SATURDAY, SEPTEMBER 25TH, 1909.

THE AUTOCAR

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

EDITED BY H. WALTER STANER.

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Notes.

Chauffeurs and their Masters.

There are many thoroughly good paid drivers in the motor world. By good we mean honest, capable men who are properly qualified for their work. It is equally true there are a large number of incapable paid drivers, whose qualifications are very scanty, and who in one way or another are quite unfitted for the work, and very often their only recommendation is that they are cheap. On the other hand, there are all grades of employers, from the reasonable and considerate man to the unreasonable and suspicious individual that no man, whether he be honest and capable or dishonest and incapable, can satisfy. A perusal of our correspondence columns would at times give the impression to an outsider that all paid drivers were a bad lot, while at another time he would be equally impressed with the idea that all employers were inconsiderate, unreasonable, and impossible to satisfy.

There is no doubt that the grumbles on the part of the employers and on the part of the men are often real, and the grievances that both classes detail are not all imaginary. After all, a man can only speak from his own experience. If an employer have never succeeded in getting a good chauffeur he is apt to conclude that all chauffeurs are hopeless, and the chauffeurs in their turn who are unlucky in their masters arrive at the conclusion that reasonable employers exist only in story books. We are glad to say that in the course of our motoring experience we have come across many motorists and men who have thoroughly understood each other, and whose relationship has been of a satisfactory nature both to employer and employed. The difficulties which have arisen have undoubtedly been largely due to ignorance and consequent suspicion and unreasonableness on the part of the employer, and to incapacity and sometimes to downright dishonesty on the part of the employed. Imagine the position of an honest and capable chauffeur who is engaged by a motor car owner who knows little or nothing about the car, and who has previously employed a man who has been proved to be either dishonest or incapable, or possibly both. Now such an employer is so ignorant that he does not really know the difference between the good man and the unsatisfactory one, and consequently he fails to appreciate or to trust either, so that no good man will stop with him longer than he can help. Then, again, there is the employer who knows how a car should be driven and how it should be looked after, but who, somehow or other, never seems to secure the right man. It may be urged that he is unreasonable, but while this is often true we know in some cases it is not so. These things will right themselves gradually as the ignorant owners learn and as the incapable chauffeurs either mend their ways or turn their attention to other work.

Difficult but not Hopeless.

In the meantime all is not so black as it is painted, and while the chauffeur question is a difficult one with many, it should be remembered on the other hand that there is a large number of satisfied employers who would not ask for better men than they have, and a large number of men who would not ask for better masters. As we have shown, most of the difficulties arise from faults on both sides, and sometimes very serious faults too, but neither class is as bad as the other is apt to paint it. Those masters who have been unlucky, and who really desire to end their troubles, should apply to the secretary of the Society of Automobile Mechanic Drivers. We do not infer that no unsatisfactory men ever get into the S.A.M.D., but such men cannot long remain in its ranks, as the standard is a high one, so that if an occasional incompetent should be sent out by the society it should not be assumed that he is a fair sample. Another application to the secretary with explanations would doubtless bring about a better result.

Tarred Roads and Slipperiness.

It is difficult to please all people, perhaps more difficult nowadays than of yore. The Burley-in-Wharfedale District Council have been tarring the roads in some of the villages in their jurisdiction, and now they are receiving complaints from various people that when it rains these tarred roads are slippery as glass. At least one of the complaints has been accompanied by railings against "those abominable motorists." The Burley surveyor gave his opinion that the trouble was due rather to the excessive slope or camber of the road than to the tarring, and also mentioned that it was only this year that he had received complaints, and he inferred that too much weight should not be given to them, as one of the accidents referred to did not take place on the road referred to at all, but some 300 yards away from it, and was due to inexperienced horsemanship. In future a supply of sand and grit is to be kept handy so that inexperienced horsemen shall not suffer.

Those who utter this complaint have doubtless unintentionally brought up a point which ought to be borne in mind with regard to tarred roads. When a road is tarred it is well known now that if the work be properly done the expenditure of waterproofing the road is more than repaid by longer durability, but as the roads are repaired their contour should be altered because there is no need for a steep slope when a road is made non-absorbent. The only reason for this steep slope on the old type of road is to make sure that the water shall drain off and not soak in.

The excessive arching, however, is bad in all other respects because the tendency is for all vehicles to slip from the crown of the road to the side. This means not only harder work for the horses, but more rapid destruction of the roads. It necessarily follows that as vehicles slip more or less sideways the road is subjected to a destructive side cutting action by the metal tyres used on horse vehicles. Anyone who studies road surfaces at all closely will notice that in the counties where the soil is muddiest the camber is greatest, this excessive arching having been forced upon local authorities to prevent the roads becoming quagmires.

Despite advances in methods of application there are still many road authorities who have only just begun to practise tarring, and we are afraid they do not always do it carefully enough. Some tarred roads, although fairly free from dust in dry weather, become excessively muddy in wet, and the mud is often slippery and disagreeable; worse than when the road was untarred. This is probably due in most cases to insufficient sweeping of the road before the tar is applied, and to the fact that the tar is not sprayed with sufficient force, or is too thick or too cold to penetrate.

Talking of tarred roads always reminds us of Kent, which has now become to all intents and purposes a well nigh dustless and mudless county so far as the majority of its main roads are concerned. Rather over twelve months ago we drove over certain Kentish roads which were being tarred, and a few days since we renewed our acquaintance with them. They had not been tarred in the interval, and they were in magnificent condition, although the traffic upon them was heavy. It was obvious even from a superficial examination that Mr. Maybury's system of tarring was excellent, and that he had not only laid the dust, but preserved his road surfaces from weather to a remarkable extent. The roads of Kent are not the only ones which have been satisfactory, but we mention them as examples of what may be done.

A view from the summit of Cairn-o'Mount, where the Scottish A.C. held their hill climb last Saturday.

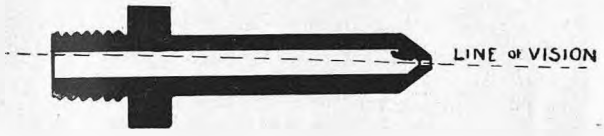
Useful Hints and Tips.

Choked Jet.

ON the subject of carburetters, I wonder how often a series of annoying stops following quickly upon one another have been brought about by such a cause as in a case I came across last week.

I was chatting with a fellow motorist in a garage where I was taking in petrol, and he told me that his car was at that moment being attended to in order that a carburetter trouble might be put right. He said that all the symptoms pointed to a choked jet, but that he had failed himself to find the offending atom, either in the jet or in the body of the carburetter. He had been pulled up on the road several times, and had only just managed to crawl into the garage.

Whilst we were talking the mechanic had taken the carburetter down and to pieces. He examined the jet, etc., and declared all clear; the owner of the car also examined it again, but failed to detect any possible cause of obstruction. However, a third individual who was standing by (modesty forbids me to mention his name) was sufficiently curious to peer through the jet too, holding it up towards the light and examining it from both ends. There *was* something in it!



Not in a direct line of vision, but "round the corner," so to speak. A carburetter jet, perhaps you have noticed, has, or the majority have, a comparatively large bore for the greater part of its length, the small diameter which regulates the flow of the petrol extending for about an eighth of an inch only. The two bores merge into one another by a taper formed by the tip of the drill used for making the large bore, and if you will examine the sketch herewith you will see how it is possible for a piece of grit or waste to escape notice unless care is taken when searching for some obstruction.

In the instance under notice there is no doubt that when the engine was pulling and using a large flow of petrol the offending atom would move out into the smaller bore, receding again when the engine was throttled down, and remaining so when the carburetter was emptied for examination. But apart from all theories as to what happened when the engine was running, there was the cause of the bother without doubt.

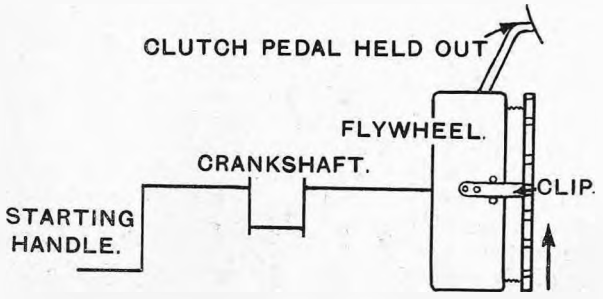
Clutch Adjustment.

In your issue of the 6th of March, 1909, you give some details of the excellent 8 h.p. Rover car. The information regarding the adjustment of the clutch is hardly sufficient for the ordinary amateur. As I come under that description, perhaps my method of doing it may be of assistance to fellow owners of these cars.

To Tighten Clutch.—Drain out oil and open inspection doors. Mark with a punch position of clip on clutch. Remove clip. Remain in same position, get someone to hold out the clutch pedal, and another person to engage and hold the starting handle to prevent the crankshaft moving. Then (from the same position, *i.e.*, at the lower inspection door) shove the male member round in a clockwise direction, *i.e.*, upwards, until the next notch is opposite the position of the clip, when the clip should be replaced. If, however, the clutch has been slipping badly it may require one or two notches more.

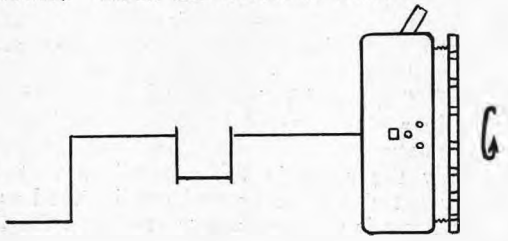
To Slacken Clutch.—If in adjusting it has been tightened too much, proceed as before as regards holding out clutch and starting handle. Then put in one of the studs of the clip and hold the female member upwards to prevent it turning downwards and unscrew the male member anti-clockwise by turning it downwards. It is quite a simple operation.

The following diagrammatic sketches may help in case my description is not sufficiently clear:



TO TIGHTEN CLUTCH. Clutch adjustment moved clockwise.

In my opinion it is very short-sighted policy of the makers not to give full instructions as to the car adjustments and overhaul of the car, particularly for those owners who live abroad. Failing this a car frequently does not get a fair chance and gets "crabbed," which means loss of custom.



TO SLACKEN CLUTCH. One stud of clip replaced to hold female member.

The book of instructions should be clear and concise and complete, and the "Foolometer" should be applied before issue. A "Foolometer" is the invention of an eminent civil engineer. The idea is excellent. It is that the most stupid member of the staff should be retained at headquarters before whom all general orders should be laid previous to their being issued to the staff. If he on reading them understood them they could be issued; if not, they would have to be redrafted until he could understand them.

H 3092, DELHI.

The Ostend Coupe des Voiturettes was secured on Tuesday, the 14th inst., by a Lion-Peugeot driven by that practised voiturette courier Giuppone. The winning car was fitted with Bosch ignition, and ran on Kempshall tyres, which were most highly spoken of by *L'Auto*. The total distance covered was 401 kilometres, or rather over 240 miles, which the Lion-Peugeot covered in 4h. 33m. 28s., Thomas (driving a Le Gui) being second in 4h. 39m. 26s. According to the French report Giuppone's average speed was 70.8 m.p.h.

Phenomena of Combustion in the Engine Cylinder.

The Function of the Explosive Mixture.

EXPERIENCE has long taught the steam user that a study of the properties of steam is both interesting and important. The study of the function of the explosive mixture in the internal combustion engine is even more interesting and important than that of steam in the steam engine. Numerically the motorist is quite the largest user of the internal combustion engine, but up to the present he has not given much of his attention to the properties of the explosive mixture before and after combustion in the cylinder. The process of evolution of the car as a whole has been so rapid and so full of interest that it has claimed most of his attention; or perhaps the subject has been considered to be the special province of the designer and manufacturer.

The object of this short paper is to attempt to increase the interest of the motorist in the phenomena of combustion in the cylinder. The driver of a car has every reason to acquire a knowledge of these phenomena. The actual source of his power lies in the heat energy of the gases; the necessary controllability of his engine is obtained by properly adjusting the explosion; and it is only by understanding the nature of the combustion that some of the finer points in the art of driving can be fully appreciated. A further question of great technical and economic interest is that of engine efficiency. Although the internal combustion engine is much superior in this respect to the steam engine, yet it has sources of waste peculiar to itself which can only be properly understood in the light of what is known of the phenomena of explosions.

The subject is here treated chiefly qualitatively rather than quantitatively, but from the point of view of the motorist its significance is not thereby lessened.

We shall first consider the nature of the pressure produced in a closed vessel by the combustion of an explosive mixture. Experiments of this nature are substantially the same in the conclusions they lead to whether petrol vapour or coal gas be used as the fuel. Coal gas is most commonly employed for these experiments on account of the convenience and accuracy with which it can be measured and introduced into the vessel. Having prepared a suitable mixture in the vessel, it is fired in the usual way by a spark, and a record of the pressure is traced on a revolving drum. Fig. 1 shows the kind of record obtained with a normal strength of mixture.

The horizontal base line is marked out in fractions of a second, and the curve O A P shows how the pressure

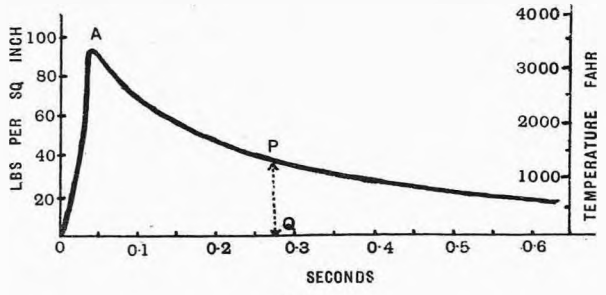


Fig. 1.

changes during the course of the explosion and afterwards, O being the point at which it is initiated. The pressure at any particular moment after firing, such as Q, is given by the height of P above the base line, in terms of the scale at the left of the diagram. It will be noticed that the pressure rises sharply to 92 lbs. per square inch at A in $\frac{1}{30}$ s., and then falls off more slowly but still at quite a rapid rate. The rise

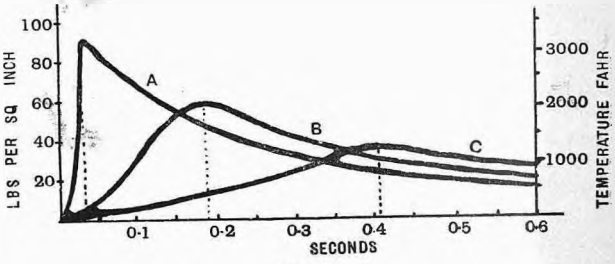


Fig. 2.

of pressure is due to the addition of heat to the gas by its own combustion, and the subsequent fall of pressure is due to this heat being rapidly imparted to the surfaces of the vessel. The rate at which the pressure falls, or, in other words, the rate at which the gas cools, is greatest just beyond the point A. This is important in showing the very fleeting character of the pressure.

The curve in fig. 1 is for a mixture containing 11% of coal gas, which is a mixture found most suitable for the gas engine. In fig. 2 are shown similar curves for mixtures of different strengths as given in Table I.

TABLE I.

Curve.	Percentage of gas.	Duration of explosion.	Maximum pressure.	Maximum temperature.
A ...	11.0	0.03s.	92	3300° F.
B ...	8.4	0.18s.	60	2100° F.
C ...	7.2	0.41s.	38	1400° F.

The column headed "Duration of Explosion" gives in each case the interval of time between firing and the attainment of maximum pressure. These curves and the table show that the precise effect of using a weaker mixture is to greatly prolong the duration of the explosion and to reduce the pressure produced.

Further experiments of the same kind have been made in which the mixture was compressed to different amounts before being exploded. These gave the same kind of curve in general, but much higher pressure occurred throughout. In fact, the highest pressure in the explosion is almost exactly proportional to that of the mixture beforehand. The manner in which the two are connected is shown graphically in fig. 3.

The horizontal scale C A in this figure represents the pressure before firing and at any particular point Q; the highest pressure reached in the explosion is given by P Q on the vertical scale. The actual mixture to which this figure applies is one containing eleven per cent. of gas, as in fig. 1.

We must now turn our attention to the actual pressure and its manner of variation in the engine cylinder itself. There now enters a further factor to be taken into account, namely, the continuous change in the volume of gas due to the forward motion of the piston. This alone causes a rapid fall of pressure, which must be added to that due to the cooling of the gases.

Fig. 4 shows for a normal stroke the value of the pressure in the cylinder for any position of the piston during a complete cycle consisting of the four strokes:

(i.) Explosion A B followed by expansion of the gases B C as the piston moves forward; (ii.) exhaust C D; (iii.) suction of fresh charge into the cylinder D E; and (iv.) compression of this charge E A. The arrows indicate the direction of motion of the piston during each stroke.

The most interesting and at the same time the most important portion of this diagram is E A B C, the compression, explosion, and expansion. The

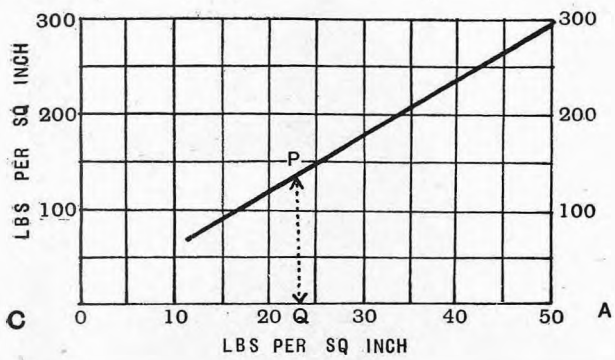


Fig. 3.

power developed by the engine when running at any constant speed is directly proportional to the shaded area of this diagram, and depends solely on this.

The art of driving may be divided into two distinct parts—management of the car mechanism (including steering, gear-changing, braking, lubricating, etc.) and management of the engine. Now the latter consists in controlling—by the throttle, spark, and sometimes by the quality or strength of mixture—the power developed by the engine to suit immediate requirements, and this is actually accomplished by directing the behaviour of the gases in the cylinder so that the pressure diagram takes widely different shapes and sizes.

Let us consider the effect of throttling the supply of fuel. This means that the pressure in the cylinder during the suction stroke D E falls very considerably below that of the atmosphere, which is represented by the straight horizontal line. Consequently the pressure at the end of the subsequent compression stroke is much below its normal value. Hence, as we have seen above, the explosion pressure is less, approximately, in proportion, and the width of the diagram is reduced throughout the stroke. Fig. 5 shows a typical diagram with a throttled supply. It should be noticed that the shape of the diagram is still very similar to that of a full-power diagram (which is shown by dotted lines), if the mixture be of the same strength in both. The precise effect of throttling is to reduce considerably the area of the diagram and with it the power of the engine.

We will now see what happens when a weak mixture is used. The explosion curves of fig. 2 give us a clue to the shape of the pressure diagram. The chief point of difference from the full-power diagram is that the explosion is going on for some time as the piston moves forward (fig. 6).

In fact, with a sufficiently weak mixture the gas may be still burning at the end of the stroke, or even worse, at the end of the subsequent exhaust strokes. In this case the fresh charge is ignited immediately on entering the cylinder, and a slight explosion occurs in the induction pipe, which is commonly known as popping in the carburetter. The effect, which can be readily produced with an engine in which the mixture is capable of wide variations, should not be confounded with back-firing, which is due to ignition taking place on the compression stroke, causing the engine to run backwards momentarily.

An important point in connection with the use of weak mixtures should be noticed. The proportion of the heat energy which is converted into mechanical energy is considerably less when combustion goes on during a large fraction of the stroke than when the explosion is nearly instantaneous. In this connection it may be mentioned that until quite recently much difference of opinion existed as to whether, in a normal explosion, combustion still goes on to any appreciable extent after the full explosion pressure is attained. Recent experiments have proved that the power value of such combustion, if it occur at all, is quite negligible.

With regard to controlling the power of the engine by altering the strength of the mixture, this method, when possible, should only be used with caution, and too weak a mixture should never be used. On the other hand, as we shall shortly show, too strong a mixture has also a peculiar disadvantage.

The explosion curves of fig. 2 embody practically the whole of the theory of the timing of the moment of ignition. Consider first the curve A, which represents a normal strength of mixture. A definite interval of time is taken to reach maximum pressure, as given by Table I. The diagram of pressure in the cylinder is reduced in area if the explosion line A B of fig. 4 slopes forward to any large extent, and this means that correspondingly less power is developed. This would be the case if the explosion were initiated exactly as the piston reached the end of its stroke, and it is consequently necessary to produce the spark a short time before the end of the compression stroke. The interval of time by which the spark must be advanced into the compression stroke depends on the strength of the mixture, as fig. 2 and the corresponding table will show, a weak mixture requiring a more advanced spark. With a fixed mixture the advancement of the

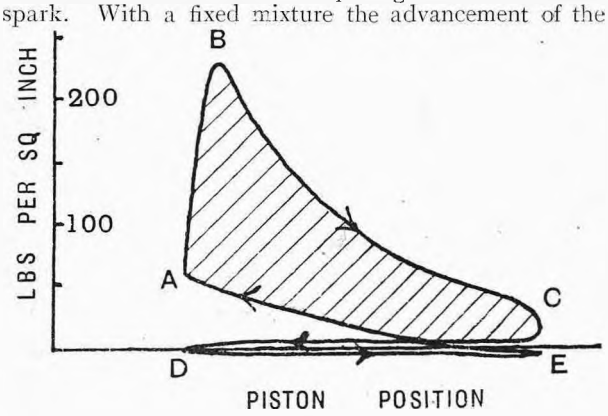


Fig. 4.

spark measured in fractions of a second is about the same for all speeds of the engine, but measured as a fraction of the stroke it must clearly be increased in proportion to the speed.

Fig. 7 shows the effect on the pressure diagram, and therefore on the power, of (A) too late ignition, (B) too early ignition, a normal ignition diagram being also shown dotted for comparison.

Having treated in some detail the pressures produced in explosions, and their effect on the power of the engine, together with the various means of controlling them, we shall now briefly consider the tem-

peratures attained by the gases in the course of an explosion. The temperature is very closely related to the pressure; in fact, with gas in a closed vessel the two are exactly proportional. It follows from this that the curves of figs. 1 and 2 represent not only the pressure but also the temperature* throughout the explosion. The temperature at any point P in fig. 1 is given by P Q interpreted with the aid of the vertical scale of temperatures at the right of the figure. The first important point to be noticed is the exceedingly high value to which the temperature rises. For instance, in the explosion of fig. 1 it attains a value 3,300° Fahr., which is actually about 800° Fahr. above the temperature of molten cast iron. We can now realise the cause of the rapid fall of pressure due to cooling, since the rate at which a hot substance cools becomes extremely great when the temperature is very high, as we see in the almost instantaneous cessation of the light from an incandescent electric lamp on opening the switch.

Reference to Table I. shows how the maximum temperature is affected by the strength of the mixture. It is seen that it is lower the weaker the mixture, and the reason for this is simply that a weak mixture may be regarded as a normal mixture diluted by a certain amount of air. The temperature is naturally lowered, just as that of a quantity of boiling water would be lowered by the addition of a small quantity of cold water.

The temperature attained in the explosion, unlike the pressure, does not depend on the pressure of the mixture before firing. At first this may appear to be in disagreement with the law of proportionality between the temperature and pressure, but a little consideration will show that it is not so. For we have previously shown that the explosion pressure is always a certain multiple of the initial pressure, and the multiple is the same whatever the actual value of the initial

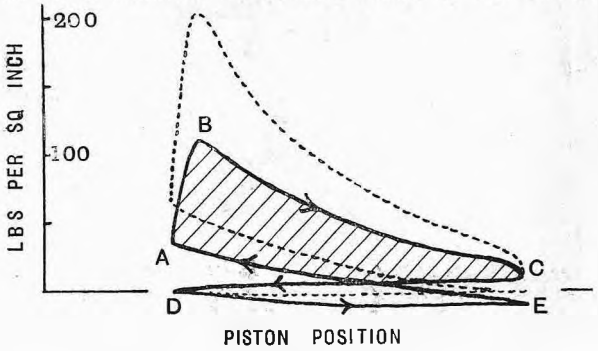


Fig. 5.

pressure. Hence in exploding a particular mixture always from the same temperature the amount by which the temperature rises is always the same.

In applying considerations such as the above to the actual explosion in the cylinder, we have to remember that the volume is not constant, so that the pressure diagram is no longer also a temperature diagram. The changing volume occupied by the gases can, however, be allowed for; the method of doing so would take us somewhat beyond the scope intended for this article, but the results of such a calculation are given in fig. 8, which is a temperature diagram corresponding to the pressure diagram of fig. 4, representing a normal explosion.

*The actual temperature varies considerably from place to place within the gas. Here and elsewhere in this article the temperature given is an average temperature of the whole gas.

We see from this that the cylinder is occupied for a considerable fraction of its time by gases so intensely hot that the average temperature would be high enough to maintain certain parts of the cylinder at a dull red heat if it were not artificially cooled. Effective cooling is of the utmost importance, and there is one particular temperature at which it is best to keep the walls of the cylinder. This should have been ascertained by the maker of the engine, and the cooling arrangements designed accordingly. Should the temperature be either much higher or lower than this the performance of the engine will be poorer. For if the cylinder be too hot some inwardly projecting portion is

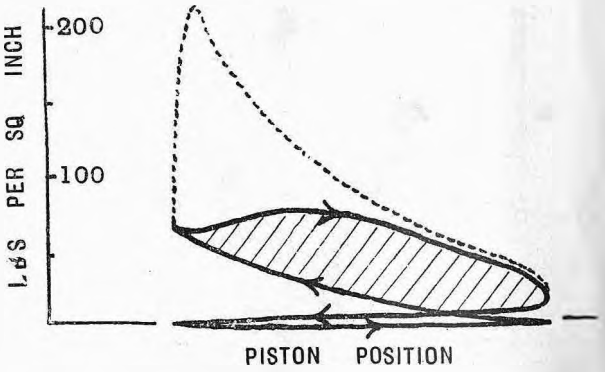


Fig. 6.

liable to become hot enough to cause pre-ignition. A further undesirable result is a decrease in the power developed. This is due to the expansion of the incoming charge, which gets unduly heated by contact with the hot cylinder and piston; this is really equivalent to throttling the supply, for although the volume of the charge is the same whether the cylinder is hot or cold, its weight is less and the power is less in proportion.

On the other hand, any attempt to keep the cylinder very cool can only be accomplished at the expense of a large proportion of the heat produced by the combustion of the fuel, which is transferred to the cooling water. In the normal working of a good engine as much as 30% of this heat of combustion is of necessity wasted in the radiator, and for the sake of efficiency it is not desirable to increase this loss.

I shall conclude this article with some notes on other sources of loss consequent on the nature of the explosion. Prominent among these is the heat wasted in the exhaust gases, which may amount to 40% of the total. The temperature of the gases at the point C at the end of the working stroke B C in fig. 8 is 1,700° Fahr., and it is at this temperature that they are expelled from the cylinder. It may be asked why the gases are not allowed to expand further until their temperature and pressure are much lower, and the answer to this is that, although it would increase the efficiency of the engine, the gain in this respect would be more than counterbalanced by the increase in the cost of construction.

In order of importance, the next source of loss is the incomplete combustion of the fuel. Many experiments bearing on this have been made quite recently, and it has been conclusively proved that under certain circumstances quite a considerable fraction of the energy in the fuel is never liberated as heat. This has been shown by chemical analyses of the exhaust gases. Now the combustible constituents of petrol are carbon and hydrogen, which form a complex com-

bination. After complete combustion these become carbon dioxide and steam respectively, but it is possible for the carbon to burn only partially, forming a gas known as carbon monoxide, which will itself burn to carbon dioxide with the evolution of a further amount of heat. In fact, the heat produced by the combustion of carbon monoxide is some 70% of that obtainable by the complete combustion of the carbon; hence the presence of any carbon monoxide in the exhaust gases is evidence of incomplete combustion. Actually experiments have shown that carbon monoxide is almost always present in amounts varying from 1% to 11%, and this percentage seems to depend on the strength of mixture used. It is smallest when the mixture is the weakest that will fire readily and consistently, and it increases as the mixture is

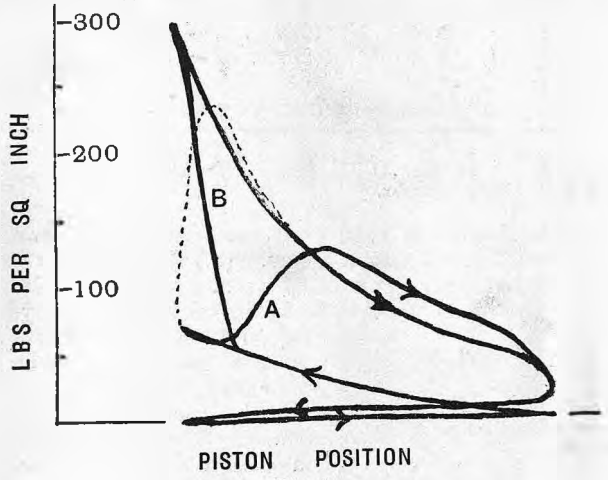


Fig. 7.

strengthened; further—and it is a point of great importance—the engine power increases but little as we increase the proportion of fuel in the mixture above that of the weakest regularly firing mixture. It is therefore clearly profitable to work with a fairly weak mixture, but this must not be carried so far as to produce the undesirable results already noted.

