

Stainless Steel for Motor Cycles.

3<sup>D</sup>

# THE MOTOR CYCLE

Circulation Exceeds 100,000 Weekly.

Founded 1903.

COVERS EVERY PHASE OF THE MOVEMENT AND CIRCULATES THROUGHOUT THE WORLD

No. 877. Vol. 24.

Thursday, January 15th, 1920.

Price 3d.

Published Weekly.

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## WAUCHOPES

RECENTLY we have been in close touch with the manufacturers, and forming our opinion solely on their reports. Our advice is "Buy Whilst You Can." Practically every manufacturer has his whole output for the year divided between the various agents, and unless you buy or place a definite order now, you will probably be without a new machine for 1920. This year is going to be the greatest that Motor Cyclists have ever known. **BOOK NOW.**

We have definite contracts fixed up for the following makes:  
Douglas. B.S.A. Harley-Dav. Morgan. Quadram.  
Triumph. Ariel. James. New Imperial. Clyno.  
Allon. Enfield. Matchless. Zenith-Gradua. Rudge.  
Rover. Enf-All. A.J.S. Bat. etc.

Several second-hand machines on offer. These will be completely and carefully overhauled before leaving our depot, and bear our usual guarantee. Lists supplied on application. Bargains in Solos and Sidecar combinations from £20.

Phone: Holborn 5777. Grams: "Opineer, Fleet, London."

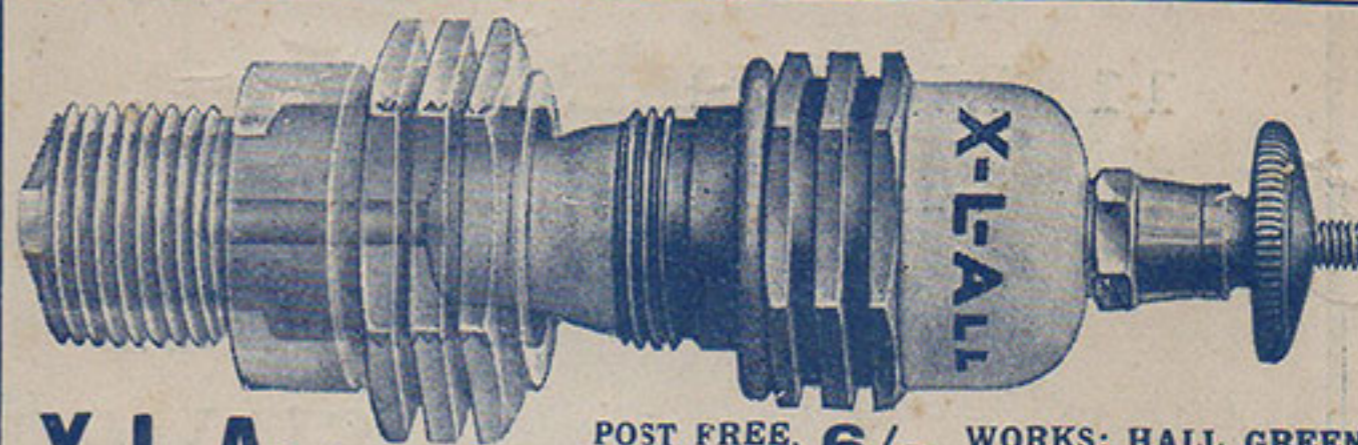
Wauchopes 9, Shoe Lane, London, E.C.4.  
Fleet Street.

## Millford

QUALITY & COMFORT

### SIDECARS

Mills-Fulford Ltd. Coventry The Original Side Car Makers.



X-L-ALL DETACHABLE PLUGS

POST FREE, 6/-

WORKS: HALL GREEN, BIRMINGHAM  
London Office: 329, High Holborn, W.C.



MOTOR CYCLES, COVENTRY.

Where there's a wheel there's a way for

# AVON

TYRES

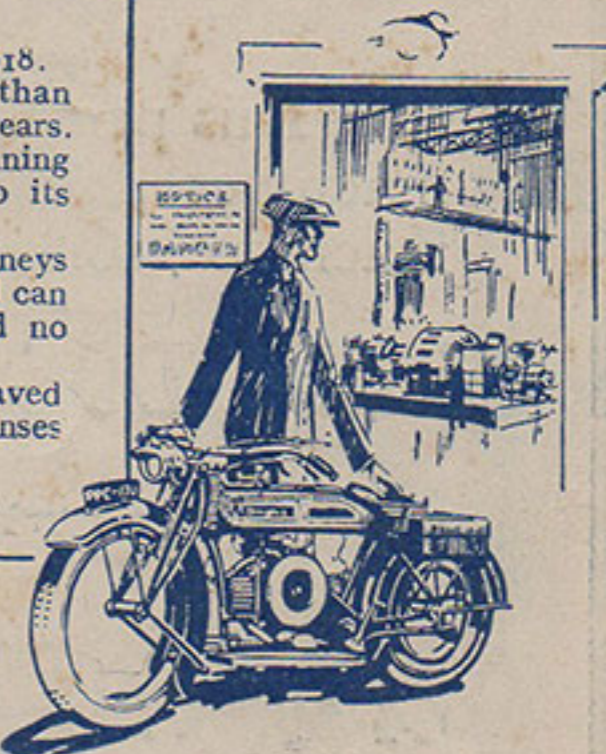
## Douglas

ON BUSINESS

THE ELECTRICAL ENGINEER.

Newcastle-on-Tyne, November, 1918.  
Dear Sirs,  
I have used none other than "Douglas" Machines for many years. My present 1911 model is still running well with over 70,000 miles to its credit in all weathers.  
I frequently make big journeys into Scotland in deep snow, and can truthfully say that I have had no trouble whatever.  
I estimate that it has saved over £60 : 0 : 0 in travelling expenses in one year. (Signed),  
GLADSTONE ARMSTRONG.

DOUGLAS MOTORS, LTD.,  
KINGSWOOD, BRISTOL.  
39, Newman St., London, W.1



## MOTORS.

THE WULFRUNA ENGINEERING CO., Ltd., Gt. Brickkiln Street, WOLVERHAMPTON.

As we have sold the whole of our output of Wolf-Jap models for this season we can now give reasonable deliveries of:

Wolf-Villiers, 2-stroke, Albion gear .. £59 10 0  
Clutch and Kick Starter .. £65 10 0

# Matchless

THE PERFECT PASSENGER MOTORCYCLE

## London to Exeter Trial Results.

Every Trial proves that for all round efficiency there is no better mount than the "MATCHLESS."

### LATEST RESULTS.

#### LONDON TO EXETER TRIAL.

11 MATCHLESS started.

10 MATCHLESS finished in schedule time, gaining  
7 GOLD MEDALS.  
3 SILVER MEDALS.

MATCHLESS percentage of finishers, 91%

#### ALL OTHER SIDECAR MACHINES.

51 started.

34 finished in scheduled time.

ALL OTHERS percentage of finishers, 66 $\frac{2}{3}$ %

This percentage result is not based on the performance of one or two picked machines and riders, but is shown by the performance of 11 MATCHLESS machines, some 5 and 6 years old.

THUS DOES THE "MATCHLESS" JUSTIFY ITS NAME.

### H. COLLIER & SONS, LTD.,

44-45, Plumstead Road, Plumstead—LONDON, S.E.18.

Telephone—  
Woolwich 17 and 18.

Works — Burrage Grove and Maxey Road, Plumstead.

Telegrams  
"Matchless, Woolwich."

# BROWN BROTHERS LTD

The Largest Motor Accessories House in the World

with which is amalgamated

**JAMES THOMSON & SON (Motor Factors), Ltd.**

Head Offices and Warehouses (Wholesale only); 20-34, Great Eastern Street, London, E.C.2. Castle Works, Lady Lawson Street, Edinburgh.

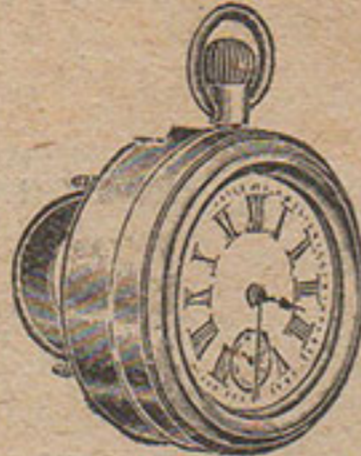
BRANCHES AT BIRMINGHAM, CARDIFF, DUBLIN, GLASGOW, LEEDS, MANCHESTER, NEWCASTLE, PARIS, AND MELBOURNE



**'DUCO' HAND CLEANER.**

Instantly cleanses greasy and grimed hands. Invaluable after any work which soils the hands. Economical and effective. **7½d. per tin.**

which soils the hands. Economical and effective.



**MOTOR CYCLE WATCH.**

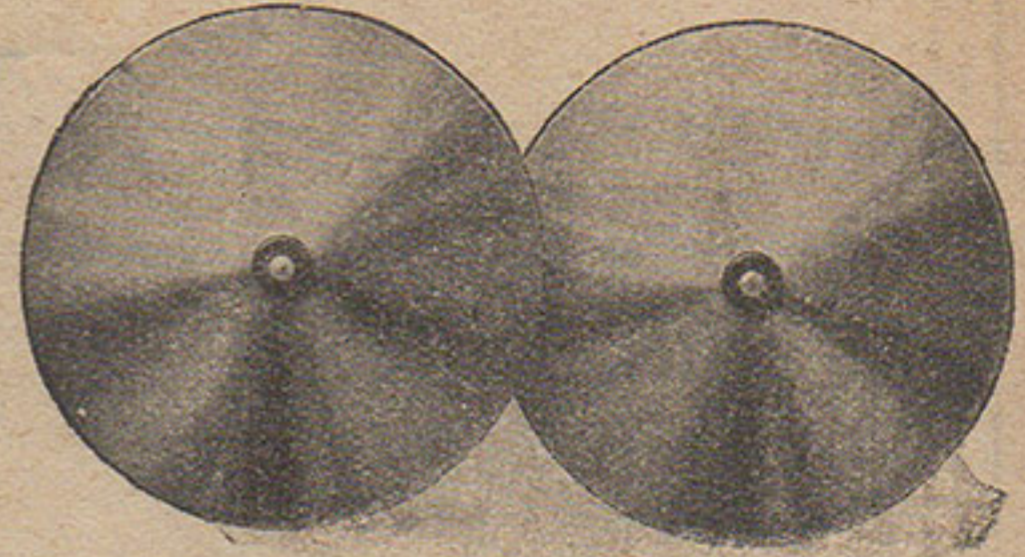
A strongly made and reliable timekeeper, to fit on motor cycle handle-bar, in full view of rider. Neat plated finish. Clip fixing, holds watch securely against vibration. **No. W2/501, each 15/6**



**"DUCO" AUXILIARY SAFETY ARMS FOR SIDECARS.**

A very necessary fitting to strengthen chassis of many of the cheaper sidecars on the road. **No. S18/2, with plated clips, each 21/-**  
**No. S18/2a, all black, each 13/-**

*These Goods are obtainable from all Motor Garages, through whom all Orders and Enquiries should be placed. Information and particulars only supplied direct.*



**POLISHED ALUMINIUM WHEEL DISCS.**

Very smart appearance, supplied complete with all necessary fittings. **No. W3/55, for Motor Cycles, 90/- per set.**  
**No. W3/56, for Sidecars, 49/- per set.**

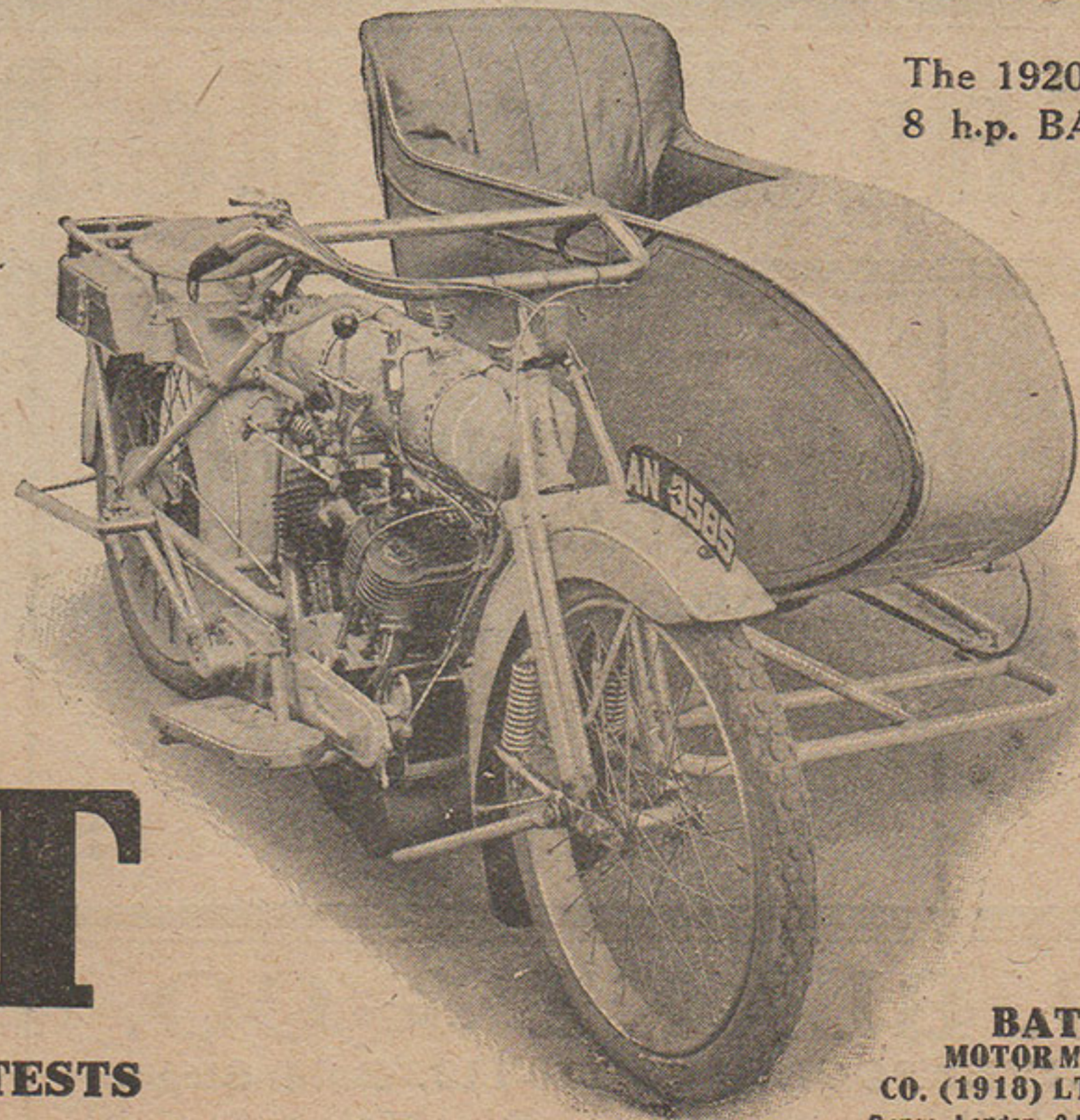
**STRENGTH,  
COMFORT,  
ELEGANCE,  
RELIABILITY,**

*all  
Combined  
in the*

**B·A·T**

**BEST — AFTER — TESTS**

*Write for particulars and prices.*



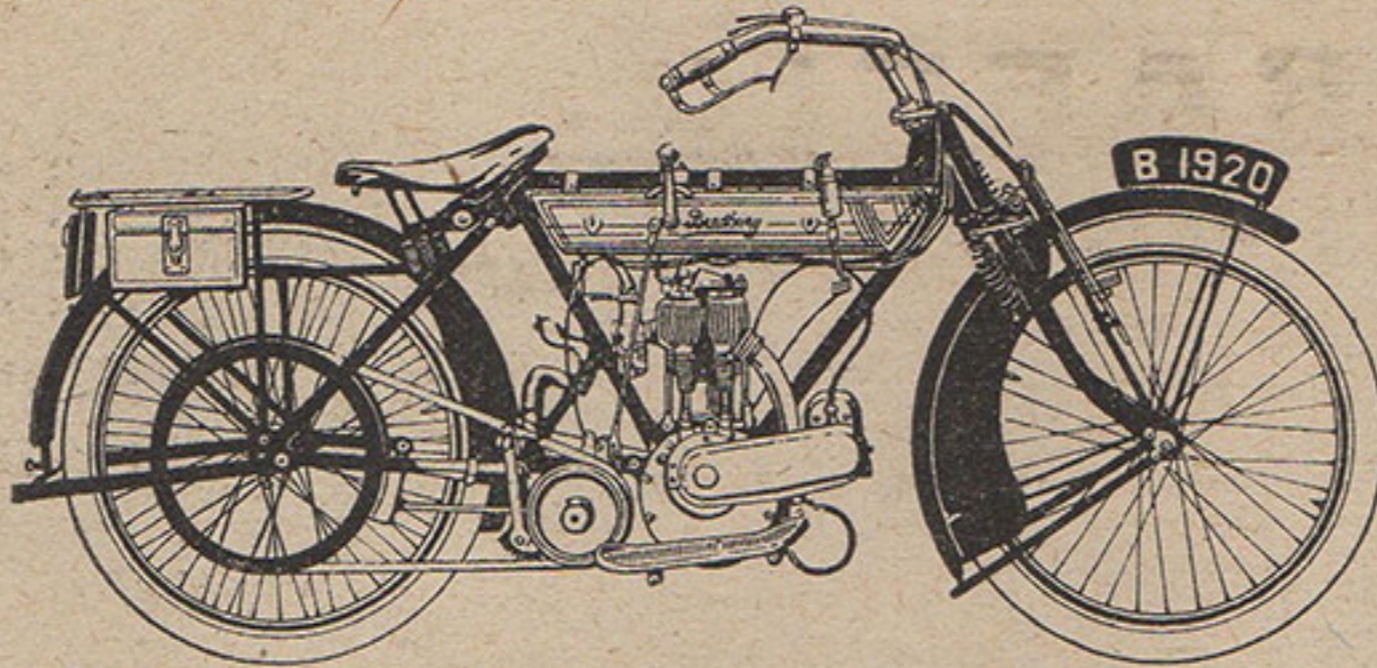
**The 1920  
8 h.p. BAT.**

**BAT  
MOTOR MFG.  
CO. (1918) LTD.,  
Penge, London, S.E.20.**



# The Bradbury

## New Lightweight Model.



2½ h.p. Four-stroke, Two-speed, Countershaft Gear, Chain and Belt Drive, Cork Clutch, and Kick-starter. Price £93 10 0

The Bradbury Lightweight has an excellence of design, workmanship, and finish that lifts it right out of the ordinary run of Lightweights. It is the ideal of its class, and was the centre of attraction and admiration of the motor cycle connoisseur at the recent Olympia Show.

Particulars and name of nearest agent sent on application.

Bradbury & Co., Ltd., Oldham.

# Martinsyde-Newman

Book your Order Now  
Strict Rotation Delivery  
Guaranteed

Sole Distributors for Lancashire,  
Cheshire, and Isle-of-Man

**J. BLAKE & CO.**  
LIVERPOOL 110-112, Bold Street  
MANCHESTER 33, Blackfriars Street

Six H.P. Twin  
Combination  
with specially designed  
Coach-built Sidecar

THE SENSATION  
OF OLYMPIA

SPEED  
RELIABILITY  
COMFORT

Price £170.

We are appointing Sub-Agents for  
the Districts of Lancashire, Cheshire,  
and Isle-of-Man, and invite enquiries  
from bona fide Motor Traders (Mem-  
bers of the M.T.A.).

Address: DEPT. A, 110, BOLD ST.  
LIVERPOOL.

# Scott

MOTOR CYCLE.

## TRAFFIC.

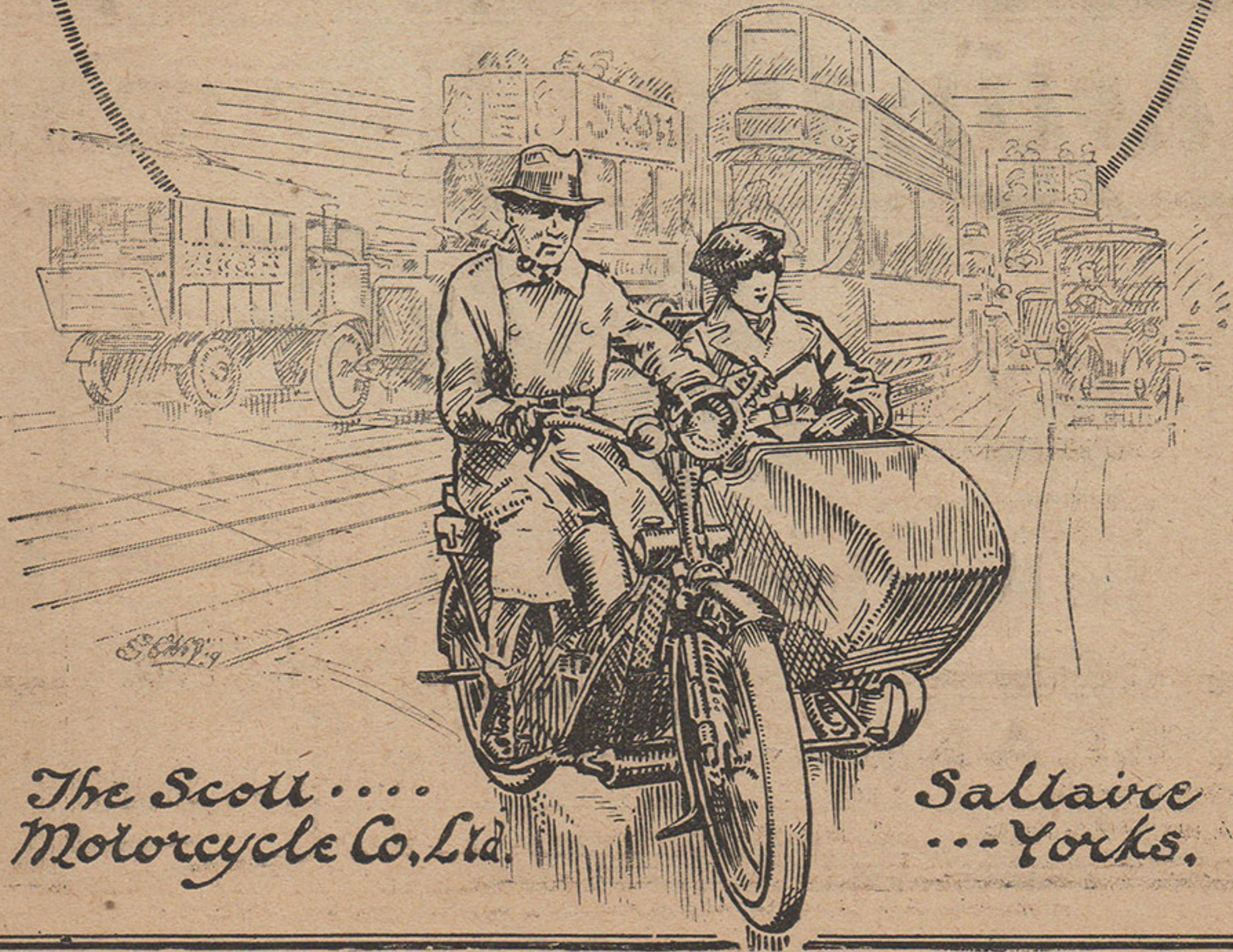
### *Safety First—THE SCOTT—and Why.*

War worn and greasy roads, heavy traffic and quick moving cars demand that the modern motor cycle be under instant control.

The **SCOTT** is the traffic machine by reason of its simplicity of control and scientific design.

You may proceed at a walking pace without effort, and when desired change into higher speeds. Moreover, in the worst weather the **SCOTT** holds the road with absence of skid or slip. This is due to the very low centre of gravity, perfect springing with correctly distributed weight, smooth braking, and instant acceleration. The water-cooled two-stroke two-cylinder engine gives even pull at all speeds.

Write for illustrated brochure and name of nearest agent.



*The Scott . . . .  
Motorcycle Co., Ltd.*

*Sallaire  
. . . Yorks.*



British Throughout,  
and proud of it!

Model 77.

The Sidecar Single  
4 H.P.

Three-speed gear box,  
chain-cum-belt drive,  
coach-built sidecar, etc.

PRICE,  
£148 10s. nett.

## Service.

When you buy a Motor Cycle, you expect to get service; just how much service and satisfaction depends on your own decision, the selection of your mount.

First cost is not everything, detail and design are the points that make for real service—reliability.

Lubrication is a most important detail in Motor Cycle engine construction; with the perfect constant mechanical lubrication as embodied in the Model 77 power unit, you are certain of every part being lubricated as a petrol engine should be—such lubrication makes real service all the time—and the mechanical parts wear twice as long. Why not further investigate the merits of the Model 77, The Sidecar Single? Details will be sent post free, on request; study the points of advantage, then order a Service mount

(Signed)

"*Rex*"

KING OF MOTOR CYCLES.

The Rex Motor Manufacturing Co., Ltd.,  
COVENTRY.

**Pratt's**  
"PERFECTION"  
**Spirit**



BY APPOINTMENT

The Master Spirit of the Motor Age

in the  
GREEN can

AVAILABLE  
EVERYWHERE

Anglo-American Oil Co., Ltd., 36, Queen Anne's Gate, London, S.W.1.



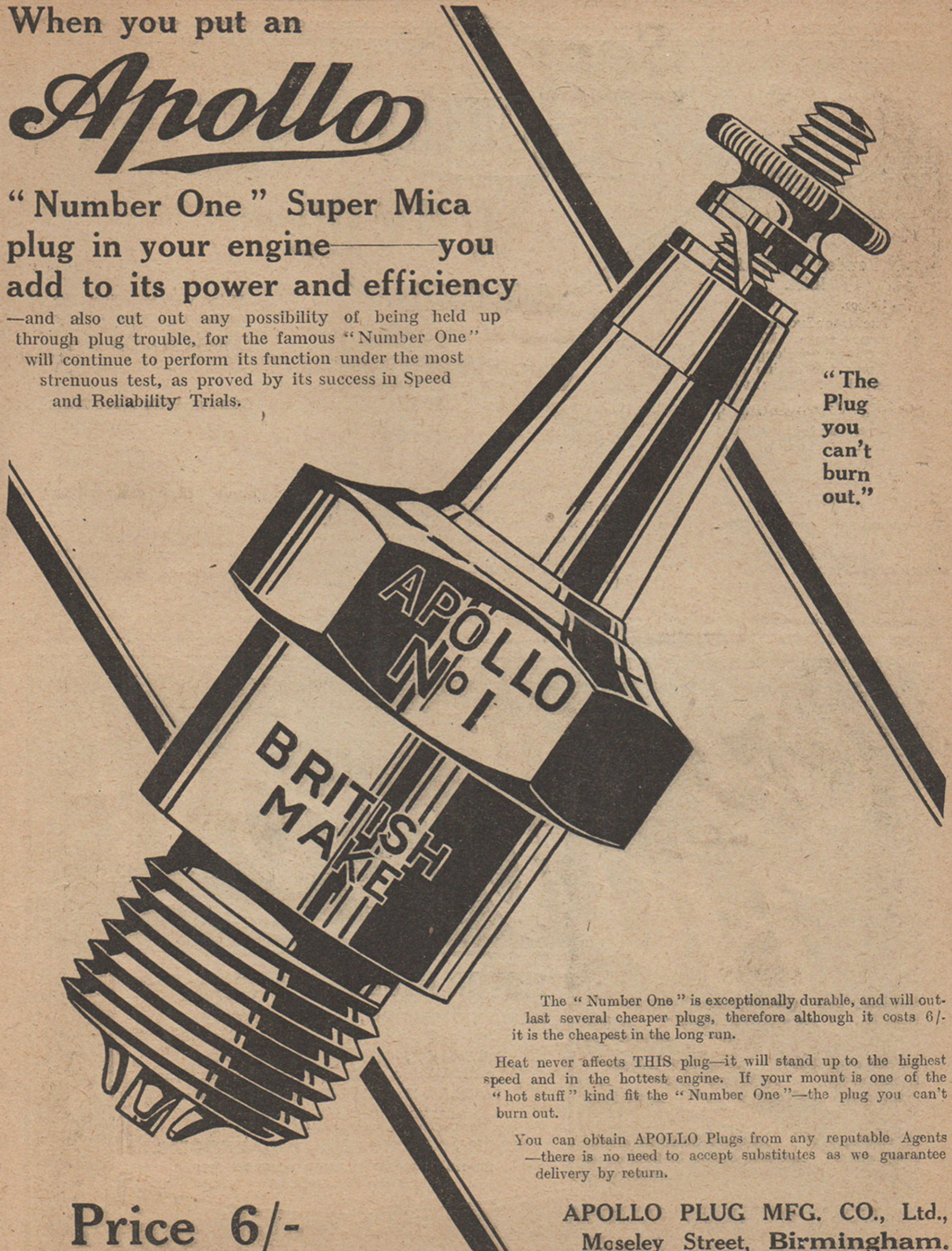
When you put an

# Apollo

"Number One" Super Mica  
 plug in your engine—you  
 add to its power and efficiency

—and also cut out any possibility of being held up  
 through plug trouble, for the famous "Number One"  
 will continue to perform its function under the most  
 strenuous test, as proved by its success in Speed  
 and Reliability Trials.

"The  
 Plug  
 you  
 can't  
 burn  
 out."



The "Number One" is exceptionally durable, and will out-  
 last several cheaper plugs, therefore although it costs 6/-  
 it is the cheapest in the long run.

Heat never affects THIS plug—it will stand up to the highest  
 speed and in the hottest engine. If your mount is one of the  
 "hot stuff" kind fit the "Number One"—the plug you can't  
 burn out.

You can obtain APOLLO Plugs from any reputable Agents  
 —there is no need to accept substitutes as we guarantee  
 delivery by return.

Price 6/-

APOLLO PLUG MFG. CO., Ltd.,  
 Moseley Street, Birmingham.

*In answering this advertisement it is desirable to mention "The Motor Cycle."*



# Bowden Wire Ltd

Victoria Rd  
Willesden  
Junction  
N.W.10.

LONDON

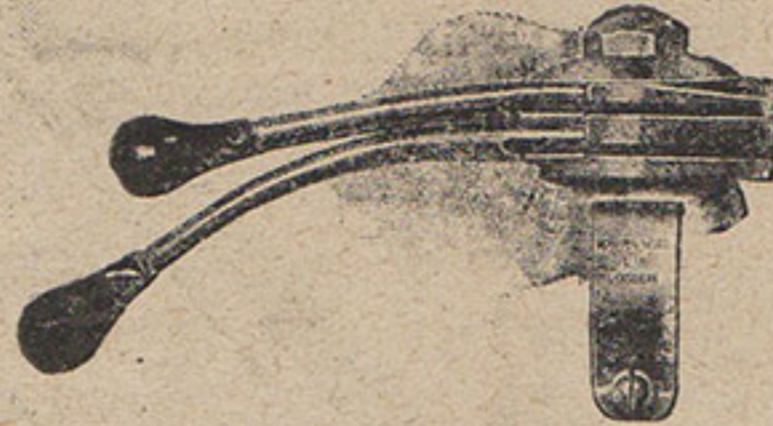
### Bowden Extra Air Inlet.

No. 499.

The Motor Cyclist's great money saver. Makes a little fuel go a long way. Keeps the engine cool and clean. Easily fitted. Specially useful with Benzole. Price with lever and Bowdenite Wire Mechanism, 21/-

### Stops, Clips,

and all necessary fittings to use with Bowden Wire Mechanism and Controls.



### Bowden Control Levers.

For Brakes, Clutch, Air Inlet, Magneto, etc. Controls are made for right or left hand, with levers for one, two, or three movements. **No 413** (as illustrated) for Two Movements, Pin or Clip fitting, Nickel Finish, Price 15/6. *We invite enquiries.*

### Bowden Magneto Control

Helps you to adjust the magneto from the handle-bar. Easily fitted. Prices 21/- and 26/3

### Bowden Wire Mechanism

for effectively controlling all movements from the handle-bar. Known to millions of Motorists, Airmen, and Motor Cyclists the world over. Made in various strengths in the following finishes: Bowdensilver, Bowdenbrass, Bowdenite, Bowdenoir, Bowdensolo.

# Get it at Harrods!

## MOTOR CYCLES ! NEW MOTOR CYCLES IN STOCK.

**HARLEY-DAVIDSON,**  
7-9 h.p. Solo.

**DOUGLAS,**  
4 h.p. Combination.

**HARLEY-DAVIDSON,** 4½ h.p. Flat Twin.

**INVICTA,**  
2½ h.p. 2-stroke.

**ROVER,**  
3½ h.p. Combination (S/hand)

*SEND for latest lists and particulars of Harrods system of extended payments.*

**HARRODS MOTOR SHOWROOMS**

116-118 BROMPTON ROAD LONDON SW1  
(Opposite Main Building)



# New Imperial

## MOTORS

STAND FOR:—

PERFECT DEPENDABILITY  
 EFFICIENT MUDGUARDING  
 EASE OF CONTROL  
 SMARTNESS  
 SPEED  
 ECONOMY  
 SURE DURABILITY  
 GOOD DELIVERY  
 COMFORT AND ACCESSIBILITY

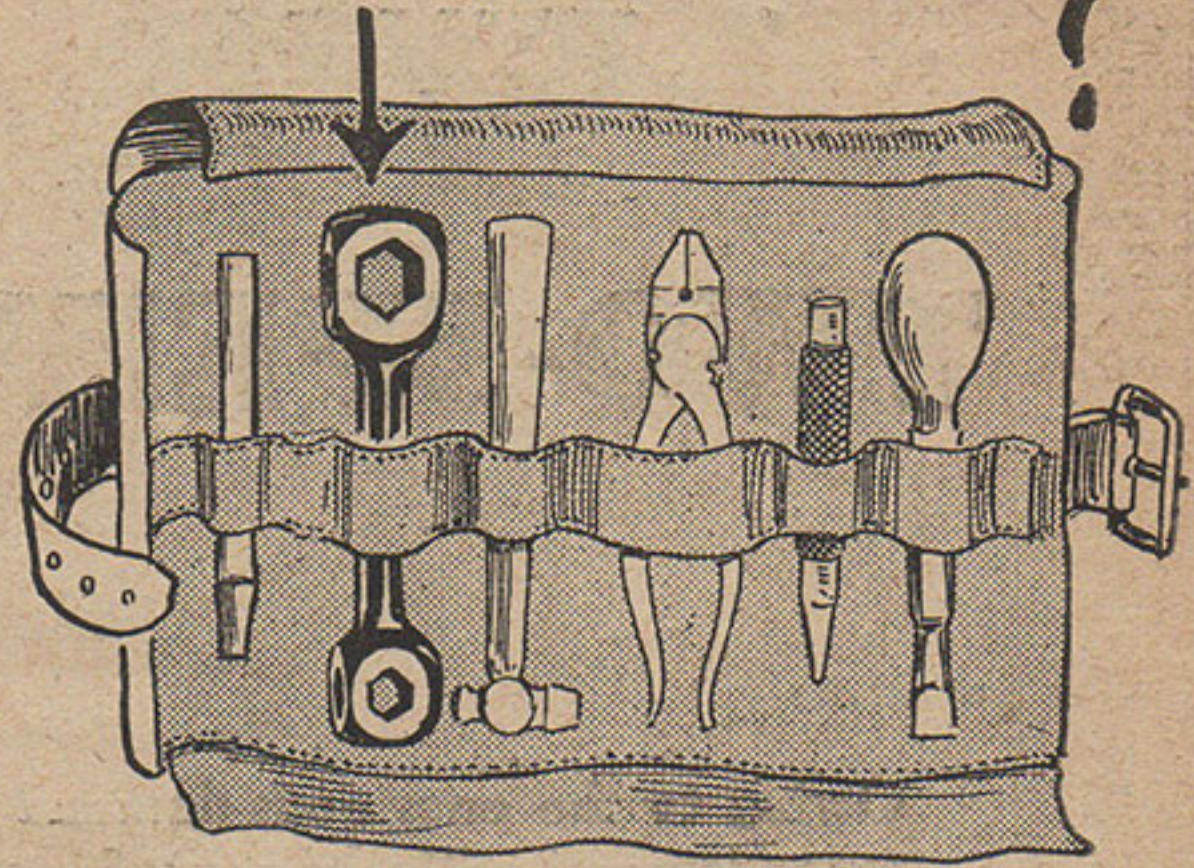
In fact, when you purchase a "New Imperial"—whether a "Light Tourist," the Perfect Solo Mount, or an 8 h.p., the Perfect Sidecar Mount—you free yourself of worries, and can enjoy the pastime to the full.

Any of our Contracting Agents will be pleased to book your order in rotation.

Catalogues free on request.

NEW IMPERIAL CYCLES LTD.  
 BIRMINGHAM.

# IS IT THERE?



**M**OST tool kits are overcrowded with innumerable spanners, but how often it happens that not one spanner in the whole set will fit some particular nut. Yet the "DUM-BEL" Spanner will give you a complete range of ten different sizes in one compact tool.

The new "DUM-BEL MULTI" Spanner will fit from 10 to 18 different sizes of nuts, and yet it contains no loose parts. It is the strongest spanner ever put on the market, and it has no open jaws to distort.

The "DUM-BEL MULTI" is as great a necessity in your home as it is on your car or in your works. One spanner fits the nuts of your mangle or your lawn mower.

The "DUM-BEL" Spanner is a necessity on your aeroplane, your cycle, or scooter. If one size does not fit, you still have a spanner in your hand which does.

Price of No. 1 size Spanner 3/- nett, plus 4d. postage.

GET A



**E. H. DRUCE & CO.,**  
 Sole distributors of the "DUM-BEL MULTI,"

HOLYHEAD ROAD,

COVENTRY.

# LEVIS OWNERS.

## TWO-SPEED GEAR BOX

Owing to the enormous demand from Levis owners, we have made special arrangements with the manufacturers of the Roc Gear to design and supply complete Two-speed Countershaft Sets. A machine so fitted has been submitted to the Levis manufacturers for their approval, and, after exhaustive tests, their verdict is A.1. (This report can be seen if desired.)

For further particulars apply :

**THE RAY MOTOR CO.,**  
 49, BRICK STREET, PICCADILLY, W.1. (CLOSE TO DOWN STREET  
 TUBE STATION.)

### GREAT CLEARANCE SALE

of New and Second-hand Government Stores, Surplus  
 Clothing, Horse Equipment, Military Stores, etc.

All Wool Khaki Trousers .. .. .	8/6
" " Black " .. .. .	8/6
" " Khaki Tunics .. .. .	6/6
Corduroy Trousers .. .. .	8/6
Khaki Riding Breeches, Serge .. .. .	7/6
Riding Breeches (Bedford Cords) .. .. .	12/6
Australian Khaki Rubber-lined Capes (long), beautiful condition .. .. .	12/6
New Army Shirts .. .. .	7/6
" " Socks (Grey) .. .. .	2/9
Combination Sheet and Driving Cape (soiled). Original Cost 50/- My price,	4/6
New Heavy Blue Serge Trousers .. .. .	15/-
" " " Whipcord " .. .. .	15/-
Beautiful White Fleecy Blankets .. .. .	7/6
Large Size American Army Blankets (64 x 90) .. .. .	13/6
Leather Waistcoats .. .. .	10/6
Khaki British Warmes .. .. .	22/6
Heavy Blue Overcoats, Navy Melton .. .. .	25/-
Rubber Sheets, 6ft. x 3ft., fitted with brass eyelets, guaranteed satisfaction .. .. .	4/-
Cheaper quality, suitable for covering outhouses 15/- doz.	
Black or Yellow Oilskin Jackets .. .. .	7/6
" " " Trousers .. .. .	7/6
Army Boots, re-soled, perfect uppers, grand line .. .. .	10/6
Black Rubber Suits (Coat, Trousers, and Sou'-wester) made for Air Force and cost the Government 63/-, my price .. .. .	20/-
New Rubber Waterproof Aprons .. .. .	12/6

Hundreds of other lines too numerous to advertise.

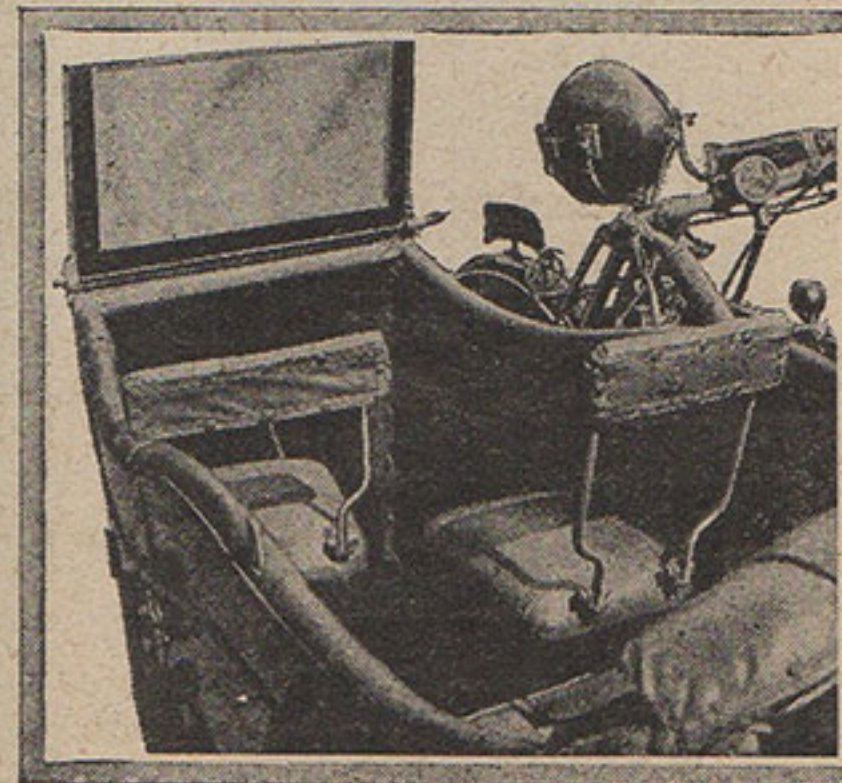
SEND FOR BARGAIN LIST. Terms: CASH WITH ORDER.

All Goods Carriage Paid and Orders treated in Strict Rotation.

Currie's Stores (Army Dept.) 29, Downing St., Manchester.

## PATEY & CO., LTD.,

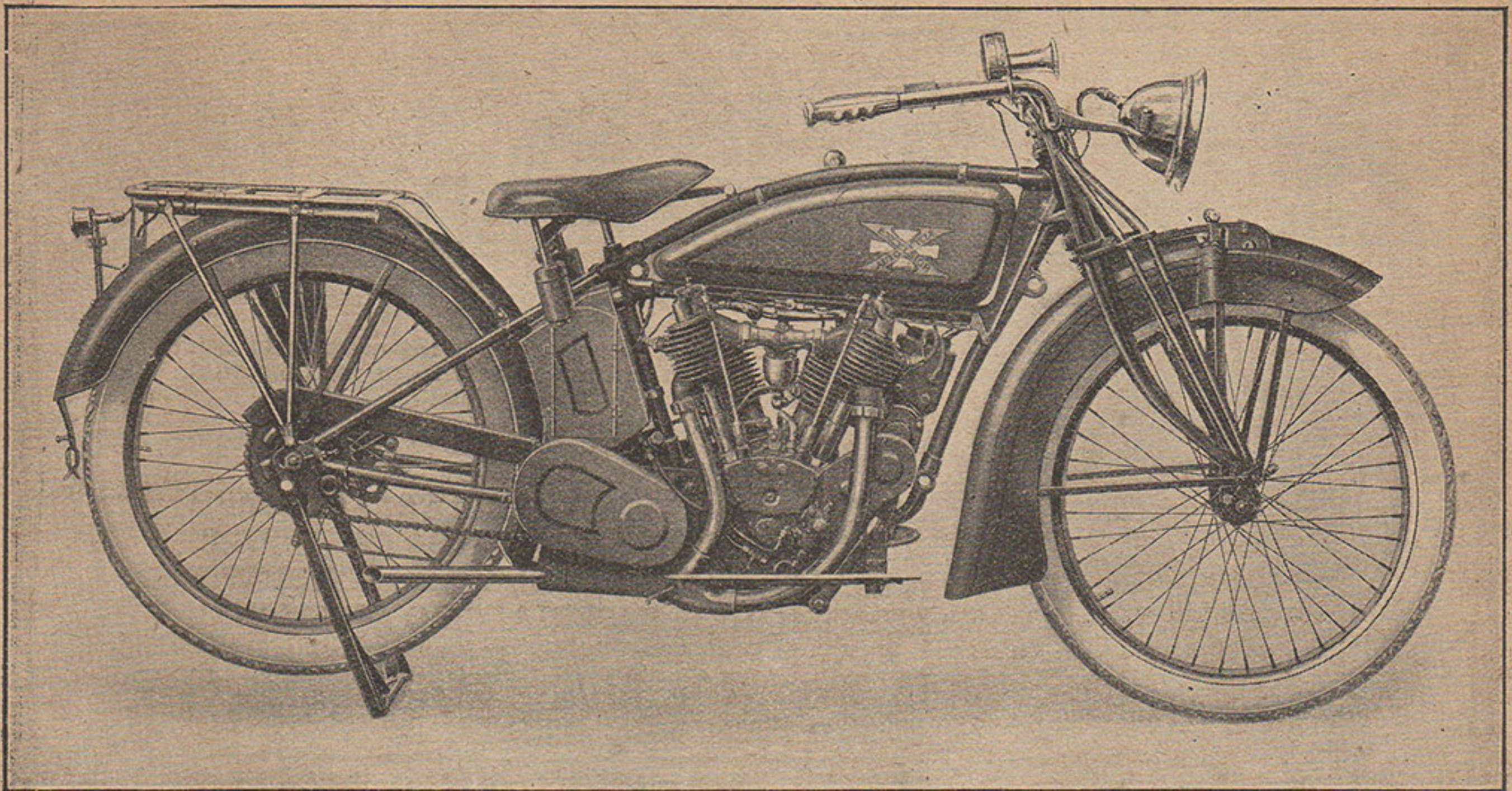
Motor Engineers, etc.,  
 45, Horseferry Rd., Westminster.  
**THE PATEY FAMILY SIDECAR**



Interior of the family sidecar. The two small seats are easily removed, thus allowing plenty of luggage room inside the body when travelling with one passenger.

Designed to carry in comfort one adult and two children or two adults. Can be fitted to any Motor Cycle.

Orders now being taken for Early Delivery.



THE AMERICAN  
**Excelsior**  
 TWIN

**The motor cycle that always makes good.**

Ample power to deal easily with the severest hills and roughest roads is always forthcoming from the Excelsior big twin; every part of the machine is equal to the strain imposed upon it.

**Melchior, Armstrong & Dessau**  
 (LONDON) LTD.

**14a, GREAT MARLBOROUGH ST., LONDON, W.1.**

Telegrams:  
 "Willdegre, London."

Telephone:  
 Gerrard 2462.

**AMERICAN EXCELSIOR DISTRIBUTORS.**

ROBERTSON'S MOTORS, LTD. 157b, Great Portland Street, W.1.—IRELAND, and that part of England and Wales South of and including Counties of Cardigan Radnor, Hereford, Gloucester, Oxford Northampton, Rutland, and Lincoln. THE PREMIER MOTOR CO., Aston Road, Birmingham.—Counties of Warwick, Worcester, Stafford, Shropshire, Leicester, Nottingham, and Derby. J. BLAKE & CO. 110-112, Bold Street, Liverpool.—Counties of Lancashire, Cheshire, Flint, Denbigh, Merioneth, Carnarvon, Anglesey, and Montgomery. C. S. RUSSELL, Clifford Street, York.—Yorkshire. EDINBURGH PIONEER MOTORS, LTD., 50, Grindlay Street, Edinburgh.—Scotland.

*In answering this advertisement it is desirable to mention "The Motor Cycle."*

# A Square Deal

first—last—and all the time. That maxim is the foundation on which has been built the biggest motor cycle business in the South.

And we only handle machines of proved reliability. These are our agencies:

CLYNO □ A.J.S. □ MATCHLESS □ TRIUMPH  
 NEW HUDSON □ P. & M. □ NORTON □ LEVIS  
 A.B.C. □ ROYAL ENFIELD □ BLACKBURNE  
 ZENITH □ NEW IMPERIAL □ ROVER □ ARIEL

## H. J. V. L. A. N.

### THE NO-PREMIUM HOUSE

## READING

*"The Biggest Dealers  
 in the South."*

PHONE 1024

You Can have  
 Car comfort at  
 Sidecar cost

with an **"LM"**

Special Features.

Electric Lighting	Seat Starter
3 speeds and Reverse	8 h.p. J.A.P. Engine, W.C.
Two-seater and Dickey	45-55 miles per gallon

Catalogue, etc., from the

**Little Midland Light Car Co.  
 LTD.,**

**Lynwood Road — BLACKBURN.**

Telephone : 5713.

Telegrams : "ELM."

Sole Concessionaires : Messrs. J. E.  
 White & Co. (Liverpool), Ltd.,  
 57, The Albany, Liverpool.

# X-L-ALL

**NEW MODELS OF THIS  
 FAMOUS SADDLE.**



**NO 1920 COMBINATION  
 COMPLETE  
 unless fitted with  
 MODEL H.27**

**FITTED WITH FOLDING BACKREST.**

**X-L-ALL LTD., Hall Green, BIRMINGHAM.**

# THE 1920 PROGRAMME OF London and Midland Motors Ltd.

**Kingsbury "Junior"**  
Light Cars.

**Kingsbury 2-Stroke**  
Motor Cycles.

**Kingsbury Scooters**

**Bethlehem Trucks**

**National Cars.**

**Bethlehem Cars.**

**Foster Cars.**

**Militor Motor Cycles.**

**Brockway Trucks.**

THIS COMPLETE RANGE IS IN THE HANDS OF THE  
WHOLESALE DISTRIBUTORS SHOWN BELOW:

**AUTO-PRODUCTS, Ltd.,**

*Head Offices & Garage:* Thomleigh Road,  
West Jesmond, Newcastle-upon-Tyne.

NORTHUMBERLAND      CUMBERLAND      DURHAM

**LANCASHIRE & YORKSHIRE MOTORS, Ltd.,**

255, Deansgate, Manchester.

LANCASHIRE      CHESHIRE      WESTMORLAND  
DERBYSHIRE      ANGLESEY      CARNARVON  
DENBIGH      FLINT      MONTGOMERY      MERIONETH

**A. T. RALPHS (LEEDS), Ltd.,**

Grant Avenue, Roundhay Road, and  
Roseville Road, Leeds; and at Norwich.

YORKSHIRE      LINCOLNSHIRE      NORFOLK

**SIMPSON & SLATER, Ltd.,**

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NOTTINGHAMSHIRE

**EDWD. G. BROWN, M.I.Mech.E.,**

5, 6, 7 & 8, Gt. Hampton St., Birmingham.

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LEICESTERSHIRE      RUTLAND      WARWICKSHIRE  
NORTHAMPTON

**GEOFFREY S. DAVISON, Ltd.,**

16, Bute Street, Luton

BEDFORDSHIRE      SUFFOLK      BUCKINGHAMSHIRE  
BERKSHIRE      HERTFORDSHIRE      OXFORDSHIRE  
CAMBRIDGESHIRE      HUNTINGDON  
ESSEX (Excluding Metropolitan Police Area)

**W. O. GARBUTT,**

Southgate, Gloucester.

GLOUCESTERSHIRE      BRECKNOCK      SOMERSET  
CARDIGAN      WILTSHIRE      CARMARTHEN  
HEREFORDSHIRE      PEMBROKE      MONMOUTH  
RADNOR      GLAMORGAN      CORNWALL      DEVON

**TATTERSALL'S, Ltd.,**

4, Great Marlborough St., Oxford Circus,  
London, W.1.

SUSSEX      KENT (excluding Metropolitan Police Area)  
HAMPSHIRE      SURREY ( " " " )  
DORSET

**JOHN M. WILSON (MOTOR ENGINEERS), Ltd.**

209, Nuneaton Street, Bridgeton, Glasgow.

ALL SCOTLAND

**IRISH SALES DISTRIBUTION CO.,**

Dublin.

ALL IRELAND

THE ABOVE FIRMS ARE NOW ALLOTING AGENCIES AND SUB-AGENCIES WITHIN THE  
ABOVE-STATED AREAS FOR THE WHOLE OR ANY PART OF THE L. & M. PROGRAMME

Telegrams:  
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London.

**London & Midland Motors, Ltd.**  
445, OXFORD STREET, LONDON, W.1.

Telephones:  
Mayfair 4202  
4203

# BOXING NIGHT

to all on the road was a perfect nightmare. As everyone knows, it rained incessantly and

## COMMISERATION

for riders of Belt-driven machines in the LONDON - EXETER TRIAL was handed out right and left. By common consent users of these machines were *bound* to be let down by their belts. The Belt-slip "Bogey" was let loose. Yet what did we see? The majority of riders pinning their faith to the



# JOHN BULL DEEP DRIVE BELT

—the Belt which had successfully carried them through other trials of equal severity. Their confidence was well placed for

## 7 GOLD & 7 SILVER MEDALS

were secured. Truly a most remarkable record representing 60% OF THE WHOLE AWARDS made to belt-driven machines. Fit JOHN BULL TYRES AND BELTS and you can afford to scorn the so-called "Bogies" of the road.

LEICESTER RUBBER Co., Ltd., LEICESTER.

1919  
FRIDAY

26

DECEMBER

"He that provideth for a rainy day  
is surely wise" Proverb.

## WHY WORRY!

IF YOU WANT  
SATISFACTION

BUY A

# HOBART

"Coventry's best lightweight Motor Bicycle."

It is the outcome of 19 years' experience in the manufacture of lightweight Motor Bicycles.

*Catalogue free on request.*

Business established 1884.

**HOBART CYCLE CO. LTD**  
HOBART WORKS  
COVENTRY. ENG.

# RENNOC SIDE CARS

## Bodies and Hoods

**ORDER NOW for IMMEDIATE  
DELIVERY.**

*Largest Stock in London of  
complete Sidecars and Bodies*

**Actual Manufacturers  
Throughout.**

Wholesale, Retail and Export.  
**SEND FOR LIST.**

20 various Model Bodies, single and Tandems, from £4 10 0.  
300 complete Sidecars and Bodies in Stock. Chassis a speciality.

**Rennoc Works, 86, Victoria Rd.,  
STROUD GREEN, N.** Phone: Hornsey 850.

# *The Cleveland Motor Cycle*

IN four short years, the Cleveland has gone all over the world and won a name for itself. Clevelands are used by thousands of satisfied owners from one end of the earth to the other. The Cleveland blends light weight with quality and gives maximum service at minimum cost.

The Cleveland was the only light weight motor cycle adopted by the United States War Department for overseas service.

Petrol consumption 100 miles per gallon.

*EARLY DELIVERIES.*

*Manufactured by :—*

*The Cleveland Motor Cycle Mfg. Co.,  
Cleveland, U.S.A.*

*SPECIFICATION :—*

Two-stroke motor.

Unit power plant.

Worm drive transmission.

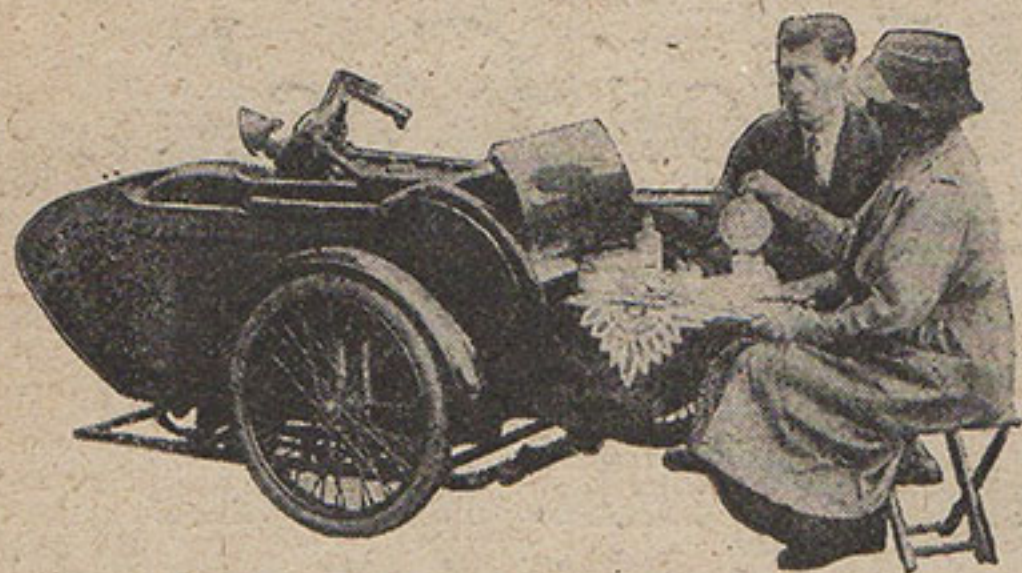
Direct drive magneto.

26" x 3" tyres. Low saddle position. Weight 175 pound.

*Concessionnaires for British Isles :—*

*North Western Motors, Ltd.,  
Norton Street, Liverpool.*

## "The LANGFORD" SIDECAR SUPREAM



### A NEW DESIGN.

Showing luncheon and tea cabinet withdrawn, fully equipped, forming table, fitted as standard with two stools. Top recess opened showing capacity for two gallon can of Petrol, and one can of oil. When closed, the whole being neatly tucked away.

The Chassis with four-point Attachment, adjustable to fit any machine. Patent Shock-Absorber to wheel as well as Cee Springs gives perfect springing and greatest comfort.

*The Trade and Agents invited where not represented. Catalogue on Application.  
Patent No. 20714/19.*

**The Langford Sidecar Body and Chassis Co.**  
LONDON ROAD, NORBURY, S.W.16.

## The Coulson B

sprung frame, with the BLACKBURNE  
2 $\frac{3}{4}$  h.p. Engine.

## The "H.B."

kick starter and clutch, with the BLACKBURNE  
2 $\frac{3}{4}$  h.p. Engine.

The Blackburne 4 h.p.

The Blackburne 8 h.p. Comb.

*For information write to*

**LONDON MOTORS,**  
61, Holborn Viaduct,  
E.C.1.

TELEPHONE: CITY 4230.

TELEGRAMS: "OMOBICYCLES, CENT, LONDON."

FROM  
**LAND'S END**  
TO  
**JOHN-O'-GROAT'S**

There are thousands waiting for their sidecar. Can we help you?

We can make the chassis to your design, or submit designs of our own.

We are also making the sidecar complete.

Output and workmanship guaranteed.

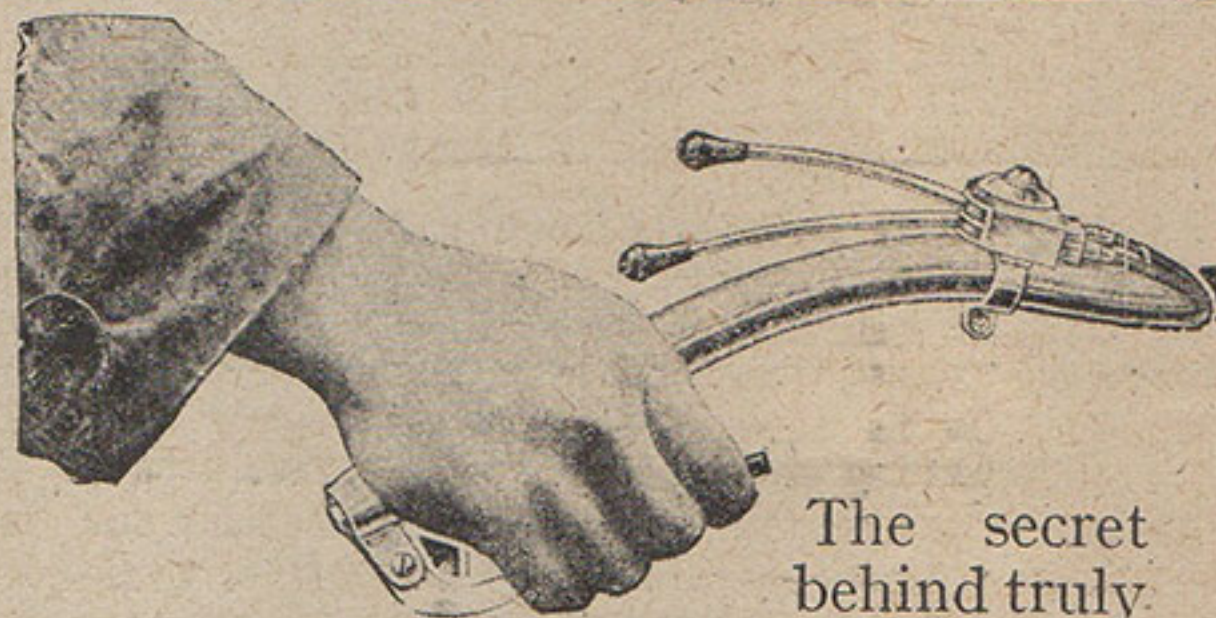
Send us your enquiries.

Orders are accepted in strict rotation.

**ALLIN & NEWBOLD, LTD.,**

MANUFACTURERS,

Newall Works, LETCHWORTH.



The secret behind truly Successful Motor Cycling is invariably found in the rider's attitude to the vital policy of "Safety First."

Brake efficiency is imperative—the "BOWDEN, Tyseley" Brake and Control Fittings positively ensure at all times the rider's Perfect Safety under all normal and emergency conditions.

**BOWDEN BRAKE CO.**  
Ltd., Tyseley, Birmingham.

"Bowden" Tyseley.



# Copy of Telegram

## Sent to Motor and Allied Trades

### December 18th, 1919.

This Telegram will be accepted for transmission subject to the Telegraph Acts, and Regulations made thereunder.

SEE NOTICE AT BACK.

<p><b>A.</b></p> <p>Prefix _____ Code _____</p>	<p>POST OFFICE TELEGRAPHS (Inland Telegrams)</p>	<p>No. of Telegram _____</p> <p><b>For Postage Stamps.</b> <i>To be affixed by the Sender.</i> Any stamp for which there is not room here should be affixed at the back of this form. <b>12 words, including the words in the address, 9d. Every additional word ½d.</b> <i>A Receipt for the Charges on this Telegram can be obtained, price One Penny.</i></p>
<p>Office of Origin and Service Instructions.</p>	<p>Words _____ Sent _____</p> <p>At _____ M.</p>	
	<p>Charge _____</p> <p>To _____</p> <p>By _____</p>	

When a reply is to be pre-paid write the words "Reply Paid" in the space below. These words are not charged for.

TO }

Mr. Edgar Duffield lecturing to Institution Automobile Engineers on Car Design strongly urged the use of a Reliable Safety Lock Nut to protect life and save money.

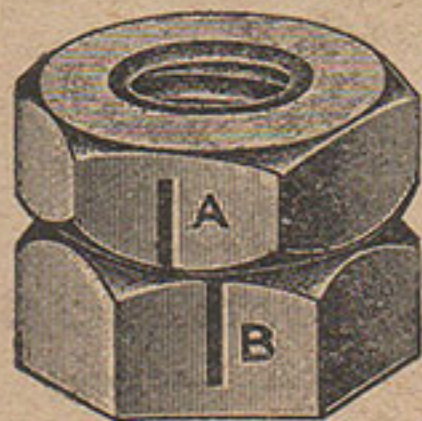
VISLOK guarantees to fulfil to uttermost all Mr. Duffields conditions reported in December Automobile Engineer page 456.

VISLOK is already standardised by some progressive Car Lorry and Engine makers. Increasing and continuous repeat orders for VISLOKS from Motor Garages Owner Drivers and Repairers prove that Mr. Duffield voices Car Owners requirements and confirm the VISLOK undisputed statement that if Ordinary Nuts could sprout what crops the roads would grow.

Every dropped nut is a risk to life and property. Why perpetuate these risks when you can have VISLOKS guarantee for safety and reliability based on many years of practical working results conclusively proving that VISLOK defies all forces of intensified and continuous vibrations. VISLOK welcomes severest tests under your own conditions. FREE SAMPLES from Vislok

FROM }

The Name and address of the Sender, IF NOT TO BE TELEGRAPHED, should be written on the Back of the Form.



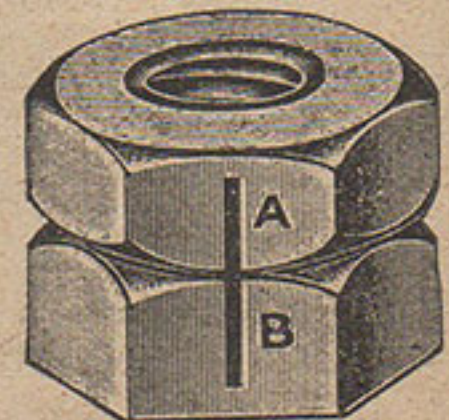
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# VISLOK LTD.

3, ST. BRIDE'S HOUSE,  
SALISBURY SQ., LONDON, E.C.4.

Telegrams:  
"VYSSELOQUE, FLEET,  
LONDON."

Telephone:  
8157 CENTRAL  
(3 Lines).



UNLOCKED.

In answering this advertisement it is desirable to mention "The Motor Cycle."

# A few of the recent Successes OF THE **VERUS**

Six Days Highest Award in its class with one machine.  
 Liverpool Welsh Trials - Two Machines - Two Silver Medals.  
 Redditch Trial - - - - - Two Silver Medals.

## WE HAVE FOUR MODELS.

2½ h.p. Single-speed, Two-stroke.      2¾ h.p. 2-speed, Four-stroke, Blackburne Engine.  
 2½ h.p. 2-speed, Two-stroke.      4 h.p. 3-speed, Four-stroke, Blackburne Engine.

Write for nearest Agent to the Manufacturers—

**ALFRED WISEMAN, LTD.,**  
 GLOVER STREET - - - BIRMINGHAM.

## Surridge's HOLDTITE.

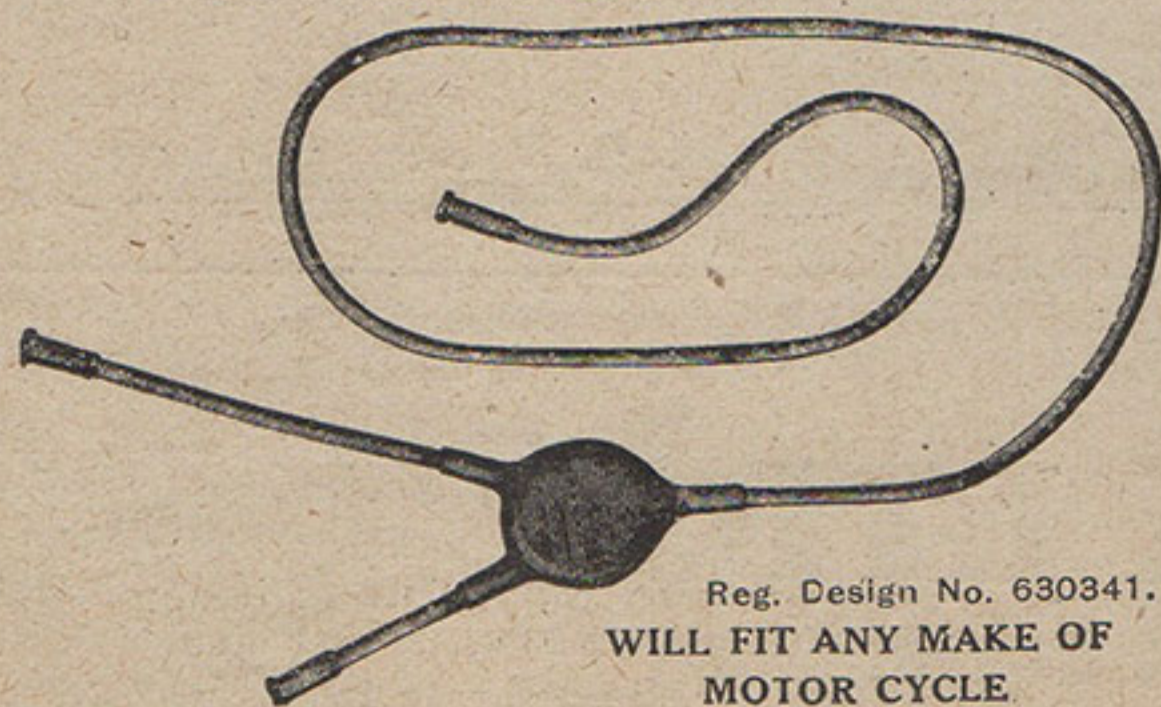
### SURRIDGE'S COMBINED BAG CONNECTOR For Head and Tail Lights.

This combination enables both lamps to be fed from one generator, and in conjunction with the Bag a perfect steady flame is given.

The Bag governs the flow of gas to each, so that both the small and large lamps get their right amount without undue pressure on the smaller burner, as is the case when only ordinary tubing is used.

*A perfect flame to both lamps.      The bag traps all moisture*

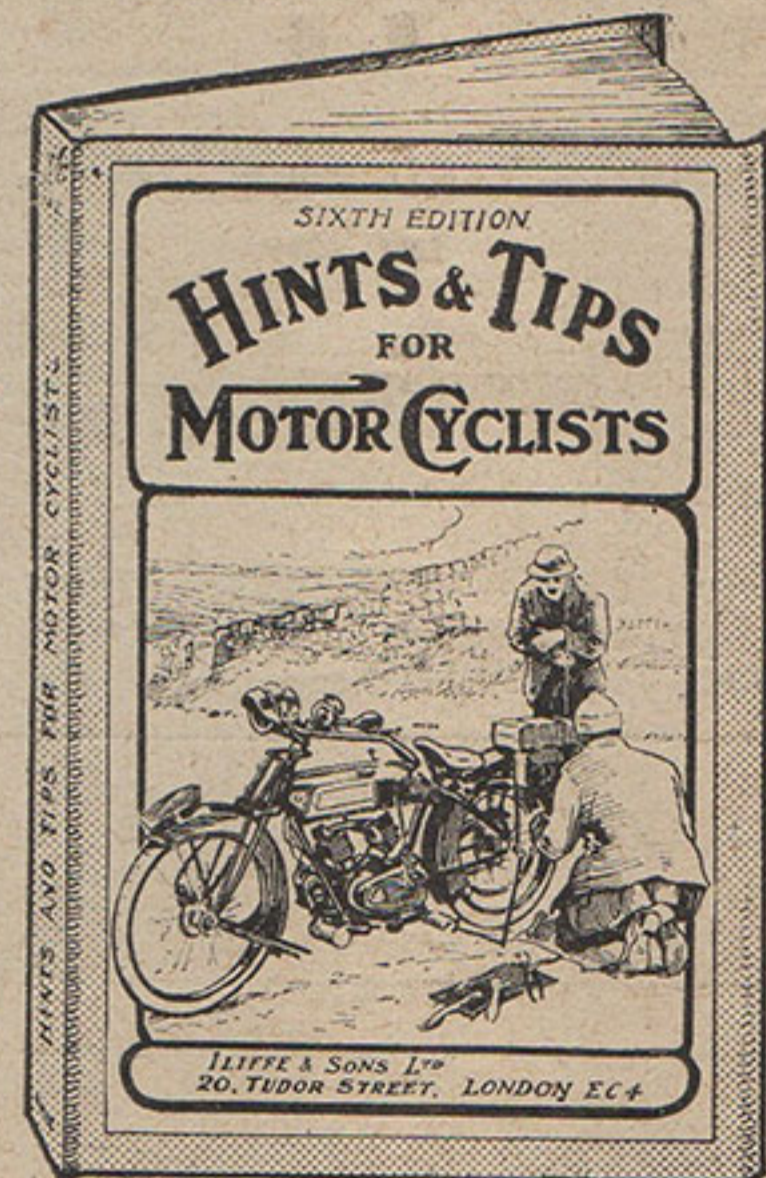
Price - - - - 5/- each  
 Length between the Lamp Ends, 70 inches.



Reg. Design No. 630341.  
**WILL FIT ANY MAKE OF  
 MOTOR CYCLE.**

From all Garages and Agents      Send for full List.  
**SURRIDGES PATENTS,**  
 73, Church Street, Camberwell, London, S.E.

A handy  
 book for  
 reference  
 when  
 overhauling  
 your  
 machine.



SIXTH  
 EDITION

(Second  
 Reprint)

Over 400 separate and numbered paragraphs, with complete alphabetical index.

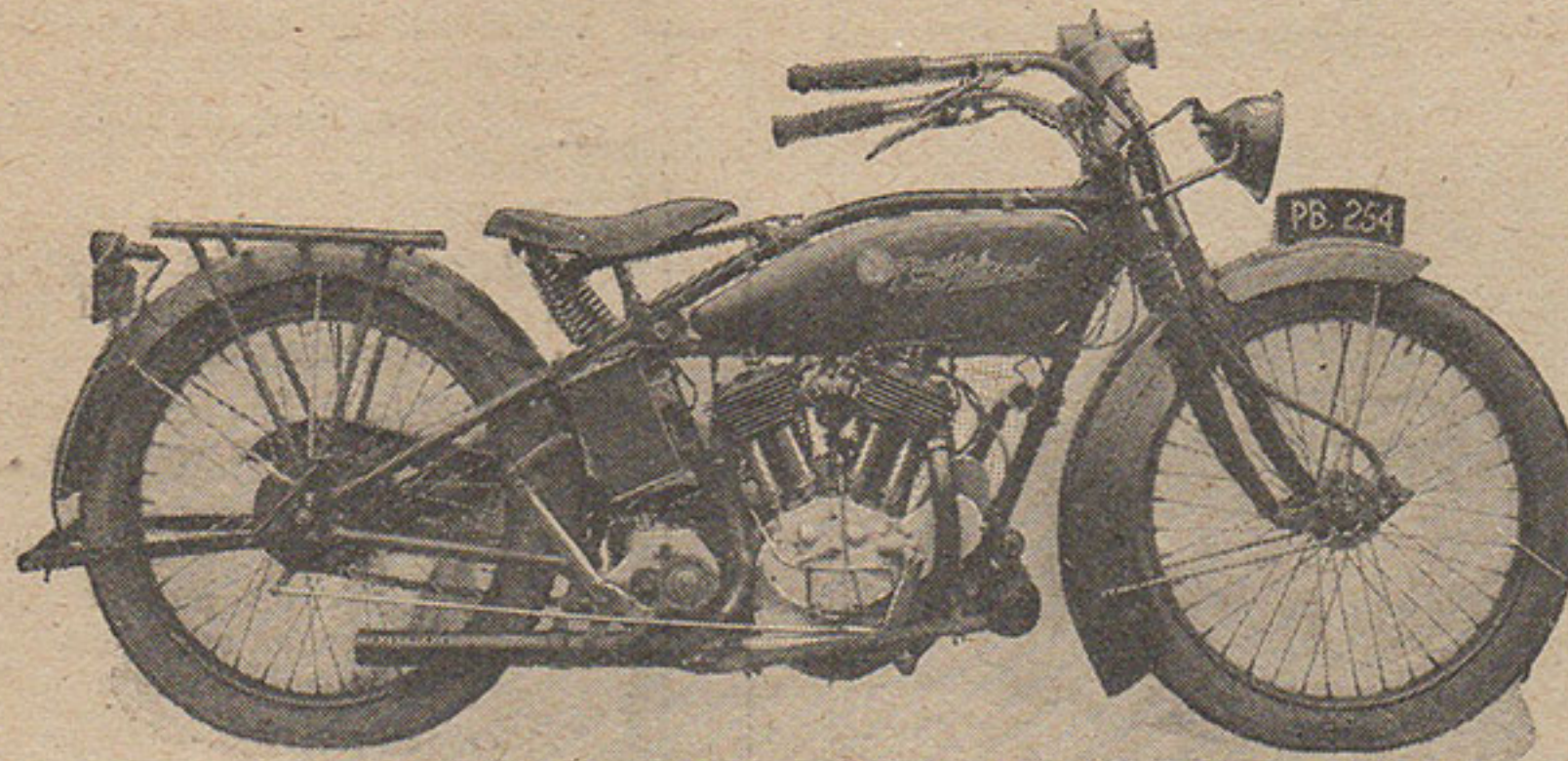
**A FEATURE** of this Edition consists of illustrations showing the working parts and action of four-stroke and two-stroke motor cycle engines

Price 2/- net. By Post (Home or Abroad) 2/3

From LILFEE & SONS LTD., 20, Tudor Street, London, E.C.4  
 and leading book-sellers

# THE 1920 READING STANDARD

Book your new machine at once.



Write for the address of the local agent.

**STANLEY J. WATSON, Berners Works, Richmond, Surrey.**

DESIGNED FOR THE SPORTING RIDER.

Sole Distributing Agents  
for the

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WORCESTERSHIRE.

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MESSRS. MARTIN MITCHELL, LTD.,  
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MESSRS. LAYTON GARAGES,  
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MESSRS. SAUNDERS CYCLE Co.,  
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GLASGOW AND DISTRICT  
MESSRS S. G. S. MOTORS, LTD.,  
167, Albert Rd.,  
POLLOKSHIELDS, GLASGOW

3½HP.  
**DUZMO**  
— 1920 —

PRICE £75 NOW.

SPECIAL FEATURES :

OVERHEAD VALVES, OUTSIDE FLYWHEEL.  
DETACHABLE CYLINDER HEADS.  
"DRY SUMP" LUBRICATION.  
LIGHT RECIPROCATING PARTS.

Applications for further Territory can still  
be made to:—

**THE PORTABLE TOOL  
and  
ENGINEERING Co., Ltd.,**  
Cedar Works, Enfield Highway,  
MIDDLESEX.

'Phone: Enfield, 467. 'Grams: 'Portable, Enfield.'

have been appointed for the  
following Territories:

LONDON. MIDDLESEX. SURREY.  
HERTFORDSHIRE.

BEDFORDSHIRE.  
MESSRS. BALLARD'S MOTORS,  
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SOUTH KENSINGTON, S.W.7.

SUFFOLK. NORFOLK. ESSEX,  
CAMBRIDGESHIRE.

MESSRS. EGERTON'S, Motor Engineers,  
Northgate Street, IPSWICH.

PROVINCE of ULSTER, IRELAND.  
SAMUEL M. ADAMS' Motor Agent,  
50, Donegal Street, BELFAST.

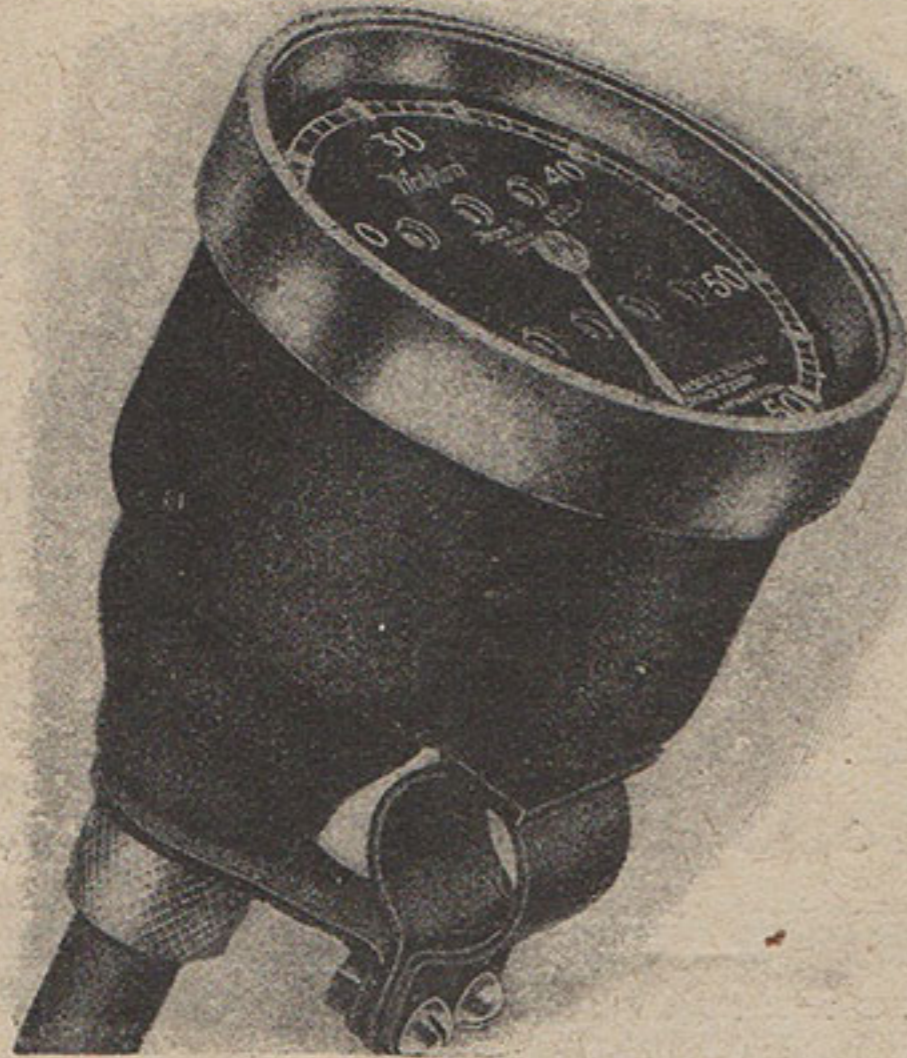
HUNTINGDONSHIRE.  
MESSRS. PARKER & SON,  
Station Road Garage, ST. IVES, HUNTS.

SOUTH WALES.  
IVOR L. ROBERTS, 223, Oxford Street,  
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WESTMORLAND, CUMBERLAND,  
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R. MARTIN RENNISON, Crown Hotel,  
PENRITH, CUMBERLAND.



Speedometers



**Watford Motor Cycle Speedometer.**

**Model 42. Price £5 : 5 : 0.**

Black finish. Nickel-plated bezel. Black dial, with white figures. Indicates speeds to 60 miles per hour. Total mileage counter to 10,000, and repeats. Quickly reset trip-counter to 100 miles, showing tenths.

**Model 40. Price £4 : 15 : 0.**

Corresponds in other details, but has no trip mileage counter

*Letter dated 20/11/19 received from Mr. A. J. Dixon :*

"You will be pleased to hear that my 'WATFORD' Speedometer, about which I wrote you last in 1913, when I had covered 8,000 miles, has now well passed 40,000, and is still as good as ever

"I have used it in competition work practically all over Europe, including the really frightful roads in Italy, but despite the awful vibration it has never given me a moment's trouble, and its veracity remains unchanged.

"It has been through 3 Scottish Six Days and 2 A.C.U. Six Days Trials, gaining Gold Medals, or rather helping me to do so on my Singer Motor Cycle.

"In conclusion I may say that I know of no other Speedometer that has equalled this performance, and I take this opportunity of congratulating you on turning out such a fine instrument."

Manufactured by

**NORTH & SONS, LTD.,  
WATFORD,**

and 14, SOHO SQUARE, LONDON, W.1.



**PISTON RINGS**

These Piston Rings are manufactured on the most advanced principles known to-day. The experience of aircraft requirements during the war is embodied in both design and material.

We claim that BRICO Piston Rings are as near perfection as any piston ring in the world.

Even in appearance alone BRICO Piston Rings proclaim "quality," and a practical test of the rings in an engine will prove that their performance is equal to their appearance.

Perfect in finish, in fit, and in material, BRICO Piston Rings increase engine power and save lubricating oil.

*BRICO Piston Rings are made for all popular motor car and motor cycle engines and are supplied from stock by return.*

Traders should write for new Price List H. Private motorists are supplied by Garages and Dealers.

**The BRITISH PISTON RING CO., LTD.,  
Holbrook Lane, — — Coventry.**

'Grams : "Pistorings, Coventry." 'Phone : 1214-1215.



**3½ h.p. TWO-STROKE (Precision 350 c.c. Eng.)  
TWO-SPEED GEAR, CLUTCH, AND KICK START**

**PRICE £85**

One Model only.

**STRONG, RELIABLE, POWERFUL, AND SPEEDY**

Read what a rider says of it—

Dear Sirs,  
Grange Drive,  
Monton Green, Manchester.

A few days ago I purchased a "New Scale" motor cycle from Tom Davies, Deansgate, Manchester . . . . It might interest you to know that a few days later I returned over Kirkstone on the Brotherswater side, which is the steeper of the two. I make a point of resting and cooling any cycle on a stiff hill. I did so before the very stiff bit at the top. Now you can believe this or not—I started on the clutch (which is good) and did the last bit on TOP GEAR. Well! One cannot talk about the supernatural.

(Signed) H.M.L.

**THE MACHINE which ALWAYS gets you THERE**

Addresses of Agents and full particulars sent on request.

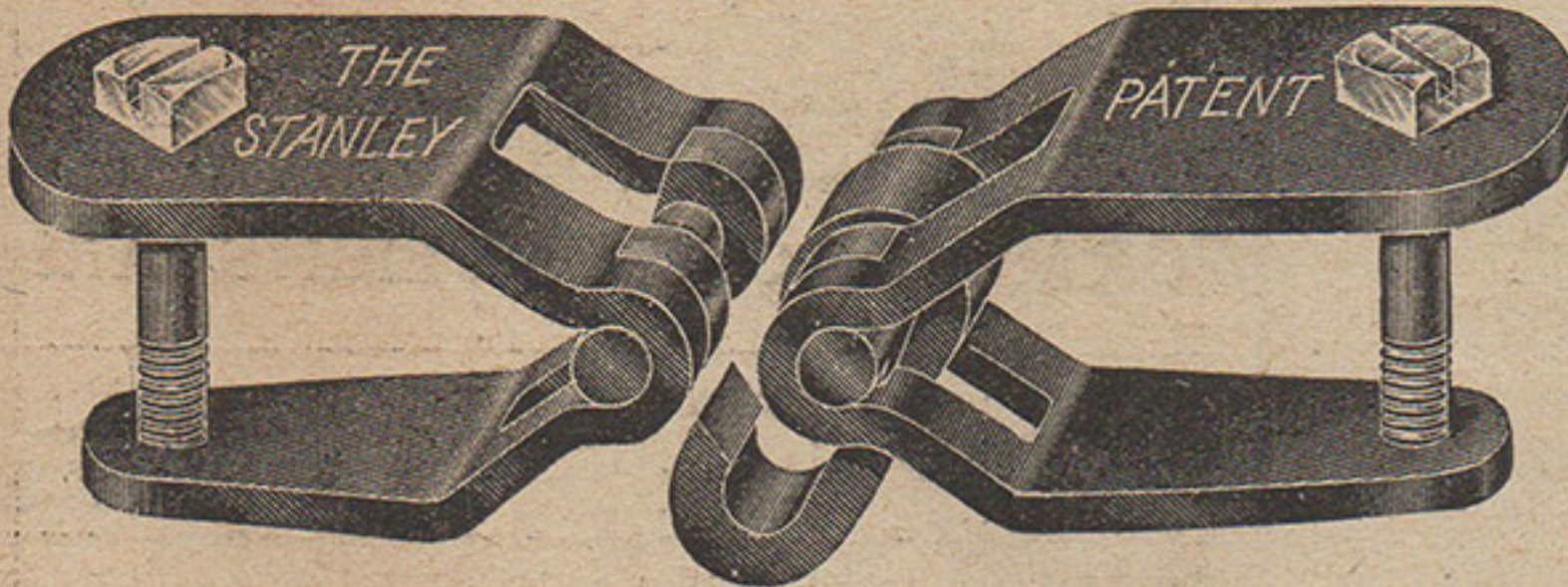
Place your order NOW and avoid disappointment.

Manufacturers :

Telephone : **ROBERTS & HIBBS,** Telegrams :  
623 Bank St. Works, Droylsden, "Roberhibs,  
Openshaw. : : MANCHESTER. : : Droylsden,  
Manchester."

# "Stanley" British Made Belt Fasteners and Accessories.

MILLIONS USED BY H.M. WAR OFFICE AND ALLIES.



THE "STANLEY" BELT FASTENER, 1/-

### THE "STANLEY" BELT FASTENER.

Used wherever motor cycles are used. The BEST at any price. Handsome nickel finish. Hardened and tempered hook and flanged pins. The no-trouble kind. The most secure, yet easily detachable fastener ever invented. Outlasts all others. The Original and Best Hook Fastener.

Sizes  $\frac{3}{4}$   $\frac{7}{8}$  1 1 1/2 in. Each 1/-



### THE "STANLEY" ADJUSTING HOOKS.

For adding length to the belt. Well made and reliable. Easily the handiest means for adjusting belt length on the road.

$\frac{3}{4}$   $\frac{7}{8}$  in. long - per set of 3 6d.

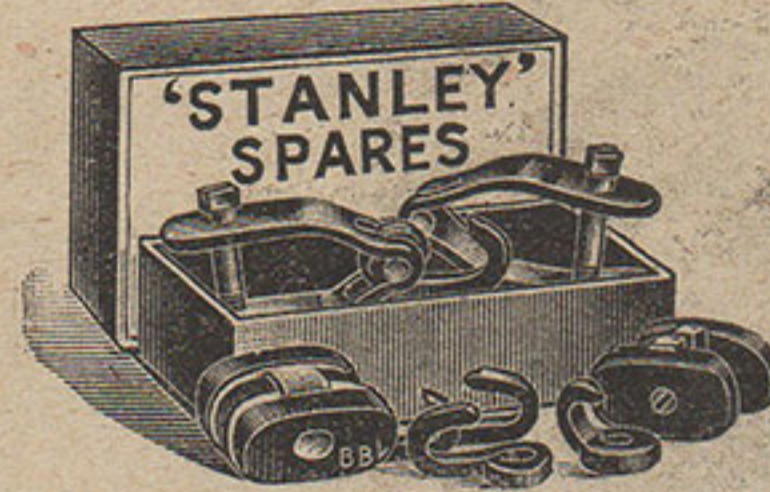


BELT PUNCHES, 2/6  
Adjustable ,, 4/6

### "STANLEY" BELTING.

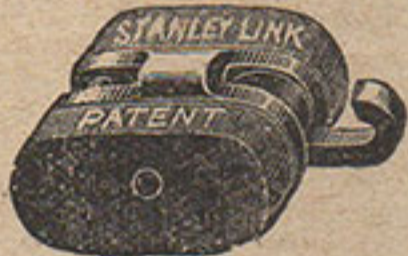
Best now, as in 1902. Supple, strong, and long wearing. Used everywhere. A Stanley Fastener supplied free with each Belt. Correct 28° angle.

