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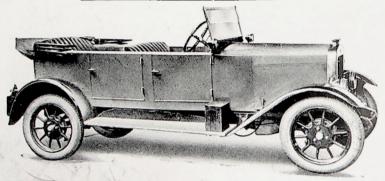
These useful lighthouses, which are beginning to appear in increasing numbers on the new arterial roads, warn traffic coming from all quarters of dangerous intercections. They materially reduce the risk of accidents at danger points.

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D.A. 255



## MORE REMARKABLI

The latest and greatest of all Rhode's achievements—a complete new model—the 10-30 Rhode. This 1927 model has not relied upon "simplified" dashboards, remodelled radiators, and similar "improvements"—it embodies the following innovations as standard in the new models, and many of these improvements in design are patent to the RHODE only.

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Engine unit construction with clutch and gearbox.

Patented triangulated bracing system to frame, giving exceedingly rigid chassis, Brake drums, shoes, springs, cams and levers are interchangeable on all four wheels. Patented system of fully compensating four-wheel brakes which can automatically be adjusted from one point, from the driver's seat, while travelling if necessary.

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It is a 4-cylinder all-gear engine, water cooled by Thermo-Syphon. Treasury rating 10.8 h.p. B.H.P. 30. Bore 66 mm. Stroke 90 mm. Engine capacity 1,232 c.c. Tax £11. 5 to 55 m.p.h. on top gear. 40 m.p.g.

Two-seater with large double dickey and £198

A list of our recognised agents is opposite, who will arrange a demonstration for you, or should you first prefer it we shall be very pleased to forward you the fullest information and particulars. May we post them along to you?

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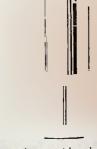


The is the simple release which enables the car to be lowered automatically.

## Now watch! - the car comes gently to the ground

EVER seen a car jack like this before? With hardly any effort and using only one hand, you raise the car. No chains or cogs, no kneeling or perspiration. Just push the lever up and down. THEN, when the job is done, you simply slip the handle on to the release valve, unscrew it a turn and the car comes gently to the ground.

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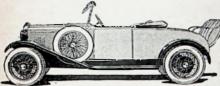
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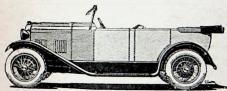






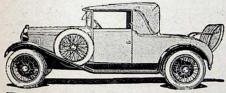


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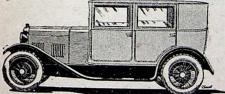
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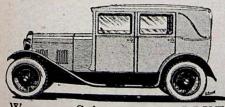


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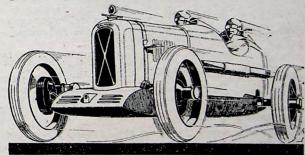
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are said to be inseparable companions. Definitely have we disproved this maxim with our "Grand Prix" model selling complete at £265, and guaranteed to give you 75 m.p.h.



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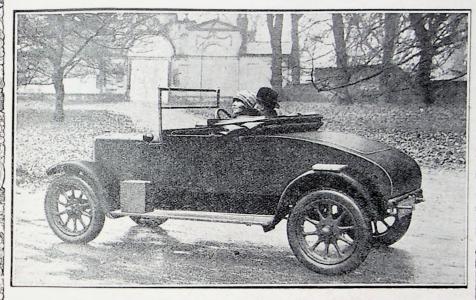
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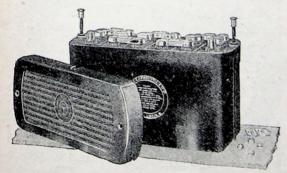


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It will be obvious, however, to the most non-technical motorist that for a battery to stand up to constant discharges of current of a most severe and prolonged character for starting and lighting in all weathers, violent jolling and vibration, apart from resisting the effects of neglect, dirt and other minor accidents during its life of service on the road, durability and strength is a sine qua non.

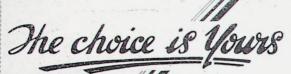
For 36 years we have made" strength" the main underlying principle in the whole design and structure of C.A.V. Batteries, and we have produced in the 1927 C.A.V. multiplate battery, with its "threaded rubber separation" in our special all-moulded case, something that we can say is honestly for better in every respect than has ever been offered to the motoring public.

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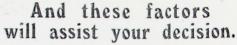
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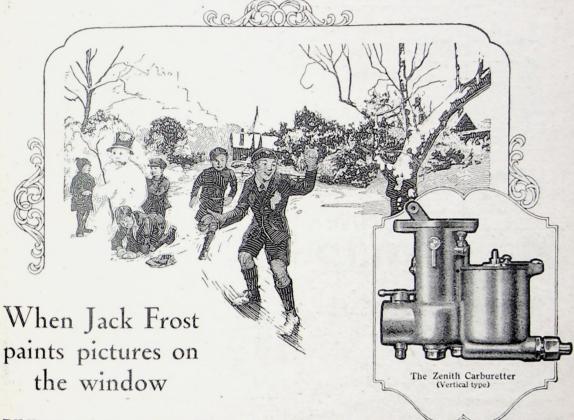
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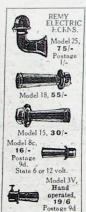
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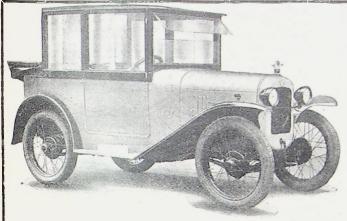
And how useful would you find a free hand for signalling or steering, but the operating of the hand brake requires all your attention. Fit a BODELO BRAKE ATTACHMENT which will enable you to apply all four brakes simultaneously by means of the foot pedal only and will leave your hands perfectly free. The BODELO is extremely simple to fit and absolutely effective.

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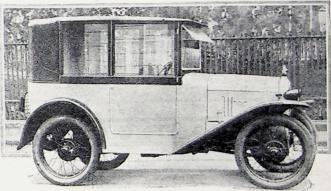
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55 m.p.h. 50 m.p.g.

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"Burghley" Body.

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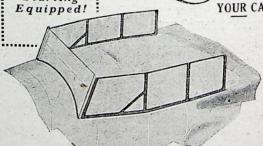
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## The remarkable 11 h.p. 4-door Saloon PRICE \$199.10s.

British coachbuilt body. Adjustable front seats. Winding windows.

Efficient 4-wheel brakes (12 in. Diameter).

Four wide doors.

Powerful smooth running engine.

Delightfully light steering.

Ample accommodation and leg room.

Easy (right hand) gear change.

Perfect suspension.

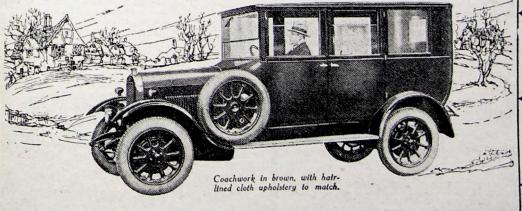
### THE CLYNO ENGINEERING CO. (1922) LTD., WOLVERHAMPTON.

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Rootes Service Works: Lodge Place, St. John's Wood Rd., N.W.1.

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#### SCOTTISH MOTORISTS To OF SPECIAL INTEREST

### Clearance Sale of used SINGER CARS at bargain prices

SINGER 1926, 10/26 h.p., Brand New, showroom soiled only, four-seater		SINGER 1926, 10/26 h.p., lour-seater, blue, guaranteed condition £150	
body, painted maroon	£180	SINGER 1926, 10/26 h.p., four-seater,	
SINGER 1926, 10/26 h.p., similar to above, but painted blue	£180	maroon, demonstration model, per- fect order	
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SINGER 1926, 10/26 h.p., four-seater, maroon, guaranteed condition	H.	four-seater, painted blue and uphol- stered in leather £172/10	
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All the above cars represent truly amazing used car value, and all cars are in guaranteed condition.

Cash, deferred payments, or part exchange.

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N.B.-No false or exaggerated claim is made for CHEKKO.

S a motor owner you are fully aware of the A importance of Braking, but perhaps are bewildered somewhat at the claims of the various brake linings. Why not send for the CHEKKO free booklet? It will give you a great deal of information, and will settle the Brake Lining problem for you for ever.

The undoubted superiority of CHEKKO lies in the fact that alone of all brake linings it contains NO COTTON or other inflammable adulterant that can scorch or burn out. Consequently it is incomparably safer and lasts longer than any other brake lining.

Relieve your mind-use CHEKKO.

Specify and insist on CHEKKO through your garage or any of our stockists.

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## "DUCO" Radiator Muffs

Provide against cracked water iackets and difficult starting

A cold engine means difficult starting, repeated "swinging" and unfair treatment of batteries. This apart from possible fractures of water jacket and cylinders.

"DUCO" COMBINED RADIATOR
AND BONNET MUFF
Of nest and attractive appearance, these muffs are made to measure for all

neae muffi are made to measure for all types of cars from good qualitylenther cloth, lined thick warm felt. Radiator Muffs only, from 13/6 each. Com-bined Radiator and Bonnet Muffs, from 42/- cach.

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(Wholesale only). Head Offices and Warehouse: :
GREAT EASTERN STREET, LONDON, E.C.2.
126, George Sireet, EDINBURGH,
and Branches.

Please Order from your usual dealer. We cannot supply direct.

TO THE READER.—By mentioning "The Light Car and Cyclecar" when replying to advertisements, the progress of the small car movement will be assisted.

## Fit 'SOLEX' O

and get EC

MY

own, a "Solex" Carburettor will give you improved results. We definitely guarantee this fact, backed by a genuine offer of 30 days' FREE Trial.

Petrol is dear enough to be worth saving, especially when you are assured of better running too. Don't hesitate—write for particulars of our FREE Trial offer to-day.

#### SOLEX USERS' OPINIONS

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SOLEX WORKS, 223-231, MARYLEBONE ROAD, LONDON, N.W.1. Tels. —Paddington 8621, 8622, 8623, 8624, 8625, 8626. Telegrams —"Solexcarb, London."

### FREE TRIAL OFFER.

Write to Dept. L.C. to-day sending particulars of your engine no matter what type it is, and we will send you details of our 30 days' FREE Trial Scheme. There is no obligation to purchase and no charge for renovation.

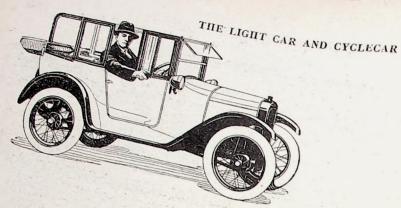
## 'fit Solex-and note the difference

Gordall Ad.



FACILITATE BUSINESS, and ensure prompt attention to your enquiries, by mentioning "The Light Car and Cyclecar" when writing to advertisers. They will appreciate it.

M.5.



### "Hard goingover roads the average motorist never sees"

writes a Staffordshire owner.

Dear Sirs,

On July 16th last I purchased one of your Austin Sevens which, to the time of writing, has done 5,000 odd miles without a moment's trouble or hesitation, with the exception of one puncture.

In my business as a timber merchant I have some very hard going over roads which the average motorist never sees. This month I have done Devon twice, the journey each way being over 180 miles, which on each occasion the little car did easily in the day.

The all-weather equipment is ideal. The car is very nippy, a grand hill climber, and silent. I have driven cars since 1908 and have yet to find a better proposition in a light car. It is undoubtedly an engineering triumph—and, above all, BRITISH. I congratulate you on such a magnificent production.

£145

Saloon - £165

JANUARY S



The AUSTIN MOTOR CO., Ltd. LONGBRIDGE, BIRMINGHAM. London Showrooms: 479-483, Oxford St., W.1 (near Marble Arch)

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

THE TABLES TURNED.

The trailing party which set out behind this Citroen at Chamonix found that it was they and not the car which had to work when they ran into a snowdrift! An incident of this kind gives added zest to winter sports.

## NOTES, NEWS & GOSSIP The WEEK

#### S.M.M. and T. Approved Events.

The only events for 1927 approved for trade support by the S.M.M. and T. are Saltburn Speed Trials, Shelsley Walsh Open Hill-climb, two events in Northern Ireland, two in the Irish Free State and all Brooklands events.

#### Embargo Withdrawn.

The embargo on exhibits of German The embargo on exhibits of German manufacture will be withdrawn for the International Motor Show, to be held at Olympia from October 13th-22nd. and for the International Commercial Motor Transport Exhibition, which will also be held at Olympia, from November 17th-26th.

#### This Week.

"The Danger of Cross-roads" is the title of a topical and instructive article title of a topical and instructive article which occupies our centre pages this week. The various risks which arise owing to present-day conditions are and concise manner. Our promised framous French Wactories, entitled this issue and deals with the Renault corks.

No. 737. VOL. XXIX

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#### LIGHTING-UP TIMES (Rear Lamps), for Saturday, January 22nd.

London	4.58	Edinburgh 4.50
Newcastla		Liverpeol 5.01
Birmingham	5.01	Bristol 5.08
Moon-Last	QUA	rter, January 26th.

The "Indianapolis."

The Indianapolis Grand Prix will be held this year on Monday, May 30th; the distance to be covered is about 500) miles. Entries are restricted to cars with engines of not more than 1,500 e.c., whilst the minimum weight is 700 kgs. (about 1,540 lb.).

#### Motor Trials Abroad.

The list of international motoring events for 1927 reveals the fact that the smaller European countries have commenced to take a very lively interest in motor sport. Czecho-Slovakia has eight international meetings. Hungary three, Switzerland, Poland and Norway two each, Roumania, Latvia Slavia and Denmark one each. Roumania, Latvia, Jugo-

#### Next Week.

The first article of our new series, "Motoring for the Beginner," will appear next week. As we have already appear next week. As we have already pointed out, our endeavour will be to tell prospective car owners and comparative novices the important essentials connected with the construction, working, maintenance and driving of modern light cars and cyclecars. A feature of the articles will be carefully prepared line drawings and informative photographs. The majority of our readers have friends who are just entering the field of motoring and we trust that their attention will be drawn to this series, which is intended primarily to help them. 1111

#### A.A. Surrey Office.

The Automobile Association opened an office at Guildford on January 17th. The usual services are available to members, who are asked to use the new office to the fullest extent.

#### A Legacy from Motorists.

The French, who do little to en-courage foreign motor tourists to visit their country, would do well to bear in mind that during the eleven months ended November 30th the amount of money spent by United States motorists touring in Canada was no less than 194 million dollars.

#### Still More Tramways.

It is somewhat surprising to learn that additional tramway links are proposed in the scheme for extending the boundaries of Coventry. In a city where a motor-driving licence is held by one in every five of the population tramways would hardly be expected to be so popular that extensions are necessary



H. Scott (Morgan) receives assistance on Salt Box Hill during the Manor Park and District M.C.'s recent trial.

#### Trees on a New Road.

Two rows of trees are being planted on the new by-pass road between Orpington and Chelsfield, which will be opened shortly.

#### All About Motor Ships.

"The Motor Ship Reference Book for 1927" is now available. Brimful of facts and figures relating to a fascinating branch of marine work, it forms a veritable encyclopedia for those interested in the subject. Pub-lished by Temple Press Ltd., 7-15, Rosebery Avenue, London, E.C.1, it is priced at 5s. Gd. post free.

#### Motoring Matters in India.

At the annual general meeting of the Associated Chambers of Commerce of India and Ceylon, held at Cawnpore, the secretary stated that the Associa-tion was of opinion, in view of the increasing use of motorcars in India, that (i) a central Road Board should be set up to advise upon and control a general road policy for the whole of India; (ii) the import duties on meter vehicles should be reduced so soon as possible and (iii) a special vehicle tax should be levied in all provinces, where necessary, the proceeds of which should be devoted exclusively to the improvement and construction of roads and bridges.

