


Vol.XXVII No. 586 Friday.Jan. 15. 1926

.. Registoredot tre apo

Look below for correct model of Lodge plug for your engine, and make a mote of it.


Every part of every model of the Lodge plug is made in England. And every Lodge plug is packed in a distinctine coloured meial box, sealed with a lead seal bearing name Lodge.

The makers of Lodge plugs will be pleased to advise concerning plugs for cars nol shown on above list, on receipt of particulars.


7/8 American (CT3)
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Pached in bronie bor.


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## More International Records



The British Petrol

Mr. E. A. D. Eldridge, driving his 1,500 c.c. EldridgeSpecial, at Montlhery, on December 13th and December 22nd, established the following International (Class) Records :-

$$
\begin{aligned}
& \text { 2,000 c.c. Class. } \\
& 193.228 \text { k.p.h. - } 5 \text { Kilos. - } 195652 \text { k.p.h. } \\
& 196.014 \text {, - } 10 \text {, } 195.439 \text {, } \\
& 121.750 \text { m.p.h. - } 5 \text { Miles - } 121.367 \text { m.p.h. } \\
& 121.654 \text {, } \quad 10 \text {, } 121.105 \text {, }
\end{aligned}
$$

The above results are especially interesting in view of the consistency in the speeds put up by Mr. Eldridge driving the same car but on two different occasions, and are a tribute to the uniformity of "B.P."

Use "B.P." The British Petrol.
British Petroleum [oltt Britannic House.Moorgate.E.C. 2
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that gives your car Free Service

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[]
Please write for furtiner par-ticulars-
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31, Brook St., Bond St., LONDON, W. 1

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> Being a genuine effort to help the Owner-Driver.

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HIGHEST PRICE FOR YOUR OLD CAR IN PART EXCHANGE FOR ANY MAKE OF CAR.
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FACILITATE BUSINESS, and cnsure prompl altention to your enquirics, by mentioning

## When you seriously con-

 sider the enormous strain placed on the wheels of your car you will realise the necessity of having nothing but the safest and strongest obtainable -SANKEY WHEELS forSTRAIGUT SIDE RIMS WELL BASE RIMS BEADED EDGE RIMS ©

#  

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Teleghone: Wellington, Shropshire, 66. Telegrams: "Sankes, Wellington, Shropshire."
LONDON OFFICE: Mr. R Jenkins. Ulster Chambers. 168, Regent Street, Wi.
WHEN REPLYING to advertisements, mention "The Light Car and Cyclecar." It helps the advertiscr and you, and assists the small car movement generally.
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# LONDON TO EXETER RELIABILITY RUN  <br> OR 100\% EFFICIENCY 

(Reproduced frors "The Daily Mirror " of December 30th, 1925, by the coustesy of that journal.)


GREAT MOTOR TRIAL.-A Salmson car casily negotiating the stiffest part of Salcombe Hill, one of the most difficult climbs included in the Motor Cycling Club's mid-winter run from London to Excter and back.-(Daily Mirror.)


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



Tax and Insurance paid for one year. No increase in the current list price.

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\begin{array}{llr}
\text { Type "M," } 89 \text { h.p.- } & & \\
& \text { 2-Seater complete } & - \\
\text { 2-Seater and Dickey } & - & \mathbf{£ 1 9 2 / 1 0} \\
\text { 4-Seater Chummy } & - & \mathbf{£ 2 1 5} \\
\text { 4-Seater De Luxe - } & - & \mathbf{£ 2 4 5} \\
\text { 4-Seater Chummy Saloon } & - & \mathbf{£ 2 7 5}
\end{array}
$$

Type "PS," 11.3 h.p., Six-Cylinder, F.W.B.-4-Seater Chummy - - - £255 4-Seater Open Touring - - $\mathbf{£ 2 8 5}$ 4-Seater Weymann Chummy Saloon £295 4-Seater Standard Chummy Saloon £295
Type "PSE," 113 h.p., Six-Cylinder, F.W.B.-4-Seater Torpedo De Luxe - - £295
All Models are supplied with four speeds forward, five Michelin disc wheels and Confort low pressure tyres, electric lighting and starting, clock, speedometer, electric and bulb horns, kit of tools.

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NEW \& USED CARS -
CAREFUL TUITION PERSONAL
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 for the same price Important concession to users of $700 \times 80$ or $26 \times 3$ tyresTHE STEPNEV reinforced tyre

## $27 \times 3.75$

which fits the $700 \times 80$ or $26 \times 3$ rim,
is now supplied at the same price as the ordinary $700 \times 80$ tyre.
PROMPT DEL\|VERY
$27 \times 3.75$ Stepney Cord Cover, む3 19s. Inner Tube, 13 s.
STEPNEY TYRES LIMITED, llanelly. LlANELLY
WALES. and Stepne, ¿Rubber Works, LONDON, E.17.'
||||i||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Baby Brown opened the door for Mrs. Brown, who was driven by Johnny Brown; meanwhile Mr. Brown surveyed with evident pride the Boown family coach, which happened to be blue.
We have all played the game "Family Coach," and how we roared when the bottom fell out!
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The National Sotor Journal.

EVERY TUESDAY. 4 D

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## NEXT WEEK

(Tues. - Jan. 19)
BICYCLES $N$ UST CARRY REAR LIGHTS.

EASY STARTING HINTS.
All the $\mathrm{N}^{\prime}$ cu's and Neus Pictures.

## This Week's Issue (Jan. 12)

BUYING SECOND-HAND.
How to tell a Bargain.
HUMOUR OF THE H:GHWAY.
Some Stories that have been told before and a few new ones.
ENGINE SPEEDS: IS THERE NO LIMIT?
The Final Drive and other Controlling Factors.
GYRATORY TRAFFIC EXPERIMENT.
Special Comprehensive Picture.
HCODS THAT RISE AT A TOUCH.
The Real "One Man" Type.
CONTINENTAL RACING NOTES.
The Vogue of Mlulti-Cylinder Engines.
THE SPARE TYRE AS A BUMPER.
A Neat Attachment on the $14 \mathrm{~h} . \mathrm{p}$. Armstrong Siddeley.
A SELF-INDICATING BATTERY.
Condition of the Charge Shown at a Clance by Rising and Fall $n_{3}$ Floats.
ROAD TESTS SHOWING PRINCIPAL CHARACTERISTICS.
The 14 h.p. Standard "Stratford " Five-Scater
THE TRAP SCANDAL.
Police Wasting Time while Molor Bandits and Burglais Carry On.
COMMONS-AND A COMMA.
Motor Picnics and the New Law of Property Act. OWNER-DRIVER TOPICS.

Useful Suggestions for Minor Improvements, Hints on Runring, Adjustments and Repairs.
THE MODERN CAR AND HOW IT WORKS.
V. - The Steering Gear, the Suspension Systemandelise Firame.

AMALGAMATION OF ELECTRICAL CONCERNS.
Lucas-Rotax-C.AV. The Truth about the Deal. RECOMMENDED HOTELS.
A First Selection Fiom Many Letters Rercived.
SEGRAVES FINE FERFORMANCE AT SOUTHPORT. WIRELESS FOR THE MOTORIST.
Special Monthly Fealuye.




$\tau$HE progressive development of motoring has called for a very large increase in the number of terms applicable, and new designations are constantly being invented.

It is of great convenience to the motorist to be able to refer to a dictionary of technical terms that are in everyday use in motoring.

The booklet now produced by "The Motor," and which will be presented with every copy of the journal published on Tuesday, January 26 , provides such a reference in a handy form.
In its twenty pages it gives a very large number of Motoring Technical Terms, which are explained in language easily understood by the reader who has had no previous knowledge of the subject.

> Secure a copy of this handy booklet by placing a definite order with your local bookstall or newsagent for

## 1 Motor

TUESDAY, JANUARY 26 - PRICE AS USUAL, $4^{\text {D. }}$
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To be efficient a road must :

1. Not be expensive to lay;
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 Our charese is ontu $5 \%$ an thin balonece ons the entrelu boy ourselves. A practicall
rehore is allowed if ata
prata transactinn is cleared -If earlier than agreed.

These vehicles have overhaled and

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 Wht,
HOLbise. NAN
HORSTMAN


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& \text { TAL }
\end{aligned}
$$



MENTION of "The Light Car and Cyclecar" when corresponding with advertisers assists

## merit is a matrer,

 not of opinion, but of proven

Thousands of owners testify to the wonderful comfort of the springing, the ease of driving, and fine road performance of these famous cars.

The A-C car has won innumerable awards in open competition for its appearance; it has made many speed records; and it holds no fewer than 32 R.A.C. Certificates for performances and tests of every kind-a number far in advance of that achieved by any other car. It is popularly known as "The Rolls-Royce of Light Cars"-a tille that concisely expresses its unique beauty, comfort and super quality.

A-C cars are designed and built throughout by practical motorists, under the expert direction of Mr. S. F. Edge, who is one of the real pioneers of the industry. They are built to an ideal, appealing to those who seck the very best in design and finish, combined with unequalled performance and the utmost of durability.
Though one might expect to pay a high price for a car of such undoubted merit, $\Lambda$ - $C$ prices actually compare most favourably with those of any other high-grade car. Send to-day for the A-C Catalogue, descriptive of all models.

$$
\begin{aligned}
& 12 / 24 \text { h.p. 4-cyl. from } \quad . \quad . \quad . \\
& \text { 12/40 h.p. } 4 \text {-cyl. from } . . \\
& \text { GUARANTEED from } 12 \text { MONTIS to } 36 \text { MONTHS } \\
& \text { PAYMENTS OVER } 3 \text { YEARS } \begin{array}{l}
\text { (if desired) }
\end{array}
\end{aligned}
$$



FIRST RACE MEETING The Southport Motor Club opened the racing season on Saturday with a meeting on OF THE SEASON. the sand i. Here are G. L. Mucklow (Frazer-Nash), D. Higgins (Salmson), and F. J. Carr (Morgan) running neck-and-neck in a one-mile race for "Novices." The FrazerNash was the winner. A report of the meeting appears in this issue.

## NOTES, NTW COSS ID ${ }^{\circ}$ the WEEK

Road Racing: Brighter Prospects? At the monual diuner of the Essex Motur Club. which was beld in the Itolboru Reeraurant, Lemilou, on Friday, January Sth, Major Lixon Spain, rejlying to the tonst of the R.A.O. and $\Delta$.-C.U., adopted a bongupul attitude towards the prostucts of rnad racing in this country. He emphasized the enormous dilficulties with which thag had to contend. but insisted that the innovation would come eventually.

## This Week.

It is not generalle renlized that to move a chnmois lenther in circles when तritu: off "f fromils wished cur is a quick method of making even the best romer)work lunk shathity. This and other interesting axprets of enr washing are denlt with in an artiole entitled "With Hose and Spmige." Our road thet rennrt deale randidly and comprehensively with the Mumber Nine, whilst on article which should ont be missed druls aith the vnrimus uses to which Bawden-wire merhanlion can be nut. It will te seen that it has an infinite variets of uses on motorcars.
No. ©゙6. Vol XXVII.

## ON OTHER PAGES

Cyclecar Comments
A Half-mile Splasb
The Eumber Nine on Test
Stop !
Borden Wire Mechanism
Racing at Southport
Novelty in Autamobile Design
Rich Mixture
Topics of the Day
With Hose and Sponge
Exeter Results Analysed
Orr Readers' Opinions
Iteas for Owners $\qquad$
LIGHTING-UP TiMES (Rear Lamps)
for Saturdey, January 16th.
I,ondion . . .. A.4 Edinbargh . . 4.3) Newcastle .. 437 Liperpool .. 4.41 Birmingham 4.50 Bristol .. 4.59

## Painting White Lines.

The latest development in painting white lines comes from America, where a special machine bas been invented for the purpose. The sprny method is used in the machine, which ean be operated by one man.

In the Philippines.
Reuter reports that November sales of small cars in the Philippine Islands created a record.

## The Three Virtues.

"A large perceutage of motor cases would never be a trouble rither to the police or to the courts if there were mure common sense, common courtesy and road sense on the part of motorists. I believe that if the three virtues were increased there would be far less to do and it would be more comfortable for eversbody."-Chairman of the Steyning magistrates. Always " the motorist"!

## Next Week.

Readers will recall the interesting complitions which we have included in our pages from time to time, wherein a number of phatographs of mndern light cais had to be named correctly. Next week a further competition on these lines will appear. cash prizes beiog offered for corruct solutions. The Rover Nine will figure in the next article of the series, "On the Road and in the Making,"

## A Costly Tax.

The renewal of licences for the Londun General Omnibus Cu.s vehieles cost t231,809 earls this month, and ns, presumably. they were uot all whole-sear licences, the digure per annum must run into something like hall a million.

## [evelopment of Original Engine.

A spenker at a recent. I.A.E. meeting stated that the Miche!! crankless engine is 10 be designed to incorporate sleeve valves. This original type of power mit ras described in our issue of November 1:ith, 1925.

## Rear Lamps Again.

It should not be long now before cyelists are compelled by law to carry rear lamps. All motorists are aware of the enntrowersy which has raged around this matter, and recently some of the daily minurs halle raphed themselves on the side of the motorist.

## Recommended Plugs.

A prominent firm of sparkiug-plug manufacturers is leading the way by publishing in its adrertising anuouncements a list of the betler-known makes if ear with the recommended type of plug for each mako of engine. The Light Car and Cyclccar ventilated the need for these charts some weeks ago, and we feel sure that thes will be much npurecinted by all owner-drivers.

## A Special Occasion

At a suburban wedding recently the bride and bridegroon were driven awas triumphantly from the church in a light car, from which. julging by the note of the exhaust, the silencer bad been removed. So many guests bad nttended the ceremony in cars that special trnffic control was necessars, and in the general excitement the police detailed for this duty evidently forgot that engines must be silenced! We bope that no summons was issued subsequently!

## The Circular Koute.

Aldiongh rhe circular method of traffic control is quite extensivels used in France and the E.S.A. it is something of a novelty in this country, but the Parliament Sybare experiment, with which we dealt last week, is not the first trial of the system in these islands. For some montlis past at the complicated junction at the $\Delta$ quanrium, Brigiton, circular control hos bern in operation, and from experience we bave found that it permits one to negotiale, iu comfort, a spot which used to be something of a nightmare.


LIGHT CAR PROVERBS.-No. 2.
This drawing depicts a well-known saying ivith which every reader should be familiar. Write it on a postcard addressed to the Edilor ant mariced Proverb No. 3 in the ton left tand corner. A prize o; a guinca is offered for the most appropriate prozerb submicted.
If two or more rcasiers submit the same if two or more rcasiers submit the same unning proverb, the prus so judged. Only one sender of the first solution may be submitted by incilidual
competitors. No judginy: will be donc before competitors. No judgint: will be conc before nams and address see next weck's "Arcund the Trade.

## British Cars in East Africa.

Out of a total of $\mathbf{1 , 2 0 0}$ motor vehicles imported into Kenya and Ugands during the first six months of 1025 ouly 200 were of British manufacture.

## Lucas New Control.

The recent offer by a firm of chartered accountants to acciuire the shares of Messrs. C. A. Vandervell and Co., Ltd. aloout which there bas been so much speculation, was made solely and entirely on helhalf of Messrs. Joseph Lucas, Ltd., of Birmingham, who now also secure control of Rotax, Mr. Oliver Lucas, n di.ector, in an interview authorized the Editor of The Motor to state that no American influence had entered into the transactions, and that the new business developments which land taken place were absolutely and solels British in oripin, and would mat be nther than entirely British controlled. The rumour that General Mintars Corporntion or any other enncerns were bchind the deal was emphatinally denied by Mr. Oliver Lucns, who explained that the sole oljeen in riew mas. by standardization of production and the reduc-


