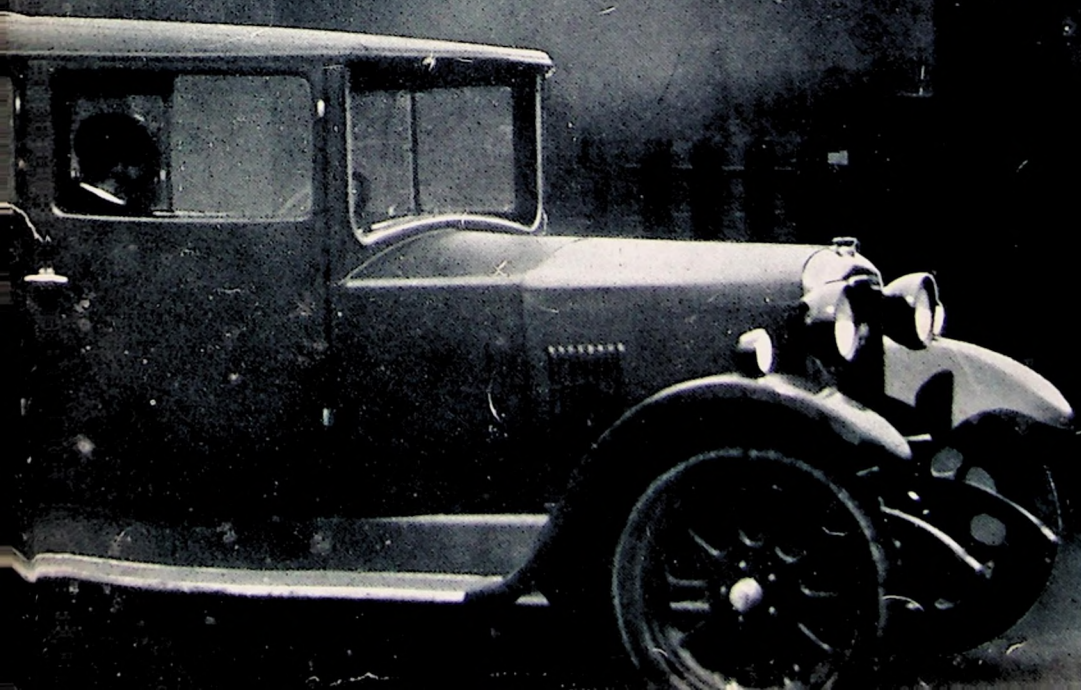


The Light Car and Cyclecar

Founded 1912
The only Small Car Journal

3^D

Vol. XXX No. 780
Friday, Nov 18, 1927
*Registered at the GPO
as a Newspaper*



"LA DELIVRANCE."

One of the most striking monuments in the country, this exceedingly artistic memorial, whilst showing the local Mrs. Grundies has been admired by thousands who use the London North Circular Road, adjoining which it stands.

When choosing sparking plugs

- Ⓐ You don't want to fly the Atlantic.
- Ⓐ You don't want to do 100 miles an hour round Brooklands.
- Ⓐ But you do want a plug that is absolutely reliable and one that will enable your engine to develop full efficiency.



LODGE

MADE IN ENGLAND

Therefore specify

LODGE
PLUGS

It is important to use the correct type of plug. Ask at your garage to see the Lodge Plug Chart, which shows the correct patterns of Lodge Plugs for all makes of motor cars, or send a postcard for Folder F2, which also gives this information, to:—

LODGE PLUGS LTD. - RUGBY.

LODGE C3
sold everywhere

5/-

in sealed red
metal box.

SEE THE NAME "LODGE" ON EVERY PLUG IN YOUR ENGINE.

IF YOU FAVOUR A LIGHT SALOON —see the Humber 9/20 H.P.

THE 9/20 h.p. Humber Saloon, already so popular among Women Motorists, has undergone several important improvements for the 1928 season.

Instead of the former bucket seats there is now a phaeton seat. A door is provided on the driver's side, and a silk blind to the rear window, operated from driver's seat. Chassis additions include shock absorbers on both axles and weatherproof covers to the brakes. Alterations in dimensions of the bodywork greatly enhance the smartness of a model that should, in its latest form, find many new admirers.

1928 LIGHT CAR MODELS COMPRISE:

9/20 h.p. 2/3-seater with dickey	-	-	-	£250
9/20 h.p. 4-seater Tourer	-	-	-	£250
9/20 h.p. 4-seater Saloon	-	-	-	£300
9/20 h.p. 4-seater Fabric Saloon	-	-	-	£285

Four Wheel Brakes and Dunlop Tyres standard.



Humber

HUMBER LTD., COVENTRY.

West End Showrooms - 94, New Bond Street, W.1.
Export Branch Office - 32, Holborn Viaduct, E.C.1.
Repair Works and Service Depot—
Canterbury Road, Kilburn, N.W.4

MENTION of "The Light Car and Cyclecar" when corresponding with advertisers assists the cause of economical motoring.

BATTERIES

A touch of the starter switch releases tremendous starting current from a C.A.V. Battery, which will awaken to life the most sticky engine as though by giant energy.

Such performance is the well merited achievement of unceasing efforts for improvement in battery manufacture, extending over a period of 36 years.

Super refinements in the design and construction of every single part provide wide margins of electrical efficiency and mechanical strength, ensuring reliable, vigorous and trouble-free service to every owner of a C.A.V. Battery.

There is a C.A.V. Battery for your car, which will fit—and a Service Agent near you who will supply it—let us send you his address.

Lucas & Co., Ltd.
LONDON, W. 3

Every C.A.V.
Battery Owner
is entitled to
our world-wide
FREE
BATTERY
SERVICE.

LUCAS

BATTERY
SERVICE

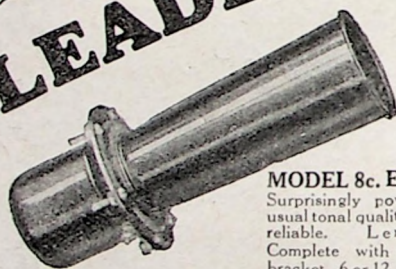
SALES
Belfast, L
Dublin, C

Battery
important

AD SERVICE DEPOTS AT
Birmingham, Bristol, Coventry,
Glasgow, Leeds, Manchester, and
Newcastle-on-Tyne.

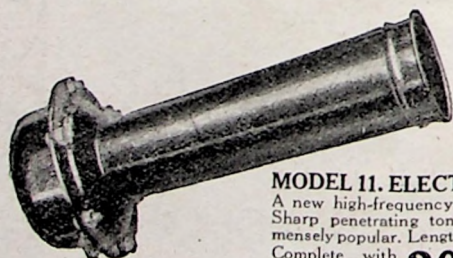
Service Agents in every im-
portant town throughout the country.

LEADERS IN THEIR CLASS DELCO-REMY HORNS



MODEL 8c. ELECTRIC
Surprisingly powerful. Un-
usual tonal quality. Compact,
reliable. Length 10 1/2".
Complete with
bracket. 6 or 12
volt. Postage 9d.

16/6



MODEL 11. ELECTRIC
A new high-frequency horn.
Sharp penetrating tone, im-
mensely popular. Length 11 1/2".
Complete with
bracket. 6 or 12
volt. Postage 1/-.

20/-

The warning note emitted by Delco-Remy Horns is clear and musically penetrating. It can be heard high above the din of heavy city traffic or far down winding country lanes.

Delco-Remy Horns are made in six models, so there is one to suit your particular purpose. Each is perfect in its class. In style, in finish, in reliability they cannot be excelled. Ask your dealer to demonstrate or write us direct stating 6 or 12 volt.

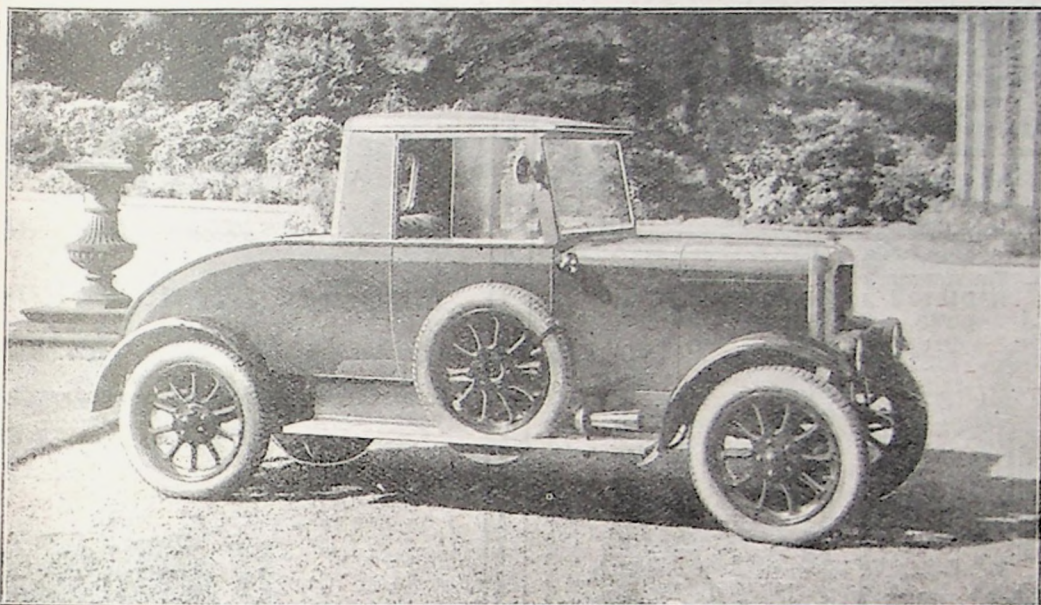
OTHER MODELS:

Model 3v.	18/9	Postage 9d.	(Hand Operated).
Model 18.	40/-	"	1/- (Electric).
Model 19.	57/6	"	1/-
Model 25.	73/6	"	1/-

DELCO-REMY & HYATT, LTD., 111, GROSVENOR RD., LONDON, S.W.1.

R.N.R.

Extending Our Prestige



Owners of our latest model are writing in to say that this is the most comfortable car they have ever ridden in, and that the springing is wonderful. Of course they are right. We see to these points before we allow a new model to be offered.

As yet we have not received any letters praising the Coupé's performance and economy, but these will follow as our new model worthily upholds the Jowett traditions in these respects.

An exceptionally wide door, single screen with patented adjustment, and an artistic two-colour scheme have made this model a popular success, and the price is only £168.

Other models are:—

Short two, £134. Long two, £142. Sports, £145.
Full four, £145. Saloon, £170.

Dunlop Balloons and Stewart Speedometers standard.

JOWETT CARS LTD., IDLE, BRADFORD

READERS, NOTE.—It assists the small car movement and the advertiser, and ensures you prompt attention, to mention "The Light Car and Cyclecar" in your enquiries.

**DRIVE IN COMFORT
THIS WINTER!**

GAMAGES

SUPPLY THE ACCESSORIES

We specialize in every possible thing that combines comfort, practicability and also adds the note of dignity—these features, of course, are so essential to modern motoring.

FOG DISKS to FIT Headlamps for All Types of Cars. **5/6**
Per Pair.

The Warmer RADIATOR LAMP

Specialty suitable for 7 h.p. AUSTIN and other Light Cars, very small and compact, gives ample heat to keep the engine ready for easy starting. Burns 1 1/2 p.a. Will burn continuously for about 30 hours.



"THE MALL" RADIATOR LAMP

will keep the Engine and Radiator warm, thus ensuring protection from frost and giving easy starting in the morning. Will burn for about 36 hours at one



Hot Water FOOT WARMER

Made with heavy tinned steel bodies covered with plain carpet. Brass ends. Greatly adds to motoring comfort.

Prices— 16 in. 18 in. 21 in. 24 in.
25/6 31/6 36/- 39/6

COSY MOTOR FOOT MUFFS

and Blue Cloth, lined Fur. Wonderfully good value. Price **16/6**
Post 6d.

With a high front, giving full protection to the ankles. Beautifully made suede finish, leather trimmed with leather fringe, and lined with lambswool.

Price **42/-**

RADIATOR MUFFS.



These muffs fit perfectly and have no straps or tapes to fasten. They are held in position by metal clips which fasten behind the radiator under edge of bonnet. Supplied for all makes of cars. A few examples:

AUSTIN 7	..	..	11/-
CITROEN 7	..	..	12/6
FIAT 7	..	..	11/-
JOWETT	..	..	12/6
TALBOT 8	..	..	11/-

Order right away to ensure Speedy Delivery.

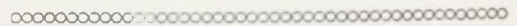
A.W. GAMAGE, Ltd., Holborn, London, E.C.1
and at 107, Cheapside, London, E.C.2

WHEN REPLYING to advertisements, mention "The Light Car and Cyclecar." It helps the advertiser, and you, and assists the small car movement generally.

COVENTRY

LIMITED.

*Engine Manufacturers
to the Trade.*



Y. type 4-cylinder 12 h.p. Engine.

TRADE ENQUIRIES
INVITED.

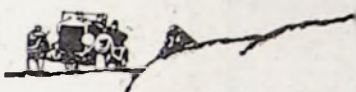
Works and Offices:

**ARS' ROAD,
COVENTRY.**

Telephone:
5051.

Telegrams:
"Climax, Phone, Coventry."

Why nearly every car made in Great Britain has Magneto Ignition

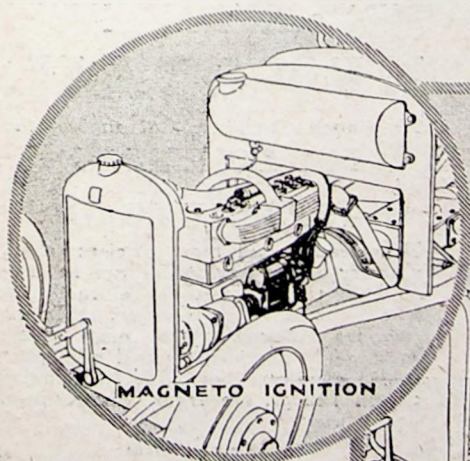


BRITISH motorists expect their cars to need very little attention after purchase. Consequently the ignition system used on British cars must be self-contained, reliable and independent of other components.

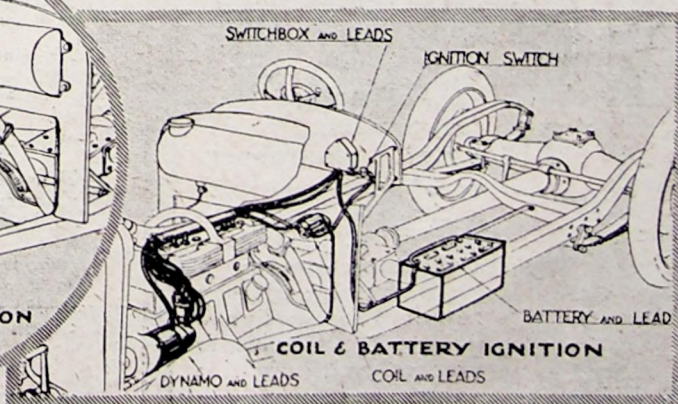
The only method of spark production which does not rely for its efficiency on the correct care of batteries is the magneto. Other systems—mostly of American origin, designed for use in a country where "service" is a fine art—are put completely out of action if the accumulator happens to run down. This means that a car may be stranded miles from a garage, powerless to move an inch. It also means that if the owner forgets to turn off the ignition switch his car will be lifeless when next it is needed. Such systems do not suit motorists or motoring conditions in this country—still less in the Dominions.

95% of British cars are equipped with magneto ignition.

BRITISH MAGNETOS



These diagrams show how simple the magneto "layout" is—and in motor engineering simplicity means reliability.



BUY A BRITISH CAR WITH A BRITISH MAGNETO

READERS, NOTE.—It assists the small car movement and the advertiser, and ensures you prompt attention, to mention "The Light Car and Cyclecar" in your enquiries.

|| "AERO" ||

VALVE SPRINGS

give

improved engine capacity. Experts say they get more power and higher speeds on "Aero"—and these few successes, selected from a great number—prove their remarkable qualities of consistency.

207 m.p.h. When Major Segrave astonished the world with the above speed figures, and record on his 1,000 h.p. Sunbeam—"Aero" helped.

281 m.p.h. When Flt.-Lt. Webster won the Schneider Cup on the "Napier Lion" engine—Terry's springs helped.

151 m.p.h. When Capt. M. Campbell lifted the speed record up to 151 m.p.h. on his 350 h.p. Sunbeam—"Aero" helped.

179.7 k.p.h. Mr. H. Le Vack has just made the above world's record on a "New Hudson" motorcycle—fitted with "Aero"

springs. Demand they be fitted on the new engine or when overhauling. Spring list free.

Valve Spring Lifter and Compressor.

Jaws have a parallel lift from 0 to $5\frac{1}{2}$ ", and lock at every point. Capable of a 200 lbs. pressure. Each jaw is reversible, and may be turned very easily and quickly. Adaptable to practically all side-by-side valves, and many o/h valves, too.

EACH.
From
Agents.
In difficulty
write us.

HERBERT TERRY & SONS, LTD. EST.
REDDITCH, ENGLAND. 1855.

said Jones

"Why isn't Something invented
That allows One to get
In and Out of a small Car like
A reasonable Human Being
Instead of having to Squeeze and Crawl
Like a Demented Caterpillar?"

There is, Mr. Jones!
LEVEROLL Seat Mechanisms.
Unobtrusive fittings requiring
But a single finger touch
And you slide back and step out
Through two feet of Extra Door Space.
To enter, sit down — glide forward
And — Click — the Seat locks itself
In its original position.
That's all!

Your light car can be made as roomy as a Rolls with LEVEROLLS, which also give instant seat adjustment, permit seats to be removed in 5 secs. for picnics and camping, or reversed for sociable occasion in your car.

Price per set 2½ Guineas

NEVAJAH,

The Shock Absorber that makes the

POT HOLE ROAD

TOP HOLE ROAD

The cheapest and most efficient shock absorber on the market, designed to automatically adjust itself to extra loads. It acts as a spring damper, nullifying excessive rebound, makes main spring breakage an impossibility and eliminates rolling when cornering. Prices, including clip-on fittings, are from One Guinea.

Send for particulars:

A. W. CHAPMAN, LTD.

Patentees and Manufacturers,
Ranelagh Gardens, HURLINGHAM, S.W.6
Telephone: Putney 2372/3.

FIAT

SENSATIONAL NEW PRICES

Representative example
—of Fiat value—

9 h.p. Saloon

Seats four persons in comfort. Coachwork of de luxe character. Cellulose finish. Upholstery of highest grade. Astonishing power and acceleration. Four-wheel brakes. Tax £8,

£225

Warning. With every Fiat Car a full guarantee is issued by this company. Every purchaser should obtain this guarantee and see that it bears the chassis and engine numbers of the machine purchased. The public is warned not to purchase a car without this guarantee

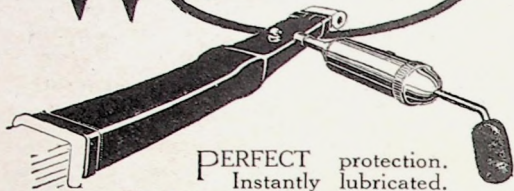
Range: 9 h.p.,
12 h.p.

Gradual Payments
Arranged.

Registered Office and
Showrooms:
43-44, Albemarle St.,
London, W.1.
Phone: Go rard 7946
(4 lines). Wires: Fiatism,
Piccy, London.
For everything pertaining
to spares, service, etc.,
communicate direct with
the Works, Wembley,
Middlesex.
FIAT (England) LTD.

WEFCO

PATENT
SPRING COVER



PERFECT protection.
Instantly lubricated.

The Tecalemit-Zerk Gun positively forces the oil from end to end of the cover. Its oil-proof qualities are due to the special insulating material with which each cover is lined. Specially built for every make of light car from ... per set **30/-**



RADIATOR MUFFS

Prices from 17/- in No. 1 quality and 12/6 in No. 2 quality. No. 1 quality to roll up, as illustration, or top portion to roll up and bottom portion to roll down. No. 2 quality to roll up only. Made in the following colours:—Black, blue, grey, maroon, and brown.

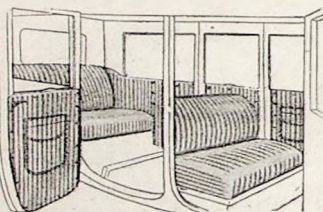
No. 1 from 17/6 No. 2 from 12/6

DETACHABLE SEAT COVERS

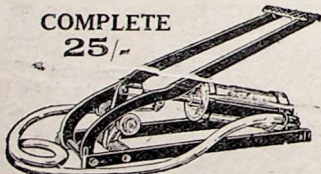
Being made of extremely hard-wearing striped fabrics which are woven expressly for the purpose, they will not easily collect the dust nor soil.

Ask for sample of material.

Prices from ... **£2-15-0**



COMPLETE 25/-



"BRISTOL" JUNIOR FOOT PUMP

Operates at the low and correct foot lift of 10" from the ground. Will inflate a balloon tyre as quickly and as easily as any pump at twice the price.

OTHER ACCESSORIES

Write for particulars of the Christen Safety Wind-screen Wiper Blade, Repair Outfits, Dill "Instanton" Combination Dust and Valve Cap, Burgan Cotter Pin Extractor and many other useful and reliable lines.

WILCOT (Parent) CO., LTD. FISHPONDS, BRISTOL

London Office: Morley House, Regent Street, W.1
TELEPHONE: MAYFAIR 1575 & 156

PRATTEN'S 'Big Three' Garages



EACH of the Garages illustrated is manufactured in our own workshops of the best quality materials, and supplied in sections which can be easily erected without skilled labour—carriage paid.

You are cordially invited to inspect them at our works, which is the most up-to-date in the West of England, where we shall be pleased to show you the process of manufacture. Prices are lowest consistent with first-class workmanship.

All Garages supplied by us are insured against fire-free.

THE "STERLING" ASBESTOS GARAGE.

15' 0" x 8' 4" x 7' 3" £14 0 0
17' 0" x 10' 6" x 7' 3" £16 0 0

2. THE "POPULAR" GARAGE

12' 0" x 7' 0" x 6' 0" £9 0 0
14' 0" x 8' 0" x 6' 0" £11 0 0

3. The "DUPEL" JOINT GARAGE

14' 0" x 8' 6" x 6' 9" £15 5 0
16' 0" x 8' 6" x 6' 9" £16 10 0

Full specifications contained in folder No. 37. Other designs illustrated and described in the Catalogue No. 35, post free.

of **F. PRATTEN & CO., LTD.**
12, Mildsomer Norton,
near Bath.

D.A.77

All about Motor Electrical Equipment !

THERE is much to be learnt about electrical matters by the owner who wishes to get the best from his car. The third edition of "The Motor Electrical Manual" supplies this information in an easily understandable and abundantly illustrated form.

It gives sufficient instruction in electrical theory and principles, and deals simply yet fully with ignition (including all types of magnets, coils and sparking plugs), dynamos, batteries, lamps, switchboards, electric horns, signalling devices, upkeep of equipment, and the working of various electrical accessories. It also includes a glossary of technical terms, and many useful tables, facts and figures.

THE MOTOR ELECTRICAL MANUAL

2/6 net
from Bookstalls
and Booksellers.
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from Publishers.

TEMPLE PRESS
LTD.,
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Avenue, E.C.1

Wholesale
Agents: E. J.
Lorby, Ltd., 30,
Paternoster Row,
E.C.4.

DO NOT MISS
this week's issue of

The Motor

Tuesday, Nov. 15th.

The Rapid Growth of Motoring.
New Vehicles Registered for the First Time in Three Months.

The Technique of Night Driving.
Hints on Driving Methods and Adjusting Headlamps.

Great Britain's Part in Future Racing.
Further Interesting Views on the Pooling of Resources.

The New Owner and His Car.
Helpful Hints on the Use of a New Car During the First Few Months.

"Gas Books" for Petrol Purchasing.
Popular System in Use in America and How It Works.

An Ingenious Overhead-valve Gear.
Operating a Number of Inclined Valves from One Camshaft.

Amateur Fitting Out.
How to Use Common Tools Correctly.

An Automatic Ignition Control.
Device which Gives Correct Tuning and Greater Flexibility.

A Double-acting Windscreen Wiper.

How a Gradient Meter Works.
Instrument which Enables the Motorist to Check the Performance of His Car.

British Research Work on Diesel Engines.

How to Understand a Car Specification.
Explanations of Terms which are Often Misunderstood.

Motor "Team" Racing Tactics and the Public.
Some Tactics which are Resented by Spectators.