Sizes  $\frac{3}{8}$   $\frac{7}{8}$  1 1 1/2 in.  
1/7 1/11 2/2 2/8 3/- per foot.



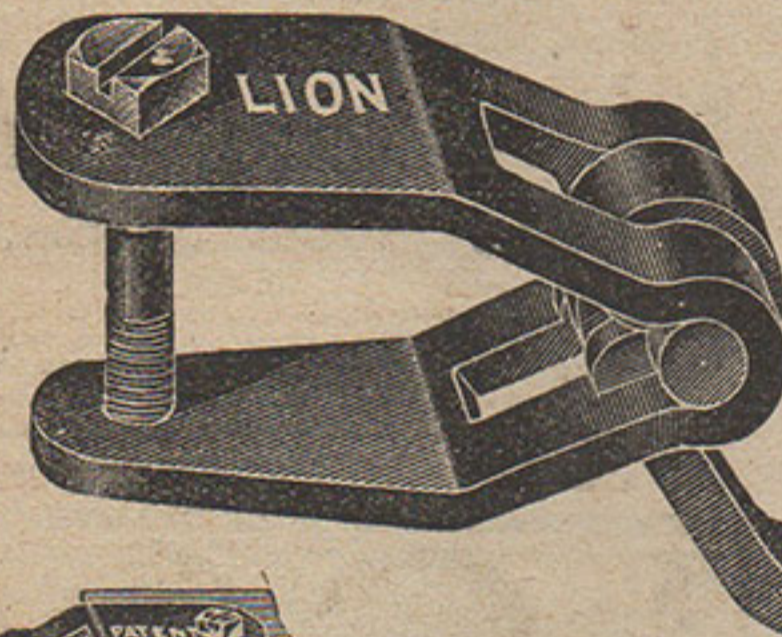
### BOX OF "STANLEY" SPARES.

Sizes  $\frac{3}{8}$   $\frac{7}{8}$  1 1 1/2 in. per set 3/3 Post Free. State size of belt when ordering.



### THE "STANLEY" SPARE LINK.

The best belt length adjuster (for lengthening or shortening) yet invented. Saves time, trouble, and money. Grips the pulley all round. The pads are of tough leather. 1/-



9d.

### THE "LION" BELT FASTENER.

Introduced to meet the demand for a cheap, reliable Hook Fastener. Hardened hook and pins. The best Detachable Belt Fastener at the price, better than most at double the price. Nickel plated. Guaranteed 5,000 miles. 9d.



### THE "STANLEY" SHIELD

protects the belt fastener. Prevents wear of the pulley and conserves power. Specially designed for use with the Philipson Pulley. Ensures a good grip on adjustable pulleys. Leather Pads, 9d.



### THE "STANLEY" SPARE LINK.

The Stanley Spare Link which is the best belt length adjuster yet invented. Saves time, trouble and money. Saves the cost of a new belt. 1/-



### THE "STANLEY" SHIELD.

The Stanley Shield, which protects the belt fastener, prevents wear of the pulley, and conserves power. Specially designed for use with the Philipson Pulley. 9d.

Sole Manufacturers and Patentees:

## STANLEY MOTOR BELT & FASTENER CO., BROMLEY, Kent.

(STANLEY WEBB, Inventor of the Original Hook Belt Fastener and other Belt Aids.)

# Hazlewoods

LTD COVENTRY.

Having now completed Government Contracts, are Re-organising for the Production of the BIG H. Motor Cycles and Pedal Cycles. APPLICATION FOR AGENCY TERMS SHOULD NOT BE DELAYED.

# Radco

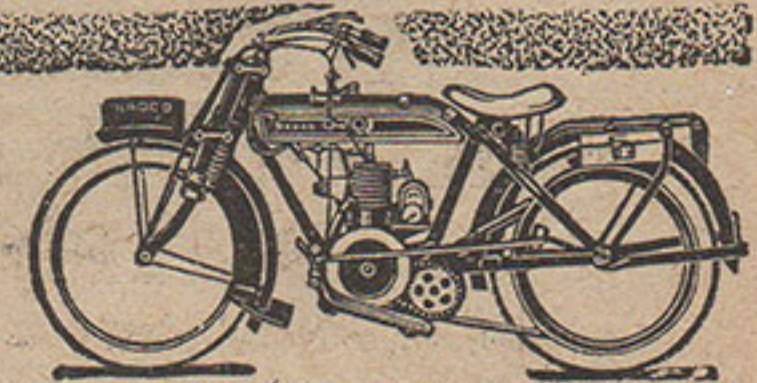
THE KING OF LIGHTWEIGHTS.

Orders will be booked in strict rotation.

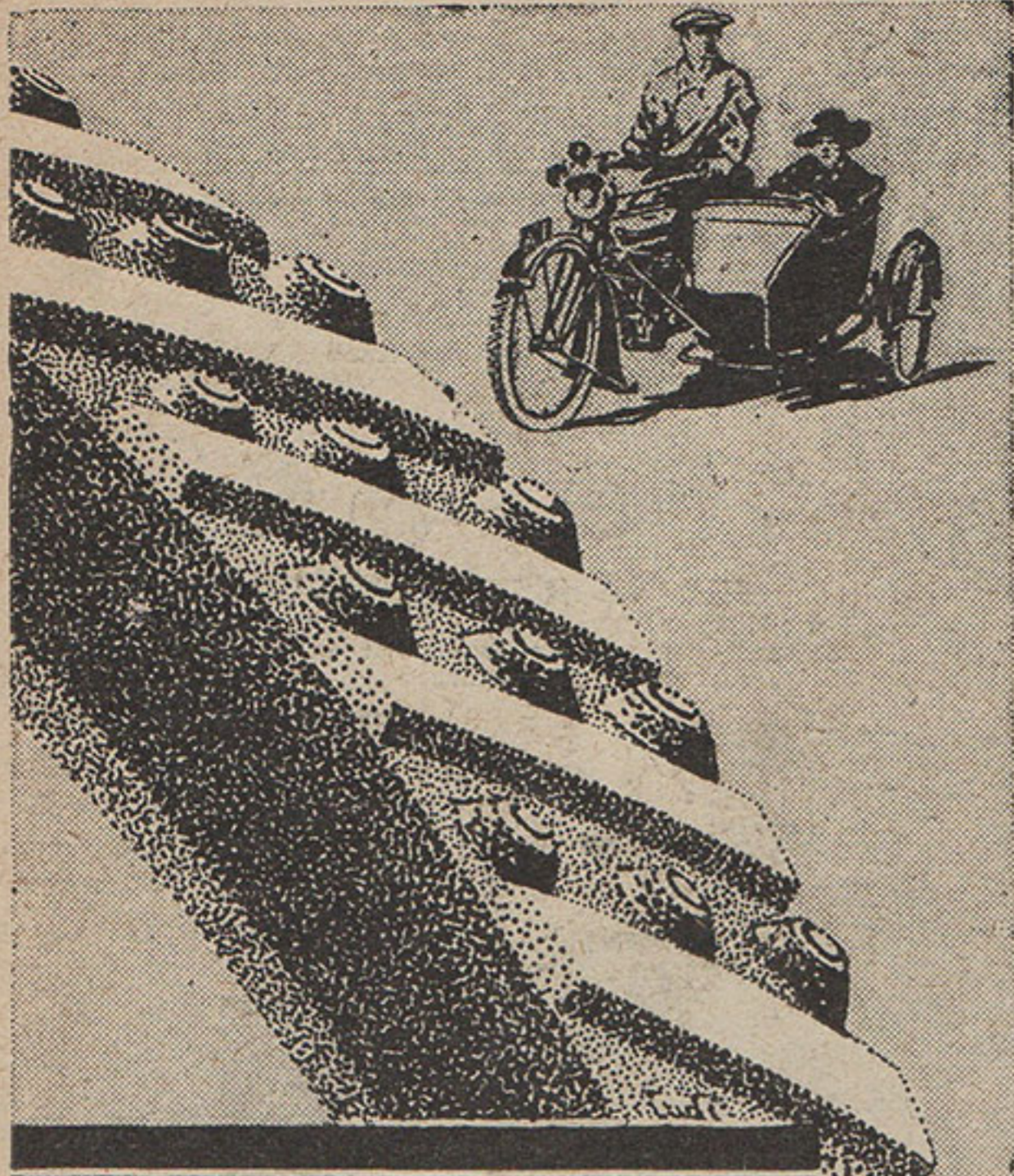
Illustrated Lists upon application.  
E. A. RADNALL & CO., DARTMOUTH ST., BIRMINGHAM.

1920 Standard Model	£48
1920 Two-speed Model	£55
1920 Kick starter	£60
1920 Sporting Model	£60

Beware of overcharges by profiteers.



In answering these advertisements it is desirable to mention "The Motor Cycle."



# The ROM Combination

grips on all surfaces,  
— wet or dry. —

Price List on application to:—  
**ROM TYRE & RUBBER CO. (1909), LTD.,**  
35-36 Brooke St., Holborn, LONDON, E.C.1.

'Phone: Holborn 1513.      'Grams: "Romdom Holb. London."

# ROM

THE NAME  
BEHIND  
THE TYRE

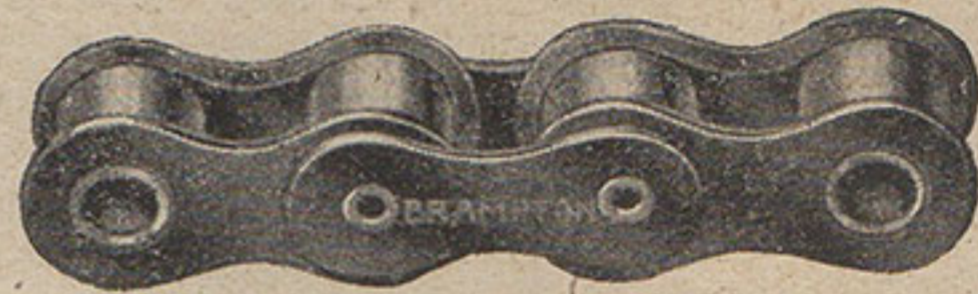
## CURRENT RETAIL PRICE LIST OF

# BRAMPTON

CHAINS

## FOR MOTOR CYCLES & LIGHT CARS

Pitch.	Roller Width.	Roller Diameter.	Width over Connecting Bolt.	Rivet Wearing Area.	Min. Breaking Load.	Weight per Foot.	Price per Foot.
in.	in.	in.	in.	sq. in.	lb.	lb.	
$\frac{3}{8}$	$\frac{1}{2}$	.335	.635	.061	2200	.37	3/9
$\frac{1}{2}$	$\frac{3}{4}$	.335	.697	.073	2200	.39	3/9
$\frac{1}{2}$	$\frac{1}{2}$	.400	.98	.078	2500	.47	4/6
$\frac{3}{4}$	$\frac{3}{4}$	.400	1.1	.103	2500	.55	4/9
$\frac{1}{2}$	$\frac{3}{4}$	.475	1.05	.104	3200	.55	5/3
$\frac{3}{4}$	$\frac{1}{2}$	.475	1.17	.132	3200	.65	5/9
$\frac{1}{2}$	$\frac{3}{4}$	.475	1.15	.129	5000	.81	5/3
$\frac{3}{4}$	$\frac{1}{2}$	.475	1.27	.160	5000	.9	5/9



**BRAMPTON BROS., LTD.,**  
Oliver Street Works, BIRMINGHAM.

Jan. 1st, 1920.

USE

# 'GLICO NATIONAL BENZOLE

"THE BLACK CAN WITH THE RED LABEL."

# G.L.I.CO., LTD.

SALISBURY HOUSE, LONDON WALL,  
LONDON, E.C.2.

# They just spring on.

That should mean a great deal to you—that, and the fact that they are made by

## BROOKS

The simple anatomically shaped springs *do* mean that it is not necessary to force one's boots against the inside of the leggings when fixing or removing. This means clean clothes.

*They take "seconds instead of minutes" to fix.*

Made in 4 sizes and also in a short pattern.

J. B. BROOKS & Co., Ltd.,  
49, Criterion Works, Birmingham.

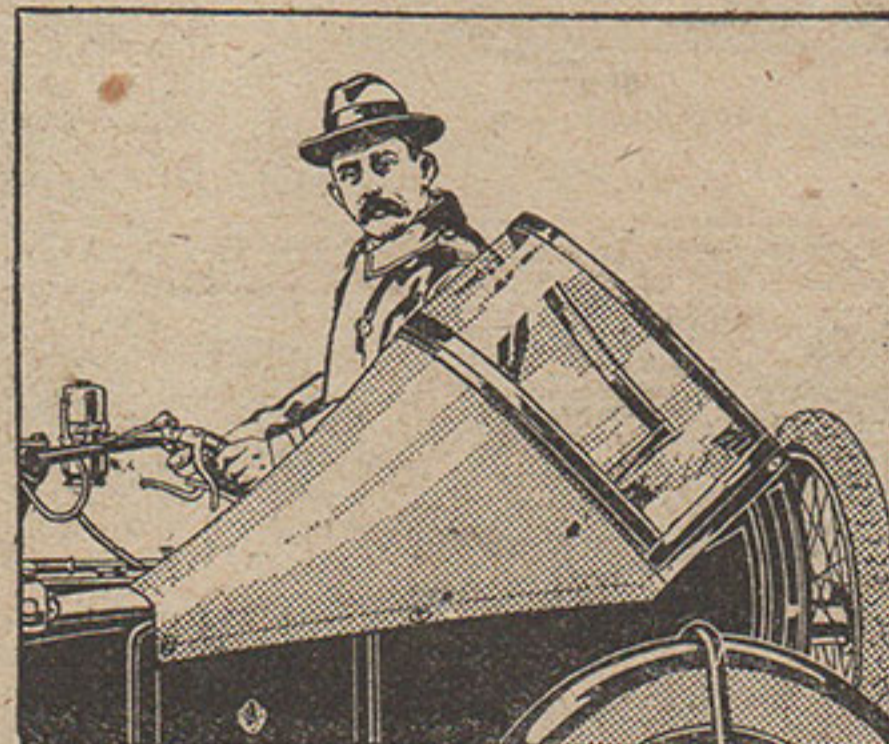


# THE EASTING WINDSCREEN.

JUST THE ACCESSORY  
YOU WANT FOR BAD  
WEATHER RIDING.

It DOES protect the passenger from the elements.

It is the only combined Hood and Screen on the market.



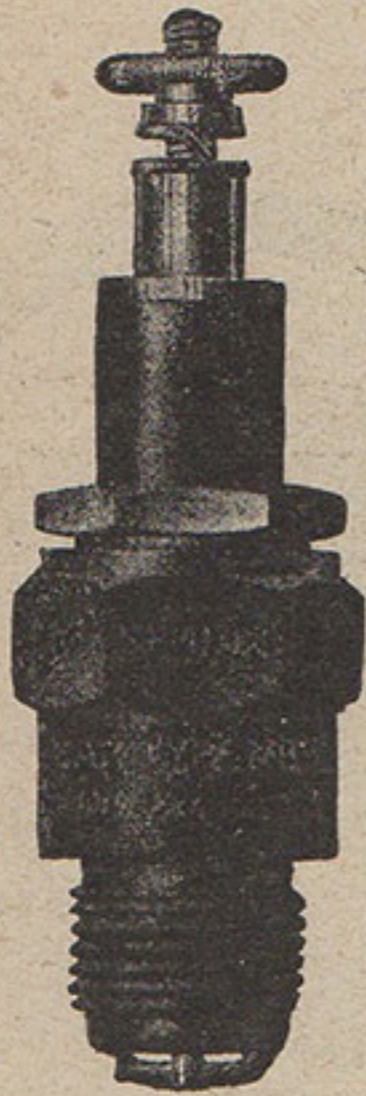
Delivery ex Stock from—

**Easting Windscreens, Ltd., 132, Steelhouse Lane, Birmingham**

Telegrams—"Screwinco, Birmingham."

Telephone—Central 5738.

*Two of the Best*



Bar Type Mica  
5/-  
of all Dealers.

Plugs we have yet produced are the Sphinx Bar-Type Mica and Bar-Type Ceramic, which possess peculiar merit in the design of the firing points. These

**SPHINX**

plugs give excellent results at both high and low speeds. When the magneto is running slowly, and its impulse is at its weakest, this form of firing point gives the hottest possible spark. As the current voltage and volume increase, it accommodates itself automatically, always affording a minimum resistance and a maximum area to the spark.

The Steatite Model is the general purpose plug, but the Mica Insulated Type should be used where much heat or vibration are involved.

Catalogue free upon request.

The Sphinx Manufacturing Co., Birmingham

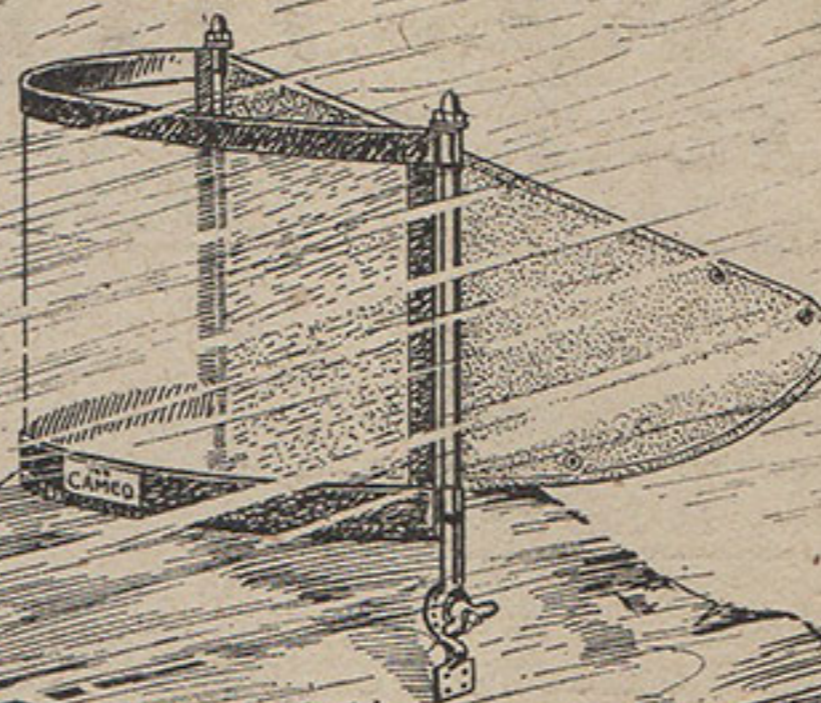


Bar Type Ceramic  
4/-  
of all Dealers

The **CAMEO**  **WIND SCREEN.**

**IS ON TOP!**

PRICE £3. COMPLETE  
- FROM ALL GARAGES -



**- DEFIES -  
THE ELEMENTS  
AND  
COMPETITION.**

CAN BE FITTED BY A  
NOVICE IN A FEW  
MINUTES, TO ANY  
MAKE OF SIDECAR.



SOLE MANUFACTURERS & PATENTEES.  
**OLLARD, WESTCOMBE & CO. LTD.** 46/47 GREAT CHARLES ST., BIRMINGHAM. PHONE CENTRAL 682. TELEGRAMS 'OLLARD' BHAM.



# PALMER

(ORIGINATORS OF THE THREE-RIB TREAD)

## CORD TYRES

Palmer Cord Tyres were fitted to the G.N. which made a non-stop run from London to Edinburgh recently. : : :

THE PALMER TYRE LIMITED,  
119, 121, 123, Shaftesbury Avenue, London, W.C.2.  
Cycle and Motor Cycle Tyre Department,  
103, St. John Street, Clerkenwell, London, E.C.

Glasgow—6, Royal Exchange Square. Birmingham—Broad Street Chambers. Coventry—St. Mary's St. Nottingham—Greyfriar Gate. Leeds—1, New York Road. Manchester—263, Deansgate.

“EVOLUTIONARY NOT REVOLUTIONARY.”

## The AYRES-HAYMAN

6 H.P. FLAT TWIN COMBINATION

embodies the ideals of critical motor cyclists at a moderate price.

**SPECIFICATION :**

**FRAME.**—Semi-duplex design of carbon steel tubing. Joints welded in a specially strong manner. Rear portion sprung on broad leaf spring and hinged at the correct place (pat. appl. for), on large diameter nickel steel pin.

**ENGINE.**—Coventry Victor 688 c.c., horizontally opposed. Practically vibrationless.

**MAGNETO.**—Thomson - Bennett, handle-bar controlled.

**CARBURETTER**—Amac, type Z, single lever.

**TANK.**—Registered design saddle tank, with two taps, and Y connection to carburetter. A portion of the petrol is imprisoned to give warning. Best & Lloyd drip feed from oil tank.

**SADDLE.**—XL-ALL best quality.

**TRANSMISSION.**— $\frac{5}{8} \times \frac{3}{4}$  extra heavy motor cycle chains, countershaft gear box giving three speeds, clutch, and kick starter. Front chain enclosed. Rear chain guarded.

**FORKS.**—Brampton bi-flex heavyweight.

**WHEELS**—28" x 3", easily detachable, interchangeable. Hoffmann roller bearings and ball thrust bearing in each hub. **The Best Hubs Ever Fitted to a Motor Cycle.**

**FOOTBOARDS**—Aluminium, with rubber studs.

**CHASSIS.**—Extra strong. Four point attachment. Spring wheel.

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				NEW Cost.	Present Value.	
(1)				£	£	
(2)				£	£	

Owner's Name (in full).....

Address .....

Occupation (if any).....

Have you any physical defect or infirmity?..... Age.....

Will cycle to be insured be used solely for private pleasure purposes?.....

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Date.....

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We cannot, at the moment, give any promise of delivery ourselves, but we shall be happy to place you in touch with the Royal Enfield Agent in your district, who will be able to give you some information on this point.

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WITH FREE ENGINE.

**JUST THE THING**  
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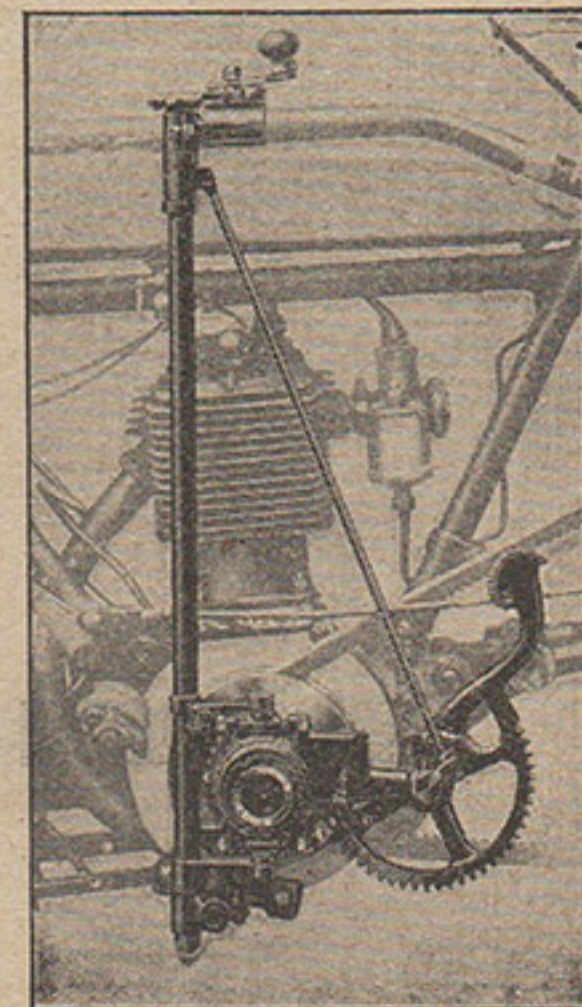
Gives gear ratios from 4 to 1 to 8 to 1 free engine, and kick-starter.

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**IN TWO HOURS**  
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NOTE.—We can at the moment only supply this Model for Machines which do not require a recessed Pulley as Triumph, Bradbury, B.S.A., Precision, T.D.C., Norton, Premier, and Rex machines of 1909 or later, etc.



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WRITE FOR TERMS.

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# Moulder's Strike.

## NOTICE.

The prolonged Moulders' Strike has made it impossible for us to deliver 1920 models in January as anticipated.

We are, therefore, delivering R.A.F. models to our contracting Agents in settlement of their January allotments.

The manufacture of the R.A.F. model will positively finish at the end of February, and this is therefore the last opportunity of obtaining a machine with an unique reputation at an exceptionally low price.



Sidecars—price £32—  
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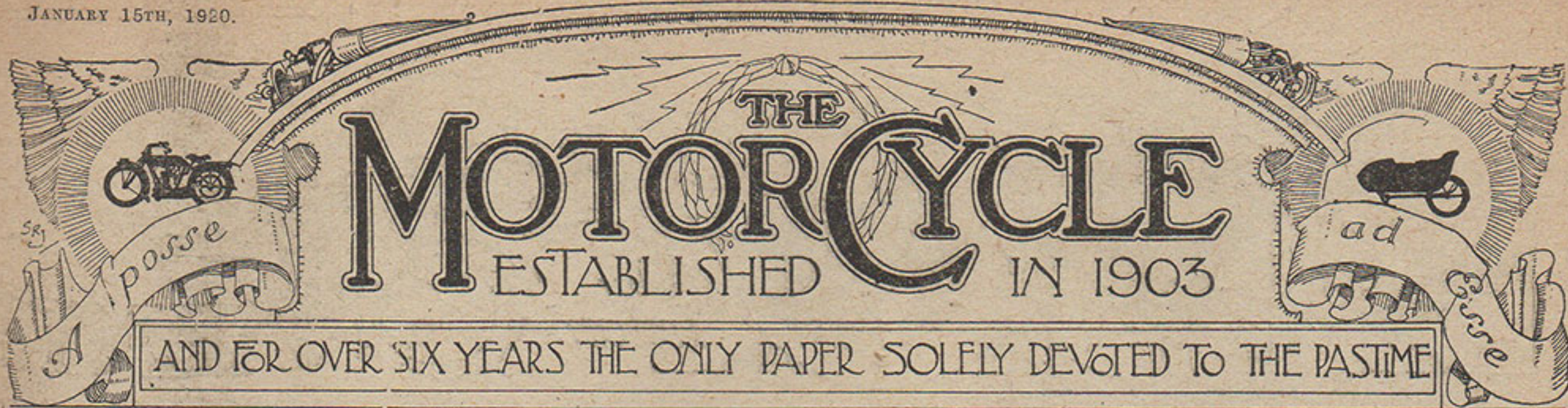
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### The Simple Motor Cycle.

**N**EARLY every motor cyclist has his own requirements, which may differ widely from those of his neighbour. This, of course, accounts for the many types which successfully find a market. There are those who require a heavy sidecar machine capable of carrying a luxuriously appointed attachment over the roughest and hilliest country. Some only demand a lighter mount capable of occasional sidecar work on reasonable roads, and to many the sidecar is altogether unnecessary. What of the solo rider? He has a choice between the 8 h.p. variable geared mount and the 1½ h.p. scooter.

The popularity of the little two-stroke is such that one can be assured that there is an enormous market for a machine which can go anywhere over ordinary roads and climb with ease any main road hill. The two-stroke is admirable for those who are content with moderate speed, but there is a large class of sporting riders who demand a fair turn of speed and a light machine at a moderate price. These are the enthusiasts who ride single-gear T.T. machines—a class of vehicle which is in danger of being ousted from the market by the demands of those who need sidecars.

There are very few makers left to us who market a T.T. 3½ h.p. which has not been spoiled for its original purpose by increased weight and unnecessary fittings; yet our daily letters show that the class to whom this type of mount appeals is still of considerable proportions. A good 3½ h.p. single with direct drive is lighter, cheaper, and simpler to keep in order than a dual purpose mount, and will go anywhere that 90% of present-day motor cyclists require, if the rider is agile and not averse to slight inconvenience on occasion. A really first-class clutch is an advantage in traffic. The saving of £20 to £30 in price and 50 lb. weight, in addition to the lessened cost of upkeep, must appeal to a large number of riders.

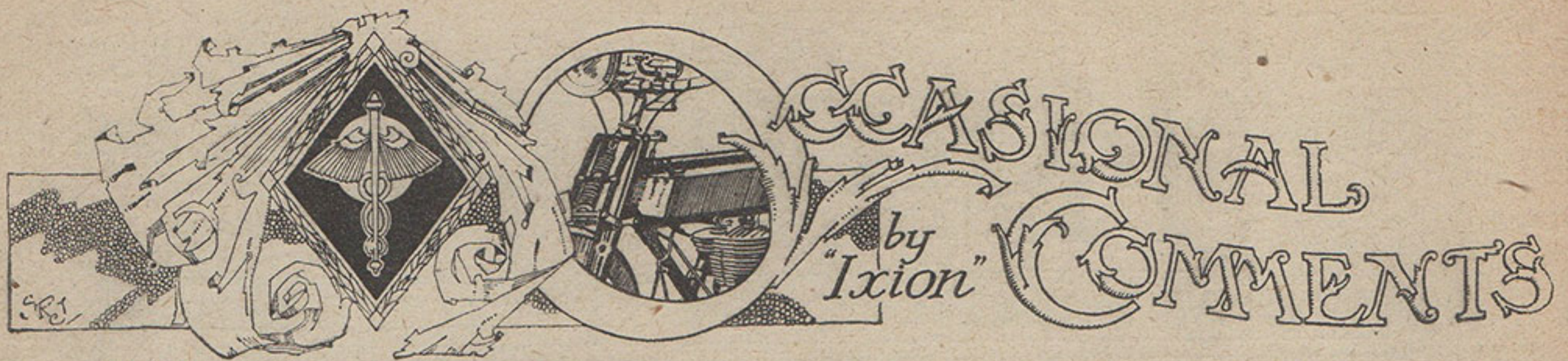
The decision of the A.C.U. to retain the 500 c.c. class for the Senior T.T. race in June may, however, stimulate interest in this type of machine.

### Effects of the Moulders' Strike.

**A**S the weeks pass and no signs of a settlement of the moulders' strike appear, the thinking motor cyclist must by now have realised some of the possible effects these labour troubles may have upon the production of motor cycles. Practically every manufacturer is now at a standstill with stocks of raw materials depleted and delivery of new machines is delayed. Even if the men resume work immediately, considerable damage has already been done, and ill-effects are bound to be felt by both maker and user throughout the year, and every day production is held up increases these difficulties. It is a deplorable state of affairs, and it is questionable whether anyone will benefit by it. There is something wrong with affairs in general when a very small section of the community can jeopardise the foundations of industry.

Unless a speedy settlement is made, the nation will suffer harm from which it will take years to recover, for at the present time especially, export trade is the very lifeblood of the country, and this is being held up. So far as motor cyclists are concerned, the effects of the strike undoubtedly will be many. Promises of delivery made a few months ago cannot be fulfilled; outputs will be smaller; prices higher, because the overhead charges of the year will have to be apportioned to fewer machines. Second-hand prices are also bound to be higher, because of the scarcity of new mounts. Experimental work is held up. The T.T. race is in danger, for, unless manufacturers are able to commence their new racing machines in good time, it will be futile to enter.

It is time the public realised that this paralysing strike affects them personally as well as the country in general.



### A Tip for the Next London-Exeter.

**H**ERE is a tip for the next London-Exeter. If there are any gas lamps left on the road by that time, the only absolute insurance against trouble is to use dissolved acetylene. It eliminates generator and burner troubles at one swoop, and the man who cannot fake up pipe connections to last over one night is unfit for competition work. In sober fact, this system is actually preferable to electricity for competition work, for if it is less convenient, it is necessarily more reliable. I have used it for ten years, and have never had any stoppages with it, barring perished tubing. On the other hand, I have had a score of stops with electric lamps during 1919. Most of them were trivial—a blown fuse, a dud filament, and the like. Give me electricity for daily use, because of its convenience. Give me dissolved acetylene for "twenty-fours," because it cannot short-circuit or do in a bearing. I use the handy cylinders, even for solo competition work, for one six-foot cylinder will last a head and tail lamp for fifteen hours with ease; but it is, of course, found at its acme of mental comfort on a sidecar, which can easily stack a reserve cylinder.

### Back to Plain Bearings?

**I** READ "Ubique's" brilliant article on mechanical progress in our issue of January 1st with great interest. One of its by-products, in my mind, was a reflection that we are all faddists, and that design is an extremely contentious affair at the best. For example, "Ubique" hates mechanical noise as much as I do. He has an equal detestation (which I unblushingly refuse to share) for exhaust noise. His ideal motor bicycle is as silent as the breathing of Venus. In his enthusiasm he desires to enclose the tappets and valve stems, *à la* Corona, and to eliminate the rumblesome ball and roller bearings now so fashionable. I, on the contrary, desire overhead valves, and that on an engine of the so hotstuff type that its exhaust valve spring and stem will need direct cooling. I admit I do not love the subterranean burr which a multitude of ball or roller bearings confer on an engine. But these bearings have produced the only motor cycle engines I know which have printable lubrication consumptions; and I do not want to go back to the old days of over-oiling and lightning carbonisation. It is only fair to add that "Ubique" pleads for a combination of forced lubrication and plain bearings, from which he doubtless expects maximum bearing life and minimum oil consumption. M'yes! I have only tried out one engine on those lines, and it was not a hotstuffer. But somehow it was nothing to write home about either in economy or durability. I suppose I cannot have it both ways. If

naked valve gear and non-plain bearings spell mechanical noise, well, I shall have a fresh argument in favour of my heresy that soupçon of exhaust noise is desirable. But, dear "Ubique," I must quarrel with one generalisation of yours: "Modern gear boxes are wonderfully satisfactory as regards noise." You shall just hear mine—post-war pukka 1919, and a famous make. Did you ever hear a De Dion tricycle with a Dupont gear after it had done 20,000 miles?

### Gear Box Mounting.

**O**NCE more "Ubique" is perfectly correct in stating that it is a horrid nuisance to have to upset both chains when the front chain wants attention. In this connection, he praises the Raleigh, which has an immovable gear box and a slidable engine. I have not owned one of the new Raleighs as yet, but I once had a 'bus designed on similar lines in this particular respect. It is not generally realised that motor cycle frames are at least as liable to distortion as car frames, but I would go so far as to say that they distort inevitably, after a reasonable amount of hard wear. So long as a belt figured in the drive, frame distortion did not matter a cent, unless it were serious enough to throw the wheels well out of track and affect the steering. But with all-chain drive, frame distortion comes up to the footlights. The 'bus which I have in mind distorted its frame, and put both chains out of line. Now it is possible within limits to set your back wheel a trifle askew: in fact, most back wheels with 10,000 miles or an amateur chain adjuster to their name, are askew at this moment. It is less easy to skew an engine in the frame—wherefore this construction demands a frame which cannot distort or set. Incidentally, an engine requires very clever mounting if it is to be slidable with the same aplomb and accuracy which suffice to slide a gear box. The design is theoretically superb: but it is heavy work for the designer to get it flawlessly expressed.

### Three-wheelers, New and Old.

**T**HE presence of so many new three-wheeled runabouts on the 1920 list is not at all surprising: the only miracle is that the Morgan has enjoyed a practical monopoly for so long. Fourteen years ago there was a tremendous but transient boom in machines of this type. I still do not know why the best of them—the 10-12 h.p. Lagonda—died, for there was very little the matter with it, even at that early date, though a usable second-hand car could be bought at the same price (about 160 guineas, if I remember aright). Most of the other machines suffered from many serious defects—weak brakes, dud clutches, accumulator ignition, inaccessible back wheels, a habit of over-turning if the rear wheel

**Occasional Comments.—**

punctured, etc. Nearly all of them mounted the second passenger forecar fashion, which was less sociable than a sidecar: moreover, it is bad manners to use your flapper as a buffer. The modern three-wheeler offers car type weather protection, comfort nearly approaching car standards, and a specification which is quite as troubleproof as that of the sidecar, if not more so. It is unfortunate that these machines are at a special disadvantage in the trials where freak hills cause jolts for three-trackers which do not occur in ordinary riding, and also artificially intensify the problem of tyre grip to a point never attained in staid touring. But the Morgan has always surmounted these special handicaps, and the newcomers may do the same if they do not try to transmit too much power through a single wheel.

**An Illuminating Contrast.**

OUR sister journal, *The Autocar*, maintains a henchman whose special business it is to keep *au fait* with air-cooling, and he spends much of his time in keeping in touch with experimental air-cooled cars. He tells me that the testers of one firm confess that engine seizure is a common occurrence in their routine work, and that he himself suffers the liveliest apprehensions when he is handling the chassis referred to. On the other hand, there are concerns engaged in this new branch of the industry which have yet to seize up their first engine, or even to induce a bout of pre-ignition. A designer will hand over one

of these engines to him, and tell him to maltreat it in any fashion which ingenuity can suggest, even up to the pitch of leaving it running in the garage overnight, and visiting it in the morning to see whether it was not finally stopped by a dry petrol tank, and is ready to resume running at once. My own experience of motor cycle engines is on all fours with his experience of cars. In the field of air-cooling there are three distinct types of designer, as follows:

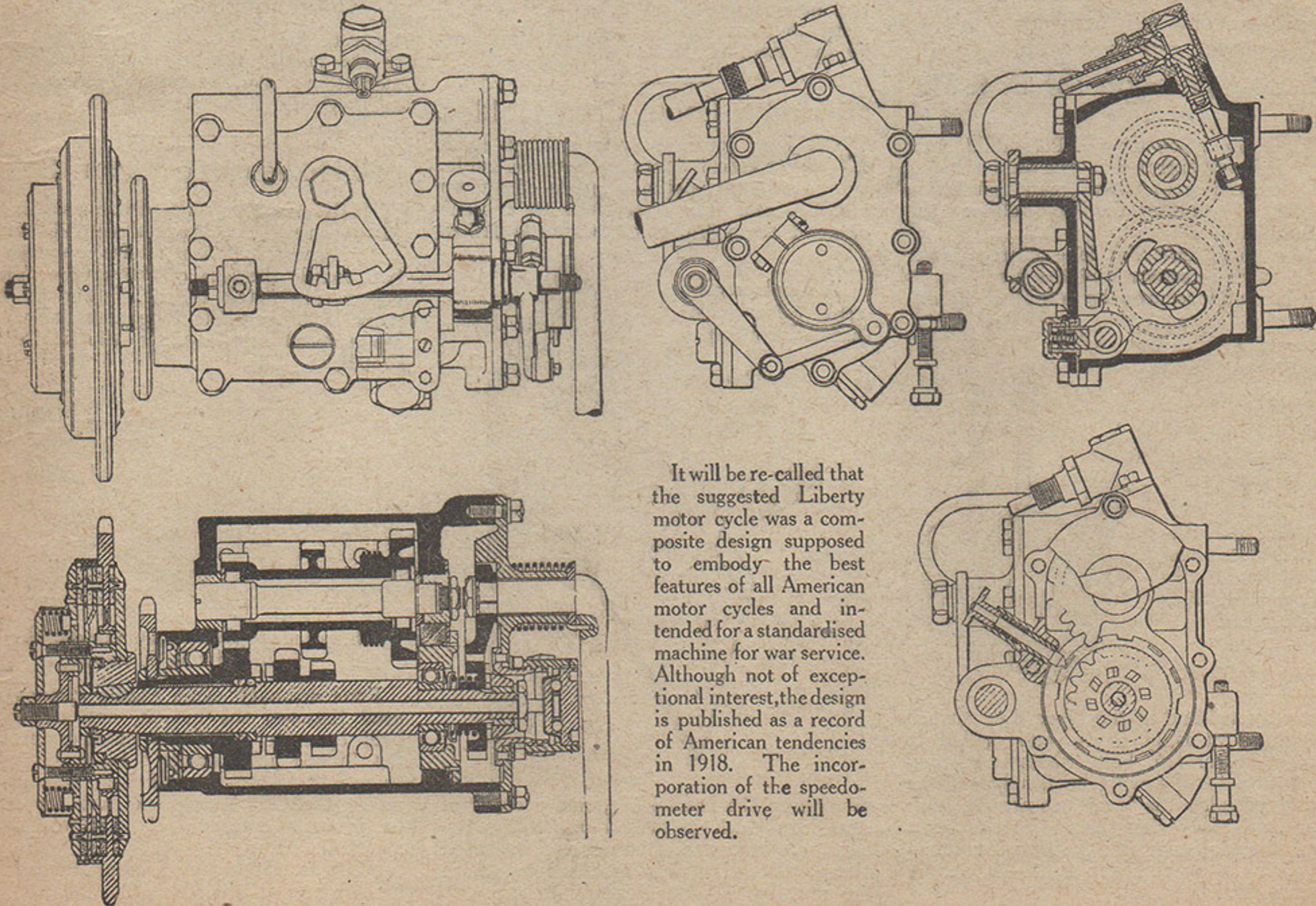
(1.) The man who does not understand air-cooling. His engine will often knock on a long hill.

(2.) The designer who understands air-cooling, but considers that his machine is roadworthy if it will take a sidecar up Sutton Bank at 15 m.p.h. on a hot day. This is good enough for the average user and the general market, but hardly good enough for an A.C.U. Six Days.

(3.) The designer who understands air-cooling, and considers that a commercial air-cooled motor cycle should run well when the piston temperature approaches 500° F.

The first type of designer still survives in the motor cycle industry, but will get squeezed out when the coming over-production and resultant slump ginger up competition. Type No. 2 has a rational excuse for his methods, and may adhere to them, even though the A.C.U. pundits misunderstand his ideas, subject his wares to extreme tests, and draw illegitimate conclusions from the net result. Type No. 3 appears to be the man of to-morrow. We shall see.

TRANSMISSION UNIT INTENDED FOR THE AMERICAN MILITARY LIBERTY MOTOR CYCLE.



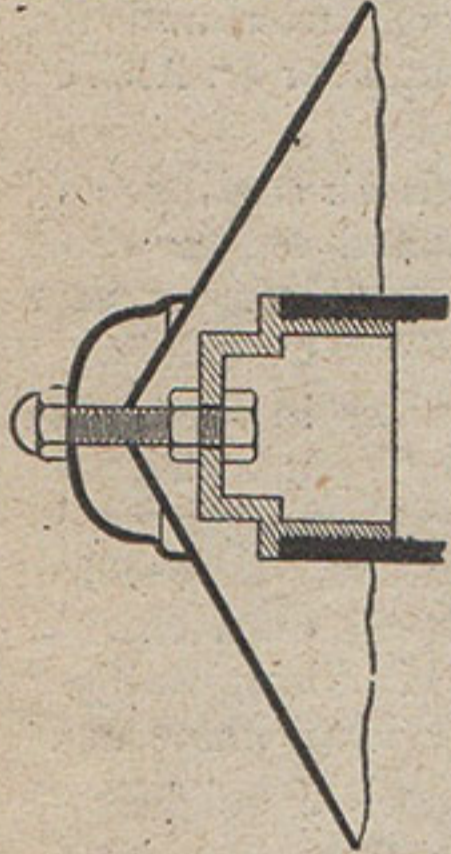
It will be re-called that the suggested Liberty motor cycle was a composite design supposed to embody the best features of all American motor cycles and intended for a standardised machine for war service. Although not of exceptional interest, the design is published as a record of American tendencies in 1918. The incorporation of the speedometer drive will be observed.

# IDEAS: Useful and Ingenious.



## Sidecar Wheel Disc Attachment.

A NEAT fitting for a disc on a sidecar wheel may be made with an old cycle bell dome. The hub cap is drilled, and a bolt passed through from the inside and secured with a nut. A suitable hole for the bolt is drilled in the bell dome, and it is put in place after the disc is fitted over the bolt. The whole is secured by a nut. Access to the tyre valve is obtained by removing the disc. A fitting such as this obviously limits the use of the disc to the sidecar wheel, to which it can only be fitted on the outside.—J. W. F. HORAN.

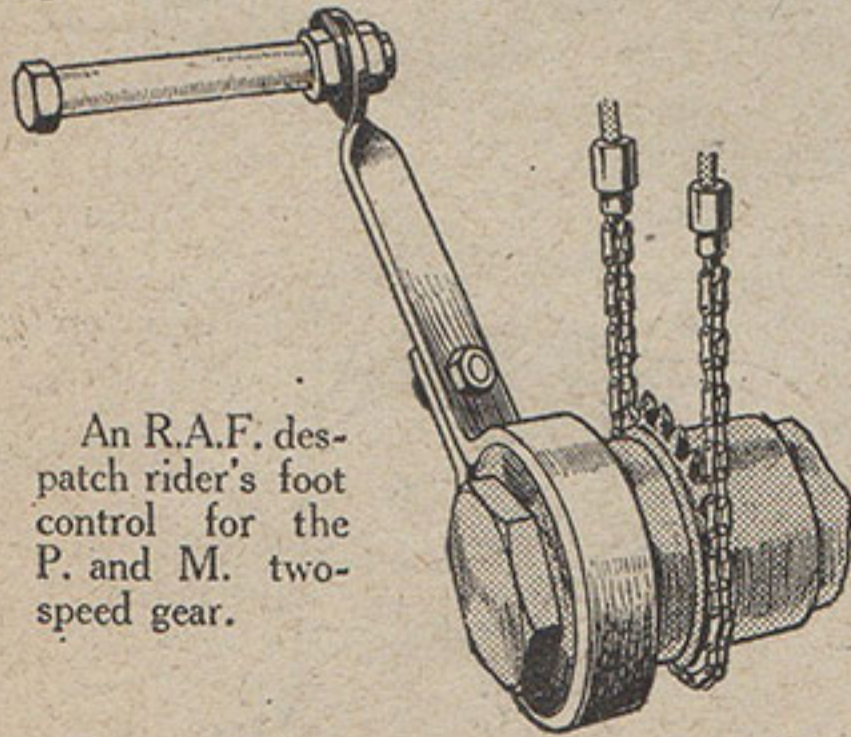


Neat sidecar wheel disc fitting made with a bolt and a cycle bell dome.

## Foot Operation for P. & M. Gear.

FOOT operation for the P. and M. gear is easily arranged, and is a decided convenience when road conditions render it undesirable to release the handle-bars.

A strip of iron 9in. long  $\times$  1in. wide  $\times$   $\frac{1}{8}$ in. thick is bent round the gear operating box and secured by a nut and bolt.



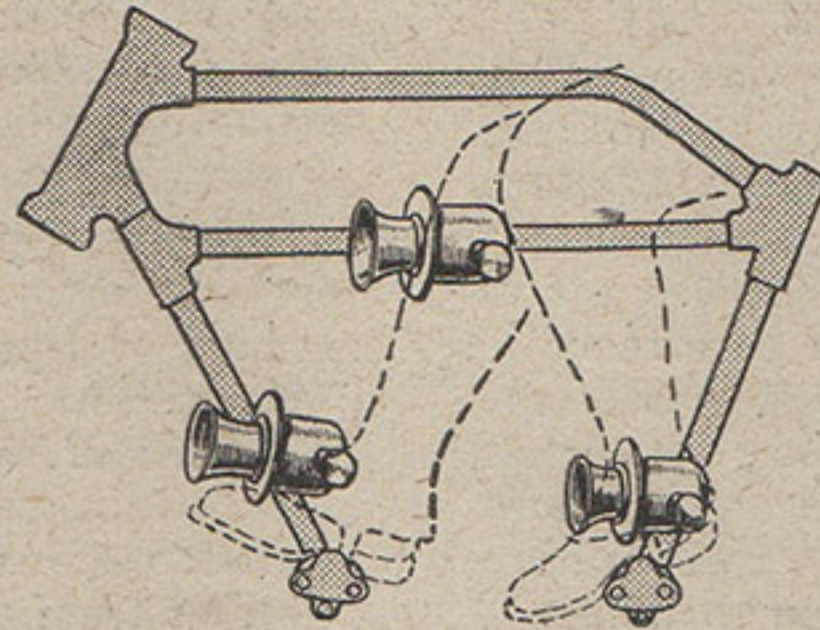
An R.A.F. despatch rider's foot control for the P. and M. two-speed gear.

The outward end of the lever thus formed is twisted at right angles and drilled to take a  $\frac{3}{16}$ in. or  $\frac{1}{2}$ in. bolt, which is secured by two nuts. Low gear is engaged by gently pressing the lever backwards, high gear by lifting with the toe of the boot. From the high gear free position is reached by giving a short sharp kick.—L. A. C. PERRIS, R.A.F., D.R.

A 20

## A Foot Controlled Horn.

BY fixing the mechanical horn on the lower members of the frame the leg can be used to operate it, and the necessity of releasing the hands from the handle-bars is removed. The



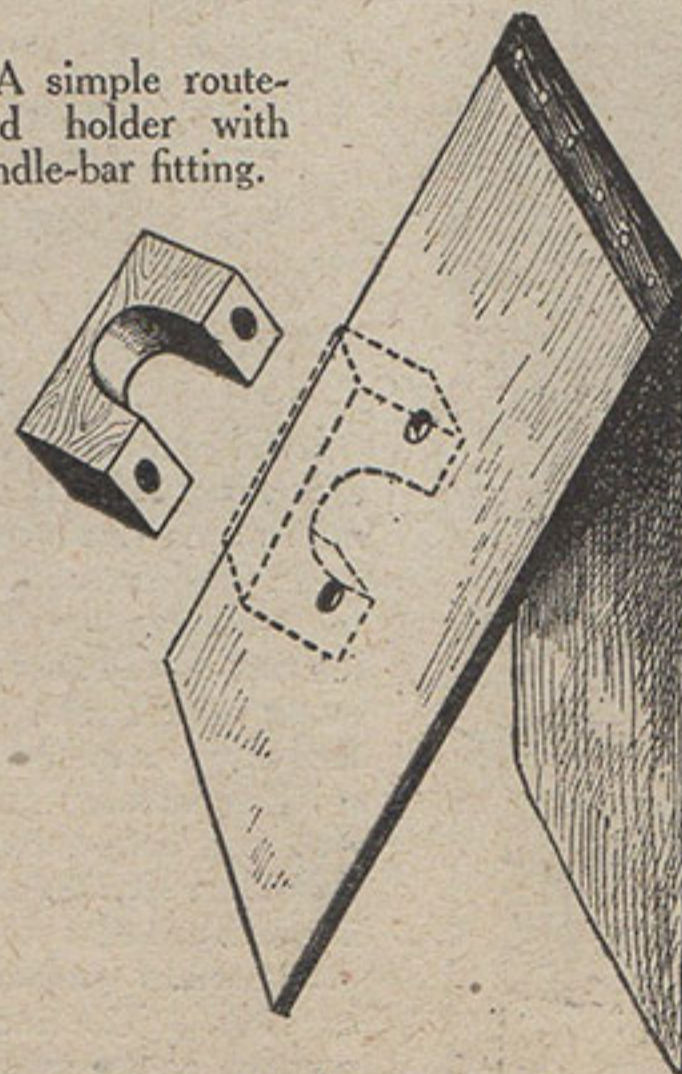
Various positions in which a mechanical horn may be attached for foot operation.

diagram shows three positions in which the horn may be fixed, so that by inward pressure of the leg the horn can be operated.—C. McC.

## Making a Route Card Holder.

FOR long journeys over strange roads route card holders are very desirable. The main portion consists of a cigar box lid, and this is screwed to a block of wood about  $\frac{3}{4}$ in. thick, which is drilled

A simple route-card holder with handle-bar fitting.

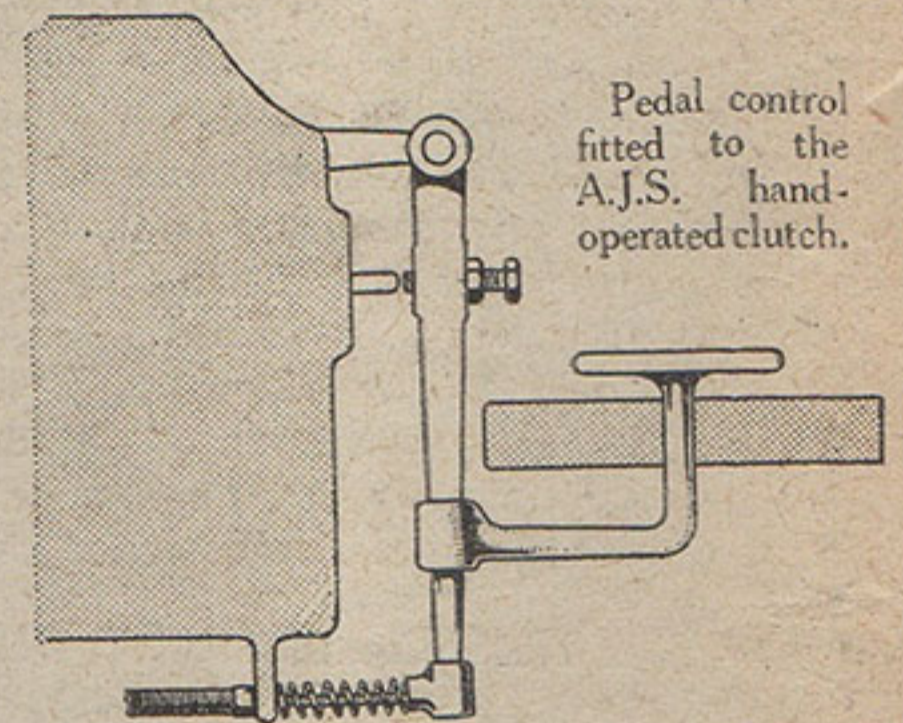


to fit over the handle-bar, and a cover of American cloth is tacked on to the top edge. A home-made holder is illustrated above. Drawing pins are used to secure the route card.—G. H. NORTHOVER.

## Pedal Control for A.J.S. Clutch.

FOOT operation of A.J.S. and similar type clutches is often of great convenience, especially when gear changing, since the throttle may be manipulated more carefully when there is no need to release the right hand to control the gear lever.

The sketch is self-explanatory, and consists of a small pedal, easily forged by any blacksmith, brazed on to the clutch lever mounted on the gear box. As will

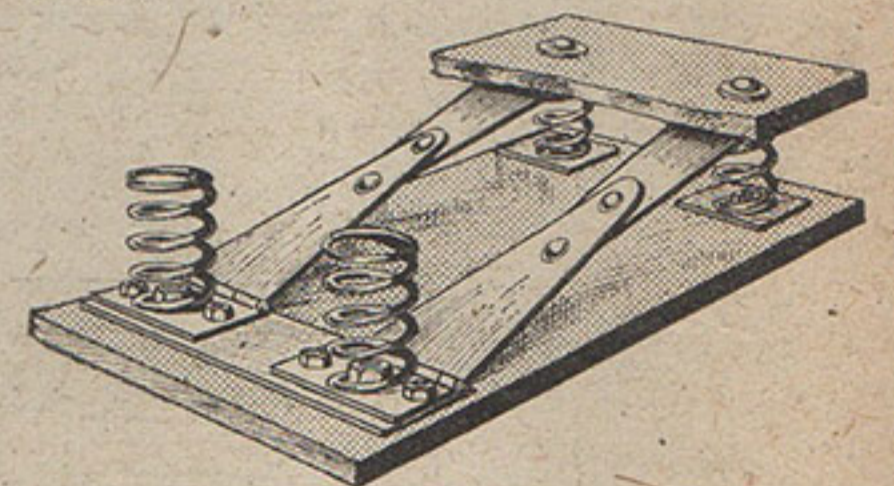


Pedal control fitted to the A.J.S. hand-operated clutch.

be seen, the pad of the pedal comes close to the end of the footboard, and is immediately under the control of the rider's heel.—J. D. O'HANLON.

## A Home-made Pillion Seat.

THE feature of this pillion seat is the elimination of excessive side sway. Essentially, the device consists of two boards the size of the carrier. These boards are fitted to each other by two pairs of hinges, the long arms of which are riveted together, as shown in the sketch.

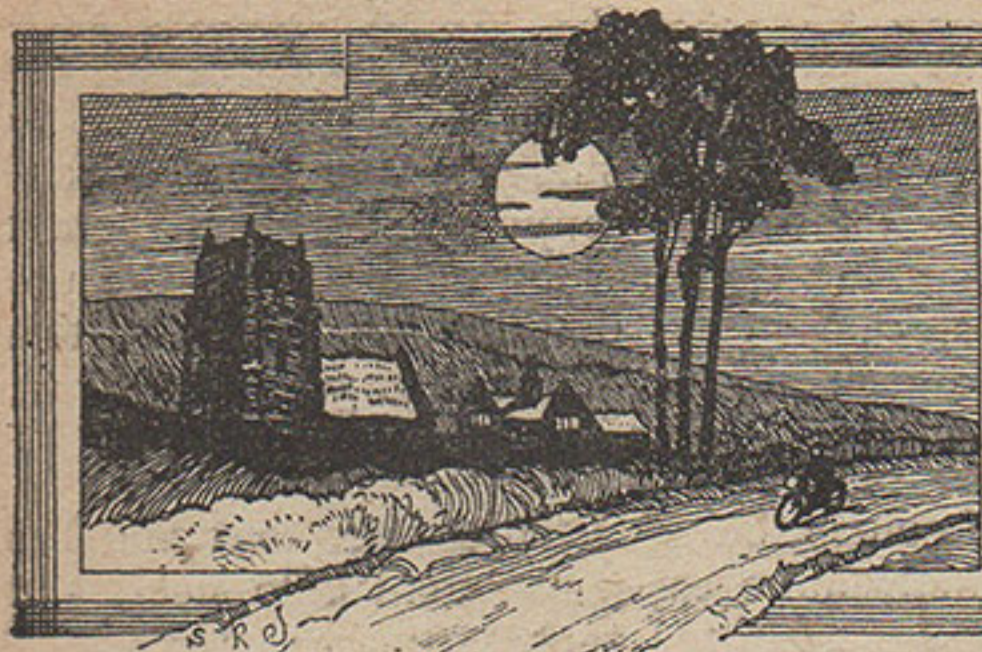


Cheap and simple fittings are used in the making of this pillion seat.

Four ordinary cycle saddle springs are used between the boards, and these are held by nuts and bolts passing through the hinges and boards. It is advisable to use large washers or thin iron strips under the bolt heads and nuts in order to prevent cracking of the wood.—H. DE M.C. (Crewe).

(Will H. de M. C. please forward his full address to the Editor?)





# STAINLESS STEEL FOR MOTOR CYCLES.

By DR. L. AITCHISON.

## Its Composition and Possibilities for Constructional Purposes.

ALL motor cyclists are now familiar with stainless steel. Almost wherever they go for lunch or dinner they are provided with a stainless steel knife. Doubtless the average person says that the new cutlery is a remarkable invention, but probably only a few who use the steel knives imagine that stainless steel has any other uses than for cutlery. This is probably due to two causes. In the first place most people are aware that cutlery (other than stainless) is made from a special type of steel which is hard and capable of taking a good temper, and they are also aware that this kind of steel is never used for structural purposes at all. They therefore assume that stainless steel is similarly constituted, and, consequently, is not suitable for structural purposes. The second reason which, in a great many cases, causes them to pass over stainless knives without reading fully the signs of the times which are embodied in these useful household articles, is a fairly widespread belief that the stainless property is something put on to the surface of the knife, and is not a virtue extending throughout the steel.

My purpose in this article is to suggest some directions in which stainless steel would be of conspicuous advantage to the motor cyclist. The obvious way to deal with such a matter is to divide the motor cycle into two halves, namely, the motor and the bicycle, and to deal with these separately. In order to appreciate, however, the following suggestions as to the application of the steel, it may be well to give a few facts about the steel, and to endeavour to establish at once the opinion that stainless steel has properties which will make it useful in other directions than the manufacture of cutlery.

Stainless steel is an alloy steel; that is to say, it contains, in addition to iron and carbon, which are the ordinary constituents of steel, a considerable percentage of another element, namely, chromium. In an ordinary table blade the amount of chromium which is present is probably about 12% to 13½%, and it is this high percentage of chromium, combined with the fact that there is not a very high percentage of carbon in the steel, which makes the material stainless and impervious to rust.

### Ease of Hardening.

In consequence of the high percentage of chromium in it, stainless steel can be hardened very effectively, much more effectively than can the ordinary plain carbon steels which are used for most structural work. When it is stated that stainless can be hardened very effectively, two things may be inferred. The first is

that when hardened, stainless steel can be made to possess a very high tensile strength, and the second is that the method required for hardening stainless steel is very simple. To illustrate the latter point, a slight digression is necessary to explain how ordinary steel is hardened. Most steel which contains only carbon in addition to the iron is hardened by heating to a full red heat, and quenching in water. Sometimes, instead of quenching in water, the articles are quenched in oil. If the steel, however, is cooled in air from a full red heat, it is not hard at all, as the figures in the following table show distinctly.

### PLAIN CARBON STEEL.

	Tensile strength tons/square inch.
Cooled in water ... ..	48
„ in oil ... ..	38
„ in air ... ..	28

Stainless steel, like many other alloy steels, differs, however, from the carbon steel, in that it may be hardened fully by cooling it in air. In order to harden a piece of stainless steel completely, the only thing which it is necessary to do is to heat it to a temperature of about 900° C., i.e., 1,650° F., and allow it to cool in still air. When this is done, the tensile strength of the steel is about 110 tons per square inch, which is obviously much higher than can be obtained from the carbon steel by any method of cooling, whether it is quenched in water, in oil, or whether it is allowed to cool in the air.

### Tempering.

It would, of course, be of very little use to the motor cyclist if stainless steel could be obtained only in such a condition that it has a tensile strength of over 100 tons per square inch. Stainless steel, however, is just like other steels, and can be softened or tempered by heating to various temperatures after it has been fully hardened. In the following table are shown the tensile strengths of stainless steel after it has been tempered at suitable temperatures; and in a parallel column are shown the corresponding strengths of plain carbon steel, such as is usually used for structural or engineering purposes after similar treatment.

	Tensile strength Stainless steel.	tons/square inch. Ordinary steel.
Fully hardened ... ..	105	48
Tempered 400° C. ... ..	100	45
„ 500° C. ... ..	92	38
„ 600° C. ... ..	62	34
„ 700° C. ... ..	54	30
„ 750° C. ... ..	51	30

From the table it will be obvious at once that stainless steel offers a considerable advantage in

**Stainless Steel for Motor Cycles.—**

strength over the ordinary steel, so that, apart from its main property, stainless steel can be seen to have many attractive points. The great virtue, however, of stainless steel is, of course, the fact that, after hardening and tempering and polishing, the steel does not corrode or rust under the attack of either the air or moisture, or sea-water, or weak acids, such as vinegar. This means at once that the effective strength of a part is considerably increased because no allowance need be made for rusting. In addition, it is not necessary to protect the parts made from it by means of paint or enamel or varnish, or any of the metal plating processes which are so frequently employed.

**Where Stainless Steel could be used.**

Turning now to the actual uses to which the steel may be put, the bicycle itself may be considered first. In the bicycle are the following main parts: the skeleton framework, the handle-bars, the brakes, and the wheels. In addition to these are the various brackets for lamps, etc., and the mudguards. The framework and handle-bars are generally made of mild steel tubing, which has tensile strength of approximately 24 tons per square inch. The brackets, where they are of steel, are made from mild steel of the same strength. The rims of the wheel are made from mild steel strip of about 30 tons per square inch strength (as it is cold-rolled), and the mudguards are made from strip of about 26 tons per square inch. The spokes of the wheels are made from steel about 75 tons per square inch tensile strength. Of these parts the ones to which stainless steel could be most profitably applied, taking into account the various methods of manufacture, are the framework, the handle-bars, the mudguards, and the brackets and similar fittings.

**The Saving in Weight.**

During the war the development of aircraft construction and design has shown the importance of conserving weight to the maximum degree possible, and, incidentally, has advanced the manufacture of tubes to a very great extent. Many aeroplane axle tubes are now required to be of about 85 tons tensile strength. This has resulted in an appreciable saving in weight. Why should not something similar be effected in the case of the motor cycle and by the use of stainless steel? It would not be impossible to make stainless tubes of 85 tons strength, but it would be easier to make them of about 60 tons. This means that the present steel of about 26 tons strength would be replaced by one of about 60 tons: more than twice in the strength. This is bound to result in a reduction of the weight of the part materially, even though it does not mean a reduction to a half. This in itself is very well worth considering. Add to this advantage, however, the fact that the material is stainless, and weights can be reduced still further. Plating and enamel do not weigh much, but they weigh something, and every little counts.

**Plating and Enamelling Unnecessary.**

The second great advantage following from the use of stainless steel for the framework and handle-bars of the bicycle is that the use of this material would obviate completely the necessity for enamelling or plating the parts. This would be of some considerable consequence in the initial cost of the parts. Besides

the initial cost, however, the use of stainless steel would do away with repairs and renovations of the enamel or plating, and the parts would always be bright and clean. This is surely a very great advantage, and, when taken in conjunction with the great gain in strength which could be achieved by the use of stainless steel, suggests that the utilisation of this material presents considerable advantages.

**The Price Question.**

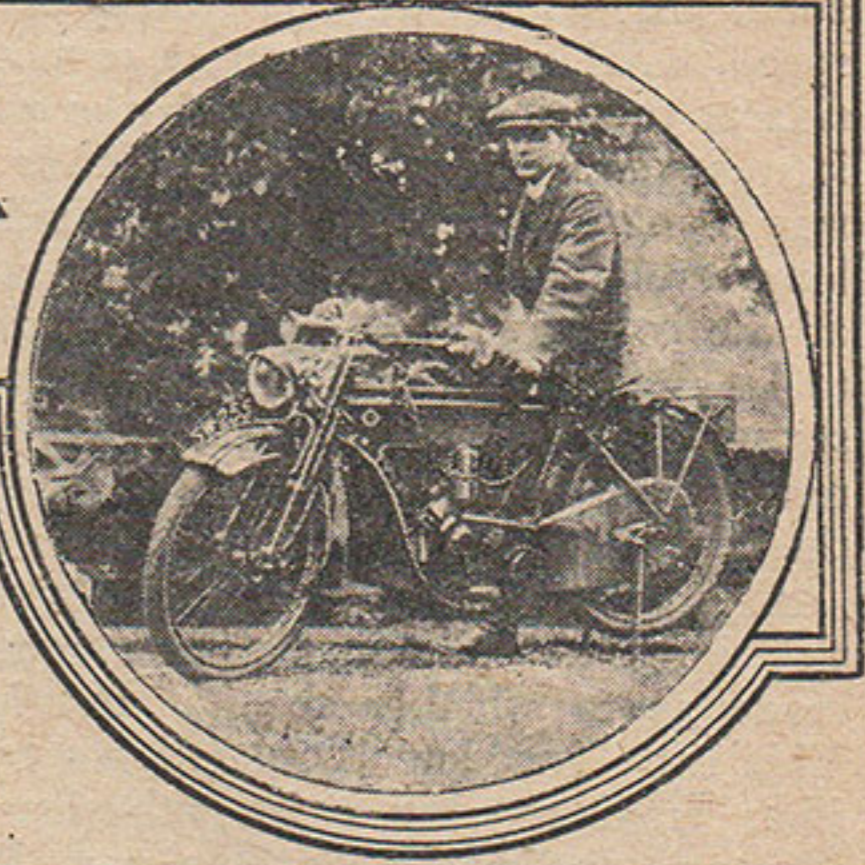
It must, of course, be admitted at once that stainless steel is distinctly more expensive than mild steel, and also it must be admitted that, although there is a possibility of the price of stainless steel being reduced distinctly from its present level, yet there is no likelihood of it ever competing with mild steel as regards price. The price, however, of an article is by no means fixed by the price of the raw material from which the article is made. As stated above, by the use of stainless steel, the weight of the parts would be considerably reduced, less material would, therefore, be required, and hence the price of the finished article would not be so high as might be expected from a direct comparison of the prices of the raw material in billet form. When cost is being considered, the cost of enamelling and plating must be taken into account, and set off against the extra price of the material. It appears possible, therefore, that when all these points are taken into account, the stainless steel frame and handle-bars would not cost a great deal more in the long run than those in the ordinary steel.

When other parts of the bicycle, such as mudguards or brackets, etc., are considered, there can be little doubt that stainless steel would have considerable advantages from the point of view of lack of rusting. By creating a demand for the type of stainless steel which would be suitable for mudguards, the price would be reduced considerably. In this case strength questions are of no great importance, but freedom from rust plays a considerable part. Even with the best enamelling, mudguards generally present rather a poor appearance after a time, and it appears very well worth while to consider the use of a material which would never rust, even after years of service.

**Stainless Steel in the Engine.**

The above remarks have been confined exclusively to the utilisation of stainless steel in the cycle as distinct from the engine. When the engine is considered, it can be said right away that there is probably hardly a single part (with the possible exception of the pistons) which could not be made from stainless steel. There is, however, no need to use this material for a great many of these parts, since their liability to corrosion is small, the parts being enclosed and running under conditions giving suitable lubrication. The steel, however, is of considerable use in connection with valves, and it is hoped that this subject may be dealt with in a separate article. In fact the general application of stainless steel to the engines should be dealt with separately. It may be taken, however, as a fairly safe statement that if corrosion is being experienced on any of the exposed parts of an engine, the use of stainless steel for this part, in order to overcome this corrosion, should be very carefully considered, and it will probably be found that, if it be adopted, the corrosion troubles will be overcome.

# The First 1000 Miles ▲ on a Mechanically ▲ Lubricated P & M



## Being the Road Impressions of a Practical Rider on a Practical Mount.

**T**HOUGH owing to the early date of its delivery my machine was minus one or two of the improvements that have since been carried into effect on the post-war model, it belongs, so far as these notes are concerned, to the post-war category, for the power unit throughout is the new model, which made its *début* in the A.C.U. Six Days Trials.

The conditions of riding in France left many of us when the war ended in the possession of an almost morbid thirst for something reliable—something endlessly reliable, which would jog us through the genial monotony of everyday life with never an anxious thought or an irksome moment. That, I suppose, was why I bought a P. and M.—not, perhaps, without certain misgivings. An impression of bygone days has never classed the P. and M. as among the antelopes of the road. They were renowned, rather, for always getting there on a minimum of petrol and a maximum of oil. Twin-cylinder enthusiasts talked about the vibration. I was among them. When I bought the P. and M., it was in a spirit of preparedness as concerned accepting a certain amount of vibration in return for the numerous and unquestionable advantages of the breed, and I was prepared to feel it badly, as the previous mount was a twin-cylinder which, theoretically, was a perfectly balanced engine except for a “negligible couple.”

### Absence of Period.

Mounting the new P. and M., however, I was very pleasantly surprised to discover that *it did not vibrate at all*. This was the first impression, and it has been a lasting one. Old P. and M. riders who try the new model have a treat in store, and, personally, as a flat twin maniac, I had no idea that it was possible to balance a single-cylinder engine so perfectly as this post-war model is balanced. Either the manufacturers have accomplished the impossible by ruling out the “inevitable period,” about which the knuts talk, or they have shifted it so high up the scale of revs. that none but the topmost knuttiest of the knuts will ever find it. Perhaps that is a slight exaggeration, but, at any rate, the engine is vibrationless at the speeds one ordinarily drives a P. and M., while at higher speed it is negligible. Certainly, it is better balanced than any of the pre-war V twins, and this, I believe, applies to at least two other of the best present-day singles.

### Silence.

Of recent years quiet running has been a great point in favour of P. and M. machines. Considerable comment has been passed on their silence, and, so far as mechanical sounds are concerned, the new model is distinctly more silent than its silent predecessors. The forced lubrication has a good deal to do with this, but of that more anon. As regards exhaust noises, it is somewhat difficult to judge. Throttled

down, the new engine turns over like a sewing machine, but it has a considerably bigger kick than the R.A.F. model—it is, in fact, a more powerful engine—and therefore, when the throttle is opened, the natural response comes by way of a healthier bark. Its usual method of progress, however, leaves nothing to be desired, and generous throttle openings are sufficiently infrequent to be negligible.

### Road Speed.

The new model looks what it is, a thoroughly practical road proposition of genuine British design and finish. I hold no brief for P. and M.'s, but it is really time that old-day impressions as regards the speed of these mounts went their way. Up till about 1913, P. and M.'s were as monotonously slow as they were monotonously reliable. The two were inseparable. They traded on their slowness, and thereon built up their reliability. The makers had decided how many fluffy, woolly “ploffs” per minute were good for you, and you could get no more. You could jam open the throttle, waggle the air, sit on the joystick, but it went on “ploffing” at the same indifferent speed. Those days are gone, and for some years past the aim of the makers has been to obtain a single of as great an all-round efficiency as any other single, without sacrificing any of the original properties. How far they have succeeded the present model shows. My mount is standard, but it is really a “hot-stuff” single. Several of the genuine speed “nobs” have marvelled at the manner in which it will rev.—and keep on revving over long distances. With a loaded sidecar it is not, of course, fast. The least head wind brings down the average enormously, as three speeds are essential for even a moderate average with so small an engine. With an empty sidecar and no head wind it is faster than most big twins with loaded sidecar, because one can stick on top gear and simply rev. An experiment in this direction proved a great surprise. I was riding up from Bradford to Scotland with the sidecar containing only “emigrants’ effects.” On the up grade after Settle, a big American twin with moderately loaded sidecar passed me with a look of contempt from its rider. “All right, my son,” I thought, “now you’ll have to keep moving all the way to Scotland!”

A good open road, no wind, glorious weather, and I continued to ride at the same speed as previously. Probably the P. and M. and the American were geared

**The First 1,000 Miles on a Mechanically Lubricated P. & M.—** about the same. It was merely a matter of engine speed. All manner of queer remains in the way of sidecar outfits were passed on the way, and presently it was quite evident that the driver of the American was doing a little more than he had intended. On a long level the P. and M. drew up alongside, and out of the corner of one eye the American was observed to be desperately twiddling twiddly bits and pulling strings. The last ten miles, however, had proved too much for the big engine. It simply could not stick the revs., and fell ignominiously to the rear.

At Carlisle I pulled up for petrol—the big twin ticked in later, and numerous tentative enquiries were made as to whether the P. and M. was standard. This little anecdote is related not by way of inviting jibes from the big twin enthusiasts, but simply to illustrate the point that the new P. and M. is not slow, and, further, as showing that there is a good deal of truth in the statements of certain single-cylinder experts to the effect that when it comes to a matter purely of revolutions the average big twin simply cannot stand up to a well made single beyond a certain distance.

Pending improvements, the P. and M. engine should mark an era of additional vitality, and it remains only to be said that where one finds difficulty in keeping pace with other good machines is on such a trial as the Scottish Six Days, when the absence of a middle gear inevitably results in periodical and stupendous "blinds."

#### Mechanical Lubrication.

Though the reader may be becoming fed up with favourable comments, he must endure a few more adjectives till we are through with this paragraph. A lubricating trouble with P. and M. engines hitherto has been the drying of the top side of the piston. This alone accounted for their high oil consumption, as, in order to keep the top side of the piston anything like adequately lubricated, it was necessary to maintain a larger quantity of oil in the crank case than would otherwise have been necessary. Because the engine had one dry spot it was necessary to keep the rest swimming. Even then the top side was alternatively dry and half dry. A little exaggeration may be pardoned in order to emphasise the point, but examine the piston of any P. and M. prior to the post-war model, and that a dry side existed is evident at a glance. This, of course, led to uneven wear and an irritating piston tap, quite apart from loss of efficiency and high oil consumption, while the high oil consumption correspondingly led to the necessity for frequent decarbonisations.

These points could, perhaps, be ignored previous to the present era of perfection, but the fact that the new system of lubrication has removed them is an important step. I cannot say whether my machine acquires less carbon deposit than the present model, because, living in the mountains, and generally using a sidecar, I habitually over-oil, but certainly it does not carbon up quickly. That the forced lubrication has

improved the engine enormously is a fact any tyro could perceive. At all times it runs with the silken smoothness suggestive of night riding, and which indicates perfect lubrication—*i.e.*, that a steady flow of oil is reaching the spots where it is required. A constant feed goes to the top side of the piston walls, the original dry spot, and thus the dry spot is ruled out, while the second force feed goes to the big end.

The ruling out of that dry spot is an enormously important point. Hitherto P. and M. engines have been fitted with pistons on the tight side in order to reduce the piston tap, which came in the end anyway. This is no longer necessary; the advantages of a free piston can be enjoyed without irritating mechanical noises and without excessive wear. In point of fact, the present piston is so well lubricated that it wears imperceptibly, as the following will show.

#### Reliability of the System.

When my machine was first turned out it was fitted, in error, with the usual P. and M. tight piston. After 1,000 miles of hard riding, I one day accidentally left the oil turned off, and, though there was a sufficient supply in the crank case, the piston dried up almost immediately, indicating that, after 1,000 miles, it had not run in sufficiently to take off its initial newness. Again, at a more recent date, I accidentally ran out of oil, and again the piston dried up immediately.

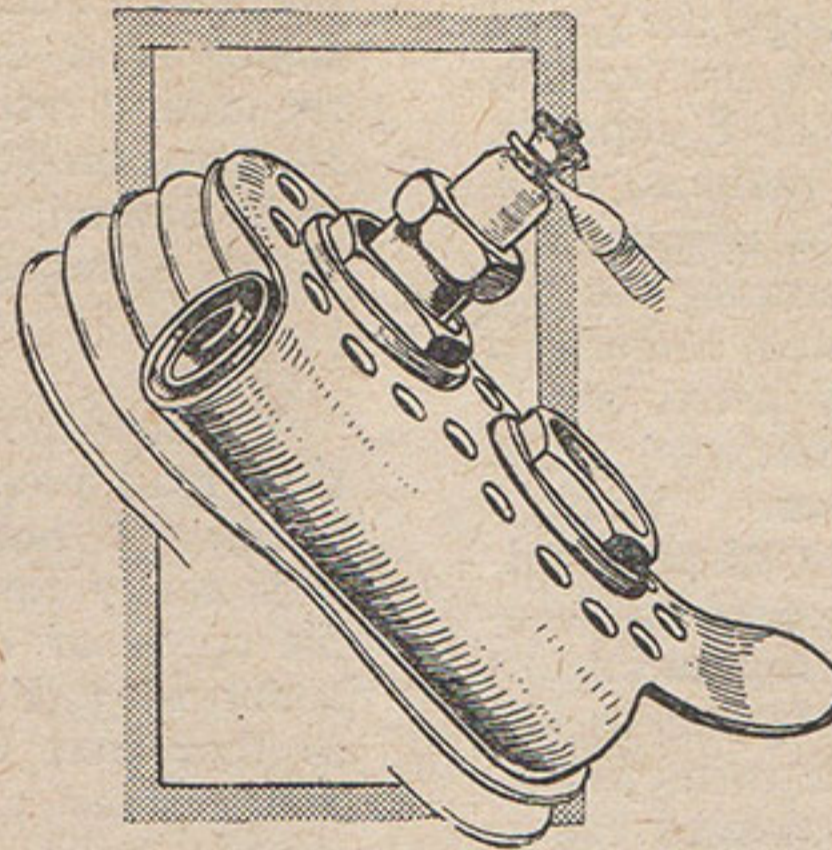
This brings us to another point. Riders of the old school are still sceptical about mechanical lubrication. "What if the pump fails, and you ride on without knowing it?" they ask. The reply is, "The pump is never likely to fail, and if

it does you will know about it in double quick time." The piston will dry up long before any other damage will occur, because a mechanically lubricated piston never becomes a really sloppy fit.

The pump under discussion cannot very well fail. It contains no valves nor springs, is simply a little solid plunger reciprocating and rotating in a little solid tube, and the only conceivable manner in which it can give up the ghost is by stripping its pinion; and you are just as likely to strip the magneto or half-time pinion. Should this occur to some luckless vagabond, he can very easily strip off his pump, send it to the makers, and go on riding by the use of his hand pump, as he did when he was a boy. It may be added that the lubrication now employed has been in use on machines (not served to the public) since 1914, and first proved itself on the P. and M. twin.

#### Minor Points.

Practically all the points one would criticise on this attractive and serviceable machine are to be washed out on the post-war model the public will get. The R.A.F. model kick-starter left a good deal to be desired. Sometimes one kicked with effect, sometimes one kicked the air and, in effect, almost broke one's ankle. Its chief weakness lay in the fact that the public seemed incapable of grasping the one or two



An additional cooling device fitted to the author's P. and M. It consists of sheet copper and fits under the valve caps.

**The First 1,000 Miles on a Mechanically Lubricated P. & M.—** adjustments provided, and on which its satisfactory working depended. The new kick-starter is a big, husky ratchet affair, which swings the engine over half-a-dozen times. It is neat and infallible.

#### Some Points for Improvement.

One recalls also having to hang head downwards between the machine and the sidecar in order to remove oily little screws and an ornamental cover in order to inject oil with an oily injector through a red elbow and into the gear—the sort of circus trick the public ought *not* to be called upon to perform. That, too, is gone. The new gear is provided with a big roller bearing packed with grease and requires no attention from the beginning of the season to the end.

The front mudguard remains the same—a blot in an emerald landscape. It might profitably have been re-designed five years ago. There is so little tyre clearance that, unknown to the rider, a stone can jam between it and the cover, and cut the front tyre all the way round—as has happened in my case. Wider guards and larger tyres are really needed. The friction shock absorber either absorbs nothing at all or it absorbs the whole drive. If perfectly adjusted, it remains so for about 100 miles, gradually slipping more and more till at 150 miles one has to get out hammers and crowbars to tighten up the whole affair. Every practical P. and M. rider I know keeps the lock nuts rammed home, and rides with a solid drive, but this is also, I learn, to be superseded by a shock absorber of the mechanical and unadjustable type, which is bound to function, and to function always.

The B. and B. variable jet carburetter is, perhaps, the writer's favourite on account of its economy, wide range of adjustment, and general efficiency. The only

trouble with it is that one is never sure of the best position of the levers for an easy start. The best position to-day may prove hopeless on Saturday next, and once having properly muddled the mixture, it is necessary to make a clean sweep and start all over again. Even with this defect, the variable jet is miles above most other designs.

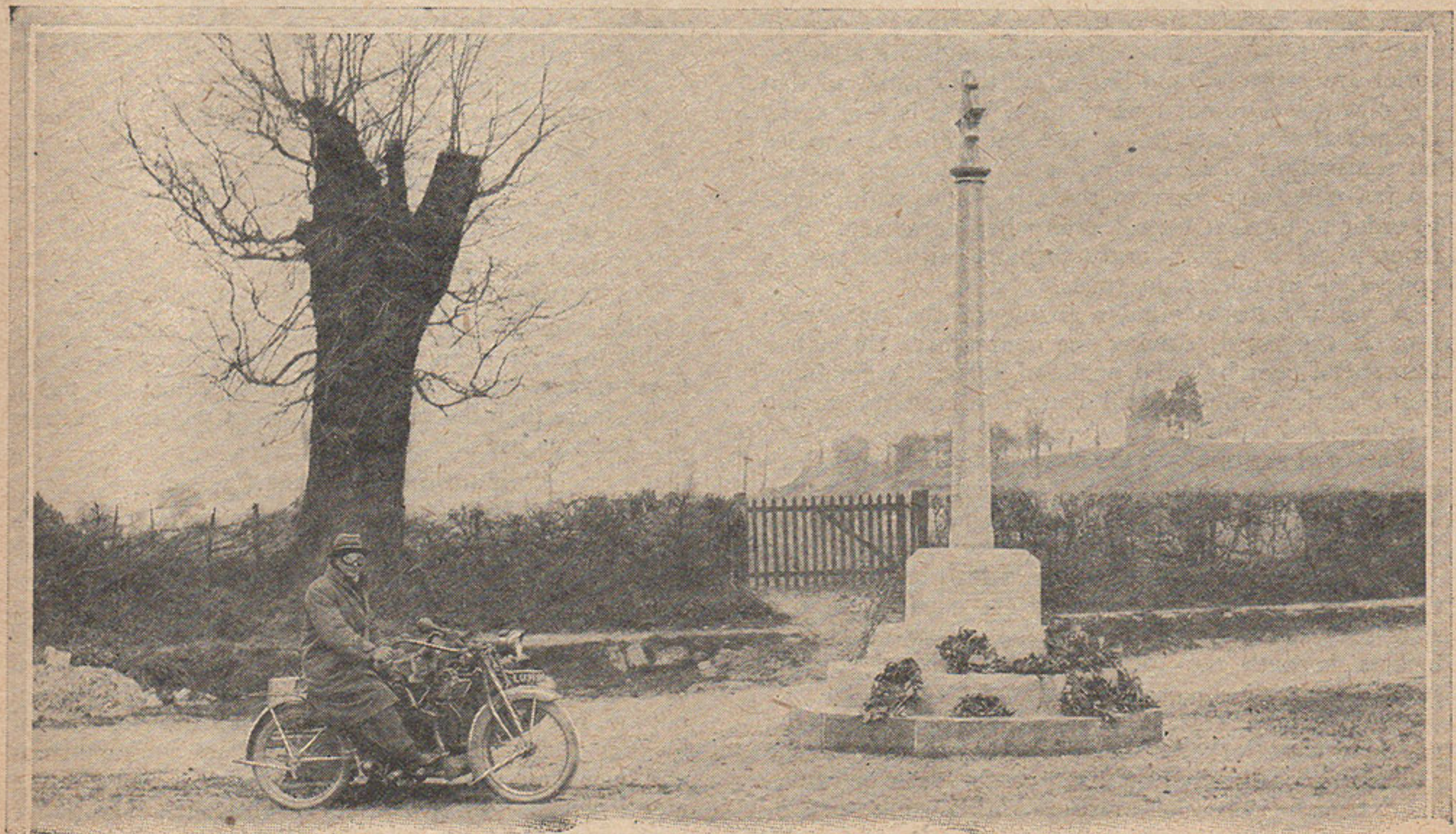
The E.I.C. magneto has given no trouble. It seems a thoroughly sound proposition, but it will be more appreciated when British manufacturers get away from minute adjustment screws.

#### Economy.

A machine of the type under review probably affords the cheapest possible travelling for two. A  $3\frac{1}{2}$  h.p. two-speed is not, of course, ideal for sidecar work, though the climbing abilities of this mount are equal to anything but the most freakish conditions. Heavy winter roads and winter winds are the real trial.

The reason why the P. and M. sidecar and one or two others of its class are essentially adapted to the poor man's requirements are, first, because they are absurdly cheap to run and, secondly, because they fetch good second-hand prices. The market value of a well-used P. and M. falls very slowly. At the end of two years, if it has been well kept, one should have very little to write off as depreciation. With luck, repair bills and renewals run to only a few shillings per year, and petrol and oil consumption is very low. From Peebles to Skipton *via* Carlisle and Kendal, with passenger and luggage, our petrol consumption panned out at 108 m.p.g. From Peebles to Glasgow *via* Lanark, through mud and against wind, it once dropped to 62 m.p.g.—the lowest yet. Oil consumption has not been measured, but I should say it is roughly just over half what it was with the R.A.F. models.

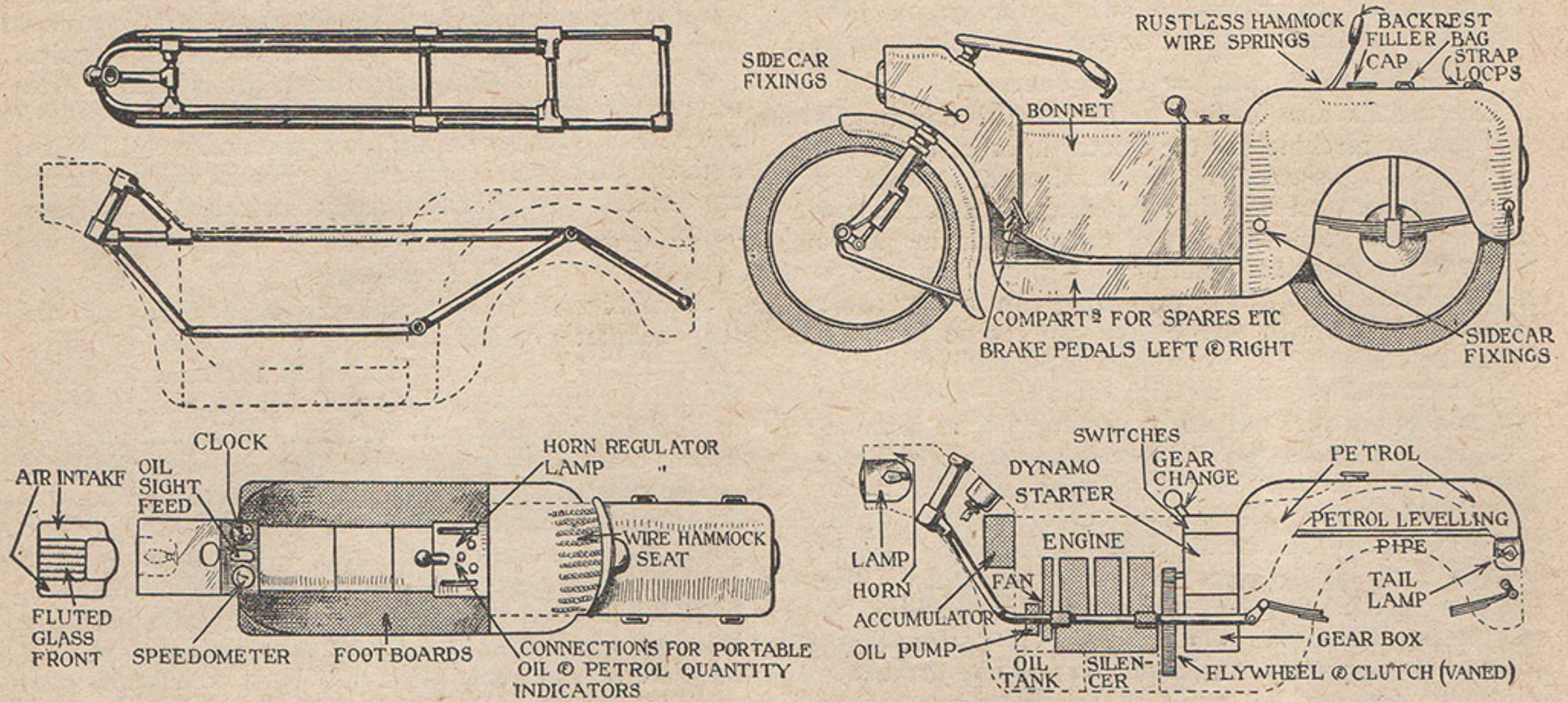
CHINOOK.