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ANCTHER EY-PASS
    NEARING
    COMPLETION
812
```

Motorists using the Path road have long been handicapped by the narrow winding arreets passing through Longford and Colnbrook (between Hounslow and Slough). A new by-pass road, skirting the villages named, is in course of constinction.

## A Veteran A.B.C

The original A.I.C. which was driven by Mr. Gordun Enkland in the 200. Mite liaces of 1 !1! : and 192.3 apmears this work among the bargaing offered in our classitied lise of secondhand cars fur sule. Last summurr the car was fitted with a surcial 1,500 c.c. engine and ran well at l'roolinnuds.

## Light Car Proverbs.

The popularity of our Iight Car l'roverhs computition is simply astounding. Last meeli's competition attracted : largel uumber of entries than even the mant rupmlar of the lizht Car Limericks, whilst no fower that 45 entiruly oriminal froverbs fisural in the entry. Whe think that the willmer, who quotios Crabbe's fammus epimarn, desurres wery surcial commendation for having hit on a truly excellone line. lieallers are asibud to nate that a prover!) fur the nurposes of this enmpetition is ns defimed by Nuttall's Siandard Dictinnary, vi\%. "A short sentence expressing a well-known truth."

## Patent Law Amendment.

As a result of a resolution put forward at the recont International Congress on Aurial Navigation, vessels, ar-roplanes and motorears are exempted from the ordinary laws of pintent infringement when temporarily coming under the jurisdiction of forcign countries. Drlays due to thrents of infringement procecdings are thus obviated.

## "O.R.O.'

The views expressed by correspondents on differeat subjects in "Our leaders' Opinions" this week are: varied and instructive. One of the most interesting letters comes from the Assistant Commissinner of I'olice of the Mueronulis, who deals with our recent description of Circular Tratfic Control in Parlinment Square.


## R.A.C. AND SUNDAY COMPETITIONS.

A
S some misunderstnndiug seems to . have arisen regarding the attitude of the R.A.C. towards the bolding of Sunday competitions on the road, the Club desires to make the position clear. The li.A.C. is stronyly opposed to the holding on a Sunday of any event which would be likely to attract either a large entry or big crowds of spuectators, or which would tend in any other way to interfere with the proper observation of the Sabbath by the community in cenera.
At the same time it should be realized that tho term "competition" is commonly used to cover many friondly and gunvi-informal runs which local clubs orgnaize for the amusnment of their members. In many instances a large proportion of such club members consists of working people-in the widest
sense of the word-whose only opportunity for enjoying the fresh nir in their cars is on $n$ Sunday. $1 f$ Sunday competitions were barrud without exception these members would be, to all intents and purposes, entirely cxcluded from any club life on the open road. It bas alwass been the policy of the IRA.C. to refuse to graut permits for Sunday events other than these so-called "competitions," but even such events are barred if, as has been stated before, large entries or big crowds of spectators are likely to be attracted. The Club has no intention of extending the scone of Sunday events for which closed permits bave bren granted in the past ; but, on the otber land. it has get to be convinced that any further restrictions are required in the general interest of the community.

STRICTLY ON BUSINESS !
(Left) A G.W.K. acts as the motive power for a circular saw at Farn borough and (above) the modern sweep, at Cambridge, goes his rounds in a Rover Eight.

## The Price of Petrol.

What exactly will be the effect of the termination of the agreements between the varintrs petrol distributing firms in the Cumbine? These agreuments will silortly expire, and it is rumoured that they will not be renewed.

## Will Car Prices Risc?

The continuous increases in the price of rubber bave inevitably resulted in a slight adilition to the prices of 19126 inotorcycles, says $M$ otor Cycling. Whether more expensive tyres will mean more expensive light cars romains to be seen.

## Italian Hill-climb.

The closing motor event of the old year in Italy, the Christmos Cup. organized by the Automobile Club des Abruzzes, constituted a T-mile hillclimb irom Loreto Aprutino to Penac. and in the 1,100 c.c. class the recently prooluced 990 c.c. 7 h.p. Fiat did very well. The fastest was Suinezzi, who accomplished the long climb in 13 min . ?.j) secs. He was follownd by Di Girolamo and Priori. in similar cars, in 13 mins. 312 secs. and 13 mins . 32 sees. respectively. The fourth man bome, Pretaroli, in a Fadin, occupird 19 mins. 2d sces. These three small cars were fister than many in the bigace classes.

In the class from 1.101 c.c. to 2.000 c.c. the results were Lennardi (Ccirano), 11 mins. 40$\}$ secs., follored by two Ansaldos, a Fiat, an Ansaldo and an O.M.


# CYCLECAR COMMENTS 

BY SHACKLEPIN

OVERCOOLED EN . CINES - SUGGESTED KEMEDIES - WATER OR EXHAUST HEAT: ING? - MOTTLING ANI) FROSTING ALU. MINIUM.

AS a rule it is more dificult to keep an engine cool than to keep it hot, but iwo brothers, each owning a G.P. Norgan, have written to we recently asking for advice as to how they can prevent their M.A.G. engines from running too cool. They say that even after the radiators have been blanked off considerably, the cylinders are only just warm after a long run and the induction pipes are corered with frost.
Of course, at this time of the sear whell the atmospheric temperature is low, one expects an engine to run cooler than in summer, but no engino can run at its best efliciency if it is too cold, and where it is fitted in a somewhat exposed position, such as on the Morgan, it becomes difficult to know exactly how to remedy matters in a simple manner.

Possibly some restriction in the outlet water pipes from the cslinders might improre matters, as the circulation would thus be slowed down and the jackets would retain the extra heat. It would be quite ensy to restrict the flow, and I suggest, as a preliminary experiment, decreasing the bore of the outlet pipes by 50 per cent. If this causes overheating, the restriction can be opened out progressively until an ideal running temperature is obtained.

With regard to the cold induction pipe, obviously some form of waterjacket suggests itself, and this, no doubt, could be made un by any tinsmith, using the existing pipe and surrounding it with a jacket made preferably of copper. Careful soldering of the joints would be necessary, anm, probably, for a really good job, it would be advisable to silser-solder them. All inlet and outlet pipe would be necessary, one leading from the top of the jacket and coupled to the radiator header tank and the other to one of the lower water-pipes or direct to the lower tank of the radiator. The connecting pipes must be finvoid of sharp bends.

With thermo-siphon cooling the H 14
circulation through the jacket might tend to be slow and somewhat erratic, but the induction pipe would at least be lept well above freezing point.

If it is desired to arod tampering with the water-cooling system, there is no reason why the jacket should not be coupled to one of the exhaust pipes and the hot exhaust gases used instead of water. This method, however, is not quite so satisfactory, because the jacket, after a time, becomes choked with oily deposits, and these are by no means easy to clean array. It must be said, however, that this system worked very well on the two-cylinder air-cooled G.N.

To enhance the effect of any lieating system which may be used, it might be a good plan to fix some kind of shield in front of the induction pipe so as to prevent a current of cold air impinging on it due to the speed of the machine on the road.

A less efficient altermative to heating the induction pipe would be to heat the air entering the carburetter, and this could easily be done by arranging a pipe from the intale to a sleeve around one of the exhaust pines close to the point where it leases the cylinder.

A pipe having a bore not less than the maximum dinmeter of the air intake should be used, and any curres or bedds necessnry to bring the pipe into the correct position should be very carefully made, so as not to restrict the flow of air more than could possibly be helped. The pipe, when fitted, should be lagged heavily with asbestos string.

It is a fact, of course, that unduly heating the intake air reduces the charge weight of the mixture entering the cylinders, but it does so to such a small extent that for ordinary touring work it makes little or no difference to the efficiency or the engine. Perhaps this system would be worth trying before adopting the more troublesome and expensive method of jacketing the induction pipe.

Another question which I have been asked is what is the best method of mothing aluminium. I take it that the idea is to use the process on aluminium bomets and similar large surfaces, and the only way of nroducing the desired etficit is rather laborious.

The surface should first te deaned thoroughly and brought to a reasonably polished condition. Aftorwaris a piece of dead-smooth emery paper, preferably conted with oil, should he laid over the ball of the thumb and applied to the surface with at wisting motion so that a rougliened nateh appears. Each natch should nerlap its neighbours slightly, and the process must be continued until the whole surface is coveren.

Anyone who has done this over the whole of a motorcar borly will realize: that I do not exaggerate when I say that the process is one of the most tedious which can be undertalien.

One might, of course, use a geared hand brace with a dise of emery cloth stuck on the end of a stick heli! in the chuck, but there is the risk with this method that the emery stick will run, as it were, and spoil the whole effect.

In large hody-building shops I have no doubt that there is some mechanical method of carrying out this work, but in most shons where arlicles in motlled aluminium are produced which I have visiterl I have nearly always seen unfortunate small bors with stunted thumbs busg on this work in the manner I have describert.

Aluminium may be given a frosted or matt finish by immersing it for a few seconds in a hot caustic sodil solution-about 2 lb . per gallon of water-and, after washing, dipping it in an acid solution made up in the proportions of $1 \frac{1}{6}$ gallons of concentrated vitric acid to 10 gallons of water-that is, a 131 per cent. solution. The final process is to wash the aluminium in water and dry in hot sawdust.
 (below) a Talbot making its way along Maid enhead High Street.


SCENES IN THE FLOODED AREA.

The recent heavy rains resulied in large areas being flocd din many parts of the country. The Thames Valley suffered particularly badly, many roads being impassable for vehicles. In one place the Bath Road was submerged for a distance of about half a mile.


MNTLASS readers must nave wondered Why the recent london-Wxeler Trial ntracted such an enormous number of mries, and they must also have wonlered what satisfaction the competitors ibtained from the event. It is diflicult. if not impossible, to describe exactly wherein lies the lure of competition work, but the fact remains that. once a keen motorist hecomes interested in it, he is soon an ardent enthusiast.

The most attractive feature, perhaps, of taking part in rellability trials is the atmosphere of strenuous endeavour which typifies them ant the extreme goodfellowship which is such a pronoumed fonture of nenrly all erents of this kind.

It must be slated at the very outset that there is nothing to be gnined by competing in relinbility trials axcept small mementoes which are of less ralue than the entry fee, and the keen satisfaction of achicrement. Unlike racing, there are no bonuses to be won, whilst the most which one receives from the manufacturer of the car which one runs is preferential treatment wher repairs hare to be dove or spare parts are needed.
The cost of taking pari in the three principal events ni the year-the LodionLand's End, the LondullJdinburgh and the Lendon-Wxeter-is al guina sub. scription to the Moter Cycling Club and an entrance fee of $x$ 응 forch evem In addition, the cost of petrol, oil and so forth used on the rums has also to be borne, whilst repair bills after such a run as the Loudon-Land's End may have to be met for sach items as broken spring leaves, and so on.

Having made up his mind to take up competition work, the small ear owner would be well advised to join a local club and acquire the knack of time-keeping and climbing stiff hills before entering for a bi; trial, as it is very disappointing when the reward for the first big effort which is made is merely to sef one's name among the list of "no awards."

It might be thought that any good driver handlin a decent car can win a gold medal in an M.C.C. trial with no previous experience of competition work, but it is rery seldom that this happens, and on the rare occasions when it does come to pass it must be altri buted more to good luck than to good judgment.

## Best Type of Car.

There are some small cars which are naturally fitted for competition work and others which are guite unsuitable. Far and away the best type of car is on which combines a four-speed gearbox with a snappy engine and light weight. Cars without a differential. prorided that they have sufficient steering lock, generally do better than those which hare a diferential ifted. A short wheelbase is also a big adrantage.
It is sometimes said that three-speed cars plate their drivers at a big disadrantage in a reliability trial. but this is not necessarily the case-provided that the bottom-gear ratio is sufficiently low-except when timed asecuts of severe hills are included. When this is the case, the man with a four-speed gearbox, who can make use of second as well as first, naturally scores over a three-speeder with too wide a gap belween second and bottom for the former to be made use of, even assuming the ratio to be low enough for the job.
The equipment needed by a competitor in reliability trials need not be particularly expensire, the only B16


Asentials over and above the standarde equipment of the car heing a pair of non-skid chains. It is best in have balloon tyres, as these obtain a good grip on rough stuff and allow fairly high speeds on bad roads, whilst a spotlight and a rienendable dashboard elock are also well worth fitting.
Nowadays few competitioni mell bother to carry many spare parts, but it is unwise to start without a few plugs, a reel of insmation tape, some copper wire and the usual paraphernalia which is generally taken on tour.
In the ease of cars fifted with unreliable makes of magneto, it is well to carry a spare instrument romplete, with the coupling marked ready for immediate attachment, whilst, where a known flaw in the design of the car exists, such as, say, a petrol pipe liable to break, the need for carrying n spare is self-evident.
Tuning up a car for a big trial is well within the ability of any enthusiastic amateur, as nothing is realls needed beyond making sure that all parts are properly adjusted and in a reasonable state of repair. In addition, great pains should be taken to make sure that the petrol tank, piping and carburetter are absolutely

(4) If you run back on a hilt, "scrub" the bank rather than charge it as this man d d. He overturned a second later. (5) Negotiate watersplashes slowly ard there will not be much splash. (6) Practise the expodi-

clean, that the electrical equipment is in first-class order, and that there are no loose nuts and bolts or fittings.

Some rery enthusiastic competition men of the type who would never recover from the shock of wimning anything less than a gold medal in a trial, make a point of exploting the route in adrance and, if necessary, altering their gear ratios to suit the various hills and tests which are included. These are almost invariably outlind in the preliminary programme which accompanins the entry form.
The writer does not feel. however, that any real need exists for a preliminary survey of the course, provided that the car to be takian though the trial is of an eflicient type, whilst altering gear rathos is perhaps a juh bernend the ability and the means of 90 per cent. of ambiterrs. In most cases of course, it is customary to fit different axle gearing rather than to malic alterations in the gearbox itself.

Itiving skill of a very high order is necessary if premier aswats are to be won regularly, and it should be noted that the most successful complitors are those who drive with eare rather than with dash.

Admittelly a dashing driver often scores on a hill by taking a risk to avoid a baulk which would foor a more cautious man; but these occasions are rare, and the shining stats in the competition firmament are unquestionably those who drive (1) win a "gold" rather than to earn applatuse from spectators.
An art, which everyone who intends to lake part in compelitions should acchire and practise assiduonsly, is inaking a good get-away from a standing start on a really sesere gradient, as this test nowadays is included in almost every trial. Essentials to success are a good hathd brake and at driver who has learned how much to speed up his engine before engaging the clutch and the exact moment during the clutch travel at which to free the liand brake. It is diflicult to deseribe on paner examely thow to handle the controls when restarting under these conditions, but practice will work wonders even will the most clunsy driver.

Another knack which must be acquired is chanking gear up and down with alusolute certainty and a minimum wastage of time, whilst patient practising of the art of fitting non-skid chains will also prose to be well worth while.

In this connection the wisest plan is always to take the same passenger and to practise with him a "chain drill" against a stof-wateh in the hands of a friend. Some people tind that it pays thein to carry two spare wheels, buth fitted with non-skid chains, and when a non-stop section is alluroached to leap out of the car, jack up and change both the hack wherls, has experienced competition men almost incariably fit their chatins on the spot instead of changing whews. With practice and with the driver and passenger following a prearranged plan of campaign. not more than two minutes should be taken in getting a pair of clanins fitted and properly adjusted.

## When Crossing Splashes.

The Light Car and C'yclecar has dealt at considerable lengrh recently with the correct method for negothating water-splashes, and there is, therefore, no need to enlarge upon the procedure here. Io brief, all that is uncessaty is to krep the speed of the car as luw as possible and the engine spred as high as nossible. Never slip an exposed clutch, howerer, as water may get between the friction surfaces and destroy the grip.

There are two methods of kerping time when driving in a relability trial. One consists of making out a spectal roure card showing your own time at the various noints alung the route where there are checks or the likelihond of secret checks, and the ofher of setting sour watch and dashboard clock to " oflicial time" and whas saving the trouble of making calculations. Perhaps the more udinus method of the wo is. howaver, the better, as if your own whteh goes wrong pulife clocks can be utilized without the likelihond of error. Time-keeping is, of course, the passenger's juh, and he should, therefore, be reliable and painstaking.

The was to get the umbst emberment out of cotapetition work is to regard it purnly as a spurt, exachly as one does a gatme of fonthall. If the route is ditlicult to fitd and the organization not all that it might be. remember that malsing platis for a hig trial is a vesy trying and awkwad business. which is carried out entirely lis unpatid men in theis spate time. If sorl keep this well in mind it is easy in conlome their mistabes, even although you yourself may be the sufferer.


Koad Tests of 1926 Models.

## THE 9-20 H.P. FOUR.SEATER HUMBER

A Car which stands out Conspicuuusly for design, QUALITY, WORKMANSHIP AND GRNERAL PERFORMANCE.


0IR verdict after an extensive test of the Humber Nine, on all manner of ronds and under widely varring weather conditions, is that it is one of the most pleasing light cars of the day. With a cubic capacity actually less than that which was deemed at one time to be just about right for a two-seater cyelecar, the four-relinder engive pulls a substamial chassis, on which was mounted, in the case of the car unier reabow, a full four-seater body; moreover, it pulles: it up hiil and down dale with four adults aboard and the allweather equipmem and hood erected, with a liveliness which left us wondering.
There can be no doubl that this very fine little engine, which, by the way, runs as sweetly as a top throughout its whole range of speed. owes wuch of its efliciency to the ingenious design which incorporates overhead inlet valves and side exhausts; and in this connection one must not overlook the fact that it is essemtally a longstroke eng!ne, the bore being 68 mm . against a stroke of 110 mm . This gives a capacity of $1 .(106 \mathrm{c} . \mathrm{c}$., a Treasury rating of xizï h.p.. and a tax of 69.

In many resiects the general specifiotation of the car closely risidmbles the 8 h.p. model which it has displacest. but here and there one obsumes fomable imgrovetuents, as, for instance, the tarte sixgrallon tank which is sheriz foin.ent the rear mumb-irons and ferds the (ox atmos earmuretter via un Allowac under the bonnet. 1 1. is pleasing to sue that shock absurbers of hariford manufacmre are standard $2 u$ the rear. Anoflar refinement is a Lucas atutomatic serven wiper, which works on the pneumatic principle, the suction
lead being renntecteal to the elbow of the sutovac suction pipe.

Other interesting details of the specification are a Lucas Dynamotor lighting and starting unit with five lamps and a large Lucas horn under the bonnct, where are housed--as in the case of the old \& 1.p. modelthe jack, brace and oilcan. The tyre pump now occupies a position inside the body on the nutar side and the tond roll is carried in a cubly hole ander the souttle dash.
'lhe elutch is a Ferodo-faced cone and the congine and gearbox form a unit. The ratios are $16,0,6.5$ and 4.9 10 1, the final drive boing by an open (whmlat firopeller shaft, with a fabric universal joint at wath wad, to a semi-foating rear axle driven by spiatl hown. Koth brule and genr levers are on !he driver's rishat.

The Humber stands almost alone in ablhering to external contracting bralios of the stuel hathal limomiolined trix: the reason given ly the mamulitilurers for defyians convention in this way beifar :hat aboh a type of brake is far mone easily kept in woble athd mujusted by the rwner-driser who has not a g̈"at dazl of time or knowletge, than expanding buakes, which ate eum-
filler spout, complete with filter, the sturtly monting of the spare wheel, the useful inspection foor in the oftside valance, so that access readily can be obtained to points of adjustment, the very easily removed floor-boards-which are fitted with tabs to facilitate pulling them up-the rubber channel along the top edge of the tower part of the two-panel screen and so forth. Space fortids mention of other equally good points.

It has bem pointed out that the ear is a full fourseater, and this is mo exaggeration, for a $6-\mathrm{ft}$. passenger can be comfortable either in the tront or the back.


## HUMBER CHARACTERISTICS.

Viewed from the front the 9-20 b.p. Humber is similar in appearance to the old 8 h.p. modil. An excellent Lucas Dynamotor unit is incorporated but if the owner wishes to spare his batteries he will find that the starting handle is swung in comfort and that the engine springs into life with a minimum of coaxing.
ot a sumerion type, with narrow framing, which athords the maximum of visibility.
Onc's first impression when in the driviug seat is that the sloping screen is too close to the driver's face, but this impression soon ranishes, and, if bad weather be encomatered, the close proximity of the screen, compled with the satisfactory working of the screen wiper form a combination which makes driving quite comfortable, even in a blizzard.
This we proved to our entire satisfaction whilst pushing our way through a blinding snow-storm which was in attendance tor about 40 miles. It was obrious then that the forward nauels of the all-weather equipment should be provided with some definite form of fastening to the windsereen pillars. It is important that dranghts at these points should be prevented. On the ear which we tested the off-side front panel had a very aggravating knack of opening outwards at the top and leting in a very unwercome drathgt.
The controls of this Fumber are well placed, but the land-brake lever might be made slightly more accessible with advantage. When full on the lerer comes up against the seat cushion, and, whereas the brake was easily applied. it was not so easily released.
The gearbox is one of the most casils managed that we know, whilst the steering is so delightfully smooth and effortless that one hand on the wheel is sufficient under any conditions. The seating position is really good, and one feels thoroughly at home in the car before it has been drisen a quarter of a mile.
The interin furnishing is of a high-class order, real leather upholstery being used and the three doors being fitted with useful and spacious pockets. The faciaboard equipment, reading trom left to right, as viewed from the driving sent, is as follows:-Clock, Jacger speedometer. oil indicator. Lucas switchhoard, strangler, starter swith and, on the extreme right, where it is yery easily and expeditiously onerated, the electric hom button.
It is impossible to form a really conclusire impression of this Humber Nine unless one takes it into the
country, for its docility and responsiveness in trafic, goud as they are, do not give an indication of the reserre capabilities of the car when it has before it, say, a long, straight, upward run. One forgets for the moment the small capacity of the engine and revels in the fact that throughout the whole throttle movement there is that welcome addition to the pulling nowers of the car as the fout is further and further depressed.

Certain main-road hills were surmounted at a higher speed than that attained with cars weighing no nore but having far larger engines, and from first to last the springing really behaved itself; there is no vibration, no rolling, no chattering of loose parts-just a comfortable hum from the engine as it gets on with its work.