One Way Traffic System for Kingston By-pass.
Special Plan View of New Scheme for Kingston Vale Entrance.

*The
National
Motor
Journal*



Some features next week
Tuesday, Nov. 22nd.

The Engine: Winter Driving Precautions. The Motor Congress: Points from the Most Important Papers. Inter-connected Braking Systems. Two New Infinitely Variable Gears. *And all the News.*

Offices.

enue, London

? Can you answer these questions about the MOTOR CAR?

How does the differential work?

What's inside the gearbox?

What is the "working cycle" of operations in a cylinder?

What is the principle of the timing gear?

Why does an engine "knock"?

How does a sleeve-valve engine work?

"THE Motor Manual" deals with: Engine types, operation and construction, valves, etc. — carburation, cooling, supercharging, silencing — transmission system — braking systems — ignition, starting, lighting — bodywork, equipment, tyres, accessories — choosing, housing and maintaining a car — adjustments and renewals — touring, legal matters, etc. Glossary of technical terms included.

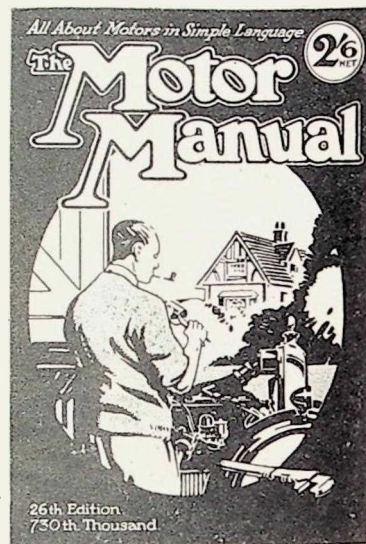
These are a few of hundreds of matters dealt with in the 26th Edition of "The Motor Manual." In its 206 well-illustrated pages it contains more information on motors and motoring than any other single book.

You get twice the pleasure from motoring if you thoroughly understand your car. Let "The Motor Manual" tell you what you want to know!

PRICE 2/6 NET.

Of bookstalls and booksellers, or 2/10 post free from

TEMPLE PRESS LTD., 5-15, Rosebery Ave., London, E.C.1.



**Yours
for**

Asking !

The New Book of the "B & B."

A new and enlarged edition containing a mine of information on carburation problems. Write for your copy and learn why so many motorists are using a "B & B" Carburetter.

Prices from £3 : 10 : 0

BROWN & BARLOW, LTD.
Carburettor Works, Wotton, Birmingham.
London Service Agents: Dartford Eng. & Carriage Co., Ltd., 23/24, Hythe Road, Willesden, N.W.10

8 WEEKS FREE MOTORING!

**THE £50 CAR
HAS ARRIVED!!**

GENUINE SALE OF CARS

Taken in part exchange for New Ones.

25 CARS at £50 EACH AND UNDER

MOST OF THEM CARRYING OUR WELL-KNOWN WRITTEN GUARANTEE.

30 CARS from £55 to £100 EACH

ALL CARRYING OUR WELL-KNOWN WRITTEN GUARANTEE.

Full Price Paid will be allowed on any of these cars if you purchase from us a new car within two months.

Best Exchange and Deferred Terms in London.

Special Agents for Austin, Standard, and Wolseley Cars.

**YOU NEVER TAKE A RISK WHEN YOU
BUY A CAR FROM**

The Light Car Co.

404, 410-414, EUSTON ROAD, LONDON, N.W.1.

Phones—Museum 3081 and 2122 (3 lines).

SAFER MOTORING EQUIPMENT

KILLS FIRE
SAVES CAR

isher

Save YOUR Car From FIRE

"EAST ANGLIAN TIMES."

MOTOR CAR DESTROYED
BY FIRE.

A motor car was completely destroyed at Blunt's Wood Corner, Haskerton, on Monday morning. A 24 h.p. car was proceeding at a moderate speed when flames were observed coming from beneath the boards at the driver's feet.

The driver assisted his two passengers and their dogs to alight, but as no extinguisher was carried he was powerless to save the car, which by that time was blazing fiercely.

Wellingborough.

Gentlemen,—

I have to report that, owing to a back-fire the petrol in a carburettor on my car caught fire; this was immediately put out with one of your "PYRENE" Extinguishers. The damage done was practically nil, owing to the quickness with which the fire was extinguished.

Yours sincerely,
(signed)—

Read
this
Letter.

The original copy of this and numerous other testimonials can be seen at our head office.

STANDARD MODEL
in polished brass filled
ready for use, complete
with bracket ... 55/-

Nickel or Black plated
60/-

JUNIOR MODEL for
Light Cars, in Nickel
only, complete ... 35/-

Please write for illustrated Folder, L.C.F.

The Bumper with the Leaf-spring Buffer.

MOTOR CAR
BUMPERS

"PYRENE" BUMPERS ensure maximum protection in the event of collision. The special spring steel from which they are made provides full absorption of shock. The Leaf-spring Buffer gives extra strength and even distribution of impact.

Patent applied for.



"PYRENE" BUMPERS and FENDER GUARDS are supplied in three sizes. Handsomely finished in Nickel and Black.

"PYRENE" BUMPERS:
£3:10s., £4 and £5 each.
"PYRENE" FENDER GUARDS:
£3:15s., £4:5s. and £5:5s. per pr.

These prices include Standard Brackets. Where special Brackets are necessary an extra charge (usually 10/-) is made.

Please ask for Folder L.C.B.

OFF'N'ON
NON-SKID
CHAINS

The inclusion of OFF'N'ON chains in your car equipment enables you to travel over the most slippery road surfaces without danger of skidding. They can be attached in a moment without a jack, and cross chains replaced instantly without tools.

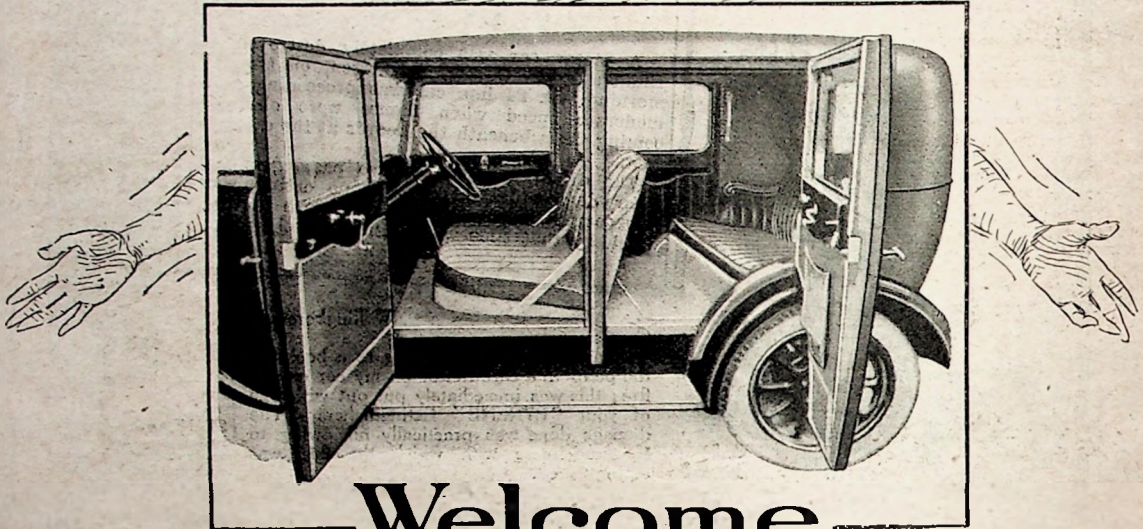
Prices on application.
Ask for Folder—L.C.C.

THE PYRENE COMPANY LTD.
(Safer Motoring Equipment),
9, GROSVENOR GARDENS,
LONDON, S.W.1.

Telephone:
VICTORIA 8592
(4 lines).

Telegrams:
"PYRENEXTIN, SOWEST,
LONDON."

WHEN REPLYING to advertisements, mention "The Light Car and Cyclecar." It helps the advertiser and you, and assists the small car movement generally.



Welcome

The appeal of the attractive and roomy Swift Ten Fabric Saloon is irresistible, typifying, as it does, the open-armed Spirit of Welcome.

Here is comfort, ease, luxury, beauty, quality and performance too—for the Swift Ten is a car of proved efficiency, reliability and economy, recognised by impartial experts as an outstanding example of British light-car practice.

The welcome is extended to you.

Let us arrange a trial run. We can give immediate delivery.



NEWNHAM
MOTOR COMPANY

237, 243/5 HAMMERSMITH ROAD, W.6
Sole Distributing Agents for
SURREY · SUSSEX · BUCKS.

JOINT
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FOR LONDON AREA

HENLYS
LIMITED

DEVONSHIRE HOUSE, PICCADILLY, W.1
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MANCHESTER DISTRICT

DISTRIBUTORS FOR BIRMINGHAM AREA *Frank Hallam* 18-20 BRISTOL ST BIRMINGHAM
DISTRIBUTORS FOR LIVERPOOL AREA *F.W. APPERLEY*, PICKERING RD NEW BRIGHTON

Miscell

READERS, NOTE.—It assists the small car movement and the advertiser, and ensures you prompt attention, to mention "The Light Car and Cyclecar" in your enquiries.



100 MILES FROM
CIVILIZATION.

The wife of a Maori chief, resting by the side of a boiling pool in the heart of the New Zealand forests around Rotura, the famous tourist district, makes the acquaintance of an Austin Seven for the first time. Her home is in Orakeikorako, a practically unexplored region.

NOTES, NEWS & GOSSIP *of the* WEEK

The Cold Snap.

Accessory dealers report an unusually large demand for radiator muffs following the very cold weather during the early part of this month.

Fresh Fields . . .

The makers of a well-known light car engine are supplying their 10 h.p. model for use in narrow-gauge works locomotives.

This Week.

Experienced motorists sometimes aver that in winter-time they use their cars for business purposes only, but there is a good deal of pleasure to be obtained from touring in the "dark months," provided that one knows just how to do it in the most comfortable manner. In our centre pages we emphasize several aspects of the question, the article being entitled "Winter Touring in Comfort." The comprehensive article on six-cylinder engines is concluded, whilst no fewer than six pages are devoted to the first of a series of articles dealing with 1928 light cars, the make described this week being the 10-25 h.p. Rover.

No. 780. VOL. XXX.

ON OTHER PAGES

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LIGHTING-UP TIMES (Rear Lamps) for Saturday, November 19th.

London . . . 4.34	Edinburgh . . 4.26
Newcastle . . 4.25	Liverpool . . 4.40
Birmingham . 4.37	Bristol . . . 4.44

Moon—New, November 24th.

Ongar Road Repairs.

Widening operations are being carried out on the main road between Epping and Ongar, but in the meantime—owing to obstruction caused by the kerbs and so forth dumped at the roadside—the thoroughfare is by no means wide, and caution is necessary.

Next Year's "200."

The Junior Car Club announces that the 1928 annual 200-Mile Race, which will be the eighth of the series, is to be held at Brocklands on Saturday, July 21st.

Irish Border Inconvenience.

The by-law may shortly be removed which necessitates that motorists crossing the Irish Free State border shall obtain official stamps and forms from the nearest post office in order to have their pass bonds completed.

Next Week.

Does it pay to lay up a car for three months or so in the winter? This is a question which many new motorists ask themselves. They argue that motoring in winter is hardly pleasurable—this we endeavour to refute in our centre pages in this issue—and that it would be just as well to save the wear and tear, not to mention a quarter's tax, by storing the car for at least three months. This and the other side of the question will be discussed in an interesting article which will appear next week.

A Curious Bridge.

A new bridge over the Rhine is curious in that it has six spans, each of a different size. The spans range from about 50 yds. to 100 yds.

No Duty on Trailers.

Motorists who, for touring purposes, make use of trailers attached to their cars, should note that, as pointed out by the R.A.C., there is no extra duty to be paid. In the case of trailers attached to commercial vehicles an extra £6 is payable on the vehicle itself.

Doctors at Accidents.

Following disclosures in the Press as to one or two instances where difficulty has been experienced in summoning a doctor to the scene of a car accident, the Royal Automobile Club wishes to point out that all R.A.C. road telephone boxes contain the names of three doctors living in the district.

£800 for Benevolent Fund.

A cheque for £800 has been added to Sir Charles Wakefield's Motor and Cycle Trades Benevolent Fund appeal by the financial success of the recent motor ball and carnival. The annual general meeting of the Benevolent Fund has been called for December 5th, at 5 p.m., at the Cordwainers' Hall, Cannon Street, London, E.C.4.

Helping a Hospital.

Motorists passing through Ashbourne, Derbyshire, which is on the main road to Buxton, are asked to "by-pass" the Cottage Hospital. The hospital is situated on a rather steep gradient of the road, and the noise caused by cars climbing the gradient on low gear causes considerable distress to the patients. An alternative route by which the hospital can be avoided is through Union Road and North Avenue.

AN ABSENTEE IN 1928.

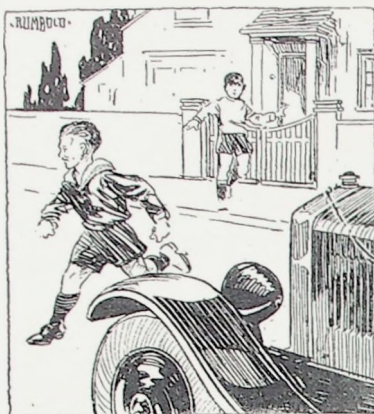


J. R. Cobb, well known to Brooklands enthusiasts, who is making a business trip to Australia and will not be seen at the track for about a year.

Our Front Cover Picture.

The figure of La Délivrance silhouetted against the stormy sky of a typical November sunset forms a very artistic study. The car in the foreground is a 10-25 h.p. Rover Paris saloon.

B10



WEEKLY WISDOM.

Beware of the children who play. In the heat of their excitement thy presence may go unperceived.

Fine Weather Keeps Roads Open.

Owing to the prevalence of the extraordinary fine weather in Switzerland many outlying passes that have been closed for the season—including Albule and Bernina—have been reopened to traffic!



Owing to the obstruction caused by the large crowds of pedestrians, signal lights in the Place de l'Opera, Paris, are operated by a gendarme on a raised platform.

Inter-Varsity Trial.

Full details of the Inter-Varsity reliability trial for the Motor Cycling Challenge Cup will be found under Club Items.

A Job for the Winter.

Few motorists are equal to the task of constructing a lean-to brick garage, but many who contemplate adding a structure of this kind would like to know how they stand with regard to local by-laws, and also enough about the actual construction to be able to superintend the work and, perhaps, "lend a hand." We have in preparation a helpful article on this subject.

New German Arterial Road.

Progress is being made with the new German arterial road connecting Berlin and the French frontier. The road will run from Saarbrücken to Leipzig with a branch to Munich.

Marendaz Gains Records.

On November 10th, at Brooklands, D. M. K. Marendaz, driving a Marendaz Special, secured two 1,100 c.c. records, the three-hour record and that for 500 kilometers.

Three Summonses Dismissed.

A member of the medical profession was recently charged at the South-Western Police Court with having overtaken a motorcycle at excessive speed, causing it to collide with another car, subsequently having driven over a cross-road at an excessive speed, and also having driven in a manner dangerous to the public. After a searching cross-examination of police witnesses by an A.A. solicitor all three summonses were dismissed.



An important caution sign erected opposite a by-road leading into the main thoroughfare near Staines. If you are faced with it proceed cautiously.

Wolverhampton Traffic Signals.

A new traffic-signalling device consisting of a number of lamps and lenses suspended over the roadway, and which is entirely automatic in operation, is being given an extended trial at Wolverhampton.

Severe Austin Trial.

A standard Austin Seven has recently been subjected to a severe trial of reliability at Auckland, New Zealand. The car carried 20 gallons of fuel in a sealed tank, and the radiator, engine sump and toolkit were also sealed. The trial was conducted under the official organization of the Auckland Automobile Association, and the final figures obtained were: Mileage, 955.5; fuel consumption, 49.8 m.p.g.; oil consumption less than half a pint and water three pints. In view of the mountainous and difficult nature of the route covered, the performance is indeed a remarkable one.

Lights on Stationary Cars.

Co-operation of car drivers is requested by the R.A.C. to put a stop to the danger caused by cars and motorcycles being left stationary on the wrong side of the road with their headlights full on. The effect of this is to force oncoming traffic on to the off side of the road, and when a driver is dazzled by powerful headlights this is a potential source of danger.

Wider Bridges.

Traffic congestion in Rotherhithe Street, Bermondsey, is being caused owing to the narrowness of the bridges at the end of the street, and the Port of London Authority is being asked to co-operate with the Traffic Advisory Committee in having the bridges widened.

Traffic Over the Tyne.

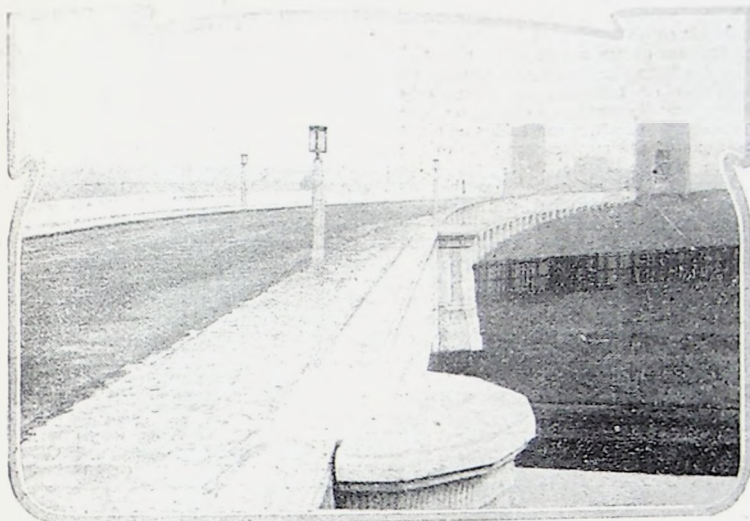
A report dealing with the need for improved facilities for traffic crossing the Tyne at Shields has been made out, and the Ministry of Transport is to be asked to provide an expert who will advise as to the best way of improving traffic facilities.

An Interesting Exhibition.

Although there are no cars or accessories on view, there is a great deal to interest motorists at the Public Works, Roads and Transport Congress and Exhibition now being held at the Royal Agricultural Hall, London. The exhibits consist chiefly of road-making machinery and materials, but several concerns are showing special warning signals and other highway safety first devices, such as permanent white lines made of various materials.

Henlys New Service Station.

North London motorists now have at their disposal one of the finest, most capacious and up-to-date garages and service stations in the country. It is one of Henlys new ventures and is situated at Hawley Crescent, Camden Town, N.W.1. There is accommodation for 500 cars, the floor space occupying an area of more than one acre; the latest equipment, including ramps in place of pits, and an inclined runway from the ground to the second floor in place of a lift, is installed, whilst the machine shop is right up to date. Henlys, Ltd., now represent a very big organization, and it is worth noting that, in addition to the Hawley Crescent service station, they occupy large premises in Great Portland Street, and in Devonshire House, Piccadilly. As an indication of the business which they handle, it may be mentioned that last week over 100 cars were sold retail, the value being £32,000, whilst the actual number of cars carried in stock during that week was 315. North London readers should make a point of visiting the Hawley Crescent service station, where they will receive a very cordial welcome. The display of second-hand cars is one of the finest to be found in the Metropolis.



ACROSS THE
LEA VALLEY.

— This imposing viaduct stretching across the Lea Valley is to be officially opened on November 23rd by Mrs. Ashley, wife of the Minister of Transport.

Midland Speed-track Plans.

Although the proposal that a racing track should be constructed at Perry Barr has been turned down—owing to the price of the land in question being too high—there is still hope that a Midland speed track proposal will materialize. The Sutton Coldfield and North Birmingham A.C. consider that public interest shown in the proposal has been great enough to make it worth while searching for a suitable site.

London Garage Shortage.

That the garage problem in London was as acute as the traffic problem or housing shortage was stated recently by the chairman of the London and Sub-

Road Racing in Ireland.

At a meeting of the Portadown Town Council the clerk mentioned a proposed Grand Prix for motorcars, and said that a suitable course might be arranged in the neighbourhood of Portadown. Mr. Kerr said that the Northern Government was anxious that road races of this kind should be held in Ulster; he also mentioned that one of the promoters had said that if a race were held there would be favourable consideration given to Portadown, providing a suitable course could be found. Mr. Kerr went on to say that the council should give the movement all the assistance they could, and moved that a committee be appointed to discuss the matter with the promoters of the race. Mr. J. Davidson, J.P., seconded the proposition, and said that there were a number of courses in and around Portadown that could be put before the promoters. Mr. C. Johnston opposed the proposition; he objected to people taking their lives in their hands and endangering the lives of others. On a vote being taken by the council the motion was passed, Mr. Johnston being the only objector. Portadown is a large market town, 25 miles from Belfast.

AT YOUR SERVICE!

urban Garages, Ltd. The nine large garages owned by the company were full, he said, and there were even waiting lists for some of them. A letter on the same subject from Mr. W. Forrest, M.P., is in our correspondence pages.

A view of a corner of the new service station of Henlys, Ltd., at Hawley Crescent, Camden Town, London. Over 500 cars can be accommodated. (See accompanying paragraph.)

Burmese Motorists' Association.

The Burma Motor Drivers' Association has just been registered. In spite of the scarcity of good roads there are now over 1,500 cars in the country.



WITH a formidable programme of legislation to be passed before it rises for Christmas, Parliament has set to work energetically, and already some of the bigger measures are well on the way to completion. The Road Transport Lighting Bill is at the final stage; only the third reading has to be completed, and it is hoped that it will be possible to place it on the Statute Book at the end of this session.

This Bill, it will be remembered, embodies a part of the larger Road Vehicles Bill which the Minister of Transport circulated many months ago, but which was squeezed out of the legislative programme this year. The smaller Bill, introduced by Mr. Lougher, deals only with lighting. It was sponsored by the Minister of Transport, and this is the one reason for the expectation that it

will be passed at a very early date.

Nothing reflects more clearly the great importance of the motorcar in national economy than the increasing number of questions on road transport subjects which are directed to Ministers. The "visibility" of police constables at night was one of the matters brought to the notice of the Home Secretary. He announced that what he described as "traffic coats," with half-white sleeves from the elbow downwards, are to be issued to the police "with all possible expedition" for use in wet weather.

The desirability of the use of coloured lights for the regulation of traffic in London and the other large cities was urged by Sir Harry Brittain. Lights of this kind (the Minister of Transport stated) are being used experimentally in Piccadilly, and, if they prove satisfac-

tory, he will extend their use in the Metropolitan area. Referring to what had been said about the use of such means of control in foreign cities, he pointed out that conditions in London are exceptional, and systems which might be useful elsewhere would not necessarily be desirable or workable here. The provision of traffic-control devices in provincial cities is a matter for the various local authorities. This means that the motorist, journeying through the country, will probably encounter that diversity of regulation in this as in other matters which often proves troublesome.

The Minister also indicated that if the lighted pillars which have been placed at the junctions of various arterial roads prove useful, their number will be increased.

Thefts of motor vehicles are only too frequent in London. The Home Secretary stated that, during the nine months ended September 30th, no fewer than 1,065 motorcars and motor vehicles were reported as having been stolen in the Metropolitan Police area. It would be interesting to know how many were subsequently recovered.

THE BENEVOLENT FUND BANQUET.

THE annual banquet of the Motor and Cycle Trades Benevolent Fund was held at the Connaught Rooms last Monday, with Sir Charles Cheers Wakefield, this year's president, in the chair, while the Lord Mayor and Sheriffs of the City of London were present during the latter part of the evening. Sir Charles Wakefield presented the record donation of £10,000 to the fund and the list of subscriptions, including his, totalled £17,128 1s. 6d., which beats the record of £10,600 last year.

Mr. A. J. Wilson, the founder of the fund 22 years ago, spoke what he termed his "swan song" when he announced that he and his wife were going to Australia and hinted that that would mean severing his connection with the fund. Features of interest in the speeches were the suggestion thrown out by Sir George Beharrell of the great expansion of the motor trade when the staple industries of the country revived, the pronouncement by Sir Ernest Wild, the Recorder of London, that all

bicycles should be fitted with rear lights, which was endorsed by Mr. Boulton Brooks, who said that the cycle manufacturers were in favour of such a requirement, and the suggestion by Sir William Letts that Lt.-Col. J. T. C. Moore-Brabazon should be made Parliamentary Secretary to the Chancellor of the Exchequer, as he was the only man who could bring him back to the straight and narrow path, and with him the fund which he has purloined from motor taxation.