#### "Need for Uniformity."

Staffordshire and Glamorganshire Scatordshire and Cammogasshire local by-laws require two side lamps to be carried, but the Motorcar (Use and Censtruction) Order stipulates only one on the off side. For this reason the chairman of the Cldhill, Staffs, magistrates refused to convict a number of motorists summoned recently for failing to carry two lights. It was pointed out that the motorists came from adjoining counties and the chairman remarked that "there was need for uniformity in the matter of lighting.



President Doumergue opening the new Paris artery, which is nearly three miles long, and forms an extension of the Boulevard Haussmann.

#### A Smart Capture.

A car was stolen recently from a A car was stolen recently from a public parking place whilst the owner was in church. About six hours later, at a town over 30 miles distant, an R.A.O. guide, being suspicious of the answers given by the driver of a car which had run out of petrol, induced the man to go with him to a nearby garage. It turned out that the car was the stolen one. was the stolen one

#### We Sympathize With-

-the man who went into County Hall on January 15th, asked for a wire-less licence and said that the dog was only just six months old,



Miss Violette Cordery, who hopes to set out very shortly on a world circuit by car.

#### Jowett Colours.

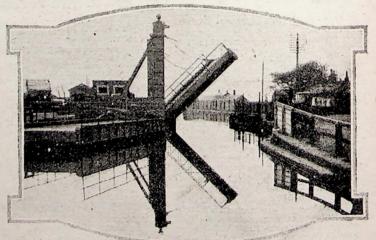
We are informed by Jowett Cars. Ltd., that a model of their Jowett range may now be obtained with a Munich lake or blue finish; previously the lake colour cost £5 extra.

#### A Railway Road?

It has been suggested that the derelict Greenwich Park branch line of the Southern Railway, which was closed in 1914 owing to the war, should be converted into a by-pass road. The track has a length of about five miles and is at present overgrown with weeds.

#### Meeting of I.P.E.

At a general meeting of the Institu-tion of Production Engineers, to be held at S3, Pall Mall, London, on January 26th, it is proposed to discuss the question of the professional regis-tration of engineers. A Bill, dealing with conditions of registration, has been durified by the Senjew of Technical been drafted by the Society of Technical Engineers for presentation to Par-



CANAL TO BE CLOSED?

On the grounds that it is now derelict, efforts are being made to close the Sankey and St. Helens canal. The bridge shown above spans the canal at Warrington and carries a large amount of Liverpool and Manchester traffic.

#### A Result of the Raid.

Local authorities in certain districts, notably Somerset, are complaining that as a result of the raid on the Road Fund there is no money available for highway improvement schemes.

#### A.-C.U. Silencer Trial.

A total of 25 entries has been received for the silencer trial, promoted by the A.-C.U., which will be held on Wednesday, January 26th. The trial is for silencers of proprietary make only, and they will be tested for silence, backpressure, adaptability, weight and durability.

#### Following the Fashion.

Dealing with marine engine developments for 1926 The Motor Boat comments on the recent introduction of 7 h.p. power units for marine purposes. The writer points out that relatively small attention has been paid to racing engines and supercharging. It is interesting to note that Imperia Motors, Ltd., are now making a marine engine, the price of which is £90. It bears a close resemblance to the old G.W.K. car unit.

#### "The Motor" Plebiscite.

In connection with The Motor readers' plebiscite wherein 20 given ear improvements suggested by that journal have been placed in their order of merit by competitors, a private and entirely separate plebiscite for members of the editorial staff of Temple Press Ltd. was organized by the management, a very useful cash award being offered. Readers may be interested to know that a member of the staff of The Light Car and Cyclecar carried off the award and

#### The German Track.

Work on the Nurburg Ring—the new German motor racing track—is now in full swing and it is anticipated that the inaugural race meeting will be held during the coming season.

#### Death of Lord Bearsted.

Lord Bearstad, who will be remembered as the originator of the Shell Transport and Trading Co., passed away on Monday last. He was in his 65th year.



CUTTING THE CORNER.

A dangerous turning in Bradford has been made safe by the sensible method of taking a slice out of a building and supporting the overhanging portion with a slender pillar.

#### Novel Advertising.

A Singer Junior in a cage formed an attractive window display recently in the showrooms of the Wheatley Motor and Engineering Co., Ltd., Stockton-on-Tees. The first three bars of "I'll be Loving you Always" appeared on a display board in front of the car, which

French Grand Prix Entry.

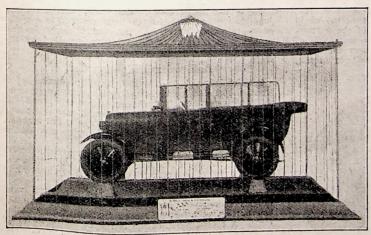
One of the first entries for the forthcoming French Grand Prix is that of Mr. G. E. T. Eyston—a British amateur.

#### High-speed Tyre Testing.

At Fort Dunlop recently Major H. O. D. Segrave witnessed the test of a tyre similar to those which he will use in his forthcoming attempts upon the world's speed records. Although it was running at an equivalent road speed of 190 m.p.h. the tyre, which is made of plain rubber without any tread, remained comparatively cool.

#### New Edition of "Motor Cycling Manual."

A new edition, the seventh, of "Motor Cycling Manual," compiled by the staff of Motor Cycling, has been published. It is written in the clearest manner possible, is fully illustrated, interesting and non-technical in style, and covers the subject completely. "Motor Cycling Manual" does not assume any previous knowledge of the subject on the part of the reader, who starts right at the beginning and progresses step by step through a complete study of the subject. This edition is published by Tetuple Press Ltd., 7-15, Rosebery Avenue, London, E.C.1, at 2s. 6d. net or post free 2s. 10d.



#### "SING A SONG OF SPEED."

This Singer Junior in a "birdcage" formed an attractive window display in an agent's showrooms recently. The idea is explained in a paragraph on this page.

that, according to the voting, much casier chassis Indication was the improvement most desired. The Motor readers' plebiscite, for which prizebeing judged this week. The entries are not being opened at our offices, the British Tabulating Machine Co., Ltd., Aldwyck, London. The votes are being counted on electric tabulating machines.

also bore the inscriptions, "A Bird with a Pedigree" and "Test its song—up Sutton," the latter being a reference to the local test hill.

#### Epping Road Improvements.

The main road from Epping Town to the "Wake Arms" is to be widened at a cost of £33,000. Motorists living in East London will undoubtedly welcome the improvement.

#### NEXT WEEK.

The First Article of the Series

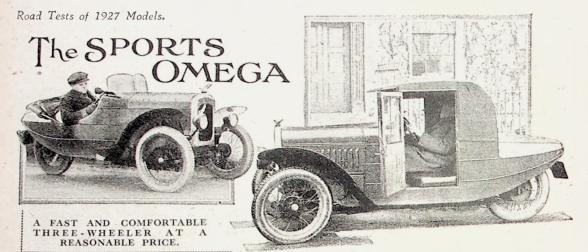
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#### "MOTORING

FOR THE

#### BEGINNER."

Tell Your Novice Friends.

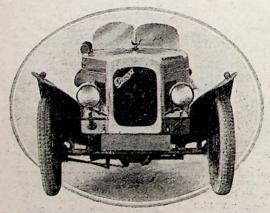


NTRODUCED just before last year's Olympia Motorcycle Show, the Omega sports model created La large amount of interest, which was increased when G. E. Tottey set up a number of new world's records in the 750 c.c. class at Brooklands in October.

We recently had an opportunity to test a standard 980 c.c. sports model over a fairly lengthy course, but before describing our impressions of the machine's behaviour it will be interesting briefly to recapitulate

the specification.

The framework of the Omega is of tubular construction, with the propeller shaft enclosed in a largediameter centre tube secured to cross-members at the front and to the bevel box at the rear. The front cross-members also form a support for the quarterelliptic springs, to which the front axle is secured. Quarter-elliptic springs are used also at the rear, where the hinged fork is arranged so that the chain tension is unaltered, due to movement of the springs. The chain sprockets are fitted one on each side of the rear wheel and these sprockets carry the brake drums, on which are mounted external-contracting bands.



The front view of the standard sports Omega presents a sturdy and pleasing appearance. The bonnet lines blend well with those of the body.

The engine is a 980 c.c. water-cooled, side-valve, twin-cylinder J.A.P., having a bore of 85.5 mm. and a stroke of 85 mm.

The magneto is mounted on the timing case of the engine and driven through the medium of bevel gears. B14

The left-hand photo depicts the standard sports Omega. The coupe model is the one which we tested.

An internal cone clutch conveys power through the enclosed propeller shaft to the bevel box, on the countershaft of which are mounted two sprockets engaged by dog clutches. Ball bearings are used throughout the transmission and the bevels are of the spiral-toothed The standard gear ratios are 42 to 1 top and type. The sta 9 to 1 bottom.

The rear wheel is arranged for easy detachment merely by loosening the two main spindle nuts and removing two bolts and the brake connections.

The gear and brake levers are mounted inside the body, a gate being provided for the gear lever and a ratchet for the brake lever. Clutch and brake pedals are mounted in the orthodox manner, whilst between them is the accelerator pedal, which works in conjunction with a hand throttle lever secured to a spoke of the steering wheel. An air-control lever is also provided for regulating the mixture supplied by the Brown and Barlow carburetter.

#### A Five-lamp Lighting Set.

Ignition control is provided for by means of a Bowden-operated lever clipped to the tubular cover of the steering column immediately below the wheel. A five-lamp Miller lighting set is fitted, the switchbox being mounted on the facia-board in the usual manner, whilst the cut-out is secured to the engine side of the dashboard.

Best and Lloyd drip-feed lubrication is arranged with the pump and sight feed on the facia-board, whilst the combined petrol and oll tank is immediately above and

behind the engine.

The bonnet is of the three-piece type and very quickly detachable, each side piece hooking into the top portion and being secured by two spring-loaded clips. A recent modification is the fitting of 27-in. by 4-in. Dunlop tyres on well-base rims as standard. The price of the Omega sports model is £125, front-wheel brakes being available at an extra cost of £3, whilst a similar charge is made for a hood.

Dealing now with our road test of the car, the model placed at our disposal was fitted with a very attractive coupé body, which the makers had built more or less as an experiment, but which, as the accompanying photographs show, presents a very pleasing appearance

Taking over the car at the Omega works, Coveniry, we shaped a course for London in the teeth of a snow storm, which enabled us fully to appreciate the comfort of an enclosed body.

Once on the open road and with the engine comfortably warm, it was possible to open out and try the paces of the car. So far as we could tell, the speedometer was quite accurate, and, taking this as our guide, we worked up the speed without the slightest difficulty to just upon 60 m.p.h., and then, going to the other end of the scale, we carried out a slow-running test which showed the engine to be capable of pulling steadily ou top gear at about 7 m.p.h., frem which speed it could be accelerated again in a very convincing manner without knock or thump.

without knock or thump.

The "flat-out" speed on the level on bottom gear was about 40 m.p.h., and at this speed there was very little vibration. A period, however, made itself felt at about 27 m.p.h. in top gear. This caused a rather severe vibration of the front wing tips, on which were

mounted the side lamps.

#### Road-holding Qualities.

Those who know the Coventry-London road are aware of the appalling surface which exists by Daventry and Weedon, a surface which provides a severe test for the suspension of any car, and although, of course, the Omega showed its dislike for the large bumps and pot-holes, we were very agreeably impressed with the springing system and with the easy manner in which the car could be steered, thus indicating that the road-holding qualities were rather above the average for this class of vehicle.

Having already experienced traffic driving in Coventry, the crowded roads of London presented no difficulty, but we should certainly have felt rather more comfortable had the brakes been slightly more powerful. The car which we were testing, however, was one of the two which had been through the London-Exeter trial, and as the brakes (on all three wheels) had not received attention since then, it was, perhaps, hardly to be expected that they should be working at their

maximum efficiency.

Petrol consumption worked out at about 45 miles per gallon, which, considering the efficiency of the engine and the adverse weather conditions under which the run was made, may be taken as being quite good. There are few criticisms which can be levelled at the Omega sports model, but one which we feel inclined to make is that to get at the filler caps for the petrot and oil tanks necessitates the complete removal of the bonnet—a small matter in itself, but one which might be avoided by fairly simple means.

This tall driver found ample leg room in the coupe body.

The return run to Coventry was undertaken after a journey into Kent, where the Omega was tested up various hills. Vigo Hill, which has an average gradient of about 1 in 9 and a very bad surface, was climbed from a standing start on the hill itself. A change up into top was made within the first 30 yards, but it was necessary to change down on the steepest part, where the surface is extremely poor. Altogether a very creditable climb was made.

During the time that the car was in our hands the engine proved very easy to start, and, by making use of the air-control lever, it pulled strongly from dead cold. The actual operation of turning the detachable starting handle is made easy by the provision of a support, which is gripped by the left hand whilst lifting

the exhaust valves.

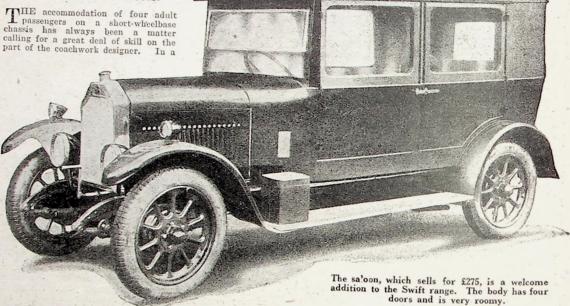
It will be seen from the foregoing that the sports Omega came through very well. So far as speed and hill-climbing are concerned, however, it will be obvious that a still better performance would be obtainable from a standard open-bodied model, as the coupt top on the model which we tested must have caused a considerable amount of wind resistance.



MECHANICAL FEATURES.

### A NEW 10 H.P. SWIFT SALOON.

FIRST DETAILS OF A ROOMY BODY MOUNTED ON THE SMALL CHASSIS.



new 10 h.p. Swift saloon all waste space has been cut down to a minimum, and consideration has been given to providing a good range of vision for both driver and passengers.

Thus we find that the body has four large side windows all operated by winders—and a rear window, whilst the seating arrangements are well carried out (considering the size of the chassis).

and even a six-footer can be accommodated in quite reasonable comfort at the wheel.

Although the body is large it does not appear to be out of proportion with the rest of the car, as the roof is kept reasonably low and the waist line fairly high, thus providing lines which con-form strictly to accepted modern practice. The head, together with the door

pillars, is covered externally in fabric from the waist line, whilst a gutter surrounds completely the forward part of the head. The rear quarters are in metal, also covered in fabric, and the head is lined internally with cloth of suitable colour.

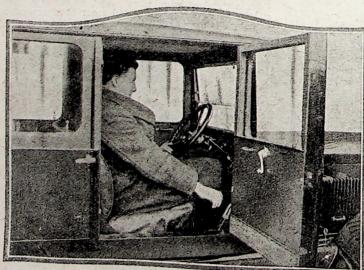
The four doors are actually 29 ins. wide, but the exact aperture through which entry or exit can be made is 26 ins. For a car of this size, the case of access to the seats is thus unusually

Double slam locks are fitted throughout and each door pillar has two dovetails which should prevent rattle even when the car has been used for a long

The interior furnishings are nicely carried out in blue leather to match the exterior paintwork, whilst the front sent being adjustable over a range of 3 ins, enables drivers of varying stature to be accommodated. Ventilation is taken care of by a combined roof light and ventilator in addition to a hinged flap ventilator fitted on each side of the scuttle.

The floors in both front and rear compartments are covered with a hair carpet, and there is a foot ramp for the rear seats, which also serves the purpose of a tool locker. This greatly adds to the comfort of the rear passengers and provides rendy access to the tools.

The polished wood facia board is very completely equipped, having a speedo-meter, clock, oil gauge, dash lamp and Rotax lighting and starting switches neatly grouped together in a central panel with two oval cubby holes arranged one on each side. The price of the car is £275 with complete equipment ment.