The offside of the engine. Points worth noting are the capacious beader tank, the Autovac fuel supply system, the accessible contact breaker and carburetter and the very large electric horn.

The maximum speed obtained in tup gear was -16 III.j.h., but we believe that with the hood furled and the all-weather equipment slowed it wond be possible to approach very narrowly the 50 m.p.h. mark. In secrond, $30 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. was reached and in first $12 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. . but the most comfortable speeds on the various gears were 38-40 m.p.h. on top, $2: 2 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. in sicond and S-12 m.p.h. on bottom.

The driver of a llumber Nine must remember one important thing, namely, that the ear is very suscemible to the ignition control. Thus, to accelerate rapidly when one is idling along at 1.5 m.p.h. in top, it is essential that the

EVERY INCH

A LIGHT CAR-
Ignition leser be pulled back to about halr-advance and mored forward progressirely as the pressure of the foot on the accelerator becomes greater and the speed increases. If this procedure is followed automatically, the car is twice as lively as when the ignition lever is more or less disregarded. A driser who fails to make good use of this control is more than foolish, for, situated above the wheel, it can be operated rery easily.
The sweetness with which the Dynamotor unit works should make the owners of cars with less elaborate equinment jealous. When the starter knob is depressed, the action of the starter-motor is, of course, dead silent,

Whilst the sweetness of the drive when the unit is athing as a dynamo is reflected by the unflickering anmeter needic. From dend cold the engine started on the starter-motor alone in less than three seconds.

A word also shoult be stid concerning the excellence of the tacss lighting set. the lipatlamps of whech, set

Here we have an excellent impression of the 9-20 h.p. Humber as viewed from the near side
$\qquad$ Its sturdy construction can be seen at a glance. The leg-room, both front and back, is generous, there is adequate head-room with the hood up, and the car not only looks but feels every inch a light car.
fairly low down ou the front dumb-irons, liberate a useful flood of illumivation that makes night drising thot only safe but fast.

Fraukly, then, we were delighted with the (1-20 h.p. Humber, delighted principally because so much satisfaction could be oblained from a car with so small an engine aud because the attention given to general finish and so on is reflected at so many different poiuts and in so binns different ways.

This model sells as a two-three-seater with dickey for £2fio, as a suloon for $\{315$, and, in the four-seater frim which we tested, for $£ 260$

## THE MARAUDER OF THE MIST.

ITT was a raw, fuggy night in November and the row of new suburban rillas was enshrouded in dense gloom, pierced only by the sullen, baleful glare of the dull, red dise which represented the street hamp a few surds distant. All was silent.

Suddenly the side door of the end house was stealthily opened and a sinister-looking figure quickly emerged. It was that of a man of medium slature, wearing a long. dark overroar, his features almost entirely concealed by a huge mufler around his chin and a cap drawn well down over his eves.

After a furtive glance around, he cautiously closed the door behind him, and stole, step by step, through the murky gloom unil his outstretched hand encountered the side of a sumall building that lowed up ahead in the fog. He paused abruptly and, thrusting his hand into the capacious pocket of his cont, drew out a small electric torch. the bright beam of which shot out upon a dror in front of him.

For a brief instant the beam moved swiftly hither and thither, then finally cane to rest upon a rusty padlock. The man ugain fumbled in his pocket and brought forth a bunch of keys. One affer another he tried in vain, muttering imprecations all the while.

Without warning, the light in his hand grew dim and went out. With a suppressed ejaculation of anger, he thrust the torch back into his pocket not grofed at the lock in the darkness. At last success crowned his efforts and the dexn swung open. It slipped inside and closed it behind him. A suladued glow arose from within and slender shafts of light filtered through the apertures around the door.

A series of mysterious sommts broke the tense silence: at first the clang of metal upon metal, then the soft plash-plash of some gurgling liguid. Rut these noises were soon superseded by one far more horrible a slow, creaking, grinding noise, followed by great sobbing sighs. as of seme mortal in dire agony.

Suddenly a stumning detonation rang out, and in the dead silence which succeeded clouds of blue, noxious vapour rolled out from under the door. Then the silence was shattered by an even louder explosion. and the door swung open, revealing two great orbs of light ghating batefully into the fog like matevolent eses.

A harsh, vibrating roar burst upon the night
and, to the accompaniment of many bangs and rattles. Mr. Jones set out in his ancient two-senter to meet his wife on the 6.36 from town.
N.M.


1UCKX and rare is the motorist who has not experienced that sudden sinking Jof the heart caused by a man in blue stepping briskly imo the roudway and calling upon him audibly or by signal to stop. A glance at the illustration may serve as a very foignant reminder to those who have actually hat the experience, whilst it will show more fortunate persons what they may expect when they transgress.

Those who are ignorant of the ramifica tions of the motor laws are, naturally, the most frequent offenders, bot an examination of the written word, camounfaged as it is by legal phtaswology and confused by side issues, footnotes, and so on, seldom enables one to sain anything but a rery hazy idea of what it means. Magistrates and members of Parliament have been known to confess igmorance regarding many points in motoring law, so the novice may well be forgiven for pleading that "he did not know" in any placeexcept a police court. Every reason, then, for explaining in simple language just what the law requires of the motorist. Here are a few of the more common reasons why a policeman may stop you on the rond :-

To examine your driving licence or your car licence. For exceeding the statutory speed limit of $20 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. along the open road or of special speed limits in vther areas.

For hatving an exhaust which, in the opinion of the police constable, is noisy.

For having lights which do not conform with the regulations.

For having a crooked, obscured, insufliciently illuminated or incorrectly proportioned number-plate.

For having too smoky an exhaust.
For dangerous driving.
It is becoming an increasingly common practice for the police to institute hold-uns for the examination of licences, and frequently this appears to be only an excuse for enabling a detailed survey of a number of cars to be made. In the ordinary course of events, however, the driver is merely called upou to stop and produce his licence.

## Licence Hold-ups.

When the inspection takes the form of an examinafion of the car licence, the constable may not only verify the actual written details, but may, if he so wishes, check the position of the holder, which must conform to a prescribed definition. Nowadays, however, car manufacturers generally fit licence holders, and as they fully understand the requirements of the law, the police seldom find fault on this score.

If every motorist in the kingdom strictly adhered to the $20 \mathrm{~m} . \mathrm{ph} . \mathrm{h}$. speed limit, the police themselses would probably be the first to wonder what had happened. Erery motor driver continually exceeds the limit and takes the risk of a "trap" or "control" being in operation.

The sudden apnearance of a policeman in the road ahead after one has been indulging in a mild $2 \bar{J}$ m.p.h. generally sigwifies that one has passed through such a control with the sort of tlying colours which appeal to those who have been operating the trap.

The best way of making sure that the police will not stop you because of technical faults in the lighting system of the car is to employ two good side. lamps which show approximately the full width of the car and a tail light which adequately illuminates the number-plate as well as throwing a red (ruby) light to the rear.
Number-plates must, of course, conform to certain dimensions, the most important of which are:-Height of letters and figures, $3 \frac{1}{2}$ ins. ; width, $2 \frac{1}{2}$ ins. ; thickDews, 自 in., with $\frac{1}{2} \mathrm{in}$. between letters and figures, a $\frac{1}{2}$-in. border top and bottom, and a border of 1 in . at the ends.

Number-plates must not be obscured: that is to sas, standing directly in front of or behind the car, one must be able to conmand a free and uninterrupted view of the whole nlate, which must be carried in a borizontal position.

Exactly why a tram should be permitted to thunder along a road, creating very often an indescribable din, when the motorist with a pleasing burble from his exhaust is accused of making too much noise, is a problem which will never be solved, but to aroid being stopped by the police and subsequently fined, the motorist must make sure that his exhaust is reasonably silent. A smoky eshaust is not often the subject of a complaint anywhere but in the Royal parks. Within these areas, however, the keepers are very strict on this point.

## Ignorance is No Excise.

Every owner shonld bear in mind that ignorance of the law is no excuse. To say, "1 didn't know" is merely to call down the wrath of the gods who rule in the courts of justice. The ruling is not new; it applies in every other case where the law of the land is concerned.
Agaiu, when the exhaust note is deemed to be too raucous or the figures on the registration plate too small it is a waste of time to say that the conditions existed when delisery of the car was taken. The manufacturer may be the sinner-and often is-but the actual owner of the car at the time of the offence must suffer.

It is up to every driver, therefore, to make sure first that he understands the law, and, secondly, that his car conforms with its requirements.

The law with regard to dangerous driving is complex in the extreme, but readers should remember that the police now possess far greater powers than formerly and that some of the restrictions which ruled in a case where arrest without warrant was meditated hare been swept away.

# BOWDEN WIRE MECHANISM. 


#### Abstract

AN ARTICLE WHICH EXPLAINS THE THEORY AND PRACTICE OF FLEXIBLE WIRE CONTROL-CORRECT METHODS OF FITTING DESCRIBED in DETAII.


AITHOOGH Bowden wire mechanism is not used on light cars to the same extent that it is on motorcscles, there is a number of controls which can with adrantage be worked by this system instead of by rods.
Probably it is owing to the fact that few ownerdrivers and-be it whispered-not all garage mechanics really understand the theory of Bowden wire mechanism or how the wire should be fitted that the system is not more popular on light cars.

Bowden wire mechanism consists mainly of two parts-a casing made of closely coiled and practically incompressible spiral wire, and a stranded wire cable threaded through the casing and linown as the inner member. An illustration on this page shows in diagrammatic form the arrangeteent of a simple type of Bowden mechanism, and it will be seen that the casing or outer member is fitted at each end against a stop, whilst the inner member passes through the outer member and the stops. and is secured at one end to the object to be moved and at tho other end. through the medium of a shackle, to the operating lever.
No matter how many curves there may be between the operating lever and the mechanism which it controls, the movement will be the same, provided alwass


An assembly designed to show the simplest application of Bowden-wire control. The sketch is self-explanatory.
tiat the wire is not allowed to sway unduly aud that the curres are of not less than 4 ins. radius.

The method of using Lowden wire just described is the usual practice, but with very little alteration to the contruls it is equally easy to transmit a push instead of a pull. In this case the inner member is auchored and the control lever connected to the outer member. Obriously, by this method the outer member will slide over the inner and exert a pushing action at its far nad. In yet another case neither member need be fixed in a stationary sense. but only relatisely to each other, so that when one pulls the other pushes and an equal displacement will result.
$\stackrel{22}{ }$


Although, iu general, any control operatid hy a Bowden wire is returned to normal position ly a sjring, it is possible to arrange a pair of wires coupled to a double-action lerer so that in one direction it is pulling "on "and in the reverse it is pulling " ofi." This makes a very positive form of control, and is used largely in aircraft work, where extreme nicels of artion is important.
An interesting claboration of bowden-wime mechanism takes the form of a master controt. which enables the same operation to be performed indepentemtly from two different points. For instance, the thrulth may be operated by the foot or hand by interposistes the mnster


The master control with cover removid to show how a single wire may be operated from two ind eper.dant controls.
control between the carburetter and the foot and haml levers. An illustration on this page shows the master control in part section, and it will be seen that a and C are two spring-controlled tubes, either of which can operate independently the control tube ( F ) to the wire mechanism of which the carburetter throthe lever is attached.

## Independent Action.

The illustration shows tube A actuating $B$, tube C being at rest. Supposing $C$ is operated by the foot accelerator, it will readily be seen that C will have to travel some little distance before its projecting lug comes into contact with P, after which it can continue the operation of opening the throtle, leaving a stationary. Thus, the throttle can be operated wholly by the hand lever or wholly by the accelerator pedal, or it can be set in any position by the hand lefer and then controlled by the pedal.

From the foregoing it will be appreciated that Bowden-wire mechanism forms a very consenient method of control, and that it may be adapted to almost any requirement.
We shall proceed now to describe the correct methods of installing Bowden-wire mechanism, with particular attention to the way in which the wire should be soldered and cint.

The inner member is composed of a number of fine strands of bighternsile steel wire twisted together, nud they have a pronounced tendency to suntwist! It is important, therefore, when cutting the wire, that it should first be soldered over an inch or so of its length; that is, lalf an inch on each side of the point where
it is to be severed. A non-corrosire soldering flux should ue used, as any flux which contains acid will have a harmful effect upon the wire, because, aithough it may be possible to clean the acid from the outer surface, that which penetrates between the strands of the wire would remain after cleaning and slowly corrode the metal. The wire in its swaller sizes may be cut with a sharp pair of pliers or with a thin-bladed cold chisel on a suitable anvil. We stress the necessity for using slarp pliers or a sharp chisel for the job, because it is fatal to "worry" the wire in an effort to separate the strands.

Having cut the wire at the desired point, the endwhich even the sharpest cutting pliers will tend to flatten-may be rounded again either by gently hammering or by touching with a file. The next job is to uttach a nipple of the correct size; that is, one having a hole through which the wire may just comfortably be pushed. The niple should be slid on to the wire until about is in. projects beyond the cup-shaped end of the nipple. This projecting wire may now be pinched slighty fat with a pair of pliers, which will prevent the nipple from falling off.

## Soldering the Nipples.

The next jols is to solder the wire into the nipple, and it is here that many amateur mechanies go asiray, because they fall into the error of thinking that only a blob of solder in the cup is needed. Actually, however, the correct procedure is to solder the whole length of the vipple. The assembly should be held vertical with the cun downards, and a little soldering Fux must then be applied to the wire ngainst the shoulder of the nipple.
The soldering iron, which, preferably, should have a chisel-shaped nose, must be clean, well tinned and of a proper temperature, and it slould be held against the nipple shoulder until the solder on its nose runs and penctrates the bore of the nipple, learing the shoulder clean but tinned; that is, no excess of solder should be present. The job should be held steadily until the solder has set, aud then the nipple may be inverted so that the cup is uppermost and held in this position in at vice or with a pair of pliers and the projecting wire hammered lightly and spread into the cup with a ballbein hammer.

Still holding the nople, a blob of solder should be cropped into the cup and heated sufficiently with the bit for it to melt and amalgamate with the wires and with the solder which has been flowed through from the opposite end of the nipple. If this jol has heen carricd out carefully it will be impossible to pull out

the wire ; that is, the nipple will resist a pull at least equal to the breaking strain of the wire.

As a rule, the outer Bowden member is covered with black waterproof material, but it may be cut quite cleanly with a pair of sharp pliers or a chisel. After cutting, the end should be examined to make sure that the last coil of the wire has not been bent across tho centre. If this has happened, it may be returned to its correct position with a pair of round-nosed pliers.

Although perhaps not essential, it is far better to finish of the ends of the outer member with plated caps; these may be slid over the casing, but it is necessary to see that the ends of the waterproof covering are not unduly frayed, as this may hare the effect of preventing the cap from being fitted neatly.

Assuming the operating lever to be fitted in the required position, the outer member may be fixed temporarily along the route of the control in order to gauge the length required. It is advisable, if not essential,


These illustrations depict clearly the method of fitting a nipple to a IS DONE - should be soldercd carefully before cutting and a non-corrosive flux must be ustd. On the left the various parts of the control are shown with their correct names.
to fit an aujustable stop at the rerking ond. If this stop is arranged, when the measurements are taken, about midway along its length of travel, slight inaccuracles in the length of the wire may be corrected; that is, the stop may be screwed outwards to shorten the control or inwards to lengthen it.
Having found the correct length of easing and capped its ends, the inner member may be well greased with vascline and threaded throngh the outer member, starting at the lever end, so that the nipple alrendy soldered on the wire will engage with the recess provided for it in the operating lever, which shonld be in the "off" position. The length of wire required between the ston


When extreme accuracy of control is desired a doubleaction lever of the type depicted here may be used.
and the object to be moved should now be measured and a mark made on the wire with a lead pencil. A nipple may now be threaded on to the wire and lightly soldered into position so that the pull may be tested.

If it is correct, the wire may be soldered and cut as previously described, and the nipple permanently fitted; but if a shackle is to be used as part of the assembly it must, of course, be fitted before the nipple is threaded on to the wire. The final adjustment of the movement will be carried out by manipulating tho adjustable stop, which afterwards may be fixed with its lock-nut. A return spring at the operafing end will be necessary to pull back the inver member through the outer, when the control lever is returned to the off pasition.

When arranging a Powden control hetween two given points, it is adrisable almays to choose the most direct path und to aroid sharp benils or loops. If the wire is too long no attempt should be made to "shorten" it by winding it into coils or looping it round tortuous
paths, as this wil! cause cradic working and make the control stiff and liable to rapid wear. The job of shortening the wire is so simple, if carried out as described above, that there is no excuse for shirking it.

Once fitted, a bowden wire should last indelinitely. but it must be lubricated from time to zime and fo little thin oil squirted down the casing will be gill that is required. Any slight streteh which may uecur through the strands of the inner wire bedding down may, of course, be taken up on the adjustable stop.

## A Practice to Avoid.

In connection with bowden-wire mechanism, it is important to renmmber that the wire is of trmpered steel, and that excessire hoat will destroy itc nafmoe. making it weak and meliable. Thereforo, care musi be taken always to see that no part of the easing is able to touch the exhaust pipe or other very hot part of the engine, and it may be mentioned here that the practice of heating the inner wire redllot at the point where it is to be eut in order to draw the temper and prevent the strands from unravelling is not an arlvis. able practice, and should be aroided.

If in the process of fitting the immer wire one strithl should inadrertently be allowed to come adrift, att easy way to replace it in its correct relatire position with the other strands is to thread on a nipule from the other end of the wire and slide it along, when it will be found that, as it comes into contact with the moravelled strand, this will be automatically pushed back into position so that fimally it may be: solderod down to the others. This hint applies only where the strand has unratrelled from the extrome ent of the wire.

If at strand breaks along the lengly of the wite it cannot be soldered into position, beeatuse the salder will make the wire rigid and prevent it from conforaning (t) the necessary curves. In general, however. it shoulal not be necessnry to renew the inner member merely because one strand has broken, as ample strengtl should remain in the wire after this strand has been remored, but the wire is so cheap and so easily fittod that a new one obriously suggests itself.

## ENTERING THE FREE STATE.

I10 cross the Irish horder, from Llster to the Free State, needs a certain amount of ceremony and some knowledge of the law, especially if mo be a motorist.

Before it is possible to "exjort" a British motorear from Northern Ireland into the Free State one must apply to the nearest Customs House and there produce the car for inspection. A form in duplicate must be tilled up and all the intimate details of the car's identity noted thereon. Since Britain is an island, the only arailable oflicial forms are those that were used for shipping, and these are still in use
deross the face of the form one declares that all renewals, adrlitions, changes of colour and so forth which take place in the lree State will be duly notified to the Customs oflicials.

To enter the Free State with a British or North of Ireland car, one must. get a householder of Southern Ireland to stand security for the value of the import cluty.

An agreement has to be entored into with the Free State Customs and duly stamped and witnessed. The Irish Automobile Club will undertake to stand security if the sum necessary (one-third the value of the car) or a banker's guarantee for part of the sum be lotiged with them

Armed with these passes and driving licences for both countries, the actual crossing of the border inay be attempted.

Only certain roads have been "approved," and only $1{ }^{6}=4$
by one of these roads cau the exit and entry bur mon Some dis!ance from the border-either at at stratcoric position at a cross-roads or close to the real dividing lime, one sees a latre red notice-hoard marked "Customs. lost" in big letters. Beside it is an octagonal corrusated iron hut fitted with windows, doors and a porell. The motorist must stop, wroduce his Northen Ireland joss tor inspection, and perhaps also give his mame and destination to the inspector. He is then passed through.

A few yards farther on appears what seems to be a sand-bagged fort with barled entanglements and armed fonliee sentries. 'Ihis is the Border Military I'ost, but the suotorist has no business here, and is merely waved through in the best approved " joint-duty" manner.

The free State post is usually denoted by a barrier across the roarl. Here the Customs post is a small iron hut, square in shape, and with no bretensions towards art.

The pass issmed at the signing of the agreement must be produced and a pass book stamped with the dale name of oflicer and destination of the car.

The driver and passengers are then asked if they tre carrying dutinble goods, and car and baggage may be searched. The male members of the party may even get what is known as a "rub down "-i.e., the ciflicer"s hand is passed over pockets, etc., to feel if there is an undue bulk anywhere that might indicate smuggled goods.

If all has been found in order, the car starls again, and one has crossed the border.
M.E.L.

## LIGHT CARS ${ }^{\text {at }}$ SOUTHPORT.

MANY FRAZER-NASH SUCCESSES.


SMALL CARS AT SPEED.

## (Above) R. V. Fontes (Alvia) round-

 ing one of the posts. (Left) Mrs. Pemberion's Frazer-Nash neck and neck with a Bentley and a Sunbeam. (Below) A Beardmore, a Morgan and a Frazer-Nash battling for the lead.TTIIT: אmmport Mator Slulis first raec meeting of the sear, although held at such an carly date, proved an murualified success.

The werther on January 9th was fine, with a still brece blowing down the course, while the sand mas in good condition.
A fairly good entry of light ears firared in the prongrame, although the 3.5(1) e.c. event would have been more interesting if Davemport's famous "Spider" enuld have met a competitor Wowity of its steel. As it was, the ouly other cul withe same rapncity wns a standard Frayer-Nash, in touring trim, driven by Mrs. I'emberton.
