

# THE AUTOCAR

A Journal published in the interests of the mechanically propelled road carriage.

EDITED BY H. WALTER STANER.

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## The Autocar.

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## Notes.

### The Paris Salon.

There is no doubt that the French annual motor show has fallen from its high estate, and the centre of interest has shifted from Paris to London despite the advantage the Parisians have over the Londoners so far as an exhibition building is concerned. No one can truthfully maintain that the huge dingy shed known as Olympia can compare favourably with the imposing light and graceful Grand Palais, which even, if less sumptuously illuminated than heretofore, still presents an almost infinitely more pleasing aspect than Olympia.

Motor exhibitions are not made, or marred, by the building, or the Olympia Motor Show had died long ago, but by the cars and general all round interest of

the exhibits. Paris still leads in the volume of its accessory and parts exhibits, which constitute a much larger and more representative department than at Olympia, but when it comes to chassis and complete cars Olympia has far more of an international display and a much more interesting collection of cars. We do not assert that there are no interesting cars in the Salon which have not been previously exhibited at Olympia, but we say unhesitatingly that if one has visited the London show one can find very little that is novel or meritorious in the Paris show with which one is not already well acquainted.

In London practically every French and other foreign firm of note was well represented. In Paris all the leading and many minor French houses show their wares, as do many of the foreign firms of importance, but only one English make—the Siddeley—is to be found. Therefore, in Olympia we find England plus the world, but in the Salon we only find France plus a smaller portion of the world and practically minus England.

### London the World's Motor Mart.

Speaking from memory, we believe we are right in saying that Mr. Edge was the first to publicly recognise the trend of affairs, and some years ago he boldly prophesied that London would become the world's motor mart, and that Paris would lose its then undisputed position. To a large extent this has been brought about by the French themselves. In all their so-called international shows they have kept all the best positions to themselves, and the foreign, and especially the British, exhibitors have been given the worst positions in the Grand Palais. At Olympia all have fared equally, and the foreign firms have shared and shared alike with the home firms, and each have had equally good positions. Beyond this it is well to remember that it has not paid the British firms, with one or two exceptions, to exhibit in Paris, but it has paid the French to exhibit in London, so that, notwithstanding the growth of the British industry and the excellence of the British cars, those French houses which have made and continue to make good cars still command as large a market in England as they did when the majority of British cars could not be compared favourably with theirs.

These are the main reasons why the French exhibition has fallen to a secondary place; there are others, but we need not go into them here. We still have the greatest admiration for French motor cars of the best makes; indeed, we flatter ourselves that we can appreciate a good car whether it be made in England or any other country, and our pages prove this incontestably, but we must say that, so far as the Salon is concerned, the French have but reaped what they have sown, and their short-sightedness has robbed them of the premier international motor exhibition, and has given it to those who treated all exhibitors with impartiality. Yet in a way we are sorry, as we cannot forget the past. France gave us the motor car, and for this we and all true motorists must ever be grateful.

### Street Lamps.

All users of suburban roads, whether they be pedestrians, cyclists, horse drivers, or motorists, would be greatly benefited if those who were responsible for the placing of street lamps ever ventured beyond the most brilliantly illuminated thoroughfares at night. We have no hesitation in saying that as the lamps are at present placed on many of the more poorly illuminated suburban thoroughfares they are a hindrance rather than a help when there is fog or heavy mist.

The trouble is brought about by the senseless practice of staggering the lamps. Instead of putting them all on one side of the road they are zigzagged from side to side, and, unless the road is quite straight, the lamps, instead of guiding the wayfarer, serve to baffle him, as a curve will bring lamps on opposite sides of the road into line, and it is only when the driver has driven on to the kerb or the pedestrian tumbled off it that it is realised that the road which was believed to be straight, or nearly so, had a bend in it. Then, again, there is the senseless system of placing some lamps on the kerb and some several feet away from it—that is, on the inside of the footpath or pavement instead of on the outside.

It should be plainly understood that we are dealing now with suburban districts and the fringes of towns generally, not with the urban districts proper, where it would, we suppose, be impossible to place the lamps down one side of a street, although it would be much more convenient, but no doubt it would give rise to heart burnings among the ratepayers, who would imagine that the residents on the side on which the lamps were placed were getting more for their money than those on the other side. In the town proper the staggering of the lamps does not baffle traffic in the way it does in the outlying areas, where the lamps are much further apart.

We have noticed in one or two provincial towns recently that the matter has had attention, and that as soon as the outskirts of the place were reached the lamps had all been brought across to one side of the road, and we hope ere long that this example will be followed throughout the country. Another good practice which we should like to see universally adopted is that which is common in East Anglia. In many of the East Anglian towns the first lamp when entering the town from the country has a red or green glass on the country side. This is a great advantage, because the coloured glass reduces the dazzling effect of the light. Directly one has got among the lamps the dazzling effect ceases. This does not really matter much to motorists, as of course they have powerful headlights, but cyclists and horse drivers are very often baffled by the glare of the first lamp.

Up to the present, with very few exceptions, the outlying districts of towns have been lighted without the least thought or consideration. All sorts of baffling optical combinations have been set up, for the simple reason that the lamps have been erected without any preliminary experiments. A lamp has been dropped at intervals of so many feet just as though it had been sown by a machine. If the lighting authorities had taken the trouble to walk round the district they proposed to illuminate after dark accompanied by a labourer with a hurricane lamp on a pole, they would have soon seen that there are many spots upon which a lamp, instead of being a guide to traffic, is a constant source of danger, and had this been done many accidents which have occurred would have been avoided. However, the moving of a lamp post is not a very serious matter, and now that some of the more enlightened authorities are dealing with the subject in an intelligent manner, it is not too much to hope that very soon their example will be universally followed.



Dorando, the famous Marathon runner, trained for his recent match with Hayes with the aid of a White steam car.

The friends of Mr. Kodakowski are projecting a complimentary dinner to him in connection with his retirement from the position of Clerk of the Course at Brooklands. A small committee has been formed. It is proposed that the dinner shall be held in

February next, and that it shall be accompanied by the presentation of a testimonial commemorating his services to the automobile movement during this and last year. The address of the hon. secretary of the committee is 71, Curzon Street, Mayfair, W.

## USEFUL HINTS AND TIPS.

### SQUEAKING CAR SPRINGS AND HOW TO CURE THEM.

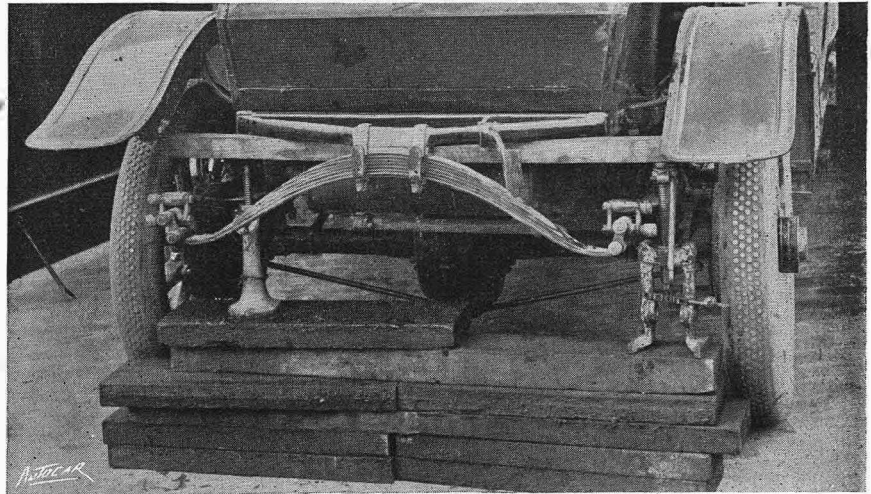
#### Attention to Springs.

Many cars squeak distressingly on rough roads, and the owners are often puzzled, as they know that all the spring pins are properly lubricated. What they do not seem to recognise is that the majority of cars have springs which from time to time require lubrication between the plates or leaves of which they are composed. If you have a car which squeaks mysteriously, first of all satisfy yourself that it is not what, for want of a better term, we may call a mechanical squeak. That is, assure yourself it is not caused by, say, an unlubricated universal joint or want of oil at the clutch collar. In fact, make sure that it is no part which is constantly revolving, as squeaks from an unlubricated shaft of any kind are very serious. Having satisfied yourself that all the running parts are properly lubricated, turn attention to the springs and brake rods. Oil all the pins and bearings, and if they are provided with grease lubricators take off each lubricator, see that it is filled with nice soft grease, and before screwing it home again push a wire into the hole in the spring pin and inject a drop or two of thin oil. Having done this, the squeak may be stopped, but it is almost impossible to study spring squeaks on the road. The way to find them out is to take hold of the dumb irons, one with each hand, and lift the car up on its springs. This may sound a herculean feat, but no great effort is required, as if one pushes and pulls in sympathy with the compression and rebound of the springs, after two or three efforts the car begins to rise and fall three or four inches on its springs. If the springs are dry, the result will probably be a most distressing chorus of squeaks, and nothing can be done to stop them while the weight is on the springs. The thing to do

is to take a couple of jacks and put them under the frame, so that the weight is lifted off the springs. To do this, it is usually necessary to use a stout piece of wood an inch or two wider than the frame and about three inches square, as the jacks have to be placed inside the frame to miss the springs. The jacks will not be long enough to reach up to the wood, so it will be necessary to pack them up with some bricks or convenient pieces of wood. The illustration shows a car jacked up so as to take the weight off its back springs. Having carefully jacked up the car, the leaves or plates of the springs will come apart slightly. They should be forced apart somewhat more than they come naturally by means of a stout screwdriver, and a copious dose of oil poured in between each of the leaves. Then a little grease should be pushed between each leaf by means of an old table knife, or, better still, one of the flexible pallet knives which painters use, and which can be bought at any oil and colour shop or ironmonger's. The blade of the knife should be thickly greased and worked up and down between the leaves of the spring. When this has

been thoroughly done the jacks can be let down and the weight taken again by the springs, and the trouble of squeaking will be stopped probably for some months. The operation must be carried out both at the front and back of the car. Some people advocate the use of grease only for lubricating the springs when the weight has been taken off them, but we believe in the plentiful use of oil first, as that will penetrate down between the leaves where even the thinnest pallet knife cannot be pushed, or if it can the space between the leaves is so small that the grease is forced off the blade.

We may say that the operation does not merely result in the stoppage of spring squeaks, but the springs themselves work much more freely, and the car is much more comfortable over a bad road. We should add that we do not recommend the lubricating of springs in this way unless they squeak, as some run almost indefinitely without any tendency to squeak at all, but the great majority will be all the better for the attention suggested, as the squeaking is not only most unpleasant but, as we have said, the easy action of the



The method of packing the jacks up under the car by means of wood blocks. Note the beam of wood inserted between the car frame and the heads of the jacks.

springs is facilitated by lubrication, and last, but not least, rusting is prevented. When the springs begin to squeak it is, as a rule, an evidence that they are beginning to rust between the leaves. We have found that most cars when new run a very short distance before the squeaking commences. This is due to the very careful washing and cleaning of the springs by the coachbuilders before painting. Such precautions are taken to remove all dirt and grease that the water is apt to be forced between the leaves more or less, and as every particle of grease is removed from the outside of the springs some of the penetrating cleansing materials used get between the leaves, and by the time the coachbuilder has finished with the springs there is very little grease left, and the more carefully he cleans them before painting the more effectually is every trace of lubricant removed. Another point to be remembered is that the more easy the springs of a car may be the more sensitive are they to lack of lubrication, because the movement between the leaves of the spring, though small, is constant, and the more flexible the spring the greater the movement. One pre-

*Useful Hints and Tips.*

caution should be observed before attempting to force the leaves apart when the weight has been taken off them for inserting the lubricant, as some cars have the top and bottom leaf held together by studs at each end, so that the two top leaves are practically one, and there is no need for lubrication. These studs are not always very strong, and if much force were used they might in some cases be broken, especially as provision is always made in riveting for a certain amount of

flexibility. That is to say, the rivet is not always intended to be strongly secured to both leaves; it is merely meant to keep them together at the ends.

Another point to be borne in mind is that, while the weight is removed from the springs, it is always well to thoroughly lubricate the spring pins, even if they are not squeaking, as the lubricant, especially if it be grease, will penetrate much more easily when the load is removed from the pins.

## MEETING THE ENEMY.

Rural residents, farmers, and others interested in the land and its cultivation, no less than the dwellers in large centres, should be able by this time to see that the motor car is destined to be their best friend. This notwithstanding the attempts of certain prejudiced individuals who are actively trying to poison their minds against it. The cry of danger, dust, death, destruction, etc., etc., which anti-motorists are raising is not likely under the improving conditions to have much effect. Detractors protest too much, and their pertinacity is becoming somewhat tiring even to those who, they presume, will take heed. The motor car has a mission to fulfil, not merely as an instrument of pleasure, but as an aid to commerce and industry. True, it started as the vehicle of the leisured and wealthy classes, and it will continue so, but other classes have not been slow to recognise its benefits and utility as a means for enhancing their enjoyment and their business interests.

For the leisured classes motoring adds new pleasures to life, dispelling the *ennui* which previously seemed to be settling upon them, and giving them interests to which they had been strangers. Such activity as is thus aroused is good for the nation. Amongst other things, it brings business and renewed activity to the aforesaid deserted countryside, where human life was beginning to pall, if not to become extinct. The motor car makes it possible for county families to take up their abode in hitherto practically inaccessible parts of the country. By its aid they are brought within easy distance of the large centres of population and of each other, and the amenities of social life are thus increased enormously. Other families of less note are also distributed at greater and greater distances from towns, where otherwise they would be compelled to adhere to the lines of railway. What is good for the higher and the middle classes is also good for those beneath. In the motor car, intelligently applied to the needs of the population, there is ready to hand the means for relieving much of the killing congestion of our huge, unwieldy towns and cities. The motor car does not confine its favours to one class of society, as is erroneously urged by its opponents. It distributes them equally amongst all, and not least amongst those whose minds its bitter opponents—irresponsible carpet-baggers who seek to eke out an existence by fomenting agitations wherever an opportunity offers—would seek to inflame against it.

Although, as we have inferred, there is a glimpse of a good time coming for the motor car, we are conscious of the fact that there is yet a great deal of work to be done to counteract the pernicious influence of hostile agitators, who, like most ugly things, are really not so formidable as they at first sight appear. We would follow up the suggestion we made some weeks ago as to the necessity for what may be called an anti-misrepresentation campaign, by another.

The members of the various motoring organisations should cease quarrelling amongst themselves as to which of them is greatest in the kingdom of motor-dom, and devote some portion of their surplus energies to the enlightenment of that portion of the general public within the range of their immediate influence upon some of the points we have named. Lantern lectures might be arranged upon the public benefit aspect of the motor car movement, as distinct from its historical and mechanical sides, which have been pretty extensively dealt with already. In this way something might be done to stem the tide of misrepresentation and abuse which is apparently gathering in strength, but which we maintain is really weak and flabby. Under the influence of teaching such as we have suggested, the minds of the people would be prepared to resent and to appraise at their true worth—or worthlessness—the shoals of circulars and statistics which are issued by industrious and self-seeking mischief-makers. Invitations to the lectures should be sent to the local press, or short reports of the lectures should be supplied, where required. Every opportunity should be seized of writing letters and articles setting forth facts and arguments tending to show the motor movement in its most favourable light as a benefactor to the community at large.

We should be pleased to render any assistance in our power to local motorists, and we have no doubt the Royal Automobile Club, the Motor Union, and the Automobile Association would each in its own sphere help to provide ammunition—that is to say, facts and arguments—for thus carrying the war into the enemy's camp. Motorists have loftily submitted to abuse and misrepresentation too long. The enemy appears to be mistaking this indifference for weakness. It is not merely necessary to adopt defensive tactics; the enemy's guns must be silenced. Then, in the calm which would follow, the public would be afforded an opportunity of assimilating the facts and arguments in favour of the motor car movement, and which tend, incidentally, in the direction of their own upliftment.

A great deal of the energy of the motor antagonists is devoted to circularising local bodies—county councils, borough councils, district councils, parish councils, and the like. Motoring organisations should adopt similar tactics with a view to supplying the antidote to the poison purveyed by the others. Of course, it is unnecessary to point out that this should be done in no mean or petty spirit, but in a dignified and reasonable manner upon the authority of the leading motoring organisations. Facts relating to the motor movement in its bearing upon the benefits that it is capable of conferring upon urban and rural communities should be explicitly stated and arguments deduced showing the wisdom of doing everything to encourage the motor industry, or, at any rate, to give it a fair field rather than to strangle it in its infancy.

## SOME IMPERIA PARTS.

A second examination of the Imperia chassis shown at Olympia revealed to us several little features of design which deserve further description and illustration. In fig. 3 we have a sketch of the steering lever as it is set outside the frame member. This sketch

tration. This universal joint occurs on both the 16-20 h.p. and the 20-30 h.p. chassis.

To the two chassis just named the particularly neat and well designed interconnected hand and pedal throttle control is fitted. B is the connection from the throttle pedal, and A from the hand control. The connecting rods and links are all so arranged that the pull upon the rods comes only exactly in the direction of their length, no twisting or cross strain being cast

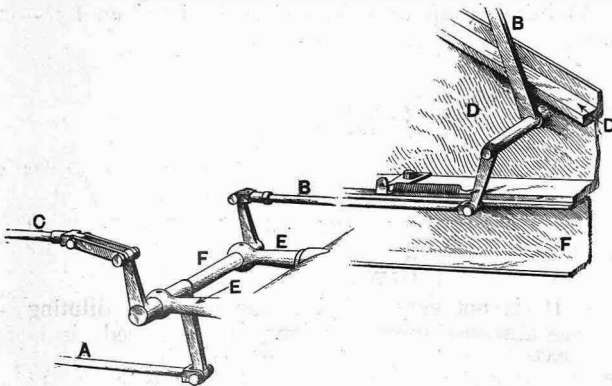


Fig. 1.—The Imperia hand and pedal throttle control.

A, connection from hand control  
B, connection from pedal control  
C, connection to throttle  
D, aluminium angle casting for foot-board  
E, bossed bracket arms  
F, cross shaft

shows the jawed locking clip A for locking and securing the hexagonal nut B, which secures the steering lever C to the sector spindle. The sketch also shows the excellent universal joint connection D between the lower end of the steering lever and the steering rod E.

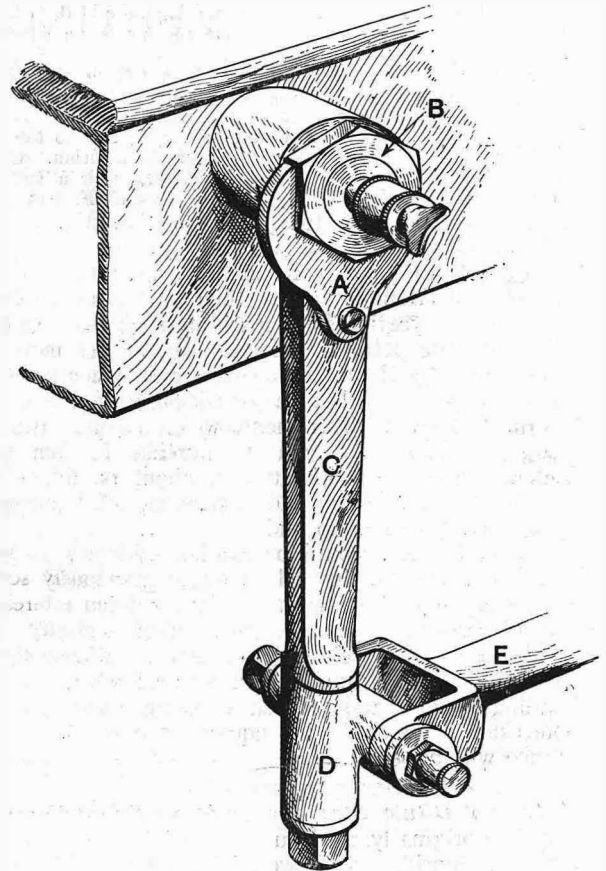


Fig. 3.—The arrangement of the Imperia steering arm, showing the locking plate and universal joint.

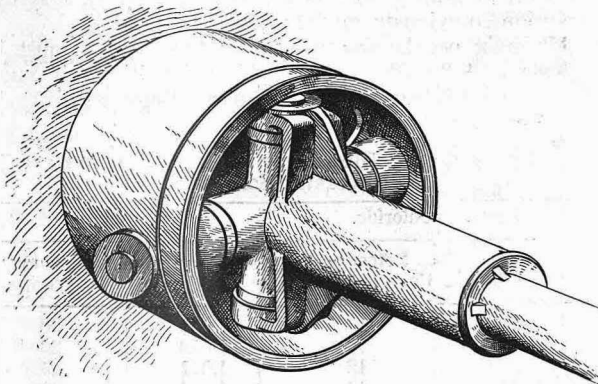


Fig. 2.—The Imperia universal joint.

This arrangement occurs on both the 12-14 h.p. and the 16-20 h.p. Imperias. Fig. 2 is a discovered view of the Imperia universal joint, which is theoretically correct in design, and is entirely enclosed in lubricant by a cap fitting on to the open end of the drum, and withdrawn in the present case for the purpose of illus-

upon them. We cannot recall any arrangement of the thing in which the combination has been more completely and straightforwardly achieved. It is also noticeable that the bosses E E which carry the cross-shaft F are cast on the top front edge of the gear box.

The agents for the Imperia cars are Messrs. C. E. Whittaker, Ltd., Great Russell Street, W.

To have been upon the market and before the public for twelve months without complaint of any kind is a record of value which accrues to the Aimia sparking plugs by the Abolo Company, of 133, Regent Street. This company have such faith in the Aimia plug that they now guarantee every plug sold for the space of twelve months against defective workmanship or material. This guarantee will come into force from 1st January, 1909. The Abolo Co. further inform us that after having subjected the Aimia plug to a very severe set of tests they have now adopted it, and the W. and G. plug now marketed by them is made under the Aimia patents.

The Motor Union Athletic Club was inaugurated two years ago for the benefit of the members of the Motor Union and the Motor Union Insurance Co., Ltd. Its playing members indulge in cricket, football, and swimming, while during the winter months concerts, etc., keep up the interest of all. The first of the social gatherings for this winter took the form of a Bohemian concert on November 27th at Anderson's Hotel, Fleet Street, E.C. The challenge trophies won during the year were presented by Mr. Rees Jeffreys, one of the vice-presidents. The hon. sec. is Mr. F. G. Bristow, 1, Albemarle Street, Piccadilly, W.

# NON-FREEZING SOLUTIONS.

## METHODS OF CALCULATING STRENGTH FOR REPLENISHMENT.

A correspondent, Mr. Randle F. Holme, writes:

Will Mr. Stacey Jones supplement his very useful information on this subject, contained in *The Autocar* of November 14th, by telling us of a simple method of testing how much glycerine is contained in a given solution? This is required because, as he points out, when the volume of the solution is reduced by evaporation, plain water can be added to bring the solution up to its original volume and strength; whereas, if it is reduced by leakage, solution and not plain water should be added. Now the difficulty is to know to what extent the volume has been reduced by evaporation and to what extent by leakage; of course, both causes generally operate together. Hence it would be very useful to know a simple means of testing the strength of the solution. Could this be ascertained by a petrol densimeter, with a suitable formula?

RANDLE F. HOLME.

We submitted the foregoing letter to Mr. Stacey Jones, and the following is his reply:

In reply to your correspondent, the best way of finding the strength at any time of either calcium chloride or glycerine solutions is by means of a densimeter. The petrol densimeter will not do, as this is only graduated for liquids lighter than water. One is required that will give densities from 1.000 to 2.000. Such an instrument, which is more usually called a hydrometer, can be purchased from any dealer in chemical apparatus for about 1s. 6d. (In London Messrs. Griffin and Sons, Ltd., of Kingsway, or Messrs. Gallenkamp and Co., Ltd., of Sun Street, Finsbury Square, would be available.)

In the accompanying tables I give the densities and corresponding percentages of both calcium chloride and glycerine solutions. The solution should be run out into some vessel deep enough to allow of the hydrometer floating upright, such as a bucket, and the reading taken exactly the same as with petrol. On referring to the table the equivalent content of substance will be given.

### CALCIUM CHLORIDE SOLUTIONS.

1. *To Dilute Strong Solutions.*—Supposing that one has originally made up a solution of about 18% calcium chloride, which would have a specific gravity of about 1.115, and that after some time in use some of the water has been evaporated off, so that on testing the gravity is now 1.13; this will mean that the solution is now of about 20% strength. The following formula will show how many ounces of water should be added to a gallon of the strong solution to bring it to proper density: Call the percentage content of the strong solution A, and that of the solution required to be made a.

Then number of ounces  

$$\frac{160 \times A}{a}$$
per gallon required to be added is given by

— 160. For example, in the case quoted, the number of ounces that must be added to one gallon of the 20% solution to bring it down to 18% is

$$\frac{160 \times 20}{18} - 160 = 178 - 160 = 18 \text{ ounces.}$$

18

2. *To Strengthen Weak Solution.*—If the solution has become weaker by addition of water after leakage, etc., a more simple formula will be applicable. The density is taken as before. Call the percentage content of weak solution found p, and call that of the solution required to be made up P. Then the number of ounces of solid commercial calcium chloride that must be added to each gallon of the weak solution

to bring it up to proper strength is given by  $\frac{8}{5} \times (P - p)$ . Thus, supposing the original solution of about 18% to have become weakened down to 16%, the amount of solid to add per gallon is  $\frac{8}{5} \times$

$$(18 - 16) = \frac{8 \times 2}{5} = \frac{16}{5} = 3\frac{1}{4} \text{ ozs. nearly.}$$

### GLYCERINE SOLUTIONS.

It is not easy to give formulæ for diluting or strengthening these solutions, and, indeed, it is far better to work from the densities only. That is, if the solution has got too concentrated it should be all poured out into a bucket, the densimeter put in, and then water added little by little till the gravity is right again. Of course, the liquid must be well stirred after each addition. The same procedure will serve to perform the reverse operation, only the strong glycerine should be added instead of the water.

The same way will do very well indeed for getting the calcium chloride solutions right, except that, instead of adding in this manner solid salt, a syrupy solution (previously made) should be used.

It must not be forgotten that the liquids must be at about 60° Fahr. when taking densities; if much hotter or colder than this the readings will not be accurate.

STRENGTH AND DENSITY OF CALCIUM CHLORIDE AND GLYCERINE SOLUTIONS.

Calcium Chloride.		Glycerine.	
Densities.	Percentage Commercial Salt.	Densities.	Percentage Glycerine.
1.06	10	1.051	20
1.07	11	1.056	22
1.075	12	1.061	24
1.08	13	1.066	26
1.09	14	1.071	28
1.095	15	1.075	30
1.10	16	1.081	32
1.105	17	1.087	34
1.115	18	1.093	36
1.12	19	1.098	38
1.13	20	1.105	40
1.135	21		
1.14	22		
1.15	23		
1.155	24		
1.165	25		
1.17	26		
1.18	27		
1.185	28		
1.19	29		
1.20	30		
1.205	31		
1.21	32		
1.22	33		
1.23	34		
1.24	35		

From the Dutch Touring Club the M.U. has received for its library a distance map of Holland, plans of cities, and six volumes of the guide to Belgium and Luxemburg. Members requiring maps, road books, and guide books for touring at home or abroad will, on application, be sent a fifty page list.

