NOVEMBER 28TH, 1908.

THE AUTOCAR

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

EDITED BY H. WALTER STANER.

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Notes.

The Motor Show.

There is no question whatever that the annual exhibition of 1908, which closed its doors last Saturday, is the best motor show which has been held up to date. We are not referring to mere numbers of cars exhibited, but to the higher standard of quality, and we have no hesitation in saying that on all-round merit the cars were well in advance of those shown in any previous exhibition, both the design and workmanship being distinctly ahead of the design and workmanship of a year ago. While it is true that advances have also been made in the quality and suitability of the material used, it is equally true that these are virtues which cannot be judged to any great extent in an exhibition, and the criticisms must as a whole be directed to design and workmanship. The improvements referred not only to the chassis, but also to the carriage bodies, so that the car as a whole has distinctly advanced since last year. Nevertheless, there were many bodies in the show which were not all they should be. Some of them, in fact, could only be moderately comfortable for persons of six feet or over; but the vital points which go towards comfort in a body were much more widely observed this year than last.

To turn again to the mechanism of the car. While, as we have said, it unquestionably shows all-round advance, there are still many instances of what we can only characterise as poor design. Many parts of the car which should be easily accessible, and which were easily accessible on the best designs, were hopelessly difficult to get at on others. In fact, in some cases it almost seemed as though ingenuity had been expended in devising methods whereby the carburetter, magneto, valves, and other parts requiring occasional attention or adjustment could be made difficult of access. In some of the worst instances practically every part was hard to get at. In others one or two of the items we have named were inaccessible, though the merest change in design would have made them quite satisfactory.

To the really keen student of design the difference between the methods was obvious. In the best designs it was evident that the whole car and all its details had been carefully designed in the drawing office, and every part of it gone over again and again till the designer was satisfied that no further improvement could be made at the moment. On the other hand, it was equally obvious that other cars had been designed piecemeal, so that, while the units might be very good in themselves, they became unsatisfactory when embodied as parts of the complete car. Then, again, the improvements in the vital matters of brake and steering gears were not so numerous as they should have been. There were fewer downright bad steering gears than in previous shows, but still many were shown which were very far from what they might have been had they been properly designed. Much the same remarks might be applied to brakes. Many of the brakes were too small. It is not a question of power, but of wear, which makes the small brake so unsatisfactory. It may be just as powerful as the brake of double the area, but the wear is more than twice as rapid, so that the brakes are constantly requiring adjustment, whereas with a brake which is well up to its work very long distances can be accomplished before any adjustment is necessary. However, despite these and other drawbacks, the average of good design and good workmanship was higher than it has ever been, and the percentage of indifferent cars was lower than in any previous exhibition.

Motor Racing.

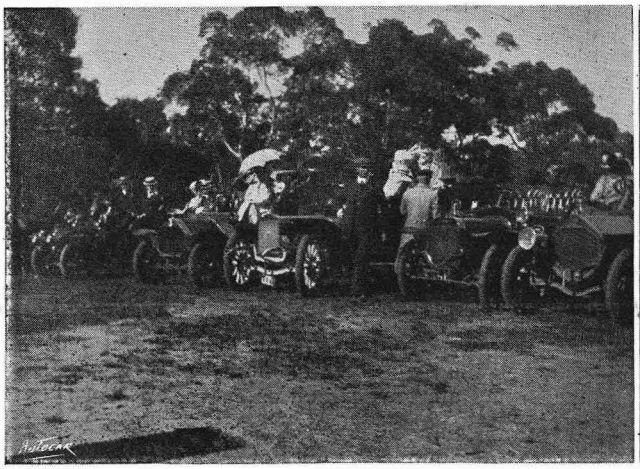
It was the unwelcome duty of *The Autocar* to record the unfortunate statement with regard to the Four Inch Race made by Mr. Joynson Hicks, M.P., chairman of the Motor Union, at the meeting held by that organisation at Oxford last September. Not content with

the remarks so well criticised by our contributor, "Owen John," in our issue of September 26th, Mr. Joynson-Hicks saw fit not only to add to those remarks on the occasion of the Motor Union dinner on the 18th inst., but practically declared himself proud of having uttered them. The daily press tirade against that sporting event is fresh in the minds of all motorists, but it is as well to remind them that, so far as we know, not one of the papers took the trouble to point out that the race was held by Act of Parliament passed by the Manx House of Keys, on properly guarded roads. The able chairman of the Motor Union took no steps to disillusion the public. On the contrary, his remarks were eagerly seized upon by the daily newspaper reporters, and were distributed far and wide throughout the country the next day, giving the unmistakable impression that motor racing on the high roads was legal, and that the Motor Union had set its face against such events, the public being left to draw its own conclusions. More than half of the non-motoring community regard the most innocent 20 m.p.h. trial as a race, and one only has to listen to the remarks of any small farmer —whose horse shies at a car—or hear the sporting yokel call out to the driver of the last car, "Go it, my boy, or you'll never win," to learn the truth of this statement. Mr. Hicks has not only missed an opportunity of helping to save the utter abandonment of the sporting side of motoring, by failing to explain that motor racing on the roads always was and always will be illegal, except when the Parliament of a certain kindly island decrees it to be otherwise, but he has failed to act as a sportsman. Races, trials, and competitions are still necessary; they are of indisputable value as tests; they help the maker and help the buyer. The sporting element in motoring creates interest in the pastime, and to eliminate it will be to injure the movement and the industry. Moreover, to quote "Owen John," "it is by no means the place of the Motor Union —who properly boast they have no interest in racing or trials—to decry the efforts of their rivals."

The Gate Change Again.

Nearly three years ago it was stated on good authority that the owners of the Mercédès patents were about to take proceedings against makers and users of motor cars who were using the gate change. This gate change was the invention of the late Herr Gottlieb Daimler, and was first embodied upon Mercédès cars. At the time of the threatened action (January, 1906) the matter was very fully gone into in *The Autocar*. We abridged the Daimler and Meybach patents which covered the gate change, and also gave counsel's opinion as to the validity of the Mercédès patents. To put the matter in a nutshell, counsel was of opinion that the Mercédès patents were valid ones. This, as we have said, is some three years ago, and nothing has publicly been heard of the threatened action for infringement by the owners of the Mercédès patents until the last few days. Now it is authoritatively stated that they intend to take action to maintain their rights.

The history of the gate change is not without interest. Prior to its introduction the slotted quadrant was almost universally used. When the gate was first introduced on the Mercédès cars it was a unique feature, and for some considerable time no other make embodied the gate. The first to do so was, so far as we recollect, the English Daimler, which had a gate change into which certain modifications were introduced under a separate patent. Now, so far as the Daimler was concerned, we believe the makers had every right to use the gate, as their original agreements with the German Daimler Co., the makers of the Mercédès cars, put them on a different footing from other makers. From that time the use of the gate has gradually grown, and now it is more widely used than the quadrant on all new cars. No doubt more quadrants are in use than gates, but comparatively few new cars are turned out with the slotted quadrant nowadays, the gate or some modification of it being almost universal on other than quite small cars. As we said in 1906 we say to-day, we do not think that manufacturers or users need feel any deep anxiety in the event of the gate patent being established as an absolutely valid patent, as it is not likely that the owners of the British patent would deal hardly with infringers. The gate, desirable though it may be, is not indispensable, and any unreasonable royalty would result in its abandonment and a return to the slotted quadrant or some modification of it. It is not likely that the owners of the gate patent would be so foolish as to repeat the mistake of those who



THE SOUTH AUSTRALIA A.C. Two views taken during the opening run of the South Australian A.C., held on October 10th. The run was from Adelaide to Belair and back, the proceedings being enlivened by afternoon tea and a gymkhana at Belair. The right hand photograph shows a Standard car on one of the stiff hills on the route. This car, according to our correspondent, appeared to have made fastest time, but as the climb was untimed there is no means of telling. This suggests that the cars should be timed, and a competition arranged, the person who names the car which made fastest time to take the prize. The other photograph is of the cars lined up in the National Park at Belair.

owned what was believed to be a master patent upon carburetters. Had they been content with a reasonable royalty they would probably have been enjoying it to-day, but as it was their terms were so unreasonable that a few of the makers combined and upset the patent in 1901, so that the float feed and jet combination is open to anyone to-day.

The New Patent Law.

It might be assumed in connection with the gate change that the position is different to-day compared with three years ago, because of the new law with regard to patents. There is a difference, but it does not affect the case of an infringement. To take the gate as an illustration, it might be assumed that because the Mercedes car was made in Germany, the owners of the British patent could not take action for infringement without the risk of their patent being revoked upon the grounds that it was being made abroad. While it is quite true that the Society of Motor Manufacturers, or some maker or combination of makers, might deem it advisable to try to force the owners of the gate patent to manufacture it in this country, this would be an entirely separate and independent action, and would have nothing to do with the action for infringement, except that it might be taken as a sort of retaliation. We mention this because there is so much misunderstanding about the new Patents Act. For instance, it has been suggested that the Renault car should be made in England, because of the patent upon the cooler and one or two other important items of the design. As a matter of fact, the new Act does not require anything of the sort. It merely makes it necessary under certain conditions for the owner of a patented article hitherto manufactured abroad to manufacture that article in England; and therefore the utmost retaliation which the new Act would provide would be to compel the owners of the Mercedes patent to manufacture the gate in England or the Renault people to make their cooler and other patented items of their car in this country, but it would in no way affect the main portion of the car, though there were enthusiastic writers on the new Patents Act who stated positively that when it came into force it would necessitate all motor cars being manufactured in England.

Reformation from Within.

Several months ago we urged the extreme desirability of the leading motor organisations taking it upon themselves to eliminate the black sheep from the ranks of motoring. We pointed out that if motorists themselves did not take drastic steps to curb the few habitually reckless drivers who were doing so much harm to the motor movement, Parliament would take up the matter, and in making new regulations to check the reckless minority, would almost of necessity bring about a state of affairs which would press hardly upon the considerate majority. Our proposition was accepted as sound by the larger proportion of the motor world, but the plan took some time to organise, and by the time it was organised the period of heaviest motor traffic for the year was over. However, matters are now taking definite shape, and we have to congratulate the Irish Automobile Club and the Royal Automobile Club for instituting legal proceedings against motorists who they had reason to believe had driven recklessly, and we have also to congratulate the Automobile Association on the expulsion of members who have likewise transgressed the rules of reasonably safe and considerate driving.

So far the whole of these instances only amount to some half dozen or so, but they show plainly that motorists are realising the importance of internal reform; the importance of ruthlessly dealing with the inconsiderate and reckless few in order that the considerate and careful majority shall not suffer for their shortcomings. At the moment we have but to urge the Royal A.C., the Automobile Association, and all the clubs and organisations working with them to continue the good work which they have begun. Up to now we can say positively that every case has been most exhaustively enquired into before prosecution or expulsion has been resorted to. This is as it should be, as it should be a recognised fact that the R.A.C. would never institute a prosecution unless the case was one which it regarded as proved. At the same time we hope that undue caution from the legal standpoint will not be practised. Neither the R.A.C. nor any other public body can, or should, expect to win every case it institutes. It is, of course, desirable that the Club should take no action except upon good grounds, but in some cases the moral evidence may be strong where the legal evidence is weak, and in that case we hope the Club will not hesitate to act even though it may have a bad case from the purely legal standpoint. Whether it be victorious or not it will receive the support of all considerate motorists in its action, and it will strengthen the public recognition of the fact that motorists themselves are determined to eliminate the black sheep from their ranks. Such a reputation is most desirable; nay, it is indispensable, and it will only be obtained by concerted and drastic action by the representative bodies, so that the lot of the reckless driver becomes practically an impossible one. We want motorists to make things so unpleasant for the really reckless driver that he must either reform or give up motoring.

It would not be a bad thing if those justices of the peace who entertain prejudice against motor cars would take a lesson from His Honour Judge Austin, who presides over the Weston County Court. This judge, in delivering judgment on a case in which a motorist sued a dairyman for damages to a car caused by the negligence of a boy who was driving a milk cart, gave expression to some extravagant sentiments against motorists, but he did not allow his private feelings to warp his judgment, as many of the great unpaid are in the habit of doing. The legal sense—which, after all, is a sense of justice—was strongly developed within him. It is this sense which the average J.P. lacks, and as a consequence he is unable, even when acting in a judicial capacity, to break away from the influence of his own prejudices. Judge Austin, however, though violently anti-motorist, gave a righteous judgment. He said he yielded to no one in his dislike of motor cars, but at the same time one must be just and fair. He was of the opinion that there was no fault on the part of the motor car driver, but that the person in fault was the boy in the cart. Parliament had foisted those pestilential things upon them, and it followed that people using the highway must use more care. They must take every precaution not to be run down by the abominable things. He thought the boy did not take sufficient care coming out of the side street, and had disregarded the sounding of the horn. He gave judgment for the motorist for £4 10s. with costs.

USEFUL HINTS AND TIPS.

TESTING ROAD WHEELS FOR ALIGNMENT TO SAVE TYRE WEAR.

From time to time we have referred to the extreme importance of keeping the road wheels in line, as any absence of alignment results in rapid wear of the tyres, besides wasting power and affecting the steering of the car. Of course, the degree of needless wear to the tyre, the amount of power wasted, and the effect upon the steering are proportionate to the inaccuracy of the wheels. There is no such thing as absolutely correct alignment, but something very nearly approximating to it must be obtained, and retained, if the tyres are not to be unnecessarily worn away.

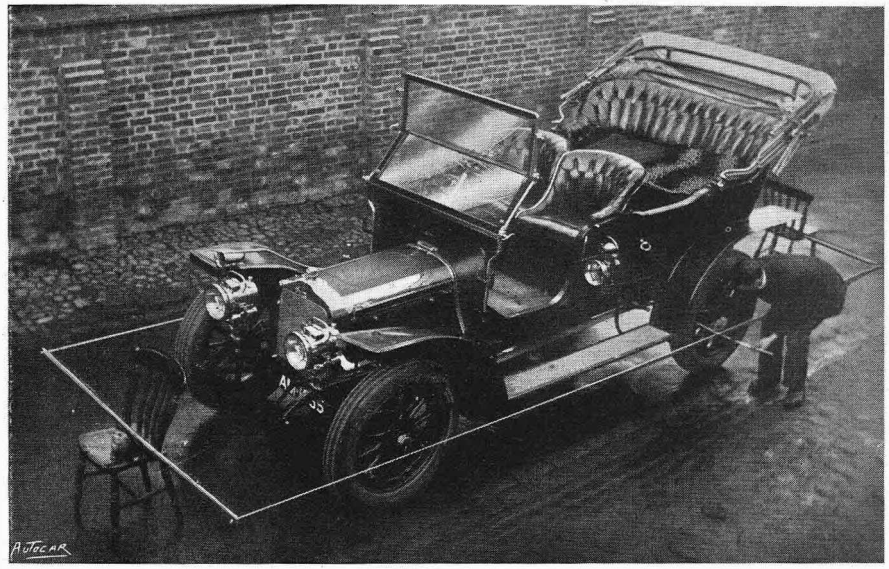


Fig. 1.—The Palmer method of testing wheel parallelism.

In the course of their very long experience as tyre makers the Palmer Tyre, Ltd., have seen so much needless damage done to tyres that they have made a study of the subject. They have found many instances of undue wear to tyres for which the users not unnaturally blamed them were really due to the wheels of the car being out of line, so that the tyres were dragged over the road, instead of being rolled along it. The makers of the Palmer tyre recognise quite well that the average owner has not the necessary appliances or staff for easily testing alignment, and therefore they have devised what for want of a better term we may call a one man method of ascertaining whether the wheels are all in line, and that without the necessity for any but the very simplest appliances. The procedure is clearly illustrated in fig. 1. Two strips of wood, each about 7ft. long, should be procured. Holes should be drilled near the ends exactly the same distance apart, and the two strips of wood should be connected by two equal lengths of string, about 15ft. long. An ordinary chair is then placed in front of the car and another at the back, and the strips of wood are arranged across the chairs, and adjusted so that one of the strings is exactly parallel with one of the rear wheels. Whether it is parallel or not is ascertained by measuring the distance between the string and the rim of the wheel at opposite sides of its circumference. The other rear wheel should then be exactly parallel with the other string. If it is not it means that the rear axle is bent, the wheels out of truth, or the axle has shifted along the springs, or in the case of a chain-driven car it has been unequally adjusted. Having ascertained the parallelism of the rear wheels, one of the steering wheels should be set so that it, too, is parallel with the string, the string, of course, on that side remaining parallel with the back wheel. Having done this, the steering wheel on the other side should be found in correct alignment also. As the rims are not always quite true, it is advisable to move the car sufficiently to cause the wheels to make a quarter of a revolution, and then to repeat the whole of the measurements. If any marked discrepancy is found, the truth or otherwise of the rim can at once be ascertained by jacking up the car and spinning the wheel.

It will be seen that this simple method of testing the alignment cannot fail, because the two strings are parallel with each other, as the holes in the strips of wood are exactly the same distance apart. Therefore, as the two strings are parallel, it follows that if one string is adjusted to be parallel with one of the driving wheels, and the steering wheel on the same side is also set parallel with the string, the two wheels on the other side must be parallel with their string, and if they are not the wheels are out of alignment, and the defect should be remedied. It should be borne in mind that occasionally the front wheels are rather closer together than the back. That is to say, the track in front is slightly narrower than the track at the back. This, of

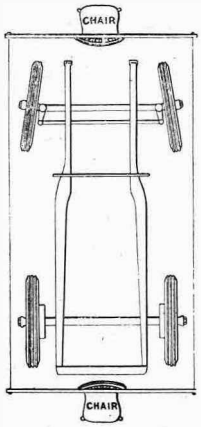


Fig. 2

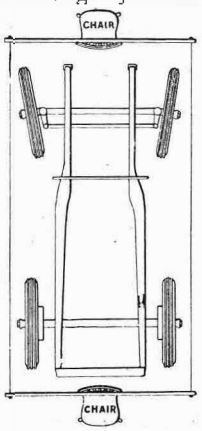


Fig. 3.

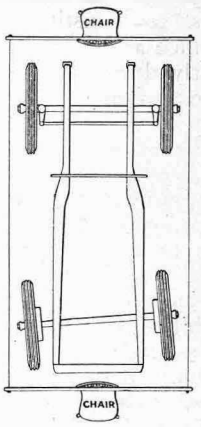


Fig. 4.

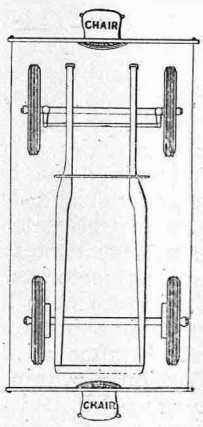


Fig. 5.

Various examples of lack of alignment, with strings, etc., in position.

course, can easily be allowed for in making the measurements.

Figs. 2 to 5 show the errors in alignment which are most common. Each of the figures is a plan view, and fig. 2 shows the common defect of the connecting rod being too long. That is, if it is placed behind the axle; if in front it is, of course, too short. Fig. 3 shows the same defect in the opposite direction, and the cause is due to bad fitting after manufacture, or to the rod which connects the two wheels having been bent in some way. The error shown in fig. 4 is most common on chain-driven cars, and is due to careless chain adjustment, so that one end of the axle has been pulled back further than the other. It is also occasionally present in gear-driven cars, and caused by careless adjustment of the radius rods if radius rod adjustment is provided, or it may be due to the axle moving in the spring clamps, though, of course, in properly constructed cars such a movement is impossible. Fig. 5 only occurs when a car has been carelessly erected or has been in some serious collision or subjected to some extraordinary strain, so that the frame itself has bent or the axles have moved bodily sidewise in the spring clamps. It is most unlikely such a defect would pass any but a criminally careless manufacturer, and it is rarely found except when a car has been in some accident.

By far the most common defects are those shown in figs. 2 and 3, and they are so common that it almost seems as though the coupling rod between the two wheels should be made adjustable. It is made adjustable in one or two cases. When it is not, the only remedy is to have it very carefully heated and bent by a good smith, the greatest care being taken that the ends or eyes are not set out of their proper position in any way, otherwise they will bind badly upon the steering pins. When any difficulties arise in finding out just where the lack of alignment lies, it can generally be ascertained by measuring and comparing the distances between the centres of the back and front wheels on each side of the car, and also by measuring the distances between the wheel rims and the frame.

As to the rear wheels, unless the frame is bent it is usually easy to set them right by means of the radius rods, but, of course, in the case of a defect like 5, and assuming that the axles themselves were all properly positioned on their springs, the only possible remedy would be to have the car dismantled and the frame trued by a firm of competent motor engineers. The Palmer Tyre, Ltd., advise all owners of cars to test their wheels in this way from time to time, and even to test new cars when received, as they tell us they know of cases in which new cars have been found to exhibit the defect shown in figs. 2 and 3 in a marked way, so that directly they were put into use they commenced to scrape away their front tyres.

HOW TO SET HEADLIGHTS. From the French.

Much of the penetrative luminosity of expensive headlights is wasted and lost by inattention to and ignorance of the proper setting of the lamps upon the frame. According to a lucidly written article in our smart contemporary, *La Pratique Automobile*, it is most important to see that the forks of the lamp brackets are absolutely perpendicular to the horizontal plane of the car. This in order that the axis of the conical beam of light projected by the lens should be at right angles to the vertical plane. This principle is an absolutism with the great lamp making houses, and runs counter to the ideas of some drivers, who think that the lamps should be set slightly forward out of the perpendicular in order that the light may be more profusely thrown upon the ground, which will be quite sufficiently illuminated by the lower portions of the beam. The idea of good road illumination is not to light up the immediate surface of the road itself, but to illumine space far ahead of the car for the distant discovery of everything in the roadway. The rays will strike and light up the surface quite early enough to discover loose metal, bad holes, or bad crossings. A photographic example of the manner in which a properly cast beam should operate is shown by a photograph taken at night, where a hooded waggon and two horses are plainly discovered at a distance of upwards of 150 yards, the form—almost the features—of the animals being quite distinguishable, while the curtains of the waggon show up very clearly. To correctly position lamps, the car should be placed on a level piece of ground, or jacked or shored up until the frame is level each way. Then the forks carrying the lamps should be set so that the lenses are vertically parallel with a plumb line held in front of them, and are proved to be dead square with each other by a straight edge being placed horizontally across both lenses.

PROSECUTION BY THE IRISH A.C.

We are informed by the Irish Automobile Club that a prosecution has just been instituted at its instance and request by the police authorities in Dublin against a motorist who recently drove his car in a manner to which the greatest exception must be taken. The evidence submitted by another motorist on the road at the time to the Club, upon which the committee of the Club decided that a prosecution should be instituted, was to the effect that the car in question was driven round corners on the wrong side and upon and off the footpath, and in passing through a village children were scattered in all directions by the gyrations of the car. Proceedings were taken under the Summary Jurisdiction Act, and not under the Motor Acts, owing to a legal difficulty. The magistrate imposed a fine of ten shillings for furious driving and a fine of sixpence for obstruction. The matter is worthy of note as showing the action taken by the Irish Automobile Club with the object of putting down inconsiderate driving. The evidence on the hearing was produced by the Club, and it desires us to state that the proceedings were determined on so long ago as early in September last.

NEW SMALL CARS AT THE SHOW. By Runabout.

VEHICLES OF INTEREST TO THE MAN OF MODEST INCOME.

Twin Cylinder Cars.

It is rather difficult nowadays to differentiate the "small" car from the "light" car, and I had better premise my notes with the remark that they will not invade the four-cylinder class at £250 and upwards. For the purposes of this article I shall limit the small car with few exceptions to single and twin-cylinder vehicles, selling at about £200 or less. The single-cylinder car of to-day is almost always fitted with the invincible De Dion motor; but when we enter the two-cylinder class I must add a word of warning. Hundreds of two-cylinder motors have been made which looked exquisite upon red carpet; but the number of two-cylinder engines which run smoothly on the road can almost be counted on the ten fingers. I did not actually try all the two-cylinder cars which looked so attractive at Olympia, and meek as they all appeared for the nonce I am pretty certain not a few of them would be exceedingly harsh and unpleasant companions on the road. You can trust a four-cylinder to be tolerably silky, whatever its design; but the man who purchases a vertical two-cylinder engined car without an exhaustive road test is to be likened to the newly wed and exceedingly foolish demoiselle who engages a housemaid without references, in that ere long there will be unexpected turmoil beneath his bonnet. So much for preface. Turning now to the trend of general design in this price-limited type of car, we find that the normal specification is somewhat as follows: Twin-cylinder monobloc engine, pressed steel or *bois armé* frame, single ignition (preferably magneto), gravity-fed splash lubrication with a single drip indicator on the dash, two lever carburetter, thermo-syphon cooling, leather cone clutch, three-speed gear box with straight-through quadrant change, universal joint abaft of gear box but seldom any universal joint between clutch and gears, radius and torque rods often dispensed with, 85 mm. or 90 mm. cross-section tyres, few refinements, rear hub internal-expanding brakes, a similar propeller-shaft brake, two-pedal control, and cheap body with tailboard tool box. The central chain drive is fast disappearing, and I am not sorry, as it has never been properly protected on any car I have known, and the average chauffeurless owner dislikes chain-cleaning intensely, and is scarcely competent to maintain its alignment under the adjustment of two separate radius rods.

Bristling with Brains.

Inspecting individual cars, we find most promise exhibited in the foreign newcomers, which is scarcely to be wondered at, since most of them issue from larger and more experienced shops than their British rivals. But for sheer intrinsic novelty devoid of freakishness the Smeddle and Kennedy stands out as unique in the entire show. It bristles with brains. The gear box and differential are in a single case, and the entire back axle can be taken off in a few minutes. The gate change is operated by a very clever rod motion actuating two separate selectors, and the gears are almost too broad in the teeth, if that is possible. Four brakes are concentrated on the rear hubs, so that all are effective if the propeller-shaft is damaged. The springing is Lanchester in the rear and Sizaire in front—a good combination. The engine is very clever, for the overhead valve shaft can be lifted off in sixty seconds by unscrewing four wing nuts, and as quickly replaced in accurate timing by means of a pointer registering with a mark on the flywheel. The cone and cam actuated metal to metal clutch is self-adjusting for wear, and there are plenty of flywheels—two in the crank case and one with fan arms farther astern. There is little to give trouble, as the magneto (Nieuport) has no distributer, and the radiator no pump. The oil cut-off (gravity feed) is combined with the switch (*vide* a recent "Hint"), so that the engine cannot be stopped without turning off the lubrication, and the speed control is by a single pedal. Interchangeability has been very carefully studied; I noticed a neat little lever arm in the operating mechanism, and a search proved that six duplicates figured in other portions of the chassis.

Some British and Foreign Examples.

The 8 h.p. Humber has already been dealt with so fully that further comment is unnecessary except to say that I believe it is quite as good as it looks. Including two separate ignitions and mechanical lubrication, it is remarkably full value.

The 10 h.p. Riley will have a great vogue among patriotic motorists who prefer accepted outlines. I purposely say "outlines," because the chassis is inwardly original in the extreme. If you dislike epicyclic gears and want a type that is easy and foolproof in the changing, the Riley patent gear box cannot well be surpassed. The V engine attains a smoother balance than any vertical two-cylinder, provided the carburation is exact, and my only objection to Riley cars has been removed now that an option between magneto and a coil with distributer has at last superseded the old eight platinum system. The universal joint astern of the gear box is as big and as well cased as those on cars of five times the cost, and the lubrication system is now more nearly automatic, thanks to a force pump. The mudguards are the only boxed patterns to be seen in this class. A quickly detachable coupling makes access to the clutch a simple matter—a great advance on the 9 h.p., and the final addition of detachable wheels as an extra ranks the 10 h.p. Riley as one of the gems in the small car ranks. America provides two noble exponents of the small car, including the only four-cylinder at less than £200 in the shape of the Ford. Neither it nor the Cadillac is new to our market, but I mention the Cadillac because I had never previously discerned what a host of refinements lurk under its modest exterior. No small cars, and few large cars, can boast such details as a reserve compartment to their fuel tanks, or a safety spark retarder operated by the starting handle. I might add it stands almost alone in this class as being specially designed to feel a load of four people as little as possible.