In the laren chasses IB. O. D. Segrave, wihn in twolitre Grand Prix Sunbeam, swopt the board, but it was interesting in note that Davenport's wonderful getaway wave him o substantial lead. This be leste at the hatf-distance, where Segraves red racer, which erossed the finishing liue at 110 m.p.p.L., was well into its stride.
The first event for cars was a class for four-senter touring moilels of up to 3.500 c.c. canneity, in which the only light car was a very smart FrakerNash, driven by Mrs. Pemberton, who was successful in grining third place. This event was held over a standing kilometre, but the other short-distanco events took piace orer a mile course.

## A Fleet Three-wheeler.

Bullouglis Morann proved too flect for the 1.100 c.c. four-wheclers in the keneral class. but in the novices' section Mucklow's Frazer-Nnsil and Fimgin's Etreanlined Salmson special secured first and sectond places against $F$. Carr's Marzan.
Davennort was the nuly neweomer in the 1.50 n e.e. class, but he proved a very cass winner. while in the novices' section Migzin serured a min from Mucklow. The two-litre and unlimited classes bronglit in a numbine nf larger enrs, but only Segrave's Grand 「rix Sunbean could reach the finish alhend of Davennort's "Spider." which shot on tho mark

in its usual nstounding fashion. The ten-mile races; which gave promise of a thrilling contest, developed into a procession.

Although be had no serious opposition. Sugrave"s driving was a perfect example of how a car should be handed, his cornering, as ustut, being above reproach.

Meesou's Vauxhall came scond, while Fontes kept well alicad of the only -hier car, the Bentloy driven by Miss Cunlifec. Fontes drove in really splendid style, his methods being similar to those of Scgrave, although, maturally, the Nvis was not so fast on the straights as the Sunbeam racer. Nevertheless, the ear ran extremely well and gave an excellent account of itself.

## Good Organization.

Throughout the meeting there were no delays, class following class with sach expetition that the last race was ofer a good 40 minutes beforo sehedule, for which the organizers deserve the highest credit.
In the evening a dinner and dance were held at the Royal Hotel. the chair being taken by Major W'allwark, while amongst those present were the Mayor of Southport. Councillor E. Intfield. and Mr. 'T. W'. Toumbloroumh, representing the М.-C.U. and R.A.C.
Respouding in the tonst of "The Fuests." the Maror assured the club that in the crent of the foreshore beins aeguired by the local authority, every
assistance would be accorded to them :! holding speed events on the sands.

Mr. Lougiburongh touched on tha question of alcohol fuel for racing, saying that the $\mathrm{A} . \mathrm{C} . \mathrm{C}$. inteuded co stan'l firm in their decision to permit its use. After the Masor and Mr. Loughhorough hat presented the reniarkable arrag of prizes. stid to total $£ 900$ in valuc, the rest of the evening was devoted te dancing. The day's results were:-

## standing xilometre.

Four-seater Touring Cars up to 3,500 o.e. -1, Niss M. Cunlifle (Eentles): 2. C. R. W. Jachoon (Sunbeam). 3. Nra. Pcmbertion (Erazer-Aash).

## STANDING START MILE RACES.

Up to 1.100 c.c., General-1, B. M. BullouFh (Morfant: 2. E. I.. Nucklow (Frazer-Nash): 3,
. Mo
 (Morgan).
Up to 1.500 e.c., General.-1, B. II. Darenpart (Frazer,Mashi: 2, J. M. Migain Salmson).
Ditto, Novise- 1, D. Ilimgin (Saimson): 2, E L. Mucklow Frarer-Nash). Un to 2,000 e.c., General.-1. IH. O. D. Segrave 1 Sunbuam): 2. B. H. Davenno
Nashl: 3. F. Hitchen (Ucardmore).
Ditto Naice.-1. D. Wiggin (Salmsna): 2, C. Lucklow iFrazer-Nashl: 3. Mrs. Pember-(Frazer-×ash1
Unlimited, Cencral.-1. It. O. D. Scgrase 1 Sun-
heaml: 2, B. H. Davenfort Frazer-inashl: $\overline{3}$, heaml 2, B. Il. Daverifort |Frazer-iashl: 3 , Ditio, Noyt - -
Ditto, Noviee-l, E. I.. Meeson (Vauxball):


## TEN-MILE RACES.

Up to 2,000 c.A- -1 , O. D. Sebrave (Sunbeamal: 2. R. V. Foners inlris).
Unlintited c.o.-1, M. O. D. Secrave (Sunheam): 2. Fi. I. Meoson iVaushall): $3, R$. V. Fonics

## NOVELTY IN AUTOMOBILE DESIGN

## Recently Patented Ideas for Two-stroke Engines. Sectional Bodies. Front-wheel Torque Rods and Supercharger Lay-out.


axle torque protected by Mr. F.H. Royce. (4) Supercharger control according to the Sunbeam Motor Car Co., Lud., and Mr. L. Coatalen.

ONE of the most common complaints against twostroker plgines is that, in the absence of a definite exhaus: pumping action, there is always a large amount of buziu gas remairing in then cylinder which mixes
Th the incowing charge asu reduces the worbing alfieney of the engine. A blast of air preceding the fresh gas is known as an air scavenger and is a scheme empluyed by many inventors for clearing the cylinders. One of the latest patents in this direction is that of Heer G. J. Lugt.
Moriag in a housing on oue side of the crankcase is a hinged rane controlled by an arm attached to the commecting rod at its ceatre. In the position shown in -he accompansing sleten (1) the vane is about to move to the left. pushing a column of air up the passage into the cylinder so soon as the piston uncovers the ports, that is, just past bontom dead-centre position. The air is drawn into the passare and sane housing through a non return valve by the movement of the vane from left to right.
This engine can be reversed, as can many two-strokes, by means of the ability to retard the ignition far enough to enable the engine to run in the opposite direction when the former degree of retard becomes advance. When running backwards a valve, close to the hinge of the vane, is opened, cutting out the air scavenger and connecting the passage to the crankcase, thus providing the transier path for reverse running.

## Sectional Coachwork.

In order to give a limited degree of flexibility to the bodies of motor vehicles Mr. O. Y. Imray proposes to construct them in sections with flexible joints. In the illustration ( 2, it will be seen that the rehicle shown in plan consists of cight units. The section on the left illusirates the inner and outer metal shells forming each part. whilst that on the right illustrates a window mounting.
Windlows can be housed in each unit; they are of the sliding type capable of being fixed in any position by means of rollers on the frames registering with recesses in the sides of the openings in the body. When raised fully the windows lie in sockets in the upper angles of the hody units and rest on anti-rattle cushions.

820

At the junction of each pair of units, as can be seen on reference to the sketch ('2a), whe shells are chat nelled and are grippell between a pair of rulderer strips clamped by bolts bearing on metal plates. This ispe of connertion between the sections gives a small degree of flexibilits and would enable manufacturers to stock one size of unit for each type of chassis to a harge extent, as the long wheelbase model could have, say, one more unit than the shorter car.

## Taking Front Axle Torque.

Particularly in the case of cars having front-whed brakes there is much twisting strain on the front springs, and Mr. F. If. Royce covers an iden for relieving the springs of this burden, leaving them free to attend to vehicle suspension only. The forward end of each front spring is comnected to a shackle link and the rear end to a vertical post carried under the chassis frame as shown in 3 above.

Below the front axle is an anchorage at each end for the torque rods which run back to vertical posts, io which they are coupled by a special type of ball joint. A smaller post is fixed to the frame on each side behind the main ones, and they are joined by truss rods. Isy this means any tendency of the front anle to turn over will be resisted by the torque rods, the thrust bein: taken through the posts to the chassis itself.

## Supercharger Control.

Registered in the names of the Sunheam Motor Car Co., Ltd., and Mr. L. Coatalen is an interesting patent dealing with control for superchargers, giving normal or forced induction as desired.

The system comprises a blower in a bs-nass pipe which can be connected to or disconnected from the engine drive by a clutch, shown in sketeh (4) in the accompanying group. between the timing case and the blower. In the circular casing above the carburetter is a valve giving positions first for direct or normal induction, in which case the mixture goes from the enr buretter straight through the valse to the manifold. and second for forced mixture supply. In the latter case the blower draws its charge along the lower pip: and drives it through the upper one to the engine.

## Combination Coachwork.

A two-seater car combining the advintages of a touring model and a coupe can be constructed according to the design of Mr. F. J. Barnes. The principle of the invention is to make the boot more than usually roomy and fold the "fixed" type of head down into it when the car is to be used as a tourer.

On reference to the illustration, it will be seen that the head is piroted just behind the top of the seat. The


A partly sectioned view of a body built according to the idea of Mr. F. J. Barnes. The method of folding the head backwards and downwards is clearly shown.
head itself is also hinged, and, when the top portion is doubled back, it can be swung downwards into the boot after the top decck las been moved back out of the way. In order to prevent the dickey-seat passengers using the head as a footrest, a hinged platiorm is provided at a conrenient distance from the seat.

## Using Heavy Fuel.

In view of the possibilities of Diesel engines for motorcar work, it is interesting to consider recently patented designs for such engines. Mr. P. F. IIackethal uses a system of continuous heating of the heavy fuel by means of which the liquid circulates until it is atomized sufliciently to give proper combustion.

From the tank. sewn in the top right-hand corner of rig. 1a, the fuel flows to a loat mechanism and hlouces to tha nozzle ont the laft. where it is mixed with a certain amount of air or exhaust gas. The mixture then pusses up into the induction loop under the intluence of suction puinps above the cylinders. It continues to circulate in the loop until it becomes atomized and
passes into the pumps seen in Fig. 1b. Neating is effected by contact between the induction loop and tho exhaust manifold.

After passing from the pump, the mixture is forced through the timed vertical valve into the combustion chamber: air, in proper proportions, is pumped in through the valve shown on the left. Engine speed is, of coursc. lower in Diesel typies than in petrol-using power units, otherwise the fuel pumps would not work correctly.

Combustion is spontaneous, due to the high degrec of compression, thus obviating the need for an electric ignition system for running, but an auxiliary set is often fitted for starting purposes.

## Counteracting Rusty Rims.

In some cases metal-to-metal contact between detachable rim flanges and the fixed part of the wheel leads to difficulty in removal due to rust. Mr. H. Sheils proposes to counteract this trouble by the insertion of a flexible lining strip between the parts. This strip is shown shated solid in Fig. 2 and may be fixed either to the rim flange or felloe.

Another point of this design of wheel is the prorision of lugs on the loose flange registering with sockets in the felloe, thus relieving the bolts or other fixing mechanism of much of the driving strain.

## Avoiding Theft and Damage.

Bumpers and a car lock combined form the subject of a patent by Mr. H. A. Chivers. So far as the bumpers are concerned, the design appears to be nothing out of the ordinary, consisting of two horizontal bars mounted on springs fixed to the dumb-irons as shown in Fig. 3. The upper of the two bumper bars is solid but the lower one is centrally divided and can be moved so that the curved ends swing back and grip the tyres of the front wheels. In this way the wheels cannot be turned from side to side for steering, and the car is, practically speaking, out of action.

Carricd on a bar fixed between the dumb-irons is the locking mechanism. By means of a key the movable bars can be released and pulled on to the tyres by the handle shown in front of the bumpers. In another form one rigid bar is secured at its centre and can be slid bodily backwards to lock the wheels.


HEAVY OIL VAPORISER -DETACHABLE RIM COMBINED BUMPER AND CAR LOCK.
(la and lb) A circulatory fuel-heating system, patented by Mr. P. F. Hackethal, for heavy-oil engines, a design which should be applicable for motorcar work. (2) Mr. H. Sheils's detachable rim flange has a cushion mounting and lugs for taking driving strains. (3) An ingenious combination of front bumpers ard thiefproof device protected by Mr. H. A. Chivers. The front wheels are held by the bar when in the "locked" position.


Ib


2



## For Comfort's Sake.

AIf I the only driver in the world who holds a stecring wheel in such a manner that the sharp edges of the spokes are very uncomfortable for my little fingers, which obtain a considerable :Hmunt of support from them? If 1 am not, why are so many steering-wheel spokes bevelled off almost to a knife edge?

Readers need not bother to answer my questions, but those who make stecring wheels and those whu devise the tricky little rubber control corers which are common on motorcycles might well bear them in mind.

## Oversize Steering Wheels.

0$N$ the subject of steering wheels, readers may remember that I remarked several months ago on the big improvement to the steering of my Sports Arlel Ten which was effected by fitting an $18-\mathrm{in}$. steering wheel. I have just flted the same wheel, which is of the four-spoke type and has at narrow rim rather like that of the $11.4 \mathrm{~h} . \mathrm{p}$. Standard, on $\mathrm{m} / 5$ new Lea-Francis, and agatin a welcome sense of having very complete control has resulted.

I believe that nearly every light car would be improved by a larger steering wheel, particularls those of Continental origin, almost all of which are somewhat meagrely equipped in this respect.

## 20 m.p.h.-10 Yards a Second.

IAMP focusing is such an easy matter ou a dmodern car that it is surprising to tind so many cars with lamps that are clearly in need of adjustment. To those readers who have not yet investigated the potentialities of their lamps i commend the experiment of a little tinkering with the adjustments. Too many new motorists imagine that what they require is a large splash of light immedintely in front of the car. This is a mistake. Some of the light should be as far ahead as possible, thus revealing unlighted ohstacles and road junctions whilst they are at a safe distance.

At 20 miles an hour one is travelling at a speed of 10 yards a second!

## Better Electric Starters.

THE old argument that electric starters were of little value because, when wanted most, namely, when the engine was cold, one dare not use them would appear to have ilttle significance nowadays. During the recent cold spell-and it was n28
really cold, as everybody knows-il had the opportunity of pressing the starter knobs of no fawer than four light cars, all being stone-cold, the cooling water, in fact, only just above freming. In every case starting up was instantancous, providing the strangler were clused.

This speaks volumes for the allauces which Ihave been made of recent years, but inm not ashamed to admit that I still awaken ny willing steed first thing in the morning by means of the starting handle. After all is said and done tho argument against using the starter really contre: in a very praiseworthy desire to spare the aceumm lator.

## Causes of Skidding.

IIKE pinking and dillicult gear changos, skid 1 ding is a bugbear which ean be largely ubvi ated by design, aud experience of the past few weeks suggests that there is vast room for researeh in this direction. The very fact that some cians will skid on the slightest provocation, while others are as steady as if on rails, indicates that there must be a detinite root cause of skidding which it should not be impossible to overcome.

Some manufacturers have not given sufficient attention to the matter. The fact was forcibly borne home to me during the wintry weather in December, when I had occasion to take several different makes of car on to the fro\%en and treacherous roads. One slid about like a movier on roller skates, another behaved itself. pworderl the brakes and the thoottle were used with care, but a third reguired real abuse of the controls to make it deriate from its course, and, normally, it gave no cause for anxicty.

It is significant that two of my acquaintances who own ears of the first make had nasty accldents during this period.

## A Car for $£ 65$.

AFIRIEND came to me a couple of months ago with a long tale of woe. For several yars he had bren ruming a nowerful siderar machine, which was almost wrorn out, and which he thought he could sell for about $£ 40$. His trouble was that he could not raise more than $£ 30$ to put to that figure, and he badly wanted to buy a second-hand light car. He thought, however, that efo was not enough to buy anything worth having on four wheels and, much agninst his rill, proposed to make a deferred payment transaction for a car costing $£ 100$ or so. He fancied something with

${ }^{m e}$ Lioht Car<br>A. (yclecar

four cyliaders, a chummy body and essentially very cheip to rum.

After some time I convinced him that what he really needed was a good two-eylinder car which, as a keen amateur mechanic, he could easily overhaul at home. He saw the wistom of my remarks, and ultimately bought an old Aricl Nine for $\mathfrak{f}$ aj̀. This car has since covered some 3,000 miles, with no expentiture on spare parts and at an average in.p.s. of 42.

## Claims of the Twin.

IT camnot be denied that those who seek the most. - ceonomical ruming, and who camot afford big repair bills, are very foolish if they. look beyond the two-eylinder class of car. A twin can be orerhamled by anyone with a little common sense and previous motorescle experience; it has fewer bearings, fewer histons and fewer valves than a four, and, in most cases, the principal engine bearings are of the ball or roller type, and thus need no specially skilled fitting when the time comes for them to be roplaced. A four-cylinder engine, on the other hand, !as plain bearings for the crankshaft joumals and big-colds, and refitting these, apart trom stripping down the engine and reassembling, takes a good mechanic about a counle of days.

I heard recently of an owner of a two-cylinder car who broke his crankshaft, and was on the road again two days later, having spent only $£ 3$. A similar catastropile with a four-cerinder engine would probably have cost nearly $£ 20$, whilst the car would have been laid up for merhaps a fortnight.

## Cheap-and Nasty.

ICALLAED recently at the service depot of $a$ concern which has won renown as manufacturers of lirst-class car accessories and asked them to addust one of their electric horns which hat coased fire after having been in use for exinctly three days. A mechanic fidded with it for about an hour, cursed it, tesied it, cursed it again and finally refitied it to the car, on which it worked for a day or two and finally gave out with one despairing groan. I fitted a French bulb horn and left the electric atrocity to hide its shame under the bornet.

Why should this be? The electric horn bears a fanmous name and is part of the standard equipment of a relatively expeusive car, but a single glance at its innarrls suflices to show that it has
obviously been designed to sell at a price which precludes any chance of it giving continued satisfaction. I cannot heln feeling that, until the arrival of the cheap electric horn which works, car manufacturers would be well advised to send out their products filted with bulb horns. An unreliable horo, like a dud alarm clock, is an abomination for which no one has the slightest use.

The cost of a good electric horn-by which I mean the kind which never breaks down and which can be leard at once by the driver of a chaindriven lo ry loaded with old tin-cans-seems to be not very fi.r short of a $f \bar{y}$ note. If there is a cheaper one I should he glad to hear of it.

## Better Ronnets Needed.

ON opening the bonnet after a period of runnin: in the recent bad weather, many owners must have found ample cause for agreeing that more aderuate protection of the power unit is needed. Show, sleet and drizzle soon find their way under the bonnet, and, as few owners have the inclination after a drive against the elements to wipe over the engine, the moisture remains there to do its insidious work. As a consequence, many an engine which last summer looked as resplendent as a lifeguardsman will be by the spring a woeful mass of rust. Moreorer, the moisture tends to find its way into awkward places, and thus causes vexatious delays. With a motorcycle rust on a engine excites no comment, but on a car it is anathema. Let us have bonnets which are something more than covers!

## An Overdue Improvement.

IN connection with the need for better engine protection, is it not an extraordinary thing that no effort is made-except in the case of the lenault - to prevent the dust drawn in through the radiotor from being distributed all over the engine?

Personally, I am not addicted to polishing my water and petrol pipes, "picking out " the crliuderhead nuts with scarlet paint, and using the rocker cover as a shaving glass, but I do like to see an engine that is reasonably clean, if only for the sake of encouraging me to keep it in decent fettle. Jut how can one keep it free from grime when the

## THE FASTEST CYCLECAR.

Two new views of the chassis oi H. Eeart's racing Morgan, which lowered so many records last seasorl Foints of note are the underslung tank, shock absorbers, huge tyres and spacial steering rake.
fan is constantly sucking in dust and distributing it over the whole unit?
I fancy that before many more years have passed some form of bafle will be litted behind every radiator to deflect the hot air and dust benenth the car.

## Worrying Wings.

TAlRGA, useful and handsome wings are wel1.4 come features on any touring type of car, but: they can be a horrible nuisance when certain little jobs on the engine have to be done in the garage. Remoral of a wing is usually a job tackled only When circumstances absolutely necessitate it; but why should this be so?

An instance of a simple type of wing fixing, which confers the adrantage of rapid remoral, is founc on the Jowett. One spanner suflices to remove two nuts below the running board and one on the stayholding bolt. After the bolt has been withdrawn the wing can be lifted off; two minutes is ample time for the job. A few rags thrown over the wheel then give a tolerably comfortable seat for the worker, and he has plenty of elbow room.

## Skid Chains and Sense.

RLCCENT snowy and icy roads have brought to light many sets of non-skid chains-useful things, but objects which appear to be used mith little discretion. During a recent week-end in Scotland I was amazed to see the number of cars of which the wiugs, wheels and tyres showed obrious signs of maltreatment by chain equipment of a wrong type or incerrectly fitted.

Chalas of wrong sizes for the wheels on which
they were employed, chalins with flapping crosspieces and chains cutting the tyres, due to improper fitting, were quite common. Presumably, the fact that icy road conditions rarely obtain accounts for the neglected condition of these useful accessories, but a little more sense in their ust: would prove economieal in many cases.

## Menai Suspension Bridge.

TTHE Menai Suspension Bridge has always intrigutd me and, learning the other day that it was 100 years old, I turned up its history. It was on January 30th. 1S2G, that the bridge, which spans the Menai Straits, was formally opemed. Its construction had occupied seven years. l'art of Telford's great scheme of improvement in the remaking of the Molyhead Road, it enabled travellers to Anglesey and thence to lreland to cross then straits without the risk and inconvenimen of time old ferries which previously had plied their w:y from shore to shore.

The main span of the bridge between the tuwer supports is 570 ft ., the total road lenesth irom shore? to shore being about 1.000 ft ., while the lenth of the supporing chains from the anchoringe at dilhow side is $1,710 \mathrm{ft}$. Two roadways, 12 it . wille, form the carriage way, and between them is a foilpalh 4 ft . in width.

The cost of the bridge sounds to-laty exmedingly morlerate. It was $£ 120,000$, wherens the Joritanniat railway bridge, two miles down the straits, cont fully five times that sum. It would be a fitine method of celebrating the centenary of the Mremai Bridge to free it once for all of its tolls?


A CENTENARIAN $\qquad$ One of the mast impasing bridges in the warld, that which crosses the Menai Straits IN STEEL hae a most interesting history. "Focus" cutlines it on this pase.


## Cyclists.

AIROMINENT morning paper remarked in a leading article last week that cyclists and motorists are engaged in conducting at deadly "hate" against one another, and that the feud has become rery bitter, to the detriment of both parties. This statement is very wide of the mark, for the only guarrel which motorists have with cyclists concerns the obstinacy of : section of the latter regarding the rultestion of rear lamps. The position is rather ridiculous, for, although the controversy is revired every year, the various aremments advanced do not vary in the slightest, nor is any progress made. Cyclists argue that the principle of using tail lamps is wrong, in that it throws the onus for an accident unon the overtaken party. If this principle is allowed as being reasonable, then the natural corollary is that warning lights of all kinds are a danger, and should not be allowed. That would mean unlighted steam rollers, unlighted farm carts and other unlighted obstructions upon the roads at night. Even the lamps on refuges, and the famous red warning lights along the Great West Road, would have to go by the board. As an argument, therefore, the foundation stone of the cyclists' contentions cannot be allowed.

We fail to sec any reason why cyclists should not spend 2 s. on a rear lamp and 6 d. a year on providing oil for it. They may consider this expenditure a hardship, but they should bear in mind that motor owners have to pay between $£ 10$ and $£ 20$ for the lighting equipment on thelr cars, whilst the maintenance of it in good condition costs at least fifty times as much as they ask cyclists to spend upon oil.