SOLVING THE KINGSTON BY-PASS PROBLEM.

IT is refreshing to note that the authorities have lost no time in tackling the critical traffic situation which arose directly the Kingston by-pass was opened. The congestion which occurred at Robin Hood Gate, Richmond Park, has already been described, and the authorities have come to the conclusion that circular traffic control

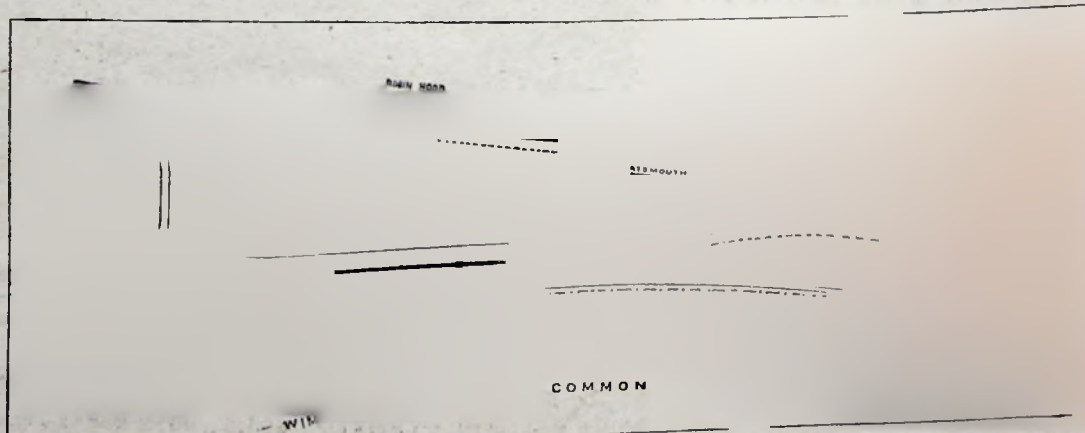
is the only practical way out of the difficulty.

The accompanying map will show how alterations will be effected so as to bring the one-way traffic system into use, and as this system has been successful in other very busy areas it is anticipated that it will be equally successful at the important and very busy

road junction now so much discussed.

Workmen have already started to make the necessary alterations on the ground, and it is probable that the new traffic control will be in full working order in a few weeks. The island will be of sufficient size to enable easy turns to be made and traffic will proceed as shown in the plan below.

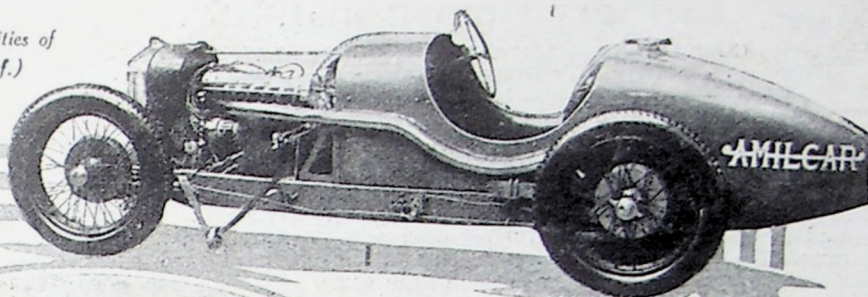
HOW THE
NEW
ONE-WAY
TRAFFIC
SYSTEM
WILL
WORK.



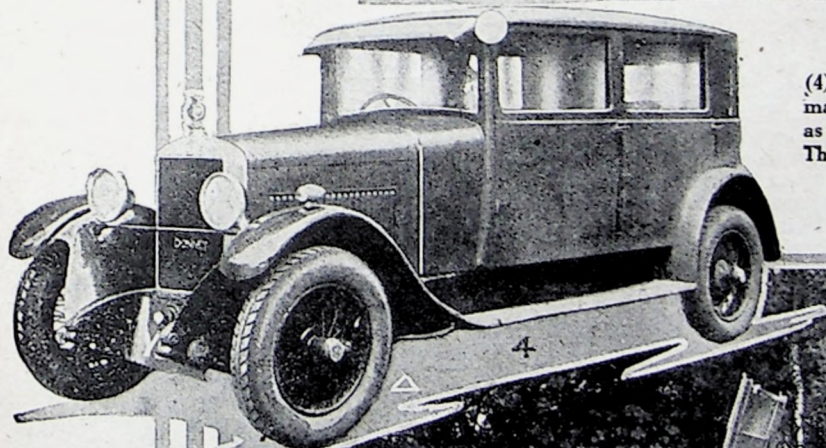
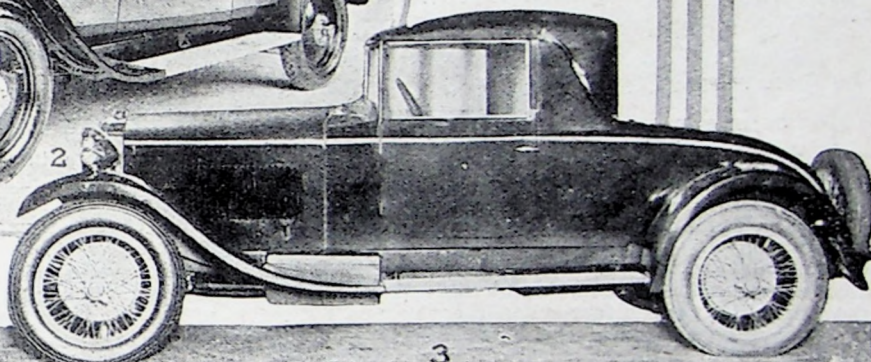
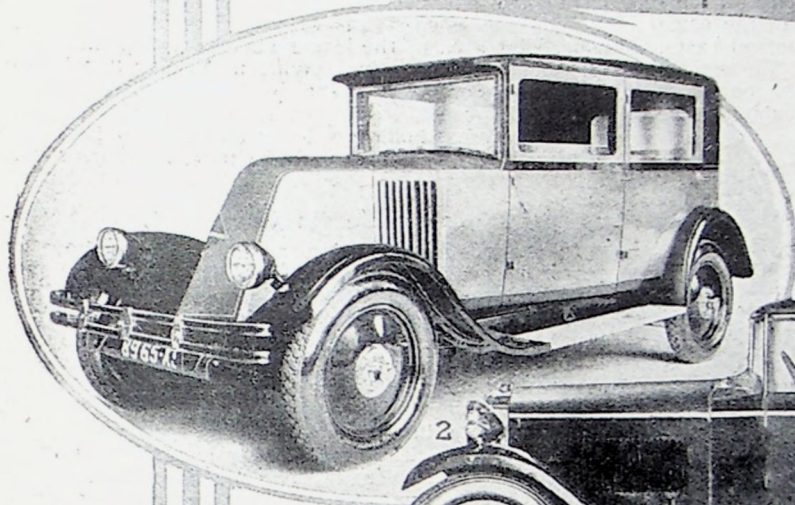
A plan of the junction of the Kingston by-pass with the Portsmouth road, showing the new island by means of which a one-way traffic system will be obtained. It is anticipated that the new regulations will come into force very shortly.

MODERN SIX-CYLINDER LIGHT CARS.

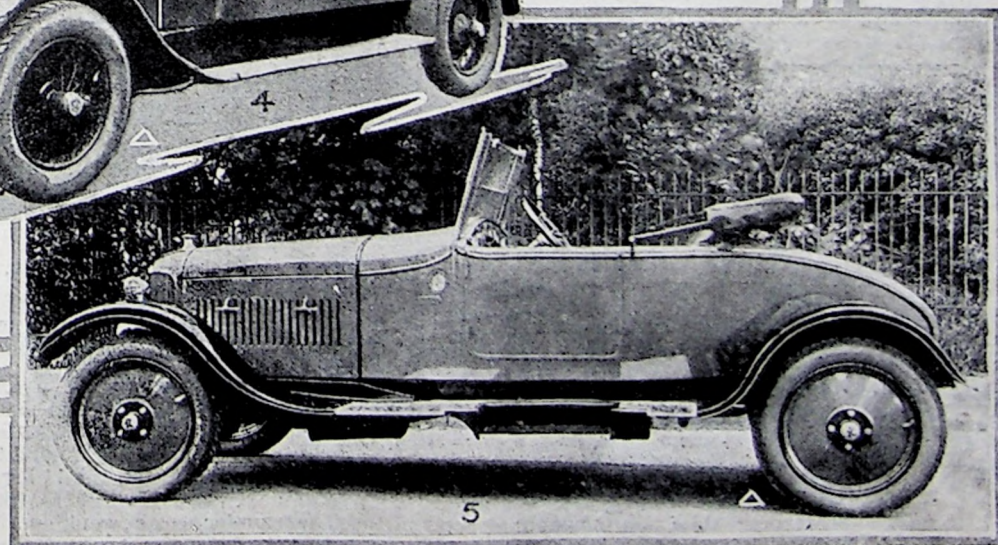
(See the article entitled "Possibilities of Six-cylinder Engines" overleaf.)



(1) The Grand Sport Amilcar. (2) The Renault Monasix. (3) The Alfa-Romeo coupe.



(4) The Donnet is made in 1½-litre size as well as 2-litre. (5) The A.C. as an open two-seater.





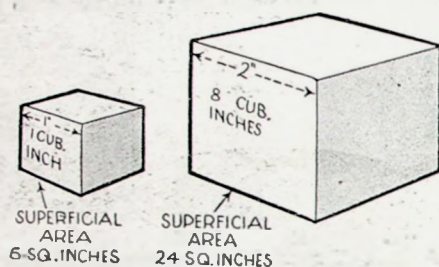
POSSIBILITIES OF SIX-CYLINDER ENGINES.

CONCLUDING INSTALMENT, DEALING WITH QUESTIONS OF CAPACITY, HORSE-POWER RATING, RUNNING COSTS AND SO FORTH.



THE concluding paragraphs of the previous instalment of this article dealt with cylinder capacities and their relation to taxation. It was explained also how stroke-bore ratio affects the horse-power rating and this point will now be further discussed.

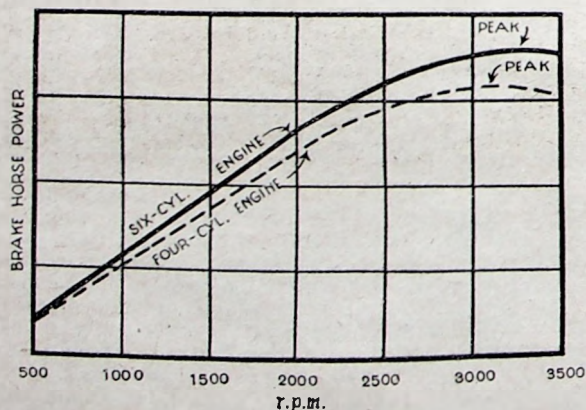
As regards the comparison in the taxation of a four-cylinder engine and a six-cylinder engine of the same capacity, we have worked out two hypothetical cases, the capacity being 1,500 c.c. in each and the stroke-bore ratio $1\frac{1}{2}$. Working on this basis, the bore and stroke of a four-cylinder engine can be calculated to be



By comparing these two cubes it is clear that doubling the length of the edge gives eight times the volume and four times the area—an important factor in combustion-chamber design.

68 mm. and 102 mm., while those of the six-cylinder engine work out at 60 mm. and 90 mm. Consequently, the tax is £12 on the four-cylinder engine and £14 on the "six," although the capacities are identical.

This disability of the "six" is to some extent offset by the fact that, by employing a bigger number of smaller cylinders, a greater brake-horse-power can be obtained from a given total capacity—a fact which is fully grasped by racing car designers, who now build $1\frac{1}{2}$ -litre engines with eight cylinders as a matter of course. The increase in the power obtainable is due chiefly to the fact that the smaller the cylinder the greater is the compression ratio which can be employed without risk of detonation. Another point, however, is that a six-cylinder engine can be revved to higher speeds owing to its better balance, while it is easier to provide an adequate port area for the admission of the mixture when the cylinders are small.



These power curves of a "four" and a "six," each of $1\frac{1}{2}$ litres capacity, show that the power output of the "six" is greater throughout the speed range.

B14

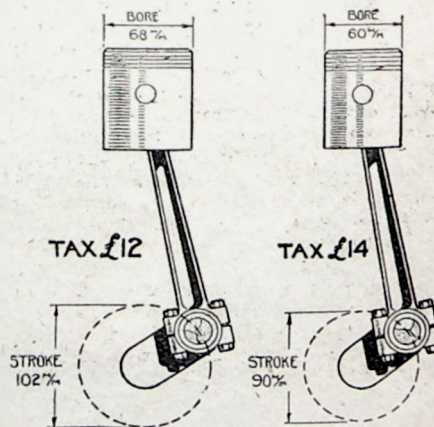
It is generally understood that as the combustion chamber becomes smaller the ratio of its surface area to its volume increases. Consequently, there is a bigger area for the flow of heat, and a higher compression pressure can be used. This can be explained by comparing two cubes, one with a 2-in. edge and the other with a 1-in. edge. It is easy enough to see that the superficial area of the larger cube is 24 sq. ins., while its volume is 8 cubic ins., giving a ratio of 3, whereas, in the smaller cube, the area is 6 sq. ins. and the volume 1 cubic in., giving a ratio of 6. Exactly the same reasoning holds good for two combustion chambers each of the same general shape, no matter what this shape may be.

Power Curves Compared.

In one of the drawings reproduced we show two power curves for $1\frac{1}{2}$ -litre engines, one with four cylinders and the other with six. From this it will be noticed that the power output of the "six" is about 3 per cent. greater than that of the "four" up to about 2,000 r.p.m., thanks to the higher compression pressure. Above this speed the more generous port area of the six-cylinder engine begins to tell, so that at 3,000 r.p.m. the difference in power outputs increases to 10 per cent., while the peak of the curve is somewhat higher for the six-cylinder engine than for the other.

We have not shown curves for petrol consumption because so much depends upon the distribution system, as already explained, but apart from this important factor it will be anticipated that the petrol consumption of the "six" would be higher than that of the "four" owing to increased friction in the engine and the greater heat loss to the jackets.

Lastly, there are the matters of cost, reliability and maintenance work, and in all of these the four-cylinder



A four-cylinder engine of $1\frac{1}{2}$ litres capacity and with a stroke-bore ratio of $1\frac{1}{2}$ is taxed at £12, but £14 is the tax payable on a "six" of similar characteristics.

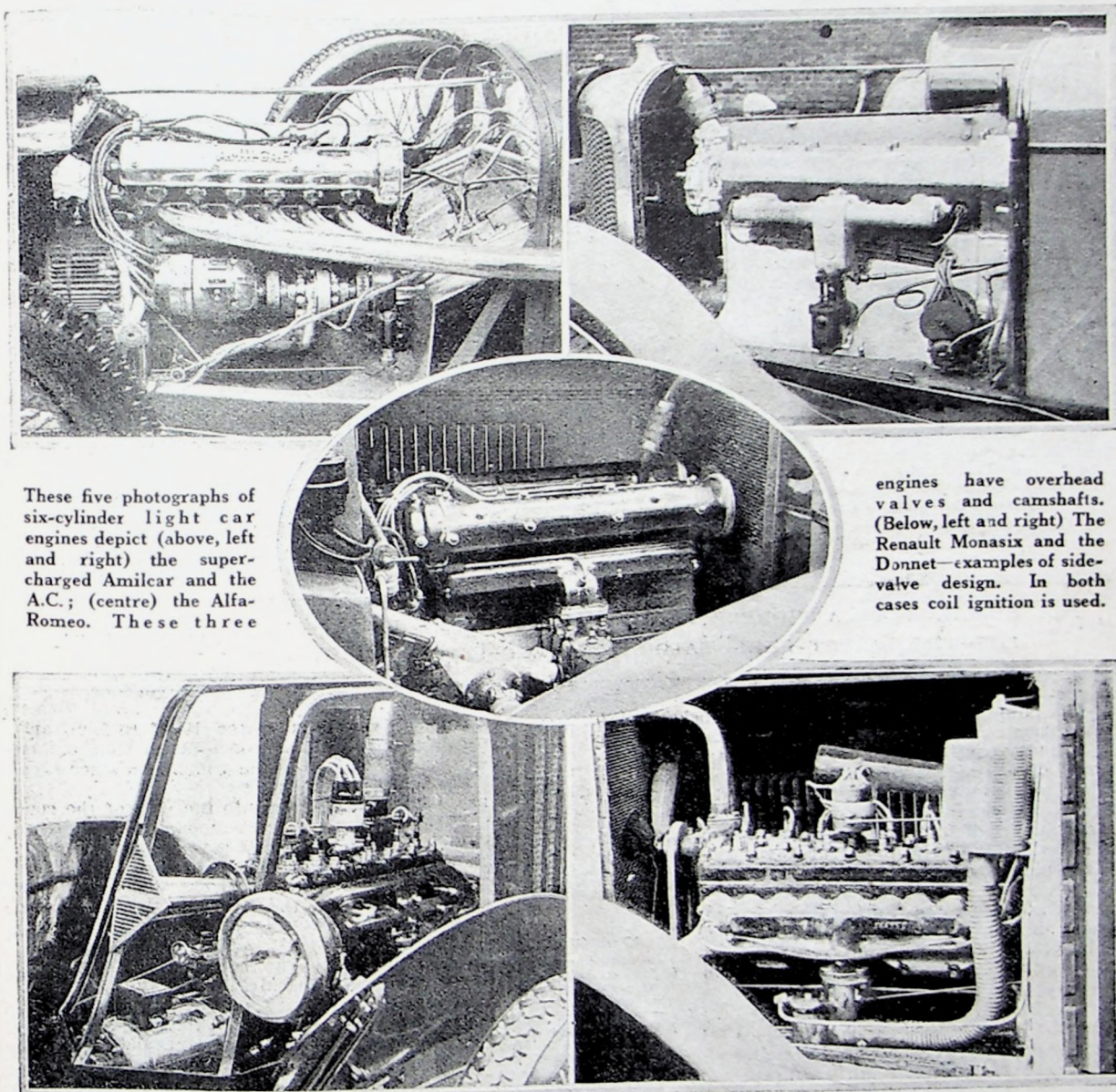
engine is usually—but not always justifiably—assumed to score slightly over the six-cylinder type. Taking two chassis of otherwise identical design, one powered with a six-cylinder engine and the other with a "four," it is probable that in the $1\frac{1}{2}$ -litre class the "six" would cost anything from £30 to £50 more than the other. The running costs would not necessarily differ very greatly, because the difference in tax would only

amount to about £2 per annum, and the difference in petrol consumption is not vastly important so long as petrol remains at its present low price.

As regards reliability, it might at first be thought that, as there is an increase of roughly 50 per cent. in the number of working parts when six cylinders are used in place of four, the chances of breakdown are increased in like proportion. This view is a fallacious one, however, because it is a truism of all branches of engineering that the more smoothly a

In respect of maintenance work there is, of course, a margin in favour of the four-cylinder engine. Examining the sparking plugs or checking the valve clearances, for example, are operations which will take half as long again in the case of a "six." However, other items of maintenance work, such as replenishment with oil, greasing the chassis, looking after the tyres and so on, are wholly unaffected by the number of cylinders employed in the engine.

To sum up, it will be realized from the particulars



These five photographs of six-cylinder light car engines depict (above, left and right) the super-charged Amilcar and the A.C.; (centre) the Alfa-Romeo. These three

engines have overhead valves and camshafts. (Below, left and right) The Renault Monasix and the Donnet—examples of side-valve design. In both cases coil ignition is used.

mechanism will run the less likely are the parts to wear out or fail.

It is true that in a six-cylinder engine there are 12 valves, any one of which may break, instead of the eight valves of a four-cylinder engine, but how often is a broken valve experienced nowadays? It is worth remembering, in this connection, that the Napier-Lion and Rolls-Royce aero engines, with 18 cylinders and 12 cylinders respectively and a highly complicated mechanism including overhead camshafts, are known to be the most reliable engines in the world, and can be run at full throttle for longer periods without a breakdown than any motorcar engine.

which we have given that there is far more in designing a six-cylinder engine than the mere adding of a couple of cylinders to an existing power unit, with, perhaps, a decrease of bore and stroke. Particular care is required when, as in the case of an engine of less than 1½ litres capacity, the cylinder dimensions of the "six" are unusually small. Consequently, it may be anticipated that the increase in the numbers of six-cylinder cars will take place much more slowly in the light car class than in the 16-20 h.p. class, at any rate for some years to come.

Photographs of the light cars to which six-cylinder engines are fitted appear on another page.

Light Cars of 1928.



THE ROMANCE OF A PIONEER ROAD TRANSPORT CONCERN WHICH ORIGINATED IN 1877—THE LATEST PARIS SALOON ON TEST—USEFUL MAINTENANCE HINTS.

THE name Rover has not only been associated with light cars for many years, but with the motor industry itself since its earliest days, and the history of a concern which has helped to place the British motor industry where it is to-day has a flavour of romance which loses nothing in the telling.

As a matter of fact, one has to go back farther than the introduction of the motorcar in tracing the history of this pioneer firm of road transport, for it was in 1877 that John Kemp Starley and William Sutton, two engineers of Coventry, joined forces, and produced the first Rover bicycle.

It should be recalled that in the '80's Coventry was going through a transition period; famous throughout the world for its silk and watch industries in years gone by, it was then beginning to feel that some other form of commercial activity was necessary if it were to maintain its prosperity, and Messrs. Starley and Sutton were amongst the first to realize the possibilities of bicycles.

The partnership was not altogether a success from a business point of view, because the public had not yet become reconciled to a form of travel as exemplified by the ordinary or high bicycle. This was rather risky at the best of times and demanded that a rider should be no modest athlete if he desired to indulge in the sport freely! Very much discouraged, Mr. J. K. Starley—the father of the present "J.K."—thought of emigrating, and was, in fact, busy formulating his plans when the brilliant idea

of the "safety" bicycle suggested itself to him, and it is worth placing on record once again that out of that idea he evolved a principle which has since been adopted throughout the world.

The name Rover first crept into the title of the concern in 1895-6 during the cycle boom of that year. J. K. Starley and Co. expanded into the Rover Cycle Co., with a capital of £150,000, while two years later the modest West Orchard Works were abandoned, the new firm taking up its quarters in the factory on the Poddy Croft Estate. In the year 1902 J. K. Starley died, at the comparatively early age of 46, and Mr. Harry Smith, the previous secretary of the company, was appointed general manager, with Mr. J. K. Starley, Junior, as assistant works manager.

Up to that time the thought of building self-propelled vehicles had not been considered seriously, but under the new régime this ambition took shape, and was realized, the first motorcycle—a 2½ h.p. single-cylinder—maturing in 1903. It was but a short step from motorcycles to cars and the work of designing the first

Rover was entrusted to Mr. Edmund Lewis, who evolved a layout now old enough to be thought new by folk who have not followed the history of motoring.

The car had no chassis frame in the ordinary sense, two large-section aluminium tubes forming a "T" taking its place, the central tube supporting the 8 h.p. single-cylinder engine, gearbox and so on, while the cross-piece at the tail carried the rear axle. This car

AT A GLANCE.

Engine: Four-cylinder, (1,185 c.c.). Tax £10. Unit construction of engine and gearbox, three speeds, central control, final drive by worm.

Made as two and four-seater tourers and semi-sports, coupe and saloon.

Leading dimensions of tourer: Overall length, 12 ft. 6 ins.; overall width, 5 ft. 1 in.

Maker's address: THE ROVER CO., Ltd., Meteor Works, Coventry.

appeared in 1904 and took part in a number of speed and competition events. In 1906 a smaller and more conventional 6 h.p. model, to sell at 100 guineas, was produced, whilst this model was supplemented by a four-cylinder 10-12 h.p. and a four-cylinder 16-20 h.p. model. In 1905 the Rover Cycle Co., Ltd., became the Rover Co., Ltd., and from that point the history of the concern takes on a much more modern note.

The first notable event was the victory achieved by a 16-20 h.p. model in the Tourist Trophy Race of 1907, the car then still bearing the shield-shaped radiator of which the upper lines of the modern Rover radiator are the only relic. Year succeeded year and the prosperity of the firm continued; then came the war, when, like practically every other manufacturing concern in this country, the Rover Co., Ltd., turned their attention to the production of war materials. These included Stokes guns, bombs, and so forth.