If we add to the British cars already named the popular old-stagers, such as the Rover, Alldays, Phœnix, and Jackson, we might thoughtlessly claim a two-power standard, but I fear this would be premature. Against us are marshalled the Grégoire and Darracq (two excellent little two-cylinders), the De Dion (which we have always with us, and can never part with), the speedy Sizaire, the Baby Peugeot, and some others, to which this present Olympia has added the 6 h.p. and 9 h.p. Delage, the two Werners of similar power, and finally a very formidable trio—the 8-9 h.p. Chenard-Walcker, 8 h.p. Renault, and 7 h.p. Adler.

The two Delages and the two Werners are distinctly Continental in appearance, and are meant to be fast—

a claim confirmed by the fact that all four of them carry the latest De Dion single-cylinder engines on very light chassis, the Werners being the lighter and cheaper of the two makes.

Of the three last, the Renault will be gladly taken on trust by everybody, simply because its big sisters enjoy so enviable a reputation. It is a magnificently finished little car, on standard Renault lines throughout, save that no torque or radius rods are found necessary with the small engine and type of springing employed. The two-cylinder engine, of 75 mm. bore by 120 mm. stroke, has its cylinders cast on the monobloc system, cooled by thermo-syphon from a radiator carried as a dash-board—a scheme which provides the maximum of accessibility. The keynote of the car is stern simplicity, and when this is combined with Renault brains and Renault workmanship, what more can be desired by an owner wishing to dispense with the chauffeur? I should imagine that before many months are over there may be a certain difficulty in obtaining this car for private use, as its chassis will make a very fine little substratum for public service work in level counties, and its price puts it within the reach of the smaller jobmasters.

Simplicity the Keynote.

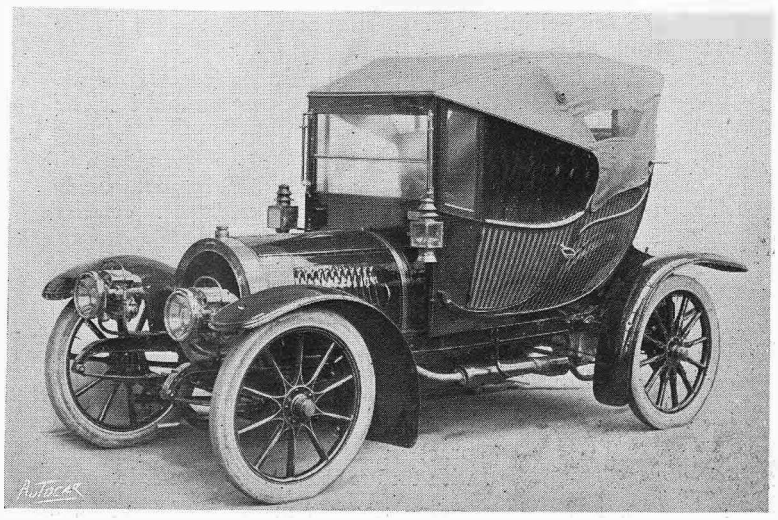
The 8-9 h.p. Chenard-Walcker is another beautifully finished small car an exquisite miniature of its bigger brethren—and it stands apart on our roll by reason of its four forward speeds. As I have often pointed out, the smaller the engine in any car, the greater should be the number of its gear ratios. Failing the provision of an infinite gear, the number of ratios is limited by the owner's willingness to repeat the operation of changing, but I know there are many small car men who will jump at the prospect of a fourth gear. The fourth gear is direct. The chassis is peculiar in other pleasant respects. It has a sound torque rod system, and the well-known Chenard-Walcker double back axle, a dead axle taking the weight, and an entirely separate live axle driving the rear wheels through internally-toothed drums. The steering lock is wider than that of its competitors. Simplicity is here again the keynote of the detail work; thermo-syphon cooling, automatic carburation, and automatic mechanical lubricator. The rear springs are three-quarter ellipticals of excellent design. A feature I specially liked about this car was the reduction in price of the extras, which are truly proportionate to the car. Fitted with hood and screen, this taking little vehicle sells at a highly competitive price.

A Successful Car.

The Adler is still lustrous with the reputation achieved by its firm in winning two classes outright in the 2,000 Miles Trial—a performance that may not be rivalled for several years. I was also drawn unresistingly to inspect it by glowing memories of an early V-engined Adler which I used to drive years ago. The new 7 h.p. at once attracts attention by its Morgan body, many small cars having coachwork of so poor a quality that no "kerridge folk" would dream of riding in them. But its chassis is even more satisfactory. It will suffer less from distortion under strain than many bearing better known names, and if it is less simple than the average, the quality of the work makes refinements desirable instead of sources of anxiety. It ranks with the Humber in possessing two separate ignitions, and if thermo-syphon cooling were substituted for a centrifugal pump I should call its specification almost ideal for the small car man, as the carburetter is of a simple automatic pattern, and the lubrication is by means of a well thought out pump, driven by pinions, and including a tell-tale indicator, while solidarity of workmanship has not, as on certain other cars, been regarded as a sufficient excuse for neglecting accessibility. Many owners prefer a metal clutch, and this example avoids thrust with particular efficiency. The crowd round this car, in spite of its being in the Annexe, and on a stand that did not bear its name, showed that many people have been watching the 1909 Adler programme ever since its excellent showing in the trials. I should not like to wager that I could produce three English small cars to beat this trio.

An Unorthodox Car.

Mr. Martineau's latest offspring, the 9 h.p. Pilgrim, stands in a class by itself. Eminent engineers rave about it, but the public are so much the slaves of fashion that bodymakers are far more likely to be their chief guides than any eminent engineer. It is obviously easy to poke fun at a chassis which has a stern almost as free from complications as a wheelbarrow, and on which a forlorn and bereft flywheel appears to be looking around with a pained expression for the clutch, gear box, and propeller-shaft, which we might suppose some impertinent repairer to have removed under an unworthy misapprehension. But the fact remains that a system under which a 9 h.p. chassis can be sturdily constructed, and yet weigh less than 6 cwts., has a great deal to be said for it. And who knows if one day all our small cars may not carry their gear box neatly concealed inside the crank case and their differentials on the front axle? Sterling points of improvement, though they may run counter to orthodox ideas of what constitutes a properly designed car, may not always be made the subjects of ridicule.



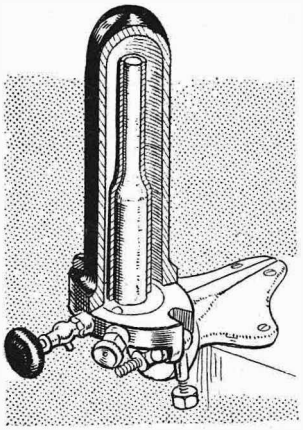
A Nordenfelt chassis fitted with a two-seated Victoria body with high side doors, by Hewer's Car Bodies, Ltd. The idea of totally enclosing the front by means of the hood and screen and side pieces is good, but is rather spoilt by the corner posts, which are liable to obstruct the view when driving round corners. This could be remedied by a wider front screen. The smart mudguards fitted are the "Frankonia," for which the British Bariquand and Marre Engine Co. are agents. These wings effectively prevent any mud from splashing on to the bodywork.

SOME SHOW NOTES.

GLEANED DURING A GENERAL SURVEY OF THE EXHIBITS.

The Harvey Frost Vulcaniser.

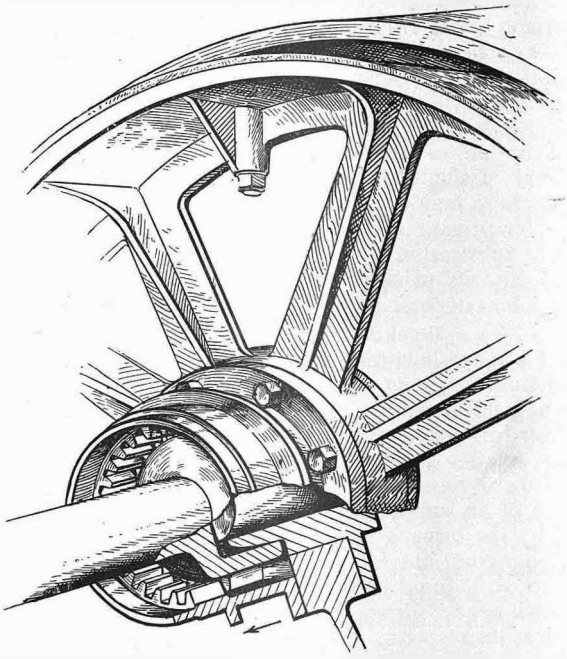
A new pattern of vulcaniser was exhibited by Messrs. Harvey Frost. This is not intended to replace the ordinary vulcaniser, but is an accessory thereto. Its function is to enable anyone to make up short lengths of tube from the flat strips, or to vulcanise the ends of canvas and rubber water tubing, so that moisture cannot get into the exposed ends and rot the canvas. This small vulcaniser is used in conjunction with the larger vulcaniser, as it requires steam for its operation. A connection is made to the steam generating apparatus of the larger vulcaniser, and steam is admitted into the interior of the tubular outer casing shown in the sketch. The pipe to be vulcanised is either wrapped round or threaded on the mandril shown at the centre. The cover is put on and steam is let in when the operation of vulcanising takes place in the usual manner. This fitment should be very useful for garages where sundry lengths of water piping have to be made or cut off from canvas and rubber pipe.



The 16 h.p. four-cylinder Vinot has a drum shaped gear box mounted on an angle steel underframe. The counter-shaft is below the main driving shaft. There are three forward speeds and a reverse.

The English Lorraine-Dietrich lubricating system is worked by a double pump. The pump forces the oil through a sight feed on the dashboard, and from here it is distributed through another pump to the bearings. In order to ascertain the amount of oil in the crank chamber there is a drain tap at the forward end, and inter-connected with it through a tube is an oil level tap.

A good feature of the live axle Westinghouse chassis is the specially large diameter footbrake.



AT OLYMPIA. When the Talbot double clutch is fully engaged the gear teeth shown are in mesh; when it is "out" the clutch is forced from the clutch-shaft.

The 15 h.p. Minerva chassis has its four-cylinder engine cast *en bloc*. The propeller-shaft brake adjustment is in front of the gear box, thus being very accessible. For covered bodies the frame is dropped, and the semi-elliptic springs are carried underneath the back axle.

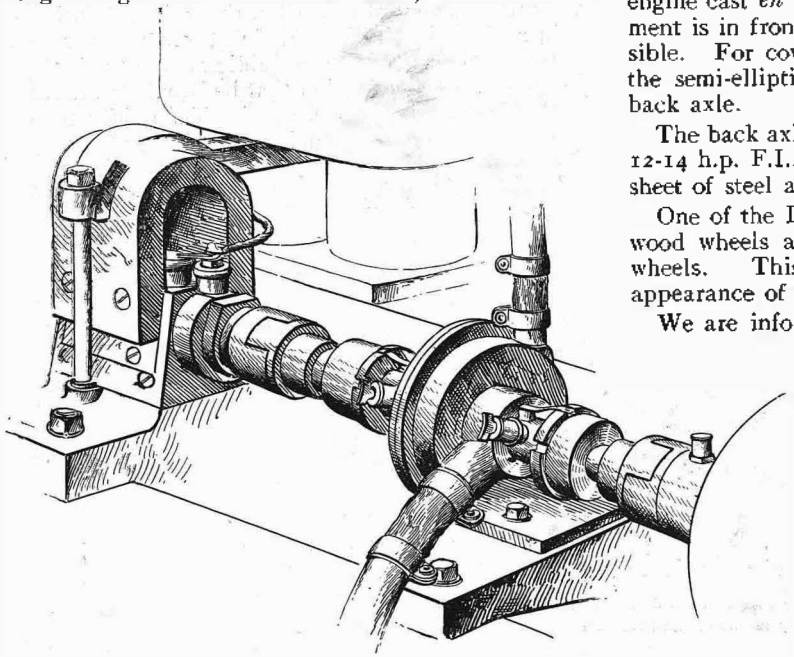
The back axle and propeller-shaft casing of the little 12-14 h.p. F.I.A.T. chassis are each pressed out of one sheet of steel and bolted together.

One of the Daimler cars was fitted on one side with wood wheels and on the other with R.W. detachable wheels. This arrangement rendered the relative appearance of the two types very distinct.

We are informed that Austin's have booked enough orders at Olympia to keep them busy till the end of June.

Quite a number of small four-cylinder engines are to be seen cast *en bloc*, while cylinders cast in pairs appear to have become almost general practice. Many firms still dispense with torque rods for the live axle.

An uncommon example of the coachbuilders' art was to be seen on the Sheffield-Simplex stand. The big yellow wholly-enclosed limousine was fitted with a back seat, half of which extended, on the "lazy-tongs" system,

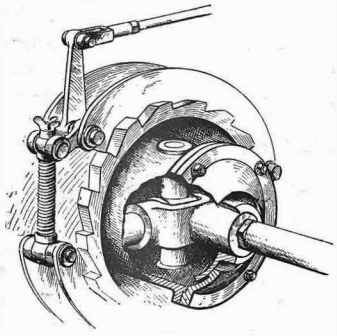


AT OLYMPIA. The easily detachable magneto and pump of the Star cars. The drive is also very simple.

to form a couch along the full length of the floor. So great was the interest manifested in the novelty that it required the undivided services of one demonstrator.

The Buick engines were neat and well designed examples of overhead valve practice.

Great interest was centred in the huge six-cylinder Renault chassis fitted with self-starting gear. The dimensions of this car were enormous, but were beautifully proportionate to the size and power of the engine. The live axle especially was a fine piece of work.



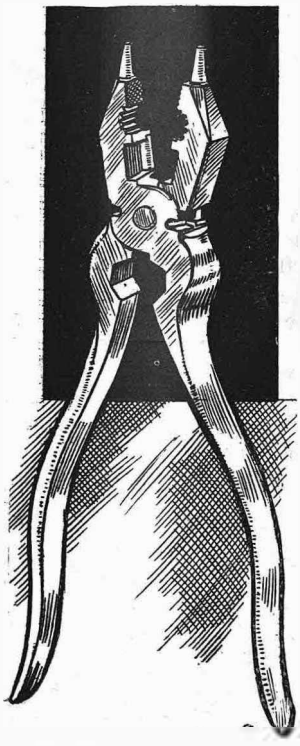
AT OLYMPIA. The universal joint and brake between the propeller-shaft and gear-box on the 10 h.p. Alldays.

Only two cars were noticed at Olympia with the gears on the axle, and in both cases only a single low forward emergency speed and reverse were fitted.

The White Company have departed from their usual practice in fitting a pressed steel frame to the new 15 h.p. model.

On very many cars in the show the brake adjustment was arranged to be effected by means of easily operated finger nuts with automatic self-locking catches. Provision for lubrication in the form of greasers and dust-proof oil fillers is also much more in evidence this year.

The noiselessness of the noiseless Napier engine running on the stand was greatly emphasised by the click of the driving belt fastener and the hum of the electric motor.

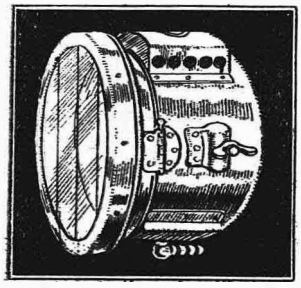


"Silent," "noiseless," and "gearless" were the dominant notes at Olympia this year.

The new M.M.C. is fitted with corrugated exhaust piping to take up the effect of expansion.

The new 14-18 h.p. Sunbeam car was almost hidden behind an array of "sold" cards by the time the show came to an end.

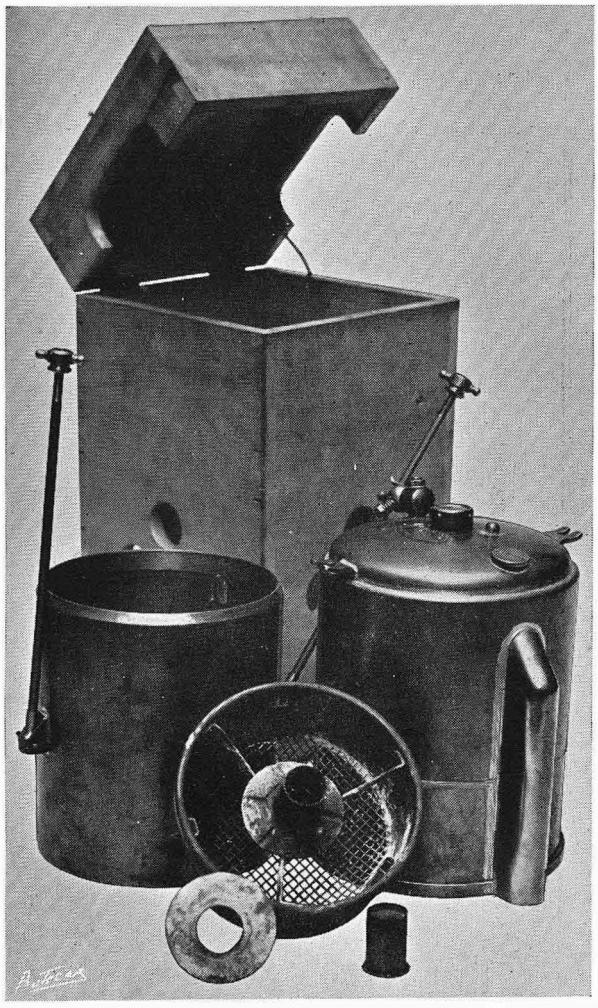
"Even a child can work it." Such was brought to mind by the sight of the very small messenger boy who was "grinding" the sectioned slide-valve Minerva engine for the benefit of sightseers. Messrs. Minerva Motors, Ltd., have the sole Belgian rights for Knight's engine.



AT OLYMPIA. A combination tool shown by Gamages, and the Rotax pilot lamp.

In our review of the exhibits we referred to the 40 h.p. six-cylinder Austin chassis. This was obviously an error, as it is well known that the six-cylinder Austin is of 60 h.p.

We are pleased to note that the tendency to abandon torque and radius rods and to endeavour to use the springs to carry out their duties has not grown; on the contrary, it has decreased, though it may be observed in one or two chassis by well-known makers.



The Lucas acetylene generator and carbide separator dismantled.

There were amazingly few engines exhibited in chassis and complete cars provided with accessible and adequate means of ascertaining the oil level in the crank chamber. It is absurd to provide easy means of replenishing the crank chamber with lubricant and not to have some simple method of enabling one to know how much oil there is already in the case and how much more is required to fill it up.

The gear boxes in many chassis are placed a great deal too far back in the frames, so that when the body is fitted it comes directly beneath the driver's seat, where the petrol tank is often located. The task of replenishing the gear box with grease or oil is

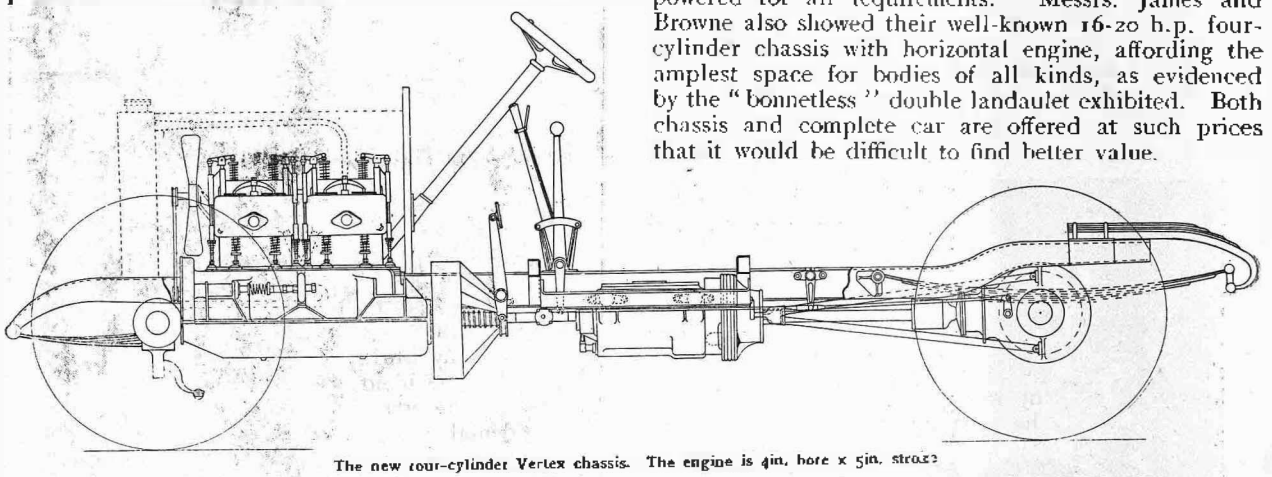
made most difficult when the box is so placed as the cover is so very inaccessible. In one case we noted a gear box lid which could not be removed at all without having a huge piece cut out of the floorboards beneath the driver's seat.

The provision of means for driving speedometers from the propeller-shaft is worthy of much greater attention than has been given to this very desirable arrangement. There are many really serious objections to the prevalent method of driving these instruments by friction or any other means off the front wheel, and nearly every one of these are overcome by driving off the propeller-shaft or the driven gear-shaft.

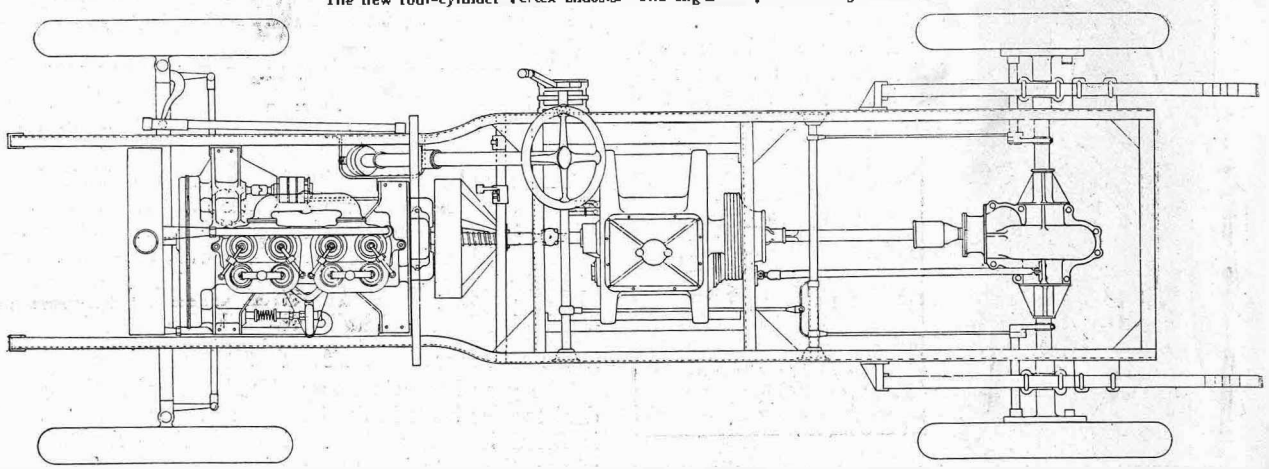
There was a marked improvement in the design of steering gear joints and the lay out of rods, but there were several chassis on which improvements might very well have been effected with advantage. For instance, the connecting rod between the steering gear lever and the axle steering arm might be without bends and be much more nearly horizontal than was the case in certain instances.

THE J. & B. AND VERTEX CARS.

Owing to inadvertence, no reference was made in our show report last week to the fine exhibit of chassis and cars on Stand 25 by Messrs. James and Browne, Ltd., of Westcroft Works, King Street, Hammersmith, W. This firm showed a 25 h.p. four-cylinder Vertex chassis, which we described in detail in our first show issue of 14th November, a study of which as it was presented on the stand was sufficient to convince everyone of the excellent up-to-date design and splendid workmanship for which Messrs. James and Browne's productions have always been remarkable. The special features of the engine are its overhead inlet valves, contained in individual cages, and almost immediately withdrawable, and the carriage of the vertical tappet rods operating the rocking tappet lever in long phosphor-bronze bushed bearings, which preclude any suggestion of noise from this form of valve, otherwise so desirable. Also the stud of the pivot piece has a thread forward upon its lower end, whereby it is screwed into the valve chamber casting, and by which and a lock-nut its height can be adjusted to vary the valve lift as desired and bring the ends of the rocking lever and those of the tappet rod and valve stem into such close contact that no noise is made. The valves are of unusual size, giving no less than 2¼in. opening for a 4in. by 5in. engine. For further details of this engine and chassis we refer our readers to the description mentioned above, and also to detailed drawings of both which will shortly appear. One of these chassis was shown carrying a side entrance phaeton of excellent finish and design, and served to show into what a comfortable, convenient, and moderate priced car this chassis will make up. Another interesting chassis was the 45 h.p. six-cylinder Vertex, its engine having cylinders cast and set separately upon the crank chamber. This car, however, has been before the public since Olympia of last year, and has gained the fullest approval of all into whose hands it has come. As suggested, it is a six-cylinder car at a moderate price, sufficiently powered for all requirements. Messrs. James and Browne also showed their well-known 16-20 h.p. four-cylinder chassis with horizontal engine, affording the amplest space for bodies of all kinds, as evidenced by the "bonnetless" double landaulet exhibited. Both chassis and complete car are offered at such prices that it would be difficult to find better value.



The new four-cylinder Vertex chassis. The engine is 4in. bore x 5in. stroke



Plan view of the new four-cylinder Vertex chassis.

Olympia Attendances.

This year the Olympia turnstiles recorded a total attendance of 151,850 people. The daily attendances were as follows:

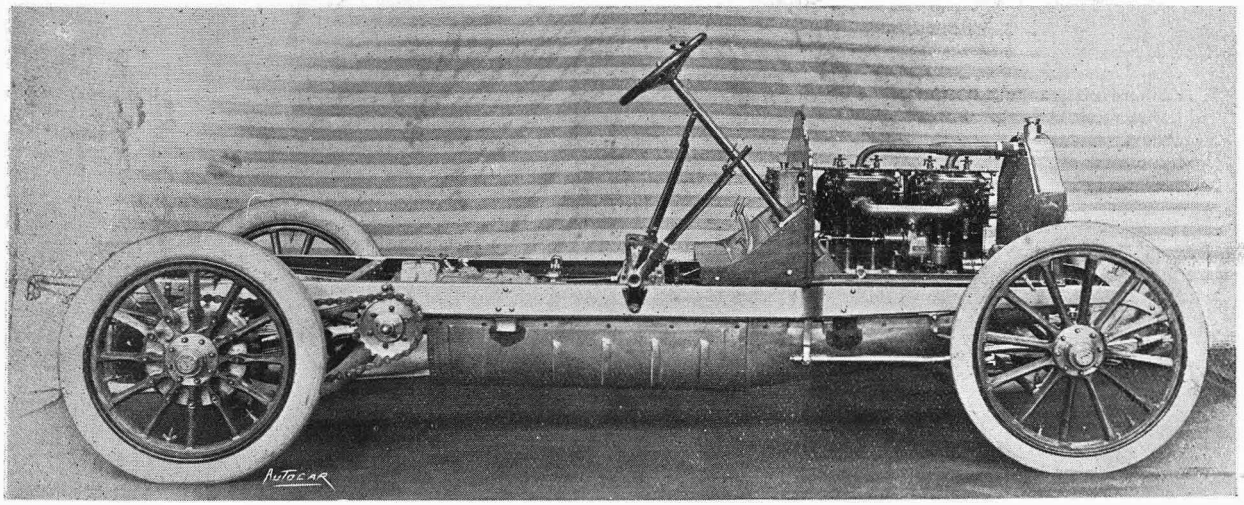
Friday	8,047
Saturday	17,702
Monday	16,044
Tuesday	18,984
Wednesday	25,695
Thursday	21,716
Friday	20,990
Saturday	22,672

It should be borne in mind that on Tuesday and Thursday the admission was 2s. 6d. up till 5 p.m. and 1s. afterwards. Last year the total numbers registered by the turnstiles were 160,532, but this does not mean that this year's attendance was smaller. The lower number is simply due to the fact that no trial runs were given, so that there was practically no re-entering, as was the case last year. The actual cash receipts for admission were over £500 more than last year, and more than 5,000 tickets were sold before the show opened. At first sight it may seem that a difference of over 9,000 for re-admission after trial runs is excessive, but it only means an average of just over 1,000 persons per day, and as most of the trial runs were made with full cars it will be seen that only 250 trial runs per day would account for the difference, though, as a matter of fact, the number of trial runs was greatly in excess of the average we have named.