## Motor Union Notes.

(Communicated by the Secretary.)

Two important decisions have been gained from the Board of Trade by the Union as the result of its opposition to the confirmation of the Mid-Lincolnshire Light Railway Order. The Board has upheld the Union's objection in regard to sub-clause (1) of clause 24, "which has now been amended so as to make it clear that the last lines thereof apply only to the case of one additional line, for a passing place, on a single line." The effect of the Union's intervention is that an additional line may be laid across a highway only in the case of a single line to enable trains to pass each other at the station. Moreover, the Board adds: "This amendment to clause 24 will be adopted in all future orders of the same class." The object is to prevent shunting operations across the highway to the delay and inconvenience of the road traffic.

◇ ◇ ◇ ◇

The representatives of the four principal petrol companies will meet the Executive Committee of the Union in conference on Monday next.

◇ ◇ ◇ ◇

In reply to a communication from the Union, the Board of Trade states that it is not proposed by the Board to hold an inquiry into the circumstances attending the fatal accident near Northwich Station on November 5th, when a lady who was riding in a motor car was killed as the result of a collision between a train and the car at a level crossing unprotected by gates. The Board, however, is "in communication with the Cheshire Lines Committee in regard to the means adopted for protecting the crossing."

◇ ◇ ◇ ◇

Complaint has been received by the Union that the Pembroke Rural Council has thrown down long stretches of limestone and left it to be worked in by the traffic. It is further stated that the majority of the Council refuse to introduce rolling. The Union is taking up the matter in conjunction with the Welsh A.C.

◇ ◇ ◇ ◇

The American A.A. informs the Union that many Americans will "tour the Continent next year owing to the prosperous times which are assured by the election of Mr. Taft to the Presidency."

◇ ◇ ◇ ◇

Prominence may be given to the objects of the Legal and Legislative Defence Fund, which concern all motorists, whether members or non-members. They include watching legislative proposals, taking test cases to the High Court, opposing speed limit and prohibition applications when necessary, assisting (under special circumstances) members summoned, appeals to Quarter Sessions, and prosecuting persons who have assaulted, obstructed, or thrown stones at motorists. Contributions received between November 28th and December 4th are:

£1 1s., W. H. Stevens, Esq.  
10s. 6d., G. B. Wallers, Esq.

Towards an expenditure of £543 the sum of £208 19s. has been received.

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At a meeting of the Chorlton-cum-Hardy Ratepayers' Association, the following resolution was passed:

"That the best thanks of this Association be tendered to the Motor Union for supplying the three danger signs which have been fixed in Chorlton-cum-Hardy."

One hundred and twenty-three car badges were issued in November, bringing the total to 4,877.

Badges for hon. local correspondents will be issued in the course of a few days. The Union is indebted to a considerable number of members who during the past two months have kindly agreed to take up the duties of local correspondent, and the Secretary will be glad to hear from ladies or gentlemen willing to act in the following districts:

"Aberystwyth, Bettws-y-Coed, Banbury, Corwen (Merioneth), Canterbury, Fishguard, Hay, Hereford, Huntingdon, King's Lynn, Lichfield, Marlborough, Market Harborough, Newbury, Penrith, Ross (Herefordshire), Spalding, Stafford, Stratford-on-Avon, Towcester, and Yeovil."

The Local Government Board has issued an Order for a ten mile speed limit on a portion of the main road through the urban district of Newhaven. The application was for an eight mile limit, which was strongly opposed by the Motor Union, though it was prepared to acquiesce in a ten mile speed limit. It will be seen that the Board has given an Order in those terms.

A reply by the secretary of the Swiss Touring Club to an enquiry made by the Union on behalf of a member, and which may be useful to others proposing to tour in Switzerland, is as follows:

"The itinerary projected by your member is quite practicable, and he can drive his car to Interlaken, *via* Geneva, Vevey, Bulle, Berne, and Thouna. Perhaps he would do well to call at our offices for further information, and we shall be very pleased to place ourselves at his disposal. It is clear that in the case of a snow-storm this itinerary would no longer be practicable to a motor car or any other method of locomotion, but such eventualities are quite improbable on the route in question."

One of the advantages of membership of the Union is that members touring abroad are able to obtain the services of the powerful touring organisations connected with the L.I.A.T. Founded many years ago, they have strongly established themselves, and can do much to secure the comfort of touring members.

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A Liverpool member summoned for an unlighted tail lamp writes:

"Your excellent advice being taken, my case was dismissed on payment of costs, thus avoiding endorsement of license."

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A number of Irish motorists have written for an explanation of their position consequent upon the termination by the Irish A.C. of the agreement with the Union. One correspondent writes:

"I have been from the earliest days a member of the Irish A.C., and considered that I was an *ex-officio* member of the Motor Union. Will you kindly inform me whether I am entitled to the full advantages of membership, and also to a free copy of *The Autocar*, and to the use on my car of the M.U. badge?"

It is necessary for the inquirer to become an individual member of the Union if he is to continue to receive its benefits, which are far more numerous now than when the affiliation agreement existed. The same reply is applicable to members of English clubs not now affiliated, and from whose ranks the Union is gaining many new members.

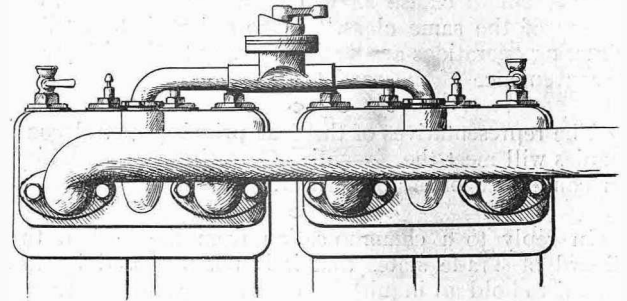
## THE PARIS SHOW.

### A GENERAL REVIEW AND CRITICISM OF THE EXHIBITS IN THE SALON.

After a careful survey of the exhibits at the Salon we are bound to say that there are very few advancements in mechanical design or workmanship in the French show which have not already seen the light at Olympia. Practically all the best Continental cars were to be found at Olympia, and many of the chassis and some of the cars are the identical ones shown in London. There are, of course, certain novelties, but many are of no mechanical advantage in the first place, or of use to the owner of the car in the second. A complex mechanical construction is no advancement, unless the user is to derive some ultimate benefit from it in some pronounced form. Take as an example the present popular practice of casting the four cylinders of the very small type of motor in one piece. It involves an intricate casting in the first place, apt to contain hidden flaws; it is difficult to machine as compared with a two-cylinder casting; any error of workmanship has to be patched up, or an expensive casting thrown away. So much for the major disadvantages. The sole gains of this type of motor are: A neat-looking row of cylinders; a short crankshaft, often so short that a central bearing of any useful dimensions cannot be employed; a minimum number of water pipe joints; and a more or less simple arrangement of the inlet and exhaust pipes. The advantages to the owner are not easy to arrive at, but disadvantages which stand out strongly are: That the provisions for adequately draining the water-jackets during cold weather are non-existent, so that there is always a risk of cracked cylinders after one has imagined that all the water has been let out; cracked cylinders invariably mean a replacement with new ones, not one or two in this case, but all four; the light and often insufficiently supported crankshaft will twist and whip under load, wearing out the bearings and making a noisy running motor.

One of the best designed small four-cylinder motors of under 12 h.p. was the Buchet. This has its

cylinders cast in pairs to a very practical and symmetrical design. The valves are all on one side of the cylinders, and are of large diameter, the inlets in the centre and the exhausts on the outside; the carburetter is placed on the right side of the cylinders, opposite to the valves; a small diameter induction pipe takes a very rich mixture to a branched pipe leading to the inlet ports from the *top* of the valve box, so leaving a clear run from the side for the exhaust pipe. The



The uncommon inlet and exhaust piping design on the Buchet engine.

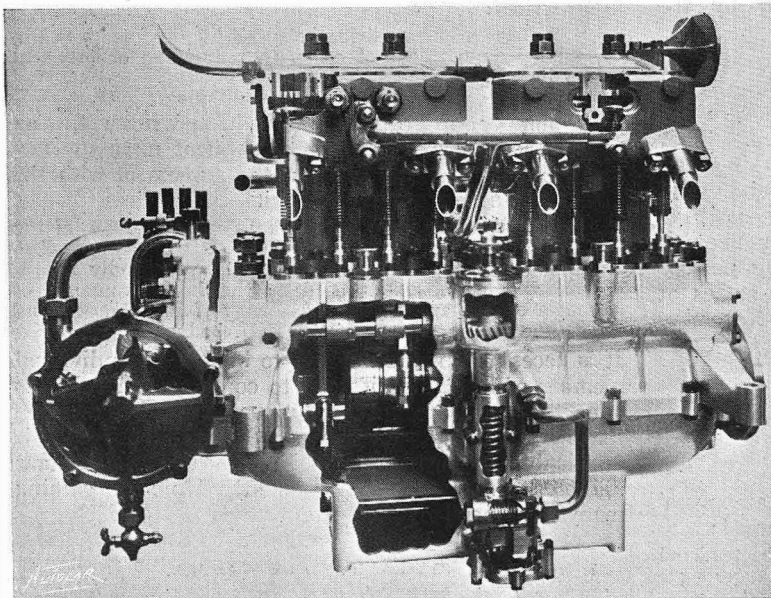
throttle valve is placed in the centre of the branched induction pipe, and is made to admit pure air to the rich mixture proceeding from the carburetter, so that for slow running and pulling a rich mixture is obtained, whilst for high speeds a weaker gas is given. Magneto ignition is employed, the magneto being driven from the camshaft gear. Lubrication is maintained by a paddle pump placed on the rear end of the camshaft. Altogether a very well thought out, accessible, and cleanly designed motor.

#### Steering Gears.

The construction of steering gears still leaves much room for improvement; indeed, little has been done to this important part of the car, upon which the safety of the passengers and other road users depends so largely. This apathy—and it is nothing more—is astonishing, when there are, proportionately, as many accidents through failure of steering gears in France as there are in England. Most makers seem afraid to put a gear on with large wearing surfaces to all working parts, their one idea being to keep everything small and light. We saw very few examples of what we regard as really satisfactory steering gears, and there are plenty of opportunities for inspecting such parts in the galleries as well as on the ground floor.

#### Mechanical Novelties.

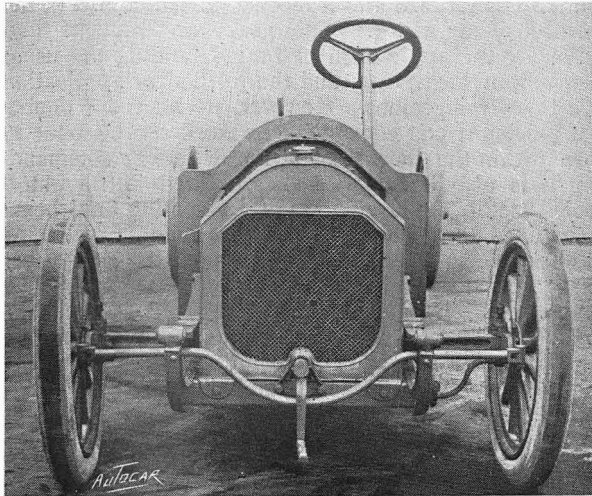
The chassis were very disappointing to the visitor on the look-out for new ideas, as there are very few. The use of large diameter valves is noticeable, and the enclosing of the valve stems and springs by an easily detachable cover plate finds favour amongst a large number of makers. The circulation of lubricating oil to the bearings, and working parts of the engine generally, is now common practice, but there is no better system to be found than was to be



A longitudinal sectional view of the 1909 model, 12-14 h.p. four-cylinder De Dion engine: 75 x 100 mm., with mechanical lubricator.



seen on cars at Olympia. On the Ballot engine the oil pump is worked by an eccentric mounted at the centre of the camshaft. The pump plunger is a long brass barrel with a number of shallow grooves turned in it to make it self oil-tight. The same makers have a 12 h.p.



The uncommon front appearance of the Stabilia car. As will be noticed the car is underhung, and has its steering connecting rod considerably bent to avoid the starting handle.

four-cylinder motor, in which the exhaust pipes are cast round the induction pipes in such a manner that only two pipes are seen on the valve boxes, the induction pipe at the front end and the exhaust at the rear end.

The interposition of a small lever between the cams and the valve plungers is a very general practice, as it is maintained that it reduces, or rather eliminates, side wear on the plungers and guides, and also that it makes for a quiet running engine.

#### Controls.

The engine control arrangements are very much as they have been in the past, but perhaps the pedal accelerator has found more patrons, as it is very generally employed. The use of short levers and small joints is to be deprecated, as it leads to jamming of the control and eventual rattle and general slackness. On the Delahaye chassis a very simple and effective

method of operating moving parts was to be noted. This consisted of mounting a bevel pinion on the lower ends of the control rods running through the centre of the steering column. These bevel pinions engage with racks cut on the arms of bell crank levers which are mounted on a bracket on the steering gear box.

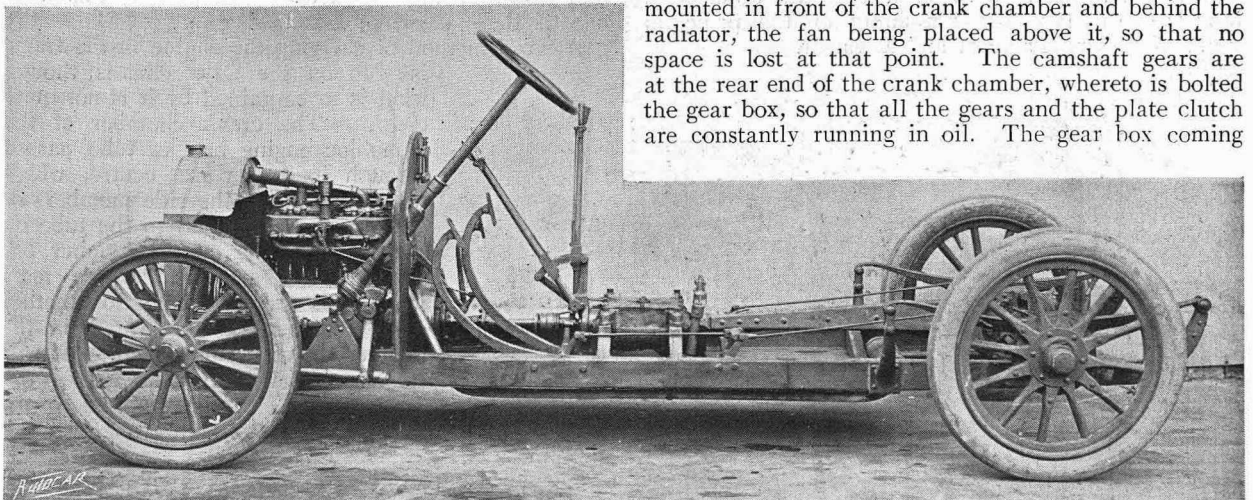
#### Brakes.

The necessity for brakes of large diameter and ample surface has been realised by several of the leading makers, whose braking arrangements are beyond criticism; but the majority of makers err on the small side, and as a result, whilst their brakes may be quite powerful and sufficient for a time, they do not last long enough, as the wear is very great, and constant adjustments are necessary. There are no very striking features in brakes in the main, but the chassis of the Reichenberger Automobil Fabrik is provided with a powerful band brake at the front and rear ends of the gear box, as well as very large diameter brakes on the rear road wheels. The E.N.V. car has all its brakes concentrated at the rear hubs, the one set of brakes being expanding and the others contracting, the brake shoes being applied to separated drums. On the Labor chassis the pedal brake is mounted on the bevel driving pinion shaft, and is of very ample proportions.

#### Various Chassis.

The Stabilia chassis is one of the most novel in the show, it having the frame slung beneath the axles in the manner clearly shown in the accompanying photographic illustrations. The side members have their ends curved upwards, and outwards as to the rear end. The springs are attached to these and to brackets specially formed to take their inner ends. The top edge of the frame stands about a foot from the ground, but, of course, the gear box and propeller-shaft stand above this line somewhat, but when the body is fitted, and allowing for sufficient clearance, the footboard is very low as compared with the average car. Access to the motor is made very simple by the suspending of the frame above the springs. This, by the way, is no new idea, as Mr. Austin so constructed and exhibited a Wolseley car in 1902.

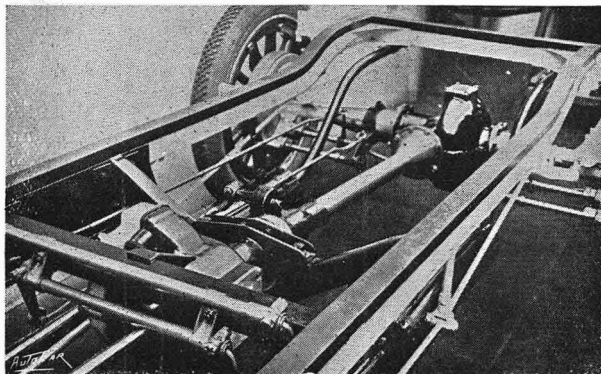
A well-proportioned chassis of a design worthy of careful consideration is the 12-16 h.p. S.P.A. It has two pairs of cylinders mounted on the crank chamber, with the various outside parts arranged in a most accessible and symmetrical manner. The flywheel is mounted in front of the crank chamber and behind the radiator, the fan being placed above it, so that no space is lost at that point. The camshaft gears are at the rear end of the crank chamber, whereto is bolted the gear box, so that all the gears and the plate clutch are constantly running in oil. The gear box coming



A longitudinal view of the Stabilia chassis showing the underhanging frame.

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immediately beneath the driver's noorboard makes this part very accessible, including the forward end universal joint to the long propeller-shaft. This re-arrangement of the organs certainly places everything easily to hand for those who have to maintain the car on the road.

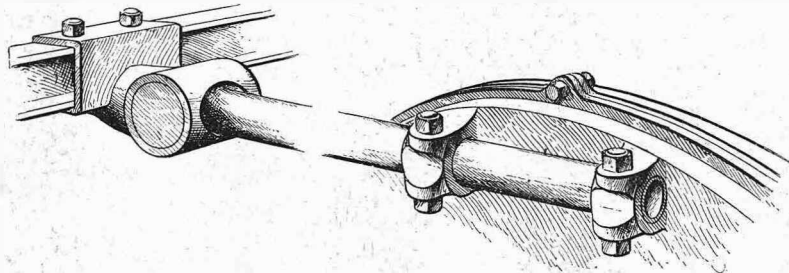


The peculiar form of two-speed gear box on the eight-cylinder E.N.V. chassis.

The E.N.V. chassis, to which we have before referred with regard to the brakes, is engined with a V type eight-cylinder motor, whose dimensions or any detailed particulars were refused us, but we should estimate it at 40 h.p. There are but two gears, the direct drive being almost invariably used, the other gears being for starting on bad gradients or pulling out of bad places, and reversing.

Another firm who bolt the gear box directly on to the crank chamber are the Prima. Here also the disc clutch is oil-fed from the gear box. The flywheel is carried in the usual position, but in a separate compartment of the gear box.

There are exhibited on a coachbuilder's stand in a gallery a 10 h.p. and 15 h.p. Panhard chassis. Both have four-cylinder motors, the first having cylinder dimensions of 80 by 120 mm. and the second 90 by 130 mm. The general details of both are alike, in that they have live axle drive, with the propeller-shaft casing bracketed to a cross member of the frame to form a torque and radius rod; four speed gears; rear brake connections of ribbons of steel working between roller guides; engine lubrication by feed pump worked from the rear end of the camshaft; and high-tension magneto ignition. On the 15 h.p. chassis the disc clutch is contained in the separated gear box, with a jointed driving-shaft between it and the crankshaft. Models of this type were not shown on the principal stand of Messrs. Panhard and Levassor.



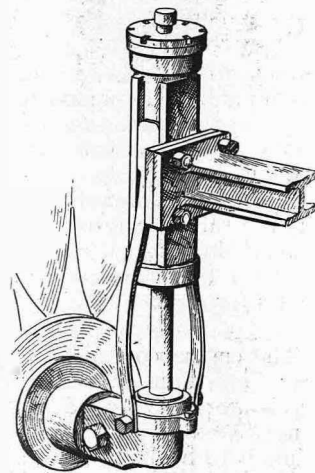
The torque rod of the Corre car.

An excellent design for a torque and radius rod was to be seen on the Corre chassis. This consisted of a large diameter steel tube clamped into lugs cast fore and aft on the crown bevel wheel casing of the back

axle. Its forward end took a bearing in a circular block to form a T piece which worked in a bracket attached to a cross member of the frame. The sketch we give makes this so clear that any further description is unnecessary.

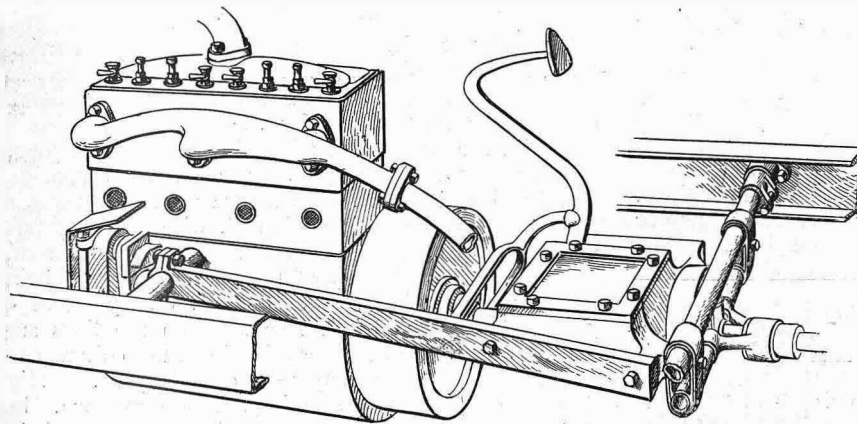
C. E. Hanriod advises by notices several features, some of which are shown in practical form. One is the epicyclic form of change-speed gear, giving three or four speeds forward and a reverse, all contained in the flywheel of the motor. The gears are brought into action by the application of brakes holding the usual members of such gears, and the method of application is extremely ingenious. However, we have our doubts if a gearing strong enough for its work can be made to come within the dimensions at the designer's command. There is also exhibited a chassis fitted with a water-cooled motor, the circulation of the cooling fluid being maintained by a self-acting injector, which is claimed to work so efficiently as to dispense with the more usual pump, radiator, and fan, having in place thereof a simple tank in front of the dashboard of about the same capacity as a radiator for the same size motor. The injector works by difference of temperature of the water in the cylinder jackets and the tank. A notice on the stand announced, "A motor without valves or eccentrics, with gas distributor independent of the combustion chamber," but we failed to locate it on any of our visits to that particular stand.

The small Truffault cars contain a front axle and springing system which might be developed with advantage for cars of medium power up to, say, 20 h.p. The front axle is a rigid front member of the frame, and at its extremities are long cylindrical sockets containing strong coil springs. Working through these sockets are plunger rods forming part of the front wheel axles, which turn about these rods or steering pins. Guides are provided for steadying the central steering pins as they move up and down in their sockets. We give a sketch of one of these steering sockets.



Sketch of the Truffault axle end.

A novel method of carrying the engine in the frame is seen on the Oryx chassis, though what is to be gained by it is not quite clear. The crank chamber of the monobloc engine has a tube passed through its transverse centre, which tube is bolted to the side members of the frame. Clamped to the tube on each side of the crank chamber are pressed steel members, whose rearward ends are bracketed to another cross member of the frame in the manner shown in our sketch. It will be seen that the gear box, the clutch operating levers, etc., are also bolted to the same side members. The most interesting feature lies in the air intake arrangement to the carburetter. The valves are all enclosed, and their cover is



The unique method of suspending the engine and gear box in the Oryx car.

provided with four wire gauze covered ports, through which cold air is drawn to the carburetter; on its way thereto it impinges upon the heated valve stems, and in cooling these becomes heated itself, and so passes on its way to the cylinder *via* the carburetter.

**Some General Notes on Chassis.**

We were pleased to note that French chassis designers are showing some consideration for the car owner and his coachbuilder. The majority of chassis have the gear boxes brought as far forward as possible, so that they may be easily attended to by merely lifting up the footboards. Brake adjustments are also brought, as far as possible, to the same point, so that there can be no excuse for their being neglected so far as adjustment is concerned. It is at last being considered necessary to do something for the very large majority of car owners who take a personal and active interest in the upkeep of their cars. To become a contortionist is no part of a motorist's education, and yet this is what he has to be in these days with some cars in order to get the lid off a gear box to lubricate it—this just because the said box has been placed exactly where the front seat will come, and when the petrol tank is placed under the seat, as it often is, a bad matter is made worse. Easy means of back axle lubrication are still lacking, but we shall arrive at that in course of time.

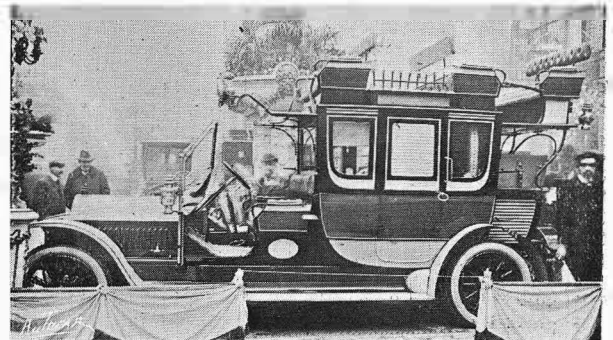
In the latest designed chassis every effort is made to keep all the mechanism below the level of the top of the frame, so that the coachbuilder has a clean run for his work, and has no need to interfere with that of his engineer colleague, the chassis builder, as he has no provision to make for brake rod clearance, oil and petrol pipe passages, and the projection of various parts up into the coachwork.

The positioning of the steering wheel and side levers has been more carefully considered, this no doubt coming with the more forward placing of the gear box. This has the advantage of enabling the front seats to be brought as near to the dashboard as may be with comfort to the occupants of those seats, so that more room

*The Paris Show.*  
is available for seating accommodation at the back. As a result of this consideration, we see chassis fitted with bodies giving six seats—two in front, two at the back, and two swinging seats mounted on the door posts, and, further, there is a reduction of the wide gap which has existed between the dashboard and the seats which has spoiled the appearance of many otherwise nice bodies.