In 1919 the factory was released from the control of the Ministry of Munitions and a transformation took place. Within a very short time the 8 h.p. twin-cylinder air-cooled Rover, with which modern motorists are familiar, was taking shape, whilst the 12 h.p. model had also been revived. A separate factory at Tyseley was taken over to produce the 8 h.p. model, which provided employment for 1,500 hands. In March, 1923, Mr. Harry Smith retired and Mr. J. K. Starley, Junior, took his place; in 1924 the four-cylinder 9-20 h.p. car was marketed; in 1925 the 14-45 h.p. Rover appeared, and early this year the latest series of 10-25 h.p. cars were put into production.

Naturally, as the concern grew in size and importance, modern machinery was installed and modern methods of car construction were adopted, and it was decided that, so far as possible, every part used in the construction of a Rover car should be made in Rover factories. The result is that to-day only specialized components and so on—such as tyres, wheels, electrical equipment and minor body fittings—are "imported." It is worthy of note that the Tyseley plant, which deals with the 10-25 h.p. cars, is almost equal in size, and certainly equal in its up-to-dateness, to the Meteor Works, where the larger models are made—a very striking indication of the market which exists for Rover light cars.

How Rovers are Made.

Like every good motorcar, the life of a Rover begins in the drawing office; the next stage is the purchase, to certain specifications laid down by the drawing office, of materials which are required for its construction. The drawing office is, of course, always kept fairly busy by reason of improvements, new designs

and so forth, which, as a rule, are planned and tried out many months before the public ever hears of them. When the materials arrive, batches are tested by the laboratory staff. Meanwhile, pattern makers and foundry men ensure that the production of castings goes forward unchecked.

Here it may be mentioned that the main foundry at Meteor Works is engaged solely on the production of grey iron and malleable iron castings, whilst a special "non-ferrous" foundry is also employed. In the Meteor Works foundry there are giant pneumatic moulding machines, whilst the cupola has a melting capacity of 3½ tons per hour. Rows upon rows of automatic and semi-automatic machines are employed for getting the castings and so on ready for assembling, whilst there are big tinsmith shops for producing tanks and radiators, and a body works, where body-building in all its forms is undertaken. The bodies of the "10-25s" are made in a separate factory, and here it might be mentioned that the Rover Co. is one of the pioneers of cellulose lacquer and that they overcame the difficulties attendant on the use of cellulose whilst other manufacturers were still considering whether or not it was worth while.

In dealing with the specification, maintenance and so on of 10-25 h.p. Rovers, we must necessarily mention many points which are already familiar to owners of these cars, but we would emphasize here that these articles are intended to appeal to readers as a whole, as well as to those who own 9-20 h.p. or 10-25 h.p. Rovers.

The 10-25 h.p. Models.

Actually, the specifications of the various models of the 10-25 h.p. series are practically identical, the essential differences between them consisting mainly in the type of body employed.

The full range for 1928 is as follows:—Two-seater tourer with double dickey, £220; four-seater tourer (model A) in one colour £225, and (model B) in dual-tone finish, £5 extra; detachable-head coupé, £235; semi-sports two-seater, £260; semi-sports four-seater, £260, both in dual-tone finish and with pneumatic



Mr. J. K. Starley, the present managing director of the Rover Co., Ltd.

GLIMPSES OF THE ROVER WORKS.

(Left) The iron foundry at Coventry. The scene shows the moulds being prepared, a number of "boxes" being ready to receive the molten metal. (Above) A corner of the drawing office at Tyseley. Here new models gradually take shape in black and white.

upholstery to the rear seats; Riviera Weymann saloon with folding roof, £250; Paris Weymann saloon, £250. Incidentally, the whole range is shown pictorially and in colours in a very neat folder, which can be obtained from the Rover Co., Ltd., Coventry.

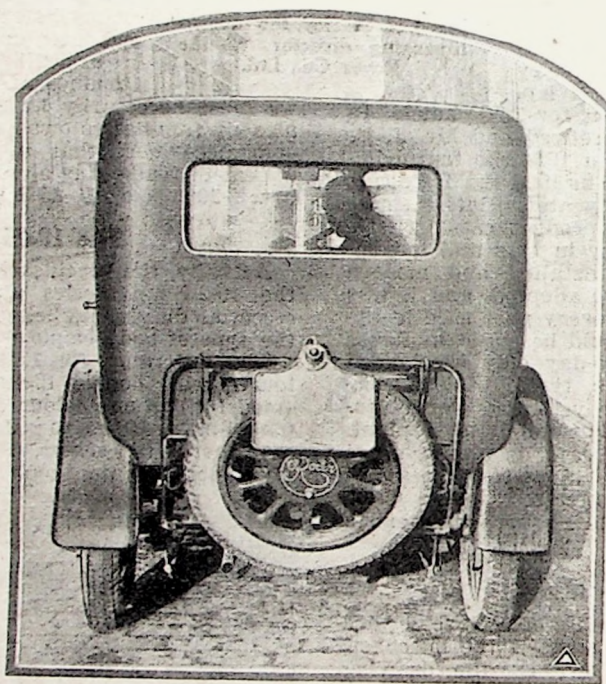
Useful information for prospective owners is the widths of the seats, which are as follow:—Two-seater, front 48 ins., dickey 39 ins.; four-seater (model A) front and rear, 48 ins.; four-seater (model B), front and rear, 44 ins.; semi-sports two-seater, front 40 ins., dickey seat 24 ins.; semi-sports four-seater, front and rear, 41 ins.

The Chassis in Detail.

The mechanical specification in brief is as follows:—Four-cylinder monobloc engine, bore 63 mm., stroke 95 mm., capacity 1,185 c.c., Treasury rating 9.8 h.p., tax £10. The engine is built up of four main components, namely, the sump, crankcase, cylinder block and detachable head which carries the overhead valve gear, induction and exhaust systems; the valve gear itself is enclosed by a cast-aluminium cover. Thermosiphon cooling is assisted by a pump, the valves are push-rod operated, whilst the lubricating oil is pressured to all bearings, including the overhead rocker gear. A Lucas magneto, Smith single-jet carburetter and Lucas dynamo and starter-motor complete the principal equipment of the engine.

Engine and gearbox are formed as a unit, the clutch being of the dry-plate type, all enclosed, with the exception of an inspection cover, to which reference will be made later on. The gearbox is of the three-speed order, the ratios being 5.2, 9.3 and 19.5 to 1.

Both gear and brake levers are arranged centrally, the propeller shaft is enclosed—a centre bearing being situated half-way down the torque tube—whilst the final drive is by underslung worm. The brake pedal applies shoes in all four drums, whilst the brake lever, by means of independent mechanism, operates only the shoes in the rear wheels. Suspension is by long semi-elliptics at the front and multi-leaved quarter-elliptics at the rear. The master leaves of the rear springs rest on hardened



The large rear window of the saloon greatly simplifies reversing. Ample accommodation for a trunk or suit cases is provided by the let-down grid at the rear.

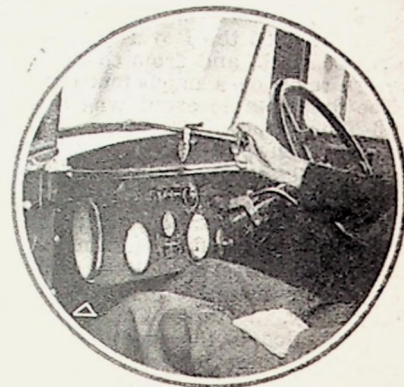
steel rollers. Steering is of the worm and segment type, whilst the wheels of the touring models are pressed-steel artillerys, wire wheels being fitted to the semi-sports models.

The equipment is, of course, comprehensive and includes speedometer, clock, spring gaiters, shock

absorbers, automatic screen wiper, driving mirror and so on; all models, except the two-seater semi-sports, have a very handy folding luggage grid at the rear.

The model which was recently placed at our disposal for test purposes was the Paris saloon, an addition to the range of Rover cars made early last year, which instantly achieved popularity and has been selling in considerable numbers ever since.

It is of the Weymann type, but has solid rear panels, by means of which



By means of a quick-acting telescopic fastener the single-pane screen can be opened about 8 ins., as shown.

very pleasing lines are obtained. The roof is extended forward so as to form a V-shaped sun visor, whilst there is a diminutive gutter round the front and sides to carry off the rain-water; the body overhangs the running-boards, so that ample width is obtained without increasing the track.

The interior of the car is well furnished. It is lined and upholstered (in leather) to match the body colour, with carpets of a slightly deeper shade, whilst the roof lining is brown. The ebony-black fascia-board has a shallow tray above it, cubby holes at each end and clock, speedometer, oil gauge, starter knob, strangler, switchboard and dash lamp neatly grouped upon it. The windows are of the half-sliding type, with catches to prevent them being accidentally opened, whilst the rear window has a blind which can be raised and lowered by means of a cord terminating in a quick-release button situated within easy reach of the driver.

In addition to their ordinary catches the doors have thief-proof bolts and the front near-side door has a key. All doors are fitted with nickel-plated handle-pulls and pockets with very neat quick-fastener buttons.

Room for Five Adults.

On the near-side front door there is a ladies' companion, whilst to match it on the off-side door there is an ash-tray. The rear-view mirror is arranged inside the car, the furnishing of which also includes a roof light and roof ventilator. All seats are well sprung, the front seats being adjustable for reach and the squabs for rake by means of straps. There is a useful-sized tool locker under the front seat and the width of the seats permits of ample room for two in the front and three at the rear. The single-pane screen has a quick-action telescopic opener giving about 8-in. movement, and across this screen the Trico wiper sweeps a wide and useful arc.

The roof ventilator is kept open and closed by a spring. Adjacent to it is a roof light.

Rovers are proverbially easy to start, not, be it noted, in these go-ahead days by means of the handle, unless one so wishes, but by the use of the electric starter. It is necessary generally to retard the ignition slightly by moving the right-hand lever beneath the steering wheel in an anti-clockwise direction, whilst to speed up the engine when warming up on a cold morning a slightly wider throttle opening may be obtained by turning the left-hand lever in a clockwise direction.

Plenty of Reserve Power.

The gear lever is easily handled, no fault whatever can be found with the clutch, and the brakes are, without question, one of the strongest points of the Rover. Naturally, the saloon offers greater wind resistance than the touring model, but the engine has plenty of reserve power and even against a fairly stiff head wind 40 m.p.h. can be maintained with the comforting feeling that the power unit is working well within its limits. The car is, of course, lively on the lower gears, 30 m.p.h. being fairly easily attained on second. The petrol consumption of the model we tested was surprisingly good, being round about the 40 m.p.g. mark, whilst the oil consumption was so low as to call for no replenishment of the sump during our 400-mile test.

The car rides well, but would benefit by the addition of shock absorbers at the front, whilst let-down windows would, in the opinion of the writer, be preferable to the sliding type.

The initial part of our test consisted of a run from Coventry to London. It was undertaken on the day that the gale which swept the country three weeks ago was beginning to work up, and an excellent opportunity presented itself for testing

the weatherproofness of the 10-25 h.p. Paris saloon. Accompanying a high wind which was blowing from the south-west rain lashed down unceasingly, and in many parts of the low-lying country the road ahead was obscured by an unpleasant kind of semi-mist which made visibility very poor.

Outside it was cold enough for coat collars to be turned up, but within the saloon the temperature was sufficiently comfortable to permit of hat and coat being discarded, whilst ample ventilation was still obtained by opening two of the rear windows.

The screen fitted so snugly that not a single drop of

water found its way into the car, whilst the wide arc swept by the screen-wiper ensured a clear view ahead even when the downpour was at its heaviest. Naturally, the roads were slippery, but the car showed no signs of skidding. Frequent delays were caused by slow-moving lorries, whilst at times the strength of the wind called for a slight reduction of speed. For the major part of the journey, however, 40 m.p.h. could have been steadily maintained, and the trip completed in just over three hours.

Given a clear run no hill called for a change down from top gear; in fact, the performance of the car in that gear is one of its most pleasing attributes.

Maintenance Hints.

Special mention should be made of the steering, which is not only delightfully easy but positive as well; in fact, at 40 m.p.h. one can control the car with two fingers and at 2 m.p.h. the road wheels are nearly as

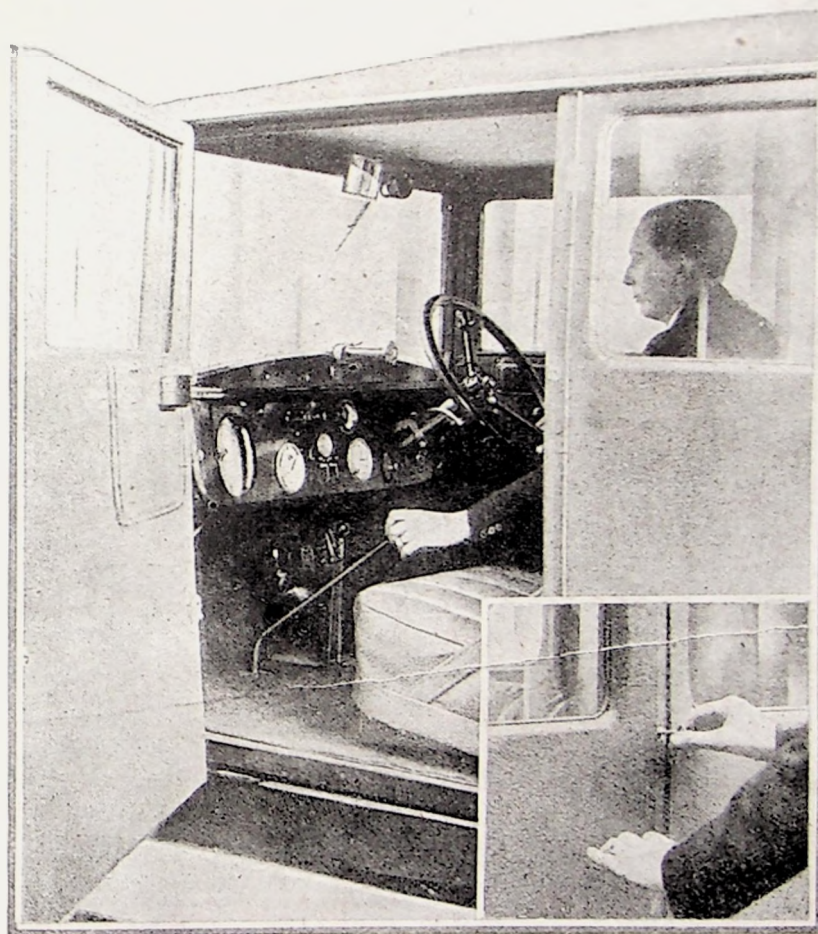
easy to lock over. Bearing in mind its type, power and weight, the performance of the car left nothing to be desired, and we can recommend this saloon as really excellent value for money at £250.

The maintenance of 10-25 h.p. Rovers is a very simple matter. Grease-gun lubrication is employed throughout, except, of course, in the case of brake cross-shafts, pedal shafts and so on. When using the grease gun two important things should be remembered; the first, to wipe the face of the grease nipple, and the second to exert a slight pull on the gun after it has been hooked on.

The more important greasers are those which feed the steering swivel pins, that which supplies the forward ball housing of the torque tube and

the two at the rear which keep the leaf spring rollers well greased. Up-to-date drivers need no advice as to replenishing either the sump, gearbox or back axle, but it should be noted that a high-grade oil is recommended for the gearbox, engine oil being quite suitable.

If an owner prefers to use a light-bodied grease for the gearbox there is apparently no objection, but when replenishing it is advisable to remove the gearbox cover—which comes away complete with the gear-lever—so that the actual amount of lubricant within the box can be seen. No provision—purposely—is made to provide means for oiling the centre bearing of the propeller



A COMFORTABLE
DRIVING POSITION.

This photograph gives an excellent impression of the well-furnished interior of the Paris saloon and also shows the comfortable driving position. (Inset) The front near-side door is fitted with a lock and key, the other doors can be secured from the inside.

shaft which benefits by any leakage from the gearbox.

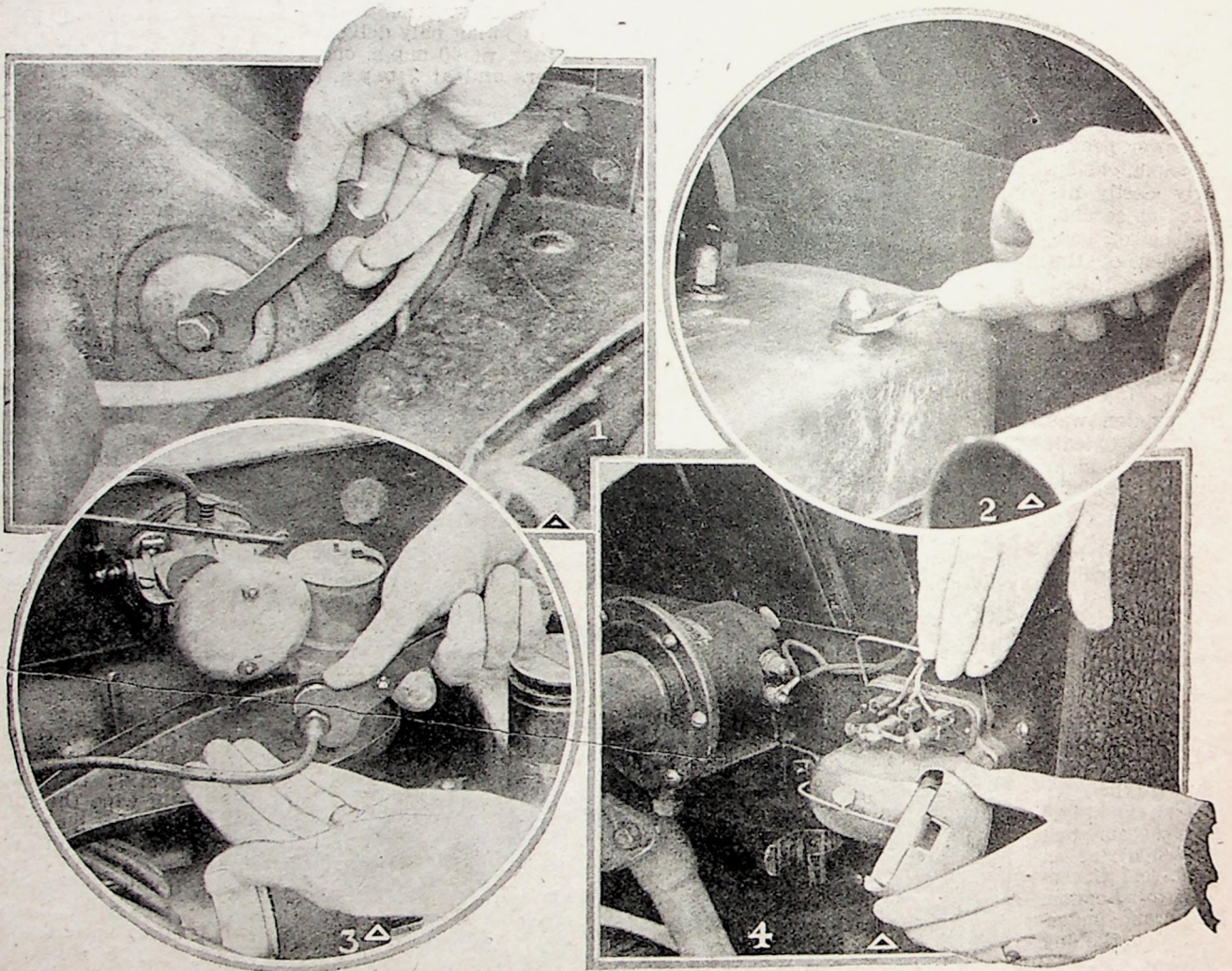
If the clutch shows any sign of becoming jerky—this has not occurred in 4,000 miles' running with a semi-sports model owned by a member of our staff—the inspection cover should be removed and each clutch peg should be given two or three drops of oil. Owing to the large-diameter rear drums, braking strains are fairly well equalized between the front and rear axles, and for at least six months of ordinary use all adjustment can be made by turning the tommy bar adjuster, which can be reached by lifting the off side of the bonnet and which is situated adjacent to the clutch pedal.

Providing the car is gone over with the grease gun,

certainly rolling on corners. The last-named applies with particular force to a car like the saloon, in which the centre of gravity is slightly higher than that of a tourer.

As the result of fairly extensive experience with the 10-25 h.p. Rover, the writer ventures to give one or two hints and tips culled from personal knowledge of the car. It may be mentioned that the maintenance of practically all types of current Rover models follows very much the same lines.

Thanks to really good overhead-valve arrangements, tappet adjustments need to be made only at very infrequent intervals. When it is decided, however, to remove the valve cover to check clearances and so forth,



HINTS IN PICTURES

(1) How access can be gained to the starter motor engaging mechanism in the unlikely event of the pinion jamming or sticking. (2) Keep tight the nuts of the valve cover so as to prevent waste of oil through leakage. (3) Support the petrol pipe as shown when undoing the union to withdraw the filter. (4) Where the fuse lives: the cut-out cover immediately below it is sealed.

say, once a week, and that a watchful eye is kept on the water level and the engine oil level, the car should need no further attention for hundreds of miles, but, in the opinion of the writer, it is as well to check the level of the lubricant in the gearbox and back axle every 800 miles.

The biggest job that an owner-driver would probably tackle would be decarbonizing, in which case we could not do better than recommend him to follow the very clearly set out directions given in the company's own "Upkeep and Management" handbook. Tyre pressures should be checked frequently, for—as we have so often said in this journal—slabby tyres make for sluggish running, erratic steering, sometimes wheel patter, and

it is a good plan to go over the engine thoroughly, and the job will be made far easier if the bonnet is removed. One of the photographs on the next page shows the best method of doing this single-handed so as to avoid bending any of the panels out of shape. At the front end the main hinge is turned down at right angles and fits into a hole in the flange of the radiator casing, and this must be pulled out first. The whole bonnet can then be eased slightly towards the operator so that it comes out of the bracket on the dash.

When taking off the valve cover plate make sure that the gasket is not damaged. It may tend to stick partly to the cover and partly to the cylinder head, and should be eased round with a knife so that it falls back on to

the latter. This will facilitate replacing the cover so that an oil-tight joint is obtained. The nuts holding the cover in place should be tightened up firmly, for it is important to avoid the possibility of any oil leakage between the cover and the block.

With the off-side bonnet flap raised in the ordinary way it is possible to gain access to the grease nipple by means of which the clutch thrust race is lubricated. Many owners overlook this point and go to unnecessary trouble in removing the floorboards. This ball race, by the way, should not be over-lubricated. It is far better to give it half a turn of the grease gun once every week than five or six turns of the gun once a month: the risk is that of grease finding its way in between the friction members of the clutch.

The removal of the sparking plugs is made far easier if a box-spanner is used. Should intermittent misfiring occur when getting away from cold, it is generally an indication that the bodies of the plugs want wiping; in fact, it is a good plan to make sure that the insulation of each of the plugs is perfect by wiping them frequently and removing any traces of the dusty deposit which sometimes forms on the porcelain.

The clutch pit is now closed by a detachable cover, and if the clutch becomes at all jerky in action the cover should be taken off and two or three drops of oil applied to each of the four circumferential pegs. If the services of two friends can be utilized, one to turn the starting handle until the pegs are rotated into the best position for oiling, whilst the other works the clutch pedal, the job will be done far more easily and effectively.

The filter of the Smith carburetter should be cleaned out occasionally, and, to do this, the petrol union must be undone, using the jet spanner for this purpose. A somewhat larger spanner will be required to undo the hexagon nut which screws straight on to the body of the carburetter, and which, on an extension, actually carries the filter.

When undoing the petrol union, support the pipe with the fingers so that no bending strain is placed on the pipe during the initial operation of slacking-off the nut. The pipe should also be steadied when doing up the petrol union nut. To clean the jet it is advisable to remove the petrol drip tray so that easier access can be gained to the jet plug.

If moderately thick lubricant such as light-bodied

grease is used in the gearbox, it is better, as we have already pointed out, to take off the cover of the gearbox rather than to judge by an inspection made through the filling orifice, because lubricant tends to pile up in the neck of the orifice and to give a false impression of the height of the lubricant in the main body of the box.