DRIVING COMFORT. B16

This view shows the handiness of the controls. Neither gear nor brake lever impedes entry or exit through this door.



#### BATTERIES IN THE MAKING.

SOME INTERESTING
METHODS EMPLOYED AT
THE C.A.V. WORKS AT
ACTON.

of a black doughty substance. The dies then close on it and within a few moments the completed container is ready to be removed.

Another very interesting shop is that in which the lead grids are cast. One of the accompanying photographs shows the men at work and gives an excellent impression of the speed with which C.A.V. batteries are now being turned out.

The grids are placed on conveyors, which take them from this shop to a trimming shop, where the rought edges are cut off. They are then ready for

In the charging shop.

IN the course of a recent visit to the C.A.V. Works at Acton, London, we were shown some very interesting processes which are now being employed in the making of C.A.V. batteries.

The most ingenious is in connection with the construction of the handsome mouded containers thick are now being

The most ingenious is in connection with the construction of the handsome moulded containers which are now being employed for car-starting batteries. These are moulded in one operation and actually leave the machine completely finished and requiring no machining or other work of any kind. The material used is a "hush-hush" preparation which goes into the machine in the form

#### Plates being hand pasted.

pasting, this work being done entirely by hand to ensure that the grids are entirely and properly covered, thus preventing any likelihood of subsequent shedding. After pasting, the plates are very scientifically dried with the aid of an elaborate air-conditioning plant and they are then ready for forming—a technical term—which might be (rather incorrectly) described as giving them an initial charge.

initial charge.

Next they are passed to an assembly shop, where the positive and negative plates are united into groups in preparation for having the separators placed between them ready for assembly in the container.

in the container.

The concluding processes of erection include burning on the connecting bars and filling in the upper part with a substance resembling pitch.

We were very favourably impressed by the great care which is taken to ensure accuracy in manufacture and maximum efficiency from every battery produced.

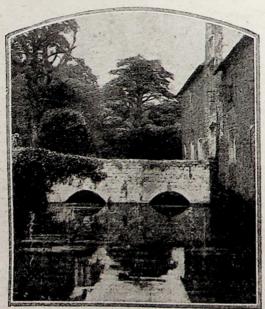
The large airy workshops have special apparatus to prevent the fumes from being inhaled by the workers. (Above) The grid-casting shop.

**B17** 

A LITHOUGH our highroads offer the speediest going, it is along the by-roads that one must go in pursuit of the choicest bits of scenery and the gems of rural architecture, and along these lanes and narrow roadways there is a wealth of interest that is the accumulation of the centuries and the legacy of generations long since passed away.

At Riverhead, two miles short of Sevenoaks, on the London road, a roadway turns due east by Seal and, after five miles, enters the quaint little village of Ightham, which is said to be the most beautiful village in Kent. The well-made road surface, with the white lines at the awkward bend, seems somewhat out of place in this old-world village, but many cars pass this way in the summer months, and the danger of the eastern exit from the village is not to be ignored.

In spite of this, Ightham retains its ancient aspact. Its one inn, the "George and Dragon," dates from 1460, and looks its age, whilst Tudor houses here, with their flagged paths and sundials, are among other attractions of the village. The church of St. Peter contains a curious monument to Dame Dorothy Selby, who died in



A portion of the front of Ightham Mote and the bridge spanning the most which surrounds this fine old mansion,

1641 and is credited with having deciphered the letter which led to the discovery of the Gunpowder Plot in 1605. Her epitaph is unusually quaint:—

"In heart a Lydia, in tongue a Hanna; In zeale a Ruthe, in wedlock a Susannah; Prudently simple, providently wary; To the world a Martha, and to heaven a Mary."

The centre of interest at Ightham, however, is Ightham Mote, a magnificent old mansion surrounded by a well-filled moat. It was built by St. Henry de Haut in 1340, although it has been added to at various periods. The building, which forms the four sides of a quadrangle, has stabling for 60 horses and is set in the midst of a richly wooded park.

in the midst of a richly wooded park.

Along narrow and hilly lanes one may approach Sevenoaks from Ightham by way of Knole Park, a beautifully wooded estate, in the centre of which stands Knole House, one of the lordly mansions of England. It has 365 rooms and 540 windows. It belonged to the Archbishops of Canterbury until Cranmer in 1537 surrendered it to King Henry VIII. The beautiful beech avenue, the Broad Walk, is nearly a mile in length, and many deer roam about the grounds.

#### A Fine View.

From the summit of River Hill, just east of Sevenoaks, there is a magnificent view over the Weald of Kent as far as Tonbridge, and, if one has a mind for exploration, a very pleasant afternoon may be spent among the interesting lunes and narrow ways which intersect this level lowland.

Mereworth has an imposing castle, and the Mereworth woods, where, in the reign of Queen Elizabeth, wild boar were hunted, are famed for their beauty. North of these extensive woodlands is Offham, where the quintain still stands on the village green; near at hand, along a pleasant lane, is West Malling, with its ruined Benedictine Abbey. Westward along the Maidstone road Wrotham lies north of Ightham, and the ecclesiologist will find several unusual features in the structure of the old church of St. George.

The ancient Pilgrims' Road almost touches Wrotham, and can be more or less followed to Otford, where may be seen the ruined palace, Otford Court, once the residence of Thomas a Becket. Here Erasmus was entertimed and Cardinal Compagnia.

tained and Cardinal Campeggio.

Kemsing, east of Otford, is famous for St. Edith's Well in the centre of the village, and all over this beautiful district are scattered these interesting villages, with their relics of the past and the charm of unspoiled nature which preserves to the county of Kent the much prized name of "The Garden of England."

A.P.

Famous French Light Car Factories.

## WHERE THE RENAULT— A BRIEF GLIMPSE OF A FACTORY WHICH COVERS 154 ACRES AND EMPLOYS NEARLY 30,000 PEOPLE.

HE origin of the vast Renault factory, by far the largest motor works in France, dates from the beginning of the motoring era. In 1898 M. Louis Renault, the present managing director, when 20 years of age, started building a motorcar. His workshop was a little wooden shed on the banks of the Seine at Billaucourt.

This shed still exists; it is carefully preserved in the courtyard in front of the general offices, and all around it has grown up the huge works which now cover an area of 154 acres and employ works.

nearly 30,000 people.

The little concern founded by Louis Renault and his brother Marcel, as a result of the success obtained with the first Renault car, had grown by 1914 to be one of the premier motor firms of

be one of the premier motor firms of France and of the world. Upon the outbreak of hostilities Messrs, Renault concentrated upon the production of military cars and lorries and also upon aviation engines and shells for the famous 75 mm, field gun. Later came the French tanks, built throughout in the Renault works.

Many motor vehicles coming within light car limits were built by Renaults in the early days of the industry, but we are not concerned here with the details of these ancestral machines. Suffice it to say that they obtained in their day an exceptional reputation for reliability.

The Renault light car, as we know it, appeared after the Armistice, when the great factory, with its enormously increased plant, settled down to the mass-production of cars and the construction of industrial vehicles, aviation engines, and so on. The 9-15 h.p. Renault received a very warm welcome in France upon its appearance in 1920, and it has since proved one of the most popular of the Renault range. It is built on the most up-to-date quantity-production lines, the average daily output of this type amounting to 100 complete cars. Both engines and complete chassis are erected on the travelling-belt system. Although mass-produced, each of these sturdy little cars receives a high degree of individual attention before it leaves the works. The engines are given a six-hour bench test. They are then completely dismounted and examined,



M. Louis Renault.

after which they are re-erected and given a further bench test at full power.

When the chassis is erected it is sent to the chassis test shop, where electric dynamometer tests register the power transmitted to the road wheels. After passing out of the test shop, the chassis are sent to the body-building department and finally the complete cars are given a final test on rollers connected up to a dynamometer.

As the factory is situated on the Seine, timber in the rough is brought to the body shop by river transport. In its completeness the Renault factory resembles certain American motor works, everything being made on the spot from the raw material.

The foundry department is particularly up to date. In the steel foundry

there are four Bessemer converters, each with a capacity of 1½ tons, and various special steels are dealt with, including several grades of chrome nickel. A special department in the iron foundry, with an output of about five tons a day, is set apart for cylinder blocks. The cylinder blocks for the small car are cast in pairs—two to a mould. The aluminium foundry is a particularly important section of the works, and here both die-casting and ordinary sand moulding are undertaken. A separate foundry is installed for duralumin castings. Finally, there is a foundry for phosphorbronze and brass work.

In addition to the gigantic steel stamping shops, machine shops and fitting shops, there are several special departments not usually found in a motor works. One large section turns out drawn-steel tubing and extruded metal work. Another deals with springs.

Power for the Renault factory is supplied by a huge central generating station. Here six groups of turboalternators are fed by Babcock boilers. They develop a total of 16,000 kilowatts.

The Renault factory is an institution of which France may well be proud, and the work of its creator was recognized recently by the French Government, when M. Louis Renault was raised to the rank of Commander in the Legion of Honour. M. Renault had been a Chevalier of the order for many years.



A GIGANTIC
ORGANIZATION.

The Renault factory at Billancourt (Seine). It began, in 1898, as a little wooden shed, which is still preserved and jealously guarded as one of the treasures of this famous French firm.



#### Well Oiled.

WE have all heard of the motorcycle novice who was found trying to pump up a tyre via the security bolt, but an acquaintance of mine has been running him close. He complained to me of a leakage of grease from his car on to the new garage floor. He suspected undue wear somewhere.

Investigating the blobs I discovered that part of the frame behind the near footboard was simply smothered in grease. "It's that nipple at fault, I believe," said the owner. "It seems to take a lot of grease." The nipple was well tucked away; so tucked away, in fact, that I grew suspicious and borrowed an inspection lamp. It was the head of a bolt!

#### Hoods Down.

THE temptation to leave the hood and side curtains up for the duration of winter is hard to overcome, but, given a fine day and, say, a 50-mile journey, the trouble of opening up the car is well repaid. Apart from a breath of real fresh air and the elimination of that "cooped-up" feeling, one's bus appears to run far more sweetly, multitudinous odd noises, as everybody knows, vanishing when the hood is down. These, of course, are strong arguments in favour of sliding half-roofs for saloons. I find that I can get along much quicker in an open car, not, I think, because of the slight decrease in wind resistance-although this is measurable, especially when there is a head-on breeze-but because the whole machine appears more readily and easily to give of its very best.

#### A "Cock" and "Bull" Story.

How many of the hundreds of thousands of people who ride and drive each year through Stony Stratford, on the main Coventry-London road, are aware that its two hotels, the "Cock" and the "Bull," gave rise to the expression, "A cock-andbull story"? I am credibly informed that they did, my informant being a man who proudly boasts that he has lived his whole life in Bucks.

Tradition has it that in the coaching days travellers from the North put up at the "Cock," whilst those from the South put up at the "Bull." After dinner they used to call on one another-the two hotels are not many yards apart-and these impromptu visits were often the subject of a little mild exaggeration concerning the state of the roads along which the respective travellers would set out The "Cock" guests would tell on the morrow. their visitors of terrible snowdrifts towards Towcester, whilst the "Bull" brigade, not to be outdone, would boast of thrilling escapes from disaster during their crossing of the Dunstable Downs.

#### A Link with the Princes.

CTONY STRATFORD, by the way, although it Dlooks uninteresting to a degree as you drive between its two rows of houses, hoping you are paying sufficient regard to its ten-mile limit, is really a distinctly interesting townlet with historic assoclations that many a quite imposing town might envy. In a house in its main street the two luckless little Princes, Arthur and John, enjoyed their last hours of liberty before being taken to the Tower, whilst many now-forgotten celebritles broke their journeys

My Bartholomew's Gazetteer describes Stony Stratford as an "ancient place" and meutions that it boasts of engineering works. I have never noticed them, however, although I must have passed through the place some hundreds of times.

#### Ruined Roadways.

WHEN gas, water and other undertakings were first given power to break up roads, local authorities were very vigilant at seeing that they complied with their legal liability to put them in proper repair again. It is to be feared that in some places this watchfulness has been relaxed, with the result that repairs are being done in a perfunctory and slipshod manner.

I have in mind a section of road that was reconstructed at great expense to ratepayers two or three years ago. Since then gas and water concerns have been busy and the road is now crossed by a series of shallow depressions. The effect on the surface in between has been disastrous, for buses and heavy lorries bouncing over have worn a succession of waves in the road and it is rapidly going to ruln. Yet, a little way beyond the last depression the road is as smooth as the day it was reconstructed.

Motorists who are also ratepayers have a close interest in seeing that companies with monopolies are kept up to their responsibilities, and where there is cause for complaint a letter to the responsible authority will usually have effect.

#### An Elusive Trouble-

A N acquaintance recently asked me to take a short run in his Rover Eight to see if I could discover the cause of a mysterious loss of power which had, at times, become very noticeable. He told me that the trouble was not continuous, for on some days the engine pulled with its usual vigour, but that on other occasions it would accelerate well up to a point and then suddenly, to use his own expression, "become flabby" and refuse to rev. any faster.

This was very troublesome, because many hills which he was accustomed to take in second gear with the engine turning over at a good speed had to be ascended in bottom, because the engine would not rev. sufficiently. He had examined it carefully, and he told me that the ignition and carburation were perfect, and that the valves were timed correctly and were not sticking in their guides.

#### --- And Its Cause.

THE symptoms were certainly puzzling, and, as I took the wheel and he got in beside me, I was frankly at a loss to account for the fault. A short run soon convinced me that the engine behaved exactly as described, and, stopping on the grass margin at the side of the road, I opened the bonnet and tried to find the cause. Everything appeared O.K., however, and we continued on our way. To my surprise the engine seemed to have quite re-

covered its liveliness, and was pulling splendidly.

This set me thinking, and, without telling my companion of my suspicions, I once more stopped, took off one of the bonnet sides and replaced it. As I had anticipated, the trouble reappeared so soon as we recommenced our journey. The owner of the car was more puzzled than ever, until I explained that the cause of the trouble was the plug shorting on the cowl formed on the bonnet side. This, however, did not happen until the engine speed reached a certain point, when a slight vibration period set the bonnet vibrating, thus partially cutting out one cylinder. By replacing the side of the bonnet slightly farther aft ample clearance was obtained, and the trouble disappeared.

#### Rank Bad Driving.

THERE must be very few drivers whose judgment is so poor or recklessness so great that they will deliberately risk their necks, and yet you meet them again and again. My most recent experience of the species took place on a practically straight but comparatively narrow road. Drawing out to pass another car, he must have seen me bearing down on him from the opposite direction, but he refused to give way. I know the signs, so I clapped on my brakes, and had perforce to run my two near-side wheels well on to the footpath to give him room to pass. All very well. Mr. Roadfool, but supposing, instead of there being a path, the edge of the road had been bounded by a brick wall?

Battery Life.

H OW long should a battery last? It is curious and perhaps significant that manufacturers furnish us with little or no information on this



It is hard at this time of the year to find enjoyable Saturday and Sunday afternoon runs. Those who live in the South could do worse than explore some of the pretty villages of Berkshire.

point in their advertisements; but, judging from complaints that I have heard, some is certainly needed.

Recently a garage manager of long experience told an acquaintance of mine, whose battery is no longer up to its work, that he could not expect to get more than 20,000 miles' service without trouble from any battery, and there was not one that he would guarantee for a longer period. Whether this is true or not I leave to the manufacturers, but the fact remains that many owners have been called upon to pay £6 or £7 for a new battery after a couple of seasons' running, and they are very sore about it.

The matter needs ventilating, for the cost of battery replacement is not one that usually figures in estimates of maintenance prepared by agents for customers.