We have enumerated all the losses that are inherent in the internal combustion engine from the nature of

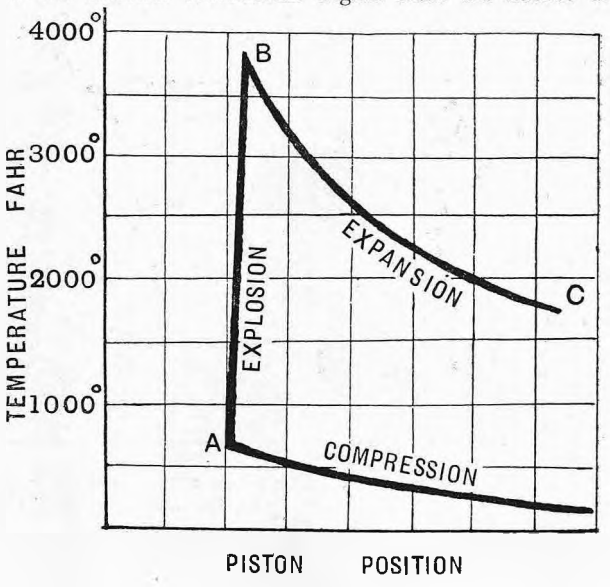


Fig. 8.

the phenomena of the explosion. Other losses there are, but they are mechanical losses and are common to all types of heat engine.

Although these losses appear very high, it is only fair to the engine to separate them into unavoidable and avoidable losses. It can be shown that the greater portion, roughly about 65% in an ordinary good engine, are quite unavoidable. On the whole we have every reason to be satisfied with the progress made up to date, and it is certain that the portion of the available heat energy in the fuel which is inevitably lost will be considerably reduced in the future.

M.

Special Motor Roads considered in the Light of Cold Figures.

Theoretically alluring to some, what are the practical possibilities of Mr. Lloyd George's project? The nett income from petrol tax and car licences means £600,000 per annum. How much new road could be made for this money, if it were all available, which it is not, as much of it would be spent on bettering existing roads, neglecting the fanciful picture of any revenue coming from horse traffic for traversing any special motor road?

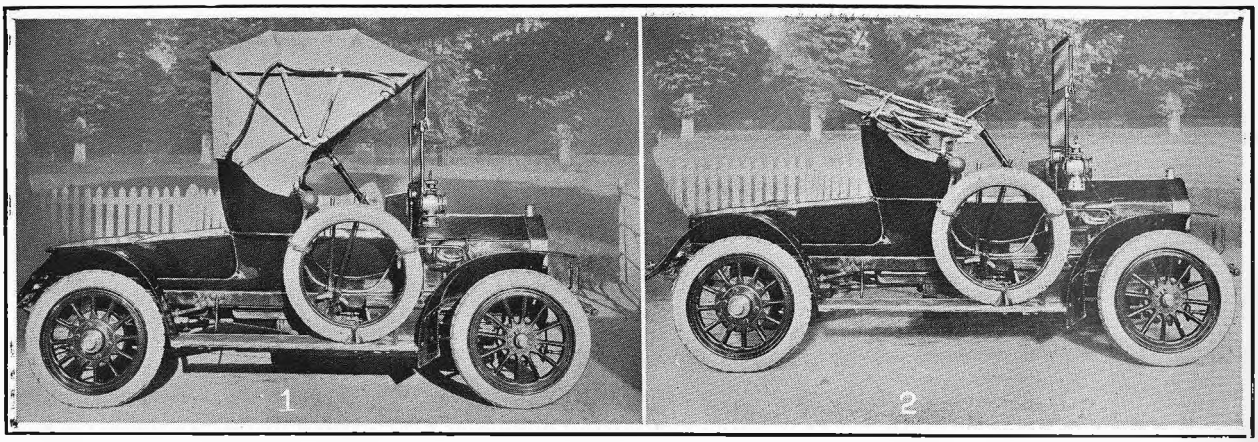
New highways of any length are very rarely constructed nowadays. Lancashire has a notable example in the "new" or short road from Kirkham to Blackpool; but it took many years of negotiation and worry, and great expense, to make this an accomplished fact. Then there is the easy-gradient road over Honister Pass, from Keswick to Buttermere (toll to pay)—another example of much anxiety and expense. It is very difficult to secure the land for new roads in this age.

Suppose, however, that land were absolutely free. With that visionary premise we can estimate, on the basis of information supplied by a Lancashire town's surveyor, as follows: Excavation, 2s. per square yard; draining, 3d.; ballasting, 1s.; tarmac, 4s. (ordinary macadam at 3s. is not good enough for special roads); total, 7s. 3d. per square yard. Roughly, a 40ft. road would thus cost £4 10s. per yard, or nearly £8,000 a mile. Then, of course, there would be the footpaths. Thus there would be some seventy miles of new road for the Chancellor's new taxes, if the whole nett sum were available, for the whole country in twelve months. But the land would have to be bought, though possibly this might be counterbalanced ultimately in a very few cases by the accretions in land values. Road engineers and surveyors have no objection to receiving and applying the £600,000, but this is all that can be said for the project.

By the courtesy of the Society of Motor Manufacturers and Traders, the Associates' Department of the R.A.C. will occupy stand No. 2 at the forthcoming Olympia Exhibition in November, and it is proposed to use the space as a reception office for associates. Candidates for associateship will be able to obtain at the stand full information regarding the organisation and its programme.

Body Design and Construction.

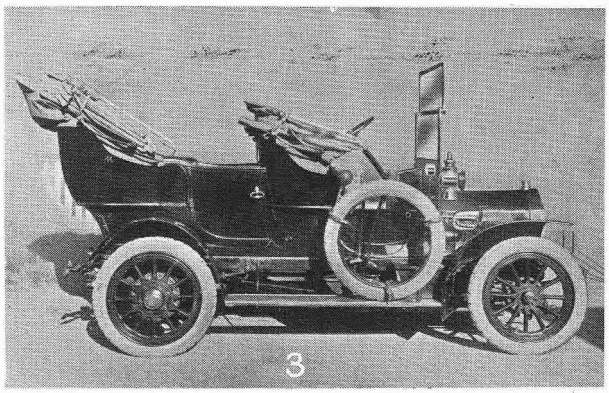
An Arrangement Suitable for all Sorts and Conditions of Weather.



AS A TWO-SEATER. The hood shown in both the "up" and "down" positions. The platform for the detachable tonneau has been filled in with a neat sloping tool box.

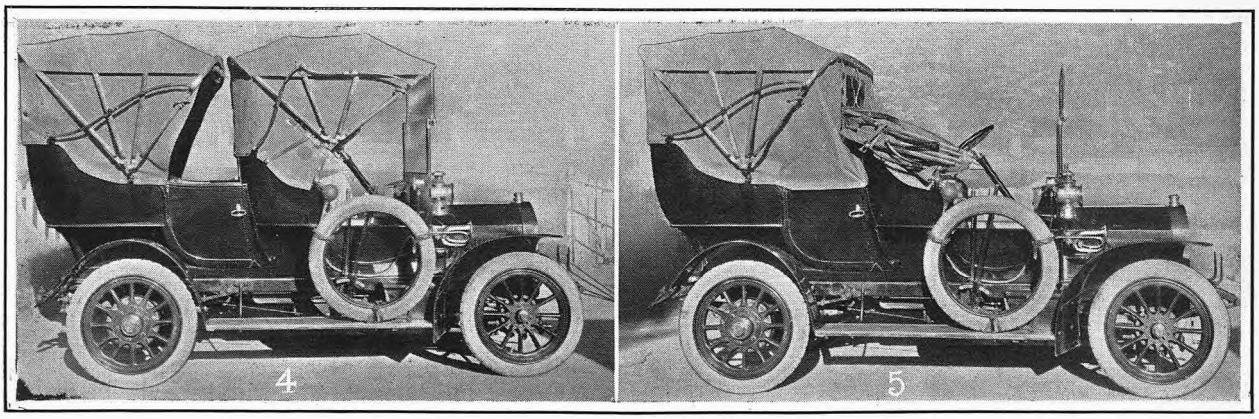
I SEND you five photographs which may interest some of your readers, as they show the combinations which may be made on a car fitted with a Windham detachable body and the hoods patented by Messrs. Coward and Co., Maidenhead.

I used to have a car with a canopy top, and have of course constantly ridden in cars fitted with every variety of Cape hood, but I did not like either, and considered the Cape hood particularly objectionable on account of its draughtiness, the time it takes to put up or take down, etc. In April last I saw in your paper what seemed to answer my requirements, and by extending the idea and having the car fitted with a detachable body I think I have at last got an ideal combination.



AS A FOUR-SEATER. Both hoods down.

The advantages are: (1.) The hoods can be put up in a moment by one person. There is no lifting about and screwing on to fresh brackets, often needing two people and causing some delay. (2.) The car is free from draught, each part being warm and comfortable. (3.) If the driver wants to be in the open and is carrying children or other passengers who need to be protected, the back hood can be used alone as in No. 5. Of course, in such a case it need not be so completely closed up as in the photograph, as the side extension curtains could be left off. (4.) If the car be required as a two-seater, it is still possible to have a hood for the front seats. (5.) When both hoods are up communication can be held between the back and front seats by rolling up a small celluloid screen in the back of the front hood, or, if the weather be particularly bad, the back part can be closed up more completely than is shown in No. 4, by unrolling the front screen and putting on the side



AS A FOUR-SEATER. Showing the car with both hoods up and with the back one only up but entirely closed.

curtains as in No. 5. (6.) The hoods are very light, and add very little to the weight of the car.

As regards construction, the whole secret lies in the method of foreshortening the front hood when it is down so that it may not hang over the doors at the back. The car shown in the photographs is a 10-12 h.p. Swift, with a comparatively short wheelbase. The rain baffles of each hood, which prevent water dripping between them when both are up, clearly shown in the pictures, are, I believe, registered by the makers. Another important feature is that the back of the front hood and the front of the back hood are fitted with stiff gutters. These prevent the water dripping between the hoods.

In the photographs will be seen a Doolittle rim on the step, which I have had fitted to this car after two years' experience on another car. I have found these rims invaluable, and consider that, apart from the speed of changing the rim on the road (which is to some extent shared by other rims), the great advantages are that new tyres can be put on the rims without exertion in from seven to ten minutes, and that the continuous rubber band which takes the place of security bolts hermetically seals the tyre from wet and grit, so that the canvas of the cover lasts much longer.

I hope the illustrations may be of use to other owners who want a very snug and comfortable car.

A. H. M.

Some Points About Torpedo bodies.

AT the present moment there are probably less than a hundred torpedo bodies on the road. There will probably be a good number at Olympia, and when more motorists have seen them and driven in them, there will be a very distinct boom. The only puzzle is that this type of coachwork has taken so long to evolve, for there is not a word to be said in favour of low side doors to either front or rear seats, while the usual gap between the dashboard and the steering wheel is simply designed for the admission of rain. At the same time not every design of torpedo body is either efficient or handsome, and we wish to put buyers on their guard against several pitfalls which await the designer of such *carrosserie*.

Certain photographs recently published in these columns show that a body with high flush sides and two pairs of full-sized doors looks abominably squat and lofty on a short chassis. It reminds us irresistibly of the small boy's Tate sugar box mounted on rollers. In all cases the height of the sides must be strictly proportioned to the length of the chassis; the longer the chassis, the higher the body may be; the shorter the chassis, the lower must the sides be kept, and consequently the bigger the rake needed for the steering column. From our experiments we should estimate that a 9ft. chassis is the shortest to which a torpedo body can be sensibly applied, and with a chassis of this length the rear seat will be forced out backward till it is directly over the back axle—which spells bumpiness, however excellent the springs. A 10ft. chassis is certainly preferable.

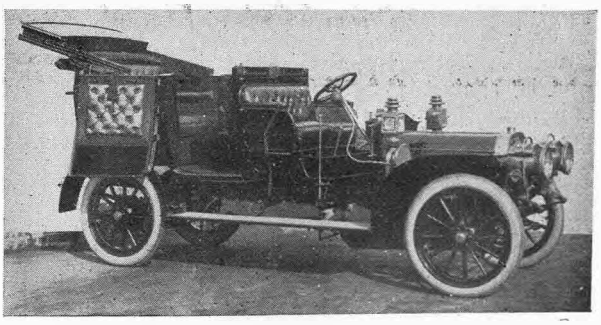
Again, it follows that if the steering column be steeply raked backwards, the scuttle dash must be much deeper, or else it will fail in its purpose of protecting the driver's legs, and he will continue to require a driving apron or rug. The side doors of the front seats interfere with this necessary deepening of the scuttle, as their front hinge must come near the dash, and the rear edge of the scuttle must overlap this hinge considerably. There is no need for the scuttle to be fixed all along its side edges—a well made bevelled joint resting lightly on the top of the side doors when closed is quite practicable.

Two further difficulties present themselves at this juncture. The dashboard of most cars continues to be the repository of a host of fittings, some of which demand manipulation by the occupants of the front seat while the car is in motion, and others ought to be at any rate comfortably visible. The hand pressure pump for the petrol supply comes in the first category, and drip feeds come in the second. Unless care be taken, all these fittings will be rendered somewhat inaccessible by the fitting of a torpedo body on a shortish chassis. The hand pressure pump may be fitted to the underside of the scuttle. The oil force pump may well be separated from the drip feed box, or other lubrication indicator, and be mounted in the usual racing position, *i.e.*, vertically against the front of the boot under the driving seat. The drip feeds should be fixed on a block projecting from the dash proper, so as to bring them nearer to the driver.

The second difficulty is the placing of the petrol tank. Most cars continue to carry their tanks under the front seat—a position that is never convenient, and which is rendered impossible if the seat be low. The tank must therefore be combined with the dash, or set at the rear and fed by pressure.

The whole of the points dealt with so far relate to designing a torpedo body for a short chassis. There is another point affecting its use on longer chassis. It is the rule in all torpedo coachwork to build the seats lower than with the standard side entrance coachwork. Many coachbuilders fail to realise that if the seats be low, the angles of both seat and back rest must be altered. A low seat with a vertical back and a flat floorboard is horribly uncomfortable, and care must be taken to tilt both the cushion and the back of the seat slightly over towards the rear. Even when this is done a sloped footboard is really desirable for maximum comfort.

If these points be attended to carefully, the torpedo sporting phaeton is the most efficient and comfortable body procurable for chassis of 9ft. and over. A bastard type of torpedo is possible on still shorter chassis, if entrance to the rear portion be obtained by a swing seat; but these bastard torpedos cannot look anything but ugly, for the projecting backs of the two seats are squeezed tightly together towards the back of the car, and utterly spoil the aspect of the car's proportions, because of the abnormal length of the fore body.



A 16-20 h.p. Argyll double landaulet recently supplied to the Earl of Kimberley by Messrs. Argylls, Ltd.

"The Autocar League."

The Circular Nuisance. Members only Approached on League Matters.

"THE AUTOCAR LEAGUE" HAS NO SUBSCRIPTION. ITS AIMS ARE TO OBTAIN THE SUPPORT OF EVERY MOTORIST IN THE UNITED KINGDOM, SO THAT WHEN MATTERS OF VITAL IMPORTANCE COME UP FOR DISCUSSION A POSTAL REFERENDUM CAN BE TAKEN. WHEN THE REFERENDUM IS COMPLETED THE GOVERNMENT OR OTHER AUTHORITIES CONCERNED AND ALL THE CLUBS AND MOTOR ORGANISATIONS WILL BE NOTIFIED. ON CERTAIN OCCASIONS THE MEMBERS WILL BE ASKED TO TAKE UNITED ACTION SO THAT INJUSTICES MAY BE REMOVED OR ABUSES STAMPED OUT. IT IS ONLY BY SOME SUCH SYSTEM AS THIS THAT MOTORISTS WILL BE ABLE TO OBTAIN FAIR TREATMENT.

Cars at Elections.

AS a general election may take place comparatively soon it is well that members of the League should consider the matter from the automobilists' point of view. We say automobilists' point of view advisedly, because it should be clearly understood that we are not discussing the political aspect of the question in any way, though we think we are safe in saying that a member of Parliament who is opposed to automobilism is so far out of touch with modern requirements and progress that the chances are he is not really fit to respresent any constituency in the House of Commons. There may be a very few notable exceptions, but they are so few that they are hardly worth considering.

On the other hand, whatever a candidate's views on automobilism may be, there is no doubt that he and his agents will be only too delighted to have the assistance of every car which they can possibly procure on the day of the election. Not only so, but very many of the candidates conduct their election campaigns entirely from a motor car, and although these candidates when elected may vote in favour of the petrol tax and express themselves in violently anti-motor language, it is quite possible that during the pre-election period they may have motored more violently and more inconsiderately than the great bulk of those whom they may condemn at a later period. Strong politicians will say we are placing automobilism before politics, or they may even say in front of patriotism. We are, however, doing nothing of the sort. We are merely presenting the facts as they are, and our readers must decide how they will act.

At the present moment it behoves us all to give the matter careful consideration, and to make up our minds which is the best way by which motorists can ensure fair play in the Parliament which will be elected at the next general election. As we approach it, the question is not a political one in any sense of the word. It is rather a question of urging on our readers the desirability of their ascertaining the views of the candidates for Parliamentary honours. We, too, propose to do this as far as it can be done when the time comes, so that our readers may know who is for and who is against them, and who halts between two opinions. These hesitants by the way are usually in the majority at election times, and are perhaps the most dangerous of all because they are mere opportunists who will accept the help of a motor car with gratitude to-day and utter violently anti-motoring harangues in the House of Commons to-morrow.

Unfortunately, too, many candidates endeavour to cloak their opinions for fear of giving offence to one section or another of their supporters. Therefore it will be most difficult to obtain anything like a complete list, so that every motorist should as far as possible endeavour to ascertain for himself the views of his representative or would-be representative in Parliament and then make up his mind whether he will or will not lend his motor car to assist in obtaining his election. Each individual motorist will have this opportunity, as he is sure to be asked to lend his car when the date of the general election approaches. When a man is asked to lend a valuable article such as a motor car he has the right to assure himself that he is not placing it at the service of one who will turn upon him and his car at the first opportunity.

It is well to say at this point that electioneering is by far the most damaging use to which a motor car can be put, and only people who can afford to have a car repainted and perhaps re-upholstered after a general election should lend it to any candidate, because in these things neither horse nor man is spared and the most careful owner is driven at the end of a contest to take eight men in a four-seated car and to carry as many more on the mudguards, bonnet and steps as these things will bear without actual failure, and the hood if left on the car will probably be in ribbons before the day is over, as it is used on all possible occasions for gymnastic exercises by the offspring of the free and independent electors.

The question is a many sided one, and one on which there must be a great diversity of opinion. It is necessary to remember that our enemies are already active, as at least one association of an anti-motoring nature is heckling members of Parliament and demanding their views on what it is pleased to call "the motor peril," and it is threatening the members with a full publication of their views.

The Plague of Circulars.

Many readers, in sending in their names and addresses for the League Referendum, express the fear that this information may be used for other purposes. They tell us that they have been so plagued with circulars since they became owners of motor cars that they are afraid of increasing the number they already receive, as they seem to think that our list of names and addresses may be used for other purposes than communicating with them on League matters. We have stated positively that this fear is groundless, but as it appears to be so widespread we repeat our positive assurance that the list of names and addresses of the members of "The Autocar League" will be kept absolutely private, and we undertake never to use it for any other purpose or to allow it to be used for any other purpose than to communicate with the members of the League on matters concerning the League. However the names and addresses of motorists may be obtained by the enterprising issuers of circulars, we can assure them that they have

not been obtained, and never will be obtained, through us. Of course there are some motorists who are interested in these circulars and who like to have them, but they appear to be so much in the minority that we know we are conforming to the desires of the great majority of the members of the League in giving the assurance we have done. The matter is one of considerable importance, and we refer to it again because it is well that the many who are so keenly enthusiastic in helping to build up the League will bear it in mind and reassure their friends that any anxiety with regard to the uses to which their names and addresses may be put is unnecessary. We repeat that the formation of the League is *bonâ fide*.

The Week's Progress.

The names and addresses of adherents to the League continue to come in steadily by every post, and again it is our pleasing duty to thank many of our readers who have helped us, and who are continuing to help us, in the work of consolidation. We have now appointed a secretary, and have organised a staff for dealing with League matters, but the pressure of work in connection with the League correspondence is so heavy that it still must be some time before we can get absolutely on terms with it. Below we give a few extracts from letters on subjects of interest to members of the League which have been received within the last few days.

Some Extracts from "The Autocar League" Correspondence.

SPECIAL MOTOR ROADS UNNECESSARY.

Special motor roads are not wanted. The present roads will do with improvements, but all road users should bear their part of the expense, not motorists only.—J.L.D.

I was until recently a test driver for a firm of motor car manufacturers, but have now taken up aeronautics, largely to avoid police traps and other forms of highway robbery which the unfortunate trade driver suffers from to an abnormal extent. A red number plate to a policeman is like a red rag to a bull.

Special motor roads will be of no use to manufacturers for testing cars or for tourists who want to see the country; they will be infested with speed demons, and quite unsafe. I find that the rebate of the petrol tax for aeronautical purposes is a myth, like all the Government's promises.—L. HOWARD-FLANDERS.

ROAD IMPROVEMENT.

May I make a suggestion? There has been much written and said about the proposed new taxation on cars and petrol, but my view is that it is bound to come, and that a far better thing would be to acquiesce in it, but to use it as a lever to obtain roads of a proper surface and of a dustless material. Once the present system of patching roads and throwing metalling everywhere and anywhere, instead of working by gangs and with a roller, is abolished I am satisfied we should more than recoup the extra taxation by the amount we saved on tyres.—LEWIS G. M. KEMMIS.

FROM SPAIN.

I beg to enclose you my entrance form duly signed for "The Autocar League," and would like to express my sympathy for the movement which you are public-spirited enough to inaugurate.

Although I do most of my motoring in this country (Spain), I generally manage to get in four or five weeks' motoring in England each summer. I have just returned from my vacation this year, and though I must have passed through nearly all the police traps in the home counties and in Cornwall, I did so unscathed. This I must attribute either to good luck or to the fact that I carried no badges; I left them on my car in Spain. Nevertheless I was much impressed by the police persecution, and the change from the tolerant and sympathetic police of poor Spain was most distressing from the motorist's point of view. I admit that the magnificent roads and lovely scenery in England make it almost worth while being a motorist there, and if your League can assist to remove that most un-English of all our institutions, the police trap, England should be the motorists' paradise, and what that implies the motor manufacturers, the tradespeople, and innkeepers of the country towns should not fail to realise.

I must add that in a moment of patriotic fervour I turned one day into St. James's Park to have a look at the half-completed Queen Victoria Memorial. On a beautiful wide, empty road I was immediately stopped, and whilst surrounded by a gaping, jeering crowd of loafers a polite park-keeper demanded my licence. I was subsequently fined £1 with 2s. costs for proceeding at more than ten miles an hour. This I am, of course, trying to regard as rather a poor English joke.—ERNEST R. WOAKES.

A LONG DEFERRED ROAD IMPROVEMENT.

I have noticed that, according to a reply in the House, the Steyning magistrates have mulcted motorists to the extent of nearly £1,400 in two years and eight months. This is the Bench which "intended" to alter the road or lane in which Lord de Clifford met his end. I believe it is now doing it. The trapping, however, is all done on the open road, where no danger exists, and the danger spots are left severely alone. I believe that one of the magistrates is so prejudiced that he will not set foot in a motor car.—A VICTIM.

TRAFFIC AT CROSS ROADS.

Now that we have "The Autocar League" in being, would it not be possible, through its agency, to arrange some clear, well designed rules for the safety and guidance of all forms of traffic, either approaching cross-roads or debouching from branch roads on to main roads, in town and country? The nautical rule, *i.e.*, to give way to boats approaching on the starboard quarter, might well be applied to traffic at cross-roads where vehicles may be expected from any direction.

Those of our readers who approve of the object of the League are asked to sign and send in the following form:

THE AUTOCAR LEAGUE.

I am the owner of a .....h.p.....and will undertake to vote by postcard or letter on any important matter concerning the welfare of automobilism.

Name.....

Address.....

To the Editor, "The Autocar," 20, Tudor St., London, E.C.

and resolves itself into the following simple rule: "Give right of way to all traffic approaching from the right, unless there is sufficient interval to admit of crossing in front, without causing an oncoming vehicle to slacken speed." All traffic debouching from branch roads on to main roads must give way to through traffic on the main road, though once a vehicle has gained a footing, as it were, on the main road, the former rule will apply. In the present uncertain state of affairs it is largely a matter of luck whether one negotiates cross-roads safely or not, and the strain of trying to look in opposite directions at one and the same time is distinctly harassing to a careful driver. I feel sure that if this matter were taken up by the League, and a rule made and kept by motorists, drivers of other vehicles would quickly conform for their own sakes.—ES 105.

[The suggestion made by our correspondent has been brought up in one form or another time after time during the past few years, but nothing could be carried out effectively because there was no one body which represented anything like a majority of the whole of the motorists in the United Kingdom. We invite members of the League to discuss the suggestion. We agree as to the necessity of such a rule, but would suggest that this should be altered as to "traffic approaching from the *right*." It appears to us that it would be better if the word *left* were substituted if only for the fact that the rule of the road requires one to keep to the left on meeting other traffic.—ED.]

DRIVEN ABROAD.

I have just returned from motoring in Brittany for the fourth year, and am surprised in looking up the back numbers of your paper to see how obnoxious the police have made themselves during the holidays. Why don't more people go abroad to beautiful Brittany? It is so very easy, and the cost of freight is soon saved in the cost of living—no drink bills to pay, wine and cider thrown in, the bathing is perfect, the coast scenery delightful, golf and tennis both to be had, and the fête days and pardons alone make it worth while to visit; besides, the car seems to travel much faster. I get 5 m.p.h. more out of it. Whether this is petrol or air I do not know. Incidentally, this country has lost more than £400 by sending me abroad to avoid police traps.—A.S.H.

TO SUPPRESS ROAD HOGGERY.

Would it not help towards the suppression of "road hoggery" (and therefore of police traps) if motorists were to take the numbers of any real "hogs" they meet, and report them to the proper quarter? Thus a "hog" would be denounced "all along the line" on a long trip, and would receive such a shower of abuse that he would be compelled to desist from his evil ways, or become an ignominious outcast. —E. C. PERRY.

SUPPRESSION OF INCONSIDERATE DRIVING.

I have just received a notice containing particulars of associateship and membership of the R.A.C., and observe a paragraph, "Every considerate motorist should, moreover, assist the energetic action of the R.A.C. for the suppression of inconsiderate driving." I should be glad to know what action the R.A.C. refer to. Personally, I have not yet known or heard of any effective action whatever having been taken by either the R.A.C. or the Motor Union to enforce considerate driving.

It is difficult to know what steps these organisations could take; but it appears to me that if an alphabetical roll of motor car owners were kept at headquarters, anyone seeing or experiencing inconvenience from inconsiderate driving could write up reporting date, place, particulars, and number of offending car; in the event of several complaints from different parts of the country against a particular car, that would be *prima facie* evidence that the car was improperly driven, and the owner could be warned, and in the event of another case occurring reported to the local police.

With this report hanging over his head to be produced as evidence, the offender would probably improve his manners. Under present conditions many motorists are beginning to look upon the enforced twenty mile limit as preferable to the utterly inconsiderate driving of a large number of motorists, and the lesser of the two evils.

