

THE AUTOCAR

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

EDITED BY H. WALTER STANER.

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Notes.

Second-hand Cars.—The Risk.

There are numbers of good sound second-hand cars for sale, which are well worth purchasing at the prices at which they are offered, but amateurs fear to buy because they are not qualified to know the difference between the signs of fair wear and tear and absolute neglect or unscrupulous disguising of defects. There are many honest expert examiners who will give a conscientious report on a second-hand car for a reasonable fee, but there are a few unscrupulous ones who for a consideration from the seller will make a false or partial report to mislead the would-be purchaser. If they could be sure of honest advice, the private buyers would not hesitate to purchase second-hand cars. They cannot afford a new one of the type they

want, and so they abstain from buying. The owners of good used cars, who would buy a new car if they could sell their old one, also suffer from this widespread and not always groundless suspicion of second-hand vehicles. Our aim is to establish confidence by a system which will remove the risk of deception, and so benefit the honest seller and the *bona-fide* purchaser alike.

Second-hand Cars.—The Remedy.

With this end in view, we are organising a system which will enable us to furnish reports on second-hand cars to would-be purchasers. These reports will be made for us by capable and honest men who have been appointed to do the work in different parts of the country. The system, briefly, is as follows: A prospective purchaser sees the advertisement of a second-hand car which seems to meet his wants. He corresponds with the owner, and decides that, subject to the condition being as described by the seller, he will buy the car. He then writes to *The Autocar*, giving the name and address of the seller, and requesting a report on the vehicle he has for sale. For this he encloses an examination fee, and if travelling expenses should also be required he will be advised. *The Autocar* engineer who happens to reside nearest to the place where the seller's car is kept is instructed to examine and report upon it. His report is then filed by *The Autocar*, and a copy of it sent to the would-be purchaser. No names are divulged, so that neither the seller nor the expert examiner knows the name of the person for whom *The Autocar* report is being prepared.

Further Details of the System.

Every precaution will be taken to secure capable and honourable men to make the examinations referred to in the preceding note on our behalf, and a thorough system of checking their work has been prepared. In most centres appointments have already been made, but there are some districts in which no engineer has yet been selected. Capable experts can apply for the appointments, though they will understand that convincing evidence as to their ability and probity will be required. Without these proofs no expert not personally well known to us will be appointed. We should add that the inclusive fee for expert examination will cover the sum required to pay for the efficient working of the examination department of *The Autocar*. The inclusive fees will be on a graduated scale, as the expert has more work to do in examining properly, say, a six-cylindred car *de luxe* than a single-cylindred and far less complex vehicle. Therefore he naturally and rightly expects to be remunerated *pro rata*. Finally, it should be clearly understood that the system refers to second-hand cars only. New vehicles will not be dealt with, though we shall continue to give advice gratuitously about these, as heretofore and subject to the rules set forth at the head of "Queries and Replies." The arrangements for working the system are almost completed, and as soon as it is in operation it will be announced.

An Energetic Club.

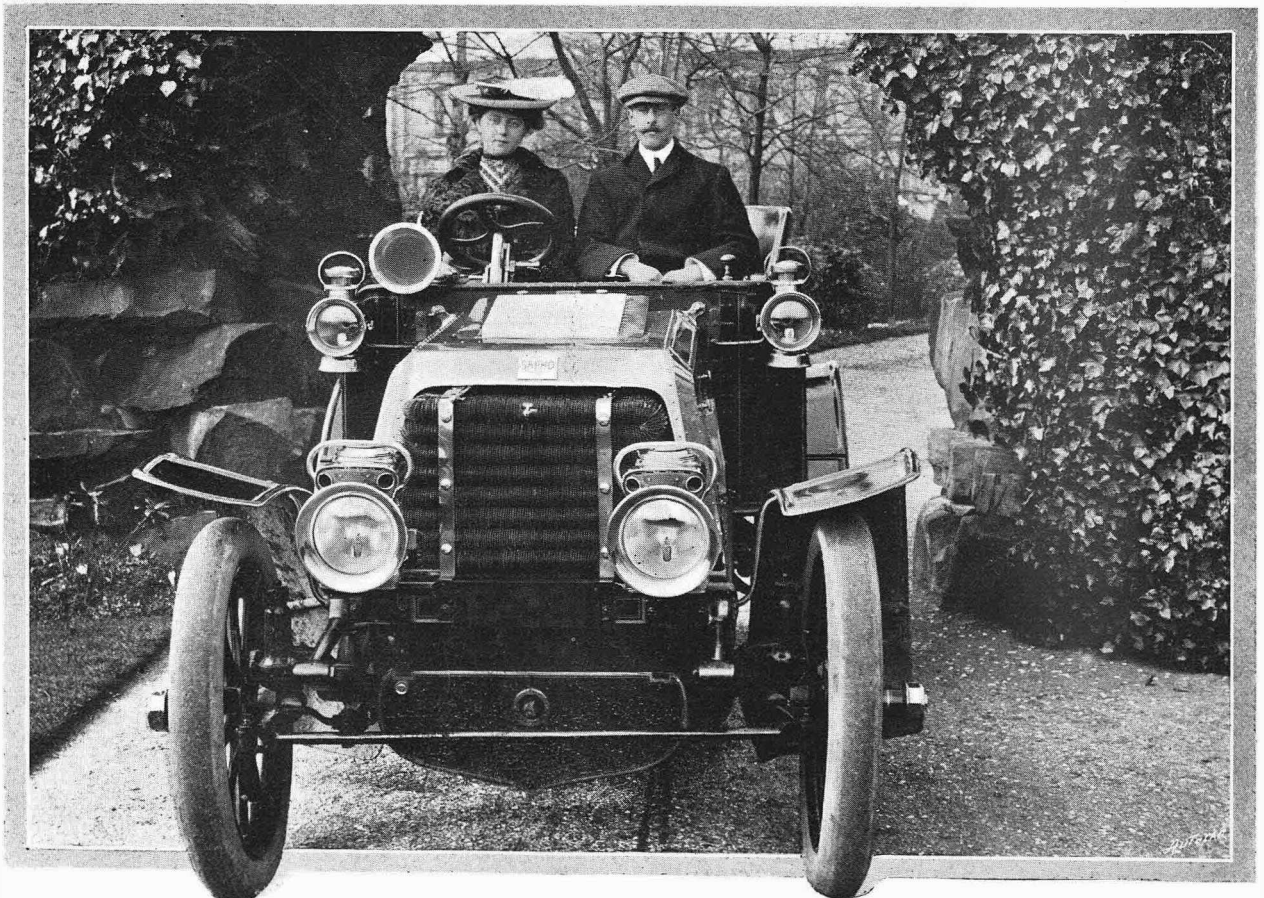
We have from time to time referred to efforts made in Lincolnshire with respect to the production of alcohol for commercial purposes, and now learn that an organised attempt in this direction is to be made by the Lincolnshire A.C. A committee has been formed to deal with the question, which is of the utmost importance to such an agricultural county as Lincolnshire, and every chamber of agriculture and every chamber of commerce is to be approached with a view to obtaining their assistance. It has been wisely decided not to touch what might be called the mechanical side of the question, but to confine the efforts to the abolition of the restrictions on the manufacture of alcohol for commercial purposes. Lincolnshire is rather noted for its thoroughness, and its motor club is very much alive, so that it may be taken as certain that a vigorous, though cautious, campaign will be carried out. The club will be careful not to do anything to interfere in any way with other steps being taken to secure similar ends.

We hope the example of the Lincolnshire Club will be followed by other energetic and influential county and district clubs. Of course, the movement ought to have been initiated by the Automobile Club of Great Britain, but the parent club will undoubtedly move in the matter eventually. In the meantime, all that can be done in preparing public opinion for the necessary changes which must be made in the law before alcohol

can be regarded as a practical fuel is so much to the good. Mr. John Scott Montagu is bringing the matter up in the House of Commons, and although he and the members associated with him will undoubtedly do their best, it can scarcely be expected that they will achieve success at the first attempt. To some extent it appears to us that the club is still failing to undertake some of its most important duties. From a national as well as an automobile point of view, the work of fostering the production and use of home-made fuels in place of foreign supplied petrol is most important.

The Dust Question.

Even more important at the present time than home-made fuel is the dust question. The experiments conducted by the club in connection with the reliability trials last autumn were most useful, but they did not strike at the root of the question. So far as can be seen at present, although dust may be reduced by the design and form of the car, it will only result in some diminution of the dust plague; the real and only practical reform must be in the roads themselves. Yet we do not find the club at the head of the movement to endeavour to ascertain the most satisfactory dust layer. Instead of this, the work is being attempted by private enterprise, and not, as it should be, by the national Automobile Club. Reckless driving undoubtedly does a great deal of harm, but the dust does still more, as it raises prejudice every time a car passes a non-motorist on a dry day.



Photograph by

Jerome, Southport.

A WELL TRAVELLED CAR. Mr. and Mrs. Dudley Coddington, of Southport, who some time ago became possessed of that well-known 24 h.p. Daimler, "Le Chat Noir," are depicted in the illustration on the car in question, which has been re-christened "Sapho." It would really be interesting to learn the exact mileage of the car since its first owner, Mr. Oliver Stanton, drove it out of the Daimler Works on its maiden journey

USEFUL HINTS AND TIPS.

When to charge up Accumulators.

When the usually deep chocolate-coloured positive plate of an accumulator begins to look as though a very fine sprinkling of flour has been made on its surface, then it should be tested. Usually, when this condition is presented a four-volt battery will register 3.8 volts on the voltmeter, and it is not safe to risk running longer, but the battery should immediately be recharged and care taken that the plates are completely covered with acid.