#### An Analogy.

A POINT which needs emphasizing in this connection is that the life of a battery depends entirely upon the treatment which it receives. If the electrolyte level is not maintained, if the battery is allowed to stand when discharged or if it is consistently overcharged it may not stand a season's use without needing a fairly costly overhaul.

The great thing for owner-drivers to remember is that a battery can be compared with a tank of water which has at the bottom a small tap, represented by the lighting switches, and a very large

tap represented by the starter switch. To fill the "tank" the dynamo is provided, and the owner's job is to see that it keeps it full. Unfortunately for him, however, the difficulty of determining the depth of water—i.e., the state of charge—is almost insuperable, for a hydrometer provides the only accurate gauge, and it is far from satisfactory for the job, because there is seldom sufficient liquid available to fill it. Somewhat premature standardization of dimensions must bear part of the blame for this.

#### No Fool Like an Old Fool!

I WAS chatting about things motoring to a chance acquainfance in a famous hostelry on the West Road. "These grease guns," he wailed, "are all very well, but what a job it is to fill them even with the latest 'charging' tins! I have to dismantle both ends of the gun, otherwise the air prevents any grease from being forced into the barrel."

"But," I queried, "you surely do not slack back the plunger until it is at the beginning of its stroke?" "Of course," he replied.

I explained that the correct method was to undo the screwed gland in the handle end of the barrel, so that when the gun was pushed down into the grease the pressure would automatically force the plunger back until the barrel was full.

"Thanks," he said gratefully, adding ruefully, "There's no fool like an old fool!"



FORTUNATELY
OUT OF DATE.

An Omega beside the old stocks at Dunchurch, a picturesque village between Daventry and Coventry, on the Holyhead road.

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Phone: Central 2372-3.

COVENTRY: 6. Worwick Row
Phone: Coventry 4775.

NORTHERN OFFICES:
MANCHESTER: 196, Deansgate.
Phone: Central:

#### Satisfied Owners.

THE scheme which inaugurated last of publishing readers' own experiences of their cars has provided a wonderful testimonial for the 1926 light car. A very large number of letters appeared dealing with the behaviour of 1926 models in the hands of the public; but, naturally, they represented only a small proportion of those which we received. Of those which never attained the dignity

of print, the bulk were couched in terms of praise from start to finish. They were not withheld, however, purely on this account; they lacked for the most part facts, which were in our opinion essential if the feature was to be really useful to

readers.

It might be thought that all, or certainly a proportion, of the owners who wrote in such glowing terms of their cars did so with some ulterior motive, but what could it have been? They stood to gain nothing from writing letters of that kind. There is another point of view which needs to be considered. Few men would willingly admit that the car which they had chosen and bought was a bad choice and a bad bargain. Admitting that, then, is it not extremely likely that they would not have written to us at all? Of course, it is.

have written to us at all? Of course, it is.

No matter which way it is argued, the fact stands out that light car owners as a whole are not only contented with their cars, but are actually so enthusiastic about them that they wish to tell the world what splendid little vehicles they are. So long as this state of affairs continues, no anxiety need be felt either for the future prosperity of the small car industry or for the increasing

popularity of the light car.

#### Negotiating Cross-roads.

An article in this issue outlines the danger of cross-roads and explains means which have either been suggested or have been adopted for countering it. It will be seen that we are as far from a satisfactory solution as ever. The writer of the article pays a tribute to motoring organizations, which, by the appointment of civil road-traffic directors, have helped immeasurably to reduce the number of accidents for which cross-roads have been responsible.

There seem to be only two obvious methods for preventing accidents. The first is to make it

"THE LIGHT CAR AND CYCLECAR" WAS FOUNDED IN 1912 TO CATER FOR THE NEEDS OF USERS AND POTENTIAL PURCHASERS OF LIGHT CARS AND CYCLECARS, AND IT HAS CONSISTENTLY ENCOURAGED THE DEVELOPMENT OF THE ECONOMICAL MOTORING MOVEMENT FOR OVER FOURTEEN YEARS.

NO CAR WITH AN ENGINE CAPACITY EXCEEDING 1,500 C.C. (1) LITRES) COMES WITHIN THE SCOPE OF THIS JOURNAL, THAT CAPACITY BEING GENERALLY RECOGNIZED AND ACCEPTED AS THE LIMIT FOR A LIGHT CAR ENGINE. Conducted by
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obligatory . for every vehicle to slow down to a very low speed at crossroads, and the second to have traffic directors at every cross-roads in the country. We fear, ever, that the one idea is as impracticable as the other, and it would appear that it must be left to the common sense of the individual to see that the extreme measure outlined in the first idea shall be unnecessary and that the cost of attempting to carry

out the latter shall be avoided.

There seems little doubt that any official attempt to prevent accidents at cross-roads must react on motorists, for they would have to pay for any measures introduced for their protection. Meantime, we earnestly appeal to our readers, especially those who are, comparatively speaking, newcomers in the world of motoring, to read carefully the article to which we have referred, so that they may be cognizant of dangers of which, very likely, they are unaware.

#### Testing the Disabled.

THE all-women trial helped to vindicate the claims of the fair sex to be capable drivers, and we suggest that, with a similar object in view. a trial confined to disabled drivers and promoted by the Disabled Drivers' M.C. in collaboration with a well-known club should be instituted at an early date. The trial would come within the province of the M.C.C. or the J.C.C., the former because of the widespread notice which it already commands when organizing successful tests, and the latter because it caters for small, easily managed machines which suit disabled drivers admirably.

The impression amongst an easily biased section of the public that maimed drivers are a danger to themselves and others is, unfortunately, gaining ground, but we stoutly deny that there is any real foundation for the inferences which have been made. The men concerned are, for the most part, suffering as a result of the prominent part they took in the Great War, and it is very unfair that the handicap under which they are already labouring should be increased. To the majority, much of their pleasure in life is derived from their ability to drive and any interference with their liberty in this direction would rob them of much of the joy which they still manage to extract from their fettered existences.

## CYCLECAR COMMENTS.

By SHACKLEPIN.

AN INGENIOUS HOME-BUILT THREE-WHEELER—BELT DRIVE SATISFACTION—A HAND-CON-TROLLED COVENTRY-VICTOR— BENDING LARGE-BORE PIPES.

A SHEFFIELD render has sent me an interesting description of a three-wheeler which he built a year or so ago. The two side members are of channel-section steel swept in at the rear on each side of the driving wheel. Cross bracing is used at three points and the side members are bolted directly to the front axle, no springs being used. The rear wheel, also, is unsprung, but the body is fitted with helical springs in front and Cee springs at the rear.

A 5-6 h.p. twin-cylinder Clyno motorcycle engine forms the power unit, and the primary drive is by chain to a Sturmey-Archer three-speed gearbox; thence a belt conveys the power to the rear wheel. The kick-starter shaft is extended to bring the crank outside the frame, and the gear lever is arranged to project through the floorboards in a central position.

Steering is direct, and front-wheel brakes are fitted, the latter being operated by pedal through the media of flat steel rods and swivel eyes, which ensure equal application at any angle of the front wheels. The Sturmey-Archer clutch is connected to a pedal and an outside hand-lever controls a brake-shoe acting on the rear wheel belt rim.

The builder says that on the road the cyclecar behaves quite well and the engine appears to be more efficient than when it was in a motorcycle. This theory is based upon the fact that on its first trial it tore out all the spokes of the belt rim!

Due, probably, to its short wheelbase, narrow track and light weight—4 cwt.—the machine bounces rather at speeds over 30 m.p.h., but the builder says that he has not had the slightest trouble with the belt, which does not slip.

This is rather interesting, in view of my recent remarks concerning belt drive.

During a recent call at the Coventry-Victor works, I was shown a very interesting conversion which is being made on one of the de luxe model three-wheelers. The machine has been bought by a legless man so that the clutch and normal foot brake must be controllable by hand.

The necessary levers were being fitted at the time of my visit, and, so far as I could see, a very neat job will result. I have arranged to have some sketches made when the work is finished, and these will be published in due course, as they are sure to prove interesting to many of my readers.

The Coventry-Victor works are very busy just now coping with an increasing number of orders for three-wheelers. So busy are they, in fact, that the motorcycle side of the business is being transferred to other premises. I hope to be in a position before long to make a very interesting announcement concerning these three-wheelers.

One of the troubles which seems to beset amateur mechanics is their inability to bend steel or copper tubing in a professional manner. Small-bore tubing, such as that used for petrol and oil pipes, presents no difficulty, provided it is well annealed, but so soon as exhaust or inlet pipe bending is attempted matters assume a different complexion.

Large-bore pipes should always be "loaded" and bent cold; the most convenient loading material is lead, which is melted and poured into the tube, one end of which is, of course, plugged. When the lead has set and the pipe is cool enough to handle, bending can begin.

A template of stout wire should be prepared, or, alternatively, the required curves can be chalked out on the floor; the pipe can be tried against this as the bending proceeds.

A stout anchorage of some kind will be needed as a "solid" pipe of 1½ ins. or so diameter is not easy to pull round. If a vice is used, there is a risk of kinking the pipe rather severely; a better plan is to drill a hole, large enough to take the pipe, in a stout piece of timber and radius the edges of the hole; the timber can be held in the vice, or secured in any other convenient way.

The pipe is passed through the hole to the point where the bend is required to begin and given a downward push, passed a little farther through the hole and bent again. It should then be removed and examined for swellings on the inner radius. These swellings must be hammered out by the gentle use of a ball-pene hammer with the pipe supported on a piece of soft wood.

The alternate bending and hammering operations are continued until the required curve is obtained, and if the job has been done carefully, a smooth and workmanlike bend will result. Finally, the lead is melted out and a final finish given to the bend with a smooth file and emery cloth.

The secret of the whole process is not to hurry the bending; any attempt to complete the curve with one gigantic push on the end of the pipe will result in hopeless kinking, even if it does not split the pipe. The same process as that outlined above is used for bending copper pipes, but they must be well annealed before pouring in the lead.

In certain cases, such as when using very thin copper tubing, or always for aluminium, resin or pitch should be used for londing. I do not recommend loading steel tubing with sand and bending it hot; it is a very awkward method and good results are not easy to obtain. There is also the danger of the tube being split or the plugs blown out by the formation of steam if the sand is not perfectly dry.



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### —and what these MANUFACTURERS THINK OF IT

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#### 

# They met at lunch in the "George"

THEY WERE BOTH ON A LONG RUN; said the owner of the beautiful four-figure car to the Trojan owner: "I thought I wouldn't see you again after Coventry—how have you managed to join me here?"

SAID THE Trojan OWNER: "I've not only got your number by heart, but I admire your beautiful car—and the way it roars away from me on the straight—but, you see, at hold-ups and round corners, my little Trojan is so easy to hold on the road and to pull up that I can gain on you quite a lot, and it's fine fun to average nearly as much as your expensive machine."

SINGAPORE TO LONDON IN A TROJAN

A specially illustrated report of this epic Journey is now being prepared. May we put you on our list for a copy?

## Try a Trojan - The

# time



The introduction of balloon tyre equipment on the three-door four-seater Trojan results in a greater degree of adhesion to the road surface, thus making a greater speed possible. On the 1927 model a higher gear is introduced.

The price of the Trojan £125 complete on Solid Tyres

Fitted with full pneumatic equipment - £130 The 3-door 4-seater model on solids - £140

The 3-door 4-seater model on pneumatics as illustrated - £145

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One of your Resolutions will have been to get rid of that old light car and have something really up to date and economical in its place.

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A BRITISH INVENTION

Just a few drops in your bucket and you get a SOFT VELVETY SOLUTION which dissolves ALL DIRT and brings up the original lustre and beauty of your car in ONE OPERATION, prolonging the life of all fine surfaces. Not only the coachwork, the glass and the windscreen, but the upholstery, every part INSIDE and OUT. Car cleaning becomes a pleasure AND IT COSTS YOU NEXT TO NOTHING, a one pint tin making 12 pints of solution.

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Huttonizing Fluid will revolutionize the work of the Garage and prove the greatest boon the motorist has yet known.

YOUR HANDS, SIR? Huttonizing Fluid being antiseptic and germicidal, it is a most wonderful cleaner, healer and preserver of the hands.

If your garage or dealer does not yet stock Huttonizing Fluid, send 3/6 for a pint tin or 2/3 for half pint, post paid, together with his name and address.

BRITISH COMMODITIES LTD. (Dept. L.C.). New House, Hatton Garden, F.C.I.

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IF YOU VALUE YOUR CAR & YOUR HOME

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ONE THIRD THE LABOUR



Huttonise your car

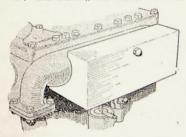


Huttonize your Home



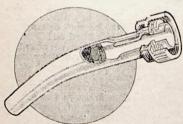
#### For Austin Sevens.

Known as Hemm's Booster, a must which fits over the induction pipe and a portion of the exhaust pipe of an Austin Seven has been placed on the market by Mr. Charles Hemm. Chester Road, Poynton, Cheshire. The object of this fitting, which sells for 5s. 6d. post free, is to keep the induction pipe reasonably warm by means of exhaust heat, thus making for better running



For improving carburation—an asbestos-lined muff for keeping an Austin Seven induction pipe warm.

in cold weather, and reducing the time taken for the engine to get into its stride after starting up from cold. The muft is construe ed of thin sheet metal and is lined with asbestos. Fitting should be quite simple, for it is necessary only to remove one bolt and washer, place the muft in position and replace the bolt.



A neat petrol pourer, which can be stored inside a petrol can when not in use.

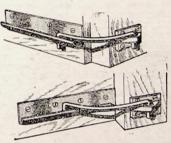
#### A Handy Petrol Pourer.

An accompanying illustration shows a very serviceable petrol pourer which is being marketed by Messrs. Stevens and Bullivant, Sutton Road, Erdington, Birmingham. The noteworthy feature of this pourer is that when not in use the nozzle can be reversed and stored inside the spare petrol can, this being made possible by an adapter which serews on to the filler orifice and is also threaded to take the ordinary

fancet cap. Thus it does not take up valuable space in the tool locker, but is always handy when required. The pourer is made in brass and can be obtained with either plated or polished brass finish. A strainer gauze is incorporated and a length of flexible tubing can be supplied for use with cars which have an awkwardly placed petrol tank orifice. The prices range from 2s. 6d. to 5s. 6d.

#### For Garage Doors.

Many garage doors have an awkward knack of refusing to remain fully open unless they are held by means of a brick or some other form of stop. A neat eatch which saves this trouble by automatically retaining the door in the open position is being sold by A. W. Gamage, Ltd., Holbern, London, E.C.I. The Autocatch, as the device is called, consists of a curved rod, which at one



A cleverly designed automatic catch for holding garage doors wide open.

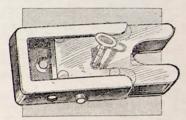
end is hinged to a bracket fitted to the door support, the other end being bent over at right angles and sliding in a metal channel screwed to the door itself. The channel is drilled at one end so that when the door is opened the rod slides along until it drops into the hole, thus holding the door in the open position. Two models are obtainable, these being the 6-in, size at 3s, and the 10-in, at 5s.

#### An Effective Cleaner.

We have recently been testing a sample of Huttonizing Fluid, marketed by British Commodities, Ltd., New House, Hatton Garden, London E.C.I. The bodywork of a car can easily be given a brilliant finish by first washing it in the usual way and then, whilst still wet, rubbing on the fluid, afterwards washing it off with a sponge and leather and giving a final polish with a soft duster. Upholstery, celluloid side screens and glass windscreens also take on a clean and fresh appearance when "Huttonized."

Simple Starter Lock.