Only recently on the way to the race meeting at Ayr, on a road where there is not much room to pass, and when I was going about twenty-four miles an hour, immediately on hearing a car behind, at some risk to myself, I eased up and allowed the car to pass. One of the "gentlemen," I thought, must be thanking me, as he said something in passing; I was informed, however, that the actual remark was, "We cannot wait all day for you."

In the next village a great big car went through absolutely smothering the village in dust.

Everyone knows you can see this kind of thing any day where there are any number of cars passing; but one is told it is only the "occasional driver" who does these things.—MODERATE.

Just before I left Scotland the other day I saw an instance of what I should call very inconsiderate driving indeed of a car bearing the Edinburgh mark. The road was very narrow. A little in front of me on the same side of the road as that on which I stood was a nurse with two or three little children and a perambulator. A large covered car came past at a great pace, and did not, so far as I could see, leave the middle of the road by a foot. It would have been safe enough if we had all been "gate posts," but it could not have been safe for the little children. Even my little dog, which I was holding between my feet, shrank away, and I had to stoop and hold him as the car came on. I saw the nurse getting the children close to her and holding their hands. The wind caused by the rapid passage of the car struck me like a blow. There was no danger to me, but I think there was to the nurse and children. It is such absolute disregard for the safety and the comfort of people walking on the roads that causes the great dislike to our motors; but you know all this and have stated it strongly many times. The car I mention was driven by a chauffeur and contained passengers.

I have a small suggestion to make. During the early summer I was passing through a large city on a short tour. It was just about teatime, and we looked about to find a suitable restaurant. Some of us smaller folk much prefer such a place—for tea at any rate—to a big hotel. We found a very fair place, and had a very good tea, but on our return

we learned that there was a better place still. Now could not our great associations and clubs give the names of nice places for lunches and teas in the principal towns as well as the names of hotels? I am sure many motorists would be glad to know the restaurants recommended by those who know them.—C.G.S.S.

LADY MEMBERS.

As the owner of a small car who has never been able to afford the luxury of joining any of the older motor organisations, I welcome the formation of "The Autocar League," and beg to be enrolled as a member. Since I started motoring *The Autocar* has been my guiding star, and I feel that the League will prove a worthy offspring. (Please excuse the mixed metaphor, Mr. Editor.) But, stop! Perhaps I am rejoicing too soon, and, being a mere woman, I shall not be allowed to vote. Will my unfortunate sex debar me from having a voice in motoring affairs, as it does in those of the country? Does that seemingly frank word "readers" refer to male readers only?—SHE ROVER.

[Certainly not.—ED.]

ONE BODY.

I think the object you have in view excellent. To my mind it has been one of the greatest mistakes (except from the paid officials' point of view) to have so many organisations. One society from the first, and only one, would have been far more useful in all questions dealing with motoring, and would have carried more weight in any opposition to any persecution to motorists in whatever form. Union is strength, and was never more needed than at the present moment.—JOHN LOBLEY.

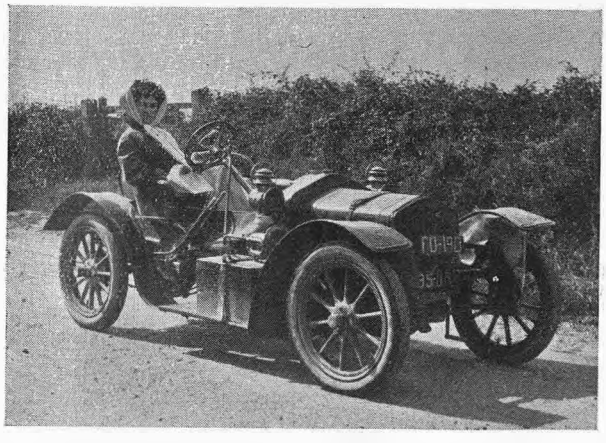
VOTERS' REGISTER OF MOTORISTS.

A scheme for the formation of a voters' register of motorists, the fact of being a motorist being the only qualification, combined with the machinery for taking a plebiscite of them on any important question, has my cordial approval, and I shall be glad to be placed on the list. The institution of a subscription seems to me to offer grave danger of the formation of what would be merely another limited and only partially representative body, and the greatest thanks are due to your public-spirited proposal to avoid this risk, which I hope may not prove an impossibly heavy burden.—R. W. BUTTEMER.

SEEMS TO HAVE CAUGHT ON.

Your registration scheme seems to have caught on in a rather remarkable way. I tried to purchase my weekly copy of *The Autocar* in Shrewsbury last Saturday, and neither W. H. Smith and Son nor Wymans had a single copy of the threepenny or penny edition on sale at two o'clock; completely cleared out.

I expect you will find it necessary to make a small charge if only to cover postages, but I shall willingly pay a little towards that if you do.—H. W. HAMILTON.



Mrs. Dee on her Sizaire et Naudin car. Mrs. Dee is an enthusiastic motorist, having owned a Richardson, a Chenard-Walcker, a Renault, a Rover, and a De Dion. Several photographs of Mr. J. C. Dee upon two-seated racing model Rovers have appeared in "The Autocar."

TRAPS IN THE WRONG PLACES.

A Sussex correspondent writes:

I am sending you a report of a case of a steam-roller man being knocked down by a motorist. I think you will agree with me that the motorist was to blame. He ought to have known that a man working behind the roller might step in front of him, and been ready if it happened. At the same time, it was not such a bad case as the prosecution made out.

Mr. E. D. Fawcett at the wheel of his mountaineering De Dion during his record climb to the Mer de Glace.

The point I wish to emphasise is that, because the magistrates did not inflict so heavy a penalty as usual, they were at once attacked by certain of the public; and the same thing happened in a case which was dismissed last year, although in that case (a collision at cross-roads with a horse and cart) the evidence clearly proved that the cart ran into the motor, which was pulled up within a foot.

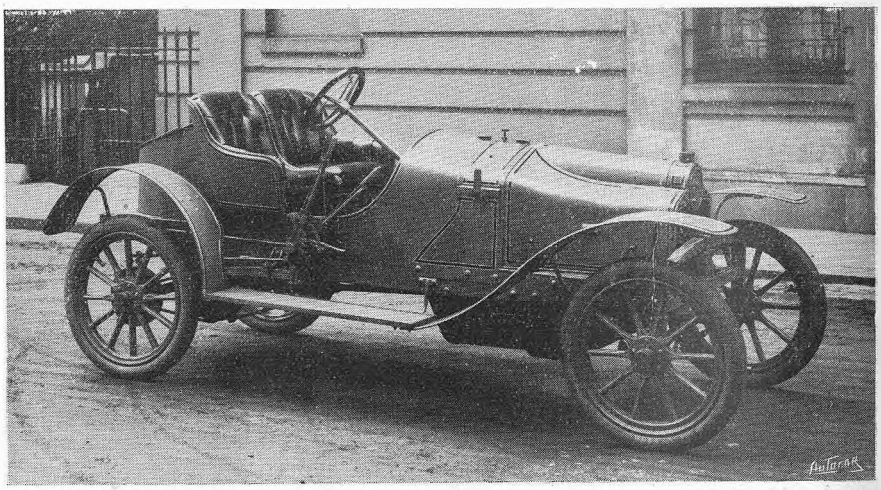
Magistrates as a body are deservedly held in the highest respect among those who know them, and anything in the nature of a personal attack would at once be resented, even by many of those who severely criticise their attitude towards motorists. I believe that a good deal of the trouble arises from ignorance and the gang of scorchers who infest the Brighton Road at week-ends. These men are continually getting into trouble, and make it bad for everybody. No doubt much of the trouble in Surrey is to be traced to the same cause. The local motorists have no serious cause of complaint against the police, except that they are too ready in case of an accident to jump to the conclusion that the motor is to blame. Our chief grievance is the vindictive character of the penalties and the entire lack of discrimination shown.

If by next year we could obtain a general adoption of long distance trapping (nothing less than, say, six miles, to include at least two villages) and no summoning under twenty-five miles (short traps only to be used in the danger zones of ten mile limits, and no summoning in these under fifteen miles), it would be a great gain. I doubt whether it will be possible to abolish trapping yet, but we should have much less to complain of if it were modified as suggested.

One thing more. Let the League set to work at once against the inconsiderate driver. He is the curse of the road, and deserves no pity. If every member of the League will pledge himself to drive with reasonable care and to show every possible consideration for other road users and dwellers by the wayside, the League can at once be sure of a great deal of public support, which will otherwise be withheld. I am personally quite willing to give such a pledge, for I have always done this both as cyclist and motor cyclist, and the result is that in twenty years' experience I never remember having any unpleasantness with either the police or the public. Surely it is not too much to ask a man to ease up when passing villages or wayside cottages, or when passing other traffic. I have been passed by car drivers on the road, who, though they were well within the law, were acting like cads, in that they smothered everyone in dust. On the other hand, I have had cars drive up to within a few yards at a speed which was well over the limit, and yet go past me at a moderate pace, by which nobody would be inconvenienced, and open out when sufficiently well clear to leave me out of the dust cloud. The latter is the kind of driving that makes friends of other road users. The former simply exasperates the public, and makes them ask for more restrictions. Is it too much to ask *The Autocar* to use all its influence to obtain improvement in such matters as these? The argument that the motor does not make dust, and the roads ought to be tarred, is no excuse.

On the Track. By H. C. Lafone.

BROOKLANDS, though still comatose, is beginning to stretch itself preparatory to the race meeting on October 6th. There are several bad places which are undergoing a much-needed repair, and several more which are not. The fact is, if there is not a general overhaul this autumn, the car makers will have to make special springs for next summer's meetings. Really parts of the course are beyond a joke, and those whose internal arrangements are not in need of a thorough shaking up are beginning to make lamentation. During the week I have carried out two pleasant little trials on my own account, and have had the track almost to myself, except on Friday, when a terrific thunderstorm and Mr. Harry Swindley arrived to dispute my monopoly. Both these intruders were, I understand, engaged on consumption trials, but, while the mere man was out to use as little liquid as possible, the elements made a satisfactory effort to create a new record in extravagance. The track was like a watercourse, and all the drains and gullies spouted madly for three hours' non-stop run, what time the thunder and lightning did their parts with untiring zest. But to get back to my trials. One was of the new Palmer light tyres which have just been introduced by the Palmer Tyre, Ltd. Now I do not wish to turn these notes into a "puff" article at all, but I must state facts, and if the facts are good for the Palmer people so much the better for everyone concerned. First, let me say that my 1908 Sizaire was the trial car, and that it had hood, screen, Stepney, luggage-carrier, and complete touring equipment of tools and spares. Next, I must mention that I had made no adjustments, other than changing the tyres, since I had enjoyed my last spin on the track. Thirdly, it must be added that there was no wind at all. Now to business. First I tried the car for speed on the flat, and touched 44½ miles an hour as against my previous best, in the same trim but with other tyres, of 40 miles an hour. I then attacked the test hill and climbed it at the first attempt. This, even with the car stripped of all I can easily take off, I had never succeeded in doing before. And I may add that I used my small petrol jet throughout the trial. The Palmer people had told me that I should be able to do all kinds of marvels, but I had accepted their statements with a large sprinkling of salt. I take this opportunity of apologising to them. The tyres are marvellously fast, both on the level and up hill, and most comfortable.



The 1910 Model 12 h.p. Sizaire-Naudin Car.

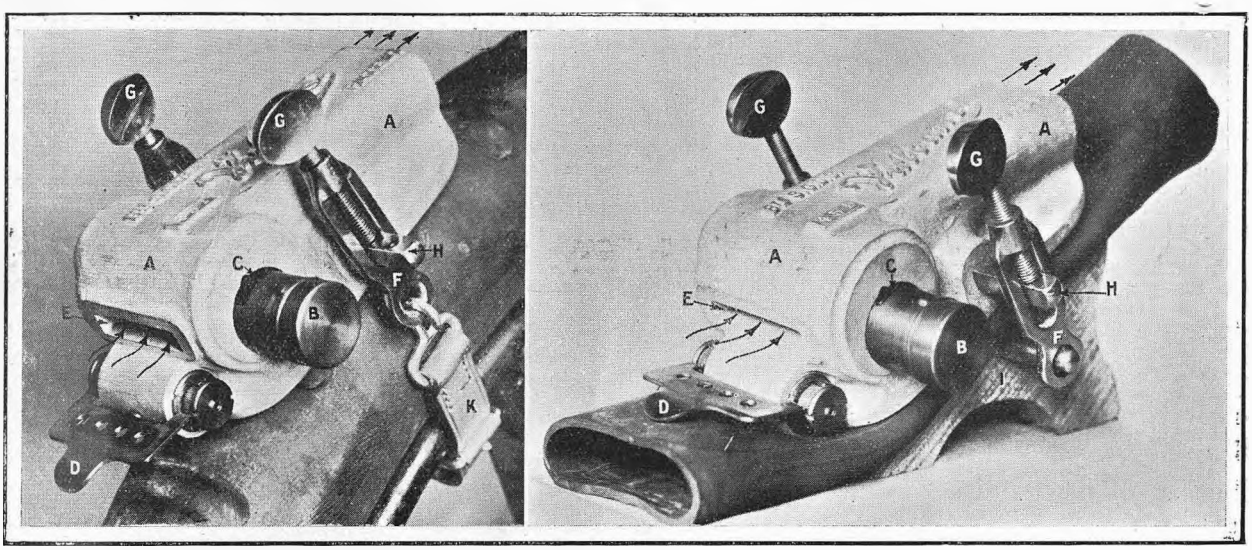
My other trial was of the 1910 model 12 h.p. Sizaire. In most respects this car is a great improvement on the earlier models. The stroke is now 140 mm. instead of 130 mm., but I am not sure that I approve of this increase, though the sweet running of the engine would not lead one to imagine that any alteration of stroke had been made. The radiator has been enlarged, and the tubes decreased in size and increased in number. The starting handle shaft is now supported in a bearing below the camshaft, and the method of coupling it to the crankshaft is much improved. The fibre block on the clutch is now redesigned, the gearshaft has been fitted with ball bearings, and this alteration is an immense improvement, for the gears are infinitely more silent than they used to be. The exhaust pipe is about double the size of the old pipe, and the silencer is also greatly enlarged. The back wheel brakes are now adjustable by thumbscrew, and the footbrake operating rod is better suspended in front than was formerly the case. The bonnet is higher, and the whole machine looks stronger. A good many of the suggestions made by me when the new model was being constructed have been adopted, but I must complain that the front wheel plain bearings are retained, the back wheel brake drums are still unenclosed, and the method of attaching the rear ends of the side springs to the back axle is unaltered. However, these matters are not of very much importance, and I have not been stopped on the road by any one of them during the fifteen months of my Sizaire driving. Well, I clocked the new car—it was started up for the first time in England on the morning of the trial!—to do one lap from a standing start at 42.86 miles an hour, while a flying lap came out at 44.9 miles an hour. Certainly with the engine and gears thoroughly "run in," and with the carburetter finely adjusted, I think considerably more speed would be obtained. Then I went at the test hill. From a start at the gate of the hill the car climbed quite easily to the top with driver alone. With one passenger in addition it reached a point at which one could from the seat see over the crest, and pulled over the top after a brief struggle in which my iron will power overcame its inclination to run down backwards. The first speed gear ratio has been slightly reduced since the 1909 model was constructed, and this change is decidedly for the better. The radiator never became unduly hot throughout the trial, and this is another improvement, for my car does not like a long spell of first speed work. The new engine can run regularly at extraordinarily low speeds when "free," and can pull steadily when the car is travelling on top gear at twelve miles an hour. The new air valve is equipped with a dashpot which eliminates all the jingling which used to emanate from the old type.

The Vulcan Vulcaniser.

An Easily Manipulated System of Tyre Repairs.

MESSRS. J. LACOSTE AND CO., of 184, Shaftesbury Avenue, have put many interesting and useful accessories upon the market, but nothing handier, more ingenious, or useful than the Vulcan Vulcaniser herewith illustrated and described. This neatly designed apparatus is very light, being of aluminium, and is formed with a concave vulcanising surface with the contour of a tyre cover, in order that all repairs may be flush and follow the shape of the tyre itself.

Fig. 1 shows the vulcaniser in position for vulcanising a cut in an outer cover, the strap K round the wheel being used to hold it in position. Fig. 2 the repair of an inner tube, the wooden block I, which takes the place of the strap K (fig. 1), holds the work at the angle at which the vulcaniser should be used. In both cases the strap and the block are retained in position by the bridle F, the screws G G, and the bridle support H.



Figs. 1 and 2.

A, aluminium body of vulcaniser
B, spirit lamp
C, gauze burner in lamp
D, automatic shutter
E, air port
F, bridle
G, thumb screws
H, bridle support
I, wooden block
K, strap for holding vulcaniser in position

To vulcanise a cut or patch, the spirit lamp B is filled with spirit and placed in the orifice in the aluminium casting A. The lamp is then ignited at the gauze-covered opening C, the air necessary for the combustion of the spirit entering at the port E in the direction of the arrows, and passing through the body of the vulcaniser and out at the top indicated by the arrows in the top right-hand corner in figs. 1 and 2. When the proper vulcanising temperature is reached the shutter D partially and automatically closes the air port E. Then sufficient air is admitted through the holes seen in the shutter D to permit the vulcaniser to maintain the regular temperature for vulcanisation until all the spirit in the lamp B is consumed and the work completed.

The action of the automatic shutter which governs the operation of this simple apparatus is ingenuity itself. The shutter D (fig. 3) is held up by a spring M, which tends to thrust it against the mouth of the air port E. It cannot, however, do this for the reason that the square spindle N upon which the spring is mounted is embedded in a globule of metal O. This globule of metal adheres to the walls of the spindle chamber and also to the squared spindle.

The metal globule is of such a nature that it melts at 120° C., and as soon as the body of the vulcaniser reaches that temperature the metal melts, releases the spindle of the shutter, and the spring M closes the air port E to the degree already mentioned. At the close of the operation the shutter is pushed back to its original position, leaving the vulcaniser ready for use again when necessary.

This is surely vulcanising made easy; not only easy but pleasant, for it is only necessary to light the burner and as soon as this goes out the work is done.

The vulcaniser can be carried about on the car for roadside repairs, all that is necessary being to carry a little spirit for the lamp.

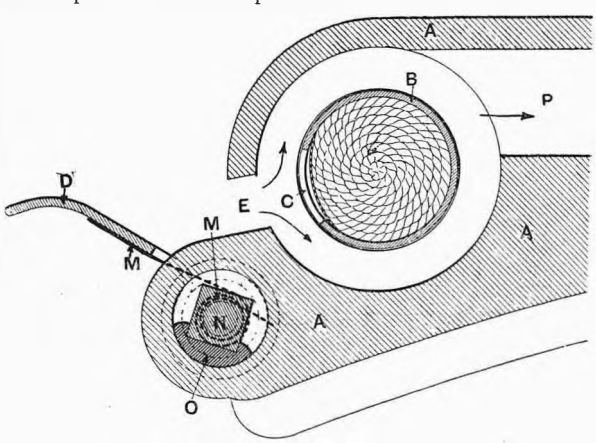


Fig. 3.

A, aluminium body of vulcaniser
B, spirit lamp
C, gauze burner in lamp
D, automatic shutter
E, air port
M, spring holding the shutter
N, square spindle
O, metal globule

Road Warnings.

Will readers kindly advise us of Police Traps which they discover? It will lessen the work of classification if correspondents will give the names of the two towns between which a trap occurs and the county in which it is situated, stating also, if possible, whether the trap is worked by the County or the Borough authorities. In order that the list may be kept up to date we should be glad to have notification of the cessation of traps. Our thanks and the thanks of our readers are due to those who have gone to the trouble of making us acquainted with the location of the traps.

ANGLESEY.

About halfway between Holyhead and Bangor, at a village called Gwalchmai, motorists are watched, but not stopped until they reach Menai, and prosecutions are instituted for reckless and dangerous driving.

BERKSHIRE.

All the traps in this county come within the blackened area.

London-Basingstoke road in Sunningdale.

A trap is worked in Clewer Without, in the parish of Windsor.

King's Road, Windsor, ending at the Park Gates (Queen Anne's Gate).

London-Basingstoke road, between Holloway College and top of Wheatsheaf Hill.

There is a trap in Windsor ending 100 yards from the Park gates on the road from Windsor to Bagshot.

Traps are worked between Reading and Wokingham, and down Buckhurst Hill between Wokingham and Bracknell.

Bath Road. Measured distance from the thirty-sixth milestone east side of Reading; also through ten-mile limit at Slough.

Through Egham High Street, also from Egham Causeway to Old Windsor, along the Runnimede Marshes; also up Egham Hill.

London-Bath road. Between Maidenhead and Reading traps are frequently worked at any of these points: (1) Knowl Hill, (2) near Wargrave, or (3) near Sonning.

BUCKINGHAMSHIRE.

All the traps in this county come within the blackened area.

Cars are timed in Burnham.

Bath Road, in or near Colnbrook.

Bath Road, between Slough and Maidenhead.

The police are very strict on the ten miles limit in Slough.

Quarter-mile trap on Slough-Beaconsfield road at Farnham Common.

Taplow, from goods station to Slough, and right through to Colnbrook.

London-Wycombe road. A timed furlong in the ten miles limit at Upper Marsh.

There is a trap on the far side of High Wycombe, near West Wycombe Station.

London-Coventry road, over a hill top a mile and a half into Fenny Stratford.

Rickmansworth to Amersham. Quarter-mile trap round a curve towards Chalfont Road Station.

A ten mile speed limit now exists at Well End, Little Marlow, over a stretch of about half a mile, covering the distance guarded by Motor Union and parish notices. This stretch is on the Bourne End-Marlow road, after leaving Bourne End village.

London-Oxford road from Gerrard's Cross to Beaconsfield. Also a trap down White Hill, a long slope between an avenue of trees about two miles on the High Wycombe side of Beaconsfield; also through Beaconsfield town itself on Saturdays and Sundays.

CAMBRIDGESHIRE.

Cambridge-Haverhill road. An occasional trap in or near the village of Little Abington, about seven miles from Cambridge.

37-71.—In Trumpington village, near Cambridge, two and a half miles on the London Road.

37-70.—London-Cambridge road (*viâ* Bishop's Stortford) at Sawston, about six miles south of Cambridge.

38-70.—Newmarket - London road, eight and threequarter miles out of Newmarket, near cross roads. There are three traps in the two miles of ten miles per hour limit in Newmarket.

CARDIGANSHIRE.

7-70.—Several traps are being worked north of Cardigan, over about twelve miles on the Aberayron road. There are traps five and seven miles north of Cardigan respectively.

CHESHIRE.

18-81.—Chester-Wrexham road, a few miles out of Chester.

19-82.—Between Netherton and the foot of Dunham Hill on the Warrington to Chester road.

19-80.—Chester - Whitchurch road, from Troopers' Inn, at Christleton Bridge to Broxton Police Station.

23-83.—Stockport-Buxton road, just below the village of High Lane; also from the top of the hill beyond High Lane to Disley.

21-79.—Nantwich - Whitchurch road, from the first mile post out of Nantwich to four miles further on, and again at the fifth mile from Nantwich.

16-83.—West Kirby-Birkenhead road, on the road *viâ* Sanghall Massey, and also between the Glegg Arms, Gayton, and West Kirby, on the Chester-Hoylake road.

CORNWALL.

Penzance Causeway.

Penzance. Ten miles speed limit up High Street rigidly enforced.

7-54.—Bodmin Moors.

4-52.—On entering Newquay.

Hayle Causeway, just outside Hayle.

3-51.—On the Falmouth Road from Truro.

9-53.—Saltash, coming on to Saltash Ferry for Plymouth.

7-57.—Between Bude and Tintagel (old road near Stratton).

1-51.—Connor Downs, one and a half miles Camborne side of Hayle.

4-53.—A trap in St. Columb and one about a mile out, on the Wadebridge Road.

2-50.—Truro-Falmouth-Helston road, and anywhere between Helston and the Lizard.

4-52.—Bodmin - Truro road, at Brighton Bridge, about two miles from Ladock.

8-55.—A measured 440 yards at Compass, Southpetherwin, about a mile from Launceston towards Camelford.

3-49.—A police trap a quarter of a mile in length is working on the Helston-St. Keverne road. It is situated five or six miles from Helston, through a wood, just at the beginning of the Goonhilly Downs. One watch only is used, and trapping apparently takes place in the direction of Helston.

CUMBERLAND.

18-99.—A trap is now being worked between the seventeenth milestone from Penrith and the Toll Bar House on the Penrith-Carlisle road.

DENBIGHSHIRE.

14-80.—Holyhead Road, near Cerrigy-Druidion.

15-80.—Ruthin-Corwen road, from Ruthin to the county boundary. Motorists are advised to drive with special caution through the towns of Denbigh and Ruthin.

ESSEX.

There is a trap between High Garrett School and Braintree, between two milestones.

40-67.—Cars are timed at Witham.

44-68.—Trap at Thorpe, near Clacton.

37-65. — Drive carefully through Woodford.

42-68.—All the roads into Colchester are trapped intermittently.

37-64.—Barking-Southend, between Rippleside Cemetery and the Rookery.

HAMPSHIRE.

All the traps in this county come within the blackened area.

Ten mile limit through Farnham.

Tichfield Road, Bursledon Road, and Porchester Road, Fareham, are all trapped.

London-Basingstoke Road at Hartford Bridge between the thirty-fifth and thirty-sixth milestones.

30-61.—Basingstoke district.

30-58.—London-Portsmouth road. A ten mile limit at Petersfield.

31-59.—A trap at Sheet, near Petersfield, on the Portsmouth Road.

24-55.—Great caution should be observed all round Bournemouth.

30-57.—Havant-Cosham road, on the Cosham side of the former village.

29-57. — Portsmouth - Southampton road, between Cosham and Fareham.

26-58.—At Sherfield English, between Romsey and Salisbury, out of Romsey.

31-60.—London-Winchester road, a few miles west of Farnham, going towards Alton.

27-58.—Southampton to Totton (for Christchurch, Salisbury, etc.) between Millbrook and Redbridge.

27-59.—There are three traps between Winchester and Romsey. (1) Pilt, (2) Hursley, and (3) Ampfield.

29-61.—Winchester Road at North Waltham, and at the Hatch cross-roads, on the London Road, near Basingstoke.

HEREFORDSHIRE.

19-70.—There is a measured quarter-mile in Hereford, commencing at the ventilating shaft beyond Whitecross and finishing nearly opposite Renelagh Street.

HERTFORDSHIRE.

Ten mile limit in Chestnut Avenue, Bushey Park.

A trap is occasionally worked between Watford and Stanmore, at Bushey Heath. It extends from the church to about 300 yards down the hill. Motorists should be particularly careful in driving between Stanmore and Watford, where there is a ten miles limit.

35-65.—In High Barnet, between Park Road and the church. Ten mile limit.

HUNTINGDONSHIRE.

All entrances into St. Neots are intermittently trapped.

35-72.—A trap is in operation over a measured distance of 250 yards in Buckden, on the Great North Road, and prosecutions are instituted for trivial excesses of speed.

35-72.—Through the village of Alconbury Weston.

35-71.—St. Neots-Cambridge Road, trap just outside St. Neots.

36-72.—Cambridge-Huntingdon road, from the county boundary through the village of Fenstanton.

35-72.—Little Stukeley, a few miles north of Huntingdon. The two hills on which the trap is worked are dangerous, there being cross roads at the bottom.

KENT.

Ten miles limit through Croydon.

Canterbury Road, from Park Lane, Shooters Hill, to the Fox; St. John's Park Road, Blackheath, to Heath House.

A trap is being worked at night by flash lamps on the Greenwich Road, from Merryweather's Fire Engine Works to Greenwich Railway Station; distance, one furlong.

37-63.—Eltham.

40-61.—On the Ashford Road, and on the London Road, Maidstone.

41-61.—Folkestone road, eight miles between Maidstone and Lenham.

44-62.—Between Sturry and Upstreet, on the Ramsgate Road, four miles trap.

37-63.—Near Bromley from the twelfth milestone on the Bromley-Sevenoaks road to the ten miles limit boards entering the town going towards London from Sevenoaks.

39-62.—Main road from Wrotham to Preston Hall, near the second milestone out of Maidstone. Traps may also be worked between Kingsdown and the Horse and Groom, at the top of Wrotham Hill.