Care of Accumulators.

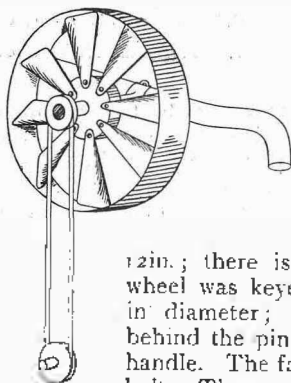
Celluloid cases are best for accumulators, as the plates can be examined to ascertain if any of the paste is loosened or the plates deformed. Also, any stray pieces of paste which may shake out and be liable to cause "short circuiting" can be located and easily removed without injuring the cells. When an accumulator is first put into use, it is best to take off the terminal nuts and then wax or vaseline the screw-thread, and put back the nuts. On connecting up the wires see that a clean connection is obtained between the terminal face and the wire contact. The reason for this is that any acid liquid or vapour may corrode the brass thread and nut, and so prevent easy removal when a fresh-charged battery is required.

When a Car does best.

When a well-designed and constructed car has been run for some time by its owner, and the question is asked, "How does it go?" the reply is, "Better than when I first had it." This is only to be expected in the natural order of things, for the thorough running-in of the bearings, gears, and axles cannot be properly done until a fair amount of road work is completed, although in most cases they receive a good working-in during manufacture in the shops and in the subsequent trial work on the road before delivery to the buyer. Taking the case of an Atlantic liner, it has to do quite a number of voyages before "settling down to its work," as an engineer would phrase it. So with the mechanism of a motor car a certain amount of work must be done by it before the best results are shown in running, and the speed, quietness, efficiency, and general smoothness acquired which characterise the best type of car.

Fan Cooling.

We are indebted to a correspondent (Mr. P. Naish) for the sketch and method he adopted to increase the cooling of the cylinder jacket water on his 12 h.p. Darracq. The fan is attached to the inlet pipe by a collar carrying a spindle by two bolts and nuts. The fan has a phosphor-bronze bearing 3in. long, the total diameter of the fan being 12in.; there is no back to it. A pulley wheel was keyed to the engineshaft $2\frac{1}{2}$ in. in diameter; there is just room for it behind the pin which engages the starting handle. The fan is driven by a light leather belt. The car can now be run in a hilly neighbourhood on the first speed or left running for a lengthy period without overheating the water or having self-ignition when the current is switched off.



Non-skidding Devices.

As the subject of non-skidding devices for motor vehicles is at the moment very much to the front, inventors of and the public using these devices should note that, strictly speaking, any of the mechanical devices which grip and plough up the road when suddenly brought into action are illegal to use, apart from any danger there may be of overturning a vehicle fitted with such device in case the road should not be caught as intended.

Leaky Tyre Valves.

Having a leaky tyre valve, which on examination showed no defect either in the rubber with which the joint is made or with the metallic seatings, numerous attempts at tight screwing-up and the application of soft-soap failed to effect a remedy, but when a little ordinary sugar dissolved in water was rubbed into the valve rubber the trouble immediately disappeared, and the stoppage of the leak was permanently effected. This is useful to know, as apparently the rubber is not caused to stick in any way nor is any injury done to it.

Commutator Lubrication.

Car owners whose high-tension ignition systems include a rolling contact-maker of the Lacoste type cannot be too careful about the lubrication of the commutator. When cars so fitted are first received from the makers the interior of the commutator case will or should be found packed with a somewhat thin grease, with which the action of contact-making as the roller on the little arm passes over the brass or steel terminals appears to be as perfect as possible. After four or five hundred miles the engine may be found to fire imperfectly on one or more cylinders, particularly when accelerated, and then such failures will frequently find their cure by the washing out of the commutator with petrol, and, when the latter has dried off, the application of fresh grease. Care, however, should be taken as to the grease applied, for there are several very stiff kinds sold which, though good enough for bearings, are by no means suitable for commutator lubrication. The grease which from actual use seems to us of exactly the right quality and consistency for the purpose is a fine lubricating grease such as "Sternoline."

Steering Pivot Lubrication.

The question of lubrication of steering pivots is rather a neglected one. Recently makers have been drilling the pins and inserting lubricators, but by far the most usual method is to cover the pivots with a leather casing, and fill up with grease. Now, if it is at any time necessary to remove the leather there is the utmost difficulty in returning it. The reason is not hard to seek, for when putting the leather on a piece is just twisted round the rod and arm and bound with wire. It is not difficult to arrange this differently, so that not only can the leather be taken off and on, but so that it will make a tighter job and retain the grease better. The joints should be studied and the leather cut so that the flat piece of leather is a development of the parts which it has to cover; that is to say, when cut, it will resemble a T somewhat, the tail wrapping about the distance rod, and the crosspiece folded over and enclosing the steering arm. Two thongs should be left cut diagonally from the junction of the tail with crosspiece, these thongs wrapping over and completing the case at the joint.

THE IGNITION OR INDUCTION COIL EXPLAINED.

WE HAVE ON PREVIOUS OCCASIONS EXPLAINED THE WORKING OF AN IGNITION COIL, BUT THERE HAS NEVER YET BEEN SHOWN AN ACTUAL COIL IN ITS COMPONENT PARTS SUCH AS WE GIVE IN THIS ARTICLE.

In the majority of cases a high-speed trembler type of induction coil is employed to produce the spark required to ignite the gaseous mixture in an internal combustion engine.

How the coil works and how it is built up is a mystery to a very large number of users, and so long as the coil works satisfactorily no attempt is made to investigate the interior of the plain-looking box in which are fixed the component parts of a complete coil. It is undoubtedly well that such is the case, as invariably when a coil is dissected by those not having the requisite knowledge and skill to properly disconnect and dismount the parts, trouble is experienced in again getting the coil to properly perform its functions.

To save trouble and worry when a coil gets out of order and refuses to work correctly, even when the usual adjustment or cleaning of a trembler blade fails to locate the fault, it is always safer, and cheaper in the long run, to return the coil for examination to the manufacturer or his duly accredited agent.

To show the parts employed in the interior of a coil box, a complete coil has been dissected and the parts photographed. On the left is shown a circular bobbin F, which is made up with a centre Q consisting of a large number of closely-packed straight soft-iron wires about 3/16 in. longer than the bobbin. This is called the core.

Round this core is either a wood or ebonite bobbin to form a casing, which protects the iron wire from contact with the coils or turns of primary wire, this consisting of cotton insulated copper wire of about 19 or 20 gauge, and it also forms a base on which to regularly wind the wire. In some cases the bobbin is not used, but only a thin layer of well-waxed stiff card or paper is wound round the iron wire.

When the primary winding is completed it is well insulated with layers of paraffined paper or oiled silk, and outside this is wound a large number of turns of very fine (about 32 gauge) copper wire. This is called the secondary wiring. The total length of this wire is about one and a half miles with some makes, and in special cases may be increased to five miles or even more.

At E this secondary wiring is shown with the insulating paper and paraffin wax scratched away. In this case absolutely bare wire is used for the secondary wire, and the winding is carried out like a screw-thread, no two turns touching, but a small space is preserved between each turn, and when one complete layer is wound it is tested with a battery and galvanometer, and if correctly wound the whole bobbin is dipped in

a bath of melted paraffin-wax, lifted out and allowed to cool. The effect of this dipping is to deposit a thin film of wax on the wire between the spaces, thus effectively insulating each turn from its neighbour. A layer of paraffined paper is then wrapped over this and the next layer of wire is wound over the paper, and the same treatment of testing and dipping followed out for every layer of wire wound on.

When the requisite amount of wire is wound on, the whole is encased and bound up in oiled silk or paraffin-waxed paper. The ends of both primary and secondary wires are left of sufficient length, as shown at A, R, and C, to enable connections to be readily made to the inside ends of the terminals which are fixed in

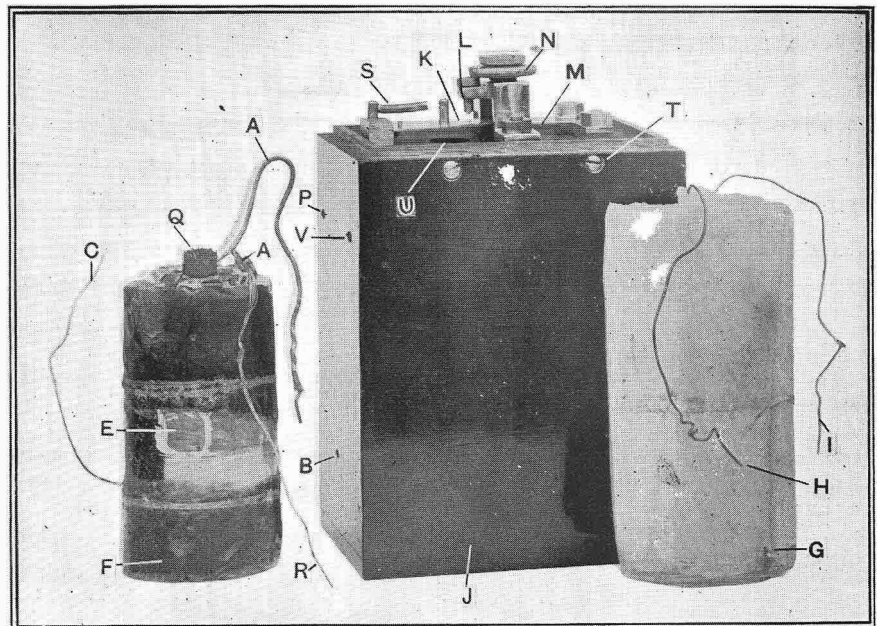


Fig. 1. A dissected induction coil. The same reference letters also apply to the diagrammatic drawing, Fig. 2.