A war memorial in the village of Lugwardine, Herefordshire. It has thirty-two names on it—a large total for a village of only a few houses.

# A Highly Developed Motor Bicycle.

A READER'S SUGGESTED DESIGN.



Details of an ideal motor cycle suggested by Mr. H. P. Blake, of Wimbledon.

SOME years ago Mr. H. P. Blake, of Wimbledon, sent us a model and sketches demonstrating his ideas of a motor bicycle *de luxe*; and the attention recently devoted to this topic by *The Times* and ourselves has moved him to submit the accompanying specification and sketches, which he places freely at the disposal of anybody who may be interested, since he is unable to develop the design for himself.

The general view shows a smooth-sided casing of Duralumin utilised to conceal an ordinary frame of steel tubing. The whole of the mechanism and accessories are protected and hidden by this casing, so that the machine does not look "spiky," and is very easily cleaned after a dirty ride. The back wheel is carried on semi-elliptic leaf springs, a U tube being carried up from the rear forks to the tail of the main frame in order to prevent lateral sway when cornering. The front wheel is trailed caster fashion, with its springs concealed in telescopic tubes.

A vertical three-cylinder engine of the two-stroke type is suggested, driving the rear wheel through a four-speed gear box and enclosed shaft. A combination electrical outfit would cater for ignition, engine starting, and lighting.

The cowl surrounding the steering head houses three items, viz., the head lamp (which has a dimming device), the electric hooter, and the air intake to the fan which cools the encased engine.

The frame is narrow, the rider's legs being outside the engine cowl. The footrests are carried up in a slow curve at the front end to form mudshields, and lockers beneath the footboards are utilised for the storage of tools and spare parts.

The lubricating oil tank is set low down between the footboard lockers, the oil being pumped to the engine *via* a sight-feed mounted on the dash or instrument board. The dash also carries a sunk speedometer and clock, together with the adjustment for the

oil-feed. An unusual petrol tank of  $3\frac{1}{2}$  gallons capacity is mounted above the rear wheel, its fore and aft bottom levels being connected by an equalising pipe concealed under the Duralumin cowling. The registration numbers are, of course, painted on the cowling, and the tail lamp is built into the rear of the petrol tank.

The handle-bar controls would naturally be of the concealed type, viz., twist grips or thumb slides.

In lieu of a saddle, a hammock seat of cycle car pattern is suggested, but the use of rustless steel links is preferred to leather.

The approximate dimensions are:

- Wheelbase, 56in.
- Saddle to footboards, 17in.
- Ground clearance, 7in.
- Wheels, 28 x 3in.
- Width of bonnet,  $7\frac{1}{2}$ in.
- Width of petrol tank, 12in.
- Maximum width (across footboards), 14in.

Such a machine, it is claimed, should not be appreciably heavier than a conventional mount of equal horse-power, since the light cowling would not weigh much more than the numerous fittings required to carry the parts as usually arranged.

### Perfection in Motor Cycles.

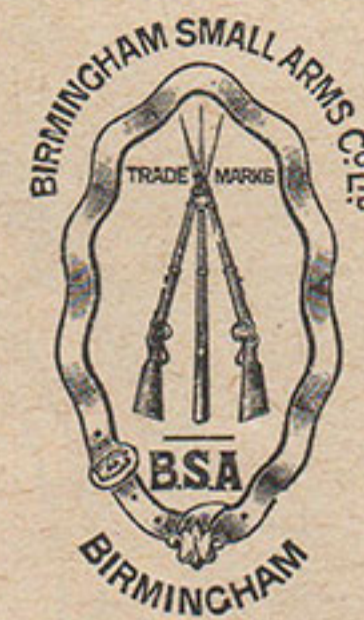
It will be interesting to see how far Mr. Blake's design conforms to readers' notions of a machine *de luxe*. His specification is tantamount to a heavy-weight built with two special points of emphasis, viz., ease of cleaning and disregard of cost. But the *cachet* of the Rolls-Royce car—so often quoted as the zenith of motoring luxury—is not unconventionality in general outline, but the perfection of a normal first-class design by dint of first-class material, first-class workmanship, and incessant testing. It follows that a Rolls-Royce motor bicycle need not be unconventional. The policy might imply no more than the following points:

# B.S.A.

## MOTOR BICYCLES.

**T**HE universal popularity of B.S.A. Motor Bicycles is the greatest tribute to the sterling service which B.S.A. machines will give under the most varying conditions. Whether on the stony tracks and bush paths of German East Africa or the shell-pitted, treacherous French roads during the War, the record of B.S.A. Motor Bicycles has always been one of unfailing reliability. Dependable under such searching trials, the B. S. A. is practically trouble free under ordinary riding conditions.

**B. S. A. CYCLES LIMITED,**  
 Small Heath - - - Birmingham  
 Proprietors: The Birmingham Small Arms Co., Ltd.

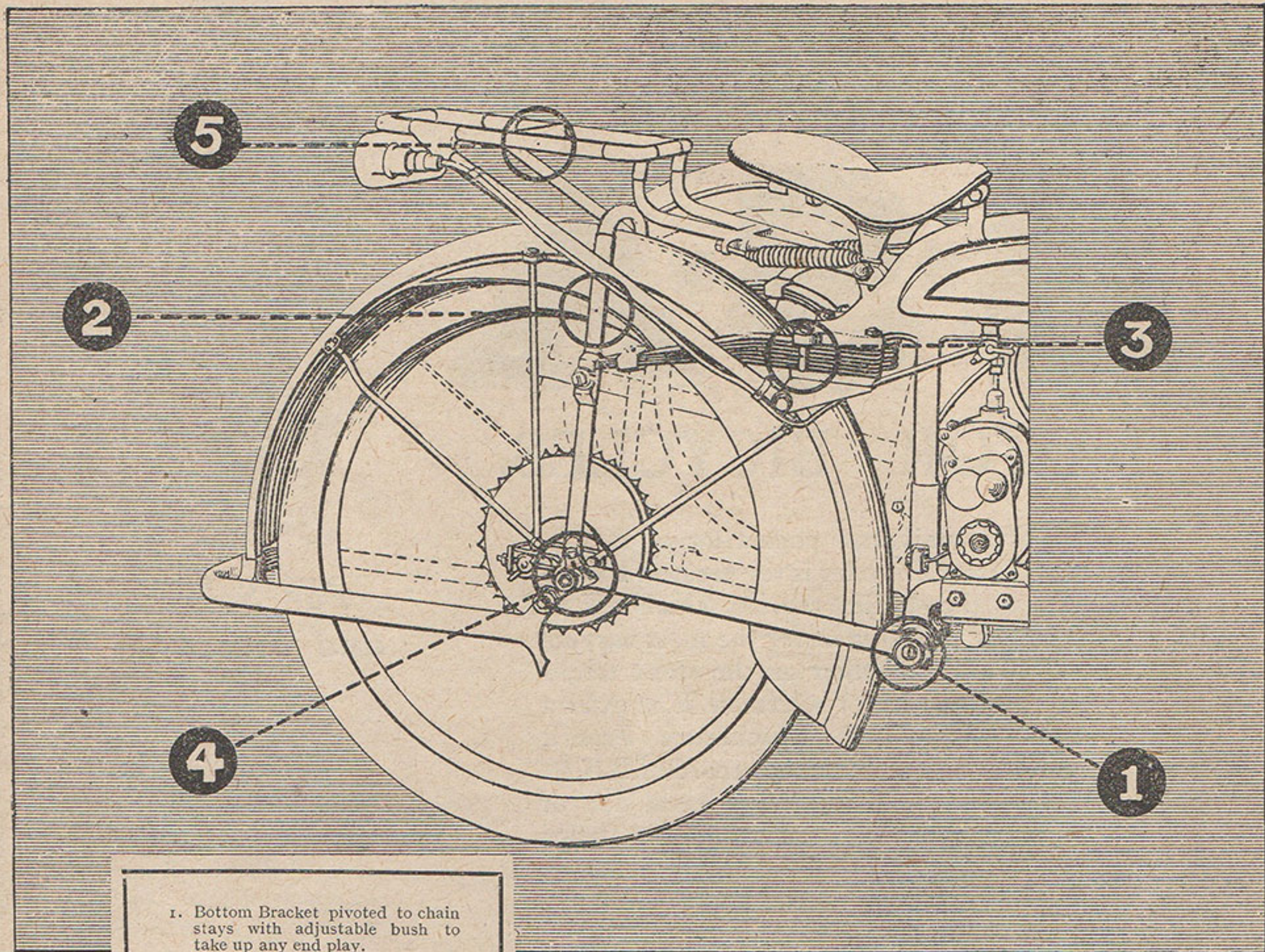


*For Solo  
and Sidecar.*

*Write for Illustrated  
Catalogue, Post Free.*



*In answering this advertisement it is desirable to mention "The Motor Cycle."*



1. Bottom Bracket pivoted to chain stays with adjustable bush to take up any end play.
2. Loop Member uniting the two forked ends of the chain stays.
3. Quarter Elliptic Leaf Springs attached rigidly to Clyno Special Saddle Pillar Lug and pivoted on Loop member.
4. Outer end of chain stay with pivot for Loop Member and adjustment for driving chain. Rigid separate attachment for mudguard stays. Independent attachment for back wheel stand. This design eliminates all possibility of lateral play and rattle.
5. Luggage Carrier on sprung portion of frame, unhampered by toolbag and entirely free for luggage.

*The fourth of a series of advertisements dealing with the many and various features which combine to make the 8 h.p. Clyno the finest Motor Cycle Sidecar Outfit in the World.*

## The New CLYNO SPRING FRAME



is simplicity itself; there's absolutely *nothing* to go wrong. The chain stays being pivoted at the forward end leave the wheel free to rise and fall and accommodate itself to the road surface. The two forked ends of the chain stays are united by a loop member carried across the wheel. This ensures rigidity and prevents any possibility of lateral play. A pair of quarter-elliptic leaf springs are carried from the top of each side of the loop to the special lug below the saddle. They absorb all shocks and completely insulate the rider from the road. The luggage carrier being fitted to the sprung portion of the frame is also equally insulated from road shocks and vibration. The pivoting pins are of steel, hardened and ground, and work in bushes. Every bush is provided with an oil plug. These are all of one size and fit the oil gun provided in the kit. The chief bottom-bracket bush is adjustable to take up any play.

**THE CLYNO ENGINEERING CO., LTD., Pelham St., Wolverhampton.**

870A



**A Highly Developed Motor Bicycle.—**

- (1.) Limited output.
- (2.) High price.
- (3.) Vibrationless engine.
- (4.) Vibrationless frame.
- (5.) Ten hours' bench test of each engine.
- (6.) 500 miles road test of each machine.

The quality of the machine would then embody a host of minor perfections, which cannot all be guaranteed in a cheap machine built on the quantity system. For example, it would have no oil leaks at the tappet

guides or crank case joints; it would never soot a plug; its carburetter would not flood until, say, the third season; it would be impossible to adjust the back wheel out of track with the front wheel; it would tick over at 75 r.p.m. in neutral; its clutch could be operated with one finger, but would not slip within 20,000 miles; it would not carbonise its cylinder in less than a full season's riding; its wheels would be interchangeable within sixty seconds, etc., etc. Nevertheless, it might closely resemble in outward appearance one of our standard production machines.

## OUR EXPORT TRADE.

### BOTH IMPORTS AND EXPORTS ON THE INCREASE.

**T**HIS year will mark the resumption of trade in Overseas markets on a scale fitting the nation that turns out the world's finest machines. Last year, of course, an effort was made to fulfil a small percentage of the Overseas orders in hand, but the few machines exported did little to satisfy the ever-increasing demand, the number exported being, roughly, half of those in 1913. Many have been the criticisms levelled at British makers at their efforts at building up Empire trade. Lethargy, indifference, and shortsightedness, have been among the accusations advanced by Overseas motor cyclists, the greatest grievance probably being the spare part question.

We have been told that in a few years time British trade will be entirely eclipsed by American, that our antiquated methods will result in the total ruin of the pioneer work performed by a few British firms years ago. Yet, in spite of all this condemnation and rather tiring tirade, in spite of the American trade organisation, and the magnificent opportunity they had of penetrating our reserves during the early part of the war, the demand for British machines is as firm as ever. When British motor cycles are sent out—whether to South Africa, New Zealand, India, or Canada—they are snapped up in spite of price and the so-called bad spare service. That fact speaks for itself. The demand is there, and will unquestionably remain so long as our machines maintain their high standard and workmanship.

**British Service Abroad.**

There is room for much improvement in British service abroad without a doubt, but the many grumbles heard are uttered without giving thought to the obstacles that confront the comparatively small and individual manufacturer in his effort to supply a world market. These obstacles will be overcome when British firms combine in their efforts to form central spare depots in various countries—a scheme we discussed some months ago, and to which reference will be made at a later date—and when the strangling effect of labour troubles is overcome.

The coming year British makers will have great difficulty in meeting the demands of the home market, but the wise manufacturer, who is looking right ahead, will make provisions for maintaining or building up goodwill abroad. There will be an ever-increasing demand at home for machines: a demand that is likely to lull to sleep the faculty for a full realisation

of the gigantic possibilities of "foreign" demand, for not only is there the white population of such places as India and China to consider, but also the coloured races. Let it be remembered that the enlightened population of India and China is a large one, and, judging from correspondents' letters, it is interested in the cheap and simple type of motor cycle. The world's demands for motor cycles is huge, and the makers who have imagination, mettle, and push, will reap a big reward: there is no question whatever on that point.

**Exports for 1919.**

So far as export trade for the last year is concerned, no remarkable feature presents itself on studying the figures. It will be observed from the table below that about half the number of machines were exported last year compared with 1913, but their value was nearly £160,000 more.

Compared with the month of November, last month's figures show a very slight decline, the number of machines exported being 838, their value, together with parts, accessories, tyres, and tubes, amounting to £115,035.

EXPORTS.

YEAR ENDED 31ST DECEMBER.

	1913.	1914.	1915.	1916.
Value of motor cycles, parts, and accessories ..	£991,035	£1,305,250	£820,217	£958,729
No. of machines .....	16,850	20,877	10,979	12,851
	1917.	1918.	1919.	
Value of motor cycles, parts, and accessories ..	£1,237,207	£672,649	£1,158,139	
No. of machines .....	14,159	5,652	8,330	

MONTH ENDED 31ST DECEMBER.

	1917.	1918.	1919.
Value of motor cycles, parts, and accessories .....	£95,907	£45,717	£118,822

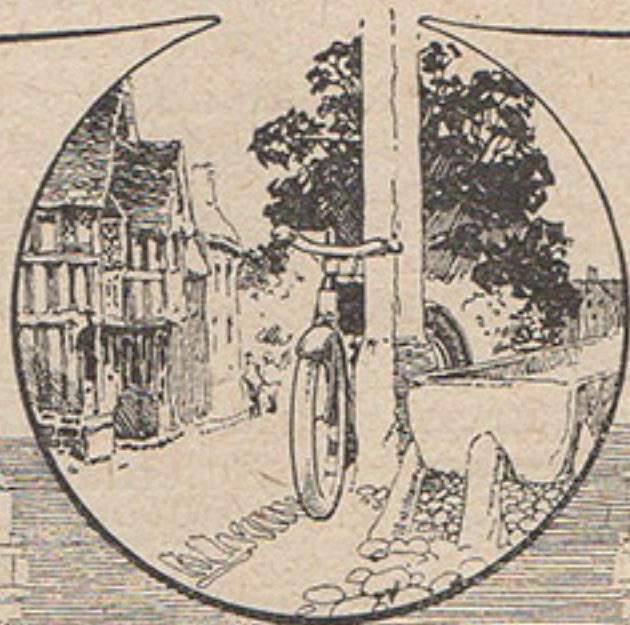
IMPORTS.

MONTH ENDED 31ST DECEMBER.

	1917.	1918.	1919.
Value of motor cycles, parts, and accessories .....	£1,691	£491	£42,860

## AIR-COOLING UP-TO-DATE.

By "ROAD RIDER."



Modern Views on the  
Question of Heat  
Conductivity and the  
Selection of Materials.

It is not a mere accident that several prospective motor cycle engines are to be fitted with detachable heads; nor has this ancient system of construction been revived solely or mainly to facilitate decarbonisation, or to permit the interior surface of the combustion chamber to be machined. A little consideration will show that a detachable head is essential to full cooling efficiency.

Where "hotstuff" engines are concerned, it is desirable to keep the inlet pocket as cold as possible. It is true that a portion of the inlet pipe should be well heated, to assist vaporisation of the fuel on any type of engine, and to ensure equal distribution of the charge to the several inlet valves of a multi-cylinder. But if the inlet valve pocket is really hot, it is impossible for the engine to inhale a maximum charge, since heat expands the gases; and the inlet valve is open for a miserably brief period at the best. Consequently the inlet pipe should be heated close to the carburettor, and cooled near the valve. For this reason it is desirable to prevent the inevitable heat of the exhaust valve pocket from raising the neighbourhood of the inlet valve to a very high temperature. If the cylinder head is made of a metal possessing a high degree of conductivity, e.g., aluminium, the temperatures of the inlet and exhaust valve pockets will be approximately equal, which is undesirable. On the other hand, if the cylinder head is made of cast iron, which possesses comparatively low heat conductivity, the inlet valve will keep fairly cool, and the heat of the exhaust valve will be isolated, and the cylinder head will expand unevenly.

### A Composite Cylinder.

A recent patent solves this dilemma with satisfactory results. A one-piece cylinder of aluminium will suffer from too hot an inlet valve, with resultant wire drawing of the charge. A one-piece cylinder of cast iron will tend to distort egg-shaped with its long diameter bisecting the exhaust valve, with consequent piston friction. Hence a detachable head is clearly indicated as the road towards a solution.

The nature of the problem is absurdly simple. Theoretically, the cylinder head should be hot on one side and cool on the other, for reasons already stated:

while the cylinder barrel should be of an even temperature all round to avoid distortion and piston friction. In other words, the designer must devise a detachable head which will not pass on uneven heating to the cylinder barrel. Any type of joint between head and barrel interferes to some extent with the flow of heat from one part to the other: the best made faced joint is an insulator of heat to some extent; racing sparking plugs are made with one-piece electrodes to secure the most rapid conduction of heat and so to prevent the points from becoming incandescent and causing pre-ignition. Hence some designers deliberately fit a type of head-to-barrel joint which is a bad heat conductor. Such a joint is necessarily apt to leak; since the hot exhaust side of the head is expanding away from the cool inlet side, and exerting a sideways pull. The patent, above referred to, embodies a thickish aluminium washer of considerable diameter between a cast iron head and a steel barrel. Aluminium possesses splendid heat conductivity, and measurements of temperature on the top and bottom sides of this washer are very interesting. At the top the exhaust side of the washer is appreciably the hotter: at the bottom there is no material difference between the temperatures on the two sides. In other words, this washer puts the heat into equilibrium before communicating it to the steel cylinder barrel. Thus all three desiderata are obtained, viz.:

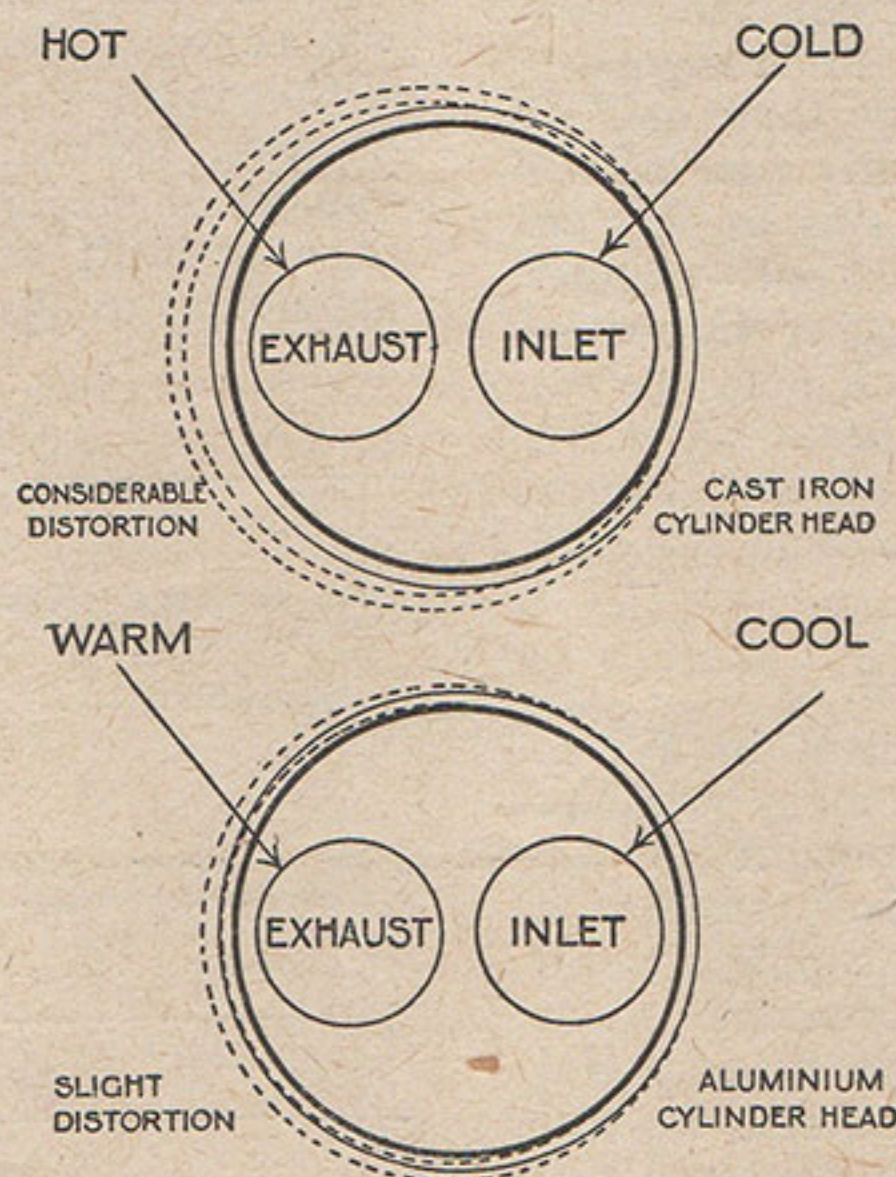
1. A cool inlet valve pocket.
2. Full internal machining of the combustion head.
3. A symmetrical piston path under full load.

It is doubtful whether any other method of construction at present in use fulfils all these requirements quite so satisfactorily.

### Piston Temperature.

In the second place, it is equally necessary to maintain the whole area of the piston at as even a temperature as possible. In pre-war motor cycle engines this necessity was fully realised, but clumsily tackled. The designer's main expedients consisted of:

1. Drenching the cylinder walls with oil.
2. Retaining the hand lubrication system, simply because it furnished *cold* oil at periodic intervals.



Relative distortion of cast iron and aluminium cylinders (exaggerated).

**LONDON — EXETER TRIAL.  
100 per cent. success.**

**FOUR**  
*Indian*  
**Motocycles**  
**compete**

**FOUR**  
and  
Win **GOLD**  
**MEDALS.**

The new Indian Scout was included in the team and publicly proved its reliability. The design and low riding position make it practically immune from side-slip, and very steady over rough surfaces.

Referring to the Solo Machines, "The Press" writes:—

"It was really painful to watch the antics of these men who swerved from side to side of the road, trailing their feet. Much of it was due really to bad riding. In great contrast was Russell Coes (4 h.p. INDIAN Scout), behind whom we rode for some distance. He made no trouble whatever, and steered a perfectly straight course at any speed that the machine in front would permit. Russell Coes finished as fresh as paint, his INDIAN Scout tickling over as quietly as when we inspected it a few days before the run."

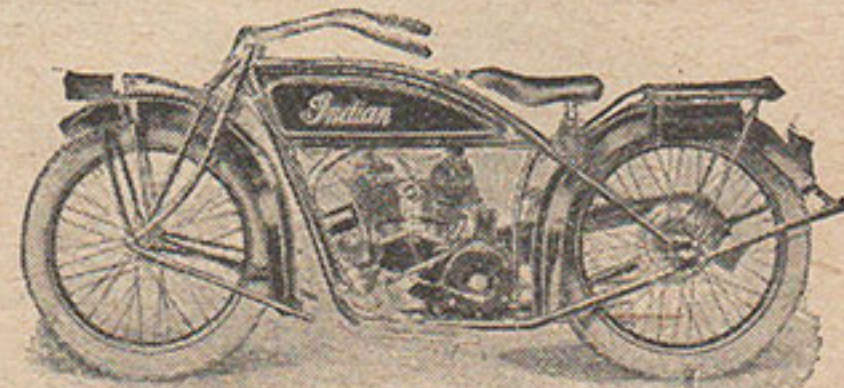
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Telephone: Museum 1643.  
Telegrams: "Hendian, Eusroad, London."

AUSTRALIA—109-113, Russell St., Melbourne. AFRICA—  
Indian House, 127-9, Commissioner Street, Johannesburg.  
Indian House, 579, West Street, Durban. Indian House,  
Strand Street, Port Elizabeth.



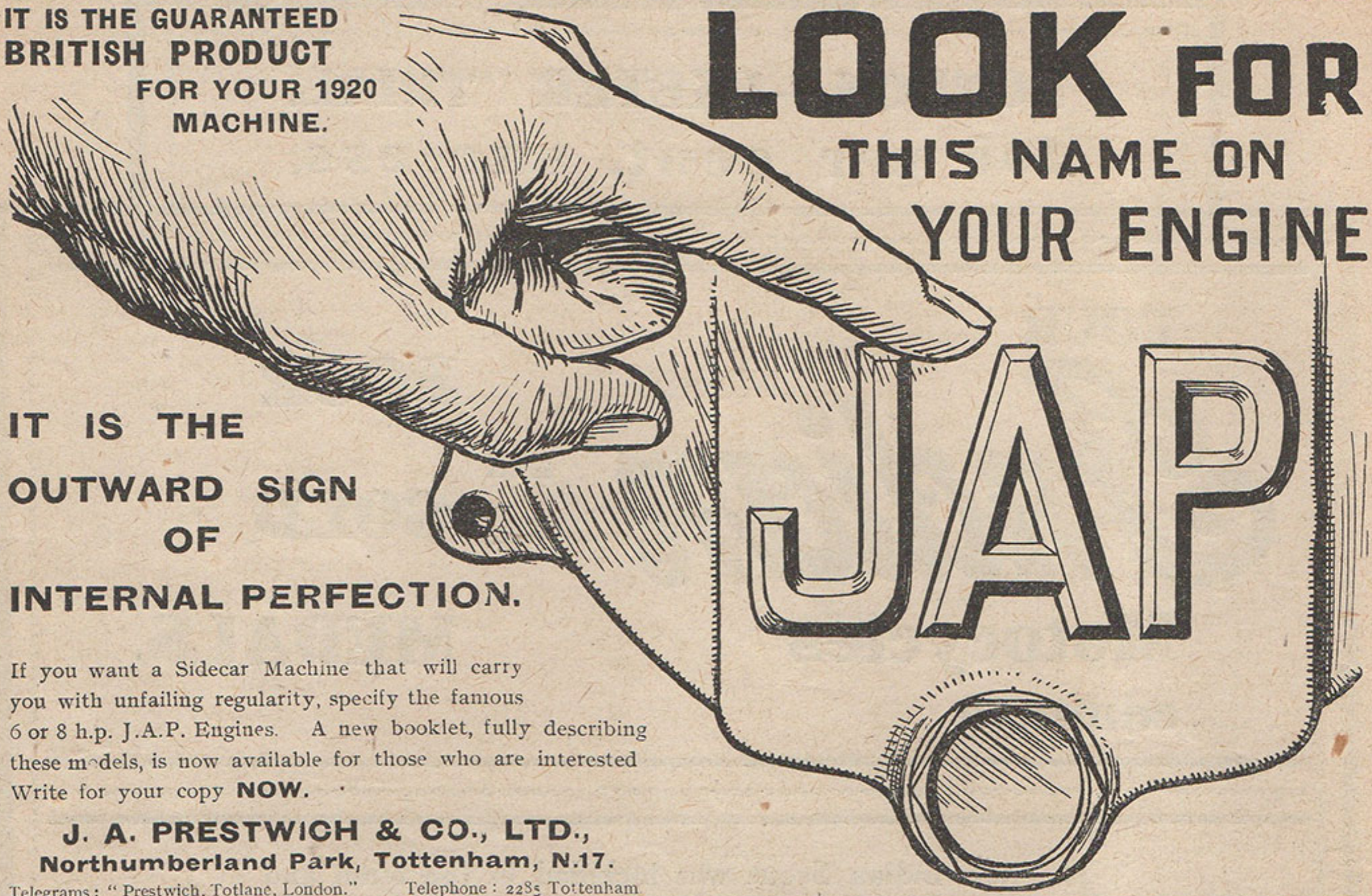
**IT IS THE GUARANTEED  
BRITISH PRODUCT  
FOR YOUR 1920  
MACHINE.**

**LOOK FOR  
THIS NAME ON  
YOUR ENGINE**

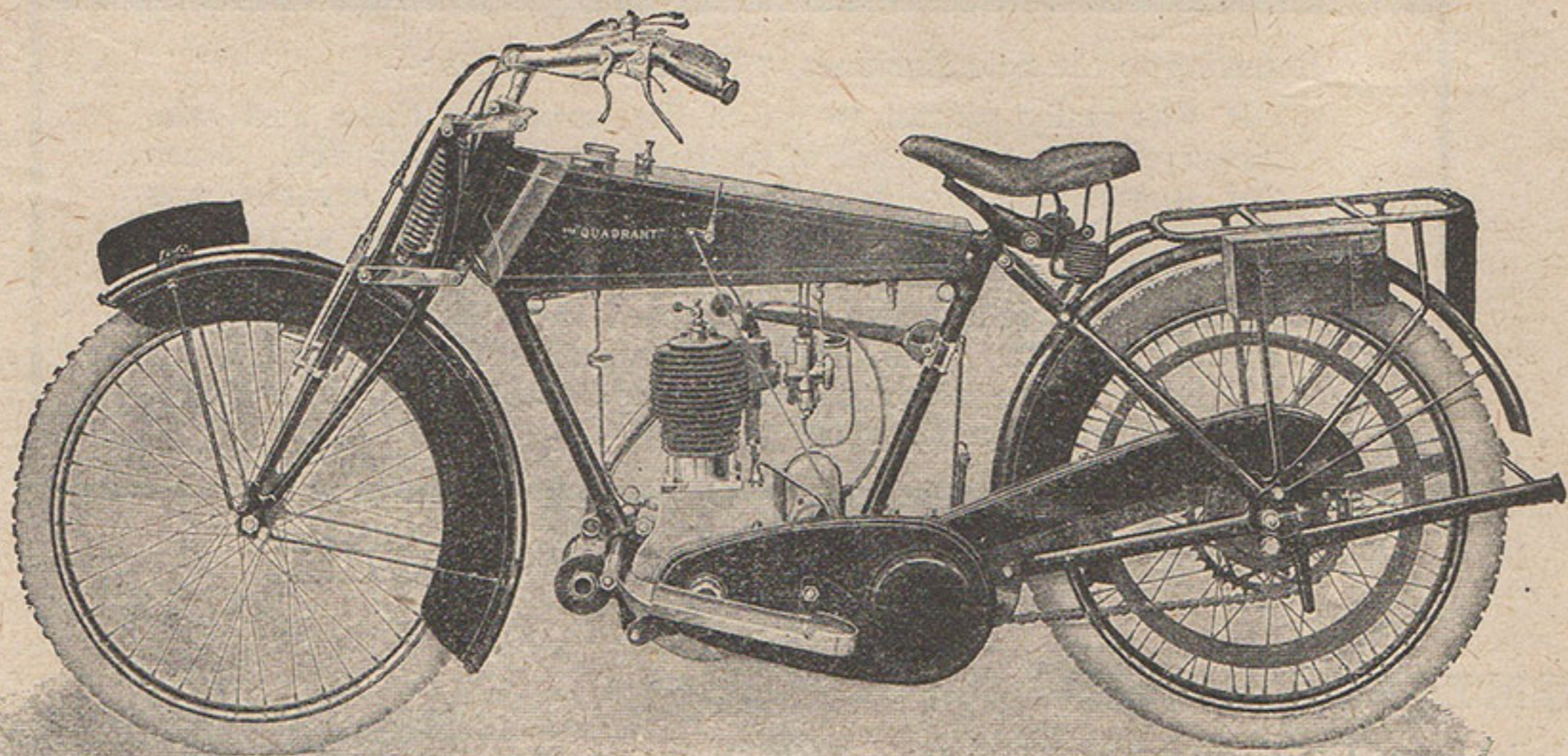
**IT IS THE  
OUTWARD SIGN  
OF  
INTERNAL PERFECTION.**

If you want a Sidecar Machine that will carry you with unfailing regularity, specify the famous 6 or 8 h.p. J.A.P. Engines. A new booklet, fully describing these models, is now available for those who are interested. Write for your copy **NOW.**

**J. A. PRESTWICH & CO., LTD.,**  
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**The Reliable Quadrant—1920 Model.**



4½ h.p. Chain Drive, Sturmey Archer Gear.

A perfect machine for all purposes.

**QUADRANT, LAWLEY ST., BIRMINGHAM.**

**Air-cooling Up-to-date.—**

3. Spraying the interior of the piston with oil.  
 4. Compensating for the excessive expansion of the red-hot crown of the piston by giving the top "land" of the piston from .003in. to .003in. more clearance in the cylinder than the lower "lands" (i.e., using a "tapered" piston). All these expedients were faulty. For example:

1. Created excessive piston friction, as the tight-fitting rings had to overcome the resistance of a "wave" of oil which they squeezed along the cylinder walls on both the up and the down stroke: led to rapid carbonisation; produced absurd oil consumption.

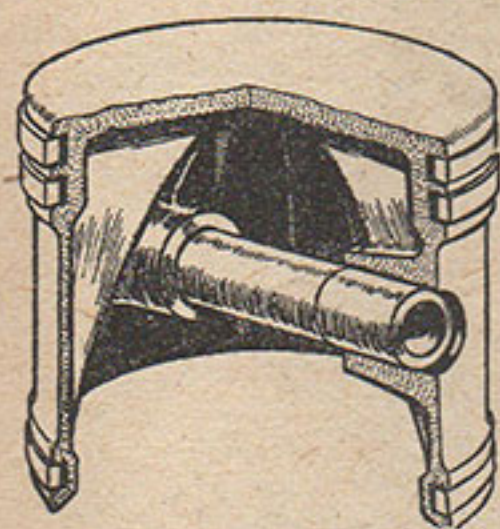
2. Gave the rider trouble which no car driver would tolerate: 75% of motor cycle engines were either under or over lubricated.

3. Exaggerated the overheating of the piston as soon as carbon crusts formed under the piston crown (few riders removed these crusts during amateur overhauls) and produced excessive oil consumption.

4. Rendered the second ring from the top the real "compression guard" whenever the engine was cold, and the top edge of the piston had not yet expanded to fit the cylinder bore. For this reason the second ring bore heavy responsibilities, and three rings became advisable. Moreover, the two top lands and rings carbonised heavily, and after a few hundred miles this carbon wiped out the extra clearance.

**Experiments Five Years Ago.**

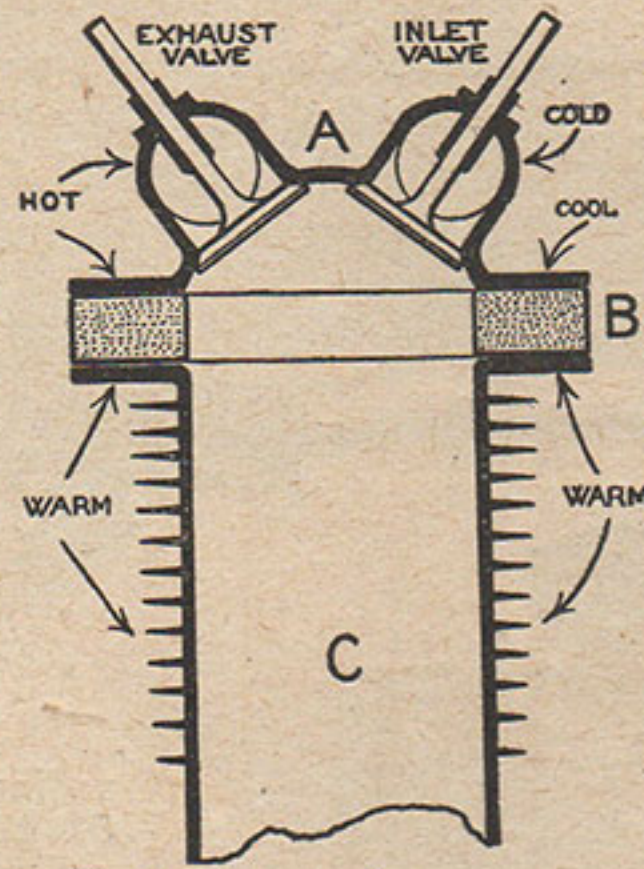
Quite five years ago a number of piston experiments were in progress, though it is doubtful whether even their originators fully understood the factors by which they achieved notable successes. The three principal innovations were the recessed or drilled steel piston, the aluminium piston, and the scraper ring.



Aluminium piston with crypt-type internal ribs for cooling piston head.

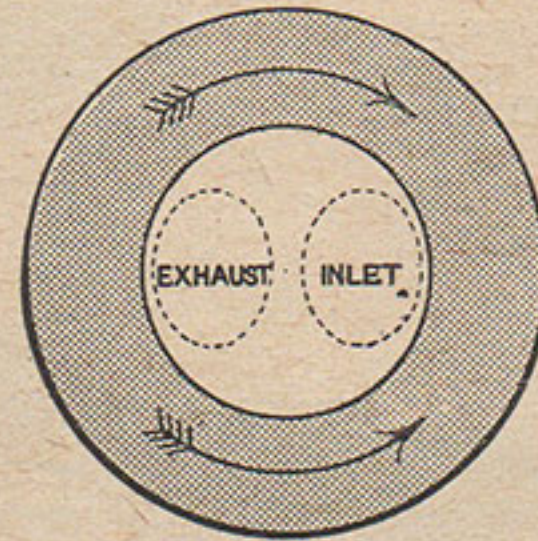
The steel piston with a recessed waist ranged from the Rudge pattern, on which the "waist" was barely noticeable, to the Zephyr patent, which resembled an hour glass: in between these extreme patterns came all manner of "perforated jam jars." Some inventors claimed improved efficiency as the result of the lightness of their designs, others emphasised

the fact that their perforated piston skirts made for improved lubrication of the cylinder walls. In practically every case the main merit was the fact that the harassed piston rings were able to get rid of the waves of compressed oil which they had pushed in front of them for years. Similarly, the original devotees of the aluminium piston made great play with learned



(A) Cast iron head.  
 (B) Aluminium washer  
 (C) Steel cylinder.

talk about the lightness of the reciprocating parts. In one experiment aluminium pistons, weighing considerably less than the steel pistons which they superseded, made no perceptible difference in the running whatsoever, except when the engine was cold and their excessive clearance caused them to "slap" quite audibly until they had warmed up "and grown" to a better fit.



Arrows show circumferential radiation of heat in aluminium washer.

It follows that the prime essential in piston design is to get rid of the oil friction as far as possible. This implies proper cooling of the piston; otherwise cutting down the supply of oil will lead to seizure.

**Getting the Heat from the Piston Head.**

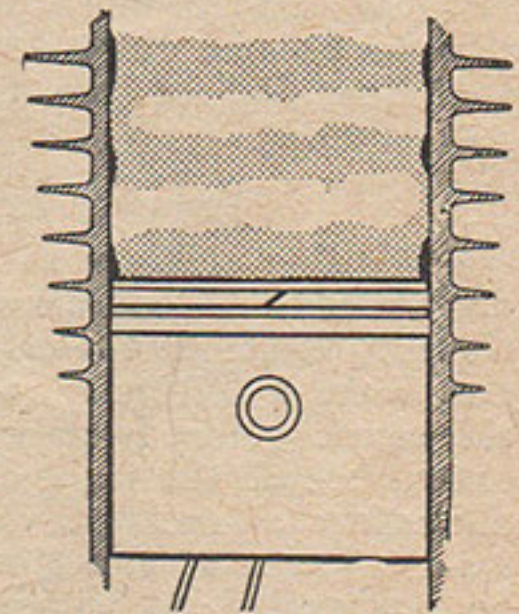
Since the crown of a piston is subjected to enormous heat, and the skirt is protected from direct contact with the explosion flame, it is essential to use

a metal of high heat conductivity; and in this respect aluminium has cast iron beat to a frazzle, and is suitable in all other respects. The main value of the earliest aluminium pistons was their superior heat conductivity, considerably assisted by the inevitable thickness of their skirts, since a thin aluminium skirt would not bear the load.

Drilling a piston impairs its heat conductivity. The holes narrow the path by which the heat struggles to flow from the head to the skirt. From a thermal standpoint this device is as foolish as trying to empty the Chelsea football ground quickly after a cup-tie by keeping half the exits shut.

Secondly, the interior of a piston should be heavily ribbed, not to withstand the thrust of the explosion, but to conduct heat from the centre of the piston crown into the base of the skirt. On some of the Sunbeam aircraft engines a metal stud connects the piston crown to the gudgeon pin. A superior practice is to web the whole of the crown to the skirt in a fashion reminiscent of the groining of the roof of a crypt.

If an aluminium piston designed on these lines should weigh more than the cast iron piston which it supersedes, the engine will nevertheless be improved. If, in addition, the aluminium piston weighs less, additional revolutions will be obtainable.



Old type piston forcing waves of oil (exaggerated diagram) up the cylinder bore on each upstroke.

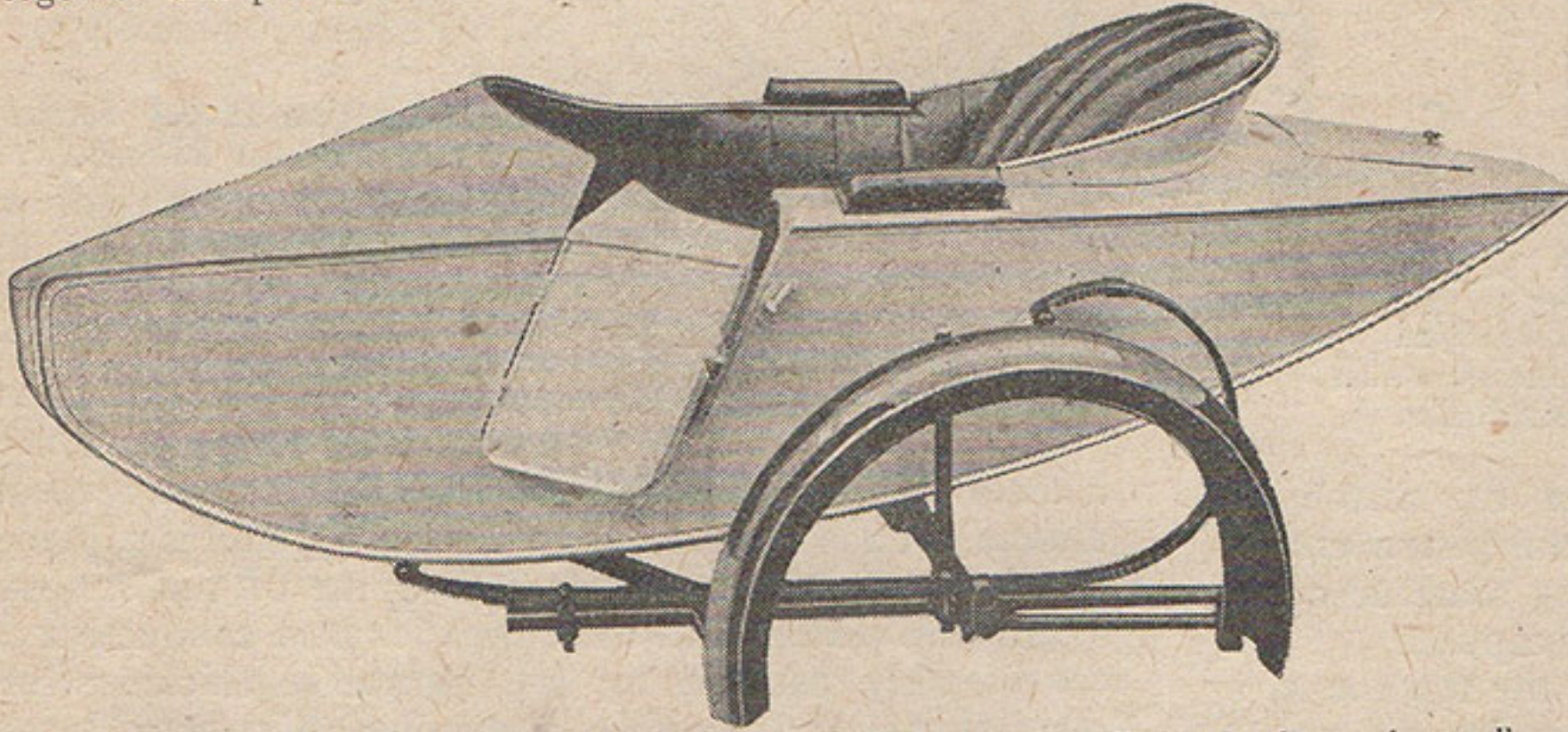
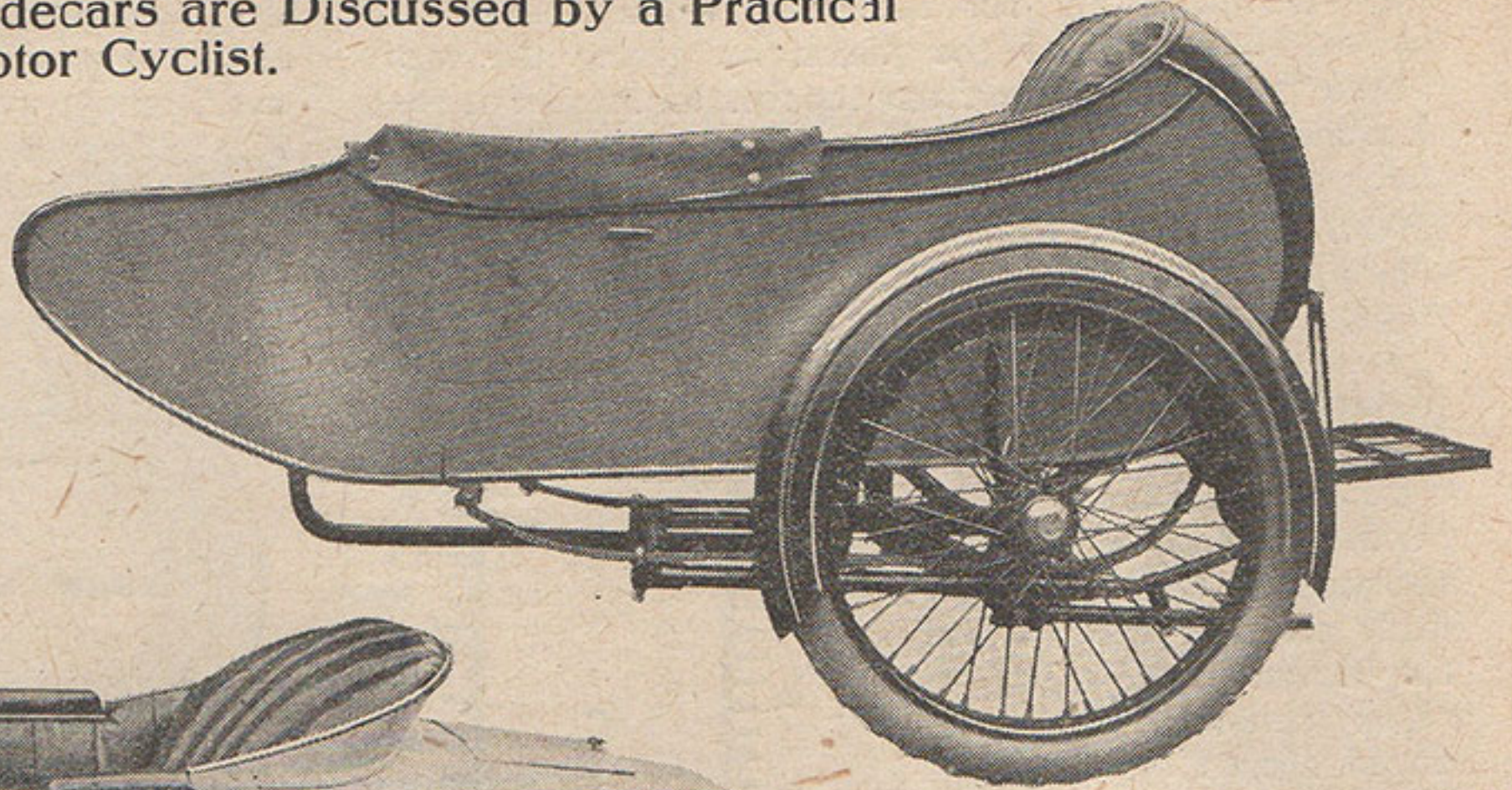
The famous Ricardo piston, known as the "slipper" type, reduces the oil friction to a minimum by dispensing with a skirt except for two brief panels on the pressure sides. Mr. Ricardo has also patented a "trunk" piston, which has no skirt at all: the rings are carried on a shallow cap, and the bearing surfaces lower down are out of range of high temperatures.

## CHOOSING A TOURING SIDECAR.

Some Details concerning Sidecars are Discussed by a Practical Motor Cyclist.

PERHAPS it is unnecessary to go into the reasons which impelled the writer to consider the necessity of choosing a sidecar, since they appear to crop up eventually in the life history of every motor cyclist. Let it suffice to mention the fact that whatever attachment was ultimately decided upon a certain amount of luggage had to be carried without interfering with the comfort of the passenger.

To this end, a large collection of sidecar manufacturers' literature was gathered together and perused.



(Left) The Horder and Lane—a newcomer which closely follows the lines of a well-known French sidecar. (Right) The Rover sidecar, which is one of the many fitted with a luggage carrier on the body itself.

In the first place, the writer is an ardent solo enthusiast, who regards the sidecar as a necessary evil which will persist concurrently with the continued existence of the social (and sociable) instinct.

Following this confession, it may be assumed that a critical eye was brought to bear upon the sidecars described, and so much as this may be said at once—that the writer found so little to criticise and so much worthy of praise that he became quite disgruntled, feeling that the day of the meticulous scribe was ending.

### Luggage Grids.

Regarding sidecars in general, one distinctly noticeable feature must be mentioned. Hitherto the carrying of luggage has been a difficulty with the touring sidecarist. Most luggage grids were mere extensions of the rigid chassis, and were ultimately of greatest value to suit case makers—even a solid steel case could not be guaranteed to withstand the chafing of a tour to the North of Scotland or a week of mountaineering amongst the Lakes.

The 1920 catalogues reveal a change. With few exceptions the luggage grid, such as is fitted to almost all the best class of machines, is mounted on the body itself, thus insulating it from vibration in the same degree as the passenger is insulated. One firm, the Rudge, goes even so far as to mount the body on the spring luggage grid as it were, since the main springs carry a frame which rearwardly is the grid, while in front it forms

a support for the body. The mudguard is also mounted on this, and is likewise removed from the effects of the road wheel vibration.

Another ingenious arrangement, as effective as it is unobtrusive, is the concealed luggage platform on the Millford *de luxe* sidecar. The body is of the new popular bulbous back variety, and if luggage has to be carried the back may be let down and retained at right angles by the same strap which secures the suit cases. A tool box is also hidden in this arrangement.

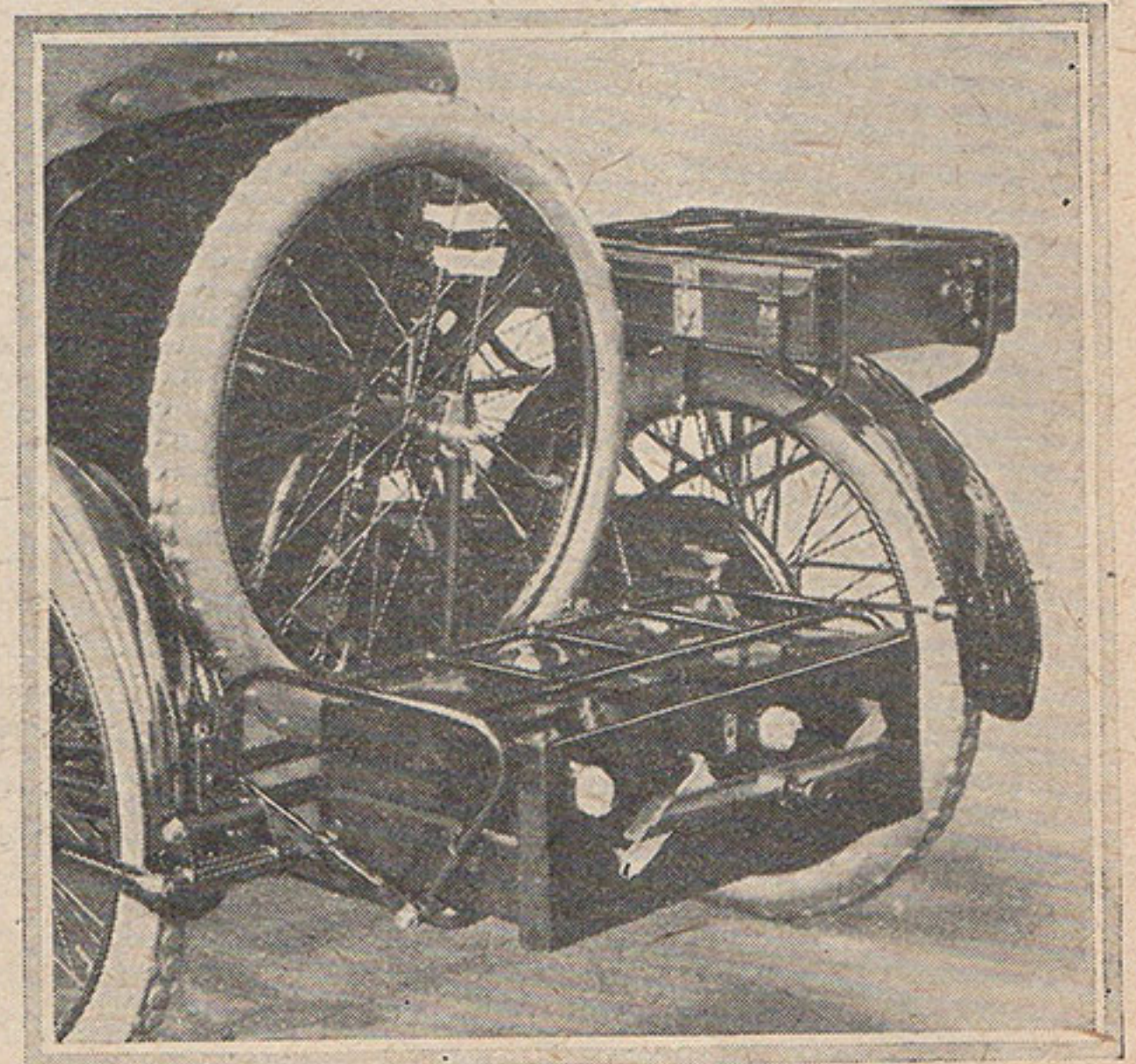
Another sidecar embodying a tool drawer with the grid is the A.J.S., which has a convenient rear platform attached to the back of the body immediately below the spare wheel carrier. Since A.J.S. machines receive such arduous testing in public competitions, they are replete with the details suggested by practical road experience, and that mentioned is undoubtedly one.

Spare wheel carrying is somewhat of a problem if other im-


pedimenta are to be accommodated, and the Excelsior people meet the case in a very cute manner. In the centre of the folding grid is a lug bored and tapped with a screw thread. A bolt, which goes through the hollow centre of the wheel, is screwed into this, so that when the grid is in use the wheel is horizontally beneath it.

### Spring Wheels.

Sidecar wheel springing has likewise received much attention in these latter days, and more than one firm produce thoroughly sound springing systems. Grindlay sidecars have double leaf springs which insulate everything but the wheel itself, while the Henderson, which has the wheel and axle sprung, only carries 11 lb. dead weight. The Bamco leaf spring model has the stub axle mounted at the centre of a heavy laminated half-elliptic, and is extremely simple. Clyno and A.B.C. outfits have sidecars with



On the Royal Ruby, special attention has been given to the carriage of petrol tins.

 OWING TO THE PROTRACTED MOULDERS' STRIKE, WHICH IS SERIOUSLY IMPEDING THE REGULAR OUTPUT OF TRIUMPH MOTOR CYCLES, DELIVERIES FOR THE TIME BEING ARE UNAVOIDABLY HELD UP.

WE REGRET THAT, OWING TO THE CONTINUOUS RISE IN THE COST OF RAW MATERIALS, WE ARE COMPELLED TO REVISE OUR PRICES WHICH, AS FROM JANUARY 1st, 1920, ARE AS FOLLOWS:—

- Type H.  
4 h.p. Triumph, 3-speed gear,  
chain-cum-belt transmission .. **£103 0s.**
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4 h.p. Triumph, 3-speed gear,  
chain-cum-belt transmission,  
Gloria sidecar .. .. **£148 0s.**
- Type S.D. Combination.  
4 h.p. Triumph, 3-speed gear  
and spring drive, all-chain  
transmission, Gloria sidecar .. **£160 10s.**
- Type L.W.  
Junior Triumph, 2¼ h.p., 2-stroke,  
2-speed .. .. **£66 0s.**

*The above prices (subject to revision without notice), include delivery at any Triumph Agent's Depot within the United Kingdom.*



**Triumph Cycle Co., Ltd., Coventry.**

LONDON: 218, Great Portland Street, W.1.

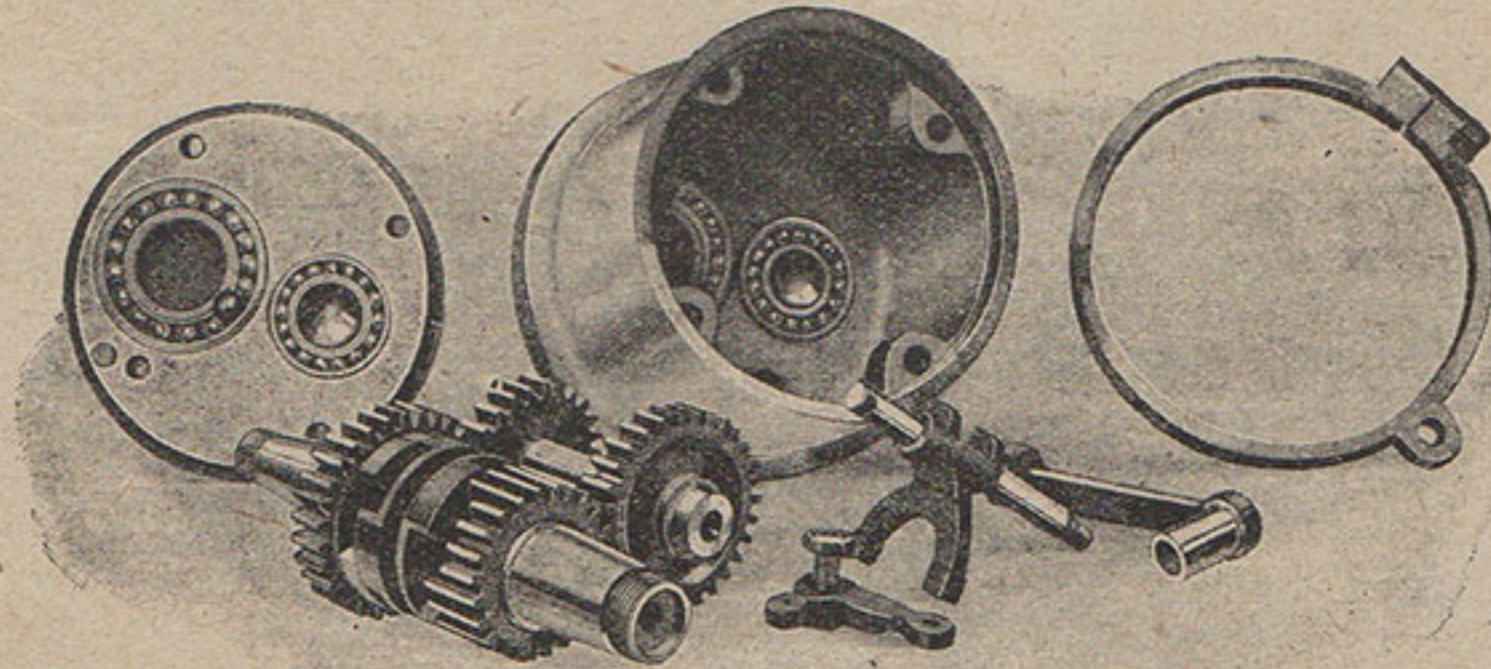
# CEDOS

TW° STR°KE TW° SPEED

Vide "Irish Cyclist," 3-12-19.

The Cedos sets a New Standard  
in Lightweights, and at the Next  
Show we are Bound to see Its  
Influence REFLECTED in  
OTHER MACHINES.

## ONE OF ITS GOOD POINTS.



A little point but a large one in Gear Box Manufacture.  
ALL TEETH ARE SHAPED ON FELLOW'S GEAR SHAPERS  
AND THEN GROUND. A CEDOS BOX IS NOISELESS.

**Cedos Motors,** Hanwell & Sons,  
Components, Ltd. **Northampton.**



**Choosing a Touring Sidecar.—**

wheels supported on quarter-elliptic leaf springs, while the Matchless embodies coil springs; all these work in unison with the motor cycle frame springing.

The general tendency to support the wheel hub spindle at its outer end is probably largely due to the growing favour of detachable wheels, and a good point in this connection is to be seen on the Rex chassis. Here the outer member of the frame encircling the wheel is detachable, this making for easy withdrawal of the wheel.

**Bodywork.**

Bodywork generally much improves, and some excellent finish is to be seen. The purple Scott sidecar, for instance, is made up with aluminium panels and is extremely light. Norton sidecars can be had with a large rounded back which opens out to form a dickey seat, while, in the matter of weather protection, there is every refinement to appeal to the most sybaritic passenger. He (or she, we must say) can choose between the extreme at the one end represented by the open sidecar with a simple screen like the Easting passing through the intermediary ground covered by the touring types with hoods, windscreens, and side curtains, on to the other end of the scale, where we find the complete sidecar-limousine type of body.

As stated in the prefatory remarks, the writer is something of a solo enthusiast of the all-weather type, and,

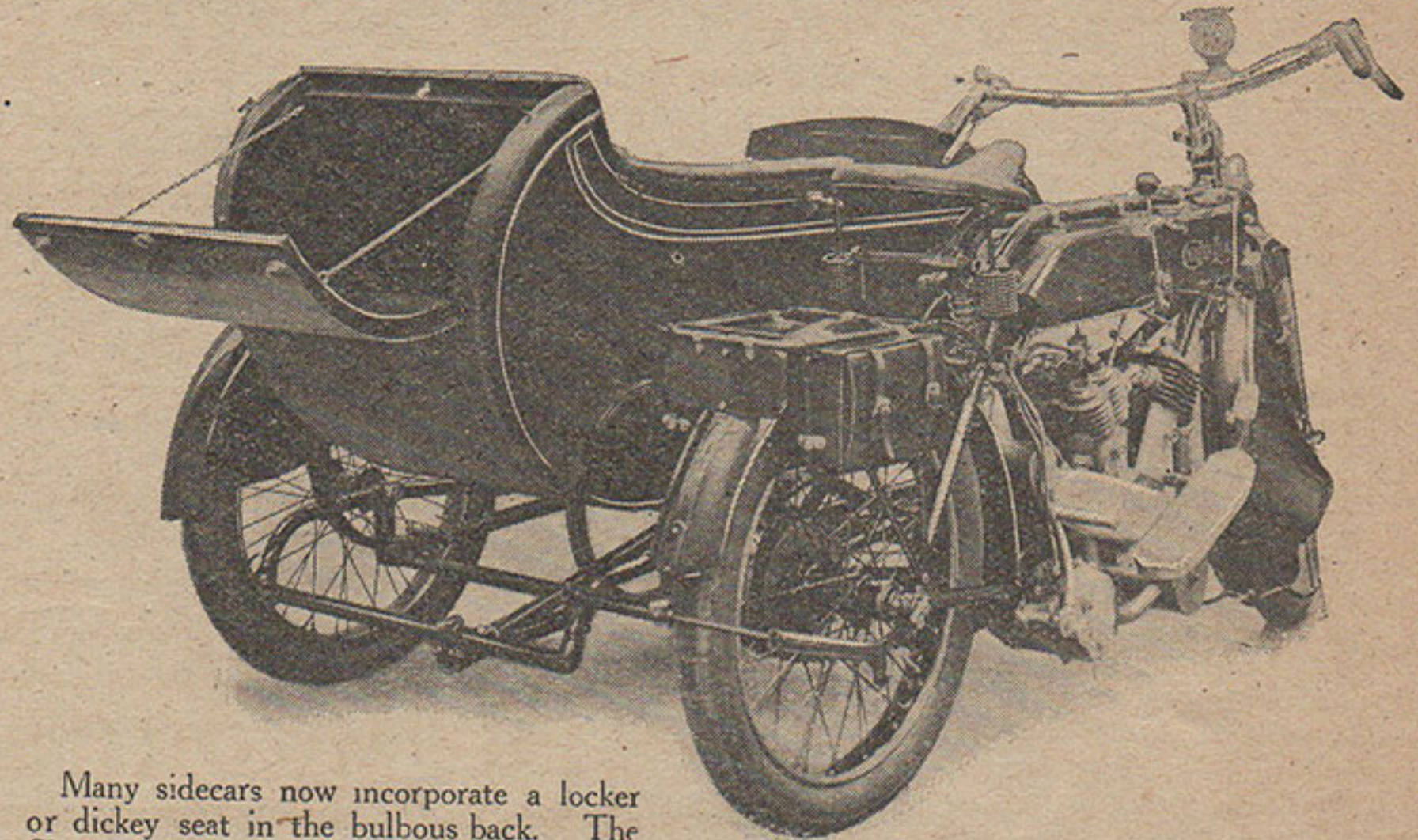
although the enclosed, glass-sided body appeals to him as a commercially valuable innovation for sidecar work, he would be most distinctly affected by the contrast of his position with that of the passenger if he chanced to be driving such an outfit regularly in Manchester or any of those places on which popular repute bestows a ceaseless downpour.

In conclusion, even this very cursory glance over the catalogues is sufficient to give one food for reflection on the

advanced state of sidecar design to which our manufacturers have attained in the comparatively short period since the exit of the once-popular basket body.

Actually the sidecar has not yet been chosen, because it has been decided that the most important point is the colour, and a more influential personage has informed the writer that it must be selected next spring in accordance with the prevailing fashion in complexions at that date.

WHARFEDALE.



Many sidecars now incorporate a locker or dickey seat in the bulbous back. The Chater-Lea is a typical example.

**A PICNIC SIDECAR.**

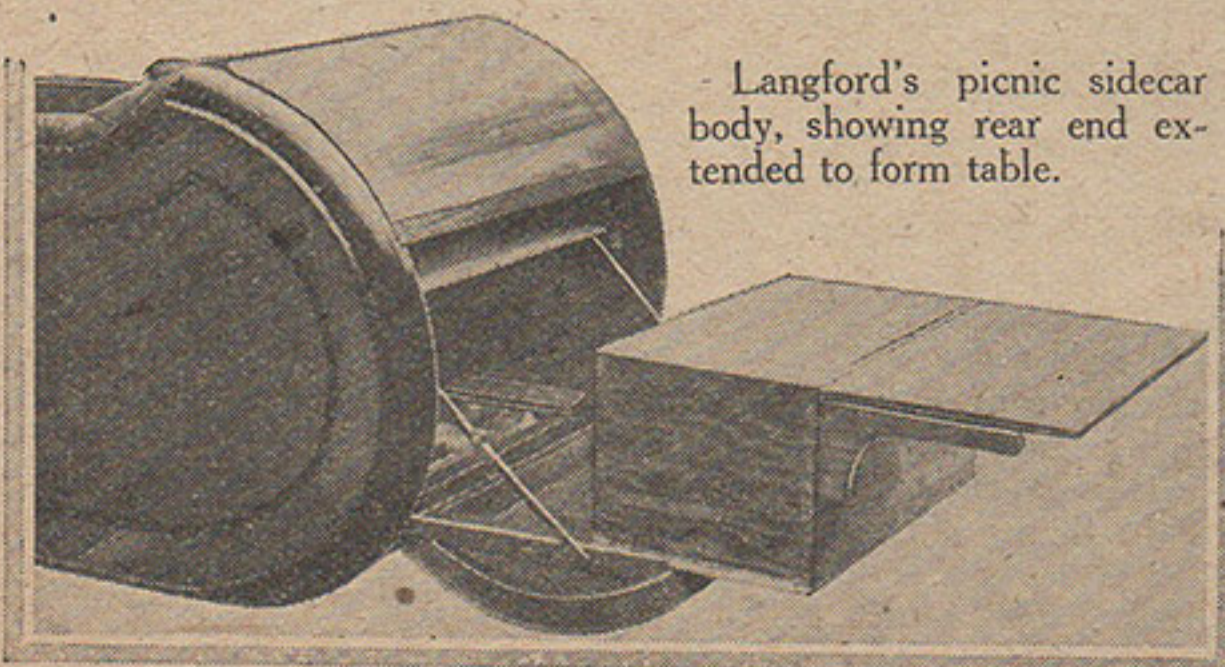
WE have often urged sidecar manufacturers to consider the demand which undoubtedly exists for a sidecar embodying equipment for the large number of motor cyclists, who during the summer months make a practice of taking their meals in the open. On the score of economy alone, the picnic has much to commend it, but apart from this question the majority of motor cyclists' wives prefer to cater for themselves, when they are sure of obtaining meals exactly to their liking at no greater expense than if they stayed at home.

So far, however, accommodation for the picnic equipment has been a matter for the sidecar owner to arrange as best he could, and especially where a sprung grid is not fitted it has not been easy. As we have frequently pointed out, it is a problem for designers of sidecars to solve, and in this connection the Langford Sidecar Body and Chassis Co., London Road, Norbury, appear to have been singularly successful.

To provide a comfortable sidecar capable of carrying fuel, oil, and spares for long-distance touring, and suitable equipment for a picnic, a most ingenious and compact arrangement has been constructed within the rear of the body of the new sidecar offered by this firm. Two doors are provided, the lower one of which, when opened, is held in a horizontal position by means of two hinged brackets. On the inside of the door is a complete luncheon box equipped for two persons. Two wooden brackets are hinged to the side of the box, which enables a false top to be opened to form a large table. The complete box may, if desired, be slid out on the rails fixed to the door. Also housed in the lower compartment are two collapsible seats. The upper locker is constructed to accommodate a two-gallon tin of petrol and a quart tin of oil, and should the sidecar be required for utility purposes, the luncheon box may be substituted by the passenger's luggage.

A very neat appearance has been obtained, the rear of the car possessing a gracefully curved line. A small tray is also provided in the nose of the body for the accommodation of papers or maps.

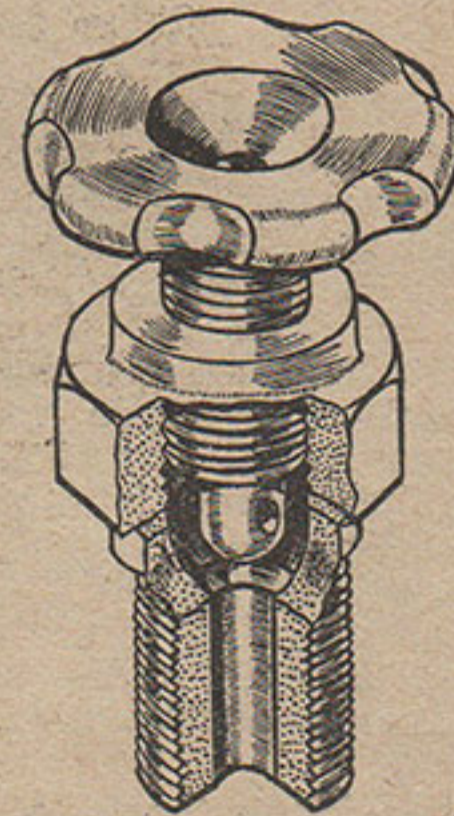
The price of this sidecar when fitted with a special chassis, which is provided with coil spring shock absorbers, will be approximately £38.



Langford's picnic sidecar body, showing rear end extended to form table.

**A LEVERLESS COMPRESSION TAP.**

A LEVERLESS compression tap of a simple design has recently been placed on the market by Messrs. Leo Ripault and Co., King's Road, St. Pancras, London, N.W.1. Two components only are used in its construction, one being the brass body provided with an hexagonal nut on the outside, the lower portion of which is threaded in order that it may be screwed into the cylinder. The other component consists of a brass screw provided with a circular adjusting head, serrated about its circumference for ease of turning, in the centre of which



The Ripault compression tap.

is a large priming cup. A hole is drilled through the centre of the screw to allow the petrol to flow from the priming cup through a hole in the tapered valve (located beneath the screw) to the engine. When the tap is in the closed position, the tapered valve is screwed on to the tapered seating inside the body in such a way that no leaks may occur. This tap can be easily and readily detached for cleaning purposes.

## OUR AMERICAN NEWS LETTER.

### Some Notes of Sporting Events in the United States.

**A**T the Passaic (N.J.) M.C.C.'s recent hill-climbing contest at Pompton Plains, the principal interest centred about the first competition between the Indian Scout and the Harley-Davidson sports model. The Harley-Davidson mediumweight, handled by a seventeen-years-old rider, who was compelled to carry a 25 lb. sack of sand to meet the minimum weight set by the M. and A.T.A., won with a climb of 703 feet. The Indian Scout went over the hill three times in practice, but in the hands of a novice rider, unfamiliar with both mount and hill, fumbled a good climb twice running near 550 feet up. The Scout has plenty of reserve power for gruelling work in heavy sand. The hill is 800 feet long, with a gradient of 1 in 3.

For the first time in three contests the hill has been topped by sidecar outfits, both times by Indian riders. This event was watched with interest, because new rules of the M. and A.T.A. were being tried out. Formerly a sidecar passenger in hill-climbs was permitted to ride on the rear mudguard of the machine. No more, however, for the new regulation calls for the passenger to keep in the car, from the hips down. The terrific drag of the sidecar wheel was overcome by the driver throwing his weight as far to the left (we use right-hand sidecars) as possible. This method held the two successful drivers to a straight course.

#### A Craze for Freak Hill-climbing.

With the running of the Passaic Club's climb, the "season" rounds out with no fewer than six big hill-climbs being promoted within a radius of one hundred miles of New York City. The craze for grade-conquering stunts does not abate, for everyone is talking of the 1920 climbs he will organise. Trouble is, we shall run out of hills if this activity keeps up. In fact, one ambitious set of promoters, keen for a real hill-climb, are planning to hold a contest up Mount Washington, in New Hampshire. This mountain is a part of the White Mountains of that State, and is a pimple of considerable size. Eight miles is the length of the waggon road, and the top is 6,254 feet into the sky. This hill was the scene of a famed climb in 1905. An Indian rider made the eight miles in 20m. 59 $\frac{1}{2}$ s., or  $\frac{1}{3}$ s. slower than the fastest automobile time.

#### High Speeds.

Since the F.A.M. passed out and the Motorcycle and Allied Trades Association Competition Committee assumed control of motor cycle competition, there has occurred a wonderful revival of interest in contests of all sorts. Shortened to M. and A.T.A., or "Mattie," the controlling body put over four championship race meets in various parts of the United States, at all of which amazingly fast times were clocked by the timers. Foolishly or otherwise, "Mattie" officials did not attempt to affiliate with the Fédération Internationale des Clubs Motorcyclists, which deprives the Indian and Harley-Davidson machines of official world's records at various distances. At Sheepshead Bay, on October 11th, 1919, two miles were ridden at an average a shade under ninety-seven miles per hour; and

at the same meet another mark was set for fifty miles at an average of 91 m.p.h. At the next meeting of the F.I.C.M., American representatives from the M. and A.T.A. will be in attendance, and this oversight will be rectified.

Although road record riding has been brought to a standstill in most parts of the States, on account of winter weather, Southern California continues to be the scene of some fast riding. Roy Artley, riding a 1920 Indian, motor bolted in a rigid frame, shattered the San Francisco-Los Angeles mark by rolling the 465 miles in 9h. 25m., on October 31st, 1919. This clips his Henderson record by 39m., and breaks the Cadillac automobile time by 12m. Artley averaged close to 50 m.p.h. for the journey. One stretch—the 221 miles between Frisco and Fresno—was ridden in 3h. 54m., which, figured out, creeps up to 56 m.p.h. for four hours—almost unbelievable.

#### An Unsuccessful Transcontinental Trip.

E. G. Baker—he of the numerous road record stunts—received his fourth setback on a Transcontinental attempt. Baker, driving an Indian sidecar outfit, left New York City on a schedule that called for his appearance in Los Angeles, Cal., 3,327 miles away, just seven days and five hours later. He established a sidecar mark of 27h. 5m. for 802 miles when he pulled into Indianapolis for his first rest. West of that point, he encountered rains in country that has clay main roads. After many discouraging delays caused by miring into the mud deeply, Baker was forced to abandon his trial somewhere west of Kansas City, Kansas, or about half-way across.

#### American View of the Six Days.

At a time when we were turning to the A.C.U. Six Days Trial as a solution to our machine-wrecking endurance runs, that do not decide a one-man winner, along comes news of a lot of dissatisfaction over the results of that same contest. From a seat 3,000 miles away, the affair looked like an illustration of that old saw, "Too many cooks spoil the broth." Inspections of motor cycles before and after a contest are fine ideas; but this one about silence, that lost the Harley-Davidson and Indian seven points or so, how was that arrived at? We always prided ourselves that, muffled down, both of those makes were rather quiet running.

E. B. HOLTON.

There have been many efforts on the part of Australian motor cyclists to establish a record for the Inter-state route between Adelaide and Melbourne, and the Dunlop Rubber Co. has offered a trophy for the first rider to complete the journey in twenty-four hours. A South Australian rider, Mr. E. C. Wagener, recently made a plucky attempt to win this cup on a Harley-Davidson, and succeeded in covering the 589 $\frac{1}{2}$  miles in 24h. 22m. The ride was checked by the officials of the motor cycle clubs of South Australia and Victoria, and, recognising the merit of the ride, the Dunlop Co. awarded him a special trophy.



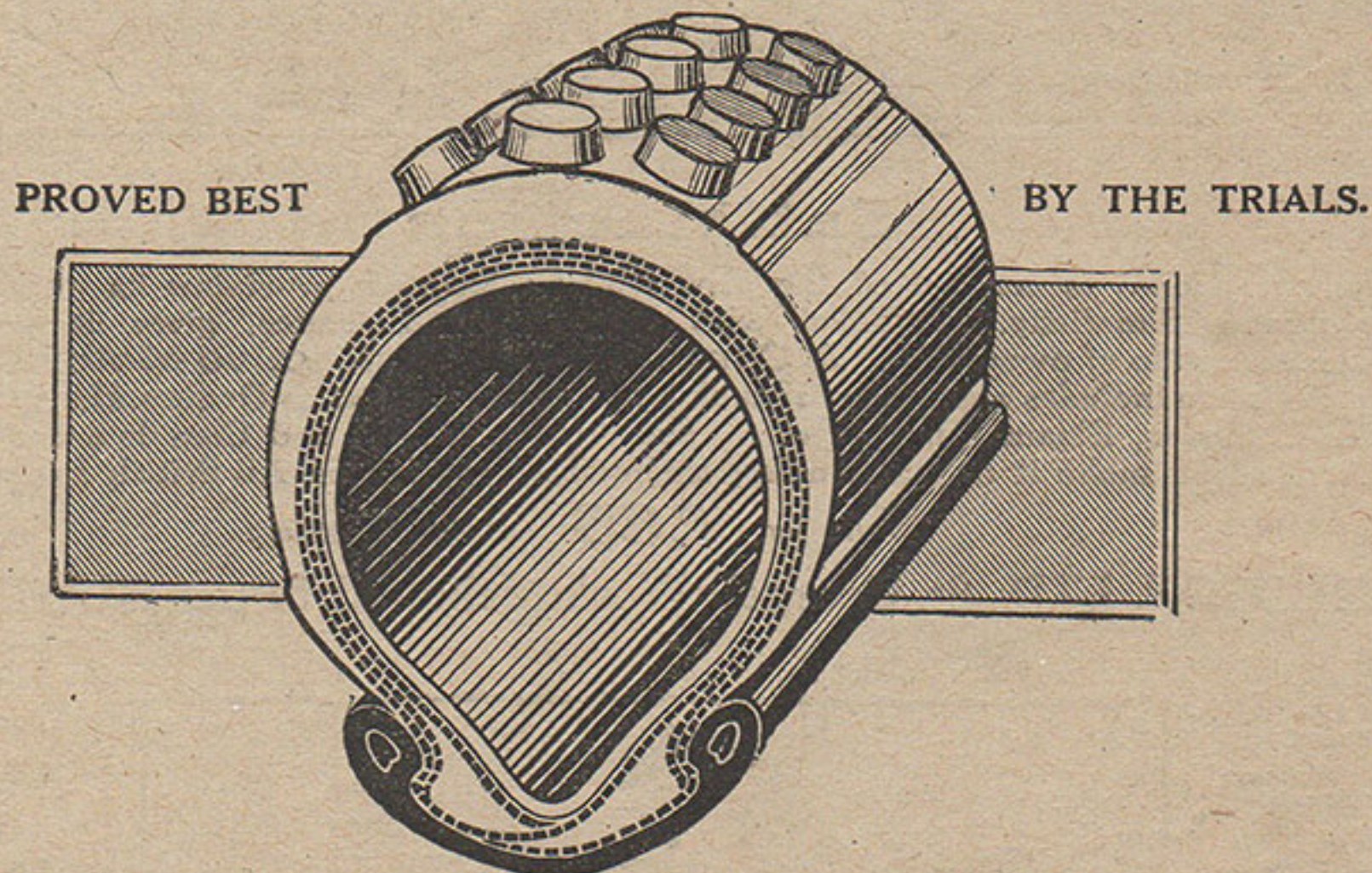
The Indian Scout and Harley-Davidson flat twin in a climbing contest at Passaic, N.J.

# HUTCHINSON

## London-Exeter Trial

THERE was the usual immunity from tyre trouble on the part of those riders who were sufficiently discriminating to use Hutchinsons.

It has always been so—since the beginning—and it is all done on stock tyres—the same as you can buy.



THE TYRE WITH  
NINE LIVES

HUTCHINSON TYRES,  
70, Basinghall St., London,  
E.C.2.

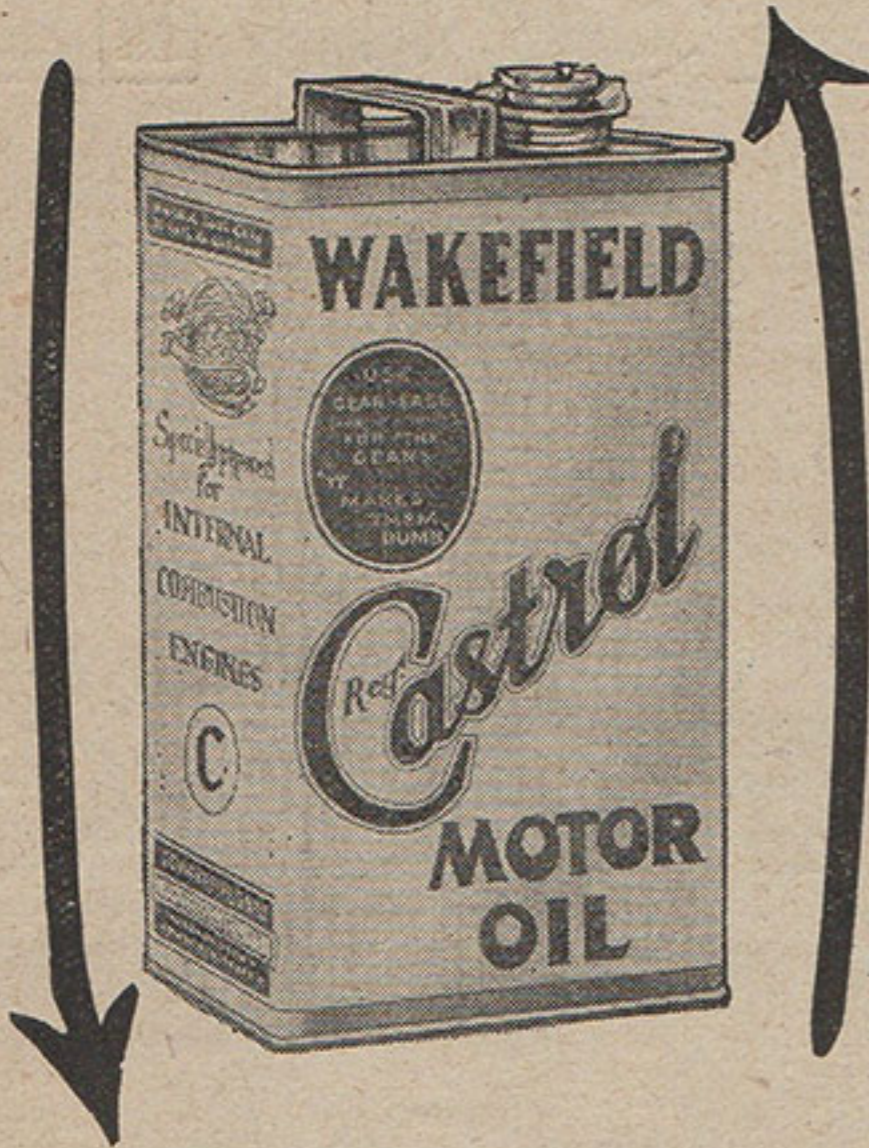
Established 1850.



THE TYRE WITH  
NINE LIVES

*In answering this advertisement it is desirable to mention "The Motor Cycle."*

LONDON



EXETER

40 GOLD MEDALS

OUT OF A TOTAL OF 53

17 SILVER MEDALS

OUT OF A TOTAL OF 26

WON ON

WAKEFIELD

**Castrol** Regd.  
MOTOR OIL

C. C. WAKEFIELD & Co., Ltd.

WAKEFIELD HOUSE, CHEAPSIDE, LONDON, E.C.2.

# NEW HUDSON

Powerful 2-stroke Lightweight

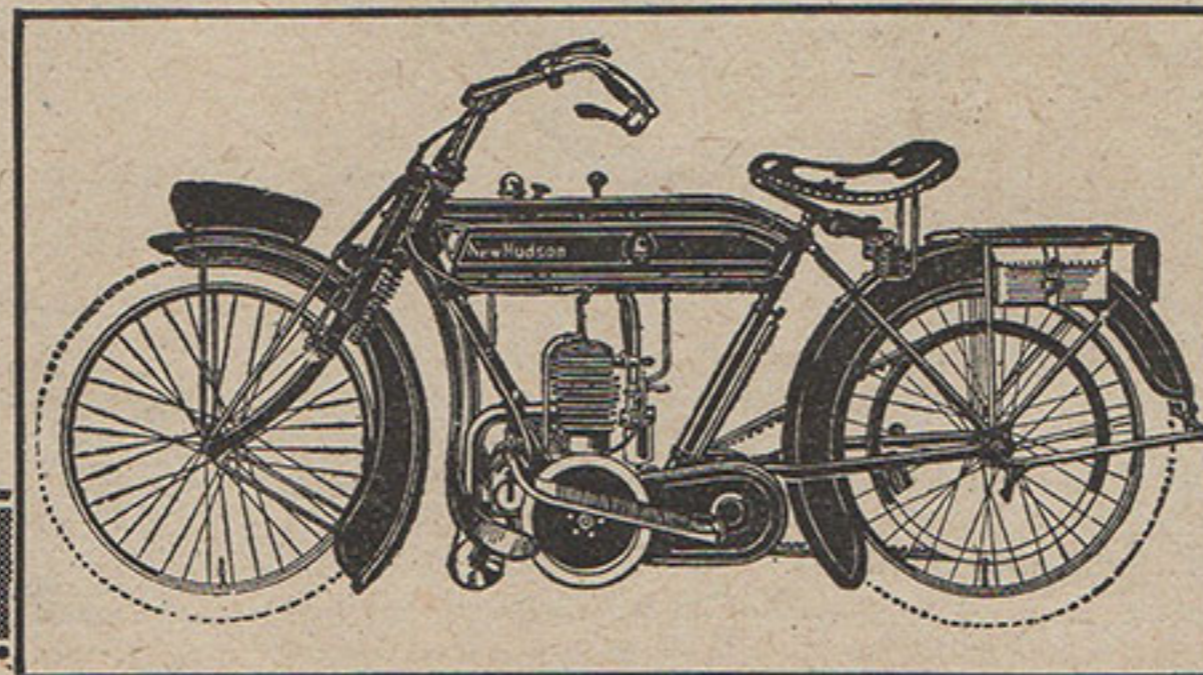
## Satisfaction

The exceptional refinement of the New Hudson instantly proclaims its good taste. Its utmost Simplicity, combined with Power and Elegance, gives it pride of place and pride of ownership. **A Complete and Distinctive Motor Cycle.** Specification includes equipment of such high-grade products as Dunlop, Hans Renold, C.A.V., Lodge, Blumel, Lycett, etc. The Ability, Utility, and Completeness of the New Hudson make it an outstanding example of specialized All-British Production.

Write for **£65** illustrated catalogue.

NEW HUDSON, LTD., St. George's Works, Icknield Street, BIRMINGHAM.

**LONDON.**  
Cuppen Allan & Co., Gt. Portland Street  
A. T. Paskell, Finsbury Pavement & Branches.  
**SCOTLAND.**  
North British Machine Co., Ltd., Gt. Clyde St., GLASGOW.  
**IRELAND.**  
Harry B. Huet & Co., O'Connell St., WATERFORD.