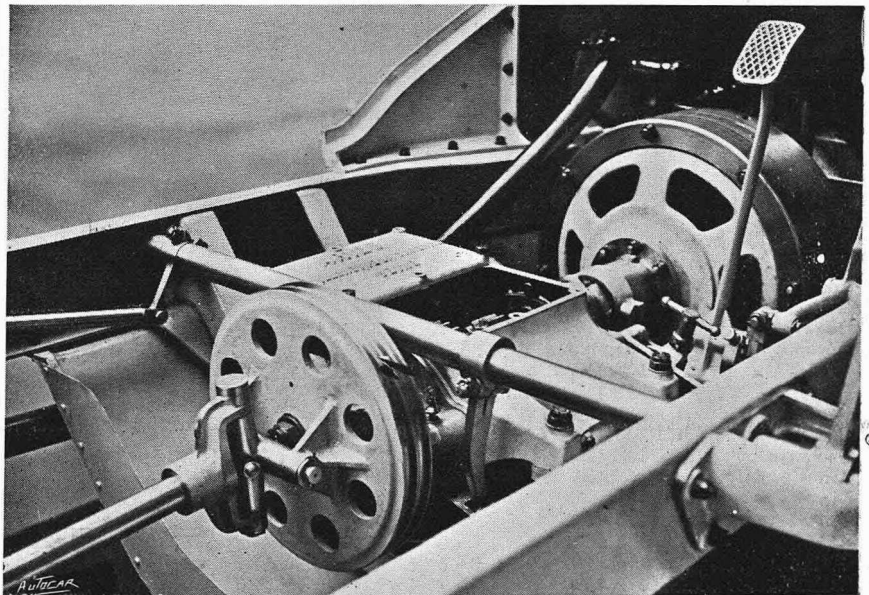
The rear transverse spring is not as much in evidence as it has been in the past, the three-quarter elliptical springs being more generally employed.

The Wolseley-Siddeley exhibit was much the same as at Olympia, and compared favourably with any chassis or complete car in the Paris Salon. At the time of President Fallières's visit to the exhibition he



The Darracq coach is unique in having seats for outside passengers, being, in fact, an adaptation of the old stage-coach.

personally congratulated Mr. Siddeley on his firm's productions. The only other car of British design was the 40 h.p. six-cylinder San Giorgio, which, as is well known, is a twin sister to the English Napier.



The Aries gear box, brake, and fore universal joint. This is a good example of the forward placing of the gear box and the use of large brake drums.

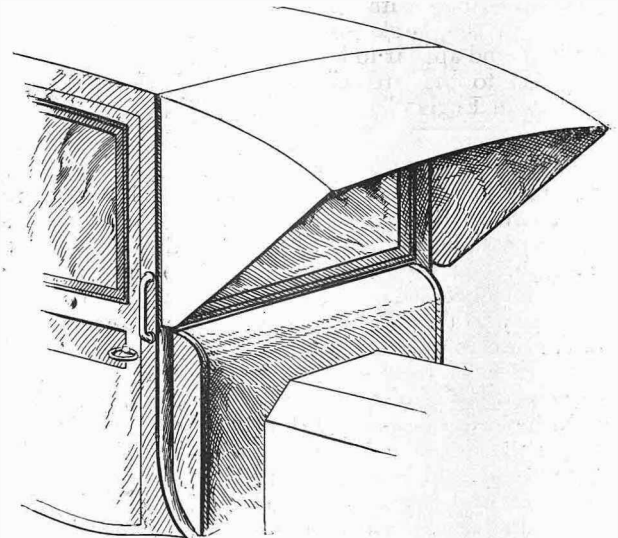
*The Paris Show.*

We are indebted to our French contemporary, *L'Auto*, for the following interesting table of particulars of the six-cylinder engines in evidence at the Paris Show. In one or two cases the firing sequence may not be correct, owing to the difficulty of obtaining information. H. T. signifies high tension ignition, L. T. low tension. 3 × 2 signifies that the cylinders are cast in three groups of two, and 2 × 3 two groups of three. Mono means that the cylinders are cast in monobloc form, and sep. separately.

Car.	Bore and Stroke.	Maker's H.P.	Design of Engine	Order of Firing.	Ignition.
	mm.				
Aries	84 × 120	15-25	sep.	1 3 5 6 4 2	H.T.
Aries	105 × 130	40-50	sep.	1 3 5 6 4 2	H.T.
Bayard-A. Clément	88 × 120	25	3 × 2	1 5 3 6 2 4	H.T.
Bayard-A. Clément	100 × 120	30	3 × 2	1 5 3 6 2 4	H.T.
Berliet	100 × 140	40	3 × 2	1 5 3 6 2 4	H.T.
Berliet	120 × 140	60	3 × 2	1 5 3 6 2 4	L.T.
Bollee	106 × 130	30-50	3 × 2	1 4 2 6 3 5	L.T.
Bollee	125 × 130	60	3 × 2	1 4 2 6 3 5	L.T.
Bollee	130 × 150	75	3 × 2	1 4 2 6 3 5	L.T.
Brasier	90 × 120	34	3 × 2	1 5 3 6 2 4	H.T.
Brasier	112 × 130	50	3 × 2	1 5 3 6 2 4	L.T.
La Buire	80 × 120	16	3 × 2	1 5 3 6 2 4	H.T.
La Buire	92 × 120	24	3 × 2	1 5 3 6 2 4	H.T.
La Buire	102 × 130	30	3 × 2	1 5 3 6 2 4	H.T.
La Buire	120 × 140	40	3 × 2	1 5 3 6 2 4	H.T.
Buchet	76 × 100	18	3 × 2	1 2 3 6 5 4	H.T.
Buchet	85 × 110	22	3 × 2	1 2 3 6 5 4	H.T.
Clément-Gladiator	90 × 120	18-24	3 × 2	1 5 3 6 2 4	H.T.
Clément-Gladiator	120 × 140	60	3 × 2	1 5 3 6 2 4	H.T.
Cottin-Desgouttes	80 × 120	16	3 × 2	1 5 3 6 2 4	H.T.
Cottin-Desgouttes	120 × 140	45	3 × 2	1 5 3 6 2 4	L.T.
Darraeq	120 × 120	40-50	3 × 2	1 5 3 6 2 4	H.T.
Delaunay-Belleville	72 × 105	10	mono.	1 2 4 6 5 3	H.T.
Delaunay-Belleville	85 × 120	15	2 × 3	1 2 4 6 5 3	H.T.
Delaunay-Belleville	98 × 122	25	3 × 2	1 2 4 6 5 3	H.T.
Delaunay-Belleville	115 × 130	40	sep.	1 2 4 6 5 3	H.T.
Lorraine-Dietrich	80 × 120	15	2 × 3	1 5 3 6 2 4	H.T.
Lorraine-Dietrich	130 × 150	70	3 × 2	1 5 3 6 2 4	H.T.
F.I.A.T.	110 × 130	30-50	3 × 2	1 5 3 6 2 4	H.T.
F.I.A.T.	125 × 150	50-60	3 × 2	1 5 3 6 2 4	H.T.
Florentia	100 × 140	28-38	3 × 2	1 2 3 6 5 4	H.T.
Germain	86 × 110	14-20	sep.	1 5 3 6 2 4	H.T.
Germain	92 × 110	18-22	sep.	1 5 3 6 2 4	H.T.
Germain	102 × 110	40	sep.	1 5 3 6 2 4	H.T.
Germain	120 × 130	60-70	sep.	1 5 3 6 2 4	H.T.
Gobron	112 × 200	70	3 × 2	1 5 4 6 2 3	H.T.
Hotchkiss	120 × 140	50-60	3 × 2	1 5 3 6 2 4	H.T.
Itala	130 × 140	60	3 × 2	1 2 3 6 5 4	L.T.
Itala	140 × 140	75	3 × 2	1 2 3 6 5 4	L.T.
Lancia	90 × 100	30	3 × 2	1 5 3 6 2 4	H.T.
Mercedes	120 × 140	65	3 × 2	1 5 3 6 2 4	L.T.
Mercedes	120 × 150	75	3 × 2	1 5 3 6 2 4	L.T.
Milde-Gaillardet	120 × 130	35-40	3 × 2	1 2 3 6 5 4	H.T.
Minerva	105 × 120	40	3 × 2	1 5 3 6 2 4	H.T.
Mors	114 × 150	50	3 × 2	1 5 3 6 2 4	L.T.
Panhard-Levassor	90 × 130	30	sep.	1 5 3 6 2 4	H.T.
Panhard-Levassor	130 × 140	60	sep.	1 5 3 6 2 4	H.T.
Piccard-Pictet	100 × 120	28	3 × 2	1 5 3 6 2 4	H.T.
Renault	120 × 140	50-60	3 × 2	1 5 3 6 2 4	H.T.
Rochet-Schneider	104 × 140	30	3 × 2	1 5 3 6 2 4	H.T.
Rochet-Schneider	120 × 160	45	3 × 2	1 5 3 6 2 4	H.T.
Rossel	110 × 110	30-40	3 × 2	1 3 5 6 4 2	H.T.
Rossel	135 × 140	70-80	3 × 2	1 3 5 6 4 2	H.T.
Porthos	100 × 110	25-35	sep.	1 3 5 6 4 2	H.T.
Porthos	120 × 140	50-60	sep.	1 3 5 6 4 2	H.T.
Georges Roy	110 × 150	60	3 × 2	1 5 3 6 2 4	H.T.
San-Giorgio	100 × 100	30-40	3 × 2	1 3 5 6 4 2	H.T.
San-Giorgio	100 × 120	40-50	3 × 2	1 3 5 6 4 2	H.T.
San-Giorgio	112 × 120	50-60	3 × 2	1 3 5 6 4 2	H.T.
S.C.A.R.	100 × 130	35	3 × 2	1 5 3 6 2 4	H.T.
S.P.A.	130 × 140	60	3 × 2	1 5 3 6 2 4	H.T.
Siddeley	118 × 120	50	3 × 2	1 5 3 6 2 4	H.T.
Unic	85 × 120	25	2 × 3	1 4 2 6 3 5	H.T.
Sultan-Lethimonnier	75 × 110	15	3 × 2	1 5 3 6 2 4	H.T.

*Carriage Bodies.*

The greatest advance has been made in the carriage work, and the designs are much better than in the past, not so much as regards outline, but in those details which make for comfort for the occupants. As at Olympia, the enclosed carriage is much more strongly represented than the open type, even when provided with hood and screen. There are numerous types of entirely enclosed carriage—that is, with the body built up from the dashboard and covering in the front seats. These bodies are mostly of the shortened type, being within the wheelbase, and having an ample tool or luggage box at the back, somewhat on the lines suggested by "The Autocrat" in the columns of *The Autocar* in the early part of this year. High side doors to the back seats are numerous, but their usefulness is largely nullified by the seats being too high. Side doors to the front seats are very few and far between, and what there are of them are of no use whatsoever, unless one regards them in the light of



An extension piece for the double enclosed car shown by A. Renault.

boot scrapers. High doors to front seats seem to present a lot of difficulties to the coachbuilders, some of whom, recognising the advantages to be derived from their use by the passengers, have made a useful compromise by filling in the aching void with a leather apron. Though there were but three or four cars so fitted to be seen in the Salon, we noticed several in use in the streets of Paris. A good example of this type of body will be shortly described and illustrated.

Screens have been greatly improved, and are in very general use. On the whole, they are of a much more practical nature than the earlier constructions, in that they are adjustable to a very large degree, and have been brought back nearer to the driver. One or two of the more interesting ones are illustrated and described.

The Cape cart hood has been obviously neglected at the expense of other body building considerations. The majority are badly cut and fitted, and likely to become troublesome. The English coachbuilder is far better up in this work than his French *confrère*.

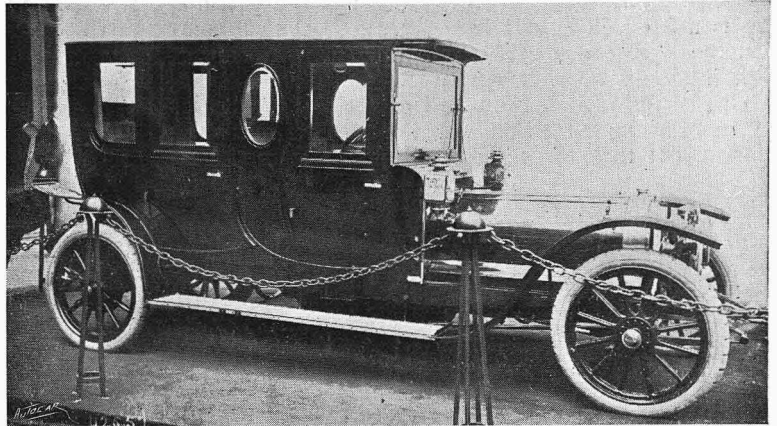
On the point of general workmanship in carriage building we offer no remarks. It has been truly said that a little paint often covers a multitude of sins, and we do not attempt to deny this.

We have already referred to the enclosed type of body generally, and of this we now give a few examples.

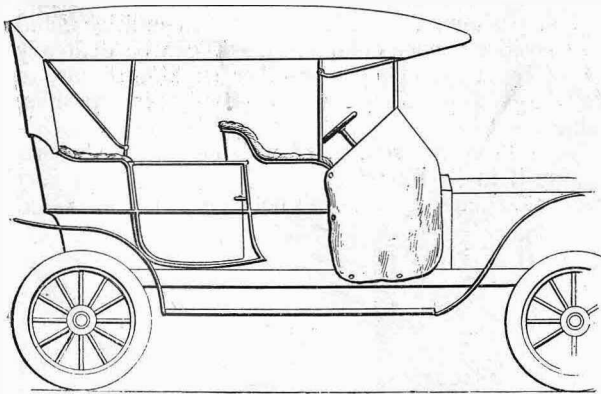
A fine cabriolet body was shown by the Auto-Office. In this there was a neat extension hood carried forward to the top of the driver's screen, and secured thereto by quick detaching clips. For use as an open car, the whole hood folds back, and the side posts and windows disappear into the body panels.

Messrs. Merville, Garnier, and Picard exhibited a carefully thought out body, in which the front sides were enclosed with a leather apron in the manner depicted by our sketch. The Cape hood was brought well forward beyond the screen, which ran right up into the top of the hood.

Two-seated cars with an additional emergency seat enclosed in the back box part of the body are fairly numerous, and appear to be in some demand in France, though up to the present they have found but few adherents in England.

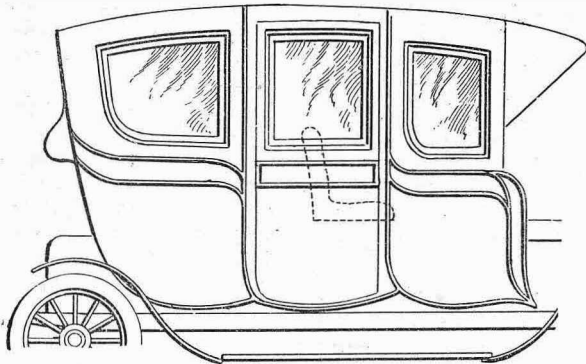


A double touring body shown on the Porthos chassis.



A cosy front apron shown by Merville, Garnier and Picard.

A useful type of enclosed body was to be seen on the stand of G. Gilotte, who has produced a four-seated body with swinging seats for the driver and the occupant of the other front seat. This arrangement

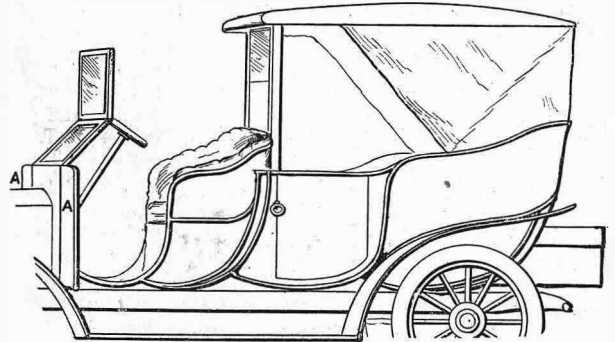


A four-seated body with revolving seat for driver shown by G. Gilotte.

gives wide doors and access from either side. The swinging seats are quite safe, as the weight of the passenger is utilised to lock them into position wherever placed.

A large double phaeton body by Saoutchik, on a Mercedes chassis, offers some interesting points, which we illustrate with a sketch. First the manner of widening the dashboard to the width of the body is

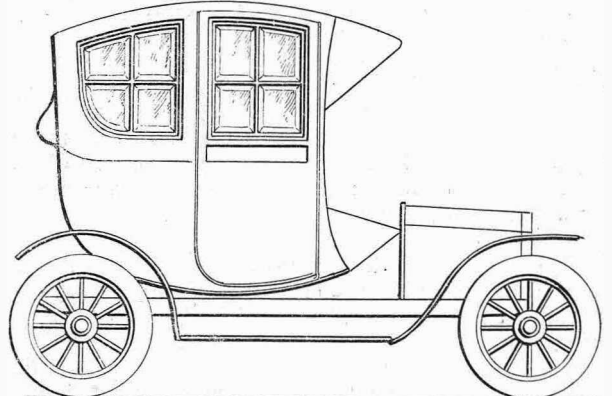
simple, neat, and not unsightly. It consists of adding two wings A A, set slightly back to deflect draught and reduce the flat area presented to the resistance of the wind. A large tyre box is fitted at the back of the car, about one-third of it being let into the space



A touring body shown by J. Saoutchik with screen both at back and front of driver and large boot behind. There are also two wide wing screens A A at each end of the dash.

beneath the back seats. The centre box in the tyre box serves to carry many of the parts which would otherwise be carried beneath the seats. The hood is constructed to fold back parallel with the tyre box, the appearance of which is not then so unbalanced.

A 16 h.p. Grégoire with a neat little enclosed body is the subject of one of our sketches. From this it will be seen that the body is well within the wheelbase, though it is set well back from the dashboard, the intervening space being filled in with a pair of tool and spare parts boxes

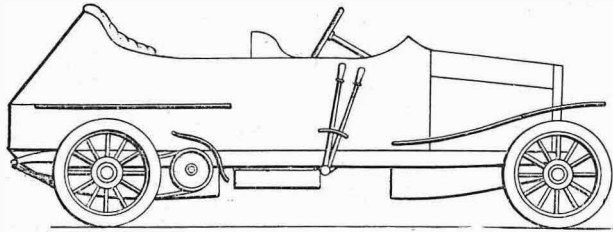


A quaint body fitted to a Grégoire chassis

*The Paris Show.*

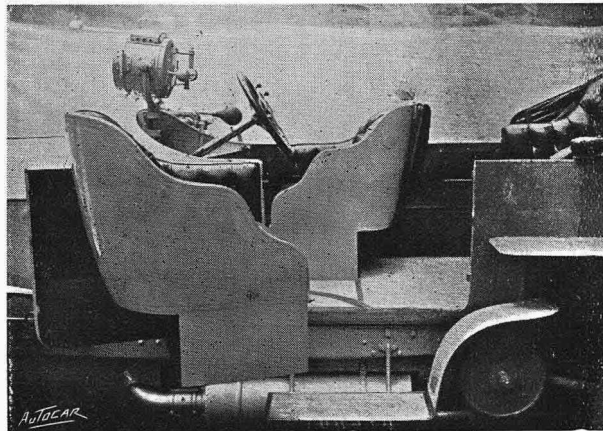
A very low built enclosed body was to be seen on the Porthos stand. By dropping the whole frame on its axles a little and lowering the seats to a comfortable degree the whole has been kept so compact that it should take the road very comfortably.

One of the most curious and original of the bodies to be seen in the Salon was that on the Mercedes stand. It took the form of a torpedo sterned boat



The novel boat body on the Mercedes stand.

hull, with the prow cut off and replaced with the bonnet. The accompanying sketch gives its lines somewhat, but, whilst it may not have been beautiful, it looked better in itself than in either a photograph or a sketch. It affords four very comfortable seats, and would be very warm and snug; there is only one door, and that on the left side, and this carries the left-hand front seat. Why it should have been so made is difficult to comprehend, as we see no reason why the swinging seat should not have been fixed and a separate door giving access to the front



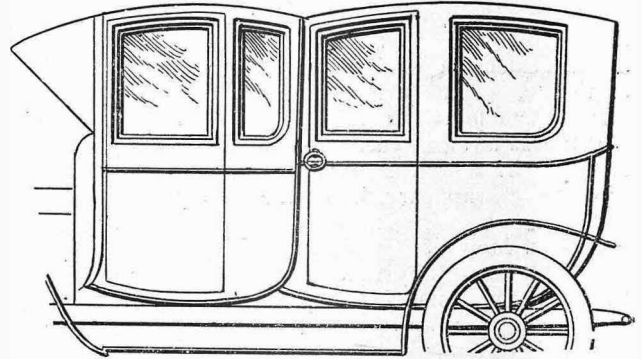
The side door entrance to the Mercedes car showing the left front seat carried thereon.

seats provided on the left side, and a door of ample dimensions devised for each side of the rear seat entrance. The slanting stern contains ample lockers for the carriage of all the accessories, etc., one usually carries on a car.

One very noticeable feature on the larger cars is the provision of large step boxes for the housing of tools, spare parts, and supplies, these having been removed from the boot beneath the rear seat to make way for personal luggage boxes constructed to fit in here. On the whole, this is a good arrangement for a touring car, provided the step boxes are made dust and waterproof.

Two or three of the enclosed type of car have a short hood projecting from the driver's screen to prevent the upper half through which one has to look being made opaque by rain or snow. As will be appreciated from the sketch of a body by M. A. Renault, this little hood, whilst being practical, is not

unsightly either when extended or when folded back. It must be understood that the lower forward edge of this hood comes down to about the horizontal line of



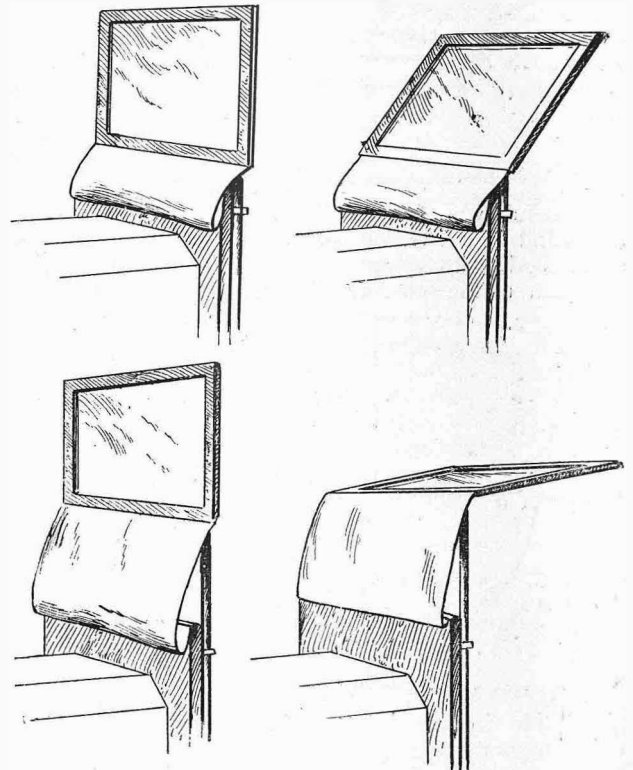
A handsome double body shown by A. Renault.

sight of the driver, so that it does not limit his range of vision ahead.

**Screens.**

Weather screens of many forms were, of course, to be noted, but those we particularly refer to are of the universal position type. These are perhaps the best of their kind, as one can so easily experiment to find the best positions for different climatic conditions, and these positions, once definitely fixed, can be definitely located by stops, clamps, or other suitable means, so that the screen always takes exactly the position desired.

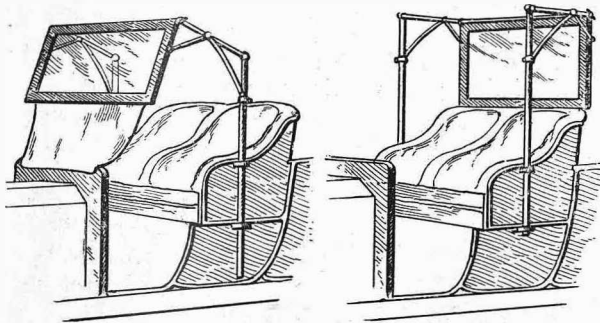
Andre Pasquet's screen, of which we give sketches showing it in its four most useful positions, is a very practical arrangement, though not exactly novel. Good



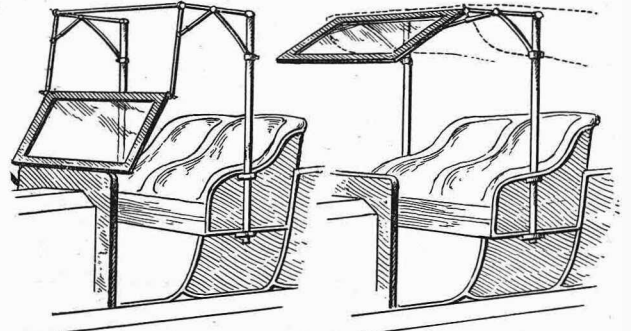
Four positions of the Pasquet screen.

as it is, improvements might still be effected by mounting the leather filling in piece on a spring roller, so that when the screen is dropped it would be rolled

neatly up instead of being left to flop about. The bottom edge of the framed screen is hinged to a cross-bar whose side members are pivoted at their base and made telescopic, by which arrangement any desired position may be given to the screen.



able clamps, placed at about the horizontal centre line; thus the upper half screen may be placed in various useful positions in relation to the lower half screen, from lying down parallel to it or standing upright from it.



Four views of the Klapp screen, which is capable of being arranged in a great number of different positions.

The Gordon screen, an English production, was to be seen in one of the *salles*. This is an excellent device, consisting of two glass screens mounted in brass frames. The lower one is hinged by adjustable clamps to the dashboard, so that it may be placed at any angle thereto. Similar clamps carry two uprights from the upper corners, and carry the top half of the screen in adjust-

The Klapp is another simple arrangement, and the four sketches we give of it not only show some of its positions, but its method of working to a large extent. It may be said that the uprights carrying the screen are hinged about half way down, so that when not required the screen may be so placed that it lies down behind the backs of the front seats.

### STATISTICS OF THE PARIS SHOW. By H. Hewitt Griffin.

The need of *The Autocar* Census of the Shows as a history maker has again been proved. But for these annual figures there would be no trace of the rise and fall of the shows. As a recent instance, Olympia looked much the same as usual to the ordinary observer, but as will be seen from the table published in *The Autocar* of November 21st, and reproduced here, there were thirty-five fewer cars than a year ago and fifty-one fewer than two years ago. Now, had Olympia maintained the overcrowded standard of 1906, it would have had the hollow satisfaction of being the largest motor show in the world.

Paris was so far ahead in past years that it seemed impossible to climb to its greatness; so it was, for Olympia could not hold the cars. Further, the Salon has steadily been growing, and there seemed every hope that it would pass 700 this year. Instead the mountain has come to Mahomet. The Salon has backed down to Olympia, as the table shows so eloquently. There are in the present show just fifty fewer complete cars and seventy-one fewer chassis, or 121 decrease (say 17.42%) in the year.