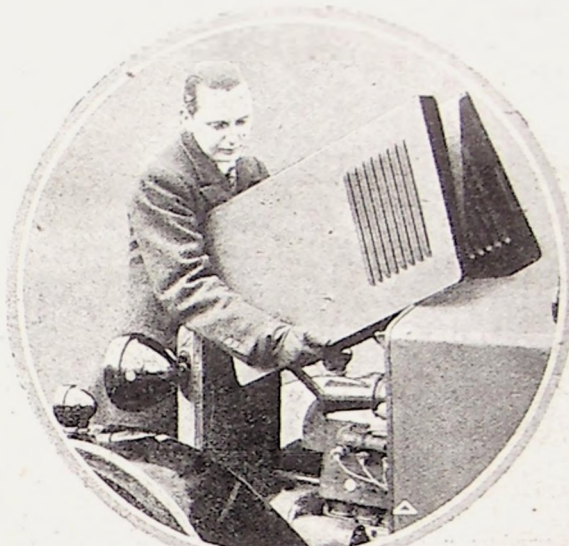
Special mention should be made of the fact that in some of the earlier 10-25 h.p. models the engine bearings are sufficiently tight to make it extremely difficult to start up from cold by hand; in fact, it may be necessary

to cover some 400 miles before the bearings are really free. If such an engine is carefully run in, however, the bearings should be in perfect condition at the end of the period named, and the car will run all the sweeter as a result of the shafts having bedded themselves in in a normal manner.

We have found that the electric starter is quite capable of dealing with a stiff engine even on the coldest morning, but care should be taken, of course, to see that the dynamo and battery are up to their work.

Wheel alignment should be checked occasionally, and this can be done by stretching a string along one side of the car as shown in one of the photographs below. The string should be run so that it is just underneath the hub caps. The front wheels should toe in slightly, as this allows for a small degree of

outward splay which usually takes place when a car is running on the road, and ensures that, under running conditions, the front wheels shall be in perfect alignment. Finally, a few condensed hints. Never remove the water or engine oil filters when filling up; don't forget to give the magneto and dynamo two or three drops of really good machine oil about every 1,000 miles' running; have the magneto superficially overhauled about every six months; and, lastly, go over the car periodically with a set of spanners.



How to remove the bonnet so as to avoid bending any of the members out of shape. With bonnet removed it is far easier to "go over" the engine.



(Left) A length of string tied to the rear wheel and to the front dumb-iron is a useful means for checking wheel alignment. (Above) One operator turns the starting handle while a second gives a drop or two of oil to the clutch pegs.

NEW TWO-STROKE DEGUINGAND.

AN INEXPENSIVE FRENCH CAR HAVING MANY NOVEL FEATURES.

Whether as a sports two-seater or as a cabriolet the Deguingand presents an attractive appearance. The engine has a capacity of 750 c.c.

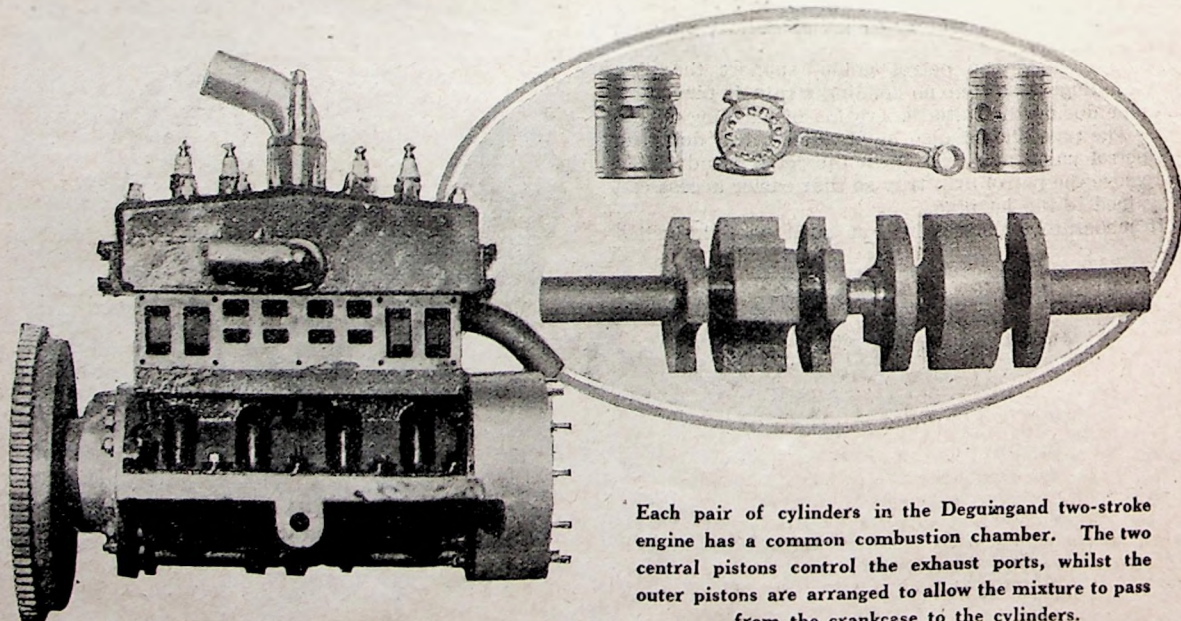
A REALLY serious effort to produce a cheap but fast small car has been made by Messrs. A. Deguingand, of Paris. The name of Deguingand is bound up with the history of motoring in connection with Vinot-Deguingand cars, and especially taxicabs. The layout of the new Deguingand bears a resemblance to that of the Sima-Violet cyclecar; with important modifications, however. The tubular steel propeller-shaft casing forms what one may term the backbone of the chassis. The frame is a comparatively unimportant affair consisting of a pressed steel triangle which acts as a body support.

The two-speed and reverse gearbox is located at the rear, and engine, propeller shaft casing, gearbox and rear axle casing really make up one unit. Gear and brake levers are mounted centrally on the propeller-

shaft casing, and the method of operating the gears is distinctly peculiar, for the propeller shaft itself is moved backwards and forwards bodily. A steel sleeve about 2 ft. long placed amidships within the propeller shaft casing, and fitted with roller bearings at each end, gives support to the shaft.

Suspension is by splayed quarter-elliptics at the rear and a single flat transverse spring for the front axle. Steering arrangements are particularly good. A small bevel pinion is fixed to the bottom of the steering column; large bevel sectors engage on each side of this pinion, the whole being enclosed in a kind of small differential casing. Side shafts extending outwards from the casing carry drop arms to which are attached push and pull rods conveying the movement to the wheels. This duplicated steering is an excellent feature and quite unusual in so small a vehicle as the Deguingand. Four-wheel braking is employed, the brakes being operated by stout Bowden cables.

The engine of the Deguingand is most interesting. It is a four-cylinder water-cooled two-stroke employing crankcase compression. The cylinder bore is 60 mm. and the piston stroke 65 mm. Although possessing four



Each pair of cylinders in the Deguingand two-stroke engine has a common combustion chamber. The two central pistons control the exhaust ports, whilst the outer pistons are arranged to allow the mixture to pass from the crankcase to the cylinders.

cylinders, the engine functions exactly as would a normal two-cylinder two-stroke. As may be seen from the photograph, the twin crankpins on the substantial and well-balanced crankshaft are disposed at an angle of 180 degrees. The twin pistons thus rise and fall together and as each pair of cylinders has a common combustion chamber the cycle is exactly that of a two-cylinder engine.

The arrangement of ports is particularly ingenious. Transfer ports are disposed in the end cylinders, and exhaust ports only in the two middle cylinders. The pistons in the end cylinders are responsible for the intake of gas, and they have ports on each side which allow the gas to flow through the transfer passages on each down stroke. The two central pistons, on the other hand, have no ports at all, as they open the exhaust orifices only. By a correct disposition of the inlet and exhaust openings a regular current of gas is obtained throughout the engine.

The crankshaft runs in three large ball bearings, whilst roller bearings are employed for the connecting rod big-ends. The flywheel and electric starter are located at the forward end of the engine, and the casing for the multiple-disc clutch is cast in one with the crankcase at the rear. Efficient cooling is essential in a two-stroke engine, and the cooling arrangements on the Deguingand are excellent. Large-diameter leads carry the water to each side of the cylinder block. Two plugs are fitted in each combustion chamber, and the head is detachable.

Two kinds of body are produced for the car by Messrs. Deguingand, a sports two-seater and a closed body of the popular "faux cabriolet" type. The latter is so well turned out that one wonders how it can be

done for the money, as the whole outfit sells in France at a price equivalent to about £120. Very wide doors, luxurious upholstery, mahogany interior panelling with satinwood inlay and a handsome and well-fitted instrument board are features of the cabriolet. The sports body is a two-seater of the beetle-backed semi-racing type so popular in France. This body also is quite well finished and equipped.

Taking over a Deguingand for a trial run recently, we received a pleasant surprise. The Deguingand, after all, is regarded as a cyclecar in France. The makers do not describe it as such, but a chassis weight of about 900 lb. and an engine capacity of 750 c.c. bring it well within the category. Memories of previous trips in cheap French cyclecars were not too reassuring. The little Deguingand, however, proved quite a satisfactory machine.

The engine was extremely lively and flexible, so much so that the lack of a third speed was scarcely noticed. The suspension was good and the machine was quite comfortable even on bad pavé. On hills the little car was really astonishing, its capacity for hanging on to top gear being particularly good. The engine was smooth and almost vibrationless in running, but a trifle noisy. This last characteristic is sometimes a feature of two-strokes, however, and in France it is by no means a disadvantage. The French small-car buyer usually likes to get a bit of noise for his money, especially if he is "un sportsman." On the whole, the Deguingand is a very creditable piece of work and a distinct improvement upon certain other recent productions in the cheap cyclecar line. It is made by Automobiles A. Deguingand, 16-18, Rue Jean Jaurès, Puteaux, Seine, France.

HIGH-FREQUENCY ELECTRIC HORNS.

THE sound emitted by an electric horn is caused by the rapid vibration of a diaphragm. This is set in motion either by a motor-driven rotating ratchet engaging with a steel button in the centre of the diaphragm, or by an armature vibrated by an electromagnet and make-and-break mechanism, the motion of the armature being conveyed to the diaphragm through the medium of a short rod. Although having considerable carrying power, the notes made by these methods are comparatively low pitched, and they cannot always be made musical. By using the vibrating-armature type as a basis, however, and making certain modifications to the diaphragm, a high-pitched musical note can be obtained which has the advantage of being clearly distinguishable amongst normal traffic noises.

A horn of this type is the Sparton S.O.S., made by Graham Amplion, Ltd., 25, Savile Row, London, W.1. The mechanism of the horn consists of a laminated field magnet near which is mounted a heavy laminated armature supported on a corrugated steel spring. A contact breaker with an adjustable screw is fitted within the casing, and it is interesting to note that a condenser is bridged across the contacts in order to reduce sparking at the points. The armature is in contact with a circular corrugated diaphragm made of a special steel alloy.

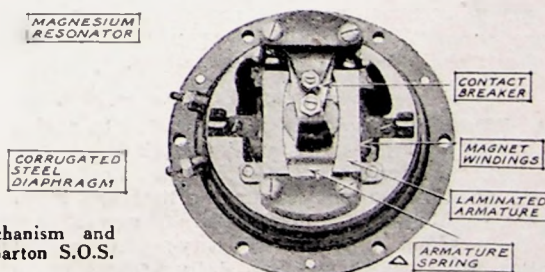
If no other parts beyond the trumpet and casing were added the horn would work perfectly well, but it would not emit the high-frequency "ping" note. To attain this a second diaphragm, known as a resonator, is secured to the outer face of the main diaphragm. The resonator is a disc of cast magnesium—an unusual metal, but one which experiments have shown to be the best for the purpose, as it is very light but possesses

the natural musical "ring" which is required.

When the armature vibrates, which, of course, it does at a very high speed, the movement is conveyed to the two diaphragms. These, however, have unequal periods of vibration, because the resonator, being very light, is able, as it were, to accelerate rapidly, so that it vibrates at a very much higher frequency than the main diaphragm, the combination of notes resulting in the distinctive and road-clearing "ping."

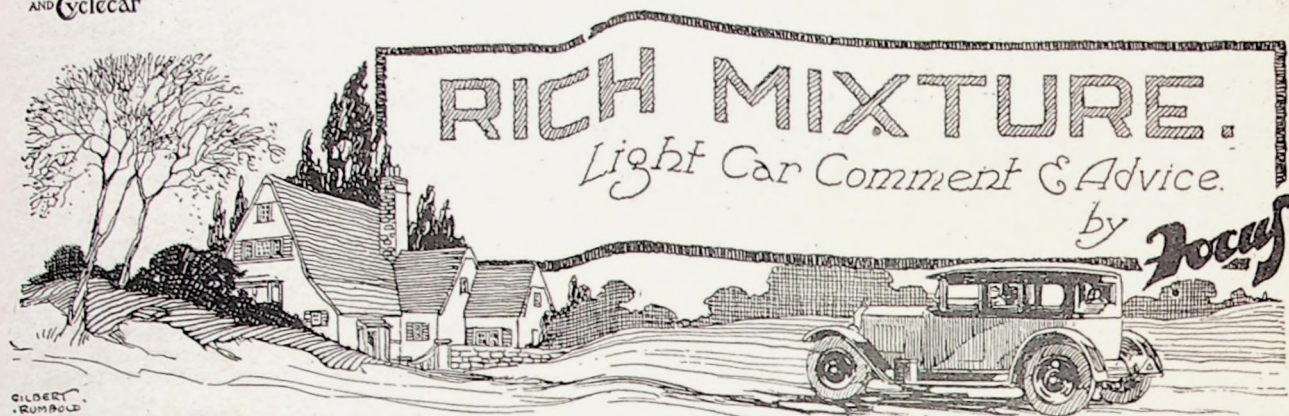
We have been using one of the Junior type Sparton S.O.S. horns on a staff car for some time and have found it to be very efficient and reliable. This particular model costs £2 18s. 6d. complete with push-button. The S.O.S. Senior is priced

The vibrating mechanism and resonator of the Sparton S.O.S. horn.



at £3 18s. 6d., and either model is available for six or 12-volt circuits, the 12-volt type in each model being supplied with a two-tone push-button.

Another interesting electric horn made by Graham Amplion, Ltd., is known as the Chimes. Its musical note is provided by two organ reeds supplied with compressed air from a small pump driven by an electric motor. The pump is of the eccentric vane type similar to a Zoller supercharger, and full working pressure is attained directly the motor is started by pressing the button. It will be recalled that the note of a Chimes horn was telephoned across the Atlantic recently.



Confusion of Road Signs.

CONSIDERABLE confusion seems to exist in the minds of local authorities on the correct sign to erect at a point where a road is joined by another coming in at right angles. In many cases I have seen the sign for a right or left-hand bend placed at these points, instead of the correct sign, which takes the form of the letter T lying on its side. If road signs are to be of any use they must be correct, for drivers who come across mistakes of this kind are apt to disregard warning notices entirely, and the old fable of the cry of "wolf" may be re-enacted with unfortunate results.

Flexible Mudguards.

IT has often been suggested that mudguards made of some flexible material would be a great boon. Those who champion the idea tell us that, instead of having to pay for a wing being beaten out after a minor collision, the material would be unharmed and we should go on our way none the worse. This sounds very nice on the face of it, but I am not at all sure that we should be any better off.

As it is, a wing often takes the force of a minor collision and saves the rest of the car from being damaged. With flexible wings this would not be so, and where we now have to pay for a wing being beaten out we might, if the idea were adopted, have to pay for a complete rear-body panel being renovated—a much more costly business. It seems to me that a good set of bumpers, fore and aft, is a much better way of guarding against the effects of minor accidents.

Maximum Weekly Mileages.

A READER who calls my attention to a claim of 27,000 miles in 13 weeks which was recently made (and later corrected.—Ed.) by an advertiser, tells me that he cannot imagine that any human being could stand the nerve strain of covering such a tremendous mileage. Twenty-seven thousand miles in 13 weeks means a daily mileage of 297, and I must say that I agree with my correspondent that for one man to keep this up for long would be a great strain, if not an impossibility.

The same correspondent remarks that he knows a man who does 600 miles a week regularly and he "is becoming a nervous wreck." I cannot say that I agree that 600 miles a week is enough to be harmful to a man or woman of ordinary physique, but anything over the thousand mark as a regular practice during the winter months impresses me as being more than enough for those whose driving is incidental to their main occupation.

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The Fashion Spreads.

SOME weeks ago I remarked on the absurdity of motorcyclists fitting red triangles to the rear mudguards of their machines, as motorcycles have been fitted with brakes on both wheels from time immemorial. I recently came across a case, however, which was an exception. The machine in question had one of those neat little notices "Keep off my Tail" attached to its rear mudguard. As it was a very small two-stroke, many years old, and capable, I should imagine, of a maximum speed of about 25 m.p.h., the warning struck me as being very necessary!

A Conflagration Brewing.

LAST Sunday morning I had a telephone message from a friend who said that his car was on fire and what should he do about it? The car in question was a new acquisition which had cost a lot of money, and the owner was so perturbed that it took him some minutes to explain that something was smouldering under the scuttle, alongside the petrol tank, and that volumes of smoke were being emitted. I told him to pull off, cut or in some other way disconnect one of the main connections of the battery, and that I would run round to see him as quickly as I could.

It was, of course, another instance of a short circuit having caused the wiring to heat up and the rubber and cotton insulation to be set on fire—a trouble which has been far too common of recent years and which can be a source of very real danger when, as is so often the case, the wiring is taken in close proximity to the petrol tank.

An Obvious Need.

I STILL contend, and I always shall, that the proper place for the switchboard-junction box is on the engine side of the dashboard under the bonnet and not behind the fascia board. With such an arrangement the wiring would be simplified, short circuits would be far less dangerous and the work of car manufacturers, coachbuilders, service depots and owners would be made much easier. The only wires which it is necessary to bring near the driver's seat are two for the horn and two for the ammeter—the starter cables can be taken beneath the floorboards to a foot-operated button to the left of the clutch pedal.

Perhaps it is expecting too much to hope that wiring will be wholly eliminated from the back of the fascia board for three or four years, but in the meantime one can put in a plea for stout, good quality cables being used and every effort being made to keep the wiring away from the tank.

Heroes or Madmen?

IF we are to believe all the thrilling things we read about "motor bandits" in the daily Press, our police must either be a race of supermen or lunatics. In the past few months I have read on several occasions of a car making a thrilling dash down a crowded street after a robbery, its speed being given as 50 m.p.h. This, of course, is all very interesting and thrilling to readers, but when we are told that a policeman attempted to stop its mad career by jumping on the step (!) board, we must either take off our hats to the police, or—what is more usual—take the report with a pinch of salt!

Railway guards become very expert in jumping on moving trains, but I can no more imagine a guard boarding a train travelling at a mile a minute than I can a policeman jumping on the running-board of a car travelling at 50 m.p.h.

Direct Action.

A FEW weeks ago I referred to the action of a lorry driver who, confronted with blazing headlamps which the owner declined to dim, released a powerful searchlight that dominated the road. I have now received a letter from a reader supporting the lorry driver. "I have found," he says, "that the only way to defeat the light-hog and prevent dazzle is to drown his lights in an even more powerful beam. Until I discovered this I suffered agonies at night through people refusing to reduce their lights. After several narrow escapes from bringing disaster on

other people and myself I fitted an extra powerful bulb to my off-side headlamp—which I do not normally use—and now when meeting dazzling headlamps this provides me with ample light to nullify their effect." We seem to be in for some hectic times!

Why—and Why?

WHILE in a garage the other day I heard a car owner who had crumpled his near wing against a wall in a fog wax extremely wrathful against motor manufacturers in general. It was his first car, so his views had the virtue of freshness.

"Look at all those gadgets," he said with a wave of the hand towards the fascia board. "How many of them are useful to a driver in heavy rain, or a fog, or when dazzled by the lights of another car? Not one. I'd give the lot for a wiper that wiped both ends or all of the screen and a powerful spotlight that showed up the edge of the road. Yet to get such things I have to pay for them as extras. Why on earth cannot they be standard and some of the other fitments extras?"

I can only answer—Why?

An Apparent Seizure.

FOLLOWING on my recent note on old-timers who refuse to admit defeat before a temporary breakdown comes the experience of a neighbour of mine who, although he has owned a car for three seasons, is still a novice in mechanical knowledge.

He was passing through a village one evening



AT PACKINGTON, WARWICKSHIRE. — The owners of an 11-22 h.p. de luxe model Wolseley find a pretty spot made doubly beautiful by the early arrival of winter.

recently when there came a startling screech from the vicinity of the bonnet. This was succeeded by a heavy grinding noise, and he hurriedly pulled up to investigate. Nothing was to be seen, but on attempting to start the engine the noise was redoubled. A youth from a garage strolled up, scenting a job, and promptly diagnosed the trouble as an engine seizure.

Trying to start up with the handle seemed to confirm this gloomy opinion. The garage proprietor was next consulted, and he had no doubt whatever on the matter. Either a piston had smashed or a piston ring broken. In any case the engine would have to come down.

Soon Rectified.

THEY were just preparing to push the car into the garage when, to the car-owner's joy, along came a friend whose motoring experience goes back to the days of the tube ignition. On the circumstances being explained, he naturally made an examination, and in a couple of minutes had located the noise as coming from the dynamotor in front of the engine. Removal of the metal band around the brushes disclosed a thick powdering of brass. "A bearing's chewing up," he said.

It was the work of a few minutes to detach the driving chain, and the engine, starting at the first pull up, purred away as sweetly as ever. They departed for home, leaving the garage man and his assistant a picture of blank astonishment.

Is It Pride?

WHAT is the cause of the very pronounced backward tilt of the head that characterizes so many drivers—especially those in saloon cars—nowadays? In some cases the nose is held so high in the air that one could imagine the driver was gazing through the roof. Curiously enough, passengers in the front seat do not seem to fall into the same habit, and their attitude makes that of the driver all the more comical.

Whether there is an advantage in holding the head in this position I cannot say, but on long journeys it must produce an uncomfortable feeling in the back of the neck. Personally, I have found that the healthiest and least fatiguing position is to sit as upright as possible, with the head at a natural angle. This attitude is certainly the safest, for it keeps one alert and ready to act.

Bang Went £250!

THOSE economists who seem to imagine that the sole purpose of life is to save up for a rainy day must endure acute torture over the way people contrive to purchase cars out of very modest incomes. Occasionally one does hear of measures taken which hardly seem wise, but not often. Such an extreme case came to my knowledge recently.

In this instance a man who had been paying premiums on an endowment assurance policy for 25 years drew the sum—£250—when due and straightway spent the whole of it in buying a car! Such a "splash," transcending the whole principles of life insurance, is sufficient to shock and scandalise the prudent, but does it not typify the spirit of the times?

A Link with Pepys.

TRAVELLERS along the Great North Road between Alconbury Hill and Eaton Socon will notice that a name marked for years on maps has disappeared. This is the Sun Inn at Brampton cross-roads. The hostelry is still there, but it has been extended and brought up to date and now rejoices in the title "Brampton Hut Hotel." Since Brampton Hut is an A.A. box the new title provides an interesting example of motor nomenclature influencing the signs of licensed houses. It was to Brampton that Pepys used to make his journeys and here he buried his gold, but as most guide-books refer to the Sun Inn in giving directions it is as well to note the change.



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Dazzle—The Solution.

THE annual problem of driving after dark without being dazzled by the lights of other cars and without causing needless inconvenience to others is a topic which reaches its zenith at this time of the year, when newcomers to motoring are enduring their first season of night-driving. They are suffering, many of them; and they are protesting in no measured terms against the apathy of the Ministry of Transport and every other authority which might—but does not—do anything to improve their lot. Older hands at the wheel are seldom heard complaining; they know how to mitigate the effects of dazzle, and in practising their own particular remedies are content to let others grumble for them.

The whole question really is far less troublesome than many believe; the large majority of experienced drivers do not agree that legislation is either desirable or necessary, and an end of the so-called "problem" might almost be said to be in sight. We see its disappearance in the increasing demand for an extremely clever invention in the form of lamp reflectors which can be readily dipped and twisted to the left by the operation of a single small control adjacent to the driver's hand. Lamps so constructed benefit the user as much as they benefit others, and for that reason it would not surprise us if in two or three years' time almost every car on the roads had lamps embodying this essentially practical feature.

Coming Transport Problems.