Cars that are left in public garages or parking places must be drivable, but owners strongly resent the abuse of the electric starter, of which free use is generally made by the assistants. The C.M.I. starter lock (5s. 6d., from the Central Motor Institute and Engineering Co., Itd., 112a. Finchley Road, London, N.W.3) is designed for the express purpose of preventing such malpractices; in a minor degree it acts as a thief-proof device. It takes the form of a self-contained lock, which is screwed to the facia board or footboard in such a position that stout prongs, forming part of the slidably-mounted

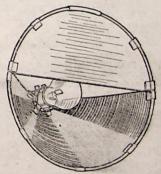


The C.M.I. starter lock, an inexpensive device for preventing unauthorized use of the electric starter.

body of the device, can be slipped under the starter knob, the whole being locked in position by means of an ordinary key. "Secret" screws are used to fasten the device in position, a bradawl and screwdri er being all that are necessary for fitting. The idea strikes us as being eminently practical and useful.

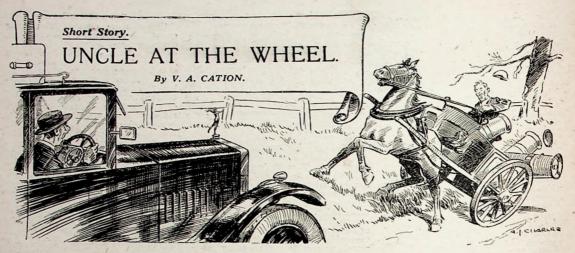
#### A New Anti-dazzle Device.

The illustration given below shows an auti-dazzle device which is the invention of Mr. L. Kelly, 26. Crewsdon Road, Brixton, Loudon, S.W.9. It consists of a circular metal frame which carries a semicircular sheet of frosted celluloid at the top, whilst the lower



The anti-dazzle device invented by Mr. L. Kelly; it is described in the accompanying paragraph.

half of the frame holds a piece of greentinted celluloid, shaped in the form of a half cone. The device is intended to be fixed over the lame reflector, the apex of the cone fitting neatly round the bulb holder. When in use the frosted celluloid diffuses the upward rays from the filament, or the top part of the reflector, whilst the tinted portion is claimed to cut out any dazzling light from the lower half of the reflector.



N company with some relations I recently paid a visit to an uncle of mine, whose residence, by reason of its distance from my own, is not often visited by my family. Uncle, who is the rector of a north-country village, is of a quiet and retiring disposition; his letter writing is confined mainly to petitions and circulars beginning: "In these troublous times," and ending, "It is more blessed to give than to receive." Consequently, the entirely unprecedented happenings which I am about to relate came as a great shock to us. I feel I must retail them as a warning to those novices who are thinking of buying "a luxurious, high-powered saloon" second-hand.

As I have said, I was visiting Uncle at his tiny, out-the-way village. We had received a wire telling of-the-way village. us that we should be met, so we were not surprised when we were greeted by my aunt; but the welcome was not warm, and the good lady appeared to be on the verge of a nervous breakdown.

Hurriedly shaking our hands, she led us out of the station and across the yard to where a huge 20 h.p. four-door saloon stood majestically aloof from the

group of dog-carts and aged growlers.

Our amazement grew when, in place of the expected chauffeur, we discovered at the wheel my uncle, complete in the clerical "round-about" and "wideawake."

Without so much as a

"How d'you do?" he turned and, pointing to the rear seats, snapped, "Get in!" While a porter threw the luggage on the roof we obeyed, too dazed to ask questions; and then the fuit began.

Uncle tried the electric starter and the car lurched forward with an ugly "Grrr!" It took us nearly five minutes to shift the gear lever from top to neutral, and then he tried again. I was about to make a suggestion, when my aunt

"He only bought it yesterday," she wluspered.
"Don't give him advice. He'd only resent it as an aspersion on his driving."

"If his driving is anything like his starting," I replied, "we're doomed."

The battery was showing signs of fatigue when I summoned up sufficient courage to suggest that he should switch on the ignition. This he did, and the engine proceeded to rev. almost at its maximum, despite

all juggling with the throttle. When we had refixed the throttle rod to the butterfly arm, Uncle made another attempt, this time with great success. By a process of elimination he discovered the correct gear, and we leapt towards the gates of the station yard. Our progress was arrested with a suddenness equal to that of our start, for a further mishap had occurred in the gearbox. Fortunately, it was of sturdy construction and did not unduly resent reverse being engaged at 5 m.p.h. The abrupt stoppage was, however, disastrous, for the passengers in the rear found themselves eagerly examining the necks of the occupants of the front seats, who, in turn, were carrying out a detailed inspection of the windscreen. Meanwhile a trunk fell heavily from the roof and came to rest with a crash on the bonnet.

Order restored, we successfully restarted, and Uncle displayed his contempt for a small village hill with a gradient of a mere 1 in 8 by changing from first to top on the steepest part. Willing and long-suffering though it was, this was more than the engine could stand, and Uncle essayed a late change into second. The reverend gentleman, in the heat of the moment, compromised and missed his gear, leaving us in neutral on a miniature Porlock. I was by now prepared for anything, and

with a swift lunge over the front squab I grabbed the hand brake; but I was forestalled by Uncle's foresight: he was driving with it fairly hard on !

A perilous rearward descent of the hill by means of a sinuous course closely of a sinuous course resembling the way of Uncle's arch-enemy, Serpent, enabled us to reach the safety of level ground and once more attempt the climb.

Everything went well and we soared up with the engine screaming in first. For two miles we breezed along

with the tyre lever.

narrow lanes at a steady
t h i r t y. Pandemonium
reigned on the roof, where the boxes jostled each other,

and consternation and dismay were rampant inside.

Not a word was said, and Uncle gritted his feeth as he hunched over the steering wheel. I could almost hear him muttering "The Assyrian came down like a wolf on the fold."

We were still five miles from the rectory when the inevitable happened. We came round a corner at about 35 m.p.h. and met a milk-cart. With marvellous



Muttering under his breath, Uncle smote the lady (the nymph, not Aunt) with the tyre lever.

presence of mind Uncle slammed on all the brakes and we skidded to a standstill, while the terrified horse climbed the bank, upsetting the milkman and the churns.

With a few well-meant words about "pitfalls for the unwary," the milk concern was reassembled, but the car proved stubborn. It was locked in top gear and nothing would shift either the lever or the car. Uncle made the acquaintance of his tool-kit for the first time. It contained a leaking oilcan, a tyre lever, a broken "adjustable" and a jack without a handle. Uncle sat at the wheel, throwing his weight on the gear lever while the passengers pushed the spare-wheel case at the rear. The only result was a large dent in the body, so we transferred our efforts to the front.

Here an unexpected difficulty was encountered, for Aunt discovered a most ungodly idol in the shape of an unadorned and shameless nymph, who disported herself on the radiator filler cap. A lengthy interruption occurred while Aunt deplored the morals of the generation and demanded that the obscene token should be removed. Muttering the Thirty-nine Articles under his breath, Uncle smote the lady (the nymph—not Aunt) with the tyre lever and turned again to the work on hand.

He was very near despairing when his eye lighted on a tractor busy in a near-by field. Leaping the gate, he set off across a stretch of newly ploughed land, and, after some altercation with the ploughman, returned brandishing a large agricultural spanner of the sort used for adjusting ploughshares. It was not, however, designed for shifting locked gear levers, and after half an hour all save my avuncular relative and myself decided to walk, leaving us to wrestle with the car.

At last we persuaded the ploughman to hitch us on

At last we persuaded the ploughman to hitch us on to the back of his tractor, and the jerk with which he started successfully freed the gear.

On the following day Uncle did a level swap for a 7 h.p. light car of the same make.

#### DRIVING FOR THE DISABLED MADE EASY.

AN INGENIOUS JOWETT CONVERSION.

To enable a legless man to drive a conventional type of car with three-speed gearbox and so on, Mr. E. H. Hora, an automobile agent and engineer, of Rainsford Road, Chelmsford, converted the controls of a Jowett to meet the necessary requirements.

His experimental car proved so successful that he quickly received another order, and he is now prepared

to convert new Jowetts supplied through his agency at a cost of £4 and to adapt old cars of any make, but with similar controls, for £7 10s.

The system is as follows:—

The throttle is controlled by a Bowden wire and a lever, the latter mounted on the left of the steering wheel. The brake pedal is actuated by a rod mounted at its top end in a bracket bolted to the faciabourd. A flat hand-plate is fixed to the upper end of the rod and it is in close proximity to the steering wheel. These two controls are perfectly simple and easily operated.

The clutch is ingeniously operated by the hand-brake lever. For the first few "notches" of its movement the lever gradually releases the clutch and during the

the clutch, and during the latter part of its travel it continues to hold the clutch out but applies the hand brake in the normal way. This is effected by a short extension to the bottom end of the lever carrying a cam which bears against a stop mounted on an auxiliary transverse shaft.

A short lever on the shaft is connected with the clutch withdrawal arm by a rod (B). Thus, to change gear, it is necessary only to pull the hand-brake lever back two or three notches, engage the gear, and release the hand brake. To stop the car, the lever is pulled right back, the clutch being automatically released and the brakes applied.

This system, however, was found to have a disadvantage when a start had to be made up a hill, for so

soon as the hand brake was released, and before the clutch could be properly engaged, the car tended to run backwards. As the right hand was being used to work the lever, the "foot" brake (on the right of the steering wheel) could not conveniently be applied.

To overcome this drawback, Mr. Hora devised a very original control. He extended the length of the clutch

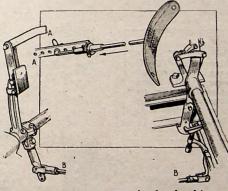
pedal a couple of inches by bolling two short strips of steel to it and connected it with a long rod (A), which had at its other end a padded rest arranged to press lightly against the driver's abdomen. The length of the rod can be adjusted so as to "fit" the driver comfortably and to allow for the thickness of his clothes.

We tested this arrangement and found it perfectly satisfactory, it being remarkably easy to operate the clutch smoothly and quickly simply by leaning forward a little; in fact, double declutching presented no difficulty, the movements being almost automatic.

We regard the whole idea as a very praiseworthy effort to meet the requirements of disabled drivers.

The conversion is so readily made that it takes no more than 24 hours to fit it to a new car, and it requires no subsequent attention, except for an occasional drop of oil on the fork-ends and a little grease on the

Able-bodied men might be inclined to smile at the novelty of the controls, but they should remember that an arrangement which makes it possible for a cripple to drive safely and comfortably is no mean achievement. The joys of motoring are doubled for the man who cannot indulge in such exercises as golf and tennis, while for the disabled business man who cannot afford a chaufteur a car easy to drive and fitted with simple controls is an inestimable boon.



Showing the arrangements whereby the driver may declutch either by the hand-brake lever or by leaning forward. The lower extension on the clutch-pedal boss is a motorcycle sidecar lug.

Tell your novice friend about these articles. Commencing next week:

#### MOTORING FOR THE BEGINNER.

A series of articles especially written for those about to take up motoring or those who have only just acquired their first car.

"THE LIGHT CAR AND CYCLECAR"—NEXT FRIDAY'S ISSUE.

T is generally admitted that cross-roads provide one of the most prominent causes of accidents and, despite the enormous growth in the number of vehicles, no practical means have yet been devised for eliminating the many risks which are involved.

A very high tribute, however, must be paid to the Automobile Association and the Royal Automobile Club, which, by appointing patrols and guides to act as pointduty men at the busier crossings—men, by the way, whose services are common to all, whether they be members of these bodies or not—have done a very great deal to safeguard the public. As we have intimated, however, these civil traffic directors can be spared to guard only the busier crossings, and there remain literally thousands of secondary cross-roads where, if the volume of traffic is not so great, the danger is possibly greater.

A scheme which has been discussed at considerable length and which has many supporters, embraces what is known as the "off-side rule." In effect, it is very simple, requiring that drivers shall give way to all traffic approaching from their off side; exactly how it applies will be understood by glancing at an accompanying illustration, which shows three cars meeting

at a cross-roads.

#### Unfair on Main Road Traffic.

To make the explanation clearer in this and other instances which will be quoted, it will be assumed that the main road runs north and south, the side roads east and west.

In the example to which we refer it will be seen that car A is travelling northward, car B southward—both on the main road—whilst a third car (C) wishes to cross the main road from west to east.

#### HOW ACCIDENTS ARE CAUSED-

(1) An example which shows the unfairness of the "off-side rule." Car B, although on a main road, is held up until (1) An example which shows the unfairness of the "off-side rule." Car B, although on a moin road, is held up until A and C have proceeded on the'r journeys. (2) The kind of triple collision which mry take place when risks are taken at cross roads. How can such occurrences positively be prevented? (Inset) A st ggested warning sign to be placed about 50 yards d. wn overy side road.



### THE DANGER OF CROSS ROADS.

Bearing in mind the off-side rule, car A has the privilege of proceeding straight ahead because car C must give way to traffic approaching from its right; car C, however, enjoys the privilege of making the second move, because B must give way to it. Car B, therefore, cannot move until both C and A have proceeded on their journey.

The obvious drawback to a scheme like this is that whereas, virtually, main-road traffic should have the right of way, B, travelling north to south, is held up, whilst an even greater disadvantage is that main-road traffic tends usually to disregard minor cross-roads much more than does the traffic actually making use of them. In the case of the latter, drivers are usually aware of the fact that they are about to cross a main road, and in nine cases out of ten due caution is exercised.

It is in the tenth case, however, that disaster is invited, and another illustration (2) shows the sort of triple collision which can take place when three cars attempt to negotiate a crossing without having regard to traffic which may be coming from other directions.

The driver of car A, seeing car C bearing down on the near side, would, as likely as not, lock over hard to the right. Car B would almost certainly swing

THE RAPID GROWTH OF MOTORING PROBLEM WHICH WE DISCUSS BELOW HIES MORE AGUTE. SEVERAL MEASURES PREVENTING ACCIDENTS ARE DISCUSBUT ALL DEPEND FOR THEIR SUCCESS FE "HUMAN ELEMENT." IS THERE NO TICAL WAY OUT OF THE DIFFICULTY?



right, with the object of avoiding the other two, whilst car C would probably swing left. This illustration demonstrates very clearly the danger which we are emphasizing and will, we hope, act as a caution to drivers, who, emboldened by that contempt which is born of familiarity, disregard the possibilities attendant on foolhardy driving at cross-roads.

We have dealt with the off-side rule only so far as it affects cross-roads; when fork-roads are involved, other complications are introduced. With these, however, we are not in this article concerns.

ever, we are not, in this article, concerned.

Although, as we have pointed out, road patrols and, guides cannot be spared in sufficient numbers to guard every dangerous cross-roads, the motoring bodies concerned have done as much as they can by erecting warning signs, whilst the Ministry of Transport signs which are now gradually taking their places must be familiar to all.

Mention must be made of the "flashing beacons" which, tried as an experiment at danger points on the Great West Road, bid fair to become universal at busy cross-roads. That they have a salutary effect is obvious. One of these beacons figures in our front-cover picture.

A scheme which has found favour in the eyes of the

public, but not with the authorities, is that main-road traffic should always be given the right of way and that crossings should be identified by signposts placed some 50 yards down each road, so that a driver can tell whether he has the accepted privilege of the user of a main road or whether he is on a side road and must give way.

Here, again, however, there is in the minds of some people a serious drawback. They believe that, resting secure in the rights he possessed, a driver of a car on a main road might throw caution to the winds and speed across danger-points with unabated speed. It would only require a driver on a by-road to overlook or disregard the possibilities of other traffic being about to set the stage for a serious accident. Nothing short of an actual barrier across a side road would positively prevent such a possibility say those who believe that main-road users also should be warned.

#### Automatic Signals.

Inventors have been busy trying to solve the problem, and there are many clever people concentrating on the idea of signals operated by the depression of road platforms over which cars must pass when approaching cross-roads. Here, again, the human element creeps in, for, even if the signals were clear and unmistakable, there would be the possibility of their being ignored.