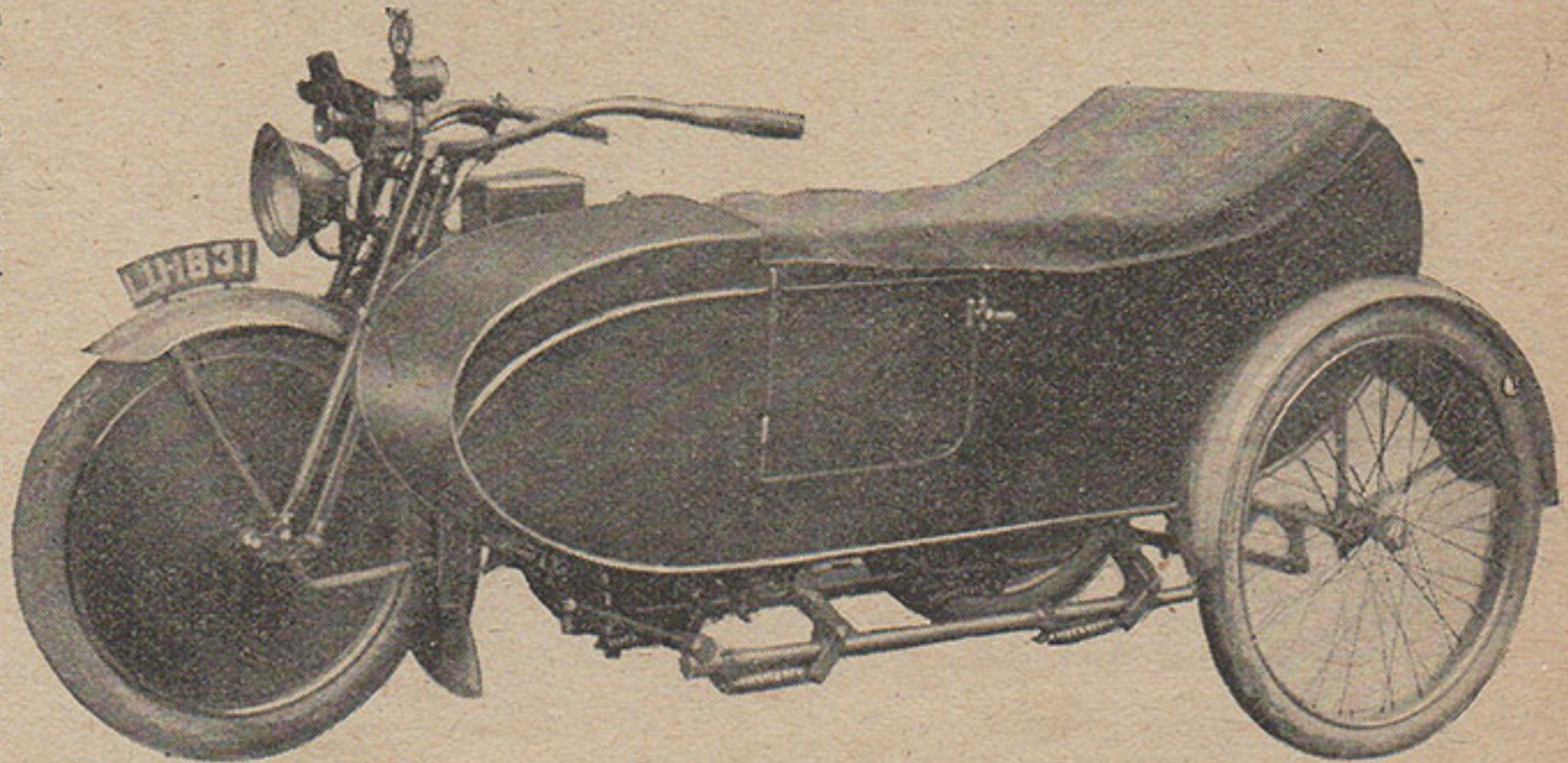


**FRANCE.**  
Emille Bigeard, 9. Place Cormeille, LEVALLOIS-PERRET (Seine).  
**HOLLAND.**  
J. Witmond, Prinsengracht, 291, AMSTERDAM.  
**DENMARK.**  
Skandinavisk Motor Co. COPENHAGEN.  
Also throughout the World, including all British Colonies, per the Company's Concessionaires.

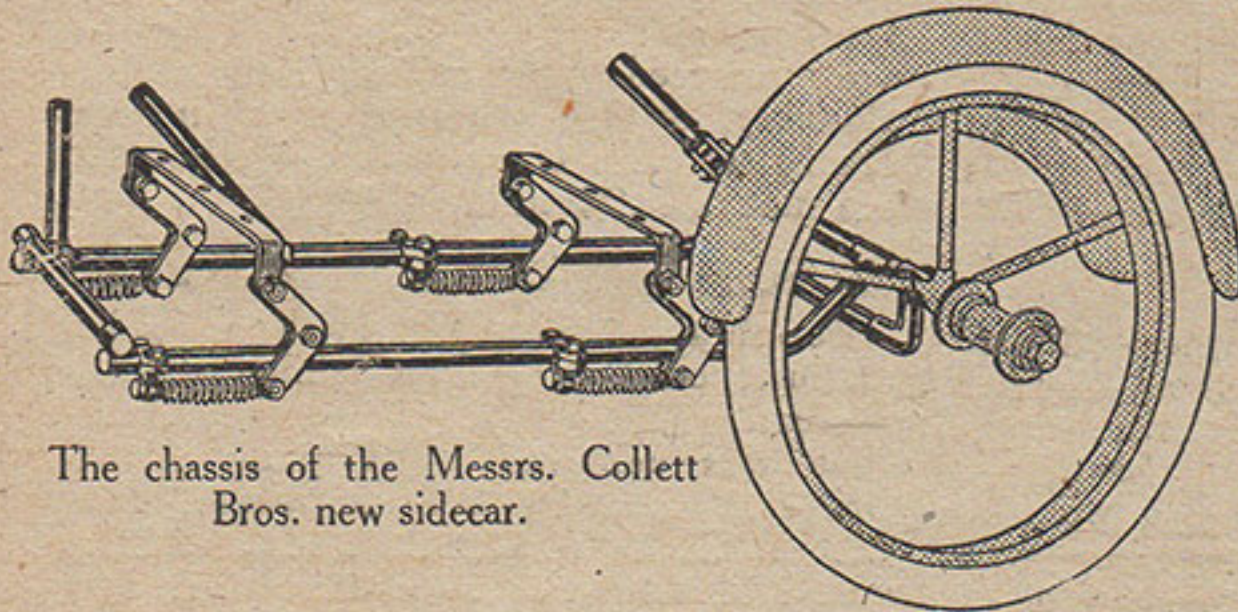
## SIDECAR SUSPENSION BY COIL SPRINGS.

**O**WING to the length of the average C spring used on the modern sidecar, there is always a tendency for the body to bounce when the machine is driven *sans* passenger. With the idea of eliminating this, and also to provide a suspension system which will prevent side sway and canting, Messrs. Collett Bros., of 1, Railway Buildings, South Norwood, have introduced a new sidecar embodying bell cranks and coil springs in tension.

It will be seen from the illustrations that double crank levers are pivoted on the longitudinal members of the chassis, and carry on their upper arms the transverse plates which support the body. The lower arm of each pair of cranks is connected to one end of a coil spring which is fixed to the chassis. By this system the body occupies a position relative to the chassis approximately the same as those which are fitted with C



The suspension of the sidecar is by bell cranks and coil springs instead of ordinary leaf springs.

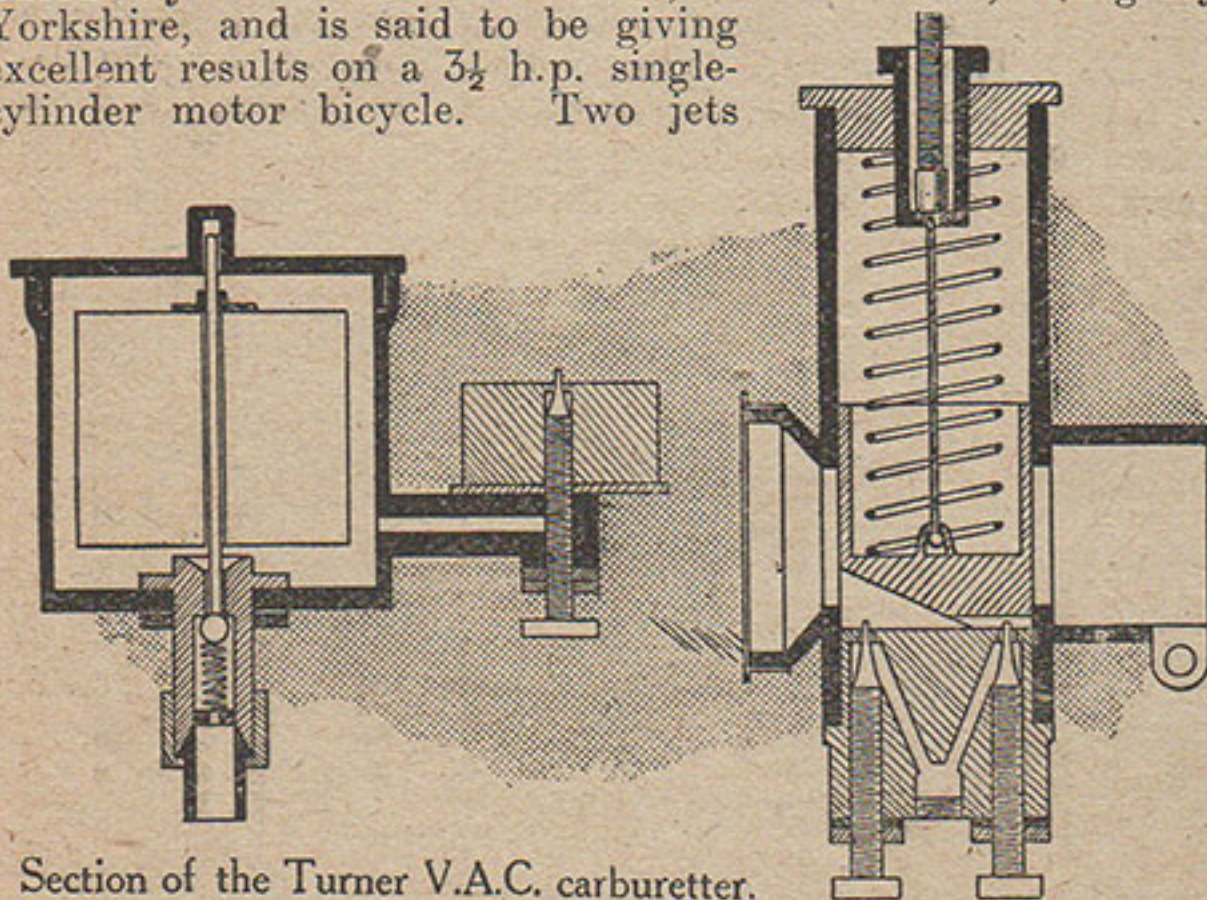


The chassis of the Messrs. Collett Bros. new sidecar.

springs, and the direction and amount of movement are also similar. The design certainly has a clean appearance, and, provided that the bearings supporting the shafts of the bell cranks are of good size, are a good fit, and are kept lubricated, there is no reason why it should not be a great success. Some of the most comfortable sidecars we have used have been fitted with coil springs in tension, and there is a marked tendency at the present time for car designers to consider the many advantages obtaining with this type of spring for suspension purposes. With the Collett system it should be quite possible to include a means of adjusting the spring tension. Owing to the light weight of a sidecar, it is exceedingly difficult to provide springing ideal for both light and heavyweight passengers.

## A SIMPLE AUTOMATIC CARBURETTER.

**T**HE demand for carburetters operated by one lever only is steadily growing, and designs for this type are flowing in in large numbers. A very simple instrument, which depends for its automaticity on the shape of the throttle barrel and the size of its jets, has been produced by Mr. E. R. Turner, of Kildwick, Keighley, Yorkshire, and is said to be giving excellent results on a 3½ h.p. single-cylinder motor bicycle. Two jets



Section of the Turner V.A.C. carburetter.

are mounted in an extension of the float chamber, each being adjustable by means of a screwed taper needle. The jet nearest the engine acts as a pilot jet, and lies in a groove in the throttle barrel, thus the incoming air is concentrated round the jet orifice. Delivery from the main jet is delayed until the throttle is about one-third open.

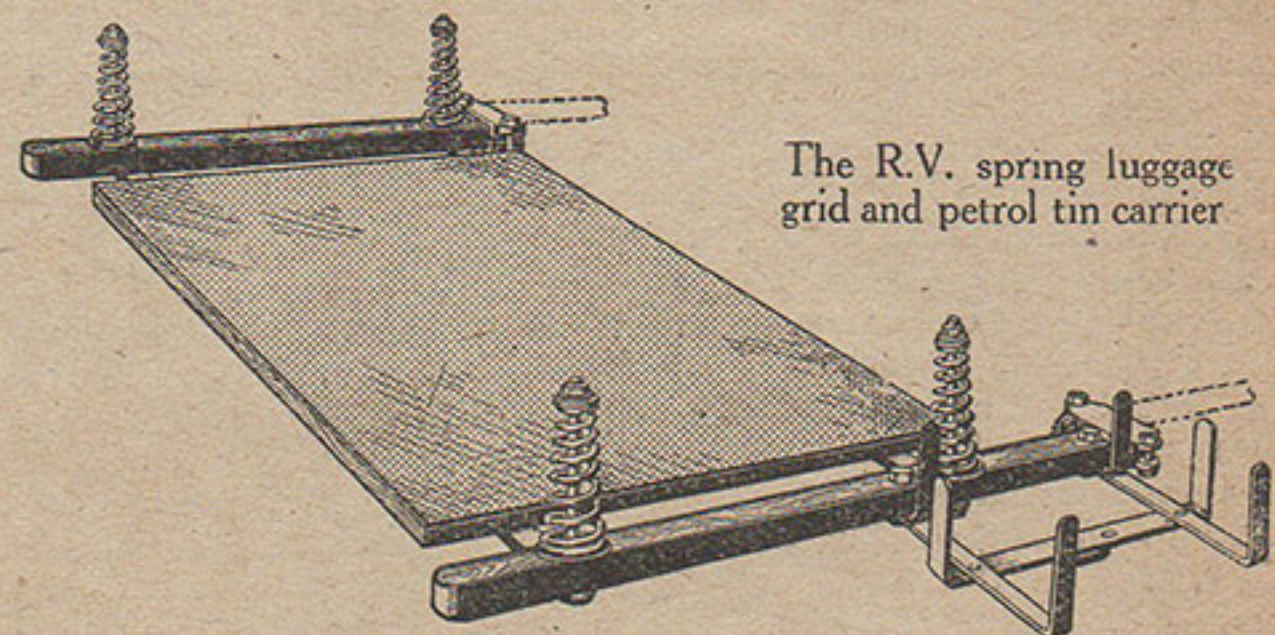
A curious feature is introduced in the float chamber, for the petrol orifice is normally closed by a spring-loaded ball, which is opened by the weight of the float and needle when the fuel in the float chamber sinks below the required level.

## A SPRUNG SIDECAR LUGGAGE CARRIER.

**L**UGGAGE platforms rigidly attached to unsprung sidecar chassis have almost disappeared from present-day sidecar designs. Current practice insists on the grid being spring supported, and this is done either by mounting the carrier on the body, where it has the benefit of the latter's springing, or else a separate spring arrangement is used.

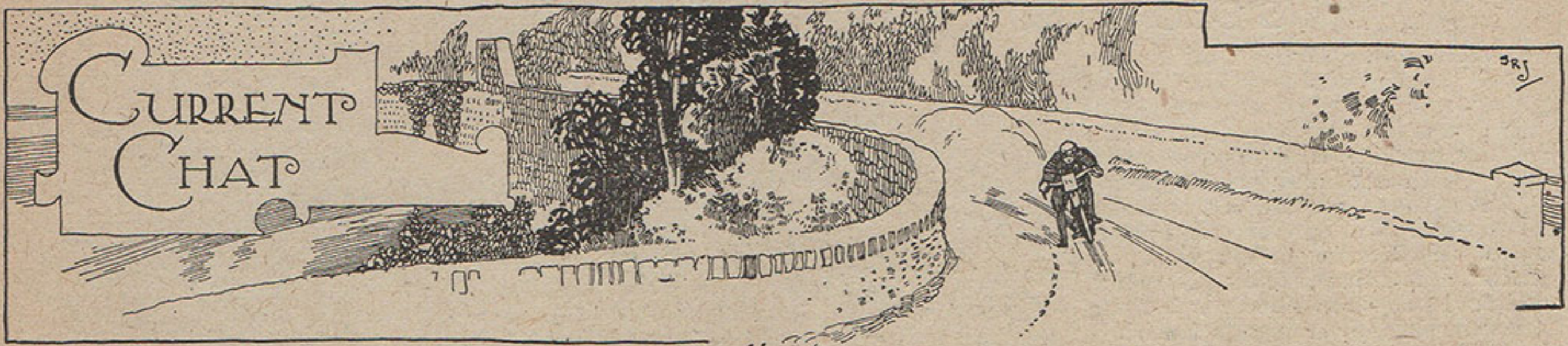
On a rigid grid it is not only difficult to fix a luggage case to prevent it chafing the sidecar body, but the contents are sometimes damaged by vibration.

A device readily adapted to standard sidecar chassis that brings the specification into conformity with modern ideas as regards the carrying of personal effects is manufactured by the R.V. Sidecar Co., of 92, Humber Avenue, Coventry. The platform, which is of enamelled wood, is



The R.V. spring luggage grid and petrol tin carrier.

carried on four springs, supported in turn on two arms clamped to the main chassis tubes. Lightness of the whole construction is obtained by making these arms of ash, and they are stiffened by entirely surrounding them with steel fitch plates. A petrol can carrier is also fitted, and various modifications to suit different makers' chassis are undertaken.



### Times to Light Lamps.

GREENWICH TIME.			
Jan. 15th	...	...	4.47 p.m.
" 17th	...	...	4.50 "
" 19th	...	...	4.53 "
" 21st	...	...	4.54 "

### Police Trap.

We have received indications on several occasions recently of considerable activity on the part of the Metropolitan police. There is a trap working between the Wheatsheaf, Banstead, and Banstead Downs.

### Cubical Capacity Table.

A useful table, giving the cubical capacity of cylinders having bores from 50 to 90 mm. and strokes from 50 to 100 mm., is available from the offices of *The Motor Cycle*. The price is 1s. post free.

### Three-cylinder Radial Engines.

We are advised that the three-cylinder radial engine fitted in the Beaumont motor cycle, which was described on page 46 of last week's issue of *The Motor Cycle*, is manufactured by a separate concern, and will be known as the R'drup.

### An Anglo-American Alliance.

We are able to announce that Miss Marjorie Bridgeman, the daughter of Mr. E. A. Bridgeman, the well-known Indian expert, was married to Mr. Russell Reed Coes on the 3rd inst. Mr. Russell Coes, like his father-in-law, is a skilful rider, and took part in the London-Exeter run, gaining a gold medal on an Indian Scout motor cycle. He is an American subject, and has been over in this country for a holiday.

### New Motor Fuel.

Reuter reports that successful tests of a motor fuel declared to be more economical than petrol were announced recently in New York by Mr. Otto Praeger, Second Assistant Postmaster-General, in charge of the air mail service. The fuel consists of 38 parts alcohol, 30 petrol, 19 benzole, 7.5 ether, and 4 toluol. The ingredients making up the remaining 1½ parts were not given. It is stated that a saving of 3.9 gallons an hour in favour of the synthetic fuel was indicated in the test, for which two aeroplanes of identical design were used—one consuming petrol alone. While extremely interesting as showing efforts to develop what is termed a synthetic fuel, it must not be overlooked that the B.T.U. in such a mixture do not equal petrol. In view of the ingredients the term synthetic is perhaps hardly applicable.

### Paris-Rouen Trial.

In view of the large number of competitions announced for this year, the Touring Moto Club of France will only organise one trial, namely, Paris-Rouen, which will take place on June 20th.

### Air-cooling.

An interesting article on the future of air-cooling appeared in last week's issue of our sister journal *The Autocar*, in which the author states his conviction that in a very few years the air-cooled engine will become the standard motive power for touring vehicles. Most types of air-cooled engines are discussed.

### A Story with a Moral.

At the London Bankruptcy Court, last week, a schoolmaster, who had filed his petition, stated that his failure was due to a motor cycle accident. Last July he knocked down and injured a woman, who, in an action against him, was awarded £300 and costs. In spite of previous warnings of a like nature, one frequently hears of motor cyclists who prefer to take third party risks themselves rather than pay for insurance.

### French Scooter Trial.

The organisers of the French Scooter Trial, to be held on April 18th, have discovered that the maximum weight fixed by the Auto Cycle Union, and which they had adopted, will not allow many French manufacturers to take part; they have, therefore, increased the weight from 66 lb. to 88 lb. The height of the platform from the ground, also an A.C.U. regulation, is not sufficient for French roads, so the

### Special Features.

STAINLESS STEEL FOR MOTOR CYCLES.  
AIR COOLING UP TO DATE.  
CHOOSING A TOURING SIDECAR

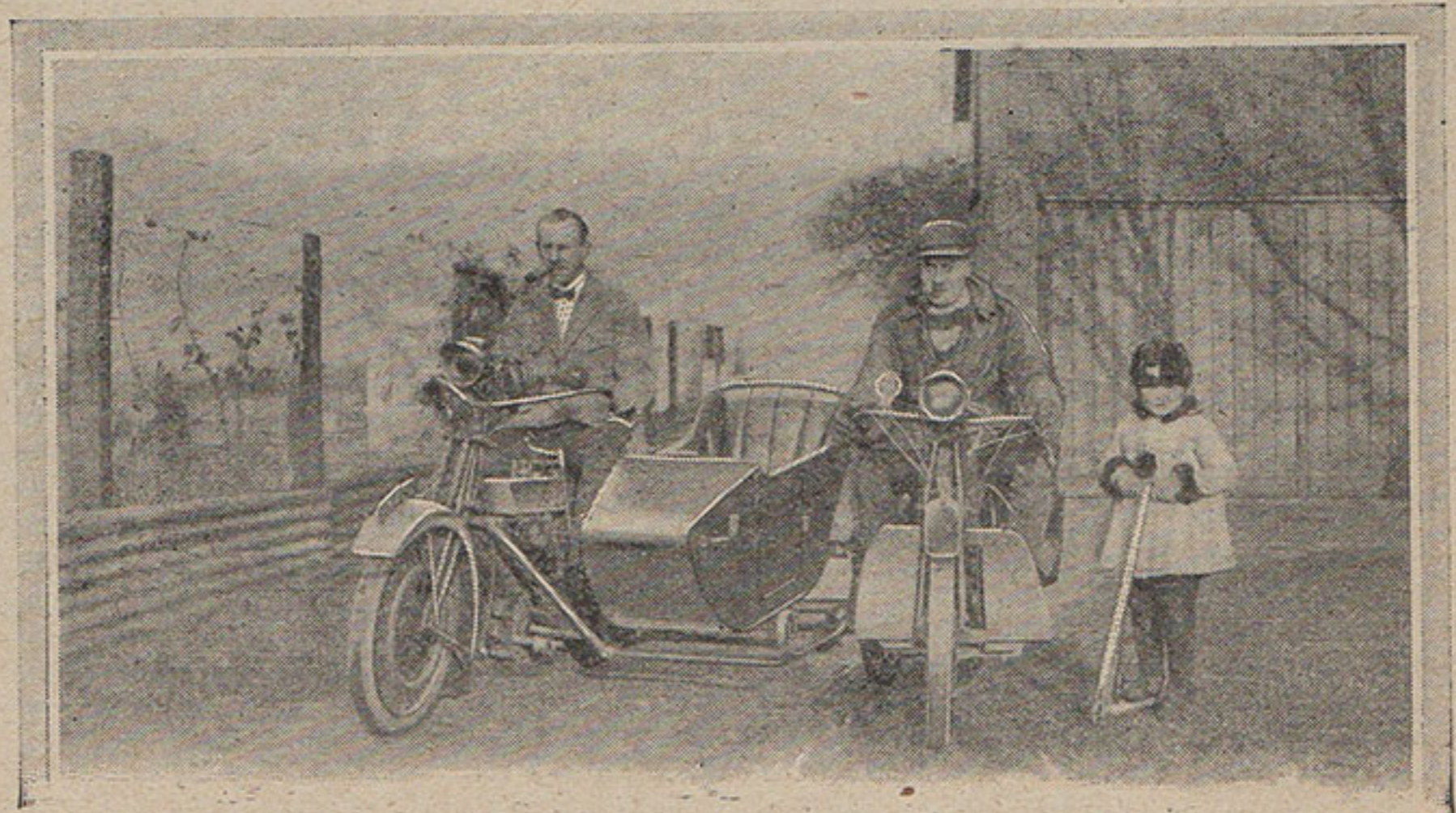
organisers have increased the platform height to eight inches. In making the announcement with regard to the alteration in platform height, English roads are referred to as 'billiard tables'. Possibly, on the whole, our main roads are better than those of France, but they are not all "billiard tables."

### 123 m.p.g. with 3½ h.p. Motor Cycle.

To obtain 123 m.p.g. with a 3½ h.p. motor cycle during a reliability trial in Wales is indeed a good performance. This was achieved by Captain A. W. Brittain on a 3½ h.p. Sunbeam, fitted with a Binks carburetter, in the Liverpool M.C. Trial, last October. The average consumption of the six Sunbeam riders competing was 101 m.p.g.

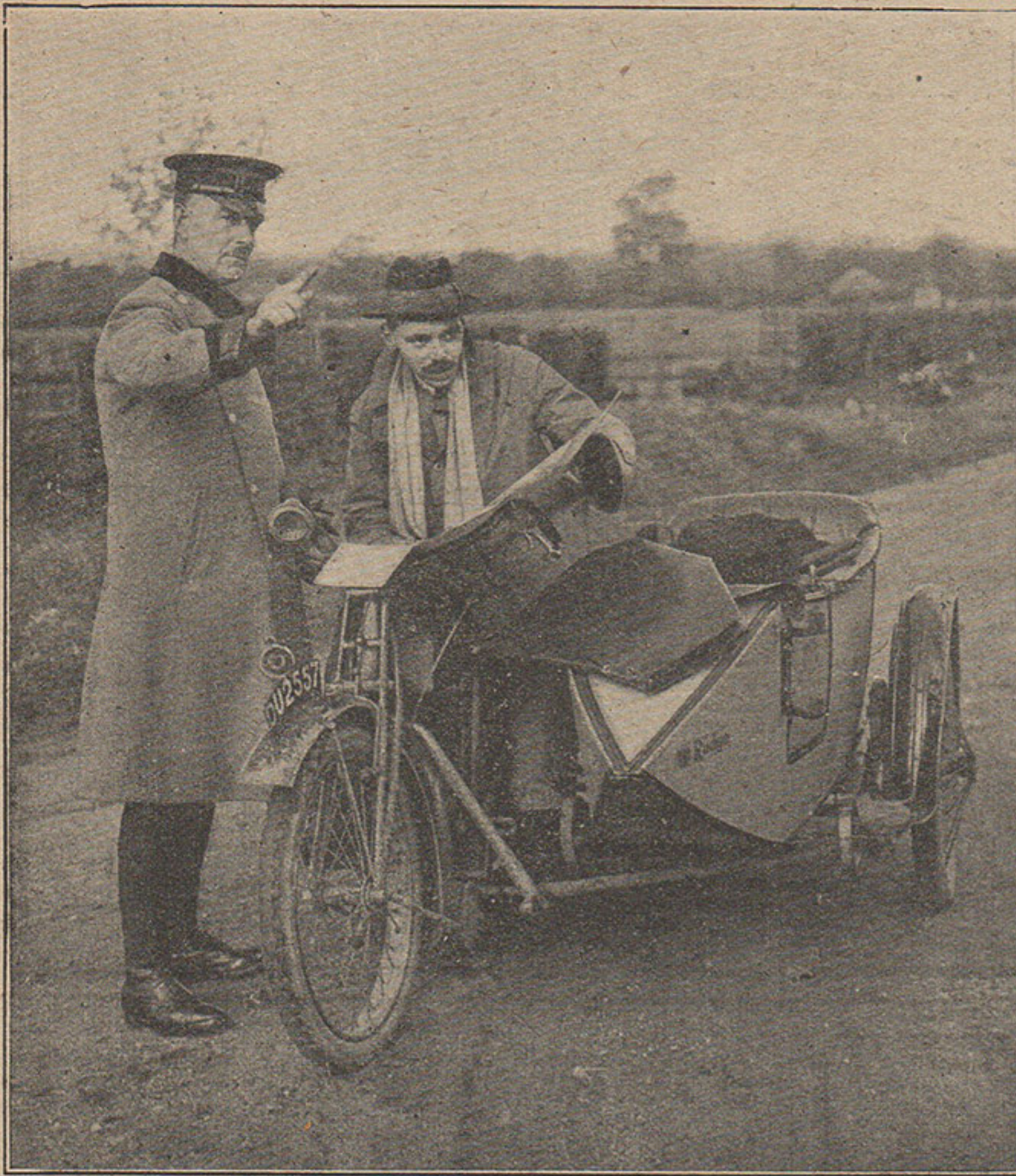
### Old-fashioned Road-making Methods.

The Fosseway, so far as the Leicestershire section is concerned, is a notorious stretch of road, which for some years has been neglected and is full of potholes. In an attempt to put matters right, the holes have been filled up with loose stones for a considerable distance after passing the Syston lane-end, and considerable damage to tyres is now the result. The Nottinghamshire section remains in excellent condition, and a splendid object lesson to the road surveyors of the neighbouring county.



THREE STAGES IN THE WORLD OF WHEELS.

A 6 h.p., a 2½ h.p., and a one foot power mount starting out for a run in Kent!



**10/-**  
ANNUAL  
SUBSCRIPTION  
TO THE  
**A.C.U.**

brings you the  
following **FREE**  
Benefits :

**Free "Get-You-Home" Scheme**, whereby in case of accident or breakdown on the road practical assistance is afforded you.

**Free Legal Advice and Defence** on all technical motor cycling matters.

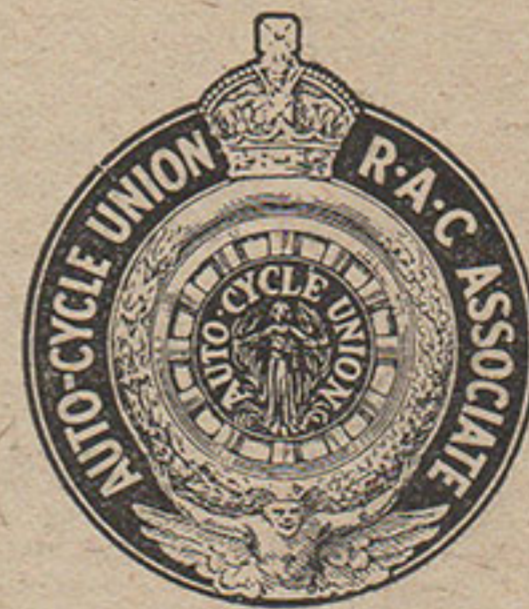
**Free Assistance** of the R.A.C. Road Guides.

**Free Use** of a Reading Room at the R.A.C. Headquarters.

**Free Assistance** in Touring and Foreign Travel.

**Special Insurance Facilities**, etc., etc.

**A**SSISTANCE on the road is a valued provision of A.C.U. membership. At some time or other every motor cyclist needs to be helped on his way—either in overcoming a breakdown, in the form of route direction, or in some kind of personal service. The whole body of R.A.C. Road Guides are at the service of A.C.U. members, and they are trained and equipped to render assistance in many tangible forms. Display on your machine "The Badge that Brings you the Freedom of the Road," and you will find a friend and counsellor in the R.A.C. Road Guide everywhere. The Badge also entitles you to the advantages of the "Get-You-Home" Scheme, an organisation at all times ready to give you practical assistance in the event of accident or breakdown on the road.



**Information Coupon**

The Secretary,  
AUTO-CYCLE UNION  
83, PALL MALL,  
LONDON, S.W.1

Please send me further particulars regarding the advantages of becoming a member of the A.C.U. together with Application Form for membership

Name .....

Address .....

"The Motor Cycle." 15/1/20

In answering this advertisement it is desirable to mention "The Motor Cycle."

# Sunbeam Motor Cycles with Perfect Power Transmission

## WIN TWO CUPS IN ONE TRIAL.

Liverpool Motor Club .. .. Reliance Cup Results.

3½ H.P. SUNBEAM - E. L. BOSTON - Reliance Open Cup Challenge.  
3½ H.P. SUNBEAM - J. A. NEWMAN - Reliance Amateur Challenge Cup.

The "Daily Mail" says:—

"The outstanding performance was the excellent consumption shown by all riders of 3½ h.p. Sunbeam machines. Six of those who finished showed an average of 101 miles per gallon."

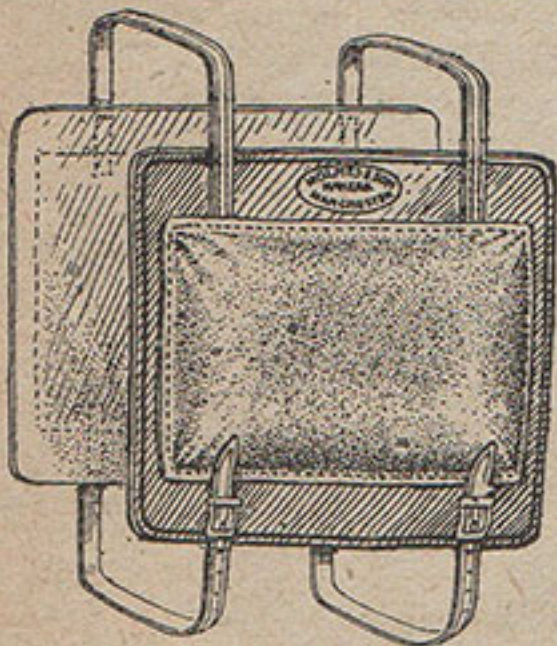
The Judges' Report states:—

"The best performance IN ANY CLASS was that of Capt. W. Brittain 3½ h.p. Sunbeam, 123 miles per gallon."

FOR SPEED, RELIABILITY, AND ECONOMY,  
YOU CANNOT BEAT THE SUNBEAM.

JOHN MARSTON, LIMITED, 11, SUNBEAMLAND, WOLVERHAMPTON.

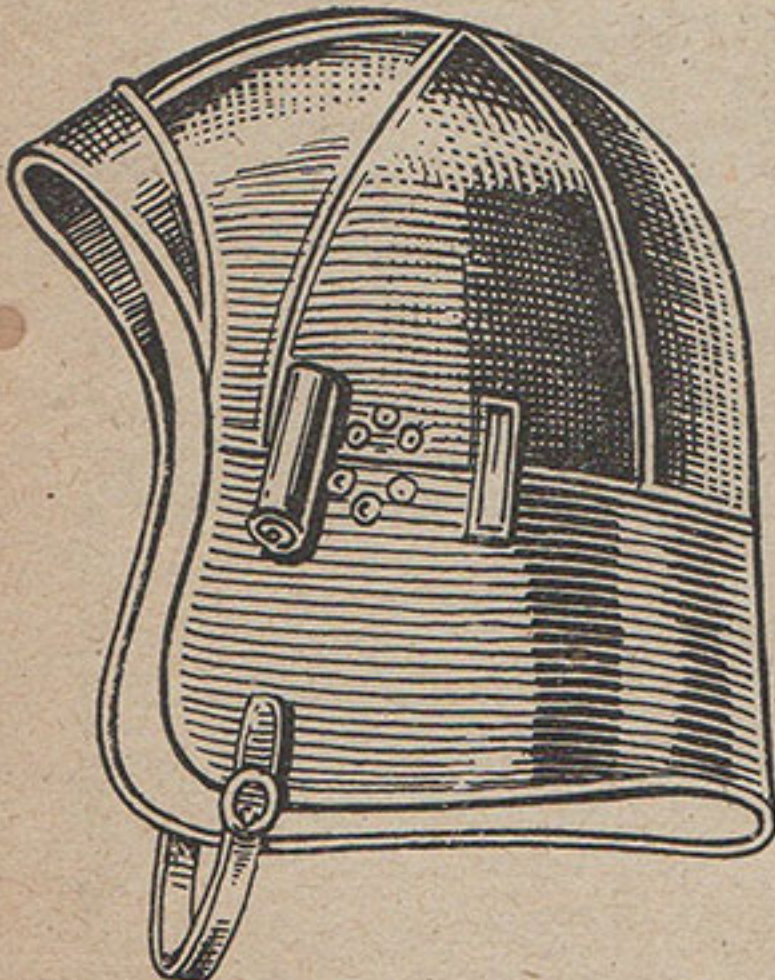
London Showrooms: 57, Holborn Viaduct, E.C.1. 157, Sloane Street, S.W.1.



Telegrams: Semloh.  
Telephone: City 4432.

### MOTOR HOLMES GOODS

**Knee Grips for Winter Riding.**  
Our A.1 Quality made of Selected Hides. Measuring Overall, length 7in. by 6½in. deep. Pad 6in. by 4in. Suitable for Triumph, Norton, and machines with similar tanks.  
**Price 12/6 per pair,**



#### MOTOR CYCLIST'S HELMET.

Invaluable for cold weather riding. Keeps the ears and head free from draughts. Made from selected soft skins, lined wool, and fitted with Ear Rolls and Goggle Slides as illustrated. **Price 21/-.**

Made in dark khak green colour only.

For complete protection we still supply the Famous "All Weather" Motor Suit at £4.

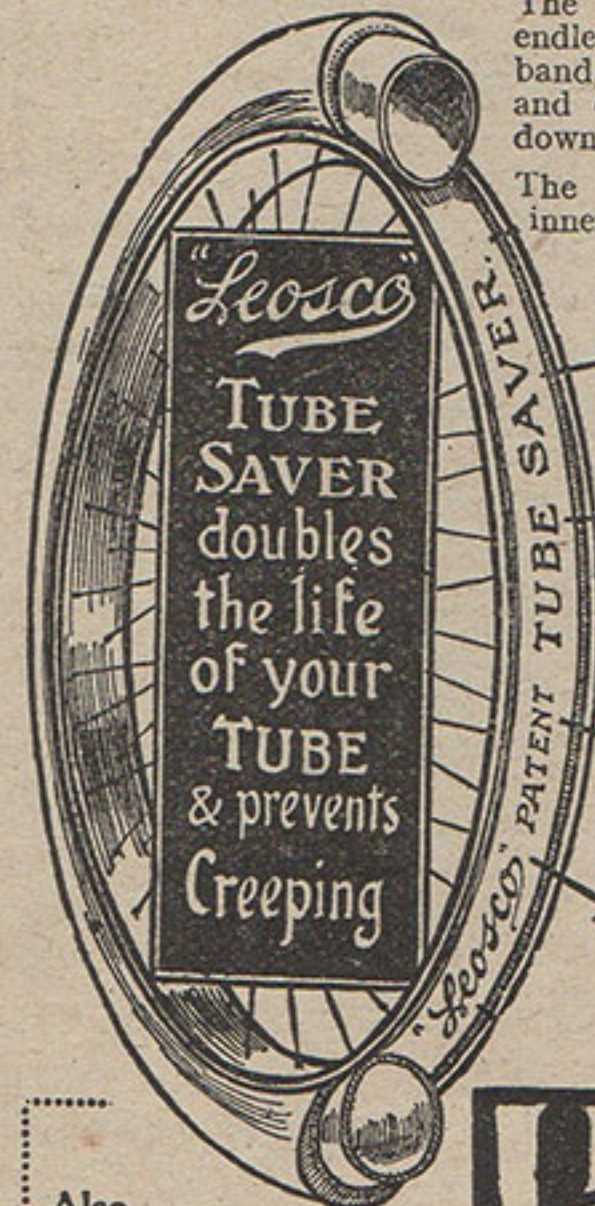
Particulars on Request.

Ask your Agent for above or write actual Manufacturers,

HOLMES & SON, 38, Albert St., MANCHESTER.

## STOP RIM RUST

from ruining your inner tubes  
by fitting the Leo-sco Patent Tube Savers.



The Leo-sco Patent Tube Saver consists of an endless extensible composite red rubber and fabric band, thick in centre and tapered to the edges, and on being stretched over the rim, it beds down firmly into it.

The Leo-sco Patent Tube Saver prevents the inner tube of the tyre coming in contact with rusty rims, and, in the case of wire wheels, with spoke-heads. It saves the tube from danger and destruction, and prevents creeping.

#### ORDER TO-DAY.

2", 2½", 2¾" **PRICE 5/- each.**  
650×65 or 700×80 .. **6/9 each.**

Postage 4d.

N.B.—Please state size of tyre used when ordering.

Obtainable from all Agents, Factors, or direct from the Sole Manufacturers and Patentees:

**LEO SWAIN & CO.,**  
237-9, Deansgate,  
MANCHESTER.

Works and Garage: St. John Street.

Telephone: City 5180-1.

Telegrams: "Immaculate, Manchester."

**LEO-SCO**  
**TUBE SAVER**  
"The One & Only"

Also  
Motor Cycle Super  
Suits, Non Nip Tubes  
and Tyre Holders.



**Taxation.**

We are informed on excellent authority that the revised taxation on motor vehicles will be based on cubical capacity of engines.

**Companies Registered from August to December, 1919.**

The number of companies associated with the motor industry registered during the last six months was 411, the capital prescribed being £18,408,925.

**The 1920 Tourist Trophy Races.**

We know of a well-known private owner who is anxious to compete in one of the 1920 Tourist Trophy races. Any manufacturers who are interested and care to communicate with this gentleman should write to the Editor, who will be glad to place them in touch with him.

**£10 Reward.**

A reward of £10 will be paid by Mr. C. Boswell, Iver House, New Barnet, for information leading to the recovery of his 2½ h.p. Douglas, which was stolen from the front of the Warrington Hotel, Maida Vale, on Sunday, January 4th. The machine was fitted with disc wheels, and bore the number LH 2987.

**The Moulders' Strike.**

Several of the leading motor cycle manufacturers are "closed down" owing to shortage of materials due to the moulders' strike. Apparently the majority of the moulders who are connected with the motor cycle and automobile industry are in favour of accepting the terms which have been offered to the affected trade.

**59.8 m.p.g. with G.N.**

The R.A.C. has now issued its "certificate of performance" in connection with Mr. Rex Mundy's non-stop engine run from London to Edinburgh on N.B.A. benzole. It certifies that the engine was not stopped nor the clutch disengaged when descending hills. The oil consumption was 316.4 m.p.g., the benzole consumption being 59.8 m.p.g.—equivalent to 42.6 ton-miles per gallon. The total running weight of the runabout with passengers was 1,594 lb. (approximately 14 cwt.), the weight of the car being 1,246 lb. (approximately 11 cwt.). The equipment included a Sthenos type B.H. carburetter, Cooke plugs, Easting car screen, and Palmer 700x75 mm. tyres. Coolie oil was used.

**Motor Permits for Ireland.**

In conjunction with the Irish authorities, and working through the Royal Irish Automobile Club, arrangements have been made whereby members and associate members of the R.A.C., who wish to proceed to Ireland with their cars, can obtain the requisite permits beforehand. The details required by the authorities are:

- (1.) DRIVER.—Surname; Christian names; profession or occupation; age; height; build; colour of hair; name and address of the owner of the car; registration number; make, horse-power, colour, and seating accommodation of car; two small photographs, unmounted (of driver), 3in. x 2½in.
- (2.) OWNER.—Surname; Christian names; profession or occupation; address; registration number of the car; make, horse-power, colour, and seating accommodation of car.
- (3.) If the owner of the car wishes to drive it he must supply precisely the information concerning himself as requested for the driver.

**Second-hand Prices.**

High prices for second-hand machines are likely to prevail this spring on account of the lack of new machines resulting from the moulders' strike, which has suspended manufacture for about three months.

**Alcohol as Fuel.**

There is every possibility of a test being made in the near future of a British motor spirit that has alcohol as its base. The trial will probably be conducted on the lines of the recent 5,000-mile National benzole test, and a driver with much experience in this class of work has already been retained. Extremely low cost will be a feature of the new fuel, but it remains to be seen whether the lower thermal value of alcohol will commend itself to motor cyclists with low-powered engines in competition with petrol and benzole.

**IMPORTANT DATES.**

- Sat. Jan 17th, to Sat. Jan. 24th—  
Montreal Motor Show.
- Fri., Jan. 23rd, to Sat. Jan 31st—  
Scottish Motor Show, Glasgow.
- Thurs., Jan. 29th—  
Institution of Automobile Engineers. Paper by Dr. A. H. Gibson on "Air-cooling of Engines," Chamber of Commerce, Birmingham, 7.30 p.m.
- Fri., Feb. 13th, to Mon., Feb. 16th—  
Paris-Nice Trial.
- Mon., Feb. 23rd, to Sat., March 6th—  
British Industries Exhibition, Birmingham
- Sat. Feb. 28th—  
Sutton Coldfield A.C. Trial for Colmore Cup
- Mon., March 1st, to Tues., March 16th—  
Lyons Fair.
- Good Friday, April 2—  
Inter-club Meet at Richmond, Yorks.
- Fri., May 21st—  
M.C.C. London Edinburgh Run.
- Mon., June 14th, to Sat., June 19—  
Royal Scottish A.C. Light Car Trial.
- Tues., June 15th—  
Junior T.T. Race, Isle of Man.
- Thurs., June 17th—  
Senior T.T. Race, Isle of Man.
- Wed. and Thurs., July 7th and 8th—  
Arbuthnot Trophy Trial.
- Sun., July 25th, to Aug. 1—  
International Six Days Trial in France.
- Mon., Aug. 23rd, to Sat., Aug. 28th—  
A.C.U. Six Days Trial.

**The T.T. in Danger.**

If the moulders' strike is not settled soon, it is extremely doubtful whether manufacturers will be able to build their special machines for the T.T. races.

**Junior T.T.**

Considerable interest is being manifested in the 250 c.c. class for the Junior T.T., which will compete for *The Motor Cycle* trophy. As was to be expected, our suggestion to encourage the development of the smaller machines promises to swell the entries for the Junior race, as there are quite a number of makers interested in engines under 250 c.c., who would not otherwise have entered in direct competition with engines 100 c.c. larger. Nevertheless, should a particularly fast 250 c.c. machine be produced, it may have a chance to win both trophies, i.e., the Junior T.T. and *The Motor Cycle* Cup.

**New South Wales T.T**

Messrs. John Marston, Ltd., have been advised by cable that the New South Wales Tourist Trophy has been won on a 3½ h.p. Sunbeam.

**Ilford Bridge.**

The R.A.C. warns motorists that great care is required in crossing Ilford Bridge. The surface of the road in this locality is particularly bad.

**Evesham.**

The police at Evesham do not allow motor vehicles to stand in Bridge Street, and motor cyclists desiring to stop in the old town are advised either to garage their machines or leave them in High Street or Market Place.

**Entrant for Paris-Nice Trial.**

Among the several British entrants for the Paris-Nice Trial is Mr. Maurice Greenwood, who is riding the machine he entered for the F.I.C.M. Six Days Trial at Grenoble in 1914—a 2½ h.p. two-stroke Connaught.

**French Trial and Beach Races.**

The Moto Club Parisien will hold a trial for motor cycles and sidecars from Paris to La Baule and back on May 2nd. A speed trial in conjunction with the reliability test will take place on the beach at La Baule.

**Police Trap.**

We have received information of a police trap working on Saturdays and Sundays chiefly, on the main Croydon Road between the Anerley Road and the Mitre Hotel. The road is absolutely straight and down hill, and is therefore an inducement for a good turn of speed.

**Another Trial in France.**

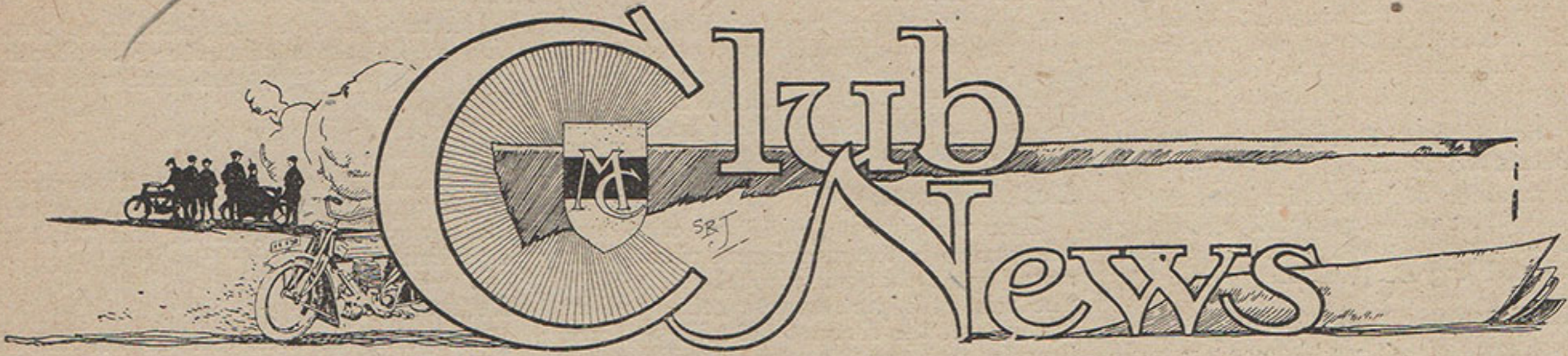
The Moto Club of Marseilles will hold a touring reliability trial from Marseilles to Nice and Monte Carlo on April 4th. There will be twelve classes and numerous prizes. Entry forms and further particulars can be obtained from the secretary of the Marseilles M.C., Brasserie du Chapitre, Marseilles.

**One Car Every 25 Seconds.**

In a paper read before the technical section of the Institution of Automobile Engineers, on the 7th inst., Mr. A. Tilt, the author, stated that the Ford factory, in addition to the skilled men, employs the "scum of the earth," represented by fifty-two nationalities, speaking 100 dialects, working in soulless monotony. The result is a complete chassis every twenty-five seconds.

**Re-making Belgian Roads.**

The Royal Automobile Club has received information from the Belgium Ministry of Public Works that it has decided to commence a vast programme of road improvements which will prove a real boon to motorists who may wish to tour in Belgium. The programme includes the remaking of a network of roads which will connect Brussels with all important towns and centres, and will afford communication by means of good cross-country roads between various tourist resorts, the devastated districts, and the battlefields of Flanders.



### South Birmingham M.C.C.

The final results regarding the Palmer Cup Trial, held last autumn, have now been announced as under:

- B. Bird (4¼ B.S.A.), Palmer Cup and Cameta Cup.
  - G. Kuhn (Levis), Upton Cup.
  - A. Walker (4 Triumph), Cooper Cup.
  - A. Milner (Diamond), gold medal.
- There were no other awards.

### The Brookdale Club.

The Brookdale Club (Catford), Ltd., has just completed the purchase of the freehold of its headquarters at the Brookdale Hall, Catford. It will be carried on as a sports and social club, and prior to the war was making great progress with its motoring section.

### The New Bedford Club.

A large number of applications for membership have been received for the proposed new club in the Bedford district, and a meeting will shortly be held in one of the central hotels in Bedford to elect officers. All local riders who are interested should send their names to either Mr. C. F. Plowman, 37, Broadwater Avenue, Letchworth, Herts, or Mr. H. H. Berrie, Goldington, Beds.

### Bath and West of England M.C.

The above club is holding a twenty-four-hour reliability trial from Bath to Land's End and back on the 23rd and 25th inst., which will be confined to members only. The entrance fee is 7s. 6d. Motor cyclists wishing to join the club and desirous of competing in the trial should communicate with the secretary, Mr. C. B. Newman, 20, Stall Street, Bath.

### Ealing and District M.C.C.

The annual dinner of the Ealing and District M.C.C. will be held at the Clarendon Restaurant, Broadway, Hammersmith, on March 2nd, at 8 p.m. Prizes won during the 1919 season will be awarded. Motor cycling events, filmed by the Hon. Victor Bruce, will be shown on the screen during the evening, and a concert has been arranged. The price of tickets is 10s. 6d., application for which should be made immediately to the hon. sec.

An interesting non-competitive event is fixed for February 1st. This will be in the nature of a run under Colonial conditions as regards road surface and course. The run will start from Kew Bridge at 10 a.m., and the Colonial section will be entered at Horsley Towers, near East Horsley, at 11 a.m.

Those desirous of riding, but who are not members of the club, should apply for particulars of membership to the hon. sec., Mr. S. P. L. Brown, 25, Ormiston Road, W.12.

### Future Events.

- Jan. 17.—N.M.C.F.U., Sheffield. Meeting in Rotherham.
- Jan. 21.—York and District M.C. Supper and Concert, Windmill Hotel.
- Jan. 23-25.—Bath and West of England M.C. Twenty-four Hour Trial to Land's End and back.
- Feb. 1.—Ealing and District M.C.C. Sporting Run under "Colonial" Conditions.
- Feb. 25.—York and District M.C. Annual Dinner and A.G.M.
- Mar. 2.—Ealing and District M.C.C. Annual Dinner, Clarendon Restaurant, Hammersmith.
- Mar. 20.—Home Counties Clubs' Reliability Trial.
- Apr. 3.—M.C.C. Jarrott Cup Trial.
- Apr. 5.—Westmorland M.C.C. Hill-climb.
- Apr. 5.—Brooklands A.R.C. Race Meeting.
- Apr. 27.—Birmingham M.C.C. Trial.
- May 21.—M.C.C. London-Edinburgh Run.
- May 22.—Bristol M.C.C. Speed Trial.
- May 24.—Liverpool M.C. Speed Trial.
- May 24.—Brooklands A.R.C. Race Meeting.
- June 5.—Ilkley M.C. Reliability Trial.
- July 3.—Blackburn and District M.C.C. Hill-climb.
- July 10.—Midland C. and A.C. Trial.
- July 15.—Essex M.C. and Southend M.C.C. Speed Trials.
- July 17.—Cumberland County M.C.C. Trial.
- July 24.—Luton and Beds. A.C. Speed Trial.
- July 31.—Aberdare, Blaenavon, Welsh A. and A.C., Cardiff, and Tredegar Clubs. Joint Hill-climb.
- Aug. 2.—Brooklands A.R.C. Race Meeting.
- Aug. 7.—Sheffield, Loughborough, N. Derbyshire, and Nottingham Clubs. Joint Speed Trial.
- Aug. 14 or 21.—Carmarthen and Ystalyfera Clubs. Joint Speed Trials.
- Sept. 1.—York and District M.C.C. Hill-climb.
- Sept. 4.—Woolwich, Streatham, Rochester, and Surrey Clubs. Joint Reliability Trial.
- Sept. 11.—Bristol M.C.C. Hill-climb.
- Sept. 18.—Liverpool M.C. Reliability Trial.
- Sept. 25.—Redditch, Wolverhampton, and Kidderminster Clubs. Joint Reliability Trial.

### B.M.C.R.C.

In addition to the above the B.M.C.R.C. will hold two race meetings in April, and one each in June, July, August, September, and October.

### East Midland Open Events.

A meeting of representatives of the affiliated clubs in the enlarged East Midland District was held on Saturday evening at the Angel Hotel, Sheffield. Considering the size of the area, the meeting was splendidly representative, delegates attending from Loughborough, Nottingham, Ilkeston, North Derbyshire, Sheffield, Lincoln, Wath-on-Deerne, Ilkley, York, and Derby N.F.U. The business, mainly, was to discuss the arrangements for the running of the three open trials allotted by the A.C.U. at the meeting at Olympia. A discussion took place respecting the arrangements made in London. Mr. Myhill, of Ilkeston, considered that, as the largest number of clubs were situated in the southern part of the area, one of the two dates allotted to the northern clubs should be transferred. The arrangements made in London respecting the York and Ilkley clubs were confirmed. It was resolved to allow all other than the York and Ilkley clubs to participate in the organising of the remaining fixture (a speed event). North Derbyshire was

deputed to find and submit a suitable course, the Lincoln club to have the second option. All clubs joining in the organisation of the event to share profits or losses in ratio to their club membership. It was resolved that the East Midland Centre Challenge Trophy be competed for in the three open events, three teams of three riders from each club competing for reliability at the Ilkley trial, hill-climbing at the York trial, and speed at the North Derbyshire or Lincoln event. The cup holders, North Derbyshire M.C.C., proposed that new clubs joining up pay an entrance fee of £2 2s., this, as in the past, to cover all entrance fees for all future trials. The proposition was agreed to. It was pointed out that at previous trials the inclusion of the Trophy had ensured the success of the meeting, Doncaster in 1914 having what was probably the largest gate for any event held outside Brooklands. Mr. J. Simmonds, Nottingham and District M.C.C., was elected as the centre representative on the General Committee of the A.C.U. The hospitality of the Sheffield club in providing a substantial tea was much appreciated.

### Wanted, a Club for Mansfield.

Mr. G. Mills, 16, Hall Street, Mansfield, will be pleased to hear of motor cyclists who would be willing to help in organising a motor cycle club for the district.

### A Club for Finchley?

Mr. Bernard Staley Burnage, Victoria Avenue, Finchley, N.3, proposes to form a motor cycle club in his district, and asks fellow enthusiasts to communicate with him with a view to forming a committee to discuss the matter.

### N.M.C.F.U. (Sheffield).

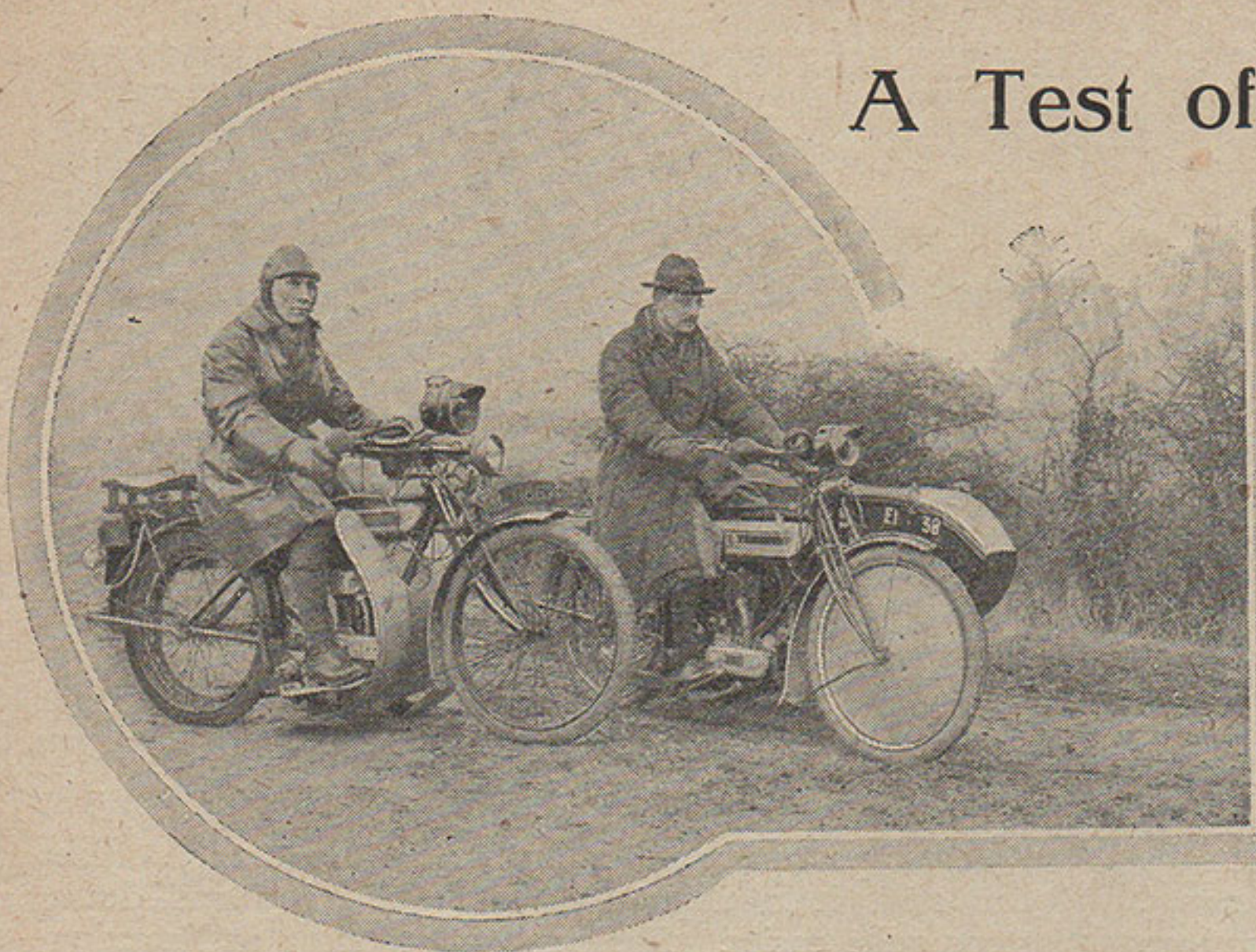
A meeting in connection with the above will be held in the Y.M.C.A. Boys' Club Room, Talbot Lane School, Rotherham, on Saturday, the 17th inst., to commence 6 p.m. As a result of this meeting it is hoped to form a branch of the N.M.C.F.U. in Rotherham, and all members and other motor cyclists in the district are invited to attend.

### Bargoed and District M.C.

A meeting was held at the A1 Restaurant, Bargoed, on Tuesday of last week, when it was unanimously decided to form the above club. Great interest was manifested by those present, and about eighteen members were enrolled. The opening run has not yet been arranged, but meetings will be held every Tuesday, at 7.30 p.m., till further notice. All interested are asked to communicate with the secretary, Mr. W. H. Merchant, 60, Park Place, Gilfach, Bargoed.

## A Test of an Air-cooling Device.

### A Road Test of Mr. Hawley Morgan's Exhaust Cooled Motor Cycle Engine.



The 2½ h.p. New Imperial fitted with the device, and the Triumph sidecar which followed the test.

missing the gear, but the machine was immediately taken to the bottom and restarted, the hill being climbed without a falter. A second attempt by the inventor was entirely successful, and throughout the run the engine showed no signs of distress. The third attempt was made to climb the hill with the Triumph's passenger on the back carrier. The engine, however, was not sufficiently powerful to take the gradient, but it came to a standstill on the steepest portion, half way up the hill, without signs of knocking.

The return journey was also made at a good speed, and certainly it seemed impossible to make the little engine fitted with the cooling device overheat, but it was so extremely cold (a strong north-east wind was blowing) that we should have been more satisfied had the test taken place in really hot weather.

Our readers will remember that Mr. Hawley Morgan's idea is to surround the cylinder by means of a special jacket in which vertical slots are cut, and to introduce a forced draught by means of an ejector incorporated in the exhaust system, causing the air to be drawn through the slots in the cylinder fins.

**I**N the issue of December 18th we described an ingenious cooling system invented by Mr. Hawley Morgan, and during a recent week-end we took the 2½ h.p. New Imperial equipped with his invention for a run of about thirty miles. Leading the way on a 4 h.p. Triumph and sidecar, we set the pace to a speed which kept the little solo machine hard put to it, and after covering about five miles a sharp turn to the right was taken up a fairly steep hill. The little engine took the gradient on about quarter throttle, and shortly after that we took it over ourselves and drove it for a further five miles, and then, without stopping to cool, went straight up a gradient of 1 in 5 on the slopes of the Chilterns. Unfortunately, on the first attempt the machine was brought to a standstill through

It is very difficult to form a conclusive opinion of a device of this kind in a short run, and a more extended trial is really necessary. A long trial over difficult country and under varying temperatures would be far better. We can say, however, that during the brief test to which we put the machine the system behaved satisfactorily, and the idea is really well carried out. Our photographs will show the excellent protection afforded the rider's legs, but as the day was dry the efficacy of the mudguarding could not be adequately tested.



Mr. Hawley Morgan making a good ascent of Chaul End Hill near Dunstable.

### AUTO CYCLE UNION NOTES.

**T**HE thirteenth annual dinner of the Auto Cycle Union will take place in the Great Gallery of the Royal Automobile Club on Wednesday, January 21st. The Hon. Sir Arthur Stanley, President of the Union, will take the chair. The reception will be at 6.15 p.m. for dinner at 6.45 p.m. Tickets, price 15s. each, may be obtained of the Secretary, A.C.U., 83, Pall Mall, S.W.1.

#### Paris-Nice Trial, 1920.

The Auto Cycle Union is making every arrangement to facilitate the convenience of members attending or compet-

ing in the trial. The requirements of the French authorities in regard to Customs formalities are being met in the most expeditious manner, and A.C.U. members will be able to obtain triptychs and other documents which will eliminate several inconveniences to which they would otherwise be subjected.

Intending competitors are reminded that petrol and lubricating oil may not be taken across the Channel with their machines, but the leading firms marketing these commodities have taken steps to ensure a ready supply in France.

## 30,000 Miles on a Two-stroke.

### The Lightweight Motor Cycle for Long Distance Utility Work.

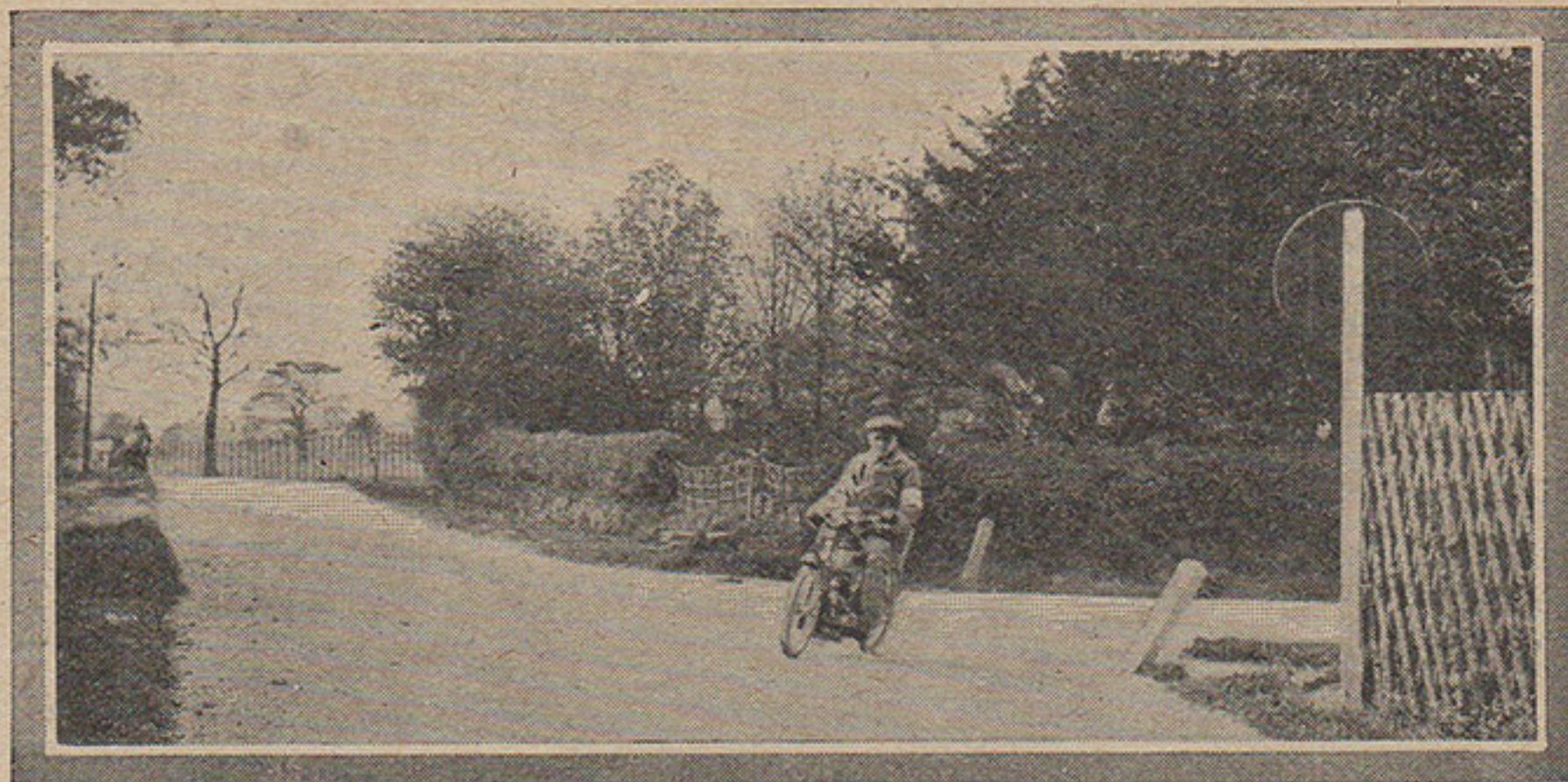
SINCE the days when there first appeared on the market the lightweight motor cycle, there seems to have been somewhat of a doubt as to its possibility for really hard and constant work. Even now it is looked on in many quarters as a mere handy runabout for short journeys and pottering. That the contrary is the truth does not yet seem to strike many, and the experiences I give below may bring home to them how very much can be done with such a machine. In fact, given a good model, it is the equal in all respects to its big brother (bar one thing, namely, for sidecar work), and it has an extra advantage that many riders of big horse-power and heavyweight machines do not recognise, viz., exceptional handiness for storage and convenience on the road.

The writer some four years ago, being very much struck by an article by "Ixion" in *The Motor Cycle*, bought his first lightweight, taking it as merely an adjunct to a heavy sidecar outfit, which was then doing all his work. At first it was used merely for the purpose that the makers nominally gave as its reason for existence, i.e., short journeys and general handiness for pottering about. For a year the machine was used for such purposes, and was actually sold with the idea that it was not meant for serious and heavy work.

#### Lightweights for Business Purposes.

Three years ago, however, having to make a lot of business calls to farms and cottages in a country district, and finding the heavier machine had disadvantages in that direction, I invested in a new Triumph Baby, and the work on which it has been used for 30,000 miles has been to all intents and purposes that of a hard-driven commercial traveller. Day in and day out, in all sorts of weather, through mud, over good, bad, and indifferent roads, over grass tracks on the Sussex Downs, hilly country and plain, the machine has been given every chance of failure.

For three years this little machine has been on the road, it has been taken out and run with no regard to speed, often when in the company of one of the motor cycle riders of a big London daily, and it has been kept hard at work at over thirty miles an hour for hours on end. It has not been merely a question of short journeys, for often it has been on the road from early morning till late at night. For two years it was used for extra heavy work by a despatch rider of special constabulary, over rough rutty farm tracks, over grass tracks, climbing hills of 1 in 10 and 1 in 13, etc., over roads full of pot-holes, and over roughly laid country roads full of loose stones.



The Junior Triumph used by the writer on constabulary duties.

It has proved handy in a way that few realise. One can store it in a passage and take it up and down steps quite easily. For constant stopping and starting it has no equal in the big machine, for I have never yet in all this big mileage failed just to get astride it, and walk a few paces and off, on the journey.

Its running cost has been exceptionally small: an average of ninety-five miles to the gallon for petrol. Very little cost for lubricating oil, one new Dunlop belt, one new set of Dunlop tyres, and one new wire for a brake, are, I find, from my carefully kept cost records, the total expenses for the fine total of 30,000 miles. I find it, too, an exceptionally clean machine to ride. I often go out in my ordinary walking clothes, with a heavy black overcoat as outer costume, and never yet have I had anyone comment on my appearance when I call. Of course, on wet journeys a complete set of oilskins has been used, and I can arrive at the end of a journey, take them off and turn in to my call as clean and tidy as if I had made the journey by train.

Those who are considering the employment of motor cycles for their work should think seriously of the lightweight. Such a machine should be kept clean. Ten minutes' attention on arrival home on a dusty day, and twenty on a wet day, have been enough to keep my machine in good condition. The bearings should be lubricated regularly, and the bright parts vaselined once every month in winter or wet weather. Good sparking plugs are essential. I have used two Lodge plugs only: the last one, an Aero plug, which is very efficient in this engine.

#### Minimum Attention Necessary.

Finally, it must be remembered that, to obtain satisfaction, the lightweight—or any motor cycle, for that matter—should be kept in trim. Oil and reason must be used. No man spends fifty pounds on a horse, and then leaves it in a shed at night without any attention. If he does, he soon has a dead horse. I have ridden and experimented for pleasure and profit since the first motor cycles were put upon the road; and, though I still cling to the sidecar outfit as the best fun in the line, I think that the lightweight is a serious—aye, a very serious—proposition to be considered when we are all looking at the question of motor cycle utility.

R. C. MEASURES.

The special permission of the Committee of the Stock Exchange to deal in these Notes is being applied for.

The List of Applications for purchase is now open, and will be closed on or before the 19th day of January, 1920.

# THE BIRMINGHAM SMALL ARMS CO., LTD.

(Incorporated under the Companies Acts, 1862 to 1890.)

## CAPITAL.

	Authorised.	Issued.
5 per Cent. "A" Cumulative Preference Shares (of £5 each) .. .. .	£203,150	£203,150
6 per Cent. "B" Cumulative Preference Shares (of £1 each) .. .. .	£500,000	£350,430
Ordinary Shares (of £1 each) .. .. .	£4,296,850	£2,522,172
	<b>£5,000,000</b>	<b>£3,075,752</b>

## OFFER FOR SALE OF £2,500,000 6½ PER CENT. TWELVE-YEAR NOTES, In Denominations of £25, £50, and £100, AT 99 PER CENT.

The Notes are repayable at par on 1st January, 1932, and the Company has the right of repaying any of them at par by drawings at any time after 31st December, 1920, on giving three months' notice in writing to the registered holder, such notice terminating on any date on which interest is payable.

The Articles of Association of the Company provide that so long as any of these 6½ per cent. Notes are outstanding it shall not create or issue any debentures or debenture stock or other securities constituting a charge upon any part of the undertaking or property of the Company (other than real or leasehold property, fixed plant and machinery, or shares or securities acquired after 31st December, 1919), or on uncalled capital (if any) existing on 31st December, 1919, or create any other mortgage or charge thereon without the sanction of an extraordinary resolution passed at a meeting of the holders of these Notes.

Interest on these Notes will be payable half-yearly on 1st January and 1st July, the first instalment being payable on 1st July, 1920, and calculated on the amount of the instalments for the time being paid up thereon from the respective dates of payment. Interest coupons will be attached to the Notes.

LONDON JOINT CITY & MIDLAND BANK, LIMITED,  
5, Threadneedle Street, E.C.2.  
BARCLAY'S BANK, LIMITED,  
54, Lombard Street, E.C.3.  
THE BRITISH LINEN BANK,  
Edinburgh, and  
MESSRS. ERLANGERS,  
8, Crosby Square, E.C.3.

are authorised by the Imperial and Foreign Corporation, Limited, of 1, Broad Street Place, E.C.2, the purchasers of the Notes, to receive at their Head Offices and Branches, applications for the purchase of the above £2,500,000 6½ per cent. Notes at 99 per cent.,

Payable as follows:—  
10 per cent. on Application,  
33½ " " " Acceptance,  
55½ " " " the 15th day of April, 1920.  
99 per cent.

Interest of 4 per cent. per annum will be payable on amounts paid in advance of the date for payment of the final instalment of 55½ per cent.

The following is a copy of a letter addressed to the Imperial and Foreign Corporation, Limited, by Sir Hallelwell Rogers, the Chairman of the Company.

THE BIRMINGHAM SMALL ARMS COMPANY, LIMITED,  
BIRMINGHAM,  
December 8th, 1919.

To the Directors of  
IMPERIAL AND FOREIGN CORPORATION, LIMITED,  
GENTLEMEN,

In reply to your enquiry, I beg to inform you that The Birmingham Small Arms Company, Limited, owns the whole of the Share Capital of the Daimler Company, Limited, Coventry, of Messrs. Burton, Griffiths and Company, Limited, London, and 99 per cent. of the Share Capital of Messrs. William Jessop and Sons, Limited, Sheffield.

The value of the Net Assets of the various Companies, taken at the following dates:—

The Birmingham Small Arms Company, Limited, at 31st July, 1919,  
The Daimler Company, Limited, at 31st July, 1919,  
Messrs. Burton, Griffiths and Company, Limited, at 31st December, 1918,  
Messrs. William Jessop and Sons, Limited, at 31st December, 1918,

is, as nearly as can be ascertained, the sum of £5,458,257 (five million, four hundred and fifty-eight thousand, two hundred and fifty-seven pounds).  
The Net Annual Profits of the above Companies for their last seven (7) financial years, after providing for Excess Profits Duty and Ordinary Depreciation, and making allowance for the variation of the dates on which the financial years of the several Companies end, are approximately as follows:—

1913	..	..	..	..	..	..	..	..	..	..	..	£365,699
1914	..	..	..	..	..	..	..	..	..	..	..	361,782
1915	..	..	..	..	..	..	..	..	..	..	..	623,725
1916	..	..	..	..	..	..	..	..	..	..	..	838,193
1917	..	..	..	..	..	..	..	..	..	..	..	1,417,395
1918	..	..	..	..	..	..	..	..	..	..	..	1,449,356
1919	..	..	..	..	..	..	..	..	..	..	..	1,281,228
												<b>£6,337,378</b>

showing an average of approximately £905,339 (nine hundred and five thousand, three hundred and thirty-nine pounds) per annum for the last seven years.

The Directors regard the trading outlook of the Company as satisfactory, and in practically all the various Departments of the Company's enterprises the orders received are in excess of the Company's capacity to execute them.

Yours faithfully,  
HALLEWELL ROGERS,  
Chairman.

From the above letter it will be seen that when the proceeds of this issue of Notes is added to the net assets of the Company and its subsidiary companies, the assets as stated therein amount to over £7,500,000, or more than three times the nominal amount of the Notes now offered, and that on the basis of the average profits as stated above for the last seven years, after providing for Excess Profits Duty and exclusive of any additional earnings derivable from the proceeds of the present issue, the interest on these Notes is covered five-and-a-half times.

Applications for purchase must be lodged with the Head Office or a Branch of any one of the Banks set out above, together with the amount payable on application. If any application be not accepted in respect of the full number of Notes comprised in the application, the surplus amount paid on application will be appropriated towards the amount payable on acceptance, and any balance will be returned to the applicant, and where any application is not accepted, the amount paid will be returned in full. Interest at the rate of 10 per cent. per annum will be charged on the amount overdue. Failure to pay the balance of the purchase money will render the amount already paid liable to forfeiture, and will also give to the Imperial and Foreign Corporation, Limited, the right to re-sell the Notes in respect of which the default shall have been made.

Interim Scrip Certificates will be delivered in exchange for Letters of Acceptance duly receipted for the amount payable on acceptance, and these Certificates will be exchanged against the Definitive Notes after payment of the final instalment.

Both the Interim Scrip Certificates and the Definitive Notes are transferable on the usual transfer forms on payment of a fee of 2s. 6d. per transfer, and a register of Noteholders will be kept by the Company, in which such transfers will be duly entered.

Application will be made in due course for an official quotation on the Stock Exchange, London, and the principal provincial Exchanges for the Notes now offered for sale.

Copies of the Memorandum and Articles of Association of the Company, the original of the above Letter, the Agreement dated 2nd January, 1920, between the Company and the Imperial and Foreign Corporation, Limited, under which the Corporation agreed to subscribe at 95½ per cent. for the Notes now offered for sale, and receive a commission of £8,125, the Corporation paying the expenses incidental to and attendant upon this offer, including the brokerage and underwriting and overriding commissions, can be seen at the Offices of Messrs. Guedalla, Jacobson, and Spyer, Winchester House, Old Broad Street, E.C.2, between the hours of 11 a.m. and 4 p.m. on any day whilst the list remains open.

The Imperial and Foreign Corporation, Limited, is paying underwriting and overriding commissions of 1½ per cent. and ½ per cent. respectively, and an additional ¼ per cent. on all firm applications by underwriters or Notes which underwriters are required to take up.

A brokerage of ¼ per cent. will be paid in respect of all accepted applications by the public bearing the stamp of a Broker or recognised Agent approved by the Imperial and Foreign Corporation, Limited.

Particulars of this offer for sale and Application Forms may be obtained from the Imperial and Foreign Corporation, Limited, or from any of the Bankers or Brokers, or the Offices of the Company.  
12th January, 1920.

## THE BIRMINGHAM SMALL ARMS COMPANY, LIMITED, Directors.

SIR HALLEWELL ROGERS, M.P., Greville Lodge, Edgbaston, Birmingham. *Chairman.*  
EDWARD MANVILLE, M.P., Keresley House, near Coventry. *Deputy Chairman.*  
PERCY MARTIN, Esq., The Spring, Kenilworth. *Managing Director.*  
A. NEVILLE CHAMBERLAIN, Esq., M.P., Westbourne, Edgbaston, Birmingham.  
ALBERT EADIE, Esq., 17, Albert Court, Kensington, London, S.W.7.  
EDWARD MEREDITH GRIFFITHS, Esq., Beechlands, Wadhurst, Sussex.  
ALBERT JOHN HOBSON, Esq., Esholt, Sheffield.  
Brig.-General SIR HENRY CAPEL LOFFT HOLDEN, K.C.B., F.R.S., Gifford House, St. John's Park, Blackheath, London, S.E.3.  
WALTER HENRY THOMAS, Esq., Norfolk Road, Sheffield.  
ARTHUR HERBERT EDWARD WOOD, Esq., Glassel, Aberdeenshire.  
THOMAS SYDNEY WALKER, Esq., Chad House, Edgbaston, Birmingham.

### Bankers.

LONDON JOINT CITY AND MIDLAND BANK, LIMITED.  
BARCLAY'S BANK, LIMITED.

### Brokers.

MYERS AND CO., 19, Throgmorton Avenue, E.C.2.  
F. W. BENTLEY AND CO., Leeds and Huddersfield.  
BUCHANAN, GAIRDNER AND TENNANT, 19, St. Vincent Place, Glasgow

### Solicitors.

PINSENT AND CO., 6, Bennett's Hill, Birmingham (for the Company).  
GUEDALLA, JACOBSON AND SPYER, Winchester House, Old Broad Street, E.C.2 (for Imperial and Foreign Corporation, Limited).

### Auditors.

CARTER AND CO., 33, Waterloo Street, Birmingham.

### Secretary and Registered Offices.

CAPTAIN KENNETH R. DAVIS, O.B.E., F.S.A.A., F.C.I.S.,  
Armoury Road, Small Heath, Birmingham.



# FAME

for the

## ROYAL RUBY

### COMBINATION

In the London—Exeter run only two Royal Ruby machines (both combinations) were entered. Ridden by Messrs. L. A. Apsey and H. Dale, both completed in schedule time and won

## TWO GOLD MEDALS

Writing of the run, Mr. Apsey says:—"The two machines went through neck to neck the whole way to schedule, and not only did we do the 310½ miles included in the run but an additional 120, in 25 hours, viz.: from Southampton to Staines and back. This with lady passengers who are not an assistance like mechanic passengers.

It's the regularity of running and reliability of the Royal Ruby that makes it such a favourite. Make sure of a joyous 1920 by having the combination which can be depended upon.

**THE RUBY CYCLE CO., LTD.**  
**CANNEL STREET, ANCOATS, MANCHESTER.**

Manufacturers and Patentees of the Royal Ruby Cycles, Motor Cycles, and Sidecars.  
 Telephone: City 3818. Central 1570. Telegrams: "Machines, Manchester."

Another feature  
 of the **A.J.S.**—the

### Patent Rear Stand Operation.

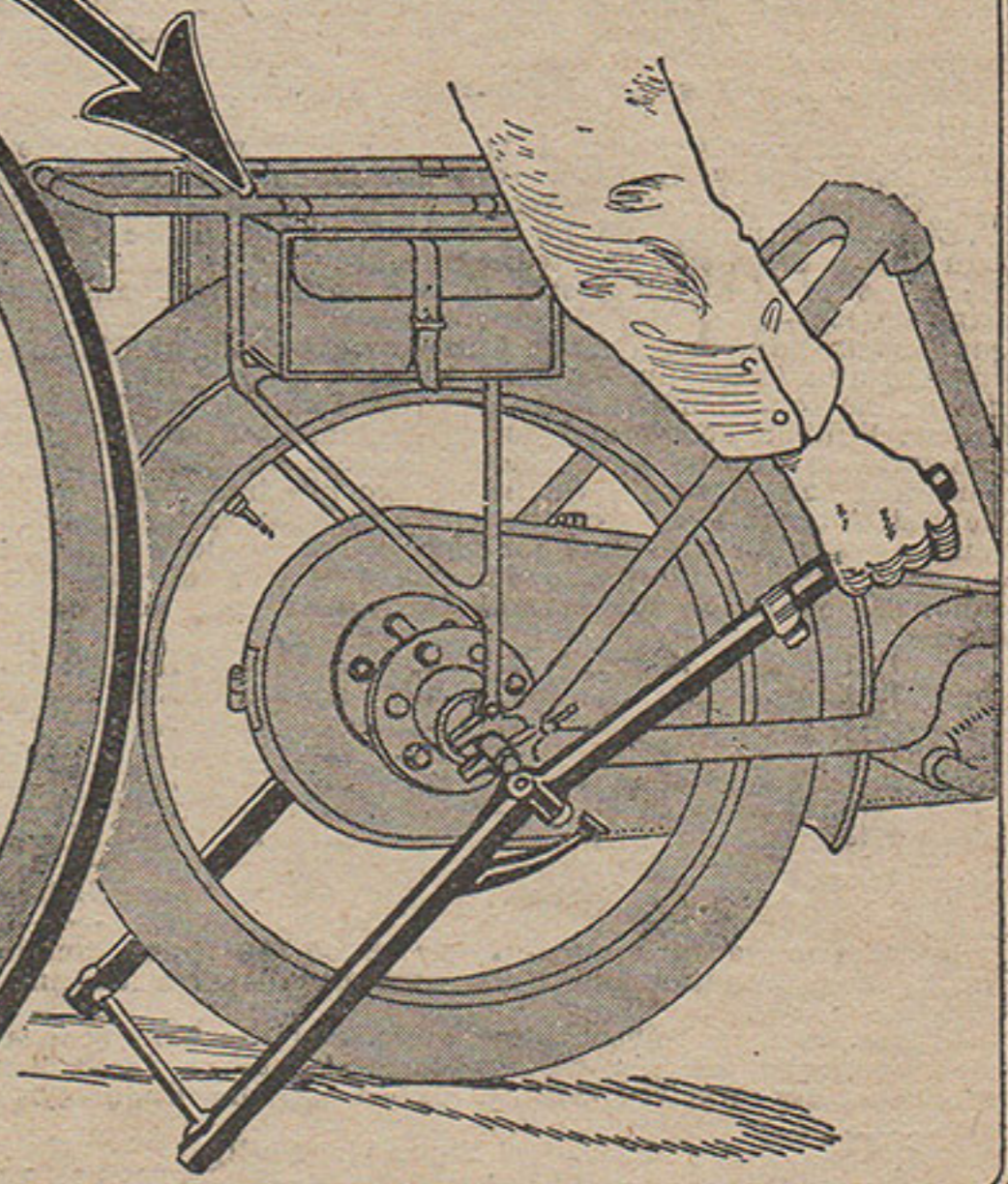
The feature illustrated is just one of those "little things that count," something incorporated for the benefit of the rider, because from our own experience we know that it was necessary. When a motor cycle is coupled to a sidecar, it is almost a herculean task to lift the outfit when wishing to jack up the rear wheel of the motor cycle.

The A.J.S. Patent Lifting Device offers a practical solution of this problem. It is simple in the extreme, and its incorporation on the machine is so neatly carried out that it is hardly noticeable.

The device consists of a lever hinged to the stand on the right hand side, adjacent to the fork end. The lever when not in use is clipped to the Stand Stay, but when required for lifting purposes, the stand is let down in the usual way on to the ground, lever swung out as shown in the accompanying illustration, grasped by the hand and pulled towards the rear of the machine, when the lever is exerted immediately raises the motor cycle with the utmost ease.

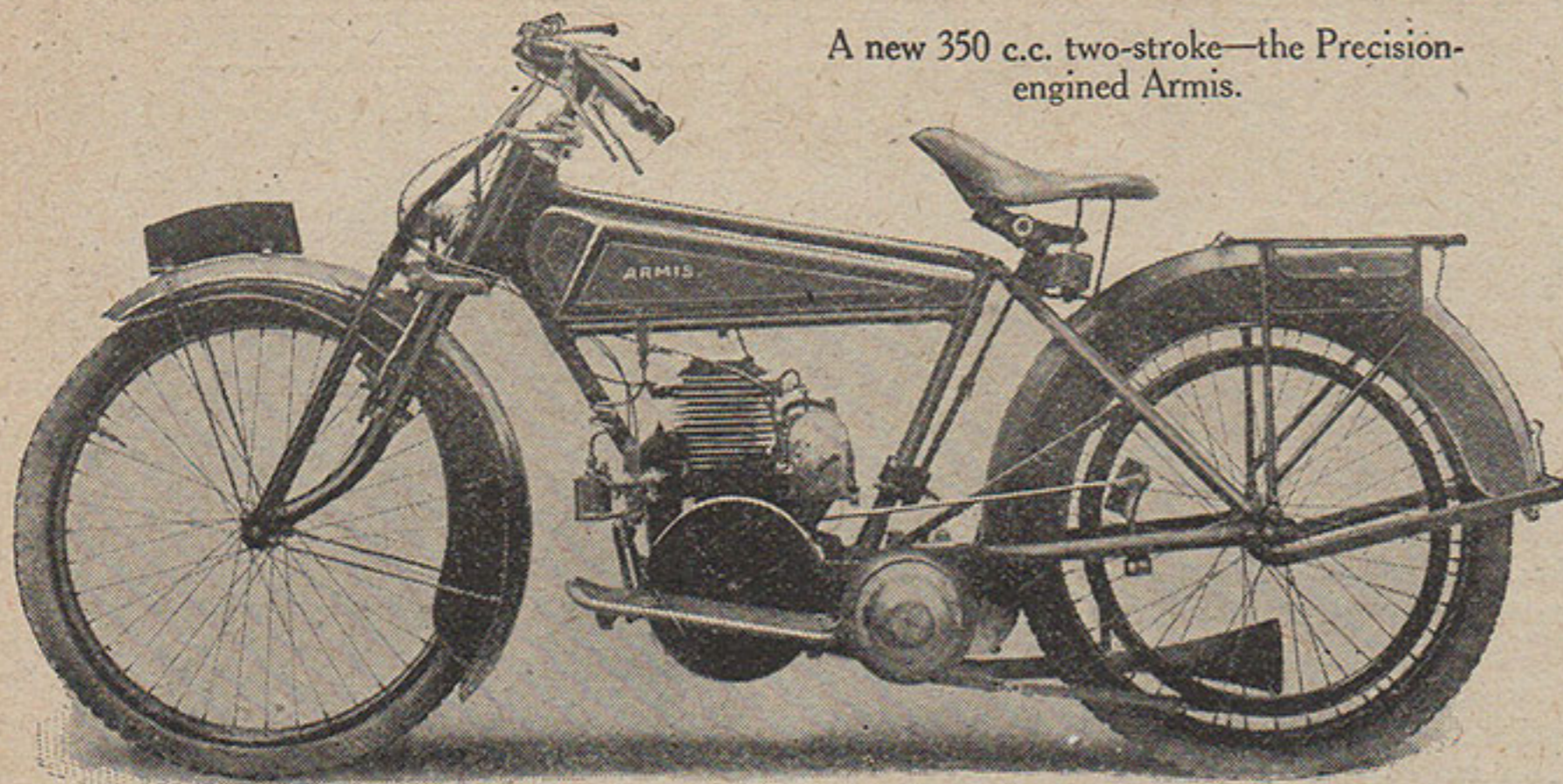
Nothing simpler could be devised—but it does its work efficiently, the same as every other part of the A.J.S. Catalogue on application.