Racing cars were not allowed at Olympia, and they hardly come under the head of "Pleasure Cars," and

certainly are not passenger cars. If we deduct these from the 383 it leaves 365, but even with the full figures Olympia is again ahead with 385, and only fifty behind in chassis.

At Olympia France contributed over 28%. In Paris England contributed under 1% (.698%).

Pleasure Cars only.	LONDON.			PARIS.		
	1908.	1907.	1906.	1908.	1907.	1906.
Complete Cars .....	385	392	438	383	433	446
Chassis .....	140	168	138	190	261	219
<b>TOTALS .....</b>	<b>525</b>	<b>560</b>	<b>576</b>	<b>573</b>	<b>694</b>	<b>665</b>
<b>PROPULSION—</b>						
Petrol only .....	511	539	559	564	672	603
Petrol and Electricity .....	—	1	—	5	10	1
Electricity only .....	2	5	6	4	12	41
Steam .....	12	15	11	—	—	10
	525	560	576	573	694	665

The following number of firms represented the various nations: Italy 11, Belgium 5, Germany 4, Switzerland 3, America 2, Austria 1, Great Britain and Ireland 1.

At the Modern Gallery, 61, New Bond Street, from December 7th to 12th, Madame Molly, of 47, George Street, Croydon, is exhibiting some becoming and useful headgear. Being a practical motorist—that is to say, not only a looker-on, but a driver herself—she is capable of judging accurately the needs of her sister motorists. Wind, rain, and sunshine, not forgetting dust, are all considered. There are no trivialities about Madame Molly's hats, no feathers to be draggled, no buckles that tarnish, no fly-away trimmings; all is neat, serviceable, and practical. What more can be required? The material of which many of these hats are made is a silk waterproof manufactured by Cordings,

of Piccadilly, and the fact that Madame Molly is showing one of her own hats made in a green shade of this material, in which she has motored 3,000 miles, is surely proof enough of its durability. The veils, attached by small buttons and elastic loops, give comfort to the wearers, and ensure that neatness of appearance at the end of the journey so much sought after by all lovers of motoring. The Duchess of Sutherland and Countess of Warwick are amongst the distinguished patrons of Madame Molly. She was also awarded a bronze medal at the Franco-British Exhibition and a silver medal at the Dress Exhibition in February last.

## THE 1909 EISEMANN MAGNETO.

The accompanying blocks show the 1909 self-contained high tension Eiseemann magneto, known as the type ED 4. The principal feature of this machine is its capability of giving almost as hot a spark at the fully retarded position of the make and break mechanism as when the latter is fully advanced. This property is due to a point of design the nature of which we are not at liberty to divulge. In consequence of this hot spark at low speeds it is claimed that the starting up is an easy matter, and dead slow running of the engine easy of attainment.

The low tension system has been entirely altered from last year's pattern, with a view to enabling the magneto to work satisfactorily at the high engine speeds which are now coming into vogue. This alteration has been found so satisfactory that the makers guarantee successful operation of the magneto at an armature speed of 4,000 revolutions per minute. The make and break mechanism has been modified also. If reference to fig. 3 is made, it will be seen that the heel piece of the rocking lever carrying one of the platinum points is fitted with a hard red fibre block, which works in conjunction with two steel cam pieces fitted inside the cover shown alongside. The advantage of this arrangement lies in the fact that practically all the wear takes place on the easily replaced fibre block, and affects all four cylinders equally, so that even running may be maintained.

The high tension system is exceedingly neat and simple. The current is picked up by a brush mounted

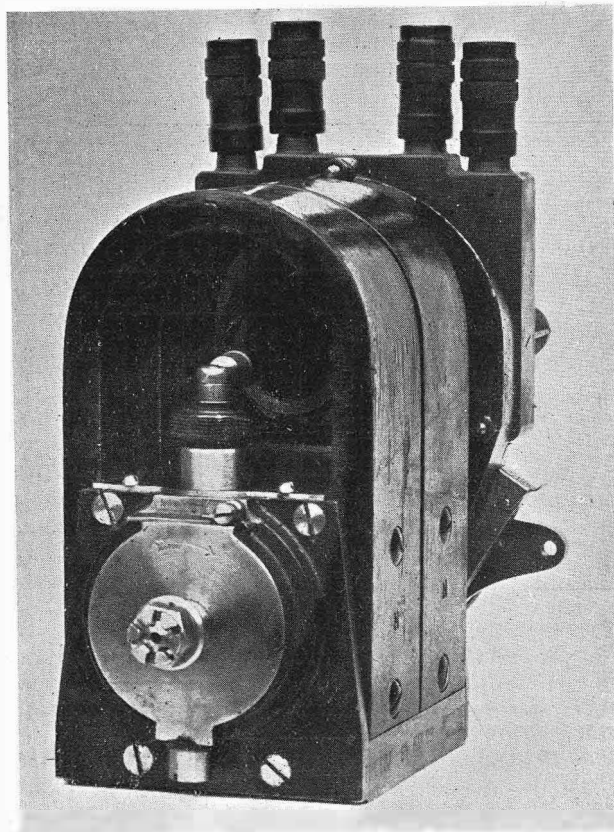


Fig. 1.—The driving end of the magneto, showing the terminal of the high-tension current collecting brush with the horizontal insulated pencil passing the current to the centre of the revolving distributing finger.

on the terminal seen in fig. 1 and conveyed by means of the horizontal pencil to the revolving distributing arm, which carries a steel, spring controlled finger revolving over the four segments which are connected to the four high tension terminals. These segments and the distributor brush may be seen in fig. 3.

The timing gear wheels are now mounted between the contact breaker mechanism and the magneto, thereby leaving the driving end quite free.

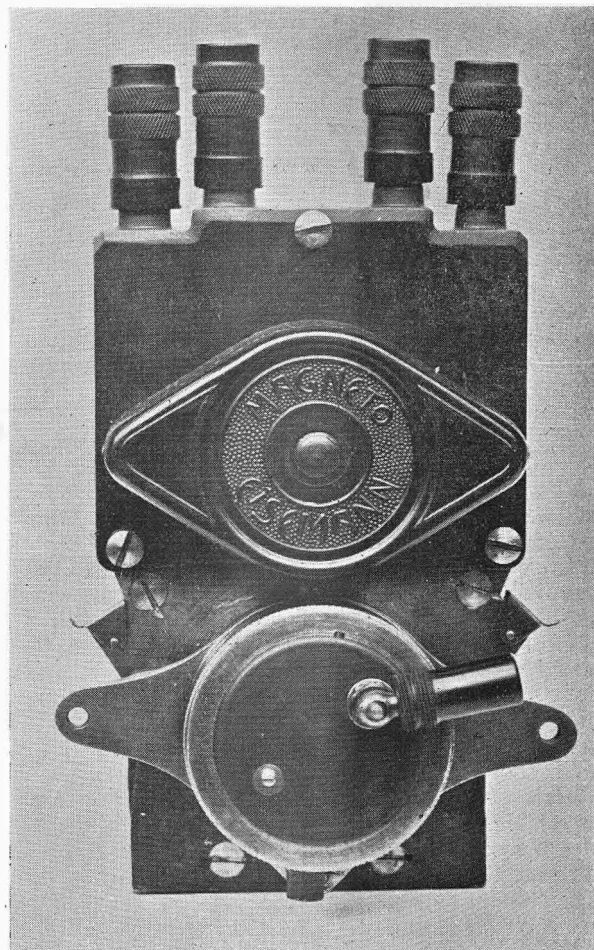


Fig. 2.—The distributor and contact breaker end of the machine with covers in position.

The machine, as a whole, is beautifully made and cleanly designed, as becomes a high efficiency, hard-working organ.

Dismantling is an easy matter, as the covers of the various parts are all held by spring and ball clips, as are the terminals. Cleaning and adjusting of the contact breaker is especially simple, as the whole device can be exposed completely in one operation by the removal of its casing. The whole of the distributing mechanism can also be withdrawn instantaneously for cleaning and inspection, as it is likewise held in place by simple spring clips. The bearing at the driving end is of the plain variety, that at the front end being a ball bearing. This combination is used, as it has been found the most satisfactory way of mounting the armature to counteract the effects of wear. The distributing arm spindle is also on a plain bearing. Lubrication of



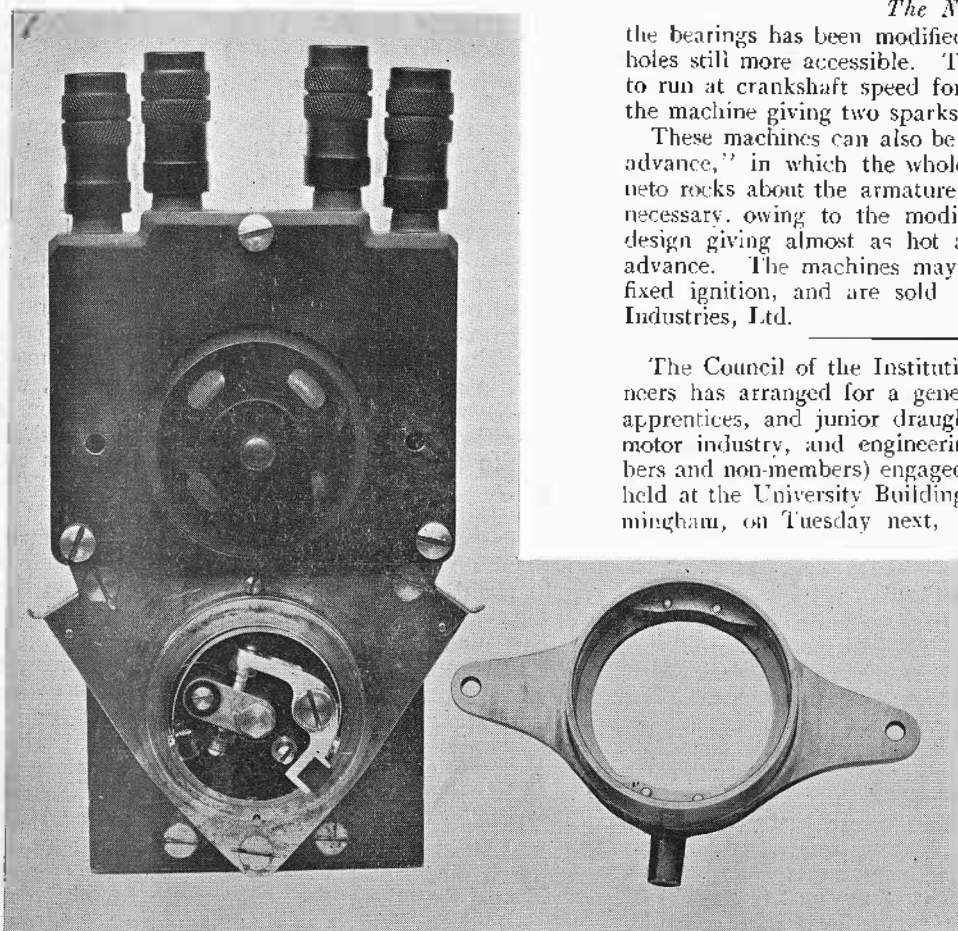


Fig. 3.—The distributor end with covers removed showing the H.T. distributor finger and segments and the low tension contact breaker with its easily renewable fibre heel piece. Alongside is the rocking sleeve carrying the steel make-and-break cams.

*The New Eisemann Magneto.* the bearings has been modified, so as to make the oil holes still more accessible. The armature is designed to run at crankshaft speed for a four-cylinder engine, the machine giving two sparks per revolution.

These machines can also be obtained with "rocking advance," in which the whole "body" of the magneto rocks about the armature, but this is not now so necessary, owing to the modification in the ordinary design giving almost as hot a spark at retard as at advance. The machines may also be obtained with fixed ignition, and are sold by the United Motor Industries, Ltd.

The Council of the Institution of Automobile Engineers has arranged for a general meeting of pupils, apprentices, and junior draughtsmen employed in the motor industry, and engineering students (both members and non-members) engaged in Birmingham, to be held at the University Buildings, Edmund Street, Birmingham, on Tuesday next, 15th December. The

chair will be taken at eight o'clock by Mr. Max R. Lawrence (chairman of the Birmingham Centre Committee), when an address will be given by Dr. H. S. Hele-Shaw, F.R.S. At nine o'clock the address will conclude, and the gathering will resolve itself into a business meeting to form a branch of the Graduates' Section in Birmingham.

### ROYAL A.C. GENERAL COMMITTEE.

The monthly meeting of this committee was held at the Club House on Thursday last week.

An application for association with the R.A.C. from the Monmouthshire A.C., which had been recently formed by Sir Henry Mather Jackson, Bart., with a nucleus of seventy members, was agreed to.

Seventy-five new candidates for individual associate-ship were elected.

A considerable number of these applications had been received as a result of the courtesy of the Society of Motor Manufacturers and Traders in placing a space at the disposal of the Club for the use of the Associates' Department, and a cordial vote of thanks was passed to the Society.

On the recommendation of the Organising Committee it was agreed to accept an application for the affiliation of the Automobile Club of China under the standard "Colonial" agreement.

The arrangements for the first annual dinner of associates, to be held in the Grand Hall at the Hotel Cecil on Thursday, 14th January, were discussed. It was decided to invite the honorary secretaries of the associated clubs to be the guests of the General Committee on this occasion, and also to arrange for separate tables to be set apart for each club.

During the week the following additional clubs have decided to become associated with the R.A.C. on the 1st January: Cheshire A.C., 205 members; Herts.

County A.C., 145 members; Huddersfield A.C., 181 members; Kensington A.C., 79 members; Yorkshire A.C., 293 members.

The accession of these five clubs raises the total number of clubs so far directly associated with the R.A.C. to thirty-two, whose memberships aggregate 6,516. In addition, thirty-seven clubs are associated through the Auto Cycle Union, and their membership reaches 2,627. The total number of individuals included in the scheme and represented on the committee, excluding members of all those clubs whose agreements expire at the end of this year, and who have not yet decided as to their future affiliation, is now upwards of 13,000.

There are still twenty-five clubs which have to decide, affecting 2,377 members.

At the last meeting of the Committee of the Royal A.C. 121 candidates were elected to membership, and seven new life memberships were passed and approved. The number of members at the present moment is 4,007. It was decided to raise the entrance fee from £6 6s. to £12 12s. for the next 1,000 members. This decision does not apply to applications received prior to the 1st January, 1909. Senor Don Florencio L. Dominguez, Argentine Minister, was elected an honorary member during his residence in Great Britain.

# ROADS, MOTORS, AND TAXES.

## GENERAL PRINCIPLES WHICH SHOULD GUIDE THE LEGISLATURE.

### A Proposal with an Ulterior Object.

When, some two years ago, articles of suave character appeared in some of our leading journals advocating a loving attention on the part of the Chancellor of the Exchequer and on the part of all local authorities to motor cars, etc., it would have appeared to the notice as though the writers represented a new species of the *genus homo*, viz., men anxious to have themselves taxed. For the peculiarity was that semi-inspired articles, written with an air of awful authority, appeared from quarters intimately connected with automobile unions and other users of motor traction of a somewhat elegant kind. The whole appears to have been inspired by the spirits who engineered the Royal Commission on Motor Cars, and at first had the appearance of being a recrudescence of that school of sciolists who regarded luxury, and such sumptuary notions, as furnishing canons of taxation. The appearance, let it be repeated, for the event proves that it was not really so, though even yet it is apparent that some in this gallery hope to compass a more ultimate and subtle object by appealing to the sumptuous character of the equipages which some owners of motor cars use on the roads. When, however, that significant recommendation of the said Commission of a Road Commission and Bureau in London was pushed to the front all students of local administration and taxation were aware, if not awake to the fact before, that we were face to face with an old claim of agrarian territorial interests for relief at the charge of the rest of the Sovereign's lieges. The resurgent effort of the past few weeks to create a demand for a special taxation of users of roads, coupled with a renewed demand for that central bureau for roads, discloses without a veil the origin and the object of a movement which, surely, does not deserve to succeed.

### Who Should Pay for Road Maintenance?

The moment is appropriate for a consideration of taxes, no doubt, for most people are expecting some changes in the next Budget. Yet writers on the lines just suggested venture to suggest, with great aplomb, what cannot be regarded by those who follow fiscal matters as other than reactionary. Some of the articles we refer to are excellent examples of the calculated folly of regarding roads and their upkeep as apart from taxation generally, and, indeed, not subject to ordinary considerations touching taxation. The boldness, too, with which the demand is implied is refreshing, and the writer seems to consider that the chief question is how to get revenue which will relieve those who bear rates at present, viz., owners of property. In the course of one article, it is said, "the farmer generally pays heavy local rates." If he does pay, nominally, most students of the subject agree that the true incidence of rates on farms is on the landlord, and not on the farmer. A frank recognition of the economic bearing of these matters is necessary to a just and proper estimate of movements such as this to tax all sorts of vehicles which use roads specially, and the concomitant demand that for accepting such taxation (whatever that may mean) a special bureau shall dole out the proceeds for the improvement of roads.

Two chief positions with regard to the actual position should be borne in mind; the distinction between road making and maintenance, on one hand, and the taxation required for local purposes; and, secondly, the

imposts placed upon various kinds of vehicles already. Of the necessity to distinguish between improvement of roads and the related question of local taxation reams have been written, and appearances suggest that many weary chapters will be added yet. Many will be able to join heartily in advocating many improvements in roads who cannot and will not countenance the assumptions and pretensions of those who are pressing questions of taxation in the direction of taxing vehicular traffic. The articles to which reference has been made already, in a most nonchalant and amusing way, witness to the writer's consciousness that he had to make bricks without straw, or, to drop figures, to find, or pretend to find, a method of accomplishing his end equitably. All the time, ideas such as nationalising roads were seen to be but Aunt Sallys, for the writer shows he was aware that such a proposal precipitates the inquiry into local taxation as a whole which he would avoid, and he is bent, of a truth, from first word to last, upon getting a further taxation of vehicles. That taxation of vehicles would ease landlords, and would thus serve to realise the object of this movement, which is to circumvent somebody, while rates of various kinds, or their increase, are thrown on other shoulders by various devices. The real question, therefore, which emerges here is not the state of the roads, but the question who should pay for their maintenance. To deal adequately with the place of highways in local and national life, and to trace the obligation to maintain them, would require a volume, but it may be asserted confidently that the ultimate principle found in our history and institutions is that the property through which roads are driven—the property, therefore, which is thus benefited—should be charged with their maintenance, as with other burdens of a local nature. Since Peel's Act of 1840, however, which made personal property, specifically, free from poor rate and analogous rates, certain interests have clamoured for relief in various ways at the expense of other sections of the community, less favourably situated as far as the majority goes. The effect is that the tenure of all land, always subject to local charges of an undefined character and amount, becomes altered so that at each increment of aid from the taxes that tenure tends to become absolute instead of the strictly limited nature which it is supposed to be.

### Industry Should Not be Taxed.

That the matter stirs the consciousness of the writer referred to, and, more practically, that it touches industry, and the daily position of those who do not own land, may be shown quite briefly. The writer is fain to acknowledge that right in the way of a dip such as he would like into the Imperial Exchequer is the fact that large sums are now drawn from that quarter, and they cannot be increased readily. These sums since about 1888, the passing of the Local Government Act, have grown so that the annual amount became £11,250,000 in 1907-8, and to that amount £3,447,532 has to be added for various services which used to be a charge on localities, but which, principally since 1860, have been shifted at various times on to the national funds. The reader should understand the meaning of that shifting. The taxpayers and the ratepayers are by no means the same citizens, and the object of shifting charges from local to national taxation is to bring many who do not pay

rates, but do pay taxes, if not directly, yet indirectly, by means of duties on tea, sugar, and other commodities to bear a share of local taxation. But that is a gain to landowners, not to farmers, for all land is subject to rating, and every penny shifted to national taxation makes a landowner's "property" of higher value. Hence these attempts made constantly to get a larger contribution from the national funds, or alternately, as in the case in hand, to get a series of duties or taxes laid upon users of roads. By a grant from the Exchequer an old woman buying tea by the ounce is made to contribute to the repair of roads (the attempt to " earmark " death duty and license money is vain). By some new licenses, such as those on motor cars, the same national fund from which a grant is sought is swollen, but depleted immediately to relieve the immemorial duty of the landowner to repair the roads. The matter is somewhat involved; indeed, some of the authors of the plan appear to rejoice in that involuement, but it is hoped that this brief summary discloses clearly the forces working to bring an

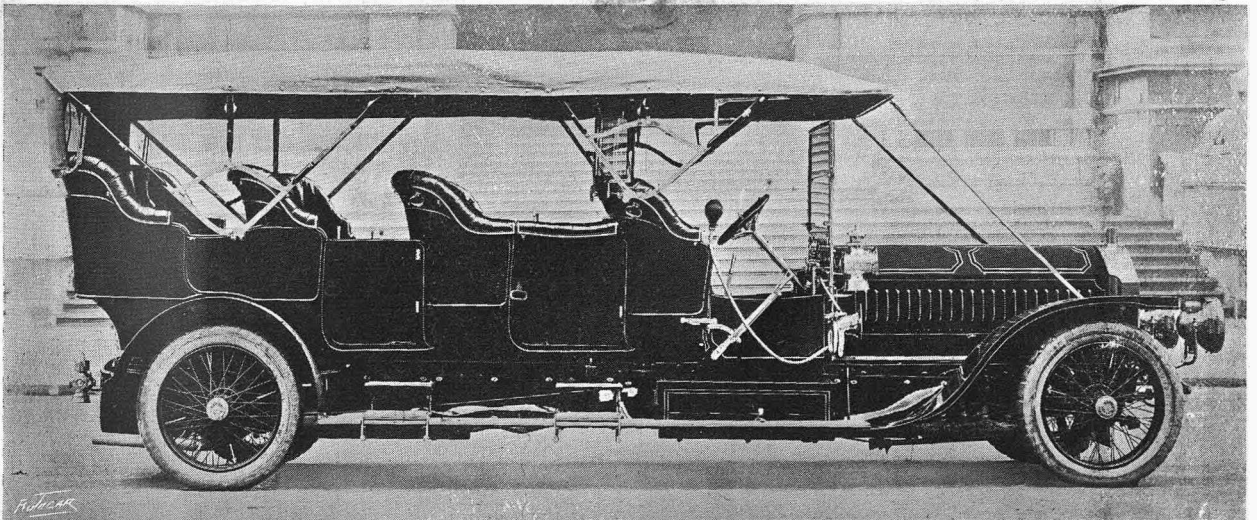
*Motors, Roads, and Taxes.*  
industry such as the fabrication of motor vehicles by specious pleas to the aid of our property owners.

Reserving to another article the consideration of the charges now placed on motor vehicles, and the suggestions which writers upon this subject have made recently, let the reader be informed, in conclusion, how the writer who has been quoted several times may be brought in evidence again, as he declares so touchingly that what he wants is a restoration of toll-gates on our roads; only he is convinced that he cannot get that restoration. Let the reader consider this pathetic regret of his in connection with the historical and economic summary of the question already given, and he will find easily how a retreat is made upon motor vehicles, by licenses on which the same object of relieving property owners is sought. To understand this is to understand how a number of members of motor unions appear in that surprising character of men who call upon the authorities to tax their vehicles. The equitable character of taxation and the interests of justice are, meanwhile, left out in the cold. W.

## A CAR WITH A PERSPECTIVE.

The accompanying illustration is that of a 120 h.p. Napier, with a wheelbase of 14ft. 11in., which has just been completed to the order of Messrs. Mark and Co., Bombay. Needless to remark, the car has several points of design different from standard Napier practice, necessitated by the extreme body length. Notably, the side members are of pressed steel of a new design,

drive. The body has four rows of seats, seating three each except the front one. Access to the hindmost seat is by a door through the centre of the third one. The seat of honour is immediately behind the driver, and is most luxuriously fitted with speed and distance recorder, clock, binoculars, and other accessories. Detachable wire wheels are fitted, as well as two screens



with tie rods from end to end over a vertical strut. Special provision has been made for bracing the frame laterally, and in other points, also, detail structural alterations have been made. The engine is a standard 120 h.p. Napier, with copper water jackets. The carburetter is of the new Napier controllable type, and the ignition is Napier synchronised, magneto also being fitted. Three speeds only are given, and live axle

and a special hood. The springing also is most satisfactory. The car measures 21ft. over all, and is for use on long journeys across India. It is possible, however, to drive it slowly in traffic, and it has a comparatively sharp steering lock. The lines of the body would have been improved if the sills between the third and fourth seats had been the same height as those between the first and second.

In appointing a professor for the new department of motor car engineering, which will be provided in the restored main building of the Merchant Venturers' Technical College, Bristol, the Governors are making what is a new departure so far as the West of England is concerned. Instead of engaging a professor whose whole time will be devoted to the work of his depart-

ment, they are arranging that the gentleman appointed shall be required to do teaching work during a limited number of hours a week only, while during the rest of his time he will not merely be permitted, but expected, to do other work, so that he may keep himself in touch with the motor car engineering industry, either by engaging in research work or private practice.

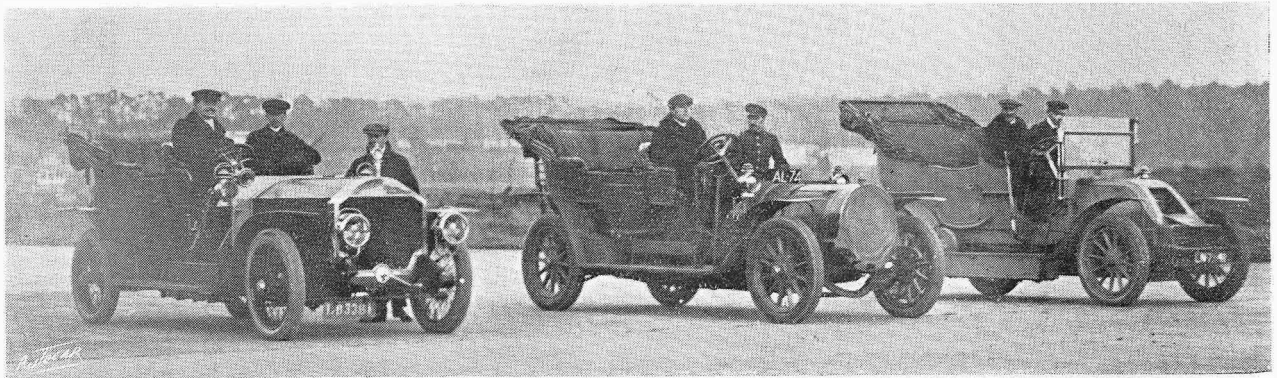
## AMATEURS AT BROOKLANDS.

At Brooklands motor course the stripped racing car and the touring vehicle with racing body, devoid of all that goes to make motoring comfortable and enjoyable, are such common objects that it was more than pleasant on a recent fine afternoon to be the spectator of a friendly series of races between three keen amateur enthusiasts driving three touring cars, all fitted with Cape cart hoods and one with a wind screen, and all carrying a full complement of tools, spares, tyres, and other necessities of travel. The cars had seen much hard work, and the first-mentioned below was but recently returned from Italy.