Another promising scheme is the use of a white line painted across the road some few yards before a by-road crosses a main road, the word "Stop" also being painted on the surface of the highway so that it can be seen clearly by drivers in plenty of time for them to pull up. If every driver obeyed the admonition laid down, accidents would be practically impos-

#### - AND HOW THEY MAY BE AVERTED.

(3) The wrong way for a car (A) to turn left. This is a common fault with drivers of cars having a poor "lock" or turning radius. The arrows show how a collision may occur. (4) The correct manner in which the driver of car A should proceed. (5) Drivers should make it an invariable practice to slow down when about to cross a main road and to give audible warning of their approach.



OUR READERS' OPINIONS (contd.).

#### The Disabled Drivers' Motor Club.

Your correspondent, Mr. Fred Ashley, whose letter appeared in your issue of December 31st, has apparently not heard of the Disabled Drivers' Motor Club. This club

was formed solely to further the inter-The Right to ests of the disabled driver, and his right Drive. to drive will be strongly maintained against any proposals to the contrary.

Entrance and membership fees are as follow :- Town members: Entrance fee 5s., subscription 10s, per annum; country members (those residing outside a 50-mile radus from Hyde Park, London); No entrance fee, subscription 5s. per annum. The more we are together the stronger we shall be.

N. Fielden, Hon. Secretary.

#### A Test Welcomed.

I am a disabled driver, having lost an arm in France 1915. I have been driving a car for only 12 months. in 1915. but I endorse the remarks of one of your correspondents

that disabled drivers exercise more cau-Disabled Drivers' tion, perhaps, than the able-bodied man. Further, 1, too, would welcome passing a test if needed. Whilst agreeing that Cautious. every precaution should be taken to make roads safe. have no sympathy with what I term the stunt Press, which is endeavouring to stop all except the absolutely fit from driving. Has it ever occurred to the people who put forward these views what we who have been disabled in the service of our country have been deprived of in the way of sport? No cricket, football, billiards—or, in fact, any of

the games in which we used to participate-can we now enjoy, and it seems that our one remaining pleasure will also be prohibited unless we assert ourselves and show that we are quite sate on roads. There is one more question which I would like to ask of the killjoys—In all the accidents that one reads of, how many disabled drivers are involved? In conclusion, let me say that I, for one, am glad that there is a journal like The Light Car and Cyclear in which to air our views. in which to air our views.

#### Inner Tubes as Shock Absorbers.

With reference to your hint on shock absorbers made from aeroplane clastic, perhaps it would interest readers to know I have successfully made a shock absorber from two old inner tubes. I use a 30-in, by 31-in, tube at each end of one axle of my car, and the difference in the riding qualities of the car is astounding. JOHN CAIRNS.

#### The Tyre-size Muddle.

Being one of the many readers who have never voiced their opinion in your paper. I should like to suggest another very easy method of giving tyre sizes, as stated by "Stability." For instance, let us have a little existing types and sizes of tyres Suggestion.

A Helpful (?) all the existing types and sizes of tyres marked on as at present, and, in addition, all the following particulars: cubic conceits air presents applied to the state of the

capacity, air pressure, number of yards of cotton employed in making the tyre and the number of lbs. of rubber used. The following is an example which should very easily be remembered:  $710 \times 90 \times 7,000 \times 45 \times 1,001,654 \times 30!$ . UNSTABLE.

### Lubricating Road Springs.

218

May I add one more tip for making home-made gaiters to those given in your recent article on lubricating road

springs? A strip of old inner tube, about 2 ins, wide, makes,

Cheap Spring
Gaiters
Gaiters
The spring of all for keeping out wet and mud. It should be wound on puttee Condemned. fashion and pulled moderately tight, so that the rubber is slightly stretched, the end being fastened with a binding of adhesive tape. If the covering is then given a coat of black enamel it will look very neat, and with the folds well overlapped it is practically impenetrable to moisture and mud.

I pass this on to those who are interested, but is the covering of springs really a sound policy? Personally, I doubt it very much, and so do a number of experienced motorists of my acquaintance.

Ask the foremen of any big repair works what he thinks of the spring gaiters provided on many cars. He will, as a rule, condemn them.

Only the other day I was having a look round a big garage workshop. I was accompanied by the manager, and as we

passed one popular make of car he stopped.
"Look!" he said, pointing to a rear spri

"Look!" he said, pointing to a rear spring from which the gaiter had just been removed. That spring was just a mass of metal welded solid by rust. "Half the cars that come in here are like that," he continued. "Rotten things, these gaiters; I'd scrap the lot!"

I agreed; for, personally, when I buy a new car I invariably remove the gaiters if any are fitted. I may leave those on the front half of semi-elliptic front springs as a concession to appearance, but off come the rest, and stay off until

I sell the car. I should make it clear that I am referring to the ordinary gaiters, which merely cover the springs and have no method of inserting lubricant. Unless they are removed at least every 2,000 miles in winter the springs will be in worse condition than if left unprotected altogether, because the grease will be squeezed from between the leaves, then rust will appear, due to internal sweating.

appear, due to internal sweating.

With many motorists, out of sight is out of mind. A spring hidden by a cover extremely unpleasant to remove is ignored and untended. A leaf may then fracture—no one knows; no one cares. A second breaks with like results, until finally the whole thing goes crash and the motorist is perhaps hopelessly stranded. A stitch in time is a most excellent precept for the car owner.

To remove and replace gaiters is about as unpleasant a job as one can conceivably imagine. Most of them seem to lace up underneath, so to do anything with them at all one

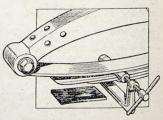
must crawl right under the car and lie on one's back in the very finest possible position for mud and water to drip into one's face, hair and ears.

When motoring was purely a pastime owners were quite prepared to do odd jobs of this kind, but the present day driver who uses his car for business cannot afford the

My experience of light cars is that in many of them the springs will squeak after a time even though they are kept well lubricated, for the following reason. After a fair mileage, the actual extent depending on the roads traversed, the springs seem to take such a set that any lubricant is very quickly forced away from a small spot an inch or two from the ends of one or more leaves.

I have experienced the same thing time after timesqueaking springs which, when examined, were free from rust and well lubricated, except for a spot about as big as a penny in the position indicated. This was dry, and was

method The curing squeaking suggested springs springs suggested by our correspon-dent; a strip of oiled leather is in-serted under the end of each leaf.



the cause of the trouble, but to have to remove gaiters every few hundred miles to cure it was intolerable.

I have since found a cure for this trouble. It is to insert thin strips of oil-scaked leather, the same width as the springs and about 3 ins. long, under the end of each leaf which gets dry. This avoids a metal-to-metal contact and stops any squeaking.

Of course, spring gaiters of modern design, with practi-cal means fer injecting oil or thin grease, approach as nearly as possible to the right conditions; but, all things considered. give me springs naked as they were born. It is then but little trouble occasionally to jack up the car and insert grease, smearing it also over the outside of the leaves. At shorter intervals one can in a few minutes squirt in oily paraffin, which will work between the leaves and keep the springs supple and in good order.

Manmaduke. springs supple and in good order.

в36

4-CYL. models 12-24 and 12-40 h.p. from £285

## Try one-on the toughest hill you know

These photographs show a recent ascent of Leith Hill, near Dorking, made by Mrs. Bruce in the Hon. Victor Bruce's A-C Car. The ease with which such a hill is conquered by A-C Cars is convincing testimony to their great power and reliability, yet the A-C costs less to run, per mile, than any other car of equal road-performance and carrying-capacity. Try one for yourself, and prove these things by actual personal experience.

Dunlop Cord Tyres are best, and we fit them on all A-C Cars. EVERY A-C MODEL IS GUARANTEED 3 YEARS.

Payments over 3 years, if desired.



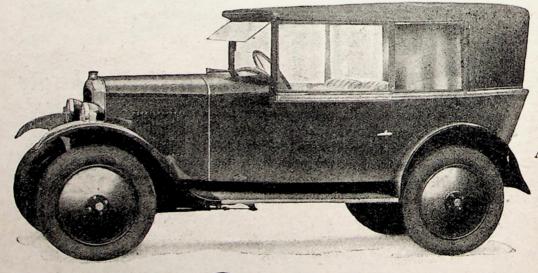
THAMES DITTON, SURREY, ENGLAND.

Full Range of A-C Cars at A-C LONDON CONCESSIONAIRES, 55-56, Pall Mull, London, S.W.1 (Opposite Marlborough House.)

We can supply perfect used cars - under Guarantee.

# implicity combined

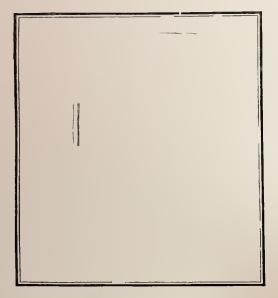
It might have been designed by a lady to embody all that womankind desires in a car—this dainty, sturdy, unfaltering little Peugeot! A car that rouses admiration, even a breath of envy, among one's friends. A car that runs so well it puts such words as breakdown and trouble in the limbo of forgotten things. A car so responsive it seems half human in its desire to please. Roominess and comfort, of course—and hood and side screens that give saloon protection! Even in the mundane matter of economy the Peugeot is strikingly to the fore. Seven pounds tax. Fifty miles to a gallon. What more could she want?



7/12 All-Weat Peugeo 4-Seate £16

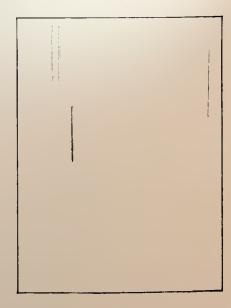
PEUGEOL IT PUR-JO)

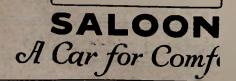
The small advertisement columns of "The Light Car and Cyclecar" form a unique mart for the disposal of all goods of interest to small car users.

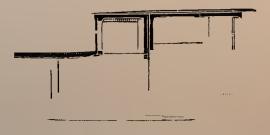


## atever weather A CAR FOR COMFORT

HE Singer Saloon is a car for wintry weather when the wind is whistling through the streets and the snow drifting up the drive, Built for comfort it soothes and satisfies-luxury, refinement, reliability-everything a car should possess and give can be yours with a Singer Saloon. Plenty of legroom, width for three, pneumatic upholstery, pile carpets, winding windows, roller blinds, interior lights, roof cords for hats or papers, ash trays, commodious pockets-these and many other refinements are all to be found in a SINGER Saloon at £260-the biggest value in British Saloons. Dunlop Tyres are fitted. May we send you full particulars? Singer & Company, Ltd., Coventry. London Showrooms: 202, Gt. Portland Street, W.1.







#### OUR READERS' OPINIONS (contd.).

### 1926 Troian Owners' Experiences.

#### A Solid-tyred Model.

I own a 1926 Trojan and cannot speak too highly of it.
My mileage during 12 months' ownership is over 15,000 and the car has given no trouble. As the result of careful measurements, I have found that the petrol consumption on measurements, I have found that the petrol consumption on long runs in level country is 50 m.p.g. The Trojan is a chean car to run, giving no trouble, and, contrary to the general opinion, I do not find that the solid tyres cause skidding, whilst it will take practically any hill in top gear. I think it is as comfortable, despite its solid tyres, as most cars with pneumatics, and I find that it behaves particularly well on rough roads.

II.N.M.H.

#### Repairs Cost 10d. in 10,750 Miles.

My Trojan was delivered in December, 1925, and since then has covered 10,750 miles. Soon after taking over the car some trouble was experienced with the big-ends, and the makers fitted a new engine gratis. My total bill for repairs up to the present time has amounted to 10d, this being accounted for by the need for two leather cup washers for

the priming pump.

The performance of the car can be summarized as follows: Tyre mileage (pneumatics), 8,000 to 10,000; petrol consumption, 40 mp.g.; maximum speed, 30 m.p.h.; average speed maintained for distances of 100 miles or more, 25-26 m.p.h. It should be pointed out that these figures are those obtainable in everyday use, and the performance can be slightly improved under favourable conditions. The car has given 100 per cent. reliability so far and no appreciable wear has taken place, the engine, in fact, being in considerably better fettle than when new.

My criticisms are only minor ones. The steering was rather stiff to begin with, but improved considerably with use, whilst road shocks are transmitted to the steering wheel to some extent. In my opinion, the headlights could with advantage be slightly more powerful. With regard to the engine, its only faults are a slight period at about 30 m.p.h., and the fact that the silencer becomes choked up after some 3,000 to 4,000 miles' running. Cleaning it is a simple, although distinctly dirty, job.

In general, I regard the Trojan as one of the most remark-

able cars on the road, and I fully expect it to cover 20,000 to 30,000 miles before a visit to the repair shop will be necessary. Ease of control is an excellent feature and the attention required is negligible, the engine never apparently needing decarbonizing!

P. H. Mangin.

Linden, Heronsgate, Chorley Wood.

#### The Three-door Model.

Since delivery at the end of February, my 1926 three-door model Trojan has completed 7,800 miles in all weathers and on all manner of roads. I have experienced three involuntary stops, these being due to a blown main fuse, a punctary stops, these being due to a blown main tuse, a puncture and a sparking plug which gave trouble after 6,300 miles. Petrol and oil consumption for the whole distance work out at just over 43 m.p.g. and about 1,100 m.p.g. respectively. The maximum speed of the car is 35 m.p.h., but it will keep up 30 m.p.h. indefinitely, and I can easily maintain averages of 26-27 miles an hour.

Acceleration and braking are distinctly good, while the hill-climbing powers of the car are also excellent; although

hill-climbing powers of the car are also excellent; although it is somewhat slow on very steep gradients it is an excep-tionally stift hill which calls for a change down.

The Trojan is very pleasant to handle in traffic, bottom genr not being required except for starting away from rest.

gear not being required except for starting away from rest, and it is possible to get away from speeds so low as 1 mile an hour without pinking or any transmission noise.

The steering lock is somewhat limited, but when manœuvring in a garage this disadvantage is to some extent compensated for by the case with which it is possible to change from bottom to reverse gear. The steering, too, is a trifle heavy at low speeds. The suspension is excellent, especially with pneumatic tyres, which also prevent road shock being transmitted to the steering wheel.

The bodywork and upholstery are of good quality and provide very good riding comfort, whilst with reasonable care in cleaning the finish can be retained indefinitely. Legroom in both back and front seats is exceptionally good, and I find it possible to carry four adults and a child without any discomfort.

any discomfort.
With regard to the "solid" back axle, this does not seem

to cause undue tyre wear, and the car holds the road well, whilst I have not been troubled with skidding or "tail-wag." Although not of the latest roller-bearing type, the engine runs very sweetly up to 31 m.p.h., but over this speed it is just a trifle fussy. Both engine and gearbox are very accessible, and adjustments are simple and easy to carry out; in fact, the only really messy job which has to be done to any part of the car is chain adjustment, which I find is necessary about every 2,500 miles.

The only serious trouble I have experienced was due to a big-end which caused a rather bad knock after about 6,500 miles. Although the guarantee had expired some time before, a new bearing was fitted by the makers free of charge. Thalassa,

S. H. FLEMING.

Thalassa, South Benfleet, Essex.

#### A Top-gear Car.

Having owned a 1925 Trojan with solid tyres, and seeing the 1926 three-door model with pneumatic tyres at the 1925 Motor Show, I thought I would like to change, so I ordered one and took delivery in January last.