A. J. STEVENS & Co. (1914) Ltd.  
 Graiseley House,  
 Wolverhampton.



London Agents:  
 H. Taylor & Co., Ltd.  
 Store St., Tott. Ct. Rd.

6 h.p. Combination, complete with spare wheel and tyre, spring seat pillar, wind-screen, storm-proof apron and tools, £200..... Motor cycle only £148



A new 350 c.c. two-stroke—the Precision-engined Armis.

### A NEW 350 c.c. TWO-STROKE

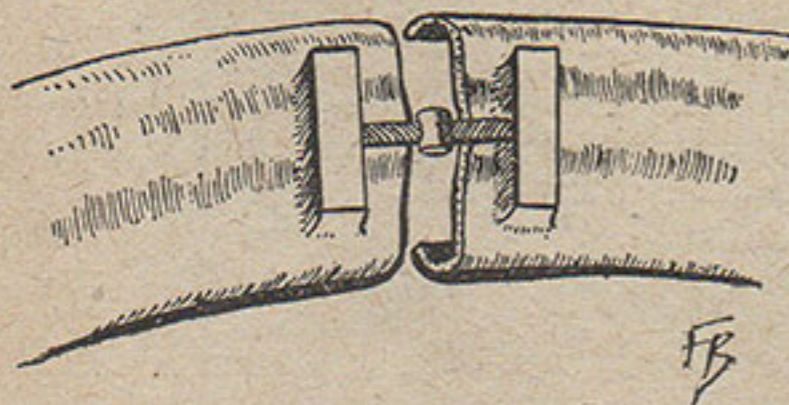
WHEN Messrs. F. E. Baker introduced their new 350 c.c. two-stroke engine unit, we expected that it would attract newcomers to the so-called motor cycle assembling field. The Armis Cycle Manufacturing Co., of Heneage Street, Birmingham, is one of these, and the Armis motor cycle is the result. It is a new name so far as motor cycles are concerned, but the men behind it are not new to the motor cycle industry, for Messrs. Harrison and Baker, the principals, have long been associated with the Calthorpe Motor Cycle Co.

Having a straight tube frame with diagonal top tube, the machine follows more or less conventional lines with good mudguarding and aluminium footboards. The forks are of the Saxon type.

The saddle suspension is rather unique, and consists of a laminated leaf spring clipped to the rear tube of the frame in an approximately parallel position. At its upper end the saddle is fixed, so that the weight of the rider is carried on the spring in addition to the usual pair of coil springs.

### A DETACHABLE RIM FOR MOTOR CYCLES.

THE fertile brain of Dr. A. M. Low has been responsible for two more inventions in connection with motorcycling. One of these is a detachable rim for high-powered motor cycles which are now fitted with light car tyres.

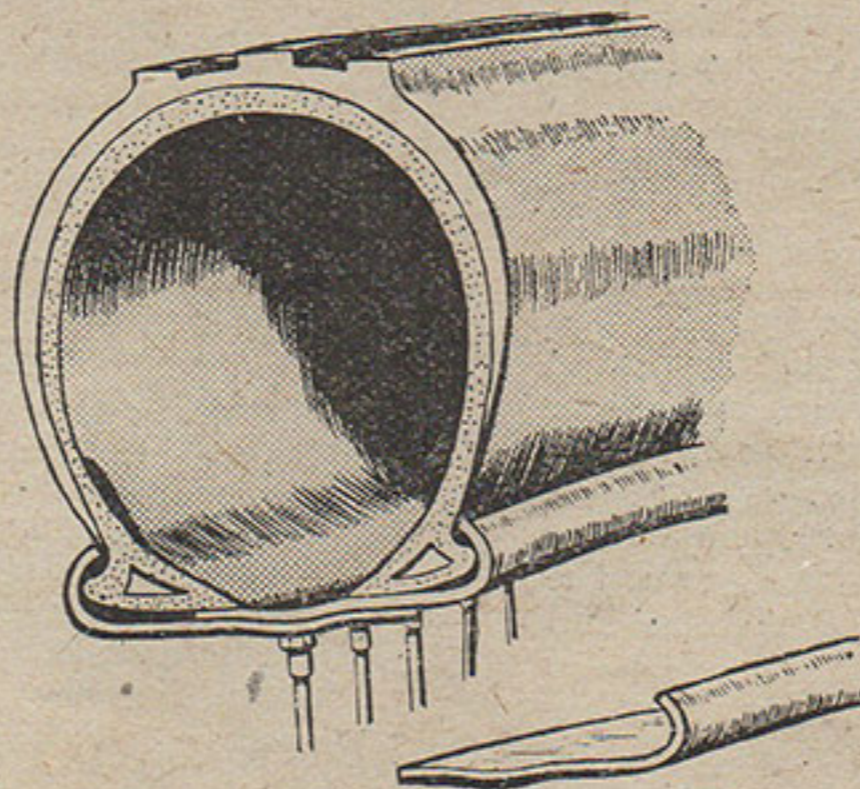


The joint of the Low detachable rim.

Referring to the drawings it will be seen that one part of the rim carries the spokes. The detachable portion is a half-split rim, so that by unscrewing a toggle, shown in the small illustration, situated at the end of the detachable portion, the rim can be ex-

tended, and thus half the rim can be lifted out of the recess carrying the spokes and, entirely removed, allowing the tyre to be slipped off without any trouble. It is probable that the device will be marketed by Rapid Rims, Ltd., 7, Pall Mall, London, S.W.1.

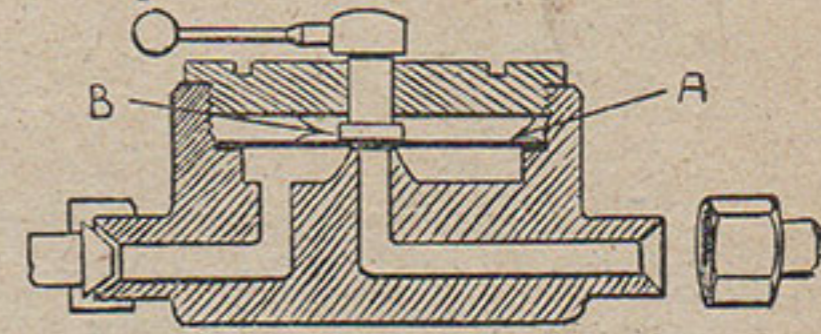
Dr. Low is also responsible for a simple and practical form of petrol tap which is quite suitable for use on motor



Construction of the Low detachable rim.

cycles. The tap consists of a brass casting, into which the top is screwed by means of a peg spanner. In the top there is threaded a small rod to which the lever or tap handle is fitted. When

the handle is screwed down, it forces a steel disc on to the petrol orifice, and a perfect joint is secured. It is difficult to see how any petrol leakage can occur in a tap of this kind, whether open or shut, if the unions are tight, as it is simplicity itself. If necessary, the disc may be welded to the top portion of the tap.



A petrol tap of new design.

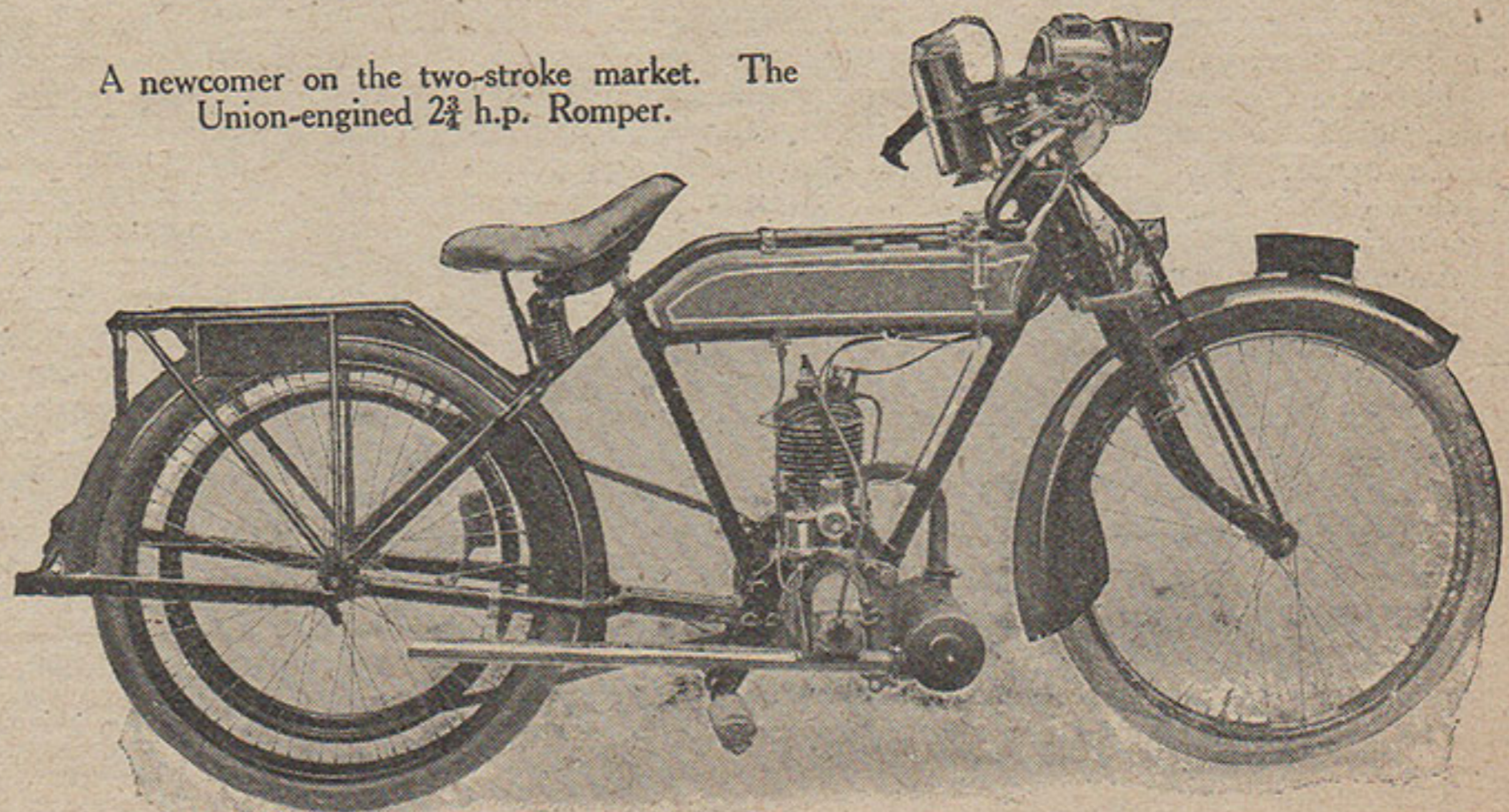
### THE ROMPER MOTOR BICYCLE.

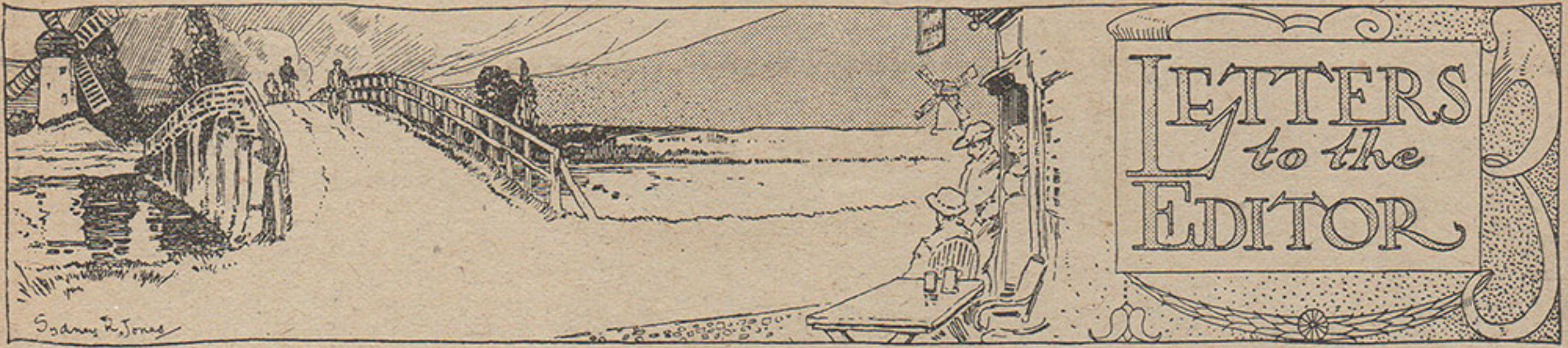
A NEW lightweight has been placed on the market which is known as the Romper. It is fitted with a 2½ h.p. Union two-stroke engine, equipped with an Amac carburetter and Runbaken magneto.

The frame is of somewhat interesting design, as the engine is placed exactly in the centre, with a view to giving a perfect balance to the machine. Special attention has been given to the construction, the head being reinforced, and incorporating lugs for the top tube and the auxiliary tube, it is consequently very strong. The back forks are detachable, and the portion forward of the rear mudguard is designed so that a two-speed gear box can be fitted without difficulty. The machine, as sold, is of the single gear pattern. The back lug casting is similar to that of the head, the same casting having lugs for the top tube and the auxiliary frame tube.

An unusual fitting is a long brass pipe which is carried underneath the tank for the purpose of conveying acetylene gas from the generator to the rear lamp, thus doing away with the unsightly appearance of loose rubber tubing. Excepting that it has a short wheelbase, standard lines are followed for the remainder of the machine. It has 26×2in. wheels, taking 2½in. tyres, wide, comfortable saddle, Bowden front brake, and a pedal applied rear brake engaging with the belt rim.

A newcomer on the two-stroke market. The Union-engined 2½ h.p. Romper.





The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

#### RIDING AT NIGHT.

Sir,—If "J.M.," who wrote about "Riding at Night" in your issue of December 18th, will procure the coiled wire covering of a Bowden cable (Bowden solo) and slip over it an Exonite casing, he will obtain the gastight, flexible, unpinchable, and inconspicuous connection tube he requires for his rear light.

J. C. BENNETT MITCHELL.

#### FIREWORKS FROM MAGNETO.

Sir,—Some little time back a correspondent in your columns wrote of a firework display from his magneto. I have had a similar experience. On a recent wet Saturday afternoon I stopped to give another rider a push off, and on running my own 'bus (2½ twin Enfield) the magneto terminal sent out a shower of sparks, about 8in. in length and feather shaped. I immediately stopped and removed the terminal, wiped it dry, and replaced it. The sparks did not recur again, and the 'bus went as well as ever. Can any reader explain this?

ECLAIR.

Birkenhead.

#### T.T. RACES AND THE I.O.M.

Sir,—In view of the large number of motor cyclists who will be visiting the I.O.M. for the T.T. Races, there is a very vexatious and unnecessary regulation which all motor cyclists and car owners have to comply with and, I am sure, would like to see abolished, viz., all motor cyclists and car owners must register themselves and motor cycle within twenty-four hours of landing, and if they reside on the island over one month they have to go to the expense and trouble of taking a Manx registration out.

As this unnecessary regulation is not in force in any other part of the United Kingdom, I should like to see this letter published in *The Motor Cycle*, and brought to the notice of the R.A.C., A.A., and A.C.U. with a view to the above vexatious and unnecessary regulation being abolished.

Liverpool.

R.M.

#### CLUTCHES ON LIGHTWEIGHTS.

Sir,—An examination of the latest specifications shows an increased tendency amongst makers to incorporate clutches in lightweight machines. This prompts me to ask—"Is a clutch really necessary on a lightweight motor cycle, and do the advantages which accrue justify the extra expense?"

On several occasions recently here in Edinburgh I have seen motor cyclists held up by the policeman regulating the traffic at the west end of Princes Street. Those cyclists having clutch machines declutched, and kept their engines ticking over, whilst their clutchless brethren stopped their engines. When permitted to proceed, the latter got away quite as quickly as the former, merely by pushing off with their feet, particularly those possessing a certain 2½ h.p. flat twin. This machine is extremely popular in this district, and I notice that all the 1920 models are fitted with clutches.

Personally, I never considered a clutch necessary on lightweight machines; my first mount was a 1910 2½ h.p.

Correspondents are urged to express themselves as concisely as possible, especially in view of the fact that only a small percentage of letters received can possibly be published. Many interesting letters are unavoidably omitted in consequence of their abnormal length.

Motosacoche, and I scrapped the jockey pulley clutch arrangement on this excellent little machine immediately on taking delivery.

I also notice from recent correspondence in *The Motor Cycle* that some readers experience difficulty in starting big single engines from cold.

I have at present a B.S.A. combination, which never gives me any trouble in starting. I give the jet about three-quarters of a turn, open the throttle about one-third, and the air just a trifle. I then put the machine into first, and push off. About two yards usually suffice. In very cold weather a few drops of fuel through the compression tap help considerably. I always use equal parts of petrol and benzole.

DAVID W. MUNRO.

#### A SUBSTITUTE FOR PLATINUM.

Sir,—Perhaps some of your readers would like to hear of a new substance instead of platinum for magneto points.

I have a Ruthardt magneto, and, through running without a carbon, I burnt the points out, and for a new pair at a magneto agent's I was quoted 12s. 6d. per point, a price which I thought too high. Anyway, I went home without the points, but with the expectation of inventing something not so dear as platinum. To begin, I ground all the odd bits of platinum from the spring and screw, and cut out two small pieces of pure nickel, which I soldered on instead of the platinum. After some time of solid hard wear I examined the points, and found them perfect, not even burnt, notwithstanding I am running without a carbon. I might add that the cost of these points would not be one-tenth the cost of platinum points. Perhaps some of your readers will likewise try this, and let us know the results.

Belfast.

H. W.

#### THE A.C.U. REPORT.

Sir,—May I be permitted to reply to "Lightweight's" remarks in your issue of December 18th re Mr. Norton's letter.

One would gather that "Lightweight's" ideal motor cycle is the Henderson, plus another seventy or eighty pounds of water jacket, radiator, and water, bringing the weight right up to approximately 400 lb. solo.

Right here I would hasten to add that I do not go all the way with Mr. Norton, who, of course, is the champion of the "big single," although I ride one myself.

It is well known that the ratio weight horse-power decreases as the number of cylinders increase, and I fancy that motor cycle design will tend to follow this line, a thing supported by the greatly increased popularity of the h.o. twin.

We may or may not get the aeroplane type of engine on the motor cycle. One thing I am certain of, and that is that water cooling will never enjoy any very great popularity amongst motor cyclists. More, I venture to prophesy that it will eventually die out, even amongst heavy cars. The air-cooled cycle car has been with us a long time, and no one would venture to say that the Morgan, for instance, would not comply with "Lightweight's" definition of utility.

Anyway, the big single is not dead yet. I have yet to be shown a multi-cylinder 'bus that will put up with the "brutalising" that mine has suffered and still go anywhere on a 4 to 1 gear fixed engine. When I can, I shall welcome it with open arms, provided that it is light for the power developed.

I wish the A.C.U. luck in its efforts to make rear lighting permanent for all vehicles. I know what the unlighted cyclist is to my cost.

WILBERFORCE DURELL.



# KEMPSTALL



MARKET RD.  
 Caledonian Rd.  
 LONDON.

28. 11. 19

*Messrs. The Kempshall  
 Tyre Company.*

*Dear Sirs.*

THIS PARTICULAR TYRE  
 FILLED WITH RUBBERINE  
 RAN FOR

**23,059**

MILES  
 ON THE DRIVING  
 WHEEL OF AN A.C

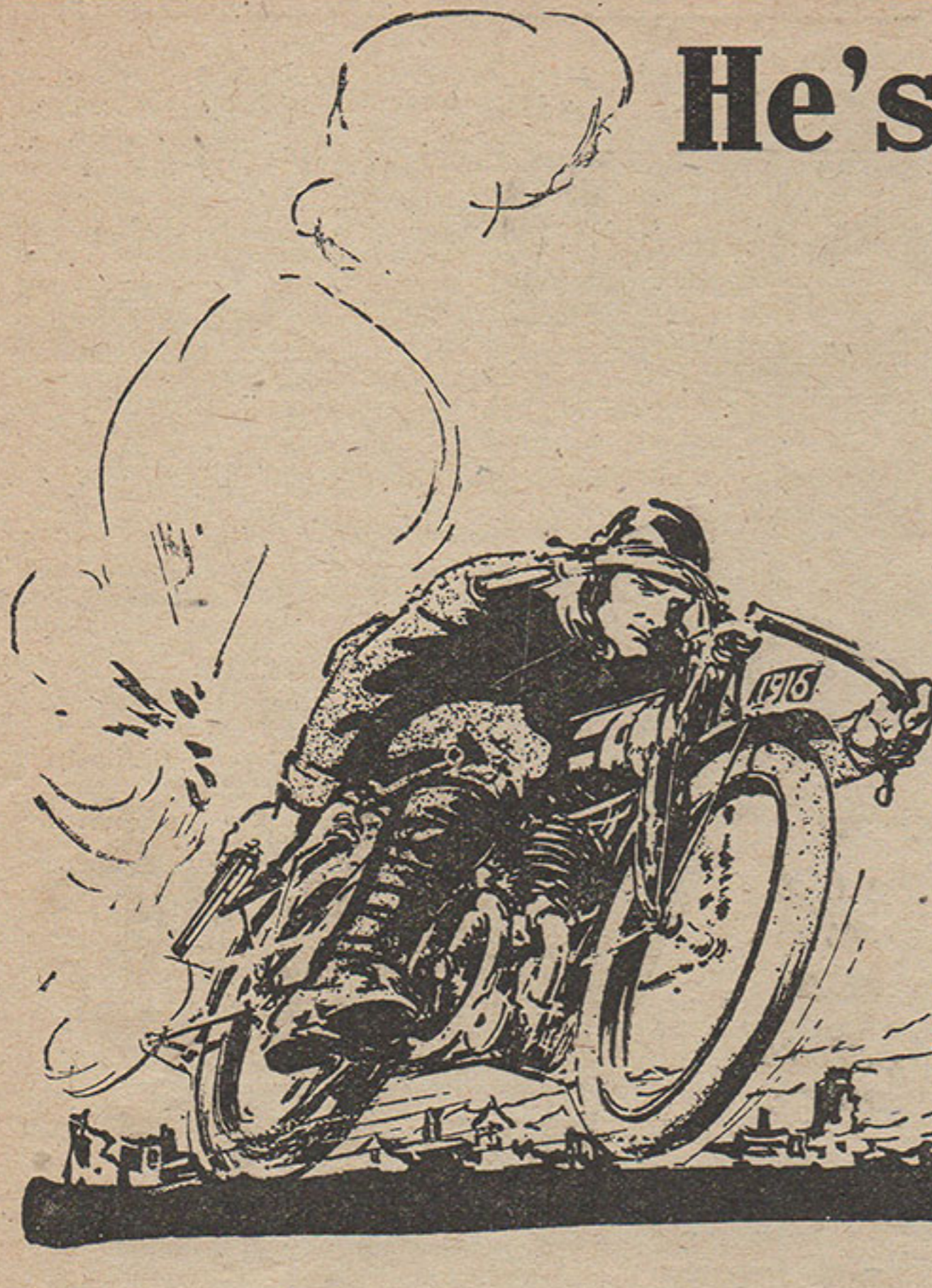
*yours faithfully*  
**RUBBERINE LTD**

# He's a Civilian Now

but the days when he was a D.R. will not be forgotten. The Magneto that enabled him to pull through many a tight corner will find a place on his 1920 machine.

**C.A.V. Magnetos**  
BRITISH THROUGHOUT

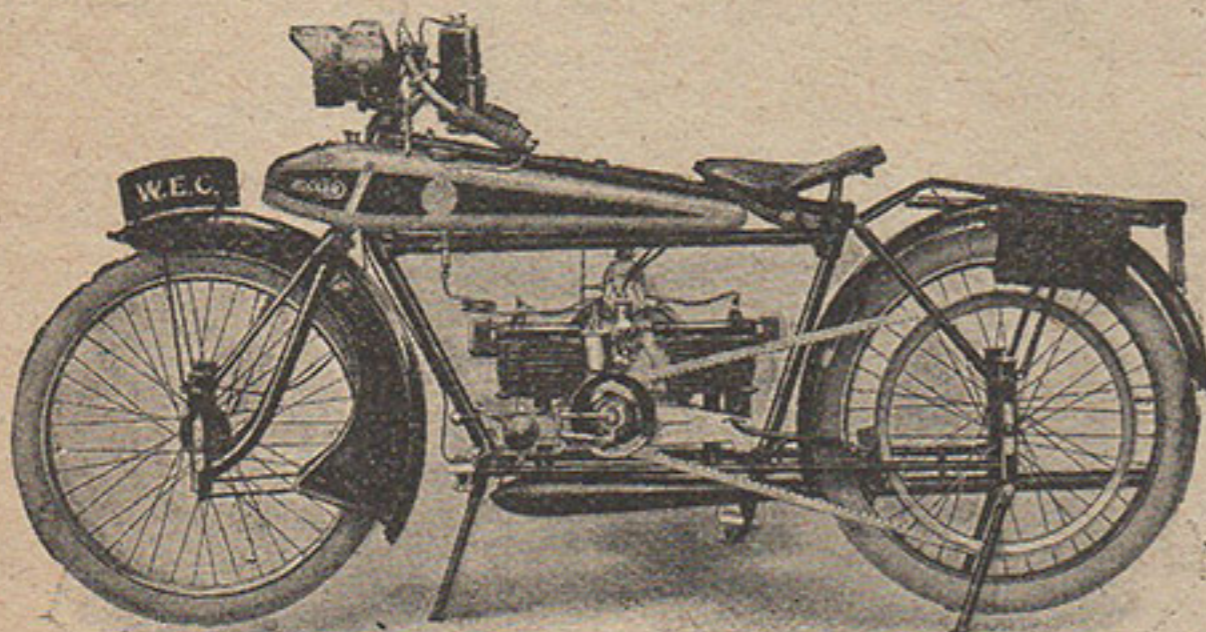
C. A. VANDERVELL & CO., LTD.  
Electrical Engineers, - - - ACTON, W.3.



**WOOLER**  
ENGINEERING Co. Ltd.

ALPERTON, LONDON.

WOOLER 2 $\frac{3}{4}$  H.P. FLAT TWIN



**The Accessible Motor Cycle**

Write for Particulars.

**Watch Woolers  
on the Road.**

Ultra-economical running is by no means the only or the greatest merit attaching to the Wooler 2 $\frac{3}{4}$  Flat Twin.

Watch Woolers on the road under every possible condition, and you will be convinced of the wonderful ease of control.

Observe—if you can—Wooler riders changing gear. Like a conjuring trick, it is easy to do but very difficult to see. Just the slightest movement of the foot, and the ratio is perfect for any new condition that may have arisen.

**But do not be content until you possess a Wooler.**

**HOW MOTOR CYCLES ARE STOLEN.**

Sir,—I regret to say that the machine I recently advertised was stolen by means of the following trick, and if you would give this publicity it might prevent any other advertiser being victimised in the same manner.

The thief, a pleasant, well-dressed man, age about 27, height 5ft. 8in., hair light brown, eyes blue-grey, clean shaven, called during the morning, stating that he was a chauffeur, and unable to call after six, as requested in advertisement, and obtained my business address from my sister. He then called on me, informing me he had seen my machine, etc., and asked for an appointment that evening, and after leaving me sent a forged wire, in my name, to my mother, stating I had seen "Taylor," as he called himself, and might let him try the machine that afternoon, which, unfortunately, she did.

As the affair was apparently carefully planned, it is not unlikely that the trick may be tried again.

Leytonstone.

J.W.B.

**UNBUSINESSLIKE METHODS.**

Sir,—I think the following, as an example of post-war "business" methods, might be of interest to your readers.

From a firm which has a world-wide reputation for high-class motor cycle lighting accessories I ordered an electric head lamp, after which the sequence of events was thus:

November 6th.—Receipted invoice received.

November 7th.—Lamp received, tested, and lamp holder unit found to be faulty. Lamp holder returned same day, with request to rectify fault as soon as possible.

November 20th.—"Hurry up" letter sent, having had no reply to my letter of the 7th, and requiring lamp urgently.

November 30th.—Still no reply, so wrote again.

December 10th.—No reply to any of my letters, so handed copies of correspondence to the Automobile Association.

December 12th.—Lamp holder received. No letter.

December 13th.—Letter from A.A. saying lamp holder was being despatched on the 11th inst. Also letter from makers (dated 10th), saying holder was being posted "to-night." No mention of an apology for non-reply to my letters.

Needless to say, that firm has booked its last order from me or any of my friends.

I should like to add my testimony to that of the many others who have found membership of the A.A. a "very present help in trouble."  
SYDNEY R. ELLIOTT.

**ICE ON THE ROADS.**

Sir,—I should like to give a word of warning to night riders of the condition of the roads at this time of the year.

On returning from Kendal the other night, rather late, for the first ten miles the roads were in quite good condition—in places, perhaps, rather muddy. Without any warning I came upon a stretch of ice, and did two complete spins before finally settling down. I had to drag the machine to the side of the road before I could get it on to its wheels again. After riding in the gutter for a couple of miles, the road apparently became better, so I ventured into the middle of the road. Feeling more confident, I opened out a little, perhaps 15 m.p.h. A policeman, standing at the side of the road, never gave me any warning. Soon after I passed him I came upon another stretch. I did one complete spin, and finished with a somersault.

With the policeman's assistance, I got going again. I did not encounter any more ice—in fact, mud was the rule for the remaining part of the journey.

My machine, an 8 h.p. Zenith, was very slightly injured, due, I suppose, to the weight being carried low and the machine being so strongly built.  
J.L.W.

Lancaster.

**SCOOTERS.**

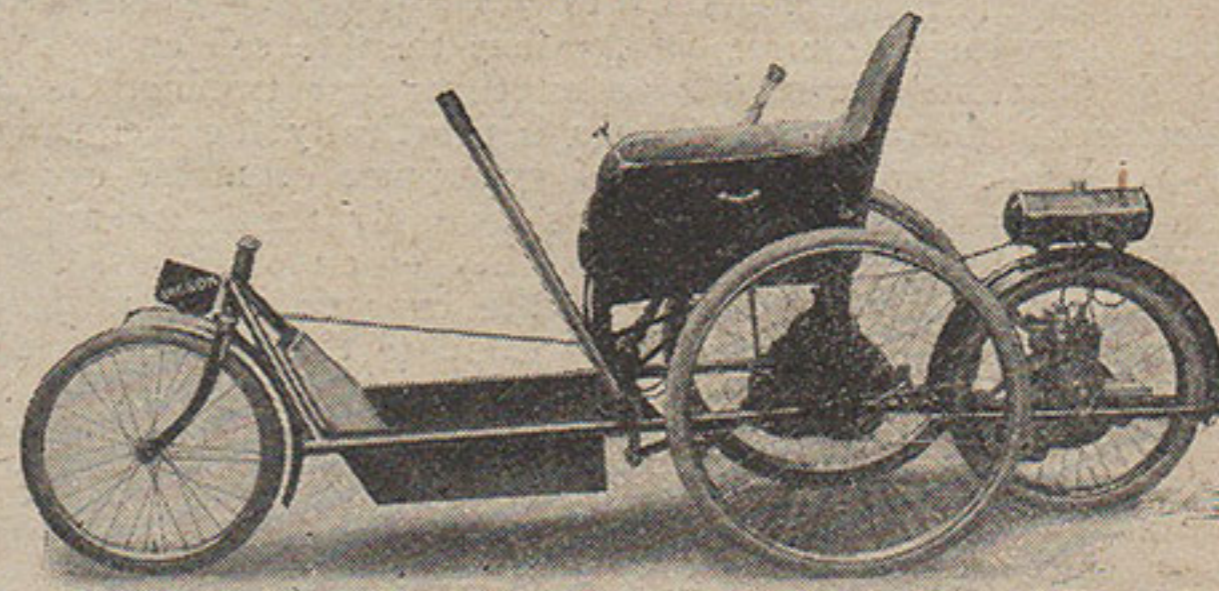
Sir,—I think that if scooters are to become popular they should be cheaper. Just on £50 is too much for these diminutives. It is nearly £10 more than the lightweight that aspires to become the two-wheeled Ford. If they are to appeal to women they must be both simple and cheap. With a valveless engine, one lever carburetter and simple transmission, satisfaction (in starting, upkeep, etc.) is assured to the biggest duffer (mechanically), whether he or she. Mr. Frank Whitworth seems against the "no seat" idea. Scooters are generally given a seat to hide the defect of wheels and footboard not being sprung. Another reason for a seat is to use it for a wrong purpose (for long journeys

instead of short trips). The word "scooter" should apply only to those ultra simple seatless machines with wheels up to 16in. Some of the machines now masquerading as scooters are really poor imitations of the Phoenix Cob, an open-frame machine, made by Mr. Van Hooydonk seventeen years ago, for elderly riders. Mr. Whitworth has evidently done no practical experimenting with scooters, or he would not question the comfort of 10in. wheels, referred to by Major Kennedy. Years ago I made a motor skate with 8in. wheels which was comfortable at ten miles an hour (even with cushion tyres). Any size wheel has its safe speed. I think a reliable scooter could easily be made to sell at £35.  
Lewisham, S.E.

STANOOP.

**AN INVALID MOTOR CHAIR.**

Sir,—No doubt the invalid motor chair which your correspondent, Jas. Cooper, saw in the Hammersmith Road during the Motor Cycle Show was one of our production, and the one on which our Mr. Garnett, himself an invalid, visited the Show on several occasions.



The "Argson" three-speed hand tricycle with Auto-wheel attached.

The chair itself was one of our three-speed gear-driven models, with an Auto-wheel attached, and, as the latter can be removed or replaced in less than five minutes, Mr. Garnett was able to proceed to the Exhibition under power, and, on arriving there, detach the wheel, and "paddle" around the Show by hand.

A speed of anything from 3 to 25 m.p.h. can be maintained, and the machine is perfectly steady on the road, and easy to steer and control.

THE ARGSON ENGINEERING CO., LTD.

S. O. NEEDHAM, Director.

**SPEEDING-UP THE TRAFFIC.**

Sir,—In view of the tremendous increase of all motor traffic, an increase which will probably double and treble in the next few years, is it not time that the laws relating to traffic control were thoroughly overhauled?

Obviously the ridiculous twenty mile limit should go—driving to the danger of the public would cover all cases of road-hogging.

The unwritten law of main road precedence should be made actual law. I would suggest going one further, and having three grades of roads, the higher grade always to have undisputed right of way over the lower. Roads are already classified in this way in most maps, and a standard map could be used as a basis for argument until all entrances to higher grade roads could be marked by sign-posts. Once the public was accustomed to this, an average main road speed of 35 to 50 m.p.h. could be maintained with as much safety as the present-day twenty.

A speeding-up of all forms of transit is the natural form of evolution, and should be catered for rather than hindered. Why, in the name of fortune, should blatant signs order the whole mighty stream of traffic of a great main road to pull up because a carter occasionally drives out of a farm entrance, or a munitionaire out of his lodge gates?

Granted, the said carter and munitionaire would need much education before speeds previously mentioned would be reasonably safe, but time and fines for breaking such a law would do even that.

In any case, the onus of avoiding accidents is put definitely on to the few for the benefit of the many, which is surely the essence of just law.

Your readers' opinions on this subject would be interesting if you could find room to insert this in your valuable paper.

GET A MOVE ON.

Luton.

## SIDE CAR HUBS

Sir,—This is probably an old complaint, but worth ventilating again. Cannot something be done to persuade manufacturers of sidecars to fit wheels to their chassis which can stand up to the heavy strain imposed upon them? The hubs of most of the wheels are altogether on too small a scale, both cones and balls being undersized, besides the design being unsuitable for a wheel that is liable to severe side strains. Should not all sidecar wheel spindles be supported at both ends, at least for high-powered machines? I have recently been endeavouring to obtain a sidecar chassis for a new heavy 8 h.p. machine, and have tried many firms in and around London, none of whom are in a position to give immediate delivery of what I require, but all offer various makes of chassis with same unsuitable wheel. When I complain that the wheel is of a size totally inadequate for the work they all admit that it is so, but say that customers prefer a cheap model rather than pay a few extra shillings for a good article. This may or may not be true, but it is surely up to the trade to advise their customers as to what design of chassis is suitable to their requirements, rather than to sell an article which they know cannot give anything but trouble. Is it because the manufacture of hubs is practically the monopoly of firms who probably have no experience of motor cycles and sidecars on the road? It is certainly time that motor cyclists could feel that the reliability of an outfit will not be jeopardised by the failure of the cups or cones of their sidecar wheels. One has only to compare the sidecars made by or to the design of motor cycle manufacturers and those made by many firms who specialise in sidecars only. I am aware that there are one or two sidecar manufacturers who are above reproach, but, judging from what one sees on the road, they are few and far between. STANDARD.

London.

## AN IMPROVEMENT IN AIR COOLING

Sir,—Regarding powerful two-strokes, I think they will serve the rider well if under-driven, i.e., not driven all out for any considerable distance, that is, as they are constructed at present. I used one with a light sidecar for about four years, a 318 c.c. belt-driven, three-speed hub, kick starter machine. Passenger ten stone, rider ten stone. Longest run without any stop, forty-six miles, and then only on account of arriving at destination. I found it a good climber and comfortable to drive, but it wore out three or four belts during the time I had it. I found the three-point plug the best.

I like the idea of a cooling jacket by Mr. Hawley Morgan, as shown in your issue of December 18th, 1919, but as 75% of the heat is around the head of the cylinder, I should think it only necessary to cool that portion.

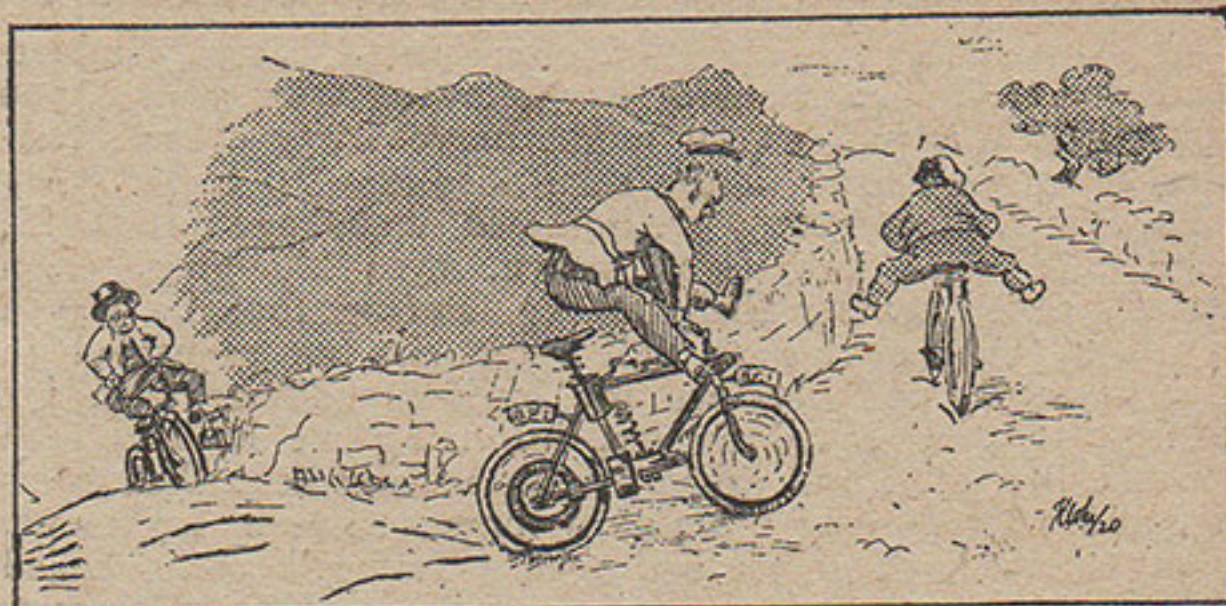
Would it not be better to have the air space around the head of the cylinder the same size throughout, so as to have a clear passage of cold air passing at each impulse?

Enclosed is a rough sketch of the idea. I must admit, however, the spiral core might be a trifle awkward in moulding. RIDER.

Warrington.

## CAVEAT EMPTOR.

Sir,—Speaking from my knowledge of the motor trade generally, and from my own personal experience, I do not think that motor cycles (and for the matter of that, cars also) were ever being turned out so badly as at present. With the exception of perhaps half-a-dozen makes of machines, which are generally beyond reproach, it seems to be entirely a matter of luck whether one gets a good or a bad motor cycle. We, as motor cyclists, are as a rule handicapped by reason of our not being able to get a trial run before purchasing, therefore it behoves those of us, to whom the present high prices are of consequence, to make a point of carefully examining new machines as far as possible before taking delivery, especially the vital parts,



## A PEEP INTO THE FUTURE.

The first hill-climbing competition on the new "Bump" bicycle depicted by a reader, Mr. H. W. Moss.

such as engines and gear boxes, and to insist on seeing that all parts are properly adjusted, and at least in running order. Unfortunately, manufacturers are in a position to say, "Take it or leave it," and many agents do not care what they sell so long as they can sell it; but if we want proper value for money, it is up to us to insist on getting properly finished machines, even at the sacrifice of a larger output. Personally, I have always found the chief offenders in this respect to be assemblers of motor cycles; not those who, in the strict sense of the word, manufacture them, but those who buy the various parts and put them together, or stick them together, as the case may be, many of whom cannot even properly build a wheel. After keeping a vow for several years never again to buy a machine of this kind, I was tempted some weeks ago to give an order for another, a so-called lightweight, for which the makers have the impudence to ask nearly the price of a countershaft Triumph. The condition in which this machine was sent to the agents was simply disgusting; some parts of it would not even have done credit to a blacksmith. I will avoid going into details which would encroach even more than I am doing upon your valuable space, and suffice it to say, that I absolutely refused to take delivery. Fortunately for me, I am never without a trusty Triumph, no matter what other machines I may or may not possess, but even if I had not been in this fortunate position, I should still have refused delivery of this machine.

Thanking you for the many happy days this year which your publication has afforded me ENTENTE.  
London.

## GOOD SERVICE.

Sir,—I recently placed an order for a motor cycle accessory with a leading London firm, and sent a cheque in advance. I received a polite reply and promise of attention, but no goods. After some waiting I placed the order with cheque with another London firm. Result, exactly the same. After weeks of waiting I sent my order to Harrod's, London. Result, goods arrived in due course.

I think that other motorists who may have had similar difficulties to mine may be glad to know of a place where orders get promptly executed.

(REV.) EDWARD W. WILMOTT.

## BOOKS AND MAPS FOR MOTOR CYCLISTS.

Issued in conjunction with *The Motor Cycle*.

	Price	By
	net.	post.
"HINTS AND TIPS FOR MOTOR CYCLISTS." Containing over 400 useful "wrinkles" and helpful hints in regard to motor cycles. Sixth Edition. (Second Reprint.)	2/-	2/3
"TRACING MOTOR CYCLE TROUBLES." A reliable system for tracing motor cycle faults and of remedying any trouble when found. Fourth Edition	2/-	2/3
"THE MOTOR CYCLE" ROAD MAPS. England and Wales, Scotland, London (showing roads into and out of London and avoiding London). Mounted on linen. Set of three, complete in case	4/6	4/10

Obtainable by post (remittance with order) from ILIFFE & SONS Ltd., 20, Tudor Street, London, E.C.4, or of leading Booksellers and Railway Bookstalls.

**LONDON-EDINBURGH RUN**

**1919**

both A.B.C. Solo  
Mounts and A.B.C.  
Combination gained  
**GOLD MEDAL AWARDS.**

**THE  
TALBOT  
GARAGE, Ltd.  
STOCKPORT,**

Are the sole distributing  
Agents for Lancashire and  
Cheshire for the famous



Greatest engine efficiency and power for all purposes by air-cooled, flat twin power unit.

**15%** reduction in fuel consumption. Luxurious riding comfort by scientific seat springing. Greater resiliency by **30%** lighter frame construction, with **100%** greater strength. Four-speed gear box. Automatic lubrication.

Send for particulars and early delivery dates, and secure your mount for this season's riding.

Phone : 500, Stockport.  
Grams: "Talbot Garage,  
Stockport."

# What do you know about your motor?

## An Important Work for every Motor Cyclist

The time is past when it required an expert engineer to drive a car, but a working knowledge of the various parts of a car and their functions is still essential to really successful driving, and the importance of this work to every owner and driver of a motor car, cycle, or cycle car can hardly be over-estimated.

"The Book of the Motor Car" is the first really comprehensive work on motor cars, cycle cars, and motor cycles ever published. By the careful study of its chapters the rawest amateur can learn the principles upon which his car works; but at the same time it is so comprehensive and so striking in its detail that even the skilled man will find it a book of enthralling interest and extreme utility, while the practical motorist will find it quite indispensable. It should be as much a part of the equipment of a garage as an oilcan or a lifting jack. Reading its chapters, even the most expert driver will find himself gaining a fuller understanding of points that he thought he understood already, and learning hints that will enable him to increase the efficiency of his mount in a surprising manner.

### Driving and Repairs.

"The Book of the Motor Car" is full of invaluable information on all problems of driving and repairing a car, instructions being given for all possible difficulties in language that can be understood even by the most unmechanical mind. The following are a few of the subjects dealt with:

Cylinders, valves of all kinds, different types of engines, carburettors, ignition, silencers, gear and clutches, radiators, cooling systems, brakes, lubrication, lighting systems, wheels, tyres, fuels and how to use them, tools, and repair appliances, etc., etc.

### Cycle Cars and Motor Cycles.

The work pays full attention to motor cycles and cycle cars, full details and instruction being given for all those points wherein they must be treated differently from the most powerful motor car. In these and all other respects "The Book of the Motor Car" is in line with the very latest discoveries in motor engineering. It is profusely illustrated with full-page plates, drawings, in plan section and elevation, diagrams, and photographs, as well as a series of sectional movable models in colour.

### A FREE BOOKLET.

The publishers are willing to send an interesting illustrated booklet describing the work to all sending this form or a postcard

To the Caxton Publishing Co., Ltd.,  
75, Surrey Street, London, W.C.2.

Please send me, free of charge and without any obligation on my part, your illustrated booklet giving full particulars of "The Book of the Motor Car."

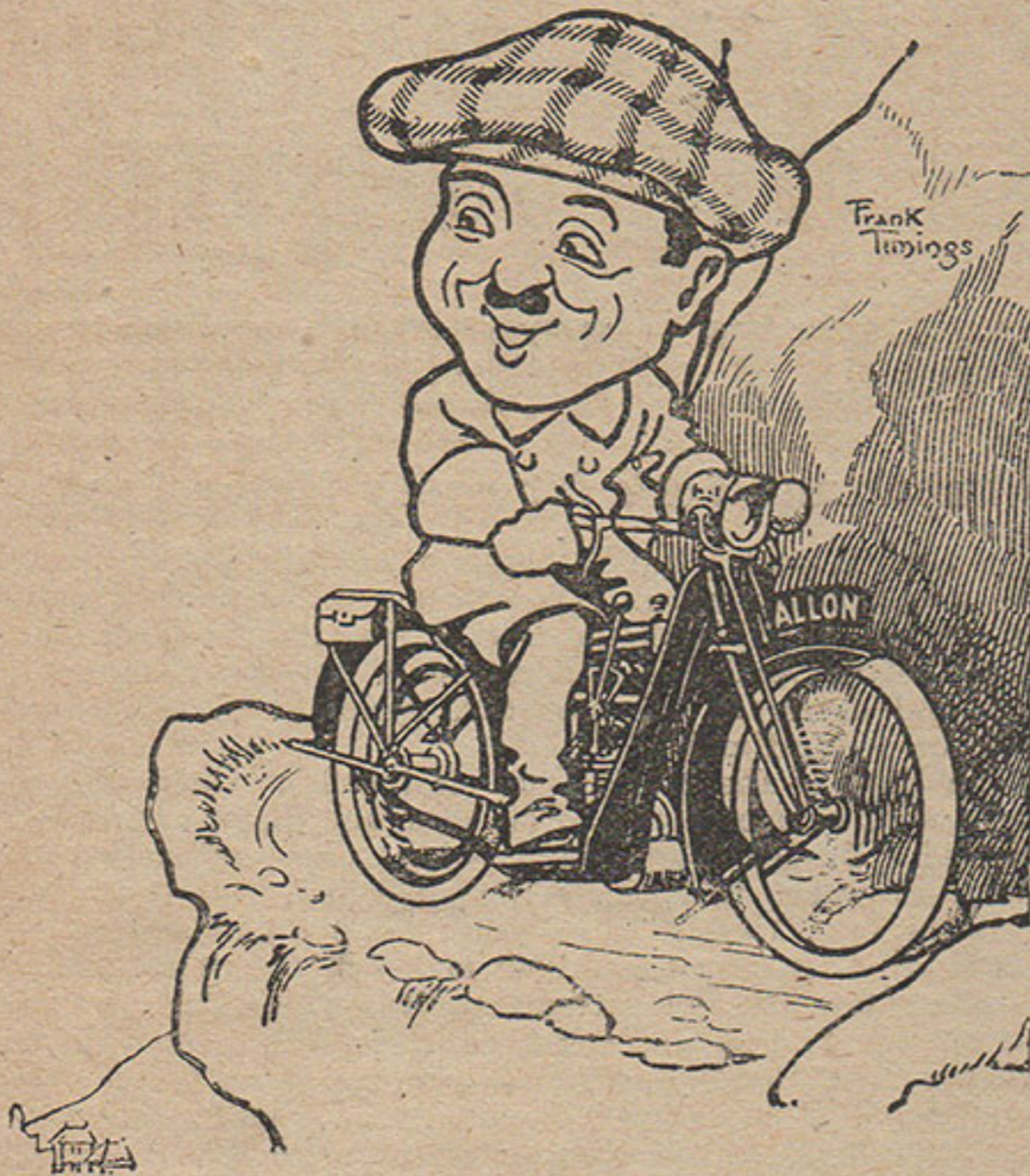
Name .....

(Send this form or a postcard.)

Address .....

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**FOR REAL JOY RIDING  
— TROUBLE FREE —  
RIDE AN**

# ALLON

**PATENT TWO-STROKE**

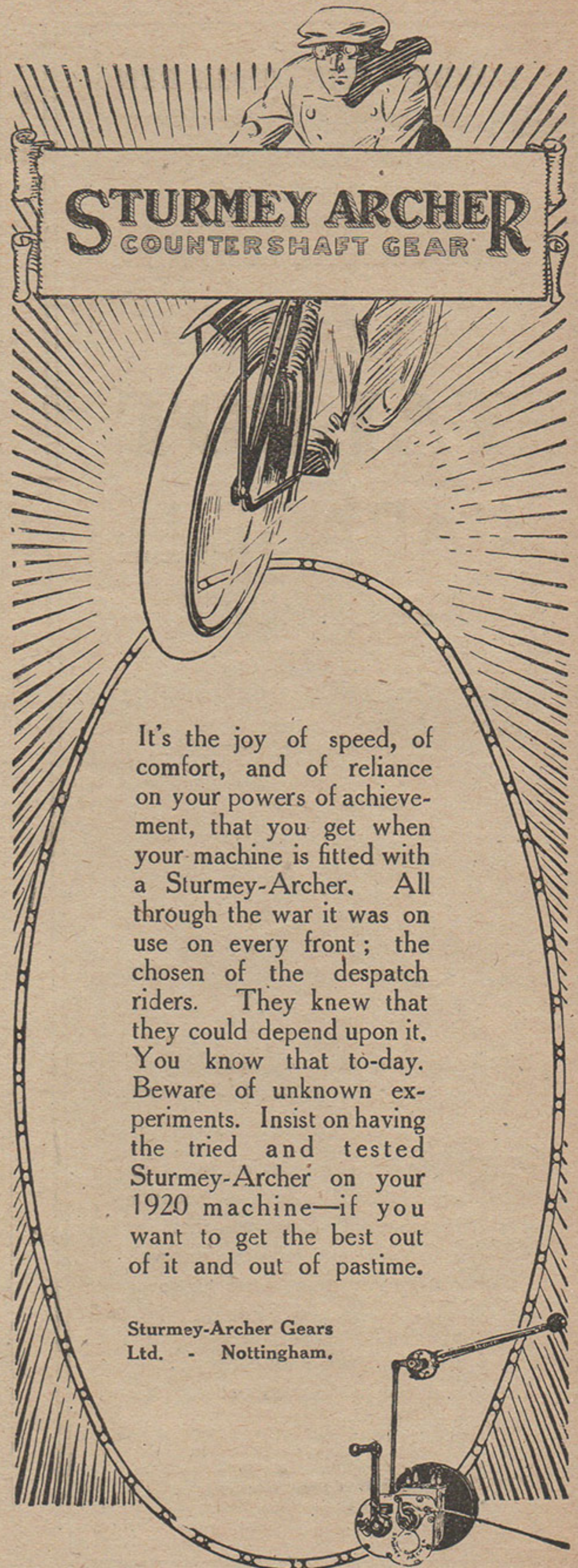
**Proclaimed by thousands of  
riders to be without doubt**

## THE BEST OF ALL MOTOR CYCLES

**incomparable  
for COMFORT  
and DURABILITY,  
yet SIMPLE  
and POWERFUL.**

Full particulars and name of nearest Agent  
sent on request.

**Alldays & Onions, Ltd.,  
BIRMINGHAM.**



It's the joy of speed, of comfort, and of reliance on your powers of achievement, that you get when your machine is fitted with a Sturmev-Archer. All through the war it was on use on every front; the chosen of the despatch riders. They knew that they could depend upon it. You know that to-day. Beware of unknown experiments. Insist on having the tried and tested Sturmev-Archer on your 1920 machine—if you want to get the best out of it and out of pastime.

Sturmev-Archer Gears  
Ltd. - Nottingham.

# QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

### Sparking in Contact Breaker.

Will you advise me why my Ruthardt magneto sparks at the platinum points? What would you advise me to do, as it will only spark occasionally and then ceases for a time, and so on?—W.E.H.

Excessive sparking at the contact breaker platinum points indicates a defective operation of the condenser, and we should advise you to submit your magneto to C. A. Vandervell and Co., Ltd., Warple Way, Acton Vale, W.3, who formerly handled the Ruthardt.

### Gear Ratios.

Will you inform me what size engine sprockets I should need to give a 4 to 1 top gear on one machine and 4½ to 1 on another? Both machines have 20in. belt rims and 8in. pulleys on gear box. Clutch sprocket has 36 teeth. What size belt rim should I need with an 18T. engine sprocket, 36T. clutch sprocket, and 8in. gear box pulley?—T.S.

With the sprocket and pulleys already fitted to your machine, you would need a 22 tooth engine sprocket to obtain a 4 to 1 gear ratio, and a 20 tooth sprocket to obtain a 4½ to 1. To obtain a 4½ to 1 gear, using an 18 tooth engine sprocket, the rear belt rim should be 18in. in diameter.

### Wheel Building.

I am about to fit my 3½ h.p. British Excelsior with a 650 x 65 mm. back wheel, therefore I should be greatly obliged if you could give me a little information that would enable me to build the wheel myself, i.e.: (1.) The correct method of arranging spokes from hub to rim. (2.) Is there any particular way of crossing the spokes? (3.) The general method employed in truing up the wheel?—H.C.S.

(1.) We should recommend you to have the wheel rebuilt by an experienced cycle mechanic, as wheel-building is a trade in itself, and if you are not skilled in it, we do not think that the result will be very satisfactory, should you attempt it yourself. (2.) In truing a wheel, the method is alternately to tighten and slacken the spoke nipples until the rim runs truly, both circumferentially and centrally with the hub. When this is completed the tension of all the spokes should be equal. Experience alone can make you an expert in this process.

### Removing Timing Pinion.

Will you please inform me if the crankshaft pinion of the 1914 Douglas 2½ h.p. engine has a right or left-hand thread?—A.J.C.

The crankshaft pinion on the 1914 Douglas is not screwed on at all; it is a tightly pressed fit on a parallel shaft. Possibly you refer to the retaining screw in the end of this shaft, which has a right-hand thread.

### Surging in Inlet Pipe.

(1.) Do the unequal periods between the induction strokes of a V-twin cause "surging" of the mixture in the T-shaped inlet pipe, and, consequently, unequal distribution of gas to the two cylinders? (2.) If such is the case, which cylinder is adversely affected—front or rear? (3.) Is it possible to overcome this defect by making use of a special timing for the inlet valve of the cylinder affected? (4.) Can you give particulars of such a timing?—R.F.M.

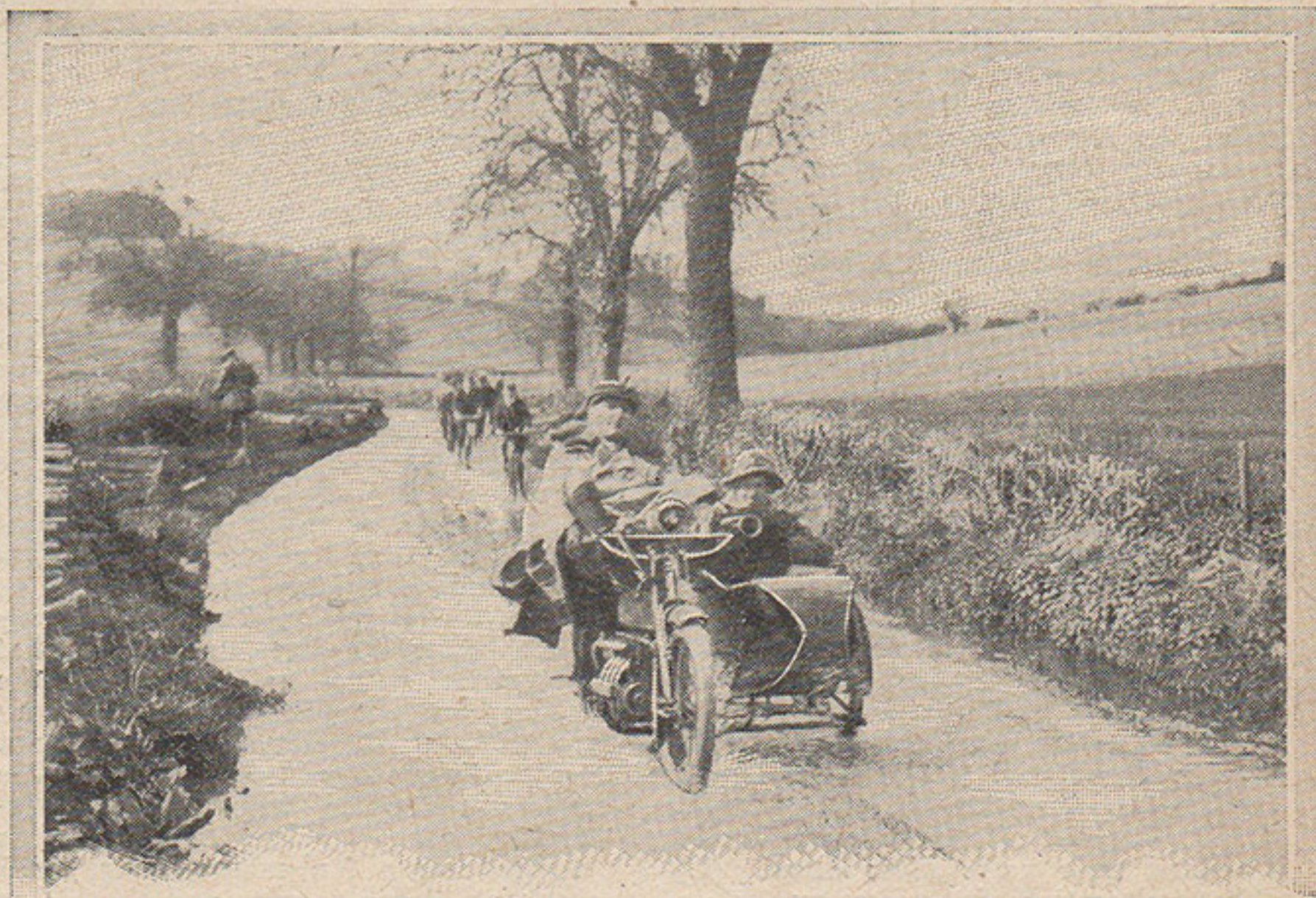
(1.) You are correct in supposing that the unequal periods between the induc-

tion strokes of a V-twin engine cause surging of the mixture. (2.) Skilful design of the induction pipe and ports will eliminate any bad effects. It is impossible to say which cylinder will be adversely affected, as everything depends upon the design. (3.) Slight variations in the timing of the two cylinders are sometimes adopted, but if this is not done by the makers, the usual form of timing gear prevents it being done subsequently.

### Moto-Reve Questions.

I should like your opinion on a twin-cylinder 2½ h.p. Moto-Rêve, especially as regards maximum speed and ease of starting. Will you give some particulars on starting and running a motor cycle?—A.T.H.T.

Moto-Rêve motor cycles were made in Switzerland, and they have not been imported into this country for some years. They were quite well made, but of very light parts. They are capable of about 35 m.p.h. on the level. With the standard carburetter they were not particularly easy to start. They are much improved, however, by having a good modern lightweight carburetter fitted.



Flooded roads are now frequently met with in many parts of the country, but waterproof magnetos and chain drive have eliminated the old trouble that attended the passing through flood water.

**Charging from Alternating Current.**

**?** (1.) Is it possible to charge accumulators from the switch terminal of a magneto by using the Noden chemical rectifier which converts alternating current to direct current? (2.) What is the approximate voltage of the A.C. current generated by a Bosch magneto, as I should have to transform down to the necessary voltage? (3.) Would it be detrimental to the magneto, and what effect would it have on the spark at the plugs?—H.S.

(1.) It would no doubt be possible to charge an accumulator from the low-tension circuit of the magneto, by using the Noden valve. (2.) The maximum voltage is approximately six. (3.) It would not harm the magneto, but the spark would be considerably weakened at low speeds, and you would not be able to start with the battery in circuit.

**Two-stroke Efficiency.**

**?** (1.) Is it possible and practical to make a diagram, on crankshaft degrees, showing opening and closing of the ports in a two-stroke engine? (2.) Why is the explosion of a two-stroke engine less powerful than that of a four-stroke engine of similar capacity? (3.) Which of the following types of engine is theoretically the most efficient, and which suffers the least from heat losses, provided that the bore and stroke are similar in all cases: (a) A two-stroke engine, with Scott type of piston; (b) a two-stroke engine, with Connaught type of piston; (c) a four-stroke engine, with overhead valves inclined to one another; (d) a four-stroke engine, with side by side valves?—F.M.A.

(1.) A timing diagram can be made to apply to the two-stroke engine quite as easily as to the four-stroke type. (2.) The maximum effective pressure in a two-stroke engine is less than that of a four-stroke of similar capacity, because the volumetric efficiency of the former type is not so great as in the latter. In all such comparisons it is assumed that compression ratios and other details bear a reasonably close relationship in each case. (3.) Theoretically, the four-stroke engine, with overhead valves inclined to each other, is the most efficient type, since the volumetric efficiency is greater and the heat losses smaller than in the other designs you mention.

**Hub Gear, Magneto, and other Queries.**

**?** (1.) How can I adjust clutch and gears of a 1914 T.T. three-speed Mark VII. Armstrong motorcycle for 8 h.p.? The clutch will not work at all. I start in low and change to middle all right, but cannot change to high or down again to low without stopping. (2.) How should I test a Bosch magneto, type DA2, and where can I obtain any handbook concerning it? (3.) Is it possible to increase compression of a 3½ h.p. J.A.P. engine? It turns quite easily by hand with valve lifter down. (4.) What alteration is necessary to a Senspray carburetter to use benzole, and what make of benzole would you recommend?—A.L.

(1.) If your gear is of the correct T.T. pattern no clutch is fitted. The gears are adjusted by securing the control lever in the position marked "adjusting" on the quadrant. The road wheel should then run freely and without noise, while the belt rim is stationary. If it does not do so, tighten or slacken the milled adjuster on the control rod until the necessary free running is obtained. (2.) You do not say to what particular tests you wish to subject your magneto. If you merely require to know its working efficiency a good spark at the plug will be sufficient evidence. (3.) Evidently the engine is in poor condition, and it will probably need new piston rings, and the valves will also require grinding in. (4.) Slightly lower the petrol level, also fit a jet two sizes smaller. Benzole which conforms to the N.B.A. specification can be thoroughly recommended.

(1.) Apparently your carburetter is flooding. This is rather unusual on the top feed B. and B., and may be caused by the collar on the needle having altered its position, or by a small obstruction in the valve seating, which prevents the needle closing the orifice completely. A further possible cause may be that the float is punctured and weighed down with petrol. You can ascertain this by removing the float and shaking it, noticing if you can hear the petrol inside. (2.) It seems almost impossible that the clutch should slip on low gear if it does not do so on top. In all probability you are mistaking the fact that the engine is racing on a light load for symptoms of clutch slipping.

**READER'S REPLY.****Belt Trouble.**

Re queries on belt trouble and your reply in the issue of December 18th. Might I suggest, from my own experience, that belt wear is also very much accentuated by changing the direction in which the belt runs. With a Rudge-Multi I find belts wear well until, through oversight, perhaps after shortening, the belt is put on again the opposite way round from which it was taken off. To avoid this I now mark an arrow on the top pointing towards the engine pulley to ensure replacing the belt always in the same direction after taking it off for any purpose.—H. W. JESSOP.

**RECOMMENDED ROUTES.**

**ELLESMERE TO LOUGHBOROUGH.**—J.P.B.  
Ellesmere, Whitchurch, Woore, Stone, Uttoxeter, Burton, Ashby-de-la-Zouch, Loughborough.

**LAUNCESTON TO WADEBRIDGE.**—E.H.  
Launceston, Piperspool, Davidstow, Camelford, St. Kew Highway, Wadebridge. Return same way, or over Bodmin Moor, via Bodmin.

**CHESTER TO DUFFIELD.**—A.R.M.  
Chester, Tarvin, Middlewich, Holmes Chapel, Congleton, along Brixton Road five miles, turn right to Leek, Ashbourne, Turnditch (Belper Road), Duffield. The direct route is by Nantwich, Newcastle, and Uttoxeter, and passes through the Potteries.

**LAUNCESTON TO BIDEFORD AND BRISTOL.**—E.H.  
Launceston, Tower Hill Station, Holsworthy, Monkleigh, Bideford, Barnstaple, Swimbridge, South Molton, Bampton, Wiveliscombe, Milverton, Bridgwater, Highbridge, Cross, Red Hill, Bristol.

**CHICHESTER TO PLYMOUTH.**—L.J.H.  
Chichester, Emsworth, Havant, Cosham, Fareham, Burgledon, over Northern Bridge for Southampton, Totton, Lyndhurst, Bournemouth, Constitution Hill, follow Wimborne Road to Fleet's Corner, and then branch left over railway bridge for Lytchett Minster, left for Wareham, Wool, Warmwell Cross, Dorchester, Winterborne Abbas, Bridport, Charmouth, bear right for Hunter's Lodge Inn, Axminster, Honiton, Exeter, Chudleigh, Ashburton, Buckfastleigh, Ivybridge, Plymouth. Distance, 190 miles.

**THE NEXT STAGE!**

**MOTOR CYCLISTS**  
interested in small or large cars should read

*The Autocar*  
Every Friday 3d.

*the forerunner of all motoring journals. Founded in 1895, it remains the largest and most successful automobile paper, and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.*

**Flooding Carburetter.**

**?** (1.) My machine is a Big Four Norton and sidecar. Until a few days ago I could do 70 miles per gallon, and now cannot do more than 20. The engine eight strokes at low speed, but has great power, as I have not yet seen a hill which cannot be taken on top gear. If the engine is running even with the pilot jet the whole air must be given. Controls seem to be all right. If I am using the pilot jet on the level or down hill it misfires and eight strokes continually, but if a small incline appears as soon as I go uphill the engine picks up and runs much better. I quite understand that too much petrol is passing to the engine, but not being acquainted with the B. and B. carburetter I do not see the way to remedy it. (2.) The machine is fitted with the Sturmey-Archer gear. When low gear is engaged for a few minutes, for traffic work, it begins to race and the clutch slips. This slipping is not felt when going on second or third speeds.—J.U.



# The MOTOR CYCLIST'S SURE SHIELD



How the A.A. Badge defends members against motoring risks.

The British motor cyclist is always open to attack—his liberty is threatened by legislative restrictions, he is liable to be charged with technical offences under the Motor Car Act, whilst, in spite of the high standard of the modern motor cycle, "road trouble" is an ever-present risk.

Fortunately, there exists, in the Automobile Association, an efficient and prepared Motoring Organisation, whose duty it is to foresee and guard against any and every danger which threatens the motor cyclist or interferes with his legitimate comfort

So well has the A.A. performed its duty that it can be truly said there is not now a single need of the reasonable motor cyclist which the Association does not provide for.

The A.A. Badge protects members against all the following "regrettable incidents":—

**Unnecessary delay due to a breakdown, lack of motor fuel, spares, etc.** The khaki-clad A.A. patrol will render invaluable help in any of these emergencies.

**Charges under the Motor Car Act.** Members are defended free of cost by A.A. solicitors in any police court in the United Kingdom.

**Foreign Customs Dues.** Any member of the A.A. can take a motor cycle into a 70% tariff country on a banker's indemnity alone, and without depositing fifty or sixty pounds in Customs dues.

**"Taking the wrong road."** Detailed itineraries of routes throughout the United Kingdom, together

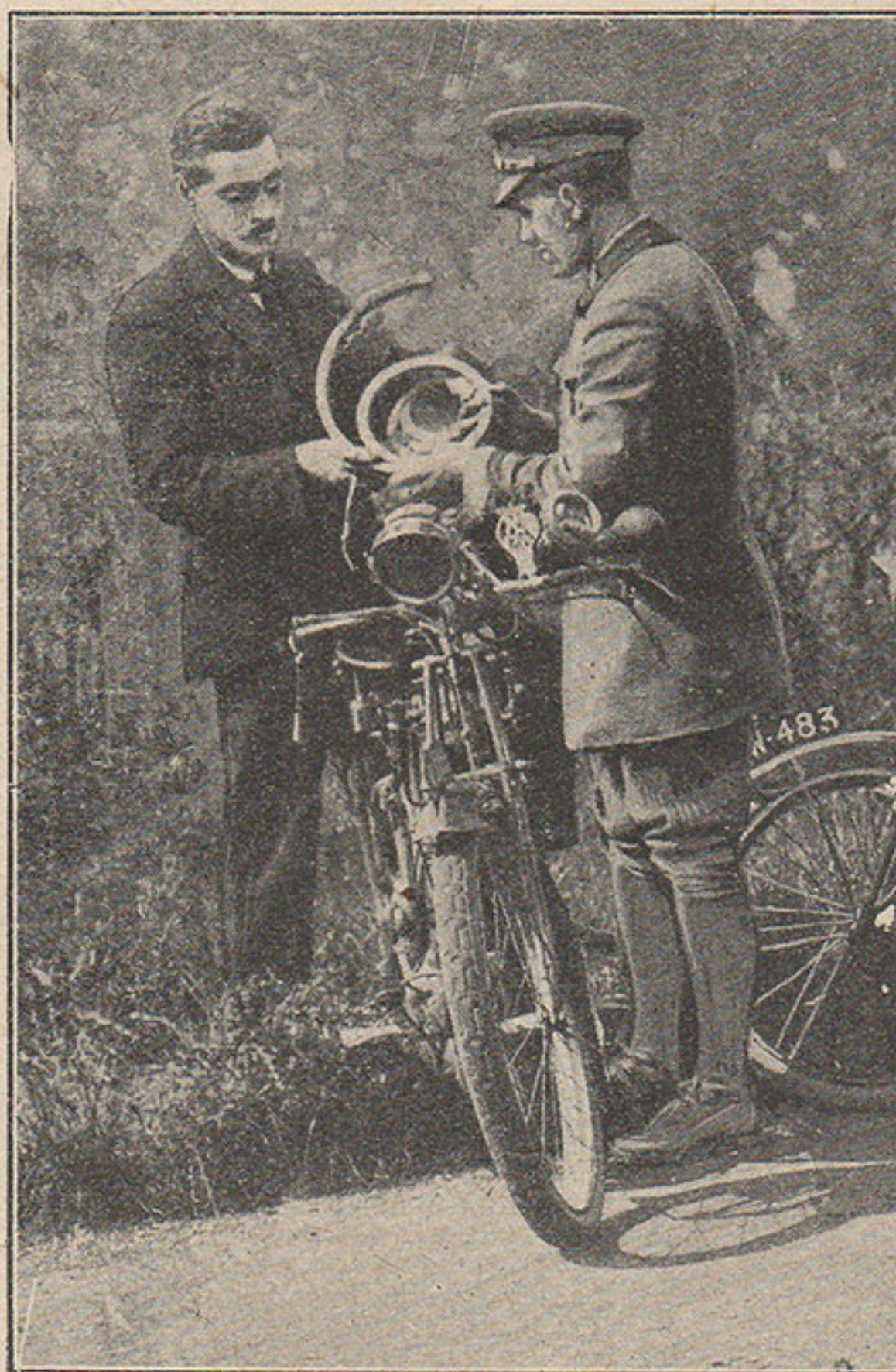
with accurate guide cards of all the larger towns, are supplied free to members on request.

**Buying a "dud" Cycle.** Qualified engineers advise on the choice of motor cycles, and report upon motor vehicles, new and second-hand, offered to members.

**Unsatisfactory Hotel Accommodation.** The A.A. Handbook, issued free to members, contains a list of all the A.A. officially appointed Hotels throughout England, Ireland, Scotland, and Wales.

In addition, the A.A. Badge secures free use of the Roadside Telephone Boxes, "Mechanical First Aid" Cycles, Special Insurance Facilities, etc., etc., and it is to the personal advantage of every motor cyclist who is not already a member to become one without delay.

Send a postcard to-day, to the Secretary, The Automobile Association, 21, Finsbury House, Whitcomb Street, London, W.C.2, for a free copy of the booklet, "The Key to the Open Road," which contains full particulars of all A.A. benefits and the objects of the Association.



## A FRIEND IN NEED.

The A.A. Badge brings Welcome Assistance.

### Report on National Benzole Road Test.

This report has now been completed, and can be obtained by members from the Fuel Department of the A.A. and M.U. It is published in two editions: paper covers at 3/6 post free, and cloth binding, making it a permanent book of reference, at 5/- post free.

# MISCELLANEOUS ADVERTISEMENTS.

## PRICES.

**ADVERTISEMENTS** in these columns—First 12 words 2/6, and 2d. for every additional word. Paragraphs of under 8 words are charged double rate, i.e., 5/-. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable to **ILIFFE & SONS Ltd.**, and crossed **Treasury Notes**, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," 20, Tudor Street, London, E.C.4, or 19, Hertford Street, Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

## NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "Motor Cycle," 20, Tudor Street, E.C.4. Replies to Box Number advertisements containing remittances should be sent by registered post, but in all such cases it is advisable to make use of the Deposit System.

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

## DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, 1/-. All deposit matters are dealt with at 20, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

## SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

## MOTOR CYCLES FOR SALE.

### A.B.C.

**WHAT** Option on 3h.p. A.B.C.? Delivery promised March. £5 deposit already paid.—Blucke, Shaftesbury, Dorset. [X2561]

**A.B.C.**, ordered February, deposit paid April: what offers for option delivery?—Box 6,668, c/o The Motor Cycle. [7866]

**JONES'** Garage, special agents for A.B.C., Broadway, Muswell Hill, N.10, and Woodside Parade, North Finchley. [0026]

**WE** Are Agents for the A.B.C. Place your order with us to secure good delivery.—Apply, King and Harper, 6, Bridge St., Cambridge. [7663]

# WAUCHOPE'S

9, Shoe Lane,  
Fleet Street,  
London, E.C.4.

For square  
deals and  
values....

Our Stock includes the following Machines.

No.	H.P.	Machine.	Year.	Price.
<b>NEW.</b>				
12267		<b>AUTOPED MOTOR SCOOTERS</b>	1920	£42 0
—	7-9	<b>HARLEY-DAVIDSON</b> .....	1920	—
—	7-9	<b>HARLEY-DAVIDSON Comb.</b> ..	1920	—
12161	8	<b>NEW IMPERIAL and Sidecar</b> ..	1919	—
12291	2½	<b>P. &amp; S.</b> .....	1920	£67 0
12290	2½	<b>CARFIELD</b> .....	1920	£60 0
—	2½	<b>DOUGLAS, 3-speed</b> .....	1920	£90 0
12317	3½	<b>JAMES Twin</b> .....	1920	£115 0
12316	3½	<b>SCOTT Twin</b> .....	1920	£115 10
12318	4½	<b>QUADRANT Combination</b> ..	1920	£122 10
<b>SECOND-HAND SOLO MACHINES.</b>				
12292	3½	<b>SCOTT</b> .....	1910	£32 10
12294	2½	<b>FORWARD</b> .....	—	£27 10
12272	4	<b>BRADBURY</b> .....	1911	£40 0
12074	6	<b>ZENITH, Gradua gear</b> .....	1914	£84 0
12059	8	<b>MATCHLESS, single gear</b> ..	1913	£72 10
12012	3½	<b>CORAH-J.A.P.</b> .....	1912	£48 0
11762	3½	<b>RUDGE</b> .....	1913	£45 0
12315	2½	<b>CARFIELD</b> .....	1920	£59 0
12310	2½	<b>CALTHORPE J.A.P.</b> .....	1914	£48 0
12303	2½	<b>NEW IMPERIAL J.A.P.</b> .....	1916	£47 10
<b>SECOND-HAND COMBINATIONS.</b>				
12276	7-9	<b>INDIAN Combination</b> .....	1914	£95 0
12275	8	<b>ROYAL RUBY and Sidecar</b> ..	1919	£150 0
12273	4½	<b>JAMES Combination</b> .....	1916	£125 0
12166	8	<b>ROYAL ENFIELD Combination</b> ..	1919	£167 15
12010	7-9	<b>JAMES-HOWARTH Comb.</b> ..	1914	£125 0
12120	3½	<b>KERRY-ABINGDON Comb.</b> ..	1914	£72 10
12082	5-6	<b>INDIAN Combination</b> .....	1913	£125 0
12000	7-9	<b>INDIAN Combination</b> .....	1913	£85 0
12184	6	<b>ROYAL ENFIELD Combination</b> ..	1917	£155 0
12196	4	<b>DOUGLAS Combination</b> .....	1919	£125 0
12101	4	<b>A.J.S. and Sidecar</b> .....	1915	£130 0
11977	8	<b>WILLIAMSON Combination</b> ..	1914	£110 0
12159	5-6	<b>RUDGE-MULTI and Sidecar</b> ..	1914	£87 10
12164	4	(twin) <b>ZENITH and Sidecar</b> ..	1919	£145 0
12104	7-9	<b>HARLEY-DAVIDSON Comb.</b> ..	1915	£150 0
12188	6	<b>ROYAL ENFIELD Combination</b> ..	1913	£87 10
12293	7-9	<b>HARLEY-DAVIDSON</b> .....	1919	£185 0
12136	3½	<b>RUDGE MULTI</b> .....	1916	£130 0
12168	7-9	<b>INDIAN Combination</b> .....	1913	£77 10
11983	6	<b>ROYAL ENFIELD Combination</b> ..	1913	£82 10
12305	4	<b>SUNBEAM and Sidecar</b> .....	1919	£165 0
12314	8	<b>HUMBER Combination</b> .....	1919	£175 0
<b>SECOND-HAND CARS</b>				
12135	—	<b>GARDENA Cycle Car, 7-9 h.p. Harley-Davidson engine</b> .....	—	£115 0
12099	8	<b>DUO Car I.A.P. engine</b> .....	—	£150 0
12299	10	<b>CITROEN Car (new)</b> .....	1920	£525 0
12300	8	<b>G.N. Car</b> .....	1916	£105 0
12302	8	<b>G.W.K. Car</b> .....	1914	£205 0

**SIDECARS.**  
Canoet Minor. Royal Ruby.  
Canoet D4. "Wauchope's" No. 1.  
Canoet K4. "Wauchope's" No. 2.  
Canoet K3. Williamsons.  
Douglas. Triumph.

The Latest 1919  
**6 h.p. J.A.P. TWIN-CYLINDER ENGINES.**  
From Stock. Trade supplied. Terms on application; these include extras. 50 engines, for immediate delivery, £37 10s. each.

**6 h.p. J.A.P. Cylinders**, including valves, springs, and compression plugs ..... £5 0  
**6 h.p. J.A.P. Pistons**, with rings and gudgeon pins ..... £1 5  
**4 h.p. DOUGAS Cylinders**, new, for 4 h.p. engines ..... £2 5  
Second-hand Machines taken n Part Payment. Good price allowed. Maker's guarantee.

# WAUCHOPE'S,

## 9, SHOE LANE, E.C.4.

Phon: Holborn 5777  
Grams: Opificer, Fleet, London.