- | | | |
|---|---|--|
| A, primary wire end | J, base of the box or shell, the coil rest at about the level of the white line | R, return wire to primary and secondary windings |
| B, hole for high tension wire C | K, armature or trembler blade | S, spring holding up the armature K |
| C, high tension wire | L, check screw | T, screws securing ebonite top to the coil |
| E, part of the secondary windings uncovered | M, spring blade | U, hole through which the core Q protrudes |
| F, bobbin or coil | N, contact adjusting screw | V, hole for terminal for the wire R |
| G, condenser | P, hole for primary wire A terminal | |
| H and I, wire to the condenser | Q, iron wire centre or core | |

the case at P, V, and B, and also to the terminals communicating with the spring blade M and the bridge, in which is fixed the platinum-pointed adjusting screw N and a porcelain-tipped check screw L, used for the purpose of limiting the motion of the armature blade K, operated by the spring S to raise it to stop L. A condenser G is made up of a series of alternate layers of fine tinfoil and paraffin-waxed paper, the odd number layers of tinfoil are connected together by the wire H, and all the even number layers of tinfoil by the wire I.

The connections I and H, are so made that when the current passing through the primary winding is interrupted by the vibration of the trembler blade M, the condenser acts as a "shunt circuit" and stores up the energy of the "extra current," preventing exces-

sive sparking at the platinum points of the trembler and screw, and this stored-up energy at the next making of the circuit helps the current to rise quickly in the primary coils.

The circular bobbin F which we have seen is really composed of a soft-iron centre surrounded with thick primary and thin secondary wires, is now placed in the wood shell, and the necessary connecting wires are threaded through the holes P, V, and B; then the condenser connections are bent into an accessible position, and the condenser itself is placed by the side of the bobbin F in the shell, and melted paraffin-wax is poured to fill up the space between them and to within about $\frac{3}{8}$ in. of the top of the shell. The wax sets hard and fixes the parts securely in the shell, then the ebonite top carrying the trembler blade, etc., is placed above it, connections to the bridge and trembler blade terminals are made, the top is then secured in the shell by means of four small screws as shown at T, the soft-iron core protruding about $\frac{1}{8}$ in. through the hole in the ebonite shown at V. The coil is then tested, adjustments are made to obtain the best spark with the smallest consumption of current, and the apparatus is then ready for use.

The Action of the Coil.

When an electric current passes from the battery along the connecting wire to terminal P (fig. 2), a connecting wire as shown makes a circuit to the trembler blade M, thence through the platinum point fixed on the blade, through the platinum-pointed adjusting screw N, and back through the crossbridge holding this screw to the primary turns of wire A. It then travels back to terminal V, thence through the switch 1 and contact-maker blade 2, through the contact piece 3 on the commutator to the axle 4, which usually is part of the camshaft, and is therefore in metallic connection with the motor. The current then passes through the body of the motor, thus completing the circuit back to the battery by means of the wire attached to the negative pole of the battery, which is connected to the frame of the machine, or, in technical language, is "earthed," this wire from the battery to the frame being known as the "earth wire."

The fact of passing a low-tension current through the primary coils causes the soft-iron core Q to be immediately turned into a powerful electro-magnet, and this attracts the spring blade K quickly to it. This blade moves about a chisel-shaped end in the coil illustrated and on the bent wire which acts as a hinge. When the blade K is attracted it depresses the end of the spring plate M also, and thus brings its platinum-tipped portion out of contact with the platinum-tipped screw N. The primary circuit is thus broken, the current from the battery ceases to flow, and immediately this occurs the soft-iron core ceases to be a magnet. Therefore, the attraction of it on the blade K ceases, and it is at once restored to its normal position resting against the screw stop L, and the blade M is restored to contact with the screw N, when the whole operation is again resumed so long as the commutator blade 2 makes contact with the metallic piece 3 embedded in its insulating disc.

Every time the circuit of the primary coil is broken by the blade M trembling (and this may happen a large number of times during the time of metallic contact with the commutator blade and disc metal), a current of electricity (known as the secondary current) is induced in the secondary windings E, the voltage produced in this winding being of sufficient tension to

break down the gap at the sparking plug points and thus produce a passage for the high-tension current, which is manifested by the production of a hot spark at the plug points. This spark fires the mixture in the cylinder.

The efficiency of the spark depends on the rapidity with which the primary circuit is broken, also on the strong magnetic field of the soft-iron core when temporarily turned into a strong magnet, and on the larger number of turns in the secondary winding as compared with the primary turns. Although the action of the secondary current is quite independent of metallic contact with the primary, the cutting of the insulated secondary windings by the collapse of the magnetic lines of force on breaking the primary circuit produces the secondary current, which has a voltage several thousand times that of the primary current. If no condenser were fitted the spark produced at the

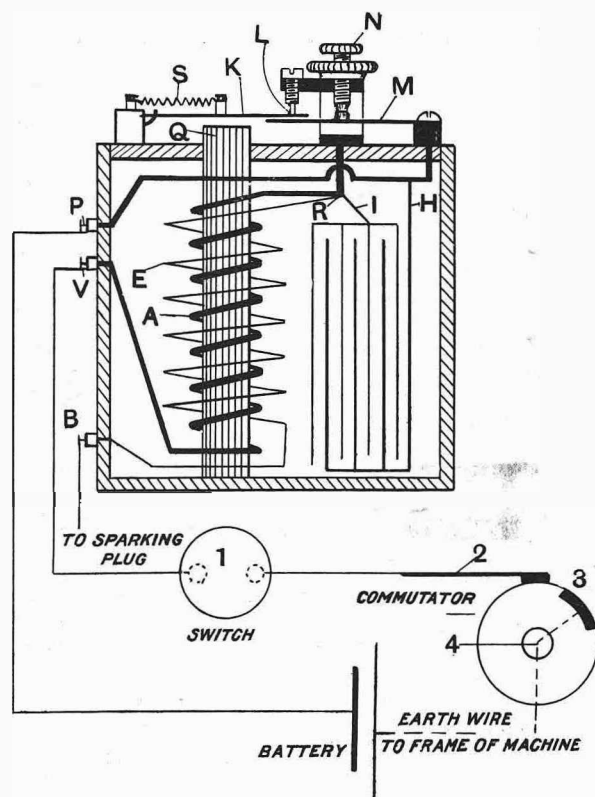


Fig. 2. Diagram showing the connections of an induction coil and how the circuits are completed.

terminals of the secondary circuit would be very feeble indeed, and would be useless for ignition purposes.

As will be seen, the condenser is short-circuited or connected across the blade and bridge screw terminals, its function being to cause the discharge of the extra energy of the current at the breaking of the primary circuit, this discharge being of an oscillatory nature similar to that of a Leyden jar, and demagnetisation of the iron core is rapidly caused, thus increasing the rapidity of action of the coil.

If an inefficient condenser be fitted, a strong spark is obtained at breaking of the circuit between the platinum-pointed screw and trembler blade, which rapidly burns away the contacts and causes unsatisfactory working, frequent adjustments of the screws N becoming necessary, in addition to there being an abnormal consumption of battery current.

CASUAL COMMENTS. By A. J. Wilson.

Easter Penance.

Regarded from the standpoint of a sybarite to whom a holiday means a period of absolutely reposeful indolence, my own Easter vacation cannot be regarded as a conspicuous success. I spent about three hours tinkering my car for every one hour driving it, and at the time of writing my left wrist is still aching from the unaccustomed exertion involved in screwing and unscrewing things in positions inaccessible to my right hand. My chief trouble was a worn pump—the only part of the car which I could not set right in my own motor house during the spring cleaning described in some previous comments. One of the largest firms of motor makers in England had considered it sufficient to renew the packing of asbestos string at each end of the pumpshaft, but after their operations I only drove the car four miles before the water tank had emptied itself by way of the pump bearings. The hot water

Sprag Struggles.

Another series of troubles I eventually discovered to arise from the circumstance that the drop bar of my ratchet sprag had cast its spring, so that it would frequently jolt up and strike against one of the spokes of the ratchet wheel, occasioning sudden frictional contacts which played havoc with my gears. Frequent applications of string and copper wire enabled me to get along in spells varying from one to ten miles at a time. I was at times tempted to discard the ratchet sprag altogether, but always decided to endure the annoyance associated with it rather than incur the risk of sharing the fate of a gentleman whom I once saw climbing the hill out of Guildford; missing his gear, he allowed his car to run backward, so that the star-board mudguard was smashed against the stone wall into which the driver prudently turned rather than risk a worse fate.



Photograph by *Keig, Douglas.*
THE ISLE OF MAN ELIMINATING TRIALS. An awkward turn under the railway near Foxdale village. The course is seen winding over the hill in the background.

had thoroughly softened the leather on the pump wheel, and the pump lubricant had joined the hot water in so thoroughly greasing the leather as to prevent the flywheel getting any bite upon the wheel. Result: Hopeless overheating of the engine and cracking of a cylinder, the darkness of the night preventing me detecting the circumstance that the pump had ceased working, through my not being able to watch the manometer. It took me three days of alternate driving and patching to cover the 120 miles journey I had set out upon. Eventually I managed to diminish the defect by contriving a shield out of a piece of tin plate drilled with a hole to fit over the pump wheel shaft, and so shapen like a scoop as to carry away the grease and water which exuded from the pump, casting the mixture harmlessly down clear of the leather, so that as long as I screwed in some fresh pump grease every three or four miles the pump worked all right. In future I forswear pumps driven by friction wheels.