LANCASHIRE.

All the traps in this county come within the blackened area.

Lytham-St. Anne's.

A ten miles an hour limit in Skipton.

Preston-Clitheroe road.

Preston-Chorley.

St. Anne's-on-the-Sea-Blackpool road.

Liverpool-Preston road. Several traps.

Preston-Lancaster road.

Preston to Blackpool and Kirkham.

There is a timed stretch in Preston Road, Warton.

Lytham-Blackpool road, between Thursby's Home and Squires Gate.

There are no traps in the Southport Borough.

Preston-Garstang road. Two mile trap outside the Preston borough boundary.

Wigan-Warrington road, south of Wigan, and on the Preston-Southport road at Crossens.

Burnley and Nelson districts, particularly on the main road from Nelson to Gisburn.

A trap in operation, worked by telephone, between Broughton and Myerscough.

At Maghull and Burscough on the main road between Liverpool and Preston; also at Formby, on the main road between Liverpool and Southport.

Lancaster-Skipton road. Beginning about half a mile before High Bentham, and continuing to the far end of Low Bentham.

Manchester-Liverpool road *viâ* Warrington. Between Manchester and Warrington, and between Sankey and Bold.

There is a trap in Moor Lane, Crosby. This is the main road into Crosby, Waterloo, Seaforth, and thence to Liverpool from Southport and Warrington.

Lancaster. At the present time unquestionably the plague spot. Measured lengths on each side of the town, both on the road to Garstang and that to Carnforth. Bitterly hostile to motorists; in fact, one might almost say vindictive. No possible chance of an acquittal except on purely legal grounds. Heavy penalties. The best advice that can be given is to keep away.

LINCOLNSHIRE.

The whole of the road between Grantham and Stamford (Rutland) is unsafe.

35-85.—Louth-Grimsby road, entering Grimsby.

31-79.—North of Grantham cars are being timed over four miles between Great Gonerby and Long Bennington.

32-77.—Great North Road, between Colsterworth and South Witham, two and a half miles. Colsterworth is about eight miles south of Grantham.

LONDON.

Owing to limited scale of the map it is impossible to show the traps in this county.

There is a measured 220 yards in Whitehall, usually worked on Sundays.

Albert Bridge Road and Battersea Bridge Road, worked alternately by three policemen.

Wood Lane, from the entrance to the White City to the corner of Wood Lane and Uxbridge Road.

Kennington Road, between Lambeth Road and Walnut Tree Walk; also between the Kennington Theatre and the Horns Tavern.

Greenwich, measured distance from a post between Nos. 26 and 28, Shooters Hill Road to the corner of Kidbrook Park Road.

On the main road between Pinner and Rickmansworth, in the Metropolitan police area, about two miles before the Middlesex boundary is reached.

MERIONETHSHIRE.

All the traps in this county come within the blackened area.

Five miles trap through Corwen.

Machynlleth-Aberdovey road, quarter-mile trap at Pennal.

There is a two-mile trap in operation through the village of Bala.

Trapping takes place at times on the road from Dolgelly to Barmouth.

Llangollen-Corwen road, a five miles trap between Glyndyfrdwy and Corwen.

There is a measured distance on the road between Llan Festiniog and Blaenau-Festiniog.

Harlech-Festiniog road, about one and a half miles out of Harlech. Worked downhill only.

From a point one mile south of Bala Lake on the Bala-Dolgelly road and continuing for half a mile.

Barmouth-Harlech road. Between Barmouth and Dyffryn, commencing near the old church at Llanaber, situated on the left side driving from Barmouth.

From Llangollen to Corwen there are several short traps (worked principally at the week-end), another at the head of Bala Lake, with a further short trap at the Dolgelly Bridge.

MIDDLESEX.

Owing to limited scale of the map it is impossible to show the traps in this county.

Uxbridge Road, at Hanwell.

On the Bath Road on the west side of Hounslow.

Rickmansworth Road on the London side of Northwood Station.

High Street, Guildford, where a ten mile limit trap is often working. The policemen stand about 100 yards apart. About half-way up the road, where three men are seen talking, is a sharp turn to the right—Quarry Street—leading to Godalming.

Cars are being timed through Stanwell, on the London-Datchet road.

London-Harrow road, between Holland's Gun Factory and Kensal Green Cemetery.

Traps are in daily operation on the Great North Road between Barnet and Littleheath.

An occasional trap on Rosslyn Hill, Hampstead, on the main road from Haverstock Hill, extending from Pond Street to Thurlow Road.

London Road, two traps, one between Stanmore and Bushey Heath, across Stanmore Common, and the other in Edgware. There is very often one through Bushey Heath itself.

NORTHUMBERLAND.

All these traps are included in the blackened area round Newcastle.

Newcastle-Morpeth road, at Seaton Burn.

Newcastle-on-Tyne-Tynemouth road, near Wallsend.

Newcastle-Hexham. Denton Bank foot, just out of Newcastle.

Walbottle, about four miles from Newcastle, on Newcastle-Heddon road.

Carlisle-Newcastle road, at Horsley, eight miles from Newcastle, beyond Corbridge.

Stannington-Alnwick road at Northgate, and also on the Wooler Road. About seven miles further on the Wooler Road there is another trap worked from the Wooler side into Long Horsley village. On the Morpeth-Alnwick road there is a trap at Causey Park.

A trap has been started on the open and wide stretch of the North Road just north of Gosforth between the cycle track and Three Mile Bridge. The North Road is here wider than anywhere else and with no cross roads, as well as perfectly straight. Under these circumstances with trapping on open roads in operation, we have no alternative but to blacken this county. At present there are about thirty traps in Northumberland, but up to the present they have all been at places where caution was needed, although some of them have been very unfairly worked.

OXFORDSHIRE.

There are three traps between Henley and Shillingford, on the Henley-Oxford road.

30-65.—Oxford Road, between Aston Rowant and Postcombe.

26-67.—Oxford - Cheltenham road, about a mile west of Witney.

27-67.—Between Eynsham and Witney, on the Oxford to Cheltenham road.

28-67.—Oxford-Banbury road, about one and a half miles from Kidlington Gate going from Oxford to Banbury.

RUTLAND.

Cars are being timed through many of the villages south of Stamford, on the Great North Road.

SHROPSHIRE.

19-79.—Through Whitchurch; also at Overton Hill.

20-76.—Holyhead Road, entering Wellington from Shrewsbury.

21-74.—Kidderminster - Bridgnorth road, at Quatford, close to the school.

17-78.—Oswestry-Ruabon road, between Derwen and Preesgwyn, through the village of Gobowen.

STAFFORDSHIRE.

22-79.—There is renewed police activity in the Trentham district. Care should be taken between Stone and Newcastle, especially in the vicinity of the A.A. signs, both at Trentham and Trent Vale. The Local Government Board refused a ten miles limit in this district.

SUFFOLK.

39-71.—Intermittent traps in the ten-mile area at Newmarket.

45-71.—Ipswich-Yarmouth road at Wickham Market; a ten-mile speed limit is now enforced.

SURREY.

All the traps in this county come within the blackened area.

Esher-Oxshott Road.

High Street, Redhill.

Windlesham, near Chertsey.

Figg Marsh, Mitcham, beyond Tooting.

Kingston-Leatherhead road at Hook.

London Road, Sonning; also at Ruscombe.

Croydon to Titsey, Limpsfield, and Westerham.

Sutton Road, Croydon, leading to Wallington.

Mitcham Lane. Trap here in various parts every day.

Eastbourne Road. Eastbourne side of Godstone village.

Croydon and Purley, or between Purley and Coulsdon.

Near Stoat's Nest Station, each side of the Purley Road.

Belmont Station and Sutton Station, on the Brighton Road.

London-Basingstoke Road, between Egham and Virginia Water.

London Road, Mitcham, and in Carshalton and Addington Roads.

London-Eastbourne Road, on the London side of Blindley Heath.

In Richmond Park, between Roehampton Gate and Richmond Gate.

Between Godstone and Croydon, terminating at Caterham Valley Police Station.

Dorking - Reigate road. Between Buckland Corner and West Street, Reigate.

The Kingston police are provided with electric flash lamps for the purpose of night timing.

Between Norbiton Railway Bridge and the tramway terminus, near the Albert Hotel, Kingston Hill.

About half a mile from the Jolly Farmers' Inn, entering Camberley. Also from the Jolly Farmers' to Frimley.

Barnes Common. Between the southward end of the Ranelagh Club grounds and the foot of the railway bridge hill.

Brighton Road at Reigate, from the end of the tunnel at the entrance of the town to the foot of the hill.

Park Side, between Putney and Wimbledon. There is also a ten miles an hour limit through the Broadway, Wimbledon.

Godalming. Either under the railway bridge entering Godalming from Milford, or at the other end of the town going towards Farncombe.

The local police have taken many measurements of Leigham Court Road, Streatham, and also on the north side of Streatham Common.

London and Epsom road, between Worcester Park and Ewell railway bridge, also about half a mile from Epsom on the Ashtead Road.

Croydon and Mitcham, going towards London, between the railway bridge and the pond at the turning of the road entering the village of Mitcham.

An occasional trap on the Godalming-Haslemere Road at any point between Milford and Haslemere; also a trap on the King's Road, Haslemere, at times.

London-Reigate Road between the suspension bridge and the town, between the town and Buckland Corner on the Dorking Road, and both north and south of Redhill.

Kingston-on-Thames, for half a mile along the Esher Road. Also just before the post office at Hindhead, on the Portsmouth Road, and just beyond the Hotel Moorland at Hindhead.

A trap is in operation in Richmond. Sometimes it is worked on the Upper Richmond Road, between Richmond and Mortlake, and at other times on the Kew Road, between Richmond and Kew.

Traps are set on all roads leading into Farnham; on the Hog's Back to Guildford Road from the Aldershot fork to Simonds Hill; on the Winchester Road from the Bardon and Petersfield branch, towards Berbley. The ten miles limit is being rigidly enforced in Farnham.

SUSSEX.

Nearly all the traps in this county come within the blackened area (West Sussex). East Sussex is much less infested with them.

Brighton Road, near Hickstead.

Hastings Road, in the vicinity of Hurst Green.

London - Pulborough road, beyond Balls Hut Inn.

Lewes-Brighton road, about half a mile from Lewes.

Brighton-Horsham road, between Cowfold and Henfield.

Horsham-Pulborough road, before reaching Codmore Hill.

Portsmouth to Chichester, between Bosham and Chichester.

Worthing-Horsham road, after passing through Washington.

Littlehampton Road, between Billingshurst and Pulborough.

Guildford-Chichester road between North Chapel and Petworth.

Worthing to Littlehampton, about halfway between these places.

Chichester to Westhampnell, where road divides to Petworth and Arundel.

Bedhampton - Chichester road, just outside Fishbourne on Chichester side.

Arundel to Worthing, about two miles from Arundel on the open road.

Arundel-Chichester road, about four miles from Arundel; also at Fair Mile Bottom.

Brighton road *viâ* Cuckfield. After leaving Cuckfield for Brighton there is a byroad to Hurstpierpoint. The trap starts from about 200 yards past this point, and extends for five miles. Cases are heard before the notoriously vindictive Haywards Heath Bench.

WARWICKSHIRE.

Sunrising Hill.

Banbury-Stratford road, near Tysoe.

Banbury-Warwick road in vicinity of Gaydon Inn.

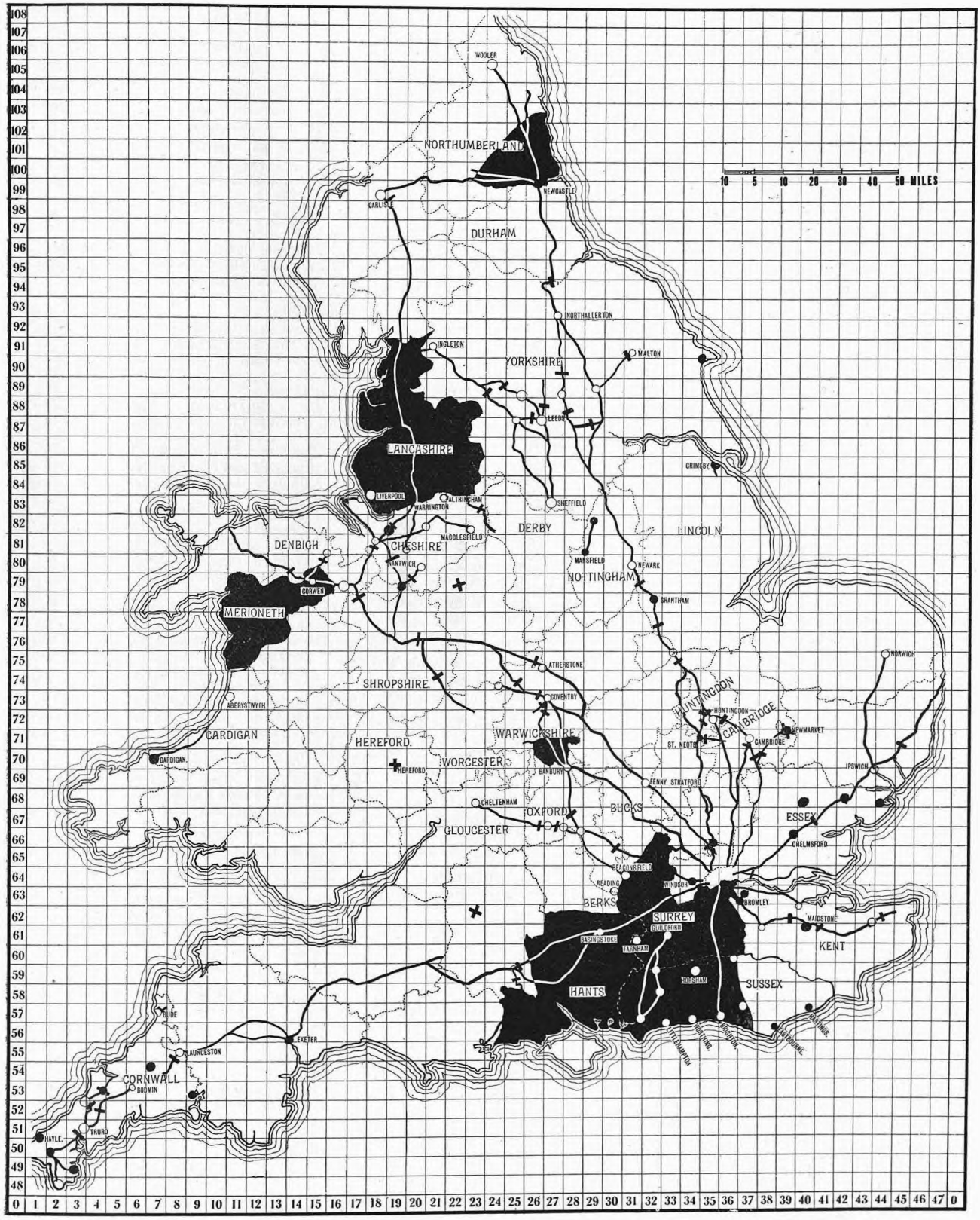
Southam-Leamington road, about one mile out of the latter place.

26-73.—Coventry-Kenilworth road.

25-74.—Stonebridge-Castle Bromwich road.

27-72.—On Stoneleigh Hill, between Coventry and Leamington.

The Police Traps of England and Wales.



To simplify the location and identification of traps we have reverted to the squaring system on this map. Each trap mentioned in the letterpress is indicated thereon by a cross line, and the number of the square in which the cross line occurs is placed against the paragraph referring to it. The bottom or smaller numbers should be read before the side or higher numbers.

26-75. — Watling Street between Wilnecote and Atherstone.

26-73.—Birmingham - Coventry road, between Allesley village and half a mile from the railway bridge on the outskirts of Coventry.

WILTSHIRE.

25-59.—London - Andover - Salisbury road.

25-59.—Salisbury-Bournemouth road, three miles from Salisbury, at Bodenham.

23-62.—Devizes - Melksham road, about one and a half miles from the latter place, at the foot of Caen Hill. The railway crosses the road at this point.

YORKSHIRE.

The police appear to be timing cars between the eleventh and fifteenth milestones from Northallerton to Darlington, also between the first milestone on the York side of Thirsk and the second out of York. Whether these are long distance traps we do not know, but the police were taking numbers of cars as they passed the points named.

Motorists proceeding from Bolton Abbey up the Wharte Valley on the western side of the river to Burnsall should carefully avoid making the return journey from Burnsall on the eastern side of the river *viâ* Applewick, Holme House, the Strid, Friars' Stone, on to the junction of this road with the road from Bolton Bridge to Blubberhouse. The road is shown on Bartholomew's map, Sheet No. 6, ½in. scale, as a second-class road, but from the Strid southwards it is absolutely dangerous and unsuitable for motors. Within the last week two cars have just barely escaped being smashed, one at the Friars' Stone. The grades are very steep and the surface soft, so that the driving wheels cannot get a grip.

34-90.—Bridlington.

31-91.—York Road entering Malton

28-88.—Between Ferrybridge and Aberford.

26-87.—Leeds - Bradford road, at Bramley Station.

29-87.—Leeds-Selby road, between Monk Fryston and Selby.

26-88.—Leeds-Harrogate road, between Moortown and Allwoodley.

24-89.—Otley-Skipton road, one mile trap between Addingham and the reservoir.

27-90.—Wetherby - Boroughbridge. All cars going north of Boroughbridge are timed on leaving the town.

27-94.—Between Northallerton and Durham *viâ* Leeming Lane, just before the turning off the lane for Darlington.

24-89.—Skipton-Keighley road, north of Kildwick. There is an alternative route *viâ* Otley, Bearley, Ilkley, Addingham, to Skipton.

SCOTLAND.

ABERDEENSHIRE.

Major Gordon, the Chief Constable of Aberdeen, is extremely fair, and does not wish to trap if he can possibly avoid it, so it behoves all motorists to drive with every care and consideration.

BANFF.

Huntly-Keith road, between forty-sixth and fiftieth milestones from Aberdeen.

There is a trap on the road between Banff and Macduff. All the controls in Banffshire appear to be about four miles in length, and the twenty miles limit is rigidly enforced.

Ballindalloch-Aberlour road, about threequarters of a mile from Ballindalloch Post Office; also on Craigellachie-Aberlour road.

DUMBARTONSHIRE.

Dumbartonshire in general and the burgh of Dumbarton in particular are thickly set with speed limits in which traps may be at any time in operation.

DUMFRIES.

Hawick-Carlisle road, five miles south of Langholme and fifteen miles north of Carlisle. Cases are heard at the county court, Dumfries. Cars are also timed between Gretna Green and Annan.

ELGIN.

Lhanbryde-Elgin road.

Speed limit between Elgin and Forres; also in the burgh of Gran town.

FIFE.

There are two new traps entering Cupar, one is between Kettlebridge and Pitlessic on the Kirkcaldy Road, and the other between Cupar and the Bow of Fife. Both are three miles long, and the driver is not stopped at the time, as is usual nowadays.

1. Newport - St. Andrews - Cupar main roads as follows: From Craig Pier, Newport, and from first milestone on main road. Craig Pier includes the ten miles limit through Newport. Between Guardbridge and St. Andrews.

2. Between St. Andrews and Crail, including village of Kingsbarns.

3. Between Crail and Anstruther, including village of Kilrenny.

4. Between Colinsburgh and Leven, including a few villages.

5. Main roads leading west from Cupar.

FORFARSHIRE.

The following traps are being worked in the Kurriemuir district:

Broughty Ferry, ten mile limits.

Arbroath-Dundee.

Lunan Bay, ten mile limit.

From first milestone along Brechin Road.

Between Glamis and Kirriemuir.

From first milestone along Lintrathen Road.

Between Kirrie and Alyth, three miles out.

From the first milestone to the third on the Cortachy Road.

Between Forfar and Glamis, and Eassie and Glamis.

A measured distance at Finavon, main road between Forfar and Brechin.

On the Arbroath Montrose road, at Lunan, ten mile limit.

Forfar-Arbroath road, between fifth and fourth milestones out of Arbroath.

Forfar-Perth road, one mile south of Eassie.

Forfar-Brechin road, at Finavon, and at Eassie, on the Forfar-Meigle road.

A ten mile limit in the village of Birkhill Feus, near Lochee, Dundee, is being rigidly enforced, also a measured quarter-mile from the junction of Gourdie Road to a point east from the junction of Dronley Road, Dundee.

KINROSS-SHIRE.

Ten miles limit at Milnathort.

Ten miles limit at Kinross.

On the Great North Road, east of Milnathort, cars are being timed. Sheriff-substitute J. Dean Leslie recently fined a chauffeur £10 or sixty days' imprisonment.

NAIRN.

Nairn-Inverness road, one to two miles north of Nairn.

PERTHSHIRE.

Pitlochry and Dunkeld, through Auchterarder.

A timing control through St. Fillans, N.B., on the Cowrie Road right through the village.

A ten mile limit through Auchterarder village.

There is a strictly enforced ten mile limit through Birnam.

Cars timed in the ten-mile limit on Boat Brae, near Rattray, by Blairgowrie.

Perth to Dundee. Ten-mile limits at Inchture, Longforgan, and Invergowrie, and also traps on open roads.

Keith and Huntly turnpike road, one and a half miles from Keith. Traps are likely to be in operation near Elgin and Nairn.

Pitlochry-Blair Atholl road, half a mile beyond the former place. The Pitlochry ten-mile limit is taken very seriously by the police.

Dunkeld-Amulree road from the second to the fourth milestones, west of Dunkeld, also from the turn to Dunkeld Station to past the school.

Practically every ten mile limit in Perthshire is timed, particularly Bankfoot, Auchterarder, Cupar-Angus, and Longforgan, while traps are regularly working on the Perth to Edinburgh Road, about the first mile out (up Craigend Brae), and between Bridge of Earn and Glenfarg, between the fourth and sixth milestones. On the North Road at different places between Perth and Luncarty, and between Dunkkeld and Pitlochry.

STIRLING.

Strathblane-Campsie road, a half-mile trap just outside Strathblane.

There is a three mile trap between Kenmore and Aberfeldy, beginning just past the one and a quarter milestone from Kenmore, near the park gates.

IRELAND.

CO. ANTRIM.

The police are very strict in Lurgan and Portadown.

Lisburn-Moira road is likely to have a trap in operation.

Carrickfergus ten mile limit is being strictly enforced, cars being timed over a quarter-mile on what is known as the Scotch Quarter, which is just after the bad turn at the Post Office going in the direction of Whitehead.

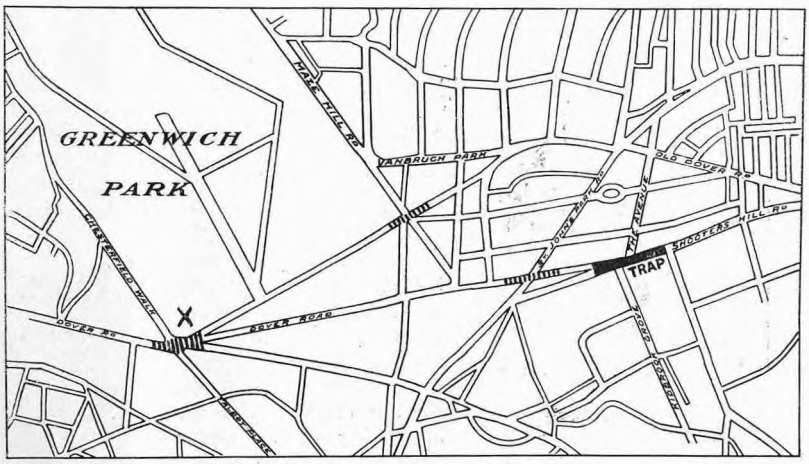
CO. DUBLIN.

Dublin-Bray road. A 400 yards trap through Stillorgan. A motorist has been fined £1 for driving at a speed of twenty-six and threequarter miles an hour. If the trap were laid in the village, the fine, in our opinion, was certainly a lenient one.

Misplaced Police Traps.

An Example of how Dangerous Places are left to take Care of Themselves.

AN excellent example of how the police have made a practice of instituting traps for motorists in safe places and leaving dangerous ones unguarded reaches us from a correspondent, who also sends a plan of the district—a part of which we reproduce—showing the position of the trap marked in solid black, and three dangerous and unguarded places, which are indicated by alternate black and white lines on the road map. Our correspondent writes: "The trap on Shooters Hill Road is now being worked at night with flashlights, and I send you a map marking its exact position. You will notice that it begins just at the end of a patch of grass, and the road is very broad. The turning out marked 'Avenue' is not a carriage way, but simply a path under some trees, there being posts to prevent vehicles using it. Kidbrook Grove on the other side contains, as you will see, very few houses, and I suppose is one of the least used roads in Blackheath. Therefore there is no reason why this trap should be placed in this position, and I believe it owes its origin to the fact that a magistrate resides within its length. Now if this trap were placed at the corner of Greenwich Park Wall (which I have marked with a cross) it would be in a justifiable position, because at that point some six roads converging, and most of them are extensively used. The corner is blind, owing to the Park wall, which is some 10ft. high. Could not some protest be addressed to the police to secure that they alter the position of this trap to the more useful spot? Referring again to the trap in Shooters Hill Road, I may say that the police stand on the south side of the road, and one of them generally wears his blue police trousers and regulation boots, with a brown jacket. The trap is 220 yards long."



Plan showing in black the position of the police trap on Shooters Hill Road, Blackheath.

Suspicious Coincidences in Timing of Motorists.

At the Sutton (Surrey) Petty Sessions last week the magistrates present were Messrs. R. C. Henderson (in the chair), T. Walker, C. Beall, and J. Wakeford. George Charles Blizzard was summoned for exceeding the speed limit on the Brighton Road, Belmont, on the 26th ult. P.C. Acott said defendant was travelling at the rate of 25 miles 494 yards per hour. When stopped, defendant said his speedometer never showed more than 20 m.p.h. all over the Common. A letter was read from the makers of the speedometer to the effect that the machine was under-registering from 1½ to 2 m.p.h., but the bench decided to convict, and a fine of £3 and costs was imposed.—Harold Henry Smith was similarly charged, and was said to be driving, on the same day and at the same place, at a speed of 25 miles 494 yards per hour. P.C. Acott proved the case, and there being no previous convictions, defendant was fined £2 and 8s. 6d. costs.—Thomas Wharton Ford was summoned for a similar offence at the same time and place. He also was said to be travelling at the rate of 25 miles 494 yards per hour. P.C. Acott proved the case, and said there was a discrepancy of three-fifths of a second in the stop-watches. When stopped, defendant said: "It is slightly down hill, and I was not racing." Defendant, who had no previous convictions against him, was fined £2 and 8s. 6d. costs.—Sidney Raymond Ankers was also summoned for exceeding the speed limit on the Brighton Road on the same date. P.C. Acott said the speed was 26 miles 286 yards per hour. There were two previous convictions, and a fine of £5 and costs was imposed.—Albert Roberts was fined £4 and 9s. 6d. costs for a similar offence. His speed was 27 miles 772 yards per hour, as proved by P.C. Acott.—Commenting on the above cases the *Sutton Weekly Record* says: "It was very singular that in three out of the five cases the speed was estimated to be exactly the same—25 miles 494 yards per hour. In one of the cases it was admitted in evidence that there was a slight discrepancy of three-fifths of a second between the watches used in timing the motorists, but despite that it is extraordinary that three cars should travel over a particular stretch of road on the same day at exactly the same speed. It may have been a coincidence only, but one feels more inclined to imagine there was a sporting instinct behind it." Why the magistrates did not suspect something wrong is passing strange.

In reporting two cases of unlighted vehicles on page 436 of the last issue of *The Autocar* the court was incorrectly stated as the Reading Borough Bench, whereas it should have been the Basingstoke Borough Bench. The error arose through the district heading having been cut off the cutting from a Reading paper giving a report of the case which was sent to us by a reader of *The Autocar*.

The Panflex Spring Wheel.

An Interesting Substitute for Pneumatic Tyres.

THIS wheel, which is the invention of the Hon. R. Clere Parsons, M.A., M.Inst.C.E., of 39, Victoria Street, London, S.W., is the outcome of the consideration of the subject of spring wheels since 1906, and in which Mr. Parsons has sought to obtain silence in action, easy running, with, of course, freedom from punctures and bursts. To keep down running expenses, from the point of view of repair, has also been an object.