An objection to Olympia which was very noticeable during the crowded afternoons and evenings was found in the drinking bars. These were a great nuisance, as crowds of loafers continually surrounded these places, and the one on the left-hand side of the entrance from Addison Road was so crowded at times that it made circulation in this part of the Show very difficult. If it is necessary to provide refreshment in this way surely the bars could be put in some adjacent shed or some temporary place could be erected in the form of a lean-to which would keep their patrons out of the main lines of circulation. As it is they are a great nuisance and a very objectionable feature, and they certainly do not enhance the tone of the exhibition.

A French View of the Show.

M. Paul Meyan, a contributor to *La France Automobile*, gives his impressions of the Olympia Show. It is only natural and to be expected that he, regarding English productions as through a glass darkly, should find them lacking in "simplicity, lightness, elegance, harmony, and sobriety" (the national failing present, you see, even in motor cars)—those qualities which are due to the deftness of the Latin—when compared with the productions of his native country. Well, well, M. Paul Meyan must tickle the ears of his readers. To admit that *la Belle France* was approached by the denizens of this damp, asthmatical country would be nothing short of treason. Let M. Paul Meyan lay this flattering unction to his soul, and soothe to calm the perturbed spirits of his readers. We yield to none in our appreciation of the great quality of French automobile engineering, its daring in design, and deftness in execution, but to suggest, as our good *confrère* does, that the best of English work yet lags behind the best of which France is capable is to deny the evidence which must have met his eyes, had he eyes for anything but French cars, when at Olympia. It would be invidious to name names or to institute comparisons, as he has done, but the invocation of a singular carburetter position and a single special form of change speed as contrasts is hardly convincing. Also he suggests that the well-reputed English makes are only four in number. While those he mentions stand assuredly in the forefront, there remain others of equal importance and repute. In his anxiety to assure his readers that the French makers need fear no opposition from those of this country M. Paul Meyan leaves much unsaid which, presuming him capable of appreciation, he should have said if he desires to discharge his plain duty to the French industry. In the concluding paragraph of his article he accentuates his obvious lack of observation or information, for he is bold enough to assert that the past show was remarkable for a smaller attendance and less public interest than that of any preceding year. However, the turnstiles on the one hand and a large proportion of the exhibitors on the other will combine to give him the—well, the denial polite.

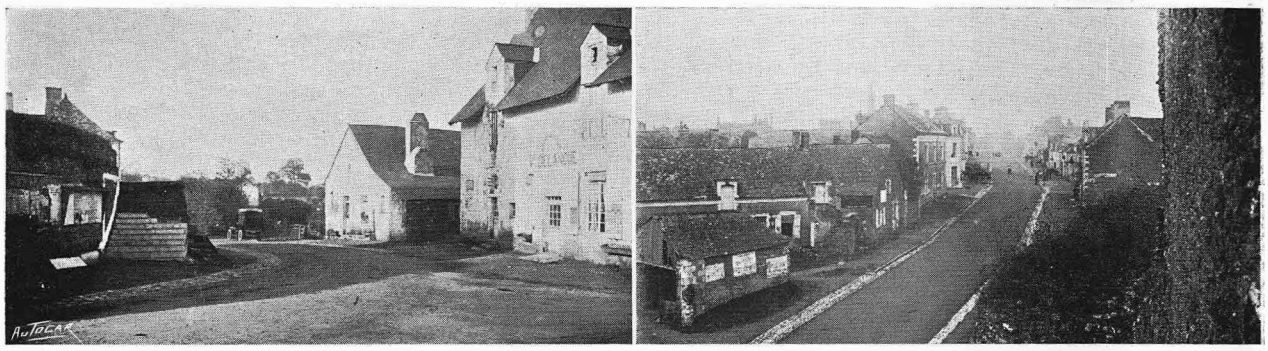


The 40 h.p. Bianchi chassis from the off side, showing carburetter, etc. This chassis was to have been exhibited at Olympia by Itala Motors, Ltd., but the small space available made this impossible.

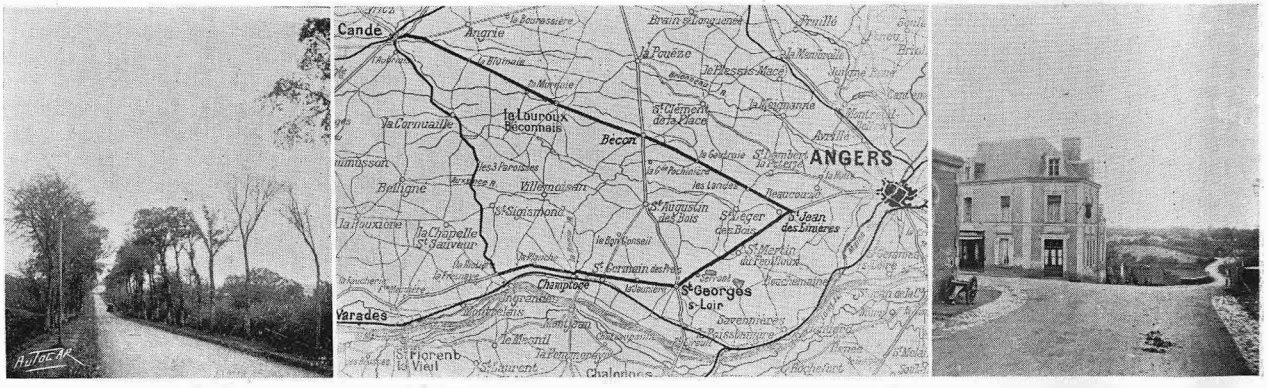
CONTINENTAL NOTES AND NEWS.

The Anjou Circuit.

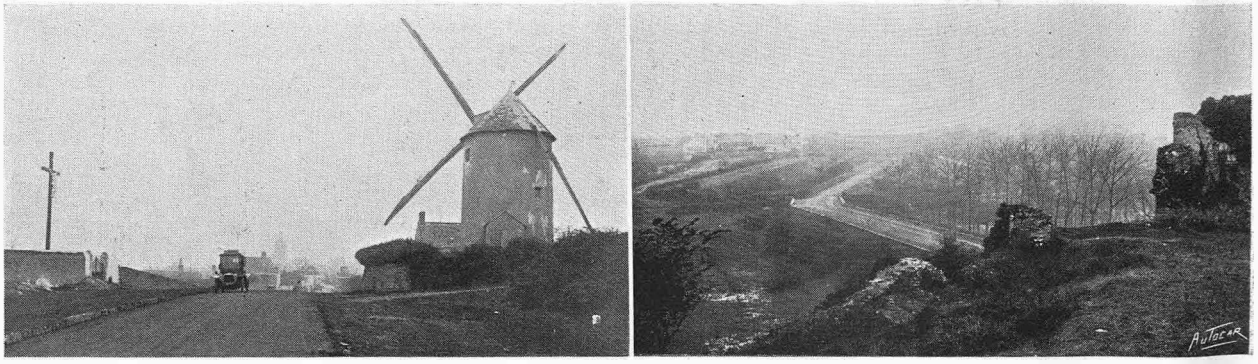
The Anjou Circuit has been finally adopted for the Grand Prix Race, which is to be run off at the end of June or the beginning of July next year. The course is in the shape of an irregular triangle, with its base between La Croix de Lorraine, situated some miles from Angers, and the town of Candé, while the start will take place near the apex of the triangle near a village called St. Germain-des-Prés. The total length of the course is 74,322 kilometres (46.15 miles), much of the going being of a give and take character, the long stretches alternating with sharp turnings and winding roads, while the gradients are sufficiently severe to prove a good test for the vehicles. From the stands at St. Germain-des-Prés the spectators will have a good view of several miles of road, which is fairly straight to the apex of the triangle at La Riotière, from which point the road winds almost continuously for about twelve miles up to Candé. The turning here is so sharp that it will probably be found necessary to remove the pavement. Between Candé and La Croix de Lorraine the road is straight, and for the most part perfectly level, and there is no doubt that some very high speeds will be attained on this part of the course. It passes through three villages known as Le Louroux-Béconnais, Bécon, and La Gautraie, and at La Croix de Lorraine there is another sharp turning back to St. Germain-des-Prés, the road again being for the most part straight and level. The news of the selection of the circuit has been received with



THE 1909 GRAND PRIX COURSE. Views of the Anjou Circuit which has been selected by the A.C. de France for next year's contest. The left-hand illustration shows a bend in the village of Le Louroux-Béconnais; that on the right the straight road through Champtoce.



THE 1909 GRAND PRIX COURSE. Starting near St. Germain, competitors will traverse St. Georges, St. Jeans, Bécon, Candé, La Riotiere, and so back to the starting point. On the left is illustrated a fast piece of road near Candé; on the right the road leading out of Beconnais.



THE 1909 GRAND PRIX COURSE. At the top of the hill out of St. George's. View of the course taken from Barbe-Bleue—a ruined castle near Champtoce. Angers is about 160 miles from Paris, and Havre nearly the same distance. It is much less accessible than the Dieppe Circuit.

great enthusiasm at Angers, where the local authorities seem determined to show that the choice is justified by doing their best to make the forthcoming Grand Prix Race the most successful yet held.

Competitions for Aeroplanes.

Now that the Chamber of Deputies and the Municipal Council of Paris have given their official support to flying machine experiments by voting funds for prizes, of which the details will be decided later on, public enthusiasm for the new movement is rapidly growing, and scarcely a week now passes without some new trial or race being produced. Not only is there to be a three days' race organised by the Aero Club de France, but there is to be a race from Bordeaux to Paris, to say nothing of the competitions to be carried out at Monaco in March, which are likely to prove the starting point for a big sporting movement next year. Meanwhile there are scores of inventors who are hoping to secure some of these prizes, many with machines which they are now designing or building, and if only one half of these compete there should be plenty of interest in the competitions to be held during the coming year. Although Wilbur Wright is doubtful of being able to take part in any of these competitions in view of his return to the United States at an early date, he nevertheless continues to do some admirable performances in the intervals of training pilots, and appears now to have set himself the task of proving the fallacy of criticisms levelled against his machine to the effect that it is unable to take its flight without the aid of a cumbrous arrangement of standards and weights. During the past week or so he won prizes for flying at certain altitudes, having secured one prize for flying at a height of about 150 feet. As he was obliged, under the conditions of the test, to start without the aid of weights, he simply lengthened his rails and started with the effort of the propeller alone, when the machine rose as easily as when helped by the weights.

Rival Aero Clubs.

The decision of the Automobile Club de France to take upon itself the task of encouraging mechanical flight has naturally created a good deal of apprehension among members of the Aero Club, who fear that their influence will be considerably curtailed now that such a powerful body as the Automobile Club has taken the interests of mechanical flight under its wing. That the situation has changed a good deal recently is proved by the fact that when the question of occupying itself with flying machines was brought up by the Automobile Club about a year ago the idea was promptly objected to by some of the prominent members, who at the same time belonged to the Aero Club de France, on the ground that as this latter body had so long been identifying itself with mechanical flight it was not fair to take the matter out of its hands. Since then, however, a new group has been formed under the title of the Ligue Aerienne, which aims at creating a national movement and offering prizes for the encouragement of inventors. The Ligue Aerienne was attacked by the Aero Club de France, which saw in the Ligue a powerful rival, and this attitude was not to the liking of those members who, at the same time, belonged to the Automobile Club. Thereupon a scission took place in the ranks of the Aero Club, the resignations including the Marquis de Dion and M. Archdeacon, the president and vice-president of the Aero Club. The Marquis de Dion, yielding to the earnest request of many friends, has since withdrawn his resignation, and, although M. Archdeacon has not gone quite so far, there is every probability of a reconciliation being brought about sooner or later.

Decorations for Aviators.

In the French Chamber of Deputies on Friday, the 20th inst., the Marquis de Dion moved a resolution in favour of the bestowal of the Cross of the Legion of Honour upon men like Messrs. Archdeacon, Blériot, Gabriel Voisin, and Esnault-Pelterie, who have devoted their lives to aviation. He also asked that the Cross should be awarded to Messrs. Wilbur Wright and Henry Farman for their pioneer efforts in aviation. The resolution was adopted unanimously.

Six Mile Flight by Farman.

Mr. Henry Farman, whose machine is stationed at Châlons Camp, resumed his experiments last week after making some alterations to his machine. On Tuesday, the 17th inst., notwithstanding a thick fog, he started on a series of flights which were quite successful. The longest of the flights was six miles at an altitude of about 60 feet. The machine, which was originally a biplane, has now been transformed into a triplane. After fitting on the extremities of the centre cell a pair of small wings, with the object of increasing the lateral stability of the machine, a third plane, ten metres long, was added above the central cell.

Mr. Moore-Brabazon's Successful Flight.

The biplane of the Farman type recently ordered by Mr. Moore-Brabazon from Messrs. Voisin Frères, was conveyed to the Issy-les-Moulineaux drill ground last week. In appearance the machine resembles Mr. Farman's own machine before he altered it to a triplane, and is particularly interesting, as it is the first to be fitted with an ordinary automobile engine. On Friday, the 20th inst., Mr. Moore-Brabazon had the machine out early, and, despite the heavy ground, succeeded in making a flight. This was very gratifying, seeing that the machine had only been out of the builders' hands two or three days. It is fitted with a 50 h.p. Vivinius engine.

Miscellaneous.

It is reported that negotiations are proceeding between the Russian War Office and Mr. Hart O. Berg, Mr. Wilbur Wright's representative, for the purchase of a model aeroplane.

A committee of Angevin sportsmen proposes to organise, in connection with the next Grand Prix of the Automobile Club de France, an aeroplane race, to be contested from Saumur to Angers.

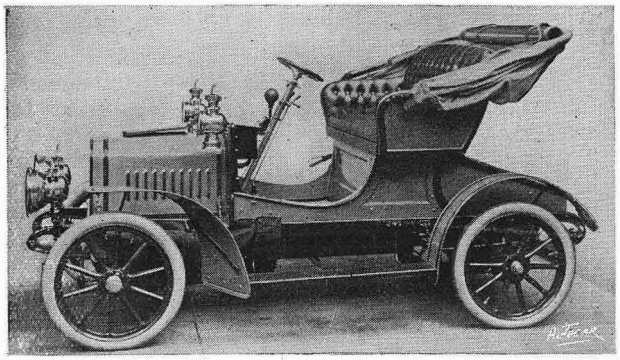
The banquet to be given by the Société d'Encouragement à l'Aviation in honour of French aviators will take place under the presidency of M. Barthou, Minister of Public Works, on Saturday, December 5th, at the Hotel Meurice, Paris. Gold medals specially struck at the Mint will be presented to Mr. Farman, Mr. Delagrange, and Mr. Blériot.

A meeting of the various presidents of all the aero clubs recognised by the International Federation will take place in Paris on December 2nd, in order to draw up, if possible, a comprehensive calendar for 1909.

THE STANLEY SHOW.

A FEW CARS ARE SHOWN IN THE GILBEY HALL AT THE AGRICULTURAL HALL IN CONNECTION WITH THE OLD-ESTABLISHED STANLEY SHOW OF CYCLES AND MOTOR CYCLES.

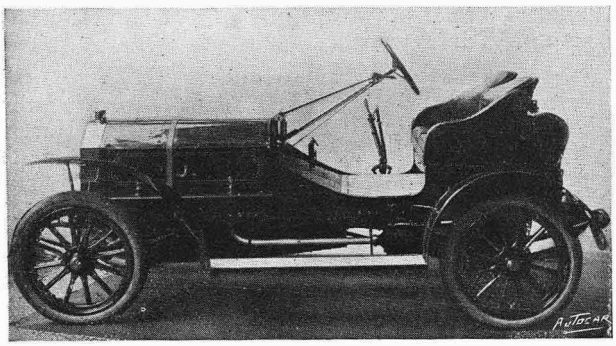
The Victoria Trading Co., 47, Lamb's Conduit Street, E.C., show the "Piccolo" air-cooled cars in two and four cylinder varieties. The four-cylinder has each pair of cylinders set at 45° to each other on a common crank chamber, and drives through a leather-faced cone clutch to a gear box giving three speeds forward with direct drive on top, and propeller-shaft and live axle in the usual way. A speciality claimed for this engine is the fact that both engine and



THE STANLEY SHOW. The two-cylinder 6-8 h.p. Piccolo.

pistons are made of Krupp steel and not cast iron as usual with flanged air-cooled engines. The cylinders are 72 mm. bore and 95 mm. stroke. Twin fans are set upon a horizontal fan spindle, running longitudinally between cylinders, and serve to accentuate the draught upon the walls of the latter. For the rest the car is of the usual standard type with regard to frame, brakes, and the like.

On the stand of the Star Cycle Co., Ltd., of Wolverhampton, is shown a 10 h.p. Royal Starling chassis. The cylinders are 3⅜in. by 4¼in., and with crank chamber and gearbox carried upon a stout under frame. This car varies but little from that exhibited at this show last year, save

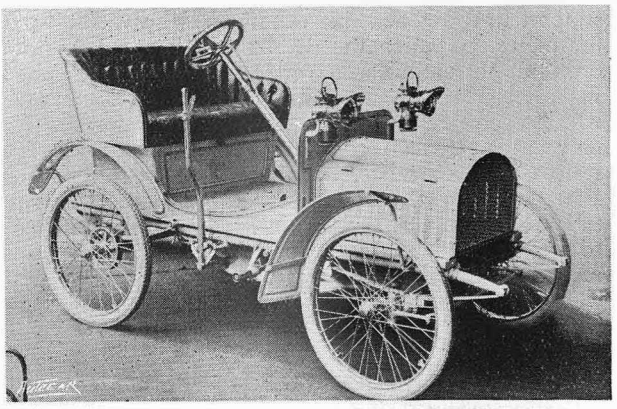


THE STANLEY SHOW. The 10 h.p. "Little Briton" model, shown by the Star Cycle Co.

that the fan now is a solid casting, and a gear-driven in place of friction-driven water pump is fitted, and sundry improvements in detail are made throughout the chassis. The most important of these, perhaps, is the internal expanding brake now fitted behind the gear box, and an accelerator pedal added to the control. Four 10 h.p. chassis are shown, carrying very smart bodies of various designs, and an 8 h.p. single-cylinder two-seated car with gate change is also exhibited.

The Vindec runabout, staged on Stand 297, is propelled by a two-cylinder air-cooled engine, the cylinders being set longitudinally in line on a common crank chamber at an angle of some 30° to each other. The drive passes from the engine by chain to the counter-shaft, and thence by belt to the near side wheels, the driving belt pulley being of the adjustable variety, thus giving a varied ratio of drive from counter-shaft to back wheel.

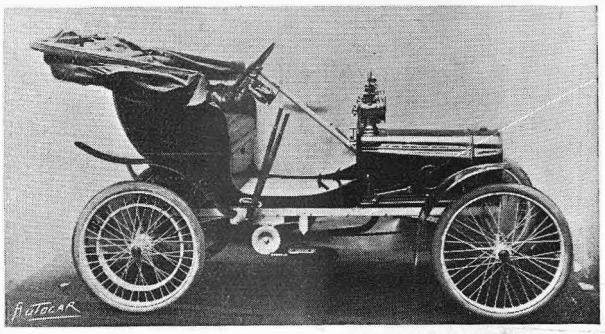
The two-cylinder Colibri car with 7-8 h.p. two-cylinder engine, crank chamber, flywheel well, and gear box in one



THE STANLEY SHOW. The 7-9 h.p. Vindec runabout.

casting, is shown upon Stand 204, cylinders 82 × 90 mm. The gear box affords three speeds forward and reverse with long propeller-shaft drive to back axle. Brakes are fitted in the usual way. The chassis is certainly excellently designed, and presents all the features of a large car.

The Arno Motor Co., of Coventry, show a 35 h.p. four-cylinder car with White and Poppe engine.



THE STANLEY SHOW. The 5½ h.p. O.T.A.V. voiturette which is driven by means of belts and has no differential gear.

The Junior and O.T.A.V. Motor Car Co., on Stand 300, show several examples of their now well-known 5½ h.p. O.T.A.V. cars, with hood and magneto ignition complete, at a really marvellous price. This little vehicle has already been described and illustrated in *The Autocar*, but attention would not be wasted if only by reference to the number of notable performances achieved by this remarkable little car in sundry Continental and one English event.

THE NUMBER OF CARS IN LONDON.

From July 1st to September 30th inclusive, applications for the registration of 1,806 motor cars, 53 heavy motor cars, and 373 motor cycles were dealt with, bringing the total number of these vehicles up to 23,717, 1,980, and 9,211 respectively. During the same period the number of general identification marks issued was 25; 124 duplicate licenses were granted; and 407 copies of entries in the Council's register were furnished to the public. Changes of ownership in 1,452 cases were dealt with, the total number of such changes being 6,740 cars and 4,102 cycles. The number of licenses since the commencement of the Council's administration to drive motor cars and cycles issued was 6,489, bringing the total number up to 89,604.

Motor Union Notes.

(Communicated by the Secretary.)

The Union has addressed a letter to the Home Secretary with reference to the manner in which the Motor Car Act is administered by the police and the magistrates.

◇ ◇ ◇ ◇

The Secretary has gratefully to acknowledge the many written and verbal congratulations upon the annual dinner, at which the reputation of the Union for first class after dinner speaking was more than maintained. These communications are summarised by the following extract from one written by Colonel C. H. Paynton: "Venture to take the opportunity to congratulate the Union on the excellent arrangements and splendid speeches at the banquet, and which I much enjoyed."

◇ ◇ ◇ ◇

A three days' programme has been arranged by the Welsh A.C. on the occasion of the Union's visit to Wales next July. It is proposed to organise a members' tour in connection with this visit which will include the Wye Valley.

◇ ◇ ◇ ◇

The Sussex County A.C. is the third club which has resolved to take advantage of the arrangements which the Union has made for the circulation of the Motor Union edition of *The Autocar* to its affiliated clubs.

◇ ◇ ◇ ◇

The Secretary of the Union is to meet representatives of the Surrey County Council early in December to discuss various applications for speed limits that are under consideration for that county.

◇ ◇ ◇ ◇

Mr. E. M. Griffiths has won the Motor Union medal awarded by the Cardiff Motor Club for success in a hill-climbing competition.

◇ ◇ ◇ ◇

Inquiries have been made by the Union regarding the use of unauthorised number plates. The Chief Commissioner of the Metropolitan Police states that only seventy-seven specific cases have come before him during the last four years in which there was no doubt that cars had been carrying false numbers. The Chief Constables of Kent, Surrey, and Sussex replied that this form of offence is not prevalent in those counties.

◇ ◇ ◇ ◇

In a certain county the police have made a practice of taking numbers and afterwards demanding name and address of driver on the ground of reckless driving. On receipt of this information the motorist is summoned not only for reckless driving but for exceeding the speed limit, but only the latter summons is proceeded with. The president of a club affiliated to the Union refused to give the information, and was fined £5 and costs. The Union is supporting an application to quash the conviction, as it appears to be an improper use of the powers conferred by the Act.

◇ ◇ ◇ ◇

"Unless the drivers of motor cars change their speed very considerably the Town Council will feel compelled to apply for a drastic speed limit on these hills," is the concluding sentence of a letter from the Town Clerk of Ipswich, asking, on behalf of the Education Committee, if the Motor Union will undertake to erect warning signs near the schools in Bolton Lane and Ranelagh Road.

Apart from the value of the Union's signs from the point of view of the safety of the public and of drivers, there is another aspect from which they may be regarded as of service to the community. A chief constable has invited the Union to supply signs for a certain town in order to effect a reduction of speed, and he mentions that the alternative will be the placing of a control—a course he does not desire to adopt.

◇ ◇ ◇ ◇

Two danger notices have been erected by Sir John Miller at a double turning near Heywood House, Westbury, Wilts. Mr. H. Bull, J.P., the Union's hon. correspondent at Buckingham, has shared the cost of four danger notices and four plates inscribed, "Reduce speed through Buckingham."

◇ ◇ ◇ ◇

The following contribution has been received for the Legal and Legislative Defence Fund: £1 1s., Dr. A. E. Porter. This amount brings the total to £206 7s.

◇ ◇ ◇ ◇

The Middlesex County Council has applied for the ten-mile limit for so much of High Street and Kew Bridge Road as is within the Brentford Urban District and so much of the Uxbridge main road as is within the Southall-Norwood Urban District. The West Ham Council has scheduled a number of roads in that borough, and the Hertford County Council makes application with reference to portions of the St. Albans, Hatfield, and Barnet main roads, besides several in Elstree. The secretary will be glad to at once hear from motorists regarding these applications.

◇ ◇ ◇ ◇

Arrangements have been concluded by the Union's engineering department with a local authority for reporting upon a number of motor fire engines, for the supply of which tenders have been received from both British and French firms. On application to the Secretary, members may obtain the scale of fees charged for the services of the engineers in the inspection of cars, etc., in London and provinces.

◇ ◇ ◇ ◇

Asked by the Union at the instance of the A.A. to erect a direction post to indicate the Robin Hood gate of Richmond Park, the Surrey County Council put up two ineffective danger signs. The Union has arranged to erect at its own expense immediately opposite the gate on private property a notice, lettered red on white, "To Richmond Park—Special Caution."

◇ ◇ ◇ ◇

The road authority and the Board of Trade have had attention drawn by the Union to the dangerous conditions existing at the level crossing on the Manchester main road near Northwich Station, the scene of the recent fatality to a motor car passenger. Motorists who use it hold the opinion that the precautions taken to ensure the safety of the public are inadequate.

◇ ◇ ◇ ◇

Nearly three weeks after a tour in the West, a London member received a summons alleging that in passing through a village the horn of his car was not sounded. The car was not stopped, but its number was noted by a constable. Undoubtedly the procedure is unfair to the motorist. The Union has advised him as to the defence of his driver, who he says is inclined to sound the horn too often, so careful is he.

◇ ◇ ◇ ◇

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

THE GLISSOIRE SHOCK ABSORBER.

This ingenious device, in which a simple hydraulic principle is seized upon to provide the shock-absorbing action so necessary to the complete comfort of a modern motor car, is now being put upon the market by Messrs. Warwick Wright, Ltd., of 110, High Street, Marylebone, who make a special point of fitting and adjusting this apparatus to any type of car. It is claimed for the Glissoire that its design endows it with a certain amount of discriminating intelligence, which serves to distinguish between great shocks which require damping and lesser shocks which are sufficiently modified by the springs themselves.

Four things are required of an efficient shock-absorber: It must preserve the mechanism from shock, it must effect a big saving in the tyre bill, it must make the car sit down on the road, and it must greatly enhance the comfort of passengers. It is therefore claimed for the Glissoire shock-absorber that it reacts in direct proportion to the amount of disturbance delivered to it.