Up to date I have run just on 5,000 miles, and I very much prefer the three-door model with pneumatics. The steering is lighter and the road shocks are not transmitted to the driver's arms. In addition, I find I can average a higher speed than was possible previously. Regarding petrol consumption, I get a good 40 miles per

gallon, and on long runs I have averaged slightly more. springing it really excellent, but I believe shock absorbers springing 15 really excellent, but I believe shock absorbers would be an advantage, as the car has a slight tendency to bounce on poor roads. Driving is wonderfully simple. Not having previously driven a car, I took the wheel after a run of 10 minutes, and after four driving lessons of one hour each I was able to manage quite well on my own. It is possible to climb almost any hill in top gear, and I have run from St. Albans to Worthing and back (76 miles each way), without a simple grown hours.

I have run from St. Albans to Working, each way) without a single gear change.

L. F. Bennington.

St. Albans, Herts.

#### In the Hands of a Novice.

I took delivery of a three-door 1926 model Trojan fitted with pneumatic tyres in March, 1926. I had never been in a car before, but after the agent had explained the controls and I had had three 40-minute driving lessons, I was able to take the car over myself and have since driven

I obtain 40 miles per gallon of petrol on runs of 100 miles or so, whilst on short trips the consumption works out at 36 m.p.g. So far as oil is concerned, the figure is about

1,000 m.p.g.
I am living in the Rhondda Valley, Glamorganshire, and find the car a really splendid hill-climber, as evidenced by the fact that I have travelled from my home to Chester entirely in top gear. I do not know of any other car that can equal

this performance.

I followed the instructions given in the makers' handbook I followed the instructions given in the makers' handbook carefully, but had some difficulty in starting up. With my car, however. I have found that an easy start can be obtained by keeping the mixture lever slightly below the position recommended for normal working conditions instead of on full petrol as instructed. The brakes are very reliable, but I had to reline the foot brake after 6,000 miles, due probably to beying ill treated it remember when I was locarium. to having ill-treated it somewhat when I was learning to

drive.

The engine has given no mechanical trouble, but after 5,000 miles it mysteriously lost a good deal of its pulling power. This was traced to the silencer, which had choked up, and the trouble was rectified in an bour and a half, after which he engine regained its efficiency. In conclusion, I may say that the Trojan is well sprung, very reliable and comfortable, while the controls are very easy to manipulate.

WILLIAM EDWARDS. manipulate. 14, Deri Terrace,

Tylorstown, Pontygwalth.

• It should be pointed out that last June, concurrent with a very small reduction in the capacity of the Trojan engine to bring it within the light car limit, several small improvements were incorporated. These included roller big-ends, a better-balanced crankshaft and an improved oiling system.—Ed.

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#### OUR READERS' OPINIONS (contd.).

#### Sticking Piston Rings.

With reference to a reader's query regarding a mysterious loss of compression. I experienced the same trouble on one occasion, and found that it was due to the sticking of a piston ring in its groove owing to carbon deposit. The trouble is caused by over-oiling in the first instance and frequently cures itself.

J. W. COVENEY.

#### Causes of Lost Compression.

The cause of the mysterious loss of compression experienced by Mr. A. W. Morrish on his Bayliss Thomas is quite simple. When the engine was erected after decarbonizing

some small flakes of carbon were blown Carbon on the on the valve seating during the first few Valve Seating, firing strokes of the engine, thus preventing the valves from closing fully

and effectively stopping the engine through lack of compression. The third time this happened the inlet valves only were held up, with the result that on compression stroke the mixture was, as be stated, blown back through the carburetter.

Another cause of lack of compression is when traces of valve-grinding compound are left on the valves and their seatings after they have been ground in. One cannot be too sure of removing every atom of the abrasive, and it is therefore best to make liberal use of paraffin when cleaning them. TWO-WHELLER.

#### Improving the Motor Car.

I see that The Motor has just run a plebiscite, competitors being asked to place in their most obvious order 20 suggested improvements to modern cars. The fact that at

least 20 improvements are deemed necessary is, surely, a tacit admission that all is not well with motors of to-day; From 1912 to 1924. in fact, it means that the whole design

needs revision. Modern cars, while being in many respects better than their forerunners, have not improved much in mechanical design and construction. The car of 1912 was designed to give absolutely trouble-free running, and it was built to last. In those days cars, although rudimentary in principle, were conceived by practical draughtsmen intent not upon startling features and unconventional practices but upon putting down on their drawing-boards good, sound If an old-fashioned designer straight from, say, the drawing office of some famous engineering firm were to go over the drawings of a modern chassis, it would break his heart; but if he were given a finger in the pie there would be no inaccessible nuts, gimerack controls and makeshift fittings of pressed-steel and bent wire. If modern genius could be associated in the drawing office with experience and the sober judgment which existed 14 years ago, motor-cars of to-day would need few improvements. V.A.C.

#### Headlights in Fog.

The difficulty encountered by motorists when some of the rays from their headlights are reflected back by fog seems to bear a fundamental resemblance to the problem which has been practically solved by

Cutting Out Un- photographers. In the case of the latter desirable Rays. the obstacle to be overcome was the fact that, whilst the human eye is affected chiefly by the red, orange and yellow rays of the spectrum, the photographic plate "sees" principally by means of the altra-violet, violet and blue, thus giving apparently false colour values in monochrome. The remedy lies in the use of panchromatic plates plus a complementary filter, which I believe is not merely a filter stained yellow or complementary that the property is the property of the propert or orange, but one scientifically treated with certain dyes, I cannot help thinking that it would be interesting to hear what opinion with regard to the motorists' problem is held by, say, Ilford, Ltd., whose Alpha, Beta, Gamma, Ariol and other filters have proved such a boon to photographers who have learnt to value the firm's chromatic and panchromatic plates.

Possibly a stumbling-block would be the higher cost of hendlamp covers made on the principal of the Gamma filter. A letter on the subject from the concern in question should prove of considerable interest. A.H.R.

\* \* Our correspondent seems to have overlooked the fact that orange-tinted screens for fitting over headlamp glasses are already on the market.—Ed.

#### The Performance of a 11.9 h.p. Car.

I do not doubt for a moment the performance which Mr. Edward Forde claims for his 11.9 h.p. Anzani engine in his letter published in your issue of January 7th, and should be extremely grateful if he would say

Different how he manages to obtain it. I have a car with a British Anzani engine, gear Results.

weight is approximately 14½ ewt. but 1 cannot get any-thing like the results he claims. I am very much of a novice, and maybe Mr. Porde can help me; of course, if his is a sports engine, that would explain matters. FRANK S. E. CROSS.

#### The New Motor Bill.

I entirely agree with the points raised in Mr. Birch's letter in a recent issue of your journal. There is, however, one other point I should like to mention, and it concerns lorries and other heavy traffic.

Badly Lighted One often meets a lorry at night with Lorries. two (and very often only one) flickerconsidered fair to the motorist. Apart from this, there are often two trailers behind a lorry with nothing whatever to denote their presence. I suggest that there should be a light (this need only be a dim one) on the off side of every trailer to show it is there. If this suggestion could be em-bodied in the new Motor Bill, I am convinced it would be welcomed by all who use the roads at night. PASSENGER.

#### CONDENSED CORRESPONDENCE.

"C.M.," 52, Cobbett Road, Bitterne Park, Southampton, has experienced a mysterious trouble with his Austin Seven, and would be glad if any readers who could suggest a cause would communicate with him. After driving a few miles he noticed a strong smell of petrol, and on lifting the bonnet petrol was found splashed over the tank. When he began to unscrew the filler cap a fountain of petrol spurted up through the vent hole, but after replacing the cap and wiping the tank he was able to drive on without further trouble. This has occurred on three separate occasions at

#### INFORMATION WANTED.

LEA-FRANCIS.—Renders' experiences of the 10 h.p. model would be appreciated.—F. H. Popham, 55, Digby Mansions,

ROVER EIGHT.—The opportunity to borrow or purchase an instruction book would be much appreciated.—T. S. Murray, 21. Highthorne Avenue, Bradford.

HOME-BUILT CYCLECAR.—Any reader who has built a three-wheeler is asked to give advice on the type of rear wheel to use.-W. White, 130, Bedford Street, Crewe.

Carden.—The loan or opportunity to purchase an instruction book dealing with the 1922 7 h.p. model would be appreciated.—W. J. Fiske, 33, Gateley Road, Brixton,

RHODE.—Owners of the 1927 four-seater models are requested to give their opinions regarding reliability, efficiency and durability.—E. R. Berwick, 52, Marlowes, Heinel Hempstead, Herts.

SINGER.—Any reader who is willing to lend or sell an instruction book for the 1924-10 h.p. model is asked to communicate with G. G. Mobsby, 67, Surbiton Road, Surbiton, Surrey.

RENAULT .- Owners of the 9-15 h.p. model are asked to give their experiences of the car with regard to its reliability and general performance.—W. T. Downes, 189. Burlington Road, Small Heath, Birmingham.

BUGATTI.-Renders' experiences of the recent modified Brescia models, with particular regard to their liability to oil up sparking-plugs, the efficiency of the transmission brake (if no f.w.b. fitted) and the oil consumption obtainable would oblige.—" Pirps," 3, Marlowe Road, Wallasey.

#### TO NEW DRIVERS.

Make sure of next week's, and ensuing copies of The Light Car and Cyclecar. They will contain special articles under the heading-

"MOTORING FOR THE BEGINNER."



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.

## Another Use for Chewing Gum.

Chewing gum has quite a number of uses apart from its aid to digestion. For instance, it makes a sound patch for a punctured petrol tank and can conveniently be wrapped round a leaking union, as it is unaffected by petrol.

#### Screw-down Greasers.

Screw-down greasers which have no locking device on them should always be screwed down tight, not given a turn or so at intervals. The grease should be forced right in, as it will last just as long, and there will be no risk of a dry hearing. In addition, the cap is not likely to work loose and become lost. It is a good plan, during the cold months, to fill a vertical cap with a piece of sponge or a wad of felt saturated with oil. Grease does not work its way into the bearings in cold weather so well as does oil.



A useful garage jack which can be made cheaply by any amateur carpenter.

#### A Home-made Jack.

No great carpentring skill is necessary to make the handy garage juck depicted in the accompanying illustration. The baseboard should be about 18 ins. long, 10 ins. wide and 1½ ins. thick, whilst a convenient size for the upright and side pieces would be 2½ ins. square. Screws or bolts can be used for assembling these parts, and two steel plates will be needed to support and guide the lever arm, which also is made of wood—straight-grained ash for preference. The length of the lever will depend upon the weight of the ear to be lifted, but a good overall length is 3 ft. 6 ins., with the pivot about 6 ins. from the groove which is cut to suit the car axles. A strong hook, a length of chain and a clip arranged as shown in the sketch complete the jack, and it will be obvious that the height of the jack can easily be adjusted.

#### Rover Strangler Rods.

The strangler control rod on Rover Nine cars runs through a screw eye in the bottom of the instrument board, and there is no means of holding it out while the driver cranks the engine on cold mornings. An ordinary wooden clip, as used for suspending photographic prints while drying, will hold the rod in place if clipped on when the latter is pulled out. The pressure of the clip is just sufficient, and the rod can be pushed in without removing it.

#### Lost Hub Caps.

When a hub cap is lost or knocked off it is always advisable to cover the exposed end of the stub axle, otherwise grit and other foreign matter will get into the grease and very likely injure the bearings. A small container, such as a round cocoa or tobacco tin, can usually he found to slip over the end of the axle, and if it is not a tight fit it can he secured with copper wire, binding it tightly on the lub thread.

#### For Single-panel Screens.

Where single-panel screens are fitted there is almost invariably a gap between the top edge of the glass and the front of the hood, through which rain drives. To remedy this take a strip of colluloid as long as the windscreen and in, wider than the gap. Sew one edge of it between a double thickness of twill and tack the latter on to the underside of the wooden front member of the hood. Wind resistance will keep the celluloid flush with the screen. When the hood is not in use the strip stows away quite neatly.

#### Aluminium Facia Boards.

A shabby facia board can be made to look quite smart by covering it with sheet aluminium, which can be procured at any large ironmongers or accessory house. It can be cut by strong scissors or, better still, tinman's snips, but a stiff paper template the size of the facia board should first be prepared, the positions of the instruments and controls being carefully identified. The template should be stuck on the aluminium so that it will be behind the sheet in relation to its correct position when mounted. It is a good plan to allow for a "turn back" under the edge of the facia board. The aluminium sheet may be fixed either by small nickel-plated round-headed screws or by half-round aluminium beading.

The finishing touches should be a good polish and, if it be desired to avoid further polishing, a couple of coats of

transparent lacquer.



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.

L.C. (Buxton).—You are expecting too much: radiator lamps are intended to prevent freezing taking place, not to keep the whole cooling system hot.

E.W.E. (Mold).—A flat speedometer pulley and belt, such as you suggest, could not be used satisfactorily to drive a 12-volt dynamo. You would be troubled with belt slip and it is doubtful if the necessary armature speed could be attained.

J.G. (London, E.).—The action taken by the authorities was correct with regard to the renewal of the licence of your car. The regulation on the back of form RF 1A says "If the last licence for the vehicle was not taken out in your name you must not use this form, but must send in to the Council . . . a new declaration on the appropriate form R.F/1/1 . . " - As your car was licensed by the manufacturers and then transferred to you the last licence obviously was not taken out in your name.

G.T. (Crewe).—The Instanter electrical heating device for fitting in the induction pipe is quite satisfactory and reliable. As it is in use for only a few minutes at a time it has no ill effect upon the battery.

C.T.A. (Leicester).—The usual compression figure for a touring engine is about 70 lb. to 80 lb. per sq. in. This, when running at average road speeds, probably increases to 120 lb. or thereabouts. For racing much higher figures are used.

A.F.C. (London, W.).—The head of the 10.8 h.p. Coventry-Simplex engine is not detachable, it is true, but the task of removing a valve is simple, as any valve can be withdrawn after taking off the appropriate valve cap. The oil consumption you mention—1,100 m.p.g.—is too heavy; try opening the relief valve slightly.

S.A.P. (Malvern).—You appear to have examined everything except the high-tension leads. Vibration may be causing one or more of the leads to chafe against the cylinder block, rubbing away the insulation and eventually causing a "short." This appears the only possible solution in view of the otherwise thorough diagnesis which you have carried out.

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Reports and Announcements of Sporting and Social Events.

R.A.C. PERMITS.

The R.A.C. has issued the following closed permits:—February 12th, reliability trial, Leeds M.C. June 4th, half-day rehability trial, North Manchester M.C.

The Woking and D. M.C. has arranged to hold its first annual dinner and dance in Woking on Wednesday, January 26th Dance tickets will be 5s, and dinner tickets 5s. 6c., combined dance and dinner tickets being 10a. The hon secretary is Mr E. S. Hutchence, Lindholm, York Road, Woking.

OXFORD M.C.

The annual meeting of the Oxford M.C will be held at the offices of Messra Critchley, Ward and Picott, 40, Cornmarket Street, Oxford, on Monday, January 51st, at 6.15 p.m. Notices of the meeting will be sent to members in due course. The next social event to be held by this club will be the annual dinner and dance, which will be held in Oxford on February 11th, at the Carfax Assembly Rooms.

February 11th, at the Carlax Assembly Rooms.

CATFORD AND D. M.C.

The answal dinner and dance of the Catford and District Motor Club will be held on Saturiay, February 19th, at Maison Lyons (opposite the Trocadero), Shaftesbury Avenue, London, W.I. The chair will be taken at 7 p.m. by the president, Lt.-Ool Sir Asabeton Pownnil, O.H.E., T.D., M.P., and it is hoped that there will be a record number of members and Triends present upon this important occasion. A very enjoyable programme has been arranged and everyone attending is assured of spending a jolly evenane. The dinner will be followed by a dance, the music for which will be prevised by the London "Aphelian" Band. Tekets—B. 6d. single and 15x double—may be obtained from the hom, social secretary, Ur. C. J. B. Millest, I. Hazelbank Road, Catlord, S.E.