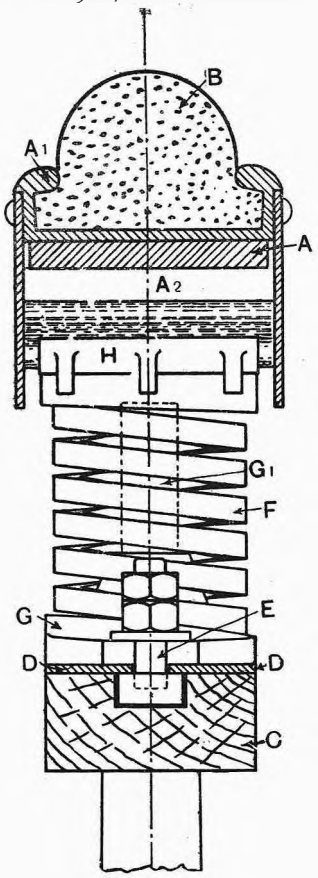


Fig. 1.—Details of the Panflex wheel.

A, channel rim
A1, inner channel rim
A2, clearance between A and H
B, rubber tyre pressed into rim
C, wooden felloe of spoked wheel centre
D, steel bands shrunk on C, with grooved space between them
E, T bolt securing spiral spring to rim D of wheel centre
F, steel square section spiral springs
G, inner aluminium base castings
G1, steel tube cast into aluminium base
H, outer aluminium cap castings

This wheel, the construction of which is very clearly shown in the accompanying section (fig. 1), is, as its name suggests, flexible in every direction. It consists of two independent parts, viz.—(1) a double channel rim A, consisting of an outer channel A_1 into which a rubber tyre B is pressed in the usual way, and (2) an inner channel A_2, formed by riveting thin rings of non-rusting metal on both sides of the outer channel.

In the case of the driving wheel, this channel rim has corrugated segments with polished surfaces riveted all round it (see fig. 2), not only for the purpose of transmitting the driving force of the engine, but also for taking the effect of the brakes.

In the case of front wheels and the driving wheels of light cars, the loaf section rubber as shown in fig. 1 is used; but for the driving wheels of heavy and high-powered cars a flat pad of rubber is vulcanised on a steel plate.

In the case of a non-driving wheel the corrugated segments are unnecessary, as no driving or braking forces are transmitted. The channel rim and the centre of the wheel C (fig. 1) are not connected to each other. The wheel centre C takes the form of a small wooden-spoked wheel, with two steel bands D D shrunk upon it in such wise that a groove is left between them to take the heads of the T bolts E attaching the spiral springs F to the centre wheel rim. The cylindrical spiral springs are of square section, formed at each end to fit into aluminium castings G and H. There are such spaces between each coil that when the coils are closed the metal is not overstrained. The springs are zinced by the Sherard process. On one face the aluminium blocks take the springs, and on the other are made with suitable lugs to enable the T bolts to grip them. Steel tubes G_1, which pass up the centre of the springs, are cast into the aluminium bases. The caps at the outer ends of the springs are made with spirals into which the springs screw, and on the other or outer face are formed with dove-tailed grooves into which rubber strips of loaf section are forced for the steering wheels, while for driving wheels, where the tractive force has to be transmitted, a solid rubber pad is specially vulcanised on to a steel plate.

The consideration of the behaviour and operation of the Panflex spring wheel, when acting as a driving wheel, is interesting. When the weight of the vehicle is resting upon the wheel the springs and caps in the lower portion of the wheel carry the load. They are, of course, in close contact with, but do not shift their position relatively to, the rim. So soon, however, as they move round and become disengaged, and their places are taken by others, they travel forward relatively to the rim and in the direction of its rotation. Thus the central portion makes a slightly greater number of revolutions than the outer rim in a given distance. The above operation is, of course, quite continuous, while the spiral springs being capable of deflection in every direction great smoothness of running is thereby obtained.

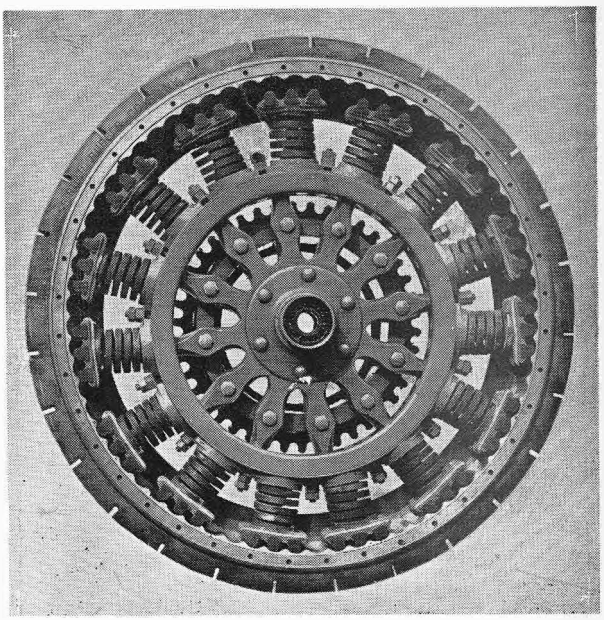


Fig. 2.—Complete assembled and loaded wheel, showing how rubber pads disengage and engage with corrugations of inner channel.

Motor Union Notes.

(Communicated by the Secretary.)

The General Committee met in London on Wednesday last at the Hotel Great Central. The item of chief importance under discussion was the new Development and Road Improvement Funds Bill. The Executive Committee reported that copies of the Bill had been submitted to those clubs affiliated to the Union and to the local centres, and that a meeting had been held at which the Bill was considered in conjunction with the opinions which had been expressed by them. At this meeting the following resolution was adopted:

> "The Committee view with satisfaction the proposal of the Government to establish a Central Road Board. Where it is desirable to construct new roads to by-pass certain congested towns, the Committee do not think that such roads should be confined to motor traffic. The Committee hope that as a result of the assistance offered under this Bill the county councils and other highway authorities will be able to carry out road improvements on a much larger scale than they have been able to do in the past."

A number of amendments to the Bill are being drafted, and will in due course be placed on the Parliamentary agenda paper by Mr. W. Joynson-Hicks, M.P. (chairman), on behalf of the Union.

◇ ◇ ◇ ◇

The attention of the Union has been drawn to the fact that notice boards have been erected at Stairfoot and Burley-in-Wharfedale bearing the words "Motors 10 miles per hour." As the Local Government Board have not issued any orders imposing special speed limits within the limits marked by the notice boards, these notices have no authority, and motorists are under no legal obligation to observe them. The Union is now in communication with the authorities on the subject, and is endeavouring to secure the removal of these signs. It is obviously important that no such signs should be erected except where they are authorised by the Local Government Board, as if it becomes known that such is being done it will have the result of impairing the authority of those erected under the provisions of the orders issued by the Local Government Board under the Motor Car Act, and the motorist on tour will be unable to distinguish between those which are legally and those which are illegally erected.

◇ ◇ ◇ ◇

It has been represented to the honorary secretary of the West Herts. Centre of the Motor Union that precautionary steps should be taken to ensure the safety of the public in the use of the roads at Abbots Langley. The local authorities have, therefore, been communicated with, and it has been pointed out that the Union is anxious to actively co-operate in taking every step which will conduce to the safety of the public, and will be glad to consult with the District Council in regard to this matter.

◇ ◇ ◇ ◇

An inadvertent omission from the Motor Union Handbook, which is regretted, is that of the name of Mr. G. Andrews, of Horncastle, Lincs., who is one of the officially recommended repairers of the Union.

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Thirty cases were dealt with by the Legal Department last week.

The Local Government Board have issued orders imposing a ten-mile speed limit on certain roads at Weybridge and Bexhill. In the case of the former the Union objected to the imposition of a reduced speed limit on the major portion of the road included in the original application, on the grounds that there was no special danger to warrant such restriction. This view has been endorsed by the Local Government Board, and only a small portion of the application has been granted. In the case of Bexhill the Union compromised with the local authorities, and the order as issued is on the lines agreed upon by the Union. An order has also been issued imposing a ten miles speed limit on certain roads at Berkhampstead. As a result of the opposition of the Union at the L.G.B. inquiry, the order shows a considerable modification of the distances over which it was at first proposed to impose the limit.

The Local Government Board have informed the Union that they are unable to comply with the application of the West Sussex County Council for a ten miles speed limit at Broadbridge Heath. This application was opposed by the Union.

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Notwithstanding recent warnings in this column, the Touring Department has recently had to deal with some cases in which members have omitted to get their *triptyques* properly discharged when bringing their cars out of foreign countries. It is extremely important that members should take care, when leaving a country, that the Customs officials detach the "exit" sheet, and certify re-exportation in the space at the foot of the counterfoil of the *triptyque*. When a car has been brought out of a country without this formality being attended to, the deposit is forfeited to the Customs authorities, and it is only as an act of grace that they may authorise a refund that can no longer be claimed as a right. Some of the authorities are getting rather weary of correspondence with various associations regarding undischarged *triptyques*, and have threatened to refuse to entertain any further claims of the kind. The Touring Department will, of course, do all that is possible to help members, but it is hoped that members themselves will in future be very careful to avoid the necessity for the intervention of the Union with foreign Customs on their behalf.

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The remarkable increase in the individual membership continues to be maintained. The number of *new* individual members who joined during the first fortnight of the current month shows an increase of sixty per cent. when compared with the corresponding figures of last year. The total individual membership of the Union has increased by nearly fifty per cent. during 1909.

◇ ◇ ◇ ◇

The Union has been consulted by a firm of motor repairers as to a suitable locality in which to open a new motor garage, preferably within a radius of fifty miles from Andover. If there is any member who feels that there is a need for a firm of repairers in his locality, and who would care to notify the Union of this fact, the Union will be glad to forward such information to its correspondent.

◇ ◇ ◇ ◇

The Motor Union. Chairman: W. Joynson Hicks, M.P.
Albemarle Street, London, W. "Speedway, London." 9090 Gerrard.

The Development and Road Improvement Bill.

An article which is partly critical but mainly explanatory and suggestive, by one who is not unfavourably impressed by the Bill.

WHILE more exciting topics are engaging the attention of the public, questions of importance are apt to be eclipsed. That may be said of the Development and Road Improvement Bill and its objects, which are receiving the attention of a House of Commons Committee. By general consent the objects aimed at deserve very earnest attention, for their novelty is perhaps greater than that of any measure now before Parliament.

Two New Bodies set up.

The Bill sets up two separate bodies for administrative purposes: the one, a Development Commission of five persons (this instead of the Advisory Committee which was first proposed in the Bill); the other, the Roads Board, charged with the improvement of roads. A brief reference to the duties and powers proposed for each of these bodies will reveal the importance of the new departure, and perhaps disclose also something of the experimental character of these attempts. It would be a sanguine person who would hope to find a complete movement at once, and in its final form.

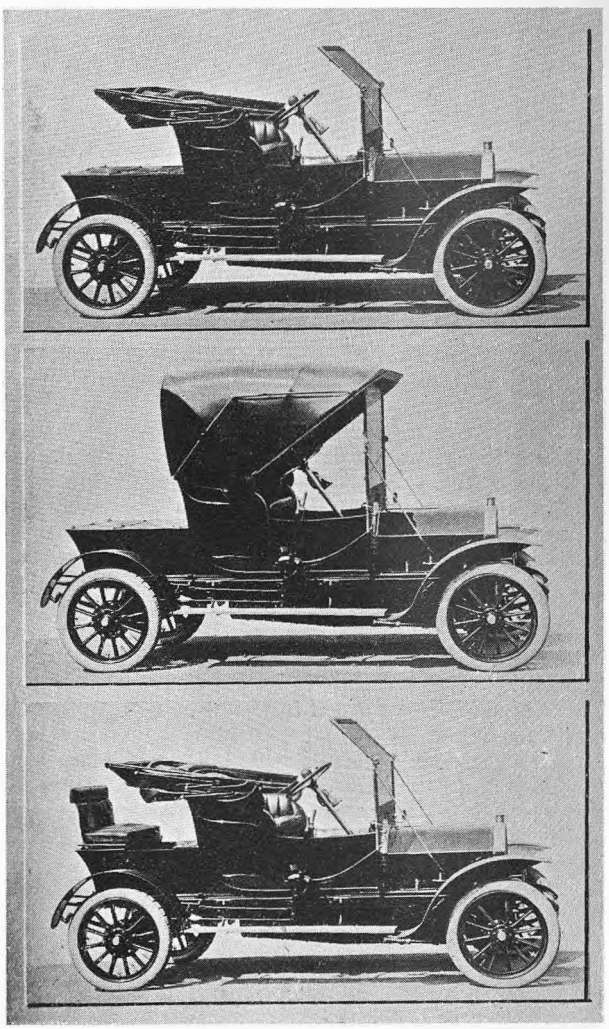
The Economic Development of the United Kingdom.

The duties of the Development Commission are summed up in the phrase, "to promote the economic development of the United Kingdom." Some specific objects to be aimed at are embodied in the Bill. Among these objects are forestry; agricultural and rural industries in all their aspects, including economic inquiries and instruction and experiments; drainage; rural transport, including light railways, but not roads; harbours, canals, and fisheries. Towards promoting such objects it is proposed to make a grant from April next of £500,000 a year, for four years; and when the scope of the objects and the "run" that may be expected to be made upon such a fund are taken into account the grant must be regarded as but a modest beginning.

The powers of the Commission will be limited obviously by the amount of the fund placed at its disposal. It should be observed also that the expenses of the Commission are to be paid out of this fund. Subject to that, the Commission is directed to operate either by a free grant or by a loan, always subject to the approval of the Treasury as regards form, but, apparently, not as regards the objects to be aided by the Commission. Special power is given to make an advance through the Board of Agriculture or through the Irish Department of Agriculture. No doubt such a provision should be included if an unwise expenditure of the public funds is to be avoided. Powers to acquire land for its purposes are also granted to the Commission.

Powers of the Roads Board.

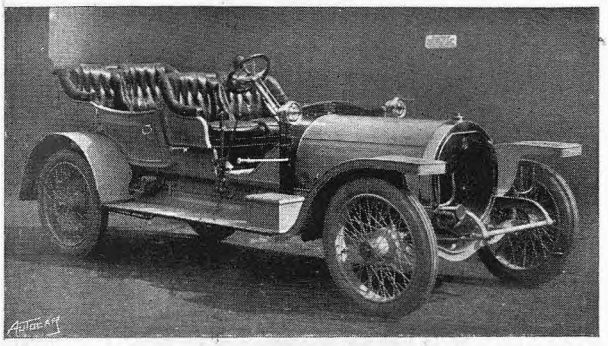
Similarly, in the case of the Roads Board the £600,000 a year which the motor car duty and the petrol duty are estimated to produce will be placed at this board's disposal. The cost of the board's staff will be borne by this fund, so that the nett sum available for road improvement will be less by the expenses incurred. The Roads Board will be empowered to construct and maintain new roads, or to make advances to highway authorities to improve roads for motor traffic. This advance also may be, either or both, a free grant or a loan. The powers will include the making of regulations for using the roads made by the Board, subject to the consent of the Treasury, and after consultation with the Local Government Board. A good clause also is that which enables the Roads Board to contract with a county or borough authority for the maintenance of a new road. The Roads Board is also empowered to anticipate its income by a sum not larger than £200,000. The chief novelty connected with the foundation of the Board is the power conferred, in connection with the acquisition of land, to acquire land on either side of a new road for a quarter of a mile from the middle of the road. So far as the Bill goes no object in thus acquiring land is mentioned, and the powers and duties of the Board extend only to the improvement of roads. Such land by the new road side shall not be in London, nor a borough or urban district; but powers are granted to erect offices and "other build-



Three views of a 10 h.p. Star car fitted with a special doctor's Victoria body having dickey seat at the back, which can be raised or lowered as desired.

ings," and powers are also allowed to the Roads Board (with the approval of the Treasury) to sell, lease, and manage any land it may acquire, which may not be required for the new road.

The general powers granted for acquiring land are much the same in both cases, whether for development



The first 45 h.p. gear-box-less Sheffield-Simplex car to be exported to Australia, recently shipped to the Sheffield-Simplex agents in Victoria.

or road purposes. The Land Clauses Acts are applied for the purposes of the Act, but with significant modifications. In cases of dispute, whether land is to be acquired for roads or other purposes, by consent or compulsorily, a single arbitrator will be appointed with power to disallow unnecessary costs, and no allowance will be made on account of compulsory purchase.

Possibilities of the Measure.

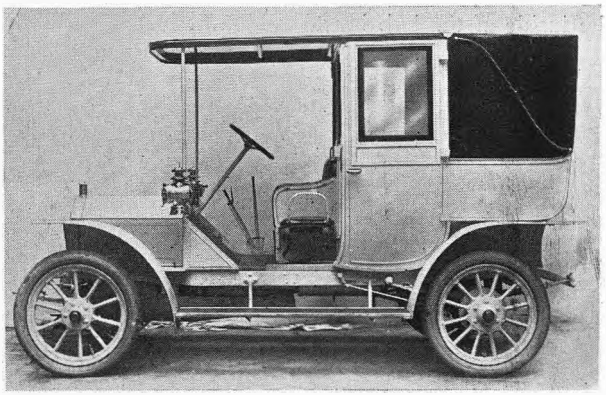
From this brief outline of the Bill it will be seen that steps of great interest, and possibly of great importance, may be taken under it. There can be no question that the powers granted are novel. From the nature of the case, and on account of this novelty, it is to be hoped that action will be cautious at the first. Especially will this caution be necessary where there may be danger of overlapping as between authorities, national or local, charged with duties akin to those for which power is granted to these new Boards. Development of the economic condition of the United Kingdom is, obviously, a vague and indefinite object. All sorts of projects may be deemed legitimate, and £500,000 a year will be but a mouthful to those fertile in object and enthusiastic in experiment. The Commission for this object will need a firm will to resist, as well as to discharge, the duties of encouragement for which they are formed.

As already intimated, the powers conferred on the Roads Board are in line with those granted to the Development Commission, and, in general, the remarks on caution needed apply to this Board also. The most delicate portion of the duties will be in deciding on projects as they are related to both the Board and local authorities. This delicacy extends to both new roads and to aid granted in other cases. The powers granted are wide and somewhat indefinite, and it will be necessary constantly to avoid doing the work of local authorities. Perhaps the provision of new roads, and the vigilance of those who are interested in motors, will act as a barrier against a transference of duties from one body to the other. The somewhat limited amount of the fund also will tend to restrict the nature of the operations taken in hand.

As I write it is probable the details of this Bill will excite much discussion on points which space forbids me to notice. The restriction on the price to be paid for land under these schemes may be justified by the fact that to accomplish the ends in view economy is as necessary as the objects are laudable and pressing in character. The powers given to the Roads Board to acquire land along new roads, and to sell and to manage it, are, however, quite novel, and such powers, if granted, should be used tentatively and most cautiously. The first four years of the Development Commission, and the initiation of its work by the Roads Board, will have an important bearing upon the future support accorded to these new bodies.

The Bill gives a general direction to the new bodies to consider the state of employment existing when approving work to be taken in hand. Such a direction amounts to an expression of sympathy, but cannot be more than a pious opinion expressed for the guidance of the executive officers charged with the statutory authority. The pious opinion may prove salutary.

W.



The first 15 h.p. Napier cab ordered for India. The chassis follows Napier cab practice except that the radiating surface has been increased and everything is covered in.

The trap in Buckden, Hunts., on the Great North Road, is an exceedingly unfair one, as the police time over a distance of 250 yards and proceed to issue summonses for very small excesses of the legal limit. For instance, a reader who was alleged to have covered the 250 yards at a speed of twenty-four miles an hour was fined £5 by the St. Neots Bench. As a matter of fact his speedometer told him that he was not exceeding the speed limit by one mile an hour. This shows how the trap system fails to discriminate between the considerate and inconsiderate driver. On the same day there were several cases of alleged excesses of the legal limit, the highest speed being twenty-six miles an hour and the fines varied from £4 to £6. If the St. Neots Bench were really interested in discriminating between the inconsiderate and considerate drivers they would first of all see that the whole length of the village of Buckden was timed instead of a paltry 250 yards, and then they would make some efforts to assure themselves that the timing was accurate. Above all, they would discriminate between a trivial infraction of the speed limit and serious excesses to which we are as strongly opposed as they possibly can be. It would be interesting to know how many motor cases have been dismissed by the St. Neots Bench on other than purely legal grounds.

The New R.W. Detachable Wheel.

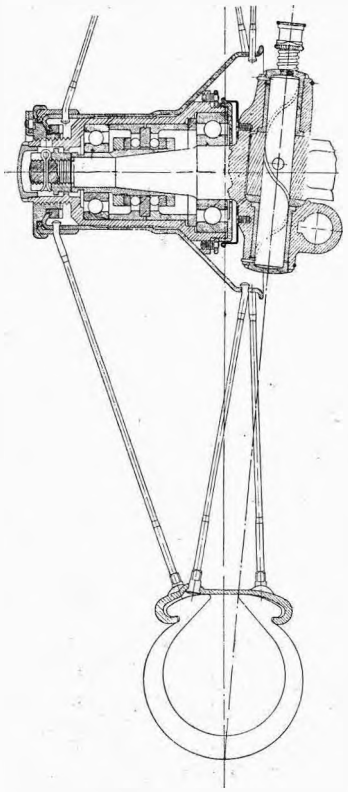


Fig. 1.—Part section of the R.W. triple-spoked wire wheel.

A new form of dished wire wheel has just issued from the Rudge-Whitworth factory, to supplement the well-known form of detachable wheel. The unique disposition of the triple sets of tangent spokes and the method of "dishing" the rim in relation to the hub in such a manner that the produced centre line of the steering swivel axle intersects the wheel centre line exactly on the road contact point is shown in the sectional view.

The perspective view of the wheel (fig. 2) shows better the arrangement of the assembled spokes and the neat design of the hub, and also the new method of locking the wheels on to the hub bearing sleeves by small milled teeth or grooves which are cut transversely upon the inside of the hub barrel, which fit in any position into correspondng teeth on the fixed hub sleeve. This device is to be adopted on all the Rudge-Whitworth wheels in future, but the dished wheel will only be employed when the design of the car makes it preferable.

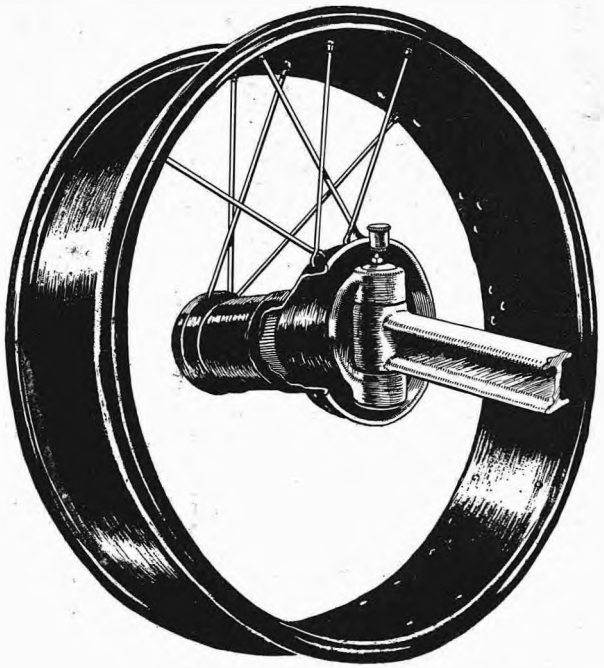
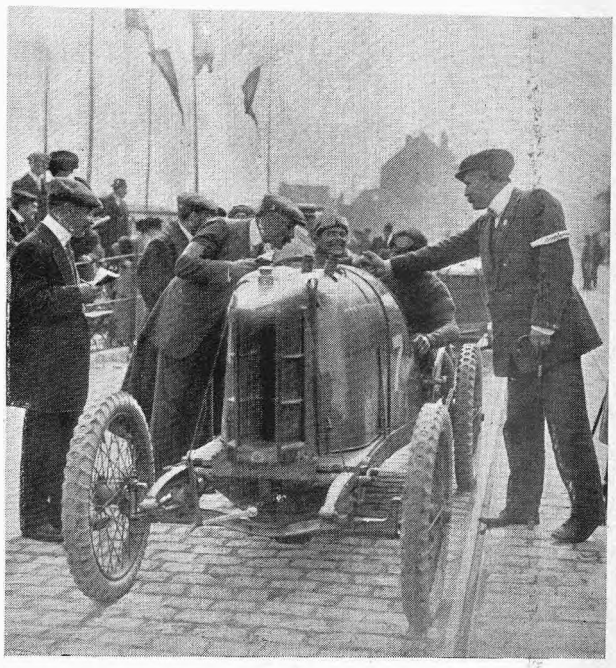


Fig. 2.—Sketch of the main parts of the R.W. wheel.



Guippione on the Kempshall tyre shod Lion-Peugeot voiturette which he lately drove 240 miles in 4h. 33m. 28s. in the Ostend Cup Race.

The Semmering Hill-climb.

This classic Austrian automobile event was held on the 19th inst. in splendid weather, and proved a great success. The hill is 6¼ miles long, and has an average gradient of 1 in 25. The results were as follows:

Touring Cars.—16 h.p. Laurin-Klement (Hieronymus), 8m. 3s., 1; Laurin-Klement (Count Koloweat), 9m. 14s., 2; Mercédès (Salzer), 9m. 30s., 3.

22 h.p. Class.—Adler (Wilhelm), 9m. 3s., 1; Puch (Slevoght), 9m. 46s., 2; Vauxhall (Selz), 10m. 49s., 3.

28 h.p. Class.—Benz (Phillip), 8m. 21s., 1; Benz (Prince de Bavière), 8m. 27s., 2.

35 h.p. Class.—Opel (Michl), 8m. 19s., 1; Daimler (Hemetsberger), 8m. 51s., 2; Opel (Lindpainter), 9m. 57s., 3.

46 h.p. Class.—Opel (Joerns), 7m. 54s., 1; Benz (Erle), 7m. 58s., 2; Daimler (Nikodem), 9m. 20s., 3.

Racing Cars and Grand Prix Cars.—Puch (Medinger), 10m. 9s., 1; Sizaire (Obruba), 11m. 5s., 2; Puch (Lhuillier), 11m. 23s., 3.

Minimum Bore 75 mm.—Puch (Wolf), 9m., 1.

Minimum Bore 86 mm.—Laurin-Klement (Hieronymus), 8m. 19s., 1; Laurin-Klement (Wetyka), 9m., 2.

No Limit Class.—Mercédès (Salzer), 7m. 7s., 1; Mercédès (Poëge), 7m. 13s., 2; Benz (Erle), 7m. 28s., 3; Opel (Joerns), 7m. 36s., 4.

We are informed that eighty candidates have already been nominated for the next election to membership of the Royal Automobile Club on Wednesday, the 6th October.

* * *

Last week, in Liverpool, a greengrocer's cart, driven by a boy of twelve, killed a two-year-old child. The verdict was one of "Accidental death." How is it there is no age limit for the drivers of horse-drawn vehicles? The average boy of twelve is no more fit to drive a horse cart than a motor car.

Dust Prevention.

The judges' report upon the official test by the Roads Improvement Association of the dust laying qualities of calcium chloride, manufactured by Messrs. Brunner, Mond, and Co., of Northwich, has just been issued. The material was laid upon the road in May and June last, and the effect upon the road surface and in keeping down the dust has been noted since that date. The judges appointed by the Roads Improvement Association to conduct the test were: A. Dryland, A.M.Inst.C.E. (county surveyor, Surrey), H. P. Maybury (county surveyor, Kent), Geo. W. Manning (Staines Rural District Council), and W. J. Atkinson Butterfield, M.A., F.I.C. (consulting and analytical chemist).

The report is a comprehensive document. It includes paragraphs dealing with the nature and properties of the material, analysis of the road surface after the material had been upon the road a certain time, etc. Schedules are attached giving the actual cost of applying the material, and also daily observations of its effect upon the road. In summing up the report the judges state: "We are of opinion that the results of the test of calcium chloride applied in granular form by the 'dry' method have shown that it is a very effective dust layer, and, provided no ill effects are experienced in winter as a consequence of the treatment, we are of opinion it is a cheaper and preferable process to that of street watering, which, as now carried out, is undoubtedly very injurious to macadamised roads."