## Persecution.

SEELDOM with regard to the motorist has police vigilance been so active as at present. From all sides we hear of summonses arising out of the non-ob.ervance of technical requirements such as those relating to number pintes, exhausts, lights and so on, and, smarting as the result of the fines which are imposed, motorists in increasing numbers are beginning to say hard things about the police. To the necessity for tracking down and punishing deliberate offenders we are very much alive, but we do think that a greater degree of
' 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 CONSIST. ENTLY ENCOURAGED THE DEVELOPMENT OF THE ECONOMICAL MOTORING MOVEMENT FOR OVER TIVELVE YEARS.

NO CAR WITH AN ENGINE CAPACITY EXCEEDING 1,500 C.C. ( 11 LITRES) COMES WITHIN THE SCOPE OF THIS JOURNAL, THAT CAPACITY BEING GENERALLY RECOGNIZED AND ACCEPTED AS THE LIMIT FOR A LIGHT CAR ENGINE.
tolerance should be extended to those who inadvertently commit technical offences, and particularly to those who come under the surveillance of the law for the first time. How needless it is to prosecute a man because a lamp filament has broken, a silencer seam split, a number plate become obscured by mud or baggage, or for any similar mischance. Summonsing a car owner for an error made by the naker of his car also scems both needless and absurd. Surely, without straining the qualities of mercy or justice, a greater degree of forbearance might be shown? Friendly relations between motorists and the police are much to be desired, but can any fair-minded citizen be blamed for hotly resenting the kind of petty persecution of which he is nowadays only too often the surprised abd indignant victim?

## Maintenance.

THHERE are iudleations that the next big stride in the design of motorcars will relate to cutting down the time which must be spent in oiling, greasing and adjusting the minor chassis points which call for periodical attention. At present, a small car has in its construction anything from six to forty small parts which need regular attention with an oil can or grease gun, and neglect of any of them spells a more or less heavy repair bill in the long run. Of recent years we hare witnessed the almost complete disappearance of the oldfashioned screw-down greaser, but its replacement by the now almost universal high-pressure system does not mark the dawn of an era which is likely to last for any considerable time.

It must be recognized that we need new methods of design rather than makeshift derices to allow existing practice to be successful. In this connection it is moteworthy that experiments are going ahead with the use of non-metallic substances for bushings, spring shackles and similar parts which. if neglected, in their present guise soon rust or seize. The fabric unirersal joint already has almost ousted the metallic variety from the leading position which it held a few years ago. We believe that before long special fabries will be employed extensively in car construction with consequently reduced repair bills and less work and worry for the owner.

1OlV oflen does the privinte owner seorning the call of economy, hatnd his ar over to the washer at the local garage for attention because his own efforts at atr cleaning result in such an indificreat: appearance of the rarnished coachworli: Satly disillusioned, many a man in this posilion remarks that car washing is not so simple as it looks.
Nevertheless, the job is quite easy providing it is properly tackled. Water and a rag will achiere nothing except a mess and probably many scratches. Simple equipment, coupled with practical methods, is the meaus of leeping a car spotlessly clean, and, what is probably more important to many, improving the secoul-hand value by means of its lasting, smart :1ppearance.

How often should I wash my car?" is a questiou often asked by the vorice. The answer obriously is, " When it needs it." lrixing a regular day for washing the car is not the best practice, is to obtain the most satisfactory results the car shonla be washed whenever it comes in wet, and, of course, when the presence of dust or mud splashes is sufficiently noticeable to call for their removal.

Not oniy is it best for the conchwork to wash it down before the mud dries, lut the job is much easier than when caked mud las to be dealt with. Whilst on the question of when the car should receive its bath, a caution is necessary regarding dust. If this bo other than a very thin coating remorable by means of a feather whisk, wash the car, do not attempt to ruh it clown dre.

## Be Suitably Clad.

Issuming that a car has to be washed, a proper plan of campaign must be followed, and the first step is for the owner to make himself ready for the task.
'Ihe feet and lems are the parts most intimately concerned, and gum boots, field boots or stout shoes and motorcycle overall leggings are called for. Whatever kit is arailable or preforred, it must keep the legs from beroming soaked by splashing water, and the boots should be really waterproof. An old mackintosh coat fulfils the purjose of protecting the owner's clothes. The top burton should be fastened or the collar turned up, as splashes are inevitable, and greasy, muddy water quickly finds its way on to the collar or tie.
A further point in connection with clothing concerns jacket and shirt cuffs. The latter should be rolled up so as to avoid their being soiled or soaked. Parlienlarly when working on the whers:

## (1) Plenty of water is necessary



## WITH HOSE AND SPON

or the mindersides of the wings, the wrists are ahore the elbows, and water running clown enuses the familiac sotden, elinging, uncomfortable feeling. Tying the mackintosh sleeves with string overcoumes this difficulty if there be no wrist straps. Haring completed one's own toilet, attention wust be given to that of the car. Getting the washing equipment ready is the next step, and the hose is the first item on the list. Comple it up securely and see that it is not kinked or trapued ant any point, and that it can be run out to its full lengll. Failing a hose, a large watering can may be used for pouring the water over the car, the rose being used when a gentle strenm is required. Next a bucket is required, and care should he taken to see that it is really clean. Grease or grit on any of the washing equipment is fatal to good results and otiten to the varnish.

Alhough one brush may suflice, two will in found useful, one being for the wheel spokes, the other for the undersides of the wings and chassis parts. Jong handles are grood features in both casos, as they enable the operator to keep at a reasonable distance from the water and mud. A sponge, a chamois leathor and soft polishing eloth complete the washing kii. 'IFir jack should be prepared in readiness, and the parallin brish and tin should bo handy in case spreasy parts have to be tackleal before the washing can lo. carried out.
(3) Take off looseparts which hinder access to the panels. driver'swash-ing-k it inspection.

Now, a word of warning as to the water itself; soft water is preferable, as it has a less corrosive effect than hard water. Do not put parafin or netrol in the water for washing purposes; it spoils the rarnish.
The next point is where to wash the car. Obriously, the position of the drain has much to do with it. Care should be taken to avoid any place which will mean that the washer has to stand in pools of water. The ground should be firm and sufficiently level to enable the jack to be used to raise cach of the wheels. Remember also that the position which avoids the neces sity for moving the car during the washing process,

CAR WASHING DESCRIBED IN DETAILOBTAINING A SMART APPEARANCE BY ADOPTING CORRECT METHODS.
in order to get the hose to reach the various parts, is at saring of time and labour. It is far easicr to move the hose romid the car than vice versa.

Having put the car in the right place, the next thing is to prepare it for washing. It the cushions amblomi
4) Clean out the inside of the car before washing down.
are to be chaned, do this fart of the job tirst to a yoid dust being denosited on the newly washed rarnish; amilarly the foorhords and mats should be dealt with before the washing begins. On the other haud, nickelphated barts are best cleaned after the hody, as water aplashes will undo mueld of the good work if they are polished hetorehand.
siare wheels, petrol tins and sttech fittings are best remored, as they hinder access to the body panels in many cases. Put $\quad$ ) the hood and side curtains of a louring car; this helps to keep the upholstery cle'tn and dry. as splashes are inevitable, and the hood is more casily dried than the cushions.
Now we come to the actual washing, and will deal with the chassis parts linst. If there be grease on the axles, whels or any surfaces to be washed, remove it with paratlin by means of a brush and wipe the surfaces cleat hefore applying any of the washing lit. sheh as the chassis brush, otherwise everything will be smeared with the grease.

A powerful stream of water is useful when working on the chassis, but eare should be taken to avoid direeting it into the hub bearings or through the radiator. In the case of the front-wheel bearings, if there be any doubt as to the efliciency of the dirt-excluding felt washers, it is a good plan to wrap an oil-soaked ratg round the ends of the front axle to collect any water which might tend to run in.
Wings and wheels can be taken together, but the undersides of the wings should be cleaned right out before a start is made on the wheels. Plenty of water and liberal use of the long-handled brush soon frees the caked mud. For easy working each wheel should be jacked un and the spoke brush used to reach the nooks and crannies. In the case of dise wheels, of course, the chassis brush will suffice, and it mas not

(6) Use low-water pressure on the hody.
de necessary to jack them up. Take care when jacking up to scotch the car, as shown in our cover picture, and do not forget that, in the case of a car without a differential, both rear wheels must be raised at the same time if they are to be turned for cleaning purposes.

Coming now to the body, the water in the bucket should be changed and the sponge, if it has been used on the chassis, should be washed out thoroughly to get rid of any grit which it may have picked up.

Virnished coachwork deserves careful handing, ind mul or dust should be "flowed " off instead of scoured. Use a gentle water stream and plenty of it. Note here the change as regards water pressure-high for tho chassis, but low for the polished surfaces. The sponge should be used with a dabbing motion rather than a rubliog one

## Leather With Care.

When all the dirt has been washed otr, the rarnished surlace must be "leathered" to absorb all the surplus water. The chamois leather should be moved in parallel straight lines to avoid making the circular marks on the varnish which catch the light and look so ugly. Wring the leather out frefuently, and on no account get it greasy; washing it in the bucket at intervals helps to keep it clean. The use of a little warm water in the bucket, when "leathering of " is conducive to comfort on the part of the operator, and so long as it is not too hot no harm will be done to the car. The final polish can be giren with a clean, soft cloth.

When washing a car two troubles are often encoun-tered-irst, rar spots, aud, scoondly, rain spots, which cause unsightly blotches on the varnish. Dealing with the tar question first, the parts should be washed down, preferably with luke-warm water: next dab, hut do not rub, the surface with a chamois leather until it is thoroughly dry. Take a piece of soft woollen waterial and rub the tar spots with a little raseline or unsalted butter, changing the working surface of the rag frequeutly so as to aroid smearing the dissolved tar over the surrounding surfaces. Continue the process until the tar disappears and then wash over the parts again.
Turning to the second trouble, that caused by rain spots, use a little linseed oil on a soft rag. polishing gently until the blotches disappear; then take a clean dry cloth. rub of superfluous oil and polish up with yet another small piece of dry rag.
If possible. it is a good practice to grease round the various points on the chassis after washing. Should any water have found its way into the bearings an application of the grease sun will help to expel it.

## POT-HUNTERS CAUGHT NAPPING <br> analysis of the london-exbter awards SHOWS THE TRIAL TO HAVE BEEN A QUITE DIFFICULT TEST.

IN the past the Motor Cycling: Club's run from London to Excter and back has been considered to be a very casyif not confortable-method of carning a kold mednl, but, as the list of nwards which was published in full and exclusively in The Isight Car and Cyclccar last week showed, there was this year a slaughter of the innocents which must have made a very large number of regular competitors realize that the LondonWacter is no longer $a$ run to be underinken lightly.
The star performers in the event were the sidecar machines in the under 350 c.c. class; there were nine starters -cight gold medals. Solo motorcyces also did very well with 141 starters and OS gold medals; whilst cars made a dismal showing with 104 starters and 41 gold medals.
The piece de ressistance for the ears was elimbing Solcombe Fill at the speeds prescribed by the Club. It will be remembered that the three-whecled? cyelecars had to arerage 1 S m.p.h. for half a mile on the hill, and their success is measured by the fact that with 1 ; starters five won gold mednls, whilst cight, all of which presumably were unable to average the set speed, won silvers.
Among the four-wheelers the elass for those uader $\mathbf{1 , 1 0 0}$ c.c. really did quite well. They had to average $12 \mathrm{~m} . \mathrm{p}$.h. on Snlcombe, and 13 managed to do so, Whilst 15 found it too much for them. The 1,500 c.c. cars lind to arerage 15 m.p.h., and this was achicred successfully by 18 of them, the failures numbering 34 . It was in the class for unlimited ears, however, that the greatest
difliculty on Salcombe was experienced. The speed to be averaged for the halfmile was 18 m.p.h.; there were 9 successful competitors and 29 failures.
This analysis shows that either light cars are more efficient in their class than are unlimited cars in theirs or that the Motor Cycling Club is wrong in assuming that tho bigger the car the belter its performance on a hill.

As we remarked before the run was held, the regulations put a premium upon sports models and four-spenel geraboxes, but, even so, quite a number of four-speed cars were unnble to average the speed on Salcombe which the regulations made necessary, whilst sports models figured in fair numbers among the list, of those which missed their " zolds."

Jantary 10.1926.

The Salmsons really did splendidly, for the four starters woll four gold medals. The Amilears also did very well, gaining three gold medals and ono " no award" with four starters.

Amung the 1,500 e.c. cars five of the 19 gold medals which were wou fell tu Frazer-Nashes, two other cars of this make receiving no awards, wne through an accident and the other because a erlinder head gasliet blew and coused its retircment. Lea-Francis cars, which are noted for competition performances, bagged two gold medals and five silwers with seven starters, whilst Rhode cars achieved one gold and two silvers with three starters, Alvis cars kept their end up with four gold medals, one silver, one bronze and a "no award" out of seven runners.

A very interesting feature of the table giving the summary of entrics and awards which we publish on this pago is the list of figures relating to the munber of retirements in the various elasses. A significant fact revenled is that tho proportion of retirements io starters among the sidecars was 1 in 4.73 , whilst in the case of three-wheeled cyclecars it was 1 in 1 C .

SUMMARY OF ENTRIES AND AWARDS.

|  |  | Soloa. | Sidecars. | Three-wheeled Cyclecars. | Cars. | Total. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ENTRANTS | -. | 141 | . 114 | 17 | 15? | 427 |
| Lers Non-slaricrs.. | .. | 3 | 5 | 1 | 13 | 27 |
| STARTERS | .. | 141 | 109 | 16 | 134 | 400 |
| Less Retirements | .. | 14 | 23 | 1 | 8 | 45 |
| FINISHERS | .. | 127 | 86 | 15 | 126 | 354 |
| Gold Medala . | * | 99 | 38 | 5 | 41 | 18. |
| Silver Medals |  | 25 | -0 | 8 | 78 | 151 |
| Bronze Medals | .. | 1 | 5 | 0 | 1 | 7 |
| No Award . | .. | 3 | 3 | 2 | 6 | 14 |

VERI interesting corresplondence has been going on in a Liverpool paper between the well-known Laucashire county coroner, Mr. S. Brighouse, and a local business man upou the vexed question of rear lights for cyelists.

The correspondence arose out of some pointed remarks by Mr. Brighouse at a recent inquest upon a cyclist knocked down by an overtaking car. Mr. Brighouse then said:-

People talk awful rubbish. The Cyclists' Touring Club has stated that cyelists should not carry rear lights because motorists should be able to pull un and to see anything immediately in frout of them. Did sou ever hear such absurd nonsense? I was a member of that club and have been a cyclist all my life. yet I cannot understand a club with such a high reputation supporting such an illegal, illogical and ridiculous proposition."

The county coroner's remarks were then taknu up by a Mr. W. P. Cook, of Livernool, who wrote ironically, saying that "the thanks of $6,000.000$ eyclists are due to Mr. Brighouse for lecturing them in such humorous fashion," adding that:

To postulate that the pedestrian

## A Coroner's Views on Unlighted Cyclists. THEIR ARGUMENTS ARE "ABSURD NONSENSE."

slould seek sanctuary in tho liedgo while the god in the car flashes past with dazzle headlights, and that it is illegal, illogical and ridiculous to expect motorists to govern speed by the range of their own vision and be ablo to pull up and see anything immediately in front of them, is about as perfect an example of nonsense as one could wish."
legarding his own remarks at the inquest on cyclists carrying rear lights. Mr. Brighouse pointed out that be had been inundated with expressions of approval, and that, judging from what cyelists themselves had said to him since his comment. "if Mr. Cook appealed to his $6,000,000$ he would appeal in vain.
"The question of whether cyclists shall be exempted from the present law regarding the carrying of rear lights," continued the county coroner, "will have to come up for revision by the
proper authorities, and, for the sake of the travelling public, the sooner tho better.
"The motor driver," he added, " is not 'the god in the car'; nor is it, as between cyclist and motorist, a case of poor man and rich man. In the large majority of cases the motorenr enables people of moderate menns to traverse and learn about their own land; in any case, the motorear has corre to stay."
Then, "as a lawyer and a coroner," Mr. Brighouse addressed an appeal to cyclists " to discard statutes and rulcs and to recollect that times are not as they were, and old rusty axioms about the uses of the highway not in keeping with the conditions of to-day.
"The pedestrinn, the eyclist, the motorist, the wagoner and others have equal rights on the King's himhway.
"It is only sweet reasomableness on the part of everybndy-an honest endenvour to give and take-a consideration for nthers that will make that highway safe and a pleasure to use.
"Do unto athers as you whold they should do unto yon. Mave a rear light to sour cyrles, nad the nther users of the road will, when they pass you, raise their hats, pive sou a friendly hand wave and bless sou."


We weicome at all times letters sent to as by readers for oublication in these columns, and while taking no responsibility for the opinions expressed therein, give preference to those letters which deal with subjects of general interest. No anonymous communications will be accepted, but the writer may use a nom de plume if desired. To insure publication in the next issue, letters must reach this office not later than Monday morning. We reserve the right to mahe any alterations or deletions which we deem necessary.

## THE LIGHTING QUESTION AGAIN.

## Drastic Revision and Clear-cut Rules Needed.

Cycl'sts' Rear Lights.
1 learn with great satisfaretion that there is mow some hape of the fresebt peneration living to sen eyclists combbulled to carry rear light:. Whe ahast the ouly sensible reäulation inalle under D.O.L.A. was
Hope at Last. ever alolished I ean mever understand, hut one cannot help admiring the Cyclists' 'Tomring Club and its ciftioers for the fisht they have put up in their endeavour, mistaken thengh it may he, to hutp their membery.

No matler what Government mat in power, it is always, the motorist who suffirs from its attentions, other road usess bing allowed ti" .injoy an almost complete immunits from nuy kind of logistative worrs.
I have no doubt that abler brains than mine have sought the reason for this unlanpy state of nfairs, and, taking efelists as an example, I cun ouls gite it as my opinion that their organization is stronger and more determined than ony which professes to eater for the needs of motorists, and that, individunlly, they give it the support which it would appent to justifs. Have we motorists nuyone but ourselves to blame that our own house is in disorder?

Nit. Desper.indeas.

## Avoiding Responsibility.

Anything more futile than the reasons adwanced by the O.T.C. and by eyclists themselves against compulsory rear lights it is impossible to imagine. I should hesitate in revive this topic were it not that some

## Hopeless <br> Arguments

 of the daily papers have, nt last, ranged themselves on the side of the motorist. and I feel that the matter should not bo allowed fo drop until compulsory rear lights, not nuly for crelists, but far all road vehicles, becomes lan:.It is obvinus that cyelists know they have no real argument agninst rear lights. Ton say that a bicycle eannot ensily be fitted with a rear lamp, and that, if fitted, it will not remain alight, is futile to a degree. If a lamp which does not jult nut ean be fitted in front, obvinusly one can also be fitted at the rear, and I contend that there is more vibration on the front wheel of a bicycle than on the rear. Mans cyclists, howerer, will not buy zood Inmps, hut profer to pit un with the 1 rouble of some trumpery article which, mrobably. would not burn properly eren if stond on a table in a quict room.

It has been suggested in print more thay once that if rear lamps fere compulsory, a motorist would bave no
hesitation in running down a cyrlist whow: latul had gonu out. This is a very serious eharge, but it gocs to show how desjerate eyclists have become in their search for excuses which will enable them to avoid their resmousibilities.

Montigue. Wise.

## Swivelling Headlamps.

I was most interented in Mr. Steven's letter in sour issue of January Sth, with reference to close-up mudguards and bwivelling lamps. It seems curious that it swivelling headlamps are illegal, nearly every motorThe Motorcycle cycle on the road to-day is fitted wirl
Type.
a swivelling lann. With regard to the a swivelling lamp. With regard to the mudgrards, the Lucas motorcycle liphting set and, I think, one or two other sets have a headlamn bracket to clamp direct on to the front forks, which, of course, are unspruns. Could any of your readers give me sonue suzzestions for fitting close-ul mudguards to a $\$ [organ?
D. V. AKERDED.

## Headlamps and the Law.

In your issuc of Javuary Sth you point out that as the law stands at present swivelling headlamps are illegal. I have no cony of the Aet, so my oninion may be ill-founded: but it appears to me that it is the fired
An Ambiguous lamps which are illegal, because oll page Position. $3+4$ of the R.A.C. Guide of 1025 I read that every motorcar shall exhibit : white light visible in the dircetion in which the motorear is procecding. It secms to follow that during all such times as the car is not proceeding in a direction absolutely continumus with the fore-and-aft line of the chassis. that is, while it is deriating in either direetion from that line or is in process of taking up a uew direction, every car whose lights do not respond immediately to the action of the steering wheel or front road whecls is not complying strietly with the rule that the light sball be exhibited in the directiou in which the car is procecding. At such times the lights and the chassis are lagging bohind in the original direction. All drisers know the dark-sector effect of this in its most wronounced form when going round right-angled corners.

If the lights were placed so ns to move with the front wheels they would show in the direction in which the car mas proceeding immediately the direction began to be altered. and, besides giving to approaching trafic earlier notice of

OUR READERS OPINIONS（contd．）．
what a car was going to do nr doing，would jlluminate tho diark sector referred to．I have had the desirability of this carlier notice demonstrated on my car by a collision from which swivelling lumps conld have saved me had my at－ tacker been shewn earlice the direction in which 1 was turning to avoid collision，i．c．the nosition of any front whecls，instead of being lelt to julge from the lngging nosition of the chassis of my car with its fixed lights．

Francis Larrison－Smith
＊Article II，para， 7 （ii）the Motor Cars（Use and Con－ struction）Order，1004，states that＂Every lamp carricd hy a mutorcar at any dime during the period mentioned in this condition shadl be so constructed，fitted and attached as to prevent the movenent or the use ns a searchlight of the light exhibited by ally such lamp．＂－En．

## Blacking Out．

As one who is on the road evers night the whole year round．I have very frequent oceasion to bless the man who switches of his headlamps when he cannot dim or dip．and

## Is it Right <br> or Wrong？

 siod to curse the man who wil not．The former courteous and sensible individual is in the errent majority， thank gooduess．These remarks are prompted by a recent editorial，where in one breath ou advise ngainst blacking out，and in the next gou say，＂When the other man has lamps which are no more nowerfui than gour own side lamps it is wise to slow down and switel off．＂So you admit that circumstnuces can make switching off a＂wise＂course，and，in my view，every driver must be the judge as to the appropriate moment for switching off． 1 esu confurm to the wishes of the other man without endangering myself or anyone else，because 1 can switch of my off－side lamp，and my near－side lamp is set slightly askew so as to cast its beam ou to the kerb about 25 sds ． aliead．The driver who uses his headlights or anything else to the discomfort of his fellows is a road－log．Fortunately there are very few who follow your advice，but I am sur－ prised that you encourage the breed，even though in the next sentence you admit you are in the wrong．