Too Much of a Brake.

A strange development occurred on Easter Tuesday morning, when, having backed my car out of its coach-house at Bournemouth, I found it impossible to start it forward out of the yard. The car would back all right, but not an inch forward would it budge. An obliging young chauffeur in charge of another car assisted me in diagnosing the cause, which we found to consist in the fact that the foot brake on the countershaft had worn so loose that it gripped with amazing fierceness directly the clutch was let in to drive forward. Not being able to see how to adjust the brake, we had to take it completely off, and I completed my day's journey in the same way as I drove some eight hundred miles over the Irish mountains last summer, with nothing but the hand brake upon which to rely.

Drowned Out.

One little misadventure which I met with in Hampshire taught me that it is not always desirable to go gently through a water-splash. I had forsaken the main

roads and taken to the lanes in search of the novel and picturesque, and suddenly approached a water-splash of unusually formidable dimensions, upon the further side of which stood an unattended pony in a trap. Fearing that if I charged the splash at speed the pony would be frightened and bolt, I entered the water very gently, with the result that the stream turned out to be deeper than I had anticipated, and there was a sudden cloud of steam as my hot exhaust box became flooded, and the engine stopped, leaving me seated in the middle of a sheet of water, helpless, until the owner of the pony drove his trap in to my rescue. Then a search through surrounding counties enabled me to procure a team of horses with a long rope, whereby the car was dragged out to dry land. Why the engine should have stopped so suddenly when the crank case touched the water seems accountable for by the supposition that the exhaust box and part of the exhaust pipe became suddenly filled with water, and occasioned such back pressure as to prevent the exhaust valves emitting the products of combustion.

L.C.C. Red Tape.

I understand that something like 5,000 motor cars and motor cycles have already been registered in the county of London alone, but to judge by my own observations I am afraid that the ratepayers of my native county will not have their burdens very sensibly relieved by virtue of the fees accruing from such registration. The London County Council seems, in fact, to have become hide-bound with the red-tape traditions of the Circumlocution Office. *Par exemple*: I made early application for the registration of my own car and motor cycles, with a view to secure such low numbers as would enable me to use small number plates, and, although I was not so fortunate as Earl Russell in getting a number consisting of a single unit, I was lucky enough to get all three of my numbers within the first hundred. My application was dated December 8th, and the receipt of my cheque was acknowledged with tolerable promptitude, my driver's licence (applied for on the same day) being forwarded twenty days later, along with a printed circular letter informing me that my numbers were A 96, A 97, and A 98, and that copies of the entries in the Council's register relating to this car and these motor cycles would be forwarded to me in due course. It was, however, not until two months later—to be accurate, February 28th—that I received two documents, resembling nothing so much as my wife's "marriage lines," which I found to be copies of the entries in the Council's register relating to my two motor cycles, numbers A 97 and A 98. I thereupon wrote to enquire why the copy of the entry relating to my car, number A 96, had not also been sent to me, and received another foolscap circular letter intimating that a copy of the entry relating to my car number A 96 would be forwarded in due course. Exactly five weeks later I received another foolscap circular letter informing me that the London County Council enclosed therewith a copy of the entry in the Council's register relating to my car number A 96, application for which I had made on December 8th! Thus it took the Council four months, less two days, to furnish me with these documents, although, as above shown, my application was among the first hundred; and the elaborate series of circulars and documents employed suggests that a vast amount of unnecessary circumlocution is taking place in connection with these registrations. Perhaps some reader of arithmetical tendencies will like to work out the little problem:

If it takes the London County Council four months less two days to send out the documents relating to the ninety-sixth application they receive, how long will it take them to complete the 5,000th?

A Petrol Can Dodge.

One of the few literary articles on motor car subjects which I invariably read from beginning to end is the Rev. Arundell Whatton's always interesting "Diary" in the *Club Journal*. Possibly I am slightly biased in my estimation, by reason of the circumstance that I first met Mr. Whatton when we both were enthusiastic bicycle racers, more years ago than I care to remember; if so, the circumstance is merely a proof of the long-enduring sympathy aroused by community of interest in athletic sports. Last week I noticed that the Rev. Mr. Whatton gave us the tip that we can turn the screw plug of a Pratt's motor spirit can with the bottom edge of another can, in case we should not have a tool handy with which to unscrew the plug. But I should have supposed that the Rev. Mr. Whatton was aware of a still handier trick for unscrewing the plugs of Pratt's cans—to wit, the use of the step of the car as a screwdriver. This dodge is so common that I should have imagined that it was universally known by this time. The step being in such a rigid and convenient position enables us to fit the slotted can plug on to its edge and turn the can itself with an irresistible leverage.

Tiller Steering.

The question of whether the early forms of tiller steering were as good as the now almost universal wheel steering was settled long ago in favour of the latter, and, so far as large cars are concerned, there are so few exceptions as suffice to proverbially prove the rule, the Lanchester and Duryea representing a minority so small as to be regarded as insignificant. For my own part, I certainly like a form of steering that can be controlled by one hand as easily as by the other, not to speak of the additional security one feels when taking a firm grip of the steering wheel with both hands on an emergency when travelling fast or negotiating ticklish corners. But I often wonder whether the tiller form of steering might not be suitable for small, light, two-seated cars of low power driven by orthodox petrol engines, as they seem to be for such handy little runabouts as the Locomobile and other light cars of the American type. I was particularly impressed with this idea when, at the Agricultural Hall Show, I stood watching some cars being manoeuvred in and out of the crowded yard, the ease with which a tiller-controlled car was steered, backed, and driven forward being strikingly in contrast to the awkwardness with which another small car with wheel steering was handled. The steering wheels of very small diameter which are fitted to most small cars have so little leverage as to destroy the advantage possessed by the steering wheels of larger diameter fitted to full-sized cars; and I suggest that the makers of small cars might profitably experiment with tillers of the Locomobile type, the leverage possessed by which must be ample for the weight that has to be controlled.

There are likely to be quite a number of Argylls in South Africa before long, as a British firm with distributing depots all over the country have become agents for these cars, and a number have already been shipped to them.

THE ISLE OF MAN ELIMINATING TRIALS.

A SERIES OF TRIALS WILL TAKE PLACE ON TUESDAY NEXT, MAY 10TH, TO SELECT THE THREE CARS AND DRIVERS TO REPRESENT ENGLAND IN THE INTERNATIONAL RACE FOR THE GORDON-BENNETT CUP. THE DISTANCE ONCE ROUND THE COURSE IS 51½ MILES.

Before the route for the Gordon-Bennett eliminating trials, as here illustrated and described, was finally decided upon, Mr. Orde, the energetic secretary of the Automobile Club, spent a considerable amount of time prospecting the island with a view to choosing the most suitable route. From the following description and the accompanying map it will be seen that a good trials course has been mapped out, and the results of the trials should be from every point of view more satisfactory than a series of wild sprints over a kilometre and mile course.

As now arranged, the cars will start from the Quarter Bridge, Douglas, in a southerly direction. The course in the North turns off the Kirkmichael and Ramsey Road at Ballaugh, past Ballaugh Old Church, and *via* the Sandy Gate to Jurby Roads, and enters Ramsey near St. Olave's Church. This gives a longer and quicker route than going by the Kirkmichael-Ramsey Road, and, in addition, the road for the most part is flat, and has some lovely straight stretches on it.

The route from Ramsey back to the starting point again takes the mountain road *via* Snaefell, instead of going along the Laxey Road. There are two reasons for employing this route. In the first place, the village of Laxey will be avoided, and the mountain is quieter and has fewer sharp and awkward turns. The Southern—Castletown—end of the route turns off to the left at Ballasalla, passes King William's College, and gets, by means of Victoria Road, missing the busy parts of Castletown, on to the Malew cross roads. As originally arranged, the route turned to the right at Ballasalla, through the village, with several dangerous turns. The circuit may be estimated at fifty-three or fifty-four miles, and, on the whole, the roads are good and wide, and few corners have to be negotiated. Two very risky hills—Richmond and Craig Willie's—have to be ascended instead of being descended, as was the case when the course was first mapped out. The Highway Board has undertaken to divert the roads at several nasty curves temporarily so as to minimise the bends.

To go into details in regard to the route, the start will be made from a level piece of ground between Bray Hill and the Quarter Bridge, and descending a little steep the cars will bowl along merrily over Castle-town Road to the foot of Richmond Hill—a very steep piece, about half a mile long, but good road and wide. From the summit comes a level spin of three-quarters of a mile to Mount Murray, and by alternate rise and fall, not at all stiff, we pass through Santon to a double curve at the bottom of Blackboard Bridge

hill—a short piece rising about 1 in 50—and a little further on we come to a nasty corner. Crossing the railway bridge at this point, there is a slight rise of about one hundred yards, and then an almost straight even road goes on to Ballasalla village, where we have almost a right angle to negotiate. The road then is good, with only one or two sharp turns, all along Victoria Road, skirting Castletown, and until Malew cross roads are reached. There are no danger spots in this length, but from the cross roads, past the limekilns, and on to

Hill the though pass

the top of Silverburn road is rather narrow, allowing two carts to comfortably.

Making the Silverburn Hill, the motorist hails with pleasure a splendid run of about five miles to Foxdale—a one-street village, but

the great silver and lead-mining village of the island.