The three participants in this sporting event were the Marquis de Mouzilly St. Mars, Mr. Thomas Scully, and his brother Mr. Frederick Scully. Their respective vehicles were a 60 h.p. six-cylinder Napier, 127 by 101, low but comfortable body, Cape cart hood, two

been left in place, so that all competed under the same conditions as would prevail on the open road. It must be understood that the contest was entirely of a private nature, the participants were amateurs driving genuine touring cars, and that the times given are not correct to the fifth of a second. But in so much as frequent boasts of high speeds obtained on the road are as rife now as ever they were, a good idea of what can be expected of cars of this size in the way of pace is given.

Starting at the first telephone box past the members' bridge on a one lap scratch race, the Napier rapidly established a lead. The Delaunay lost little time in getting off the mark, but its driver (Mr. T. Scully) missed his gears and dropped badly in the rear. Later he made up a good deal, and finished second, while the C.G.V. was a bad third. Times: Napier, 3m. 7s.



ENTHUSIASTIC AMATEURS AT BROOKLANDS. Reading from left to right the drivers are the Marquis de Mouzilly St. Mars, Mr. Thomas Scully, and Mr. Frederick Scully.

spare Rudge-Whitworth wheels, tools, and spare parts; a 40 h.p. four-cylinder Delaunay-Belleville, 134 by 140, standard touring body, Cape cart hood, wind screen removed, spare Michelin rim with tyre, all tools, etc., on board; and a 40 h.p. C.G.V., 140 by 160, very heavy body with high backs to the seats, wind screen *in situ*, Cape cart hood, tools, and spares on board. After the races the cars were placed on the weighbridge, and the following weights were recorded: Napier, 4,200 lbs.; Delaunay-Belleville, 4,150 lbs.; C.G.V., 4,670 lbs.

The cars on arriving at the course were drawn up near the clubhouse, and the mechanics set to work to remove the wind screens. On the Delaunay this was easily effected, but the screen on the C.G.V. proved obdurate, and it was left in position. The Napier had no screen at all, since the one which was on order was not delivered. Had it been on the car it would have

(53.24 m.p.h.); Delaunay, 3m. 32 $\frac{1}{2}$ s. (46.91 m.p.h.); C.G.V., not timed.

Second race under similar conditions. Napier again led off in magnificent form; the quick acceleration of the six-cylinder engine and the superior skill of its clever driver, whose racing experience stood him in good stead, told only too well against the other two plucky enthusiasts. 1, Napier, 3m. 3s. (54.40 m.p.h.); 2, Delaunay, 3m. 25 $\frac{1}{2}$ s. (48.37 m.p.h.)

The third race was over the same distance, but with a flying start. All three cars kept together till the members' bridge was reached, when the Napier shot ahead, and was the first to cross the line, followed by Delaunay and C.G.V. The result was, of course, a foregone conclusion, the six-cylinder again proving superior. Times: 1, Napier, 2m. 46 $\frac{3}{4}$ s. (59.75 m.p.h.); 2, Delaunay, 3m. 7 $\frac{1}{2}$ s. (53.5 m.p.h.); 3, C.G.V., 3m. 12 $\frac{1}{2}$ s. (51.80 m.p.h.)

The statement which has appeared in some of the papers that the committee of the Royal A.C. have considered a proposal that, in order to further the aerial navigation movement, a mixed commission should be formed, consisting of representatives of the Admiralty, War Office, R.A.C., Aero Club, and Society of Motor Manufacturers, is incorrect.

\* \* \*

Once again Lanchester practice has stood the test of time and emerged triumphant. It will be remembered that wire wheels for years past have been standard Lanchester practice until of late, when the

company have had to fit wood wheels in deference to public requirements. That wire wheels, on account of their all-round superiority over wood wheels, are steadily coming into favour, however, is clearly evidenced by the fact that all the Lanchester cars ordered at Olympia are to have wire wheels. The four cars exhibited were also bought off the stand, the single specimen having wood wheels being returned to the works for fitting with wire wheels before delivery. Quite apart from their strength and lightness, a Lanchester looks smarter with wire than with wood wheels.

## A BIENNIAL SHOW.

### OVERTURES FROM FRANCE.

Over a month ago we announced that the French makers were seriously considering the desirability of holding no motor show in 1909. Their decision to show or not to show was, to some extent, to hinge upon the success of the present Salon, and it would appear that they are disappointed with the results which have so far accrued from the Salon, as the *Chambre Syndicale* (which is the French equivalent to our Society of Motor Manufacturers) has, we hear, made overtures to the English society. The French proposition is practically to the effect that if the English will agree not to hold a show at Olympia in 1909, the French will also abstain from organising an exhibition.

We suppose the matter will be brought formally before the exhibitors, but the proposition is not at all likely to be acceptable to the majority of them. So far as we can see, the position is practically summed up in the statement that France finds exhibitions unprofitable and England does not, and it is hardly

likely that under the circumstances England will consent to drop her exhibition.

Another suggestion has been made, but not, so far as we know, officially, and that is that France should alternate her exhibition with England. That is, both would hold exhibitions every two years, but not in the same year, so that one year the show would be in England and the next year in France, and so on. From the English point of view, this would be quite wrong, because it would do more than anything else to maintain interest in the French exhibition, though from the French standpoint it would undoubtedly be a very excellent plan. In fact, at the moment there seems to be a very general desire upon the part of the French to stagnate, as it is stated that a number of the most prominent competitors in the Grand Prix races have formed or are forming a compact not to enter. In this, however, the French are not alone, as it is stated that both their Italian and German rivals are more or less favourable to the scheme.

## MOTOR CAR SPEED LIMITS.

### ANTI-MOTORISTS' DEPUTATION TO THE PRESIDENT OF THE LOCAL GOVERNMENT BOARD.

A deputation of anti-motoring members of Parliament waited upon the President of the Local Government Board on Monday to ask him to issue a general notice that when a local authority made application for the fixing of a speed limit not exceeding ten miles an hour in any town or village, the application should be granted provisionally until good reason was shown to the contrary.

Mr. John Burns, in reply, said he would look into the law on the subject and see whether he had any authority to do as was suggested.

In the meantime, the motoring members of Parliament have not been idle. They have been in communication with Mr. Burns, and have arranged, through the Motor Union, for a deputation to attend the Local Government Board on Monday next, at noon, to lay before Mr. Burns facts and arguments to show the undesirableness of such a course as that suggested. They will, we understand, urge upon the President of the Local Government Board that to place

in the hands of local authorities the power to fix speed limits without proper and impartial enquiry would be against the best interests of the community in view of the unreasoning prejudice which exists against motor cars and motorists in many places.

Our Parliamentary correspondent, writing from the House of Commons, says:

Yesterday's deputation of anti-motoring M.P.'s to Mr. John Burns was quite fruitless. The right hon. gentleman extended a benevolent reception to the members who waited on him, but he declined, so I am assured, to give a definite assurance one way or the other. The President of the Local Government Board apparently prefers to postpone his final pronouncement till he has learned the views of the motorists who wait on him to-morrow. It is perhaps a mere speculation as to how Mr. Burns will proceed when he has had both sides of the case presented to him, but up to now he has clearly refrained from making any statement of a definite nature.

## IMPORTS AND EXPORTS OF MOTOR CARS.

The following figures taken from the Board of Trade returns for November show the value of the imports and exports of motor cars during the past

eleven months, and the single month of November just ended, as compared with the corresponding periods of the two previous years:

### IMPORTS OF FOREIGN CARS, CHASSIS, AND PARTS.

	Month ended November 30th.			Eleven Months ended November 30th.		
	1906.	1907.	1908.	1906.	1907.	1908.
Imports of foreign cars and parts	£351,661	£307,326	£276,093	£4,149,546	£4,327,824	£3,895,781
Foreign cars re-exported	34,309	31,163	31,779	365,925	340,403	314,479
Net imports	£317,352	£336,163	£244,314	£3,783,621	£3,987,421	£3,581,302
Exports of British-made cars	102,971	124,315	124,983	718,636	1,216,485	1,152,540
Excess of imports over exports	£214,381	£211,848	£119,331	£3,064,985	£2,770,936	£2,428,762

## FASTENING NON-SKID COVERS TO RIMS.

Some little time ago we published a letter from Mr. C. D. Leng, in which he asked some queries with a view to perfecting a simple system for fastening detachable non-skid covers to the wheel independently of the tyre rim. The matter excited very considerable interest, and correspondents later bore out what was said about the enormous saving of tyres that would be effected. Mr. Leng now writes: "I was having a pair of detachable rims fitted to a car at the time, and I induced the makers to consider the question of a special rim to take the hooks of a detachable non-skid cover. They have got out a very simple and effective arrangement which looks like saving 50% of tyre costs.

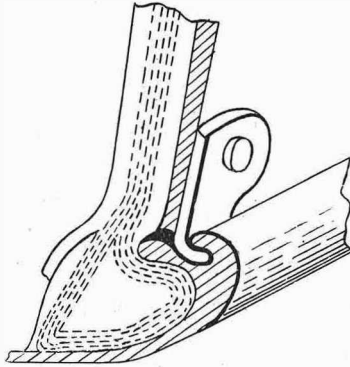


Fig. 1.—This illustration shows one of the hooks of a non-skid cover hooked into the lip of the special rim.

"As I explained, I have tried all kinds of leather metal-studded non-skids, the last set being Durandals, which had been fitted over a set of smooth Michelin tyres on a 40 h.p. F.I.A.T. This car was used somewhat roughly for eighteen months, and the tyres were then recovered for the first time. They were quite

good, except that they were wet. They had not been punctured, and they should last another eighteen months. The tubes were damaged only by the water that had got in between the hooks.

"With the new system of fastening designed by the Shrewsbury and Challiner Company, there will be no fear of water finding its way into the cover, and I think the solution of the trouble has been discovered, and that the new rim will have an enormous sale. Any handy chauffeur ought now to be able to rivet new treads on to the leather cover. To facilitate home repairs, it will be well to have a cast-iron section of a tyre made to fit into a vice or in a hole in the bench like the iron last or foot that a cobbler uses when he repairs boots. A stock of rivets, and treads supplied by the yard, and a hammer only will be required to

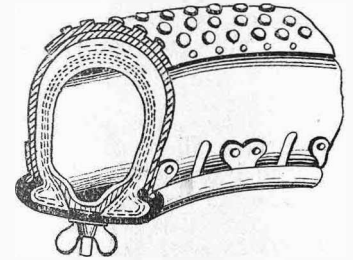
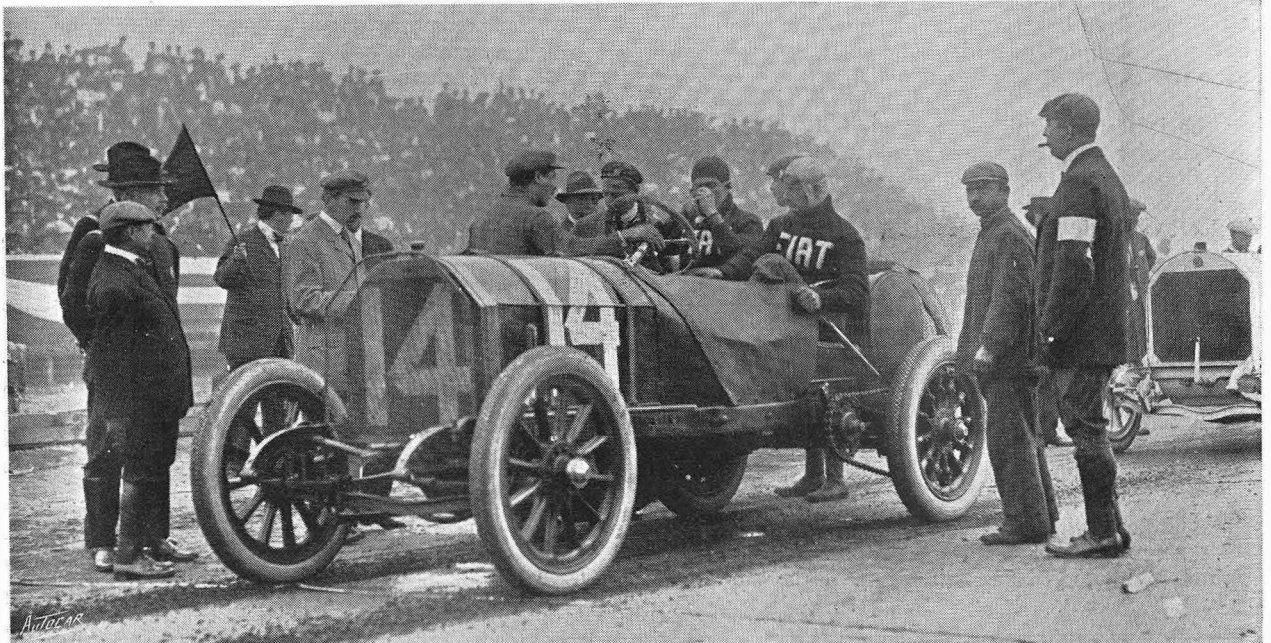


Fig. 2.—The non-skid cover is here shown in position over the plain tyre. Drawings from *Sheffield Daily Telegraph*.

fasten fresh treads. We shall thus be able to renew the part that wears, just as we have our boots soled and heeled. We are running thirteen motor cars daily over greasy streets and roads, and the tyre bill is something considerable, but I think we ought to be able to halve it now that this difficulty has been solved."



THE GRAND PRIZE OF AMERICA. 3The winning F.I.A.T. with Wagner at the wheel.

The Indiarubber Manufacturers' Association intimates that in consequence of the serious advance in the price of raw rubber all prices are subject to revision. One leading firm has announced that its prices are subject to ten per cent. premium.

A police trap is working at the week-ends on the Leeds-Headingley-Otley road at Hyde Park Corner, ending at the public-house. Several cars were caught there last Saturday. This road has been trapped almost continuously since the beginning of the summer.

# THE WEIGHT OF MOTOR CAR AND PARTS.\*

The study of motor car weight has been under a cloud since the accomplishments of engineers outwitted the provisions made by Gordon Bennett to safeguard his trophy in the earlier days. Accordingly, before drawing attention to the weights of particular parts, I think it may be well to show that the general subject is still worthy of our attention. When later we come to consider particular parts—pistons, connecting rods, crankshafts, cylinder castings, complete engines, unsprung weight on road wheels, or body weight—we shall find that every single item is so full of suggestiveness that no man can write more than a brief essay on motor car weights if he has anything else to do.

**Total Car Weight.**—This may be considered in relation to hill-climbing, travelling on the level, and accelerating.

**Hill-climbing.** Taking the horse-power at the road wheels as represented by the equation:†

$$\text{H.P.} = \frac{W}{T} + \frac{W}{T} \cdot Lr + .0000543 (V)^2 A.$$

Weight is a dominant factor until very high speeds begin to give a significant value to the third or windage term (we are only concerned with something under 3 h.p. of windage with a car of 20 sq. ft. wind frontage at 30 m.p.h., and on most hills of any consequence, and with most touring cars, even this is very good travelling). A picturesque idea of the effect of weight is obtained from the consideration that if two cars of about 30 h.p. started equal in every way at the foot of South Harting Hill, where a classic hill-climb over a mile long was run off last year, the fact that one driver presented the other with a bottle of champagne at the start would secure for the simple and generous donor a victory by a car's length.

**On the Track.**—On the other hand, with uninterrupted level runs such as the Brooklands track small increments of weight have little import, since the first term of the formula goes out, the third term becomes more significant, and W only appears in the second term, where it is multiplied by the small factor "r," the co-efficient of rolling resistance (which may be taken as  $\frac{1}{100}$  or 40 lbs. per ton as an average figure). None the less it is a mistake to neglect the rolling resistance entirely even for track work, and when we come to consider average speed on ordinary level roads weight immediately springs into importance again, because mass comes in as a dominant factor in the expression for acceleration  $F = Ma$ .

**Acceleration and "Liveliness."**—It is probably safe to say that in England a car is never run at a constant speed for any length of time, unless that speed be a very low one, and the chances are rare which allow a medium-powered car to attain to its maximum speed for any useful period of time. The reason for this is that an appreciable interval of time and of space is necessary for the acceleration of any car having the usual ratio of h.p. to weight (see Table I., on next page), and the usual weight distribution on the car.

In order not to complicate matters with considerations relating to the irregular behaviour of carburetters, we must for the purpose of this paper assume cars to be such that the explosive mixture is supplied and passes through appropriate valves, carburetter, and inlet and exhaust pipes, so that there is no delay between the driver's call for the effort of the engine and its response to that demand. Under these circum-

stances we might call  $\frac{H.P.}{W}$  the *liveliness* of a car. Any car

may, I think, be called lively if its weight is 1 cwt. or less per available horse-power at the wheels. In order to drive such a car properly it is necessary not to allow the engine to exert 1 h.p. per 112 lbs. until its velocity is about 9 m.p.h., or it will skid its wheels. (The supposition is dry macadam with a co-efficient friction of 0.625 and an average load distribution of 0.6 of the weight on the driving wheels.) An idea of the usual ratio of h.p. at road wheels to weight may be gathered from Table I., in which it will be seen that

there is in practice a range from  $\frac{1}{4}$  h.p. to 1.2 h.p. at the road wheels per cwt. of complete car.

It is, I hope, a pardonable digression to point out that anyone who will weigh his car, and drive it up a timed hill of known length and gradient, can thereby calculate its "liveliness," and the result obtained may be instructively compared to the "liveliness" of the cars in the table, which was worked out from the R.A.C. 2,000 Miles Trials of this year. The "liveliness" is seen to increase with the power, though not as rapidly as the power, and (with one exception) the increase of the average "liveliness" in the various classes is regular. Thus, the average of the small cars (Classes A, B, C) have a "liveliness" of 0.478. Class D has an average of 0.593, Class E averages 0.736, Class F averages 0.707. Class G averages 0.856, Classes H and J average 0.938, and Classes K and L average 1.032.

In quite a number of cases when open touring cars of high horse-power are bought they are not desired because the h.p. is high, but because the liveliness is high, and if we look down the table we find that the liveliness which is the average among the highest-powered cars can also be obtained in some exceptionally small ones.

Thus, we get a figure in excess of 1 h.p. per cwt. from the 20 h.p. Vauxhall, which runs close in this respect to the much larger cars—the Adler, Daimler, De Dietrich, Rolls-Royce, and Ariel—and this without laying itself open to the charge of flimsiness, without weight cutting, and with being practically the most reliable car in the whole trial.

When, however, a car is wanted for weight carrying, it is clearly a case for high power—as for large seven-seated bodies, limousines, double landaulets, and Pullmans. It is here that Adler, Daimler, De Dietrich, Rolls-Royce, and Ariel cannot be approached by the little Vauxhall, which nevertheless will equal most of them on a hill. Similarly, when wind resistance is important, as at speeds of 45 to 60 m.p.h., the large power tells seriously, and one finds that there is, in fact, a *quid pro quo* for the higher price and dearer upkeep of tyres.

**Price.**—So many and various are the merits and advantages included and paid for in the price of a car that it always seems a little invidious to make a schedule of *price per h.p.*, since such a schedule pays no heed to the workmanship, finish, silence, absence of vibration, fuel consumption, liveliness, etc., etc. As far as I know, a price relationship to power of this kind has not been worked out before, save on the basis of some rating.\* It will be seen in this curve that all the downward peaks represent cars that are cheap for their power. These are not always coincident with the maximum of "liveliness."

**Oil, Water, Tools, Spares, Petrol.**—It is interesting to notice that the towing provisions of the various cars amount, roughly speaking, to ten per cent. of the weight of the car and body. As a rule, a good deal could be saved on this if accessory makers turned their minds to it.

**Weights of Parts.**—I am painfully aware of the inadequacy of the data which have been at my disposal, but I must point out to anyone who wishes to carp at this, that the amount of labour required personally to weigh the parts of cars is enormous. One has to be fortunate enough to catch a broken-down car in a repair shop. Employ one's powers of persuasion on the owner, limit one's inquiry to the parts which are already dismantled, wait for the fitter to reach the particular part of which the weight is desired, and then set to work, if possible, without infuriating the repair man. There are other limitations; for example, it is unfair to remove the gudgeon pin if this does not require attention, etc., etc.

I have in some cases been at great pains with this process of dismantling, but in other cases, through the generous assistance of manufacturers who have taken this trouble, I have obtained the weights of some vital parts of cars. I believe a case can be made for the usefulness of correlating these weights, and I should myself be willing to undertake the work of analysing them if other makers would be so good as to assist me with the data. I am willing to accept the condition that the maker's name shall not be made known if that should be his desire. As matters are at present, I admit with pleasure my indebtedness to Iris Motors, the

\*Paper read before the Incorporated Institution of Automobile Engineers by Mr. Mervyn O'Gorman, M.T.M.E., M.I.E.E., M.I.A.E., on Wednesday, December 9th.

†W is the weight of the loaded car in cwt.

T is the time up the height H in seconds and feet.

L is the length of the hill in feet.

r is the co-efficient of rolling resistance =  $\frac{40}{2240}$ .

V is the velocity up the hill in miles per hour.

A is the windage area of the car in tens of square feet.

\*Not maximum possible power at the maximum possible piston speed, which no one ever gets for five consecutive minutes, or any other particular piston speed, but just the power developed on sixteen miles of hills of all sorts and gradients, and in the course of a tour when each man was trying to do his best.

Wolseley Co., the Rolls-Royce Co., Dennis Bros., James and Browne, the Humber Co., and Messrs. Headon Bros. and Wark, the repairers who gave me facilities most generously,

but the Daimler, Napier, Gladiator, Darracq, Renault, Sunbeam, Berliet, and Winton cars shown were obtained on what material came to hand and were weighed by my own staff.

TABLE I.—HORSE-POWER, WEIGHT, AND "LIVELINESS."

Name of Car.	Number in R.A.C. Trials.	B.H.P. at Road Wheels.	Weight Full (W.f.)	Proportion of W.f. on Driving Wheels.	Weight Empty (W.e.)	Difference in Weight.	B.H.P. W.
8 h.p. De Dion-Bouton	A 12	4.95	1,494	.817	1,369	125	.171
9 h.p. Adler	B 11	6.87	1,751	.834	1,582	169	.44
10 h.p. Cadillac	C 2	6.41	1,687	.826	1,549	138	.426
10-13 h.p. Zedel	C 23	9.82	1,624	.824	1,489	135	.675
12-14 h.p. Singer	D 33	14.25	2,401	1.164	2,170	222	.665
15-18 h.p. Zedel	D 44	—	2,232	1.164	2,027	205	—
12-14 h.p. Straker-Squirs	D 21	10.65	2,241	1.259	1,963	278	.512
12-14 h.p. De Dion-Bouton	D 42	—	2,173	—	1,978	195	—
15-18 h.p. Zedel	D 43	—	2,101	—	1,911	190	—
12-16 h.p. Vauxhall	E 28	22.6	2,511	1.283	2,292	219	1.01
20 h.p. De Luca-Daimler	E 54	15.5	2,676	1.472	2,465	211	.15
15 h.p. Talbot	E 59	—	2,521	1.378	2,286	235	—
15 h.p. Panhard (chain drive)	E 53	19.75	3,429	1.747	3,048	381	.645
15 h.p. Panhard (live axle)	E 52	20.25	3,145	1,600	2,879	266	.721
20 h.p. De Luca-Daimler	E 37	16.5	2,675	1,474	2,435	240	.690
10-12 h.p. Coventry-Humber	E 7	14.38	2,271	1,176	2,006	265	.708
18 h.p. Benz	E 85	—	2,523	1,458	2,156	367	—
12-15 h.p. Hillman-Coatalen	E 16	—	2,460	—	2,230	230	—
14-16 h.p. Belsize	E 9	—	2,420	—	2,195	225	—
20 h.p. Talbot	F 60	—	2,590	1,392	2,345	245	—
20 h.p. Beeston-Humber	F 24	21.2	3,024	1,560	2,727	297	.785
15 h.p. Coventry-Humber	F 25	19.55	3,013	1,618	2,642	371	.726
18 h.p. Panhard	F 79	20.9	3,444	1,771	3,035	409	.680
18 h.p. Minerva	F 38	22.0	2,965	1,562	2,703	263	.830
20-24 h.p. Junior	F 41	—	3,246	1,770	3,049	197	—
25-30 h.p. Brown	F 48	16.32	3,437	1,777	3,105	332	.517
18 h.p. Thornycroft	F 58	—	2,811	1,438	2,541	270	—
16 h.p. Star	F 40	—	2,940	—	2,660	280	—
30 h.p. Adler	G 73	31.75	3,161	1,733	2,787	374	1.12
20-30 h.p. Nagant-Hobson	G 61	23.2	2,923	1,520	2,643	280	.887
25 h.p. Deasy	G 49	19.05	3,314	1,860	3,002	312	.644
30 h.p. Beeston-Humber	G 45	27.25	3,944	2,031	3,641	303	.774
25-30 h.p. Ariel	G 56	—	3,498	—	3,153	345	—
28 h.p. Belsize	G 36	—	3,323	—	2,998	325	—
White Steamer	G 47	—	3,477	—	3,137	340	—
40 h.p. Armstrong-Whitworth	H 79	32.6	3,743	1,959	3,383	360	.975
White Steamer	H 76	—	4,115	2,285	3,705	410	—
25 h.p. Hillman-Coatalen	H 50	18.75	3,228	1,684	2,877	351	.65
38 h.p. Daimler	H 63	31.8	3,158	1,631	2,815	343	1.13
38 h.p. Daimler	H 75	30.0	3,106	1,620	2,806	300	1.08
30-40 h.p. Ariel	J 72	31.2	4,079	2,247	3,694	385	.855
40-50 h.p. Rolls-Royce	K 86	40.3	3,852	2,091	3,472	380	1.17
35 h.p. Deasy	K 65	35.9	4,291	2,199	3,840	361	.956
60 h.p. Lorraine-Dietrich	K 87	39.1	4,369	2,322	3,929	440	1.001
40-50 h.p. Rolls-Royce	K 83	—	3,793	—	3,418	375	—
40-50 h.p. Ariel	L 82	37.7	4,240	2,389	3,815	425	1.00

Ratio of h.p. on road wheels to the weight "full" of cars in 2,000 miles, R.A.C. trials, 1908.

"Full" means to include petrol, water, oil, tools, all spare parts, any necessary ballast; in fact, everything except passengers.

The weight on hill was, in fact, the "full" weight as above defined, plus passengers, mechanic, driver and observer (= 244 lbs.), making in all fifty stones for all four-seated cars.

"Empty" means without petrol, water, oil, or tools, spare parts, ballast in passengers.

B.H.P.

The liveliness, or  $\frac{\text{B.H.P.}}{W}$ , in the last column is the ratio of h.p. to the number of cwts. in the weight "full."

(To be continued.)

In view of possible trouble through infringement of the Mercedes gate change patent, Messrs. C. E. Whittaker, Ltd., who are the sole British agents for the Imperia cars, tell us that they are indemnifying

all purchasers of their cars against any proceedings which may be taken against them for infringement. This is because in cases of infringement the user as well as the maker is responsible.