LEEDS M.C., LYD.

With the layer of a presently selection of the layer of a presently selection.

or obtained from the hom, social secretary, Mr. G. J. B. Millest, 1, Hazelbank Road, Catford, S.E.

LEEDS M.C., LTD.

With the Issue of a prospectus, details are now available concerning the new organization of the Leeds Motor Crob as a limited company, baring a capital of 25,000, divided into 6,000 and 6,000 are sold as a sold as of 21 each and 2,000 ordinary interests of a sold as of 21 each and 2,000 ordinary interests of the sold as of 21 each and 2,000 ordinary interests of the sold are Mr. Arthur Waterman, Mr. Thomas William Lancaster, Mr. Arthur Botterill and Mr. Thomas William Hasue. The formation of the company has been made necessary through the acquisition by the club of the Post Hill Estate and the Avenue House at Leeds. Plane have been presented for fitting up this house in Woodhome Lane with a lounge, billiard-room, rading-room, large ballroom committee room and care takers tremises. There is also provision for a deferenment-room and lock-mp garage socommediation, whilst ample parking ground has bord of ball of the state of the sold of the sold

#### FORTHCOMING EVENTS

January 21.

J.C.C. Yorks Centre. Annual Dinner and Dance at Leeds.
Belsize-Bradshaw L.C.C. Annual General Meeting.
Morgan M.C. Annual General Meeting.

January 22. Catford M.C. Whist Drive.

January 23.

Wood Green and D. M.C. Social Run to Leighton Buzzard. West Kent M.C. Wilson Cup Trial.

January 26,

J.C.C. Annual General Meeting Leeds M.C., Ltd. Musical Evening, Woking and D. M.C. and C.C. Annual Dinner and Dance.

January 27.

M.C.C. Annual Ceneral Meeting.
Wood Green and D. M.C. Annual
General Meeting.
Ulster Automobile Sports Club.
Annual Dinner and Prize Distribu-

January 28-29.
Cardiff M.C. and C.C. Cardiff-Lelcester-Cardiff 24-Hour Trial.
Combined M.C.s. Charity Danco at Alexandra Palace.

January 29-30.

Woking and D. M.C. and C.C. Winter Trial Starts.
Southampton and D. M.C.C. and I.C.C. Annual Night Trial.

January 31: Oxford M.C. Annual General Meeting.

February 1.

J.C.C. Yorks Centre. Annual General Meeting.

February 3.

N.E. London M.C.C. Annual Dinner and Prize Distribution.

February 6.

City of London M.C. Run to Tring.

February 9.

Morgan M.C. Whist-drive and Dance at Ye Meeca Cafe, London.

February 16.

J.C.C. (South-Western Centre). Annual Dinner and Dance.

PORTSMOUTH AND D. JOWETT C.C.

A whist drive and dance will be held by the
Portsmouth and District Jowett Car Glub on
West and Extraory 16th, at Kimbell's Car
Otherina Rodu, Southsea, commencing at 7.6.
D.m., and continuing until 1 a.m. Tickets
may be obtained from the hon. secretary
Mr. L. Platford Donne, Balmoral, 7, Aston Road,
Southsea.

MOTOR CYCLING CLUB, LTD.

MUTOR CYCLING CLUB, LTD.

The ordinary general meeting of the members of the Motor Cycling Club, Ltd., will be held at Pagant's Restaurant, Great Portland Street, W.1, on Thursday, January 27th, at 6.30 p.m. The annual report and statement of accounts which will be submitted show that the club is in a very satisfactory position financially, and there is quite a handsome balance for 1927.

FRENCH EIGHT-DAY EVENT.

FRENCH EIGHT-DAY EVENT.

It has been decided at the Autodrome de Linux-Monthbery, to hold what a popular Paris mewspaper calls "the most formidable endurance test." It will be run for eight days at regular speed over a circular course at Monthbery for pieriods of 10 hrs. per day. The Motocycle Club de France has province ally decided to suspend Lo Tour de Franco and to replace it by a more important traced greater value, but in the province of the province of the control of the province of the control of the co

#### TO CLUB SECRETARIES.

Club secretaries would greatly assist us if they would forward us copies of their 1927 fixture lists so soon as possible in order that we may compile a general table of events for the guidance of our readers and intending entrants.

SHEFFIELD M.C.

The cighth annual general meeting of the Sheffield M.C. was held at the Angel Ileie, Sheffield, on Wednesday, January 12th, the room being filled to its utnost capacity. The secretary reported a most successful year, men bership for 1926 having increased to 2.1 and the statement of accounts showed gods as being the statement of accounts showed gods as the statement of the statem

### LIVELY DISCUSSION AT ESSEX CLUB'S DINNER.

COME 200 members and friends were present that the Holbern Restaurant, London, on Friday, when the Essex Motor Club held its annual dinner and dance. The gathering was precided over by Mr. S. G. Cummings, whilst two of the distinguished visations were foommander F. P. Armstrong (R.A.C.) and Mr. T. W. Loughborough A.C.U.]

The minute speeches were the order of the sterling, and the rule showed what a surprising account of useful work can be done in that several the sterling of the country in the main theme. Four hymners the country thanks to the club's beneficence: It the country thanks to the club's beneficence; it the country thanks to the club's beneficence; it was a surprising active in this its 24th year of existence as it had ever been.

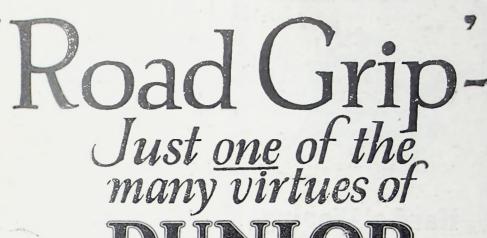
A bright two-minute diversion by Professor B44

Low, then Mr. B. 8. Marshall rose to propose the health of the R.A.C. and A.-C.U. Flxing a stern eye on Commander Armstrong, he said:

For the fourth time at an Exex dinner I am going to ask something: I am always asking. (Cheers! We want more competitions, and I appeal to you, Commander Armstrong, to get the competition be and the competition and another the competition and they want the blessing of the R.A.C. on competitions from which there is plenty to learn and which provide clean, fine sport. I thank Commander Armstrong for the kindly interest he is taking in the Exect Motor Club, but I ask him to let. Commander Armstrong to the kindly interest he is taking in the Exect Motor Club, but I ask him to let. Commander Armstrong to the kindly interest he is taking in the Exect Motor Club, but I ask him to let. Commander Armstrong to the kindly interest he is taking in the Exect Motor Club, but I ask him to let. For the competition of the struck a serious note and my toply, therefore, must be in the same strain; but he does not, apparently, fully understand the fissue, First let me say that the R.A.C. is such promote sport, and deprecates very strongly the attitude of the Society of Motor Manufacturers

and Traders; but we appreciate, from their point of view, the attitude they have taken up. The R.A.C. cannot force the hand of the Society and the persuation of the R.A.C. has no effect, The decision of the R.A.C. has no effect, The decision of the R.A.C. has no effect, The decision of the R.A.C. has no effect, and the R.A.C. has no effect, and the R.A.C. has not the R.A.C. has the time the R.A.C. has not the ways that the many competitions are not in the interests of the trade. If the Essex Motor Club can do more good than we can, then more power to your clow. I congratulate the Essex Motor Club on its energy and ability with regard to competitions, and I thank the committee for the loyal way in which they accept the rulings of the governing bodies."

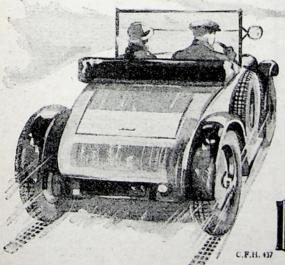
After dinner the floor was cleared for dancing which continued uself midnight, and during the evening it was noticed that Commander Armstrong and Mr. Marshall were ongaged in very carnest conversation. Perhaps competition loving members will construe this as a hopeful ormen!



DUNLOP CORDS

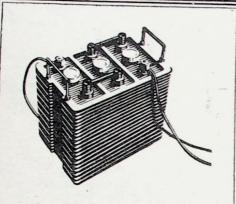
Styre experts with an unequalled well of experience to draw upon—the Dunlop tread bites through the filmy grease of winter roads, and gives you considence:

If your tyres are old and worn, fit new DUNLOP Cords now.



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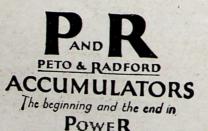


## Hard o' Wooing

Is yours the kind of car which has to be persuaded to start: that needs coaxing: must be wooed into putting even her worst foot foremost? Put a P. & R. accumulator behind her self-starter and see how she'll take the bit between her teeth.

There's a healthy, hefty rush of power from a P. & R. It turns her over as if you meant it. Headlights fed from a P. & R. are head-LIGHTS. And they don't discharge a P. & R. down after a few hours' burning to the point when a self-starter won't any more.

Why? Well, there are many technical reasons. You'll find them in our book if you'll send a postcard for it to Peto & Radford, 50, Grosvenor Gardens, S.W.1.



C2

## AROUND THE TRADE.

As a result of extensive experimenting the new British Goodrich non-skid tyres are claimed to be almost entirely proof against skidding. They are fitted as standard on Lea-Francis cars, amongst others.

The latest Exide publication, issued by the Chloride Electrical Storage Co., Ltd., takes the form of a chart which shows at a glance all the needful information regarding the recharging of all types of Exide batteries.

Philips Lamps, Ltd., have now placed on the market two new types of headlamp bulbs which are claimed to reduce dazzle to a minimum. They are known as the Philips Duplo lamp and the twin-filament auto headlamp bulb.

W. Dickins and Co., Ltd., Cross Cheaping, Coventry, are issuing an interesting brochure describing their "Quick Fit" gaiters, which are claimed never to gape. The booklet is illustrated and contains a comprehensive price list.

The Dunlop Rubber Co., Ltd., state that, in spite of the tyre "war," they will not relax in their efforts to bring about still further improvements, and in no circumstances will they allow the "urge of price" to compel a reduction in the quality of Dunlop tyres.

Joseph Kaye and Sons, Ltd., wish us to emphasize the fact that when ordering their latest force-feed oilcans it is necessary to specify force feed. If oil feeders only are ordered the ordinary valve type will be supplied; these will not squirt oil and are much slower in action.

Membery and Co., Ltd., notify us that they are commencing a fortnightly motor auction sale at their premises at Young's Corner, Hammersmith, under the title of the Hammersmith Motor Auction Mart. They will be specializing in the sale of reliable second-hand light cars.

C. C. Wakefield and Co., Ltd., advise us that Mr. E. J. Anderson has now been appointed their competitions manager. Mr. Anderson has been associated with the concern for over 17 years, and has for a long time been a popular figure in the competition world, particularly at Brooklands.

The Champion Sparking Plug Co., Ltd., inform us that the Macchi Fiat scaplane, piloted by Major Bernardi, of the Italian Air Force, which recently set up a new world's record at Hampton Roads, Newport, U.S.A., by averaging nearly 259 m.p.h., was fitted with Champion sparking plugs.

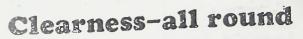
Messrs. R. M. Vivian and Co. announce that they have taken additional showrooms and offices at 4-12, Palmers Street, Westminster, S.W.1 (opposite St. James's Park Underground Station). The existing premises at 31-33, Spenser Street, S.W.1, are being retained as a service depot.

Auto-Auctions, Ltd., Horseferry Road, Westminster, S.W.1, inform us that alterations to their showrooms are now completed. The floor space has been increased and a new bay affords accommodation for many more cars. The whole building has been redecorated and the lighting considerably improved.

James Young and Co., Ltd., Coachbuilders, London Road, Bromley, Kent, advise us that they have just inaugurated a new department in their business to be devoted to the sale of new and high-grade used cars. Mr. J. Stubbings has joined the staff as sales manager, and will have control of the new department.

RECKITT

& SONS, LTD.



To have clearness all-round when driving—through the glass in front—through the celluloid each side—gives you confidence and adds to your enjoyment. For cleaning celluloid side curtains use Brasso. You can do this when giving the bright metal parts a rub over.

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HULL AND LONDON.

WHENEVER a well-known product enjoys steadily increasing appreciation, it becomes obvious that it has certain qualities which set it apart from its rivals.

Thirty years cord tyre manufacturing experience has placed Palmer far ahead, so that the Palmer Flexicord of to-day is a finished and perfected tyre, endowed with great powers of endurance and giving consistent long service.

Palmer Flexicords are available in Wired Edge, Straight Side and Beaded Edge types, in sizes to fit your car—specify them and commence to enjoy motoring.

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Wired Edge and Beaded Edge

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STANDARD model now fitted with double windscreen, black leather cloth hood, electric horn and celluloid covered steering wheel.

DE LUXE FAMILY and AERO models now 3 in. wider and longer. 7 in. front wheel brakes now standard.

STANDARD Model - £89 DE LUXE, air-cooled - £110 DE LUXE, water-cooled £120 FAMILY, air-cooled - £111 FAMILY, water-cooled £121 AERO, water-cooled - £127 AERO, 16 40 h.p., Racing £140 SELF-STARTER £10 extra.

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"Now, instead of almost breaking my own heart and that of my man to get a start on these cold mornings, it is perfectly easy, and no cranking indefinitely, with hot water cloths, etc. etc."



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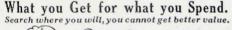
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Built of Thornber's Locjoint Weatherboarda
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A Thornber Garage will last a lifetime, because everything is solid in its construction. It is sent from works in sections —every section com-plete, ready for erection, plete ready for crection, which requires no skilled labour. No loose timber whatever is sent. All Garages have Gliding out of way Doors, which move at a child's push, occupy no room when open, and obvitte hinged door weakness. All fittings supplied. Two windows, top half to open. Tenant's fixture. 12 months free fire insurance.



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When overhauling fit 'AERO" ValveSprings for pace and power.



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"I have done over 40,000 miles in one year, and they are still going strong. As my engine does good spells at 5,000 r f.m. this fact speaks for their qualities."

"I always had trouble with breaking valve springs until I fitted 'Aero' quality."—E.G.

Fit "Aero" Valve Springs. We make for all engines, in single or nest patterns. Order from your agent. In case of difficulty from us. Meanwhile ask for "IX Points on 'Aero' Springs.'

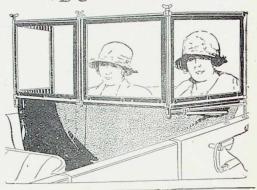


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MORGAN, 1925, Family model, J.A.P. witz-coled engine, Lucas Magdyno lighting, low mileng., beautiful condition 178 A-C, 1921/2, 11 h.p., 4-seater, attractively finished, ull-wenther equipment, co. d. yrs.

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ing and self-starter, attractive and very reliable. 169 (CITROEN, 1923/4, 114 hp., 4-scate; touter, starter, lighting, exceptionally smart, carefully used 24, 186 (Nover, 1924/5, 8 hp., 2-scater de luxe and double sunken dickey, leather upholstery, all-weather equipment, self-scate fine

dickey, leather upholstery, all-weather equipment, sell-starter, dynamo lighting, fine condition throughout. \$65 ROVER, 1924/5, 8 h.p., Lift 1-seater, dynamo lighting and sell-starter, ell-weather equip-ment original yres, smart as carefully used. \$57-10

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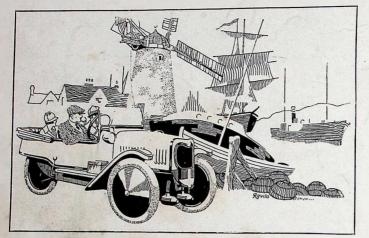
ROVER, 8 h.p., 1922, 2-scater, dickey, dynamo lighting, extremely carefully used £34

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