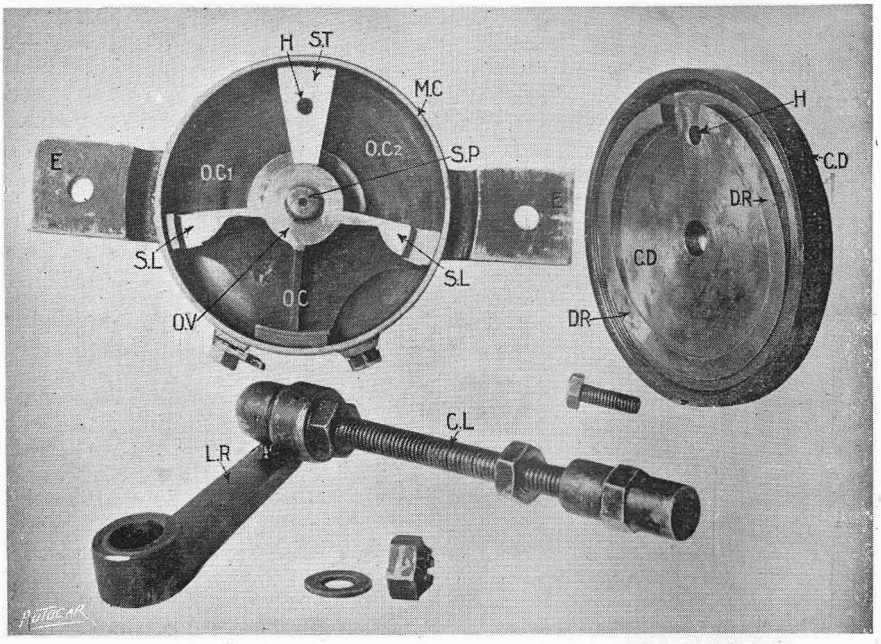


Fig. 1.—Parts of the Glissoire shock absorber.

M.C, main casing
O C, O C1, and O C2, oil compartments
S T, stop dividing oil compartments
S L, slots in oscillating vane
O V, oscillating vane
C D, closing disc formed with diminishing ridges on inside face
H, hole for set screw seating C D and stop S T
L R, lever operating oscillating vane O V
C L, connecting link made with ball and socket joint
E E, lugs for attaching apparatus to frame
S P, spindle carrying boss of oscillating vane O V
D R, diminishing ridge

Before embarking upon a description of the action and effect of this device, we shall briefly describe its construction. M C is the main casing, formed of pressed steel, with the two lugs E E for attachment to the web of the side frame member. This casing takes the form of an open drum with a stop S T for dividing it into two compartments holding thick oil. Mounted on the spindle S P is the oscillating vane O V, this spindle passing through a stuffing box on the outside of the casing, and there carrying the lever L R, which in its turn is attached to the connecting link C L. The open face of the main casing shown is closed by the closing disc C D, which has the concentric diminishing ridges D R formed upon it. The closing disc C D is anchored to the stop S T by a setscrew passing through the holes H seen in both. C D is forced to an oil-tight joint with the main casing by a screw collar (not shown).

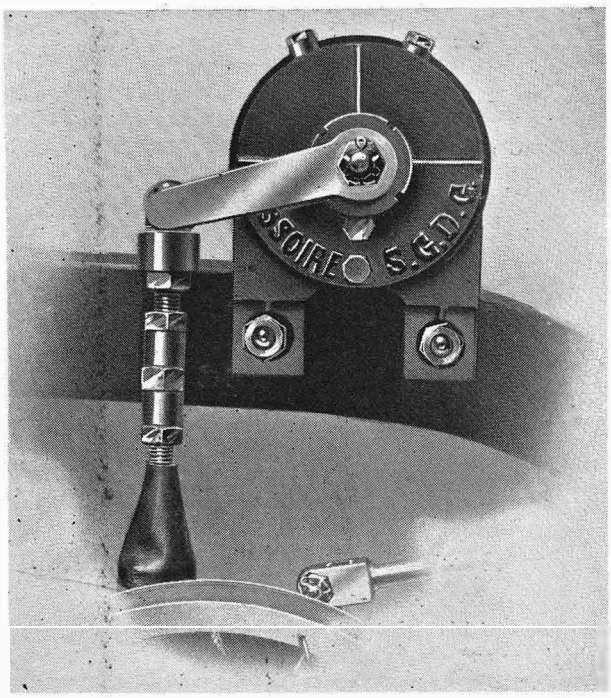


Fig. 2.—The Glissoire shock absorber in position on the chassis.

As already mentioned, the main casing M C is secured to the outside face of the web of the side frame member by the lugs E, and the connecting link C L is attached to the axle. Now, when in position as shown in fig. 2, it will be seen that as the axle approaches to or departs from the frame, due to the inequalities of the road and the play of the springs, the connecting link is endowed with similar motion, which results in the rocking of the lever L R. The oscillating vane O V (fig. 1) is consequently endowed with an oscillating movement within the main casing M C, but as the latter is now filled up with thick oil, it follows that to move the arms of the vane either up or down, the vane must displace the oil and cause it to flow from O C_1 through O C to O C_2, and *vice versâ*. To do this, its only means of passage is by the slots S L formed in the arms of the oscillating vane, which slots become more and more closed by the diminishing ridge D R as the arms rock towards the top of the casing. It is this carefully proportioned choking of the oil passage between the upper and the lower oil spaces as the upward travelling arm

approaches the top that endows the Glissoire shock-absorber with its greatly appreciated graduated action. When the rocking action of the vane is slight, the resistance of the body of oil within the casing is slight by reason of the maximum area of slot passage being afforded. In fact, in principle the working appears to be similar to that of the Siddeley shock absorber.

The Glissoire is exceedingly well and strongly made. There is practically nothing to get out of order, and it can be accurately and comfortably adjusted to any weight of car. There being no springs or friction discs, there are no parts to weaken, wear, or get out of order, and what few frictional parts there are are always working in oil.

ON THE TRACK. By H. C. Lafone.

Mr. S. F. Edge is evidently determined to wind up in style the record season of 1908. On Wednesday in last week the news reached me that Mr. Newton was to attack the 90 h.p. short record at noon on that same day. To one who had put in five consecutive days at Olympia the excuse for a day off was more than welcome, and I made for the paddock at Brooklands, congratulating myself upon the chance of a little fresh air in place of the microbes at Kensington. There was a brisk breeze blowing from the west, which meant that the wind would be dead ahead for cars going over the measured half-mile in the usual direction, and Mr. Newton finally decided to drive right-handed, or clockwise. So perfectly does Mr. Newton know the track and so instinctively does he do the right thing in negotiating the banks that he very soon seemed quite at home going the wrong way round. The only difficulty appeared to be connected with slackening speed at the end of the measured distance sufficiently to enable the car to come easily off the pond banking. The big Napier "Samson" is by no means an easy car to tune up, and many a time I have heard him "missing" in the most annoying way, in spite of the very best efforts of his attendants. On this occasion, however, he was in a good temper, certain carburetter alterations having been carried out since he covered the flying half-mile some weeks ago at the rate of almost 115 miles an hour. Considering that the cold blustering wind on Wednesday week can have been anything but good for carburation, I think that it was a decided triumph for both driver and car that the figures should have been put up to almost 120 miles an hour.

Mr. Rodakowski's resignation of the position of official timekeeper at Brooklands is likely to cause a certain amount of difficulty. The electric timing apparatus wants a great deal of knowing, and "old hands" like Mr. Newton are very much averse to entrusting themselves to the tender mercies of a new man. So far the question has not become acute, because nobody except Mr. Newton has gone for records since Mr. Rodakowski's resignation, and Mr. Rodakowski had promised to do the timing himself for the series of record attempts which Mr. Newton was on the point of making. During the record above referred to Col. H. C. L. Holden, the inventor of the timing apparatus, was with Mr. Rodakowski in the box.

While on the subject of retirements from Brooklands I must mention that Mr. Newton's racing career has come, or is very shortly coming, to a close. No driver has won more laurels on the track, and no one has deserved his successes more, than Mr. Newton. He is one of those few drivers who have recognised that the race is not always to the swift. As an example of his wonderful judgment and self-restraint may be mentioned his win in the race for the O'Gorman Trophy. I can only add that I myself, in company, I am sure, with all other regular visitors to Brooklands, shall miss Mr. Newton most sincerely. Rumour has it that his next engagement is in the matrimonial stakes; if this is the fact, I need only wish him in future the success he has enjoyed in the past.

ABERDEEN TO LONDON NON-STOP RUN.

The following particulars of the Aberdeen to London run on a Belsize car are supplied by Mr. Lawson Turnbull, hon. local correspondent of the Motor Union at Aberdeen:

"On Thursday, November 5th, a 20-30 h.p. Belsize standard touring car left Aberdeen to attempt a mechanical non-stop run to London. The car was driven by Mr. O. F. W. Steele all the way, and had on board Mr. Lawson Turnbull (hon. local correspondent, Motor Union, Aberdeen), Mr. C. B. Williamson (mechanic), Mr. W. J. D. Mair (timekeeper), and Mr. G. D. Vernon, of High Wycombe. A start was made from the Arcade Motor Garage, Aberdeen, at 5 p.m., and the route taken was Perth (9.30 p.m.), Stirling (11.24 p.m.), Glasgow, *viâ* Kilsyth (1.30 a.m.), where the first stop was made for petrol. The car then followed the route over Beattock Summit, arriving at Carlisle at 7 a.m., where a fresh supply of petrol was obtained, also hot coffee. Carlisle was left at 7.35 a.m. The hardest part of the road now lay in front of the car, namely, the stiff climb of Shap, which would have been negotiated on top gear had it not been that on swinging round a corner a cart hidden from Mr. Steele had deposited a load of stones right in the middle of the road, and had Mr. Steele been a less skilful driver the run might have ended abruptly. However, an accident was averted without stopping the engine, and the car continued on its way, arriving at Preston at 11.30 a.m. After taking on more petrol the car made for Warrington, and then, intsead of taking the direct route to Lichfield, a longer road was taken through Cheshire and then eastwards towards Lichfield, which place was reached at 5.30 p.m. Here the last halt was made for petrol, and the car set out on the last stage of its journey. This part of the road was practically unknown to any of the occupants of the car, and consequently in the dark many wrong turns were taken which caused much delay. Eventually London was reached, and the car drew up at the Motor Union offices, Albemarle Street, at 1.45 a.m. (November 7th), after completing a total distance of 620 miles in 32¾ hours, making an average of 19¼ miles per hour. The total amount of petrol consumed was 28 gallons. The car was driven back to Aberdeen by Mr. Steele, *viâ* York, Newcastle, and Carlisle, without a single nut or bolt requiring any attention."

ON THE ROAD.

There is no doubt that motors and motoring have come upon civilisation in such a hurry that the Fine Arts have never yet had a chance to catch them up. With regard to automobiles in Illustration and Story, they may have been promoted from the Farce to Comedy—I have even come across descriptions of love scenes taking place in them in ordinary six-shilling novels—but as a background for Drama and Tragedy no one has yet utilised them. Of course, in Melodrama and Feuilleton the errant motors have taken the parts of the frightened horses or the run-away carriage, and in the place of the villain or intervening husband being brought home from hunting on a hurdle with a broken neck by grooms, he is now usually reported as consumed to a cinder by an exploding cylinder or crushed into a thousand pieces at the foot of a cliff; at any rate his body is never borne to the "Hall." Therefore any intense writer of gloomy and fateful Drama has a new field for originality in front of him, though I am quite sure the real reason for its barrenness is because of the appalling words he will have to use in his descriptions. For instance, he might have to write "two-seater"! I ask you, can anyone imagine deeper bathos? You may suggest that the word "car" has the highest sanction and is poetic in itself. Very likely, I answer, but does it not imply that the person owning it has only one motor, and therefore is not likely to occur in high-class tragedy? Undoubtedly; and, moreover, a "two-seater" is just the sort of vehicle a misanthropic millionaire, a wicked earl, or a mysterious stranger *would* use in order to be in keeping with his romantic calling. Therefore I have been to the trouble of trying to find a more suitable name, and, as French enters so much into motoring jargon, have picked out yet another Gallic noun, which has the merit of fitting the case like a blister. The word I give to carriage-builders and motor manufacturers is *désobligeante*, which the dictionary translates as "a carriage for two persons," and which Laurence Sterne in "A Sentimental Journey" describes as "a chaise, so-called from its holding but one person." What could be more suitable? I look forward at the next Olympia exhibition to the general use of the word, because it implies what dealers and agents so often whisper to you, namely, that you need not be under the necessity of always over-weighting your car with relatives and friends, for the very good reason that there is no room for them. Therefore let us have no more of that low Americanism "two-seater," which, after all, is wrong in itself, because it might easily be thought to mean a car with two seats, namely, a front seat and a back seat.

It seems a pity, having got on to the mention of the "Sentimental Journey through France and Italy," to let it go without a few comments on its ideal method of touring. To begin with, I like the grand comprehensiveness of the title, though, as a matter of fact, the author never gets—in the book at least—to Italy at all. But one does not notice that, for, like all happy persons, the very last thing he does is to care where he may be as long as there is anything to interest him. He—like we do—went, of course, by road, and one has only to read the book to realise that this is the only possible way to go. Perhaps nowadays we may think him a little too critical, but we must remember that in his days—and the book came out in 1768—a man who was travelling inside a carriage had more time for thinking than is granted to us who hang on round corners and—wherever we may be sitting—feel for imaginary foot brakes when anything appears in sight. But even in Sterne's day there were travellers who merely counted their travels by their towns, and deemed it to be waste of time seeing anything that was not in the eighteenth century equivalent of Baedeker. Hear him on the subject: "I pity the man who can travel from Dan to Beersheba and cry, 'Tis all barren'; and so it is: and so is all the world to him who will not cultivate the fruit it offers." And later he comments on the jaundiced story of the Travels of the learned Smelfungus thus: "He wrote an account of them; but 'twas nothing more than the account of his own miserable feelings."

But Sterne is a little hard on Travellers in his catalogue of them—which, by the way, he wrote subject to the secsawing of the aforesaid *desobligeante*. He puts it: "Thus the whole circle of Travellers may be reduced to the following heads:

"Idle Travellers. "Proud Travellers.
"Inquisitive Travellers. "Vain Travellers.
"Lying Travellers. "Splenetic Travellers."

Then follow:

"The Travellers of Necessity.
"The Delinquent and Felonious Traveller.
"The Unfortunate and Innocent Traveller.
"The Simple Traveller.

"And, last of all (if you please), the Sentimental Traveller (meaning thereby myself)."

The author then wonders if in giving a whole niche to himself he is not intruding on the confines of the Vain Traveller, since he has no better grounds for drawing attention to himself than the mere novelty of his vehicle, but he comforts himself with the reflection that he may possibly serve to assist his fellow men to know themselves and grasp their opportunities, and also to "save them, as Sancho Panca said to Don Quixote, from taking many foul steps to see sights and look into discoveries, all which they might have seen dry-shod at home." What Sterne would have gone on to say, I know not, for at this time he was interrupted by two Travellers whom he heard wondering at what could be the cause of the motion of the *desobligeante*. "'Twas the agitation," said I, coolly, "of writing a preface." . . . . . "I never heard," said one of them—a *simple Traveller*—"of a preface wrote in a *desobligeante!*"

As an Englishman does not travel to see Englishmen, I retired to my room. I should have explained that the vehicle was at rest in the stableyard of the Calais inn, and that the Author was merely sitting in it with a view to acquiring it by purchase. So he says, but possibly even in those days hotels were as unkind to their retiring and sober guests as they are so often now—and Calais is very near England.

This dissertation has got very far away from its original intention, but having strayed into the question of foreign travel let me take this opportunity of thanking a correspondent for a kind and interesting letter on foreign travel, and a recommendation to the effect that the Continental hand guide to France is even more lucid and helpful than the Michelin one. Since I received it, many others have told me how good it is, and, if it is all it is said to be, happy is the country which possesses two such helpful hand-books to the full enjoyment of its many beauties.

OWEN JOHN.

A PREMIUM ON EXTRAVAGANCE IN PETROL.

During the course of the exhibition which has just closed its doors at Olympia, one of the petrol supplying companies caused some surprise by extensively advertising an offer to pay 5s. for every hundred seals detached from their motor spirit cans. Shortly after this announcement we noticed with regret that another big company followed suit in this wise, their explanation being that such a repayment for seals practically amounted to an allowance to the dealer on the price of motor spirit, and that they were in self-defence obliged to follow the lead of their competitors. The firm responsible for the initiation of this practice were doubtless moved thereto by the idea that the possibility of obtaining this rebate would cause users of motor spirit to demand the brand the seals of which were worth each a trifle over a halfpenny, but in view of the trifling amount so securable by the ordinary user, that this result would follow is by no means probable. What is more likely to happen is the fact that the seals will be clipped off before sale, and the sealing, which the public have hitherto regarded as a safeguard, will in many cases be absent. Again, the possibility of obtaining 5s. for 100 such seals is a distinct temptation to the chauffeur to waste petrol in more ways than one. To our mind this is, perhaps, the most serious aspect of the matter. The whole thing has already led to some complication, for we are given to understand that certain of the wholesale distributers, in lieu of imposing the collection of the seals upon their customers, have circularised them to the effect that for every 100 gallons of spirit purchased they will give a rebate of 2s. 6d., which is equal to 5s. per 100 seals.

Writing on the subject, Messrs. Carless, Capel, and Leonard say:

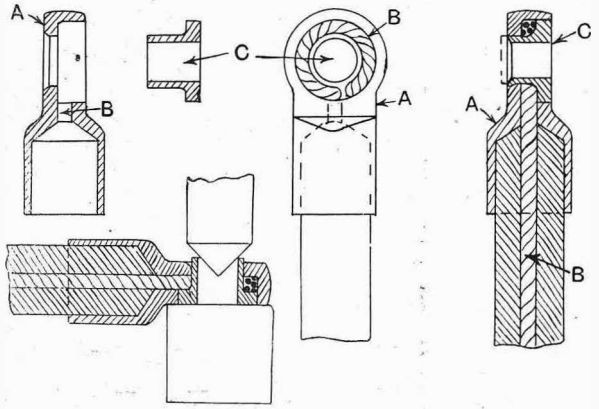
"No motorist need think that the presents offered to chauffeurs will eventually come out of the pockets of the importers. Nothing is more unlikely! The giving of such presents as those now offered (if that policy succeeds) will be more than refunded by the enhanced prices demanded for motor spirit when the proper time comes. Because we think this new departure is a great danger, and must put the trade on a thoroughly unsound basis, we venture to appeal to motorists to set their faces against it. If the importers can reduce their prices, by all means let them do it straightaway, but let the man who pays have the benefit."

THE AFFILIATION QUESTION

Some of the county and district clubs are bringing pressure to bear in a passive kind of manner upon the Royal Automobile Club with a view to inducing them to reconsider their decision with regard to affiliation with more than one central body. The following resolution adopted by the committee of the Derby and District A.C. is an example of the action that is being taken: "That the Derby and District Automobile Club become associated with the Royal Automobile Club, provided that that body consents to withdraw the word 'only' in Clause 18 of its scheme for association, thus allowing freedom of action to provincial clubs; but that in the event of its refusal to adopt this suggestion the Derby and District Automobile Club remain affiliated with the Motor Union." The Midland A.C. and several other clubs have taken a somewhat similar stand.

THE BOSCH TERMINAL.

A neat terminal is that recently placed on the market by the Bosch Magneto Co., Ltd., and illustrated herewith. The component parts are shown on the left, and lettered A, B, and C respectively, A being the terminal proper with an extension sleeve to fit over the insulation of the wire, B the aperture through



The new Bosch terminal.
A, the body. B, the wire. C, the rivet.

which the bared wire passes, and C the rivet holding the wire. The device attached to a cable is shown in section on the right, and in the lower corner the punch is shown in position ready to rivet over the neck of C, which holds the whole firmly together. The claims for this terminal are simplicity and lightness. It requires no soldering, and relieves the conducting wire of any strain.

A USEFUL CONVERTIBLE MOTOR VEHICLE.

It is not often that the heavier type of automobile is referred to in these pages, now that the subject is adequately dealt with by our contemporary, *Motor Traction*. But the introduction of a convertible vehicle which may be used either as a lorry for estate work or as a passenger motor vehicle to carry a number of people and a great quantity of luggage, calls for some comment in *The Autocar*. This vehicle is the Norfolk convertible country house and estate car, consisting of a well upholstered and fitted omnibus body, carrying seven persons inside, three behind the driver, and one on the seat beside him, on a 30-32 h.p. F.C. type Commer Car 3½ ton lorry chassis, built by Commercial Cars, Ltd., Luton.

The omnibus in question was recently driven from London to Harrogate in a day, carrying six people, a large quantity of petrol, and a good deal of luggage. The engine ran smoothly and with great regularity, and showed itself to be flexible and efficient. The first speed was only used once, the car was well sprung and most comfortable, and the petrol consumption worked out to about eight or nine miles to the gallon.

For station work, shooting parties, and for the many and manifold purposes for which a vehicle of this kind would be required in the services of a large landowner, the Norfolk convertible car is eminently suitable.

"THE AUTOCAR" LECTURES.

As explained last week, the lectures at the Newcastle-on-Tyne and Birmingham centres, which were fixed for the 16th and 18th November respectively, were postponed till the following week on account of the Olympia Show. The Leeds lecture, due for the 19th inst., was also put off for the same reason. The effect of this postponement will be that the course of lectures at each of the centres named will be extended one week beyond the dates originally announced. The decisions in each case were arrived at hastily for the convenience of those who attend. We trust that no inconvenience has been caused to any member of the audiences concerned who may not have been aware of the change. The particulars and dates of the remaining lectures of the course are as follow:

FIFTH LECTURE.—Carburation—Cooling and Lubrication.

SIXTH LECTURE.—The whole of this lecture will be devoted to various forms of ignition, particular attention being given to High Tension Distributing Systems and Magnetos.

SEVENTH LECTURE. — Frames—Steering—Brakes—Bearings—Chains, etc.

EIGHTH LECTURE. — Bodies—Wheels—Tyres—Accessories—Hints on Driving—Organisation.

The dates of the remaining lectures at each centre are as follow:

LONDON.—3.30 and 8.30 p.m. Dec. 1st.

BIRMINGHAM.—7 p.m. Dec. 2nd, 9th, and 16th.

LEEDS.—7.30 p.m. Dec. 3rd, 10th, and 17th.

MANCHESTER.—4.0 and 7.30 p.m. Nov. 27th, Dec. 4th and 11th.

NEWCASTLE-ON-TYNE.—7.15 p.m. Nov. 30th, Dec. 7th, 14th, and 21st.

We draw special attention to the fact that to meet the wishes of some of our readers it has been arranged to issue tickets to admit to the remaining lectures of the series at any of the centres at a reduced fee. We strongly urge all those who have not yet applied to take advantage of the opportunity now afforded them of gaining a working knowledge of their car.

Applications for tickets should be made immediately to *The Autocar* Lecture Secretary, 20, Tudor Street, London, E.C.

Before the Epsom magistrates on Monday, the 16th inst., Mr. Ian Hayward Roberts was summoned for having, at Banstead, on October 3rd, driven a motor car recklessly, "having regard to all the circumstances of the case." Mr. Huntley Jenkins, barrister-at-law, explained that the prosecution had been instituted by the Royal Automobile Club, and that he had been instructed by that Club's Legal Committee. Mr. E. Bray appeared for the defence. Evidence in support of the summons followed from Mr. V. A. Rutter, surveyor, of Norfolk Street, Strand, and from Miss Eva Wilson, of Norwood Road. The result was that the defendant was fined £10 and £3 13s. 6d. costs.

A SOLUTION WANTED. An Ignition Problem of an Amateur.

The following has been sent us by a correspondent who handles a difficult problem by setting out first the problem, then the available data, and then the hypothesis, a practical solution having been unattainable. Both makers and repairers have been unable to offer a solution. The car is a two-cylinder 1907 pattern of well-known manufacture.

PROBLEM: Judging by the effect produced when the two tremblers are alternately held down, one cylinder works very much better than the other. No. 1, we will say, is enough to keep the engine running, but No. 2 fails, the engine gradually coming to rest.

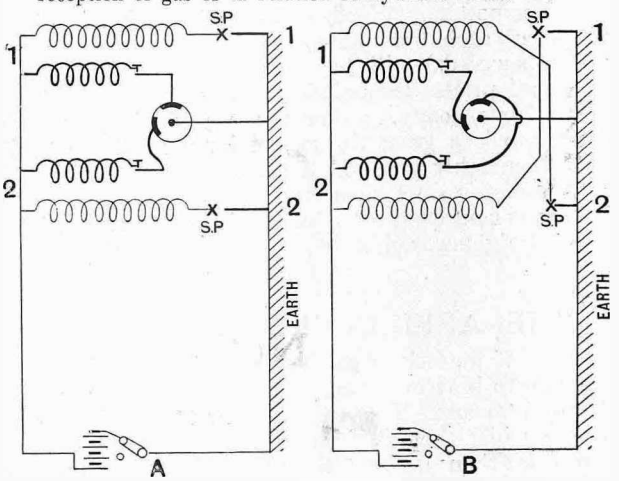
Query: Does this arise from a defect in the cylinders, the trembler coil, or the commutator (Lacoste roller type)?

DATA: When the connections were interchanged, putting No. 1 coil on to No. 2 cylinder, this combination behaved badly, the No. 2 coil on to No. 1 cylinder being all right. From this it might be argued that No. 2 cylinder is at fault, for No. 1 coil which supplied No. 1 in the first case behaved satisfactorily. Further, No. 2 coil cannot be faulty, for when driving No. 1 cylinder it was all right; and further still, another coil was borrowed and substituted without any difference.

In this juggle the commutator connections have to be changed with the primary. In other words, No. 1 section on the commutator always serves No. 1 cylinder, this apparently being necessary to secure the correct sequence of firing. It is possible, therefore, that it may be the commutator section No. 2 that is wrong. But to eliminate this as far as possible, the commutator was sent to the makers and relined, but with no appreciable improvement, showing this procedure to have been unnecessary.

The wires and connections have been all carefully examined and found all right, also the sparking plugs; all four valves have been ground in, and the compression is perfect.

HYPOTHESIS: The only explanation that can be suggested is that one cylinder is in a more favourable position for reception of gas or in relation to flywheel effect.



In the arrangement A the cylinder fired by No. 1 coil works well; in B the cylinder fired by No. 2 coil works well.

We must warn chauffeurs who are on the look out for employment against a practice which appears to be worked at their expense. An advertisement with a box number is published, and when the driver on the look out for employment replies to it he finds that he is not communicating with a private owner or firm of motor car makers who want a driver, but with a registry office, which offers to include his name on its list if a booking fee is sent. It stands to sense that this is not the way to conduct a registry office. The matter may be perfectly honest, but it does not look so on the face of it, as a registry office should advertise as such and not masquerade as a private employer. We advise all drivers who receive communications of this kind to take no notice of them. They are not necessarily swindles, but the chances appear to be in favour of shady practice, as the method of getting into communication with the men is not straightforward.

THE MOTOR UNION.

A REPORT OF THE SPEECHES AFTER THE ANNUAL DINNER.

The annual dinner of the Motor Union took place on Wednesday evening, November 18th, at the Wharncliffe Rooms, Hotel Great Central, London, Mr. W. Joynson Hicks, M.P., in the chair. The company numbered 200, including members and guests. Amongst those present were Earl Russell, Sir Clifton Robinson, Sir Martin Conway, Mr. T. Mackinnon Wood, M.P. (Under Secretary for Foreign Affairs), Mr. R. A. Robinson (chairman L.C.C.), Mr. G. L. Gomme (clerk L.C.C.), Mr. Robert Todd (president Stanley Cycling Club, and vice-president A.C.U.), Mr. R. A. McCall, K.C. (vice-chairman M.U.), Mr. C. McWhirter (chairman Finance Committee), Mr. E. Manville (president Society of M.M. and T.), Mr. J. Kennedy (chairman Parliamentary Committee), Col. Baskerville (chairman C.T.C.), Mr. Stenson Cooke (secretary A.A.), Col. R. E. Crompton, C.B. (chairman Commercial Motor Users' Association), Mr. C. H. Dodd (vice-chairman M.U.), Mr. W. Ballin Hinde (treasurer M.U.), Mr. W. Rees Jeffreys (secretary M.U.) A number of ladies were also present.