## CORRESPONDENCE.

### EDITORIAL NOTICES.

No letters from members of the motor industry will be published when they deal with subjects which may be regarded as advertisements for the writers' or their business interests. At the same time as many of the most practical suggestions come from those engaged in the motor industry, their letters will be inserted when possible, though the names of the firms they represent may be expunged, and the initials of the writers substituted.

Letters of a personal nature will be withheld.  
The Editor, although accepting no responsibility for the opinions expressed by correspondents, reserves the right to publish a portion of a letter and to omit any part which he does not consider interesting or essential.

All communications under a nom de plume should be accompanied by the name and address of the writer, not necessarily for publication, but to assure the Editor as to good faith.

Enquirers who ask for the experiences of private owners with specified cars, parts, or accessories, are requested to enclose a stamped addressed envelope, so that replies which space will not permit us to publish may be forwarded to them. Circulars or letters from interested parties will not be forwarded.

### HOW TO SET HEADLIGHTS.

[13691].—I have read your article entitled "How to Set Headlights" with much interest, but as I entirely disagree with the method therein put forward, the views of some of your other readers might be of interest. I found that when my lamps were vertical and parallel, the light was thrown too much upwards, and there was a bright patch of light in the middle of the road beyond which I could not see. I therefore altered them, turning the right one slightly downwards and the left one considerably downwards, and both slightly outwards. This I found illuminated the road very much more uniformly, the left lamp illuminating the first fifty yards just in front of the car, and the right one lighting up about fifty yards just in front of that again. With this alteration I certainly found that I could drive at night with much more comfort. In foggy weather also I found it a great improvement.

J. F. HENDERSON.

### DESIGN OF BONNETS.

[13692].—What a variety we did see at Olympia! I was struck with the fact that so many good cars by good makers were simply killed and made non-attractive by their gaudy, showy, fire-engine, circus-waggon, chip-potato-machine style of bonnet. Something distinctive each one seems to be striving for. One good firm seems to think that the letter A lends itself to an attractive form; others seem to think that the letter O, made up with very wide flat pieces of brass, makes a good design. Such designs are vulgar in the extreme, to my way of thinking, and, I should think, are more costly to make than the plainer designs. My taste in bonnets, and I think that of most people, lies in the direction of, say, Napier's, Siddleys, Austins, Vulcans, Ariels, Sunbeams, Darracqs, Minervas, Clements, and many others. Of course it is all a question of taste, but I would appeal to our manufacturers to give us less brass to clean, and less fanciful shapes and designs.

J. C.

### THE 1909 DAIMLER ENGINE.

[13693].—Like your correspondent Mr. Walton [No. 13645] I have read up the 1909 Daimler engine, but unlike he or Mr. Wright I have been much struck by Mr. Knight's ideas and the masterly fashion in which the Daimler Company have carried them out. Mr. Wright [No. 13646] merely states facts; he bolsters (or pillows) up his arguments with very untechnical, not to say incorrect, statements. It is well-known that the detachable cylinder heads are primarily intended for the alteration or correction of the compression, not for removal of carbon, and this is to my mind a very excellent provision.

As an engineer I think that the connecting rod lugs on the valve sleeves are quite up to their work, and as a long and satisfied user of the Renold silent chain I think its use in place of gear wheels is justified, as it is absolutely silent, and remarkably efficient and durable.

In conclusion, I wish the Daimler Company continued success, and a like success to your valued paper. I sincerely appreciate its many good features, not to mention its straightforwardness, and its King's English.

JS 37.

### FRONT WHEEL BRAKES.

[13694].—Two letters [13651 and 13652] in your issue of November 28th deal with front wheel braking and the Allen-Liversidge front wheel brakes. The first writer, Mr. H. G. Hayes, makes the statement that "no front brake will prevent a skid, if the steering wheel be held absolutely rigid," and he bases his opinion on "personal experience with the Allen-Liversidge brakes." I have not had the pleasure of

knowing this gentleman, but on enquiry I find that he was a junior draughtsman employed by a certain engineering firm who carried out for me some early experiments. Without going into the question of how far his knowledge of front wheel braking goes I will content myself with an offer. If the party making this statement can succeed in forcing a side-slip by the application of the Allen-Liversidge front wheel brakes—either by fixing the steering wheel absolutely rigid, or by leaving it entirely free from the hands—I will pay £10 to any charit-

able institution he may name, provided he will agree to do the same, should he fail. Furthermore, I will place a car at his disposal for the purpose.

The second writer, Mr. P. L. Renouf, states that the Allen-Liversidge device is the same as that which he designed four years ago, but which he "shelved" in favour of another, or, as he terms it, the "only perfect" idea. This statement irresistibly reminds me of the waggish schoolmaster who asked one of his scholars one day, "What is electricity?" "I *did* know sir," said the boy, "but I have forgotten." "What a pity," said the schoolmaster, "for you're the only person who ever knew it." And so I say of Mr. Renouf; what a pity he "shelved" a device, which, according to his own letter, "is giving such good results" (and which the motor world has now acknowledged to be "a very simple and practical solution" of the front wheel brake problem), in order to take up with an idea which after the lapse of four years still remains "only perfect."

Mr. Renouf was good enough to explain further why he "shelved" the Allen-Liversidge device, and he, therefore, imposes upon me the similar courtesy of explaining why I adopted it in preference even to his "only perfect" one. I realised with Mr. Renouf that the braking action must be on exactly the same centre as the steering movement, but I was not led into the error of believing that the line of pull should be confined to the line of the steering pivot. I found that if the brake device were mounted on the steering centre I could fulfil all the essential conditions without the disadvantage of dangerously confining my line of pull, of weakening my steering pivot with boring, and of reducing my leverage at the brake to only one-half the diameter of the brake drum. Furthermore, I was of the opinion that the running of a cable over an independently rotatable pulley would produce a much better mechanical effect than to fix it in a position where it would be subjected to a constant twisting and untwisting strain under the steering movement. The defect of such an arrangement would be made even more apparent by substituting a chain for the cable.

Since the success of the Allen-Liversidge front wheel brakes (which, it is acknowledged, have brought the subject of front wheel braking for the first time practically before the public) I have been surprised at the number of "perfect" systems which are said to have previously existed. They all, however, seem to have been born, like the little flower in Gray's "Elegy," "to blush unseen." Perhaps they were "too perfect" to start with, and, like those very good people, "died early." Only the imperfect in this case seems to have survived and grown to maturity.

THOS. G. ALLEN.

[13695].—After all the kind things that have been said in *The Autocar* at various times and by various writers about my system of steering and of braking, it would be ungracious on my part to harshly criticise rival attempts in the laudable propaganda of front wheel braking, but it is as well to remind experimentalists of the risks ably pointed out a year ago by Mr. Bradford, who confessed to have been unable to find any differential connection between two front brakes delicate enough to be always reliable. As Messrs. Wright remark, there is a right way and a wrong one. I should say there are many wrong ones, and the attempted compromise of a side pivot raked outwards, as alluded to by Mr. Allen, belongs to the latter class. My own experience shows that if the pivots lie in the central planes of the wheels, and the brake connections pass through the pivotal lines (the actual brake drums and bands need not be central at all), all trouble is at an end. If the connection between two brakes does not differentiate properly, even if one brake only operates in a centrally pivoted hub,

*Correspondence.*

neither skidding round nor slewing of any kind is induced by the brake action on either sandy or greasy surfaces. If the bus companies would only adopt steering wheels such as are fitted by Messrs. Alby and Simpson on the Sentinel lorries, a good deal of their trouble would cease. If they were to apply the brakes within those wheels nearly all their worries in this connection would be at an end. The combined front driving and front steering design of the Messrs. Wright I am not able to criticise from actual tests.

P. L. RENOUF.

## THE RENAULT TYPE OF CAR.

[13696].—It appears to me that your correspondent's letter [13621] is most easily answered. English motor car design has followed, in the past, the most popular and most practical Continental design, viz., the Mercedes, and I have yet to learn that a second-hand 1905 Renault car will fetch a higher price than a similar car of that make.

Radiators are no doubt placed in front of the engine because it is the proper place for them. How did the Renault people endeavour to overcome the cooling difficulty in their Grand Prix racers of this year? By making them a kind of glorified meat safe.

I shall be surprised if in a short time the Renault design is not brought into line with the majority—at any rate, so far as their higher powered cars are concerned.

The Renault cars are so excellently made that, in spite of radical defects in design, they remain popular for a certain class of car—to wit, the town carriage. The man who drives his own car and wants the best all-round touring car would not be at all satisfied with one.

I am not aware that the Renaults have distinguished themselves in reliability trials or as good hill-climbers.

The English firm who announce that they are copying the Renault design are apparently only doing so in a half-hearted fashion; the why and the wherefore of this attitude should be apparent.

I am not in any way peculiarly interested in the manufacture of English motor cars, but I hope and trust that the day is not far distant when an enlightened Government will make it more difficult for the so-called Englishman to pander to foreign fashions in motor car design. PEN-INSULAR.

[13697].—I would like to refer to your correspondent, A. J. Stannal, who in his interesting letter [13621] on Renault cars concludes with the statement that English makers have each made several designs since 1905. The Roydale car as exhibited at the recent Olympia Show is to all intents and purposes exactly the same design as when first put on the market about three years ago, and the Roydale show chassis exhibited this year is identical with that exhibited last year, with the exception of a cover on the cardan joints. I certainly do not agree with your correspondent about the utter failure of English cars in the reliability trials; whatever may be lacking in the design of the majority of British-built cars, their reliability in trials of all descriptions, as far as I have been able to judge, has been in excess of any Continental makes. During the recent show, amongst the many cars that were constantly coming and going from Olympia, the only car I saw in difficulties, the driver being unable to start it, where it had stopped in a busy thoroughfare, was the make of car your correspondent is championing.

CHARLES BINKS.

## TYRES.

[13698].—Will "E. P." [letter No. 13644] kindly say whether he did the 7,000 miles with Palmer tyres on back or front wheels of his Daimler? I have always heard the drawbacks of Palmer tyres were that they were not resilient, and were difficult to change on the road. My car is also a 30 h.p. Daimler. I can do 7,000 miles on steering wheels, but cannot do more than half that on the driving wheels with ordinary tyres. W.L.

## SOLUTIONS TO AN IGNITION PROBLEM.

[13699].—I notice that in *The Autocar* of November 28th (page 896) you invite solutions of the ignition problem propounded by an amateur owner of a two-cylinder car, one cylinder of which behaves in an erratic and unsatisfactory manner. Below are a few suggestions for locating the fault.

In the first place, it is highly improbable that this is an "ignition problem" at all, as the data given are proof that the coils are all right. Also I note that wires, connections, and plugs have been carefully examined and found in good order, and that the valves have been ground in, and com-

pression is perfect. Many people run away with the idea that if compression is good then the whole engine is in first-class order, but I should advise the owner to carefully examine his engine for the following:

- (1.) Small crack or fissure in induction pipe branch leading to faulty cylinder, probably near flange.
- (2.) Faulty washer or joint at flange of induction pipe.
- (3.) Worn valve stem, or valve stem guide.
- (4.) Bad joint at valve chamber cover.

Any one of these four defects would be sufficient to account for the trouble, as the mixture drawn into the engine would be weakened by admission of air at the places named.

As the owner says nothing, and the drawing fails to show the direction of rotation of the wipe contact, one is left to guess which of the two cylinders fire first, and this complicates matters, because that is a very important point to be considered in trying to elucidate the mystery. It is an extremely difficult matter to adjust any known type of carburetter to satisfactorily supply a mixture which does not vary in the ratio of petrol to air to a motor of this type, both cylinders of which fire in one revolution and then run an idle revolution before again firing.

If carburetter jet is too large or petrol level too high, No. 1 may get a fairly explosive mixture, while No. 2 will get too rich a one on account of the suction of No. 1 having overcome the inertia of the petrol and thus caused the jet to flood over or discharge too large a quantity of petrol. This will make No. 2 fire weakly. On the other hand, with a small jet or carburetter adjusted for economy, No. 1 may get a poor charge of gas and fire weakly, while No. 2 will get the advantage of No. 1's suction on jet and get a good fireable mixture. Even with carburetter properly adjusted No. 2 often gets starved of mixture owing to faulty design and construction in length or area of induction pipe. It must be remembered that the direction of gases in upper part of induction pipe is constantly reversing or oscillating between the two cylinders, and this is the reverse of conducive to regular supply.

I think if the owner will disconnect flange of induction pipe from the good cylinder (No. 1) and substitute for the present washer a blank washer (that is, one completely closing the pipe orifice), and then bolt up again as before, and, in addition, remove one of the valve pocket covers so as to allow free ingress and egress of air to No. 1 to make load as light as possible, he will find it quite easy to shut engine up on No. 2 alone and keep it running, and he should then be able to trace the fault if, as I suspect, it is one of carburation.

B. A. PEAT, S.A.M.D.

[13700].—I have some experience with two-cylinder engines, and I think you will find that the trouble referred to in *The Autocar* of November 28th (page 896) does not lie with the ignition or carburetter, but more likely with the engine itself. Of course, there are such things as unequal compression due to bad valve seatings, or perhaps the valve stems and tappets are worn in such a manner that the engine gets more gas in one cylinder than in the other. Also No. 1 cylinder may have a free exhaust, and with No. 2 the tappets may be so worn that the discharge taking place so late and under much greater pressure than No. 1 would produce a braking effect on that particular cylinder. This would cause the flywheel to slow so much as to prevent it taking the piston past the compression stroke to complete the next cycle, thus causing the engine to stop. But putting this on one side, and assuming the compression to be perfect and equal on each cylinder, I think the trouble is in the design of the engine.

I notice in the diagram that the segments of the commutator are set at 90°. Therefore, the crankshaft must be set at 180°, which I think is the key to the solution. By closely following the cycle of operations in the cylinders, when No. 1 trembler is held down, it will be found that when No. 2 is firing No. 1 is on the exhaust stroke. Then follows No. 1 suction, No. 2 exhaust, then No. 1 compression, No. 2 suction. As No. 1 is not fired owing to trembler being held down, it gives no impulse; then, at the same time No. 2 is compressed and fired. So it will be noticed that after No. 2 has fired it has to drive three strokes for No. 1 and three strokes for No. 2 before it fires again. Now as the last two strokes of these operations are compression strokes, coming as they do after the other strokes, and before No. 2 fires, it must be at once realised how great the braking effect on the flywheel must be. Now by holding down No. 2 trembler and firing No. 1 cylinder the operations are somewhat different, for when No. 1 is firing No. 2 is compressing. Therefore,

when No. 2 is firing there are two compression strokes before the firing stroke, but when No. 1 is firing there is only one, the other coming during the firing stroke, which almost neutralises it. Less braking effect would be thus put on the flywheel.

This, I think, is the solution to amateur's trouble. The unbalanced effort of the explosions in an engine with the crankshaft set at 180° can be fully realised by anyone who owns a car of this description. In my opinion all two-cylinder engines should be made like the 10-12 h.p. Rover, in which the explosions are balanced. Anyone taking a ride on a car of this description will at once realise how near it approaches the smoothness of a four-cylinder car.

F. W. HARRISON.

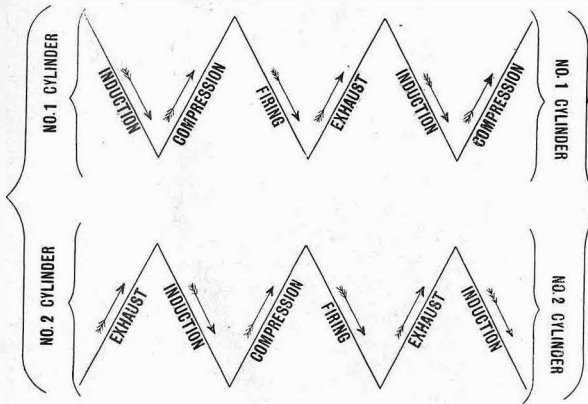
[13701.]—I beg to offer a probable solution of the above problem, as I once had a similar experience.

It was a two-cylinder engine, which worked fairly well under ordinary conditions, but on testing each cylinder separately, No. 1 would not run alone for any length of time. Everything was examined. New plugs were fitted, valves ground, commutator looked to, and the coils changed over, etc., but always with the same result.

Now on looking at the induction pipe it was noticed that No. 1 cylinder had further to draw the gas than No. 2, and seeing No. 1 fired immediately after No. 2, it seemed No. 1 was being partly starved. This was proved by cutting out No. 2 and at the same time holding up the exhaust valve of No. 2, when No. 1 fired perfectly; so that a badly-designed induction pipe was at the bottom of the whole trouble.

GEORGE KEMBER.

[13702.]—I was much interested in the "ignition" problem which appeared in your last issue, and I venture to suggest a solution to it. Like your contributor I, too, own a two-cylinder car by a well-known maker i.e., a 10-12 h.p. Talbot—and I have had a similar experience. With an almost closed throttle, No. 1 cylinder alone will drive the car, while No. 2 fails to do so unless the throttle is opened wider. There is nothing the matter with the ignition or the compression, and the car pulls well when running. Still, the difference between the behaviour of the two cylinders when each of them is running alone is so marked as to suggest that there is something wrong.



My theory as to the cause of this difference is as follows. It will be more clearly understood by reference to the diagram, which is intended to show the up and down strokes of the pistons and the relation in point of time of these strokes to one another. It will be seen that No. 1 cylinder fires first, and is immediately followed by No. 2; also that the firing stroke of No. 1 synchronises with the compression stroke of No. 2, and the firing stroke of No. 2 with the exhaust stroke of No. 1. Suppose that No. 2 cylinder is cut out. It acts as a drag on No. 1, and the moment of greatest drag is during its compression stroke. This stroke, however, synchronises with the firing stroke of No. 1, with the result that its resistance is easily overcome. Again, suppose that No. 1 cylinder is cut out. It acts as a drag on No. 2, and the moment of greatest drag is during its compression stroke. This stroke synchronises with the induction stroke of No. 2, and this stroke obviously in no way helps to overcome the resistance offered by No. 1's compression.

In other words, when No. 1 cylinder alone is firing, the maximum resistance offered to it corresponds with its maximum effort, and so is easily overcome; but when No. 2 is firing, the maximum resistance offered to it corresponds with its minimum effort, and consequently is very effective.

I have therefore come to the conclusion that the difference in running of the two cylinders is only present when they are running singly, and that there is no difference when both are running.

II. J.

[13703.]—From the little data given there appear to be many causes which might account for the failure.

Data given:

- (i.) Either coil works the one cylinder.
- (ii.) The wiring is complete and unbroken.
- (iii.) Both plugs are in working order, and presumably making good contact with the cylinders.
- (iv.) The compression is good, i.e., piston rings not leaking, and both valves make a gastight joint with their seatings on the compression stroke.

From the above there appear to be many possible causes which might account for the failure of No. 2 cylinder.

I.—Ignition. The electrical timing may be wrong, as whichever coil is firing No. 1 (by the connections that were shown), it is making contact through one particular fixed contact in the commutator which is correctly timed as it is firing the working cylinder; but the other may not be spaced (45° cranks at 180°, 180° cranks at 360°), and so not firing the other cylinder at the correct time.

Too late—part of power stroke is lost and combustion incomplete before the gases escape. This would probably cause firing in silencer.

Too early—causing preignition, i.e., firing the charge before the piston has reached the top of the stroke.

II.—Induction pipe feeding No. 2 cylinder partially choked, but not completely, as the engine continues to rotate for a time after No. 1 cylinder is cut out.

III.—(a) Timing of valves in No. 2 cylinder not correct.

(i.) Exhaust too late, so that it is not on its seating during early part of inlet stroke, allowing part of the new charge to escape.

(ii.) Exhaust too early before combustion is complete. (i. and ii.) probably cause firing in silencer.

(iii.) Inlet too early before exhaust is complete, giving a weak mixture; probably cause of popping in carburetter.

(iv.) Inlet too late, and so not getting a full charge.

(b) Valves not lifting enough, and so choking gases; exhaust waste gases giving weak mixture, inlet new mixture poor charge.

(c) Exhaust choked by pipe being too small, leaving a residue of burnt gases in the cylinder, and so a weak mixture; or the same effect would be given by too much back-pressure in the silencer, not sufficient to impede exhaust from one cylinder, but choking the second rapidly following exhaust (cranks at 180°).

With two cylinders side by side and cranks arranged at 180°, one up when the other is down, the inlet stroke for both cylinders occurs in one revolution that is, no petrol is required one revolution and a large demand the next. No. 1 cylinder taking mixture first, the following may account for the failure of No. 2.

IV.—Petrol pipe partially choked, and so not passing enough for both cylinders.

V.—During the inlet (suction) stroke of No. 1 cylinder the gases rush up the induction pipe and into the cylinder through the valve. This valve now closes with such rapidity as to force the mixture for a moment in the opposite direction. By this time the inlet valve of No. 2 cylinder has opened, and if both cylinders are fed with one pipe, by the time the mixture is again reversed a part of the inlet stroke of No. 2 cylinder is wasted, so that the cylinder does not get its full charge. This will have more effect with short branches—the shorter, the more exaggerated the effect.

VI.—The carburetter (a) not capable of supplying the two cylinders in quick succession; (b) freezing due to sudden demand.

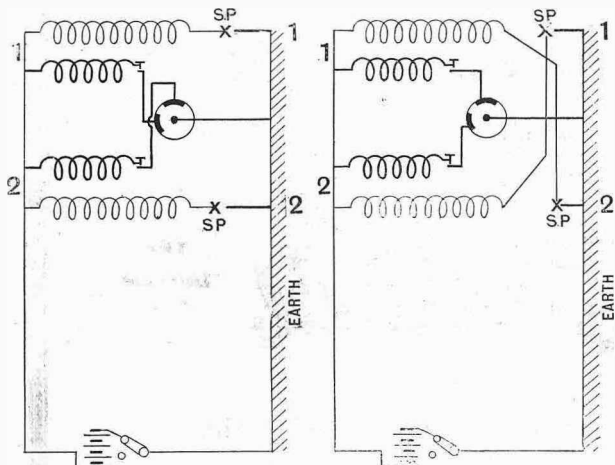
FAULT FINDING.

I.—Commutator and complete ignition system. Remove both plugs, connect them to their respective wires, and place them on top of the cylinder with their bases touching, but the upper part to stand clear of the cylinders. If the switch is now closed and the crankshaft turned, by means of the starting handle, to the firing point at each cylinder in turn, a good fat spark should appear at the tips of their respective plugs if the circuits are complete. Also notice that the crank

**Correspondence.**

is in the same position in each cylinder at the firing point; also position of cranks with ignition retarded and advanced. If they do not fire at the same point, the fixed contacts in the commutator are wrongly spaced.

I.—Further test of commutator. Connect up as in either diagram. Note the order of firing is reversed. If No. 2 now sparks all right, but No. 1 misses, the commutator is wrong in second segment, which is again feeding the faulty cylinder. But if No. 2 continues to fail the fault does not lie in the commutator.



II. and III.—To test for these faults, valves also tested as above by turning crank round and noting position on opening and closing of valves, reverse the connections to the sparking plugs and so reversing the order of firing in the two cylinders. If the ignition has been proved by above to be faultless, and No. 2 continues to fail, the fault lies in II. or III. This test is made with engine running.

IV., V., and VI.—If No. 2 is all right but No. 1 fails, the fault is in either IV., V., or VI.

**REMOVING FAULTS.**

- I.—Renew commutator.
- II.—Take down pipe, examine and clean it; also examine the joint at cylinder end, that the hole is large enough and not blocked up.
- III.—Reset valves and see that valve spindles are not sticking or springs broken.
- IV.—Take down and blow through pipe, replace, and notice the carburetter floods easily by keeping the valve off its seat.
- V.—This might be overcome by taking branch pipes straight from the carburetter, no part of pipe common to both cylinders except just at the carburetter. If this failed by having a carburetter with two jets, one each side of float chamber, with each its own pipe and cylinder.
- VI.—(a) Thoroughly clean carburetter, examine float and balance weights, slightly enlarge opening of jet, see that needle valve works free; (b) draw air from round exhaust pipe.

Cranks at 360°. Faults IV. to VI. would not appear, as the firing is evenly spaced.

**MOTOR.**

**A PREMIUM ON EXTRAVAGANCE IN PETROL.**

[13704.]—I am a seller of Anglo and Shell spirit (no other brand). I must protest against the seal business. It is bad for the seller, the driver, and the buyer, who will view it with suspicion, which every agent should guard against. Many will over buy. Am I justified in selling petrol, knowing that the driver is profiting from goods paid for by his employer without the employer's sanction? **LUX.**

[13705.]—It seems likely that the petrol companies who have adopted the seal premium system will be more influenced by considerations of profit than anything else, and therefore it is perhaps well to point out to them that one effect of this precious scheme is that, in adopting this plan, they practically do away with the old guarantee that the tin sold to the purchaser contains their own spirit. The natural aim of every garage or shop attendant who sells a tin of petrol is to get hold of the seal for himself. In fear lest the purchaser may ask for it he removes it before the tin is

brought out to the car, and the tin is presented ready opened. This has certainly been my experience since the institution of this plan to an extent quite unknown previously, and it emphasizes the desirability of every right thinking motorist buying and insisting on his driver buying only those makes of petrol which are free from this suspicion of unreliability, if only for their own protection.

We must earnestly hope that the pressure of public opinion and the fear of its results on their profits will bring the offending companies to reason very shortly.

**W. A. WILLS.**

[13706.]—I have read letter 13684 in *The Autocar*, and also your remarks in the issue of the previous week, with which I fully agree, and have just sent off an order for my next two months' requirements for a brand of petrol which does not give money for seals. **A. BENN.**

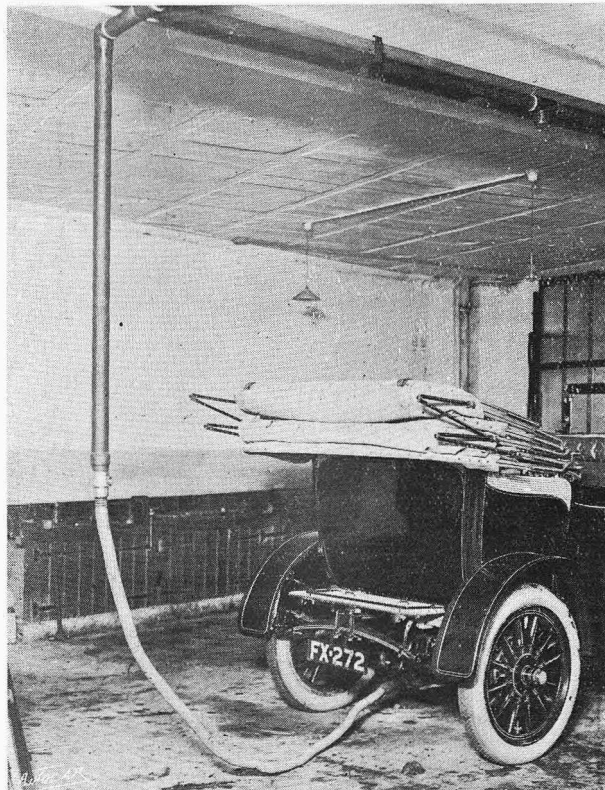
[13707.]—Does not the Secret Commission Act apply in this petrol 5s. and 5s. 6d. per hundred discount to chauffeurs? Of course, if this discount is only sent to owners of cars it will pan out all right, but why cannot petrol companies sell to us users at competitive prices to gain trade, and not try to lead honest chauffeurs into dishonesty?