The New Maxim Engine.

From his remarks at the Blériot dinner last week, Sir Hiram Maxim appeared to imagine that no one had ever tried to make or to use steel cylinders. This may not have been his impression, but it was certainly the impression which his remarks conveyed. However this may be, he appears to have succeeded where others have not obtained satisfaction, because it cannot be said upon the whole the results of steel cylinders and steel pistons have been satisfactory. Sir Hiram Maxim informed his hearers that he had succeeded in making an all steel engine weighing only 210 lbs., which, at 1,400 revolutions per minute, developed 87 h.p. He further stated that there was not a single part of it which had not a factor of safety of five, and he wound up by complacently stating that his engine developed the power of two horses for the weight of one barnyard fowl. We are not authorities on the weights of barnyard fowl, and we question whether Sir Hiram Maxim is, as he stated earlier in his speech that his engine weighed from one to one and a half pounds per horse-power. However, we must hope that the performances of his engine when he sets it to drive a flying machine will be more definite than his arithmetic and his similes. There is no doubt that the aeroplane engine will have its influence upon the motor car engine. In the efforts to obtain lightness with reliability, refinements in design and material will be made in aero engines, and some of them are sure to be adopted in the motor car engine, as it stands to reason that anything which can be done to reduce the dead weight of a motor car without an undue increase in the cost is worth doing. It is interesting to point out that Pennington used steel cylinders as long ago as 1898 on his early motor cars, which he made at the Great Horseless Carriage Co., in the factory which now forms part of the Daimler Works.

Tests of the Polyrhoe Carburetter.

Last week we illustrated the Polyrhoe carburetter, which, it will be remembered, is a unique instrument. We have not yet tried it on a car, but the makers have sent us a copy of a report which they have received from Messrs. Swinburne, O'Gorman, and Baillie, consulting engineers, who have tried it for the makers. The most interesting items in the report are that, although no actual measurements of the proportions of petrol and air taken through the carburetter were made by the consultants, the running of the engine showed that the carburetter gave a constant mixture, or something very nearly approximating to it, under all conditions. They also found that, if the mixture slide were adjusted so that it gave the best results when the engine was pulling slowly up a hill, the same position gave the best results when running fast on the level and under all other conditions, this being another proof that the mixture is a constant one. The engineers also state that no differences were found in the running of the engine whether using light or heavy petrol, this being probably due to the excessively fine division of the petrol as it issues from the jets in the form of an exceedingly fine spray. Although the jets are so fine they are satisfied that the filter is sufficiently efficient to prevent any blocking of the jets, as they have used it for 4,500 miles without any trouble from choking. They also refer to the absence of flooding or choking at sudden closing or opening of the throttle, and they are particularly impressed with the means of varying the proportions of the mixture without disturbing its proportionality under different conditions of running.

The Australian cricket team are being taken on a tour through Scotland on Standard cars. The tour started from Callander on the 24th inst., and the following itinerary is being followed: Oban, Fort Augustus, Inverness, Strathpeffer, Lairg, Wick, Inverness, Aberdeen, Braemar, and Glasgow, where the tour finishes on October 4th.

* * *

Entries for the October meeting of the Brooklands Automobile Racing Club close at twelve noon on September 27th. Entries can be made by telegram, and need not be accompanied by a remittance, but they must reach Carlton House, Regent Street, S.W., by Monday next, before noon, and must be confirmed, with full particulars, within twenty-four hours.

* * *

In view of the interest shown by readers of *The Autocar* in the subject of benzol, as evidence the recent article by Mr. Brewer and queries and replies of readers, we may state that a Lancashire firm has gone into the subject so exhaustively—in the laboratory, in road tests on all sorts of motors from bicycles to heavy lorries, and at its works—that it is now making benzol in large quantities, as a commercial article, and not merely as a theoretical possibility. It is offered at 25% below petrol prices, has been shown to give 25-30% better mileage results, and is specially refined in quality. We are promised further data.

Clutch or Throttle.

By Runabout.

WHEN the average novice first sits tremblingly behind the steering wheel of a motor car he regards the clutch pedal as his sheet anchor. When the 'bus swerves outwards, when the child darts out after its ball, when the threatening hedge reveals that the treacherous road has twisted right or left, when the courteous gradient dips and presents a wide vista of landscape, down stamps his trusty foot on the clutch pedal! At the outset his right foot probably follows suit with the brake pedal as well, but tales of tyre bills have probably stamped upon his mind the dictum that the brake pedal must be used gingerly; consequently, he soon learns not to mark time with his right foot too frequently. But the excessive use of the clutch pedal never deserts some drivers—it is a bad habit that lingers on into the æon of his third or fourth car.

Both in theory and practice the clutch pedal exists only for stopping, starting, and changing gear. To use it for temporary slows is to abuse it. There is only one possible exception, namely, for temporary slows around exceedingly acute corners, and even this only applies when the car is on a gear too high to allow of the engine picking up upon it from what is almost a standstill. The majority of cars to-day are designed and built to be driven almost exclusively on the throttle, apart from the above trio of exceptions, viz., stopping, starting, and changing gear.

At the present time I am driving a car which cannot be said to be designed for this mode of handling. It possesses no more than 12 h.p., and is afflicted with a racing gear ratio. But I have actually driven it for a fortnight without once declutching save for the three legitimate purposes named. All slowing down has been performed by simply bringing back the throttle lever on the steering wheel sector to the "shut" position. Even with a racing gear it is astonishing how often the throttle may be re-opened without the engine giving any token of labouring; the engine merely reaccepts its work perfectly calmly and simply, without any pounding, labouring, or knocking, provided the throttle is not abruptly opened. Of course, if the throttle be shut for a prolonged slowing, and when the need of slowing is over, the car is faced by a stiffish gradient, a bad corner, or a very powerful head wind, a gear change is necessary. But under all these circumstances a gear change would have been necessary if the car had been slowed on the clutch instead of upon the throttle. Consequently, the rule holds good.

It even applies to traffic work. Perhaps a mile of rather tortuous, narrow, and trafficky streets has to be negotiated. No doubt by frequently using the clutch a good deal of the distance might be covered in brief and anxious sprints on the top gear, with interspersed descents on to second or even first speed. Actually, on facing such a mile I immediately change on to second gear, and remain upon it till clear of the town, thus clearing the traffic without a gear change and often without declutching at all. I leave the reader to imagine which method is more considerate of the car. The clutch method entails far greater strain on the engine bearings, introduces wear and charring of the clutch face, and connotes shocks to the teeth of the gear. The throttle method bars out of the question the face of the clutch and the teeth of the gears, as also any forced approximations of differing speeds for the engine-shafts and the gearshafts, concentrating the total strain upon the bearings of the engine and the gear box; and the behaviour of both these portions becomes audible when they are abused, so that the driver can easily discover whether he is throwing too much on them. Mine never complain under this treatment.

Two details should be looked after in this type of driving. The first is to see that the throttle really shuts off the last atom of explosive mixture when it is alleged to be shut; otherwise disconcerting poppings will proceed from the aggrieved engine. The other is the fitting of an air bypass controlled by the throttle lever, so that when the gas is cut off an avenue of suction is opened into the air. This is not absolutely essential, but it makes for good cooling and prevents carbon deposits; for in its absence, the piston suction no doubt drags up a modicum of oil from the crank chamber, which is then burnt on to the piston and cylinder heads.

In the House of Commons.

Motor Car Regulations in Hyde Park.

Mr. Watt asked the First Commissioner of Works at what date the regulation was first issued which prohibits motor cars in certain parts of Hyde Park during stated months in the summer; has it been in force continuously from that date; and will he say whether it is the speed of the cars or the odour of the petrol which leads to the continuance of the regulation by him?

Mr. Harcourt: The regulations to which my hon. friend refers were made under the authority of the late Government in June, 1905, and have been continuously in force since that time. The maintenance of these regulations is based upon my view of what will best contribute to the general comfort and convenience of the great mass of people for whose enjoyment the park is primarily intended.

Magistrates Usurp the Powers of the Local Government Board.

The magistrates of the Manchester county police division are arrogating to themselves the powers and functions of the Local Government Board. We gather this from reading the report of a case against a motorist who on the 21st inst. was fined £3 and costs for excessive speed. In giving the decision of the court, the Chairman gravely announced that the magistrates had determined that in the suburbs of Manchester the maximum speed must not be more than twelve miles per hour. The L.G.B. would at least have held a local inquiry before coming to such a determination, but not so the Great Unpaid of the suburbs of Manchester; such a formality with them is quite unnecessary. Immediate steps should be taken to bring their conduct to the notice of the Lord Chancellor with a view of having their wings clipped.

Some Police Cases against Motorists.

Fines Beyond the Dreams of Avarice.

WE are indebted to a very active member of "The Autocar League" for sending us newspaper reports of a number of cases heard at Haywards Heath Court, where charges of exceeding the ten-mile speed limit in Handcross were heard during the month of July. The following are abbreviated reports of the cases and the amounts of the fines imposed, in addition to which there were varying sums for costs.

JULY 5TH. Magistrates present: Messrs. T. Bannister (in the chair), G. C. Hawer, W. C. Renshaw, K.C., and H. Faure-Walker.

J. Walsh, Richmond House, Chelsea, pleaded guilty to a speed of seventeen miles an hour. The police solicitor stated there was nothing against the defendant. Fined £5.

L. S. B. Hull, Redhill, Surrey, pleaded guilty to fifteen miles an hour. Fined £5.

W. A. Errington, Kingston, W., pleaded guilty to fifteen miles an hour. Fined £5.

C. J. N. Criddle, Cannon Street, E.C., admitted to driving fifteen miles an hour. Fined £2 10s. and costs.

W. Craig, Wimbledon, Surrey, pleaded guilty to twenty-four miles an hour, and stated that he was not aware of the speed limit. Fined £10.

Sir James Backhousedale, Derby; two summonses alleging twenty miles an hour each way. Fined £20.

Major Seymour Husted, Sloane Street, S.W., seventeen miles an hour. Fined £5.

H. Hora, Denmark Hill, denied driving at the alleged speed of twenty miles an hour. Evidence was produced that the speedometer was subsequently tested on the car, and was found to be 2s. fast in the mile. Fined £10 and costs.

F. W. Alexander (motor cyclist), Putney, pleaded guilty to twenty miles an hour, and was fined £3, including costs.

W. R. Clear, Herne Hill, S.E., pleaded guilty to twenty miles an hour. £10 and costs.

Altogether about £75 was taken from ten motorists.

JULY 19TH, AT HAYWARDS HEATH. Magistrates present: Messrs. E. Huth (chairman), A. J. Bridge, W. C. Renshaw, K.C., H. Faure-Walker, and P. Secreton.

L. M. Brew, West Ealing, pleaded guilty to twenty-four miles an hour. Defendant failed to attend to the summons originally issued, but was arrested on a warrant and let out on bail. Defendant said he was in Scotland, and did not receive the summons. Fined £10.

W. Harley, Wimpole Mews, W., pleaded guilty to fifteen miles an hour. Fined £2 10s.

P. Beston, Kingston Hill, seventeen miles an hour. Pleaded guilty. Fined £5.

H. Walton, Oxford Street, W., alleged to have travelled at twenty miles an hour. Pleaded guilty. Fined £10.

F. C. Debenham, Stamford Hill, N.W., seventeen miles an hour. Fined £5.

F. Lambert, Osten Mews, S.W., seventeen miles an hour. Fined £5.

H. M. A. Hennesy, Peckham Rye, S.E., a junior clerk and motor cyclist, charged with seventeen miles an hour, and stated to have behaved well in regard to the case. Fined £2 10s.

W. Pearson, Upper Tulse Hill, S.W., pleaded not guilty to an alleged speed of twenty-four miles an hour. Fined £10.

E. C. Charrington, Kingston. Represented by solicitor, who contended that an alleged previous conviction was not proved by the police, as he was not then present. Fined £10 and £3 8s. 3d. costs.

H. W. Dale, Hove. Fined £5 and costs.

L. Carle, Great Marlborough Street, W., absent in France, and represented by a solicitor. As the magistrates were not satisfied that there was sufficient evidence to identify defendant as the driver, the case was dismissed.

L. L'Estrange, Bedford Park, W., pleaded not guilty to an alleged speed of fifteen miles an hour. Two previous convictions. Fined £7 10s.

J. C. Alexander, Westminster Bridge Road, S.W., pleaded not guilty to a speed of seventeen miles an hour. Fined £5.

W. Hebden, Wimbledon, denied riding a motor cycle at a speed of twenty-four miles an hour. Fined £5.

F. J. Beech, Wandsworth, S.W., alleged speed of seventeen miles an hour. Drivers were changed in the limit, and there was insufficient evidence of identity. Case dismissed.

W. R. Little, West Kensington, pleaded not guilty to an alleged speed of twenty miles an hour. In the course of the case the magistrates stated that they would not accept testimony as to speedometers unless witnesses were in court to prove that they had been tested. Fined £10.

W. J. Lane, Surbiton, denied driving at fifteen miles an hour. The speedometer did not show the speed exceeding ten miles an hour through the mile. Witnesses supported the testimony of the speedometer, but a fine of £2 10s. was inflicted.

C. M. Hunter, Hyde Park Hotel, W., represented by a solicitor, pleaded guilty to an alleged speed of twenty miles an hour. Fined £10.

Fines amounting to £90 were taken from thirteen motorists.

On the following day, at the same court, Reginald Honour, of Hutton Street, E.C., was summoned for driving a motor car in a manner dangerous to the public at Twineham, and also for driving a car recklessly on the same date and at the same place. The summons for driving to the danger of the public was taken first. The defendant's solicitor suggested that if the magistrates convicted or acquitted the defendant in the one case, the prosecution would not go on with the other. After some evidence the case was adjourned till the next day, when the case was continued and the defendant fined £5 and costs.

JULY 26TH, at the same court, before Messrs. E. Huth, T. Bannister, G. C. Hawes, and P. Secreton.

A. D. Morris, St. James's Street, S.W., denied driving at seventeen miles an hour. The evidence of a tested speedometer was rejected, and a fine of £5 imposed.

J. Fenton, Fulham, S.W., pleaded guilty to a speed of twenty-four miles an hour, and was fined £5.

W. E. Sanders, Kilburn, stated that he thought he was through the limit when he had passed the village, and pleaded guilty to a speed of twenty miles an hour. Fined £10.

E. G. Humphry (Hammersmith Road), E. W. Paterson (Hyde Park, W.), R. Windram (Mile End, E.), E. R. Rysman (Russell Square, S.W.), and P. Eich (East Dulwich, S.E.) were each fined £2 10s. for speeds of fifteen miles an hour.

A. E. Gillard (Hackney, N.E.), W. A. Tracey (Mayfair), W. A. J. Allen (Greenwich, S.E.), and W. Dowling (Paddington) were each fined £10 for alleged speeds of twenty miles an hour.

J. A. Cheshire, New Brighton, Cheshire, pleaded guilty to twenty miles an hour, and was fined £7 10s.

R. A. Heath (King's Cross, N.), R. G. Harman (Catford, S.E.), and F. Clarkson (Merton) were each fined £5 for alleged speeds of seventeen miles an hour.

£100 in fines alone was extracted from sixteen motorists.

At the City Police Court, Durham, James Menzies, surveyor, was charged with having furiously driven a horse and trap to the danger of the public on the North Road on September 9th. P.C. Morgan said that at 9.45 on the night named he saw the defendant driving a mare at a furious rate up the street. Witness went into the middle of the road to stop him, but he shouted out, "It's all right, officer, I want to catch a train," and drove on. The constable estimated the speed at twenty miles an hour. Other witnesses corroborated. Defendant, who did not appear, was fined 5s. and costs.

On September 9th at Reigate W. G. Scott, of Kingswood, was fined 10s., including costs, for furiously driving a horse and cart.

In all the motor prosecutions it was only in the case against R. Honour that there was any suggestion of danger in any degree. The £265 odd was levied for purely technical offences against the speed limit of ten miles an hour through the village of Handcross. The limit should, of course, be respected, but we contend that in the majority of cases recorded above the fines were unduly severe, so much so that they are really beyond the average Englishman's ideas of justice as exemplified by other and much more serious cases one only too frequently reads of in the daily papers. It should be noted that a sum of £265 odd is the result of trapping on three occasions, and in one case it was stated that on May 9th about 250 cars were timed, and about 140 persons were summoned.

On the Road.

Roadside Fauna and their Death Rate.

IT is a long time since I have contributed any hints or tips concerning the driving of cars to this paper, for the good reason that I have been busy over things of higher estate. But since there seems to be a lull in internecine hostilities—possibly owing to the imminent dangers that are said to threaten all of us who happen to own a car or anything else that is his—I take this opportunity to impart a little useful information.

How to Avoid Assisting at the Suicide of Fowls.

There are occasions, as every motor driver knows, when hens absolutely refuse to be saved. Some callous people accept the situation and drive over them. Others more humane either clap on their brakes and pull up if they can to the detriment of their tyres and the alarm of their passengers, while still more endeavour to steer round them and run the risk of skidding. Now all these devices are futile because the only real and safe way to avoid danger to all parties is to wave your disengaged arm wildly round and round before you reach them, and if you have anyone alongside of you instruct him to do the same. One trial will convince you of the perfection of the idea, and if in spite of it the fowls persist, the reason will be that you did not begin to wave early enough or were not sufficiently demonstrative. Ducks do not lend themselves to the treatment quite so well as chickens, and a peacock that refused to make way for me a few weeks ago only saved himself by his presence of mind in raising his tail out of the way just as I thought I had irretrievably ruined his plumage for the year.

On Dogs.

A great many articles have been written on the enormity of motorists with regard to dogs, but had the writers of most of them any experience they would in many cases arrive at very different conclusions. I may boast that after very many miles I have had the luck—I said luck—never to have laid one out, but many of their escapes have been the result of pure good fortune. In skiddy weather and in skiddy places—and there are no tyres that will never skid—it is not fair on one's self or one's car to go in jeopardy to avoid a dog that puts itself intentionally in peril. Certainly you may save the animal's life, but possibly at the cost of your own, and those near and dear to you, or your chauffeur, and I have come to the conclusion that in such cases it is the weaker that should go to—or over—the wall. Besides which the dog may have been encouraged by its owner to commit suicide in order to obtain compensation, and while on this topic I may be pardoned if I tell a story which may not be new to some readers.

Once upon a time in the springtide a motorist had the misfortune to run over and kill a dog which was in the company of a man who was carrying a gun. In an agony of remorse the offender stopped, explained how the accident could not have been avoided owing to the stupidity of the animal, and pressed a couple of sovereigns into the hand of the stolid owner. To his surprise the man was effusive in his thanks, pocketed the money, and turned back the way he had come. The motorist began to apologise again that he had spoilt his day's sport. The man said it didn't matter. Then the motorist remembering it was the merry month of May ventured to enquire what particular kind of game the shootist was after. "Oh," said the man with a grin, "I wasn't going after any game. Old Mr. Jones gave me half a crown this morning to take his old dog away and shoot him. The dog has gone blind and deaf; that's why he didn't get out of your way. Good day, sir."

Birds, Sheep, and Pigs.

While on the subject of running over things, there are few things which show the compelling power of the back draught induced by a screen more than the way the feathers of a white fowl that has refused to be frightened come back like a haunting ghost to the vision of the driver from behind him. Indeed it is often the only intimation that the bird did not escape after all, though in some cars the undershield may often be found with tell-tale feathers mixed with the oily droppings that live there. Last spring my man informed me there was wool all over the clutch spring and other gadgets that live under the footboard, and enquired if I had run over a sheep. I inspected the stuff that had wrapped itself well over everything, and on examination found it to be some patent cotton waste that must have been dropped there when the car was last greased at Colchester. But with some people it might easily have been a sheep, for sheep are such idiotic animals that absolutely no intelligence whatever can be expected from them, and motorists consequently should know exactly what to do when they are met with. The same applies to Lincolnshire pigs, because their ears exclude their vision like blinkers, but other varieties are not impeded to the same extent.

A Hare-chase.

Arising out of this topic, a few weeks ago I had the opportunity on a lonely straight road to judge the utmost speed of a hare on a good surface. He kept ahead of me for nearly a mile, and as I did not wish to kill him I kept an exact distance behind. My Elliott speedometer—and it is very trustworthy—registered thirty-two miles an hour precisely, and the trial ended at a side road, where the animal darted down and took the most terrible head-over-heels side-slip that I have ever beheld. I put thirty-two miles an hour as that hare's top speed because I cannot imagine any motive that would make him go more quickly than the fact that a large blue car was only a few yards behind him.

Wild birds such as sparrows and thrushes are getting, I am of opinion, more wary than of yore, and it is seldom nowadays that they get into the radiator as they once did. And this, in spite of the increased noiselessness of motors, is remarkable; but I suppose the real reason is that they are in some way warned by their parents of the danger of waiting till the last moment before they try to escape. Of course it may already have become an hereditary trait, just as the absence of fear shown by birds at railway trains, and if this be the case I wonder how long it will be before the leader-writers of certain newspapers and other old women will cease to look on all motors as the inventions of the evil one and responsible for the dust they have the ill-fortune to find on the roads. But of course in this case heredity does not come into operation, though we may see its effects in the way these folk accept and use as a matter of course railway facilities, which their immediate progenitors counted as a sign of the end of the world.

OWEN JOHN.

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.

WHAT IS HORSE-POWER?

[14734.]—As Capt. Tresidder's letter [14720] has not, I think, quite exhausted the subject of steam engine power *v.* motor power, may I venture upon a supplement?

The flywheel of a motor is a reservoir of force, and the number of its revolutions is the measure of the kinetic or live energy available at any instant. This stored energy varies as the squares of the revolutions; so if the speed be reduced by one-half, then the force falls to one-quarter. Thus, if a motor develops 40 h.p. at 1,200 r.p.m., it will develop only 10 h.p. at 600 r.p.m. The stored energy, or work, in any moving body is represented by the product of half the mass and the square of the velocity. "Mass" and "inertia" are synonymous terms, and mean the weight of a body divided by 32.2 = the constant influence of gravity in feet per second. A motor has one power stroke, two idle, and one (the compression) a heavy brake. But the steam engine has power on every stroke, and the only functions of the flywheel are to move the crank past the dead centres, and steady the engine. A pair of coupled engines with cranks at 90°, and the valves cutting off after half stroke, will work without a flywheel, but not smoothly. Thus, the influence of the flywheel in the steam engine is very small as compared with the motor, where it is the reservoir of the driving force which rises or falls as the squares of the revolutions. But a steam engine may develop more power at 50 r.p.m. than at 100 r.p.m., as it is all a question of mean pressure in the cylinder; and as long as the engine is moving fast enough to pass the dead centres it will not stop. Of course, the power of a motor is variable by the throttle; but for the reasons cited it has nothing like the range of a steam engine. The Royal Agricultural Society's rule for traction and portable engines is, or perhaps was, ten circular inches of piston area per n.h.p. This disregards steam pressure, cut-off, and length of stroke—all important factors. By this rule a traction engine with a piston of 10in. diameter would be of 10 n.h.p., and with an 8in. piston 6.4 n.h.p.

When I was an apprentice, the firm was sending a heavy caustic pot from St. Helens to Liverpool with a twelve-horse team. All went well until the straight steep, Combshop Brow, leading out of St. Helens, was reached, and the horses were fairly stalled. More were brought until at last a team eighteen strong, and hard on the collar, was beaten. Then the ancient traction engine was sent from the works to help up the hill. But the old rattle-trap was equal to the occasion, for, unassisted and with ease, it hauled that heavy load up the brow, and away to Liverpool.

Two ordinary traction engines, if coupled to the stateliest forest tree in England, can drag it out by the roots. Some of the finest oaks in Woodstock Park were felled in that way.

MAURICE GANDY.

GRANTOWN-ON-SPEY.

[14735.]—In your issue of the 28th ult. a letter appears above the initials of "G. R. H." warning motorists that a police trap is in operation at Grantown-on-Spey. This is of no moment to me, as I have no connection with the county of Elgin, but I think it right to correct the statement made by your correspondent (a statement continually made in your columns), when he says of those motorists captured breaking the law at Grantown, that they "are cited to appear in Elgin, the intention obviously being that the county town should benefit from the fines."

The counties or burghs of Scotland do not benefit one single farthing from fines inflicted in the Sheriff Courts. All fines imposed on motorists have to be accounted for, and are paid over to the Exchequer Office in Edinburgh. I am glad to say I have many good friends motorists, and if I had sufficient money I would have a motor myself, but why do motorists continually try to misrepresent those who are unfortunate enough to be charged with the duty of enforcing the law as it stands; what fault can be found with them? Why do motorists not turn their attention to Parliament, and try and get the law either mended or ended? What a blessed relief it would be to the Scottish police!

A SCOTTISH CHIEF CONSTABLE.

[We have pleasure in publishing our correspondent's correction. His letter suggests work for "The Autocar League." In the meantime, we must hope that in our correspondent's county of ——— no traps are set in open roads, and that if the ten miles limit be exceeded by five miles an hour or less in the restricted areas he will take no proceedings, as there are a great many laws which are not enforced with the same literal strictness as those which concern the motor car speed limits.—ED.]

COLONIAL REQUIREMENTS.

[14736.]—As a colonial motorist with 30,000 miles to my credit and one overland record, may I say a word or two *re* the discussion about special colonial requirements? A little knowledge is said to be a dangerous thing, and I think many of the requests for impossible clearances, forty-gallon water tanks, etc., come from a certain class.

Any first-grade car with a good—by good I mean a foot—clearance, that is absolutely reliable, would be satisfactory to the majority of motorists out here. Of course, good springing and a stout frame are very desirable, as some of the so-called roads—usually a space three chains wide, between two fences, across country—are vile, usually dotted with stump, and often sandy in summer and boggy during the rainy season. Only first-grade cars can be satisfactory in the long run, as people think nothing of being a few hundred miles from the nearest repair shop, and the average farmer who can afford a car does not keep a driver.

There is one well-known make of car which holds every record in Australia—speed, petrol consumption, and the great overland rides (Melbourne-Sydney, Melbourne-Adelaide, 598 miles of rough country, and Adelaide-Port Darwin, 2,000 miles across the continent). This car is on standard lines, and pleasing in appearance, so I maintain that freak cars are unnecessary. I enclose my card, and remain,

South Australia. OVERLANDER.

POLICE TRAPPING IN SALOP.

[14737.]—This iniquitous system of persecution is, I am sorry to say, being introduced into Shropshire, which has hitherto been almost free. It is caused, I understand, by a few reckless, inconsiderate strangers driving through the county. I am afraid many of these traps are brought on by a class of selfish motorists themselves, who go into counties away from their own homes, and are inconsiderate. We should have no traps if it were not for this class of "hogs."

I drove recently near Oswestry, and met two cars driven very fast and inconsiderately, and had to keep close to the hedge on my own side to allow them to pass. They filled the road with clouds of dust, making it unable for me to take their numbers, which I certainly would have done had I been able to obtain them, and reported them.

J. R. GREATOREX.

[14738.]—I believe you make a collection of the various "police traps" in the country. I was motoring from here (Worcester) to Shrewsbury and district on Saturday week last, August 7th, through Leominster, Ludlow, Church Stretton, on to the town of Shrewsbury itself. To-day I have had a "blood-curdling" sort of notice from the Shropshire police to the effect that proceedings will be taken against me for exceeding the limit at Bayston Hill, in the parish of Meole Brace on August 7th last.

Being a complete stranger to that part of the country I have not the remotest idea whether I was exceeding the limit or not at this particular spot. From a road map I have studied apparently Bayston Hill is about two and a half miles from the centre of Shrewsbury, and I understand I was supposed to be exceeding the limit whilst descending the hill.

Correspondence.