The loyal toasts having been honoured,

Openings for Activity.

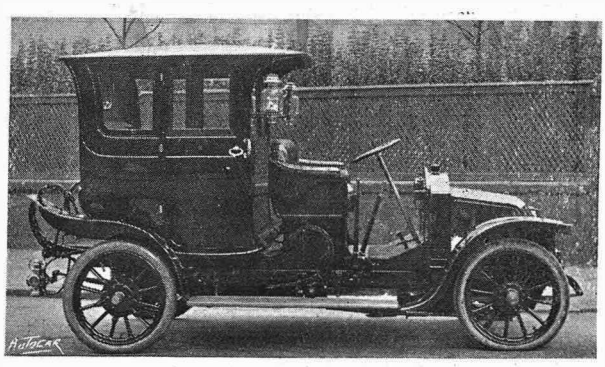
Mr. T. Mackinnon Wood, M.P., proposed the toast of the "Motor Union of Great Britain and Ireland." He said he was pleased to see that the motto of the Motor Union was "considerate driving." Under that motto he could safely appear in their midst and wish them good luck. They would all acknowledge—at any rate, he was sure ninety-nine per cent. of them would—that the duty of considerate driving fell first of all upon those who drove the fastest vehicles on the roads. He had sometimes thought that it would be a useful motto for other people besides the drivers of motor cars. (Hear, hear.) There was the driver of the covered cart, who could only see and steer in one direction, the hansom cab driver, who turned off the rank without the slightest warning and without looking about him; the lady cyclist who dismounted about six yards in front of your car, the traction engine drivers, and many others. The motto of the Motor Union would be a good motto for all these people. Someone had suggested to him—he did not recollect whether it was their secretary or the chairman [The suggestion originally appeared in *The Autocar*.—ED.]—that the next effort of the Motor Union should be directed to the Education Department, who should cause to be taught in all the elementary schools of the country, on pain of losing the school grant, the rules of the road, and the duties of considerate driving. He had heard many worse suggestions than that. If it were adopted it would add very much to the amenities of the road and the happiness of motorists. Touching the dust problem, he pointed out that when there were no motor cars and the fastest thing on the road was a bicycle, there were clouds of dust, and he remembered well seeing the hedgerows covered with dust long before the advent of the motorist. True, the dust grievance was now aggravated; but even in this connection he was not sure whether the motor car could not be looked upon as a blessing in disguise, for did it never occur to them that the motor car simply represented one stage of evolution, and that one great function of the motor car was to improve the roads of this country? There were other reforms needed in the roads besides the abatement of the dust nuisance. There were many blind corners and acute angles which were dangerous for all traffic.

The Attitude of the Motor Union.

Mr. Joynson-Hicks responded. He said, so far as the position of the Motor Union and its relations to other organisations were concerned, he could say on behalf of the members of the Union that they desired to live on terms of friendship with other motor organisations. They had no quarrel whatever with anyone. Although it was now well-known that last year they severed their connection with the Royal Automobile Club, they nevertheless wished that Club every success. They wished success also to all those provincial clubs who thought it better to throw in their lot with the Royal Automobile Club than with the Motor Union. As a Union they were not taking any steps to influence any provincial club to remain affiliated with them. The Union desired that the freedom of these clubs should be perfectly unfettered, and that whatever decision they arrived at would commend itself to the Union. He objected in the strongest possible manner against all motorists being condemned because there was a small percentage of inconsiderate drivers. He also objected to the idea which prevailed in many quarters, and even in the House of Commons, that motorists as a body should be held responsible for the bad conduct of inconsiderate drivers. One might just as well say that all horse owners should be held responsible for what covered van drivers did. He objected to being called upon to reform the manner of the black sheep who were not members of the Motor Union. There was already an organisation in existence whose special function it was to deal with offenders of this class; he referred to the police and the magistrates. He thought motorists were entitled to the protection and assistance of the police when they were passing through country villages and towns. The police ought to take means to warn them rather than set vexatious traps on such outlandish places as Salisbury Plain, where there could be no possible harm in travelling at twenty or even forty miles an hour. He was quite aware that motorists had to face a feeling of hostility, and he hoped they would live it down as they had lived through the period of ridicule. Nowhere was that hostility more apparent or more blatant than in the British House of Commons—a place where it ought to be manifest least. Quite recently motorists wisely and rightly decided that there should be no more road racing in this country. There were tracks specially constructed for that purpose. It could not be very long now before the great overgrown towns where population was congested would entirely change their character. The future of locomotion would be with the mechanically-propelled vehicle. Motorists had been on the defensive for the last ten years, and that was quite long enough. They had endured obloquy, they had endured attacks such as they were meeting now, just as though they were doing nothing for the good of the country. Why, they were one of the very few industries to-day which were flourishing, and in this time of depression they were finding steady employment for English artisans and mechanics. The time had come when as law-abiding citizens desiring to obey the law they should look for justice and for fair play.

The Motorists' Strong Case.

Sir Martin Conway proposed "The Motor Movement." He said it would not do to minimise the prejudice that existed in certain quarters against motors. He thought it a pity that motorists did not take the initiative instead of waiting to be attacked; they had a strong case, and they should give up the defensive attitude and advance to the attack. What was it the motorists had to do? State their case fairly and boldly. People said the roads in Great Britain should be used only for the purpose for which they were made. What was that? Why, in most cases the great main roads of England were originally constructed for the Roman legions to march along them. Was that all they were good for? Surely that argument would not hold water. The roads were made for traffic; that was the broad proposition he wished to lay down. By whatever means the traffic of a country was carried on the roads were for that. The roads were far more used now than formerly; therefore they cost more to maintain. The cost of maintenance was in direct proportion to the usage, and the usage was in direct proportion to the needs of the people. The needs of the people were properly met by the taxes and rates. This increased expenditure was recouped by the benefits derived from good roads, and in the long run no one ought to be worse off because the roads cost more. With



An uncommon form of car body shown at Olympia by Messrs. J. A. Lawton and Co. It was a coupe brougham on Cee springs in Louis XVI. style.

Motor Union Annual Dinner.

the advent of the motor car, which, unlike the railway train, could start where it pleased and go where it pleased, the population of the country was being dispersed over the country again, to the great relief of congested areas. He cited four cases in his own county (Kent) in which large mansions which had been disused and decayed had been restored, and were now inhabited simply because they were accessible by motor car.

Mr. R. A. Robinson, chairman of the London County Council, responded. Addressing himself to the traffic problem of London, he favoured the establishment of an advisory committee which should advise the County Council on all such matters as planning new streets, widening existing ones, and all other matters affecting the traffic. It would not be fair to ask the County Council as a body to decide these questions, because as users of the roads they were the owners of one system of locomotion (the tramways), and the temptation would be to favour their own system. There ought to be an impartial board for this purpose. A deputation would shortly wait on the Prime Minister to ask him to consider this question and get the assistance of the Government in the solution of the traffic problem. The streets were really dangerous at present.

Mr. W. R. Adkins, M.P., and Mr. E. Manville (president of the Society of Motor Manufacturers and Traders) also responded. The latter gentleman said his society had recommended all its members to take no part in any road competitions. It was difficult to compute the exact number of persons employed in the motor industry, but he had endeavoured to make an estimate, and he had come to the conclusion that at least half a million souls were to-day supported by the industry. It did seem strange, therefore, that such a movement should be crippled in its advance by any unnecessary and vexatious restrictions.

Mr. J. S. Ainsworth proposed the health of the chairman, and the Chairman briefly returned thanks.

A NEW THING IN CARS.

Foolproof.

I have made a *coup*. An American reporter would describe it as a "scoop," which is only his translation of the French. Anyhow, it fell out this way. I chanced to meet a man at tea one day recently with the high brow of the born inventor, and very modestly he asked me to come and see a little thing of his own whenever I happened to be that way. Of course, there is nothing very new in this, but where the originality in this particular case came in was that he had got something to show me, and *in full working order*. And now, if I have fully prepared the world for a surprise, let me tell all about it in ordinary and intelligible language.

Mr. A. R. Garnett, of Bawtry, on the Great North Road, has invented the most foolproof car that ever could be imagined. He calls it the "Petric," because he wishes to convey the idea of Petrol and Electric in one. I don't think much of the name, but that is unimportant. I am of his opinion, that the only persons the car will not suit will be the experts who must have lots of handles and levers and gadgets to play about with. The "Petric" consists of an ordinary engine situate in the ordinary position, and ending at the flywheel. Just behind it, connected only by two wires, lies a motor-generator, which is about the size of a loaf of bread, and placed just behind where a clutch would live in ordinary practice. Out of it proceed two wires to a "controller," about the dimensions of a cigar box, whence come wires attached to two motors which revolve just inside the sprockets, which drive the road wheels in the manner of the ordinary chain-driven car. I grant you that this sort of thing is not startlingly original, because years ago I saw machines scrapped with very much the same kind of ideas. But the great difference between this car and those departed is that this one goes as it should and the others did not. The horse-power of the car depends entirely on the sized engine it is fitted with, and Mr. Garnett tells me the loss through transmission does not exceed ten per cent. Naturally, a bigger engine would require correspondingly bigger motors, but the idea is not to provide the world with another big fast car, but simply to give it one of moderate size and pace without gear box, speed lever, clutch, or differential. There is a little dial on the wheel marked in plain figures such as are on the bell-pushes in a modern lift. There is a foot brake and a side brake. Also—and this is where the foolproofedness of the invention comes in—there is a push-pedal that takes the place of the ordinary clutch pedal, and *when the driver presses it the car goes on, and when he takes his foot off it stops.* Not the engine, for that runs as governed, and no amount of bad driving could have any effect on it. If one starts the engine with the dial at full speed ahead nothing happens, because the pedal must be depressed also, which is a most necessary foolproof device. It seems to me that anyone who can steer a bicycle can drive this car, the foot brake taking the place of back-pedalling.

A Trial.

The inventor's idea is that, as a town carriage to put into the hands of unskilled men, there is nothing in it that ignorance can damage. Petrol engines in themselves do not come to much grief, and the worst that usually ever happens to them is a dirty commutator, a short circuit, or a sticky valve. Where the beginner generally does damage is in the gear box and to the poor suffering differential and road wheels, but in this case he will not be able to belabour the poor thumping engine, because beyond giving power to the generator it has absolutely no connection with the rest of the machinery. Personally, I do not like small chain-driven cars, but here, as it does away with the necessity for a differential, much can be forgiven. Besides, chains are very different nowadays from what they were even five years ago, and chain cases can conceal and silence them altogether.

Very possibly experts will pick holes in the Petric when they see it, probably experience may find weak points, but writing as an amateur I am bound to confess that, in the course of a twenty miles drive, I found nothing whatever to complain of. Mr. Garnett tells me the car—as a cab or runabout—will not be expensive, and I can testify from my own driving of it through the crowded market day streets of Retford that it is extraordinarily easy to handle. Indeed, the chief and only objections I can see are that (1) its ease and simplicity will throw out of employment a large number of deserving bath-chairmen, and (2) that the absence of handles, levers, and a clutch makes the driving of it dull and uninteresting for the want of having nothing to do but to steer.

Of course, all this depends on whether or not it will always behave as it did when I had the good fortune to be behind it. Mr. Garnett says it will, but you know what inventors are. Anyhow, the proof of its quality can easily be demonstrated, and if it answers expectation Mr. Garnett will be a very enviable and famous man.

OWEN JOHN.

AERODONETICS.*

A REVIEW OF THE SECOND VOLUME OF A COMPLETE WORK ON AERIAL FLIGHT BY F. W. LANCHESTER.

The subject of aerial flight is one which has received a great deal of attention during recent years. This attention has been not only experimental, but considerable analytical skill has been exercised in an attempt to explain and elucidate the at first sight surprising and sometimes paradoxical results obtained by experimenters. The amount of energy and money which has been expended in the attempt to obtain conquest of the air has aroused a great deal of general interest. It has caused the popular mind to wonder, a Wells to write, and an enterprising newspaper to open its pockets. It is therefore surprising that until within the last few months no really serious attempt at providing a scientific and comprehensive treatise on this subject should have been made. This is the more surprising when one considers the amount of correspondence which has appeared in the technical papers, and the discussions arising from it.

A Scientific Basis.

The treatise of which the present book is the second volume is an attempt to place the subject on a sound scientific basis. The results of the experiments which have been conducted are sufficiently precise and understood to make this possible, and Mr. Lanchester in attempting it has acquitted himself well. The first volume was published some months ago, and was of sufficient importance for the second to be awaited with considerable interest.

The first volume, it will be remembered, was entitled "Aerodynamics," and treated generally of the theory involved in the resistance offered, and the support given, by a fluid medium to bodies in motion through it. In it was discussed the pressure exerted on a body in motion through a fluid, notably the case of a plane moving in directions along, or inclined to, the normal to its surface. From it the support given to an aeroplane was deduced.

The second volume deals with the questions of stability and equilibrium of a body in free flight, and the results of the first volume are used to determine the nature of the path described.

Method of Elucidation.

The size and scope of the complete work have considerably surpassed the author's first intentions. His real work on the subject began in 1894, when he made a number of successful flying models. Theory and experiment went hand in hand, and the result is that the proportioning of an aerodrome is now within the range of direct design. In gathering together the results for publication, gaps were found, and further investigations were undertaken. The pursuit of these, although causing delay, added considerably to the value of the work, and finally the author decided that an attempt should be made to compile a complete treatise on the subject. The treatment is on non-mathematical lines. It must not be thought that mathematics are not introduced, but each problem is approached first of all from its simplest aspect, the more complicated cases coming as a development. This is, from a student's point of view, much more desirable than the modern method, so often adopted, of treating the simpler problems as particular cases of the most general theorems, the deduction of which is hopeless to a person of but average mathematical attainments.

The Evolution of Mechanical Flight.

The author is, not inappropriately, well known in motor engineering and a close observer of natural phenomena, such as the flight of birds, immediately bearing on the theory. As the author aptly remarks in the preface, the "hobbyhorse" may be considered as one of the stepping stones to the conquest of the air. From it has been evolved the bicycle, the pneumatic tyre, the automobile, and the lightweight motor, the last of which has made mechanical flight possible. A close examination of the flight of birds has resulted in attempts to produce a similar motion in an inanimate object. The flight attempted is similar to that of the heavier types of birds, which are incapable of sustaining themselves in the air without considerable horizontal velocity. A difficulty arises, owing to the fact that we cannot completely analyse a bird's flight in the sense that we cannot say definitely how far the stability of a bird in flight is automatic and how far the nervous system is called upon to correct any tendency to instability. The complete solution of this problem presents considerable difficulty, and we shall probably have learnt to fly ourselves before it is solved.

The Flight of Birds.

The opening chapters are devoted to a discussion of the general principles involved in the motion of a body in free flight. The simple aeroplane, its motion and stability, are briefly treated, particulars of small working models are given, and with them the results of a short set of experiments carried out by the author. These are fully discussed. The second and third chapters, while of some general interest, are essentially for the student. In them the path of a free aerodone is analytically discussed. The results of the investigation are used in the following chapters in the general discussion of the stability of an aerodone, and are compared with the results of experiments on small models. The flight of birds, a subject of very considerable interest, receives a fair amount of attention. One of the most interesting chapters in the book is that dealing with that most puzzling mode of flight, namely, "soaring." By soaring as the word is here used one means the capability, which some of the heavier birds have, of moving on an approximately uniform level for indefinite periods without any apparent muscular effort. Gulls have been known to follow a ship across the Atlantic without employing the wings as propellers. Various theories have been suggested to explain this, but the question can by no means be said yet to be settled. Those suggested resolve themselves into two classes—one, which explains the fact of the bird's apparent immunity from gravitational influence by the existence of upward air currents, and the other falling back on the possibility of the birds being able to extract energy from the wind owing to the pulsations in its velocity. In accordance with the second theory, a description of a most interesting model, illustrating the flight, is given. This model was invented by Bazin in 1890, and was, by a curious coincidence, re-invented by the author a few years later, in almost identical form. But one has to read the chapter to understand and be fascinated by the problem.

* Archibald Constable and Co., Ltd. 21s. nett.

This second volume, although sold separately, is essentially what it is said to be—a second volume. Anyone wishing to thoroughly study the subject must, almost necessarily, come to the second volume through the first. As already indicated, the results obtained in the earlier part of the work must be thoroughly understood if the later parts are to be mastered. Also, a knowledge of aerial flight, even if it does not necessarily involve, is greatly assisted by a close acquaintance with the principles of mechanics, hydrodynamics, and hydraulics. These qualifications Mr. Lanchester has in a high degree, and his work, which is the most comprehensive and masterly that has yet appeared on the subject, demands attention.

A number of useful and interesting appendices are given.

IN THE HOUSE OF COMMONS.

Anti-motorists in Parliament.

According to present arrangements the deputation which is being organised by a large group of anti-motoring members of Parliament will not wait upon the President of the Local Government Board just at present. The promoters, it appears, are desirous of making the interview as formidable as possible, so far as mere numbers are concerned, and it is said that it will be necessary to utilise the largest committee room at Westminster for the purpose. The object of the deputation is to urge upon Mr. Burns the desirability of allowing villages and small towns to make regulations fixing the speed limit at ten miles without enquiry or special permission from the Local Government Board. The congested state of Parliamentary business is stated to be one of the reasons for the delay, but it is the possibility that it is desired to obtain as large an attendance as possible. It must, however, be remembered that the present state of public business, and the large political issues which pending events are likely to raise, will be calculated to overshadow the smaller matters raised by the proposed interview. But in any case the growing agitation by M.P.'s against motorists should not be underrated, and steps should be taken to counteract it as speedily as possible.

Tar Macadamised Roads.

Captain Faber asked the President of the Local Government Board whether, looking at the fact that the Cheshire authorities have declared that tar macadam, when once laid down on roads, is only one-fourth the price of ordinary macadam to renovate, he can see his way to advising that the initial expense, which is much greater than that of ordinary macadam, should be provided for out of the Imperial Exchequer, to be repaid by the yearly saving, with a view to doing away with the dust nuisance created by motor cars.

Mr. Burns said: I am afraid there is no probability of effect being given to the suggestion of the hon. member. I may, however, point out that it is the practice of the Local Government Board to sanction loans for laying down roads with tar macadam, and to allow a period of five years for the repayment of the loan. Assuming, therefore, that the view attributed to the Cheshire authorities is correct, it would seem that the local authorities could recoup themselves the additional initial expense within the period of the loan.

Speed Limit Applications.

Mr. Markham asked the President of the Local Government Board if he would say how many county councils and other local authorities had during the past twelve months asked for power to regulate the speed of motor cars in their respective areas.

Mr. Burns said: I presume my honourable friend refers to the number of authorities by whom applications have been made to the Local Government Board during the last twelve months for regulations imposing restrictions on the speed of motor cars. The number of such authorities is twenty-seven. Under the existing law local authorities cannot themselves be empowered to make regulations on this subject.

SPEED JUDGING.

The impossibility of judging speed accurately and the absurdity of expecting motorists to conform to an arbitrary speed limit is strikingly demonstrated by the letter of a locomotive superintendent with twenty-five years' experience of engines and drivers which appeared in the *Glasgow Evening News*. The author says that engine drivers are as much at sea as motorists when it comes to stating their speeds in miles per hour, and when speed restrictions are imposed engine drivers are as much given to exceeding them by a few miles per hour as are motorists. With engine drivers it is not the miles per hour sense that is highly developed, but the ability to say that a certain speed will take the train in on time, and in this direction many men are remarkable. The writer sums up by saying: "I have now run quite a quarter of a million miles on the footplate and over 100,000 miles in motors, and should not like to be told to run through a quarter-mile police trap at twenty miles per hour, estimating my speed, and being liable to a heavy fine if I should chance to be a quarter of a mile over the twenty miles per hour rate."

AMERICAN SPEEDOMETERS.

In *The Autocar* of October 31st "Owen John" wrote rather disparagingly of American speedometers, complaining that the gear drive of one had come loose and had acted like a saw against the spokes of the wheel. Curiously enough, the same trouble occurred to ourselves, also with an American speedometer, at the beginning of this year, and it happened in the following manner: The man who was fitting it gave the wheel a twist to see if the instrument was properly set and caught his finger in something or other, with the result that the injured digit occupied his attention so fully that he omitted to screw up the nuts tightly. If the fixing nuts are properly secured such trouble cannot possibly arise, so that we quite fail to see how accidents of this nature are to be attributed to the fact that the articles themselves are of faulty manufacture.

The letter on the subject of the allotment of spaces at Olympia, which appeared in our correspondence columns of Nov. 7th above the name of J. W. Bennett, should have been attributed to Mr. F. S. Bennett, well known in connection with Cadillac cars.

DETACHABLE WHEELS AND RIMS IN RACES.

Motor racing must be regarded either as a sport pure and simple or as a means to an end, the end being the ideal motor car. The ideal for any given set of conditions, such, for example, as the comfort of passengers, weight, road surface on which the car is to be used, climate, and speed, is that arrangement of car which will perform its work with the least time spent out of commission, at the least annual cost, and with the fewest number of road stops, especially those exceeding, say, five minutes, since these would seriously affect punctuality.

Abnormal Treatment.

In respect to the 1909 racing, it is idle to discuss anything else but tyre conditions, since practically all other conditions have already been decided, and, while we may lament that the restrictions to the power of the engine have not been sufficiently drastic, no comment at the moment is of any value.

As to tyres and tyre changing, since the regulations are not yet settled, much may profitably be said. Before the advent of detachable wheels and detachable rims tyre delay in Continental races was eliminated as far as possible by the employment at each control of gangs of tyre changing experts with sharp knives, who butchered the deflated tyres, and even any tyre that appeared to be worn, and replaced them with new ones on the quite tenable theory that four tyres with a sufficient number of men could be changed just as quickly as the one the deflation of which rendered replacement necessary. This method was expensive, but, above all, was an unedifying spectacle for the public who looked to racing to improve the breed; it was clearly a method that the private owner could not use, and this plan led very properly to the prohibition of anyone other than the driver and passenger mechanic assisting in any way in the changing of tyres on any part of the course. This decision, however, reduced the matter of tyre changing to one of physical endurance. There are many cases on record where early in the race complete tyres were changed in something under ten minutes, while towards the end of the race twenty and even thirty minutes were so occupied; but even this practice did not represent the conditions of the private owner. There are few chauffeurs, and still fewer owners, who are prepared to put into a roadside tyre change the amount of energy and physical effort that a racing man was in those days compelled to use.

The Coming Races.

In 1906 the detachable rim was introduced into the Grand Prix, and decided the victory for those cars to which it was fitted. In 1908 the detachable rim was still permitted, though the English detachable wheel, which had already established itself as a popular equipment for the privately-owned car, was prohibited. We think, however, that if the detachable rim is permitted for 1909, it is very unlikely that the French will attempt to prohibit the detachable wheel, as they have in the intervening twelve months had so much experience of its capabilities under ordinary touring conditions and in English competitions, such as the 2,000 Miles Trial and the Four Inch Race, in which nine out of the first ten cars were so equipped. The point that is to be decided at the meeting of the International Conference on the 30th inst. in Paris is whether both detachable rims and detachable wheels shall be prohibited from the Grand Prix of 1909.

At first sight it appears that in the interest of the motorist who is looking for better tyres, such a prohibition, making tyre trouble the crux of the whole race, is eminently desirable, but is this so? Is it a fact that the rest of the motor car is so perfect that its total importance in the race can be permitted to be overshadowed by that of the reliability of the tyres? When one considers what has happened in the races this year where rapid tyre-changing devices have been used, it is quite clear that much development in the motor itself, of the transmission gear, and even the chassis, remains to be made. But suppose for the moment that we assume that the car is so superior to the tyres that all attention should be concentrated on these by the prohibition of detachable wheels and detachable rims, and that this prohibition is also accompanied by the prohibition of the use of knives for cutting up tyres in taking them off the wheels. The result would be like the result of all legislation for contests, which differs from that which is permissible to privately-owned cars, viz., in the production of freaks. The tyres would be made not so as to give the lowest cost every hundred miles of running, but to best suit the particular race. It might, for example, be found advantageous to use tyres of an enormous diameter and an enormous thickness, and consequently of so high a price that the ordinary motorist would never contemplate purchasing them. The initial cost, the interest on it, and the hazard of accidental destruction by a bad gash would prohibit their use. It must not be lost sight of that the present conditions, where tyres are rapidly replaced, although they give to the racing man an advantage which is now shared equally by the private owner, have by no means rendered tyre failure of non-effect in a race. The close finishes, for example, in our own Four Inch Race show that the time taken to replace another tyre, even by the fastest methods, might have made the difference between first and second place.

Incentive to Improvement.

The delay of a change under racing conditions which may only be one minute is a far more serious matter in the course of a contest than the delay of five minutes which such change may well take under ordinary touring conditions. It will be seen that the incentive to the improvement of tyres remains. Those who have watched them at any of the controls in the great races will have seen how keen an interest the representatives of the tyre firms take in the nature of the failures, and how carefully the number of the cover is recorded, so that the technical experts at headquarters may have the clearest and most definite information to guide them in their progress towards better tyres. It will thus be seen that the private owner's best interests are served by giving the racing motorist the same facilities for tyre changing which he himself can enjoy, viz., devices which transfer the laborious work of tyre changing from the road to the garage. After all, our clothes wear out, but custom has decreed that we should change them at home rather than on the roadside.

We are very pleased to hear from Dr. Godfrey Lowe, the hon. sec. of the Lincolnshire Automobile Club, that the scheme for providing cars to assist in the mobilisation of the Lincolnshire Territorial Force has met with an extremely good reception in the county.

THE ARGYLL RECONSTRUCTION SCHEME.

A GOOD PROSPECT FOR THE SUCCESSFUL CONTINUATION OF THE BUSINESS.

The liquidators of Argyll Motors, Ltd., Messrs. T. Jackson and J. M. McLeod, have issued a proposed scheme for the reconstruction of the company. The scheme is prefaced by a recapitulation of the history of the company. The present company was registered in 1905 with a nominal capital of £500,000, divided into 350,000 ordinary shares of £1 and 30,000 preference shares of £5, and the company was formed to take over the business carried on by the Hozier Eng. Co., who were then well known as makers of the Argyll cars. The vendors took 6,666 six per cent. preference shares and 83,333 ordinary shares, and the remaining shares were offered to the public, and were all applied for. This was in March, 1905. In December of the same year an issue of £100,000 four and a half per cent. first mortgage debentures was made, and the whole issue was taken up. In 1907 the capital was increased from £500,000 to £650,000 by the creation of 150,000 new shares of £1 each, known as B participating preference shares. These debenture shares were only taken up to the extent of £36,000 odd, and the debenture stock and capital of the company thus stood as follows:

Debenture stock	£238,275
Ordinary capital	350,000
Preference capital	186,264
Total	£774,539

In July, 1908, the company went into voluntary liquidation. Since then everything has been revalued, and the assets of the company stand at £322,000, compared with the previous book value of £710,000. and the total book debts of the company are £360,970. In valuing the assets the liquidators have entirely ignored what may be called the superfluous expenditure in the factory, and this system has been adopted throughout. That is to say, although money may have been lavished upon the building, it has only been valued as an ordinary factory, and the expensive ornamentation has not been taken into consideration at all. With these few introductory and explanatory remarks we cannot do better than summarise the liquidators' scheme in their own words.