## MOTOR CYCLES FOR SALE.

### A.B.C.

**A.B.C.**—Book early and prevent disappointment. Specification and full particulars will be sent on application.—The Spalding Motor Co., Ltd., Spalding, distributing agents for Lincolnshire [0015]

**A.B.C.**, 3½h.p., 1915, 4-speed, hand and foot clutch, in excellent condition; best cash offer over £95; seen by appointment only.—G.P., 2, Lawrence Mansions, Cheyne Walk, Chelsea, S.W.3. [8046]

### Abingdon.

**A** BINGDON King Dick, 3½h.p., recently overhauled and enamelled, horn and lamps; £42.—Naldrett, 56, West St., Horsham. [7693]

**19** 14 Abingdon Combination, 6h.p. twin J.A.P. engine, 2-speed gear, fitted with sporting torpedo sidecar, very fast, in first-rate condition; bargain, £50.—Apply, R. F. Fuggle, Ltd., Edgware. [7777]

### A.J.S.

**A** J.S. Specialists and Agents: The Walsall Garage, Walsall. Tel.: 444. [9574]

**JACK HEALY**, Cork, official A.J.S. agent.—Rotational delivery. No premiums accepted. [6485]

**C**ROW Bros., High St., Guildford, A.J.S. agents since 1912, accept no premiums. [X7943]

**A** J.S., with coachbuilt sidecar, recently overhauled; price £85.—Box 6,714, c/o The Motor Cycle. [8248]

**19** 20 A.J.S. Combination: what offers for January delivery?—G., Rose Cottage, Ebford, Topsham, Devon. [X2621]

**6** h.p. 1914 A.J.S. and Swan Sidecar, electric light and horn, 3 speed, K.S., clutch; £125.—Miss Bacon, 41, Montpelier St., Brighton. [7846]

## :: DEPOSITS ::

### SPECIAL NOTICE.

The attention of Advertisers is called to the fact that Deposits are now dealt with at  
**20, Tudor St., London, E.C.4,**  
to which address all communications relating to deposits should be directed

**19** 20 A.J.S. Combination, just delivered, hood, screen, spare wheel; offers over list price.—Box 6,722, c/o The Motor Cycle. [8254]

**WE** Are Agents for the A.J.S. Place your order with us to secure good delivery.—Apply, King and Harper, 6, Bridge St., Cambridge. [7662]

**WAUCHOPE'S**, 9, Shoe Lane, Fleet St., London, E.C.4.—4.5h.p. A.J.S. and sidecar, 1915 model, 3-speed, clutch, and K.S., coachbuilt sidecar; £130. [8286]

**A** J.S.—Exeter Motor Cycle and Light Car Co., Ltd., Bath Rd., Exeter, and 28, Tavistock Rd., Plymouth Sole agents. Now booking for earliest deliveries. [0061]

**ONE** Brand New 1920 A.J.S. Combination, fitted with spring seat-pillar, wind screen, and hood and spare wheel, just received from works; offers.—85, Reads Rd., Blackpool. [X2628]

**19** 20 A.J.S. Combination, mileage 250, lamps, Klaxon, spares, spare wheel, etc., unscratched; £198; appointment; trial.—Johnson, 2 Hazel St., Warrington. [X2589]

**A** J.S., M.M., Aug., 1919, 6h.p. coachbuilt sidecar, spare wheel, Lucas lamps, acetylene cyl., Klaxon, Easting wind screen; offers.—Schoolmaster, Mount Rd., Rhyl, N. Wales. [7841]

**19** 19 A.J.S., military model, Sunbeam sidecar, Stewart speedometer, Lowe generator, complete lamp set and accessories; £170.—McMullin, Aircro, Arodrome, Hounslow. [6856]

**19** 18 6h.p. A.J.S., 1919 Millford coachbuilt sidecar, spare wheel, lamps, etc.; best offer over £150.—A.B., 39, Westbourne Terrace North, Paddington, W.2. Phone: 3418. [8255]

**A** J.S. 6h.p. Combination, spare wheel, lamps, speedometer, etc., tip-top condition; £140.—Newham Motor Co., 223, Hammersmith Rd., W.6. Phone: Hammersmith 80. [7742]

**19** 16 A.J.S. 2½h.p., 3-speed, kick start, hand clutch, lamp, horn, spares, new back tyre, stored during war, first-rate condition, just overhauled; £62/10.—Apply, 178 Hurst Grove, Bedford. [X1468]

**A** J.S. Spares; engine and gear box repairs; prompt delivery.—Cyril Williams, Chapel Ash Depot, Wolverhampton. T.A.: Parts. [2237]

**MOTOR CYCLES FOR SALE.**

**A.J.S.**

**1919** 5-6h.p. A.J.S., complete with sidecar, spare wheel and tyre (24/17/6), Lucas lamp (27/6), Lucas horn (27/6), sidecar lamp (17/6), Lucas tail lamp, as new; £190.—Pearcey, Grocer, Westham, Weymouth. [X2517]

**1919** A.J.S. 6h.p. and Millford coachbuilt sidecar, delivered Oct., splendid condition; any trial; Lucas lamps, Klaxon, tools, and extra large leg shields; £190.—Stevens, 21, Howard Rd., Southville, Bristol. [7890]

A.J.S., new Nov., 1919, hood, Lucas lamps, horn, Watford trip (all-black), spares; cost £225 (receipts shown), including insurance; first cheque £210 secures; owner bought car.—Letters, F. Holmes, Post Office, Exeter. [X2656]

A.J.S. Combination, 1919 (Nov.), Ace disc wheels, spare wheel (unused), Lucas equipment throughout, A.J.S. short bars, handle-bar muffs, watch, etc.; this machine is in new condition, tyres and enamel unscratched; £195.—Bicknell, Woolpack, Warwick. [X2682]

**Alldays.**

**ALLONS** at Blackburn and Sons, Station Garage, Spalding. Early deliveries. [7916]

**ALLDAYS** Allon, latest model, as new.—95, Cavendish Rd., Higham's Park, Essex. [7939]

**ALLON**, 1920, 2-speed, kick, clutch; best deliveries.—Clifford Motories, Eastwood, Notts. [8082]

**HONOR** Oak Motor Mart.—Immediate delivery Alldays Allon.—129, Brockley Rise, S.E.23. [7732]

**ALLDAYS** Allon, 2-speed, clutch; condition as new; £53, or near.—36, Bromfield Rd., Redditch. [7583]

**1916** Alldays 3½h.p., perfect condition; cash only £60, or near offer.—Boarer, 3, Marine Terrace Mews, Brighton. [X2635]

**JONES'** Garage, special agents for Alldays Allon Broadway, Muswell Hill, N.10, and Woodside Parade, North Finchley. [0027]

**1920** Allon 2-speed, kick-start and clutch, unscratched and as new, perfect, very reliable; £72.—West, Popeswood, Binfield, Berks. [7938]

**ALLDAYS** Allon 1918-19 2-stroke, 2-speed, lamps, etc., only done 2,000 miles; best offer over £59 seen near London.—Box 6,673, c/o The Motor Cycle. [7873]

**ALLON**, new, latest model, 1919, 2½h.p., 2-speed clutch, lamps, horn, tools, legshields not done 200 miles; £65.—43, Grove Rd., Sparkhill, Birmingham. [X2638]

**ALLDAYS** Matchless, fitted with 1919 Villiers 2½ h.p. 2-stroke engine, electric lighting, just re-enamelled; write, or seen Saturdays.—3, Elmfield Park Bromley, Kent. [X2561]

**ALLDAYS** Allon, 2-stroke, 1918, 2-speed, clutch kick start, lamps, horn, leg shields, tools, just overhauled, perfect condition; best offer over £55 secures.—Ball, 216, Derby St., Burton-on-Trent. [7778]

**ALLDAYS** Allon 2-stroke, new Aug., 1919, 2-speed, clutch, K.S., electric lamps, tools, horn, excellent condition, low mileage, tyres unpunctured; bargain, £56, no offers.—Box 6,625, c/o The Motor Cycle. (D) [7544]

**Ariel.**

**ARIEL**, just arrived, 3½h.p., 3-speed, countershaft model.—Moss, Wem. [X2653]

**CROW** Bros., High St., Guildford, Ariel agents, supply at makers' prices. [X7944]

**CYRIL WILLIAMS**, for early delivery of Ariels.—Chapel Ash Depot, Wolverhampton. [X8625]

**1920** Ariel Combination, 6h.p. twin, brand new, still in crate; £158 cash.—Box 6,683, c/o The Motor Cycle. [7884]

**ARIEL** 3½h.p. magneto, spring frame; 28 gns.—Wandsworth Motor Exchange, Ebner St., Wandsworth. [7934]

**JONES'** Garage special agents for Ariels, Broadway, Muswell Hill, N.10, and Woodside Parade, North Finchley. [0028]

**1918** Ariel Combination, 3½h.p., 3-speed, splendid condition, all accessories, any trial; £110, or offers.—Neale, 129, Walton Rd., East Molesey. [8009]

**ARIEL**, 3½h.p. and 6h.p.; early deliveries; all spare parts stocked.—F. Speakman, Ariel Export, 7, Rochdale Rd., Harpurhey, Manchester. [4020]

**31h.p.** Ariel Coach Combination, 3-speed countershaft, disc wheels, running order; best offer.—Humphrey, King Egbert Rd., Totley Rise, Sheffield. [X2541]

**1920** Model 3½h.p. Ariel, spring seat-pillar, special show finish, Montgomery sidecar; bought December, not used; £115, or nearest.—Box 91, c/o The Motor Cycle. [X2648]

**ARIEL** 6-7h.p. Twin, late 1919, 3-speed, kick, E.I.C., Amac, Dunlops, very fast, low mileage, condition as new; best over £110.—Bracey, Bennington, Herts. [8104]

**ARIEL** 1920 3½h.p. Coachbuilt Combination, new, in stock; £130; this model won two gold medals in London-Exeter run.—Edwards, 7, Exhibition Rd., South Kensington, S.W.7. [8212]

**Auto-Wheels**

**AUTO-WHEEL**, attached B.S.A. cycle, perfect; £21, offer.—102, Kenyon St., Fulham, S.W.6. [7694]

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<b>IVY</b> , 1919, 2½ h.p., 2-speed, lamps, etc. .. .. .	£50
<b>TRIUMPH</b> , 1913, 3½ h.p., 3-speed, hub gear .. .. .	£65
<b>ZENITH</b> , 1919, 8 h.p., full equipment .. .. .	£145
<b>CONNAUGHT</b> , 1913, 2½ h.p., single gear .. .. .	£30
<b>RUDGE</b> , 1917, 3½ h.p., multi, all accessories .. .. .	£85
<b>ROVER</b> , 3½ h.p., T.T. model, speedometer, lamps .. .. .	£78

**SIDECAR COMBINATIONS.**

<b>ARIEL</b> , 1915, 3½ h.p., 3-speed .. .. .	£115
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<b>SUNBEAM</b> , 3½ h.p., 3-speed, sporting sidecar .. .. .	£170
<b>JAMES</b> , 1914, 4 h.p., 3-speed .. .. .	£82
<b>ARIEL</b> , 1919, 3½ h.p., lamps, etc., as new .. .. .	£130
<b>DOUGLAS</b> , 1915, 3½ h.p., coach sidecar .. .. .	£130
<b>DOUGLAS</b> , 1914, 4 h.p., 3-speed .. .. .	£100
<b>SUNBEAM</b> , 1914, 3½ h.p., lamps, speedometer .. .. .	£110
<b>REX</b> , 1914, 6 h.p., twin, 2-speed .. .. .	£84
<b>ROVER</b> , 3½ h.p., 3-speed, Millford sidecar .. .. .	£90
<b>ARLEY-DAVIDSON</b> , 1916, 7-9 magneto .. .. .	£150
<b>SUNBEAM</b> , 1919, 3½ h.p., Swan sidecar .. .. .	£170
<b>BRADBURY</b> , 1919, 6 h.p., fully equipped .. .. .	£180
<b>RUDGE</b> , 1913, 3½ h.p., multi gear .. .. .	£75
<b>B.S.A.</b> , 1912, 3½ h.p., 2-speed, Millford .. .. .	£68

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**MOTOR CYCLES FOR SALE.**

**Auto-Wheels.**

**AUTO-WHEEL**, nearly new; £12.—Clifford Wilson Mfg. Co., 70, Royal Hospital Rd., Chelsea, S.W.3. [8279]

**WALL** Auto-wheel, agent guarantees perfect running order; 12 gns.—Howard, Bank House, Blackburn. [7652]

**AUTO-WHEEL**, 1920, Model de Luxe; £25; in stock; brand new.—Wilkins, Simpson, and Co., opposite Olympia, London. [6852]

**AUTO-WHEEL** and Rover Cycle, both in good condition, ready to ride away; £15, no offers.—Montgomery, 35, Mill Rd., Maldon, Essex. [7936]

**AUTO-WHEEL**, good condition, attached to nearly new cycle, tyres all new (Dunlops), spring forks; £25.—83, Diggon St., Stepney Green E.1. [7926]

**B.S.A.** Auto-wheel, adapted for use on hand tricycle, with head tube and forks attached, new cylinder, piston, valves, etc., fitted, easily detached for cycle use; £12.—R. Paine, Beechwood, Sandecotes Rd., Parkstone, Dorset. [7572]

**Bat.**

**SOLE** Birmingham Bat Agents, The Premier Motor Co., Aston Rd. Phone: Central 4310. [7706]

**BAT-J.A.P.** Coachbuilt Combination, 6h.p., countershaft, 2-speed; bargain, £47/10.—Kington, 2, King Edward Parade, Norbury, S.W. [8129]

**8h.p.** Bat-Jap, N.S.U., 2-speed, spring frame model, and double-seated cane sidecar, excellent condition; £65.—Sealey, 83, Prince's Av., Watford. [X2542]

**BAT-J.A.P.** 1913 6h.p. Twin, 3-speed Armstrong gear, coachbuilt sidecar, good condition and good tyres; price £60.—Taroads Syndicate, 9, Victoria St., S.W. Tel.: Victoria 6851. [7600]

**BAT-J.A.P.** Combination, C.B., 7h.p., 1915, 3-speed Armstrong gear, clutch, kick start, lamps, horn, in splendid condition; £85.—65, Ethelred St., Kennington Cross, London, S.E. [7898]

**BAT-J.A.P.** Combination, 1913, 6h.p., lamps, 2-speed, kick start, any trial, after 5 p.m. or week-ends; £68.—Wark, 2, Kenilworth Villas, Bedonwell Hill, Belvedere, Kent. [7814]

**BAT-J.A.P.** 6h.p. Twin, 1913, 2-speed countershaft gear, chain drive, spring frame, torpedo wicker sidecar, good order; price £60.—Taroads Syndicate, 9, Victoria St., S.W.1. Tel.: Victoria 6851. [7598]

**BAT-J.A.P.** 6-8h.p. Combination, countershaft, chain drive, fully equipped, many spares, Canoelet sidecar, in perfect order; nearest offer to £80 secures this bargain.—46, Cromwell Rd., Walthamstow. [8032]

**YOUR** Name can be first on our waiting list for the 1920 Bat-Jap. We have just started business, and have secured a contract for this well-known machine. The first cheque for £5 we receive as deposit will secure the order for the very first machine we receive, and all applications dealt with in strict rotation; any model.—Hubert Turner and Co., 4-5, Crawford Passage, Farringdon Rd., E.C.1. [8315]

**Beardmore.**

**LANCASHIRE** (West) and Cheshire.—Beardmore Precision, the most advanced and practical motor cycle yet designed.—Enquiries invited by J. Blake and Co., 110, Bold St., Liverpool. [6575]

**Blackburne.**

**CROW** Bros., High St., Guildford, are old Blackburne agents, and invite enquiries. [X7945]

**STANLEY RUSSELL**, Newport, sole Isle of Wight agent for Blackburne motors; early delivery. [5297]

**BLACKBURNE**—Place your order now for early delivery.—Egertons, Northgate St., Ipswich. [7639]

**BLACKBURNE**, new 1920, 4h.p., cshain drive, in stock; £115.—Edwards, 7, Exhibition Rd., South Kensington, S.W.7. [8213]

**JONES'** Garage, special agents for Blackburne's Broadway, Muswell Hill, N.10, and Woodside Parade, North Finchley. [0029]

**WE** Are Agents for Blackburne. Place your order with us to secure good delivery.—Apply, King and Harper, 6, Bridge St., Cambridge. [7665]

**BLACKBURNE**—New 1920 4h.p. models actually in stock; no premium required.—Chandler, Reyre and Williams, Hitchin, Herts. Phone: 165 Hitchin. [0062]

**BLACKBURNE** 4h.p., 1920, actually in stock, complete with Grindlay sidecar; £135.—P. Ellis and Co., 360-364, Lillie Rd., Fulham, London, S.W. Phone: Hammersmith 1553. [7550]

**Blumfield.**

**BLUMFIELD** Twin, 5h.p., tools, new tyres, in good condition.—Armstrong, Hospital St., Tamworth. [X2635]

**Bradbury**

**WAUCHOPE'S**, 9, Shoe Lane, Fleet St., London. —4h.p. Bradbury, 1911 model; £40. [8237]

**BRADBURY** 3½h.p., belt drive, in going order; price £25.—Taroads Syndicate, Ltd., 9, Victoria St., S.W.1. Tel.: Victoria 6851. [7601]

**BRADBURY**—For the earliest possible deliveries of 1919 models.—The Walsall Garage, Wolverhampton St., Walsall. Tel 444. [9575]

MOTOR CYCLES FOR SALE.

Bradbury.

4 h.p. Bradbury Coachbuilt Combination, kick start, accessories, guaranteed; £49, or exchange solo and cash.—49, Well St., Hackney. [7660]

BRADBURY 4h.p. Combination, 2-speed, free engine, clutch, starter, guaranteed perfectly reliable; 48 gns.—14, Arundel Rd., Croydon. [8207]

BRADBURY 4h.p. Combination, 2-speed, K.S., all-chain countershaft, h.c. clutch, Bosch, B and B., disc wheels; any trial given; first £80 secures.—Tweeddale, Maclure Rd., Rochdale. [7589]

SALE, 4 1/4 h.p. Bradbury, with 3-speed, business combination, overhauled, replated and enamelled, splendid bargain; £85; stamps for reply for particulars.—Gray, Green Lane, Barnstaple. [7494]

BRADBURY, 1920, 4h.p., 3-speed countershaft, kick starter, chain drive, Canoelet sidecar, storm apron, brand new, at makers' price; £147/5.—Wilkins, Simpson, and Co., opposite Olympia, London. [6847]

4 1/4 h.p. Bradbury Coachbuilt Combination, 1914, stored throughout war, 2-speed countershaft, clutch, lamps, recently overhauled and reupholstered; £80.—Seen at Southern Motor Exchange, Bromley Rd., Catford, London. [8271]

BRADBURY 3 1/2 h.p., 1913, 2-speed, F.E., Splitdorf mag., speedometer, new lamp, horn, warning signal, coachbuilt sidecar, new hood, new wind screen, lamps, luggage carrier, smart turnout; £65; exchange runabout.—Beeston, Wood Villa, Wellington St., Slough. [7695]

Brough.

SOLE Birmingham Brough Agents, The Premier Motor Co., Aston Rd. [7707]

5 h.p. T.T. Brough, promised next week; what offers.—Box L6,548, c/o The Motor Cycle. [7486]

MY Brough Combination due this month. Unable to purchase. What offers?—Box L6,547, c/o The Motor Cycle. [7485]

1916 Brough 3 1/2 h.p., 3 speeds, clutch, kick starter, speedometer, very fast; best reasonable offer.—1, Ovington Gardens, S.W. [8007]

SOUTH Lancashire, North Cheshire, and Isle of Man only.—Brough enquiries.—J. Blake and Co., Official Dealers, Liverpool and Manchester. [6588]

1916 Brough 3 1/2 h.p. Flat Twin, 3-speed Sturmey-Archer countershaft gear, clutch, and kick starter, very fast; £82.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. [0070]

FOR Sale, Brough Combination, 3-speed, free engine, kick start, Canoelet coachbuilt sidecar, everything in splendid condition; reason for selling, buying new car.—C. Bennett, Hale Farm, Honiton, Devon. [7680]

Brown.

3 1/2 h.p. Brown, 2-speed, disc wheels, large copper exhaust; £28.—21, Louvaine Rd., St. John's Hill, Clapham Junction. [7593]

BROWN 3 1/2 h.p., Bosch, B. and B., clutch, in perfect running order; £25, or exchange higher power.—Sharp, 39, Langdon Rd., Highgate, N. After 6. [8074]

B.S.A.

BRAND New B.S.A. Model K. in stock.—Brook Bros., Burnham, Somerset. [6820]

B.S.A., 4 1/4 h.p., Bosch mag., splendid condition; £40.—7, Bellenden Rd., Peckham, S.E. [7904]

B.S.A., 4 1/4 h.p., W.D. model, wants slight attention; £65.—Collier's Motories, Union St. South, Halifax. [7795]

B.S.A., 2-speed, clutch, excellent condition, and complete; £50.—Brunswick Lodge, Thames Ditton. [7686]

B.S.A. Sole District Agents; book now.—The Walsall Garage, Wolverhampton St., Walsall. Tel.: 444 9576. [9576]

WAUCHOPE'S, 9, Shoe Lane, Fleet St., London.—1914 4 1/4 h.p. B.S.A., 3-speed gear box, kick starter; £65. [8308]

1916 B.S.A. Combination, countershaft, 3-speed; £90.—Barnett, Llandore Garage, Stratford-on-Avon. [X2592]

1920 B.S.A. Combination, all-chain; delivery this month; £140.—Box 6,729, c/o The Motor Cycle. [8262]

B.S.A., foot start, clutch, lamps, horn, tools, good condition; £52.—William, 54, Dundonald Rd., Wimbledon. [7615]

JONES' Garage, special agents for B.S.A., Broadway, Muswell Hill, N.10, and Woodside Parade, North Finchley. [0030]

1920 B.S.A. (4 1/4 h.p. chain drive), just delivered; £106 spot cash.—W., 23, Cranbourne Terrace, Stockton-on-Tees. [7928]

B.S.A., 1915, 4 1/4 h.p., countershaft, 3-speed, and sidecar; £60.—Speechley, 1, Gunnersbury Lane, Acton Hill, W.3. [8017]

B.S.A., 1911, fine condition, unused 4 years, new tyres, tubes, and belt; accept £35.—Welch, 135, Edgware Rd., W.2. [7996]

B.S.A., 1920, new Model K, never been ridden; best cash offer over £100; London.—Box 6,715, c/o The Motor Cycle. [3249]

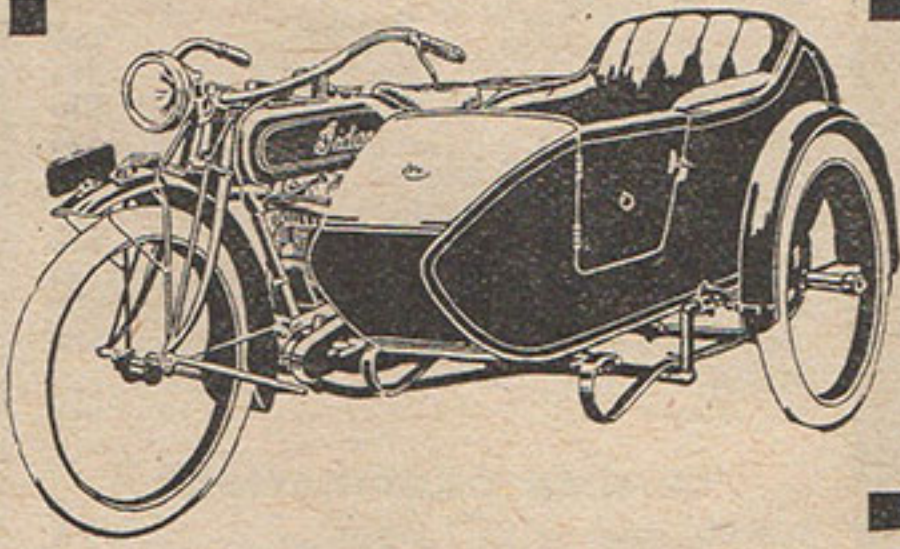
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MOTOR CYCLES FOR SALE.

B.S.A.

B.S.A. 4h.p. Model, with special sidecar, equipped Lucas spares; trial or examination.—Parker's, Bradshawgate, Bolton. [7392]

B.S.A., 4 1/4 h.p., 1919 model, Henderson sporting sidecar, acetylene lighting, in perfect running order; £120.—Gill, Earlsheaton, Dewsbury. [7512]

B.S.A. 1919 Model K, P. and H. lamp set, mechanical horn, tyres excellent, machine in perfect order; £100.—Bird, Metton, Norwich. [7755]

1913 B.S.A., 3 1/2 h.p., Philipson pulley, fully equipped, tools, spares; must sell; £45, or best offer.—B. Pearson, 10, A.A.P., Brooklands, Surrey. [X2505]

B.S.A., Model K, in stock, list price; also B.S.A. sidecar to match.—Newnham Motor Co., 223, Hammersmith Rd., W.6. Phone: Hammersmith 80. [7741]

B.S.A. 1919 Model H, mileage under 1,000, condition as new, with sidecar, coachbuilt, unused; nearest offer, £130.—Clark, Blackford, Cowes, I.W. [8058]

B.S.A. Specialists.—All replacements in stock: B.S.A. sidecars in stock.—The County Cycle and Motor Co., Broad St., Birmingham. T.A.: Comocyclo, Birmingham. [7753]

1915 B.S.A., 3-speed countershaft, kick start, in good order, with Mills-Fulford coachbuilt sidecar; £85.—Waterhouse, Briarfield, Barrington Rd., Altrincham, Cheshire. [7517]

1916 4h.p. B.S.A., all-chain, 3 speeds, thoroughly overhauled, £80; also 1914 3 1/2 h.p. B.S.A., Triumph engine, clutch model, fine solo, £55.—Walton, Dawson Sq., Burnley. [X2497]

1919 4 1/4 h.p. B.S.A. Motor Bicycle and sidecar, all-chain drive, just delivered, done about 100 miles, Lucas lamps and horn, condition new; £145.—Daniels, Lightpill, Stroud, Glos. [7784]

4 1/4 h.p. B.S.A., late 1916, all-chain 3-speed, recently overhauled by Army and Navy Stores, perfect order; £85, or nearest offer for quick sale.—Write Horne, 14, Brunswick Sq., W.C.1. Seen by appointment. [7614]

B.S.A. Combination, 3 1/2 h.p., 2-speed, kick starter, countershaft, tyres, belt nearly new, lamps, horn, and spares, had little use, in new condition; great bargain, £62; first cheque secures.—Barker, Salisbury Villas, Shotley, Ipswich. [7840]

1919 B.S.A. 4 1/4 h.p., 3-speed clutch, kick starter, complete with coachbuilt sidecar, fitted with Easting wind screen, Klaxon horn, A.K. knee-grips, lamps, and tools, also full insurance policy, perfect condition; £130.—9, Mostyn Crescent, Llandudno. [7786]

1916 4 1/4 h.p. B.S.A., Model H, Canoelet sidecar, specially sprung, electric light, bulb and Klaxon horns, Stewart trip, extra mud flaps, handle-bar muffs, oversize Dunlops, recently overhauled, condition excellent, not used 1917-18; any trial or examination; £115.—Box 6,647, c/o The Motor Cycle. [7635]

1917 4h.p. B.S.A., 3-speed countershaft, clutch, new head lamp set, both brand new tyres, 1919 (Aug.) sidecar, lovely upholstery, unscratched, new tyre, new lamps, apron, mat, etc., both guaranteed in perfect condition; any reasonable trial allowed; price £115.—Strange's Garage, Wootton Bassett, Wilts. [7754]

Calthorpe.

WAUCHOPE'S, 9, Shoe Lane, Fleet St., London.—2 1/4 h.p. Calthorpe-Jap, 1914 model; £48. [8288]

CALTHORPE-PRECISION, engine No. 13324, 2-speed, variable pulley, new Dunlops; £27.—Noyes, Bracknell. [X2546]

CALTHORPE-J.A.P. 2 1/4 h.p., 1915, Enfield gear, Amac, E.I.C., new condition; £45.—63, Solon Rd., Brixton. [8189]

1916 Calthorpe 2-stroke, 2-speed, splendid condition, mechanical horn, drive away; £38.—49, Well St., Hackney E. [8208]

CALTHORPE 2-stroke, 2 1/4 h.p., Enfield 2-speed, brand new, at makers' price; £64/1.—Wilkins, Simpson, and Co., opposite Olympia, London. [6849]

CALTHORPE-J.A.P., 2 1/4 h.p., Enfield 2-speed, brand new, at makers' price; £65/2.—Wilkins, Simpson, and Co., opposite Olympia, London. [6848]

CALTHORPE Junior, 1914, 2-speed gear, Precision engine, B. and B. carburetter, Dunlop belt, in good order; £20.—P. D. Mitton, Rectory, Kirkham, Lanes. [X2324]

CALTHORPE-J.A.P. 2 1/4 h.p., Enfield 2-speed, P. and H. lamp, electric rear light, nearly new; delivered February, 1919; £45.—4, Hanover St., London, W.1. [8270]

Campion.

1916 8h.p. Champion-Jap Combination, lamps, horn, speedometer; accept £100; ordered car.—Baker, 16, Lavington Rd., Ealing. [7507]

CAMPION-J.A.P. 1918 4h.p. Combination, not done 800 miles, a real posh lot; £120.—Bunting's Motor Exchange, Wealdstone. [7824]

Cedos.

CEDOS.—The finest 2-stroke ever produced; ladies or gentlemen's; order now for spring delivery.—J. Blake and Co., Lancashire's leading motor cycle dealers, Liverpool and Manchester. [6576]

**MOTOR CYCLES FOR SALE.**

**Centaur.**

**C**ENTAUR 3½h.p., excellent engine; £12.—E. Bradley, Highfield, Coates, Barnoldswick, Yorks. [X2481]

**Chater-Lea.**

**C**HATER-LEA Enquiries invited by J. Blake and Co., leading motor cycle experts, Liverpool and Manchester. [6577]

**6**h.p. Chater-Lea, Bosch, B. and B., in excellent running order; £35.—Gardiner, 24, Lathbury Rd., Oxford. [7682]

**C**OACHBUILT Combination, 4½h.p. Chater-Lea fittings, Dixie, new Binks, Whittle belt, new tubes, re-enamelled and overhauled December costing £18, guaranteed perfect, any trial; £37, or sell separate, £29 and £8.—47, Millbrook Rd., Brixton, S.W. [8021]

**Chater-Lea-Jap**

**C**HATER-LEA-J.A.P. 6-8h.p. C.B. Combination, 3-speed countershaft, clutch, all chain drive, water-tight Bosch, speedometer, lamps; £80; seen week-end or by appointment.—98, Willifield Way, Golders Green. [7720]

**Clyno.**

**C**LYNO, brand new, 2-stroke, 2-speed model, in stock.—Moss, Wem. [X2654]

**W**AUCHOPE'S, 9, Shoe Lane, Fleet St., London.—5-6h.p. Clyno combination, second-hand; £100. [8280]

**C**LYNO 6h.p. Frame, 2-speed gear, tank, wheels, footboards; £10.—50, Beechfield Rd., Finsbury Park, London. [8096]

**C**LYNO 1920 2-stroke, 2-speed, hand clutch, in stock; £70.—Edwards, 7, Exhibition Rd., South Kensington, S.W.7. [8214]

**C**LYNO, just delivered, 2-stroke, 2-speed; £70; exchange 1914 or later solo.—352, High Rd., Willesden, N.W.10. [8200]

**19**15 Clyno Combination, 6h.p., 3 speeds, kick starter, good order; £78.—Nichols, 20, Bernard Rd., Wallington, Surrey. [7857]

**C**LYNO 6h.p. Combinations, late models, wanting attention; £59/10, £68/10.—Collier's Motories, Union St. South, Halifax. [7796]

**C**LYNO.—New 1920 2-speed 2-stroke models actually in stock.—Chandler, Reyre and Williams, Hitchin, Herts. 'Phone: 165 Hitchin. [0063]

**W**E Are Agents for Clyno. Place your order with us to secure good delivery.—Appli, King and Harper, 6, Bridge St., Cambridge. [7667]

**W**AUCHOPE'S, 9, Shoe Lane, Fleet St., London, supply new Clynos, 1920 models, 2½h.p., 2-stroke, 2-speed, clutch; £70; from stock. [8290]

**19**16 6h.p. 3-speed Clyno kick-starter Combination, in excellent condition; £80.—J. Dooley, 33, Kellyon Rd., Wandsworth Rd. Station, Clapham. [7983]

**19**20 Clyno, only done 200 miles, perfect condition, 2½h.p., 2-speed, clutch, 2-stroke; owner buying combination.—Granville, Minster, Thanet, Kent. [8322]

**C**LYNO 1920 2-stroke, 2-speed and clutch; £70; brand new, actually in stock at makers' price.—Wilkins, Simpson, and Co., opposite Olympia, London. [6851]

**19**19 Clyno, brand new, 2½h.p., 2 speeds, fitted with lamps, horn, and speedometer; cost £79, will accept £67; Cambridge.—Box 6,678, c/o *The Motor Cycle*. [7879]

**C**LYNO Lightweight in stock. Orders booked in rotation. Clyno combination orders booked in rotation, delivery from March.—Rothwell and Milbourne, Cowleigh Garage, Malvern. [6185]

**19**17 5-6h.p. Clyno Combination, spare wheel, 3 speeds, etc., thoroughly overhauled, guaranteed, £120; another, same condition, 1916 model, £115.—Walton, Dawson Sq., Burnley. [X2498]

**19**19 Clyno 2½h.p., 2-stroke, 2 speeds, clutch, large P. and H. lamp set, rear light, Klaxon, tools, etc., mileage under 100, all unscratched, as new; £70.—Luchford, 74, Elstow Rd., Bedford. [7894]

**C**LYNO 5-6h.p. Coach Combination, late 1916, 3-speed, kick start, tyres as new, everything in perfect running order, lamp set, spare tyre, tube; £110.—152, Camberwell Grove, Camberwell. [7859]

**L**OOK! Bargain! 1918 6h.p. Clyno, 3-speed, kick-starter, clutch, fitted with gun chassis; this motor is in perfect condition, very little wear, any trial; £86.—Jefferies, 170, Stapleton Rd., Bristol. [7502]

**C**LYNO 6h.p. Twin Combination, bulbous backed sidecar, splendid condition, enamelling not scratched; any trial and inspection; too powerful for owner; £90, or offer.—Edwards, 14, Half Moon Crescent, London, N.1. [7988]

**8**h.p. Brand New W.O. Clyno, J.A.P. engine, 28x3 detachable wheels, heavy Dunlop tyres, spring seat-pillar, spring pillion seat, commercial delivery chassis fitted with steel goods carrier, perfect order, not run 200 miles; 130 gns.—Box 66, c/o *The Motor Cycle*. [X2249]

**C**LYNO, late 1913, 6h.p., 3-speed, kick starter, coach-built sidecar, hood, curtains, combination repainted, engine perfect, tyres good, spare detachable wheel, speedometer, lamps, horn; reason selling, owner emigrating; £100.—Hanslow, c/o Taylor's; 27, Oxford Rd., Windsor. [8095]

**MOTOR CYCLES FOR SALE.**

**Clyno.**

**8**h.p. Brand New W.O. Clyno, J.A.P. engine, 28x3 detachable wheels, heavy Dunlop tyres, spring seat and pillion seat, commercial chassis, fitted goods carrier, not run 20 miles; also have handsome coach body for same; £135 great bargain.—29, St. Leonard's St., Bromley-by-Bow. [8186]

**19**14-1915 Clyno Combination, 5-6h.p., 3-speed clutch, K.S., Amac, U.H. mag., lamps, F.R.S. 1,000ft. beam head, P.H. side and tail, 4 interchangeable and detachable wheels, all tyres nearly new, 26x3, Terry's spring links, wind screen, Lucas horn, tools, spare chain and tube; any trial given; in perfect order; £95.—Watkins, 7, Bryn-Heulog, Aberbeeg, Monmouthshire. [X2635]

**Connaught.**

**2**¾h.p. Connaught, 1916, 2-stroke, 2-speed, excellent condition; 42 gns., no offers.—Hammond, Waterloo Rd., Shepton Mallet. [X2560]

**19**20 Connaught Junior, 2½h.p., 2-stroke, 2-speed, 24in. wheels, new January 5th, unpacked; accept £62.—Box L6,541, c/o *The Motor Cycle*. [7479]

**Corfield.**

**W**AUCHOPE'S, 9, Shoe Lane, Fleet St., London.—2½h.p. Corfield 1920 model; £59. [8289]

**Coulson**

**C**OULSON-B in stock; immediate delivery. 'Phone: 962.—Egertons, Northgate St., Ipswich. [7640]

**C**OULSON B 2½h.p., 2-speed model, in stock.—Malvern Agents, Woodyatt, Ltd., Malvern. [3865]

**C**OULSON-B, 1919, new Sept., excellent condition; no reasonable offer refused.—Iona, Gresham Rd., Cambridge. [7723]

**C**OULSON B.—The ideal spring frame.—Enquiries invited by J. Blake and Co., the motor cycle experts of Liverpool and Manchester. [6578]

**19**20 Coulson B, used 150 miles only, 2½h.p. Blackburne engine, 2 speeds, spring frame, 23in. tyres, absolutely new; cost £95, accept £82; Cambridgeshire.—Box 6,677, c/o *The Motor Cycle*. [7878]

**Coventry Eagle.**

**C**OVENTRY EAGLE, brand new Villiers engine in 1914 frame, with 24in. wheels, barely scratched, complete with all lamps, ready to ride away; a bargain for someone, £40.—Hubert Turner and Co., 4-5, Crawford Passage, Ray St., Farringdon Rd., E.C. 'Tel.: City 7238. [7370]

**Crescent.**

**C**RESCENT-VILLIERS, 2½h.p., Albion 2-speed, not done 1,000, everything perfect and as new, Lucas horn, head and tail lamps; nearest £45.—Lt. Roberts, Air Stores, Steventon, Berks. [8086]

**Dayton.**

**1**½ to 2h.p. Dayton, splendid running order; £20.—Webber, 15, Bath St., Abingdon. [8006]

**Diamond.**

**C**YRIL WILLIAMS, for early delivery of all model Diamonds.—Chapel Ash, Wolverhampton. [X8622]

**J**ACK HEALY, Cork, official Diamond agent.—Rotational delivery. No premiums accepted. [6487]

**D**IAMOND 2½h.p., J.A.P., 2-speed, new 1920 model in stock, very sporting little 'bus; £72.—Edwards, 7, Exhibition Rd., South Kensington. [8215]

**D**IAMOND 2½h.p., 2-stroke, 1917, in perfect order, oversize tyres, acetylene lamps, pump, tools, T.T. handle-bars; bargain, £35.—Makin, Church Mount, Sutton, near Hull. [7558]

**Douglas.**

**V**IVIAN HARDIE and Laue, Ltd., Douglas Specialists.

**4**h.p. Combination, 1920 model; £145.

**2**¾h.p. Solo, 1920 model, clutch and kick starter; £90.

**2**¾h.p. Solo, 3-speed model W.; £86

**2**¾h.p. 2-speed W.D. Model; £80.

**W**E Stock Everything you require for your Douglas.

**24**, Woodstock St. (off Oxford St.), Bond St., W.1. 'Phone: Mayfair 6559. [0012]

**19**16 Douglas, 2-speed, splendid condition; 58 gns.—365, King St., Hammersmith. [3077]

**19**18 Douglas 4h.p., fine mechanical condition; £70.—141, Morton Rd., Wimbledon. [8174]

**D**OUGLAS, 1916, W.D., 2½h.p., 2-speed; £52.—25, Townshend Rd., Richmond, Surrey. [8040]

**2**¾h.p. Douglas 2-speed, 1916, good tyres, ride away; £46.—7, Gibson Sq., Islington, N.1. [7760]

**L**A TE 1917 4h.p. 3-speed Douglas, like new; £72.—29, St. Leonard's St., Bromley-by-Bow. [8184]

**19**16 4h.p. 3-speed Douglas C.B. Combination; any trial; £108.—Derby Arms, Mortlake. [X2410]

**D**OUGLAS 1915 2½h.p., 2 speeds, makers' colours; £44.—Hole, 129, Park Lane, Carshalton. [8118]

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*NOTE: These extracts are cont nuzd from 'Motor Cycling' it being impossible to include all December testimonials in one column advert.*

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Dec. 19. "Thanking you again for the trouble you have taken in the matter, and your courteous way of doing business." H. Mac. N.

Dec. 19. "Thanking you very much for your prompt attention and hoping to do business with you again in the near future." H.H.B.

Dec. 22. "Please accept my thanks for the business like way you have dealt with me. As regards future business you may rest assured when I order my next mount the order will be placed with your good selves." R.E.H.H.

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Dec. 28. "I have received the 192 Indian safely, and it gives complete satisfaction. I have run it 200 miles and can find no fault with it. It starts quite well every morning, though the weather is cold." T.D.M.

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## MOTOR CYCLES FOR SALE.

## Douglas

- DOUGLAS** 2½h.p., 1915 W.D., perfect order; £55, or offer; Hampstead.—Box 78, *c/o The Motor Cycle*. [X2450]
- 1915** 2½h.p. Douglas, W.D. model, in excellent condition; £48.—L. Bull, 44, Hill's Rd., Cambridge. [7854]
- 4** h.p. Douglas Combination, 1916, 3-speed, K.S., new condition; £95.—9, Church Rd., Willesden, N.W. [8141]
- DOUGLAS** 4h.p., 3 speeds and clutch, running order; £60.—Hole, 129, Park Lane, Carshalton. [8120]
- DOUGLAS** 2½h.p., ready to ride away, good order; seen any time; £25.—44, Jubilee Rd., Watford, Herts. [X2445]
- DOUGLAS**, 2½h.p., 2-speed gear, W.D. model, appearance as new; £65.—Tucker and Co., High-bridge. [X2617]
- DOUGLAS** 2½h.p., single gear, good tyres; ride away; £29.—65, Ethelred St., Kennington Cross, London, S.E. [7897]
- 1914** Douglas, twin-cyl., in very good condition, including tyres; a bargain.—The Minster Garage, Thanet, Kent. [8323]
- 1914** 2½h.p. Douglas and Flying Middleton Sidecar, perfect; £75.—Miss Meecham, Vectis, Montpelier St., Brighton. [7847]
- DOUGLAS** 2½h.p., 2-speed, 1915, good condition.—George Smith's Motor Cycle Depot, Clapham Junction, S.W. [8225]
- DOUGLAS** 4h.p. Combination, Dec., 1919, latest clutch, unused; what offers?—Dr. Pirie, 7, Moor Park Av., Preston. [7627]
- 1919** Douglas 2½h.p., T.T., makers' colours, new, fully equipped; £72.—Blencathra, Highfield Rd., Walton-on-Thames. [8313]
- DOUGLAS**—Large assortment of 2½h.p. second-hand models in stock, all fully guaranteed.—Ross, 86, High Rd., Lee, S.E. [5541]
- DOUGLAS** Solo and Combination; regular monthly deliveries from November.—Lloyd and Son, 29 Station St., Lewes. [9583]
- DOUGLAS** 4h.p. 3-speed W.D. Combination, good order; 95 gns.—Halifax Motor Exchange, Union St. South, Halifax. [7797]
- 4** h.p. Douglas Combination, all latest improvements, special colour, not touched the road yet; offers.—78, Cranbrook Av., Hull. [X2539]
- DOUGLAS** 1914-15 2½h.p., 2-speed, almost new condition; 50 gns.—Kington, 2, King Edward Parade, Norbury, S.W. [8127]
- 2½** h.p. Douglas, new Amac carburettor fitted, machine enamelled red, complete with lamps; £45.—Nellholme, Market Harborough. [X2448]
- HONOR** Oak Motor Mart.—Douglas combination, 4h.p., recently overhauled, splendid order; £100.—129, Brockley Rise, S.E.23. [7739]
- DOUGLAS**, 2½h.p., 2-speed, uncrated July, absolutely perfect, low mileage, smart and fast; £57.—Hope, 30, Castle St., Dover. [7681]
- DOUGLASES**—Call at Smith's for your next Douglas.—Smith's, 10-16, Haverstock Hill, opposite Chalk Farm Tube Station. [0093]
- DOUGLAS**, 2½h.p., 2-speed, W.D. model, new; £70.—Gifford Wilson Mfg. Co., 70, Royal Hospital Rd., Chelsea, S.W.3. [8272]
- WAUCHOPE'S**, 9, Shoe Lane, Fleet St., London.—Douglas machines from stock, 1920 models, solo and sidecar combinations. [8291]
- DOUGLAS**, 1916, 2 speeds, footboards, perfect condition, stored 3 years; £52/10.—51, Maplethorpe Rd., Thornton Heath, S.E. [7817]
- 1920** Douglas Models. Now delivering 2½h.p. 3-speed, £90; 4h.p. combination, £145.—Moffat, Douglas agent, Yeovil. Phone: 50. [1102]
- SMITH'S** have in stock new W.D. 2½h.p. Douglasses at 70 gns.—Smith's, 10-16, Haverstock Hill, opposite Chalk Farm Tube Station. [0083]
- DOUGLAS** 2½h.p., 2-speed, uncrated July, absolutely perfect, fully equipped, low mileage.—Hillier, 216, Portobello Rd., North Kensington, W. [X2547]
- 1914** 2½h.p., 2-speed Douglas and equipments, thoroughly overhauled by makers recently; £48.—C.B., 34, Park Rd., Harringay, N.15. [7963]
- 1916** 2½h.p. Douglas and Henderson lightweight sidecar, perfect condition; £80, complete; would separate.—Pragnell, Millford-on-Sea, Hants. [7604]
- DOUGLAS**, 2½h.p., 2-speed, uncrated in October, absolutely perfect, well equipped, unscratched; £65.—60, Wallingford Av., N. Kensington. [6944]
- 1916** Douglas, 2½h.p., T.T., 3-speed, new heavy Dunlops, engine perfect, very fast, accessories; £57.—Anderson, 125, High St., Merton, S.W.19. [7690]
- DOUGLAS** 2½h.p., Jan., 1916, 3 speeds, semi-T.T. footboards, makers' colours, excellent condition; £62.—12, Leaside Av., Muswell Hill, N.10. [8232]
- 1920** Douglasses.—By one who knows; delay is dangerous.—Order yours now from the Douglas Specialist, Gibb, Gloucester. Phone: 852. [6340]
- DOUGLAS** 2½h.p., 2-speed, condition as new, complete with new lamp set, horn, etc.; £65.—Greville, 61, Beulah Hill, Norwood, London. [8235]

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## MOTOR CYCLES FOR SALE.

## Douglas

- DOUGLAS** 1917-18 4h.p. Combination, condition as new; must be sold.—To be seen at the Camberwell Motor Works, Selbourne Rd., Camberwell, S.E.5. [7511]
- DOUGLAS** W.D. Model, 2½h.p., C.A.V., Amac, uncrated November, 1919, not done 100 miles; 68 gns.—Bowen, 1, Richmond Rd., Malvern Link. [7557]
- SMITH'S** for Second-hand 1916 2½h.p. Douglasses, overhauled, from 50 gns.—Smith's, 10-16, Haverstock Hill, opposite Chalk Farm Tube Station. [0092]
- 1919** Douglas 4h.p. Combination, bought August 28th, with accessories, little used; £138, or nearest.—169a, Stockport Rd., Levenshulme, Manchester. [X2322]
- DOUGLAS** 4h.p. New 1919 Combination, lamps, wind screen, etc.; £150, no dealers; appointment.—W.H.H., 23, Princethorpe Rd., Sydenham, S.E.26. [7659]
- 1916** Lady's Douglas, 2½h.p., 3 speeds, K. start, polished disc wheel, condition as new, stored 2½ years; £80, or near offer.—Beresford, Haxby, York. [X2564]
- 1914** 2½h.p. Douglas, 2-speed, Lucas lamp, good tyres, T.T., recently stove enamelled and plated, overhauled, perfect; £50.—80, Dorset St., Leicester. [X2555]
- DOUGLAS** 2½h.p. W.D., uncrated Nov. 1919, lamps, horn, footboards, mudshield, excellent condition; £80, no offers.—Hamerton School, nr. Huntingdon. [7931]
- DOUGLAS** 1917-18 4h.p. Combination, condition as new; must be sold.—Seen at the Camberwell Motor Exchange, Selbourne Rd., Camberwell, London. [8269]
- DOUGLAS** 2½h.p., 1915, kick starter, clutch, 2 speeds, not used during the war, excellent condition; £50.—D., 102 Southampton Row, W.C. Phone: 2230 Central. [7535]
- 2½** h.p. 1913-14 Douglas, thoroughly overhauled, fully equipped, new crankshaft, etc., splendid condition throughout; £46.—236, Caledonian Rd., King's Cross. [7851]
- 1915** 2½h.p. T.T. Douglas, 2 speeds, exceptionally good engine, long exhaust, lamps, generators, horn, new condition; £63.—P. Saunders, Longwell Green, near Bristol. [X2446]
- 1918** 4h.p. Douglas and C.B. sidecar, extra heavy steel-studded tyres, done about 200 miles, all as new; seen any time; £120.—39, Avondale Rd., E. Finchley. [7547]
- DOUGLAS** 4h.p. Combination, 3 speeds, clutch, kick starter, thoroughly overhauled, wants minor parts to complete assembling; £60.—51, Kendall Rd., Beckenham, S.E. [7718]
- 1920** Douglas 2½h.p., 3-speed, handle-bar clutch, kick starter, accessories, unscratched, wonderful machine, fast, silent; 95 gns.—61, New Kent Rd., London, S.E. [8123]
- 1919** Douglas Combination, latest type clutch, mileage 500, wind screen, 3 lamps, spares, absolutely as new; £135; Middlesex.—Box 6,710, *c/o The Motor Cycle*. [8244]
- DOUGLAS** Combination, 1918, thoroughly overhauled, in perfect order, appearance as new, any trial; £105, or near.—262, Blackhorse Lane, Walthamstow. [8052]
- DOUGLAS**, 2½h.p., new, 1919, electric lights and horn, Chelsea aluminium discs and large aluminium mud shield; £100.—Charlton, Cambridge Park, Wanstead, E.11. [7575]
- DOUGLAS** 2½h.p., 2-speed, W.D. model, 1918, uncrated last November, splendid machine, unused; 72 gns.; owner buying combination.—Roberts, Bryn Castell, Llangollen. [7790]
- 1919** 4h.p. Douglas C.B. Combination, delivered Nov. 10th, 1919, guaranteed not done 100 miles; £150; fully equipped.—Majestic, 197, Stonhouse St., Clapham Common. [8179]
- DOUGLAS** New 1920 4h.p. Combination in Stock; 1919 4h.p. combination, under 500 miles, lamps, horn, Cameo; £145.—Edwards, 7, Exhibition Rd., South Kensington. [8216]
- 1919** Douglas, 2½h.p., not ridden 200 miles, Miller's lighting set, Klaxon, absolutely perfect, fast machine, privately owned; £74.—S. Sharp, Underhill Farm, Barnet, Herts. [7616]
- 2½** h.p. Douglas, bought new July, 1919, done 1,400 miles, lamps, speedometer, insurance, excellent condition; £80.—Seen Colonial Garage, Finchley Rd. (opposite Hampstead Baths). [7811]
- ACTUALLY** in Stock for immediate delivery (no premium), brand new 4h.p. Douglas combination; first cheque secures.—Edwards and Parry, 4, Blenheim St., Bond St. Mayfair 2666. [6233]
- DOUGLAS**, 2½h.p., Bosch, Amac, clutch, kick starter, good tyres and belt, stored during war, just completely overhauled; best offer over £55 secures; Surrey.—Box 6,626, *c/o The Motor Cycle*. [7545]
- DOUGLAS**, 1913, 2½h.p., 2-speed, new Amac, lamps, horn, T.T. bars, tyres perfect, tank recently re-enamelled, excellent condition; £46.—Thompson, 34, Park Rd., Wargrave, Earlstown, Lincs. [7573]
- DOUGLAS** 2½h.p., 1915, 3-speed, kick starter, clutch, perfect condition, lamps, tools, and spares; £55, or exchange with cash for 4h.p. model Douglas.—Cooper, 33, Church St., Rickmansworth. [7515]

MOTOR CYCLES FOR SALE.

Douglas.

**DOUGLAS** (Oct., 1918) 4h.p. Combination, 3 speeds, clutch, kick starter, electrically equipped, Klaxon, new condition; £118.—Lt. James, 72, Longridge Rd., Earl's Court. Western 1344. [7905]

**DOUGLAS** 2½h.p., 2-speed, 1913, enamel and plating good, engine in perfect condition, tyres good, speedometer, lamps, toolbags, mirror, horn; £50; evenings or Saturday.—18, Chesdon Rd., Fulham. [7896]

**1915** 2½h.p. Douglas, Lucas King of the Road lamp set, Lucas horn and tail lamp, aluminium disc wheels and chain cover, long exhaust pipe, condition as new.—J., 54, Malvern Rd., Dalston, E.8. [7781]

**4** h.p. Douglas, late 1916, just overhauled, new clutch insets, C.A.V. mag., as new, new accessories, tyres nearly new, coachbuilt sidecar complete, just unpacked; nearest £100.—Hutchinson, Constantine, Cornwall. [8175]

**DOUGLAS** 2½h.p., 2-speed, fully equipped, new Palmers, 50 gns.; also Chater-Lea 2-stroke, 1919, 2½ h.p., 2-speed, very fast, all accessories, £60.—Burgess Hill Auto Works, London Rd., Burgess Hill, Sussex. [7995]

**4** h.p. Douglas Combination (not run 50 miles), complete with storm apron: prices and extended payment terms on application.—Harrods Motor Showrooms, 116-118, Brompton Rd., opposite Main Building, London, S.W.1. [7537]

**IT** Appears Ridiculous to Advertise when you have no stock, but we are giving deliveries to the early birds. Place your order at once if you want delivery.—Eli Clark, Douglas Agent, 196, Cheltenham Rd., Bristol [0016]

**£85.**—Douglas 4h.p. Combination, 3-speed, clutch, kick starter, new magneto fitted, 3 lamps, mechanical horn, in absolute perfect condition; or exchange for car.—234, Earlsfield Rd., S.W.18. Phone: 370. [8013]

**DOUGLAS** 2½h.p., 2-speed, 1916 T.T. model, excellent condition throughout, like new, perfect engine, Bosch mag., fast and quiet, horn, pump, toolbags, etc.; ride 30 miles; bargain, £65.—Burch, 178, Gipsy Rd., West Norwood, S.E. [7785]

**1920** 2½h.p. Douglas, 3-speed gear (no clutch), latest type forks and tank, undershield, etc., in stock for immediate delivery; £86, plus carriage.—Robinson's Garage, 32-35, Green St., Cambridge. Phone: 995. Tel.: Bicycles. [8227]

**DOUGLAS, W.D.,** 1917-18, 2½h.p., 2-speed, perfect condition, tyres as new, all accessories, large P. and H. front lamp, rear lamp, Watford speedometer, watch, etc.; bargain, £80.—Apply after 5 p.m., 58, Church Rd., Tovil, Maidstone. [X2471]

**1919** 4h.p. Douglas Combination, Binks, Klaxon, Orto screen, 3 P. and H. lamps, 2 generators, 2½in. back cover and tube, spare belt, 2 tubes, valve belt fasteners; £140; letter in first instance.—Southcomb May, 34, Gower Place, W.C. [7623]

**DOUGLAS** 2½h.p., 2-speed, T.T., Bosch mag., Douglas carburettor, footboards, lamps, horn, pump, tools, spares, and 2 Hutchinson passenger studded tyres almost new: private; bargain, £45, no offers; West London.—Box 6,627, c/o The Motor Cycle. [7546]

**1920** 4h.p. Douglas Combinations, latest sidecar, finished in saxe blue, absolutely new, on the premises for immediate delivery; £145, plus crate and carriage.—Robinson's Garage, 32-35, Green St., Cambridge. Phone: 995. Tel.: Bicycles. [8229]

**DOUGLASES,** 1920 models.—The noted house in the South for early deliveries. We are specialists and stockists for Douglas machines only for over 11 years.—Sole District Agents, Thompson and Co., 408, Commercial Rd., Portsmouth. Phone: 7105. [5891]

**1919** 4h.p. Douglas Combination, engine perfect, sidecar unscratched, accessories as under, if required, large Lucas head lamp, electric tail and sidecar, Watford speedometer, Lucas horn; nearest £150.—Lt. Roberts, Airstores, Steventon, Berkshire. [8068]

**1920** 2½h.p. Douglas, 3-speed gear, hand controlled clutch, kick starter, latest type forks and tank, undershield, etc., in stock for immediate delivery; £90, plus carriage.—Robinson's Garage, 32-35, Green St., Cambridge. Phone: 995 (2 lines). Tel.: Bicycles. [8228]

**1919** 4h.p. Douglas Combination, just overhauled, with special case, crank case polished bright, oil pipes, carburettor, etc., plated aluminium discs, T.T. bars, Pedley grips, new trip speedometer at zero, dissolved acetylene lighting outfit, horn, watch, very smart outfit; nearest £135; will ride anywhere near London to view.—Phone: Kingston 222. [8318]

Duzmo.

**DUZMO** 3½h.p. Single and 8h.p. Twin. Orders in strict rotation. Deliveries commence February.—All Lancashire and Cheshire enquiries to Leach and Seed, 16, John Dalton St., Manchester. [X2657]

Edmund.

**EDMUND** 2½h.p., 2-speed gear, latest model, sprung frame, not run 20 miles.—Fenwick, Dalston, Cumberland. [X2535]

Enfield.

**ENFIELD**, new, 1920, 2-stroke, 2-speed and free engine.—Moss, Wem. [X2652]

**1919** 8h.p. Royal Enfield Combination for sale; £150.—Grose, Ltd., Northampton. [X2544]



We are actually the largest buyers and sellers of first-class machines in London. If you are in need of a really first-class 1920 model, call on us, and you will get a quicker delivery than elsewhere. Every machine quoted below is for immediate delivery.

COMBINATIONS.

- 1920 8 h.p. **SUNBEAM** Combination, lamps, all accessories ..... Offers
- 1920 **MATCHLESS** Combination. Just delivered. Spare wheel, wind screen. Offers
- 1920 8 h.p. **ENFIELD** Combination. Just uncrated ..... Offers
- 1920 6 h.p. **NEW IMPERIAL - J.A.P.** Combination ..... Offers
- 1920 7-9 h.p. **HARLEY** Combination, mag. model, complete with lamps, wind screen, and horn ..... List price
- 1920 10 h.p. **HENDERSON** Combination, sporting Sidecar, T.T. bars, disc wheels, electric lighting ..... Offers
- 1920 6 h.p. **ENFIELD** Combination, Lucas dynamo lighting set, wind screen ..... Offers
- 1919 3½ h.p. **SUNBEAM** Combination, complete with electric lamps and horn ..... £165
- 1918 **HARLEY** Combination, fitted with 1920 dynamo lighting set, T.T. bars, sporting Sidecar. Real hot lot .... £165
- 1916 6 h.p. **ENFIELD** Combination, Lucas dynamo lighting set ..... £135

SOLO MACHINES.

- Brand New **BLACKBURNE**, 4 h.p. List price
- 1920 Brand New 4 h.p. twin horizontally opposed **HARLEY** ..... List price
- 1920 7-9 h.p. electrical model **HARLEY**. List price
- 1920 **TRIUMPH**, countershaft model ... Offers
- 1920 Isle of Man **RUDGE** Multi ..... £105
- 1918 3 h.p. twin **ENFIELD**, speedometer, lamps, and horn, original tyres, exceptional condition ..... £75
- 1919 3½ h.p. sporting **SUNBEAM**, racing cans, specially tuned by Sunbeams. Offers
- 1917 3½ h.p. **SUNBEAM**, lamps ..... £75
- 1920 **DIAMOND**, 2½ h.p. J.A.P. engine, Enfield 2-speed gear ..... List price
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CARS.

- CALTHORPE**, 10 h.p., special racing Brooklands model, aluminium body, bucket seats, Broit dynamo lighting set, exceptionally smart little car ... £450
- 1916 Baby **PEUGEOT**, limousine, interior drive, upholstered Bedford cord, 3-sp. model, electric lighting ..... £280

We are London Agents for the famous **CASTLE** 3-wheeler, complete with dynamo lighting set, £250. Early deliveries guaranteed.

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MOTOR CYCLES FOR SALE.

Enfield.

**ENFIELD** 1914 Combination, splendid condition; £110.—Holden, West Wickham, Beckenham, Kent. [5787]

**ENFIELD**, 3h.p., 2 speeds, kick starter, good tyres, reliable machine; £38.—72, The Chase, Clapham. [7944]

**ENFIELD** 1916 3h.p. Combination, fully equipped; £75.—Stevens, 38, Endlesham Rd., Balham. [8045]

**ENFIELD** Combination, 1913, recently overhauled, splendid condition; £85.—85a, Temple Rd., Cricklewood. [7994]

**JONES** Garage, special agents for Enfields, Broadway, Muswell Hill, N.10, and Woodside Parade, North Finchley. [0031]

**ENFIELD** Combination, 8h.p., 1916, as new, little used.—George Smith's Motor Cycle Depot, Clapham Junction, S.W. [8226]

**ENFIELD**, brand new, 2-stroke, 2½h.p., 2-speed, at makers' price; £63.—Wilkins, Simpson, and Co., opposite Olympia, London. [6850]

**3** h.p. Enfield, 2-speed, kick start, lamps, horn, splendid condition; 60 gns.—Beeden, 12, Coronation St., Darfield, near Barnsley. [7675]

**ENFIELD** Combination, 1916, as new, £10 accessories; £128; exceptionally powerful, Bosch—4, Nursery Walk, Worcester. [8111]

**1919** Royal Enfield, 2-stroke, 2-speed, perfect condition; £58; first cheque secures.—Vincent, 82, Westlode St., Spalding, Lincs. [X2582]

**ENFIELD** 2½h.p. Twin, Bosch, looks like new; must sell; £30.—Letters, L. Housley, c/o Mrs. Smith, Brinsley, near Eastwood, Notts. [7592]

**ENFIELD** Combination, 6h.p., late 1916, Lucas dynamo lighting, 3 lamps, excellent condition; £135.—Lyons, 136, Lambeth Walk. [7792]

**1917** 8h.p. Twin Enfield and sidecar, complete with lamps, good condition; any reasonable trial; £135.—de Meric, c/o Dan Guy, Weymouth. [X2518]

**ENFIELD** 1912 2½h.p. Twin, chain drive, not used for 4 years during war, splendid condition; £30, no offers.—Hardy, Teviot-Dale, Stockport. [7691]

**5**-6h.p. Enfield, fitted with coachbuilt sidecar, combination in nice running order; £160.—Apply, King and Harper, 6, Bridge St., Cambridge. [6885]

**ENFIELD** 6h.p. Combination, appearance as new, lamps, horn, speedometer, luggage grid, spares, ready for any tour; £100.—56, High St., Tooting. [7992]

**ENFIELD** 3h.p., 1916, 2 speeds, K.S., new tyre, horn, gear chains, saddle, as new; £56, or near offer.—Andrews, Wingfield, Penn, Wolverhampton. [X2585]

**ENFIELD** Combination, 6h.p., late 1913, child's seat in sidecar, lamps, horn, and tools, excellent condition; £85.—120, Estcourt Rd., South Norwood. [8059]

**ENFIELD** 1920 Brand New 6h.p. Combination, never ridden, exchange late Morgan, or sell; offers.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E3155. [8065]

**ENFIELD** Combination, 8h.p., Nov., 1918, only done 400 miles, as new, complete with lamps, tools, etc.; £140, no offers.—Jones, Cardigan House, Gorseinon. [7763]

**ENFIELD** Combination, 1914, in perfect order, new Dunlop, lamps, spares, sidecar repainted; £95, or near; seen any time.—Box 6,669, c/o The Motor Cycle. [7867]

**ROYAL ENFIELD** 2½h.p. Twin, chain drive, Bosch mag., B. and B. carburettor, ready for the road; £25.—W. T. Owen, Glascoedisaif, Llanarthney, Carmarthen. [7687]

**ROYAL ENFIELD**, 3h.p., and Watsonian sidecar, 2 speeds, kick start, new tyres, smart combination, recently overhauled; 64 gns.—Larkhall Brewery, Clapham, S.W. [8034]

**ENFIELD** 1914 6h.p. Combination, excellent condition, laid up 3 years, lamps, horn, tools, spares, extra cover and tube; £120.—Arscott, Eastway Farm, Witheridge, Devon. [7676]

**WAUCHOPE'S**, 9, Shoe Lane, Fleet St., London.—1918 8h.p. Royal Enfield combination, £165; 1917 combination, £155; 1913 or 1914, £87/10; 1919 8h.p. combination, £167/15. [8295]

**ENFIELD**, 1916, 3h.p., 2-speed, kick start, lamps, horn, tools, mirror, stored, appearance and condition as new, only done 500 miles, ride away; 60 gns.—Taylor, 96, Wellington St., Gravesend. [7861]

**3** h.p. T.T. Enfield, 1915, 2-speed (unused 3½ years during war), complete with lamps and tools, etc., perfect condition, very sporty model; 55 gns.—E. Ruthven, Beausite, c/n Sussex Rd., Sidcup Hill, Kent. [7591]

**ENFIELD** Tandem Sidecar and hood, pillion seat, Lucas dynamo lighting set, 2 horns, mirror, speedometer, 700x80 tyres, fully equipped, and just overhauled and rebushed, outfit in perfect condition; £152/10.—764, Seven Sisters Rd., N.15. [7662]

**1916** Enfield, 2-stroke, engine overhauled, new piston rings, new Amac Carburettor, new saddle bag, M.L. magneto just back from makers, lamps and horn, saddle slightly damaged, front brake wants refitting, otherwise in perfect order; first cheque for £48 secures; telegrams precedence; can be seen 11 to 5 at Kelway, Hurcot, Somerton, Somerset. [X2630]

**MOTOR CYCLES FOR SALE.**

**Excelsior.**

1920 British Excelsior 6h.p. Combination, 3-speed, countershaft, in stock; £150.—Clifford Motories, Eastwood, Notts. [8080]

2 3/4 h.p. Excelsior, mechanically sound, wants new tyres, 24 belt, and accumulator; £7 for quick sale.—Barwell, Swavesey, Cambs. [X2503]

AMERICAN Excelsior. New Model 19 and 19E. now on view.—Sole Midland distributors, The Premier Motor Co., Aston Rd., Birmingham. [7708]

LANCASHIRE, Cheshire, North Wales, Isle of Man only.—American Excelsior; enquiries.—J. Blake and Co., Official Dealers, Liverpool-Manchester. [6586]

AMERICAN Excelsior 1915 C.B. Combination, 7.9h.p., clutch, kick start, electric lights, plate glass wind screen, step to sidecar, excellent condition; £125.—Hawkes, 77, West Green Rd., Tottenham. [7279]

THE New 1920 American Excelsior represents the best value for money on the market. Book now for early delivery; fitted with Swan de Luxe sidecar.—Edwards and Parry, 4, Blenheim St., Bond St. Mayfair 2666. [6234]

BRITISH Excelsior.—We can give delivery from stock of the British Excelsior 2-stroke, 2-speed, kick starter, hand-controlled clutch model; £69/17/6. American Excelsior 7.9h.p. in January.—Forfield Motors, 11-13, Forfield Place, Leamington Spa. [X2649]

AMERICAN Excelsior 1916 Combination, 7.9h.p., 3 speeds, hand and foot clutch, kick starter, mechanical lubrication, latest Binks, with Sandum torpedo sidecar, complete lighting set, Klaxon, etc., in perfect mechanical condition throughout, excellent finish, handsome, powerful, and reliable turnout; £125; any trial or examination.—A. Rose, Highfield, Gainsborough. Tel.: 36. [X2587]

YOUR Name can be first on our waiting list for the 1920 British Excelsior. We have just started business, and have secured a contract for this well-known machine. The first cheque for £5 we receive as deposit will secure the order for the very first machine we receive, and all applications dealt with in strict rotation; any model.—Hubert Turner and Co., 4-5, Crawford Passage, Farringdon Rd., E.C.1. [831]

**F.N.**

£24; F.N. 3 1/2 h.p., clutch, fast, good order throughout, ride away.—103a, High St., Wandsworth, S.W. [8196]

F.N., 2 1/2 h.p., 2-speed, just overhauled and rebushed, tyres good; £30.—Keen, 101, The Avenue, West Ealing. [8044]

F.N. Show Models on view, the 4-cyl. model £135, and the 2 3/4 h.p. £85.—Frank Whitworth, Ltd., 139, New St., Birmingham. [7705]

7 h.p. F.N., 4-cyl., and 2 1/2 h.p. 2-speed, new 1920 models. Orders now booking Birmingham only.—The Premier Motor Co., Aston Rd., Birmingham. [7709]

T.T. 5-6h.p. 4-cyl. F.N., sloping top tube, large tapered tank, long exhaust, all red, gold lining, hot stuff mount; £40.—2, Blenheim Gardens, Wallington. [8114]

F.N., 2 1/2 h.p., new C.A.V., Amac, and horn, new Dunlop on back, new A.B.C. lamp set, good order, ride away; £26.—Murray, 42, Myrtle St., Westminster, Bristol. [7831]

F.N. 5h.p. 4-cyl. cycle with new coachbuilt sidecar, 2-speeds, plate clutch, shaft drive, 2 drum brakes, speedometer, 4 covers, 5 tubes, all unpunctured; machine was practically rebuilt last August by the makers, and is in perfect order; £80. Seen by appointment only.—Hall, The Tyrrells, Great Bookham, Surrey. [7980]

**Harley-Davidson.**

JACK HEALY, Cork, official Harley agent.—Rotational delivery. No premiums accepted. [6488]

1919 Harley-Davidson, electric equipment, excellent condition; £140.—C. E. Lovick, Crowthorne, Berks. [X2510]

HARLEY-DAVIDSON, Model F, solo, in stock; list price; earliest delivery of complete combinations.—Edwards, 7, Exhibition Rd., South Kensington. [5760]

HARLEY-DAVIDSON Combination, 1915, in excellent condition; £106 for quick sale, spot cash.—The C.G.L. Engineering Co., Swanley Junction, Kent. [7973]

NEW 1920 Sporting Harley-Davidson Combination, electric model, not run 50 miles, private sale; price £210.—Seen, Middlesex Autocar Car Co., Golders Green. [7713]

HARLEY-DAVIDSON Combination, late 1915, bulbous back sidecar, hood, screen, lamps, horn, etc., perfect order; £120.—Fox, 41, Greencoat Place, Westminster. [8113]

HARLEY-DAVIDSON Combination, 1915 electric model, 3 electric lamps, electric horn, disc wheels, tyres as new; £135.—Brown, 7, Manor Park Parade, High Rd., Lee, S.E. [8165]

HARLEY-DAVIDSON 1920 Model, F.S. mag., in stock, fitted with speedometer, lamps, Klaxon; second-hand Triumphs wanted.—Goodwin and Cragg, Stafford St., Derby. [X2593]

1918 (late) Harley-Davidson and Right-hand Sidecar, £20 spent in complete overhaul and new tyres 3 weeks ago; combination £155, solo £145; perfect order.—123, Amesbury Av., Streatham Hill, S.W.2. [8156]

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**"Elite Rivetless Soles."**

**Soles STUCK ON—NO TOOLS REQUIRED.**

These Soles are specially prepared with an adhesive surface and fixed with Elite Sol-fix Solution. WE GUARANTEE THEM TO HOLD AS FIRM AS RIVETS OR SEWING. The process of fixing is exactly the same as that of repairing a punctured Motor or Motor Cycle Tube. One of the many great advantages of our process is that no damage whatever is done to the Boots or Shoes which, when fitted with our Soles become ABSOLUTELY WATER-PROOF. Full instructions given with pair of Soles.



**PLAIN SOLES — PRICES :**

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Size.	Per pair	Size	Per pair.
10-11	2/9	6-7	2/-
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Size	Per pair.	Size.	Per pair.
4-5	2/3	1-13	2/-
2-3	2/-	11-12	1/3



**Sole Pieces, Adjustable.**

Size 7 for 8 Boots	2/3
" 6 " 7 " "	2/-
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" 3 " 4 " "	1/6

**Sol-fix Solution:**

In Tins 8d., 1/3, 2/6, and 4/6. An 8d. tin is sufficient for 2 pairs of soles Solution Brush, 4d.

Please remit 6d. to cover cost of postage. Any excess will be refunded.



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264-266, Vauxhall Bridge Road  
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**MOTOR CYCLES FOR SALE.**

**Harley-Davidson.**

WAUCHOPE'S, 9, Shoe Lane, Fleet St., London. —7.9h.p. Harley-Davidson, new 1920 model, solo and sidecar combinations from stock; also 7.9h.p. Harley-Davidson combination, 1919 model, £185; 1916 Harley-Davidson combination, £150. [8297]

HARLEY Combination, electric model, 1915, recently re-enamelled silver-grey, excellent condition, been treated kindly, just decarbonised, originally demonstrator's machine (Reading); owner taking delivery 1920 model; first offer £130 secures.—Lt. Roberts, 17, Bushwood Rd., Kew, S.W. [7514]

**Hazlewood.**

HAZLEWOOD Combination, 5h.p. J.A.P., twin, 3 speeds, kick start, good tyres, new appearance, lamps and Tan-Sad; £77/10.—91, Mapledene Rd., Dalston. [7941]

**H.B.**

H.B., 1920, brand new, 2 3/4 h.p., 2-speed, with Blackburne engine.—Moos, Wem. [X2651]

H.B. 1920, 2 3/4 h.p. Blackburne engine, 2-speed, kick starter; 85 gns.; early delivery from sole district agents, Joseph Devey and Co., 50, Darlington St., Wolverhampton. Tel.: 606. [X2562]

1920 H.B., brand new, still in crate, fitted with 2 3/4 h.p. Blackburne engine, 2 speeds, kick starter, hand clutch; list price £85, will accept £85 for quick sale; Cambridge.—Box 6,676, *c/o The Motor Cycle*. [7873]

**Henderson.**

NOW on View, new Henderson Model Z2 and Z2E.—Sole Midland distributors, The Premier Motor Co., Aston Rd., Birmingham. [7711]

LANCASHIRE, Cheshire, North Wales, and Isle of Man.—Enquiries for Henderson 4-cyl. wanted.—J. Blake and Co., Official Dealers, Liverpool-Manchester. [6587]

10 h.p. Henderson (solo), lamps, speedometer, discs, just overhauled; £93, or exchange for lower power, Triumph, Rudge, or twin Zenith preferred; cash either way.—Kinch, 73, Hunter St., Northampton. [X2449]

**Hobart.**

2 3/4 h.p. 1915 Hobart-Villiers, 2-stroke, 2 speeds, fully equipped, and in splendid condition; lowest £38.—24, Manby Rd., Newtown, Stratford, E.15. [7526]

1916 Hobart-Villiers, 2 3/4 h.p., 2-speed, countershaft, Thomson-Bennett, Amac, lamps, horn, excellent condition; £39; any trial; approval.—Gibbs, 58, Ashdown Rd., Worthing. [7810]

**Humber.**

LATE 1919 Twin Humber, 2-speed, as new, £3 Cowey, Millers lamps, tools; £95.—Allens, Ledbury. [X2438]

HUMBER 3 1/2 h.p., grand machine; £37; approval paid.—Frederick, 3, Priory Plain, Gt. Yarmouth. [7530]

WAUCHOPE'S, 9, Shoe Lane, Fleet St., London. —8h.p. Humber combination, twin, 1919; £175. [8298]

HUMBER Lightweight, good condition, running order; £20; after 6 p.m.—96, Belgrave Rd., Wanstead, E.11. [7850]

HUMBER, 1914, 3-speed clutch, kick start, lamp, tyres and condition excellent; £45.—Write, Geach, Kenilworth, Newburgh Rd., Acton. [7606]

HUMBER 3 1/2 h.p., 2-speed, handle start, semi-T.T. bars, new rear Dunlop, fine condition; ride away; nearest £45.—18a, High St. Putney. [8097]

HUMBER Lightweight, lamps, horn, pump, tool bag, tyres, enamel and plating good, in fine running condition; bargain, £30.—352, High Rd., Willesden, N.W.10. [8199]

1917 3 1/2 h.p. Flat Twin Humber, mileage guaranteed under 1,500, condition as new; £85; reason for selling, have bought sidecar machine.—Mrs. Knowles, Gissing Hall, Diss. [7965]

HUMBER Combination, 1914, 3 1/2 h.p., handle start, 2-speed, complete with lamps, speedometer, tools, and spares, all guaranteed; £70 quick sale.—Hansford, 11, Beehive Cottages, Wickham Rd., Fareham. [8016]

**Indian.**

STILL the finest and best value for money, the silent Indians; £158 solo, £190 combination.

THE Scout Model, £125 solo, the finest solo mount in the world; £155 combination.

PLACE your orders now for early delivery. Phone: 943 Horswill.—Castra Motor Cycle Garage, 42, Bridge St., Chester. [7752]

1920 Indians; prompt deliveries.—E. Brown, Indian Specialist, 3 and 7a, Parker Lane, Burnley. Tel.: 194. [X0334]

INDIAN 5h.p., clutch, disc wheels, copper exhaust, very fast, perfect condition; £60.—33, Warwick Gardens, Ilford. [7993]

INDIAN 7.9h.p. Coachbuilt Combination, 2-speed, spring frame, etc.; £90 for quick sale.—Bartlett, Goudhurst, Kent. [7729]

INDIAN Combination, 7.9h.p., 1915 clutch model, all in excellent condition; £75, or near offer.—Harris, High St., Slough. [8178]











**MOTOR CYCLES FOR SALE.**

**Rex.**

**3½** h.p. T.T. Rex, good condition, Dunlop tyres, aluminium piston, tools, etc.; £35.—7, Duke St., Leamington Spa. [X2533]  
**REX 3½** h.p., 1912 model, perfect running order: must sell, £25, or offer.—D., 102, Southampton Row, W.C. Phone: Central 2230. [7536]  
**3½** h.p. Rex, Simms mag., T.T. bars, Wood-Milne tyres as new, Cowey, Klaxon, good condition; £25, offer.—Baxter, 28, Gore Rd., Hackney. [X2543]  
**REX de Luxe 6-8** h.p., 2-speeds, handle starter, lamps, horn, 2-seater sidecar, wind screen, very powerful combination; £95.—Baker, Crowland, Peterborough. [7498]  
**REX Combination, 1914**, Bosch mag., Senspray, sidecar de luxe, 6-8 h.p., in perfect condition, can be seen at any time; price £100; also F.N. motor bicycle.—H. J. King, Albury. [7826]  
**3½** h.p. Rex, good condition, pulls well, overhauled. Rebuilt, new gudgeon pin, coil, B. and B. tyres good, spare belt, tools, horn, pump; £20, or nearest.—Chapman, Electricity Works, Hindhead. [7788]  
**FOR Earliest Delivery** of the new Rex Model 77 single or Model 66 V twin, place your order at once with sole Midland agents, The Premier Motor Co., Aston Rd., Birmingham. Phone: Central 4310. [7712]  
**4** h.p. Rex, 1914, 2 speeds, free engine, handle starting, 26x2½ new Dunlops, new belt, Bosch water-tight mag., machine throughout new condition, B. and B. carburettor, all accessories, comfortable coach sidecar, nice outfit: bargain, £65.—45, Charles St., Stepney. [8172]

**Rex-Jap.**

**REX-J.A.P. Combination, 8** h.p., 1915, C.B. sidecar, wind screen, Stewart speedometer, acetylene lighting, foot-controlled, handle start, tyres excellent; £95, or Enfield 3 h.p. and cash.—Ashby House, York Av., Hunstanton. [X2470]

**Roc**

**ROC, 3½** h.p., 2-speed, variable pulley, free engine, clutch, Bosch, B. and B., new Avon tyre, make good sidecar machine; £28, near.—Young, King St., Bedworth. [X2516]

**Rover.**

**ROVER**, brand new, 3½ h.p., 3-speed countershaft combination, in stock.—Moss, Wem. [X2655]  
**ROVER, 3½** h.p., 1917 T.T. model, very little used: 65 gns.—Larkhall Brewery, Clapham, S.W. [8033]  
**BARGAIN.**—Rover 3½ h.p., F.E. clutch, good condition, ready to ride away.—Phone: Western 6261. [7697]  
**ROVER 3½** h.p., 1915, 3-speed, clutch, good condition; £65.—14, St. John's Rd., Boxmoor, Herts. [7728]  
**£45.**—Rover 3½ h.p. T.T., F.E., 1914, new tyres and belt.—Warner, 64a, Eynham Rd., Wood Lane, W.12. [7843]  
**ROVER, 3½** h.p., 1917, T.T., Philipson pulley, top-hole condition; £70, offers.—Atkins, Crowborough. [7834]  
**JONES' Garage**, special agents for Rovers, Broadway, Muswell Hill, N.10, and Woodside Parade North Finchley. [0035]  
**ROVER 6** h.p. Combination, 1919, unused, not W.D. sidecar; £140.—Clifford Wilson Mfg. Co., 70, Royal Hospital Rd., Chelsea, S.W.3. [8274]  
**ROVER 3½** h.p., 1914, 3-speed, clutch, lamps, equipment, excellent order; £49.—Kington, 2, King Edward Parade, Norbury, S.W. [8126]  
**1919 Rover 6** h.p. Combination, 3-speed countershaft, coachbuilt sidecar, excellent condition; £165, or best offer.—80, Aldridge Rd., Perry Barr, Birmingham. [X2334]  
**1919 3½** h.p. Rover, T.T., h.c. Philipson, Lucas lamps, mechanical horn, spares, new condition, very fast; £110.—Lucy, Sunnymead, Abbotswood, Guildford. [X2552]  
**ROVER Single and Twin Models**; a limited number available for next season.—Particulars of delivery dates and prices from Lloyd and Son, 29, Station St., Lewes. [9581]  
**ROVER 3½** h.p., new last April, 3-speed countershaft, clutch, kick start, Bowden extra air, Stewart speedometer, horn and lamps.—Brown, Beechcroft, Devizes. [8206]  
**ROVER T.T., 1919, 3½** h.p., mileage under 700, tyres unpunctured, complete with all accessories and tools, spare Dunlop belt and valve spring; offers.—Wilmot, The Osse, Hereford. [7574]  
**ROVER, 1914, 3** speeds, pedal start, clutch, light coachbuilt sidecar, real sporting lot, lovely condition; £70; deferred payments arranged.—Bunting's Motor Exchange, Wealdstone. [7825]  
**ROVER, 1919 (late), 4** h.p., 3-speed countershaft, clutch, kick, practically indistinguishable from new, fully equipped, classical machine; 92 gns.—Peat, 72, The Chase, North Side Clapham Common. [7943]  
**NOW Ye Sporty Boys.**—1919 Rover 5-7 h.p. J.A.P. solo, all enclosed chain drive, under 2,000, complete with Lucas lamps, twice used, Lucas and Klaxon horns, tools; first £130 secures.—Batho, Broome, Ellesmere. [X2330]  
**3½** h.p. Second-hand Rover Combination, 1919 model, in good going order and condition; offered on behalf of a client.—Harrods Motor Showrooms, 116-118, Brompton Rd., opposite Main Building, London, S.W.1. [7538]

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**NEW IMPERIAL, 8** h.p.  
 Ditto 6 h.p.  
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**CLYNO, 2-stroke, 2-speed**  
 (4 in stock)  
**IVY, all-purpose model, 2-speed.**  
**CALTHORPE-JAP, 2-speed.**  
**OMEGA-JAP, 2-speed, kick start,**  
 clutch, disc wheels.  
**CONNAUGHT, 2-stroke, 2-speed,**  
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**INDIAN-POWERPLUS**  
 8 machines, Solo or Combination at option, **delivered January**, all dates open.

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**CARS:** HUMBER.

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**MOTOR CYCLES FOR SALE.**

**Royal Ruby.**

**HONOR Oak Motor Mart.**—Immediate delivery Royal Ruby.—129, Brockley Rise, S.E.23. [7736]  
**JACK HEALY, Cork**, official Royal Ruby agent.—Rotational delivery. No premiums accepted. [6490]  
**ROYAL RUBY 2½** h.p., J.A.P. engine, 2-speed, kick start, hand clutch, fully equipped; £65.—Parker's Bradshawgate, Bolton. [7393]  
**JONES' Garage**, special agents for Royal Rubys, Broadway, Muswell Hill, N.10, and Woodside Parade, North Finchley. [0036]  
**ROYAL RUBY 8** h.p. Combination, Ruby sidecar outfit, new, delivered this week; offers.—29, St. Leonard's St., Bromley-by-Bow. [8183]  
**FOR Sale, 2½** h.p. Royal Ruby, Villiers engine, single gear, as new, done about 200 miles; £50, or near offer.—Apply, H. Berta-Jones and Hastwell, Architects, Rhos-on-Sea. [X2435]  
**ROYAL RUBY.**—Immediate delivery of new single speed 2-stroke £48, or new 8 h.p. sidecar combination £155.—Frank Whitworth, Ltd., 139, New St., Birmingham. [7701]  
**WAUCHOPE'S, 9**, Shoe Lane, London, E.C.4.—8 h.p. Royal Ruby and sidecar, 1919 model, fast machine, powerful on hills, very flexible engine, 3-speed countershaft gear, clutch, and kick starter, all-chain drive, including accessories; £150. [8285]  
**SPECIAL T.T. Super-sporting Royal Ruby 3½** h.p. twin, o.h.v. J.A.P., 1914, little used since, 2-speed countershaft, clutch, extra large round tank, long exhaust pipes, enamelled red, plated, equal new, do 65; £80.—Seen garage, 361, Green Lanes, Haringay, London, N. [8029]

**Rudge.**

**CROW Bros., High St., Guildford**, Rudge agents, supply at list prices. [X7948]  
**EARLY Deliveries** of Rudge Multis at Blackburn and Sons, Station Garage, Spalding. [7921]  
**RUDGE 3½** h.p., 1912, adjustable pulley, good tyres; £30.—Frost, Dunton Green. [7768]  
**1919 Rudge Multi**, only ridden a few times; £90. Tucker and Co., Highbridge. [X2616]  
**HONOR Oak Motor Mart.**—Rudge Multi, immediate delivery.—129, Brockley Rise, S.E.23. [7737]  
**1919 Rudge Multi**, splendid condition; £90.—Thompson, Rennington West Farm, Alwick. [7885]  
**NEW T.T. Rudge Multi**, hand clutch, ridden 250 miles; £95, or nearest.—Askwith, Jeweller, Tewkesbury. [7576]  
**JONES' Garage**, special agents for Rudge, Broadway, Muswell Hill, N.10, and Woodside Parade, North Finchley. [0037]  
**RUDGE 3½** h.p., lamps, horn, good tyres and belt, excellent order; £38, offer.—2, Hillside, Stonebridge Rd., Harlesden. [7715]  
**3½** h.p. Rudge Multi, 1915 War Office model, in good order, with coachbuilt sidecar; £67/10.—John Surridge, Ongar, Essex. [X2512]  
**I.O.M. Rudge, 1919**, done 500 miles, £10 worth accessories; £100.—Cyril Williams, Chapel Ash Depot, Wolverhampton. [X2180]  
**3½** h.p. Rudge, Grado, lamps, horn, fine condition, perfect order, good tyres; £45, or good offer.—64, York St., Twickenham. [8233]  
**RUDGE, I.O.M., 1916**, fast machine, excellent condition, usual accessories; £72.—Apply, W. Douglas, 37, Sheep St., Northampton. [7628]  
**1919 3½** h.p. Rudge Multi, equal to new, very little ridden, spare tube, accessories; seen Saturdays; 86 gns.—Bird, 50, Hillary St., Walsall. [8106]  
**1920 5-6** h.p. Rudge Multi and Rudge sidecar, brand new, awaiting collection from Rudge depot; price £150.—Owner, 190, Plashet Grove, East Ham, E.6. [7774]  
**1919 Rudge Multi 3½** h.p. Roadster, lamps, speedometer, horn, in very nice order; £90.—Elee and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. [0069]  
**1919 5-6** h.p. Rudge Multi, done 600 miles, lamp, mechanical horn, speedometer, condition as new; £112.—Wellington, 7, Latchett Rd., Woodford, E.18. [7907]  
**1919 Rudge T.T. Multi, September**, P.H. head lamp, Premier horn, Tan-sad and footrests, as new; £100. Apply week-ends.—34, Cornwall St., Fulham. [7978]  
**RUDGE 3½** h.p. Multi with Coachbuilt Sidecar, 1915 model; £80.—Newnham Motor Co., 223, Hammersmith Rd., W.6. Phone: Hammersmith 80. [7744]  
**RUDGE Multi 3½** h.p., 1919 (Sept.), I.O.M., Lucas large lamp set, mechanical horn, rear light, guaranteed; £98; evenings.—85, Ermine Rd., Lewisham, S.E.13. [7794]  
**1917 Rudge Multi, 3½** h.p., in splendid order, T.T. bars, lamps, horn, and accessories, new back tyre, very hot stuff; £73.—209, Broadway, West Hendon, N.W. Phone: Kingsbury 162. [8319]  
**1916 Rudge Multi 3½** h.p. Combination, hand clutch, tyres, etc., perfect, overhauled, and in splendid condition; £78, bargain.—Write, Wilkins, 1, Pitcairn Rd., Mitcham, or telephone City 628 for appointment. [8237]



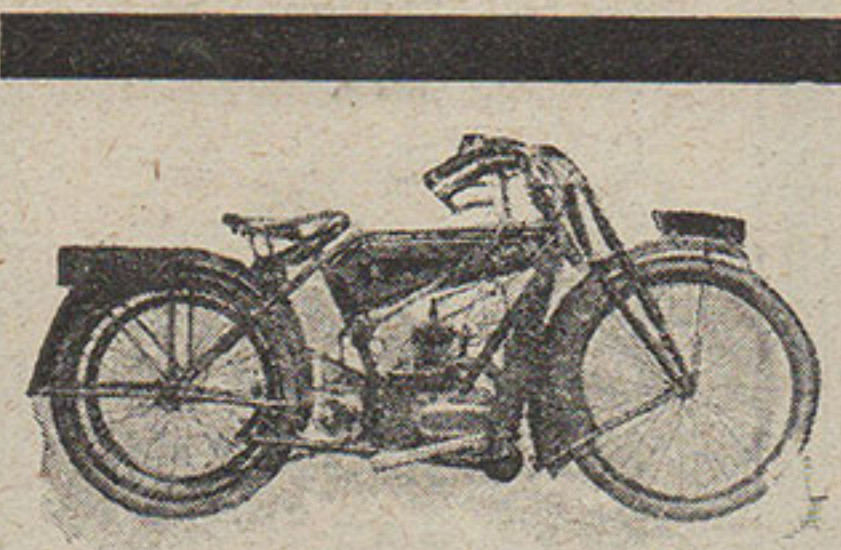
MOTOR CYCLES FOR SALE.

Triumph.

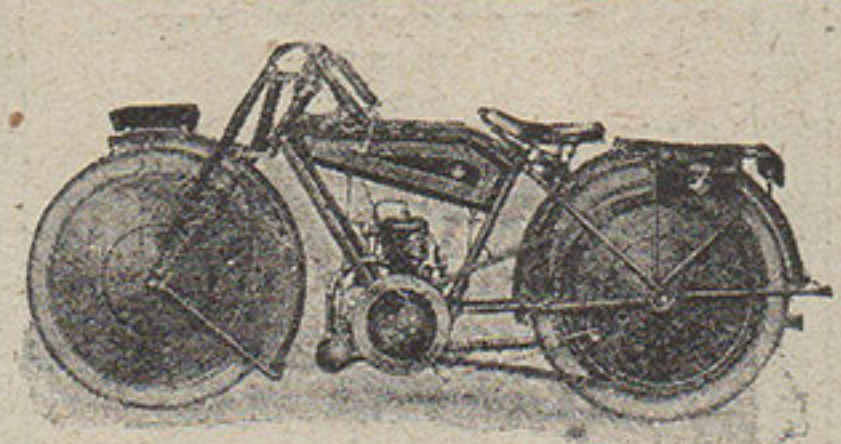
- TRIUMPH**, 1919, 4h.p. model, fully equipped, full T.T. bars.—Parker's, Bradshawgate, Bolton. [X1915]
- 3½ h.p.** Triumph, clutch, good condition: £45; after 11 o'clock.—St. Aubins, Elm Grove, Wimbledon. [8002]
- £36; Triumph 3h.p., clutch, good order, very fast, powerful.—103a High St., Wandsworth, S.W. [8195]
- TRIUMPH** 1912, free engine, overhauled, looks like new: £40.—Hills, Brooklands, Boxted, Colchester. [8100]
- 1919** T.T. Triumph, done about 3,000 miles; £80.—Apply, Capt. J. R. Allen, Buller Barracks, Aldershot. [7602]
- TRIUMPH**, 4h.p., T.T., 3-speed, clutch, in perfect order; £63.—262, Blackhorse Lane, Walthamstow. [8053]
- 1919** (late) Triumph 4h.p., little used, perfect in every way; £100.—Box 6,706, c/o *The Motor Cycle*. [8239]
- TRIUMPHS**.—Large assortment of second-hand models in stock, all fully guaranteed.—Ross, 86, High Rd., Lee, S.E. [5540]
- TRIUMPH** 3½ h.p., Grado multi gear, horn, tools; £40; just overhauled.—12, Baroness Rd., Bethnal Green, E.2. [7503]
- JONES' Garage**, special agents for Triumphs, Broadway, Muswell Hill, N.10, and Woodside Parade, North Finchley. [0035]
- 1920** Triumph, T.T. Model, brand new, still in crate: £95; Cambridgeshire.—Box 6,679, c/o *The Motor Cycle*. [7880]
- TRIUMPH** 3½ h.p. Clutch Model, just overhauled, good tyres, tools, etc.; £45.—Henderson, 209, King's Rd., Chelsea. [7758]
- 1914** Triumph and Sidecar, 3-speed, clutch; price £58; district Buckinghamshire.—Box 6,719, c/o *The Motor Cycle*. [8251]
- WAUCHOPE'S**, 9, Shoe Lane, Fleet St., London.—1914 Triumph Junior, £52/10; 1919 Triumph and C.B. sidecar, £125. [8309]
- FIVE** Triumphs, late models, 3-speed countershaft, all in good condition; £75 each.—Hawkins, 455, York Rd., Wandsworth. [7979]
- TRIUMPH** 4h.p., 1917, renovated and repaired throughout; £75; call evenings after 6.—49, Ruckledge Av., Harlesden, N.W. [7696]
- 1919** Triumph, 3-speed, as new, lamps, horn, speedometer, spare belt and chain, full kit: £100.—90, Crofton Park Rd., S.E.4. [7895]
- 1914** Triumph and C.B. Sidecar, 4h.p., 3-speed, clutch, perfect condition; £70.—Claybourn, Garage, Askern, nr. Doncaster. [8055]
- TRIUMPH**, 1915, 3-speed countershaft (1918) gear box, all in fine condition; £75, or near offer.—Welch, 135, Edgware Rd., W.2. [8027]
- NEW** Triumph, just delivered, unriden, 4h.p., chain-cum-belt, 3-speed; owner bought Morgan; £105, no offers.—Hardy, Teviot Dale, Stockport. [X2441]
- TRIUMPH**, 3½ h.p., N.S.U. 2-speed, in excellent condition, good tyres, lamps, horn; £45, or nearest offer.—Boxer, Swingfield, near Dover. [X2629]
- TRIUMPH** 1914, 3-speed, owner had it since new, been well cared for; £65, in good condition.—Marshall, 451, Attercliffe Rd., Sheffield. [7990]
- 1917** Triumph 4h.p. Combination, 3-speed, countershaft, all accessories, beautiful outfit; 98 gns., no offers.—365, King St., Hammersmith. [8079]
- TRIUMPH**, 1913, 3 speeds, clutch, in excellent condition throughout, new tyre and belt; £60.—Tierney, 22, Adelaide Rd., Leamington Spa. [X2490]
- 3½ h.p.** Triumph, Bosch mag., adjustable pulley, lamp, 2 brakes (both work), good running order; £32/10.—Cook, 148, High Rd., East Finchley, N.2. [X2491]
- TRIUMPH** Junior, not done 100 miles, guaranteed as new, Lucas horn, tools; deliver at once; £65; owner going away.—36, Bromfield Rd., Redditch. [7582]
- TRIUMPH** Road Racer, latest model, delivered Dec. 25th, selected engine, with equipment, ridden once—price £94 cash.—32, Winchester Rd., Colchester. [7520]
- 1920** Triumph, T.T. Model, only used 90 miles, fitted with lamp set, rear lamp, and Lucas horn; £95.—Box 6,680, c/o *The Motor Cycle*. [7881]
- 2½ h.p.** Baby Triumph, just overhauled and in good condition, new tyres and tubes; for quick sale.—Apply, 32, Skipton Rd., Pitsmoor, Sheffield. [X2588]
- 1919** Triumph Combination, 3 lamps, spare belt, apron, tools, etc.—£120, or exchange big twin, cash adjustment.—15, Summerhill Rd., Dartford, Kent. [7780]
- TRIUMPH**, 3½ h.p., believed 1908, B. and B., nearly new tyres, mag., P. and H. lighting set; must sell; highest offer.—Warden, Bushes Rd., Sevenoaks. [8092]
- 1920** Triumph Junior, unpacked, received Jan. 4th. 1920; £69; countershaft or T.T. Triumph in exchange, pay difference.—Box L6,538, c/o *The Motor Cycle*. [7476]
- TRIUMPH** 4h.p., countershaft, late 1917, new Dunlop tyres, belt, plating, and tank; seen London; £75 spot cash.—Box 6,709, c/o *The Motor Cycle*. [8243]

**The IVY TWO STROKE**

1908 \_\_\_\_\_ 1920  
**HAS STOOD THE TEST**  
 OF TIME.  
 1908 \_\_\_\_\_ 1920



**THE DE LUXE IVY TWO-STROKE.**  
All-Purpose Model.



**THE DE LUXE IVY TWO-STROKE.**  
Isle of Man Sporting Model.

*We shall be pleased to give full information concerning 1920 supplies on receipt of P.C. Abridged leaflet now ready.*

**S. A. NEWMAN Ltd.,**  
Aston Cross, Birmingham.

**THE ARISTOCRAT OF ITS TYPE**

MOTOR CYCLES FOR SALE.