IN his most sanguine moments a prophet of ten years ago might have hesitated before predicting the enormous strides which would be made in motoring within the course of a single decade. Even motorists themselves, out and about, and up and down the country, in fine weather and foul, may fail to appreciate the enormous growth in the number of motorcars which has taken place of recent years. To enlighten them the following figures, taken from an analysis of licensing statistics issued by the Ministry of Transport, may be quoted. The number of motorcars licensed for the first time in March, April and May, 1927, was 57,541; the figure for motorcycles was 48,087. This makes a total increase of over 100,000 vehicles in three months, and should give every-

one furiously to think. Just previous to these vehicles coming on to the roads there were no fewer than 1,257,242 licensed vehicles, making a total of 1,362,870. Five full months have passed since these figures were compiled, and as the greatest increases are always noticeable in the spring, it can be safely assumed that at least another 25,000 vehicles have to be added to the grand total.

There are morals to be drawn from these figures.

First and foremost it is imperative that new road schemes should be completed with all possible haste and that local problems which have been shelved from time to time should be tackled before a state of chaos compels the authorities to take action. Secondly, motorists themselves should realize the importance of acquiring road sense and of thoroughly mastering road etiquette; thirdly, the daily Press should bear in mind the enormous increase in motor vehicles when dealing with one of their favourite topics—road accidents.

World Motor Transport Congress.

THE World Motor Transport Congress has, this week, been held for the first time in England, and distinguished delegates from all parts of the globe have been our guests at a series of lectures and luncheons, over which the leading British authorities on road transport have presided. The gathering has been a success in every way and has proved beyond all possible doubt that an international round-table conference on the various aspects of motor usage is good for all concerned.

Naturally, the various sessions of the congress brought to light widely different views on the more important issues, whilst individual delegates also dealt with purely local conditions and, in doing so, clearly revealed the basic fact that in minor questions of transport it will be difficult to arrive at international agreement; but, taken as a whole, the conferences have gone a long way towards attaining perfection in both vehicles and roads. On the first day one of the most forceful speeches came from Mr. W. Rees Jeffreys, the chairman of the Roads Improvement Association, who, after pointing out that the new Kingston by-pass, which is virtually a two-track road, is already proving inadequate, advocated special motor speedways, with regulations prohibiting stationary vehicles.

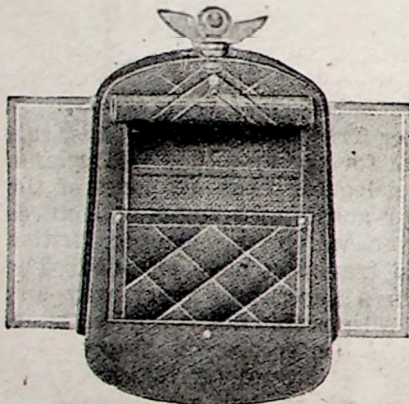
Topics of the Day



Handy Radiator Muff.

RAMSDENS (HALIFAX), LTD., Station Works, Halifax, are manufacturing a series of radiator muffs embodying a number of noteworthy refinements. Fabram radiator muffs, as they are known, are produced in two qualities, standard and junior. The former type is made from high-class black waterproof leather cloth, double lined with thick felt and soft blue cloth. A special feature is its double-flap front, by which the bottom half rolls down and the top upwards; thus either the upper or lower portion of the radiator can be covered—a feature which allows of very delicate temperature control.

The flaps are secured in either position by means of press fasteners and the filler-cap attachment is also by means of press fasteners, so that even if a large mascot is fitted there is no need to take off the cap when placing the muff in position. The edges of the muff are reinforced with flexible steel to prevent sagging, whilst clip attachments are used. For cars under 10 h.p. the standard model costs 18s., whilst the price of the junior type, which has a single-flap front, is 11s. 6d.



The Fabram radiator muff showing the two-flap front.

Engine Tyre Pump.

KNOWN as the Zodiac, an automatic tyre pump, which works from the engine, is being marketed by The Imperial Motor Industries, 11, Denmark Street, Charing Cross Road, London, W.C.2, at a price of £2 2s. It works by means of engine compression, but is designed so that only pure air is delivered to the tyres. In the case of engines having valve caps, it is fitted by drilling and tapping one of the caps for the ordinary metric plug thread, when the device can be screwed into position. For other engines a Y adaptor, which

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screws into the plug hole and carries both the plug and pump, is necessary. The Zodiac inflator is supplied complete with 13 ft. of rubber tubing, a pressure gauge and universal valve connector, and is guaranteed for one year. The weight of this device is only 13 oz. and it is claimed that it will inflate an average-sized car tyre in three to four minutes.

Ingenious P. and R. Battery.

PRITCHETT AND GOLD and **P.E.S. Co., Ltd.**, 50, Grosvenor Gardens, Victoria, London, S.W.1, are producing a battery which, although intended primarily for wireless, should prove very suitable for motorists who wish to fit a simple emergency lighting



A neat P. and R. battery with floats to show the state of charge.

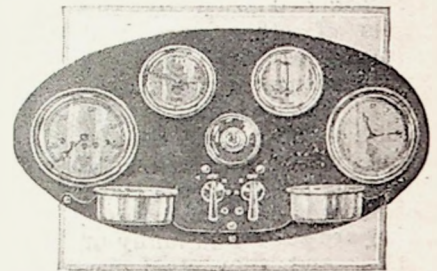
system—without dynamo or starter—to an old car or cyclecar which is not equipped with electric lighting. A special feature of this Peto and Radford battery, which is known as type P.C.F., is that it contains three coloured balls which rise or fall according to the specific gravity of the acid, thus indicating the need for recharging. For the purpose suggested this feature would be of great service, as the usual trouble with such lighting systems—that of not knowing when the battery needs recharging—would not exist. A 6-volt 30-amp.-hour type costs £2 6s. 6d., or £2 13s. in a half-inch wood crate, whilst £2 15s. 6d. and £3 5s. are the prices in the case of a 40-amp.-hour model.

Easily Fitted Ash Trays.

MANY owners of cars with metal fascia boards are deterred from fitting ash trays by the fear of spoiling the board by drilling, for should the tray subsequently be taken off unsightly holes are left. Desmo, Ltd., of Desmo House, Stafford Street, Birmingham, and 22, Ely Place, Holborn Circus, London, E.C.1, have overcome this objection by introducing a range of ash trays suitable for attachment by existing screws to the fascia boards of a number

of popular cars. The design employed for cars with oval fascia boards, such as the latest 11 h.p. Clynos, is shown in an accompanying illustration. It will be seen that in this case two ash trays are provided and are attached to a suitably shaped back plate which can be screwed to the fascia board in a few minutes. A very tasteful and well-balanced layout results.

The price of the type illustrated is very reasonable, the twin trays and back plate selling for 5s. 6d. For open cars, where there is a danger of the ash blowing about, a model with lids is available at 7s. 6d. Readers desiring information regarding models to suit their cars should get into touch with Desmo, Ltd., who will be pleased to supply full details.

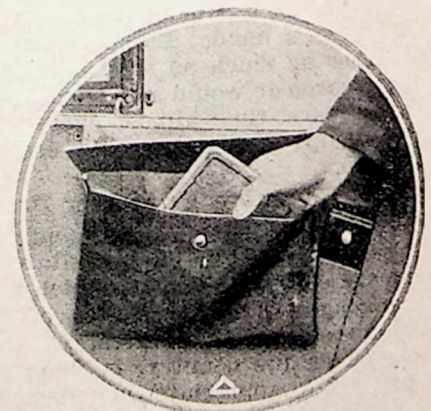


Fitted without drilling—the latest Desmo ash trays (see text).

Austin Door Pocket.

AUSTIN Seven owners who have felt the need for a door pocket for carrying maps and so forth will be interested to learn that The Service Co., Ltd., 273-274, High Holborn, London, W.C.1, have placed on the market a pocket which can be fitted to these cars in a few minutes. No tool other than a screwdriver is required for fitting, as the top of the pocket is intended to slip under the aluminium beading which runs along the top of the door, the beading clamping it in position.

This accessory, which is known as the Handy Pocket, can be fitted to either door and, at the modest price of 6s. 6d., should prove very popular. The depth



The Handy door pocket for Austin Sevens; note its ample size.

of the interior is about 7½ ins., whilst it is some 11 ins. wide, so that ample space is provided for maps, books, gloves and so on. Black leather cloth is the material used, and the flap, which is provided with a press button, is stiffened to prevent curling up of the corners.



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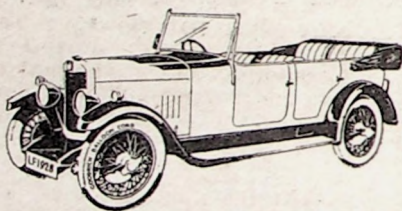
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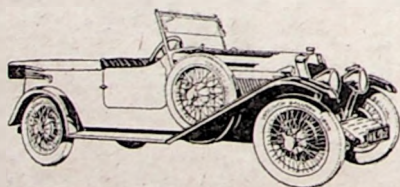
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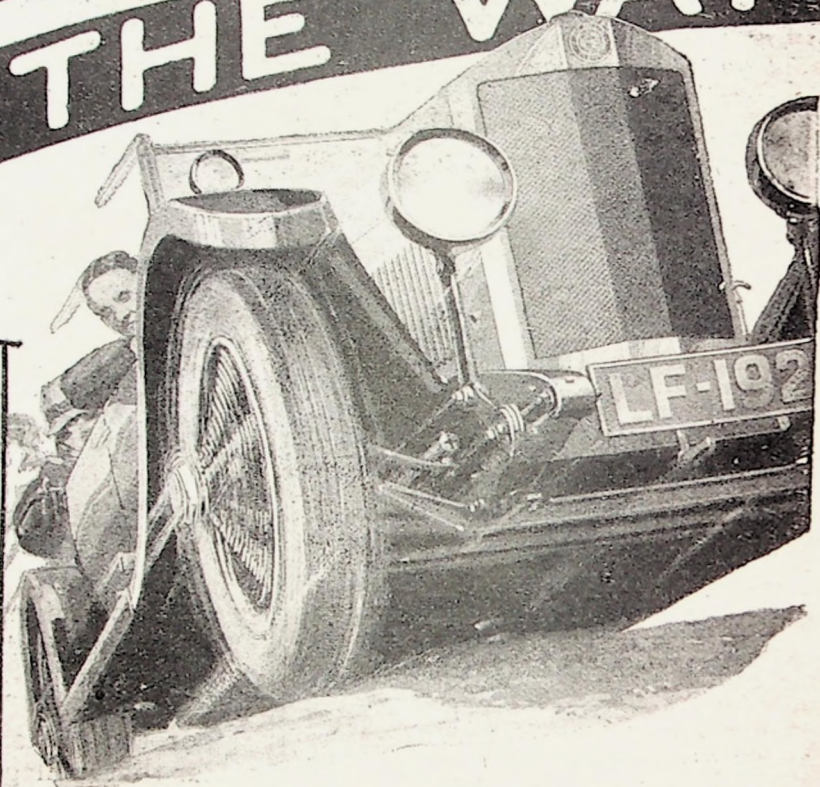
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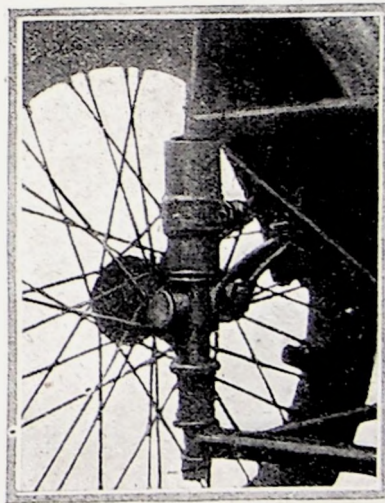
SIMPLE COMBINED STEERING DAMPERS AND SHOCK ABSORBERS FOR MORGANS — FAST THREE-WHEELERS—COLD WEATHER PRECAUTIONS

SINCE the idea of applying friction dampers to Morgan steering to prevent wheel wobble was first adopted, devices of this kind have enjoyed considerable popularity amongst owners of these cyclecars. The Editor has just passed me a letter from a reader, Mr. J. Chew, 7, Bar Terrace, Whitworth, near Rochdale, who has conceived an ingenious method of combining both a steering damper and shock absorber in one fitting. I understand that Mr. Chew has protected the invention and is considering placing it on the market.

An accompanying photograph shows an experimental model which Mr. Chew has fitted to his Morgan, and it will be seen that it replaces the telescopic tubes used to cover the front helical springs. The top (or outer) tube is provided with a ring of friction material located in a groove formed near its base. The tube itself is split longitudinally at various points round its circumference, whilst the friction ring is also divided to allow the whole to be contracted by means of an adjusting clamp. Thus, when the clamp is tightened the friction ring grips the inner tube and has a steadying effect on both up and down and rotational movement — in other words, it damps out both bounce and wobble.

as a light metal shroud is now fitted to enclose the whole assembly, leaving only the stops protruding.

I must say that the idea strikes me as an excellent one and, provided that the tubes are substantially made so that they have no tendency to buckle, should give good service. So far as I can see there is only one possible "snag," namely, that an adjustment which would give a suitable damping action for the steering might prove inadequate for preventing bounce, or vice versa.



The new combined steering damper and shock absorber for Morgans.

and the head replaced in a matter of 20 minutes or so. A motorcyclist competitor in this year's Scottish Six Days' Trials actually removed the cylinder head of one of these engines, decarbonized and replaced it between checks, the actual time taken for the work being only 16 minutes. Decarbonizing begins to loose its terrors when one has a single-cylinder two-stroke engine with no water pipes to disconnect and no valves to need grinding.

If you let loose a really keen Morgan driver at Brooklands he takes some holding. I have before me the results of the M.C.C. High-speed Trial which was held three or four weeks ago, and I note that H. R. Taylor in an Aero model managed to crowd over 25 laps into the hour allotted and to average no less than 70.5 m.p.h.

The fastest sidecar in all classes averaged 61 m.p.h. in the "unlimited" and the next fastest was some 2 m.p.h. slower. Taylor's speed, incidentally, was 7 m.p.h. faster than that of the best of the solo motorcycles and was improved upon only by cars in the unlimited class.

With the winter upon us, the risk of cracked cylinders is beginning to worry some of my readers. In my own opinion, however, the frost bogey is given too prominent a place in the scheme of things, because prolonged exposure to a very low temperature is necessary before the cooling water will freeze in the jackets. The cylinders of a cyclecar left out in the open all night, with the thermometer well below zero and with a cold wind blowing on to the radiator, might be found frost-cracked in the morning, but few of us, I take it, neglect our machines in this manner.

A thick rug thrown over the radiator and bonnet will combat a quite severe frost for several hours, whilst a 25 per cent solution of glycerine in place of the normal cooling water will resist 16 degrees of frost—a lower temperature than we experience normally in this country.

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Of course, the outer tube has to be prevented from turning, whilst the lower tube must be secured rigidly to the stub axle so that it moves with it, or the only effect of the friction ring would be to lock the two tubes together. The tubes are secured by means of "D" shaped stops fixed to the ends of the tubes. To accommodate these stops it is necessary to cut "flats" on the flanges on which the ends of the tubes rest, but this is the only structural alteration called for in fitting.

Actually, the photograph does not show the device in its latest form,

Mr. Chew states, however, that it is possible to obtain a very satisfactory compromise, so that both steering and road holding are greatly improved. Personally, I hope we shall hear more of his invention, for if it works as well in practice as it appears on paper, it should prove a boon to Morgan owners.

A feature of the two-stroke model of the Royal Ruby three-wheeler which makes a big appeal is that the aluminium cylinder head can be taken off, the engine decarbonized

WINTER TOURING IN COMFORT.

A TOPICAL REFERENCE TO MOTORING UNDER CONDITIONS WHICH ARE USUALLY CONSIDERED TO BE FAR FROM IDEAL, BUT WHICH CAN BE VERY ENJOYABLE.

FEW folk will deny that on a cold winter's day a certain amount of moral courage is necessary before one can dig oneself out of an armchair and, with one last look at the fire, don overcoat and wraps, preparatory to a run of 100 miles or so "for pleasure." This is merely a natural temptation to take the path of least resistance, as it were, which resolves itself into a feeling that it will be infinitely more pleasing to toast one's toes rather than to take deep draughts of fresh air and turn over yet another leaf in our history of the countryside which we have been slowly compiling.

As a matter of fact, there is quite a lot to be said for winter runs, not the least of their advantages being that roads are far less crowded—and in that alone, surely, sufficient inducement is given to encourage even the laziest fireside lover to get out and about.

Long-distance touring in winter has an ineffable

charm of its own, yet few motorists indulge in it except at the call of business; but what can be better than making a fairly long day trip in a snug and comfortable saloon and being welcomed at the end of the journey by mine host of the country inn we have chosen for our resting-place, and—of more practical value, perhaps—the ingle nook by the fire to which he leads us? Short tours also can be very enjoyable, provided that the mistake of starting too late in the day is not made. If it is to be a morning jaunt, why not pack a hamper and, if the day be fine, picnic within the shelter of the car, or inside the vehicle itself? There is really no reason why you should not, if the car is a saloon, whilst even touring cars can be made delightfully comfortable, provided a little trouble is taken in seeing that side screens fit snugly and are kept in good condition.

If you cannot get away until after lunch, then have lunch early and be away certainly not later than half-past one. This will give you about three hours before dark—time enough to explore at least 60 miles of countryside; but whilst you are waiting for your passengers have a quick look over the tyres, for a cursory

examination of this sort will often disclose a flint, or even a nail, which is slowly but surely getting on with its nefarious work and which, if left to its own devices, may be the cause of a flat tyre just when you are on your last lap, and when, perhaps, it has just started to snow.

With open touring cars the question of warm clothing arises, and unquestionably a leather coat is one of the finest safeguards against feeling the effects of cold; but one can keep tolerably warm even under the most severe weather conditions if a light mackintosh is slipped over one's overcoat; in extreme cases sheets of newspaper may be interposed between the two garments, particularly if there is a keen back-draught blowing across the shoulders.

The occupants of saloons need take very few precautions to keep out the cold; in fact, it is one of the charms of a saloon that the crew can, as a rule, travel hatless and without overcoats; but if the car be an open tourer and the day be very cold, certain safeguards should be employed. They will not only prevent the unwelcome appearance of a cold a few days after-

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wards but will enable driver and passengers to enjoy every minute of the run, and be sorry, perhaps, that the imminence of darkness suggests that the car should be turned homewards.

Cold feet are a form of slow torture, and if a car has the reputation for being chilly, do not be afraid to put on two pairs of socks. You may be fortunate enough to have one of those very snug footmuffs, and even mere males have been known to slip their feet into them when their fellow-passengers were not looking!

A thoughtful owner, well known to the writer, always makes a point of having floor mats in duplicate, the idea being, first, to guard against cold feet, and, secondly, to provide against the time when a prospective purchaser will come to look at his car. Needless to say, the under mat is then carefully brushed and put on top.

Rear-seat passengers should bear in mind that there are very few four-seaters in which a draught of one sort or another does not play round their faces, necks and shoulders. In the circumstances, therefore, a thick woollen muffler is indicated, unless one's host has had the forethought to provide a rear screen; but, in any case, do not forget to take a rug.

If the car is stopped, put the rug or rugs over the radiator and forward part of the bonnet; they will help to keep the engine warm and will themselves derive warmth which will be very much appreciated afterwards when the crew once more take their places.

Dirty side screens are without doubt very depressing, and on a cold, fine day one may want the side screens in position to ward off a keen side wind, whilst wanting at the same time to be able to obtain a good view of the surrounding country. Once again we would offer the old, old tip of keeping them thoroughly transparent by using a good quality metal polish. Celluloid cleaned in this way can be made to give almost the visibility of glass and, in the experience of the writer, constant cleaning with metal polish appears to prevent the celluloid turning yellow.

Here is a useful little hint in connection with open touring cars: The driver seldom erects his side screen, and uses the edge of the body as an arm-rest. During winter runs, however, it may be necessary for this screen to be put in place, in which case the support for the right elbow is often missed. A neat arm-rest which can be attached or detached in a moment can now be obtained. It can be kept in the tool locker or in any other handy storage place when not in use.

Make sure that the car is weather-tight when hood and sidescreens are erected. A little ingenuity usually can be exercised to prevent draughts, whilst if the hood is of the leather variety it should be thoroughly freed from dust occasionally and given a coating of furniture polish, mixed with a little turpentine; it will then resist the wet indefinitely. Keep your screen-wiper in good order and do not forget that two wipers—that is, one for your passenger as well as yourself—are really a well-warranted luxury.

Readers are warned that it is not considered advisable in the case of some suction-operated wipers to work the two blades in tandem from the same operating cylinder—not because the instrument is incapable of standing up to the strain, but because at full throttle openings, or when the accelerator pedal is suddenly depressed, the necessary amount of suction to drag two blades across the face of the glass may not be forthcoming.

As a matter of fact it is quite a good plan to fit up a hand or Bowden-operated wiper on the passenger's side, an ingenious conception of this idea embodying a small pedal, so that the passenger can move the wiper by a slight depression of the toe.

At the end of a cold journey many folk make what is usually regarded as a mistake in sitting down right away to a heavy meal, preceded possibly by an "appetiser." Many authorities will tell you that a cup of hot soup taken on arrival, the meal following about 20 minutes afterwards, is far better.

(1) Even when snow lies thickly on the ground there is a charm in winter motoring. (2) Keep your engine warm by throwing a rug over the radiator and bonnet. The rug itself will be all the more comforting afterwards. (3) Coming into fashion, particularly for fine-weather winter motoring—saloons that open. (4) Winter picnics can be very enjoyable, particularly if a Brooks case like this is available. (5) Duplicate floor mats have their advantages, as explained in the text. (6) A detachable arm-rest marketed by Dunhills, Ltd. (7) Last, but not least, a good quality rug is essential to comfort.

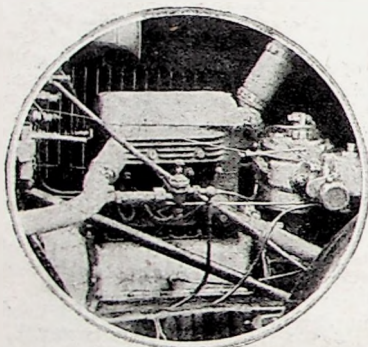
People Think That
Motoring Should be
a Business
Only. The Writer
Article Thinks
Otherwise.

THE 8.6 H.P. G.A.R.

A FAST SPORTS CAR, VERY POPULAR IN FRANCE, WHICH IS NOW ON THE BRITISH MARKET.

WE were able last week to inspect a newcomer amongst sports cars on the English market—the 8.6 h.p. G.A.R. This little car has enjoyed considerable popularity in its country of origin—France—during the past three or four years, but until quite recently, when Messrs. The Boston Automobile Engineering Co., 103, Fulham Road, obtained the sole concession for Great Britain, Ireland and the Colonies, G.A.R. cars had not been seen in England.

The G.A.R. is essentially a sporting car, and all models are fitted with Chapuis-Dornier engines of 1,098 c.c. Three types of engine, however, are supplied—a side-valve job and two o.h.-valve units, one having eight valves and the other twelve. In the latter case there are two inlet valves and one exhaust valve per



An off-side view of the engine and supercharger. The latter is mounted vertically and is placed between the engine and carburetter.

cylinder. The cylinders are cast monobloc and have detachable heads. The overhead valves, which are of large diameter, are actuated by adjustable push-rods. Oil is circulated by a mechanical pump, while on some models an oil radiator is carried between the dumb-irons. Solex, Cozette or Zenith carburetters are fitted. High-tension magneto ignition is employed and the dynamo and magneto are driven in tandem from the timing gear, which is situated at the forward end of the engine. What these engines lack in size they amply make up in power, all of them being guaranteed to develop 45 b.h.p. at 3,500 revs.

The gearbox is in unit with the engine and is specially made for G.A.R. cars by Chapuis-Dornier. Four speeds and reverse are standard for all models, the ratios being 4, 6, 9 and 15 to 1 and reverse 16 to 1. The clutch is of the cone type lined with Ferodo and is remarkably smooth.

Transmission to the rear wheels is by means of an enclosed propeller shaft and differential gearing, the pinion having 14 teeth and the crown wheel 63.

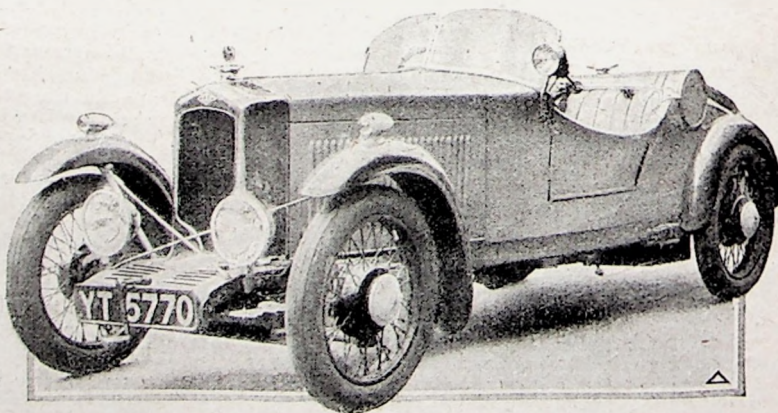
B34

Three views of a supercharged eight-valve G.A.R. A large dickey seat is provided in the tail.