From the top of the road is rather steep for about three-quarters of a mile to the railway bridge

corner, which is very dangerous, having nearly a right-angle turn to the road, shaped somewhat in the form of the letter S, where it passes under the railway line bridge. Passing along the Ballacraigne and St.

John's roads to the junction of the Peel and Glen Helen roads,

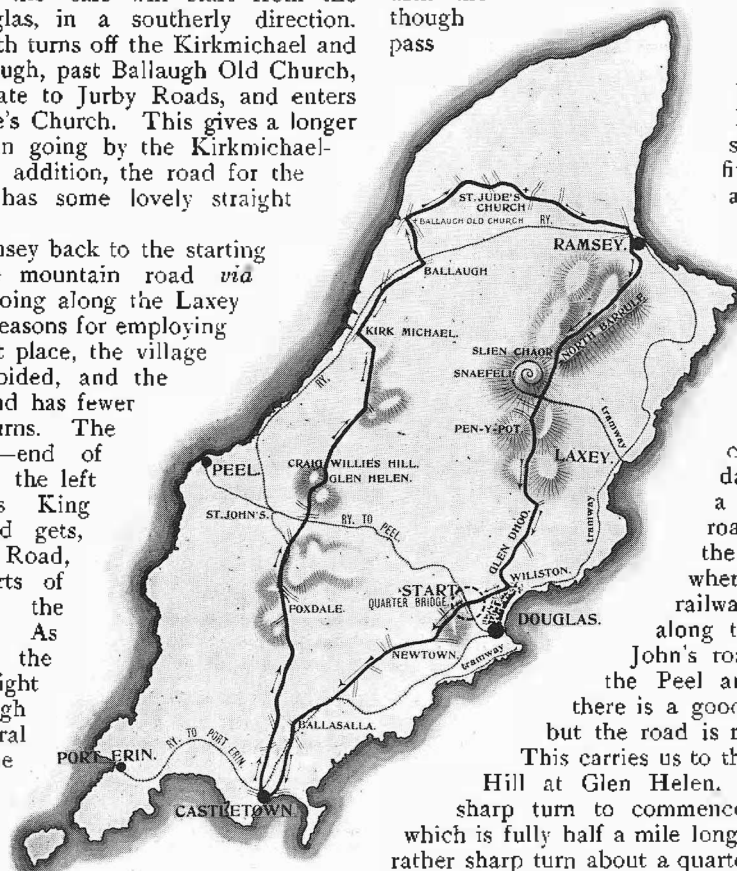
there is a good run with easy curves, but the road is rather narrow in places.

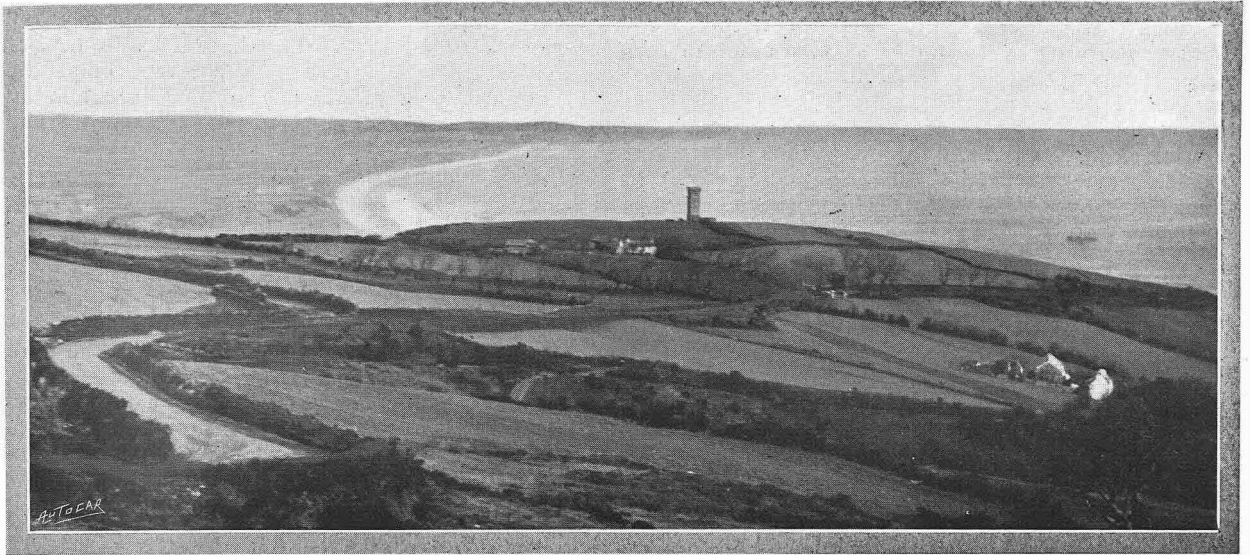
This carries us to the foot of Craig Willie's

Hill at Glen Helen, when we get a rather sharp turn to commence the rise of the hill,

which is fully half a mile long and very steep, with a rather sharp turn about a quarter of the way up, at the refreshment house. From the top of the hill is a run on almost straight road, good surface and wide, to Kirkmichael—a small village, having two rather steep rises and falls in it. From here, the run of about three miles to Ballaugh is on almost level road. At the old church there is a quick turn into the Sandy Gate and Jurby Road, which is good straight on to Ramsey.

Skirting the town of Ramsey by Bowring Road, Albert Road, and May Hill, the cars will pass on to the Glen and to the mountain road, which rises rather steeply for about half a mile, and has a couple of easy turns. Half a mile of level road brings the motorist to the Albert Tower, erected in memory of the late Prince Consort's visit to Ramsey, when His Majesty the King was a boy. Here there is a sharp corner and rise to the top of the Glen, and then comes a pretty steep gradient for a couple of miles to Sulby river bridge, where there is a sharp, nasty double turn. From here a five-mile





Photograph by

On the road southward from Ramsey

J. B. Gowen, Ramsey.

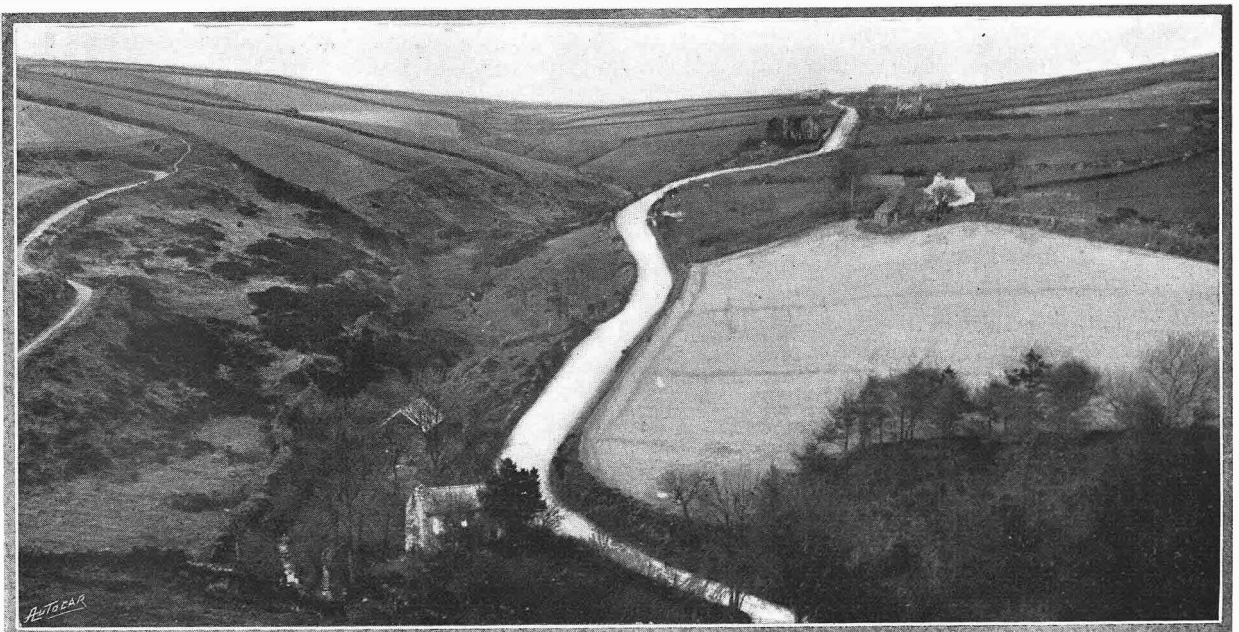
capital run can be made on level road to the Snaefell Hotel, near the summit of the great mountain. A mile or so further on there is a curve requiring care at Windy Corner, and then we get a quarter of a mile straight slight fall to Noble's Gate, from where to Keppell Gate is a fairly good spin of about three miles. Leaving Keppell, the descent for half a mile is very steep to Crag-na-Baa Hotel, where there is a very sharp turn. From here there is a decent run home, the Highway Board diverting nasty curves at Cronk-na-Berry and Walteson's corner, and at the top of Bray Hill. The hill is very steep as far as Cronkbourne four roads, and the finish is done on a mile of good straight road.

In regard to gradients, the total climb to the summit of the mountain road, before it dips to descend towards Douglas, is 1,320 feet, which is attained in six miles, working out at an average gradient of 1 in 24.

Curiously enough, the section of the route which, as to its northerly portion runs west and east, traverses a district called "The Curragh"—a name which will recall the great driving in Ireland last year. In the route, Mr. Orde's idea has been to avoid towns and large villages as much as possible, and this object he appears to have achieved.

The Conditions of the Trials.