Triumph.

- TRIUMPH** 1914 4h.p., Millford Empress sidecar, 3 speed, clutch, Bosch mag., tyres, belt, pulley new, little used during war; £75.—174, Knockhall Rd., Greenhithe. [7587]
- 1919** Triumph (November), 4h.p., countershaft, 3-speed, clutch, lamps, horn, Tan-Sad, not done 50 miles; £115, or nearest offer.—Fisher, 29, Kinnerley St., Walsall. [X2439]
- 1914** 4h.p. Triumph, with Mills-Fulford coachbuilt sidecar, 3-speed, Bosch mag., just thoroughly overhauled and in perfect running order; £90.—Ward, Bideford, Devon. [8015]
- TRIUMPH** 1912 T.T. Model, genuine road racer, in exceptionally good condition, good tyres and belt, P. and H. lamps; any examination; £45.—Griffiths, West Rd., Congleton. [X2485]
- 1919** 4h.p. Triumph Combination, Gloria de Luxe sidecar, complete with accessories, in beautiful condition; price £135.—F. W. Potts, 6, Hawkin St., Kensington, Liverpool. [7751]
- 1918** Triumph, 4h.p., countershaft 3-speed, condition as new, tools, horn, etc.; best offer over £85.—Capt. Lane, Fairholme, 15, Elderslie Rd., Eltham. Phone: Lee Green 284. [8093]
- TRIUMPH** Junior, 1919, unused, 2½ h.p., 2-speed, disc wheels, footboards, lamps, horn, and tools, complete; seen any time; £68, no offers.—Lock, Bailey Gate, Wimborne, Dorset. [7524]
- 1913** 3½ h.p. T.T. Triumph, in fine condition, Bosch mag., new belt, new Dunlop on back, B. and B. carburetter, sporty little mount; £43.—5, The Parade, Belmont Sutton, Surrey. [7607]
- TRIUMPH** 1920 T.T., unpacked, just delivered; owner will re-address to first person sending cheque, or agree "Motor Cycle" deposit system; £90.—Box L6,543, c/o *The Motor Cycle*. [7481]
- 1919** Triumph, 3-speed countershaft model, sidecar, lamps, horn, speedometer, etc., as new; £130.—The Park Motor Co., Ltd., Wells St., Jermyn St., London, S.W.1. Gerrard 1927-8. [7668]
- TRUSTY** Triumphs, 4h.p., standard models, one 1919, enamel and plate as new, perfect order, £87; one 1918, perfect order, £80.—Ell, 29, Westbourne Rd., Forest Hill, S.E. [7940]
- TRIUMPH** Junior, mileage about 250, unscratched and not fully run in, no punctures, horn, usual tools and repair kit, ideal little mount; lowest £65.—D. Lavin, Old House, Sonning, Berks. [7844]
- TRIUMPH**, 1916 C.S. 3-speed, and new grey coach Montgomery sidecar, hood, apron, lamps, horn, etc., all good Dunlop tyres and belt; £87; seen and tried.—161, Kew Rd., Richmond, S.W. [8211]
- 3½ h.p.** T.T. Triumph, 1912, 2-speed, Millford sidecar, Lucas lamps, full equipment, spares and tools, stored during war, excellent condition; 70 gns.—Wansbrough, Cliff House, Westbury, Bristol. [7999]
- 1919** Triumph, 4h.p., 3-speed, semi-T.T. bars, sporting Swan sidecar, lamps, horn, etc., complete and in splendid order; £135.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. [0065]
- TRIUMPH**, new December, countershaft, lamps, horn, mileage under 200, Montgomery grey sidecar (cost £25), not yet fitted; combination £134, machine solo £112.—Box L6,544, c/o *The Motor Cycle*. [7482]
- 3½ h.p.** Triumph Motor Cycle, with variable gear and new B. and B. pilot jet carburetter, perfect running order, £25; sidecar for above, £3/10.—Collett Bros., 1 and 4, Railway Buildings, Norwood Junction. [7519]
- 1919** (December) Triumph, Type H., countershaft, mileage 200, complete lamps, horn, tool kit; owner going abroad; seen any time; offers to exceed £105.—Lt. A. S. Wheeler, Tresco, Warminster, Wilts. [X2566]
- TRIUMPH**, unused, fitted with new sidecar, Lucas £4/17/6 head lamp, Lucas £1/7/6 horn, Lucas 14/- tail lamp, Lucas sidecar lamp (£1/8/6), registration; £135.—Lambart, c/o Dan Guy, Weymouth. [X2067]
- TRIUMPH**, 4h.p., countershaft 3-speed, kick start, Lucas horn, new P. and H. lamp set, re-enamelled makers' colours, excellent appearance and condition throughout; bargain, £75.—22, Havelock Terrace, Battersea. [7756]
- GENTLEMAN** wishes to dispose of his Triumph 4½ h.p. 1919 combination, fitted every refinement, special outfit, mileage 3,500 approx.; perfect; appointment by letter.—27, Langley Rd., Small Heath, Birmingham. [7858]
- 1919** 4h.p. Triumph, run 560 miles, Stewart speedometer, Klaxon horn, lamps front and rear, insurance (including pillion riding); best offer over 100 gns.; write, or call Saturday after 2.—Carter, 6, Belmont Grove, Lewisham. [X2101]
- TRIUMPH** 1914 Coachbuilt Combination, engine just overhauled and new parts fitted, plating and enamelling as new, complete new set hub gears fitted a few days ago, also new extra heavy Dunlop back cover and tube; price £95.—Fletcher, 12, Derwentwater Rd., Acton. [8177]
- TRIUMPH** 3½ h.p., T.T., clutch model, B. and B., Bosch, just re-enamelled light blue, new front spring, 1920 handle-bars and lamps, tyres and belt good condition, the whole guaranteed perfect condition, fast and sporty; £55.—Lieut. Wilson, Keble College, Oxford. [8143]

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. A37





MOTOR CYCLES FOR SALE.

Miscellaneous

MOTOR Cycle, in good condition; £30.—321, Coldharbour Lane, Brixton, S.W.9. [7842]

MOTOR Cycle, less mag.; £6.—Hall, Hockman Cottage, Whetstone, London, N.20. [7812]

3 1/2 h.p. Motor Cycle, free engine, Grado gear, good running order; £28.—Pacey, Quadring, Spalding. [X2323]

LIGHTWEIGHT Douglas, 2-speed, and N.S.U. lightweight; wanted, combination.—Quick, 1, Tyncoed Place, Roath, Cardiff. [X2444]

INCOMPLETE Sunbeam and Clyno Combinations and Douglas W.D. machines; send for list.—Collier's Motories, Union St. South, Halifax. [7805]

1920 J.A.P., Matchless, Union, Douglas, etc., for sale; now is time to secure for Easter exodus.—Stoneleigh, Fuller's Rd., Woodford, E.18. [7679]

3 h.p. Motor Cycle, Ascot engine, mechanical valves, B. and B. mag., 300 miles since repair; £25.—E. Mackleden, 120, Napier Rd., Gillingham, Kent. [7829]

2 1/2 h.p. Solo, B. and B. carburetter, C.A.V. mag., 4 adjustable handle-bars, wants attention; £12, or first nearest cash offer secures.—Ex-Lieut. Lucas, 140, Haish, Yeovil. [8109]

CHATER-LEA Framed Motor Cycle, 3 1/2 h.p., B.B., U.H. mag., Dunlops, lamps, horn, tool bag, good condition, running order, wants belt; £20.—193, Upper Tooting Rd., S.W.17. [8011]

BARGAINS.—Douglas 2 1/2 h.p. 2-speed, 30 gns.; Brown 3 1/2 h.p., Gradua gear, 28 gns.; O.K. 3 1/2 h.p., £38; torpedo sidecar, 10 gns.; cycle car, 60 gns.—The Southern Motor Co., 232, Brixton Rd., S.W.9. [7966]

IF You Want to Purchase a privately-owned motor cycle or car, at owner's price, send 6 penny stamps (to cover postage, etc.) for extensive list of bargains registered with us, and free introduction to what you want.

IF possible, please call. Open 9.30 to 6; Saturdays 9.30 to 1 p.m.

WE have dozens of combinations and solos registered with us from all parts of the Kingdom.—Kwicksale Private Motor Registry, 35, Long Acre, W.C. (run solely by demobilised officers), 4 doors from Covent Garden Tube Station. [6672]

CLEARANCE.—20 motor cycles, solos, combinations, various makers, magneto machines, from £16/10; frames, wheels, engines, chassis, etc.; 100 ladies' gent's cycles, frames, wheels, forks, etc.—56, Francis St., Leeds. [8008]

TRIUMPH, 3 1/2 h.p., multi gear, free engine, kick start, £35; Lewis, 2 1/2 h.p., £30; Murphy, 3 1/2 h.p., 3-speed, free engine, £35; agent for Omega-Jap, British Excelsior, etc.; new models in stock.—Cromer Garage, Cromer Rd., Moseley, Birmingham. [X2680]

F.O.C.H.—Call and see us. New and second-hand motor cycles combinations, and light cars always on view; prices to suit everybody. We will buy your old mount or allow a good price for it in part payment. Get in now on our lists for earliest deliveries of 1920 models. A few we specialise in: N.U.T., Matchless, Harley-Davidson, Rudge, B.S.A., New Imperials, Allon, Bat, Omega, Sun, O.K., and the famous G.N., Citroën, Horstmann, and Deemster cars. Strict rotation; no premiums. Our name implies our business methods.—Fair Offer Car House, 5, Heath St., Hampstead (near Hampstead Tube Station). Phone: Hampstead 3752. Hours, 9-7, including Saturdays. [6912]

MOTOR CYCLES FOR HIRE.

MOTOR Cycle Box Carriers for Hire, by disabled ex-Service men, contracts or otherwise, town or country; terms moderate.—Eaves Bros., Express Delivery Service, 5, Thornfield Rd., Shepherd's Bush, W.12. [7908]

TRICARS FOR SALE.

TRICAR for sale, 5-6 h.p., 2-speed, clutch, condition as new; sell cheap to quick buyer.—Lewis, 9, Stepney St., Burry Port, Carm. [7555]

TRICYCLES FOR SALE.

RAYBECK Hand-propelled Tricycles, fitted with Sturmev-Archer 3-speed gear and Dunlop tyres, render lame people delightfully independent; catalogue free.—Harry Rayner, 10 and 12, George St., Blackpool. [5562]

MOTOR SCOOTERS.

AUTO-GLIDERS.—Place your orders now to secure delivery.—Distributors for Kent, Saunders Cycle Co., Chatham. [8805]

WAUCHOPE'S, 9, Shoe Lane, Fleet St., London.—Autoped motor scooters, new, latest 1920 models; £42. [8312]

BODIES.

ROYAL Leicester Sidecar Bodies are built by experts, first-class finish; models supplied to fit every type of chassis.—Write The Willowbrook Co., Leicester. [0050]

BASTONE'S.—We have several soiled bodies to clear to make room for new models; inspection invited.—228, Pentonville Rd., King's Cross, London, N.1. [5027]



New Motor Cycles actually in stock for immediate delivery at Makers' List price only. No Premiums charged.

ARIEL, 3 1/2 h.p., countershaft, 3-speed.

BRADBURY 3 1/2 h.p. 3-speed Combination.

ALECTO, 3 1/2 h.p., 2-stroke, 2-speed.

CALTHORPE, 3 1/2 h.p., Precision 2-stroke, 2-speed.

HAZLEWOOD, 6 h.p., Twin 3-speed, countershaft.

L.M.C., 6 h.p., Twin 3-speed.

L.M.C., 4 1/4 h.p., single-speed.

METRO-TYLER, 2 3/4 h.p., 2-stroke, sports model.

ROVER 6 h.p. all-chain drive 1920 Combination.

SPARKBROOK, 2 1/2 h.p., 2-stroke, 2-speed.

WOLF, 2 1/2 h.p., 2-stroke, 2-speed.

WILKIN, 2 3/4 h.p., 2-stroke, 2-speed.

SECOND-HAND.

SCOTT, 3 3/4 h.p., 1919, 2-speed, small mileage.

SUN-PRECISION, 2 3/4 h.p.

NEW HUDSON, 2 3/4 h.p.; 3-speed.

NEW HUDSON 3 1/2 h.p. 3-speed Combination.

HUMBER, 3 1/2-4 h.p., 3-speed, coachbuilt sidecar.

Many others arriving daily. Come and purchase the machine of your choice at List Price.

Henderson Sidecars.

All models. Twenty to select from.

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Retail Agents—

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The Gold Medal Machine.

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BODIES.

PERFECTION Coach Sidecar Bodies, underslung and lightweight step pattern; deliveries from stock; trade supplied.—Halifax Motor Exchange, Union St. South, Halifax. [7801]

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SIDECARS, beautiful coachbuilt bodies, many designs and colours to choose from; aprons, hoods, wind screens, repairs. Trade supplied.—City Motor Co., 121, 123, 125, London Rd., Manchester. [0046]

SIDECAR Body Designs for the trade only. Working, coloured, pencil, or line drawings of original designs, also working drawings, full-sized or to scale.—Cooper's Vehicle Journal, Ltd., established designers to the coach trade for over 80 years. Consult us when designing new ideas.—20, Tudor St., London, E.C.4. [0067]

SANDUM Sidecar Bodies.—We are the largest sidecar body builders in the country. We have manufactured to date over 8,000 bodies; 200 bodies always on hand; completed or in the course of completion—3-seaters, 2-seaters, single-seaters, welded metal projectiles, and featherweight. You can get what you want and rely on a superfine finish at the Sandham Engineering Co., 336, Gray's Inn Rd., London, W.C. Phone: Holborn 933. [0020]

SIDECAR ATTACHMENTS.

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MIDDLETONS are now accepting firm orders for future delivery at a guaranteed price.

MIDDLETONS are among the few who can do this, because they are actual makers of chassis and bodies.

MIDDLETONS', London's oldest-established sidecar makers, 27, Stroud Green Rd., Finsbury Park, N.4. Phone: Hornsey 1584. [5667]

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FOR

SANDUM, the Smart Sidecar Specialists.

SANDUM Sidecar Catalogue, the most comprehensive in the trade.

SANDUM Sidecars.—Our touring models, Nos. 1, 2, and 3, are designed for comfort.

SANDUM Elite Sidecar, £26; the smartest sidecar on the road; highly commended in "The Motor Cycle."

SANDUM Sidecars, prices to suit all, from £16/10 to £35; absolutely honest value.

SANDUM Patent Convertible Sidecar with the disappearing seat; a de luxe single-seater, yet capable of seating two adults comfortably; the latest evolution of the sidecar body; fully patented.

SANDUM Featherweight Streamline Body, smart and racy, weight 18 lbs., locker in back and under seat; when not in use the seat back hinges forward and neat coverall encloses the whole; price £4/17/6.

SANDUM Hoods, plated fittings, suit any body; immediate delivery; £3.

SANDUM Combination Hood and Screen, absolutely storm-proof.

SANDUM Sidecars.—Wholesale manufacturers of coachbuilt bodies, chassis, hoods, screens, and aprons.

SANDUM Sidecars.—The most noted body-builders in the country.

SANDHAM Engineering Co., 336, Gray's Inn Rd., W.C.1. Phone: Holborn 933. Factories: 158 to 164, Pentonville Rd., N.; and Britannia Works, Britannia St., W.C. [0019]

STEVENS Sidecars, direct from factory to rider.

STEVENS Popular Model; £16/10, absolutely the best value on the market.

STEVENS Torpedo Racing Model de Luxe; £20, complete.

STEVENS De Luxe Model, the most comfortable sidecar obtainable; £23/10, complete.

STEVENS Chassis, bodies, wind screens, hoods, wheel discs, etc.

STEVENS.—Illustrated catalogue on application.

STEVENS.—All sidecars supplied with the special type of fittings to suit the machine ordered for.

STEVENS Engineering Co., 184-186, Pentonville Rd., King's Cross, London, N.1. Phone: Central 10264. [6565]

FARREN Canoe C.B. Sidecar, red, very light, good tyre; £10/10.—36, Portland St., Leamington. [X2558]

SIDECAR ATTACHMENTS.

**VENUS.**—Singles, tandems, stepped, and underslung; cheapest in trade.

**VENUS.**—Touring, sporting, tradesmen's; repairs, repainting; exchanges.

**VENUS.**—The sidecar body experts. Bodies, any design, in the rough if desired.

**VENUS.**—Bodies direct from factory to user; save money; lists ready, write.

**VENUS Sidecar Co.** 6-18, Gourley St., S. Tottenham. [6670]

**WAUCHOPE'S**, 9, Shoe Lane, Fleet St., London. Sidecars from stock:

**NEW Douglas Sidecars**, 1919, fitted immediately, £27/10; new B.S.A. sidecars.

**WAUCHOPE'S Sidecars**, new, No. 1 £24/10, No. 2 £23/10, No. 3 £22/10.

**WILLIAMSON Sidecars** to fit any machine, £25, new.

**CANOELLET Sidecars**, new.—Touring, racing, and Minor models fitted to any make of machine in a few hours. [8294]

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**SIDECAR**, complete, wicker body good tyre, all fittings; £5.—Kendall, Ockley, Surrey. [8041]

**SUNBEAM Ambulance Sidecar**, complete, brand new: £22.—41, Brown's Rd., Surbiton, Surrey. [6988]

**CORONET Sidecars**. Send for illustrated catalogue.—Booth's Motories, Portland Place, Halifax.

**CORONET Sidecars** for B.S.A., Triumph, Harley-Davidson, Phelon-Moore.—Booth's Motories, Halifax. [7394]

**EXCELLENT Wicker Sidecar**, 3-point, Palmer: bargain, £4/10.—C. Emsley, Cranswick, Yorks. [X2447]

**INDIAN Sidecar**, less wheel, coachbuilt; £6/10.—Speechley, 1, Gunnersbury Lane, Acton Hill, W.3. [8018]

**DOUGLAS Chassis**, will fit nearly any make of machine.—262, Blackhorse Lane, Walthamstow. [8054]

**SIDECARS in Stock**—Crow Bros., Guildford, have large contracts running for 1920 Millford and Montgomery. [6929]

**DOUGLAS 4h.p. Chassis**, in good condition, with wheels; from £6.—40, Replingham Rd., Southfields, S.W.18. [7924]

**GOOD Wicker Sidecar**, new Palmer tyre with fittings: £6.—Tom Batt, Turnden Farm, Bethersden, near Ashford, Kent. [7852]

**B.S.A. Sidecar** brand new, just arrived, at makers' price; £34.—Wilkins, Simpson, and Co., opposite Olympia, London. [6846]

**COACHBUILT Sidecar**, complete with 26x2½ new Dunlop; £6; slightly damaged.—93, Hessel Rd., West Ealing. [7910]

**SANDUM De Luxe No. 3 Sidecar**, dark green, hood, screen, mat and lamp, practically new; £30.—Ring up Bromley 1930. [7960]

**SWAN Sporting Sidecar**, black, Sunbeam fittings, new October, 1919; cost £30, accept £26/10.—Blackmore, Horse Market, Kettering. [7504]

**MILLFORD Cane Torpedo Sidecar**, 4-point, wind screen, apron, tyre almost new; £8/10.—Nelson, Chandos, Tiltford Rd., Farnham. [8187]

**NEW Perfection Lightweight and Underslung Coach Sidecars**; prompt deliveries.—Halifax Motor Exchange, Union St. South, Halifax. [7802]

**MILLS-FULFORD 1919 Corvette Sidecar**, complete with hood and screen, perfect condition; £30.—White, 29, Waverley Rd., Kenilworth. [X2508]

**COACHBUILT Sidecar**, new a month ago, dark green, 4-point attachment, Dunlop heavy tyre and tube; £15/10.—Box 6,674, c/o *The Motor Cycle*. [7874]

**CANOELLET Sidecar**, brand new, with storm apron, just arrived at makers' price; £29/8.—Wilkins, Simpson, and Co., opposite Olympia, London. [6845]

**COACHBUILT Sidecar**, off B.S.A., fitted shock absorbers, apron, connections; bargain, £16.—Day, Ash, Wrotham, Kent. 'Phone: 2 Ash, Dartford. [7845]

**ROYAL Leicester Sidecars**—Models for all purposes. first-class finish; quick delivery; satisfaction guaranteed. Write for catalogue.—The Willowbrook Co., Leicester [0049]

**SIDECAR**, light Venus, C.B. body, very smart, comfortable, strong chassis, heavy Dunlop tyre, complete as new; £20.—236, West End Lane, West Hampstead. [7914]

**BASTONES** for Sidecars at low prices. No better or cheaper house. Inspection invited. Latest coachbuilt 1920 models from £16/10; latest coachbuilt bodies from £4/10.

**BASTONES.**—We have a large stock of coachbuilt bodies. Latest pattern de luxe, torpedos, underslung, step pattern, tandems, and lightweight. All late models at low prices.

**BASTONES** for Montgomery sidecars, 1920, latest models in stock from £17/17. Distributing agent for North London districts. Delivery from stock; trade supplied.

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Who's Satisfied?

"The dead" say the Cynics, and are promptly disqualified. "I know," says the Experienced Motor Cyclist, "I know—the man who, with a top-hole grid and top-hole belt, adds the finishing, prime touch that gives everlasting immunity from broken fasteners—the

FORWARD FASTENER

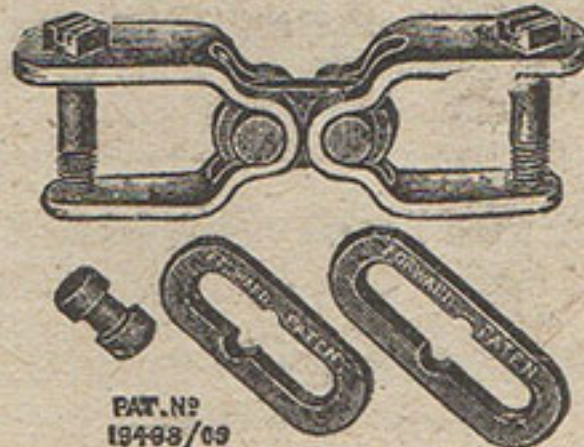
He's satisfied." So says the experienced Motor Cyclist from the depths of his special knowledge. The price of these fasteners—1/6 each. And if you should prefer a "Hook" type, why there's the chief of all hook types, too—the

King Hook

—detachable 1/3; adjustable 1/3. All made by the same firm, for whose booklet you should write.

THE FORWARD SPARKING PLUG CO.

Summer Row, BIRMINGHAM



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MAGNETO REPAIRS and spare parts

We are well qualified to undertake the repair of Magnetos of all makes, and to supply spare parts, being, as we are, one of the most experienced firms manufacturing Magnetos.

SIMMS MOTOR UNITS, LTD., Percy Buildings, Gresse Street, London, W.1.

SIDECAR ATTACHMENTS.

**RENNOC Sidecar** for immediate delivery, brand new, painted Sunbeam colours, complete with lamp bracket and auron: £30.—On view, Windovers, Ltd., 23, Long Acre, W.C.2. [7632]

**A.V. Monocar**, for speed and comfort.—Order now from J. Blake and Co., Liverpool and Manchester; authorised dealers for Lancashire (except Fylde), Cheshire, and Isle of Man. [6585]

**FOR Sale**, one Canoelet Minor sidecar, only done 50 miles, together with apron and side lamp; 15 gns., or nearest offer; owner going abroad.—Apply, Allum, 4, Balmoral Rd., Willesden Green, N.W.2. [8010]

**SIDECAR Chassis**, complete with wheel, tube, tyre, all perfectly sound, £4; also attractive Prussian blue Mills-Fulford C.B. body, modern, roomy, upholstery perfect, £5; both absolute bargain; seen any time.—Eames, Cycle Shop, Portslade, Brighton. [7726]

**J. BLAKE and Co.**, 110-112, Bold St., Liverpool, Britain's premier motor cycle and accessories saloon, have the largest assortment of sidecars for immediate delivery, including Swan, Grindlay, Canoelet, Mills-Fulford, Patey, Henderson, Luxurette, and J.B. [6584]

**THREE Douglas Sidecars** for sale, 1917, 4-arm attachment, perfect condition, brand new C.B. bodies fitted doors, in crates, £15/5 each; also 12h.p. 4-cyl. Leader 2-seater, Bosch, Claudel, spare wheel, lamps, bit pre-war, but just overhauled; nearest £80.—Lieut., Glen View, Durrington, Wilts. [7791]

**SIDE-CARRIERS AND PARCEL-CARS.**

**GIRLING Parcel Car**, 1914, perfect order, 5-cwt. body cost £45 alone, advert. for anyone; £75; exchange if desired.—51, Maplethorpe Rd., Thornton Heath, S.E. [7818]

**BARGAIN.**—15-cwt. delivery van, 8h.p. Rover, side change, 3-speed and reverse, Stepney wheel, in good condition, go anywhere; cheap, £90.—Hardy, Egg Merchant, Glastonbury. [7612]

**STAR 10h.p. Van**, in good condition; £135; or S exchange for good combination; cash either way.—Newham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7746]

**TRADESMAN'S Chater-Lea Motor Tricycle**, fitted with box, top rail, 4½h.p. clutch, 2-speed, new Dunlops, B. and B. carburetter, E.I.C. mag., good condition; £45.—Gunner, Brookwood. [7622]

**RUNABOUTS AND CYCLE CARS.**

**1913 Motorette**; any trial; £90, near offer.—Apply, Gott, Gratton Rd., Bradford. [7650]

**GIBBONS £110 Cycle Car**. Send for descriptive literature.—Gibbons, Chadwell Heath, Essex. [6222]

**INCOMPLETE Cycle Car**, 4 wheels; £15 quick sale.—Apply, 92, Bartholomew Rd., Kentish Town. [7509]

**£70; A.C. Sociable**, screen, plated fittings, lamps, splendid goer.—103a, High St., Wandsworth, S.W. [8198]

**CARDEN 1919 Monocar**, as new.—Tamplin Engineering Co., Kingston Rd., Staines. 'Phone: 139. [8139]

**A.C. Sociable**, splendid order, any trial; £75.—Clifford Wilson Mfg. Co., 70, Royal Hospital Rd., Chelsea, S.W.3. [8278]

**A.C. 3-wheel Runabout**, good condition, 2-speed, wheel steering, home-made body; £45; exchange motor cycle.—Ward, 35, Red Bank, Chorley. [X2634]

**MORGAN, 1918, M.A.G.**, Grand Prix model, repainted and thoroughly overhauled, perfect condition; £200.—Clifford Wilson Mfg. Co., 70, Royal Hospital Rd., Chelsea, S.W.3. [8277]

**1918 Morgan**, 8h.p. J.A.P., De Luxe model, radiator under bonnet, petrol tank in dash, painted grey, dynamo lighting complete, good order; £170.—Box L6,545, c/o *The Motor Cycle*. [7483]

**MORGAN, 1919**, as new, Grand Prix special, complete with hood, screen, etc., special machine built for competition; £230.—Clifford Wilson Mfg. Co., 70, Royal Hospital Rd., Chelsea, S.W.3. [8275]

**MORGAN 1920 Grand Prix**, winner gold medal in Exeter trial, not used since, painted mauve, perfect, complete with many extras; £260.—Clifford Wilson Mfg. Co., 70, Royal Hospital Rd., Chelsea, S.W.3. [8276]

**WAUCHOPE'S**, 9, Shoe Lane, Fleet St., London. —Light cars for immediate delivery: 8h.p. G.W.K., 1914, £205; G.N. car, £105; 8h.p. Duo car, J.A.P. engine, £150; Cardena cycle car, 7-9h.p. Harley-Davidson engine, £110. [8292]

**MORGAN, 8h.p. J.A.P.**, w.c., Grand Prix de Luxe, 1919, hood, screen, lamps, horn, mats, perfect condition, only done 500 miles, detachable back guard; owner ordered abroad; what offers? Seen at Gloucester.—A.J.W., Glenroy, Mannamead, Plymouth. [7747]

**TAMPLIN Cycle Cars**, £150, for reliability and comfort, economical, smart, finest components, 8h.p. J.A.P. engine in front, Sturmev-Archer 3-speed gear box, seat kick starter, inside controls, weight 3½-cwt., consumption 60-85 m.p.g., 1920 features, deeper rear seat, car type wheel bearings, live rear axle, coach finish blue and black; delivery guaranteed 8 weeks against deposit with order.—The Tamplin Engineering Co., Kingston Rd., Staines. Close Saturdays 1 p.m. [8138]

**RUNABOUTS AND CYCLE CARS.**

1914 9-11h.p. Adamson, sporty body, new hood, screen, acetylene head, electric side and tail lights, and horn, 3 and reverse, gate change, pump and sight feed lubrication, belts, tyres, tubes nearly new, low, fast; £145; after 7.—107, Tylecroft Rd., Norbury, S.W. [7911]

1914 A.V. Monocar, beautiful sporting little car, 5h.p. twin J.A.P., disc wheels, dome wings, electric lighting set, screen, Klaxon, ridden few miles; only 125 gns.; part exchange combination.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). Phone: Battersea 327. [7933]

CASTLE-THREE, the (super runabout) 4-cyl. 2-seater, interchangeable wheels and spare, dynamo lighting, provisional price £250; the finest runabout made. Book immediately for early deliveries. Particulars with pleasure. Sole agents most of Lancashire and Cheshire.—R. Bamber and Co., Ltd., Birkdale, Lanes. Tel.: 44. [5426]

3-WHEELER, 4h.p. w.c. Simms engine, engine good as new, only done 60 miles, new Thomson-Bennett mag., new tank with Best-Lloyds' drip feed, 1919 Amac carburettor, 2-speed gear, coachbuilt body and apron, practically new, 3 lamps and generator; £80; first cheque secures; no offers.—Z. Stephenson, Preston, Leysburn, Yorks. [X2484]

MORGAN, late model G.P., W.C. J.A.P., special body, disc wheels, electric lighting, Klaxon, speedometer, clock, 700x80 tyres, spare tyre carrier and tyre, hood, screen, etc., many special fittings, in splendid condition and very smart and fast, expert trial and examination invited; exchange good combination and cash, or sell; offers.—C.S., 14, Swaton Rd., Bow, E.3. [8066]

**CARS FOR SALE.**

L.M. (Little Midland) Light Car.

PRICE 210 gns. complete.

FOR full particulars and delivery dates apply Vivian Hardie and Lane, Ltd., 24, Woodstock St. (off Oxford St.), New Bond St., London, W.1. Phone: Mayfair 6559.

SOLE agents for London and Home Counties. [0084]

HUMBER Limousine, 16-20h.p., handsome 6-seater; £275.—234, Brixton Rd., S.W.9. [7540]

ROVER 12h.p. 2-seater; £195; accept motor cycle in part.—230, Brixton Rd., London, S.W. [7539]

1914 A.C. Humberette, pretty little car; bargain, £135.—158, Rosendale Rd., W. Dulwich, S.E.21. [7698]

10 h.p. Vulcan Car, 4-seater, 3 speeds and reverse, perfect order, good tyres.—Hall, Preston Road Garage, Chorley. [7567]

WEST Norwood.—Paxton Car Depot for real down-right bargains. Call and see Stanley Cook, the proprietor.—Paxton, below.

WEST Norwood.—Just ready, 10h.p. 4-cyl. light car chassis, live axle, 3-speed, Bosch, good tyres; £80; any trial.—Paxton.

WEST Norwood.—10-12h.p. 4-cyl. Humber 2-seater dickey, Bosch, hood and screen, runs well; trial; real bargain, £135.—Paxton.

WEST Norwood.—8h.p. Warno cycle car, streamline 2-seater, hood and screen, smart and comfortable, nice little car; bargain, £145.—Paxton.

WEST Norwood.—10h.p. Wolseley torpedo 2-seater, flush-sided, domed, rear locker, hood and screen, mag., runs nicely; £150.—Paxton.

WEST Norwood.—16-20h.p. Humber lorry, 15-20-cwt., cab front, gate, Bosch (watertight), Zenith, all tyres filled solid Rubberine, really useful; £185.—Paxton.

WEST Norwood.—Exceptionally smart 15.9h.p. Berliet, semi-sporting torpedo 2-seater, late type, Zenith, gate, bevel, fast; £275.—Paxton.

WEST Norwood.—Awfully smart and sporty 15-18 h.p. Hupmobile, torpedo, low streamline 4-seater, detachables, runs beautifully; bargain, £385.—Paxton.

WEST Norwood.—Exceptionally nice 20h.p. Knight-Daimler, streamline 3-seater, double dickey, detachable wheels, worm drive, beautiful condition; worth £750; bargain, £575.—Paxton.

PAXTON Car Depot, 228a, Gipsy Rd., West Norwood, have real bargains, including all above, in stock. Callers will receive special treatment.—Opposite Paxton Hotel. Service 3 buses pass. (Stanley J. Cook, Proprietor).—Paxton. [5107]

1920 Richardson Light Car 2-seater, dickey back, delivered this week; £250; list price.—29, St. Leonard's St., Bromley-by-Bow. [8185]

OLD De Dion Car, not running order; after 5 p.m., or during week-end; £12, best offer.—Stapleton, Meadfield Rd., Langley, Bucks. [7887]

ROVER 2-seater Car, in excellent condition, good running order; any trial here; £90, or near offer.—Box 6,675, c/o The Motor Cycle. [7875]

16-20h.p. Wolseley 5-seater, Lucas accessories, in excellent condition; £425; not used during war.—H. Liddiard, Downing St., Cambridge. [7692]

DARRACQ Chassis, 10-12h.p., 2-cyl., 3-speed and reverse gear box, complete with tyres, less mag.; £40.—Riddle, 167, Rockingham Rd., Kettering. [7946]

**"Westwood" REAR LIGHTS.**

Patented and Registered Designs.

**"SURPRISE" TAIL LAMP.**

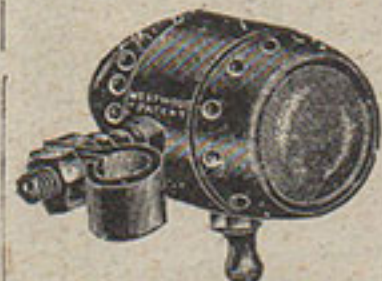
A Lamp of high-class finish with 1/4 in. Ruby Bull's-eye lens. Made of brass throughout, and heavily nickel-plated, and fitted with neat switch and special spring bulb holder, which effectually prevents the bulb from working loose or breaking through jar. Complete outfit including Lamp, Bulb, Battery and Leather Case



14/3.

**Patent "Torpedo" ACETYLENE LAMPS.**

Made from solid brass, turned and threaded at joints. Every part of solid construction. These Lamps may be taken to pieces for cleaning, and will remain alight in the strongest gale. Best quality 1/4 in. diameter Ruby Glass Lenses are fitted, and can be easily replaced if broken. These lamps will last as long as the machines they are used on and are absolutely rustless.

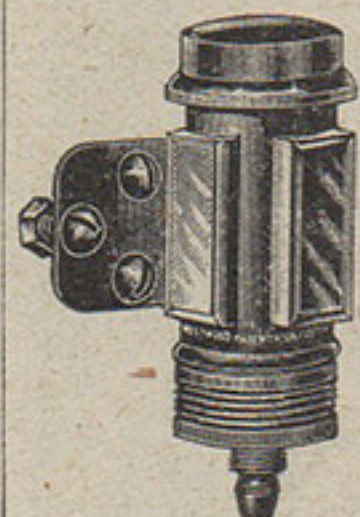
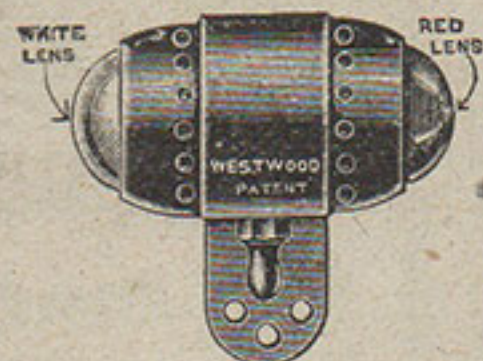


**SIDECAR LAMP,**

Price, 7/6 each.

**Tail Lamp,**

Price, 6/6 each.

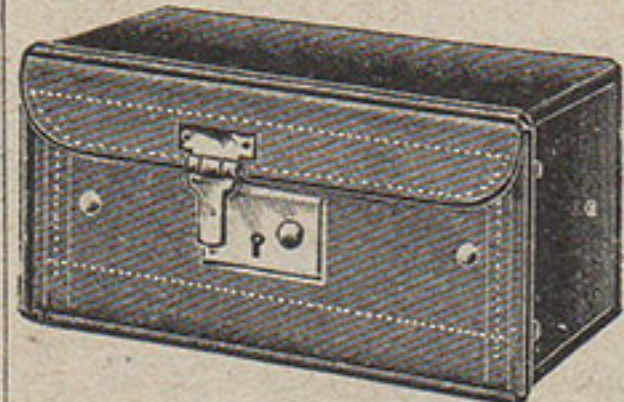


**"Royal Ruby" Acetylene Tail Lamp.**

A strong well-made and serviceable lamp, with ruby rear and white Opal Side Lens, complete with pins for attachment to Number Plate.

Price, 4/- each.

**Metal Reinforced Tool Bags.**



Substantial Bag enclosed in enamelled metal case complete with clips for attachment to carrier and English lever lock and key. Size 7 1/4 x 4 x 3 3/4 in. List No. 19/10.

Price 10/6 each.

Westwood Gearlight: are stocked by all reputable agent.

**WESTWOOD RIM AND PATENTS, LIMITED.**  
Bordesley, Birmingham.

**CARS FOR SALE.**

ROLO, 10-12h.p. J.A.P. air-cooled, good running order, lamps, horn, etc.; trial if desired; useful machine; £160.—Pochin, Broughton Astley, Leicester. [X2331]

DE DION, 8h.p., live axle, quadrant change, 3 speeds and reverse, mag. ignition, nice little car, in splendid condition; £50; trial run.—11, Dafforne Rd., Upper Tooting. [7041]

FREE Gifts! Having a touch of the giftfluenza, I'd like to give a car absolutely free to some of my customers, only I can't afford it. The best I can do, therefore, is to slaughter them at the following absurd prices. Dates advertised guaranteed accurate, as usual.—Cox, below.

BORROW-GAINS this week. (If you borrow the money for 'em you'll come again).—Quadrant motor cycle sidecar combination, 3 1/2 h.p., magneto, fixed gear, Zeppelin pattern sidecar, drive away, worth double, £20; 6h.p. Rover 2-seater, magneto, side change, wire wheels, £65; 8h.p. Rover lorry, £80; Cardan monocar, 8h.p. Jap, cigar-shaped, sporty, £85; 6h.p. Baby Peugeot, 4-seater, real funny, £85; ditto van (for that traveller in wrinkles), £85; 8h.p. Rover, 2-seater, double dickey, side doors, smartly repainted, £100; 8h.p. Warno cycle car, torpedo 2-seater, £115; 12h.p. Sizaire Big Single, sporting 2-seater, £125; 8-10h.p. 1913 1/2 Humberette, streamline 2-seater, particularly smart, £145; 12-14h.p. 4-cyl. Unic taxi, wants complete overhaul, running order, £150; 16-20h.p. 4-cyl. Rover lorry, cab front, unit engine construction, £150; 15h.p. Sultan lorry, bevel, gate, Zenith, £165; 1915 10h.p. Vox light car, streamline 2-seater, bevel, pointed radiator, wire wheels, £165; 20-28h.p. Darracq 15-20-cwt van, Zenith, 4-speed gate, £175.—Cox, below.

BURROW-GAINS! These'll burrow into your gains. —8-10h.p. Autocrat light car, bulbous back 2-seater, enclosed valves, pointed radiator, £195; 12-14 h.p. Hupmobile sporting torpedo 4-seater, low and rac., £225; 1914 Maxwell van, roomy, £225; 1915 Argo sporting 2-seater, streamline, wire wheels, monobloc, magneto, £250; 16-20h.p. Rover, 3/4 landaulet, 4-sp ed gate, £250; 20h.p. Rapid torpedo tourer, steel disc wheels, live axle, 4-speed, gate, overhauled, £285; 15h.p. Star landaulet, gate, bevel, Zenith, £285; 14-16h.p. Belsize torpedo, detachable wire wheels, domed mudguards, £285; smart 13.9h.p. Jackson streamline 5-seater, enclosed valves, monobloc, domed mudguards, exceptionally smart, £285; 12-14h.p. Fiat landaulet, taxi chassis, monobloc, 4-speed gate, £325; 12-15h.p. Calthorpe sporting 2-seater, monobloc, detachable wire wheels, £325; 20h.p. Chalmers streamline torpedo, monobloc, 4-speed, gate, £335; 12-14h.p. Unic landaulet, flush front, side doors, monobloc, sump lubrication, smart, £350; 15.9h.p. Motobloc station bus, enclosed front, monobloc, gate, enclosed valves, £385; 12-15h.p. Panhard 3/4 landaulet, monobloc, £385; 18h.p. R.M.C. coupe, underslung, £385; 10h.p. Jackson coupe, monobloc, enclosed valves, gate, pointed radiator, £385; 12-16h.p. Belsize coupe, double dickey, smart, £385; 12-15h.p. 1913 3/4 Sizaire-Naudin streamline torpedo, monobloc, enclosed valves, Sankey wheels, smart, £450; 12-15h.p. Palladium coupe, double dickey, C.A.V. dynamo lighting, detachable wheels, pointed radiator, £485.—Cox, below.

BAR-GAINS! (Saloon bar for preference.) 1915 16-20h.p. Wolseley chassis, worm drive, detachable wheels, overhauled, £500; 30h.p. 6-cyl. Minerva chassis, £500; 20h.p. Knight-Daimler streamline 2-3-seater, double dickey, detachable wheels, smart, £585; 1915 16-22h.p. Napier chassis, worm drive, £650; 20-30h.p. 1917 1/2 Crossley chassis, high pointed radiator, beautiful chassis, £700; 38h.p. 6-cyl. Napier, interior drive saloon, frameless windows, domed mudguards, smart lot, £1,000; 18-24h.p. 1914 3/4 Siddalby-Deasy super-landaulet, absolutely one of the finest landaulets on the road, £700 body, C.A.V. dynamo equipment, worm drive, cantilever springs, detachable wheels, exceptionally smart, and almost equal new, £1,285; magnificent 30h.p. 8-cyl. Cadillac, interior drive egg-shaped saloon, 1916 1/2 chassis, 1920 body, starter, dynamo, absolutely one of the smartest cars on the road, and practically equal new, £1,350; a magnificent 16h.p. Sunbeam town carriage de luxe, magnificent domed coachwork, seat 5 in and 2 out, beautiful condition and magnificent carriage, £1,400; lastly my own ultra-sporty 15-45h.p. Hispano-Suiza baby saloon coupe, seats 3 (or 2 and 2 children), electric self-starter, dynamo lighting, 65 m.p.h., 21 m.p.g., 6 wheels, magnificent condition, £1,700.—Cox, below.

COMMERCIAL Bargains. All solid tyres. 30 40-cwt. Milnes-Daimler van, £150; 1-ton Lacre van, £185; 3-ton Wolseley, £200; 30-cwt. Delannay-Belleville van, £225; 3-ton Milnes-Daimler furniture pantechnicon, £250; 3-ton 1913 De Dion worm drive chassis, enclosed valves, £300; 2-ton Thames, £385; 3-ton 1915 Sea-brook lorry, overhauled, retired, £485; 2-ton Dennis, overhauled, £550; 3-ton Leyland, worm drive, enclosed valves, overhauled, £585; 3-ton Belsize, worm drive, £600; 4-ton Scout, worm drive, £650.—Cox, below.

CHAR - A - BANC Bargains.—Magnificent 1916 1/4 Daimler, 25-seater torpedo body, exceptional condition, sleeve valve, worm drive, 4-speed, Zenith, certain fortune bringer, very fast, silent, and runs beautifully, end of season bargain, £1,425; a really fine 30-seater Straker-Squire 6-low char-a-banc, hood, worm drive, enclosed valves, steel wheels, overhauled, retired, 4-speed, fine lot, £1,500.—Cox, below.

NEW Cars.—I'll have some soon, and they'll be at list price.

DOUGLAS S. COX, The Motor Clearing House, 6, Lansdowne Hill, West Norwood, S.E., has all above in stock. Fifty cars always on view. Please call. Hours 9 to 6, including Saturdays. No business Sundays. Established 1902. [8321]

## CARS FOR SALE.

SERVICE'S, the Bargain Specialists, 26, Page St., Westminster, absolutely can't fathom why people are such pie-eaters as to buy cars elsewhere.

SERVICE'S are really doing the philanthropist stunt, especially for a few weeks, just to make an impressive start. We're newcomers, savvy? (Fortunately not "established 1902.")

SERVICE'S, 26, Page St.—Nice little De Dion Bouton light car, 2-seater, Bosch watertight, horizontal Solex, good; £65.

SERVICE'S, 26, Page St.—Smart 8-10h.p. Jackson flush-sided torpedo 4-seater, De Dion engine; bargain, £95.

SERVICE'S, 26, Page St.—Sporty 12h.p. 4-cyl. Sizaire-Naudin, 2-seater, dickey, monobloc, Zenith; £165.

SERVICE'S, 26, Page St.—12h.p. Unic taxi-landaulet, smart, economical hire car, runs nicely; £185.

SERVICE'S, 26, Page St.—Smart 8-10h.p. late model De Dion, 2-seater, double dickey; bargain, £225.

SERVICE'S, 26, Page St.—15-18h.p. Bedford-Buick torpedo, detachable wire wheels, domed mudguards; £235.

SERVICE'S, 26, Page St.—11.9h.p. Belsize streamline 3-seater, dickey, worm drive, monobloc, smart; £285.

SERVICE'S, 26, Page St.—Smart 11.9h.p. Briton torpedo, detachable wheels, pointed radiator; £285.

SERVICE'S, 26, Page St.—Sporty 1915 Horstmann light car, 4-cyl. monobloc, self-starter, smart; £285.

SERVICE'S, 26, Page St.—15.9h.p. Arrol-Johnston torpedo 2-seater, dickey, detachables, enclosed valves; £385.

SERVICE'S.—3½-ton 1915 Seabrook-Standard lorry, 40h.p., enclosed valves, thoroughly overhauled and retired; £485.

SERVICE'S, 26, Page St.—50-cwt. 1916 Vinot lorry, worm drive, 4-speed, runs nicely; £585.

SERVICE'S, 26, Page St.—Super-sporting 20.43h.p. Prince Henry Vauxhall, bulbous-back 4-seater, 65 m.p.h., dynamo; £850.

SERVICE'S, 26, Page St., Westminster (Manager Victor N. Lavender), have above all on view. Please call. [3653]

CLEMENT-TALBOT 10h.p. 2-seater, 3-speed, reverse, Zenith, hood, screen, etc., mechanically perfect; £100; exchange for combination, twin preferred.—14, Croft St., Deptford, S.E.8. [7605]

8h.p. Darracq 4-seater, 3 speeds and reverse, hood, screen, lamps, horn, Stepney, 5 tyres, mechanically sound, will go anywhere; £275 for quick sale.—Barwell, Old House, Swavesey, Cambs. [X2502]

TRUMBULL 1916 Sporting 2-seater, 12-14h.p., 4-cyl. monobloc, electric lighting and horn, spare interchangeable wheel, fast and almost new; best over £200.—Bates, 17, Hamilton Terrace, N.W.8. [7561]

WAUCHOPE'S, 9, Shoe Lane, Fleet St., London.—10h.p. new Citroën car, 1920, dynamo lighting, self-starting, disc wheels, 5 detachable wheels, hood, screen; immediate delivery; £525. [8293]

RENAULT Chassis, 4 cyls., a.i.o.v., 10-14h.p., Claudel, Simms, 815x105, mechanically o.k., tyres rotten; cash £125, or offer; exchange; evenings.—Reiffer, 62, Knighton Park, Sydenham. [7937]

1914 Humberette, w.c., guaranteed in perfect condition, mileage 6,000, lamps, speedometer, etc.; exchange for good late combination and cash, or sell £200.—Caffyn, Sheldwich, Faversham, Kent. [8180]

RAILWAY Garage, Staines ('Phone: 139), offer: 4-seater R.C.H., 1913, new gears, £135; 2-seater Studebaker, 1913, £195; Whiting-Grant, lighting, starting, £265.—Close 6 p.m., Saturdays 1 p.m. [8137]

EXCEEDINGLY Smart Sporting Model 1915-16 Bebe Peugeot, 4-cyl., 3 speeds, reverse, No. 12468, appearance as new, in primrose yellow and black; seen by appointment; £235.—158, Rosendale Rd., W. Dulwich, S.E.21. [7699]

PERRY 8-10h.p. 2-seater, splendid condition, newly painted blue, hood, screen, lamps, nice turn-out; £195; can be viewed below.—W. Cole, c/o Hodder, Williams, and Co., Radley Mews, Stratford Rd., Earl's Court, London. [8192]

A SNIP.—14-18h.p., 4-cyl., fast, sporty 2-seater and dickey, 5 interchangeable wire wheels, new tyres, hood, wind screen, full set lamps, 3 speeds and reverse, go anywhere on top; any reasonable trial; £150, lowest.—Bartlett, 5, Magdalene St., Glastonbury. [7613]

## ENGINES.

3h.p. Fafnir Engine, complete, good order; 30/.—27, Wilbury Av., Hove. [7849]

3h.p. Portable 2-stroke, 2 flywheels; £7.—Dasser, Slingsby, Malton. [X2483]

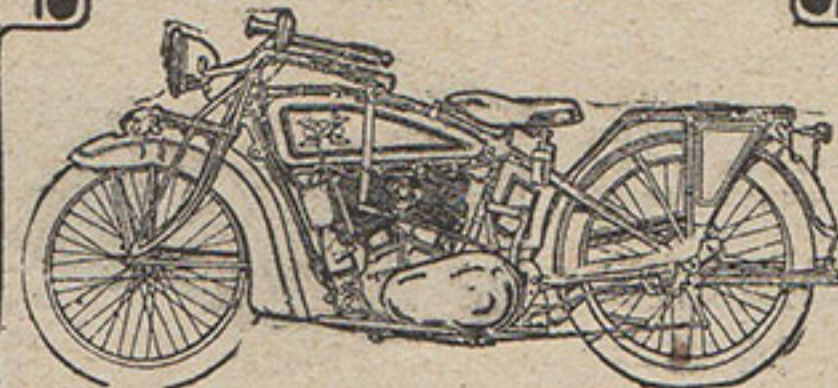
WAUCHOPE'S, 9, Shoe Lane, Fleet St., London.—2½h.p. Forward, twin engine; £25. [8296]

5-6h.p. Twin Air-cooled Engine, automatic inlet valves, good order; £12.—Mucklow, Crowborough, Sussex. [8147]

ENGINE for Sale, 4h.p., perfect, carburetter, controls, and brand new E.I.O. mag.; £12.—36, Elms Rd., Aldershot. [7749]

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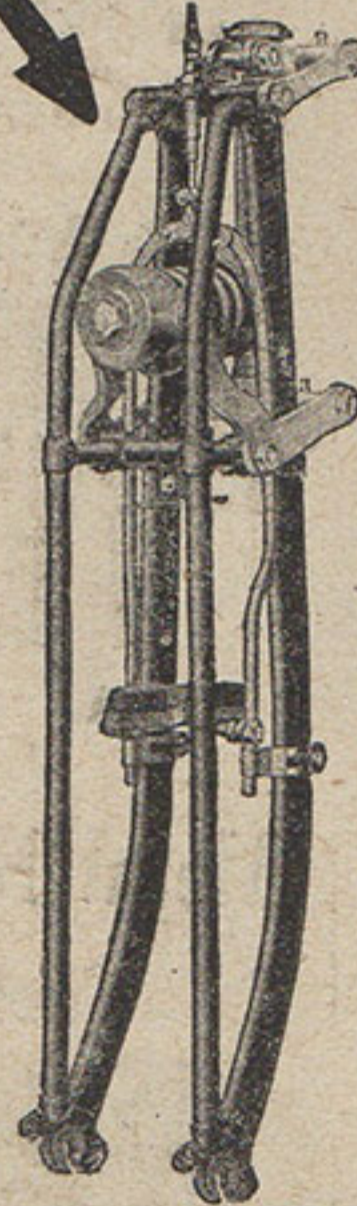
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5h.p. V. Twin Engine, in excellent condition, with induction and exhaust pipes; price £12.—Reeve, 62, Market Place, Ware, Herts. [7549]

A.B.C. 2½h.p. Engine, complete, in new condition, £15; Douglas 2½h.p. engine, incomplete, £10.—E. Watson, 27, Spencer Park, S.W.18. [X2436]

MINERVA Engine, 3½h.p., good condition, complete with silencer and Amac carburetter; first cheque £6 secures.—H. Gibson, 3, New St. Paddock, Huddersfield. [X2590]

9h.p. Riley Engine, V twin, w.c., m.o.v., contact breaker, water pump and pipes, cone clutch, good condition, suit cycle car or boat; offers, or exchange.—7, Lodge Rd., Southampton. [8094]

4h.p. J.A.P. Engine, complete with Bosch mag. and B. and B. carburetter, cradle plates, bolts and valve spares, next to new; £20, or nearest offer.—Sergt. F. White, R.A.F., Worthy Down, Winchester. [7815]

6h.p. 1919 Twin-cyl. J.A.P. Engines, brand new, complete with magneto driving sprockets, valve lifting mechanism, union nuts for exhaust pipes, induction pipes complete, compression taps, also nut and key for engine sprockets, and 2 oil feed unions, adjustable tappets, and special set of spanners for each engine; £37/10.—Wauchope's, 9, Shoe Lane, London. [4963]

## IGNITION APPLIANCES.

DIXIE Magneto, single-cyl., clockwise, perfect order; £3/15.—F. H. Pledger, Ely. [6924]

NEW C.A.V. Magneto, for single-cyl.; £4.—Marland, 451, Attercliffe Rd., Sheffield. [7991]

TWO Magnetos, 180° C.A.V. £6, Thomson-Bennett 180° £6.—Frost, Dunton Green. [7770]

CHARLES PARKER and Co. make a special feature of guaranteed magneto repairs.

CHARLES PARKER and Co. suggest that you send that magneto to them by first passenger train, advising them of its despatch.

CHARLES PARKER and Co. make every effort to despatch magnetos within four days, and where possible in 24 hours.

CHARLES PARKER and Co. have a large stock of 1-cyl. and V twin magnetos, new and second-hand.

CHARLES PARKER and Co., Magneto Specialists, 75, Park Rd., Acton, London. Tel.: Chiswick 1518. T.A.: Agparkeros, 'Phone, London, 3 minutes from South Acton (District and L.N.W. Railways).

U.H. Magnetos.—They have a special department for the repair of U.H. magnetos.

U.H. Magnetos.—Send especially your V twin magnetos to Charles Parker and Co., 75, Park Rd., Acton, London. [0101]

FIVE Bosch Platinum Screws, new; 4/6 each.—Write S.D., 30, Jasper Rd., Upper Norwood. [7528]

C.A.V., off Triumph, 2 sprockets, chain; £5.—Call or write, 286, Globe Rd., Victoria Park, E.2. [7500]

RELIANCE Magneto Repairing Co.'s efficient repair service to all types of magnetos.—Below.

WE Make a Speciality of armature winding; any quantities; trade enquiries solicited.—Below.

SPARE Parts Supplied for Bosch, U.H., Eisemann, C.A.V., E.I.C., and all known makes.—Below.

WE Can Supply new and second-hand magnetos at right prices. Old magnetos taken in part exchange.—Below.

WRITE or Call at Reliance Magneto Repairing Co., 11, Gt. Sutton St., Goswell Rd., E.C.1. T.A.: Remagco, Smith, London. [6247]

MAGNETO, twin, 180°, clockwise, perfect; £5/10.—65, Ethelred St., Kennington Cross, London, S.E. [7900]

TWO E.I.C. Magnetos, clock and anti; £4/5 each; any time by appointment.—39, St. George's Rd., N.W.6. [7871]

NEW 180° Splittorf Magneto, with cog, clockwise; £5/5.—Veale, St. Margaret's Schools, Princess Rd., Liverpool. [8000]

4½VOLT Brand New Dry Batteries, fully guaranteed; 12/9, post free.—Palmer's Garage, Tooting, S.W. [1197]

52/—Magneto, single Dixie, either rotation, guaranteed order.—Johnson, 258, Spring Rd., Ipswich. [8149]

THE Sparking Plug for the motorist at pre-war price, post free 3/ each.—A. Molloy, 15a, Steelhouse Lane, Birmingham. [X1882]

C.A.V. Magnetos (new), single or twin; stock deliveries; trade supplied.—Halifax Motor Exchange, Union St. South, Halifax. [7804]

C.A.V. Magneto, 180° twin, hardly soiled, Douglas driving sprocket; bargain, £5.—Lacey, 272, Hanworth Rd., Hounslow. [8267]

NEW Thomson-Bennett's 180° DA2, for light cars, £7/10; 50°, £6; single, £5.—Ashby, 89, Blackhorse Rd., Walthamstow. [6658]

BOULTON Magnetos can now be supplied from stock: 2½h.p. 85/; 3½h.p. 95/; carriage paid.—Boulton Magnetos, Ltd., Wolverhampton. [X1605]

**IGNITION APPLIANCES.**

**MAGNETO**, twin, Thomson-Bennett AD2, waterproof, suit horizontal, perfect; £5.—12, Upper Chorlton Rd., Brooks' Bar, Manchester. [X2537]

**MAGNETO**, suit single or flat twin, just overhauled, guaranteed perfect condition; £5.—Platt, 8, Stuart Av., Scotstoun, Glasgow. [X2584]

**MAGNETOS** Repaired and overhauled at moderate prices; experienced in all types; quick delivery.—C. Carver, 520, Devon Buildings, Dockhead, S.E.1. [7823]

**MAGNETOS**, new, for Douglas £5/5, for Triumph and big singles £4/12/6; 180° twins, all horse-powers, £5/12/6; and Anglos lightweight, £4; approval, deposit.—Ashton, Thornhill Edge, Dewsbury. [X8564]

**JEHRON**, registered 291,298, greatly superior to platinum, unequalled for blades, screws, etc., cures misfiring, 5/- each rivet; Jehron screws, fit Bosch magnetos, 11/- pair; old screws Jehronised, 5/- each.

**JEHRON** Contacts, used by Messrs. Collier Bros., Colver, Martin, making world's records.—Jehron, 38, Herbert Rd., Woolwich, London, S.E.18. [0002]

**BASTONE'S** for Magnetos.—New E.I.C., waterproof, single, for 3½h.p. and 4¼h.p., also twins and lightweights, at right prices.—Magneto Dept., 228, Pentonville Rd., King's Cross, London, N.1. [5029]

**MAGNETO** Repairs.—Send your magneto to Palmer's Garage, Tooting. Reply paid; quotation telegraphed on receipt. Quick, efficient repair guaranteed in from 2 to 6 days, usually within 24 hours.—Palmer's Garage, Tooting. [4259]

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**WANTED.** Wanted. Wanted.—Magnetos, dynamo starters, coils, etc., to repair and rewind, rock bottom prices, cast iron guarantees, 12 hours service, special terms to trade.—Electrical and Mechanical Repair Co., 24, Leytonstone Rd., Stratford, E.15. [1615]

**ALL** Makes of Magnetos Repaired, specialists in armature winding, spares from stock; in nearly all cases magnetos are returned within 2 days; satisfaction guaranteed.—Eton and Co., Sistova Rd., Bedford Hill, Balham, S.W. Phone: Streatham 352. [2705]

**ACCUMULATORS**.—Brand new C.A.V. 2-volt accumulators, about 20 amp. hours capacity, celluloid cases, 9/3 each; 2 in metal cases with strap, making 4-volt set, 17/6, carriage paid; on approval against cash; trade supplied.—Maudes', 100, Gt. Portland St., London, W.1., and 100, Paris St., Exeter. [5240]

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**IMMEDIATE** Repairs to all types of magnetos, starters, car lighting dynamos, and accumulators; armatures rewound, vulcanising, remagnetising; spare parts supplied promptly; lowest prices; expert workmanship.—Woodman and Palmer, 47a, Earl's Court Rd., W.8. Phone: Western 926. [9844]

**EUSTON** Ignition Co.'s 24 Hours Repair Service.—Guaranteed repairs to all types of magnetos, Splitorf and Dixie specialists. All repairs are tested on an approved A.I.D. test bench before being dispatched, and carry our guarantee. Rewinding and repairs guaranteed for 12 months. We hold the largest stock of guaranteed magnetos in London; V twins, all degrees; spare parts for all makes in stock. We give you real live service always.—Euston Ignition Co., 329, Euston Rd., London, N.W.1. Phone: 5034 Museum. [8596]

**THE** Magneto Repairing and Winding Co., Established 1912. Manager, S. T. Boon, late from the Bosch works.—Magneto repairs of every description. All repairs at lowest possible prices, and strictly guaranteed. We can mostly return them within 24 hours. We have several new and second-hand single and 2-cyl. magnetos in stock, all guaranteed.—Please note new address: The Magneto Repairing and Winding Co., 78, Hampstead Rd., Euston Rd., London, N.W.1. Phone: Museum 1158. T.A.: Kumagnelec, Eusroad, London. [6458]

**WE** Are the Cheapest House in the trade for repairs of every description to all types of magnetos. Spare parts. Rewinding, remagnetising, and overhauling carried out in shortest possible time. Send your magneto or write your requirements; we can supply every want. We work for and are recommended by some of the largest firms in the country. All work strictly guaranteed and carried out under estimate.—Reliance Magneto Repairing Co., 11, Gt. Sutton St., London, E.C.1. T.A.: Remageco, Smith, London. [6246]

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**ERIMUS**.—Clearance, brand new unsoiled covers; must clear.

**ERIMUS**.—All goods sent on approval against remittance.

**ERIMUS**.—Clipper 3-rib, 26x2½, 22/6; ideal Clipper, 24x2, 28/-, listed £1/19/6; 26x2¼, 34/-, listed £2/7/3; 26x2½, 40/-, listed £3/1/6; 26x2½, to fit 2¼, 40/-, listed £3/3/3; 650x65, 43/-, listed £3/6/9; 28x3, 50/-, listed £3/16/6; tubes just as cheap.

**SPECIAL** Terms to the Trade.—Erimus Motor Co., Parkgate, Darlington. [7839]



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**LEGGATE**, Edinburgh.—For great reductions and genuine value in brand new clearance 1919 tyres. Manufactured in this city by the largest indiarubber manufacturers in the British Empire, and famous the world over for quality, resiliency, durability, and non-skidding properties.—See below for approval terms. Prompt despatch guaranteed. We pay carriage.

**LEGGATE**, Edinburgh.—1919 new pattern 4-ply fabric, heavy rubber-studded, beaded covers, 26x2 32/6, list 43/9; 26x2¼ 35/-, list 46/9; 26x2½, to fit 2¼ rims, 37/6, list 50/-.; 26x2½, to fit 2¼ rims, 40/-. list 53/3; 26x2½ 38/6, list 51/3; 650x65 49/-. list 65/-.; 700x80, to fit 650x65 rims, 58/-. list 68/-.; 28x3, for American rims, 52/6, list 69/9.

**LEGGATE**, Edinburgh.—These goods are all brand new and sent anywhere on 7 days' approval against remittance; cash refunded in full if goods not approved of.

**LEGGATE** and Company, Motor Cycle and Tyre Specialists, 15, Slatford Rd., Edinburgh. Phone: Central 8693. T.A.: Tyres, Edinburgh. [X1438]

**BASTONE'S** for Covers and Tubes, new and clearance lines.

**BASTONE'S**.—Dunlop rubber-studded heavy, 26x2¼ at 47/3, 26x2½ at 51/9

**BASTONE'S**.—Palmer 28x3 at 65/-. 24x2 at 35/9, 26x2 at 40/-. 26x2¼ at 43/-.

**BASTONE'S**.—Hutchinson T.T. ribbed, 28x2¼ at 30/-. 28x2½ at 32/-.

**BASTONE'S**.—Goodrich safety tread covers, very heavy, 26x2¼ at 60/-. 26x2½ 63/-. 26x2½x2¼ at 65/-. 28x2½ 72/6, 28x3 at 77/6.

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**BASTONE'S** for Belts.—John Bull and Pedley, all sizes in stock.

**BASTONE'S**.—Hours of business, 9 till 6, Saturdays 9 till 1.

**BASTONE'S**, 228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [5026]

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**TROW** No More Old Tyres Away. We can make them equal to new again, stud or ribbed pattern treads fitted; 26in., 17/6; 650 mm., ditto; 28in., 20/-.—Below.

**VULCANISING**.—Sound and reliable repairs, from 3/6; quickly returned and satisfaction guaranteed.—The Phoenix Tyre Repairing Co., 224, Sherlock St., Birmingham. [X2612]

**UNUSED** Clincher De Luxe Stud Non-skid Motor Cycle Tyre, 26x2½, heavy; what offers?—Linnell, Silverlands, Buxton. [8957]

**TYRES**.—See Bancroftian Advertisements under Miscellaneous. Stelastoc, Pedley, Kempshall, Hutchinson; extraordinary prices. [0054]

**BRAND** New Clincher, rubber-studded, 28x3, 42/6; 26x2½, 39/6; 26x2¼, 33/6.—Wandsworth Motor Exchange, Ebner St., Wandsworth Town. [7862]

**500** Brand New Extra Heavy Dunlop Tyres, 28x3, at actually half the makers' price; 42/-.—J. Smith and Co., 16, Hampstead Rd., N.W.1. [8221]

**TWO** Dunlop Heavy 26x2½, new, £2/5 each; Continental 650x65, £1, new; two second-hand Dunlops, 15/- each; others second-hand cheap.—7, Gibson Sq., N.1. [7759]

**ECONOMIC** Tyre Co.—New clearance covers, tubes, and belts at greatly reduced prices; standard goods sent on 7 days' approval, carriage paid, against remittance.

**ECONOMIC**.—We have a small parcel of the following in Kempshall clearance:

**ECONOMIC**.—Clearance; 26x2½x2¼ non-skid, 50/-. listed 79/9; 28x3 anti-skid, 45/-. listed 74/3.

**ECONOMIC**.—24x2¼ Clincher, 45/6; 26x2¼, 60/-; 26x2½x2¼ Rom square stud, 52/6; 26x2½ Kempshall anti-skid, 54/9.

**ECONOMIC**.—26x2½, Moseley grooved, 61/6; Rom rubber bar, 77/-; rubber stud, 50/9; Dunlop heavy, 51/9.

**ECONOMIC**.—28x2½ Goodyear diamond, 45/-; 28x3 Dunlop heavy, 69/-; Rom combination, 130/9.

**ECONOMIC**.—Tubes: 26x2¼ clearance, 7/6; guaranteed 10/3; 26x2½, 11/-; 26x2½, 11/6; 28x2½, 11/-; 28x3 American valves, 8/6; British, 10/-; 650x65, 13/3.

**ECONOMIC** Tyre Co., 314, New Cross Rd., S.E.14 (near Town Hall). Phone: New Cross 1393 (One o'clock Saturdays.) [6171]

**DO** You Want reliable high-class retreading, bursts, vulcanising, chafed beads remoulding, or butt-ends fitting? Then get in touch with The Melton Rubber Works, Melton Mowbray. You will never regret it. [0085]

**TYRE** Repair Specialists.—H. F. process throughout, including retreading burst covers. Every kind of repair to tyres and tubes in 24 hours, retreads in 4 days.—The Motor Tyre Co., 66, High St., West Bromwich. [6190]

**TYRES.**

**24** x 2 Dunlop Rubber Non-skids, 24/6; **24** x 2 Palmer tubes, 7/3; **26** x 2 1/2 Palmer sidecar cover, 31/3; brand new, bargains; goods sent carriage paid and approval.—H. Emanuel, 27, Belgrade Rd., London, N.16. [0088]

**650** x 65 Pelmer Cords, 55/9; **650** x 65 Dunlop heavy rubber non-skids, £2/16/6; **26** x 2 1/2 Dunlop heavy rubber non-skids, 59/9; **26** x 2 Dunlop heavy rubber non-skids, 43/9; brand new; carriage paid.—H. Emanuel, 29, Belgrade Rd., London, N.16. Phone: Dalston 3161. [0089]

**NEW** Heavy Beaded Covers, **26** x 2 25/-, **26** x 2 1/4 27/6, **26** x 2 3/8 30/-, **26** x 2 1/2 32/6; butt-ended tubes, **26** x 2 7/6, **26** x 3 10/6; endless tubes, **26** x 2 6/6, **26** x 2 1/4 8/6, **26** x 2 1/2 9/6, **26** x 3 10/-; new rubber belts, 7ft. 6in. x 7/8in. 12/6, 8ft. 6in. x 7/8in. 15/-; sent approval, carriage paid receipt remittance.—Palmer's Garage, Tooting, S.W. [4260]

**FOR** Sale, light car and motor cycle covers, red and grey rubber, Dunlops, North British, and Caudron, brand new, plain treads, wired; **24** x 3 (23), **26** x 2 1/4 (4), **26** x 2 1/2 (12), **28** x 4 (7), **28** x 2 1/2 (2), **31** x 3 (2), **650** x 65 (10), **700** x 65 (16), **600** x 65 (3), **600** x 80 (3), **550** x 80 (1), **20** x 2 (4); **12**/6 each, carriage paid.—F. Margetts, 498, Lordship Lane, Dulwich, London, S.E. [7977]

**TANKS.**

**ENAMELLING.**—We guarantee correct makers' colours, designs, and original transfers; prompt return.—Park Motor Works, 1a, Paradise Rd., Highbury, London, N.5. [6813]

**PETROL** or Oil Tanks, 3-gallon, cylindrical domed ends, riveted in, would stand pressure, filler and strainer, perfectly new; cost 21/6, accept 10/6.—Watson, 132, High St., Aldeburgh, Suffolk. [8155]

**INSURANCE.**

**ROYS, Ltd.**, for the insurance of motor cycles, motor cycles and sidecars, scooters, auto-carriers, etc.—See below.

**ROYS, Ltd.**, for complete comprehensive policies, lowest rates, immediate repairs at any repairers, and prompt claims settlements.—See below.

**ROYS, Ltd.**, issue Lloyd's and all leading companies' policies.—See below.

**ROYS, Ltd.**, effect insurances of every description, including accident and sickness, burglary, employers' liability, fire, plate glass, householder's comprehensive, life, third party, all risks, marine, lifts, cranes, boilers explosion, riots, etc.—See below.

**ROYS, Ltd.**, invite enquiries for insurance of all kinds. Prospectuses and rates, quotations and proposal forms sent on application.—The Secretary, Insurance Offices, 170, Gt. Portland St., London, W.1. Tel.: Mayfair 2272 and 2273. [0055]

**FOR** Insurance of all kinds (specially motor), apply Ernest J. Bass, Insurance Broker, Bishops Stortford. [0005]

**CLARK, Fulton, and Co.**, effect motor cycle and scooter policies at Lloyd's. Comprehensive policies, low rates, immediate repairs at any repairer. Prospectuses and proposal forms on application. Motor car and insurances of all kinds effected.—Clark, Fulton, and Co., Insurance Brokers, 4, Drapers Gardens, Throgmorton Av., E.C. [2419]

"**THE Motor Cycle**" Insurance Policy (subscribed by Lloyd's Underwriters) covers motor cycles or cycles and sidecars used for private purposes. Complete comprehensive cover. Maximum benefits, minimum rates. Free weekly copy of "The Motor Cycle" to all policy holders paying a premium of £3/7/6 or over.—Full particulars and prospectuses on application, The Manager, "The Motor Cycle" Insurance Department, 20, Tudor St., London, E.C.4. [0007]

**TUITION.**

**MOTOR Tuition.**—The British School of Motoring Ltd., gives the highest standard of training in driving, mechanism, and repairs for the lowest fees in England. Call, or write for full particulars.—The British School of Motoring, 6, Coventry St., Piccadilly Circus, W. [0014]

**PATENTS.**

**INVENTORS.**—For drawing, designing, tracings, blue prints, turning, fitting.—P. Charleston, 14, Elsham Rd., Kensington, London. [7159]

**PATENT AGENTS.**

**J. E. S. LOCKWOOD,** Motor Specialist.—Guide free. —3, New St., Birmingham. [5292]

**CONSULTING Patent Agency,** 253, Gray's Inn Rd., London.—Aero and aircraft engines. [6635]

**INVENTORS' Advice and Handbook Free.**—King's Patent Agency, Ltd., 165, Queen Victoria St., London. [0052]

**W. BRYSON, B.Sc., Assoc. M.Inst. C.E., A.F.R., Ae.S.,** Chartered Patent Agent, 29, Southampton Buildings, London, W.C.2. [8264]

**AGENCIES.**

**TRAVELLERS** Wanted to handle new quick selling side-line on commission. Exclusive territory in Scotland, England, and Wales to the right man. Only those having present connection and actually travelling need apply.—Write Box 6,649, c/o The Motor Cycle. [7637]

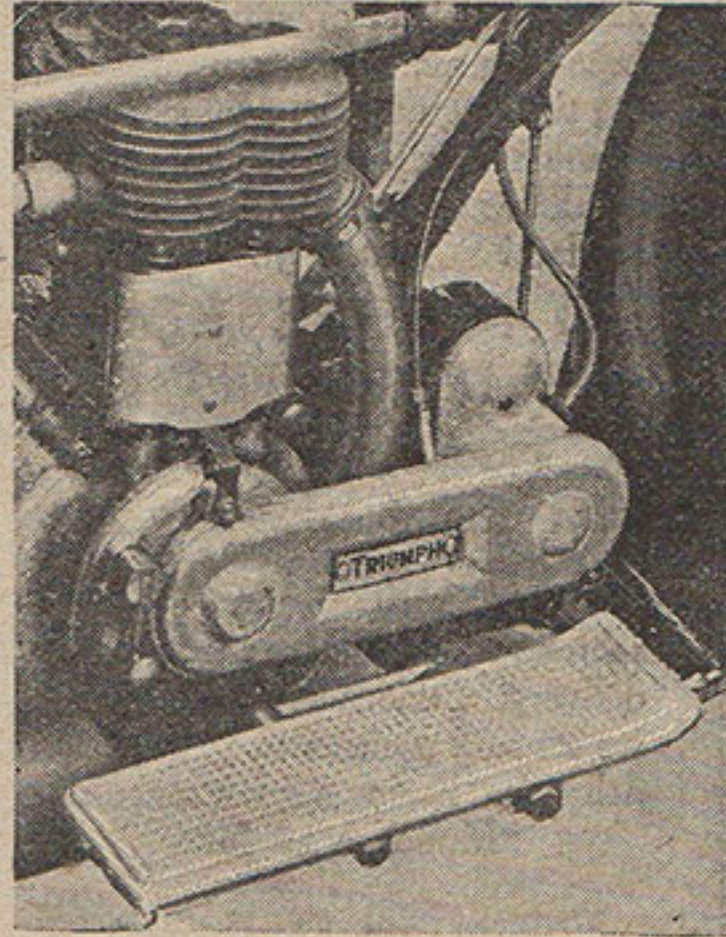
## Aluminium Footboards FOR 4 H.P. AND TWO-STROKE TRIUMPHS

Can be fitted in five minutes, and provide a more comfortable riding position, besides keeping the feet clean, and improving the appearance of the machine.

Obtainable from your local agent or direct from the patentees.

34/6 per pair. Carriage and packing 1/6  
Valve Guard 3/-

**W. BRANDISH & SONS,  
Triumph Garage,  
FOLESHILL RD., COVENTRY.**



# TRIUMPH MOTOR CYCLES

We can deliver you a **NEW Triumph** at £103 (Makers' List Price) within about two weeks.

We can deliver you a  
**2 3/4 h.p. DOUGLAS**

at Makers' List Price, £89,  
within about two weeks.

Send us a Deposit  
immediately of £20.

TRADE ENQUIRIES INVITED

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314, 316, 319, & 321, Euston Road,  
'Phone: Museum 1337. LONDON.

**CONSULTING ENGINEERS.**

**R**EX G. MUNDY, the well-known trials expert, after 14 years' all-round practical experience, offers unbiased advice on the selection of new and second-hand motor cycles and light cars. Now booking orders for early delivery of new 1920 models at list price. All new machines personally road-tested and tuned-up before delivery. Second-hand vehicles inspected and reported on.—10, Dean St., W.1. [0094]

**SITUATIONS WANTED.**

**S**ALES MAN, demonstrator, or other capacity; practical expert, 10 years' business experience; situation in or near London.—Box 6,718, c/o The Motor Cycle. [8250]

**S**ALES MAN - DEMONSTRATOR, well-known competition rider, practical expert. 7 years' trade experience, all branches, 4 years handling high power I.C. engines.—Box 6,721, c/o The Motor Cycle. [8253]

**EX-D.R.**, 4 years 3 months on Western Front, desires situation with motor cycle firm as mechanic or builder, pre-war experience 5 years, 4 years' lathe experience, reference given.—Address, Box 6,650, c/o The Motor Cycle. [7638]

**M**ECHANIC, ex-D.R., and qualified artificer R.E., and similarly employed since demobilised, desires situation as demonstrator, tester, or repairer, etc., of motor cycles, age 24, well educated, and smart.—Apply, Box 6,648, c/o The Motor Cycle. [7636]

### BUSINESSES AND PROPERTY FOR SALE, TO BE LET, OR WANTED.

**C**AR, Motor Cycle, and Cycle Business, Buckhurst Hill, main Epping Road to Newmarket and Cambridge, etc., including combination J.A.P. twin, Sun motor cycle, screw-cutting lathe, gas engine, and good stock of accessories and tools; lowest price £366.—Address, Reindeer Garage, Epping New Rd., Buckhurst Hill, Essex. [7891]

**PARTNERSHIPS**

**A**DVERTISER, many years' trade experience, would join paying live London business with £1,000-£3,000; strict confidence.—Box L6,505, c/o The Motor Cycle. [7068]

**A**DVERTISER wishes to take up working partnership where strict attention to business and moderate capital would provide good return; might consider purchasing small business if sound.—Box 6,623, c/o The Motor Cycle. [7542]

**E**NGINEER, demobilised M.T. officer, would like to find working partnership in small established garage, cycle and car repairs, etc.; or partner, to deal in second-hand vehicles; capital available £250.—Box 6,712, c/o The Motor Cycle. [8246]

**GENERAL TRADE.**

**M**OTOR Cycle Engine Castings machined and fitted, any quantity; frames made to specifications.—Luke and Co., 80, Ashted Row, Birmingham. [7056]

**A**UCTION Sales.—Palmer's Garage, Tooting, the oldest solely motor auction rooms in London. Terms, 7 1/2%, not chargeable if automobile unsold. Motors bought and sold for cash. Nearest goods stations: Falcon Lane, L.N.W. Rly.; Wimbledon, L. and S.W.Rly.; and G.W.R.—Sole address: Palmer's Garage, Tooting, London. [5250]

**WANTED.**

**A.C.** Sociable wanted.—69, Ronald Park Av., Westcliff, Essex. [7571]

**I.O.M.** Rudge wanted, genuine T.T.—Box 6,707, c/o The Motor Cycle. [8241]

**R**OLL-TOP Desk, also swing chair wanted.—Wilford, 88, Hillside Rd., Streatham. [7956]

**C**ORONA Typewriter Wanted.—Garage, 75a, Friern Rd. Dulwich, S.E. [7956]

**W**ANTED, 1911 3 1/2 h.p. Rex cylinder.—Monk, Gt. Wilbraham, Cambs. [8039]

**T**ANK for 1915 7 h.p. Indian, 3-speed model, perfect. —73, Edgecombe St., Hull. [X2605]

**R**OC 2-speed Wheel, Humber.—Loughlin, 53, Westcott St., Holderness Rd., Hull. [X2549]

**W**ANTED, R.A.F. sidecar, for 3 1/2 h.p. P. and M. —Miller, Hatton, Warwick. [X2507]

**F**LYING Officer's Leather Coat, 6it.—E. Bygott, 3, Grosvenor Rd., Birkenhead. [7499]

**N.S.U.** Gear, condition immaterial, or any parts.—Box 6,724, c/o The Motor Cycle. [8257]

**2-STROKE**, new, or any condition, O.K. or any make. —Box 84, c/o The Motor Cycle. [X2506]

**W**ANTED, spare parts for No. 8 2-speed Matchless. —Vine, Eglos, Kerry, Cornwall. [7731]

**W**ANTED, A.J.S. combination or countershaft Triumph.—22, Clare Rd., Halifax. [7800]

**S**IX Typewriters Wanted, any good make if cheap.—Lester, 275, High Holborn, W.C. [7957]

**W**ANTED, N.S.U. 2-speed, to suit Fafnir engine.—French, 4, Baker St., Brighton. [7819]

**C**LYNO, P. and M., or other combination, late model.—C., 4, Dollis Rd., Finchley. [6949]

**J**AMES or Enfield Combination wanted, private.—Write, 151, Globe Rd., Mile End. [8047]

**100** Motor Cycles wanted; bring or send; for spot cash.—Palmer's Garage, Tooting. [0010]

**WANTED.**

**WANTED**, cylinder, 3in. bore, for 2½h.p. N.S.U.—11, Robert Nuttall St., Accrington. [7688]

**BRAMPTON** or Druid Lightweight Forks.—Young, 61, Wanstead Park Av., Manor Park. [7856]

**N.S.U.** Gear wanted for 3½h.p. Triumph, good condition.—16, Devonshire Rd., Hackney. [7581]

**ENGINE** Wanted, about 5h.p. twin, cheap for cash.—Poynings, Grove Rd., Finchley, N.12. [7838]

**ENGINE** about 2h.p., with magneto and carburetter.—R.E.B., 61, Lansdowne St., Hove. [8090]

**WANTED**, light combination, about 1914, kick start.—Particulars, 57, Fountayne St., York. [7828]

**WANTED**, 2½ to 3½h.p. motor cycle; cash; private buyer.—Hull, Chandos Rd., Buckingham. [7945]

**LATE** Model B.S.A. Combination.—Lowest price to Harrison, 216, Drakewell Rd., Brockley. [8161]

**WANTED**, N.S.U. 2-speed gear, condition immaterial.—Hewer, 89, Greendale Rd., Port Sunlight. [7651]

**LANCHESTER** or White Steam Chassis, complete.—Quick, 1, Tynycoed Place, Roath, Cardiff. [X2443]

**TRIUMPH**, with countershaft, or Levis; full particulars.—54, Connop Rd., Enfield Wash. [7619]

**WANTED**, first-class twin combination, recent date. Particulars, 193, Francis Rd., Leyton, E. [7620]

**ARMSTRONG** Mark VII. or S.A. Hub Gear, good condition.—Cross, 38a, Bridget St., Rugby. [X2640]

**DOUGLAS**, late 2½h.p., sound condition; no dealers. Write, Finch, 109, Craigdale Rd., Romford. [7889]

**ZENITH**, twin, countershaft, 1915 or later; letters only.—22, Princess Rd., Finsbury Park, N. [8030]

**WANTED**, sidecar, suitable for Triumph.—Letters only, Watson, 28a, High St., Hampstead. [7927]

**HARLEY** Combination, mag. model, London district preferred.—5a, Sedgemere Av., East Finchley. [7932]

**WANTED**, motor cycle or combination; cheap.—Speechley, 1, Gunnersbury Lane, Acton, London. [2020]

**GOOD** Motor Cycle, also combination; cash waiting.—16, Osten Mews, Emperor's Gate, Kensington. [2836]

**SWAN** Torpedo or Canoelet Minor, to fit 1913 Triumph; no fancy prices.—303, Norwood Rd., S.E. [7523]

**SPEEDOMETER**, 26in., guaranteed correct and perfect.—Full description, The Vicar, Drax, Selby. [X2536]

**MOTOR** Cycle or Combination wanted, cheap for immediate cash.—20a, Pitshanger Lane, Ealing. [X2553]

**WANTED**, pair 24x2 beaded wheels, ½ belt rim.—S. E. Pailthorpe, 46, Danby St., Peckham, S.E.15. [7532]

**WANTED**, good motor cycle or combination; cash.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E3155. [8067]

**CLYNO** Front Cylinder wanted for 1912 6h.p. machine.—3, Warner Rd., Hillsborough, Sheffield. [8162]

**WANTED**, J.A.P. cylinder, 85 mm. bore, for overhead valves.—Springfield, West Mersea, Essex. [8042]

**A.J.S.** Sidecar, complete, or chassis, for military model.—Ovingdean, Gloucester Rd., Kingston. [6809]

**TRIUMPH** T.T., 3-speed, wanted, 1914 or later; no fancy price paid.—8, Bythesea Rd., Trowbridge. [7970]

**£2,000** Waiting.—Wanted, several good lightweights at reasonable prices given.—Booths Motories, Halifax. [7397]

**MILLENNIUM** 2-speed Gear, for 3½h.p. Premier motor cycle.—Box 6,629, c/o The Motor Cycle. [7584]

**DOUGLAS** 2½h.p.; state full particulars; immediate cash.—Motor, 87, Truro Rd., Wood Green. [7083]

**WANTED**, 1914 Clyno clutch push rod, 6h.p. model.—Apply, Campbell, 16, Hospital Hill, Dunfermline. [7892]

**DOUGLAS** 4h.p. Induction Pipe, kick start and clutch parts wanted.—91, Mapledene Rd., Dalston. [7942]

**WANTED**, 3½h.p. T.T. Rudge Multi, lowest price.—H. Wakeford, Carshalton Rd., Sutton, Surrey. [8122]

**WANTED**, motor cycle or combination, for cash; any conditions.—64, Church St., Edgware Rd., W. [7902]

**WANTED**, sectional hut, suitable for garage, new or S.H.—Full particulars to Netherby, Gullane, Scotland. [X2085]

**N.S.U.** Gear Wanted for Triumph, good condition; approval, deposit.—Simpson, Northfields, Stamford. [7998]

**ARIEL** 1920, 3½h.p. Combination, perfect condition essential.—Roberts, Uxbridge Rd., Hampton Hill. [7964]

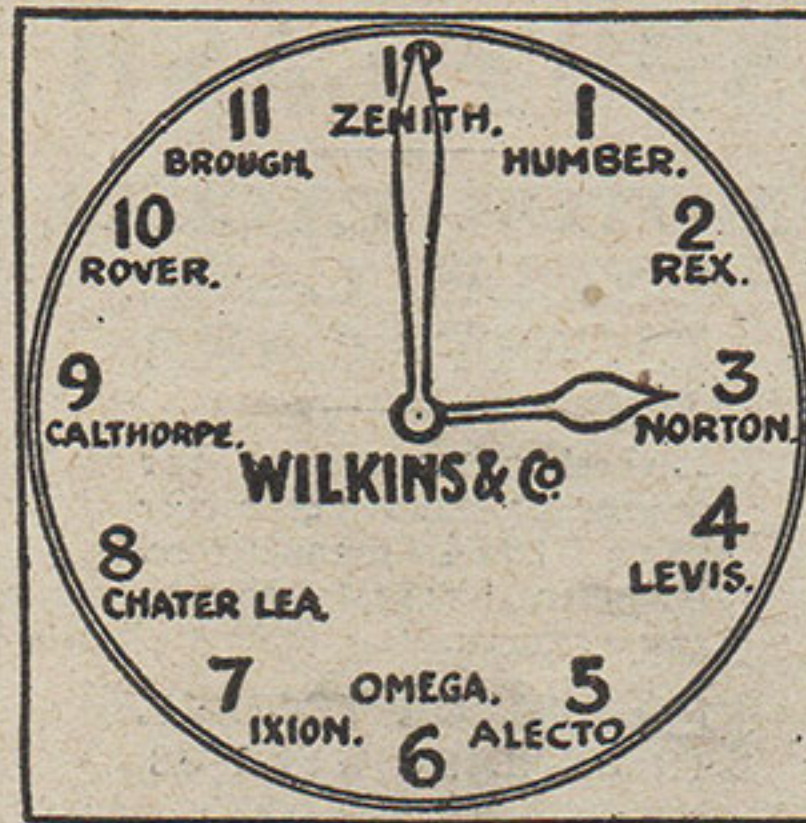
**WANTED**, Morgan, G.N., Carden, or similar, less engine.—Brailsford, 17, Glenalmond Rd., Sheffield. [7783]

**TRIUMPH** Front Forks, carburetter, 1914-15, guards, carrier, etc.—Power, White House, Tatsfield, Surrey. [7657]

**SHEFFIELD, HUNTER'S BAR.**

**TIME IS MONEY!**

Watch our clock and save both.



(H)OUR TALK.  
NORTON, Big 4.

ENGINE—82 mm. x 120 mm.—633 c.c.  
CARBURETTER—B. & B.  
IGNITION—C.A.V. Magneto.  
GEAR—Sturmey, 3-speed.  
TRANSMISSION—All chain.  
TYRES—Dunlop, 650 x 65, heavy.  
TELEGRAMS: "Accelerate, Sheffield."  
PHONE: 261, Broomhill.

**DON'T BUY a New Machine**

Have your present mount overhauled and renovated by us. No matter what its condition or how many parts are missing, we will make a new machine of it.

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Our new works and staff of skilled engineers are at your service always.

**The BROOK MOTOR AND ENGINEERING CO.**

308, Deansgate, MANCHESTER

\*Phone: 8861 Central.