The frame is of channel-section pressed steel and the front axle is particularly strongly made, being of I-section between the springs, while the ends are upswept and of square section.

Suspension is by half-elliptics forward and quarter-elliptics at the rear. Four-wheel brakes and a powerful transmission brake are included in the specification. Cozette superchargers are optional on the two-seater Garton models, the 12-valve supercharged car being guaranteed to do 100 m.p.h.

The following are the prices of the G.A.R. cars:—Chassis, o.h.v. standard £190, o.h.v. supercharged (eight-valve) £245, o.h.v. supercharged (12-valve) £270; two-seaters, side-valve standard £205; side-valve de luxe £212 10s., o.h.v. standard £217 10s.; four-seater, o.h.v. standard £240, o.h.v. de luxe £272 10s.; closed cars, o.h.v. coupé (two-three-seater) £270, o.h.v. all-weather (four-seater) £280, o.h.v. Weymann saloon (four-door, four-seater) £320; Garton model sports, o.h.v. standard (eight-valve) £240, o.h.v. supercharged (eight-valve) £300, o.h.v. standard (twelve-valve) £265, o.h.v. supercharged (twelve-valve) £325.



WITH SPORTING LINES.

Rakish lines and a low build make the G.A.R. very attractive in the eyes of a sportsman, but comfort is by no means sacrificed for speed.



OUR READERS' OPINION

We take no responsibility for the opinions expressed by readers. Correspondents may use a nom de plume, but every communication must be accompanied by the writer's full name and address. Letters for the next issue should reach us by Monday morning and should be addressed to the Editor, "The Light Car and Cyclecar," 5-15, Rosebery Avenue, London, E.C.1. We reserve the right to make any alterations or deletions which we deem necessary.

FOX HUNTING CONDEMNED. Motorists Who Resent Being Asked to Assist.

The March of Progress.

The hunting fraternity are naturally annoyed that their sport must go the way of bull and bear baiting, but all must bow to progress. Our standards in all things are higher than in grandfather's time. "Forrard

Higher Standards Away" says that 11 foxes out of 15 escaped. The greater cruelty then, for they are taken another day, and there-

fore suffer the chase on several occasions before enduring the agony of their gory death.

EVEN ON THE FIELD.

"Forrard Away" Taken to Task.

Your correspondent "Forrard Away" defends fox hunting on the grounds that motoring also results in injury and death. Apart from the futility of the tu quoque form of argu-

Irrelevant Remarks.

ment, may I be allowed space to point out to "Forrard Away" that the two cases are not, in point of fact, in any way parallel. A motor drive terminating in an accident can hardly be called a successful run, and I should imagine that for a time, at any rate, all the sport is knocked out of motoring for a motorist who has the misfortune to kill or injure another. But the purpose of a hunt is to obtain a kill; and although hunters treat us to much delightful nonsense (it is commonly stated that the fox enjoys the hunt as much as the hounds), we have yet to hear it suggested that the fox enjoys being killed. TRIUMPH TEN.

"Keep to the Point."

The correspondents who champion fox hunting would have done better in their replies to my previous letter had they kept to the point and not brought in side issues such as: Can

I ride a restless horse? Why use a nom de plume? etc. If Mr. Segar-Owen had

Fairness to All.

only appealed for kindness to dogs and horses on the ground of kindness to animals, I am sure he would have had the support of motorists one and all; but, unfortunately, he made two appeals, one for the care of the hounds and horses, and then one for motorists to help the hunt, and it is to the latter appeal I object.

I made no mention of not stopping my car for a restless horse, so the thought of the police court does not worry me; but I can assure Mr. Segar-Owen that a hunt will never receive any help from me in any way, and I resent his appeal.

As it would not be fair to the Editor to bombard him with too many letters on this subject, I suggest that if any correspondent wishes to write to me further on the matter, or wishes to know if I can ride a horse, why I used a nom de plume, and what are all my objections to fox hunting, he should apply for my name and address to the Editor, who has my full permission to give it.

A LOVER OF NATURE.

Fox Hunters Condemn Bull Fighting!

Would you please allow me to congratulate your readers on the letters published in your issue of November 4th in connection with fox hunting? To all true sportsmen, it was

A Paradox.

indeed a tonic to read the replies to Mr. Segar-Owen's preposterous letter. That fox hunting is the most cowardly, the most brutal and the most revolting recreation in Europe to-day is admitted by every responsible section of society, except by that which practises it. The paradox of the situation, however, is that even the latter class would voice their disapproval of bull fighting, although this form of "sport" demands the greatest skill and the utmost courage. Surely even the crudest justification for the hunting of animals relies upon the opportunity for the display of courage on both sides.

For these reasons, I consider it an insult to my sense of sportsmanship to be asked to assist still further in this nefarious form of recreation,

SERO SED SERIO.

Damage to Crops and Property.

Congratulations to Mr. Duncan Hobart and "Fair Play" on their replies to Mr. Segar-Owen's letter. Needless to say, I heartily endorse their remarks. With regard to the personal note in the replies of Mr. H. O.

The Question of Danckwerts and "Forrard Away" regarding my ability in horse riding, I can

only say I was attached to the Horse Transport in '14. I think this provided more chance for a display of riding skill—and was for a rather more worthy cause—than worrying a small animal to death. Mr. Danckwerts also takes offence at my use of a nom de plume. I was under the impression this was a more or less usual procedure. I shall, however, be delighted to oblige him with my full name and address, also as much of the family history as I know if he cares to apply to the Editor of this journal for my identity.

It would, of course, be impossible for any ordinary person like myself to combat the vast wisdom, logic and sense of proportion he displays, so that I must be excused if I do not quite see the connection between the homely sport of fishing and the "very expensive," unnecessary, brutal and offensive sport (?) of fox hunting.

"Forrard Away's" remark that out of 15 foxes only 4 were killed seems only to bear out my point in my original letter that all the skill and pluck is shown by the fox. His inference on the number of accidental deaths due to motoring seems rather too absurd to be taken seriously, as the idea of motorists running down pedestrians, except accidentally, belongs undoubtedly to the comic papers.

ONE OF THE COMMON MOTORISTS.

This correspondence will definitely close next week.—Ed.

OUR READERS' OPINIONS (contd.).

Engine-oil Temperature.

A great deal of correspondence has recently taken place in *The Light Car and Cyclecar* on the importance of water temperature, but never a word do we see with reference to engine-oil temperatures. Personally, I think the latter is just as important as the former, or must we "trust to luck"?

Comparative Figures.

In general engineering work and plant maintenance one comes across the trouble of hot bearings. Does this heating never occur in internal-combustion engines? As an engineer who realizes the importance of engine-oil temperature, I had a Coley dashboard-reading thermometer fitted to my Belsize-Bradshaw oil-cooled car some time ago. My car, incidentally, is also fitted with an external oil cooler.

I found that the oil reaches about 50 degrees C. after some 8 miles' running, and, later, the reading varies between 50 and 70 degrees C. This latter figure indicates the maximum temperature, no matter how far the car is run. These figures were obtained when I was using Wakefield's X.L. Castrol oil. I find that need of adjustment to some part of the engine causes the temperature to rise above the 70 degrees C. very rapidly.

Quite recently I was advised to try Wakefield's X.X.L. Castrol. I then started on a 1,000-mile tour in Devon and Cornwall, climbing such well-known hills as White Sheet, Salcombe, Holne Chase, Dartmeet, and so forth. Naturally, I expected that in such a hilly district the temperature would rise considerably above my normal figures. My records show that the average temperatures were 5 degrees lower, thus

proving that I was using a more suitable oil for my engine. I should add that oil consumption improved from 1,600 to 2,000 m.p.g.

If any readers have records of oil temperatures reached in water-cooled engines I should be very interested to hear their experiences. S. H. MOCKETT.

Free-wheel Drive and Gear Changing.

I see it is claimed for free-wheel drive that it simplifies gear changing, but I fail to see that its adoption solves the essential problem. In order to change down noiselessly at any speed above a crawl, the layshaft

A Novice's Difficulty.

must be speeded up so as to give the engaging pinions the same peripheral speed. The usual method, of course, is to do this with the engine by double declutching, and this (speaking as a novice) I take to be the chief difficulty in gear changing. But I do not see how this can be avoided merely by having a free-wheel drive. The only help this can give is in taking up the drive after the gears are engaged, and if a correct change has been made there is no difficulty in this. A.D.G.

* * A free wheel in the transmission behind the gearbox allows every shaft and wheel in the gearbox to come to rest if, when changing gear, a pause is made in neutral with the clutch free. This would be going to unnecessary extremes, but serves to illustrate the effect of the free wheel. In practice it is possible with a free wheel to make lightning changes of gear, this being due to the fact that the "spinning" wheels in the gearbox rotate only by their own inertia and are not being driven by the rear wheels.—Ed.

Further Test of Extra-air Valve.

Those who followed a discussion which recently took place in the columns of *The Light Car and Cyclecar* on the merits and demerits of extra-air valves will recall that the chief

A Semi-automatic Type.

fault in an otherwise excellent accessory was the fact that the largest quantity of extra air was drawn into the cylinders under conditions when the engine needed it least, namely, when the engine was ticking over. Hence, if the valve was set to give the best results when the engine was doing its normal work, so much air was introduced when the throttle was closed that (with the clutch out or the gear in neutral) the engine stopped—an annoying occurrence in traffic.

Since the publication of my report on a test arranged by *The Light Car and Cyclecar* (see the issue for July 22nd), I have submitted to a prolonged and rigorous test a device which it is claimed will overcome this difficulty. This is the semi-automatic attachment to the Mosaire valve, made by Messrs. Aldam and Co. The results of this test are certainly interesting.

The valve is shown in section in an accompanying illustration, but for simplicity the flange with the passage to the induction pipe is omitted. It will be observed that a Bowden control operates a plunger against the action of the spring shown in the upper part of the instrument. The plunger can thus be drawn up to any required position. This allows the piston to rise in the cylinder under the action of a second spring, shown beneath the piston crown, the rod of this piston exposing the air holes which allow air to enter.

It will be noted that the piston rod is hollow and the passage formed in it connects the interior of the flange (and therefore the induction pipe) and the space below the piston.

Now when the suction in the induction pipe is greatest, that is, when the throttle is closed, the suction is conveyed along this passage to the space below the little piston in the valve and, overcoming the push of the spring, pulls the piston down and closes the air holes.

The idea appeared to me as being very ingenious, but I certainly had my doubts as to whether the suction would be strong enough to have the desired effect. To my surprise I found that the suction of my engine was so strong that it was only on open throttle that the piston rose at all. To allow for this, the drilled passage in the piston rod is fitted at its lower end with a sliding tube which can be locked in any position by means of a little grub screw. The suction can be materially reduced by pushing this tube in, and I found this adjustment very delicate.

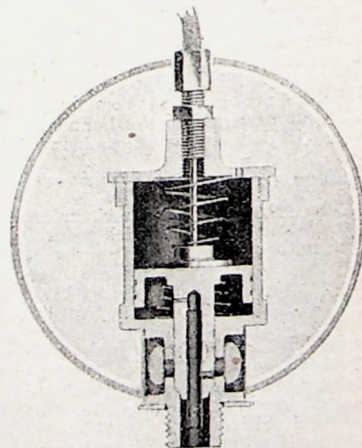
I have now run my car for 2,000 miles with this valve

fitted. Having found by trial how much air the engine will take at full throttle, I open the Bowden control to this position as soon as the engine has started. No further attention is now necessary, for as the throttle is closed the air valve is automatically closed also.

In order to provide visible evidence of the working of the valve under road conditions I removed the gauze-covered ring which protects the air holes and fitted one which made an air-tight joint, but had a tube soldered into its side. Thus, any air which entered the valve had to pass through this tube. A rubber tube connection was carried through to the instrument board where I had a specially made and calibrated flow meter.

The needle of this instrument gave an indication of the quantity of air taken in under all conditions and it also

A sectioned view of the semi-automatic Mosaire extra-air valve, which is referred to in this letter.



showed plainly the throttle setting at which the suction closed the air valve. It was certainly a rigorous and positive test, and I was fully satisfied that the valve did all that was claimed for it. In consequence, I intend to retain the valve as a permanent fitting to my car, although I may add that I have now removed the flow meter because I found its indications so fascinating that there was a danger of my watching the instrument more than the road!

A. H. STUART, PH.D., B.Sc.

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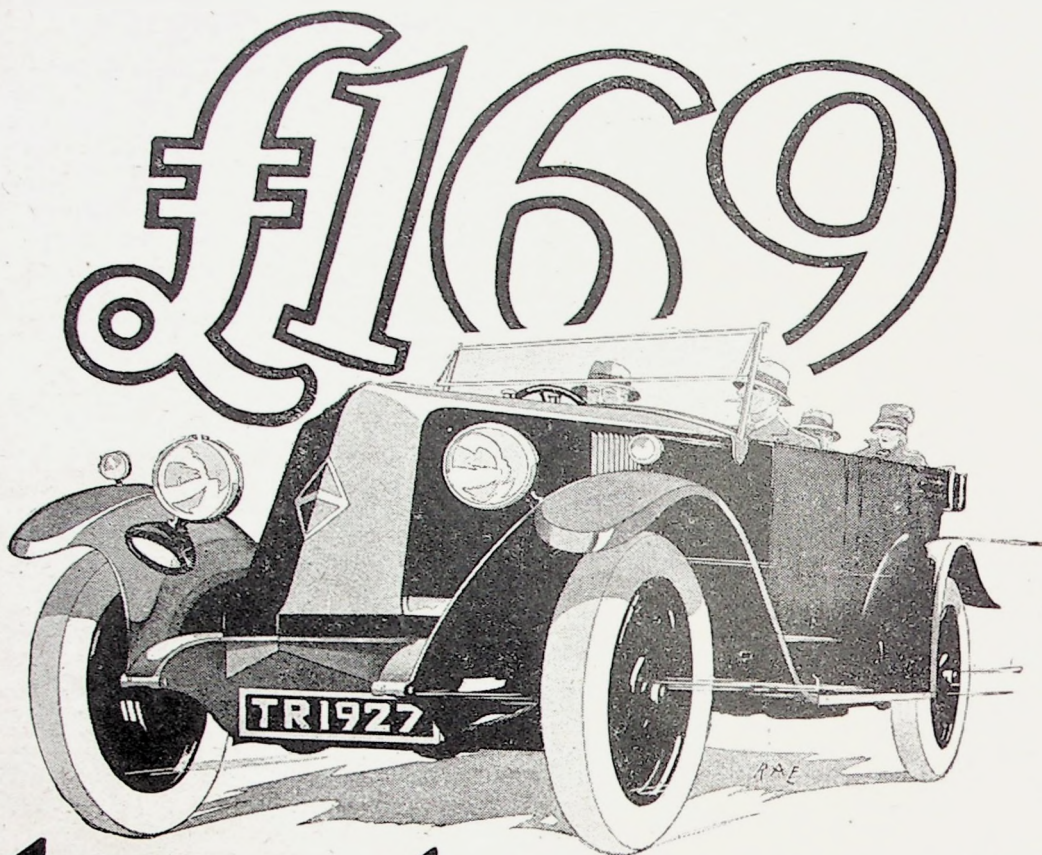
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RENAULT MONASIX

OUR READERS' OPINIONS (contd.).

"Appalling Shortage" of London Garages.

Official figures just issued show that the number of motor vehicles registered in the county of London is increasing by a thousand a week. This must be cheerful reading for the motor trade, but one wonders whether they are not coming to the end of their tether—at least where London is concerned—on account of the appalling shortage of garage accommodation. Hundreds of people—I know of several in my own little circle of friends—must be deterred from buying a car because of the difficulty of garaging. Most London garages are crowded out, and where accommodation is available it is often dark, damp, dirty and generally uninviting. There is not only scope here for well-organized commercial enterprise; it is a question whether the Society of Motor Manufacturers and Traders, or other official body, would not find it in their interests to take the matter up and prepare London garaging schemes on as comprehensive lines as the housing schemes.

WALTER FORREST, M.P.

CONDENSED CORRESPONDENCE.

The service of the Zenith carburettor concern is praised by Mr. H. C. Leat (Bristol). He posted a Zenith carburettor (4½ years old) to the makers for overhaul and to have an air intake fitted, and received it back within 40 hours. Mr. Leat states that the carburettor had been rebronzed, cleaned and fitted with a new throttle lever, balance weights, air intake and so forth, so that it was very difficult to recognize it as his own instrument.

Mr. G. F. Simond, who ran a Riley Nine Weymann saloon in the Cambridge University A.C. speed trials, writes to point out that his apparently poor performance was due to several reasons which in no way reflect upon his car. In the first place his car, which has a 1,100 c.c. engine, was running in the 1,500 c.c. touring class, whilst the fact that it was fitted with a saloon body was naturally a handicap when competing with open sports models. In addition Mr. Simond states that he had made no effort to

tune his car specially; that he arrived at the start somewhat late, and that his run had to be made with a comparatively cool engine.

Owing to the large number of replies received following the publication of an "Information Wanted" paragraph regarding the Belsize-Bradshaw, Mr. R. J. Farmer finds it impossible to acknowledge them all individually and wishes to thank all those who helped him through the medium of these columns.

INFORMATION WANTED.

AUSTIN SEVEN AND PEUGEOT.—Owners of these cars who have converted them for one-legged drivers are asked to get in touch with E. Hargreaves, 22, Eshton Terrace, Clitheroe, Lancs.

KINGSBURY JUNIOR.—The chance to buy or borrow an instruction book dealing with this car would be welcome.—E. E. Day, 29, Cheltenham Terrace, Heaton, Newcastle-on-Tyne.

DEEMSTER.—The opportunity to buy or borrow an instruction book dealing with the 1923 or 1924 model would be appreciated.—H.O., 11, Glenhorn Grove, Brooklands, Cheshire.

WOLSELEY.—The loan of, or opportunity to purchase, an instruction book dealing with the 1922 10 h.p. model would be appreciated.—W. J. Sheldrake, "Brightwell," 18, Coleridge Road, N.12.

T.B.—Any reader who has a handbook or spare parts list for the 1922 model which he is willing to loan or sell is asked to get in touch with R. Kuaggs, 88, Burley Lodge Terrace, Hyde Park Road, Leeds.

JOWETT.—Readers who have fitted shock absorbers to the long two-seater model are asked to write, giving their experiences of the most suitable type, to Harvey Gordon, 7, Hermitage Road, Hr. Crumpsall, Manchester.

NAME AND ADDRESS.—The Retford motorcyclist who was driving an open grey Morris-Cowley from St. Albans to Retford, on Sunday, November 6th, after leaving his wife at St. Albans, is asked to communicate with T.T.T., care of Messrs. Henry Greenwood and Co., 24, Wellington Street, London, W.C.2.

CLUB ITEMS AND SPORTING EVENTS.

GRASSINGTON M.C.

This club held a sporting trial over three laps of a severe course on November 15th. The route was from Grassington Square along Moor Road, round the back of the Sanatorium to Hebdon Ghyll, and there were eight observed points.



Dhorne (Morgan), winner of the 1,100 c.c. cyclecar class in the Armistice Cup Race.

WEST EALING M. AND M.C.C.

The following light car drivers gained awards in the club's recent Hospital Cup trial:—A. Mollart (A.C.), replica; R. Clark (A.C.), silver medal; H. Nickless (Austin Seven), team prize. The sum of £9 6s. 6d. was collected for the hospital, and the awards will be presented at the annual dinner, notice of which will be published in due course. The club's next event is a semi-colonial trial for the President's Cup on November 27th. Further information concerning this event may be obtained from the hon. secretary, Mr. J. Nuttall, 6, Leybourne Avenue, West Ealing, W.13.

FORTHCOMING EVENTS.

- November 19.
Inter-Varsity Reliability Trial.
- November 20.
Woking and D. M.C. and C.O. Trial.
- November 22.
New Cyclecar Club, First Annual Dinner at Hotel Cecil.
- November 26.
Carshalton M.C. Trial.
Jowett Club Rally (Godstone).
- November 27.
West Kent M.C. Reliability Trial.
Uxbridge M.C. Winter Sports.
- November 30.
Uxbridge M.C. Dance.
- December 3.
Brighton and Hove M.C. Annual Dinner.
Kent and Sussex L.C.C. Annual Dinner.
- December 4.
Woolwich, Plumstead and D. M.C. Championship of Clubs Trial.
London M.C. Social Run.
- December 9.
J.C.C. Annual Dinner.

BELSIZE-BRADSHAW L.C.C.

The annual dance was held again this year at the London Bridge Restaurant on November 8th, and it proved to be yet another feather in the club's cap of successful events. Dancing commenced at 8 p.m. and continued until midnight. There was a very encouraging number of members present, and altogether about 50 couples took the floor. The refreshment room was extremely popular, for a light buffet supper was very tastefully served during the evening. The function was purely informal and there was no speechmaking, but nevertheless the club deserves every congratulation upon the excellent spirit of camaraderie in which its events are run, and upon this successful evening in particular.

UXBRIDGE M.C.

The club's amusing little publication, "A Chat on the Winter Events," contains details of a winter sports event to be held at Hindhead on November 27th, a dance on November 30th, the annual dinner on December 7th, and a midnight run to Margate on December 10th. Members are asked to "Clinch these dates!"

LONDON M.C.

The club's visit to the London Hippodrome was thoroughly enjoyed by 70 members, and the evening concluded with supper at Lyons' Corner House. A very attractive winter programme has been arranged, and it is hoped that it will be well supported by the members. The membership now runs well into three figures, and the club has a very rosy future. More information concerning its activities will be supplied by the hon. secretary, Mr. F. W. C. Lawrence, 23, Primrose Hill Road, Hampstead, N.W.3. On December 4th a social run will start from the Marble Arch at 10.30 a.m. for Camberley and Red Road. A dance will be held on December 10th.

INTER-VARSITY TRIAL.

The third annual Inter-Varsity trial for the Motor Cycling Cup will start from Dunstable at 11 o'clock to-morrow (Saturday), November 19th. The starting point will be the Sugar Loaf Hotel, in the middle of the town, and the route will be very similar to that used last year, although we understand that it will be rather more severe. Several of the "terrors" which occurred in the first trial and were excluded last year have been reintroduced. The course measures approximately 40 miles and has to be covered twice, both times in the same direction. There are two observed water-splashes and 11 non-stop sections. From a spectator's point of view, it is probable that Redbournebury and Bonnar's Farm will be the most interesting. White Hill is also likely to prove amusing for onlookers, whilst the old favourite, Waterworks Hill, is sure to attract a large crowd. The entries have not yet been revealed, but it is known that the percentage of cars is very much higher than in previous years. Three-wheeler drivers will be allowed to use non-skid chains, this fact alone giving the impression that the course is a real "he-man's." For illustrated reports see next week's issue of this journal and *Motor Cycling*.

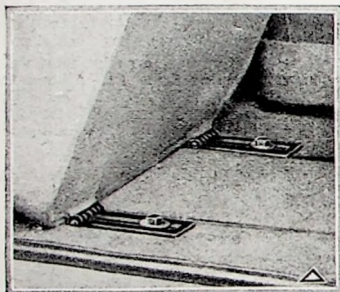


We invite readers to send us hints gained from their own experience for inclusion in this feature. Five shillings will be paid to the sender of any hint published, but we cannot undertake to return contributions not used.

Adjusting Seat Positions.

There are one or two makes of car in which the front seats tip up to facilitate entrance to the rear seats and yet are not provided with adjustment for leg reach. It is quite easy to alter the fixings of such seats so that they can be moved backwards or forwards a little.

The hinges used generally have limbs 6 ins. or so in length, through which



Slots cut in seat hinges enable them to be adjusted for position.

are drilled two or three screw holes. These holes should be joined by filing and cutting with a hacksaw a wide slot along the length of that limb of each hinge which is usually screwed to the floor. Bolts and wing nuts should be substituted for the wood screws on the floor of the car so that by slackening off the nuts the slotted limbs of the hinges may be set at any desired position.

Irregular Brake Action.