**ERNEST EDINBORO.**

**AN EXHAUST GAS EXTRACTOR.**

[13708.]—I noticed in one of your recent issues a description of an apparatus, consisting of a flexible piping and a fan, used by the Automobile Club of France in their garage, to carry away exhaust fumes and smoke.

You mention this as being new, but I wish to draw your attention to the fact that the Burlington Carriage Co. have had their extensive premises in Oxford Street fitted for the past six months with a system of piping which extends along the roofs of the various shops. This system was designed



by me, and you will notice by the photograph that I have so arranged the pipes that, in whatever part of the building a car or engine is standing it is only necessary to connect a length of flexible tubing (as shown in the photograph) to carry away any smoke or exhaust gas which would otherwise remain and vitiate the atmosphere.

I think that an arrangement of this description should be compulsory in every garage, or similar place, where the

running of a petrol engine for any considerable time is necessary, as it is otherwise quite impossible to ensure the well being of workmen in enclosed premises where a petrol engine is emitting its poisonous exhaust gases.

I may mention that it was owing to a paper read at the Royal Automobile Club on the noxious effects of carbon monoxide that my attention was directed to the designing of the above mentioned system for securing purity of atmosphere in the workshop.

L. DELANEY.

#### AMERICAN CARS.

[13709].—In *The Autocar* of November 21st, a correspondent [13625] asks for some experience from users of American cars. I bought a Cadillac car three years ago which has been running continuously since, and it has not yet cost me £2 for mechanical replacements. It got a slight overhaul twice, once in Belfast after a long tour through Ireland, and a second time in London after a long tour through England, the cost of both not being more than £5. Just now it needs a new chain. My chief expense has been tyres, as I am now running well into my second set of Dunlops.

During my English and Irish tours I went over some of the stiffest passes in the South of Ireland and Wales, and never had a mechanical stop. My only troubles have been ignition troubles, which gave me some little difficulty until I discovered the cause. I do not know any small car as good. It has got two speeds, but it will take any ordinary hill round here on top, and I do not think that a third speed would gain me a quarter of an hour in a day's travelling. I drive invariably myself, and have always given special attention to the lubrication, and never had a collision of any kind. My man is a mechanical labourer, but he never touches the machinery without my permission, and I think I have good reason to be satisfied.

Belfast.

J. M. FINNEGAN, BSc., B.A.

[13710].—Mr. F. S. Bennett's letter [13673] on American cars is, so far as I can see, an attempt to argue from the particular to the general. In claiming for America a first-rate position in the automobile world he gives us four instances which are supposed to prove what that country has done and can do in this industry.

He mentions that it has won the Vanderbilt Cup Race. He omits to mention that in the really serious race in America this year, viz., the American Grand Prize, of five American starters in twenty runners, all of whom, we may presume, knew the course, not one finished, and that their achievements in other races, such as the Thomas of this year's Grand Prix, and the Christie of last year's Grand Prix, cannot be described as meritorious.

Another instance out of the four refers to the fact that America has given us the Knight engine, as to which advantage the historian in some years will no doubt be able to comment, but concerning which it is, at all events, premature to assume that this type of engine is altogether an un-mixed blessing.

The other two instances deal with two facts concerning his own car—the Cadillac—and he mentions that they have carried out a most successful and remarkable standardisation test, for which I am only too anxious to give him every credit, and he also mentions that America has produced a 30 h.p. car at £356.

I was under the impression that Mr. Bennett was far too good a student of engineering and economics to revel in the dubious advantage of mere price in the case of a car.

May I be permitted to point out to him that complete four-cylinder cars of all sorts of horse-power are being sold in France from £185 upwards, but personally, were I a private buyer I should hesitate before investing in some of these models just as much as I should hesitate before investing in cars which are sold from £800 to £900 in England.

I do not think myself that there is anything particularly miraculous in the advance of America as a motor producing country.

I think the country which has more to its credit in this respect in high-class and not necessarily high-priced cars is Belgium.

Any country which can give us the Pipe, the Germain, the Minerva, the Metallurgique, the Vivinus, and last, but in my mind at all events not least, the Imperia, has a history in automobilism of which it may not be unreasonably proud.

Mr. Bennett says that America was not the only country to turn out bad cars in the days when this evil reputation

was made. I can only say that it is a pity that so few of the good cars ever seem to have come over into this country, but I presume that he refers more particularly to English cars.

O. E. WHITTAKER.

#### MR. EDGE'S WITHDRAWAL FROM RACING.

[13711].—I am sorry to again have to trouble you, but Mr. Edge has accused me of a deliberate misstatement of facts, hence it is necessary to get at the real truth of the record breaking at Brooklands recently.

I suggested that after Mr. Edge's "withdrawal" from racing, he has, through one of his drivers, taken part in high speed record attempts on the track.

In the first place, the letter quoted by him received from the Brooklands Club obviously proves nothing. Mr. Brown is possibly invoiced with a racing car, and elects to continue the record breaking attempts previously made by Mr. Edge, but this fact does not prove that Mr. Edge himself is not the real person interested. Why not Smith, Jones, or Robinson? What is in a name?

Now, sir, will Mr. Edge be good enough to tell us whether the following information is true:

1. That the racing car—within a short time previously owned by Mr. Edge—was, after his so-called "withdrawal" from racing, entered by a Mr. Brown (who is a great personal friend of Mr. Edge's) to attempt records at Brooklands, and accomplished a speed which was, according to anybody's definition, dangerous.

2. That the car was driven by Mr. Newton, who was, and has been for some time past, in Mr. Edge's and Mr. Napier's employ, and who has been driving racing cars throughout the year for Mr. Edge.

3. That the results of such record attempts were sent out to the Press broadcast, as an advertisement for Mr. Edge's cars, either by his firm or by his advertising agents.

4. That such record attempts were part of Mr. Edge's advertising programme.

I think these few questions will bring Mr. Edge right down to earth. His equivocation is ingenious, but surely he is not really desirous of giving us all a false impression.

I notice in one of last week's papers the following: "Mr. S. F. Edge is evidently determined to wind up in style the record season of 1908. On Wednesday in last week the news reached me that Mr. Newton was to attack the 90 h.p. short record at noon on the same day."

It is evident from this that at least to some people Mr. Edge makes no secret of his intentions.

I have no desire to be personal or to attack any business move of my rivals, but I believe in "playing the game" whether in sport or business, and if Mr. Edge will let us have the truth, the whole truth, and nothing but the truth, we shall know what he really meant when he "withdrew" from racing.

CHAS. JARROTT.

[13712].—I am afraid Mr. J. Hewitt [13686] is labouring under a misapprehension with regard to the 90 h.p. records. We have become so used to thinking of Edge and Napier cars in one breath, that a special performance by a Napier car makes us naturally assume that Mr. Edge is behind it. However, I think if Mr. Hewitt will take the trouble to enquire, he will find that the 90 h.p. Napier "Samson" is owned by a certain Mr. A. Brown, and entered by him. Of course Mr. Newton is known to be the manager of the running department of S. F. Edge, Ltd., but that does not prevent him driving record breakers for private owners. A very significant fact is that S. F. Edge, Ltd., have made no mention of these high speeds in their advertisements.

Personally, I think that someone ought to persuade Mr. Edge to enter for next year's Grand Prix, since the regulations ought to be to his liking, and the 40 h.p. engines are within a millimetre of the regulation bore.

R. J. CREAMER.

[13713].—Two weeks ago I wrote in *The Autocar*, "Mr. Edge seems determined to wind up in style the 1908 record season"—or words to that effect. I then went on to describe Mr. Newton's record on the 90 h.p. Napier. Naturally, my remarks have given rise to the belief that Mr. Edge was the entrant of the car on the occasion in question. He has denied it; but that does not seem to matter to some of his critics, who waste no time in shouting, "But *The Autocar* practically says that he was." The question appears to be so momentous, in some quarters, that I think I had better explain. I wrote as I did under the supposition that Mr.

## Correspondence.

Edge had entered the car. I had no particular reason for believing either that he had or that he had not. He always used to enter the Napier's, and it never occurred to me to imagine that he had not done so on this occasion. That I was quite wrong in inferring that he had I now freely admit, and I think it is only fair to Mr. Edge that I should add that my information as to the imminence of the record attempt came to me from the B.A.R.C., and not from Mr. Edge or anyone connected with S. F. Edge, Ltd. The whole matter seems to me trivial to a degree; but, as some people appear to treat it so seriously, I do not wish to be backward in coming forward with any explanation which it is in my power to offer.

H. C. LAFONE.

## THE 1909 DAIMLER ENGINE.

[13714].—For the past two months I have with considerable interest read the various criticisms on the new Daimler engine, and in almost every case the letters appear to emanate from members of the trade under *noms de plume*.

As a motorist of some experience with various well-known makes, I was naturally interested in the innovation, and purposely visited the Olympia Show to see the engine, which has so thoroughly roused the public interest.

I was fortunate enough, after having to wait some considerable time, to get near the models exhibited, and to have the engine thoroughly explained.

Before going to the show I was a trifle prejudiced owing to the very severe criticisms and drastic condemnation of this engine, but as a result of a careful examination I am more than convinced that the day of the mushroom valve type engine is on the wane. I wonder if the members of the trade, who have so adversely and in so unporting a manner condemned this wonderful engine, have seen the engine running on the bench and tried the car on the road. I doubt it.

During the week I have had the pleasure of taking several long runs on one of the new cars, and know that the claims made by the company are not over-rated, and must say that I have never experienced such a delightful feeling as when gliding along silently and smoothly on the new Daimler car, so much so that it now becomes necessary to look closely to the running parts remote from the engine and the fittings that there shall be no noise whatever, as any little rattle is heard at once instead of being drowned by the beat of the engine as hitherto.

Amongst others I have had two Daimler cars of the older type, and can, therefore, contrast the immeasurable superiority of the running of the engine both as regards silence and power, and feel sure intending buyers if they take a run behind a Knight engine will not be long in confirming my opinion.

CHAS. E. MARTIN.

[13715].—Now that the rush of the Olympia Show is over there has been more time to consider the claims of the enthusiastic American inventor.

1. His claim that owing to the spherical shape of the explosion chamber, the gas pressure is maintained to the end of the stroke, is a picturesque claim but incorrect, as his combustion chamber is not spherical but a flat cylinder with a truncated cone bottom.

Even, however, if it were spherical, and thus obtained a smaller wall surface in contact with the hot gases (when the piston is at the top of the stroke) than the present modern engine with poppet valves, there is the fact that the highest pressure in the cylinder is not attained until the piston has moved down in its stroke, in fact until the crank makes an angle of 45° with the vertical, so that on this point the cooling wall surface is the area of the combustion chamber plus the area uncovered by the piston at this portion of the stroke, and when you investigate this you will find there is practically a very small percentage of difference between the Knight engine and the modern poppet valve engine on this point.

If, however, the American engine had a theoretical advantage in this direction, personally I am under the impression that it would really be a detriment for ordinary motor car use, because what we want in a modern motor car engine is extreme flexibility as well as great efficiency.

To assist flexibility one has to remember that at the moment of explosion the temperature of the gases is very high, and the metal of the cylinder walls receives a large amount of heat from the gases, which causes the metal immediately in contact with the gases to assume a very high temperature. Towards the end of the firing stroke the gases have expanded very considerably, they have pushed the

piston down, and in so doing their temperature has dropped to such an extent that it is now lower than the temperature of the inside of the walls of the combustion chamber; therefore, at this point the combustion chamber itself actually begins to radiate heat to the gases, and thus keeps their pressure up towards the end of the stroke.

Obviously the amount of heat which is radiated from the wall depends, amongst other things, upon the area of the walls, and thus, contrary to the American gentleman's claims, the larger area of the wall in the modern poppet valve engine means that there is more heat radiated and given back when it is wanted, and thus increases the flexibility of a given engine.

Experiments have been performed by Prof. Burstall and Dr. Witz to show that this radiation is really an appreciable amount, and that its effect is to cause the expansion line of the gases to follow the adiabatic line for the expansion of the gases.

2. Another claim is uniformity of compression and the possibility of using an extremely weak mixture. The first is erroneous on the face of it, as any type of engine can have uniformity of compression. In a Napier engine all cylinders are arranged to have exactly the same compression; they are afterwards tested by having the valves and caps screwed in, then inverted and filled up with paraffin. If any inequality be found in the castings which causes differences of volume in any cylinder, they are at once put back and rectified, so that each cylinder is identical in volume with each other.

3. The weak mixture claim seems to me probably trying to make a virtue out of a necessity. Is it not possible that if a rich mixture is used in this American engine that the exhaust gases leave the cylinders at too high a temperature for the correct working of the cylindrical valve gear, and that therefore to get commercial results they have to use mixtures as weak as possible? If the mixture is really very weak, and a test is made, it would be found that with the weak mixture very slow speeds cannot be run, and thus the claim for flexibility is sacrificed.

S. F. EDGE.

## OVERHANG.

[13716].—I notice in paragraph under illustration on page 924 of *The Autocar* for December 5th you state that overhang would be considerably reduced if makers put the radiator in front.

Would it not have been better to suggest that the carriage builders should have bought a longer chassis, such as I believe the makers manufacture specially for a body of such a type, as it would be folly to make such an alteration as suggested in view of the fact that in my estimation the principal feature of these charming cars lies in their beautiful simplicity and accessibility—a system which I think to be universally agreed to be one of if not the most perfect systems in use. I myself, though the owner of a F.I.A.T. car, cannot but admire the Renault principle.

LN 6298.

## HOW MONEY IS WASTED.

[13717].—I should like to call attention to a feature in connection with motor events, particularly the Olympia Show, which has become more and more pronounced. I allude to the large number of advertisements by motor car and motor car accessory makers in daily and non-technical papers. No one can help being struck by the pages devoted to advertisements and alleged descriptions of the show in the daily and weekly papers of the last few weeks.

In many cases these papers decry motoring and are only too glad to publish anti-motoring correspondence, but when show time comes along they are glad to get, and do get, advertisements from manufacturers, to whose detriment they have been publishing rabid and ridiculous letters for many weeks previously.

It is not to this point that I wish to draw attention so much as to the fact, which must be obvious to technical readers, that the so called show reports in the daily papers are merely descriptions of the goods of the advertisers in the particular paper. Thus, one can see during the Olympia Show a page devoted to the Olympia Show report, the centre of the page being devoted to journalistic efforts of the staff and the sides to advertisements. In very few cases was a single stand referred to which had not an advertisement also. In many cases the descriptive matter was of such a bald type as to only gull a complete ignoramus on motor matters, whilst in many cases the descriptions were

ridiculous. In one case I read of a car with a clutch mounted on the steering wheel! Such remarks were quite common, signifying that the reports as such were quite useless.

It is hardly possible to take up a single weekly paper at any time without finding an advertisement on cars. The advertising manager of a certain company discovers that a certain paper has a fair circulation, and he puts in motor advertisements, thinking he would be the only one. On seeing the advertisement his opponent in that particular class found he had to advertise too. He was followed by a well-known tyre company which started the tyre advertisements, whilst accessories makers were not to be out done, and the result was the motor trade were apparently paying a large sum of money per week under compulsion. It does not apply to any particular weekly or daily, but applies to many weekly papers and practically every daily at show time.

The Society of Motor Manufacturers and Traders, who study the interests of the trade, limit the shows at which its members are allowed to exhibit to save expense to the trade, and in some cases it limits competitions for the same purpose. It seems to me, therefore, that it would be a good thing if the S.M.M.T. were to place some restriction upon their members' advertisements, which would be a saving, not only to the trade but to the purchaser.

My only interest in writing is that of a purchaser, as I can quite see that if the useless advertisements were curtailed we purchasers would have to pay less for our goods, especially tyres, and I am quite sure that many a man of moderate means would become a motorist if some of the expenses were reduced.

E. W. W.

#### PILOT JET FOR CARBURETTERS.

[13718].—I note that in your issue for December 5th you describe a pilot jet for carburetters as though it was an entirely novel device. May I point out that it is no new thing, but that an almost exactly identical construction was brought out some two or three years ago by Messrs. C. Grimshaw and Sons, of Sunderland, who have since fitted it to a very large number of cars, including one of 100 h.p. I got them to put one on my own small car this summer, and have found it act quite satisfactorily, as the engine runs very quietly and steadily on this by-pass when the main throttle is absolutely shut, and it will even start on this by-pass when the engine is free.

#### HAMPSHIRE MOTORIST.

[We are obliged to our correspondent (also to another who sends a similar letter) for his information, and would have given the device of Messrs. C. Grimshaw and Sons, of Sunderland, attention had we known of its existence. —Ed.]

#### THE 15 H.P. HUMBER.

[13719].—For the sake of the general public amongst your readers, I trust you will allow this question of Humber cars to be cleared up, for statements appear to have been made which, if words are to be taken with their usual meaning and without a very great deal of explanation, can only be characterised as extraordinary.

In your issue of the 28th ult. is an advertisement by a dealer in which he offers 15 h.p. Humber cars (1909) at £250, and makes the following statement: ". . . The explanation lies in the fact that I contracted with Messrs. Humber, Ltd., to take the output of their new models of 15 h.p. for 1909. . . ." These words can only be taken to mean that this dealer alleges that he has contracted with Messrs. Humber, Ltd. (which presumably means Messrs. Humber, Ltd.), to take all their 15 h.p. new models for 1909.

Yet from a letter [13682] from "Humber Agent," published in your issue of the 5th inst., it is stated that "there will be no 15 h.p. models manufactured in 1909, and that the cars referred to are clearance stock, and are fitted with not even a 1908 but a 1907 pattern engine."

But there are other more extraordinary facts! In the very issue of your journal in which "Humber Agent's" letter appears, there is to be found at page 45 an advertisement by a second dealer, who offers a "(Brand new) 1909 15 h.p. Humber car for £230, delivered free any part of England"; and he further makes the following statement: "We will forfeit £500 if the 15 h.p. Humber cars we offer are not 1909 models."

On talking this matter over with a third dealer, he offered to sell me one of these cars for £210.

I have also before me at the moment of writing the

"Abridged Catalogue. 1909 Humber Cars. Specifications." In it I find a description of a 15 h.p. car priced at £315.

Now, sir, what is the truth of all this? If there are no 1909 15 h.p. Humber models, how is it that they are advertised in the price list and offered for sale by dealers? If the first dealer mentioned bought up the 1909 output from Messrs. Humber, how can the other dealers be selling any? Unless, of course, they bought from the former and are now selling at a lower price. Perhaps that is another trade secret.

Again, if a dealer, after making his commission, can profitably sell a car at £230 or £250 which the makers are advertising at £315, what a wonderful profit the latter must make when they effect a sale! But what can be the real worth of the car? And what price is the seller of a second-hand car likely to obtain for it?

It is to be hoped that the Humber Company will throw some light on this subject.

H. T.

[13720].—I have noticed the letter signed "Humber Agent" [13682] and your comment on same in your issue of the 5th inst., and as I am the sole vendor of the 15 h.p. 1909 Humber car, I cannot allow the statements made to pass without notice.

The fact that a firm of the standing of Messrs. Humber, Ltd., schedule the 15 h.p. 1909 model in their 1909 catalogues, and prior to my contracting with them to purchase the entire output, exhibited and described the car on their stand as their 1909 new model, and were offering it to the public at £315 at this year's Olympia Show, is in itself a complete answer to all criticism.

I can scarcely think the writer can be a Humber agent, or he would know that the bore of the engine differs from the model of 1907, and that there are various other improvements not included in 1907 or 1908 models.

THOS. GILLETT.

#### BALL BEARING CRANKSHAFTS.

[13721].—In answer to Mr. Whittaker [letter 13687], who asked for the experience of users of cars with ball bearing crankshafts, I may say that I have a 1907 10-14 h.p. four-cylinder Gregoire which is fitted with a ball bearing crankshaft. The car has run some 7,000 miles, and during that time the crankshaft bearings have never caused the least trouble or called for any attention. The advantages of a ball bearing crankshaft are, I think, obvious. The engine and crankshaft can be built much shorter than if plain bearings are used. Lubrication is a less important matter. There is less friction in the engine, and, consequently, the latter is more efficient.

The only reason I can see that ball bearings are not more often fitted on the crankshaft is that the construction is more expensive, and a radical alteration has to be made in the engine design to enable the bearings to be used.

P. L. MUMMERY.

#### TYRES IN WINTER.

[13722].—Now that winter and bad weather are approaching I think a suggestion with regard to the preservation of tyres would be in order. My suggestion for the front tyre is as follows: Cut off the rim of an old outer cover and slip it over the tyre in present use. The grip of the old tyre will be sufficient to prevent the cut one from slipping. As for the hind wheels, it is generally necessary to cut holes in the cut cover and tie it to the spokes of the wheels to prevent slipping. Of course, the going will be a little more heavy, but the saving of the tyre bill would more than compensate this. It would be very interesting to hear from any other reader of any efficient ways of saving this great item of expense.

F. W. GEORGE.

#### SUMMARY OF OTHER CORRESPONDENCE.

TYRE MANIPULATING TOOLS.—In our illustrated description of a new tyre manipulator on page 926 last week, we commented upon the fact that few of the complicated devices for tyre removing have stood the test of time, the ordinary tyre lever being used in preference. The British American Co. write to say that this remark is incorrect so far as their Half Minute tyre tool is concerned. Their tyre lever works on what appears to be a very similar principle to the Alley, and they say that it has given satisfaction, during the eighteen months since its introduction, to all who will take the trouble to learn how to manipulate it.

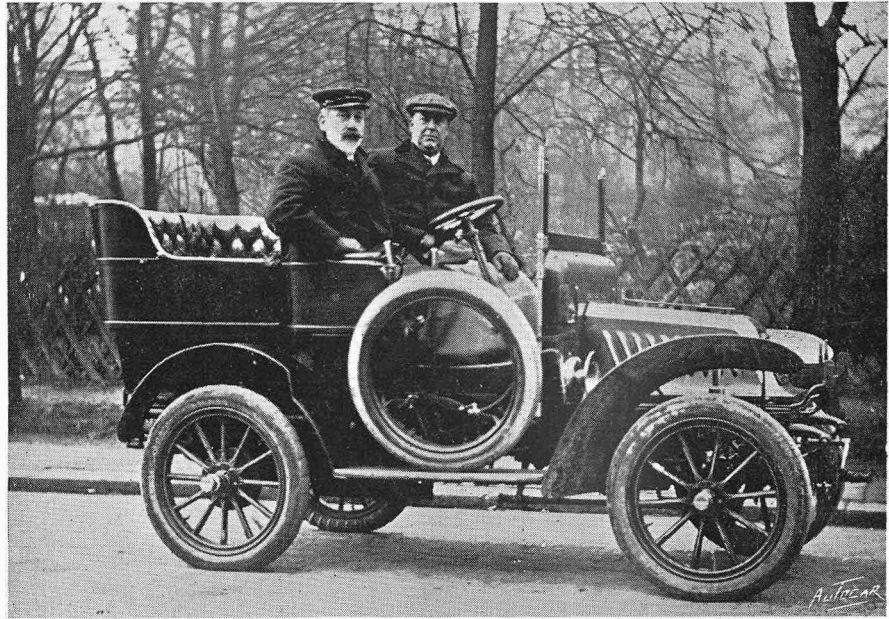
## 70,000 MILES IN THREE-AND-A-THIRD YEARS.

From time to time we have urged on our readers that when they buy a car they should buy a good one. In fact, this advice dates back to the tricar days, when we stated that, so far as we were personally concerned, we would rather buy a thoroughly good tricar than an indifferent small car costing about the same money. In other words, where money is limited, soundness of quality is of the first importance, and it is better to buy the best of a simple type than an indifferent specimen of a more ambitious type, though both may cost the same. Continuing this line of argument, we are brought face to face with the single-cylinder De Dions, which have never been cheap in the accepted sense of the word.

There have been many two-cylinder, and there are not a few four-cylinder, cars which can be bought for practically the same figure as the De Dion, but how many of these superficially cheaper cars will show a record like that furnished by an 8 h.p. single-cylinder De Dion car which belongs to a Bradford doctor, Mr. H. W. White, whose car has covered 70,000 miles in three and a third years, which represents an average of fifty-seven and a half miles a day? It seems this car is not only used by Dr. White and his assistant for professional purposes, but is employed for pleasure work and touring as well.

Above we illustrate this much used car. It is well to point out that not only is Bradford and district exceedingly hilly, but many of the roads over which the major portion of the work of the little De Dion is done are bad. In all these matters the old adage that one swallow does not make a summer applies, so that it may be well to add that in sending us the experiences of Dr. White, Messrs. De Dion-Bouton have also forwarded the records of a number of other owners of De Dions.

Among them we find a 50,000 miles and two or three other distances of over 30,000 miles, while the surveyor of the northern division of the Devon County Council has covered over 80,000 miles from 1902 onwards on a 6 h.p. De Dion, which, it will be remembered, was the immediate precursor of the 8 h.p. This and other long-distance records of durability



The 8 h.p. De Dion belonging to Dr. White, of Bradford, which has covered 70,000 miles.

which we have published from time to time in our columns show conclusively how remarkably durable a car the De Dion is. Looking back over the record of the past few years, it must be admitted that there is nothing to surpass it as a consistent proof of reliability. There have been quieter cars, faster cars, more up-to-date cars, and perhaps handsomer ones, but year in, year out, the quality of the cars has remained consistently the same, and the reputation for durability has grown with the years. This is as it should be, but when one looks into the matter impartially one must admit that there are many brands of motor cars on the market for which as much cannot be truthfully said.

## THE R.A.C. AND THE INTERNATIONAL CONFERENCE.

Mr. Mervyn O'Gorman, one of the Club's delegates at the International Conference of Recognised Automobile Clubs at Paris on 30th November, in reporting to the committee of the Royal A.C., said that the motions put forward by the R.A.C. at the Conference had met with the approval of the representatives of the federated clubs, and the Conference had practically accepted all the suggestions put forward by the R.A.C. These suggestions were:

(1) That detachable wheels should be on the same basis as detachable rims in international races.

(2) That the timing of the speeds of motor vehicles should be performed with automatic electrical timing apparatus as in England. The delegates of the R.A.C. proved their case, and the clubs accepted the

suggestion, but wished to be in a position to continue hand timing while they were making a trial of the new apparatus.