Cias．F．Vaugian
＊When approaching nn iU－lighted omnibus obviously it
is courtesy to switch off the headlamps and，if neces－ sary，to come to a standstill，thus inconveniencing only your－ self instead of perhaps 50 people who are riding in the bus． But this excention to the broad rule does not postulute that the rule itself is wrong．Blacking out as a regular practice is condemned by the A．A．，the R．A．C．and all experienced drivers．Uur correspondent pires merely bis own opinion， whilst the orgenizations named voice the collective views of hundreds of thousands of drivers．－ED．

## Circular Traffic Control

We have perused with much interest the article which appeared in The Light Car and Cyclecar of January 8th， describing the system of gyratory traffic which has recently Interesting Letter been put into omeration at Parliament
from New Square，London，S．IV．The several
from New illustrations and the diagram help to
Scotland Yard．Lring the principles of the system to the notice of the motoring public and we much appreciate the assistance which is being given by you in this matter．

Too often it is found that when some traflic experiment is made in London provincial drivers are quite ungware of the principle．Thus they unwittingly infringe regulations and cause inconvenience both to themselves and to othor road users，or they fiud it necessary to stop（often in a congested thoroughfare）to make incuiries of a police constable，in order to ascertain the purport of the regulations．

An article of the kiod that you published，which in $n$ concise and descriptive way lielps to clarify a scheme adopted with a riest to alleviate congestion in London，docs，in our npinion，render useful service to the public．

Frank Lilliot．
Assistant Commissioner of Police of the Metropolis．
New Scotland Yard，S．W．1．

## Pistor－valve Engine Design．

With reference to MT ．W．Ir．IIeritage＇s recent letter under the herdiug，＂Eliminating Poppet Valves，＂I should say this method would not worl very well in an internal－com－

## Doubtful <br> Efficiency

 bustion enyine，owing to the intenso heat which passes the mechnnical sur－ face inside the valve chamber from the exhaust．These hot gases would burn up the oil，and this would result in a seizure or wery rapid． wear．Again，when the piston valve shownd the slightest wenr，considerable compression losses would ocent．G．Jシ．ドIRTIT．

## Elimincting Foppet Values．

The design for an engine with a piston valve which was put forward last week by Mr．W．F．Jeritase，who sought readers opioions ennecrning it，is very ingenions，but

> Some of the
> Difficulties． obviously possesses a mumber of smags． Not the least of ilhese wruld be the great difliculty of presorving a gas－ tight joint between the piston valve and the bore in which it worked，and this would be complicated by the distortion which would be set un by the same valve functioning botl for the exhaust and the inlet．The pre－ sence of ports in the bore would，of conrse，prolibit the use of any form of ring on the piston valve，and lubrica－ tion would be extmenely difficult berause of the hish tem－ perature of the exhanst gases；a value of this kind would Work well in the case of a steam eugine，where tempera－ tures are low；but it impresses me as having few possi－ bilities for internal－combustion engines．

Arthil：it inson．

## Sparking－plug Position．

The letter from Mr．А．П．Stuart，wheh eriticises a recent one from Lodge Pligs，Lid．，is interesting，but it nppears that he is studving nothing sawe kheer ellicience． Kon I not right in Jelícving that very Important？ ency of plug points pentruding into the concerning appear to prominte？Mr．Stuart＇s remarks concerning the use of two sparking plugs per eylinder are certainly interesting，but，as duplicatod or trinlicated igni－ tion gives such widely varying results on different types of eagine，it cannot yet be put forward ns urreservedly desirable．

Tuvor．
The Sabbath is－－
Mr．Stanley Hosking，in a letter published in your issue dated January Sth，asserts that Saturday is the Silhath．In a well－known dictionary the definition of the word＂Sabbath＂ reads：－－＂ 1 day of the week set nuart
－The Seventh Day． for rest and Divine worship，Saturday being the Sabbath of the Jews and Sen－ day that of the Christians．＂Many people have been eonfused over this question，the trouble being that they misread the Fourth Commandment，which says：－＂The Seventh Day is the Sablonth ．．．＂－rot ＂The Seventh Day of the week is the Sabbath．＂The woids， Tho Scventh Day，＂simply and solely menn every serenth day，no matter whether it be Saturday or Sunday．

I．R．I）．
The Will to Safety．
＂Why cannot every motorist pledge himself during tho coming jear to liave no accident？＂nsked＂A．B．＂last week， and $I$ ，in turn，ask－What carthly good wonld it do if they did？＂A．B．＂states that he lins ex－

## Auto－suggestion

No Good．＇ ceeded S．O00 miles，mostly in London and the Home Comities，nud that his Conêistic princinles linve preserved him from accidents of any kind．Personnlly，I think he would have been better advised to tale nut a sound insur－ ance policy and to prevent a repetition of the near squeaks he has already suffered cither by taking driving Iessons nr studjing road－sense in some such publication as＂Jow to Drive a Motorcar．＂Auto－suggestion may be nll right in drawing－rooms，but it is $n o$ use on tho roads．A．B．C．

## "Built up to a standard not down to a price."



## "Motor in comfort all the year round."

For winter or summer motoring, no car could be more delightful than this $11 / 22 \mathrm{~h} . \mathrm{p}$. Saloon de luxe. Its coach-finished metal panels, contrasting finely with the black head and mudwings, give it a very smart appearance for town work. whilst its lightness of constructions makes it ideal for touring.

The interior is very roomy and cor fo table, the front seats being of the sliding bucket type, giving plenty of leg room. It is upholstered in leather to the window line, and above in Bedford Cord. Four doors are fitted. The finish is of the highest grade and the equipment is very comprehensive.

## Wolselley $11 / 22$... Saloon de luxe Price $£ 335$

Also supplied as Light Saloon, with leather cloth panels, and upholstered in Bedford Cord .. .. .. Price £299

Catalogues and full details sent with pleasure.
WOLSELEY MOTORS, LTD., Adderley Park, BIRMINGHAM.

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$\boldsymbol{E 4 O}$ DOWN-You can procure this Saloon de Luxe, licensed and fuly insured for a year, for $£ 40$ down and 24 monthly payments of $£ 15: 8: 0$

## OUR READERS' OPINIONS (comld.).

## St. Christopher.

I gase a brief outline of the legend of St. Christopher, and it is quite evident that " Lioyal Air Force," in replying to my letacr, does not know that a legend need not be

Legends and
l.ogic. since the Crucifixion. Dost legends leave a lot to the imagination, and it seems to have upset "Jioy:al Air Foncs." Houbtless if he were to substitute "Cross" for "Crucifix" and leave out the following line in thy letter it would be logienl, but it is not the legend, fis I uaderstand it to be.
R. IB. Birce.

## The Lives of Saints.

Your corresponient " Royal Air Porce" finds ain intellectuall difienlty in Mr. Birch's interesting account of tha life of St. Christopher throngh erediting the Divine with

## Many

A nachronisms. luman limitations of time and space. That the human mind has limitations in
its conception of time and sequence is inry clearly shown by the work of Tinctrin and other relativists. Anachronisms of the tyno rafored to are mot with abmantlas in the lives of the snints, many of emmparatively recent occurrence which have been iniostigntid fulls under modern conditions.

Althourh they cannot be explained in terms of common experionere there is far too much evidence to be lightly dismissed. The sthboert is discussed in some detail and some inturnsting examplos are given in The I'syrhaloyy of the Saines, by Menri Joly (Durns, Oates and Washbourne)
W.II.s.

## The Motorists' Patron Saint.

I sen " Vayal Air Furce" asks for further eulightemment rewardine dhr legend of St. Christopher: with all due respect. to Mr. Firch and yoursilf he may well do so, for the story
as mblished liy you is mon more than the

## A Fascenaring

 Story par, whithonhy cover fluree columas of your pappr, whids imubless is the reason for the very abridzed account you cive, but if " Royal Air Force" cares 10 let me have his name and ndilress ! shall be pleased to write out the complite lugend for him mext time I have an hour to spare. Thow fall lemend is undoubtedly a beautiful allegory, and I arm mary it was necessary for Mr. Birch to shorten it so much that it bore very titile resemblance to the real storg.If "Royal Air Force" is interested I can send him niso a phonnarall of a rather fine stained glass wiodow, in an Innelish enthedral, depieting St. Cbristopher and the Child Cllirist.
A. H. Reade.

## What is an Accessory?

I am insurerl with a first-class company, and the following lenotty brints have arisen which I should like to bring to the nutice of your readers, as they are, to my mind, very unsntisfactory:-I hase a ear a

## lnsurance Sinags.

 fuw years old which has been carefully used and elaboratoly fitted up to suit my particular requirements, the altera- tiuns and expernse in doing this being very considerable. As the car is so satisfactory, I have spent further sums in overbanls and so forth, but a casual inquiry to the comnany as to their valuation brought the atartling repls that in the case of total loss they could pay only its market value of $£ 65$.They explain that the market value is not much inGuenced by such things as oversize tyres, larger mudguarils, tool lockers. numbrous gadigets. etc., including shock absorbers, two spare wheds and electric horn, which seems to amount to the fact that a man can put a very valuable body nand equinment on a chassis and it is then worth only the same as an ordinary model one may pick op in indifferent condítion becanse buyers would not require. nnd therefore pay extra for, the hetter equipment. This seems obsurd, beennse $m v$ thol nutfit alone cost $£ 20$. tyrest and extra wheel $£ 25$, battery $£ 5$, shock absorbers $£ 2$ and electric horn E4, a toial of £ft. which leares nothing for the ear. extra fitiongs, madgets and niterations.

The second point is that 1 have had a rug stelen. nud
the company argue that, as if am only insured agninat the theft of accessories, which they say means stinndard necessorics or those supplicd with the car, I cannot recover the value of iny rug.

I should not expect to recover for a parecl taken froin my ear, but I consider that a rug is an important aceressory on a cold day. If what thes say is correct, I could recover for $\Omega$ stolen beadlamp, but not for the electric horn. as the makers did not supply the latter, which again secm:a absurd. $A$ friend defines an necessory as a remorable metal fitting, and I am now left wondering what happens if the seat cusbion is stolen.

Can anyholy tell us the true position?
Sine of an Arc.

## Circular Traffic Control.

Ineferring to your recent article in The Light Car and Cyclecar entitled "Circular T'raflic Control," page 210, relating to the dificulty in erossing from Great Georgo Strect to W'estminster Eridge, thus

## Overcoming a <br> Difficulty.

 Strect to Westminster Bridge, thas obvious solution seems to me turke all traffic turn into learliament Strect, nhich is wide enough for practically any vehicle in existence to describe a complete circle if necessary, and then break off into the traflic coming in thas opposite direction-or pass through Scotland Yard on to the Embankment. but $l$ gather that there are objections to this route being ased.G. Evin Cook.

## Oversize Tyres on Morgans.

With reference to "Shackrpin's" recent paragraph dealing with large tyres ou small wheels, readers may bo interested to knosv that recently 1 fitted 715 mm . by 10.5 Sati-factory mm. Mascley ruinforced low-pressuro covers to the $7(1) \mathrm{mm}$. by 80 mm . rims Resules. of my Aero Morgan. with very satisfuc"hame" wis not the dificult ind Getting the headings wont irres inflated to fifteen pounds mmesere and With the ront tgres imflated to fifteen pounds pressure and the rear tyre to fwenty nounds the steering is perhaps sliphtly lienvier. but there are no symptoms of wobble and comfort is greatly enhanced.

Incidentally. I may mention that Messers. David Moseley converted the back cushion of my Morman to "Float on Air" in kecping with the seats. The difference in comfort must be experienerd to be believed. I mention this as it may be of iuterest to other Morgan enthusiasts.

## Vivian F. Cbostimaite.

## Getting Into Hyde Park.

$X$ see that "Focus" is telling us of a quick way to the City from the west, namely, throngh Mrale Park, entering at Marble Arch. Now I come from the west-a good many

## A Grouse from

 the West. miles farther west than "Focus" probably meant-but I do not come more often than 1 am obliged. However, I know a better and quicker way to the City than "Focus's," namels. in garage my car this side of Marble Arch and take the Tube. I drove into the park at Marble Areh once. Never again. my masters. The arch stands by itself right away from the park, like the gate to Nowhere, but you cannot go thrnugh it. You have to go round it. There are four or five wass round, and no matter which one you take ynu will mect s ear coming the other was, and you feel as if sou are committing high treason or something pretty bad.I remember that when 1 did get round the areh $I$ found a pair of gates in front of me, and went in by the left one, but a girat car was making for the same gate to rome mut. The chanfeur jerked his wheel in time and took the other gntewas.
"It's not for fou to glare at me, young man." I said to mrself. "It's about time they taught you which is gour loft hand."

But the fellow was right after all. It appeared that both these gates were " out" gates, while there was another pair farther along, both "in." Althnugh there are several policemen on traffic duty at the Marble Arch maze, they all appear to assume that drivers are familiar with the spot, and thus do ant require guidance.

No! On a summer nfremonon I llke to have a tootlo inund sour park after I've done my business in the City before setting off for home, hut $I$ do not go in at Marble Arch. I mo in at Tanmastor Gate, and I turn in the other direction.

Country Uncle.
889

## OUR READERS ORTNIONS (contd.).

## Improved Jacking Systems.

My proposal to combine the functions of wheel-brace and jack-handle in one tool wats born, like many bright ideas, ont of an experience lackely accidental. I had to raise a car with a broken jack minus a handle. - Focus ${ }^{n}$ An-wers 1 used the wheel-brace, and the car was His C.itic. lifted in remarkably quick time, considering the fact that the two tools were not desigued for united action. On quite a number of cars both front and back axles could be raised in this manner if the jack were designed as 1 sugfested. On othersit could not he done conveniently withnut further conerivianees that would not be thought worth while by those who are


This simple and ornamental (!) jecking system is described
in the accompanying letter by "Focus."
satisfied with the implements provided in the tool kits of most cars.
Bowerer, I do mot regard the ordinary jack as the last word in methods of raising an axle, and here "Hirh "Tensinn Lerb" and I seem to agrec. Y weleome his contribution towards the ierfect car. The difliculty of getting the four wheels back to the ground is not insuperable. What is needed is a prop-stand on each side of the car, operated by a lever through suitable gearing as shown here. Fur the sake of simplicity "High 'Jension Merb's" natent is omitted in my drawing.
The normal position of the prop is shown above (Ieft). T: raise the axle the lever is moved in a beer-enginewise direction, and mas be held in position by a ratehet. The mop will, of course, be long enounl to raise the ear higher
than " H. T. IIerb"s" seythes raise it. These scythes can then be withdram, and the car lowered by moving the lever in an nuti-beer-cnginewise direction.

The only drawback 1 see to any own device is that it makes the "J. T. Herb" scythes saperfluons, seeing that the prop mieyth as well be used to ralise the car in the first place. Possibly we ean get over lhis by indacing makers to fit the seythes as standard and market the mop an acenssory.

The prop should be melhored at such a loint that the car weipht fore and aft is egual. The owner comb then raise either the front or the rear axle by occupying the rear or the iront seat respectively.

Isaginners might be liable to seize the prop, leter instead of the geal lever, but the coneeguences silould not be serious it ballonn tyres, shoek absorbers and memataic erthions are fitted.

Hocte.

## CONDENSED CORFESPONDENCE.

" F.J.B." writes in terms of proise resardinis his $11 \mathrm{~b} . \Gamma$. Standard 1924 model. Ho obtains a maximutu speed of io m.p.h. and says that, in his opinion, the car is an ideal type for use in relinbility trials, as it has a very low botton bear.

The hands will be ensier to clean and roumhness will be avoided, writes " I'assatipon," if they are lublnid with I'elda hefore ang dirty job is begun. The preparation is suld in tubes, price 1s. Grl., hy most chemists, and it roes not make the liands sticky or redace their gripuing powers. When the work is finislied the use of ordinary soay amil cold water wilt restore tha hands to their original cleanlimess whous risk of chapnies.

## INFORMATION WANTED.

Raboend Dabrars.-Experiences with Sunt. Aritibounce clips and with various decarboni\%ing componnds are requested.-IV.G.J., 7, Colelester Villas, Sianluy Rond, West Croydon.


BESIDE THE A Humber Nine beside the sluice-gates of the o'd mill at Eaton Socon. A modsrn touch is given OLD MILL. to a somewhat ancient setting by the electric lamp bracket fastened to the tree. It has sibperecded the hurricane lamp which the gate operator used to carry.


## A"No-Trouble" Car

What an Owner-driver has to say about his 10/23 h.p. Talbot.

Gerrards Cross, Buchs. 29.8.25.

1 must write you a line about the little Talbot. She has don" all that you said she would and more. It is simply impossible to fault her. and 1 did not think any small car could be such a joy 10 drive. Her latest performance is so remarkable that I must put it on record.

To-day she completed 325.7 miles on eight gallons of petrolover $40 \frac{1}{2}$ miles to the gallon! I don't know whether this is a record. but it was done in the ordinary way of driving, including three or four journeys from here to Finsbury Square and from Finsbury Square to Lavemder llill and back, so there was no question of a selected trip.

I was doing ower 40 m.p.h. betwean I' endover and Gt. Missenden athen my hind tyre split. The car never sterved or rolled but pulled up perfectly smoothly in about thirty or forty yards, and I am using the same inner thbe on the new tyre.

If any of your customers want a recommendation for the 10 , 2 I should be very glad to tell them my experience of her.

I have just done about 3,000 miles and the oil consumption is so trifling that 1 empty the sump and refill about every 1,000 miles as she never seems to want any in between.

## 10/23 h.p. Talbot Two- or Four-Seater, £350

Coupé, Coachbuilt Saloon, and Weymann Saloon bodies are also available.


## Gilement Talbot Ltd.,Kensington, W. 10

## Goggles are merely an added Danger to your motoing Equipment - unless -



" Should you reside at too great a distance for our own mechanics to attend, you may, at any time during the 3 months following purchase, take the car to a local repairer for necessary adjustments or to repair any defect in manufacture, and we will pay reasonable charges up to $2 \frac{1}{2} \%$ of the purchase price.'
The above is an extract from our Booklet-"SERVICE AND SALES.'

Send for a Copy to-273-274,
HIGH HOLBORN, LONDON, W.C. 1
Telephone-Holborn 666 (3 lines) over 6,12 or 18 months includ-



W＇e invite readers to send us hints dolned from their own experience shillings will be paid to the sender of any hint published．

## Preventing Petrol Loss．

On some cars the threads on the netrol tanls filler neek havo a flat or groove cut in them to allow air to entor the tauk as the fuel level falls，and leakage is apt to occur at this point when travelling over rough roads with a full tank．To stop this leakage，a small vent hole should be drilled in the filler cap，1：32 in．being quite large enough． Next cut two or three lenther washers which fit tightly in the filler cap．In ach wisher a $\frac{1}{a}$－in．hole should be cut， hut not in the rentre．When fitting tha waskers，see that the holes do not regis－ rer．In this way nir can pass in but the finel cannot splash out．Suflicient winhery must be usid to make a su：t wem the cap and neck．


Leather washers provide a simple
way of preventing the fuel from way of preventing the fuel fro
splashing out of a full tank．

## A Tip for Buyers．

Prospective purchasers of second－hand ears should always remember that， although the concluwork of a car may be in pood coudition，it does not follow that the vehicte is mechanically sound． The state of the hody may be judged by a rapid examination，but in the case of the chassis weal is not，as a rule， visible，and more care and time are therwfore needed to reveal faults．
A good way of testing the transmis－ sion if the car is firted with a cooling fan is to engage top pear，open the honnet nud watch the fan while the ear is bring pushord barkwards nud for－ wards．If the transmission is in per－ fect condition the fan will berin to turn aldinst simultanenusly with the formard movement of the ear．If the
（ati ean be pushed hackwards and for－ wards to any considerable extent with out the fan moving，it is a sure indica tion that wear has taken place in tho universal joiuts，or the final bevel or worm drive，or perlaps at all these points．The amount the car may bo moved without rotating the fan is，of course，proportional to the degree of wear．

After making this test in top gear， the wher gears may be engaged in turn and the operation anain carried out．If there is a noticeable increase in the delay of the fan in taking up the drive， a worn gearbox is revealed．Incident－ ally，every owner may with advantage carry out these tests occasiomally on his own car so that any undue wear will be noticed．
Cheap Speedometer Cable Casing．
Slivild the outer casing of a speedo－ moler calile break，a good substitute will be found in a length of ordinary flexible gas－pipe．This should be ob－ tained in a diameter as near as pos－ sible to that of the original casing，the rost being about id．per foot．The ends hould be bound with wire before solder－ ing on the connecting picces．When the job is complete the tube may be filled with thick sear oil and replaced．This iden should be quite satisfactorg in the ardinary way，but we do not recom－ mend it in eases where the drive is laken off one of the front wheels and the cabla has to stand a continual flex－ ing．


O．W．R．（Southampton）．－Weak valse springs may be the cause of the loss of power of which rou complain． As the car has run 9.000 miles a new set of springs will be worth fitting．

W．S．（Preston）．－Provided your piston is onls eracked slightly in the sbirt we see no reason why gou should not oblaiu considerable survice from it． High spueds should nor be indulged in． but for ordinary touring work it will doubtless carry on．A bole should be drilled at each end of the crack to pre－ vent it spreading．

## Useful Die Holders．

Die nuts for running down threads on studs in restricted positions may be pur－ chased，but a different nut is requireil for each size threat．A simple why of using ordinary dies is to make a minia－ ture die bolder with gripping screws． similar to those in－the stock；the holder should have a knurled of hexsgonal ex－ terior with holes far a tommy bar． The general idea is shown in on arrom－


A small die holder will be found invaluable for cutting threads on studs in restricted positions．
panying illustration．The mode of fix－ ing the die depends on its type－somu are solid and need only a pointed screw to prevent slip，while others are split with two，or sometimes threc，screws for opening or closing so as to varg the size for threads of different diameter．

## Extinguishing Fires．

It is becoming increasingls common for motorists to carry a patent fire－ extinguisher in a handy position on the car，and the practice has much to com－ mend it．There are，bowever，many who do not consider the risk of fire sulficiently great to warrant the cost of these devices，and it is therefore useful to remember that an outbreak may often be extinguished by wrap－ ping a rug or thick cont tightly round the part involved．Once the fire has gained a strong bold，it is，of course， futile to attempt to put it out in this way ；but，if tackled in the early stagns， the method is usually effective．


W．L．T．（Wellingborough）．－The lack of power in the front－wheel brakes of your $7 \mathrm{~h} . \mathrm{p}$ ．Austin is in all probability due to an excess of grease in the hubs． It is sufficient to fill the hub caps once a month．
A．E．E．（St．Abluas）．－As the car you have just bought is blue and the registration book describes it as sellow you must communicate with the authori－ ties and inform them of the change． The prerious owner should bave done so．Forward the book with your letter．

J．I．（Forfar）．－The practice of coasting with the clutch out，to whiels yon refer．is to be condemned．$\Lambda$ con－ linunus strain is put upon the clutch thrust bearing．It is preferable to coast with the gear leser in neutral and the clutch in．The gear can easily be re－engaged after a little practice．

## IN ANSTERTO FOUR QURRY (contd.).

B.C.J. (Liverponl).-A smart appearance of the tyre on the spare whecl can be obtuined by menns of blacklend used in the same was as on stoves or fireplaces.
D.F.F. (Manchester).- The fact that the ammeter does not record a discharge when the inspection lamp is in use is due to the plug-in connection being wired up direct to the batters, the ammeter not being in the circuit.
F.C.A. (Sutton-in-Ashfield)-Fou need not be rlarmed becnuse the oil kauge of your A.C. car records onls 2 1b. pressure when the engine is ticking over. As the car is of $19: 21$ manufacture a pluager-type oil pump is fitted which gives a maximum pressure of about 5 lb . to 7 lb . under normal conditions.
W.L. (Sevenoaks).-You can clean files by means of an acid solution, but, in we gather that the teeth are clogged with aluminium. which is quite soft, you could try the following iden first. Trike a block of hard wond and use the file on it in the ordinary way: the comparativels soft rood does not clog the file and the "tecth" which develop on the wood clean out the hrooves of the file.