Abstract of the Proposed Scheme of Reconstruction.

I. The debenture holders' claim of £260,712, including the seven per cent. premium on ranking and interest to date of liquidation, is to be satisfied by the issue of new debenture stock, amounting in all to £144,000. This is equal to a yield of 12s. in the £ on the face value of the debentures, viz., £238,275.

(*a*) The new debenture issue is to be £200,000 authorised, of which the above sum of £144,000 will be issued in satisfaction of the debenture holders' claim as above. The company is to be at liberty to issue a further amount of £16,000 without additional security; but the balance of £40,000 can only be issued in return for secured assets.

(*b*) The issue is to be for twenty years fixed, redeemable at £105, with the right to the company at any time before the expiry of ten years to redeem at £115, or thereafter during the currency of the loan at £110.

(*c*) In addition to the four and a half per cent. interest to debenture stock outstanding for the time being, such issue is to be entitled to one-tenth of the profits in any one year declared as divisible by the board.

(*d*) Debenture holders not to have the right to foreclose during the first four years, and the interest to be non-cumulative for that period.

II. The trade and cash creditors are to be given £75,000 of five per cent. income debentures, non-cumulative. Creditors under £50 to be paid cash at the rate of 4s. per £. The share that such creditors would have had in the total amount of income debenture bonds to be distributed to be deducted from the £75,000, leaving the balance of income debenture stock to be distributed *pro rata* among the remaining creditors.

III. New ordinary shares to be created to the extent of 419,596 shares of 10s. each, credited as 6s. 4d. paid, with a liability of 3s. 8d. per share, as follows:

	Credited as paid.	To be paid.
30,000 preference shares of £5 each, and 36,264 B preference shares of £1 each, to be replaced by 186,264 shares of 10s. each, 6s. 4d. paid, with 3s. 8d. liability each	£58,984	£34,148
350,000 ordinary shares to be replaced by 233,332 shares of 10s. each (that is, two shares in respect of every three old shares held), 6s. 4d. paid, with 3s. 8d. liability each	73,888	42,778
	£132,872	£76,926
	£209,798	

Balance Sheet of the Proposed Company.

The balance sheet of the proposed company will therefore be as follows:

LIABILITIES.

Debenture issue	£144,000
Income debenture stock	75,000
Ordinary shares	209,798
	£428,798

ASSETS.

As per valuations	£322,523
Cash from proposed issue	76,926
Goodwill	29,349
	£428,798

From the above it will be seen that the new company would start with assets valued at less than one-half of what they stand at in the books, and from the reports of the valuators quoted above, they are valued on a conservative basis. Including the cash from the proposed new issue, and the stock, stores, and cash at present on hand, the company should have at least £100,000 of working capital, free of old debts.

The Road Surveyors' Association of Scotland has accepted an invitation from the Scottish A.C. to a conference between that Club and the Association, at which reports by the representatives of both bodies on the recent International Road Congress in Paris will be made, and will form a basis of discussion. The meeting is to be held in the Central Station Hotel, Glasgow, on the evening of Friday, December 11th, at 7.30.

* * *

If a sufficient number of members of the Royal A.C. can be got together, it is proposed to form a party to visit the Paris Salon on Thursday, December 3rd, by the train leaving Charing Cross at 2.20 (afternoon) *via* Folkestone and Boulogne, and arriving in Paris at 9.15 p.m. In order to get special terms from the railway company, it is necessary for a certain number to travel together on the outward journey; but the return journey can be made independently. Members who wish to cross on the date specified should lodge an application for tickets at the offices of the Touring Department (108, Piccadilly, W.) Members may book tickets for friends, and associates can also apply for tickets for themselves and friends.

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.

FAST CARS MEETING EACH OTHER.

[13637.]—May I be allowed to issue a word of warning to those who (apparently out of mere bravado) do not slow up when meeting another car. In these days of easy control there is no excuse for cars rushing past each other at high speeds. Personally, I am always careful not only to slow up, but to give a driver meeting me all the room I can, quite as much for my own safety as for his, for one never knows how carefully he can steer. I have several times lately, even on greasy roads, met cars going at dangerous speeds, and the slightest slip or skid would have meant a fearful disaster to us both. Quite apart from ordinary feelings of courtesy, it seems to me unsportsmanlike to meet other cars in this manner, and I think all motor clubs should encourage this idea, and induce their members to slow down well below the legal limit at these times. With the increasing number of fast cars on the roads there is now great risk of accidents from this cause.

A SPORTSMAN.

DISPENSING WITH PUMP.

[13638.]—With reference to letter 13614 I have driven two Humber cars for three years. Both were 30 h.p., one with the cylinders cast separately and the other in pairs, and I have had the same experience with water boiling, even on top gear. I now drive one with the cylinders cast in pairs, and there is one hill which always makes the water boil on top gear, and even lifts the valve up. I have tried everything to prevent this, and the best result that I have got is by entirely taking away the gauze wire or filter from the water pump, and now I can go up the same hill without boiling at all.

HAROLD JONES.

ENGINE DESIGN.

[13639.]—With reference to letter No. 13611 on the above subject in your issue for November 14th, I may state that the idea put forward by Mr. Grafton is by no means new.

I do not wish to detract from the value of the idea, as I consider that some such method of construction is certain to be followed by designers of internal combustion engines in the near future. A French inventor has, however, gone considerably further than Mr. Grafton in this direction, and although I have not at the moment the number and date of the patent by me, a short description of the idea may be interesting to Mr. Grafton.

The cylinder and general construction of the engine follow the ordinary petrol motor lines, with the exception that a second piston is fitted in the top of the cylinder in lieu of a cover, as in the engine proposed by Mr. Grafton. This top piston is coupled up to a separate camshaft, and acts as follows: At the completion of the firing stroke, the top piston moves down to the end of the combustion chamber, so that on the up, or exhaust stroke of the main or power piston, a space of only $\frac{1}{16}$in. is left, so that the whole of the burned charge is expelled. In the ordinary petrol engine a combustion chamber full of exhaust gases is left at the end of each exhaust stroke, so diluting the incoming charge, and, in fact, preventing any fresh charge from entering until the piston has gone down some distance on the induction stroke. So far the action of this engine does not differ from the one proposed by Mr. Grafton, but at the end of the exhaust stroke the resemblance ceases.

On the commencement of the induction stroke, the two pistons commence to travel in opposite directions, thus giving a very rapid vacuum and a more efficient induction stroke. It is claimed that the top piston can ascend to a point above the normal extent of the combustion space, returning to the normal position as soon as the induction valve is closed. This has the valuable property of augmenting the charge. This device is placed under the control of the driver, so that it would be possible, for heavy work, to greatly increase the weight of the charge, and therefore the power of the engine. It is also claimed that the compression space or combustion chamber can be varied at will to any practical extent while the engine is running.

I am not aware if this engine is patented in Great Britain, or whether it is actually at work. It possesses very valuable points, and goes a long way to provide the engine asked for by the president of the Institution of Automobile Engineers in his presidential address at the opening of the session, as reported in *The Autocar* of October 17th and 24th.

DAVID J. SMITH, M.Inst.A.E.

[13640.]—With reference to letter No. 13611 respecting a new idea for a silent and flexible motor I should like, if I may, to advise your correspondent Mr. Grafton not to spend either time or money on this idea. The writer and another as far back as 1900 embodied a claim for a similar contrivance in a specification (No. 3,078, 1900) relating to heavy oil motors.

Our plan as shown on the patent specification was to employ what we termed a "cushion piston" for the purpose of absorbing the initial "kick" of the explosion. This piston was fitted with rings and kept in a normal position in a specially designed combustion chamber by a powerful compression spring. Immediately after the maximum initial pressure was reached this auxiliary piston rebounded, thus following up for a short distance the working piston, and by this means causing a more uniform pressure on the firing stroke.

I may add that the primary object of this invention was to provide a means of altering the compression to meet the difficulty of using fuel of a variable density.

I would also like to point out to Mr. Grafton that a patent was granted a few years ago to a Mr. F. H. Smith (of Dunblane, I believe) for an improved gas engine having an auxiliary piston provided at the back of the working piston and communicating with the latter through the medium of a coil spring. The explosive pressure was by this means communicated gradually to the crankshaft. A single cycle was also claimed for this engine, the charge being sucked between the two pistons and admitted to the combustion space on the upstroke through a mushroom valve provided in the centre of the auxiliary piston. I don't know whether this engine was actually put upon the market, but if in practice it was not a success I should imagine it was chiefly owing to the impossibility of obtaining a spring to stand up to the heat.

The desirability of minimising the explosive "kick" has appealed strongly to the writer and others, especially in the time of single cylinders, but it is easy to see the method such as Mr. Grafton suggests would, from the point of view of mechanical efficiency, be well—almost wicked.

JAS. H. NOBLE.

[13641.]—Your correspondent, Mr. Henry Grafton, in letter 13611 describes a plan for absorbing and afterwards giving out at the end of the stroke the shock of the explosion by means of a spring-supported piston in the cylinder head. This idea for increasing the flexibility and smoothness of petrol engines is an old one of the writer's, but has long been abandoned for, I think, obvious reasons. I am afraid that lubrication of the secondary piston and the reduction of water-cooled area would be insuperable difficulties, though, as to the cooling, it is, of course, not only practicable, but may be advantageous to work with air-cooled cylinder heads, but in this case the "head" would consist of a deep pocket which would be very difficult to cool. However, Mr. Grafton may have different views upon these points, which he will perhaps explain either through your columns or directly to me.

F. COCHRANE.

OIL, GAS, OR ELECTRICITY.

[13642.]—Now that the subject as to the best and most efficient method of illuminating a car or rather the road, is being as generally discussed as what we shall wear this time of the year, I feel that a few remarks as to my experience might be of some value to your readers.

The question of prime importance is, what light shall we adopt—electric, gas, or oil? I certainly say the first-named, electric. Its advantages are too well-known to need repeat-

Correspondence.

ing, but a few remarks as to car use may not be out of place. The lamps are neater, cleaner, require no attention, and can be lighted without dismounting or the use of half a box of matches—the running expense with efficient accumulators is very small, especially with the use of the Osram lamp. The method I have adopted is as follows :

I have two electric side lamps on the dash, run from a 4-volt 60 a.h. accumulator supplying two 1 a. 3 c.p. lamps—these lamps are ample for town and suburbs. I use a spare accumulator of the same capacity to run one lamp to illuminate the clock and speed indicator on the dash—this ensures my knowing that both accumulators are in working order, and the spare cell only doing one half the work of the other. I have always the advantage of using it for the side lamp and doing away with the clock light should it need recharging, which is very seldom, as it takes a good number of evening rides to aggregate thirty lighting hours, and a recharge costs 6d., working out five side lamp hours for 1d., or well under ¼d. per hour.

I possess two powerful gas head lamps which can be easily converted into electric when I know I shall not require the generator for more than an hour. These are supplied with 8-volt 8 c.p. Osram lamps, and are supplied from the same two cells coupled in series, and it is surprising the illuminating effect given, which would easily be taken for gas, but without the limelight glare so objectionable to cyclists, etc. I feel certain that it will become common practice if makers of lamps would adapt a simple and quick method for conversion from gas to electric, as nothing looks worse in my idea than to see two glaring eyes sweeping Piccadilly to the great annoyance of other users of the road, especially if the focus of such lamps gives a parallel beam instead of a general soft glow, and lastly if they squint or do not go where they look.

It is unnecessary to add that the use of a really good and efficient accumulator should be adopted. The make I have so long used and thoroughly tested was supplied by the Lithanode Battery Co., and is of the unspillable type and manufactured under a special process.

ARTHUR E. BENNETT.

MOTORISTS AND CYCLISTS.

[13643.]—I notice in last week's *R.A.C. Journal* (under the heading "Legal Committee") a prosecution for reckless driving, in which the chief witness appears to be a cyclist.

Now, I have driven a motor car for over eight years, and have been a cyclist for more than twenty years. My experience has been that, so far as cyclists are concerned, the motor driver is much more sinned against than sinning, as times innumerable, though driving with the utmost consideration, not only for cyclists, but for the public in general, I have been worried by cyclists trying to keep ahead of my car, riding like lunatics, and keeping so close under my front wheels that, should their bicycles skid, no power on earth could save them. Then, as usual, the unfortunate motor driver would be blamed. On one occasion I risked my car and the lives of four passengers by jamming on my brakes when the road was very greasy, causing my car to almost turn round, in order to save a tandem cycle which skidded, the riders having behaved in this fashion.

It is also a frequent occurrence for a cyclist to occupy the centre of a narrow road, and almost force a car into the ditch when trying to pass on its own side. During the eight years I have been driving, I must say I have found "road hogs" much more numerous in the cyclist ranks than amongst motorists, and I have now driven over 65,000 miles. I may say I hold a perfectly clean license, and am regarded by the police in my district as a careful and considerate driver. I carry the M.U. car badge.

Another grievance we have against cyclists is the fact of their showing no red light behind. Now this constitutes a very real danger, not only to motorists, but to the cyclists themselves, as most of them carry such wretched lights that they cannot be seen until the car is almost on the top of them. If cyclists could be compelled to carry a red tail light what a blessing it would be.

AE 508.

TYRES.

[13644.]—As I am constantly reading in your valuable paper accounts of "The durability of tyres, etc.,' I should much like, if you will allow me to do so, to give, *pro bono publico*, my experiences of late with Palmer cord ribbed tyres.

For some time previously to using them I underwent, as doubtless many others also have done who have had to buy their experience in these matters, the appalling and ruinous expense entailed by using tyres which, on a heavy car such as mine, only lasted a few months, and, at the most, perhaps in the end only worked out three or four thousand miles.

I tried most of the very best makes on the market, but the results were generally the same as regards mileage, etc. My first twelve months' experience of the cost of tyres was a little over £120, and I was beginning to get rather hopeless of the future. Fortunately, whilst in this dilemma, I met a friend of mine who had just returned from a motor tour through Italy, where, he informed me, some of the roads were as bad as could be. He told me that he had used the Palmer cord tyres with remarkable success, and strongly advised me to give them a trial.

Well, I was a bit sceptical, but I thought I would have another "plunge in rubber," so I had a pair of 895 × 135 6in. tyres fitted to my car—a 30 h.p. Daimler with a big touring body, and weighing over two tons when loaded up for touring. My troubles and anxiety from that moment ceased. I always keep a strict record of my daily petrol consumption and mileage. I ran these tyres for nearly twelve months, and took them off a few weeks ago for the purpose of having them retreaded. They registered just upon 7,000 miles, and I certainly think they would be good for another 2,000 miles after the retreading process, which appears to endue them with absolutely new life. They did not seem to "slow" the car in any way, and as regards consumption of spirit, which would, I imagine, be affected by the extra strain of a heavy tyre, I have made some record runs with regard to same whilst they were on my car wheels.

With regard to cutting and puncturing they seem to be more impervious to this defect than other rubber-faced tyres, I mean when running over rough and unrolled stones, etc., and when a cut does happen to them the tendency of the rubber seems to be to close up rather than to gape open, as is usually the case in others.

I always keep them inflated up to 80 lbs. per square inch and at that pressure, with my heavy car, I find the resiliency of them to be as near perfection as possible.

I have run with these tyres during the last twelve months all over England, and I must say the results are most gratifying. I have just purchased two pairs of new tyres of the same make, and am looking forward with confidence and pleasurable anticipation to their comfort and durability in the future.

E.P.

THE 1909 DAIMLER ENGINE.

[13645.]—I have read with much interest all the literature I have been able to obtain with reference to the Knight engine, and most of the letters in connection with the same, and arising from these I should like to make the following remarks.

The only real advantage with this engine seems to be the absence of noise from its valve gear, for the other points claimed, viz., flexibility, quick acceleration, slowing down, and picking up rapidly on a hill, amount to nothing, as there are only a matter of a good carburetter, a well-designed combustion chamber, and gearing. Is the very slight noise made by mushroom valves worse than the hissing of the air when entering the carburetter (on many of the best makes, Daimlers amongst others), or anything like as bad as a pair of noisy chains? Therefore, is it not taking a big risk in substituting this new valve gear for an old, well-tried and completely satisfactory method for the sake of such a small decrease in the general noise? Again, imagine the pleasure of cranking this engine for about ten minutes on a morning after a severe frost when the oil has got nicely set in between the piston and two sliding sleeves! I trust it may never be my misfortune to experience this. Again, why is it that these engines are only being made in a large size? Is it that the internal friction makes a small engine impracticable?

If this engine is all Mr. Knight claims it to be, why was it not entered in the 2,000 Miles Trial this year, as it is acknowledged that these cars were tested before that date? A good performance in that event would have effectively silenced some of the critics. Perhaps they did not want to overshadow the De Luca Daimlers.

I notice Mr. Knight makes such a point about being able to detach the cylinder head quickly. Now the only reason he can have for wanting to do that is to clean the top of the piston, and I think this rather admits an excessive deposit of carbon, and the valves must suffer in the same way. With regard to Mr. Knight's wholesale condemnation of mushroom valves and the extravagant language with which he

does it, one would think they really were bad, but, considering they have been used with the very greatest success ever since the petrol motor was invented, it is self-evident there cannot be much the matter with them. I quite admit that there are bad mushroom valves, but this is only because they are badly made or else of the wrong material. I have been to the trouble of asking 350 owners of Vauxhall cars (the only ones I can trace) if they have ever experienced any trouble with their valves. The following are the questions asked :

Have you ever experienced any broken valves on your Vauxhall car?

If so; how many?

After what length of time, and what number of miles running approximately?

And can you assign any cause for the breakage or breakages?

Also number of miles car has run up to the present approximately?

To these questions I have received 157 replies to date, giving a total mileage of 1,265,700. And of these 157 owners only two have experienced a broken valve, both of which cases occurred on 5 h.p. cars after running 3,000 miles, the earliest type of car built by my company, and the design of which valves was admittedly wrong. I am quite sure that other manufacturers could give equally good figures.

L. WALTON.

[13646.]—At the present moment the general press has gone rather mad on the subject of the Knight so-called valveless engine, and it would almost appear to me that quite a number have been altogether too unguarded and adventurous.

Absolutely nothing as yet is known of this engine outside the views expressed by the enthusiastic inventor. We can pardon a large amount of enthusiasm on the part of any inventor, but it does not seem to me good that a generally sober, dignified, and careful press should let itself go on an untried experiment. It weakens one's faith in it.

The Knight engine may be all that Mr. Knight claims for it, and if he has made any real advance in the construction of petrol motors, then I for my part shall be only too pleased and will welcome the improvement. This, indeed, is what all true motorists are ever striving for, but I do not think we ought to go mad over it, or accept Mr. Knight's invention in any other spirit than as a pure novelty, which may or may not be good, and in any case is totally untried as far as independent official test is concerned.

Personally, I have not much faith in these freakish productions, and look to our future in the improvement rather of the present standard types for perfection.

I take it we must consider all radical departures from type as freaks until they have established their reputation to be considered seriously. It would never occur to me now to buy a freak. I have bought so many in the past, and have invariably lost my money; but doubtless there are still many brave people in the world who will be only too anxious to bear the brunt of the experiment for the good of their fellows. It is quite safe for the sober-minded general public to leave these heroics for their young inexperienced friends, and should the new engine survive for two or three years, it might possibly be considered a commercial proposition to buy one.

I must say, however, before concluding, that the idea of a piston working inside a pillow-case, which in turn works inside another pillow-case, which in turn works inside a cylinder, does not appeal to me, and, indeed, appals most thinking people. Still, if in two or three years' time it can be authoritatively shown that it will do this wonderful thing, and that there are compensating advantages which neutralise the appalling and obvious disadvantages of the pillow-cases, then it will be quite time enough to think about buying one.

I am not speaking entirely without my book. My own firm has "had some" experiments in the manufacture of piston valves for petrol engines. There were undoubtedly advantages, but the disadvantages far outweighed them, and we returned to our early faith—the mushroom valve. The valves, too, that we employed had the advantage that they did not weigh nearly as much as ordinary cylinders, seriously increase the number of parts, or add numerous under-sized big ends and little ends to be lubricated and cared for.

WARWICK J. WRIGHT.

[13647.] I have read with much interest the paper which Mr. Knight read before the R.A.C. concerning his new engine. There is one point I should like to ask him about. He says that his engines have been before the American public for three seasons and have given satisfaction. Personally, though more or less intimately connected with the automobile trade in New York, I have never heard of them. But that, of course, is my misfortune. However, perhaps Mr. Knight will tell us who has made them, and also give us some valuable data as to their running during the three seasons. It seems to me that the criticisms of independent users would be very interesting at this time.

NEW YORK.

[13648.]—Much adverse criticism of this engine has appeared. Let us examine the claims made as far as possible impartially. These are silence, durability, and economy of both tyres and petrol.

With regard to silence—a great essential in a modern car—one cannot doubt that the Knight engine, with its sliding valves driven by eccentrics, is very quiet, especially with regard to its moving mechanical parts. To the Daimler it must be a revelation, for reasons which will be obvious to all who have ever heard a Daimler engine running. Much rubbish is talked regarding the burning of the edges of the ports, sliding sleeves sticking up, etc. Why should the edges of the ports burn? Exhaust valves of the old type, exposed to the most intense heat of the explosion, do not do so, and, as is well known, good quality cast-iron resists burning almost as well as nickel.

The chain drive to camshaft is jeered at by many who cannot for one moment have considered the matter. I suppose they would have preferred gear wheels. It is obvious to anyone that the pitch wheels with a chain engaging nearly half the circumference of the wheel is infinitely stronger than any composite gear (that is, fibre and metal gear) could be. The ultimate strength of the chain drive is sufficient to stretch the chain. Working under the ideal conditions—that is, thoroughly lubricated and closed—it does not require one to be a prophet to say it will neither wear nor stretch appreciably; it will be absolutely quiet, too.

The claim of durability is supposed to be supported by the experience of American users. It would perhaps have been better to have said nothing regarding American experience, as in this country, with the exception of two or three makes, Yankee cars cannot be sold. Nothing can be said either by any independent observer in this country regarding it; six hundred miles is quoted as giving some idea of reliability. Many cars do this weekly without any trouble; more will be known regarding the reliability of the Knight engine when some hundreds of cars have done, say, 20,000 miles each in the hands of average drivers.

If the Daimler Co. have solved the question of lubrication—and there is no reason to doubt they have—the engine will be a success, and will be sold in great numbers. They themselves are without doubt thoroughly convinced of the good points of the machine. Comparisons between the best six-cylinder engines of the old type and the new self-called valveless are flying about in the trade papers as thick as leaves in the parks. The fact of the matter is the makers of sixes see a formidable rival in the new engine even as a four, and no doubt as a six it will entirely outclass them. It is difficult to see how the Knight patents are to be got by. The greatest point regarding his valves is that whatever the pressure, they run exactly as easily as if running empty, the pressure being only on the flat surfaces of the inside of the cylinder. The question of type will now be fiercely fought, and if the new engine is as successful as may be reasonably expected, the present opponents will be crying its praises in a season or two rather louder than they at present shout in deprecation.

As to economy, everyone in the industry has been nauseated by statements regarding the economy of both four and six-cylinder cars. A fairly safe rule will be to take two-thirds of the makers' figures as to distances cars will do with the average bodies and average drivers. Unless the new engine is considerably reduced in weight, one fails to see where the economy of tyres will come in. We are told that a 30 h.p. engine developed 57 on the brake—a considerable increase on the old type. Is not the strain of the increased power ultimately thrown on the tyres? Finally, the guarantee of replacement of the valveless by engine with poppet valves should be good enough.

With regard to the guarantee to repair, after proper examination, etc.—well *(verbum sap.)*, it will be done undoubtedly, but will always be the fault of anyone or anything but the makers. This latter does not apply particularly to any firm at all.

FRED T. COX.

Correspondence.

A SAMPLE OF JUSTICES' JUSTICE.

[13649.]—The following particulars might be of interest to the readers of your valued journal, as illustrating the sort of "justice" meted out to motorists by the Seabrook (Kent) bench of magistrates.

Motoring on the main road between Canterbury and Folkestone, I was timed to have covered a measured distance of three furlongs at the alleged rate of 25 m.p.h. I was not, however, summoned for exceeding the limit, but for driving at a dangerous speed, although there was nothing on the road at the time except a motor in front, which was timed with mine, and there are no houses at all on this part of the road, which for certainly threequarters of the distance is quite straight. As a result I was fined, and my license was asked for for endorsement, but it was not produced owing to my not having it with me at the time. Having regard to the circumstances and certain proved inaccuracies in the evidence, I was strongly advised to appeal against the decision, and notice of appeal was accordingly given. Naturally thinking that the endorsement of my license would depend upon the decision of the appeal, and receiving no further communication in respect of it, imagine my surprise on receiving a summons, two days before the appeal was to be heard, to appear at Seabrook, two days after the appeal, for failing to produce my license for endorsement. Upon hearing the appeal at Canterbury Sessions it was dismissed, several of the Seabrook magistrates being on the bench during the sitting. In attending the summons for non-production of license, my solicitor explained why the license had not been sent, and asked that under the circumstances the case should be dismissed on my paying the costs. The magistrates, however, imposed a fine of £10, and suspended my license for three months.

For a technical offence of the sort, due entirely to a misapprehension, this appears to be a most arbitrary and harsh sentence, inasmuch as an appeal against it could only be made to the Quarter Sessions, which will not be held until January next, by which time the period of suspension will have almost expired. Perhaps I ought to be thankful that there was not power to the bench to order my incarceration, or possibly I should have had this experience included in my apportionment of "justices' justice."

THE VICTIM.

PRACTICAL NOTES ON THE ADAMS CAR.

[13650.]—Many articles have appeared on the engine of the Adams car, but few if any have touched on the practical advantages to be obtained from a design so well thought out in almost every particular. For instance, the large flywheel (180 lbs. in weight) gives quiet and smooth running unequalled by any but a four or six-cylinder car, but beyond this one can reduce the speed to four miles an hour on top speed without any knock. The danger of a back-fire simply does not exist, for the hand is merely pushed round.

It is always interesting to learn the exact point in a motor which induces a buyer to plump for any particular make of car. In my own case it was the ease with which the car could be stopped at the steepest part of any hill, however severe the gradient, and started off again as if nothing had happened. I hardly think that this has been made enough of by the makers, and owners of much more powerful cars have been more struck by this than by anything else, since they dare not try such tricks with theirs.

Good as was the earlier type of Adams car, the present pattern is much more efficient, any danger of seizing owing to want of oil in the crank chamber being entirely obviated by the (now) standard pressure release valve, which produces a negative pressure in the chamber. Now, if the oil tank is full, from 200 to 250 miles can be run without any attention whatever to any lubricating device of any kind, and the whole mechanism becomes absolutely automatic in every sense of the term.

The majority of motorists one meets with still suppose that the pedals must be kept in place by the foot so long as the car is running, but of course this is only true in the case of the reverse pedal, which also forms a very efficient brake. Any pedal automatically releases any other by a most ingenious system, and the adjustment of the fibre-lined bands which take the place of the clutch, and also take up the drive in an absolutely smooth manner, is a matter of the utmost ease, and should not occupy more than five or ten minutes in the first month, and less as time goes on and the fibre becomes hard with wear.

The idea which some people have as to the complicated nature of the engine is, of course, a pure myth. As a matter of fact, it is really puzzling at times from its very simplicity, and if the Daimler Co. could adopt any equally suitable gear-changing mechanism with their new type of engine, the combination would no doubt be quite irresistible.

In earlier models the springing of the car left a good deal to be desired. At present the engine is practically bolted to the very long and powerful springs which run from the front to back wheels, the body being fixed to this by a single transverse pivot on either side, and by front and back springs of carriage pattern. No one so far has had anything but praise for the effect of this unique method of suspension.