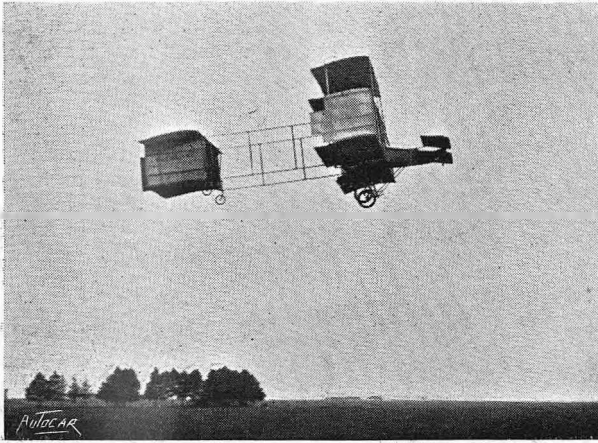
The Portugal representatives raised the question of an international rule of the road in order to avoid confusion, and the Conference agreed that the practice in the United Kingdom of all vehicles keeping to the left was the best, and the clubs decided to make representations to their respective Governments accordingly.

"Useful Hints and Tips for Automobilitists."—Under this title "Useful Hints and Tips" have been reprinted from *The Autocar* in booklet form. The third edition now on sale has been thoroughly revised and brought up to date. The book can be obtained from *The Autocar* Offices, 20, Tudor Street, London, E.C., price 2s. 6d.; post paid, 2s. 10d.



## Flashes.

At a statutory meeting of the R.A.C. Buildings Co., Ltd., it was reported that the whole of the capital for the new premises scheme had been subscribed, and that the plans were practically completed.



Photograph.

Illustrations Bureau

The Farman aeroplane in flight.

Some months since we referred to the new material for hoods known as Kamac made by the Kamac Mfg. Co., of Cross Lane Mills, Bradford. Later we dealt with its extraordinary durability and rot resisting properties, and the hood we are using of this material is still as smart as the day it was put on, while it has not lost colour in any way, nor does it show any stains or dark patches. Users and manufacturers are evidently beginning to appreciate its good qualities, as we noticed that a very large number of the Cape hoods shown at Olympia were made of the Kamac cloth.

The methodical motorist is one of the most frequent users of a diary; he will therefore be interested in the appearance of Messrs. Charles Letts and Co.'s selection for 1909. The excellence of this series is evidenced by the fact that a gold medal and diploma of honour were awarded to the publishers at the recent Franco-British Exhibition. The special features of the diaries are the self-opening tablet, the insurance coupon, and the excellent manner in which they are produced. In regard to the insurance benefits, it may be mentioned that Messrs. Charles Letts and Co. were the first publishers to introduce this system in connection with diaries, and their coupons are claimed to be the most generous of their kind in existence. Considering all these excellences and benefits, there is little wonder at the popularity of these diaries. Every possible use that may be made of a diary seems to have been anticipated and provided for. Some of the patterns of calendars, on account of their artistic merit, would serve admirably as Christmas cards.

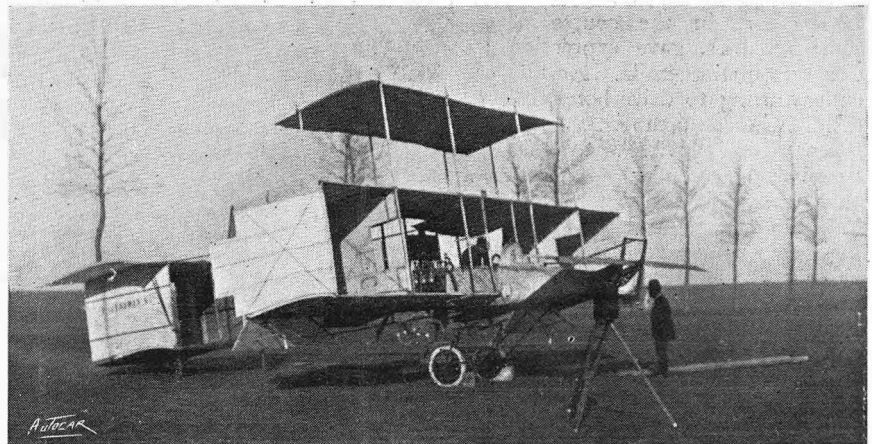
We have received a letter from Mr. André A. Godin, 1, Red Lion Square, W.C., in which he says: "I am pleased to observe that the Society of Motor Manufacturers and Traders, Ltd., has taken the matter up as to the capacity of accumulators, as such procedure, I venture to think, will protect the motorist. It has always been the policy of this house to definitely state the capacity of each individual Dinin accumulator (for which I am sole agent) on the label, and purchasers can always rest assured that this is in every case accurate, and that the full amperage is contained therein."

\* \* \*

The Hon. Leopold Canning, J.P., tells us that he recently returned from a delightful tour in France on his 40 h.p. six-cylinder Minerva, which is now two years old and going better than ever. He covered over 4,000 miles without a misfire or any trouble except two punctures, and never touched a tool the whole time. The two punctures were dealt with by the satisfactory expedient of putting on the Stepney wheel, and the tubes were changed at the nearest garage. It will be remembered that Mr. Canning looks after his big car himself, and his experiences prove what can be done with a good car intelligently looked after.

\* \* \*

This week the Saunders-Wolseley Yacht's launch for Mr. Schenley's new steam yacht was launched from Saunders's Yard at Cowes. This boat may be considered unique, for she has a guaranteed speed of twenty-five knots, which it is expected will be exceeded on trials. Never before has a steam yacht carried in davits a power boat capable of approaching this speed, and when it is remembered that only two years back even racing launches could not attain twenty-five knots, it must be recognised what progress has been made. This launch has been designed and built by Saunders, and is engined by a single eight-cylinder 200 h.p. Wolseley-Siddeley motor of similar type to the engines which ran so reliably in the racing launch *Wolseley-Siddeley*, but modified to some extent and slightly heavier. It is fitted with the Wolseley Co.'s new method of ventilating the crankcase, which not only reduces the consumption of lubricating oil, but also



Photograph.

Illustrations Bureau.

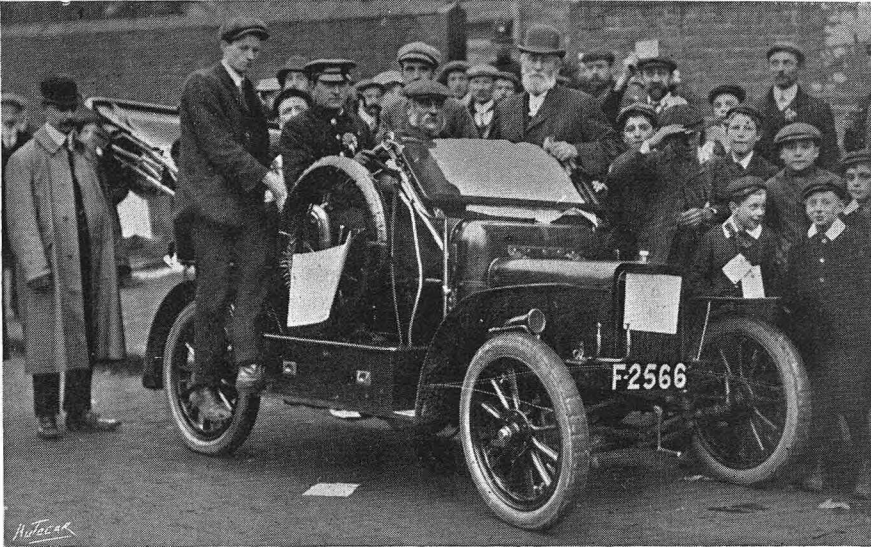
The Farman aeroplane with its new top plane fitted transforming it from a biplane to a triplane.

eliminates the oil smoke nuisance from breathers. The lubricating oil is also water-cooled during its forced circulation, and the engine is fitted with the new Bosch dual ignition with self-starter. The boat hung in davits will weigh a trifle over two tons.

*Flashes.*

The committee of the Royal A.C. has decided that a Dustless Roads Committee should be formed, consisting of the present Dust Committee of the Club,

What appears to be another gross miscarriage of justice has been perpetrated against a motorist at Worcester. At the county petty sessions the other



**ELECTIONEERING AT CHELMSFORD.** An 8 h.p. Rover car did heavy service conveying voters to the poll.

with other members, and that the Dustless Roads Committee be asked to consider its terms of reference and to submit suggestions to the committee of the Club.

\* \* \*

After considering the application which is to be made for a speed limit of ten miles an hour for a portion of the London-Uxbridge Road within the Southall-Norwood Urban District, the M.U. has informed the Middlesex County Council that it is prepared to acquiesce therewith.

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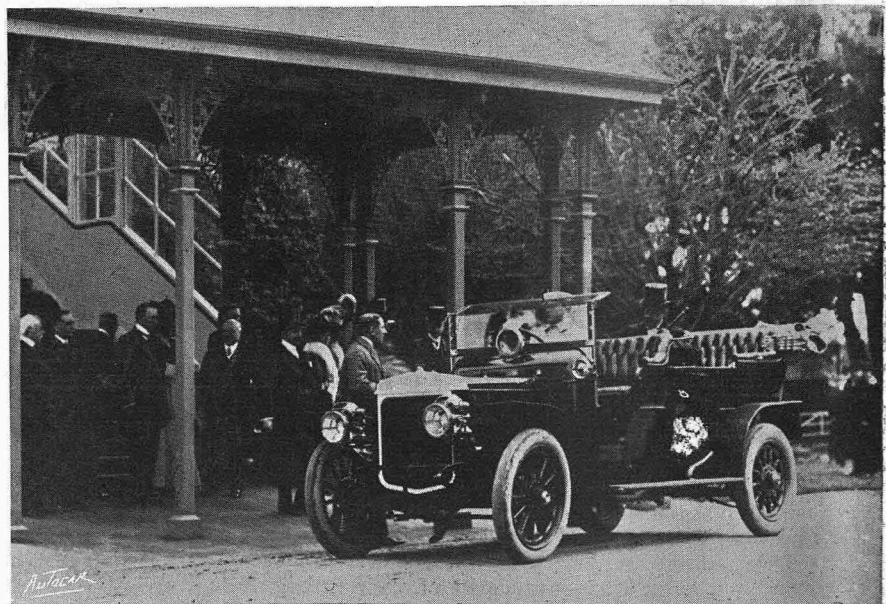
In a recent discussion upon horse-power formulæ by the Institution of Automobile Engineers, Mr. F. W. Lanchester, in the course of some remarks, gave expression to a very quaint simile. He was endeavouring to drive home the deficiencies for competition purposes of the R.A.C. formula based on cylinder diameter only, and said: "If you were to tell the men in a factory that they would have a pint of beer given them if they did certain work they would know what to expect, and there would be a convenient and accepted standard of measurement. But if you told them they would have as much beer as would stand on a three-inch circle, after a little time they would come out with long tubes of the stipulated diameter, and I guarantee that after the lapse of a few weeks you would have some men more daring than the rest coming up for their beer with coils of hose pipe of the stipulated diameter."

day Mr. W. G. Stephenson-Peach, of Great Malvern, was fined £12 16s. 6d., including costs, on a charge of negligent driving. The facts were that while driving one very dark night between Martley and Malvern at the junction of two roads he encountered a flock of sheep, which were hidden from view by two drays until he was actually upon them. He was driving, even according to the evidence for the prosecution, at a moderate pace—about ten miles an hour—and pulled up immediately. None of the sheep were injured, although one or two got underneath the car, and had to be pulled out. The affair was a pure accident, and the motorist "could not have done anything else under the circumstances."

The Chairman, in inflicting the outrageous fine, remarked that "it was the duty of the bench to prevent damage being done by motorists." Nothing of the kind. Their duty is to administer justice, and not to inflict savagely vindictive fines in cases of pure accident, simply because the defendant happens to be a motorist.

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The committee of the Royal A.C. has decided that, in its opinion, the system adopted by certain companies who sell motor spirit of offering 5s. and 5s. 6d. respectively for one hundred seals is contrary to the best interests of motorists. The R.A.C. General Committee is also of the same opinion, and passed a similar resolution.



**His Excellency Earl Dudley, Governor-General of Australia, arriving in his Daimler car at the Caulfield Races, Melbourne, on "Guinea Day."**

## CLUB DOINGS.

### Coventry M.C.

This club's fifth annual dinner will be held on Saturday, January 23rd, at the Craven Arms Hotel, Coventry. The prizes won during the past season will be distributed.

### Hertfordshire County A.C.

The members of the Herts County Automobile Club have by a very large majority decided to associate with the Royal Automobile Club, and in future will be connected with that body only.

### Derby and District A.C.

The following resolution has been passed by the members of this club: "That the Derby and District Automobile Club become associated with the Royal Automobile Club, provided that body consents to withdraw the word 'only' in Clause 18 of its scheme for Association; but that in the event of its refusal to adopt this suggestion another meeting of the members be called to further consider the position."

### Cheshire A.C.

The annual dinner of the Cheshire Automobile Club was held on December 2nd in the Adelphi Hotel, Liverpool, under brilliant and successful conditions. Mr. Thomas H. Jackson, J.P., presided over a goodly company, which included several ladies interested in motoring. As a result of the postal ballot on the question of affiliation the club has decided to join hands with the Royal Automobile Club at the expiration of the present year.

### Irish A.C.

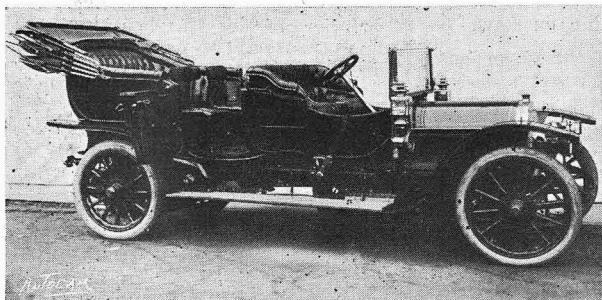
At a meeting of the committee held on the 3rd inst. matters of routine were disposed of. A communication from Lord Monck was considered, in which he desired that direction posts might be placed at several cross roads in County Wicklow for the convenience of tourists and other visitors. The committee decided, notwithstanding the recent imposition of speed limits through the county, on the application of the County Council, and directly against the evidence adduced at the hearing, and also notwithstanding the fact that the club is in no way liable to put up these posts, that, under the special circumstances, they should be erected.

Arrangements were considered and directions given for the compiling of statistics for use in the event of future legislation.

The Secretary reported that counsel on behalf of the club had attended an inquiry at Naas, on the requisition of the Kildare County Council, that a speed of six miles per hour should be imposed on the two days of Punchestown Races on all motor traffic proceeding to or from the course, within a limit of two miles therefrom, and that, counsel urged, on behalf of the club, in lieu thereof regulations should be made that all traffic, including motor cars, should, on the roads referred to, when coming to or returning from the course, remain in and not break from the line of traffic. The club desires to acknowledge the courtesy which its representative received from the Local Government Board inspector and the representatives of the County Council, and the kindness of Mr. Wisdom Hely, one of its members, in providing his motor car to convey the inspector over the roads, thus enabling him to ascertain in a practical manner the condition of the roads in question, and their suitability for motor traffic. The committee have every hope that their suggestion will be acted upon.

### Cardiff M.C.

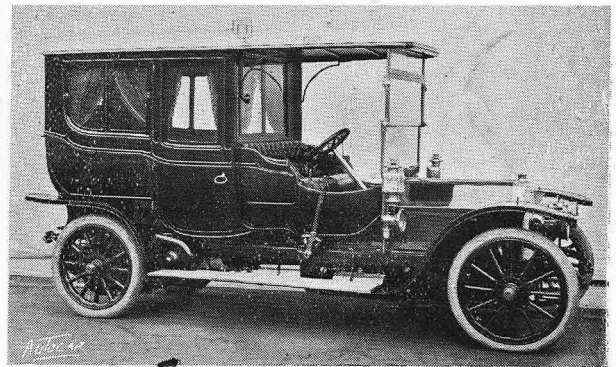
A committee meeting of the above club was held at the headquarters, Queen's Hotel, Cardiff, on Tuesday, December



AT OLYMPIA. As may be seen, the Maythorn body looks equally handsome as an open car with the detachable limousine top removed.

1st, Lord Ninian Crichton Stuart (president) in the chair. It was decided by a postal vote of the members to affiliate to the Motor Union for 1909. It was reported that the medal awarded by the Motor Union to this club had been received, and a resolution was passed thanking the M.U. The annual dinner of the club will be held during the first week of February (probably the 3rd), when Lord Ninian Stuart has kindly promised to preside and distribute the prizes and medals won in competition during the past season. One or two other social evenings will be held.

It was resolved "That the secretary be asked to write the secretaries of all other motor and motor cycling clubs in Wales and Monmouthshire with a view to calling a joint meeting of representatives of these clubs to discuss the advisability of forming a Welsh Automobile Union." Lord Ninian Stuart, in making the proposition, mentioned that both Scotland and Ireland had their "national" organisations, and he did not see why Wales should not have one too. It was suggested that if it could be so managed the joint meeting should take place on the afternoon of February 3rd on the occasion of the annual dinner.



AT OLYMPIA. This handsome body shown by Messrs. Maythorn & Son attracted considerable attention from visitors. It was of the limousine type with a detachable top, and was beautifully finished.

### Scottish A.C.

The committee have agreed to offer prizes of £2 and £1 in each class of the examinations for driving and mechanical proficiency certificates to the candidates making the best and second best results on the examiner's report during each half-year.

The annual dinner of the club will be held this year in Glasgow on the evening of Tuesday, February 2nd, 1909. H.S.H. Prince Francis of Teck, chairman of the Royal Automobile Club, has kindly accepted an invitation to be the guest of the club on that occasion.

### Southend and District M.C.

By order of the committee the hon. sec. has lodged with the Local Government Board an objection to the Southend Borough Council's application for a ten mile speed limit in certain streets of the borough of Southend-on-Sea as being unnecessary for the safety of the public. The date of the inquiry has not yet been fixed.

The committee has decided to give to the members next year a copy free of *The Autocar* if they are car members and of *The Motor Cycle* if they are motor cyclists.

The following gentlemen were recently elected members: Messrs. A. G. Welch, Percy J. Garon, and Lewis Utton.

The hon. sec., Mr. A. Warnery, will not, after the annual general meeting of the club, which it is proposed to hold in the latter part of January next, be able to continue his duties, but it is very gratifying both to the committee and Mr. Warnery to report that Mr. H. Greenfield, captain of the club, has been induced to accept the position, if elected. Mr. Greenfield has been a strong supporter of the club, practically from its inception, and the club's interests should be well safeguarded in his hands.

*The Autocar Map for Motorists.*—Invaluable when touring or contemplating a tour. This map is supplied in three styles, i.e.—(1) varnished and with roads marked in red; (2) on suitable material for marking in the roads traversed or to be traversed; (3) folded in case, suitable for carrying in car. Size of map 4ft. 8in. x 3ft. 9in. Price 8s. 7od., carriage paid, in any one of the three styles, obtainable at the offices of *The Autocar*, 20, Tudor Street, London, E.C.

## SOME QUERIES AND REPLIES.

Readers are invited to send in replies to the queries of their fellow readers. Letters should be addressed to the Editor of *The Autocar*, Coventry.

### QUERIES.

#### No. 786.—Luggage Ladder.

I SHOULD be obliged for advice as to the most convenient form of ladder for placing luggage on a limousine, with the name and address of the vendors.—S.C.I.

#### No. 787.—Gladiator and Humber Cars.

I SHALL be much obliged if in your Queries and Replies column you will ask for experiences of 12-14 h.p. Gladiator (1908), also 15 h.p. Humber (1908).—DEVONSHIRE.

#### No. 788.—Leo-Trigwell Bands.

I SHOULD be grateful to any of your readers who have tried the Leo-Trigwell bands if they would be good enough to give me an opinion on their durability, and suitability of the method of attachment.—O.S.N.

#### No. 789.—30 h.p. Beeston Humber.

I SHALL esteem it a favour if owners of 1908 30 h.p. Beeston Humber cars, the model fitted with high and low tension magneto, will state how this car wears, and what are its weak points, as I use my car on the average 300 days a year?—H.T.N.

#### No. 790.—20 h.p. Rover Car.

COULD any of your readers give me their experiences of the 20 h.p. Rover 1908 model. Is the three-point suspension quite satisfactory under all conditions?—R.H.

#### No. 791.—14-16 h.p. Four-cylinder Darracq Car.

CAN any reader of *The Autocar* give me the benefit of his experience with the 14-16 h.p. four-cylinder Darracq, side-entrance body? I am anxious to know all I can as regards reliability, wearing qualities, cost of up-keep, and silence.—BOOTS.

#### No. 792.—S.C.A.T. Cars.

I AM thinking of buying a 22 h.p. S.C.A.T. car, but as I never see any reference to these cars in *The Autocar*, I shall be much obliged if one of your readers will give his experience.—MOTOR UNIONIST.

#### No. 793.—Non-skids for Front Tyres.

CAN any of your readers give experience of detachable non-skids for front tyres of the Eyre or Parsons type to be used only on wet days, and particulars as to cost, and effect, if any, on steering? My car is a 16-20 h.p. Sunbeam, tyres 830 by 120 mm., and I have Michelin non-skids on both back wheels, but am troubled with front wheel skids on greasy roads.—NON-SKID.

#### No. 794.—Daimler Carburettor.

CAN any of your readers give me their experiences with a 1908 30 h.p. five axle Daimler as regards the carburettor? As I am only getting ten miles to the gallon, I am not satisfied, and wonder whether some alteration of the existing one is necessary, or an entirely different one of another make. Living as I do in New Zealand, it is difficult to get such information out here, but no doubt someone will assist me through the medium of your excellent paper.—H.N.C.

#### No. 795.—Touring in France.

I SHOULD be glad to know the best route from Havre to the Biscay end of the Pyrenees, and thence skirting the same to the Mediterranean, and returning to Havre by another route; whether the gradients of the roads in the Pyrenees are more severe than those in the Alps? Are they readily negotiable by a 24 h.p. Wolseley? What would be a good centre in the Pyrenees for a few days' stay, proximity of trout fishing preferred? Is it possible to cross into France by car, or are the roads impracticable? Is May a good time of year to take the Pyrenees?—F.W.P.M.

### REPLIES.

#### No. 779.—Divisible and Detachable Rim.

I shall be glad to give "Enquirer" my two years' experience of Moseley's Perfect detachable tyre. I am a medico, and consequently have not too much spare time, but look after the car myself, and I find that for quickness of changing and simplicity these rims are all that can be desired. Security bolts are done away with, yet the cover never creeps. Sometimes when changing on the road I have found the turnbuckle hoies rusted up and full of mud, and the tommy pin will not hold. I have overcome this difficulty by having the holes drilled completely through the turnbuckle, also sometimes when retreaded the cover is a little difficult, but as a rule everything when replacing a cover slips into its place most easily. The covers (especially the latter ones) have a fair average life—some 4,000 miles, but (and here we come to a great but) the Moseley Perfect detachable cover (of the size 760 by 90 mm., which I use) is some 25s. dearer than the ordinary beaded edge cover made by this firm. Hence, if one uses eight covers in a year one has to pay a royalty of some £10 per annum. With a Stepney wheel the initial expense is the only one. Could the firm see their way to equalise the price I would strongly recommend the rim. The firm are most prompt in sending covers in response to a wire, and I have never been inconvenienced *en route* through being unable to obtain one.—NULLI SECUNDUS.

#### No. 778.—The Zedel Car.

I am an owner of a 15 h.p. Zedel, and I have also bought one for a relation of mine. Both cars are very satisfactory—very quiet in traffic and flexible; they accelerate very quickly, and are fine hill-climbers. I have taken runs over all the worst hills I can conveniently reach, and I have never had to use my first speed on account of a hill. They are a little noisy on lower speeds, but this is not a point of importance. The workmanship is really splendid; I took down some parts to have a look, and have nothing but praise for the internal economy. I do not know of anything requiring special attention. So far a tablespoonful of oil has been added to the clutch, and this was merely precautionary. If "Puzzled" likes to write to me I will be happy to answer his questions as far as I can. In *The Autocar* of December 5th "Puzzled" will see that the agents have used a letter of mine as an advertisement—I may say without my leave, though I have no objection, as it is merely the truth.—HORACE LAW.

#### No. 782.—Charging Accumulators and Lighting Motor House.

I have for some months now been using, both for charging accumulators and lighting my motor house, a set of Boron cells. My accumulators are 40 x 50 amp. 4 volts. To charge these on an average costs me about 6d. per accumulator, although in some parts they may be charged a little cheaper,

when chemicals could be obtained at a less cost. I usually use two lamps, equal to about 20 c.p., which is ample, although I can run over 40 c.p. with reflector lamps supplied me; a small inspection lamp attached to the cells is also very convenient for obscure parts. You would obtain full information by addressing a letter to the Liverpool Research Co., 131, St. Domingo Road, Liverpool.—EDWARD PHILLIPS.

As I have been well satisfied with a garage set of Boron primary cells supplied me by the Boron Battery Co., of Liverpool (who are well-known advertisers in *The Autocar*), I should strongly advise "Electro" to procure either this or a smaller set, which I am sure would meet all his requirements. The set I have are capable of charging several accumulators at one time. The cost is very nominal, and the trouble saved by not having to send them out to be charged more than repays for first outlay. The cells are always ready for use, and can conveniently be used for lighting a series of lamps when required. The light is excellent. Osram lamps, with special reflectors, are used. One or more lamps may be used, according to the set of batteries employed.—L. L.

#### No. 776.—K.T. Tyres.

I have used these tyres for some weeks on my 40-50 h.p. car, and find them satisfactory in every way, as resilient as ordinary pneumatics (of course, they are pneumatic). They are excellent non-skids, and give no trouble. I cannot see the least sign of wear.—RANDLE F. HOLLANDS.

#### No. 767.—Chauffeurs' Touring Expenses.

As an English driver-mechanic I feel it my duty to protest against the remarks of "Cured," who, instead of politely answering the query of "Perplexed," simply sees a chance to rail with vindictive bitterness against the thieving, hopelessly ignorant, and arrogant English driver. You would certainly have expected more wisdom from this gentleman—who writes with much certainty about chauffeurs' hotel bills, licenses, and wages—than to have engaged in turn four ignorant and dishonest chauffeurs. I have seven years' driving and mechanical experience, and have taken and read *The Autocar* for the last four, but this is the first time I have heard of such wholesale contempt for the English driver from, I presume, an English gentleman. Surely, sir, the men who have been drivers for the past five to ten years are not *all* incapable and dishonest. There are in every calling a few black sheep, but to ban the whole for the shortcomings of the few shows neither commonsense nor justice. As one who has travelled and has a reasonable amount of perception, I fail to see that the French driver is the superior of his English brother in honesty, civility, or general ability. There are many gentlemen who own fine cars who dislike French drivers (and have reason to) as much as "Cured" detests the English, and who pay living wages, hotel bills, and driving licenses. In return, they find their cars driven, cleaned, and kept in repair in a manner equal to the cars of any other country in the world.—E. L. BETHAM.