J.W.Mt. (London, E.1)-N N ( adjustment is provided on the $12-20 \mathrm{~L} . \mathrm{p}$. Calthorpe for the inverted tonth chain which torms the distribution drive.
S.C.L. (Excter)-Greasing the front hub bearings of your 11.4 h.p. Standard every thousand miles will be correct. The method of procedure is to remove the wheels, and you will then find grease plugs in the hubs; these should be removed and greasc-gun nipples from the tool kit serewed in instead.
M.M. (Troon).-There is no bam done by running with the radiator cosy in position so long as the flan in front is raised to give a passofe for the air through the radiator. For short distances, such as a mile or two in exceptionally cold weather, the cosy may be used closed up, but rse should not recomenend sou to go beyond this distance. as overheating may occur.
W.J.E. (Wembley).--The smoke which comes up through the gaps round the floorbonrds when using the transmission brake is due in all probability to nil leaking out of the gearbox and finding its way on to the drum. Beat genernted by friction gives rise to the smoking. Either the gearbox oil level is too high or the oil-retaining device needs attention. You should wosh the drum and hand with a litlle petrol to remore the oil.
U.J.D. (Leicester).-Shake in the steering heads of your particular $10 \mathrm{~h} . \mathrm{p}$. Swift can be taken up by adjustment of the thrust bearings. Bolow each stecring hend is a cover held by three small serews. Take off each cover and you will find a large hexagon nut, by means of which the adjustmentacan be made. Be sure to replace the spllt pins after the desired settings have been obtrined.
J.W.W. (London, N.W.G).--As the misfiring occurs at fairly high speeds only you should examise the gaps of the sparking plugs and make and brenk of your Jnwett car. The proper settings are :30-thousanths of an inch nnd 20-thousanduhs of an inch respuectively. With coil ignition the plugs need a gap half as big again as that used for magneto ignition, and you may liavo overlooked this fact in "tuning un," as you are unused to the coil system.
B.I.J. (W'srrington) - As you are desirous of finding out the brake-horseporver developed by the ensine of your car, we suggest that gou apply to the makers; they usunlls keep records of the test performances of their products, which would enable them to give you the informntion. Failing this, we are afraid that you will have to retura the car to the factory. as there are very few horse-power testing plants except in the possession of motorear manufacturers and a fow big repair concerns.

## CLUB ITEMS AND SPORTING EVENTS.

## OXFORD MC.

A dance mas beld by the Orford Molor Club nt the Carlax Assembly IRomembiserford. On New Year. Das. Ehout 250 members and triendg will be beld wn Januar 25 the whilo the Annual dinner and dauce will take place on February
12 th at the Carlax Astembly Rooms, OXford.

## WEST KENT M.C.

The annual dinncr and distribution of awards Of the West Kant Motar Clab will take place at
ibo llolborn Reatauazt, London, on Saturday, tebruary 6th, commencing ni 7 p.m. Tickols, which cost 10 s. 6 d. . mas be obtinncd from tho hon. servetory, Mr. F. Wilson Smih. 32, Mam-
melmon Road, Bromley, Kent. February 12 Lh melmon Road. Bromley, Kont. February 12th is the datc fired
of the club, which will be held git the Bwan and M tire club, which will he h 7.30 , p.me Nomamind eions for officers and motlons for the agenda must rach the hon secrearary, whosc address is

## MORGAN CLUB FIXTURES.

On Febrary 14th the Norgan Motor Club Fill hold its opeaing run to St. Noota: tho start
 bers will pasilladley illghstone at about 10.45 s.m. A socini run to Dorking win bo beld on
 clther of theso runs. The date of the rellabillty March 28ib.
In cicw of the succesa of the club" annual dinner and dance, the committico has decided to bold a social dinner and ance early in March. ge. Mary's Hospilal, London, w.2.

## J.c.c. ANNUAL MEETING.

The Junior Car Clubs annual sencral mocting
Will be held in the Commletee Room. IR A.C.
ary 27 th. At 6.30 p.m. The ticntion of wam-
bers is drame to the rulc which states that
made onit ln general muetiog. and notice therco
made only in general moeng. and soten to tho hoo. general secretary or
least io days beforo tho meeting sind nlaced on
the agenda papers. All new rulea and alicra-
tione of old rules shall regnire a voithirds
majority of the members present Voting by
proxy not to be alloued. munt bo in the hande
of the hon. general socrecary, Mr. A. Perey
Londun. W.O.2, coren daje before tho mecting.

## civil service m.a

 Langno Run, which, it will be remembered, took placolast AuEust. will ho given by the Criil Tlusdaf January 19in. Tho lecture will tako Muace oblto Commitlec Room of tho Royal

## FORTHCOMING EVENTS.

January 19.
Belsize-Bradshaw L.C.C. Annual General Mceting.
Civil Servico M.A. Lantern Iecturo on
January 21.

January 24
City of London Motorlar Association
Oxford M.c. Annuary 25 .
January 27.
J.C.C. Annual General Mcotlng.

January 30.
City of London Motoring Asseciation, London-Stratiord-London Trlal.
Wost Kent M.O. Anncal $\begin{gathered}\text { February } \\ \text { Ginner. }\end{gathered}$
Fobruary 12.
Osford M.C. Annual Dinner and Danco. West Kent M.C. Annual General


## ESSEX CLUB'S DINNER.

The Fasex Motor Club has an enviablo reputa tlon for making thinga gn Elth awing, and the al the Ilolhorn Restalliant, Landon, was charac terized by all that gocs to make a functlon of this sort auccesaful. Orer 200 members and eugets were present, tho gathering belog pre
sided ofer by Mr. Eydney G. Cumminga, the president.
Qul, F lindeny Lloyd mroposed the wast of "The cinb." He revelled the lact that it was one of the oldcal in the country, datiog back to a certnin day in 1904 when two still Finmest Mass ond Cicorge Reynolds, conceiped the idea of les lormiation. One of the club's most praiseworthy uriderthkiugs went linck to those duya, added Col. Lloyd, siamely, tho annual entertainment glven to erippled children. Cumminga delegated the task of replying to Cumming: delegated the task of replying to a better undorstudy; Prol. Low has tho hanpy

## TO CLUB SECRETAEIES.

Reports and announcements intended for inclusion in next Triday's issue of "The Lizht Car and Cyclecar" must reach us by the first post on Tuesday morning
knack of making the alummest listenor amilal The spenker roughly outlised tho coming ecason's programme of the elub. which would include a hill-rltmb, Brooklande mectings, ${ }^{n}$ anand racing event, the partorganizalion, probably, of
the Roulonno Weck, and the orcr-popular One dny Trial.
Mr 13. S. Marahall, now. by the way, a vice-
president of the club. nleaded once agaln for president of the club. nleaded once again for gomething to bindone with regard to rond rao-
ing. to which Mnjor Dixon Spain, of tho R.A.C. ing. to Which Mnjor Dixon Spain, of tho R.A.C. Wo realize only too well how important is this enormous dimpulices, and matience is cascatial. Road raring lo this conmery must and will come-it lo onlo a mntler of time."
The sirictly formal side of the lunction having bepn deall with. the Hoor whe rlangod and the gathering anvo atacif orer whole-henredigy
 annual dinuer aud dance to en all too epeedy conclusion.


THE Renault $8.3 \mathrm{~h} . \mathrm{p}$. is an economical car to buy. But it is still more economical to sun. You may expect 45 miles from a gallon of petrol. Many owners get more. As to tyre wear, 13,000 miles with the spare cover untouched is by no means rare. Tax and insurance are low, too.
Owing to the way the sensible bonnet seals the mechanism and keeps out dust and grit, wear is prevented. This saves you money on replacements. The radiator being placed at the rear of the engine (where it is protected from undue vibration and coilision) does away with another source of frequent expense. The whole car is built to give continuous, faithful service at an absurdly low running cost-and does it.

## PRICE (including four-wheel brakes):



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


## AROUND THE TRADE.

In the London-Flonesester trial 51 silver euls were Nurlicd to driviveris of mulclinues fittod with Dunlisy tyres.
Readers are asked to note that the A.C. enr illustrated in the companys's alvertisemencent which applarrect in our issuc hated Junlury lst wis nocually the Reosill two seetiter :it Ez333, nund hot a $x=11 \mathrm{I}$ model.

Mry. A. Whate, who is well known in comucection with Calluryo cars, which hie hias raced suceessfully ;it Brook-
 ior Motors, at 51n, lark strect, Leegent's Park, Lundon, N.W.1, on the 4 th of this month.

Mr. Mr. Reulen Harcesson, who is well kinown in the cumpetition world, has joined the starf of the A.C.S.Silinx Svarkink rlug coi., Lutd.: is compectiiun minnter, and will be attending all the principal motoring events throughout the Linited Lingdom in this capacity.
J. Withers und Son, Ltel, Wiemmore Stret, W:alsall, are manufacturing radiator cosies suitable for any make of car. The cosies are made of black leatber cloth. lined with thick heat-retaining felt, and have an adjustable roll-up front. The price for cars up to about ! h.p. is 14 s .
Readers who decide, as the result of our wanhing anticle. to clean their cars at home, would be well advisel to communicate witn Henry Milward and Sons, Leth., Washford Mills, hedditch, as the concern handers a munber of ex-
tremely useful devices for facilitating and speeding un the job of washing a car.

In the latest Goodyent price list, 710 mm , Thy 90 mm . all-wenther-trearl cord covers nre guoted at $\mathcal{L A} 1-1 \mathrm{~s}$., and tubes at 16 s . ; $27-\mathrm{in}$. by $3.55-\mathrm{in}$. interchangeable batloon covers, as replacenents for 600 mm . by 65 mm . or 700 mm . by 50 mm ., cost $\mathrm{f}^{3} 3$ 12s. Gd., tubes being 15 s ; ; $27-\mathrm{in}$. by $4.4-\mathrm{in}$. straight-sided balloons for well-base rims cost L 40 s . for the cover and 20 . for the tube.

Our attention has been drawn by Leáa anil Francis, Ltde, to the competition successes of their ears during the past year- These include the winaink of the Clincher Cup) by $\amalg$ E. Tatlow in a $12 \mathrm{~h} . \mathrm{p}$. Len-Fruncis iu the Coventry find Waraickshire Motor Club's annuad one-Iny trial, the Shell Cup by G. N. Norris driving the well-knuwn on Wiarard" iu the Suton Coldficti and North Ihirailugham Automolile Club's one-day autumn trial, and the mennier award in the car class in the November trial of the Bournemonth and District Motor Cscle and Light Car Club by A. A. Mauleverer at the whecl of $n 10 \mathrm{~L} . \mathrm{l}$. saloon model.


LIGHT CAR PROVERBS.-No. 2.

The winner is
Mr. R. H. Baggs,
4. The Riviera,

Paignton, Devon.
The prize of $£ 1.1 .0$ will be sent to him in due course. His proverb is quoted below the subjoined drawing.

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$12 \mathrm{h.p}$. -senter (4-apecd)

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A.B.C. 42 guincos, very special 19222 seater sports and dickey. ope ide exhaust, rigid side acrecus rery last, splendid oricr ibrourcy, out


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22 Pracd St, Paddigeton. W. 2 . A.C., £160. Iato 1924. Empiro any-weather 2-seater, painted grey. rigid aide urtains and full equipment, in periect condition. Caithocis and Co.,
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worth Rd., Croydon.
A.C., 1922, Royal model. 2-scatcr, doublo dickes, antiqua leather upbolstery. painted blue, starter and lighting, aide curtains complete, rood very nice order throukhout, s98. rash. exchanges. deterred payments.
A.C., 1924, Rogal morel 2 -sester fith donble dickey. in practically new coniltion throughoul, price $£ 150$ exchanges or, deferied werms. 'Tho Light Car Co., 404-414 Eusion Fd., Lordon. 'Phono, Museum
A.C. 1921-2 2-scater, painted French grey, Anzani sporta engine, spiral raciog piston. 2 horng. clock. speedometer, daahlight, etc. beantiful
condition, 297.210 Fricra Rd., E. Dulwirh.
A.C. Royal, 4-acater, fully equinned, perlect coudition and appearance,

A.c. coulte, terms $f 15$ and 10 nayments of 215 or cash $£ 150$.


A.C. 1922. 11.9 coupo, tax paid. balloon tyres, excelleat conditioa, f140: deferred or part exchange Georgo Newman and Co., 369 Eus-
A.Cs. See pago 25. Benmotora, 30-32 HIgh St. Windsworth, S.W. 18. A.O., 1924. 2-scater, dickey, in new condition and exceptional engine,
fi45; deferred Lermis. Bartictle. 93 GL. Portiand St.
A.C. Harold Sinoons. Sce "Miscellaneou』 Cars." 686-819

ALBERT. G3 model 4 -scater, C.A.V. lighting and startef, clock specdomeler, renr ufidserecn. new tyres. total mileafe 9.143, exiellent ron-


## SECONDHAND <br> LIGHT CARS AND CYCLECARS FOR SALE (continued)

AIBERT. Clenrance aflo. 19212 -geater, atarter good condition, ES5
 Amilcare.
Vornon Balls.'Phonc, 1995 Putues.
AMILCAR sparcs.
Vernoo Ralls. Lindon.
AMILCAR servico.
Vernon Balls,
25 :Ingh St., Folham. $22 z-50$
AMILCAR, aports, 1924, in perfect condillon, nny trial, photo it

AMILCAR. 1922 aports 2 -scater, cream and Ted dickay, dstamo. raxed.
 AMILCAR.
Boon and
Porter, Ltd.
Solo concessionnaires,
Olfer tho following guaranteed used models:
1925 sports 2-вcater, taxcd, smoll miluago, $\mathbb{£} 145$.
1925 G. aports 5 -seater, sood conditfon, apeclally equipped, £220. 1925 ports 2-scator finished blue, qew condition, guarnntecd, \& 180 .
$159-161$ Castoluau. Barzes, S.W. 13 . (Close Mammersmith Broadwny) AMILCARS, Sco pago 25. Benmatorg, 30-32 High St., Wandsworth,
8. W'.18. Batlerser 1509.

AMILGAR. H. F. Edwards offer 1925 sparla 2 eacater, completoly eqnipped, starter, apecdomoter, Harthorda, V screen, dinappearinig houd, excel-
Jent condition, 130 suincas. Exchangea or deforred. 175 Gt . Poriland
686-762

ARIEL 日, 1923, chummy, $£ 72$ 10s. cash, or 218 2s. 6d. down and 12 pagwenta of 84.155 . 2d.. With tho option of a special rebato. Lamb'a, 1tid, opposito Joo St. Station, Walthamstow, or at branches by arrange-
mont.

ARIELS. Sprosem Ltd., for Arlela. Exchanges, deferted paymento 1925 (July) Ariel 10, dull 4-soaler, as now in scry way toonneau cover,


ATIEL 10. H. F. Edwards ofler 1925 4-c5linder 4-beater, completely equipmod, starter, speedameter, all-wealher eurtalma, superb condition, 130 gna. Exchangos or deferred. 175 Gt. Jorthand St.. W. W. 6977 . May.
$686-763$

AUSTIN 7, 1924, ely-starter, clock, specdometer, all-weather equipment, motorcyelc and cash. 51 Opper Richmond Rd., Enst Putacy. $686-i 251$

AUSTIN 7, anused 1925 sports 2-seater, apcedometer, motorcyelo or sidccar combination accepted part exchangc, balanco cash or cass monthly
pasment. Colmoro Depot. 31 Colmoro liow, Birmingham. $686-494$

AUSTIN 7, 1923, chummg, repasnted, recondilloned as now, $£ 90$ cabh. deferred. oxchanges. Blackley Motory, Rochdalo Id., Blackley, Manches-
tcr. Phonc. Cheetham Hill 102 .

AUSTIN 7, 1925, as new, 120 ; also 1924 at 2100 . Etce, Lud., $11-16$
AUSTIN 7,1924 chammy dark blue finloh. spondameter, in beautiful condition liroughoot, bargain, £95. Tho Tcicphono Motor Works, İd.
 AUSTIN, 1923, shock nbsorber, orcraize tyres, peocometer, excellent

AUSTIN 7, 1925, demonstration model, indistinguishablo from new. nitb excontional performance, makera fuli guaranioc, perlert condition and unbemished, colour kingenher blue, dynnmo, self-starter, spara apare potrol can. interior lightiog, mirror, mancot, eloctric hara uind: screct wiper, loose covera to bucket hoats, radialor mulf; doterred terma
 AUSTIN, Eprosen, Ltd., for Austing, Exchanges, delerred payments.
 AUSTIN 7, 1926. chmmmy, almost as now and in perfect mochanical
order, $\& 105$. Scolt, 57 Birdhurat Riso. Crosdoll. 'Phono $660.686-674$ AUSTIN. 7hp. 1925 chummy, starter nod llghting, ali-meather equipment, spare whel, shock hlisoruers, tyres almost naw. Anished peacock

AUSTIN, 7 bp, fited with 2-peater saloon body, coat $£ 250$ our price
f130, cash or terms, $£ 13$ down and 10 monthly payments of E 13. c130, cash or terms, $£ 13$ down and 10 monthly paymenis of 13. MrCarlby's Motors, 49 Green Ladee, Nowingion Green, N.16. Clissold
6598.

AUSTIN 7s. Seperal 1924 and 1925 modein in atock, conditlon as new,



## SECONDHAND <br> LIGHT CARS AND CYCLECARS FOR SALF. (continued).

AUSTIN 7. 1924, clammg, Etarter, nll-weather equapmnnt, apendometer,

 AUSTIN 7, 89 metneas, 1924 (Oetober) dynamo llghting, self-gtarter, onlv necds secing bargaint exchanges. Empira Motors. 325 Iligh Rd.
Chiswick. W.4. phono 303. AUSTIN 1925 chummy, perfect order, 105 gulaeas, Clark'a, 223 Inara-

 A. V., Bhp Blackburac, ruazboul, djnamo lighting specdomeler. Fery gond condizlou, palated bluo, prico only . ©A3. $\Lambda$. V. Moiorb, Purk Rit Ted-
dington.
 Station) BAYLISS THOMAS 10, 4-mearer, as brand new, exceptionally fine 686-573 BAYRISS THOMAS, 1925 model, $11-22 h p$, scator, gtarting, lighting.
very lithe uscu, now conrlition, cost $£ 295$, casb $\Omega 150$. 49 Lithe Albany very litele uscd, now conrlition
St., NW.1. Museum 5515. $086-1260$

BAYLISS THOMAS, 1923 , 10hp, 4-scater de Iuse, starter nnt IIghting, nainuork and upholstery as new, eyres execllent, speciul price e75, cash Vimbledon 2041 686-684 BELSIZE, M. F. Edmards oller 1924 10-20 2-featcr, double dickey.

 meter. new tyres balloo

BELSIZE-BRADSHAW, 192.3, 9hp, 2-senter, trmamn, dickey, excollent,
 BELSIZEBRADSHAW, 1923, 2-scatcr, C80 csish, or $£ 20$ down ayd 12 opposito Iloo St. Station, Waltharnstow, or at brunches by arrangemnent,
BELSIZE-BAADSHAW, 1922, 9lip, 2-3-seater, In 1924 condition, dy-


BELSIZE-BRADSHAW, 1923, 2-gcatcr and dicknp, f60; \&ully equipped

 BELSIZE-BRADSHAW, 1923, coupe, as ncw, 285: mxelianges, delerrod paymenti. D. Railton and Co., 6 Chapel St., Sallord, Manchester. Cent.
8536 .

BELSIZE-BNADSHAW. Cummings nod SImpson for bargalas.
1923 2scater, sell-btarter, balloon tyrcs, almost new, $£ 50$.
19234 -scator, self-starter, good order, ready for use. © $C 55$.
1923 4-seater, belf-starter, almost new, ready for uso, $£ 60$.
Terms from 10 per ront. down; exchanges. 5 Putnoy Bridgo Rd., Wands.
worth. Putnog 2728.
BELSIZE-RRADSHAW, 1923 , 2-seatcr nnd dickez, clock. spncdometer, to., excredingly nlec order throughout. fó: exchingan, expaniled payRiverside 2230 . EELSIZE-BRADSHAW, 555,1923 do laxe, starter, dirkey, aide sercens. rery gijont engino. Denman, 4 Dcnman PL, Plecadillg Circus. Req.
$\mathbf{9 8 6}$.


B54 For immediate altention, address G.P.O. Box 147."The Light Car and Cyclecar," 7-15, Rosebery Avenuc, Landon, E.C. I,

## SECONDHAND <br> IIGIT CARS AND CYCLECARS FOR SALE (continued).

BELSIZE-BRADSHAW, 59 guinenq, 2923 10hp, 4-6enter, ztarter and
 BELSIZE-BRADSHAWS. Sco our woraderlul rine digs" olfer on pago 29.
Kirk and Cu.. 22 Pracd sc., Padlugion, W. 2 . BELSIZEBAADSHAW. Harold Simona. Sce "Mincellancona Cars"ä 6884


 chain drive. dsnamo lightiog. 2 lyres unsrillod, sparo whee! and t5re.

 BLERIOT-WHIPPET, Into 1923, all-chain, 3 epoods, reverse, dsnamo,
 HLENIOT-WHIPPET, 1921, runs woll, s 12 10s. Grlce, Ilocklife, Hods. BLERIOT WHIPPET, 1925 , 2-scater, Bhy Nrackburno clectric lighting:
 BLERIOT WHIPPET, wice 2-scater, Iucas dynamo lighting. Blackburne
 Wandswortla ('l'own Stutiou). 686-707

 CALCOTT, 10.5 hil 1924 . 2-sealer, eclf-starler, all-wenther catpment,
 CALCOTT, 1923. ©94 10s.; 10hp, 2-seater, aoublo dickey, sfarter, nll-wearher, slum ial hareain: cash or easy payments, exchanges. Wilkine,
Simpan. ofposite olympin, London.
$686-\mathrm{j} 32$ calcott Scrvice Depot.
CALCOTT Mires. Oicrhanis of every ciekerlytson. Yepajrs. Trado

 CALCOTT, 1919 3-seater and sunk dicker, dynano lighting and com-

 CALTHORPE, 105 , 4 anater, Aphrting apnoarance, sood condition, insured

 CALTHOnPE, G9 guineaq, 1922 de luxe 4seater, antinuo leather, xear
 CALTHDRPE, $922,10 h p$, da luxa 2 -scater, dgnamo, starter. dickeg,


CALYHORFE COHpe, C70 cash, or £17 10s. down nnt 12 paymente of
 CALTHORPE, Suncr-longeain. Mebeg and Mebez (Established 1893) have to ofter the Iollowing Show and demonstration models at greatly re257 10a. saved $10-20 \mathrm{hp}$ de $\operatorname{lnxc} 4$-scater, ns makera' specification, Ist e235, aur price $\mathcal{L} 177$ 10s. Below
ع 50 baved. $10-20 \mathrm{hp}$, standard, 4-scater, is makrs' specification, list £50 erved. $10-20 \mathrm{hp}$, salonn, 4-Noor, Rogal blug, Bedlord cord uphol-

All tho above cars brand neve, full guarautce. Only a few at this figare; cannot be repeated when stock exhansted. Call. wire or phone and book

CALTHORPE Snecialist. Exchanges, deferred payments. 1922 de duxo 4-fuathr, nil-wenther equlpment, sLarter, Food condition 79 . Fxecp-
 Scabrldge, 3̄̄ Hinasler Rd., East Dulwich. Sydcnham 2452. 686-53i

CALTHORPE, 1924, 10 hp . 4 sealer, splendid condition, will exchangy for 1925 Austhn, 7 hp , or acll for 2100 cagh. Collins, 175 Fillehrcok
Rd., E.ll.
$686-667$
CALTHORPE, 1924 , 4-seater. small mileago, mang extrap, s9n. Rat,
slitue Broq., 200 Gl . Portand St., W.I.

## SECONDHAND <br> LIGHT CARS AND CYCLECARS FOR SALE. (continued).


 CALTHDRPE, 48 gnincma. 1921 2-seater dickos, atarler and lighling.
 CALTHORPE, 55 guincas. 1921 , spnrt 4 -senter, farter nod lizhling.

 tally cquipp.d. goud coudition, 190 guimeas. Bolow.
 1921 10bp Cahhorne 4 -cencer, folly equipped. starter, leathor uphot

CARDENS Cardens. Carsens. 1921 and 1922 2-seaters. sida-by-zido



 CHARRONLAYCOCK, 1921. 2.J.senter and largo dickey tsres na new. Iugange erid. very fully cquipped, litlle und carefully uscd, 268 . $k$. 1 .

 ${ }^{222.770}$


 CITROEN 7, 2 -apater. 1923, 275 cash, or 1918 15s. down and 12 pay. opposite illoo St. Statiou. Walluamstow, or at branchea by arrangement
 Gain. £YU. S Heata St., Hampstead Mube Statioa,
 all as new. spare ulicel and iyre, biorl, side curtains, wilitureeti. 80 m.ph. trip spuedonither. luggago carriel, 5 Lamps. electrle borm. onirror,
 change. Open 9 Lull 9, 7 dass a week. Rozland Smath, 78 11agh iti.
Hampstead.

CiTROEN, 1924, 7.5 hp . 2-catcr. very nice ordor, any Inspection or crial

CITROEN, 1921. 10hp. 4-gcater, elarter and liphtiog, nire condithna:

 686-j223
CITROEN, E5S, exchanges, deferred payments, 2921 Vitmen, 4-6eater, orehize igrcs, luggare grad, smart, excelent condinon, Seabridina, 35

CITROEN. elos: 1925.7 hp . 2 -acater, balloon tyros. Arthur Stuart and
Co., 16 Litule Porland St., W. 1.



CITROENS, choice of three, 11.4 hp , English tourcrs de loxe, 1925.



Citroens. Sprosen, Led., for Citroens Exchanges, deferred parments.
 CITROEN, 4-seater, $11.44 p$ exccllent condition, terms e8 10 man and

 perifet condition, only 0.000 miles, 6684 Westerz. delerred pasmats. 68 Pen. CITROEN, $1924,7.5$ coupo, good order, E75. Ratclille Bros, 260
Ge. Porliand SL, w.i.
CITROEN, $1923,7.5$, rev baltery, side cortains, otc., E55. 8 Denuvilio
Mansions, Deaurille Rd., Clapham.

## SECONDHAND LIGHT CARS AND CYCLECARS FOR SALE (continued).

 Dunlop loun doows, cido curtains, 105 . Relow.
CITROEN, $1923,7.5 \mathrm{hp}, 3$-aeater, sinvtor and lighising, rery amart,
 むirRoEN, 1923, 10.4, 4-xeater, first-clane condition, inaurcd, real bnr-
Hain, $\mathbf{C 7 5}$. E. Ilarves. Nurecry Lanc, Forest Gate, E. 7 . $686-1294$ CITROEN, 85 suincas, 1925 , Thp, clover-leat 3-seater, fully equipped,
 CITROEN, late 1925, c 179 15s.: 11.4 hp . Figilish Lody, unused, brand new, very allyhtly noiled. filly sunraniecd. cannot be repeated. Cash or easy paymenis, exahangea. Wilkina, Simpson. opposito Olympia.
Londor. Phone, Riversido 238 .
CITROEN, 1925 model, 11.4 bp, English body 4 -seatcr, Itarter, clocis, apecdometer, balloon ty
CITROEN, 1924 model, 11.4 bp . English bods, A scater, starler, clock,
 c:hangeb. mer 4388 .
CITROEN 7. 1925, 2-moaler, newly painted, splendid condtion, 265 ; exchanges. Norimgton'a, 116 Kampetead Rd., N.W.1. NuBcum 98695
CITROEN 7, clovorleal, 1925, nlmost ncw condition, balloona, Emall mileago, eló: exchangea. Norrington's, 116 Hampstead Rd.iN. N. 1.
Musoum 9078: CITROENS. Bee pago 25. Benmotors, 30-32 High St., Wandseorth,
8.W.18. Hattergea 1509. CITROEN, apeclal ofler, 1925 , 11.4 hp , Engllsh 4-scater do luxe, rojal



CITROEN 10lıp, f80, faxed and insured. 1923 (June), 4-acater, periect 986. ${ }^{\text {ordr. }}$ 4.p.g. Denman, 686-201

CITROEN. H. F. EJwards offer 1924 modol 11.4 Engligh-hodird 2-
 CITROEN, 10 pr, 4-seater, oxcellent order, 285; exchanges; balance


 palniwnrk, etc., ai new, 2110; delerred terms. Bartlett', 93 Git
CITROENS. See our monderlal nine days oller on page 29. Kirk and
Co., 22 Praed St., Paddinglon. W. 2 .
CITROEN, 104 hp . 1920 , French 2-seater, all-weather equipment, er-

CLULEY. I. F. Edwards ofter 192210 hp 2 -seater, aunk dickey, atarter,


CLYNO, occasional 4acater, terma $£ 10$ and 10 pasments of $£ 10$. or cash fion. Mirfarthy's Motors, 49 Green Lancs, Newivgton Green.
N.16. Clissold 6628.

CLYNO 1925 2-seater, all-weathor eqnipment, has been carciullf nacd
 CLYNO. Sec our wonderful nine dags ofler on page 29. Kirz and Co.
22 Praed St., Paddington, W. 2 .

COVENTRY.PREMIER 19228 8p 2-aeatcr, dynamos, clock, peedomrier,


COVENTRY-PREMIER, 1922, 8hp, 2-scater and dirkey, dynamo, in
 deferred.
Wimbledon 2041 .

CQVENTRY-PREMIER, 1922, 2-sester, large double dirkey, drinmo, apeedometer. 3 apreds. reverse, apare wheel, good running orfir, Cca to | Mart, 151 White Mart Lane, Barnes. |
| :--- |
| 68612 |

 CROUCH, 60 mp.h., 1923, Anzani, 11.9, 4-scater, saxe blue, hrown leather. 295 . perler order: deferred terma. Denman, 4 Denninn pl
Piccadily Circua. Reg. 986 .



## SECONDHAND <br> LIGHT CARS AND CYCLECARS FOR SALE (continued).

DOUGLAS, 229; cxchanges, deferred jayments: 1930 Douglas 2-scater.

ERIC-CAMPBELL, 1924, IOhp, 4-cylinder 1,4y0 c.c. Coventry-Simplez cligive tuot to bo conlused nlth the 8bp chummy Erie-Cajupbellil. A ponertul de luxo model with clock, ancedoineter, electric lgrisinf nnd starting, spring fatilcrs and combincd boot and hood cover, in cacelteos
ERIC.CAMPBELL (abovel. Room for 2 adalts and child in front seah alco has turmy dickey lor tho, staris casils and geta away in recond
gear on tho flet; top-gear car in the country.
 worth examination, private or trade, $£ 155$ or gear ofler boa No. 2924 ERIC-CAMPBELL, 1924, chummy, dyamo and atarter, $£ 95,1923$ aports 2-suatcr, aluminiumi body, red wlags and whecls, pericet condition年bo both Jullg equipped and gualantecdigexchanges or deferred terman ERIC-CAMPBELL. In. F. Edwards otter immedialo dollvery of brand yew 1926 8-20, chummy. completcly equipped, slarter, cloch apecdo
 ERIC.CAMPBELL, 1925 model, B 20 , chumms. complotols culuipped,
6uperb conaltson, 98 guincas. Џćlow, ERIC.CAMPRELL, $1923,10-22,2$-scyer, with sunk doublo dickey, completely equipped, starter, clock, apeedometer, double windscrecn, all