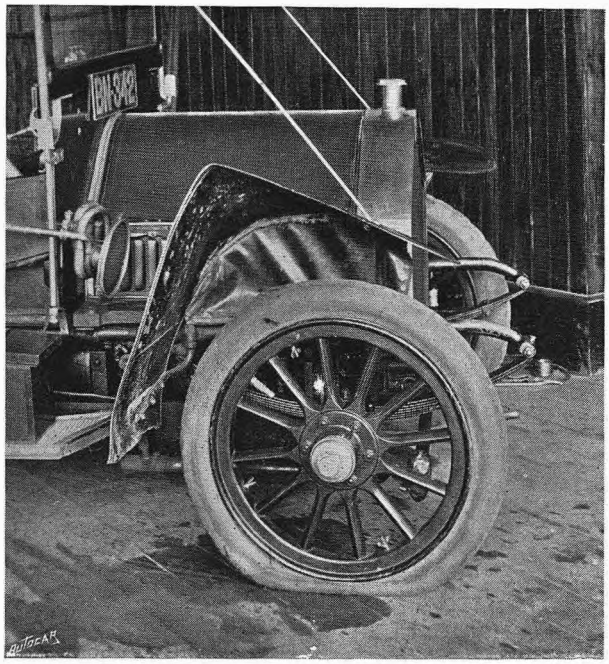
This does seem a miserable method. If a policeman had pulled me up and taken my name and number there would have been some sense in it, but to come on you about ten days after seems monstrous and childish in the extreme.

I motor for the pleasure of this pastime, and not with the idea of going at some break-neck pace, holding my life and my friend's in my hands, as it were, at every revolution of the wheels. I consider that I am an exceedingly careful driver, especially round corners, through villages and towns, or whenever approaching suburbs of any description, and if, perchance, Bayston Hill is actually situated in a village, then I feel absolutely confident that my speed was not over twenty miles per hour.

It is difficult to think what our county police did with themselves before the present Motor Car Act came into force, and it is a marvel to me they can get men to go and perch behind some wretched hedge with a view to so-called "trapping motorists." What a pity they cannot find them something better to do. TOM K. KAY.

THE BURSTING OF TYRES.

[14739.]—I was much interested to read in *The Autocar* of August 21st an account of the result of a tyre bursting on Mr. Denny's Sunbeam car, as I have just had a photograph taken showing what I, and all who have seen the car, consider a remarkable result of the bursting of a tyre.



The car was standing in the depot of the Bolton Motor Co., Ltd., and several people were in the room when the tyre burst. You will see that the mudguard is torn off the footboard, the bracket bolts are wrenched out of the guard, and the guard itself is bent up to quite a sharp point, almost a foot higher than before. H. E. BARKER.

MOTORISTS AND THEIR ENEMIES.

[14740.]—The writer of letter No. 14598 is, I think, just a wee bit too hard on the A.A. and M.U., and I speak from the experience of over 1,500 miles running during the past month or so. Granted that the police ought to be doing men's work instead of hiding behind hedges, I think that we must begin by trusting more to ourselves than we have been doing.

For instance, to save bother, the average motorist will never think of prosecuting a stone-throwing boy, and, in many cases, will not appear personally to defend himself in a speed limit prosecution. The police just take us at our own valuation, and act accordingly. In my opinion every case should be fought tooth and nail, and stone-throwers, sleepy carters, and the like prosecuted vigorously.

It is not only the police, however, who worry motorists, we have enemies within the fold as well. I lately expressed appreciation of services rendered by the A.A. in your columns while touring in Warwick and neighbourhood. On my return to Scotland I notice that the "Expert" (?) who writes the weekly local notes in our morning paper stigmatises my remarks as to loss of custom in the county by police trapping as rubbish. I got my information first hand from hotelkeepers in the county, and one and all express their condemnation of the police methods of keeping motorists away from these parts. It is just a pity that some writers do not take the trouble to ascertain for themselves the actual conditions in certain places before condemning wholesale the experiences of those who know. PAGE.

RESILIENT FILLINGS FOR TYRES.

[14741.]—In spite of his having "read with interest" my article on "Resilient Fillings for Tyres," Mr. Gavan Inrig, judging by his recent letter [No. 14653] *re* the Rigford tube, has apparently overlooked the sharp discrimination I made between the material and the manufacturer. And lest he should again miss the point I will repeat once more that the latter was decidedly the less satisfactory of the two.

Moreover, Mr. Gavan Inrig appears to be one of those noble-minded individuals who are deeply hurt if any reflection is cast upon anything with which their names are associated.

Therefore, in case Mr. Gavan Inrig should realise upon re-perusal that he failed to include several important details —no doubt through inadvertence—in his letter, which purported to be a plain and unvarnished statement of the facts, I will supply the omissions.

A gentleman of his wide experience of such concerns—the Rigford Tyre Co. was not by any means the first Mr. Gavan Inrig fathered—can hardly require an "amateur expert" to point out that, after all, he cannot claim a single iota more for his tube than I granted it.

Resileon will, so he remarks in *The Autocar* of September 4th last, "stand up just as long as the rubber tube remains sound."

How extremely interesting! Of course, the public will fall over each other in their haste to secure tubes which will equal an ordinary pneumatic in their puncture-proof qualities, while, mark you, only costing £10 or so more per set of four!

I am not surprised to find Mr. Gavan Inrig remarking that the "rest of the history of this unfortunate company is not a matter for public correspondence." But in case the public are interested they can obtain some useful information from the minute books, etc., which are preserved at the registered offices.

While it is true that "amateur experts" figured a good deal in the history of the Rigford tube, Mr. Gavan Inrig must be good enough to remember that he preferred dealing with amateurs.

Nor was he at all backward in availing himself of their assistance—in more ways than one—and Mr. Gavan Inrig can therefore hardly object to their expecting a *quid pro quo*.

Thirdly, it is decidedly curious to notice that the action of the "amateur experts" was endorsed in no uncertain manner by the prompt return of 100 per cent. of the tubes supplied to the public. And this, too, though Mr. Gavan Inrig himself was responsible, being manager and a director of the company. A. J. McKINNEY.

JUSTICE AS DISPENSED IN HUNTS.

[14742.]—I write to give a sample of what may be expected by whosoever may be the unfortunate motorist to be selected by the Huntingdonshire police for prosecution and persecution. On one of the last days of July my car (a 20 h.p. Delaunay-Belleville) was being driven by my chauffeur, whom I have had for two years, and who has a clean certificate for seven years, and who therefore does not come under the head of a "scorcher," I imagine, but a very careful driver, and who has been over the whole of Great Britain more than once. Well, on this occasion, somewhere near Water Newton, on the Great North Road, he was stopped by one police constable, who said, "You are going a bit too fast." My driver said, "Why, what do you make it?" and the police constable said, "Twenty-nine miles per hour," and, calling to another police constable, he asked him, and he said, "Twenty-five miles per hour, he thought." In the meantime, another car, which had been keeping close behind my car all the morning, passed, but was not stopped, though going at precisely the same speed as mine had been. My driver asked how he had been timed, and the police

constable showed him that he timed cars coming up the road where he could see them after they passed a certain telegraph post (about 400 yards away) until they reached him, no one at far end at all—a quite impossible method of accurate timing, of course!

My car may have been very slightly exceeding twenty miles per hour, but by speedometer I know for a fact that it could not have been going at even twenty-five miles per hour, still less twenty-nine. The road was quite clear in front, and the car was pulled up in little more than its own length with foot brake alone, and that not used violently. He received a summons for "driving to the common danger" three weeks after.

The quality of justice may be judged, as the Bench considered the occasion merited a £10 fine. One trembles to think what anyone charged with going thirty-five miles per hour, and not having a clean licence, would be relieved of. However, I would say, avoid Hunts. D. B., Capt.

AN UNPLEASANT STORY.

[14743.]—Will you give publication to the following facts, as it may be the means of causing the owner or owners of a certain car disclosing themselves? On the afternoon of September 7th we were driving along the Portsmouth Road in the direction of London. Halfway between Cobham and Esher we saw a man lying on the roadside, attended by two cyclists. Thinking that they had caused an accident, we pulled up and offered assistance. The man, though shockingly cut about the head, face, and hands, was conscious, and he told us that about half an hour previous he was walking down the road towards Cobham, when he was knocked down and run over by a big motor car. He was unable to tell the number of the car or who was in it, as he was too dazed and hurt to do so. The occupants of the car carried him to the side of the road, and then they drove down to a public-house about a mile away and procured some brandy and a glass. They returned and gave these to the man, and then told him that they would go for assistance and return and take him home. This they forgot to do. Some time after the car had left an A.A. scout found the man. As he could do nothing by himself, he got the cyclists (mentioned earlier) to mind the man whilst he (the scout) went for assistance. Then we arrived, and took the injured man into Esher, where we handed him over to the care of Dr. Woodhouse.

According to the wheel tracks on the road, the car had come down the hill close into the grass banking, almost touching in places, and just where it struck the man it had skidded right across the road to the off side.

Now it may or may not have been the fault of the driver of the car, but in either case there is no excuse of any sort that would justify the occupants of the car in leaving an injured man on the roadside in the way they did. Should the owner of the car see this, we sincerely hope that he will come forward and do something to relieve the sufferings of the injured man. Particulars as to the man's address, etc., can be obtained from Dr. Woodhouse, Buckland House, Esher, or the Police Station, Esher.

W. C. F. DREWRY.
A. WALTERS.

POLICE TACTICS.

[14744.]—Having read many letters in *The Autocar* with reference to the present disgusting persecution of motorists, I feel that I must add my protest to this state of affairs. I have always understood that one of the first of the police rules, in fact one of the chief reasons for their existence, was "prevention is better than cure;" in fact, that a policeman would be guilty of an offence if he saw a man starting to commit a burglary and did not stop him, but waited until he had finished and then caught him. In fact, the number of unfortunates whom one sees as having been had up for "loitering with intent" proves this, and yet with regard to motorists one finds these same police disguised as tramps, hiding themelves behind hedges and in pigstyes (a very proper place), in order that no hint of their presence may prevent the motorist from committing a technical breach of the law. The law in any form, and certainly as administered to motorists, is beyond me, but I should have thought that this was very near to encouraging a person to commit a crime. In fairness to the police I must say that I believe that some of them dislike this peculiarly offensive business, but when a half educated constable sees one of his own standing being promoted to higher rank and pay, owing to his pernicious ingenuity in getting convictions against the heavily fined motorist, and when he is encouraged to get convictions, and knows that an anti-motorist Bench will back him up, he ought not to be too much blamed for trying for promotion himself. Another point which has struck me very often is this, in English law I have always understood that the accused was given the benefit of the doubt, but I must say that I have very seldom heard of a motorist getting it, except in a case where someone has been injured or killed, in which cases, which are bound to be serious, I presume the magistrates find it is better to administer the law with more intelligence, and therefore with more justice than in the ordinary speed limit case, which, even if it be dismissed, is very often a heavy expense and a great inconvenience. I see in one of your articles an extract from a "Surrey Vicar's" letter stating that some person of his acquaintance has expressed the opinion that one of his children is bound to be killed sooner or later by a motor, and that when this event occurs, in the interest of other parents and other little ones, he intends to shoot the unfortunate driver. I should like to meet this intrepid gentleman, if only in order to point out that if he perpetrated this heroic act he would do no good to other parents, and would leave the rest of his offspring without their naturai protector certainly for a long time, perhaps for ever. The only way I can see to get any change in the present state of affairs is for all motorists to refrain from giving to charities in any way connected with the police, not to lend any cars for election purposes unless they have the candidate's promise in writing to vote against the speed limit, etc., to strictly boycott all districts where police trapping is prevalent, and also to follow the advice given in *The Autocar* notes with regard to the Territorial Reserve of motors. The whole thing is so unfair and so idiotic. Whoever heard of a police trap having averted an accident? The very fact of the police being concealed and in disguise explodes this idea; then the sentence in the public danger clause, "Traffic which might reasonably be expected to be on the road" it is the most extraordinary piece of piffle that ever was written. What does it matter what might be on the road, if there actually is nothing. I myself have met a traction engine, a menagerie, and a herd of cows together, but I did not drive through them at the same pace as if they had not been there, as the people who drew up this section evidently expected one would do. These anti-motorists seem to think that one's whole delight is to tear down the road, skidding corners and hogging it through villages, and what is more they are driving people, myself amongst them, towards this very state of affairs, for now I do not go fast down the open road for fear of being caught in some utterly unjustifiable trap, the result being that I go faster than I should in the ordinary way on the more twisty bits in order to make up time. Apologising for the length of this epistle. LEWIS ASPINALL.

THE RELIABILITY OF EXPENSIVE FOREIGN CARS?

[14745.]—During the last five years I have driven motors of different descriptions between 50,000 and 60,000 miles. I have had four—1st British, 2nd British, 3rd foreign, 4th foreign. The last one, purchased in January, 1908, is a single-cylinder costing £337 odd, and has given me endless trouble, and as a result I have made up my mind to stick to British-made cars in future.

The trouble consists of seized crankshaft bearings. This happened four times, and on each occasion cost about £5 to repair. When the bearings did not seize they wore very badly, and the piston rings were always breaking. I have since had a new engine which so far has not given any trouble. Next trouble broken clutch disc, £3. Then the worn actuating sliding gears broke, repairs bill £7 19s.

Now the bevel and pinion in differential gearbox have smashed up, which will mean another £10 for repairs. The makers have had the car for three weeks, and now coolly inform me they cannot say when they can get a new bevel from abroad, may be three or four weeks. I have only mentioned a few of the more serious troubles. I could write a volume on the smaller ones.

I say get a British car and reliability, and keep as much money in our little island as possible. £50 will not cover my expenses on account of repairs (mechanical breakdowns) during the last eighteen months. We hear so much of the reliability, etc., of cars in various motor journals that I think a few particulars of the unreliability of some would be interesting. B.C.L.

Correspondence.

A USEFUL SIGN.

[14746.]—We notice in your issue of 18th inst. an illustration of a sign on the Sutton-Reigate road requesting motorists to slow to the cross-roads, as there are some concealed carriage drives emerging on the road, but surely it is the duty of the users of the carriage drives to exercise the necessary care in coming into a main road. Otherwise, the traffic on the main road is slowed unnecessarily.

Logically, if it is necessary to slow for a carriage drive it is more necessary to slow for any little by-road which comes into a main road, so that there are few places where a motor ought to exceed ten miles an hour.

If a carriage drive is concealed surely it is the duty of the owner to make it safe for his own protection. It would be interesting to have the views of others on this matter.

J. REGINALD HOVENDEN.
J. A. MILNE.

COLONIALS AND "THE BUYERS' GUIDE."

[14747.]—As a subscriber, your very interesting publication reaches me once a week, and I can assure you that it is read with great interest.

I note how your readers avail themselves of your columns whether to air a grievance or to ask for information, and also how freely this is given, so that I do not hesitate to make a suggestion, and that is, when compiling "The Buyers' Guide for 1910," you include a column for the "ground clearance," and a letter indicating whether the car is of British or foreign manufacture.

With these and the particulars already supplied in this ("Buyers' Guide") collection of mechanical detail, colonial buyers should be able to get some idea of what is really available in motor cars.

Here, if you ask for a catalogue, you simply get a copy of what is issued in England, with Australian prices filled in. My contention is that the conditions of the country, climate, roads, etc., are so very different that they call for some suitable treatment. English manufacturers could easily make themselves acquainted with local requirements, and in producing their lists include certain options (as certain American builders do), and show that they are willing and anxious to meet colonial buyers. KAPARA.

Melbourne, Australia.

[Our correspondent's suggestion is a good and practical one, and we will endeavour to embody it in "The Autocars of 1910." The one difficulty is to find room for it, as the various sub-divisions of the classified list now occupy the full width of the page, and it will only be possible to include the particulars suggested by leaving out some other item of information of less importance. Indeed, it was for this reason that the country of origin was omitted last year, as we gave it in most previous editions since the first publication in 1904.—ED.]

THE LETTER OF THE LAW.

[14748.]—Your correspondent "W. S." [14705] seems to be suffering from a very undesirable, though too common, confusion between law and ethics, and to confuse a contravention of a statute with a moral offence—a state of mind which too frequently leads to the upholding the correlative proposition that all that is within the "law" is morally permissible. A man who can place going at twenty-one miles an hour on the same plane as theft and, by inference, wife-beating and other forms of assault, deserves a position on a Surrey Bench.

Fortunately, it is not a universal principle in this country that any offence against the law should be punished, and there is special provision in one statute to absolve magistrates from the necessity of so acting, though many of them are as ignorant of it as of other legal facts. There are, I believe, many laws unrepealed, but never enforced. I fancy if a man is playing golf, say, with a magistrate, and relieves his feelings in the usual manner, the J.P. should according to law fine him five shillings. Certain laws against Roman Catholic institutions are also, I believe, still unrepealed, but never enforced.

Will one of your legal correspondents give us a list of such existing but unenforced laws, which would frequently be useful in argument?

No driver ought to, and probably few drivers do, think of "speed limits" when driving. They should have nothing to distract their attention from its primary object—that of driving to the safety of themselves, their passengers, and the public, neglect of which is obviously the only real offence—and should be the only legal one—in motoring. If police traps were abolished to-morrow, there would be no alteration in the average manner of driving, no "orgy of speed," such as our enemies pretend to anticipate; but motorists themselves would then be willing to act for the suppression of the inconsiderate driver; and a real stigma, far more effective than mere legal penalty, would attach to conviction—a potent *malleus maleficorum*, which the prejudiced folly of our amateur dispensers of "justice" have thrown away.

R. W. B.

UPKEEP OF SMALL CARS.

[14749.]—In answer to letter 14685, I thought it would interest some of your readers if I gave my experience of a little two-seater 8 h.p. Humber. The front wheels are fitted with a pair of 760 × 90 mm. Dunlop tyres, plain treads; the back wheels with 760 × 90 mm. steel studded Dunlops. The front tyres show signs of wear, and in one place one of them is just worn to the canvas. The studded tyres are wearing very well, the studs not being worn down yet. I have only had one puncture (caused by a pin in one of the back wheels). I have now run a little over 3,400 miles, so that experiences with the same type of car are similar.

With regard to upkeep and performance of the car itself, as I have already stated the car has been driven over 3,400 miles since April without a hitch. I had a tour from Hull to Land's End, visiting Minehead, Dulverton, South Molton, Barnstaple, Clovelly, Bude, Camelford, St. Ives, Land's End, returning by Penzance, Helston, Falmouth, Truro, Salisbury Plain, etc. My next tour was to the Lake District, through Wensleydale to Windermere; returning we climbed over Kirkstone pass (1,500ft.), along Ullswater to Penrith. From Penrith to Barnard Castle we crossed (with three passengers) the backbone of England; the road, we were told, rose to a height of 1,800ft. above the sea level. You will see that the car has travelled over a great variety of roads. The consumption averages 28 miles to the gallon over ordinary roads, and 25 miles to the gallon in the Lake District. The system of lubrication is very good, and uses about one gallon of oil every 400 miles. The only repairs to date amount to 1s. 6d. for the repairing of a leaky petrol pipe.

The carburetter is of good design, automatically admitting extra air to the engine when running at high speeds. The engine is most flexible, and with multi-disc metal to metal clutch (our car ran about 2,000 miles before it needed oil) we can travel with three passengers on top gear from 3-30 miles per hour. With dual ignition, mechanical lubrication, and detachable wheels all upon the standard model, it has many of the refinements of a large car. I believe there is not a single small car for the same price sold with detachable wheels as a standard, and only a few as listed extras. The engine is silent and sweet running and I am very highly satisfied.

I have no interest with Humber Limited, but give my experience as owner-driver.

WM. G. HODGSON.

[14750.]—In *The Autocar* of September 11th, "R.S.H.B.," writing on the upkeep of small cars, enquires how other motorists, using low powered cars, have fared. I cannot help thinking that his experience has been unfortunate. My car is a 12 h.p. Humber of this year's make, and up to date has done about 3,500 miles. All four wheels are fitted with 760 × 90 Dunlop grooved tyres. Two of the tyres have not had a single puncture; in one front tyre I have had two punctures from picked up nails, and in one back tyre I have had three punctures, but two of these were really the result of a bad repair of the first puncture. The front tyres are cut to a very slight extent, and look as if they are good for another 3,000 miles at least; the back tyres are more worn, but will easily give me another 1,000 miles and probably a good deal more. My car has been used over all classes of roads and has generally four passengers with luggage; sometimes counting children I have had seven passengers. I keep no chauffeur, and having no private garage I have to use a public garage, so that my expenditure on unkeep includes cost of garage, washing, etc., and is therefore somewhat higher than would otherwise have been the case. My total expenditure on upkeep up to the present is rather under £22, which on a mileage of 3,500 averages 1½d. per mile. Considering that my experience as a motorist commenced in May last only, when I was an absolute novice, I think I have every reason to be satisfied both with my car and with the tyres.

E. A. E.

THE UNSATISFACTORY CHAUFFEUR.

[14751.]—As to illicit commissions, if "LN 000" would enquire into the garage business he would find that the proprietors encouraged the driver to accept commissions, telling him that if he gets his petrol off them they will "see him right." The groom does the same with the corn chandler. When I worked in the shops my hours were from 6 a.m. to 5 p.m. and 1 p.m. on Saturdays; no Sunday work. In private service I took my master to his office at 9 a.m., then back to take the ladies out shopping, etc., until lunch time. Afterwards there was a good run to somewhere or another for tea, or a round of visits. After dinner the car was out to take someone to the theatre, concert, or ball, back again late at night, and then wash the car in the small hours of the morning ready for the usual 9 o'clock call. Who would do this for 18s. a week? All I want is a fair day's pay for a fair day's work.

FREDERICK GORDON.

[14752.]—The thanks of all motor car owners are due to "LN 000" for drawing attention to this crying and increasing evil, in his very accurate and moderately worded letter, No. 14672. My own case lately coincides exactly with his, having recently, while on tour, passed through an experience of irritation and anxiety, almost inconceivable, owing to the incompetency, laziness, and deliberate, if not intentional, neglect of a driver I engaged (with quite the usual recommendations for capacity and conduct) at good wages.

This, sir, is a matter which calls for immediate action, if owners employing drivers are to derive any benefit and pleasure, and not worry and expense, from their cars. It seems useless to keep a dog and to have to bark incessantly one's self.

Your correspondent's suggestion of an interchangeable register between the different motor organisations is a good one, if members will undertake to give straightforward personal testimony, and will greatly help to protect owners against those impudent incompetents, who in many instances keep capable and hard-working men out of employment.

M.U.

[14753.]—I am one of those uncomfortable creatures called a dealer, and hundreds of cars pass through my hands during each year, and I find almost every car that has been run by a chauffeur (when I look into its unobvious working parts) is in a deplorable state of filth and neglect. Lubricators, which designers have carefully arranged for all the moving parts, are either missing or choked with dirt, and the consequence is a good car is spoilt and the makers are blamed.

The same person, when sent to me by his master with respect to a car I may either be buying or selling, usually asks this question, "How do I stand?" which technical expression signifies that if he is not bribed he will influence his master to go elsewhere. Personally, I make it a rule to tell him I will ask the master, and, if necessary, I do so in the man's presence.

The best kept and the best running cars I have seen are those cared for by ex-grooms or coachmen, and either of these good fellows is glad when I tell him the car looks well, and I, too, am glad, and when he goes he touches his hat and says "Good day, sir." I do not pay him. But the chauffeur brings his car in on top speed and pulls up dead within an inch of anything or anybody, lights his proverbial cigarette, sits or leans on somebody else's car, tells me it's no good and he mopped one up the other day, calls me "cocky" or "old chap," and, if not in a hurry, instructs my men how to do their work.

My humble opinion is that our cars, and, according to the newspapers, our wives and daughters, are much safer and more comfortable in the hands of our old friend the coachman.

MERCHANT.

[14754.]—I am well aware there are lots of weeds in the profession which we ourselves want to get rid of, and if "LN 000" wants a good man (mechanic) let him pay the wage and apply to the secretary of the Society of Automobile Mechanic Drivers, one of the societies for the protection of the profession. If he does not want a mechanic-driver, then there is the National Society of Chauffeurs: but let him keep clear of registries. As to illicit commissions, I have been a driver nearly seven years, and have never seen those kind-hearted dealers, etc., "LN 000" speaks about.

D.O.D.

[14755.]—Your correspondent raises some novel points about the chauffeur question, but I think that employers themselves are to a great extent to blame for making unsatisfactory drivers. Too many owners attach great value to a driving school certificate, and to the fact that if a man has been a driver once he must always be a driver, and, incidentally, perfect. If owners would take the trouble to check the condition of their cars periodically they would soon see what sort of a driver they had. Instead of doing this they are satisfied if all looks well, and when a big repair bill comes in to revile the whole subject of motoring from A to Z. The owner's remedy is to pick men who are enthusiasts, and who will take a pride in their job. For instance, I have in my mind's eye a man at the present moment, who is a first-class driver, has been in the shops of a London 'bus company (and that means something), is a teetotaler, and a non-smoker. He is every inch a man, but he cannot get a job in private service. Why? Because he has not been in a private job before, and I suppose people think that he is full of the mechanic's so-called independence, but, whatever it is, people employ the cigarette-smoking, lounging, cheeky, ignorant puppy, who only saw a car's inside at a driving school some three months before. There are plenty of good men to be found, but until owners recognise the fact that a good man is to be found outside the schools they will go on missing these good men.

ANODE.

[14756.]—I quite agree and can endorse evry word your correspondent "LN 000" says about chauffeurs. I know six people who are giving up their cars on this account. The following qualities were attributed the other day to a chauffeur: "Dishonesty," "impertinence," "slackness," and "dirtiness." On all sides one hears the same story.

A chauffeur of quite youthful years has an income larger than many clergymen, officers, lawyers, barristers, not to speak of coachmen, artisans, gardeners, etc. And why is this now given? Cars are fool-proof, require only a little attention and care, and are not to be named in the same street with the care of horses, or a greenhouse, and there are dozens of chauffeurs and self-called chauffeur-mechanics who are out of work on account of the chauffeurs themselves.

A MOTORIST OF MANY YEARS.

[14757.]—Your correspondent "LN 000" [14672] is certainly treading on thorny ground. I have not met an owner yet who has said he was sorry his last man left. We all have our faults, but are not all as black as we are painted. Not because one pays a good wage must one expect a good man, but for a fair wage one could get a good man. Your correspondent seems to think that a chauffeur should work for 18s. per week. He appears to forget that by the time a man can style himself a chauffeur his training has cost him a good round sum. And why not smoke during a roadside delay of an hour or more? What would he say to such delay on seeing the repair kit lying about the road, the H.F. fastened on to a tyre, and the chauffeur covered with dirt and grease, and thick grease on the footboard from filling up grease stuffers. Roadside repairs must be attended to, but such as he mentions should be done in the garage, not on the road, with an interested crowd and village police. He frequently finds bearings have not received oil. Has he given his man the time to see to these parts before having to tell him to do them? With regard to the indifferent men he refers to. He has his remedy! Why not prosecute them for false character? Better to join the Society of Automobile Mechanic Drivers, who are able to weed out bad men. Should this come about we, *i.e.*, good men—of whom there are plenty—should all get a living wage. I should try and get one. Such a letter as your correspondent's throws suspicion on all chauffeurs, and makes our lot harder than it is. It also tends to reduce salaries. For myself, I am in receipt of a little more than that received by "LN 000's" groom—not that I do not want more, but cannot get it, caused through such suspicion having been thrown upon us all, good and bad alike. I trust that when "LN 000" has got an honest, sober, trustworthy man he will again write to *The Autocar*, and give us a word of encouragement.

R.A.C. POOR PAID SURREY DRIVER.

[14758.]—It is very evident to me from "LN 000's" letter that his grievance has arisen from employing an unskilled driver, as he mentions the severe punishment that this driver gave to the gears, and he also allowed the engine to labour unduly on hills without changing gear.

Correspondence.

Now if there is one thing that draws the attention of every person interested in motor cars, it is the almost extinct sound of bad gear changing; even the old horse cab-drivers who have taken to motor cab driving, and who have had no experience whatever in motor cars, change gear without a sound. It therefore seems to me that the driver had probably never been on a car before, or the car that he was driving must have been of an antiquated pattern.

"LN 000" also mentions that for many years he controlled several hundred men, and that his fitter-drivers earned 35s. per week. Now I believe a recognised working week is about fifty-four hours, so these fitter-drivers practically get 8d. an hour, and after their work is over they are absolutely their own masters until the following day's work begins, whereas the chauffeur's hours average (especially in London and large towns) eighty hours a week, for which he is presumably paid £2, which equals 6d. per hour, and he has always to be at his master's "beck and call," and has no time he can call his own, as well as always running the risk of being called upon to answer a charge of "Manslaughter," through probably no fault of his own.