The reverse pedal is marked also "Brake," but as a matter of fact all the pedals can be used for this purpose with a closed throttle, and here the weight of the flywheel comes in very handily, for when the latter has been brought to rest, a most powerful braking effect can be got by the judicious use of the low-speed pedal. So much is this the case that even in very hilly country it is never necessary to employ the hand brake, except in case of emergency.

The cardinal point in driving is of course to keep the flywheel moving briskly, especially when taking a bad hill. If this is done, four passengers can be taken up short pitches of 1 in 6½ and up longer hills that would try the mettle of all but the higher-powered cars. The position of the petrol tank on the front of the car gives it an enormous advantage over many a modern car, where the exactly contrary practice is still often observed. One might easily enlarge on the self-lubricating chain, the automatic oil pump, etc., but the above remarks are enough to reassure any of your readers who wish for a thoroughly efficient and reliable machine.

J. CROPPER, M.D.

FRONT WHEEL BRAKES.

[13651.]—"B. F. B.'s" explanation [letter No. 13617] of the Allen-Liversidge brake not allowing a car to slip is very ingenious, but, nevertheless, incorrect, to my mind. I will explain why?

1. When a wheel is free to revolve on the "plane of its axis," there is no tendency to slip on a greasy road.

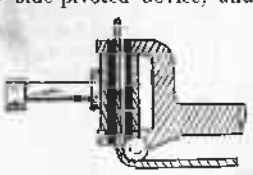
2. When the brake is applied to any wheel, whether front or back, the easiest path of travel is sideways; hence a skid.

In the ordinary motor car we have our brakes on the back wheels, and when we feel them skidding through a sudden application, it is an absolutely impossible feat (except in rare cases) to preserve a straight course by any movement of the steering wheel. But when the brake is applied to the front wheels this alters the complexion of matters. Any tendency to slip sideways is prevented by the involuntary and almost unconscious movement of the steering wheel, just as a cyclist steers a bicycle in traffic.

I maintain this (and I speak from personal experience with the Allen-Liversidge brakes, having got out some of the early drawings, and having driven a car with them fitted), that no front brake will prevent a skid, if the steering wheel were held absolutely rigid, which goes to prove my argument. However, I wish the brake the success it deserves, for, if universally fitted, motor cars would be the safest things on the roads.

HENRY G. HAYES, A.M.I.A.E.

[13652.]—In my patent specification No. 19,044 of 1904, I foresaw the possibility of my principle of making the pivotal line of steering the common line of action for brake transmission without going to the absolutely correct design in which the hub itself with its brake is centrally pivoted. The principle of common action is shown in the specification diagrammatically as applied to the ordinary side-pivoted device, and there are, of course, a good many variations possible to effect the same object. The Allen-Liversidge device, illustrated on page 755 of *The Autocar* of November 7th, is one of these, which, by the way, was one of the very first I myself designed four years ago, but shelved in favour of the better one shown in the accompanying illustration. The apparent difference is that I place the roller vertically, whereas in my first and the A.L. present design the roller is placed horizontally. The reason of discarding this latter way was that, as the steering veers, the wrap of the cable around the roller increases on one roller and decreases on the other with consequent working of the cable (which is avoided by the other design). The differential action may take this up, and no doubt will when perfect, but when it is not perfect, and should



stick a bit, the frictional effect will prefer to take the easier line of resistance by pulling one brake lever more than another.

I am therefore delighted to learn that even my most inferior device for actuating front wheel brakes is giving such good results; but I myself would not care to trust it implicitly, as it is absurd to compare it to the only perfect combination—the one in which the pivotal lines lie in the central plane of the wheel. Where this is done, absolute security is obtained, even if the differential action between the two brakes fails entirely, and even if one of the brakes not merely fails, but is left off altogether.

A patentee cannot show all possible variation of his invention; it is his duty to indicate what he believes to be the best way, and that I have done. P. L. RENOUF.

INCONSIDERATE DRIVING.

[13653.]—I am constrained to request you to be good enough to allow me to rush into print and offer a word of warning to "Surrey Car" [letter No. 13521] against boasting of a clean license.

I have driven all descriptions of cars during the past eleven years, and I used to think that the care and consideration I endeavoured to cultivate kept me free from police persecution. I have fitted my speed indicator with an electric stop, which rings a bell on the dash as soon as 20 m.p.h. is exceeded. In spite of this the Surrey police stopped me and the Surrey magistrates fined me for travelling at 30 m.p.h. when I was really travelling much nearer 13 than 30 m.p.h. It is just luck and nothing else that keeps one clear of the police, whether one is the worst scorcher or the most careful driver. ANOTHER SURREY CAR.

AMERICAN CARS.

[13654.]—In reply to letter 13625, I have some knowledge of these cars, and believe that Cadillacs, Fords, Buicks, and Reos are all well designed and well fitted. At Olympia I liked the engines of the Buick very well, and one was forced to admire everything connected with the new 20-24 h.p. Ford except the colour of its paint.

The first feature of all these cars is the extraordinarily low cost per horse-power. Other features are their great lightness, their silence, the simplicity of their transmission giving a minimum of friction when running on high speed, the perfect control by epicyclic gears which enables one to drive through densest traffic on high speed simply by slipping the clutch, and, finally, the feature that a novice can understand and drive any one of these cars in a few hours.

However, I gather, from his reference to a car which won an Irish hill-climb after 30,000 miles, that your correspondent is particularly interested in Reos. I have had an 18-22 h.p. two-cylinder, five-seater Reo since May, which I have driven nearly 4,000 miles, and for your correspondent's information I give some of its qualities.

On the day it was delivered from works my brother and I drove it from Westminster to neighbourhood of Liverpool (two hundred miles) in twelve hours, of which running time did not exceed ten hours. Although new, the car ran perfectly, and received no attention whatever except a second charge of oil and petrol. I have never driven the car to its full power, but it is capable of a high speed. I, however, deny emphatically the statement contained in a letter written to me by a certain chief constable, that it has recently averaged thirty over a measured two and a half miles.

I believe all these American cars are excellent hill-climbers on high speed, owing to their lightness, and perhaps also to the extra flywheel effect of transmission case.

I travelled recently by West Coast route from Stirling, N.B., to Crowborough, in Sussex, and found I could take every hill on high speed, not excepting Shap Fell, and I have driven up School Hill, in the centre of the town of Lewes, with four passengers in the car, entirely on high speed, without slipping the clutch. This latter hill is described in "Contour Book" as "one in twelve, dangerous," and it is too long to be rushed.

This car averages twenty-two to twenty-three miles to the gallon, and the system of mechanical lubrication has never given me a moment's trouble. I have had only one engine stop on the road. This was caused by a leaky joint in induction pipe on the second day after car was delivered, and with this exception I have seen no evidence of faulty workmanship or material. The car travels better now, and is just as sound as when I bought it.

The wheels of Reo cars are fitted with Goodyear detachable rims and tyres, and will not take English or French tyres or tubes. At first I thought this a great defect, but Reo agents have responded to my telegrams so promptly that I have experienced none of the inconvenience I expected, and, on the other hand, I have found these rims of great advantage. Tyres are removable in a few seconds without any tool, and a rim remained firmly in position after driving two miles with a flat tyre on driving wheel. Goodyear tyres are rather more expensive than some others, but they seem to be of good quality, and are perfect non-skids even when treads are considerably worn.

Probably these American cars will wear out more quickly than heavily-made cars of double the cost. The question is whether it is worth while carrying for years nearly half a ton of extra deadweight in order to have a better car at the finish—when it will be completely out of date anyway.

I should not advise purchase of a two-speed American car for use in a very hilly neighbourhood where hills run worse than one in sixteen. I do not care for low speed on epicyclic gears; it seems so slow and wasteful of power after the direct drive of the high speed. Personally, however, I so seldom need to "come down" on main roads that I do not complain of low gear or of absence of an intermediate speed.

I should advise your correspondent, if he wants a Reo, to buy the five-seater. The additional bodywork is extremely cheap, and is detachable by turning three screws, converting car in a few minutes to a two-seater. K. B. W.

THE NEW WHITE STEAM CARS.

[13655.]—With reference to the letter [13631] over the signature of R. Roberts in the last issue of *The Autocar*, your explanation to him is interesting, but as weight is a very important factor in motor car construction, I am surprised at the method employed by the White people, viz., to have a bearing only at each end of the crankshaft, as it is necessary to make it exceptionally strong and heavy when this method is employed.

There is one other point which strikes me as being curious, but no doubt open to explanation, and that is there is no thrust bearing employed on this crankshaft. Quoting Messrs. Hoffmann, who are very big makers of ball bearings, as an authority, they state that "it is impossible for a ball bearing to work satisfactorily in which the same row or rows of balls carry the journal load combined with end thrust."

I also notice on the crankshaft that the balance weights are now separate, and are bolted to the crankshaft with a round strap. Surely this is a step in the wrong direction, as it was a practice employed originally by makers of the Oldsmobile, but was found to be unsatisfactory, owing to it occasionally breaking loose and entirely smashing up the engine, so it was discarded. H. E. NORRIS.

[Our correspondent fails to appreciate the fact that motor construction is a question of compromise. A third bearing on the crankshaft would probably induce more weight than the present construction, as it would necessitate lengthening the crankshaft as well as enlarging the crank case. A railway locomotive is an example of tried construction in which no central bearing is used for the crankshaft. There is no end thrust in the White engine bearings. As to the balance weights, it is only a question of proper construction. If the fixings are strong enough they will not come adrift. ED.]

PRIVATE OWNERS AND THEIR DRIVERS.

[13656.]—In reply to "Mechanician" [13634] I think motor men want their position more clearly defined, and they want placing under two heads.

First the mechanic, and second the driver.

The mechanic should have been apprenticed as a mechanic—not necessarily in the motor trade. If he then becomes a motor mechanic he is worth to a man who has several cars from £2 5s. to £3 a week (I am speaking of the country); but how few of us have a workshop with all the requirements for doing all that such a man is capable of; and if we have not his experience is valueless, or of little use, and all difficult work has to go out.

The other man, the one that most people want, is a driver who thoroughly understands his car, and can do all that is wanted with the ordinary tools at his hand. Such a man is well paid at 30s. a week and his house or room as it may be: he should have had some workshop or garage experience, and have been on the road at least a year—certainly not less, unless he was previously a coachman—and such a man is generally a better driver than the mechanic, and certainly more considerate on the road.

Correspondence.

Recently the writer has had interviews with a considerable number of men—London men asking nearly always £2, country men 30s. and their lodging.

It is absurd for "Mechanic" to talk about a man's commonsense leaving him when he engages a driver, and nonsense about placing an expensive car in a man's hands unless he gets big wages. One can engage a competent stud groom to look after a stud of hunters, say fifteen or twenty, at 30s. and his house.

The value of his horses will be anything from £1,000 to £3,000, and the man before he gets such a place will have to put in at least ten years of work. Now a man often comes to look after a car after putting in a few months at a garage, and perhaps driven a year, and demands £2 or £2 5s. (country).

The ordinary man wants a driver. If he have a complete workshop and several cars it will pay him to pay high wages to a trained mechanic, but the position of both men are being spoilt by the so-called chauffeur-mechanic.

CAR OWNER SINCE 1898.

"THE AUTOCARS OF 1909."

[13657.]—I also read with interest "The Autocars of 1909" and the statistics of "R.J.C." last week [letter No. 13618]. Here are similar statistics from the Appearance Numbers of *The Autocar*, 1908 (which I hope will be repeated this year).

EIGHT-CYLINDER CARS (none mentioned in 1909, only two in 1908).

Smallest bore and stroke 90 × 102 mm. —40 Osterfield (41 h.p. R.A.C.)
Largest bore and stroke 105 × 105 mm.—40 Adams (54 h.p. R.A.C.)

SIX-CYLINDER CARS.

Smallest bore 75 mm.—13 Jackson (22 h.p. R.A.C.)
Shortest stroke 76 mm.—28 Lanchester (38 h.p. R.A.C.)
Largest bore 156 mm.—80 Napier (90 h.p. R.A.C.)
Longest stroke 160 mm.—50-60 Ariel-Simplex (83 h.p. R.A.C.)

FOUR-CYLINDER CARS.

Smallest bore 70 mm.—10-12 Zedel (12 h.p. R.A.C.)
Shortest stroke 76 mm.—20 Lanchester (26 h.p. R.A.C.)
Largest bore 160 mm.—75-90 C.G.V. (63 h.p. R.A.C.)
Longest stroke 180 mm.—60 De Dietrich (not given).

THREE-CYLINDER CARS (only two in 1908).

Smallest bore and stroke 80 × 90 mm.—12-16 Clyde (12 h.p. R.A.C.)
Largest bore and stroke 81 × 120 mm.—8-11 Panhard (12 h.p. R.A.C.)

TWO-CYLINDER CARS.

Smallest bore 75 mm.—8 Renault (7 h.p. R.A.C.)
Shortest stroke 80 mm.—8 Phœnix (8 h.p. R.A.C.)
Largest bore 133 mm.—12 Lanchester and 20 Valveless (22 h.p. R.A.C.)
Longest stroke 152 mm.—18 Reo (18 h.p. R.A.C.)

ONE-CYLINDER CARS.

Smallest bore 88 mm.—6½ Clyde (5 h.p. R.A.C.)
Shortest stroke 110 mm.—6½ Clyde (5 h.p. R.A.C.), 6 Rover (6 h.p. R.A.C.), and 8 Jackson (6 h.p. R.A.C.)
Largest bore 127 mm.—10 Cadillac (10 h.p. R.A.C.)
Longest stroke 152 mm.—10 Reo and 10 Adams (9 h.p. R.A.C.)

Longest wheelbase 13ft.—50-60 Renault.
Shortest wheelbase 5ft. 10in.—8 Horseshoe.
Heaviest car—50-60 Renault, 33 cwts. (chassis).
Lightest car—6 Rover, 7 cwts. (chassis).
Most expensive car—75 six-cylinder Mercedes (53 h.p. R.A.C.), £1,800 (chassis).
Least expensive car—6 one-cylinder Rover (6 h.p. R.A.C.), £130 (complete car).

Wishing *The Autocar* every success, W. P.

ANTI-MISREPRESENTATION CAMPAIGN.

[13658.]—I was glad to see in *The Autocar* for last week a strong leader calling upon the motoring organisations to take up what one might call an anti-misrepresentation campaign. I should like to make one or two additional suggestions, not that the R.A.C. or M.U. is likely to take the slightest notice, being so busy quarrelling.

First of all, if the local clubs would keep a record of all local accidents and evidence, and report to the central body, the latter would be much assisted, and the cost to the local clubs would be *nil*, as they are on the spot.

Next, in spite of the repeated declarations of the R.A.C., A.A., and other bodies, that furious driving must be put down, I have not yet seen a case of prosecution by either. Now, no one can deny that there are a few motorists for whom six months' imprisonment is too good—men who would be called "thrusters" and worse in the hunting field. Surely a few prosecutions of such might be undertaken, together with similar prosecutions of horse driving road hogs.

My next question is, Where is the member of Parliament for Coventry (or other motor-making constituency)? Mr. Harold Cox and one or two others ask questions day after day in Parliament, but I have not seen the "motor constituency" members ask any of the following questions, *e.g.*:

"Is the Home Secretary aware that animals in the streets of London daily deposit 250 tons of filthy excrement, and that the cost of removing same in Westminster alone is computed at £5,000 a year, and does he propose levying any special tax for the same?"

"Has he considered the effect on the public health of the layer of raw sewage on the main roads?"

"Has his attention been called to the unusual prevalence of septic sore throats during the dry and dusty weather?"

"Has his attention been called to the case at ——, where a butcher's cart driven by a boy of 13 came round a corner on its wrong side at fifteen miles per hour, and killed a small child? Does he propose to take steps to secure the registration of horse drivers?"

"Has he noticed the case at Mudlington, where on the same day the magistrates fined a motorist £15 for driving at twenty-one miles per hour, and a drunken labourer who half killed his child was let off with a reprimand?"

And so on *ad infinitum*.

Once more, where are the motor members? H. B.

MR. EDGE'S WITHDRAWAL FROM RACING.

[13659.]—May I venture to suggest that Mr. Chas. Jarrott is not quite fair in his remarks in letter No. 13610 *re* Mr. S. F. Edge's remarks *re* the danger of, and his withdrawal from, dangerous speed contests? When he draws attention to the new 90 h.p. records made by Newton on Brooklands, he is rather, to my mind, "hitting below the belt." When I read Mr. Edge's remarks, I read them to refer to danger to spectators and not to actual competitors. So long as human nature remains as it is, so long will competitions in every sense of the word be held. Also, to find out the weak points of a machine, can one do better than to test it to destruction? Mr. Edge has gone to an enormous expense to prove the reliability, not to buyers of his cars only, but to all who see or read the papers. If it is an advertisement, does it not speak well for his productions? I have not the pleasure of Mr. S. F. Edge's acquaintance, nor am I the lucky owner of a Napier (simply a matter of £ s. d., or I should be the latter). May I suggest that Mr. C. J., instead of talking about and belittling Mr. Edge's work, buckles to and beats it? I think he will do the motoring community more good. JNO. A. COLE.

[13660.]—Mr. Jarrott's letter [13610] appearing in a recent issue of your paper making a personal attack on me for having withdrawn from dangerous racing, is so extraordinarily untruthful that it must on the face of it defeat its writer's wish.

My letter to *The Times* is dated September 22nd, and I have received a letter from the Brooklands Automobile Racing Club dated November 11th, reading as follows:

Brooklands Automobile Racing Club.
Carlton House, Regent Street, Waterloo Place,
S.W., November 11th, 1908.

S. F. Edge, Esq., 14, New Burlington Street, W.

Dear Sir,—In reply to your letter of to-day's date, I beg to say that no trace exists in our Record Book of any records having been broken by you since September 18th.

Yours faithfully,
(Signed) KENNETH L. SKINNER, secretary.

This sets out clearly that I have not broken any records since September 18th.

I trust that Mr. Jarrott will now withdraw his unsportsmanlike insinuations, and will apologise for having made them, and I would advise him for the future to refrain from casting aspersions on business opponents until he is sure of his supposed facts. S. F. EDGE.

A NEW MAGNETO.

An interesting horizontal magneto made by the well-known firm of electrical engineers, Messrs. Muirhead and Co., was exhibited for the first time at Olympia, by the Motor Accessories Co.

The armature, it will be seen in fig. 1, revolves horizontally between the pole pieces of the horizontal magnets. The distributer and contact-breaker are placed immediately above the armature, and the

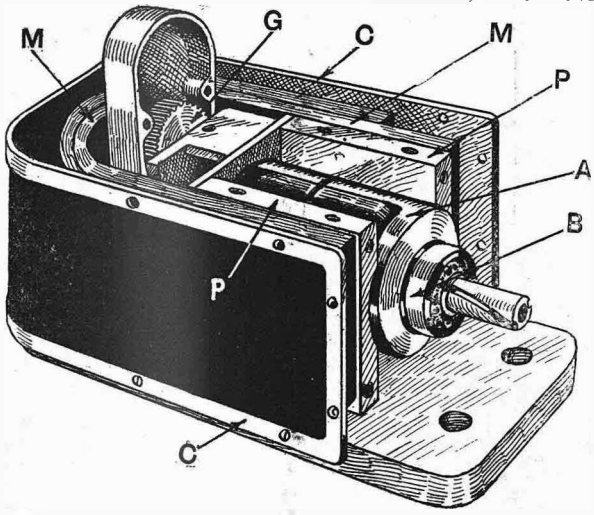


Fig. 1.—The Muirhead magneto partly dismantled.

A, armature
B, armature ball bearing
C C, magneto casing
G, gear wheels
M, field magnets
P P, pole pieces

detachable condenser, being fitted with bayonet studs, is instantly removable. Ball bearings are used throughout, and the complete mechanism is exposed, as shown in fig. 2, by removing the large ebonite cover, which is held in place by a single screw, which also serves as the lubricator when in position. The spark is advanced or retarded by the lever E, which, in conjunction with a rack and pinion gear, operates a sleeve on the driving spindle, which is coupled to the armature spindle by four small steel balls working in the two helical grooves, shown in fig. 1, and in the sleeve of the driving spindle.

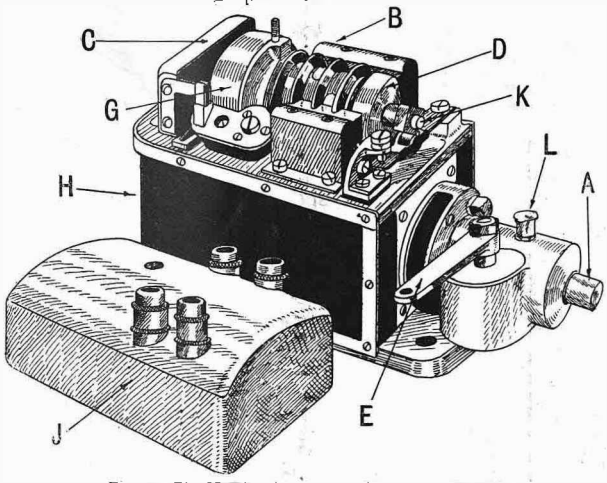


Fig. 2.—The Muirhead magneto with cover removed.

A armature spindle
S H I, distributer brushes
C, condenser
D, distributer
G, gear
H, magnet casing
J, magneto cover
K, contact breaker
L, lubricator

The workmanship is exceptionally good, and the difference in weight, in comparison with the ordinary vertical magneto, is immaterial, while in height the Muirhead machine is considerably lower.

PRIZES FOR AERONAUTS.

The new Aeroplane Club, which devotes its interests entirely to heavier than air machines, has tabulated a list of prizes which await successful aviators:

A prize of £400 is offered by Mons. Alphonse Falco for the first aviator who flies from the Chalons camp to the camp at Issay. The distance is about 180 kiloms.

£400 is offered by the French journal *La Nature* for the aeroplane which travels 100 kiloms. in two hours, measured in a straight line. He must not touch the earth, and he must name his direction before starting and alight within five kiloms. of the place named.

£40 is offered to the French aviator who on January 3rd, between the hours of 2 and 2h. 5m., makes the longest flight on a closed circuit without coming to earth.

Another £40 is offered for any aviator who flies and returns back over the same course with the least "push off" and without assistance.

The National League of France offer or control prizes to the value of £840 for the following contests:

The Lazure-Willer prize for the aviator who beats the high flight record of Wilbur Wright.

The prize offered by the Compagnie d'Aviation for the first woman aviator who flies a kilometre circle.

The Siot-Decauville prize for the first officer who covers a circular kilometre on his own machine.

The Arnoux prize for anyone who flies along a road (for the distance of one kilometre) which is flanked by trees.

The *Vie Financière* offers a prize for the owner of the smallest aeroplane in width and height which is capable of lifting him from the earth.

Then there is the André Falize prize for the first who flies in a "heavier than air" machine from the Vendome Column to the Arc de Triomphe," and finally comes to rest at the starting point.

A prize is offered of £80 by Bernard Dubos for anyone who flies by March 3rd the longest distance in a straight line across country at an average speed of forty kiloms. per hour, and another £80 by Goupy under the same conditions up to January 3rd.

Another prize of £40 is offered for proprietors of aeroplanes who shall fly the longest distance during five minutes up to January 3rd, March 3rd, and May 3rd respectively.

To encourage the proprietors of aeroplanes, four prizes of £40 are offered to those covering the circular kilometre, piloting their own machines, the prizes being subject to the condition that they shall only be awarded to aviators who have not gained a prize of £40 previously.

Three prizes of £40 are offered to French proprietors of aeroplanes who fly their own machines and who cover the circular kilometre.

Messrs. Pomery and Sons, the well-known champagne growers of Rheims, have offered a trophy of £2,000 with the object of hastening the conquest of the air by aerial voyages of considerable distances. The trophy will belong to the aviator who within the period of six months has covered the greatest distance in a straight line; at the end of three years it will become the property of the holder, unless before the three years have expired any traveller should accomplish a voyage of 1,000 kiloms. under five hours.

Messrs. Badir and Kahn have offered a prize of £100 to the first aviator who flies, either by aeroplane or dirigible balloon, and alights on the terrace at their establishment in the Chansée d'Antin.

The Monaco authorities have offered all sorts of prizes in February next, the course being between the port and Cape Martin.

Finally, there are the Michelin prizes and the Grand Prix of the Aero Club of France.

In addition to these large and valuable prizes subscribed in England and France, the Government of France will include in its next budget a sum of £4,000 for the encouragement of aerial flight.

One of the promises made by the Government is that it was prepared to place as much of its ground as possible at the disposition of aeronauts for experimental work. The question in this country is, What is the Government doing for our country?

Capt. W. Windham, hon. secretary Aeroplane Club, 22, St. John's Hill, London, S.W., will be pleased to afford any further information.

Flashes.

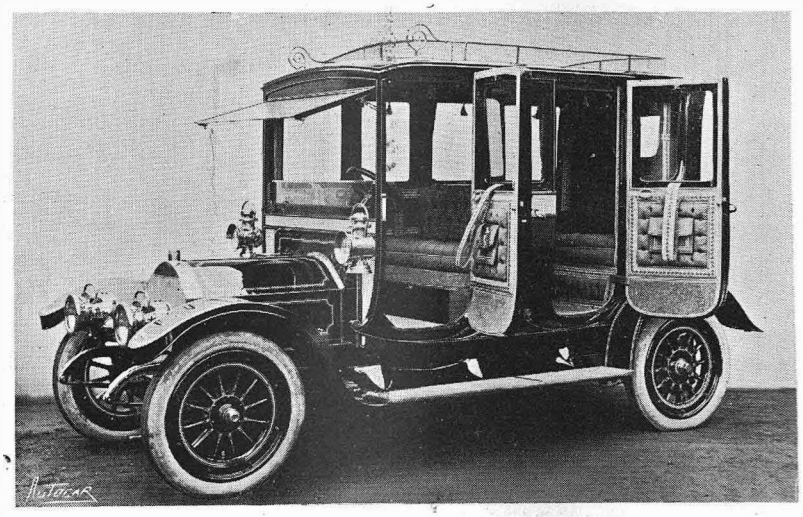
A lady resident at Pennsylvania, U.S.A., who last summer brought a car to this country, writes that, owing to the kindness of the Motor Union, her trip through England and Wales "was most delightful and enjoyable." She has applied for a supply of membership literature for distribution.

* * *

We recently had an opportunity of trying one of the new 15 h.p. Austin cars. The four-cylinder engine has a bore of 3½in. and a stroke of 4in. It runs with great freedom and smoothness, and is a remarkably nice car—an altogether worthy addition to the class of light four-cylinder cars. While speaking of the Austin, it may be interesting to add that not only has this new model been exceedingly well received by the motor world, but the 18-24 h.p., not to mention the larger models, are also in great demand. In fact Mr. Austin tells us that at the present time he has eight months' work in hand, and is putting on a night shift. Altogether, the company is in a most prosperous condition, and among the most successful of the private concerns. In fact, had it been desirable, a forty per cent. dividend could have been paid upon the last year's business. In the face of so much talk of depression in the motor industry this is cheerful news.