The regulation in the conditions of the Isle of Man eliminating trials which refers to the fixing of a maximum and minimum time for the completion of each section is exciting much interest in automobile circles. No advantage, it is said, will accrue to any competing car which covers any section in less than the minimum time, but if the maximum is exceeded a note will be taken of the fact. As we are able to understand this apparently incongruous condition, it

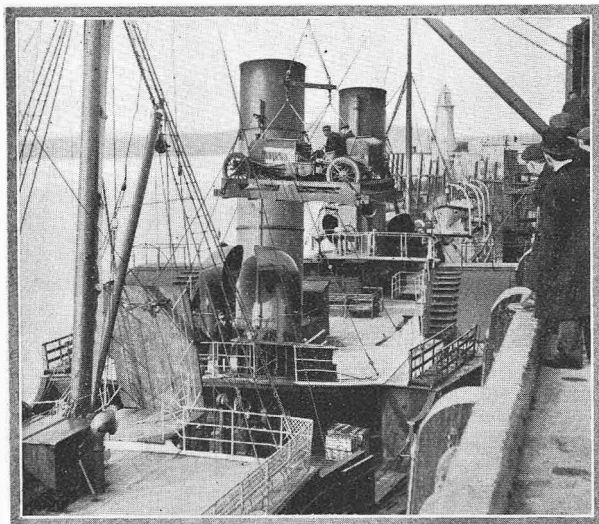


Photograph by

Craig Willie's hill, one of the long hills on the trials course.

T. Keig, Douglas.

has been so set down in order that the Isle of Man event may be a trial and not a race, for a race the Races Committee strongly desire that it should not be considered. The times of the performances of the cars on each circuit and section will be carefully scrutinised for regularity of running, due regard, of course, being had to the average speed of the car from start to finish, while the speed on the Wednesday's hill-climb and during the Douglas sprinting tests will



Landing the trial cars at Douglas.

also be taken into consideration. Further, arrangements are to be made by which the speed of the acceleration of the car will be observed, by electrical timing at various stages of the speed tests, which must, therefore, be made from a standing start. The tests are, we hear, to be made electrically, but if this is so, it is to be hoped that some really reliable and proved scheme of electrical timing will be installed and handled by reliable operators. The experimental electrical timing hitherto instituted by the club members has resulted in such utter failures that we hope the club will not entrust, or attempt to entrust, the decision of so important a question as the selection

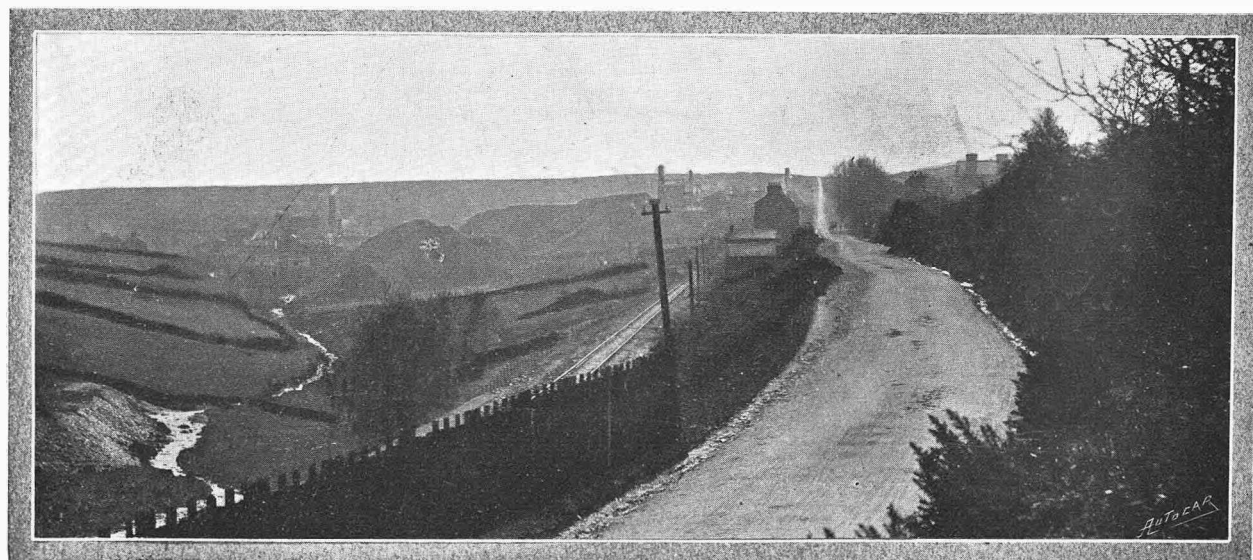
of the British champions to processes which have only as yet succeeded in proving themselves to be both unsatisfactory and incorrect. What the competitors, or entrants at least, will say to the maximum and minimum time conditions so unexpectedly sprung upon them must at the moment be left to the imagination, but one firm at least, we hear, are objecting furiously, and so regard the condition that, though they have been to almost inconceivable inconvenience and huge expense to put their cars on the line in time, they are now likely to withdraw them from the trial altogether, so absurd and unfair do they consider any limitation of speed between controls. The French decision will be made on the watch, and on the watch alone; but as matters appear with us, it would seem that the selection of the English representative cars is to be made *in camera* by a species of judicial deduction, the genuineness of which half the world will be unable to see and the other half will refuse to comprehend. Whatever may be said as to the selective method or system, we foresee much trouble and recrimination awaiting those charged with the heavy task of choice. To put the matter from one competitor's point of view—and this view may be shared by many others for all we know—the choice of the English championing cars is to be sacrificed to the possibility of future motor racing in Manxland. If this is the case, better the club had satisfied the Belgic gold lust, and run the trials over the Circuit des Ardennes for £300 per car.

The programme of the trials is as follows:

Monday, May 9. Weighing and inspection.
 Tuesday, .. 10. Eight hours trial and inspection.
 Wednesday, .. 11. Hill-climbing trial.
 Thursday, .. 12. Acceleration and speed trial.

Mr. Edge, who has critically driven over the Isle of Man course, is of the opinion that it will prove an extremely severe test both for men and cars.

Mr. C. Rawlinson, of Darracq, Ltd., assures us that in the construction of the Darracq cars which have been built in Wolverhampton and Glasgow for participation in the Gordon-Bennett eliminating trials, British labour, and British labour only, has been employed under the constant surveillance of himself and Mr. Pullenger, of Messrs. Marston and Co., of Wolverhampton.



A long straight run down the hill through Foxdale village. The railway line seen on the left is the one beneath which the cars pass and is seen in the illustration on page 610. Both photographs on this page are by T. Keig, Douglas.

THE ACCESSORIES OF A MOTOR CAR.

By Lieut. W. Windham.

Tyre Inflators.

I should not recommend anyone to purchase the cheap pumps which are made, nor is it necessary to buy the too expensive ones, which are fitted with a pressure gauge. These usually get out of order or broken, and are really of very little use. The accustomed eye can always tell when the tyres are sufficiently inflated. Care should be used to see that the nozzle actually fits your valves, and I should advise one tying the adapter on to the pump tubing, as it is very likely to get lost.

Accumulators.

I find there are very few good accumulators in the market. The same fault exists in nearly all of them—that is, having the terminals on the top, where both the wires and terminals get dirty from the fumes and splashing of the acid. I have used and owned nearly every sort from time to time in the last six years, and find there is nothing in the market, to my idea, which equals woven glass accumulators.

Primary Dry Batteries.

I should not advise the use of these. They are very uncertain. I have known new ones to register six amperes and give a good spark at the plug, but the engine refused to start, and after a day's work on the car trying to discover the reason why it would not start, another new battery of the same make was finally substituted, and off went the engine. When connecting them up, do not forget the centre terminal is the positive (carbon) and the side wire or terminal is the negative (or zinc one). If the engine will not start, owing to the dry battery, try warming the cells, and close the points of the plug till they almost touch.

Spark Plug.

There are so many of these advertised and made that it would be impossible to go into the qualifications of the various makes. I have found the Pogon very good and practically unbreakable; also the E.I.C., only the latter are very liable, I find, to get a deposit on the inside of the plug and for the spark to jump across on the inside instead of across the points. With the former this seems impossible. Makers of cars have a habit of not joining the high-tension wire properly to the plug. The consequence is that the wires break off. I should advise one to have a piece of thick brass or copper, and with fine wire bind it on to the high-tension wire, opening facing downwards, and covering up the join with strips of rubber or insulating tape. This makes a neat connection, and even if the nut should get adrift the wire will not fall off.

The porcelain is so short on some plugs that the spark will jump across from the end of the brass on the porcelain to the shoulder of the plug. This should be guarded against when choosing one. The points on a plug should be filed quite square, and not be pointed (as sold). It is not necessary to file them or scrape them when they are dirty. A little petrol from a flooded carburetter and a brush are sufficient to clean them.

Horns.

When choosing a horn, it is necessary to see that the clip for fastening it to the steering column is made to fit; some of the clips are made adjustable, so that they can be screwed on in any position or angle which is convenient. The mouth of the horn should be covered over with fine gauze. This is very necessary,

especially when fitted on the steering column (where the horn is usually tilted slightly upwards), as the rain is likely to get blown down into the tongue and prevent it sounding. This, too, may happen with the dust and grit from the road. If the horn is fitted with a dust screen, see that adequate means are provided for fastening it to the horn, as they are very liable to come off. The horns which are fitted with tubing should have two clips—one on the horn and one on the bulb. Very often only one is supplied. The tubing should for choice be made of white metal and not brass, the latter being too heavy.

Densimeters.