Does "LN 000" grudge this man his weekly salary of £2 or £2 10s. as the case may be? As a motor car owner and one who has had the charge of a large number of mechanics and the handling of chauffeurs, I should like to mention that if one gets hold of the right man and *not* a "waster" he is well worth his wage. IVOR.

[14759.]—When are you going to allow us lazy incompetent chauffeurs to enjoy our unearned increment in peace by ceasing to publish such rot as "LN 000's" letter [No. 14672]? I would like him some time when he is thinking of taking a holiday to take charge of a typical family car of to-day—a big limousine or landaulet. His first order would be about 9.30 a.m., or it might be earlier.

There might be someone lunching ten, twenty, or more miles away. Then after lunch at 2.30 or thereabouts, a drive round to be at So-and-so's for tea, a call or two, and after that if fine a drive, arriving home in time to dress for dinner. I shall be giving him a very easy time if he is back by 5.30.

Has "LN 000" ever tried washing a big-bodied car. The one I am at present driving throws the mud out in front and runs through it all, and out behind, and then sucks it after it until you have a job to see what colour it is. He ought to try to wash one as an experience. I would guarantee it would take one of the incompetents half an hour to wash the places he had missed. It takes a good washer an hour to wash either a muddy or dusty car. This brings our chauffeur home to his wife or lodgings at 6.30 p.m. Perhaps twice a week, including Sunday, which is the chauffeur's day of rest.

I will now, in comparison, take "LN 000" back to the year, say, 1898. What vehicles did this same family then possess? A pair-horse brougham, or landau, a dogcart or waggonette, and a luggage cart (this will do for an instance). What servants did they keep? "LN 000" will say a groom at 18s. a week. I have a recollection of a plump well-fed old coachman drawing his 26s. to 30s. a week with firing, house, and vegetables free, a groom to help him at 21s. a week, and in most cases a lad to help him. Now read his day's orders. He perhaps has to send a cart to the village or nearest town, or perhaps to the station, not as we have to go ten or twenty miles to the nearest big town station on the main line, but the local station at the most five miles away. Then the afternoon calls with the pair. If they travelled fifteen miles it would be a red letter day. Now watch him drive in at 5.30. His assistant helps to take out the horses, and while coachy is changing his livery and having a cup of tea the groom is rubbing down the horses. Then tea finished he is bustling around with sieve or feeding pan. Very seldom he washes his own brougham or cleans harness; he might help so as not to be too late finishing. They always try to finish cleaning at night, as they have a good bit to do in the morning with the horses.

But has the chauffeur nothing to do in the morning? Come and see the brass work. Here is two hours' hard work if the day previous has been damp, without touching engine or transmission or tyres, or any of the dozen and one little jobs which from time to time need attention.

I think I can explain why your correspondent cannot get a good chauffeur. Most gentlemen at least pay their servants, no matter how humble or unskilled the service, enough to prevent their feeling the pinch of poverty. 18s. a week forsooth for an able-bodied young man! Is he to stack the residue of this in barrels to pay his unjust police fines, or defend himself on any trumped up charge? I wonder if the chauffeur who was sitting behind the late Earl Clifford when that young nobleman drove to his death, and another behind Lord Lonsdale the other day, thought so. Yes, I suppose the risks are well paid at 18s. a week.

I might add the best men are handed on from one employer to another. Seldom do they need to advertise. I would advise "LN 000" next time he sees a man to suit him in a friend's employ to say to him as I have had said to me many times, "If you are leaving at any time do not take another situation without informing me. If I am not wanting a man I will try and get you with decent people." Decent is the bottom of the whole matter. Good masters get good servants. I am afraid I should want a job very badly before I tried for "LN 000's" situation.

ONE OF THE LAZY DISHONEST INCOMPETENTS.

[14760.]—It seems impossible to me that any owners should have such difficulty in obtaining really good chauffeurs. More than half the trouble lies with the owners themselves. I am thankful to say I work for a gentleman. My master studies my interests and I his; he pays a good wage and gets good service for it. I have two helpers and two cars, also a few electric light duties to attend to, and there is plenty of work for the three of us, as we turn our cars out second to none.

You must remember a fitter does not work on Saturday afternoons or Sundays, and does not run the risk of having his living taken away from him by police persecution, so surely a chauffeur should receive a little more on that account alone. Owners should treat their servants as human beings, not as slaves. You very rarely find gentlemen and ladies airing their grievances in the *Field* or *Gentlewoman* over their coachmen and housemaids, though a good many of the latter are far from angels. I should have thought an employer would be able to sum up a man and his capabilities almost before he could open his mouth. I find I can generally reckon up most gentlemen, and pretty correctly, inside five minutes.

It is true some owners drive better than their chauffeurs, but they are very much in the minority, and it is vastly different driving to please one's self and driving to please three or four critics. I rarely, if ever, get any Sunday work, as my master, like myself, considers it better to go to some place of worship than to run the risk of spoiling the pleasure (by dust-raising, etc.) of the many cyclists and walkers who are only too glad to get out for one day in the week. MECHANICIAN.

Letters voicing the opinions contained in the above communication have also been received from Head Chauffeur, Live and Let Live, De Dion, Paid Chauffeur, A Chauffeur, W. G., G. W. Cook, One of the Unsatisfied Ones, Mechanic Chauffeur, Justice, W. S., and H. R. H.

DAMAGE TO ROADS.

[14761.]—I see by a "Flash" of last Saturday that the editor of *La France Automobile* is of opinion that there is no need to make in this country such a loop line of roads as I have advocated, to demonstrate that motor traffic only damages roads on which animal traffic has done the primary injury. And he invites me to come to Paris and see the Champs Elysées. I shall be glad to do so, but I do not require to go to Paris to be convinced myself. It is because I know already that I wish steps to be taken to make others know. We shall never persuade the *foule* of opponents of motoring in these islands by reporting to them our view of something we have seen in France. They are not very eager to believe, and with them "seeing is believing" in the strictest sense. What I desire is that we should have a demonstration here in this country. Then the most rabid motorphobe will not be able to gainsay or resist.

J. H. A. MACDONALD,
President of the Scottish Automobile Club.

A TWO-STROKE ENGINE.

[14762.]—If Mr. William Locke will look up one of the numbers of *The Autocar* of April, 1906, he will find the identical engine fully described and illustrated. The engine which was designed by me three years ago gave rise to exactly the same doubts, which were not at all unfounded, as expressed by your correspondent. A. SABARINI.

Club Doings.

Midland A.C.

Hon. Sec., Mr. Lichfield Meek, Grand Hotel, Birmingham.

A very enjoyable meet and impromptu hill-climb took place at Shelsley Walsh, Worcestershire (by kind permission of Mr. C. H. Taylor), on Saturday last, September 11th, when a number of members and their friends attended.

A number of cars ascended the hill, the winner being Mr. C. J. Newry on a 12 h.p. De Dion; second, Mr. Arthur Cox on a 9 h.p. Riley; and third, Mr. L. Merryweather on a 20 h.p. Vauxhall.

Sheffield and District A.C.

Hon. Sec., Mr. F. B. Cawood, 63, Norfolk Street, Sheffield.

On Saturday last the Sheffield and District A.C. held a pace-judging run over a course of fifteen and a quarter miles, finishing at the Snake Inn on the Glossop Road. Each competitor drew a card stating the rate he was to travel, the speed in every case being below the legal limit.

Each car had to provide an observer to act on some other car, and no watches or speedometers were allowed.

Mr. Herbert Beesley proved the winner, drawing nineteen miles per hour, and travelling 19.16 m.p.h.

The following table shows how near each competitor got to the rate on his card, and incidentally how accurately speed can now be gauged by motorists while driving:

	Name and Car.	M.P.H. fast.
1.	Herbert Beesley (15 h.p. Talbot) ...	.16
2.	Turton Chatterton (6 h.p. De Dion) ...	.20
3.	G. D. Flather (12-16 h.p. Talbot) ...	.49
4.	F. R. Watson	.93
5.	H. B. Gallimore (10 h.p. Riley) ...	1.40
6.	A. Worrall (19 h.p. Hillman-Coatalen) ...	1.51
7.	G. F. Wesson (9-11 h.p. Darracq) ...	3.40

A lady spectator at the Scottish A.C. hill-climb obtaining a commanding view.

North Middlesex A.C

Hon. Sec., Mr. H. Wilkins Norman, Normanhurst-Harlesden Road, N.W.

Towards the close of the summer season the N.M.A.C. is already arranging its winter fixture list and, in pursuance of its consistently maintained object of affording its members benefits of a practical nature, the club has decided to hold a series of lectures at headquarters (The Great Northern Hotel, King's Cross) on useful subjects connected with automobilism. Utility and simplicity will be the key-note to be struck at these lectures, which are intended to deal in a non-technical manner with such subjects as "Fuel Economy," "Lubrication," "Ignition," "Vulcanising," etc., and which it is hoped will help every member to get the maximum efficiency out of his car with economy. The proposal is to precede each lecture by an informal club dinner, open to members of the club and their friends.

As the majority of motorists have noticed, motor car warning signals are almost invariably invisible at night, and the N.M.A.C. has felt that some means were necessary to indicate their existence. At the suggestion of a member of the committee the club recently purchased a number of street lamp panes bearing the red triangle, with the intention of persuading the local authorities to place them in the street lamps, to repeat the ordinary signs in particularly dangerous places. Already the Southgate and Wood Green District Councils have adopted the idea, and the experiment appears to be entirely successful. The glasses bear the club's name.

The committee has forwarded to the Royal Automobile Club a resolution expressing approval of the attitude adopted by the R.A.C. General Committee with regard to the Development and Road Improvement Funds Bill, Part II.

Lincolnshire A.C.

Hon. Sec., Mr. Godfrey Lowe, St. Catherine's, Lincoln.

A committee meeting was held at Sleaford, on September 15th, at which there were present Major J. A. Cole (chairman), Messrs. E. J. Brockway, T. C. Ives, W. A. Tomlinson, and Godfrey Lowe (hon. sec.) A considerable amount of correspondence was dealt with especially on the subject of the provision of special danger signs in various parts of the county. The committee confirmed a resolution previously passed that they deprecated the erection of special danger signs except under exceptional circumstances by other than the proper authority, *i.e.*, the county councils. Also that danger signs were not required where the danger was obvious such as in a village or at cross-roads which could be distinctly seen. It was only in cases where the danger was concealed and come upon suddenly that signs were required. It was decided to communicate with the Railway Company on the subject of the accommodation for cars provided at the New Holland and Hull Ferry, it having been reported that several motorists had had to return from New Holland and travel round by Gainsborough on account of the difficulty of getting over the ferry. The committee then considered the Development and Road Improvement Bill, and the following resolution, which had previously been circulated among all members of the committee, was, after slight verbal amendments, passed:

"Resolved that: The club welcomes the proposal to set up a special road authority, but is of opinion that—

"(1.) There should be separate Road Boards under the control, not of the Treasury, but of the Local Government Boards of England, Scotland, and Ireland, to administer the proceeds of the motor taxation received in the respective countries.

"(2.) As the funds to be administered are to be entirely derived from motorists, that motorists should have adequate direct representation on the respective boards.

"(3.) Special motor roads are not required, but where short stretches of road are constructed to avoid dangerous places they should be available for all classes of traffic.

SCOTTISH A.C. HILL-CLIMB.—Mr. A. H. Crawford on a 10 h.p. De Dion, winner of cup in Class 1, rounding the last corner near the top of the hill.

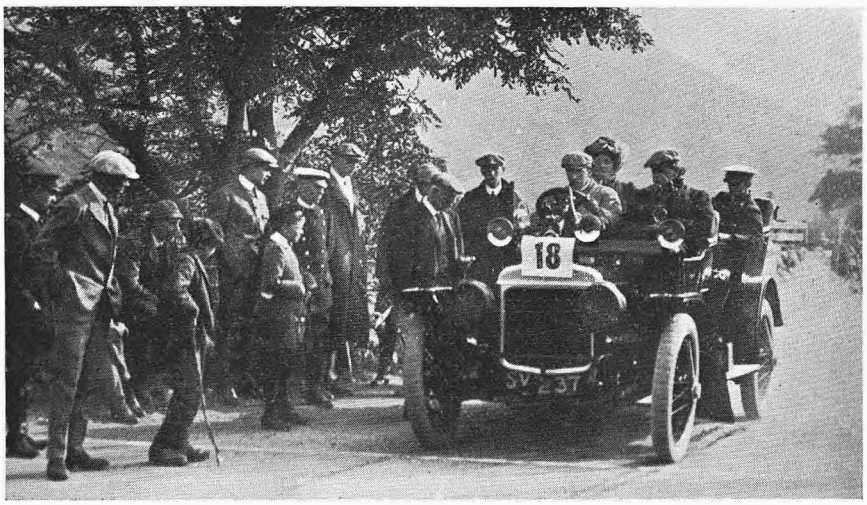
"(4.) Inasmuch as the whole district will benefit by the improvement, it is considered that such special short stretches of road should not be constructed out of funds contributed entirely by motorists.

"(5.) Powers should be given to the various Road Boards to facilitate the transit of motor traffic over existing ferries and toll bridges."

Speed-judging Competition in Derbyshire.

Promoted conjointly by the Derby and District and Derbyshire and North Stafford Automobile Clubs a speed-judging competition was held on Saturday last.

The starting and finishing point was Mickleover, near Derby. The course, which was kept secret prior to the event, was along winding lanes, a distance of upwards of four miles. Competitors chose any speed between twelve and twenty miles an hour. A silver medal was awarded to the winner, and a bronze medal to the runner-up.



Mr. R. H. Brand on a 38 h.p. Daimler, winner of cup in Class 3, starting from the foot of the hill in the Scottish A.C. hill-climbing competition.

The winner was Mr. F. A. Bolton, J.P., president of the Derbyshire and North Stafford Club, whose attempt to drive his 15 h.p. Standard car at fifteen miles an hour only failed to the extent of .43. Mr. G. B. Fletcher, who was first in the last contest, was second, and Mr. D. C. Bolton and Mr. R. Ford tied for third place. A second attempt resulted in Mr. Bolton taking precedence. The first eight positions were :

	Name and Car.	Error, secs.
1.	F. A. Bolton (15 h.p. Standard)	.43
2.	G. B. Fletcher (10-12 h.p. Humber) ...	1.1
3.	D. C. Bolton (15 h.p. Standard)	5.1
4.	R. Ford (28 h.p. Daimler)	5.1
5.	B. Saddler (8 h.p. De Dion)	7.6
6.	Arthur Ford (38 h.p. Silent Knight Daimler)	12.8
7.	H. Jefferson (9 h.p. Riley)	14.6
8.	Allan Ford (38 h.p. Silent Knight Daimler)	20.4

Berks A.C.

Hon. Sec., Lieut.-Col. W. Waring, Beenham Grange, Reading.

The Berkshire Automobile Club brought its summer season to a close on Saturday last, when Mrs. Hippisley, of Sparsholt Manor, was "at home" to the members. A joint motor gymkhana with members of the North Bucks A.C., to which Mrs. Hippisley is honorary secretary, was held along the drives in the grounds. A course of about 280 yards had been selected, but this was lengthened by 100 yards for the backward driving test, in which competitors had to take a particularly awkward turn, uphill, to the house. The tilting race (six rings) was won by Mr. Garnett (18 h.p. Straker-Squire), with Dr. Secretan (15 h.p. Brooks and Wollan) — after a tie — a good second. Mr. Garnett, with an average of nearly twelve miles per hour, also won the backwards test, with Mr. Edmund Stevens (20 h.p. Belsize) second at eight miles per hour. Miss Loder Symonds, in Mrs. Hippisley's All-days car, won the potato race, for which Miss Ciceley Hey, in Dr. Woodward's De Dion car, was second. The silver cups and other prizes were distributed by Mrs. Hippisley. The balloon chase on the previous Saturday was a great success, the Hon. C. S. Rolls ascending as the "hare" in *The Midget*.

Scottish A.C.

Hon. Sec., Mr. R. J. Smith, 163, West George Street, Glasgow.

The following are the best results in respect of the cars which completed the confined hill-climb on Cairn-o'-Mount, on September 18th.

	No. of cylinders.	Bore and stroke.	R.A.C. rating h.p.	H.P. rating under Club formula.	Weight unladen.	Efficiency marks on formula.
Class I.						
Mr. A. Hunter-Crawford's 10 h.p. De Dion ...	2	90 × 110 mm.	10.04	10.626	1,904 lbs.	236
Mr. John J. Wilson's 10 h.p. Adams	1	121 × 152 mm.	9.02	11.914	1,893 lbs.	180
Mr. Archd. Wilson's 10 h.p. Adams	1	121 × 152 mm.	9.02	11.914	1,904 lbs.	132
Class II.						
Mr. J. Leng Sturrock's 12-14 h.p. De Dion ...	4	75 × 100 mm.	13.94	13.849	1,908 lbs.	346
Mr. John B. Peden's 14-20 h.p. Siddeley ...	4	90 × 101 mm.	20.08	20.077	2,576 lbs.	227
Mr. James R. Nisbet's 10-12 h.p. Humber ...	4	82 × 95 mm.	16.9	15.999	2,268 lbs.	223
Class III.						
Lieut. R. H. Brand's 38 h.p. Daimler	4	124 × 130 mm.	38.8	45.093	3,472 lbs.	252
Mr. P. Scott McHutchen's 38 h.p. Daimler ...	4	124 × 130 mm.	38.8	45.093	3,528 lbs.	247
Mr. George F. Paisley's 24 h.p. Albion ...	4	108 × 114 mm.	28.9	31.340	3,612 lbs.	231
Mr. William Houston's 24 h.p. Albion	4	108 × 114 mm.	28.9	31.340	3,248 lbs.	217
Mr. Robert Osborne's 40-50 h.p. Rolls-Royce ...	6	114 × 114 mm.	48.54	52.379	3,920 lbs.	195
Mr. John Adam's 20 h.p. Sunbeam	4	105 × 130 mm.	27.6	32.332	3,330 lbs.	186
Mr. Thos. Shaw's 40 h.p. Napier	6	101 × 101 mm.	38.4	37.926	3,500 lbs.	183
Mr. Robert J. Smith's 18-25 h.p. Siddeley ...	4	101 × 114 mm.	25.6	27.409	2,863 lbs.	182
Mr. A. McKerrow's 30 h.p. Siddeley	4	117 × 127 mm.	34.2	39.527	3,620 lbs.	178
Mr. J. H. Paterson's 28-40 h.p. Peugeot ...	4	130 × 140 mm.	41.9	52.073	3,864 lbs.	162
Mr. William Shepherd's 50 h.p. Darracq ...	6	121 × 121 mm.	54.12	59.739	3,696 lbs.	153

The prizes awarded were as follows:

Prize for highest marks in Class I., won by Mr. A. Hunter Crawford's 10 h.p. De Dion. Prize cup, presented by Mrs. George F. Paisley, for highest efficiency of cars of less than 24.8 h.p., and prize, presented by Mr. A. Hunter Crawford, for highest efficiency over all classes, both won by Mr. J. Leng Sturrock's 12-14 h.p. De Dion, which was also highest in Class II. Prize for highest efficiency in Class III., and prize cup, presented by Messrs. J. Hunter Steen and C. J. Campbell Steen, for highest efficiency of cars of not less than 24.8 h.p. R.A.C. rating, both gained by Lieut. R. H. Brand's 38 h.p. Daimler.

The weather was excellent, and there was a large number of interested spectators from all parts of the country.

Flashes.

Sir J. H. A. Macdonald has a most delightful story commencing in the current month's issue of *Chambers' Journal*. It shows the extraordinary versatility of the grand old man of motoring, as the tale is told by the heroine in the first person singular.

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Many reasons have been assigned for the proposal in the Road Bill to build special motor roads besides those set forth by its promoters. The last and perhaps the most ingenious is voiced by the *Spectator*. It is suggested by a correspondent in the *Spectator*—and editorial attention is drawn to the suggestion—that if motor traffic at high speed could be permitted effective competition could be set up against the railways. We give the suggestion for what it is worth and with no political intent. Whether it be right or wrong, it is lacking neither in interest nor ingenuity.

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"Pneu a Boules" is the distinctive appellation of a reversible rubber ball tyre which will shortly be on trial in this country. A car having its wheels tyred with these tyres will be here early in October, and those of our readers who may be desirous of inspecting it should address Mr. Maxim Kogan, 411, Birkbeck Bank Chambers, High Holborn, W.C.

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In the old days public spirited people used to offer prizes for motor cars that would go. Things have changed now, and Mr. Charles Friswell has offered the Aeroplane Club a £500 prize in trophy or cash for the first aeroplane which can stand still in the air for even as short a period as one minute.

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Notwithstanding the disfavour with which the members of the French motor car industry and the Automobile Club of France may regard motor racing, Belgium will not relax her hold upon it. During the presentation of the prizes won at the Ostend Meeting, the Count de Liedekerke, speaking as the president of the Chamber of the Automobile and Cycle Industries, announced that the classic Circuit des Ardennes would be held in 1910.

Prince Kuropatkin, in his 12 h.p. Humber, at the Russian Auto Club race from St. Petersburg to Riga and back. The driver (in the White coat) is J. Swift who was mechanic to Mr. G. P. Mills when he won the Heavy Tourist Trophy on a Humber in 1907.

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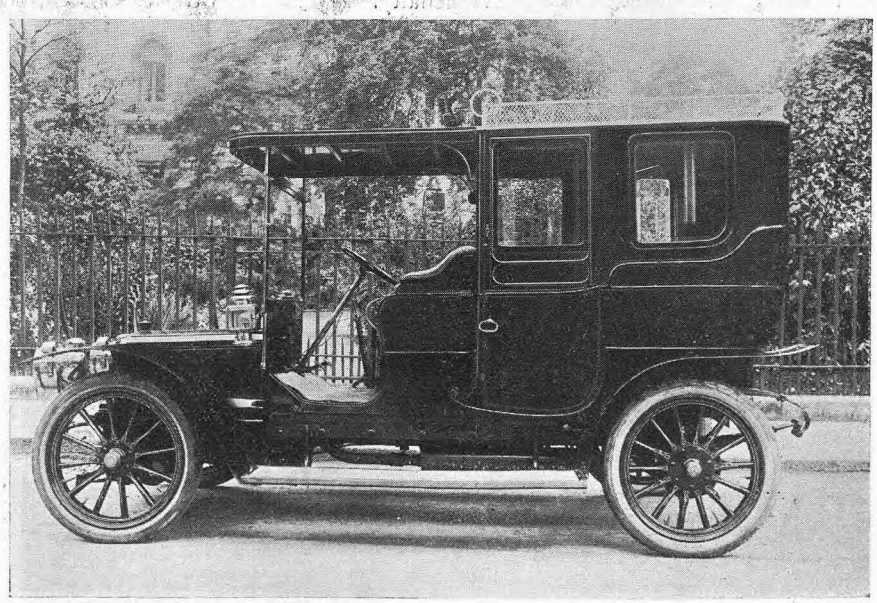
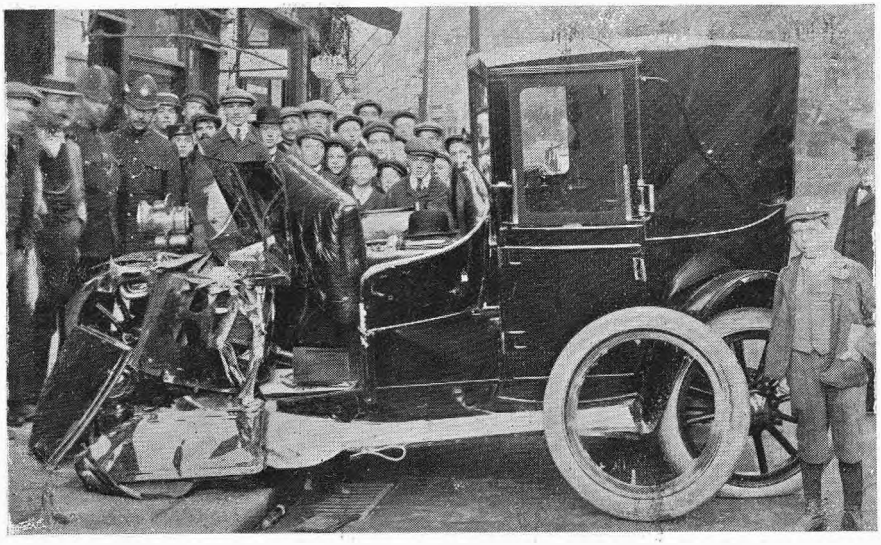
Considerable interest will be felt in the announcement that Messrs. Clément-Talbot, Ltd., of Barlby Road, North Kensington, will, at the forthcoming Olympia Show, stage a 20 h.p. six-cylinder Talbot. The engine dimensions will be similar to those of the greatly-favoured 12 h.p., and we should imagine that a six-cylinder car of this calibre would make a delightfully handable, nippy, and speedy road machine. The object of the design is quietude, extreme flexibility, and silkiness, redounding to exceptional tyre longevity—a thing greatly to be desired in these days of advanced tyre process. Mr. Frank Shorland feels that with this machine, exhibiting as it will all the at present well-known Talbot attributes, the private user will be able to enjoy all the pleasures and comforts of a six-cylinder without resource to abnormal horse-power.



A 15-25 h.p. Panhard recently supplied to Sir Joseph Ward, Premier of New Zealand, by Messrs. W. and G. Du Cros, Ltd. The top of the body is detachable, and may be lifted up from the front and back seats, thus making a phaeton body.

Flashes.

The Automobile Club of Brazil, whose membership is upwards of 150, and whose headquarters are at Rio de Janeiro, has made application for affiliation with the R.A.C.



At Willesden, recently a motor cleaner, and a shop assistant were charged with stealing a car, the property of Sir Edward Holden. The cleaner took the car out of the garage and drove off with the other man towards Willesden Green, where he ran into a shop, with the dire result depicted.

The following information is from the report by the secretary of H.M. Legation at Rio de Janeiro (Mr. M. Cheetham) on the trade of Brazil in 1908, which will shortly be issued: "The motor car has arrived in Rio and some of the larger cities, and it has come to stay. Most of the cars are French, while the F.I.A.T. Company of Turin have placed a number of passenger cars and heavy motor lorries. British manufacturers appear not to have tried very hard for a share in the trade, and but few British cars are running."

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There was a sad accident in Rotherham last week when three children were killed and six others injured. It was caused by a traction engine failing to climb a hill with a heavy load. The engine came to a stop, got beyond control, and ran backwards. The runaway dashed into a party of children with the sad result recorded above. We were sorry to see that several papers which gave considerable prominence to the event entitled it "A motor accident—three children killed and six injured," so that anyone, unless he read a description of the affair, would imagine that a motor car had caused the deaths and injuries to the little ones. It seems an extraordinary thing that widely read journals should be edited by men who do not know the difference between a motor car and a traction engine, but their inexcusable ignorance does a lot of harm to motoring.

Anglesey, which does not arbitrarily enforce speed limits, appears to have distinguished itself in an unenviable direction. The owner of a small two-seater 10 h.p. car was summoned, when driving from Holyhead to Bangor, for reckless and dangerous driving through a village about halfway, known as Gwalchmai. He assures us that as a matter of fact he was only doing about ten or twelve miles an hour, and the policeman in the village did not put up his hand or call on him to stop. He was only stopped at Menai. It was alleged he was doing thirty to thirty-five miles an hour, that there were some children in the roadway, that he nearly knocked one down, nearly collided with another vehicle, and that his car was swaying about. The motorist only had one witness to say that he was driving slowly and properly, and the policeman had two to say that he was not, and he was fined £5 and costs—£7 18s. in all. At this juncture, he tells us, the bench retired to lunch. When they returned they took another case, in which the driver of a big car was charged with travelling at forty miles an hour, which was admitted, but it was proved that the car was hurrying to catch the boat at Holyhead, so the driver was let off with costs only. It should be understood that we are not blaming the magistrates for dealing lightly with the owner of the large car, but, even if we accept the evidence in the case of the small one, we cannot see why forty miles an hour on a large car should be regarded as a venal offence whilst thirty-five on a small one entailed a distinctly heavy penalty.

A 30 h.p. six-cylinder Napier, owned by the Hon. W. T. Loton, one of the early pioneers of Western Australia, and who also sits in the Legislative Council. This is the first six-cylinder Napier to be imported into Western Australia.