**WANTED.**

**V** TWIN Magneto, for 5-6h.p. Rex; also single, and Binks 3-jet.—Main, 108, Broad St., Bridgeton, Glasgow. [X2514]

**2** or 4-cyl. Light Car or Cycle Car, condition immaterial if cheap.—14, Ecclesbourne Rd., Islington, N.1. [7719]

**INDIAN** Semi-touring Bars, or would exchange or sell T.T. bars.—22, Belgrave Crescent, Woodsmoor, Stockport. [8168]

**WANTED**, good second-hand P. and M. engine, for motor cycle; state price, etc.—Apedalle, Scorton, Darlington. [7837]

**180°** Magneto, of reputable make, must be in sound condition; cheap for cash.—Vale, Church St., Leominster. [7570]

**WANTED**, 4-cyl. F.N.'s, T.A.C.'s, T.M.C.'s, Hendersons.—Wandsworth Motor Exchange, Ebner St., Wandsworth. [1137]

**WANTED**, Baby Triumph, Levis, Velocette, or Radco, deposit.—Tax Collector, East Peckham, Paddock Wood. [8110]

**WANTED**, combination or runabout; full particulars and lowest price.—F. Tanner, 9, Gloster Terrace, Swindon. [7618]

**TRIUMPH**, also lady's Douglas, not earlier than 1912; cheap for cash.—Franklin, Glade, Holmbury St. Mary, Dorking. [7672]

**LATHE**, 4½-6in. centre, S.C., gap, hollow mandril, with accessories; cheap.—Power, White House, Tatsfield, Surrey. [7656]

**IF** You Want to sell your motor cycle or car at your own time, place, and price, send a P.C. for our registration form.

**WE** will find you a purchaser at the most reasonable terms in the kingdom.

**WE** do business all over the kingdom, and willingly show callers testimonials we have actually received from satisfied clients.

**WE** want all makes of motor cycles and cars for private purchasers.

**REGISTER** with us now, and save yourself time, expense, and trouble. No dealers.

**THE** Kwiksale Private Motor Registry, 35, Long Acre, W.C. (run solely by demobilised officers). [6673]

**T.D.C.** 2½h.p. wanted, guaranteed in good running order; about £25.—Particulars, Box 6,711, c/o The Motor Cycle. [8245]

**ROVER** Sidecar wanted, or one suitable 3½h.p. Rover.—Curtis, 82, Belleville Rd., Wandsworth Common, S.W.11. [7813]

**MAGNETO** Wanted, single cylinder and twin; also large lamp set; reasonable price.—Box 6,672, c/o The Motor Cycle. [7872]

**19** 16-17 Enfield Sidecar Body, with luggage grid, or good 2-seater, also lamp sets.—Box 6,670, c/o The Motor Cycle. [7868]

**WANTED**, latest pattern front forks, complete, for 4h.p. Douglas.—Somerville, 21, Bolton's Studios, Redcliffe Rd., S.W.10. [8263]

**WANTED**, front cylinder for Harley-Davidson, good condition essential.—The C.G.L. Engineering Co., Swanley Junction, Kent. [7972]

**GOOD** Combination, not earlier 1916, no dealers; write, stating lowest cash.—69a, Hambalt Rd., Clapham Common, S.W. [7975]

**SIDECAR** Wanted, suitable for 1919 model Harley-Davidson; state description and price.—C. E. Lovick, Crowthorne, Berks. [X2511]

**CASH** Given for any motor cycle or car, condition immaterial.—The Southern Motor Co. (Est. 1895), 230-2-4, Brixton Rd., S.W.9. [7968]

**TWO** Self-Aligning Bearings, ¾in. bore, 2 sidecar wheels, 1907 Rex front cyl. and piston.—43, Kensington Rd., Stockton-on-Tees. [7617]

**WANTED**, rear brake for 1911 Bradbury; also bottom half of crank case for 1911 6h.p. F.N.—Bailey, Wymondham, Norfolk. [8159]

**WANTED**, Harley, Matchless, Enfield combination; price, particulars; cash waiting.—Umbrella Shop, 81, North End, Croydon. [7136]

**GRAND** Prix W.C. Morgan, mechanically perfect. wanted, good coachwork, etc., not essential.—Box 6,708, c/o The Motor Cycle. [8242]

**WANTED**, Indian parts, 1910 or 1911, cradle spring fork main frame, clutch, rear stand.—Sutton, Farnley Hill, Corbridge-on-Tyne. [7671]

**LEA-FRANCIS**, any model, with or without sidecar; good prices paid; also combinations of first-class makes.—198, Gt. Portland St., W.1. [0098]

**WANTED**, back and front stands, touring bars, and complete front wheel or hub, for 7h.p. Indian.—Apply, Netherby, Gullane, Scotland. [X2084]

**WANTED**, Auto-Wheel, J.E.S., or light motor cycle; state price and condition.—1, Rosemount Villas, Clarendon Rd., Ashford, Middlesex. [8171]

**£5** Premium for new combination, Sunbeam, Matchless, similar, dynamo lighting preferred.—77, Porechester Rd., Woolston, Southampton. [7766]

WANTED.

**SCOTT**, not earlier 1914, required, any condition, if mechanically sound.—Particulars and price, Watts High St., Kissingbury, Northampton. [7820]

**DOUGLAS** Kick-start Quadrant and front brake shoes wanted for 2½ h.p. model 1914.—E. Bateman, 22, Vale Court, Maida Vale, W.9. [X2524]

**WANTED**, a first-class combination; will give £6 to £100 for a genuine lot; send particulars on call.—Deether, 11, Byron St., Poplar, E. [687]

**VERUS** or other Lightweight, C.B. body only, any condition; also Rudge or other good exhaust box and connection.—Johnson, Selsey, Sussex. [820]

**WANTED**, a few feet of cycle chain, ½ in. x 3/16 in. roller.—Send particulars and price to Stuart Turner, Ltd., Engineers, Henley-on-Thames. [760]

**A.J.S.** Combination Wanted, 1919 or 1920, not military model; fullest particulars, price, where seen; any distance.—38, Claverton St., Bath. [8026]

**WANTED**, second-hand Scott 3½ h.p., must be in running order; date not objected to.—Rupert Craven, Ashdown Park, Shrivernham, Berkshire. [7423]

**100** Motor Cycles Wanted; spot cash paid; bring or send.—Palmer's Garage, Tooting. [000]

**MOTOR** Cycle, solo or combination, slight defects not objected to, but must be cheap for ready cash.—Write, Morris, 58, Stanlake Rd., Shepherd's Bush. [791]

**WANTED**, Harley-Davidson or Indian combination, not earlier than 1914; state full particulars: London district.—Box 98, c/o *The Motor Cycle*. [7981]

**WANTED**, Zenith carburetter, to suit 6-8 h.p. twin J.A.P. motor cycle; on approval.—Tom Batt Turnden Farm, Bethersden, near Ashford, Kent. [785]

**WANTED**, motor cycle accessories or parts, single lots or complete stocks bought; cash; state price.—City Motor Co., 121-125, London Rd., Manchester. [004]

**WANTED**, Triumph, B.S.A., P. and M., or other good make, with bottom bracket gear; must be in good condition.—Gamage, 92, Rutland St., Leicester. [X2528]

**W. N. OSBORNE**, Draper, of 33, Jubilee Rd., Doncaster, wants modern motor cycle, combination or 3-wheel runabout; lowest price and full particulars. [646]

**WANTED**, wind screen, speedometer (26 in. wheel), sidcar lamp and generator; state price and condition.—Holm, 16, Sydenham Rd., London, S.E.26. [X2482]

**STILL** wanting good machines, solos or combinations; send description; we will call with cash; proof of ownership required.—Bunting, Mason's Av., Wealdstone [4258]

**WANTED**, small 4-seater car or 2-seater, condition immaterial if cheap; for cash or exchange, Rudge Multi or sell, £65.—18, Wood St., Walthamstow. [8169]

**COMBINATION**, not earlier 1918, 3-speed, clutch kick start; state all particulars of cycle and accessories, price; Douglas preferred.—34, Kent Gardens, Ealing. [7776]

**WANTED**, Triumph spring forks, wheels, brakes, magneto chain cover, sprockets, valve caps, stand any condition; cheap.—22, Somerset Rd., Meadvale Surrey. [7821]

**WANTED**, combination, preferably one requiring few repairs, overhauling, etc.; cheap.—Price and particulars by letter to G.M., 64, Sunnyside Rd., Ilford, Essex. [7773]

**WANTED**, 1918-19 6-8 h.p. combination, Clyno, Sunbeam, or Enfield preferred, fully equipped; also one for delivery purposes.—Kelham, Nassington, Peterborough. [6869]

**WANTED**, several 1916 Studebaker 4 and 6-cyl. cars, without engines; state lowest price and where can be inspected.—Apply, Box 88, c/o *The Motor Cycle*. [X2496]

**SOLO** or Combination, late model, over 4 h.p., preferably Sunbeam, Matchless, or Zenith, but other makes accepted; South Cornwall.—Box 6,646, c/o *The Motor Cycle*. [7624]

**WANTED**, 4 h.p. Douglas; exchange 6 in. S.S.S. lathe, chuck, steady, change wheels, countershaft, by Archdale, Birmingham.—Rawcliffe, Commercial Sq., Huddersfield. [X2602]

**REQUIRED** to Purchase, motor cycle up to 4 h.p., condition immaterial; also accessories.—Particulars and price, A. Hay, 26, Arlington Rd., Camden Town, N.W.1. [8236]

**BUTTERWORTH'S** Garage Require any number of motor cycles, sidecars, old cars, speed gears, magnetos, accessories; spot cash on sight.—64, Mill Lane, Brixton Hill. [480]

**WANTED**, good 2-stroke in exchange for handsome German upright grand piano, rosewood case; value £50.—Syd. Palmer, Tobacconist, Union St., Stonehouse, Plymouth. [8085]

**DEDION** Water-cooled Engines wanted, from 3½ to 8 h.p.; only engines in good condition entertained; state lowest price, bore and stroke.—Wortham-Blake and Co., Waltham Cross. [X1888]

**WANTED**, pair of Triumph forks, complete with head clip, pair of 2½ h.p. Douglas forks complete; also 2½ h.p. Douglas gear box, 2-speed; deposit.—T. Hunter, 92, Braimshott Rd., Southsea. [8023]

**WANTED**  
**FOR**  
**SPOT CASH**  
**MOTOR CYCLES**  
**CYCLE CARS**  
**LIGHT CARS**

Highest prices offered for sound machines of earlier than 1914 manufacture. Representative sent with cash any distance.

**NO RISK OR TROUBLE IN DEALING WITH US.**

*Send, or call, with full particulars and price.*

**15-16, Bishopsgate Avenue, Camomile Street, E.C.3.**

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**WE ARE**

**SOLD OUT**

**OF MOTOR CYCLES TO-DAY,**

**BUT WE**

**DO NOT WORRY**

**FOR TWO GOOD REASONS**

1. We receive about a dozen machines every week.
2. It proves our machines are "THE GOODS."

*High-class motor cycles do not remain long in showrooms.*

Get in touch with us for early delivery of **INDIAN, A.J.S., B.A.T.-J.A.P., SCOTT, BRADBURY, WILKIN, HOSKISON, O.K. UNION** motor cycles.

**LAGONDA** and **RICHARDSON** Light Cars in Stock.

**FRANK B. ROPER,**  
**166-168, LONDON ROAD**  
**SHEFFIELD**

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Telegrams: "Roper, 2802, Sheffield."

WANTED.

**SPOT** Cash for Triumphs, Douglas, A.J.S., Enfields, Brough, Nortons, Hendersons, Sunbeam, Zenith, Harley-Davidson. Write, call, or Phone Holborn 5777.—Wauchope's, 9, Shoe Lane, London. [4967]

**WE** are Cash Buyers for Sunbeams, A.J.S., Triumphs, Matchless, Douglas; forward particulars and price required.—Kirkdale Motors, Kirkdale, Sydenham. Phone: Sydenham 739. [0096]

**WANTED**, 4 to 5 h.p. C.B. combination, known make, 1915 or later, kick or pedal start, speeds, all accessories, in perfect condition; lowest price.—Traveller, 62, Derby Rd., Ponder's End, Middlesex. [X2641]

**NOTICE**—Motor cycles and cars sold on 5% commission; repairs, if required, not charged for until sale.—The Southern Motor Co. (Est. 1895), 230-2-4, Brixton Rd., S.W.9. Official repairers A.C.U. [7967]

**WANTED**, all kinds motor goods, any condition, large or small quantities; also motor cars, gear boxes, dynamos, lorries, engines, magnetos, carburetters.—Grove, 18, Fore St., Upper Edmonton. [5765]

**MODERN** Combinations, motor cycles, and light cars; distance no object; cash waiting. Phone, write, or call.—Moore's Presto Motor Works, Ltd., Tamworth Rd., West Croydon, Surrey. Est. 1881. Croydon 1545 [2223]

**NOTICE**—Cars and motor cycles wanted. We give cash, or sell on small commission. No charge for repairs until sold.—The Southern Motor Co. (Est. 1895), 230-2-4, Brixton Rd., S.W.9. Official repairers A.C.U. [754]

**WANTED**, magnetos, carburetters, gear boxes, wheels, tyres, speedometers, clocks, motor cycles, cars, lorries, any condition; all kinds motor goods any quantity.—Grove, 224, Fore St., Upper Edmonton, London. [8108]

**PERCY** and Co. requires at least 100 second-hand motor cycles and combinations. Please offer in your mount. We offer exceptional high prices. We pay you cash on sight.—Percy and Co., 337, Euston Rd., London. [0017]

**SPECIAL** Cash Buyers.—B.S.A.'s, Triumphs, A.J.S.'s, Indians, Harleys, Sunbeams, Zeniths, Enfields, A.B.C.'s, Bradburys, Ariels, P. and M.'s, N.U.T.'s.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [4420]

**WANTED**, first-class combinations, also good solo machines; price paid for good combinations up to £225; solo £140; cash waiting for right machines.—J. Smith and Co., 16, Hampstead Rd., London, N.W.1. Phone: Museum 3419. [8125]

**WANTED**, 3-speed wheel, 26x2½, good condition, also magneto, 4h.p., anti, single, exchange pair 28x2½ wheels, good covers and new tubes, and 2½ h.p. Minerva engine for anything motocrist.—Send particulars and prices to E. Castledine, Lindley St., Selston, Notts. [8037]

**WANTED**, mag. with control and sprocket for P.M., offered £4/10; set of chains, mag. timing cover; wanted flywheel and nut for 4h.p. Douglas, also gear parts and chains, Brooks' saddls, B170, Amac complete, Bosch mag. ZA2 and sprocket, 2½ h.p. Douglas.—Hole, 129, Park Lane, Carshalton. [8119]

**SEND** Your Motor Cycle to Palmer's Garage, Tooting, Wimbledon Station. Cash offer will be telegraphed immediately on receipt of machine. Machine can be included in fortnightly auction if offer not accepted. Reserve price may be fixed. Terms 7½%, not chargeable if unsold.—Sole address, Palmer's Garage and Auction Rooms, 183-199, High St., Tooting. [0009]

**F.O.C.H.** advises selling your old mount now. You can't ride it till the spring, and if you keep it till then it will be worth considerably less. Let us have it at once; we have special means of disposing of second-hand motor bikes, so can afford to pay top prices. Leave your old machine, and take the cash away.—F.O.C.H. (the Motor Car and Bike People), 5, Heath St., Hampstead (near Hampstead Tube Station). Phone: Hampstead 3752. Hours, 9-7, including Saturdays. [6766]

**WE** are Prepared to accept an unlimited number of first-class solo machines for sale on commission at 7½%; no sale no charge. All machines accepted are collected within 20 miles radius, garaged, advertised, cleaned, and insured free of charge. Only machines in perfect mechanical condition can be accepted, unless we receive instructions to overhaul same. Minor adjustments, such as Bowden controls, punctures, etc., etc., repaired free. To those who are prepared to accept a lower price we will make a spot cash offer, but if you want full market value we suggest you avail yourself of our sales on commission dept. Let us have your machine for a week or so. We shall in all probability dispose of it in that time; in any case it costs you nothing.—Allen-Bennett Motor Co., 9-10-11, Royal Parade, London Rd., West Croydon. Phone: Croydon 2450. [8268]

**EXCHANGE.**

**MAUDES'.**

**MAUDES'** Arrange Exchanges on any machines; best allowances for modern machines. See other columns for particulars.—Maudes', 100, Gt. Portland St., London, W.1. [9526]

**GOOD** Exchange and cash offered for motor cycle or combination.—Box 95, c/o *The Motor Cycle*. [X2551]

A46 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue.



**EXCHANGE.**

**E**XCHANGE New Magnetos, best British makes, for incomplete W.D. Triumph to value; Yorkshire.—Box 6,667, c/o *The Motor Cycle*. [7806]

**E**XCHANGE New Gentleman's 9-carat hall-marked solid gold double albert for cane sidecar, complete.—Box 97, c/o *The Motor Cycle*. [X2643]

**2 3** 2-stroke, new engine, mag., and carburetter, for Douglas, slight repair not objected; sell £45.—J. G. James, High Littleton, Bristol. [7610]

**Z**ENITH 8h.p. Clutch Model C.B. Combination, exchange for late model B.S.A. C.B. combination; seen Bradford.—Write, Box 6,645, c/o *The Motor Cycle*. [7633]

**8** h.p. 2-seater De Dion, perfect condition, new tyres, wind screen, lamps, spare wheel; exchange lightweight and cash or sell £100.—3, Booth Av., Withington, Manchester. [X2610]

**W**ANTED to Exchange Cowey 2-seater with Dickey, 4-cyl., for first-class combination and cash.—Newnham Motor Co., 223, Hammersmith Rd., W.6. Phone: Hammersmith 80. [7745]

**B**.S.A. Combination (s.c. right), late 1918, lamps, etc.; exchange for T.T. Norton not earlier than 1917, cash adjustment; seen any time.—Bomford, Marlfields, Beoley, Redditch. [X2623]

**E**XCHANGE 2-speed gear, clutch, and kick start, just overhauled by makers, for a lightweight Bosch anti-clock magneto, consider other make.—Joseph Sullivan, Lismore, Co. Waterford. [X2500]

**1 2** h.p. Sizaire 2-seater, 3 speeds and reverse, nice order, except clutch, which requires adjustment, running order, for good combination and cash; offers.—Edwards, 14, Half Moon Crescent, London, N.1. [7989]

**E**XCHANGE 5-6h.p. Chater-Lea-Jap, 2-speed, free engine, with sidecar, perfect order, and in excellent condition, for lightweight and cash.—Mr. Mason, 427, City Rd., Edgbaston, Birmingham. [X2550]

**E**XCHANGE 16-20h.p. Humber Lorry, 3 speeds and reverse, Zenith, Bosch, Stepney wheel complete, 3 lamps, tools, etc., good running order; trial for good combination of good make, cash adjustment.—Box L6,947, c/o *The Motor Cycle*. [5287]

**3 1** h.p. T.T. T.D.C., 1914, waterproof Bosch, Druids, new Dunlops, lamps, 1919 carburetter fitted, original enamel, very fast, perfect throughout, insured May; sell £56; exchange Douglas, Scott.—Smith, Green Mount, Stamford Rd., Bowdon, Cheshire. [X2548]

**R. D. VARTY** will be pleased to take your present machine in part exchange for anything he has in stock. Write your requirements to-day, with full particulars of your machine; a really good price will be allowed. Satisfaction guaranteed.—R. D. Varty, Thundersley, Rayleigh, Essex. [6000]

**REPAIRERS.**

**10 ANTS FOR** Pukka Repairs.

**O**FFICIAL Repairers to A.C.U. and R.A.C. Special terms to members. See end advertisement. [0087]

**W**HITTALL Machinists Co., contractors to the War Office for all motor repairs.—Below.

**W**HITTALL for Welding.—Experts in aluminium, broken parts reliably welded, accurately machined, promptly returned.—Below.

**W**HITTALL.—Cylinders ground with guaranteed accuracy, pistons fitted; prompt, moderate. New pistons made to pattern or sketch.—Whittall Machinists Co., Whittall St., Birmingham. [0017]

**6** h.p. J.A.P. Pattern Pistons, complete with rings and gudgeon pins; £1. 100 in stock.

**8** h.p. J.A.P. Pattern Pistons, complete with rings and gudgeon pin; 27/- 100 in stock.

**S**PECIAL Sizes and Other Makes quoted for per return of post.—Walter T. Matthews, 114, Suffolk St., Birmingham. Phone: Midland 1858. Grams: Walmatt, Birmingham. [4969]

**W**ELDING, Welding, Welding.—Gear, engine, frame, parts, gear wheels built up or machined.—Below.

**S**END to us for prompt attention. Low prices and guaranteed work.—Long Bros., 1, Cheval Place, Brompton Rd., London. [6480]

**C**ENTRAL Motor Co.'s Engineering Works, specialists in reboring and grinding cylinders.—Below.

**C**ENTRAL Motor Co.'s Engineering Works, specialists in making and fitting new pistons (any pattern), rings, gudgeons.—Below.

**C**ENTRAL Motor Co.'s Engineering Works, Bromsgrove St., Birmingham. Cylinders welded, machined; accurate first-class work guaranteed; orders quickly executed. [1919]

**W**ELDING Broken Cylinders, flanges, combustion heads; immediate attention; reasonable prices.—Below.

**W**ELDING Aluminium Crank Cases, gear boxes, by experts of 11 years' experience.—Below.

**C**YLINDER Grinding on latest machinery installed since hostilities ceased; accuracy guaranteed; new pistons fitted.—Sadgrove and Co., 140, Conybere St., Birmingham. [7750]

**REPAIRERS.**

**M**OTOR Cycle Frames Built and Repaired; contracts wanted.—F. and G. W. Skeat, 37, St. George's St., Tyldesley. [X2632]

**F**OSTER, of 170, Cardigan Rd., Leeds, is again at your service, and can undertake any class of welding and machine work.

**C**YLINDER Grinding and Piston Making is with us a speciality. We shall be glad to have your enquiries.—Foster, Leeds. [0003]

**A**RMSTRONG Gears a Speciality; parts supplied in 3 days; wheels repaired in one week.—A.F.L., Oakleigh, Charlestown, Weymouth. [6671]

**A**RMSTRONG and Sturmeys-Archer Gears Repaired promptly.—County Engineering Co., 64, Staines Rd., Hounslow. See displayed advt. [8130]

**M**OTOR Cycle Cylinders Reground, new pistons, rings, and gudgeons fitted; quick delivery.—Vulcan Engineering Works, Walsden, near Todmorden. [1610]

**A**RMSTRONG and Sturmeys-Archer's Gears Repaired, Send wheels labelled Paddington.—The S.S. Motor Cycle Co., 636, Harrow Rd., Paddington, W.10. [2006]

**S**WIFT of Coventry, Ltd., undertake thorough repair and overhaul of any make of motor cycle at 132-134, Long Acre, London, W.C. Enquiries invited. [0057]

**P**AINTING, body building, conversions, hoods and screens to clients' requirements, quick deliveries; quotations with pleasure.—Palmer's Garage, Tooting. [4261]

**E**NGINES Overhauled, compression restored, re-bushed throughout, pins ground, piston slots turned, piston rings fitted; singles 40/-. twins 50/-.—Below.

**P**ISTON Rings, high grade, nothing better, Ariel, B.S.A., Brough, J.A.P., Douglas, Enfield, Humber, Hudson, Indian, Premier, Rex, Sunbeam, Triumph pattern, above 1/10 each; 2-stroke rings, 2/- each; all makes stocked, standard or oversize; try us; post extra.—Patent Rings, 30, Wigan Rd., Atherton. [4547]

**K**.C. Motor Works.—Light car and motor cycle repairs. Parts made to sketch or pattern.—Rodborough Mews, Woodfield Crescent, Harrow Rd., Paddington. [7453]

**A**RMSTRONG and Sturmeys Gears Repaired in 7 days. Send wheels via Westbourne Park, G.W.R.—The Tavistock Eng. Co., 254, Portobello Rd., London, W.11. [X2624]

**O**VERHAULS and Repairs of Every Description, at reasonable charges.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. Phone: Padd. 789. [7983]

**W**ELDING.—Broken cylinders, pistons, connecting rods; cylinders rebored, new pistons and rings.—A. Pilkington and Co., 390, Lichfield Rd., Birmingham. [7414]

**F**RAMe Repairs and Alterations.—Special frames and tanks built, any designs; enamelling and plating.—A. Pilkington and Co., 390, Lichfield Rd., Birmingham. [7415]

**P**ISTONS.—J.A.P. and Douglas in stock; cylinders ground and pistons fitted in few days.—Howard Dugmore, Motor Engineer, 40½, Bristol St., Birmingham. [X2607]

**W**E are in a position to undertake contracts for enamelling and plating tanks, etc., for manufacturing firms.—Apply, 505, Seven Sisters Rd., Tottenham, N.15. [X2644]

**R**EPAIRS and Overhauls at lowest prices and shortest time. Old buses have new life put into them.—Green's Garage, 202, Trinity Rd., Wandsworth Common, S.W. [2822]

**C**UMBERLAND and North Country Motor Cyclists. Cylinders reground dead true and smooth, new pistons, rings, valves to pattern.—Cawley, Engineer, Cockermouth. [7893]

**S**TURMEY-ARCHER and Armstrong Gears, any part.—Repairs should be sent to the County Engineering Co., 64, Staines Rd., Hounslow. (See displayed advt.) [8131]

**G**EARS.—Armstrong and Sturmeys-Archer gear repairs at shortest notice.—L.A.P. Engineering Co., 175, Upper Richmond Rd., Putney. Send wheels labelled. Putney, L.S.W. Rly. [2084]

**S**TURMEY or Armstrong Gears and Premier free engine hubs; repairs executed or parts supplied promptly.—The Rotary Jointing Co., Cherry Lane Garage, Lymm, Cheshire. [5225]

**W**ELDING.—Broken flanges, aluminium crank cases, cracked water jackets, valve settings, welded and machined complete; scored bores filled in and ground to existing pistons.—Below.

**C**YLINDERS Reground, new pistons fitted complete.—West London Welding Co., Essex Place, Chiswick. Phone Chiswick 536. [7597]

**S**TEVENS Repair Depot.—Repairs of all descriptions undertaken at lowest prices by skilled mechanics. Morgan and Harley-Davidson repairs a speciality.—184, Pentonville Rd., London, N. [7114]

**C**ASTINGS.—Brass, gunmetal, phosphor bronze, and aluminium to customers' patterns; quick delivery; welding in all metals.—Maybury and Sons, 65, Montague Rd., Smethwick. [4522]

**T**HE Overhauling of Sturmeys-Archer and Armstrong gears is a scientific business.—If in trouble send to County Engineering Co., 64, Staines Rd., Hounslow. (See displayed advt.) [8133]

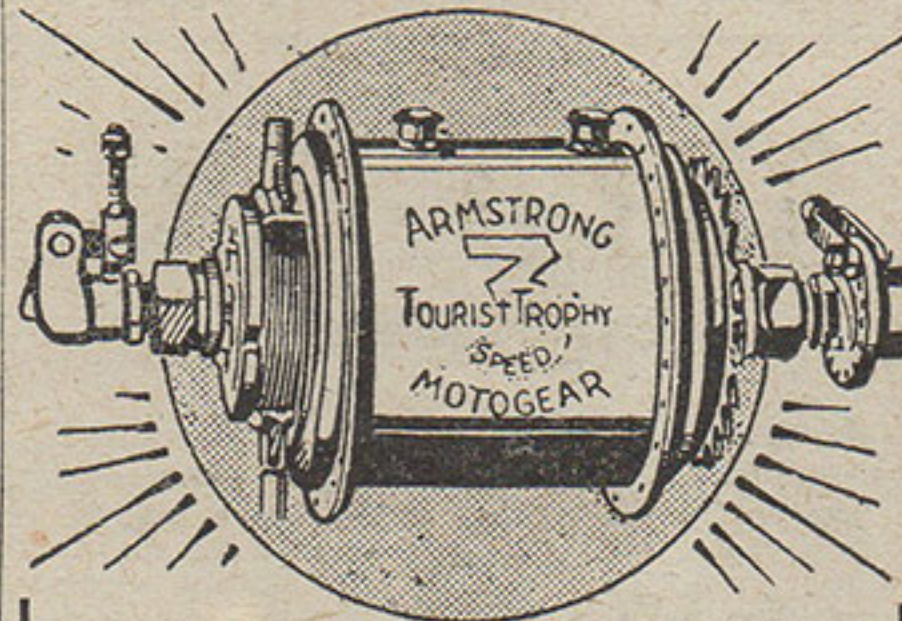
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**Arthur Lumb & Son**  
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**ARMSTRONG AND STURMEY-ARCHER GEAR REPAIRS.**

We are pleased to announce that we are now in a position to undertake immediate repairs of Armstrong and Sturmeys-Archer gears, including Sturmeys-Archer gear boxes. Above all—in urgent cases we can generally repair your gear while you wait.

Send wheels clearly labelled to Hounslow L.S.W. Railway Station.

**COUNTY ENGINEERING CO.**  
64, STAINES ROAD, HOUNSLOW,  
LONDON, W.

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**TONGE** Welding Co., Morton St., Middleton, Manchester.—Don't scrap it! Broken cylinders, aluminium crank cases, etc., welded; made like new; work guaranteed; quick return. [8150]

**SEND** Your Engine to me for a thorough overhaul. Compression restored, piston slots returned, new rings and gudgeon pins fitted, and rebushed throughout. Singles 35/-, twins 45/-.—Below.

**TRIUMPHS**, Enfields, and Douglas a speciality; repairs to frames, new tubes, etc., at moderate charges.—E. H. Terry, 16, Grove Parade, East Finchley, N.2. Phone: Finchlev 2261. [6491]

**COMPLETE** Engine Overhauls; any spares or replacements made for any make and year, new piston fitted and cylinder grinding a speciality.—Central Garage, Whittall St., Birmingham. [X2335]

**WHY** Wait for Repairs?—Engines overhauled, cylinders reground, new pistons fitted in few days, and spare rings by return; accuracy guaranteed.—Bowser, Summer Row Parade, Birmingham. [6521]

**TYPEWRITER** Repairs.—A competent staff of repairmen always available for typewriter repairs; very prompt service.—Reliance Co., The Typewriter People, 2, Gray's Inn Rd., W.C. Holborn 2388. [7951]

**HARLEY-DAVIDSON** Repairs and Overhauls.—We are now able to put work in hand without delay. Skilled staff under careful supervision.—Harley Davidson Motor Co., Ltd., 74, Newman St., London, W.1. [0043]

**CYLINDERS** Ground and new pistons fitted; all kinds of external and internal grinding, turning and milling; valves made to order.—Kellott and Collinson, Ltd., Havelock St. Garage, Gt. Horton, Bradford, Yorks. [1611]

**IF** your Armstrong or Sturmev-Archer gear is trusted to inexperienced mechanics, its life is considerably shortened.—Send repairs to County Engineering Co., 64, Staines Rd., Hounslow. (See displayed advt.) [8132]

**COMPLETE** Engine Overhauls; any spare made for any make of year in 2 or 3 days; new piston fitting and cylinder grinding a speciality.—Russell Engineering Co., Moorhead Works, Rockingham Lane, Sheffield. [0025]

**GUMBRELL** and Co. repair magnetos and lighting dynamos. Spare parts stocked. Quick service. Work guaranteed 12 months. We make a proper job.—43, 45, and 47, Derby Rd., Loughborough, Leicestershire. [7585]

**MANY** Armstrong and Sturmev-Archer gears have been ruined by sending them to inexperienced repairers.—They should be sent to County Engineering Co., 64, Staines Rd., Hounslow. (See displayed advt.) [8134]

**MOTOR** Cycle Overhauls. Indians a speciality. Repairs to frames, new tubes, etc., at moderate charges, by efficient workmen; 15 years' reputation.—Pioneer Motor Works, 290, High St., Stratford, London, E.15. [2718]

**DON'T** have engine coddled, but have it properly repaired by real mechanics. We specialise in reboring and piston fitting, rings, bushes; welding, etc.—C. A. Winwood and Co., 106, 107, Montague Rd., Smethwick. [X2646]

**ARMSTRONG** and Sturmev-Archer Gears require delicate handling when out of order.—If a prompt and perfect repair is required, send to County Engineering Co., 64, Staines Rd., Hounslow. (See displayed advt.) [8135]

**WELDING**, Welding, Welding.—Welding done by expert; cylinders, crank cases, gear boxes, pistons, cranks, flanges, etc.; aluminium a speciality. No cure, no pay, and all work returned in 6 days.—H. Heap, 105, Bissell St., Birmingham. [0023]

**WHAT** about that knock your engine has developed? It probably only requires rebushing. Send a P.C. with name and date of engine, and we will quote for complete overhaul or anything you require. Prompt delivery, and work guaranteed.—Stembridge and Rettie, 48, Church St., Luton. [X2538]

**ACETYLENE** and Electric Welding.—Broken flanges, cracked water jackets, scored bores, worn bearings, built up; aluminium gear boxes, crank cases, any broken motor part welded and machined up and returned in 7 days, 14 years' experience.—Lincoln Jeffries jun., Gun and Motor Maker, 120, Steelhouse Lane, Birmingham. [7078]

**THERE** is No Firm like Tennant where'er the light of day be; there are no men like Tennant's men, such craftsmen true as they be. Each man treats each job as a skilled surgeon treats each patient. Care and attention to each detail, and a real live desire to make every repair a source of satisfaction to the owner enables us truthfully to say that they are jolly hard to please who are not more than satisfied with The Tennant Engineering Co., 238, Bristol St., Birmingham, the pioneers of scientific motor repairing, probably the oldest firm of repair specialists in Britain, certainly the longest established in the Midlands, and most assuredly the best anywhere. Cylinders rebored and ground to a glass finish. Pistons and rings fitted that give compression, not friction; bushes made that really function, and repairs carried through that make engines real engines, not things of sobs and chatters. Bodge rectified by us, the official repairers of A.C.U. and R.A.C. [0047]

**WANTED**

TO PURCHASE FOR

**CASH!**

1914-1919 models of the following makes:

**A.J.S., BROUGH, B.S.A.,  
CLYNO, DOUGLAS,  
ENFIELD, LEVIS, LEA-  
FRANCIS, MATCHLESS,  
NEW IMPERIAL,  
NORTON, P. & M.,  
ROVER, SUNBEAM,  
TRIUMPH, and ZENITH,  
or any first-class make.**

If you have any of the above for disposal please send full particulars and the lowest price required to:

**THE SERVICE Co., Ltd.,  
289-293, High Holborn, London, W.C.1**

TELEGRAMS: "Admittedly."

PHONE: 6430 Holborn.

**Armstrong and Sturmev-Archer Hub Gears.**

We repair the above Gears promptly. Sturmev-Archer Countershaft Gear parts stocked. When sending wheels please remove all outside fittings, label clearly with owner's and our address and advise hub number and type of gear.

Recommended by Sturmev-Archer Co for Repairs  
**The CROMWELL ENGINEERING CO.,**  
427 Putney Bridge Road, Putney, London, S.W.1  
Phone: 1601, Putney. L. & S.W. Ry., Putney Station.  
We do not repair push-evele gears.



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BUTTERSHAW,  
Nr. BRADFORD.**

## MISCELLANEOUS.

ST. MARTIN'S.

ST. MARTIN'S Accessories.

**ST. MARTIN'S**.—Genuine Klaxons, Model C, all black finish, 36/- each; Volta mechanical horns, turn handle type, black and nickel, very smart, 29/6 each; mechanical horns, all black push-down pattern, 21/-, 12/6, strong and reliable; bulb horns, 15/6 each.—Below.

**ST. MARTIN'S** Acetylene Head Lamp Sets.—Motor cycle head lamps, complete with generator and brackets, 4in. front lamp, black and nickel, very smart, 52/6 set; Miller's 4in. lamp set, nickel; P. and H. 6in. lamp set, black and nickel, also in stock.—Below.

**ST. MARTIN'S** Acetylene Rear Lamps, special line, S 4/- each; Miller's pattern, 5/6 each; T.W.R. aluminium, torpedo shape, 8/3 each; P. and H., black and nickel, 9/6 each.—Below.

**ST. MARTIN'S**.—Covers: Clearance Dunlop R.S., S wrongly marked 28x2 1/2, actually 26x2 1/2, guaranteed to fit 2 1/4 in. rims, heavy 35/-, extra heavy 40/-; also 650x65 plain, Michelin 35/-, Lutetia 29/-.

**ST. MARTIN'S**.—Tubes, new, St. Martin's 26x2 1/4, guaranteed 12 months; 10/-; clearance, 26x2 1/2, thoroughly tested, 8/-.—Below.

**ST. MARTIN'S** Tool Rolls, best quality tools only, 25/- each.—Below.

**ST. MARTIN'S** Plated Motor Cycle Pumps, with foot stirrup, 7/6 each.—Below.

**ST. MARTIN'S** Patchquick Repair Outfits, 3/- each; Holdtite, 2/6; best steel tyre levers, 9d. per pair.—Below.

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**FOR** Sale, rear wheel, 26x2½, Armstrong 3-speed hub gears and controls, slight repairs wanted, less tube and cover; best offer.—18, Cambridge St., Grantham. [7594

**150** SCREWS, nuts, washers, set screws, and studs 2/6; 144 bright screws, 2/-; 72 bright hexagon nuts, 2/-; carriage paid.—Wood, Tithebarn St., Preston. [X2487

**WHY** Wait for those spare parts? Pistons, rings, valves, guides, spindles, and bushes, made to sample or drawing.—Collett Bros., opposite Norwood Junction Station. [3361

**BOSCH** Magneto off Triumph, new Dunlop cover, 26x2½, few 2½ h.p. Douglas new spares; wanted, bracket for P. and H. lamp set.—20, Goldsmith's Row, Hackney Rd., E. [8031

**SPEEDOMETER**, Cowey, latest model, 26in. wheels, 24/10, cost 25/10; Cowey horn, 22/10, cost 23: new: approval against cash.—Burt, 189, York Rd., Southend, Essex. [8073

**8-10h.p.** Air-cooled J.A.P. Engine, complete unit, carburettor, mag., clutch, pedals, seats upholstered cycle car pattern, perfect; £25.—37, Saxon Rd., Luton, Beds. [7997

**DISCS** for Triumph, Enfield, Douglas, or any make to order; enamelled black 35/- set for 2 wheels.—H. Terry, 16, Grove Parade, East Finchley, N.2 Phone: Finchley 2261. [7366

**OFFICE** Furniture People.—Good second-hand office furniture at very reasonable prices; immense assemblage of all kinds.—Reliance House, 2, Gray's Inn Rd., W.C. Holborn 2388. [7954

**PHILIPSON** Pulley, just been overhauled by makers, in splendid condition; reason selling, shaft present bike too large; £4.—Douthwaite, Bankfield Rd., Nab Wood, Shipley. [7562

**SIDECAR** Covers.—Send your old one as pattern We send per return post sample material and quotation for new one.—Waterproof Specialities Co. Rutland St., Nottingham. [6520

**AMAC** One-lever Carburettor, 22/6; Avro triplex wind screen, 25/-; 4in. P. and H. set less bracket, 22/6; Lucas small generator, 7/6; all unused.—19, Hamilton Rd., Reading. [8152

**B.** and **B.** Carburettor, 1½ in. nipple, 30/-; several parts N.S.U. gear, 40/-; 4 new valves with springs for 2½ h.p. Douglas, 25/-.—Cameron, Linlithgow Terrace, Ormiston. [8144

**AUTO** WHEEL, splendid order, £10; 3 air-cooled cylinders, 90mm. bore, £2; about 30 Whitworth and gas taps, 1½ in. to ½ in., £3, or offers.—8, Luxford St., Rotherhithe, London. [7510

**NEW** F.R.S. Dynamo, with pulleys and switches, suit Douglas, £5; also electric drill brace, 100 volts, with chuck and cable, suit garage, £5/10.—Cottis, 2, Aldine Place, Uxbridge Rd., W. [X2469

**4** h.p. Douglas cylinders, 35/-; pistons, 25/-; crankshaft, 60/-; gear box, less clutch, £7/10; crank case, £5.—Speechley, 1, Gunnersbury Lane, Acton Hill, W.3. (opposite Red Lion). [8019

**3½** h.p. J.A.P. Engine, twin, as fitted to Lea-Francis, etc., complete, brand new, £24; Binks carburettor, latest 1919 pattern, for single-cyl., 70/-.—Inchanga, Teignmouth, Devonshire. [X2489

**26** x 2¼ Motor Cycle Tube, 6/6; Clincher heavy cover, 26x2¼, 15/-; X.L. large pan saddle, very comfortable, 45/-, worth 70/-; carriage paid on receipt of cash.—Dean's Farm, Poole. [7630

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**UNBREAKABLE** Chrome Nickel Valves, guaranteed one year, any pattern, 7/- each, 12/- pair; step-cut piston rings, 5/- pair, post free, per return.—Capacity Tool Co., Broseley, Shropshire. [4759

**100,000** Shop-soiled and Second-hand Files, 6in.-16in., genuine salvage stock, all guaranteed usable. Send 12/6 for 3 dozen assorted, carriage paid, approval.—Palmer's Garage, Tooting, S.W. [3540

**3**-SPEED and Reverse Gear Box, with cone clutch, suit chain-driven cycle car, perfect, £6/10; J.A.P. overhead valve cylinder 86 mm. bore, perfect, £3/15.—Claybourn, Garage, Askern, nr. Doncaster. [8056

**19** 18 Douglas 4h.p., cantilever forks, K.S., perfect condition, £85; Thomson-Bennett magneto, 180°, new, £4/10; U.H. magneto, 180°, new, £4; Dixie magneto, single, new, £4.—Thomas, 254, Earlsfield Rd., S.W. [8024

**J.A.P.** Front Cylinder, new, 6h.p., 26/-; Douglas Amac carburettor, less controls, 15/-; Thomson-Bennett Douglas magneto, £4; Douglas front wheel, £1.—Captain Saunders, Red House, Riverside, Kingston-on-Thames. [X2440

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MISCELLANEOUS.

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**TRIUMPH Spares.**—Engines, 1916 £12/10, 1917 £15, frames £7/10, spring forks £4, tanks £2, Sturmey-Archer 3-speed gear box, 1916 £15, 1917 £18, back hubs 17/6, front 15/-. Triumph carburetter (top feed) 50/-.—Below.

**INDIAN Spares, all 1916.**—All engines, parts; spring frames £10, spring forks £4, back wheels £3/10, fronts 30/-. tanks 20/-. oval tanks 10/-. mudguards (back) 15/6, forks 15/6, magneto £6.—Below.

**CLYNO Spares.**—Frame, spring forks, tank, £17/10; spare wheels £2/10, crank cases £2, pair flywheels 50/-. gear cases 20/- each.—Below.

**50 4h.p. Douglas Magneto Timing Wheels, 12/6 each; 50 Douglas Amac carburetters, 35/-; 100 Sturmey-Archer clutch worms, 12/6.**—Hawkins, 455, York Rd., Wandsworth. [6971]

**BOOTS.**—Service used, 10/-, 15/-; warm-lined, 15/-; knee high, 20/-, 30/-; thigh, 20/-, 30/-; clogs, 8/6, 15/-; capes, 8/6; leggings, 8/6, 15/-; knee grips, 10/-.—Tarrant, 39, Hillside Corner, Stonebridge, London, N.W.10. [7959]

**ARMSTRONG 3-speed hub, clutch, kick-start, complete with wheel and all controls, needs adjusting, £8; Jap car carburetter, with control, £1; portable hearth, complete with blowpipe, £2.—1, Bells Gate Rd., Peckham. [7971]**

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**GRADO Kick Start Gears, for Rex machines, new £10; new C.A.V. 20 amp. accumulators, 12/6; car pump, with pressure gauge, 10/-; 3 sewing machines Singer V.S., Jones, Frister Rossman, 30/- the three.**—Hobbs, Meadvale, Redhill. [7822]

**PISTONS, any pattern from stock, Bradbury, Ariel, B.S.A., New Hudson, Harley-Davidson, Indian, Premier, Rudge, Douglas, Sunbeam, Singer, Radco, Levis, Hobart, all complete.**—W. Cole, 53, Sarehole Rd., Sparkhill, Birmingham. [X2156]

**CARAGES.**—We supply timber for building, cut to any lengths. Price list on receipt of stamped addressed envelope. We are also importers of plywood suitable for coachbuilding.—The City Road Timber Yard, 227, City Rd., London, E.C.1. [0040]

**ROLL-TOP Desk, office tables, typing tables, board-room tables, Palmer's desks, filing cabinets, card index drawers, swing chairs, typist chairs; all goods second-hand, at close prices.**—Reliance Co., 2, Gray's Inn Rd., W.C. Holborn 2388. [7955]

**GODFREY'S, Ltd., Accessory Department keep constantly in stock Indian and Scott spare parts; pair of 1911-12 Scott cylinders, £6/12; orders by post receive prompt attention.**—208, Gt. Portland St., London, W.1. Mayfair 7091. [6637]

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**TRIUMPH Parts.**—We have still the most varied stock of these, and can give the promptest service. Enclose stamped addressed envelope with enquiries, please, and state year of machine.—Forfield Motors, 11-13, Forfield Place, Leamington Spa. [X2656]

**CONTACT Breaker, Splittorf, unused, 15/-; adjustable pulley, 7/6; lin. belt, 8ft., 10/6; trembler coil, 7/6; J.A.P. carburetter, Bowden control, 17/6; hand camera, 35/-.** Wanted, tank, tyres, 7/8 belt.—Motorist, 3, Freke Rd., Lavender Hill, S.W. [8194]

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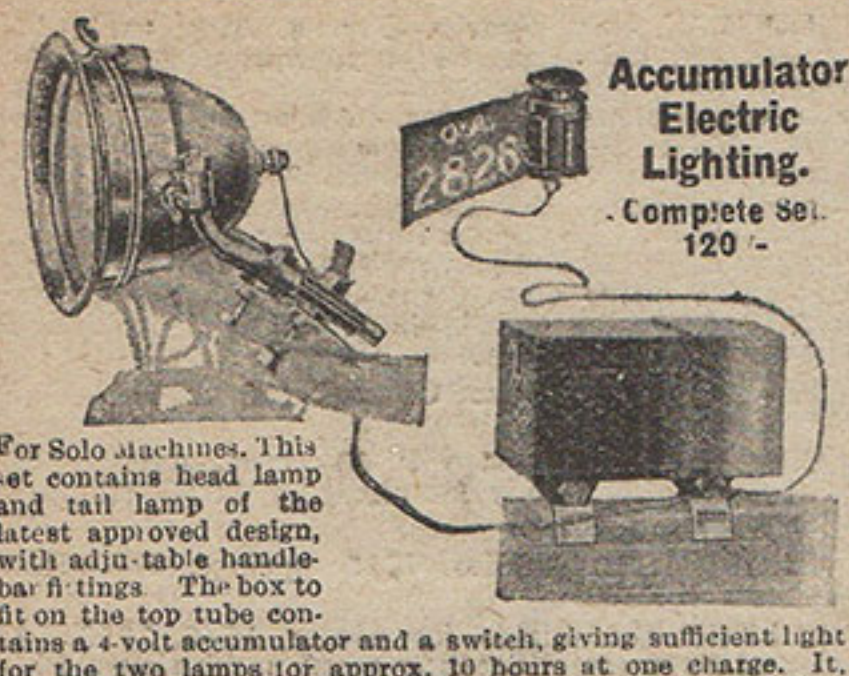
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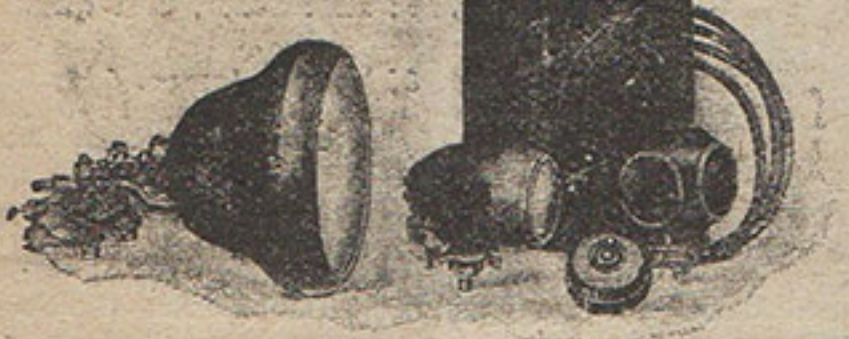
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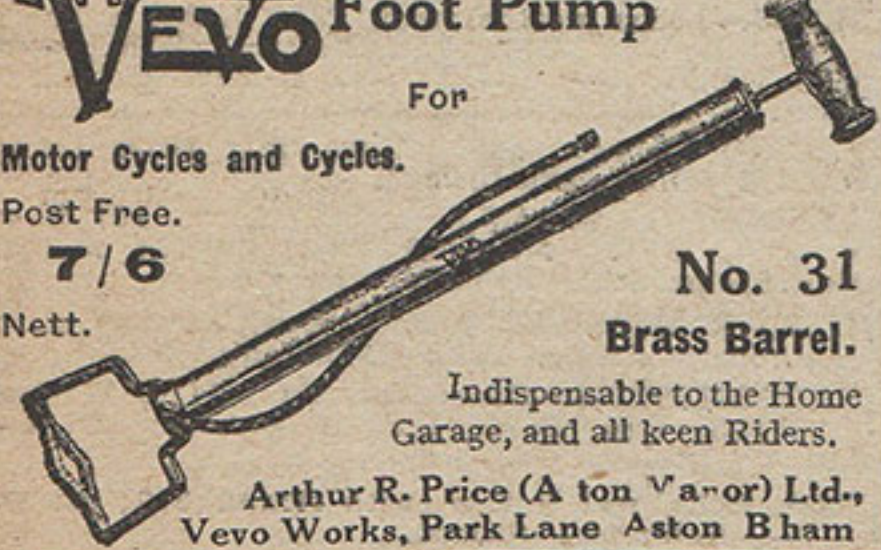
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**1919 Triumph Spares.**—Cylinders, £6/6; compression taps, 2/6; front stand, 7/9; rear stand, 25/-; front guard stays, 2/6 pair; rear carrier, 31/-; valve caps, inlet and exhaust, 5/-; valve cotteners, 3d.; pistons complete, 28/-; connecting rods, 23/6; connecting rod rollers, 5/- set; gear cover complete with bushes, 16/3; cam wheels, 23/-; rocker arms, inlet and exhaust, 8/8; cylinder base studs, 4d.; cylinder base stud nuts, 3d.; adjustable tappets, complete with guides, 9/- each; exhaust union nuts, 3/3; rear brake pads, 1/6; rear brake springs, 5d.; fork crown axle and cones, 8/-; fork girders, 29/6; fork buttress, 9/-; barrel spring, 8/-; Junior Triumph cylinder, £2/2; pattern pistons, with gudgeon and rings, 28/-; gudgeons only, 5/-; large bushes 5/-, small 3/6; piston rings, 2/6; valves, inlet and exhaust, 6/6; valve springs, 7d.; filler caps, 2/6; extra heavy covers, 34/-; inner tubes, 12/-; footrest rubber fitted to frame, 4/- each; footrest complete, 35/-; silencers, complete with union nuts, 30/-; flywheel, sprocket side, with mainshaft, 52/6; flywheel, gear side, with gearshaft, 50/-; ball bearings, crank case, 12/6; tank complete, £5/11; magneto control lever, 10/-; front wheel complete, less tyre, 44/-; rear ditto, 69/-; aluminium footboards, complete, countershaft or Junior, 30/-—Robinson's (below).

**TRIUMPH Carburettor Parts.**—Needles, 2/3; air cap, 3/6; springs, 9d.; air or throttle pistons, 2/6; tickler complete, 2/6; petrol union nuts, 4d.; jets, 9d.—Robinson's (below).

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**TOOLBAGS.**—B.S.A. 12/-, Enfield 9/-, James 11/-, Sunbeam 9/-, Zenith 30/-, Douglas 11/-—Robinson's (below).

**UNDERSHIELDS** for 2½-h.p. and 4-h.p. Douglas, protects engine from mud and dirt, enamelled black, 15/-—Robinson's Garage, 32-35, Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [8230]

**ENFIELD Twin Lightweight Engine**, 90/-; heavy-weight front forks, complete with mudguard, number plate, Bowden brake, and all fittings, 80/-; adjustable pulley, 5/-; Dunlop belt rim, new, 11/-; 26x2¼ butted tube, 5/-—49, Woodfield Rd., Ealing. [7976]

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**VALVES.**—The following patterns, inlet and exhaust, actually in stock; 3% nickel guaranteed: Triumph 1907 to 1920, J.A.P., Douglas, Rover, Clyno, A.J.S., B.S.A., James, Premier, Singer, Humber, Williamson, Blackburne, Precision, Rudge, Sunbeam, Bradbury, Rex; any other pattern in 6 days; 3/9 each.—Below.

**PISTONS** in Stock, complete with gudgeon pin and rings, following patterns: J.A.P. 2½-h.p., 22/6; J.A.P. 3½-4 and 8-h.p., 27/-; Douglas 3½ and 4-h.p., 19/6; Triumph 1910-11-12, 27/6; Triumph 1919, 28/6; B.S.A. 1911, 30/-; rings for above, 1/9 each; cash order, delivery per return.—Beech Engineering Co., Little South St., Coventry (formerly H. Beech, Hollis Rd.). [X2682]

**BOSCH DA2 Magneto**, £4/10; Triumph frame, forks, stand, carrier, tank, wheels, tyres, handle-bar, £10 lot; XI-All saddle, 12/6; Triumph carburettor, £1/12/6; Triumph pulley, 12/6; new footrest, complete with back brake, £1/12/6 7/8in. belt, as new, 10/-; all bargains.—Prout, Canon St., Taunton. [8191]

**B.S.A. 1916 Cylinder**, 30/-; 4¼-h.p. engine and carburettor, a.o.i.v., £6; twin Bosch mag., DAV, 50/-; new B. and B., pilot, 50/-; controls Enfield carburettor, 30/-; Moto-Reve carburettor, £1; Bradbury tank, 25/-; another, 15/-—54, Eldon St. North, Barnsley. [X2556]

**PISTONS** made to Specification in 4 days, from 26/- each; plain bushes, 5/-; rings from 1/9; cylinders bored and welded; frames brazed and repaired, send us your enquiries; estimate by return; work done for trade.—Wards, 51, Upper Richmond Rd., Putney. [7197]


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A lungful of air,  
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The friends that I like  
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**2 1/2** h.p. Douglas Spares, all brand new.—Three cam wheels, 22/- each; intermediate, 8/- each; belt pulleys, 8/- each; mainshaft gear box, 12/-; carburetter controls and wires, 15/-; chains, driving, 12/6 each; valves, 4/-; many other spares, new, 20% off makers' prices; stamp enquiries.—Below.

**B.S.A.** Spares, brand new, genuine.—Connecting rod, 30/-; valves, 5/- each, complete spring collars; K.S. crank, 15/-; engine sprocket, 10/-; gear box ditto, 10/-; Ford shackles, filler caps, spring fork parts, all new, cheap; stamp enquiries.—Below.

**CHAINS**, brand new.—Renold for B.S.A., etc., 3/4" x 1/4", 88 links 17/6 each, 54 links 12/- each; also quantity second-hand chains, good, 1/6 foot; stamp enquiries.—Below.

**FORD** Axleshafts, 7/6 each; Zenith wheel, rear, new, £2; 4h.p. Douglas head lug, new, £3.—7, Gibson Sq., Islington, London, N.1. [7762]

**LEATHER** Jackets, sleeveless, flannel lined, 15/- each; tan leather gauntlet gloves, wool lined, smart, comfortable, 13/6 pair; sheepskin mitts, natural wool lined, durable, cosy, 9/- pair; sidecar rugs, dark plaid design, 54in. x 64in., 15/6 each, carriage paid; cash with order; all new.—Morton and Minnis, 11, Berkeley St., Liverpool. [X2494]

**CLEARING** out through illness: 2-cyl. car, 10h.p., mag., £45; ditto box van, engine wants assembling, £45; De Dion van, thoroughly overhauled, £58; 4h.p. Lugton T.T. bike, with clutch, £38; single magneto, £4/15; Humber and sidecar, £38; lady's push cycle, as new, £8/10.—Stationer, 46, Chapel St., Marylebone. [7860]

**8** h.p. Riley Engine, gear box, magneto, carburetter, and pump, £20; two Claudel-Hobson carburetters, £2 and £3 each; Longuemare, 7/6; T. and M. carburetter, £2; Remy magneto, 4-cyl., off Garford van £3; 8h.p. Pilot light car, 2-seater, friction drive, wire wheels, lamps, £90.—G. Houlston, 560, King's Rd., Fulham, S.W. [8001]

**ARMY** Boots, per return, with guarantee, fair wear, free pair or cash returned, 10/-, 8/6, 6/6; Australian leggings, boots, and army blankets; new army boots, 25/-; rubber thigh and knee boots, £1 per pair; in fact, everything in Government footwear; send for our list (free).—M. C. Lethbridge and Son, 75, George St., Devonport, Devon. [5427]

**FOR** Disposal, two speedometers, suit car, £2/5 each, incomplete; Le Cyrano cable horn, perfect, £2/5; Megaphone, mechanical, £1/7/6; C.A.V. sidecar lamp, 10/-; trembler coil, 15/-; B. and B. carburetter, 3/4in. bore, £1/5; Amac, 1 1/2in. bore, £1/5; P. and H. gas cycle lamp, good, 12/6; appointment only; offers.—9, Kenley Rd., St. Margaret's-on-Thames. [8064]

**WHEELS**, wheels, wheels.—Motor cycle wheels built to order, back wheels from 45/-, front wheels from 25/-; motor cycle frames repaired, altered, and brought up-to-date; sidecar chassis repairs; discs fitted 26in. wheels, steel, front 20/-, back 22/-; enamelled black, other to order; stamp, enquiries.—Pendleton, 28, Lonsdale Sq., Liverpool Rd., London, N.1. [7862]

**RIMS**, 26 x 2 1/4in., drilled 40, 26 x 2 1/4in., 40, 650 x 65, 32 holes, each 8/6; one 26 x 2 1/4in. B.S.A. front wheel, 22/-; Best and Lloyd drip feed, with pump, complete, 12/6; Triumph magneto chain case, 11/-; petrol gauges, 4/9; front hub complete, 10/6; various other parts cheap; Triumph parts wanted, gear box case, front mudguard, handle-bars.—40, Field St., Bicester. [8062]

**NEW** Goods.—Capac carburetters, £4/4, exchanges quoted; tool rolls, 22/6; genuine army knapsacks, 13 1/2 x 11 x 4 1/2in., with short straps and buckles, 5/6; Corona oil stoves, 25/-; Klaxon horns, £1/15; Cowey horns, 60/-; Cowey speedometers, £5/5; Bonniksen speedometers with trip, £6/10; C.A.V. magnetos, £7/17/6.—Halifax Motor Exchange, Union St. South, Halifax. [7803]

**CLYNO** Ammunition Carrier Chassis, with interchangeable wheel, less tyre and connections, suitable for sidecar. £3; new free engine clutch, suit lightweight, £2; Rex 3 1/2 h.p. engine, adjustable pulley, less piston, £2; pair Clyno valves, 5/6, new; few shafts and gears, new, for Clyno gear boxes, 1914 and later, 1914 list prices.—4, Holcroft St., Ettingshall, Wolverhampton. [X2626]

**FOOTBOARDS**, aluminium, rubber, smart, 10/6 pair, clips 6d. extra; legshields, sheet metal, ready to fix, 12/6 pair, enamelled black, gold line; hoods, good quality, plated, 35/-; Douglas under-shields (save cleaning), 10/6; Douglas silencers, 25/-; sidecar steps, rubber and aluminium, clip to tube, 6/6; satisfaction or cash returned.—Wilson, 93, Coltart Rd., Liverpool. [X2619]

**SPEEDOMETERS**.—Godfrey's, Ltd., have large and assorted stock of speedometers in stock: Watford, Model 40, for all size wheels, 95/-; luminous dial, 105/-; Model 42, with trip, 105/-; luminous dial, 115/-; Cowey, 110/-, with trip 130/-; Stewart, 84/-; Bonniksen, 26in. wheel, with trip, 130/-. Post orders receive prompt attention; postage on any of above, 1/- extra.—208, Gt. Portland St., London, W.1. Mayfair 7091. [6636]

**ENFIELD** Speedometer, 50/-; Smith's speedometer, 50/-; Watford, 40/-, all perfect; complete Triumph piston, 10/-; Triumph new connecting arm, complete, 15/-; Dixie Douglas magneto, perfect, £3/10; C.A.V. twin waterproof ditto, £4; front 26 x 2 1/4 wheel, beaded, 12/6; Triumph clutch wheel, complete, perfect, £5; Triumph crank case, 30/-; pair flywheels, connecting arm, 30/-; almost new cigar sidecar body, 50/-; Sunbeam 4-wheel runabout, 2 speeds, free, 4 1/2 h.p., 3-seater, £10 on rail.—W. Perrin, 6, Etna Rd., St. Albans. [7508]



**LEATHER HELMETS.**  
All patterns in Brown or Black.

**KNEE GRIPS.**  
Usual patterns.

**Crescent (patent) KNEE GRIP.**  
Pad can be adjusted to come over, half over, or in front of knee. Send for list to the MAKER.

**H. BEDNALL,**  
55, Sutton Crescent, WALSALL.

**TOOLBAGS! TOOLBAGS!!**



Extra stout, all leather, 1/6 each.  
Special quotations for quantities.

**Brown Army Canvas Shoes**, 2/6; **Canadian White**, 3/6; **Army Boots**, 6/-, 9/-; **Genuine New Army Boots**, 27/-; **New Naval Boots**, 26/-; **New Black & Brown Leggings**, whole block (no seams), 11/6 pair. Write for free catalogue of New and Second-hand **Army Blankets, Clothing, etc.** **M. GOULD**, Naval & Military Contractor, 42, St. Andrew Street, PLYMOUTH.

**STILAXITE**

**KEEPS METALS CLEAN & BRIGHT UNDER HEAT.**  
Following application of this New Preparation, metal emerge bright and clean from heat treatment.  
**Prevents Scaling! Saves Time and Money!**  
Sample 1lb. Tin, 2/6 post paid.  
The Stilaxite Co. (Dept. 5), 4 Hanover St., London, W.1.

**PULLEYS** for any motor  
Adjustable, 5in. diameter, 14/6, Plated.  
Fixed, to 5in. diameter, 7/6.  
**Supplied in size 3in. to 9in. diameter.**  
**WELL-KNOWN MAKES IN STOCK.**  
Guaranteed. Post Free.  
**J. PERKINS,** 455, HIGH ROAD LEYTON.  
Telephone: 248. Walthamstow.

**Tyre Repairing.**  
Established 1897.

**RETREADING Motor Cycle COVERS.**  
**HEAVY** (Rubber studded or ribbed) 14/-  
**EXTRA HEAVY** " " 16/6

For driving wheels of machines of over 3 1/2 h.p. used for passenger work we strongly recommend car treads being fitted. Price 20/- each.

Repairs of every description to covers and tubes promptly executed. Lists and sections of retreads upon application to

**THE EXCELSIOR TYRE CO.,**  
HURST STREET, BIRMINGHAM.

**PRESERVE YOUR CYLINDERS**



**Cylinder Black**  
TINS 9<sup>p</sup> 1/6 POST FREE  
WITHSTANDS HEAT

**OWEN BROS. HULL, ENG.**

**Wanted!**

High Class Combinations, Motor Cycles, and Light Cars. Call or write, giving year and make, also lowest cash price.

**The Winstan Henney Motor Co.,**  
63, South End, Croydon, Surrey.

**TRIUMPH PARTS**

We are the promptest firm for these. Practically every part for every model actually in stock. Enclose stamped envelope, please.

**FORFIELD MOTORS,**  
11-13, FORFIELD PLACE,  
**LEAMINGTON SPA.**  
**TRIUMPH PARTS**

**GEARS!**



Cut to Pattern or Sketch for Motors, Motorcycles, and Cinematographs.  
**Burton G. Raymond**  
27, Lisle Street, Leicester Sq. W.C. 2.  
Telephone: Gerrard 4637.

**RINGS**



All Standard sizes in stock. Send Pattern or dimensions. Trade enquiries invited.  
**THE LIFFORD ACCESSORIES CO.**  
10a, Guildhall Buildings, Navigation St. BIRMINGHAM

Agencies held for  
**MARTINSYDE, N.U.T., CLYNO, QUADRANT WOOLER, Etc.**

REPAIRS EXECUTED.  
**OPEN ON SUNDAYS.**  
**BOCKING & CLEGG,**  
352, High Rd., Willesden Green, N.W.10.

A56 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue.



MISCELLANEOUS.

1915 B.S.A. Connecting Rod, 20/-; cylinder, 25/-; gear lever and quadrant, 17/6; clutch pedal, rod, and worms, 17/6; brake pedal and shoe, 15/-; 1915 Triumph spares—cylinder 25/-, timing half crank case 15/-, inlet cam wheel 10/-, complete 1914 foot brake 20/-, 1915 tank (dented, repainted) 25/-; Bradbury tank, complete, 30/-; Premier 3 1/2 h.p. cylinder 20/-, piston 15/-, valves, tappets, and cams 20/-, crank case 30/-; Levis cylinder, 20/-; parts old Quadrant engine: 1915 Douglas tank, renovated, 30/-; 1911 Douglas tank, 20/-; 1916 Douglas frame, 24/-; several oil pumps, coils, etc.; Chater tricar frame and axle, 23/-; enquiries, stamped envelope, please; first cash secures.—Walton Bros., Dawson Sq., Burnley. [X2499]

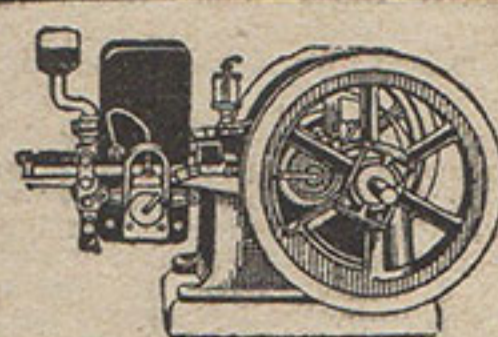
CYCLE Car Parts.—Two 26x2 1/2 voiturette rims, 12/-; two 26x2 1/2 motor cycle rims, 12/-; one new Chater-Lea hub, 8 1/2 in. brake drum, and 30-toothed chain wheel, 11/17/6; one Chater-Lea chain ring, 40x5/8x5/8 in., 12/-; one ditto, 22x5/8x1/4 in., 6/-; new pair 5in. motor cycle mudguards, 5/6; one 20-toothed, one 16, and one 15-toothed by 5/8 in. x 1/4 in. chain rings, the lot 15/-; pair 26x2 1/2 wheels, front axle, and steering connections, complete, 22/2; chain drive back axle, with 26x2 1/2 wheels and springs, front axle complete with wheels, gear box, epicycloid gears, 2 speeds, 8h.p. twin w.c. Fafnir engine (wants slight welds to outside water jacket), with Hele-Shaw type clutch, all in order, 28/10; one small honeycomb radiator, sound, 21/1; one 7-seated open body, off Daimler, 23.—Cowell, Honiton, Devon. [7779]

GODFREY'S, Ltd., Accessory Dept., can offer from stock Dunlop covers, heavy and extra heavy, 28x3 6/9 and 76/6, 28x2 1/2 57/9 and 70/6, 26x2 1/2 51/9 and 61/6, 24x2 42/-; Firestone covers, 28x3, 69/6; Goodyear, 26x2 3/4, 61/-; disc wheel, in purple and black, for Scotts, 30/- per wheel; P. and H. lamp sets, 37/6, 42/-, 50/-, 53/6, 55/-, 60/-, 69/-, and 75/-; Lucas King of the Road, finished green, 97/6; Miller sets, 54/-; F.R.S. Junior, 60/-; Security sets, 52/6; Westwood rear and sidecar torpedo lamps, 6/6 and 7/6; small generators, 9/6; F.R.S. electric sets, combination 8 gns., solo set 130/-; electric sidecar lamps, 14/- and 22/-, complete with bulb, wiring, and switch; mechanical horns, Cowey 60/-, Klaxon 36/-, Volta 30/-; bulb horns, black 22/6, plated 25/-; genuine King Dick spanners, 7/6 and 4/6; post orders receive prompt attention; postage extra.—208, Gt. Portland St., London, W.1. 'Phone: Mayfair 7091. [6635]

BASTONE'S Bowden Front Motor Cycle Brakes, 15/6; compression taps, 2/6; petrol taps, 3/-; motor cycle toolkits, 21/-; mechanical horns, 21/- and 25/- each; Tan-Sad pillion seats, 33/-; sidecar hoods, easily fitted, 57/-; Coverall aprons, 18/6; sidecar mudguards, with stays, 14/-; 4in. mudguard blades, 4/6; exhaust and inlet valves for Douglas, 2 3/4 h.p. 4/-, 4h.p. 4/6; Singer and Triumph, 5/6; C.A.V. 2-cyl. magnetos, set at 180°, anti-clockwise, 27/-; ditto Berling, 25/10; Bob Jon motor cycle lamps and generators, 52/6; aluminium tail lamps, 7/6; ditto large sidecar lamps, 14/-; Lodge Aero test plugs, 2/6 each; standard ditto, 2/3 each; small Wakefield spanners, 1/6; sidecar mats, 6/6; Easting wind screen, 24/10; Rapid, 22/17; Bosch ZAV magneto, set at 60°, anti-clockwise, 26/15; Dixie single, 24/-; handle-bar mirrors, 10/-; B. and B. carburetters in stock.—228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [8266]

J.A.P. Specialists, genuine J.A.P. specialists, not imitation J.A.P. specialists. This applies to both workmanship and goods. Practically all parts in stock for J.A.P. engines except 2 1/2 h.p. cylinders. Imitation is the sincerest form of flattery, but why buy shop-made imitation J.A.P. parts when we can supply the genuine J.A.P. article from stock? Immediate delivery of genuine J.A.P. connecting rods, J.A.P. cylinders, J.A.P. pistons, J.A.P. valves, J.A.P. bushes, J.A.P. rings, J.A.P. springs, etc., from stock. When enquiring, send fullest details possible or old part to save delay. We also have Bosch 50° water-tight for J.A.P., 26/15; new 2 3/4 h.p. o.h.v. J.A.P. twin engine, 230/-; new Amac, suit 8h.p. J.A.P., 22/10, almost new; 1915 Douglas 2 3/4 h.p. engine, with mag. and carburettor, 218/18/6; two special J.A.P. engines, as new, one 6h.p. 232/10, other 8h.p. 235.—BP Garage and Repair Works, J.A.P. Specialists, 40, Murray Mews, Murray St., Camden Town, N.W. [8140]

FOR—  
**QUICK,  
CHEAP,  
EFFICIENT**  
**TYRE REPAIRS.**  
Special Terms to Clubs.  
**Universal Tyre Repairing Co., Ltd.**  
Garratt Lane, Earlsfield, London, S.W.18.



1, 2, and 3 H.P.  
**PETROL ENGINES.**  
For Farm or other stationary work. Hopper cooled. Magneto ignition. Portable. Easy to start. Weight 8 cwt. Sent out complete with petrol tank, and mounted on wood skids ready for running.  
Send for List.  
*Delivery from Stock.*  
Booth's Motories, Portland Place, Halifax.

**DIXIE**  
**MAGNETOS**  
Splitdorf Electrical Co. of London Ltd.   
162, Great Portland Street, W.1.

**TRANSFERS** FOR ALL PURPOSES  
Write for specimens and quotations  
**Iliffe & Sons Ltd., Transfer Coventry**  
Specialists.

MISCELLANEOUS.

THE Cheapest House in the Trade for Accessories.—Wind screens: The Easting 90/-, the Orto 35/-, 45/-, and 70/-, the Walbro 35/-, the Cameo 60/-, the Raper 57/-, Taylor's 25/-, 32/6, 33/6, 35/-, 37/6, and 47/6; aluminium leg shields 35/6, steel enamelled 16/6; College mudshields, 16/6 and 35/6; Watford speed indicators 95/-, Stewart 84/- (for 26in. or 28in. wheels); belt rim brakes, 13/9; M-L magnetos, 28/8 and 210/2/6; engine pulleys—fixed, 4in. 9/-, 5in. 10/-, 6in. 12/-, 15/-; adjustable, 4in. 17/-, 5in. 18/-, 6in. 20/-; 7in. 22/-; Premier mechanical horns, 37/6; P. and H. lamp sets, No. 125 50/-, No. 120 37/6; aluminium footboards 14/-, 50/- pair; underslung sidecar chassis, 29/6; sidecar bodies, 26/10 and 210/15; sidecar hoods, 43/-, 54/-, and 70/-; sidecar aprons, 18/6 and 20/-; W.S.R. adjustable jets, 8/6; oilskin suits, black 21/3, yellow 35/-; leather helmets, 10/8 and 11/6; fawn twill waterproof suits, 51/-; seatless trousers, 21/-; Amac, B. and B., and Binks carburetters, 67/-, 72/-, and 87/9; Mabon clutches and gears, 25/5 and 29/9; Albion lightweight gears, 27/10 and 212; Bradbury's N.S.U. gears, 210/10; Lomax backrests, 5/9; sidecar arms, 16/-; Ukantes rear stands, 13/6; Brooks B170 saddle 53/-, B175 58/-; wheel discs, 45/- per set; Lycett's Lightning stands, 14/6; metal-covered toolbags, 11/-, 11/8, and 14/-; handle-bars, 4 patterns, 14/6; Bowden brakes, 26/3, 44/3; Bowden levers from 6/10; V.M. pillion seats, 25/-; Tan-Sad seats, 33/-; H.B. mirrors, 12/6; accessories to the value of 26 or over supplied on gradual payments.—Metropolitan Machinists' Co., Ltd., 248, Bishopsgate, London, E.C. [4275]

MISCELLANEOUS.

MOTORITIES, the firm who never profiteer, are about to open their 1920 campaign against exorbitant prices. We unhesitatingly state that our former policy of low prices will be rigidly maintained throughout the season, which, judging from recent advices, will be one to sorely try both the pockets and the patience of motorists in general. Manufacturers are in a hopeless muddle, and though our contracts at present with them run into thousands of pounds, deliveries are most erratic. This week we offer some grand bargains, many of which are quoted at pre-war prices; all goods are brand new unless otherwise stated. Forty brand new 2-speed gear boxes, complete with controls, and listed at 27/10, our price 25/10; one A.J.S. pattern 2-speed gear box, complete with clutch and kick-start, 29/10, bargain; 250 1920 new design carriers, grand lot, enamelled black, 15/- each; 800 rims, 24x2 and 2 1/2 in., 3/6 each; 400 belt rims, 14 and 16 in., 5/- each; Brookes pan seater saddle, brand new, 38/-; grand purchase of 200 pairs solid aluminium footboards, 14x4 1/2, 14/6 pair, being retailed by others at 30/-; superior type De Luxe 16in. long by 4 1/2 wide, with raised heel piece, 19/6 pair, finest exclusive design yet marketed; 80 raised handle-bars, black, touring pattern, 12/6 each; pair Saxon spring forks, heavy, 24/10; 200 assorted tanks, suit Sun-Villiers, O.K., Radco, Connaught, Levis, etc., enamelled 30/-, bright 22/-; 150 very special winter guards, front valenced right round, and provided with special large magneto shield on each side, rear guards, half only valenced and both are enamelled black, our price 12/6 pair, front alone is worth 15/-; 150 extra massive drain taps for engines or tanks, 1/9 each, worth 3/6; pair Druid Mk. II. compound spring forks, 24/12/6; about 60 compression taps, cupped and fitted with non-conductible ball lever, 3/- each; spare petrol containers, complete with clips and pins, 5/- each, round or square pattern; 500 latest 1920 armoured pannier toolbags, beautifully finished, 7 1/2 x 3 1/2 x 3in., listed at 19/6 pair, our price 10/6 pair; 100 assorted motor frames from 24/10 single to 26/17/6 for twins up to 6-8h.p., and with 3-speed Sturmey-Archer brackets; one only for Jardine 3 or 4-speed gear box, price 26/10; one only brand new war model heavy frame and Druid type spring forks, fitted up complete with heavy valenced mudguard, drip feed tank, all enamelled Service colour, magnificent bargain, 210/10, one only, remember, first cheque secures; twin E.I.C. magneto, good as new, 50/-, anti-clock, 26/15; two lightweight clockwise magnetos, brand new, 23/15 each; one heavyweight U.H., rare spark, 23/19/6, been used; 50 horns, twist, black or plated, listed 15/- our price 10/6. Old stock: Handle-bars, assorted designs, 8/6 each; tons of flywheels, hundredweights of connecting rods, all dirt cheap; few brand new 2 3/4 h.p. T.D.C. cylinders, 22 each; pistons for same, 12/6; also for 2 3/4 h.p. J.A.P., 12/6; for 4h.p. J.A.P., 15/- each; for 8h.p. J.A.P., 15/- each; for 3 1/2 h.p. T.D.C., 13/- each; compare these prices, and put your thinking cap on; one B. and B. heavyweight carburettor, brand new, 22/5; few second-hand and soiled, very cheap; Rex 3 1/2 h.p. engine, one only, 24/10; sidecar complete, less tyre, 15 gns.; large aluminium countershaft chain covers, 17in. long, 8in. diameter large end, 5 1/2 in. diameter small end, price 14/6 each, beautifully polished and machined; brass tank filler caps and bases, 1/- each, complete, one size only, 1 1/2 in. inside diameter; accumulators, 2, 4, and 6 volt can be supplied. When ordering any goods, carriage must be included. Also enclosed stamped addressed envelope for reply. No Sunday business.—Motorities, 191, Sweetman St., Wolverhampton. [8136]

**MEMO** To ensure insertion letters containing advertisements intended for these columns should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London 20, Tudor St., E.C.4, by the first post on Friday morning previous to the day of issue.

London Agents for LEA-FRANCIS LTD  
**A. J. SPROSTON, Ltd.**  
198, GREAT PORTLAND ST, LONDON, W.1.  
PHONE MAYFAIR 4826

LET US POST PARTICULARS of **1920 LEA-FRANCIS** (The Motor Cycle Magnificent). We can give good deliveries in the early part of 1920 Season.

**PLUGS.**  
Lodge Aero Plugs 2/8.  
We can offer a limited number of these well-known plugs at 2/8, post free, each one W.D. tested and ready for use.  
Orders in strict rotation.

Early Delivery of following:  
Lea-Francis. Rudge.  
Douglas 4 h.p. and 2 1/2 h.p.  
Harley-Davidson.  
American Excelsior. Diamond.  
Ariel. Zenith.  
Matchless.

# LAMB'S

8 h.p.  
New Imperial W.D. **£135**  
Combination,

or **£40** down and 12 monthly instalments of **£9 2s. 1d.**  
Liberal discount if paid in three or six months.

5-6 h.p.  
ROVER W.D. **£125**  
Combination,

or **£35** down and 12 monthly payments of **£8 12s. 6d.**  
Liberal discount if paid in three or six months.

## NEW MACHINES

At Makers' List Prices in Stock.

1920 **MAXWELL** 5-seater car.  
1920 **HARLEY-DAVIDSON**, 7-9 standard  
1919 **CLYNO** 2½ h.p. lightweight.  
1920 **DIAMOND** 2-speed, J.A.P. engine.  
1919 **ARIEL** 6-7 combination.  
1919 **ARIEL** 3½ h.p. combination.  
1919 **ENFIELD** 3 h.p. 2-speed.  
1919 **DOUGLAS** 4 h.p. W.D.  
1919 **NEW IMPERIAL** 8 h.p. and sidecar.  
1919 **METRO-TYLER**.  
1920 **NEW IMPERIAL** 6 h.p.  
1920 **JAMES** 2½ h.p.  
1920 **ROVER** combination.

## NEARLY NEW MACHINES

Majority only ridden approx. 500 miles.

1919 **TRIUMPH** and sidecar.  
1919 **B.S.A.** all chain and best sidecar.  
1919 **JUNO** 2-speed.  
1919 **NORTON-B.R.S.**  
1919 **ROVER** 3-speed.  
1919 **INDIAN** 2½ h.p., 3-speed.  
1919 **DOUGLAS** 4 h.p., and sidecar.  
1919 **RUDGE-MULTI**, I.O.M. (3).  
1919 **ZENITH** 8 h.p. and sidecar.

## SECOND-HAND MACHINES.

1916 **ALLDAYS** 2-seater, dynamo lighting.  
1917 **ALLON** 2-speed, hand clutch.  
1917-18 **ENFIELD**, dynamo.  
1916 **HARLEY** combination.  
1914 **TRIUMPH** 3-speed.  
1916 **NEW HUDSON** 2-stroke.  
1917 **HARLEY** 7-9 sporting combination.  
1917 **RUDGE** combinations.  
1916 **JAMES** 4½ h.p. combination.  
**BRITISH EXCELSIOR** and sidecar,  
1919 **HARLEY**, elec., 7-9 h.p. solo.

Sidecars in Stock—B.S.A., No. 2 **TRIUMPH**, **CANDELET** (all models), **WATSONIAN** (all models).

**LAMB'S**

151, High St., Walthamstow E 17.

'Phone: 169, Walthamstow.  
Telegrams: "Cyclotomo, Phone, London."

50, High Rd., Wood Green, N.22.

'Phone: 1956 Hornsey.

387, Euston Rd., N.W. 1

'Phone: 4978 Museum  
(opp. Gt. Portland St. Stn.)

## "SPEEDON" MOTOR CAR OILS

High Grade and Unexcelled.

Can be obtained from all Motor Garages and Motor Car Dealers.

DON'T BE SATISFIED WITH LESS THAN THE BEST, AND DEMAND "SPEEDON."

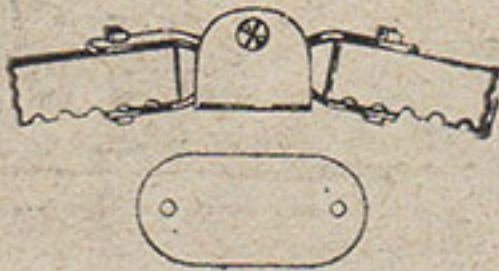
Sole Manufacturers:

**JOHN S. MORRIS & SON (OILS), Ltd.,**  
CROSS LANE OIL WORKS,  
SALFORD, MANCHESTER.

## The "RAPIT" Belt End and Fastener Protector

Registered 671618

Made from Specially Treated Leather.



Trebles the Life of your Belts.

State size of Belt required for.

Fitted in a few moments.

Price 9d. each by post 10½d.; or 3 for 2/6, by post 2/2.

This simple contrivance has been thoroughly tested on all kinds of roads and has given utmost satisfaction. Its use protects the belt ends from wear, renders it impossible for the fastener to come unhooked, and gives the equivalent of an endless belt.

**H. B. SANDERS, 14 Woodhouse Parade, London, N.12**

## "Ixon" knows how to keep dry!

"Finally I bought a first-grade suit of grey oilskins made by Barbour, of South Shields, and found I could ride my 200 miles of a trial, stand in a steady downpour through two hill-climbs per diem, sit on wet grass banks when my legs wearied, and get into the hotel at night bone-dry; moreover, as the oilies were hung up overnight in a wall-less stable for the draughts to play around them, they were invariably bone-dry long before the first competitor got away next morning."

"Ixon," in his Occasional Comments—"The Motor Cycle."

Money back in full if they fail on any point.

## Beacon Oilskins

NEVER GO STICKY OR LEAK.

The Beacon Motor Cycling Suit will keep you as dry as it does "Ixon," and will enable you to drive all day against wind-driven Rain and Sleet without letting you get wet or chilled.

Black double lightweight Jackets with winduffs double fronts, and two roomy pockets, 22/6.  
"eated Trousers Overalls, 25/-.

**SUIT COMPLETE (post free) 47/6**

In Grey-Green—Jackets, 27/6. Seated Trousers Overalls, 28/6. Suit complete, post free, 56/-.

Prices given are for Jacket length 33". For 36" and 39" length please add 2/6 and 5/- per suit respectively.

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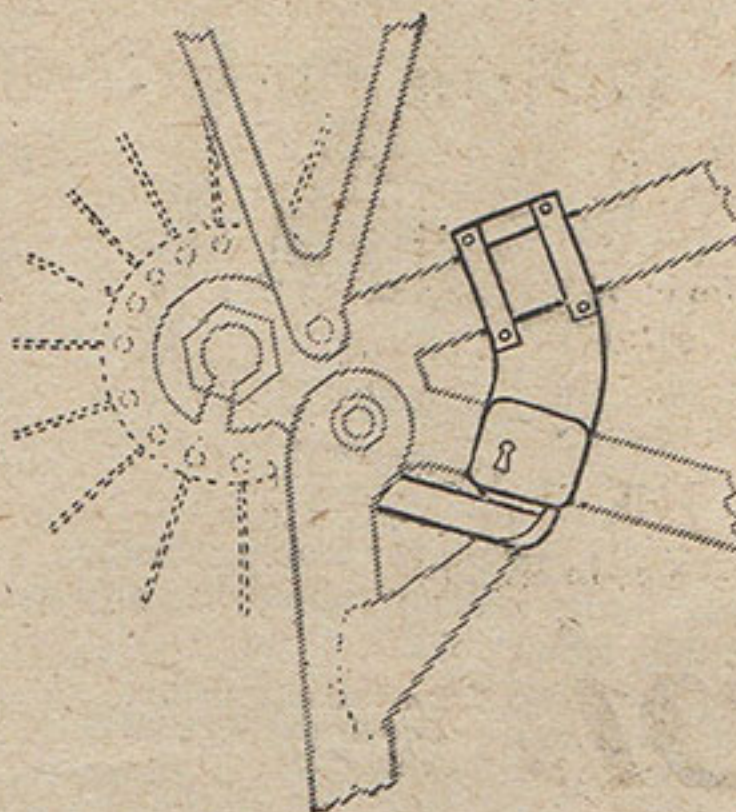
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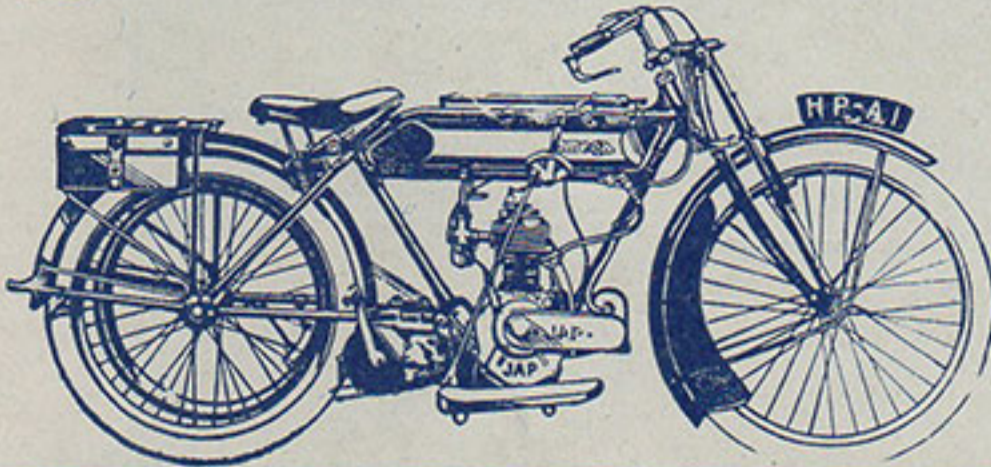
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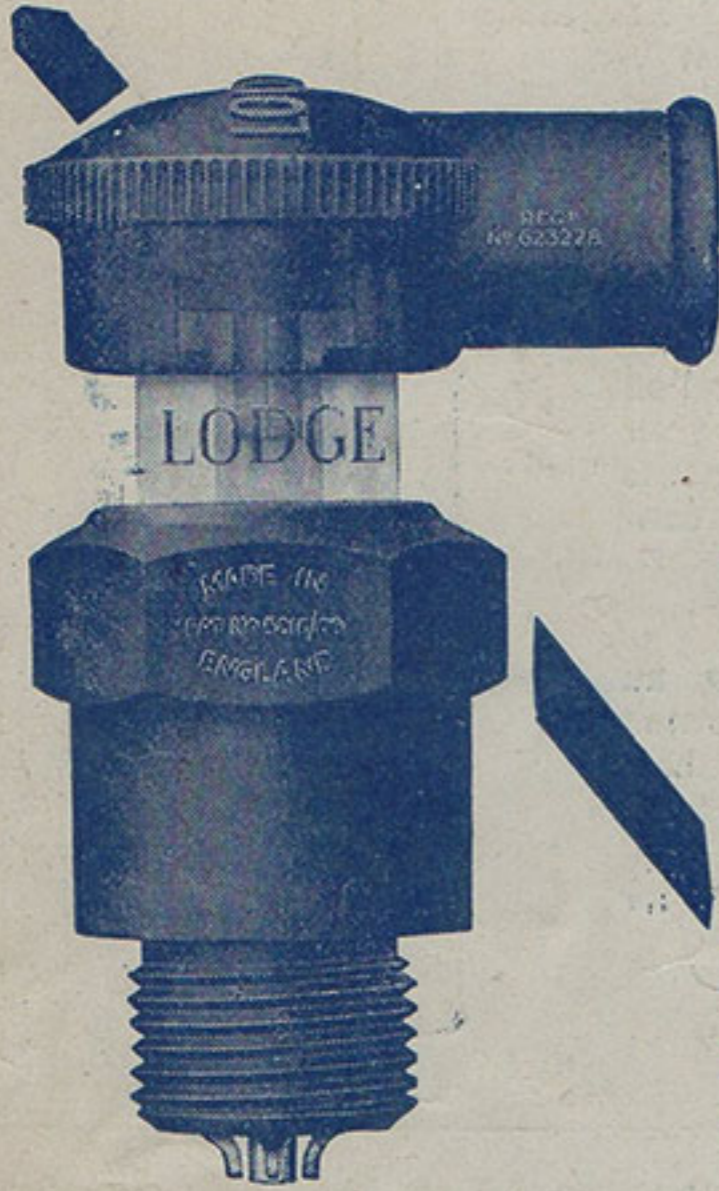
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