These are occasionally very useful for testing the density of the petrol, only they are rather liable to break. They are easily made. Weigh the petrol which is usually used, then get a small and thin float and weight it till it stands upright in the petrol, then mark the height of the petrol on it. Thus it will be easily seen whether the petrol is heavier or lighter than usually used. .700 is about the average weight of petrol which is sold; the same petrol will weigh a little more in winter and a little less in summer. The red mark on a densimeter should be below the level of the petrol of .680 density. For use in the engine, petrol should not weigh more than .720 (maximum winter weight). Densimeters are made to weigh .680 petrol, which used to be the standard weight sold.

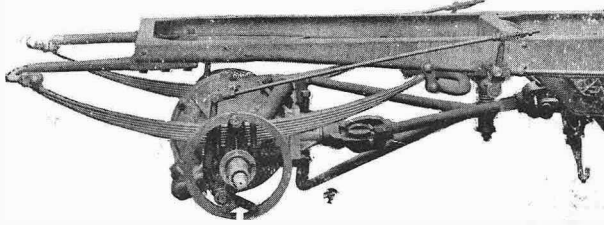
Tools, etc., to be carried as likely to be useful.

- One big spanner opening to 4in. for a large car and 3in. for a small one.
- One small King Dick spanner.
- One pair Quick Grip pliers made to take a nut.
- One pair ordinary pliers for cutting wire, etc.
- One set of files, round, flat, half-round, and half-flat.
- One cold steel chisel.
- One long steel punch, one short punch.
- One long screwdriver, one small screwdriver.
- One oilcan (Lucas), with the hole for filling it at the bottom and not divided in the centre.
- One small pot of grease.
- One hammer; a big spanner is usually found to be sufficient for most purposes.
- One small box of split pins (assorted).
- One repairing outfit.
- One tin of composition for repairing slits or cuts in the outer cover. I find the Westwood cover repairer the best.
- Some thick and thin wire, waste, cloths, etc.
- One tin of composition for vulcanising the patches on the inner tube (solution is a thing of the past).
- One roll of insulating tape.
- One spare tube.
- One spare valve.
- One small bottle of paraffin for the side and tail lamps.
- One tin of carbide for the acetylene lamps.
- One petrol funnel.
- One knife with a long blade.
- One densimeter.
- One voltmeter (if required).
- One jack (the Millennium Universal is a useful form).
- One tyre putty in case of bursts.
- One set spare washers.
- One spare piston ring.
- One tyre pump.
- One set of box spanners (French or English, according to the make of the car).
- One spare link (if a chain is used).
- One spare sparking plug (if used).
- One spare tappet (if low tension magnet is used).
- One sheet of fine emery cloth.
- One trembler, contact screw (if required).
- Gloves, oilskin coat, and oilskin hat.
- Map, driving license, etc.

(Concluded from page 581).

THE 24 H.P. DIAMANT CAR.

The Diamant car, which was shown at the late Agricultural Hall Show in St. Edward's Hall, was described briefly in our show report, but now that we are enabled to illustrate both the engine and chassis, a few remarks upon the salient points of both may be of

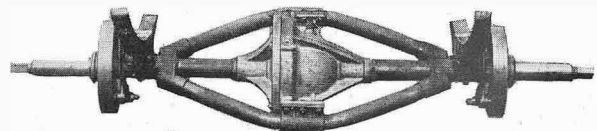


Side view of the rear axle showing the propeller-shaft, the method of staying the axle and the expanding brakes.

interest, as the engine particularly varies somewhat from the usual type of four-cylinder motor in several respects. The stroke of the engine is 130 mm., and the bore of the cylinder 90 mm. These are all separate castings bolted to an aluminium crank case, each by four bolts as shown, and have their valve chambers cast upon their upper ends in turret form on the right-hand side, slightly forward of the centre of each cylinder. The extended exhaust port is also part of the cylinder casting, the exhaust being led round the cylinder to the left-hand side, where it is discharged into an exhaust pot, common to all four cylinders. The crankshaft runs in plain bearings between each crank, and as to the ends on balls. The induction valves are mechanically actuated from the single layshaft by means of long vertical rods passing through steadies bolted to lugs cast on the cylinders. These rods are immediately beneath, and serve to actuate the tappet levers which depress and open the induction valves. The exhaust valve spindles and risers are seen beneath the turret valve boxes already mentioned. Side by side with the induction valve rods are the striking rods of the magneto make-and-break tappet, the upper ends of these rods passing through swivelling guides, the lower ends being carried on a plate sliding in a guide formed in the crank chamber. These plates are connected to the spindle seen running nearly the whole length of the crank

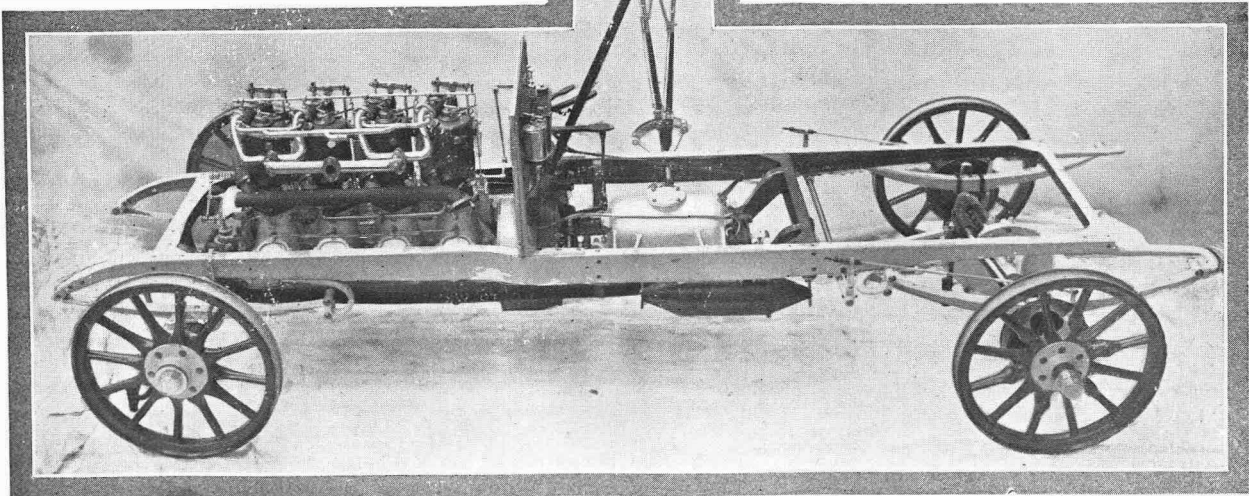
chamber, which spindle can be actuated from the steering wheel, and the roller ends of the ignition rods thus swung towards or away from the ignition cams on the layshaft—a neat and simple manner of obtaining the variation of the ignition timing. The magneto is driven by encased gearing off the layshaft, and the centrifugal circulating pump is driven by a dog from the end of the armature spindle projecting forward. A separate cam case is formed to each cylinder, and separate inspection lids are provided in the crank chamber to each crank. The carburetter is of somewhat novel design, being controlled by the governor, which, through the agency of suitable levers, operates a piston throttle valve and a supplementary cold-air inlet. When in action the governor opens the extra air valve, thus admitting a suitable quantity of pure air as the engine speed increases up to the point when the piston throttle is set to cut down the charge supply. The action of the governor can be regulated by a pedal, and also a hand lever set in the centre of the steering wheel.

The drive passes from the engine through a friction clutch of the usual form, save that the male portion of the clutch is an addition, and is held to the flywheel



The Diamant rear axle showing the tube truss.

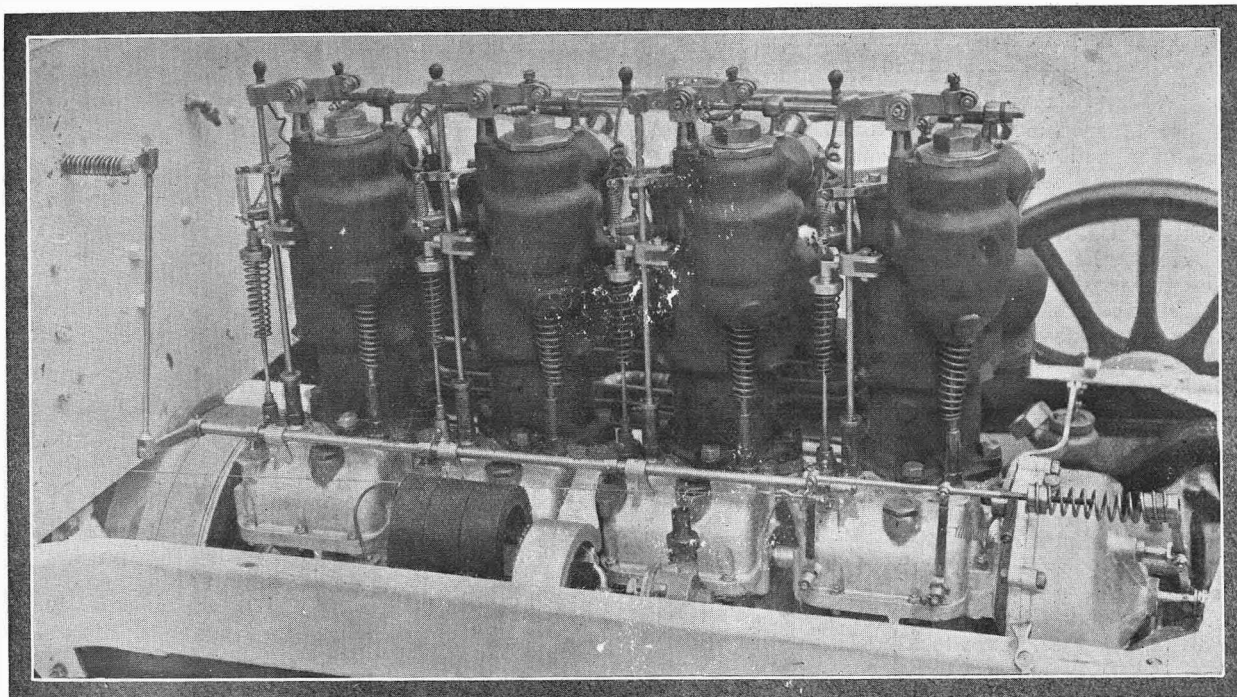
in such a manner that by detaching the four screws and the coupling block between the clutch and gear-shaft the clutch can be dropped quite clear of all the other parts. A gear of the ordinary sliding type affords three speeds forward and reverse, but the construction of the propeller-shaft is rather in advance of the usual forms. The universal joint immediately behind the gear box is theoretically correct in construction, while the rear connection with the driving bevel wheel spindle is by means of a double-clawed telescopic joint, having a floating quadruply-slotted block between the claws, which compensates for motion in any direction. The rear axle sleeve is very strongly trussed by stout tubes passing



from end to end over the differential gear box, and the radius rods pass from the top and bottom of the differential gear box respectively to a uniting stamping, which is capable of vertical movement between strong spiral springs on a tube descending vertically from the cross member of the frame.