 FIAT cars. Accredited agents, Mooro's I'resto, North End and Tam
worth Red., Croydon. 'Phono 2623 . FIAT, 1923, $10-15$, afloon, in excellent condition, revarnishetl, trimmed cloth, 5 small milcage, £210. F. G. Smith Mators, Lid., ligh Si. Wall-
stcad, E. 11 . FIAT, luxurinus $1922^{1 / 2}, 10-15,4$-scater, starting, lightiog, cloch, specdo-

 South port. Tel. 1157 . 190 , used 6 months only Hatton'a Garage
$z z z-271$ FRAZER-NASH. Sproser, Ltd, for aporls cars. Exchangca, deferred FRAZER-NASH, 1925, super-sporta, guaraneced 75 m.p.h., in periect
 Ahalulely as new, taxcd,
ILanham 1212. C.N. M. R. Godlrey, the original dealgner and manufacturar, for the C.N. Before deciding to purchaso a G.N. कrite for parllculars of re
 list on request. N. R. Godirey Nuturs. Manur lid., Richmond. Phone,
3024 . C.N.s. Gond scond-band cars almays 2 L stock. Uverhauls. Conver
Bions. Rebulding. Special tuming All aparis atorkid. Experi guaranteen work unly. Bring your car to the southern agents and eer-
vico. Ihe Eastgato Garage, Lewes. G.N. "OKim II." The Iamous racling G.N. Rebuilt and recondltioned,
very fino order, still world record holder,
\& 135 . Easigate Garage lewer. C.N.E. Two 1921 2-seaters, Jynamo, specdometer, aparo whecl, 205
cach, or excuange motorcycle. 51 Upper Itichmond Hd., Enst Rutioy 686-J245
 686.8194 C.N., 1920-1, sports, dynamo lighting, sery fast, repalnted, f₹7 10a., choster. Phone, Chectham Mill 102 .
G.N., 1921, dynamo. re-ennmelled and thoroughly orerhauled, condition
guaranted, perlect, £37. Colcs, Twyver Works, Miltbrook St, Gloticealar. guaranted, perlect, £37. Coles, Twyver Works, Millbrook St., Glouceanar. $\begin{array}{r}686.1221\end{array}$ C.N., e29: exchanges, deferred payments. $1920-21$ G.N. 2-seater dynamo sparo wheel, apeednmelor, Amart, good condillon. Bcauridgo 35
llanaler Rd., Eat Dulwich. Sydenham 2452. $686-532$

 | Cbiswick. Pbono 568. |
| :--- |
| 686.548 |

C.N., 1922 (May), 2-seater, dickes, fully equipped, sperdometer, clock, clectric light. grease-gun lubrication, excellent condision throughout in West Enllog. 688-j292 G.N. 1923 modol, 2-seator and dickey seat, complete and in beautiful condition, e45; exclanges or casy torms. Cummings. 101 Fulhniu itd.
Suuth Kensington.
686.652 C. N., alnndard model, dynamo, spocdometer. dickey seat, spara wheal, f25: deferred 1erms and cxchanges. Andrew's Motor Mart. 151 White
IIart Lano. Barnes. G.N., clearance salo, 1921 good condition, E20, tin ressonable offer
 C.N., 1921. 8hp. 2-acator, dynamo llghting, good tyrea and spare, hond, in extra pirial conrfition. s29; cash wr difrrisd. Naylors, 406́ Garrnte
lano, Earlafield, S.W.18. 'lhonc, Wimbledon 2041 . $686-690$

## SECONDHAND LIGHT CARS AND CYCLECARS FOR SALE (continued).

G.N.a. Go to Earl'a and eceuro a bargain for the springe

G N., Lacere, dynamo lighting. aluminium norls and pistons, side mirror 2 hornn, shock nusorbers, largo stecring whech, \&26.
C.N., 1920 , dynamo lighting, chummy body, dashlarap, safety hub capps,
otc., bargitio.
G.N., 1922, dynamo, dickes, clectrio hord, bsfoon tgres, e42.
G.N., 1922, dynamo, dickey, electrio born, repalnted light bluo, c44. G.N.s. Wo have n good stock of netw tyres suitablo for these machincs; G.Ns. Farls, led Tha Valo of Healeb, Hamnstead, N.W.3. 'Phone, and Sulurday.
C.N.a. Vadum Cn., Premter Specinliste, for roally sound, orerhaulcd G.N. hato 1922 hello usel, overhauled, guaranteced, dickes. full equip G.N., 1922-23, really superb car, only wants secing, orcrhauled, guaran-
G.N., 1922 model, ©erri-sporta, polighed alobrinium bonnct, $\boldsymbol{x} 38$.
C.N., 1922 model, fully equipped, dickes, 237.
G.N. Ouher 1922 cara Irome £.36,
(near Whito Harl), Willesden G.ev.s boughe for casb, overhauled and sold. Delerred termb, exchanges $686-544$

GRAHAME-WHITE, 2 -water, lato 1921, lax CG per annum, lamps, horul, ete Gnod tyres, nnd perlect trechanical contidion, an economical

 G.W.K. 1921 , A-sater, very gnou condition, it45. Jack Prien, Werton-
 GWYNNE B, second hand corf, all models, overbauled and buaranteed,
 GWYNNE 8 , 4 mater, 1924 (Junel, 6.700 milcs. origioal owner, licensed 1926. Croydon di-trict, ©120 lowst, or exchange 1925 Riley I.w.b.

GWYNNE 8, 1924, 4-scaler, self-alatter, dynamo. foola, etc., taxed and insured. perfect condition, c78; deferred pasments. 21 Ponnant Mews, $686-695$
Earis Court. 6684 western.



 HORSTMAN, 1923, 4-scater, dsuamo and startor, exceltent condition,
 HUMBERETTE, 2 -seater, in nico coadition, just orerhanled, 230 . GIp-
ling. Muorings, Maldon, Esser. HUMBER, 1925, 8-18hp, chummy, lighting, atarter, etc., fpecial engine, paint oxecllen
 HUMBER, 8.9 hp . 1915 , 2 -scater, lamp set, horn, and asal equip-


HUMBER, 1925 model, $8-18 \mathrm{hp}$, light $\operatorname{saloon}$, dark bluc, upholswred Bedford cord. 2195 exchange3, balanec deferrech Nownhamis. Heath
Rd., I'wickenbam. Phono, Richmond 3293 . 686.798 Jowerr Service Station (London), main agenis and specialists Als models, trial runsi reliablo used cars. Wcstminster Bridgo Garage, 5

JOWEYT, 2-scater, Decembor, 1923, self-startcr, 6 whecla, sparu battery. clock, electrlo lead, many refinements, owner-driven, periect conNition, any Lsinl, bargain, $£ 75$. 11., 11 St. Ann'a 'ferrace, London,

JOWETT. F $\cap$ C.F., Ltd., the London Depot and Service Station for nev and socond-band Jowetts. 5 Heath St., Hampstead (Tubo Station), 686.459

JoWETT, 1924, 2-scater, balloons on rear, sterter and poriect, $\begin{aligned} & \text { £85. } \\ & \text { Wellords Motors, Brabton. }\end{aligned}$ 686-507
JoWETT, 1924, 2-scatcr, dickey, ororsizo tgres, guarantced, price 580.


## SECONDHAND <br> LIGHT CARS AND CYCLECARS FOR SALE (continued).

JOWETT, Auguat, 1925, chassis No. 55094, full 4..enter, fully equipped. halloon, mhock absorbera lugkago carrier, motormeter, automatic acirect rear serern, E155, inclading insuranco to Augnet. 29 HMgh Si. Wan:

JOWETT, 1925, 2-seater, atarter, кpecially tuned engine, headlamps,

JOWETT, 1925 nmodel, 2 -soater, bluo, specdometcr, milleage 5.000 , aplen. did conditlon, sell echeaply or cxirhango for godd Morgan with such cash



JOWETY, 1 ate model. 7 hp . 2 -scater, dickey, in cxcellent condition. fully equipped, dynamo Uighting, speedometer, rood is ract any examiontion 686-j3\%0 Jowett. 1r. G. Gamble, Crystal Palaco, anthorized agent. For tho best second-band Jowetts consult tho specialist Grst.
1924 2-seater, dickes, orersizo tyres, sercral extras, small mileage, e 85. 1925 2-sater, dickey, overnizo tyrce, very emall mileage, e98.
1924 A-scatcr, ballon tyres, ecls-starter, spring gaiters, luggage earricr, 1925 light 4, eelf-starter, balloon isres, nesd icw times for demonstra-
 KINGSBURY JUNIOR 2 -scater, 8 hp, w-e. 3 speeds, reversc. $\mathbf{f 3 0}$ : de-

LAGONDA, E59: exchanges, delerred payments. 1921-22 razonda couno, sunknn dickey. lightinf, starter, clectric born, specelometer, sparo

 LAGONDA 1 J24 all-wnather 4-seater. R145; exchanges or deferred


LAGONDA. IK. F. Fdwards offer 192412 hp f-door all-weathcr, completely equipped, preumslic upholstery, winding windowa, execlleni con-

LAGONDA conpe, self-startor, registered 1921. Hittle nsed, s45: er-
 LAGONDA coupe 1922-23, perfoct iltele car, new hatterics, overhaulul completely in Docernber (biUs shwn), owner gaing Yrcland, what offers

LEA-FRANCIS, fitted with special 2 -scater bady double dickey. lighting.

LITTLE MIDLAND, 1921, ©seater and dickey, steel detachable disc


MARSEAL, 1924 model, 2 sentcr, lighting and starting new tyres all
 MARSEAL,
fiuston Rd., 1923,
10ndion. MARSEAL, $192 J_{1} 10 \mathrm{hp}$. sports 2 -seatcr. starter and lisbting, all-ainminium body. tyres sound, in very nice condition, $\mathfrak{f 4 9 \text { , cash or delerted. }} 686$. MATChLESS, f85, 1925, 4 -seater, 4 -whel braked, Lucas lighting,


MATHIS sports, 9to, 1996. ohop-soiled only. meal bargain. E120, lightinf. starter and completoly equippeditexchanges, or eas terms. 686.648
Morgan Servico Depot. Offeral appointed repatrers by the Morgan Hotor Co. lor Loudon. Full rango oi spare carried Ncw and second23 Lower Clapton Rd.. E.5. Clissold 2408 2z8-840 MORGANS. James and Co. ISheffield). Wid. 261-7 Eeclesall Rd. Shefheld, oftcial agents. Gond stoct of spareg carried diew ard serond2460 Central, or wire "Tact. Sheffield."
MORGANS. new, and second.liand; cash, oxchange, doferred. We hay $\begin{gathered}\text { Worgans. Ulympia, Wasefeld. } \\ 697.4677\end{gathered}$
MorGAN. s59j excharges. delerice pasments: 1922 do luye J..l.P.


## SECONDHAND LIGHT CARS AND CYCLECARS FOR SALE (conlinued).

MORGANS. Elce, Lid., olter the following recond-hand machines, all overhauled and guaranticed. Grand Prix, 1904, M. A.G. enginc, e85. Bulow
lirand Prix, 1923, dsnamo Hehting, etc., x68. Below
Famils model, 1925, 8hp J.A P., w.e., ns new, 107 10s,

MORGAN, 1922 Grand Prix, water-cooled Plackburne, dsnamo, 5 hamps,



MORGAN, fnmily, J.A.P. w.ec. nen condition throughout specdoactor, nany tmprovementa. new upholstering, apiong seat, special hood, mn hogany dash, areasc-gun lubrication, insido brakc, guarauteo perfect, nris
examination, 285 . Gray, 51 Winchendon Rd. Tcddington. $680-j 222$ MORGAN. F.O.C.M., Ctd., bave Eeveral bargains. 5 IIcalh St. Mamp-
 MORGAN, 1921, family model, w.c. M.A.G. englnc, dynamo llghting,


MOAGAN, 1925, 8hp J.A.P., mileage under 5.000, ono owner only in yred till April. P85, exchnngo or terms, Chegter Miphall, Stourclith, Aliags oped.

MORGAN, J.A.p. Grand Trix recently ropainted and orerhauled, ncw wings, orersize tyrer, nil nearly new, Inrgo headnmps, whole machine lligligate, N.6. 686-1267
MORGAN, do laxe, 1924, wi-c. J.A.P., dyamo lighting, small milcage, silendid condition, taxed and traured, $\& 85$. J. Mopkins, 35 liarcombo
lid., Stoko Nowingtnn, London, A.16.

M9RGAN, 1923, do luxe, water-cooled M.A.G., electrio lighting, specdo. meter, finialied purple , £75. Below
MORGAN, 1922, G.P., w.-c. J.A.P., dynamo, speedometer, $£ 65$. BelowMORGAN, 1925, do luxe, oh.v. Blackbumo, A-sided tyres, front-wbees brakes, specdometer, anell Below
MORGAN, 1924, de luxc, lobp M. A.G., spcedometer, side curtains, indistinguishablo from ncw. £Sb. Below
MORGAN, 1925 , do luxe, water-cooled M.A. (i., Lncas starter and light. ng zet, apecdometar, small inileagc, xi25. Below.
Maudea Notor Mar. List contlaunlly changing. Further marticulara
on request. $100 ~ G t . ~ P o r t l a n d ~ S t, ~ L o n d o n, ~ W .1 . ~ N u s e u m ~$
7676.
MORCAN, 1922, de luxc, in splendid order nnd eondition, real bargain,
C45: excbangea or cass ternas. Cummings, 101 Fulham Rd., Bouth Konington

686-651


AORGAN, snecial racing, known ns " Land Crab," 2 magnetos, 2 carbarechanges and oxtended pasmenta. 5 Putnes Bridec Rd wide, E55; Putiacy 2729.

MORGAN, 1921-22, Grand Prix J.A.P., water-cooled, Lucas dynamo, spedometer, cloctric horn, oversize tyros, as new, just overhauled by Morgans at coat of fin, Euperb condiliou and apnearance, £52 10a.;

MORGAN, 1925. Acro, IOhp, Britinh Anzanl, Lucas dymamo, Acro houd, shlaysd winguishmost new, straipht-aided tyrcs, small mileage,
absolutely indistinguishable irom new, E105. Bclow.
MORGAN, 1923, de luxe, 8hp, w.e. M.A.G., fully equipped, istes excel-

MORGAN, 1925, Aero, J.A.P., w.e-e., speedometer, fnished claret, small


MORGAN, 1924, Anzani cnginc, Grand Prix, dynamo, dfac whecla, etc, 686-810
MORGANS. Homacia have for disposal the following guaranteed Mor 1924 do tuxe, w.e. J.A.P., dynamo, specdometer, cte., £95. 1925 Famils. w.c. J.A.P., speedometer, dyamo, etc., 195. 1924 de luxe, ซ.c. J.A.P. dyanmu, epecdometer, perfect, £ 90 1924 Famils. 8hp, w.c. J.A.P., dynamo, ctc., ふ90.
1924 Famils, 8hp w.c. J. A.P., dynamo, hood, etc., guapantecd, 285. 1924 do luxe, 8lip w.c. J A.P., dynamo, specdometer, 880.
1918 Grand Prix. w.-c. J.A.P.. acetylano Huhing. juet overhanaled, £45. Any of the sbore machines can le snpplicd un delerrad terins. Itomar'k,

## SECONDHAND <br> LIGHT CARS AND CYCLECARS FOR SALE (continucd).

MORGANS. The Allen-Benmett Motor Co. Lıtd, The Morgnn Specint asta, have for diaposal the following second hand cars, all gharancece in first-class condition alsd opeu to nny examination nild iring, Deferred 1926 Aero, epecial ports Anzani enginc, front-wheel brakef, orersizo
Dunlop keraight-zided tyres, Lueas dynamo lighting, hood, speciometer electric horn, sput light, spectally thnished Chimbildge blue, with red
 1925 Grand Prix. Anznni engine, finlahed red. uaual emmprehensivo 1925 do luxe, special super apurts J.A.t'. engines, equal to new in evors 1924 Aero, special ol.v. Blackburac enginc, front-ubeel brakes, 4 spect genisox, hood, winetacreen, dynamo lighting, clook, specelcimeler han exceoded 75 m.p.h. on 13rooklande, finished dark red, pesfect combli 1924 Acro epecinl o.h.r. Alnckburno enginc; frovtwhocl brakes, epredo meter. excellent condition, filiehed gray, 295.
920 do luxc, water-cooled M.A G. engano, ado ecreens, pelifect condi ion, finished maurc, $C 60$ 1923 do luxe. J.A.P., dige wheels. excollent condithon, findsted blue, e60
 1919 (approx.), 8hp J.A.1, eporls aluninium body, very fair condl Seo theso nt our special second-hand elowroome, Grigg Works, Sandur-
 Mongans. Sco our wonderful minc days offer on pago 29. Klrk nud
Co., 22 Pracd Sl., Paddington, W. 2 . NEW CARDENS, 1 I2 4 famils modela, accommodatinc 2 adulaz nud 2

 NEW CARDEN, 1923 (lnte), 2 -scater, 7 hp , lampa, horn, usual equip


NEW HUDSON, 1920, IOhp M MA, Swheuler, dynamo, Bounikgen spare whocl, ${ }^{3}$ specds, reverte, recently property of Du Lissi of MA.A.G.
Co., i 56 . 51 Upper Richmond Md, Last Putney.
pEUGEOT. Sprosen, Ltd., for Peugeots. Exclangee, dufured pas


PRINCESS 8hp eminil A-scater, dynnmo, epecdomoter, sprind, rerersw Marl, 151 Whito Mari Lanc, Barnes.
RENAULT, 1923, 8. Shy, 2-seater and dickey, fully equipled and in RENAULT, 2-scatcr, onn of tha gnnd old oneq, only wants becing, di4.
Makiu and IIarrigon, 327 Migh Md., Chiswich, Jhono 558 . 686-552 RMODE, ECTy lato 1924 , 9.5 hp , o.h.v., sporta, cantilever springs, wiro Wheuls, dynamo lighting, startcr. Dunlop cord tyres throughout, snare
 cash, deterred or exchange. Open 9 till 9, 7 diys a week. 1lowinnd
Smith, 78 Kigh St. Mampstead.
RENAULT, 1924, 8.3, cloverlcal, 2120 . Gcorge Nowman and Co., 369
Euston 1ld., London.
RHODE occasionn] 4, 1925, f92 10s. cash, or $£ 232 \mathrm{ar}$ 6d, down and
 RMOOE, ${ }^{1925}$, 12bp chummy, 265. George Newman and Co., 369 RichardSON Cat Co.. Milsthorde. near Shefficld. Spare parts in in
zzz-881 RICHARDSON 1921 2-seator, Bhp J.A.P., 3 specds, reverso, dicheg scat, f22: delerrod vertss
Whito Hart Lanc, Barnes.

RILEY. Lewes Motor W'orks, Susser. Alf Rlleys completely overlauled
before offercd. W'rite fur block Hat.
RILEY. Harold Simons. Sco "Miscellancons Cars." 686-820
ROVER, 1925, 9hp, do luxe, 4-scatcr model, slighely uscd conplition 49.53 Sussex Plare, South Kcnsington. 'Phone, Ken. 8558-9. zzz-91

ROVER, 259, exchanges, deferred posments, 1923, chummy 4-senter, do luxe. dynamo, sll-weather equipment, leather upholstery, Nock, sperdo Dulwich. Sydcoham 2452 . 686.537

ROVER, axceptional bargain, 1921 , 8hp, with chummy body, good order,



## SECONDHAND LIGHT CARS AND CYCLECARS FOR SALE (conlinued).


 Roven 8, 1 $\Omega 22,2$ scater, dickey, self-ataticr, good tyres, sound, 248. Below.
Canli. dêterred. cxcbanga Below.
Ward and Co.. 51 Opper Richmond Rd., Fast Pulacy. 'Pbono $2818-159.124$
 6628 .










 Rallon and Co.,


ROVER 8, 1925 model, 2 scalct with double dickes. completo and in


 ROVER 日, 192.3 , Jo luxe, dynamo, clock, specdometor, Ioatier upholatery,

ROVER, 81p. 1924. 2 -seater and dickay. excellemt condition. R85: two





 ROVER 19248 hp A senter, stater and lybilag, aprednmeter. all-
 ROVER 1925 Shp do luxe, 2 -seater and douhto sunken dickey, gharlor and lighutir 5 -lamp set, miliage a
blue, nosltively new condition, fl25.






 Roven, ghp, 1924, 4.scater do laxo bargain for 275: part exclianges

 ROVER 8, 1921, mechanically perloct, dynamo llghtior. 5 limpa, elee-
 nOVER 8, 1923 morlcl, saloon conpe, starter, klnenaber buo, very One





## SECONDHAND <br> LIGHT C.ARS AND CYCLECARS FOR SALE (contint.ed).

 nover 9. 1925 rodel. do lazo 2-zeater, mileago 3.000 , starter, dickey.
 ROVER 8, 1924 morlel, chumms, aide screens, new tyres, apecdometer.
aplendid condition, $\mathbb{5}$. Below. aplendid condiltion, 259 . Below.

 noven, 8 hp. 1924, 4 acater, dynamo lifheing als-wcather curtaina,

ROVER, 8 hp lato 1923. 2 -scater do luxe, specdometer, clock. leather Whholbery, nil-weatuer cutirmone excellene condition, guaranteed e665.
nOVER, lato 1921, £42 101. 8tp. 2-seater, dickecy, plde sercens, speedo-
 cxecptional bargain. Wilkina, Simpton, opposite Oi'smpia, London 686 - 33.33


ROVER, 1922. a cbummy. 272 10s. cash, or $£ 18$ 2a. 6d domn and 12





ROVER, 1923. 8 hp, 2ecater do luyo coupe, d.. 1 and B. leather apbol-


noven g. Fincbley Motora oficr 1924 2-anator and daublo sariken


Rover 8, 1924-25. do tuxa 4 -scater, nell-iarter, real leather aphol-


ROVER, 1923, gbp chummy, cxoclient condulion, 65 trines. Belcw.

 ROVER, ع38, 1922, 2-seater, dickes, dsnarmo lightinge in excrptionally


ROVER 8, 49 gulacas, 1923 chummy, aelf-starter. sety smant appear-


ROVER, 65 guineas, 1924 fall A-eceter, leather hood, aide acrecnis
nbalugly uncralchef,


ROVER B, 4 semtor 1925, with celf-starter, beautiful condation. elo0;


ROVER, 1921, 2-seater, 8bp, mari, maroon Inish, f39; exchangea ualanoe deforco. Newnhamix, Hoath Rd., Twickenham. Phone, Richmond
3293. ROVER A 2-scaters, several 1 פ21-3 models, cheap: cxchange motorcyclay, bond 5293 . novers. Sce onr wanderfal nine days" offer on page 29. Ktry and Ca.
22 Pracd Se. Paddiagton,
$686-804$ SALMSON. Apply to the Lomdon distributors, Gondon Watney and Co. I.td.. for doconc-uand Salman cark Screral iways in ohek. Part exW.1. Phude. Maglatr 2966 . 222.285

SALMSON, 1925, $10-15 \mathrm{hp}$. 4 -door allood front-mitect brakes, ballooga,

SALMSON, iato 1923, Grand Pry. Aited fith beavifil motila alu-

SALMSON 1925 Sports, bio. Gtarting and Hzhtiag. clock, apeedometer,
SALMSON, 1925, 10-15hp. 4-door miloon, Pront-cheal brakes, balloons, from now ear. insured, £275. K.J. Motori, Bromicy. indistinguinhabla

## SECONDHAND <br> LIGHT CARS AND CYCLECARS FOR SALE (conlinued).

## SECONDHAND <br> LIGHT CARS AND CYCLECARS FOR SALE (continued).

SALMSON. Sprosen, Ltd., for Enlmans. Exchanges, delerred pay 1922. livered $1923, \begin{gathered}\text { 2anater, dynamo, in perifect conditimm, }\end{gathered}$
${ }^{\text {lick }}$


SALMSON, 1925, 10hp, 2esenter sporis fitted special hood. new np

SALMSON. 1923. 10hn. acmlsports A-scater, atarter and lighting. Eng1.h buly, Ell. weather cquipment, clock, apcedameter, ferenty CPhone, Wiublidon 2041 .
SALMSONS. Sew page 25. Benmolors, $30-32$ Migh St., Wandaworth, $686-597$
\&.W.ig. Bntergen $15 j 9$.
 SALMSON, 65 m.p.h 1924.25, Brookinnda type, atrmamlined borly
 SALMSON. 17 F ENWarde olfer 192410 hp de luxo English bodj, 2 seater, sunt dobblo dicker, completcle equipped axcellent condition. 88
guinmas: exchanges or delorred 175 Gt. Porinad Si, w.1. Ninifir
6977 . 686.770 SALMSON, 1 の25. ${ }^{2}$-ernter, new mndibion, \& 110 exchanges, balanre do-


SCOTY SOCIABLE, 1922. J-whecler dyaamo lighting. interchangeab"o


SINGER 1924 10hp 4 -scater, palnted bluc, elcctric lights, sell-starter,
 SINGER. $10 h p$. 1924 do luxe 4 -scater, palnted bluc, leather npholtery and good sll-weather cquipment. balloon tyres. spechal 12 Fr . lighting

 SINGER. K.I Motars, Bromley, offer 1921 104p 2-scater and dickey,
687.616 SINGER. 1924 . 4-seater, colour blue, all-wenther equipment, clork,

 SINGER, 1 Ohp. 1921, aelt-atarter, sood condition, 250 , or near ofler, $\begin{aligned} & 34 \\ & 688 \text { h } 242\end{aligned}$

8inger. Saicty firsti Ernest Grimaldi. Lid., autborized Singer agenta licr the followins used model carryine 3 months witten gunrantco:-
SINGER, 1925. 4-meater de luxe, shop solled only. 2195
SINGER, 1925. 4-seater do luxo, excellent throaghout, $\mathcal{\Sigma} 160$
Lirnest Grlmald!, Led., 87-88 Gt. Portland St., W. 1. Muroum 3931.
686-608
INGER, 1925, $10-26$ de luxe, pucumatlo apholsters, mechanical wiper, alisolutrly new condition, insured, 8145 . Below.
SINGER, 1923, 10 hp , A-acaler, rigid all-wenther rear screct, nerlect
SINGER. 1924, 2-seater, excellent condition, x 95 : owner goinc abroad.
SINGER, 1926. 10-2G. de luxa 4-Ecater, all-wrather, new, condition, Uarrain, ci 150 . Lionel M. Pugh, 56 South Mollon St. W. Mayinir
4433 .
$686-571$

SINGER, 2-senter, splendid condition, 5 gned tres, 217 10. Makin
SINGER 10, dynamo, spendometer, 3 apeeds, rererse, good running order,

SINGER 10, 1915, 2-scater and dlekey, 3 specds and rererse, lamps born, rece. ongino just thoroughly overhanled, in very good condition


GINGER, 2-seater. 1921 , 10 hp , terma $£ 5$ 10n, and 10 payments of £5 10a, or wah \&55. MrCirthy's Motors, 49 Greca Lancs, Newíncion Green. N.16. Cllasold 6628
$686 \cdot \mathrm{j} 305$
SINGER, 1925, $10-26 \mathrm{hp}$. Asater do luxe, pneamatic upholetery. Triplex acecn luggnge grid. sumall mileage, practically nowi El75. Plekworth

GINGER, 10hp, clectric lightige, orerhanled, look: well, nearcst 820
SINGERS. Sce pasc 25. Benmotora, 30-32 IIgh St., Wandsworth,

SINGER 1925 latost improved model de luxe, 2189 16s., 4 -scater, maroon, unuscd, unacratehed, showroom solicd only, fully gunrantecd. ex ceplonal olfer, cash or casp paytucnts exchanges. Wilkins, Simpison,
oppoaito Olympia, London. 'Phono, Riversido 238 . $686-3340$ SINGER, 1925 model $10 \mathrm{hp}, 4$-seater, painted bluo, In exerptional con
 SINGER, 1925, Ealoon, 10hp, mileage under 6,000 , as new, c226 cash: deferred, exchanges, Blackley Motors, Rochdale Fd ., Minckley,
Manchester. 'Phone, Chcetham Hill 102.
$686-517$ GINGER, 1924, 10 hp , 2-zeater do luxc, desnamo, atorter, dirkey, ns new, Bulwn: also 246 252 Deansgate. Manchester SINGER, 1924 (late), 4-scater. blue, do luxe, leather upholatered, hag jual ben taken in exchange for mew model, open to ans exatninnton ar
tivl, price £100. Eeen at Ifydethorpe Motors, IISdetborpe Rd. Bal SINGER, Intest 1925 improved model do Iuxe, E 179 25a, 10hp. 4 seater, usid only few ulnes, b-and ncw in Augush, malenga y ood, In accurce. Wibklog, Simpson, opposilo Olympia, London. SINCER, 1924, s 212103 , 2 -scater do luxe, atarter, sll-seather, preclBimpsong. opporite Olgmpla, London. pasmerts, exchanges. Gilhing
G86-1337 SINGER, 1924, lobp, model A-seater do luxe, dashlighe, specdometer
 kias. Simprob, appusito Ulsmpia, London

SINGER 2-mmater, 1921 , unken dickey. self-atarter, shack absorbere, clock, acep mat, slde cartains, petrol can carricr. Eparo whed and erre, 60n, opposito Olyimpia, Lozdon.
$686-j 525$
SINGER. Marolet Simont. Sce "Miscellancous Cars." 686-801 SINGER coune, 1921 , starting and lighting, filly equippos and oscrbauled by singera at a cost of $£ 72$, monhanically cqual to ucw accept
£75. Empiro Motor Co., Withington, Manclicster. SINGER 1924 do luxe A-scater, starter, rlgid fido acreenq, Cilo: cxchanges, balnnce delerred. Newnbams, Leath Rd., Twichenhaw. 'Phogn
Iflimond 3293 . 86.795

 STANDARD, e198, barkaln, little uned, Ag new and perfect, 192G,
1J. 1 hp , SLandard Piccadils STANDAND, 1921, 2-3calcr, doublo dickey, gencral condition 680-1210 €51. Gonulne bargain: exchange. Grice, Ilucklulte, Beds. 686-j28a STANDARD, 1924, all-weather 4-Ratar, dvmamo and ataricr, fllo: diances or dnicrred icrms. TMo Light Car Co., 404-414 Eusto Fex

 STANDARD, 35 -acator, ns bramd new, s98. Dclolorda, North Row,
behind Marblo Arch Pavilion. STANDARD, 1923, 11.4, do laxe nll-weather 2-seater, poricet, £85. STANDARD, 1924, 11.4, 2-seatmy all-wenther, nerfect, s110. Lionel STANDARD, 2-zeater nnd dickoy, dynamo. sncedomelor, 3 apeds, reverse, spare wheel.
Mart, 151 Whileo IIart Lane, Barnes.

STANDARD, ${ }^{1923,} 11.4$, 2-scater, no roasonable offer refused. Apply,
Box No. 3482, c.o. "rike Lisht Car and Cyclecar."


STANDARD. IISdelhorno Motorn, of 31a Mydethorpe Rd., Bitham, olfor the followin

1924 2-brarer do luxe, leather upholatered. mileage 6,000, fins car 23 new, 100 guineas: 19252 seater de luxe, $e^{2} 125: 1923$ do luxe 2 -seater, in excellent order, e79: 1923. nearly 1924, 4-seater, as now in cvory
way, e80.
 lent condlitin: cash or oasy payments, oxchanges. Wilkins, Simpaon,
G8G-j 342 opposite Olympla, Londna.
STANDARD 19219.5 2-scater, e75. Georgo Nemman nod Co. 369
Euntod lid., London.
$686-740$
STANDARD 1924 model, $11.4 \mathrm{hp}, 2$-acaler, sunken dirkeg, ntartor, clock,


686-747
STANDARD. Marold Slmons. Sce "Miscellancons Cara." 686-823
STANDARD, 1919, 9.5, 2-scater, fell-starter, dark blue finish, allWeather oquiproent, \&.62; exchanpes, balance deferrec. Newnham'si

## SECONDHAND <br> LIGHT CARS AND CYCLECARS FOR SALE (conlinued).

 wWIFT, 1023. 1Ohp. 2-seater, excellent order, any inancection or


 SWIFT, 1921. 2-sentcr, jost anent $\mathfrak{s 1 2}$ on orefhaul, $\mathfrak{e s o}$. South Ealing WIFT 10, 3.sweater, ns brand new. thoroughbred. ©96. Detulurdit WIFT. 921 . TUnp, 2-scater And dooble dickes, atarter and
 SWIFTS. Sce pago 25 Henmotora, 30.32 lligh St., Wiandaworth.
 with the uptum, il n enceial rebate l.amb's. Lid., 80 Nigh Res., Worid
Greesh in. 22 . or at branchas by arrangoment.
$686-457$


 swift, 29 gumes, 1020 Swift 2 -scater, dickry, dynamo apare wlieri, SWIFY ,ars, brami new, ą hargain pricce; 1925 lohp galoons, liee
 TALBOT 1923 10-23hp (CS tas) 2-zcater and ank-ith dickos, condition

 TALBOT 8, 1923. 2-reater antl dickey, zigid sido curtaina, excellont conithy thrnighoul, E95. Iichnnge or lurms. Chester Mighnll. Stnurclific Sl. lilgwaro RU. Paild. 3553 (4th turn righe from Marble Arch). 686.584
Almaya open. TALBors. Se page 25. Benmolora, $30-32$ High St., Wandswarth,
S.w.18.
686.598 TALBOT, $1923.8-18 \mathrm{hp}$. do luxe 2-scater, cilckey, full equipmint, nt new. El30: cxchmber, deferred payments. Parker's. Led. Bradshnopate,
Bolthn: alan 246-252 Deansgate, Minncheater. YALDOT, 1924, 4-senter, x193 10 ensh. or e49 17 a 6d. duwti and

 TALBOT. II. F. Edwards offer 1924 10-23, A-door ealoon, completely TALBOT 19231023 A-smter, completoly equipped, rigld all-weather
 TALBOTDAMFACO. E79 15a. Into 1922, 8-18hp. 2-acater, dickey,


 WAVERLEY, 1923. 2-scater, faxed, rlectrlo efartink, £ 110 coush, or
 WOLSELEY cars Arcredilerl Agenta, Moonco Presto, North Ead and WOLSELEY 7, Miny 1923. chummy. 2-3-scater, arlf-aterter, iwo adules, chirhauled. barmoin c66. Inepection bs aprolotment 62 Courtfeld Gardens. Weml Ezaling. 686-j279 WOLSELEY 7. Ollers. 1924, de luro. startor, all weather. dictey, as WOLSELEY 68k-512
 WOLSELEY, 1924 . 2-peatcr, 2145 rasb, or 236 sa, down and 12


 WOLSELEY, [3ranklands maricl 10 hp . alaminium Ends. Fery smari and
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