Trouble is occasionally experienced by failure of the brakes to come off after application. This is more often experienced when the brakes are fiercely applied, and may generally be traced to one of several causes.

Lack of oil on the joints of the brake gear is very likely to be a source of trouble, while partially-seized brake camshafts and broken or weak pull-off springs may also prevent the brakes from coming off promptly. Another possible cause, in the case of badly worn brake linings and when cables are used, is that at full operation of the lever or pedal the cam moves almost to the dead-centre point, and the pull-off spring will not then be able to bring the cam back to its normal position.

240

Weatherproof Finish.

A pleasing permanent blue-black finish may be given to small iron or steel parts in quite a simple manner. Dip the metal to be cleaned in a solution of copper sulphate for a few minutes, then in a solution of hyposulphate of soda to which a little hydrochloric acid has been added. Immediately after dipping the metal parts should be dried and well polished.

Cleaning Out Petrol Pipes.

Difficulty is sometimes experienced in cleaning out obstructions from petrol pipes in which there are sharp curves. Blowing down the pipe with a tyre pump is not always successful in removing pieces of grit, and in such cases a length of old Bowden outer casing worked through the pipe is quite effective. The casing is of a diameter slightly less than the bore of the average petrol pipe, and is sufficiently flexible easily to be passed through.



Queries of general interest will be answered under this heading whenever possible, but a stamped addressed envelope must be enclosed for reply by post. Telephonic inquiries cannot be answered.

P.S. (Bolton).—The fact that you do not push the starting lever of your Trojan far enough down would most probably account for the ringing noise of which you complain. The noise is caused by the pawl striking the ratchet and is intended as a warning that the ignition is retarded.

W.K. (Coventry).—The presence of dust in the switch may be sufficient to prevent the ignition warning light of your Lucas set continuing to work after switching off. Take one lead from the battery to prevent the possibility of a short circuit, and thoroughly clean the switch segments with a soft duster.

F.M. (Hammersmith).—The petrol consumption figures you mention for the 11 h.p. Standard are quite up to the average and within the range claimed by the makers. In the circumstances, therefore, we do not advise you to experiment with different jet sizes in an attempt to improve petrol consumption. You may, however, care to try various brands of fuel.

Defeating Rust.

Immediately the paint on any part of the bodywork of a car begins to crack or chip, there is a possibility that rust may form on the exposed metal beneath and quickly spread under the edges of the crack.

Rust should be removed at once by the application of a little paraffin, and a permanent cure can then be effected by painting over the cracked parts with a little quick-drying enamel. A tin should be kept handy in the garage for the purpose, so that any scratches may be touched up immediately they are noticed.

Gas-tight Cylinder Joints.

It is of the utmost importance that the joint between the cylinder head and barrel of an engine having a detachable head should be perfectly gas-tight.

This is assured in most cases by the use of a copper-asbestos gasket, and in some cases the makers recommend the use of some adhesive and sealing compound as a double assurance against leaks.

An effective sealing compound is to be found in ordinary shellac varnish, which may be bought ready made up or can quite easily be prepared by dissolving orange shellac flakes in methylated spirit until an adhesive of the right consistency is obtained. The varnish should be applied liberally to both sides of the gasket and to the cylinder castings before replacing the head and tightening the holding-down bolts.

T.J. (Edinburgh).—The ignition control of your Jewett can be made to work more stiffly by tightening the nut of the control rod behind the lever bracket. This increases the pressure on the control spring.

A.L. (Twickenham).—If you have any reason to suppose that the car offered you has been stolen you should make full inquiries before purchasing. Ask the dealer to show you the registration book and endeavour to obtain the name and address of the previous owner.

T.L. (London, E.10).—The symptoms mentioned point to a faulty magneto, and we advise you to have this tested by an expert. As you have already had the carburettor thoroughly overhauled, we presume that there is no possibility of the poor performance of which you complain being caused by a carburation fault.

F.W. (London, N.S.).—We do not advise you to replace the detachable cylinder head of your car without the copper-asbestos gasket. It would be very difficult without expensive machining operations to ensure a gas-tight joint, and you would be very likely to experience trouble through gas and water leakages, which would far outweigh any small benefits to be gained by increasing the compression ratio.

**75
m.p.h.**



for 3 hours on **AUSTIN 7**

AT Brooklands, on November 10, Mr. A. E. Walter, driving a Sports Austin 7, broke the International "Class H" Record for Three Hours, using Shell Oil and Petrol.

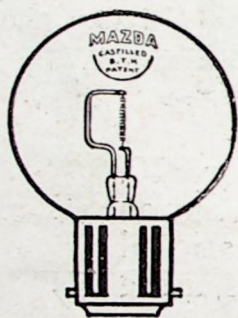
In 3 hours he travelled 191 miles 442 yards—an average speed of 63.75 m.p.h. (subject to official confirmation).

An astonishing performance for so small a car! And another new record to the list held by Shell Oil and Petrol.

TRIPLE SHELL OIL

Approved by
AUSTIN MOTOR CO. LTD.
for all Austin Models

**It's better
to be sure
than
sorry**



Use

**ELECTRIC BULBS
for MOTOR CARS
& MOTOR CYCLES**

T-H

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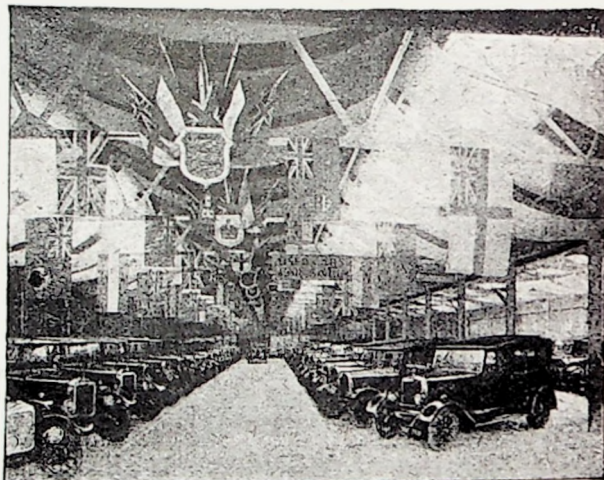
**The British Thomson-Houston Co., Ltd.
Crown House, Aldwych, London, W.C.2**

AROUND THE TRADE.

A range of 52 different models is advertised by the Services Watch Co., Ltd., Leicester, and the prices are from 15s. 6d. post free. Readers requiring a reliable and guaranteed watch should send for the interesting illustrated catalogue.

The Sumwin Co., who are the manufacturers of Sumwin radiator shutters, notify us that they have moved to new premises at 12, Queen's Road, Coventry. All orders for new shutters should be sent to this address, but repairs and orders for spare parts should be directed to the Sumwin licensees, Randle Radiators, Ltd., Cheylesmore, Coventry.

Messrs. Tapley and Co., Totton, Southampton, have sent us a useful leaflet which shows how the Tapley gradient and performance meter is intended to be used in the course of ordinary driving, so that any motorist may keep a constant check on the condition and performance of his car. Readers who would like to know more about this interesting instrument are invited to apply for a copy of the leaflet at the address given.



A view of Messrs. Newnham's showrooms, which were specially decorated during the Motor Show week.

Fort Dunlop notifies us that a new and larger depot has been opened in Edinburgh by the Dunlop Rubber Co., Ltd. It is situated in Canning Street at the west end of Princes Street, and the storage space is very much greater than that of the old depot; while a service garage has been built where wheel alignments and pressures may be tested. The new premises are under the charge of Mr. Paterson, the Dunlop district manager.

Shell-Mex, Ltd., draw our attention to a recent prosecution case against the partners of a garage business who were heavily fined for selling as Shell spirit another brand of fuel. Commenting on the case, the chairman of magistrates said: "The fraud was really three-fold, as the defendants had not only defrauded the Shell Co., but the public and all other companies in the sense that this sort of thing destroyed the faith of the public in these pumps."

Messrs. Newnham Motor Co., 237, 243 and 245, Hammer-smith Road, London, W.6, wish to call attention to the fact that they have a department devoted entirely to the sale of second-hand cars. Included in this department is a showroom capable of accommodating 120 to 150 cars, while the average range of used vehicles kept in stock—most of them offered with a definite printed and signed three-months' guarantee—is over 100 up-to-date models. A weekly list giving particulars of the current stock is published and will be forwarded to any interested reader upon application.

WHEN REPLYING to advertisements, mention "The Light Car and Cyclecar." It helps the advertiser and you, and assists the small car movement generally.



WORLD'S RECORDS.

CLASS 1.

(Three-wheelers not exceeding 500 c.c.)

Tuesday, Oct. 25th, R. R. Jackson on a twin-cylinder 498 c.c. Morgan-Blackburne:—

50 miles s.s. 66'17 m.p.h.
100 kilos s.s. 66'50 m.p.h.
1 hour s.s. 66'53 m.p.h.

Wednesday, Oct. 26th, E. C. Fernihough on a single-cylinder 494 c.c. Morgan-J.A.P.:—

100 miles s.s. 62'23 m.p.h.
200 miles s.s. 61'63 m.p.h.
2 hours s.s. 62'37 m.p.h.
3 hours s.s. 61'57 m.p.h.

C. C. WAKEFIELD & CO., LTD.,

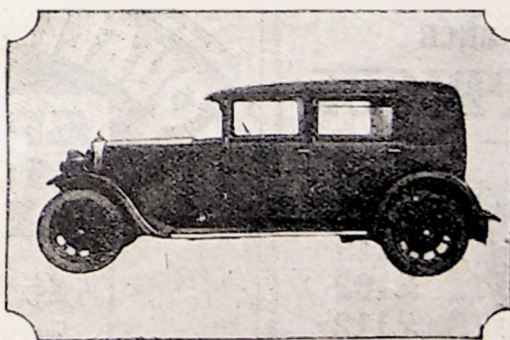
All-British Firm,
WAKEFIELD HOUSE, CHEAPSIDE,
LONDON, E.C.2.

313 Miles per hour!

— the highest speed ever attained.

Wakefield CASTROL was used in the Fiat-engined Macchi 52 flown by Commander Mario de Bernardi when (subject to official confirmation) he broke the World's Air Speed Record at Venice on November 5th, by averaging 296'9 m.p.h., reaching 313 m.p.h. one way of the course.

Remember that Maj. Segrave, who reached 207 m.p.h.—the highest speed ever attained on land—also used—



STYLE

Built by Coachbuilders, the "WYDOOR" FABRIC BODY will immediately cause the discriminating buyer to enquire more closely. Its light weight, silence, rigidity, comfort and general excellence give that tone only obtainable by experienced craftsmen. "WYDOOR" FABRIC BODIES may be fitted to any make of chassis and will give exceptional roominess, freedom from drumming and other body noises.

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*Phones:
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8720
FULHAM 3818

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Sulky Engines

are only to be expected during this weather. You can avoid this trouble by equipping your car with a snug fitting, fleecy lined, tailor-made cosy.

RADIATOR COSIES

Prices according to size.

J. B. BROOKS & CO., LTD.,
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London Office: 74, Margaret Street, W.1.

LONDON MORGAN SERVICE DEPOT ANNOUNCE NEW 1928 PRICES

Aero, O.H.V., J.A.P. Model ..	£132
Super Aero O.H.V., J.A.P. Model ..	£145
Aero Model	£119
Air-cooled Family Model ..	£102
Water-cooled Family Model ..	£112
Air-cooled de Luxe Model ..	£100
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Standard Model	£85

Self Starter, £8 extra. Geared Steering, £2 extra.

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'It's easy to Start'

It is the easiest thing in the winter to start your car, no matter how cold or how severe the frost, if you have taken the precaution of fitting a BAR-KINS RADIATOR MUFF. A BAR-KINS MUFF, with the front closed, will keep your engine warm for hours after it has stopped running. In addition the roll front can be adjusted to suit all weather conditions when the car is running.

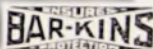
BAR-KINS MUFFS are now made in two qualities, the Standard for every size and make of car, and the Popular for the most popular makes of cars such as Clyno, etc.



PRICES:
Standard Model 18/-
Popular Model 12/-

Drop us a postcard and let us send you full particulars.

HUGHES & CO.,
WAVERLEY ROAD,
SMALL HEATH,
BIRMINGHAM.



Not a heater only, but a lamp with "101" uses, absolutely safe in all.

Put this in your bonnet
start with a swing on the frostiest morn

Winter cold is a bug-bear to motorists. It makes starting difficult and, if proper precautions are not taken, a freeze-up may result, cylinders and jackets be cracked, and the bus be out of commission whilst undergoing costly repairs. And all because you do not use a

'PROTECTOR' PATENT SAFETY LAMP

Approved by the leading Insurance Companies and used by H.M. Government.

Place a lighted "Protector" overnight in the bonnet of your car. The warm air it circulates keeps the engine warm and the oil from solidifying, making starting-up easier on the coldest morning. It eliminates all necessity to drain the radiator, prevents a freeze-up and all possible injuries from frost, and being the only lamp of its kind absolutely safe against fire or explosion, it is the only efficient alternative to a costly heating and lighting installation in the garage.

You will need a "Protector" badly this winter.

Get it NOW

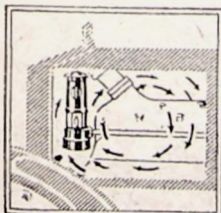
It has 101 other uses absolutely safe in all.

The "Protector" burns petrol, 30 hours, one filling, costing less than 1d. Gives 1 C.P. light (adequate for inspection purposes). Is clean, free from smell. Turned in solid brass, British made, weighs 3 1/2 lbs., measures 10" x 3 1/2".

Sold by Garages and the sole makers.
Carriage Paid in U.K.

20/-

PROTECTOR LAMP & LIGHTING CO., LTD.,
Eccles :: Manchester.

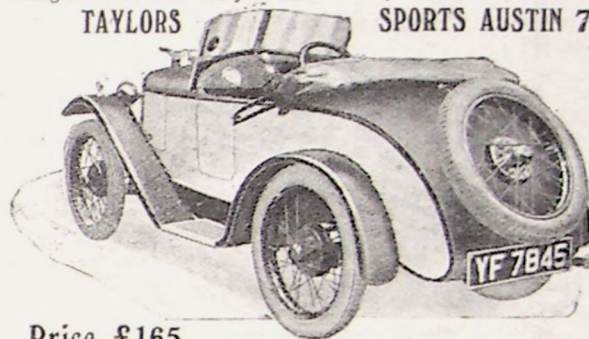


Place lamp in bonnet overnight and ensure easier starting in the morning.

100 used Cars Wanted by TAYLORS

If you want a good price for your present car in part exchange for any make of new car upon the market—then run it over to our Showrooms at Kensington and let us quote you on the spot. If inconvenient to call, send us full particulars, at the same time stating make of new car you wish to buy—we will do the rest.

TAYLORS SPORTS AUSTIN 7



Price £165

ALL MAKES SUPPLIED FOR CASH, EXCHANGE, OR UPON OUR NEW "ALL-IN" EASY PAYMENT PLAN.

AUSTINS	£135 to £650	JOWETT	£134 to £170
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SPIRAL
AIR VALVE
& EASY
STARTER

**THIS MASTER
EXTRA AIR VALVE**
GUARANTEES
DECREASED PETROL CONSUMPTION,
INCREASED ACCELERATION,
COOLER RUNNING,
MORE POWER,
and both types provide an excellent
AIR BRAKE.

JOWETT.

Enclosed please find cheque value 30/- in payment of the Mosaire sent on 30 days' trial. I have given the device a good trial and am pleased with the results.

I am having petrol and on a recent descent from Blackstone Edge, Littleboro', I was able to coach down without using my brakes, which means a saving of linings and the elimination of vibration. I shall recommend the Mosaire to all my motorcycling friends.

Yours faithfully, A.G.

PEUGEOT 7.

I am quite satisfied with the results obtained from the "Mosaire" sent on 30 days' free trial and I enclose money order in payment.

CALTHORPE.

Enclosed please find cheque value 30/- in payment for the Mosaire. I am truly thankful it has increased my mileage 12 1/4 miles per gallon.

Also it has enabled me to set my carburettor for an easy start and then adjust the mixture for economy from the driver's seat.

7-5 CITROEN.

Please find postal order in payment of your account for Mosaire.

I find it does all you claim for it, and I am well satisfied.

It incorporates the following advantages, which no other extra Air Valve can give:—

Patent Coil Air Diffuser in combination with Injector Sleeve (Patent pending).

Patent Priming Diffuser for easy starting from cold.

Gunmetal Cone Valve. Guaranteed against air leaks for 5 years.

PRICES — Hand Operated Type— 30/-
Semi-Automatic — 35/-

Complete with everything necessary to fit. The semi-automatic air inlet when set from driver's seat admits extra air according to engine speed, also closes down automatically.

FIT IT ON
and you will find
that it does all
that we claim.

30 DAYS'
FREE
TRIAL

Send for our 54-page Booklet giving the Opinions of Owner-Drivers under all sorts of conditions.

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The quality of BRICO Piston Rings is not left to chance, but right through every stage of manufacture is carefully watched and tested. The raw material is analysed, and castings made by the BRICO patent centrifugal process which eliminates all impurities, producing a metal of close grain and fine structure essential for piston ring manufacture. Daily analysis for En (elastic) value, tensile strength, Brinell hardness, permanent set and wear, and microscopic examination of structure result in the production of piston rings as near perfect as possible.

There's a BRICO ring for every engine. Sold by all Garages, Dealers and Agents.

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CELLULOID CAR PAINTING

**Wonderful
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YOU really CAN get an absolutely perfect result, with no risk of failure. A bold claim, but even large panels and wings can be finished by any Amateur, and without a blemish. Convert your car to the Celluloid finish now. Use **CELAMEL CELLULOID BRUSHING LACQUER**, and you will be sure of success if you follow instructions.

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Send 6d. stamps to-day for a copy of this Booklet, it tells you how to cover your car with Celluloid, and make a first-class job in a quarter of the time taken with ordinary enamel. Booklet obtainable only from the Sole Proprietors and Manufacturers of **CELAMEL, POSTANS & MORLEY BROTHERS LTD.**, Celamel Works Trevor Street, Birmingham.

CELAMEL is obtainable through all Motor Accessory Dealers, but if your local Dealer does not stock, **SEND YOUR ORDER DIRECT WITH REMITTANCE TO POSTANS & MORLEY BROTHERS LTD. NO CHARGE FOR CAR-RIAGE OR PACKING.**

PRICES:

CELAMEL Black and Colours.		CELAMEL Vul- canized Brushes.	
7/-	Tins. Approx. 1 pint.	1 1/2 in. 1/9	
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CELAMEL SPECIAL RUBBING PAPER.

240 Grit for rubbing down old paint . . . 6d. per sheet.
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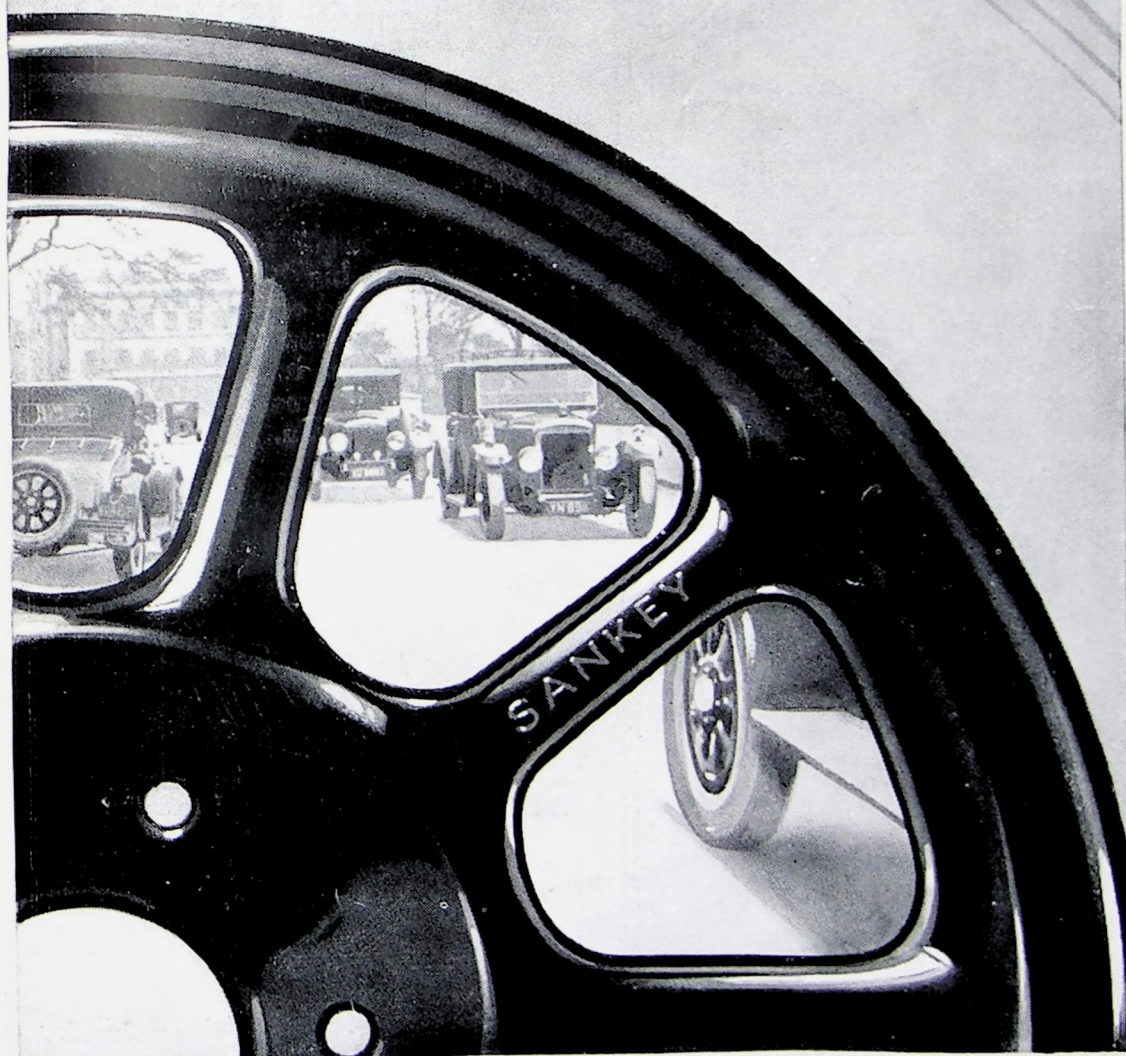
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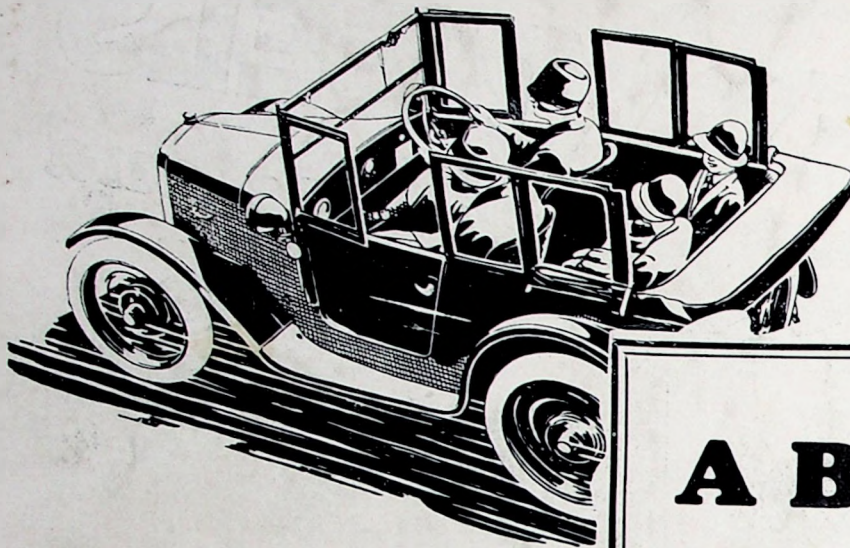
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"My Austin 'Seven' has just done 27,000 miles in 13 months—and I have never had to spend a halfpenny on her. Her performance was always excellent in the extreme and the further she went the better she liked it. No higher praise of the Austin 'Seven' can be given, when I tell you that after doing 27,000 miles an agent gave me £97 10 0 for her."

A BIG CAR

reduced to

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The Austin "Seven" is a reduction to scale of the big "Twenty" and just as efficient and comfortable. No more expensive to run than a motor-cycle combination, it is delightfully simple to drive and maintain. A trial run will convince you.

TOURER - £135

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