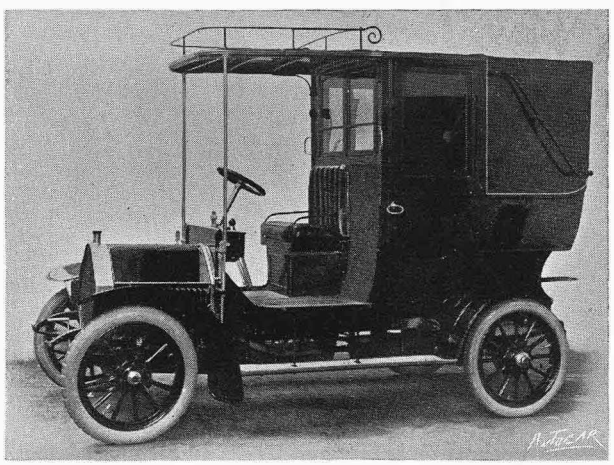
* * *

Towards the end of last week a rumour was current in the Show to the effect that an action was about to be taken with regard to enforcing royalties in connection with the gate change patents, owned jointly by the Mercédès-Daimler Co. and the Daimler Motoren Gesellschaft of Unter-Turkheim. In order to be able to put the automobile industry into possession of the exact position at the moment, we made enquiries of one of the directors of the Mercédès-Daimler Co., and find that, for once, rumour has not lied. This company, who own all the British Mercedes patents jointly in this country with the parent German company, has been formed to protect its own interests and those of the German company, and although the actual policy to be followed has not yet been decided, there is no doubt that action to establish the patent rights of these companies in this country will be taken sooner or later. The matter is referred to more fully on page 878 of the current issue of *The Autocar*.



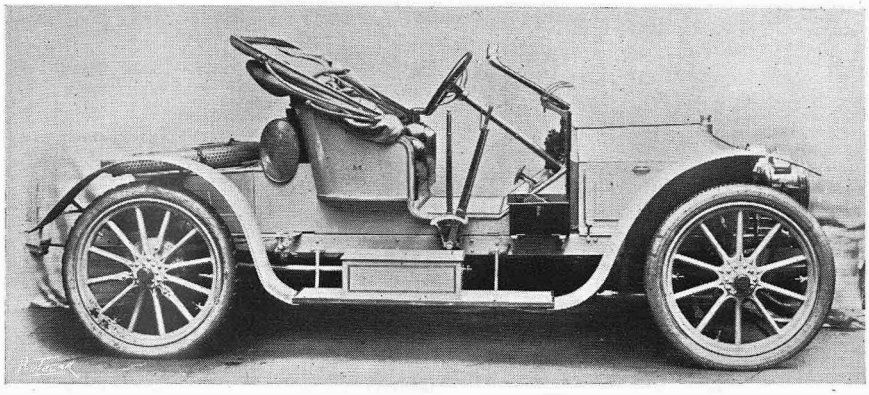
A Four Inch model S.C.A.T. car fitted with a fine example of a type of body which is becoming prevalent for large town carriages. The example shown is by Messrs. Salmons and Sons.

The suggested test for hill-climbing, and also quietness of running, made in *The Autocar*, is, we hear, likely to be adopted, and a demonstration made of a well-known car in this manner. For this purpose a special form of phonograph will be used as being the most suitable instrument for recording the sound impressions. The idea is to set the machine on the hill with a blank record, and start it simultaneously as the car commences the climb. The record should give the sound impressions of the car under the most severe road testing conditions. The hill selected for the test is peculiarly suitable. There is no traffic, it is exceedingly stiff, and can only be taken from a stationary start, hence the climb could only be made on the low gear, and the highest engine speed would be needed. Of course, under such conditions no car would be silent. Moreover, the surface of the hill is loose, so that the tyres alone would set up a certain amount of noise.



A 10-12 h.p. four-cylinder Humber. A type of cab which is becoming very numerous on the streets of London, as well as of several provincial cities. What must be a taxicab record was established by one of these cabs, which carried three members of the Eccentric Club—five persons in all—with luggage to Plymouth and back. The machine registered £16 os. 8d. for the double journey.

The International Association of Recognised Automobile Clubs has called a conference, to be held in Paris on December 1st, of the bodies which were represented at the recent Paris Roads Congress, to adopt an international form of road signal and its wording; to settle the general conditions as to the erection of signals on the roads, notably their position as regards travellers and their distance from obstacles, and height of the signal above the road surface.



A smart 26 h.p. Metallurgique car supplied to Captain Ward Jackson, by Warwick Wright, Ltd. The hood extends forward of the wind screen, which is adjustable to any angle. The car is finished in white with gold lines. Captain Ward Jackson also owns a Metallurgique fitted with a "Duchess" body.

The Vauxhall Company announce that they are ready to build a Grand Prix team of three Vauxhalls for anybody who will enter them and have them driven. They state, however, that they are too well satisfied with touring car business to run a team themselves.

* * *

The Anglo-American Oil Co., who are the producers of Pratt's motor spirit, advise us that they are now marketing two brands of spirit, which will be known as Pratt's Perfection and Anglo-Taxibus spirit, the latter having a s.g. of .760. Both brands of fuel will be sold in cans with "silver" seals, and purchasers can obtain a bonus on their purchases of these spirits at the rate of 5s. for every 100 of these seals returned, this offer holding good until February 28th, 1909.

* * *

The Bucks. County Council recently applied to the Local Government Board for an order to restrict the speed of motor cars to ten miles an hour on every road in the county where there are continuous inhabited houses for a quarter of a mile. The L.G.B., however, were unable to accede to such a sweeping request.

* * *

Some few months back we had one of the latest pattern De Dion sparking plugs sent us for trial. It was at once put into commission, but we had become quite oblivious of its existence until a day or two ago when Messrs. De Dion Bouton enquired whether it had given satisfaction. The fact that we had entirely forgotten we had one of their plugs on test is, we think, sufficient evidence of its reliability and all-round good qualities.

Flashes.

The eleventh annual dinner of the founder members of the R.A.C. was held on Wednesday last.

* * *

On December 10th Mr. Charles Knight will lecture on his engine before the committee of the Ladies' Automobile Club of Great Britain and Ireland.

* * *

During the winter months of the early part of this year we derived much satisfaction and comfort on the car by wearing a pair of Foxe's puttees. After trying these against leggings and stockings we came to the conclusion that in Foxe's spiral puttees the advantages of both leather leggings and thick stockings were to be found, in that they gave the warmth of the leather and the suppleness of the wool coverings. For wear when occupying a side-doorless front seat on a car there is nothing to beat them, and, properly put on, they are always neat.

* * *

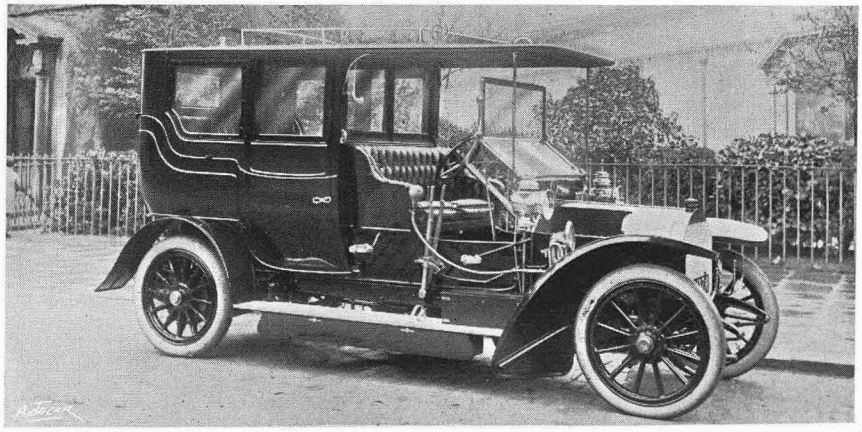
In the list of honours conferred in connection with His Majesty's birthday, the names of well-known automobilists are to be found. Sir Charles McLaren, Bart., who joined the R.A.C. in 1902, becomes a member of the Privy Council. Mr. Charles E. Shaw, M.P., who joined the Club as far back as 1900, has been given a baronetcy. Two other members, the Earl of Derby and Viscount Esher, have received promotion in the Royal Victoria Order and the Order of the Bath respectively. Alderman Duckworth, M.P., one of the new knights, is an individual associate.

* * *

The annual exhibition of motor cars, cycles, and accessories will be held in Paris from to-day (Saturday), November 28th, to Sunday, December 13th, both days inclusive.

* * *

At the next Conference of National Automobile Clubs on November 30th the R.A.C. will again put forward its proposition for the establishment of a definite system whereby records made under certain approved conditions will be regarded by all the clubs federated as world's records.



A handsome movable top limousine built by Messrs. S. and A. Fuller, of Bath. It is fitted to a 35 h.p. five axle Mercedes, one of the first of its type to take the road.

THE RENAULT SELF-STARTER.

Not being accustomed to be left in the march of progress, Messrs. Renault and Co. have been among the earliest to adopt and fit an automatic self-starter to their well-known motors. In place of the pedal actuated device of last year, good enough in itself but necessitating some physical effort on the part of the driver, they now pin their faith to a compressed air apparatus on Saurer lines, which would appear, after all, to be the simplest and most efficient of the various methods yet put before the public. In the self-starter now fitted Messrs. Renault have sought to make the apparatus part and parcel of the motor itself. This as it is here set out will be seen to consist of four principal organs with the necessary connections and attachments. We have the air pump M, the compressed air holder L, the controller A, and the distributer of the compressed air D.

The air pump M is placed immediately above the level of the camshaft forward of the front pair of cylinders, as shown in fig. 1. Its crank casing is practically a portion and part of the crank chamber, as seen in the special section fig. 2, which shows the air pump throw to be operated from the end of the camshaft B. The pump throw rotates in ball bearings, and by means of the connecting rod gives the necessary reciprocating movement to the pump plunger or piston U. At every downward movement of the plunger air is drawn into the barrel of the pump through the orifice T and the inlet valve S, and upon every upward movement is compressed in the barrel and delivered under compression through the lifting valve N and the delivery pipe G to the holder L. But the air so compressed and delivered into the chamber O also passes by the orifice Q to the space W above the metallic membrane X. This membrane, which is carried on a shoulder formed around the chamber and is anchored by the valve cap, is set a little above the upper end of the stem of the valve S. Now the duty of this membrane is to act as an automatic bypass, for it is obvious that the pressure in the holder L and the chamber O must always be equal, and when this pressure reaches a certain set point its effect upon the upper surface of the membrane X is such that it is deflected downwards, and coming more or less into contact with the upper end of the inlet valve stem holds

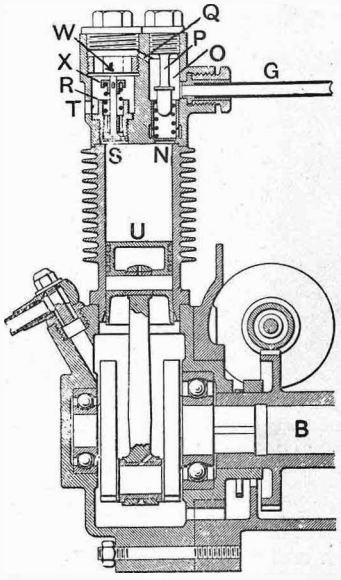


Fig 2.—Section through the air compressor
B, forward end of camshaft
G, compressed air delivery pipe
N, compressed air delivery valve
O, delivery valve chamber
P, bossed end of valve cup ing abuttal for valve spring
Q, byepass orifice
R, air inlet valve chamber
S, air suction valve
T, air inlet
U, air pump piston
W, air space
X, metallic membrane

this valve open more or less, so that the charge of air drawn in by the plunger on its downward stroke is driven out again by the same on its upward stroke, no air then passing through the delivery valve N, for this valve will not lift unless the pressure of the air in the pump barrel on the upward or delivery stroke of the plunger is greater than that in the holder L, and consequently in the chamber O. The air pump there-

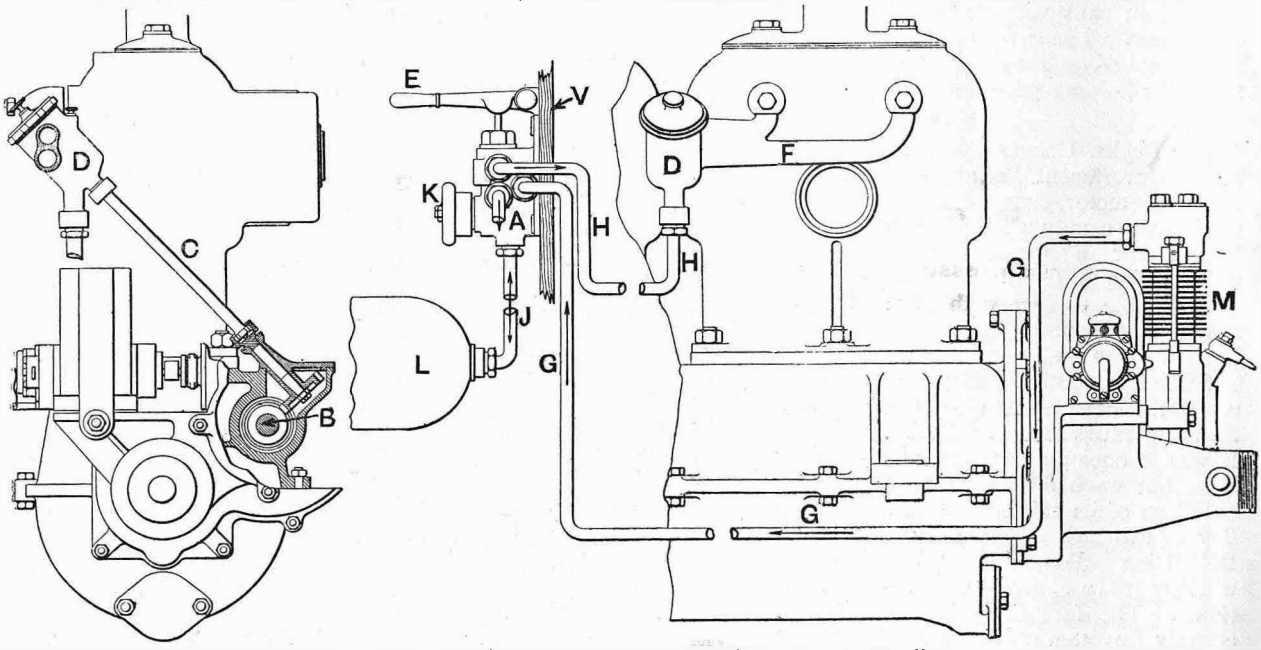


Fig. 1.—Sectional end view and side view of the disposition of the Renault self-starter.

A, controller permitting access of air to cylinders
B, camshaft
C, air distributer shaft
D, compressed air distributer
F, compressed air leads
E, valve lever for opening valve and allowing air to pass from compressed air holder L to the air distributer D and thence to the cylinder
G, compressed air delivery pipe from air compressor to controller A
H, pipe leading air from controller to distributer
J, air pipe from reservoir to controller A
K, air stop cock isolating reservoir
L, compressed air holder
M, air compressor
V, dashboard

fore automatically ceases to deliver air to the holder as soon as a certain pressure has accrued in that vessel. As the apparatus is not gear driven it is quite silent in operation—a feature which is obviously a *sine qua non* on Renault cars.

Compressed Air Distributer.

This part of the apparatus is shown and marked D on the left-hand side of the engine, and is operated by the inclined shaft C, which passes upwards and across from the camshaft between the two pairs of cylinders. It is worm driven off the aforesaid shaft as shown. The compressed air reaches the distributer from the holder L by the pipe H, the outlet from the latter being closed by an automatic valve, which can be depressed and opened at will by means of the lever E.

The rotating valve in the distributer D is so formed as to its leads that upon the lever E being depressed compressed air is at once admitted through the distributer and the leads F to just that cylinder which has its piston at the top of the compression stroke, with the result that that piston is at once driven downwards, and the engine being started the distributer turning sympathetically delivers air to the next cylinder in readiness, and so on.

So soon as the engine is running at sufficient speed under the influence of the compressed air, the lever E is released and the natural cycle of events with carburetted air as their provoking agent then ensues. A stop cock actuated by the wheel K is provided for securely sealing the air holder when the car is at rest for any length of time. The air pump barrel is cast with radiating flanges to dispel heat. The whole apparatus is simple, neat, noiseless, and is entirely enclosed within the motor bonnet. The compressed air in the reservoir can also be used for tyre inflation.

CLUB DOINGS.

Scottish A.C.

The Road Surveyors' Association of Scotland have accepted an invitation from the club to a conference between the club and the association, at which reports by the representatives of both bodies on the recent International Road Congress in Paris will be made, and will form a basis of discussion. The meeting is to be held in the Central Station Hotel, Glasgow, on Friday, December 11th, at 7.30 p.m.

Sheffield and District A.C.

The third annual dinner of this club will be held at the King's Head Hotel, Change Alley, on Wednesday, December 16th, when the prizes won at the hill-climb will be distributed. Mr. E. F. Coupe will take the chair.

The committee has received many more applications for caution boards than could be granted with due respect to the club's finances. It has been decided to fix a caution board near the Todwick cross-road on the Sheffield and Worksop Road.

Midland A.C. Conference.

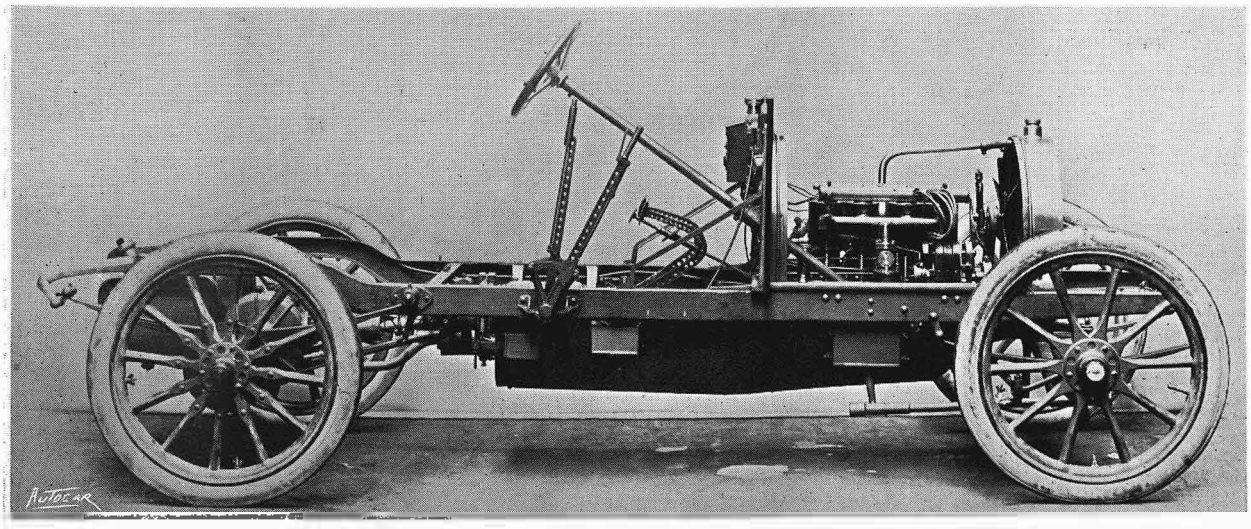
At the invitation of this club a conference was held on Saturday last week of provincial clubs to consider the affiliation question. The clubs represented were: Harrogate and District, Sheffield and District, Derby and District, Midland, Leicester, Shropshire, Liverpool, and Manchester. There was almost a unanimous feeling in favour of affiliation to the Motor Union, and at the close of the conference, to put the matter in order, it was proposed and seconded, "That the delegates do recommend their clubs to affiliate to the Royal Automobile Club." Then an amendment was proposed and seconded as follows: "That after careful consideration of the question of affiliation this conference is of opinion that the R.A.C. should be asked to reconsider the question of joint affiliation, and that until a reply is received from the R.A.C. the clubs be recommended not to affiliate to either body." This was put and carried—15 votes to 2. It was then put as a substantive resolution, and carried *nem. con.* by sixteen votes (one not voting). Immediately the reply is received from the R.A.C. another conference will be held.

British Motor Boat Club.

On Thursday last week the first house dinner of the season was held, when the B.M.B.C. had the pleasure of entertaining several foreign delegates of the I.M.Y.A. A smoking concert followed in the Club smoking room, for which a very good musical programme had been provided.

Irish A.C.

A special committee meeting of this club was held on Thursday, the 12th inst., to decide whether, in view of the fact that the Local Government Board for Ireland had recently imposed speed limits in Co. Wicklow against the great preponderance of evidence, the club should be represented on any further inquiries. The Secretary reported that an inquiry was to be held at Naas on the 2nd prox. to consider an application that the speed of motor vehicles should not exceed six miles per hour on the two days of Punchestown race meeting for a distance of two miles from the course. It was decided to instruct counsel to attend the inquiry, and urge that, instead of the proposed regulation, one should be made that motor cars and all other vehicles should be required to keep to the line of traffic; and the hope was expressed that, on this occasion, the Local Government Board would come to a decision according to the evidence and necessities of the case



AT OLYMPIA. The 1909 20 h.p. four-cylinder Nordenfelt chassis. The raised frame, raked steering, and drilled levers and pedals will be noticed.

SOME QUERIES AND REPLIES.

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

QUERIES.

No. 772.—16-20 h.p. Calthorpe Car.

I SHALL be glad to know your readers' opinions of the 1908 16-20 h.p. Calthorpe car, regarding speed, consumption, reliability, and hill-climbing powers.—H.B.

No. 773.—Multiple Jet Carburetter.

WOULD any of your readers kindly give me their experiences of the T. and M. multiple jet carburetter?—G. M. MEARES.

No. 774.—14-16 h.p. Belsize Car.

CAN any of your readers give me any information as to whether this car is heavy on tyres, also as to its petrol consumption, hill-climbing capabilities, average speed on the level, and general reliability, or if there are any weak points?—A.J.E.

No. 775.—Gillett-Lehmann Carburetter.

MAY I enquire through your columns whether any of your readers have tried the Gillett-Lehmann carburetter attached to a Darracq car? I have had the Gillett-Lehmann controller fitted to my Darracq carburetter for some months, and find it on the whole satisfactory, and am now thinking of buying the complete carburetter if I am satisfied as to its benefits.—LANCASHIRE.

REPLIES

No. 766.—Steam Cars.

We hope you will permit us enough space to give your enquirer "Learner" the advice he asks for. As he says the car is not of recent manufacture, we think it very probable the strainer in the paraffin tank is choked up. We should advise him to draw off the paraffin, then to remove the strainer and thoroughly clean it. Probably a new piece of gauze could be fitted with advantage. Before putting the paraffin back into the tank, he should strain it to see that there is no water in it, as paraffin and water do not make a successful fuel for burning. When the car is kept standing with the main burner going, the air pressure should also be reduced to about 30 lbs. The burner system should also be thoroughly cleaned, particularly the fitting which is attached to the vaporising coil just outside the generator casing. The difficulty "Learner" refers to is, we think, most likely caused by excessive heat; hence our advice that he should reduce the air pressure when the car is going to stand for any length of time with the burner going. If "Learner" will communicate with us, we shall be only too pleased to give him advice or more practical assistance if necessary.—TURNER'S MOTOR MFG. CO., LTD.

No. 767.—Chauffeurs' Touring Expenses.

I wonder how long owners of motor cars will continue to put up with the class of chauffeur to be met with here in England. I have owned cars for the past ten years, and have had four different English chauffeurs. Result, they tried to rob me at every possible turn and in a variety of ways. They are, as a rule, supremely ignorant, and are unable to do any but the most trifling of repairs. They were all thoroughly untrustworthy, and any repair requiring a certain amount of skill they were one and all quite incapable of performing, so that I found myself doing half the chauffeur's work in my garage, which I have fitted up as a workshop as well. They were all unable to turn on a lathe, nor had they the least knowledge of forge work or brazing, while the airs they gave themselves, especially in the servants' hall and elsewhere, were too amazing for words. It is not usual for the owner to pay hotel bills and full wages to chauffeur when on tour, but this and every other arrangement should be agreed to before engaging him, so that there may be no mistake whatever about it. It is certainly most unusual for the owner to supply his chauffeur with a driving license. The wages "Perplexed" is paying for one small car are vastly too high. I had all this trouble in the early days, and should continue to have it if I had not got a French chauffeur-mechanic over from France, since which time my expenses have steadily decreased.—CURED.

No. 713.—Turner-Miesse Steam Car.

No doubt your lighting back at the nozzle or backfire arises from your combustion chamber or burner box becoming corroded with deposit from the oil. To obviate this, you should at once remove your burner box and clean away all deposit you may find. When standing reduce your air pressure to about 30 lbs., and turn your oil off a little (not out), for while you are standing your generator and burner get overheated. I learn with regret that your car is not fitted with the burner regulator, as no doubt this is a valuable addition to the steam car. I should be pleased to advise further if necessary.—CARL J. TROMAN.

No. 760.—10-12 h.p. Coventry Humber.

I have been running a 10-12 h.p. Coventry Humber (1908 pattern) since May 24th last. It has a four-seated body, and, with four passengers, weighs over 22 cwts. I have found it a very reliable, smooth, and quiet running car, and on a straightaway run on a road like the Great North Road, have, with special attention to the carburetter, averaged thirty miles to the gallon. In 5,000 miles running I have only had two involuntary stops, which were due to negligence on my own part. One stop was due to not replenishing water in the tank until it was practically empty, and the other stop was due to the carburetter not having been cleaned out in time and becoming choked. About 2,000 miles had been run without cleaning. In my opinion, I cannot conceive a more suitable car for the man of moderate means who wants a four-cylinder engine. So far there is no appreciable wear anywhere. I have found it a good hill-climber, the bottom speed being very seldom required. It goes up Alconbury Hill with four passengers with ease on top gear. I have Bosch magneto as well as the ordinary accumulator ignition, and find it gives more power than the latter, and have had no ignition troubles at all. The car is now being packed by Messrs. Humber to go out with me to India.—HENRY GOODALL.

I have a 10-12 four-cylinder 1908 Humber which I purchased in June this year, and I have covered getting on towards 6,000 miles on it. With the exception of three or four punctures, over which I have been somewhat unlucky, I have never had the slightest trouble with the car. The double ignition with eight sparking plugs has worked perfectly, so much so, that not a single plug has been out to be cleaned. With the exception of cleaning out the carburetter twice nothing on the car has been touched, and its hill-climbing capacities are wonderful. This is not my first experience of Humbers, as I have a 15 h.p. four-cylinder as well which has been run some 18,000 miles, and neither car has had an involuntary stop on the road from any mechanical cause. I have had a very large experience in cars, and am quite satisfied that, up to the present, I have not had one to touch either of my Humbers, and for the man with moderate means I am sure the 10-12 two-seater Humber cannot be beaten.—W. H. H.

No. 765.—Heating Motor House.

If "ERB 3670" will be advised by me he will install one of the small heating plants worked by gas supplied by Messrs. Berry and Sons. Personally, I consider it imperative for any motor house to be kept dry, and the temperature above freezing point. I may add that I have tried almost every device to obtain the above result, but find the above apparatus cannot be surpassed. Stoves are an abomination, being both dirty and unreliable.—H. L. CUNLIFFE.

No. 764.—Plumbago in Cylinders.

It is an absolute fallacy to imagine plumbago will prevent cylinders fouling in a petrol motor. The only rational way of preventing cylinder heads and pistons from becoming incrusted is to always run on as weak a mixture as possible and lubricate (not over-lubricate) with good oil containing no vegetable compounds. If through overheating the piston rings get stuck down at any time and loss of compression ensues, a good tip is to inject a little common paraffin into the cylinder heads and turn the engine round several times by hand to work it into the pistons. Care should be exercised in doing this as infrequently as possible, as paraffin is a deadly enemy in high speed bearings.—HENRY G. HAYES, A.M.I.A.E.

QUERY AND REPLY.

Accumulators in Laid-up Car.

I SHOULD be greatly obliged if you would tell me the best thing to do with the accumulators of a car that is laid up. Should they be run down, their acid poured away, and filled with distilled water, or should above be done without running them down? Both are now showing over four volts.—A.J.H.

You can either run the accumulators down or charge them fully, whichever is the less trouble. Do not discharge them too quickly. A safe method is to run them down through a four-volt lamp. Whether you charge them fully or run them down the after procedure is the same. Empty all the acid and wash out several times. When all traces of the acid are removed fill up with distilled water. Vaseline the terminals thoroughly in either case.