A powerful double-grip brake is applied to a cast-iron drum on the rear end of gearshaft, and expanding brakes are applied by a side lever through short arms on the

ends of a rocking shaft, the arms bearing on the draw-rods through springs, which serve to compensate the brake application. The frame is of stamped steel, inswept forward of the dashboard to afford greater steering lock. The chassis of this car can be inspected at the International Motor Car Co.'s depot, 76, High Street, Marylebone, and, as may be gathered from the above particulars, is well worth examination, as it possesses a number of interesting features.



A right-hand side view of the 24 h.p. Diamant engine, showing the valve boxes and the method of actuating the valves and the magneto tappet rods.

TAR-MAC FOR ROAD MAKING.

Automobilists who regularly peruse our columns will remember that we have from time to time commented upon the road metalling invented by Mr. Hooley, surveyor to the County Council of Nottingham, and of which that gentleman spoke at the last annual dinner of the Nottingham Automobile Club. We have waited with considerable interest for other details of this material, which, according to various reports, appears likely to settle the road difficulty so far as mud and dust are concerned; but it was not until last Friday that we were afforded an opportunity of seeing the Tar-Mac laid and in course of being laid. It is to the Rural District Council of Staines and their energetic surveyor, Mr. G. W. Manning, that the thanks of the community at large are due for experimenting with this new material. Mr. Manning has laid about 300ft. more or less on the Kingston and Staines main road, at a point about a mile and a half short of Staines. This is a road which has only lately been made up as to at least half of its breadth, and the Staines surveyor selected Mr. Hooley's patent material largely upon this account. The party that travelled down to Staines for the purpose of inspecting the newly-laid surface consisted of Messrs. John Parker, M.I.C.E., S. Pilcher, C. H. Warne, J. Mullins, Harry J. Swindley (*The Autocar*), and N. J. Temperley, the well-known patentee and proprietor of the Temperley Transporter. The

journey was most comfortably made in a fast and easy running 24 h.p. Spyker car, driven by Mr. Montague Atkinson, and in a 9 h.p. Darracq supplied by Automobilia, Ltd., for the run. Just before reaching the trial piece, a slight shower of rain fell, which practically prevented any tests as to dust raising; but, we may say, we have been over the road since on a very dusty afternoon, and found that the dust cloud following us while travelling over the ordinary road surfaces absolutely ceased and disappeared as soon as we struck the Hooley Tar-Mac. Mr. Manning tells us that this material costs altogether eighteenpence per ton more to lay and establish than ordinary granite macadam; but, as he expects to be able to very largely reduce, if not abolish watering altogether, and also is confident that the life of the road will be increased by at least one hundred per cent., it looks as if the Tar-Mac, while fulfilling the conditions necessary for modern road traffic, will come out much cheaper than the ordinary unsatisfactory and costly metalling. We shall visit this stretch of road from time to time and report further on its character, but from what we know of road construction, it certainly appears to us that in Tar-Mac the material for road construction has probably been found. It will be remembered that Tar-Mac is broken iron furnace slag treated with gas tar directly at the furnace mouth.

CONTINENTAL NOTES AND NEWS.

Arras Automobile Week.

An automobile week has been organised from the 24th to the 29th of May at Arras, by the Automobile Club du Nord, on the occasion of the Arras Exhibition, which will be held at that date. This automobile week will be important, and offers to competitors a complete programme which will suit all requirements. The event has been definitely settled, and the Prefectoral authorisation has been received.

The Race from Paris to the Sea.

The Monaco meeting of automobile boats is only just over, and yet another trial is already announced. There will, indeed, be two trials held in August, which will be organised by *Le Velo* and the *Yachting Gazette*. At the end of this competition a second event will take place, namely, the Gaston-Menier cup race, which was also run for the first time last year.

The race from Paris to the sea will take place from the 14th to the 22nd of August, and will include two classes—racers and cruisers. The racers will go over the course in four stages, namely:

- (1.) From Paris to Vernon.
- (2.) From Vernon to Rouen.
- (3.) From Rouen to Tancarville.
- (4.) From Havre to Trouville.

The part of the course between Tancarville and Havre will be neutralised.

The cruisers will go over the course in the following stages:

- (1.) From Paris to Mantes.
- (2.) From Mantes to Elbœuf.
- (3.) From Elbœuf to Rouen.
- (4.) From Rouen to Caudebec-en-Caux.
- (5.) From Caudebec to Tancarville and Havre.
- (6.) From Havre to Trouville.

Last year the first race from Paris to the sea was carried off brilliantly by a Mercedes, which covered the course in 11h. 16m. 21 $\frac{1}{2}$ s.

The Gaston-Menier Cup.

Just the same as last year, at the end of the race from Paris to the sea the Gaston-Menier cup will be competed for over a course of three nautical miles in

the sea. This competition is open to all automobile boats of a maximum length of twelve metres from stern to stern, not counting the rudder, unless the rudder should be at the same time a propeller. Foreign 40ft. boats will be reckoned within the twelve metres, and there is no limit of horse-power or cylinder capacity. The Gaston-Menier cup must be placed by the winner in the rooms of the Automobile Club which has its headquarters in the capital town of the State to which the winning boat shall belong. It is a challenge cup, and as the object of it is to encourage the construction of motors for marine purposes, it must be won three times before it becomes the property of the winner, and each of the three times the winning boat must have one or more motors made by the same constructor.

Here, therefore, are two competitions for automobile boats, which, coming after the Monaco meeting, will add new interest to this movement, and, profiting by the experiences gained at Monaco, the different manufacturers ought to be able to produce some most interesting results in the competition, and the Trouville automobile boat meeting in the month of August should be an attractive event.

Trials of Pneumatic Tyres.

The question of pneumatic tyres and anti-skid apparatus is coming more and more to the fore, and the trials organised by the Automobile Club of Seine-et-Oise have started the ball rolling, and we hear that there is going to be organised towards the end of May a trial of pneumatic tyres on the macadamised road which follows the Seine near Neuilly. The different systems of tyres will be tried successively on an electric automobile, with wheels 1,020 millimetres in diameter with 120 millimetre tyres. The car chosen for the trial is a simple chassis with a driver's seat. The total weight of the chassis is over 32 cwt., and the weight on the hind wheels 19 $\frac{1}{2}$ cwt. The trials will consist in calculating the comparative results attained. (1.) By smooth rubber tyres (first with a normal tread and second with a narrow tread), and then with anti-skid apparatus. The tyres will also be tried with a pressure in the inner tube successively of 90 lbs., 75 lbs., and 60 lbs. to the square inch. The speed at



The Ivel agricultura motor drawing a three-furrow plough at the agricultural trials at Versailles.

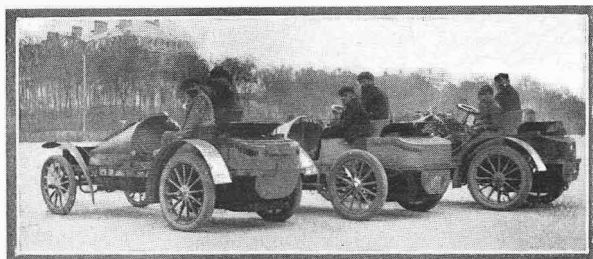
which the trials will be held will be four, eleven, and twenty miles an hour.

A French Delegate for the Non-skid Trials.

The A.C.G.B. and I. having requested the A.C.F. to designate a representative to join the technical committee presiding over the non-skid trials in England, the president of the A.C.F., representing the technical commission, has appointed M. Périssé to attend the non-skid trials on the 7th of May.

The French Eliminating Trials.

The course for the French eliminating trials for the choice of the Gordon-Bennett cars has been modified by the order of the Minister of the Interior, who considered that the circuit as first adopted went through



A rear view of the three Serpollet Gordon-Bennett racers

a country which was too populated and which contained too many sharp curves. The first route chosen started from Mazargan and went through Vouziers, turning north to Le Chesne, and then along a hilly, tortuous road to Tannay, on the route to Sedan, and through Chemery to Donchery, where, instead of going on to Sedan, it turned westward to Poix, Flize, and Boulzicourt, and southward to Rethel, by the Crêtes de Poix, Faissault, and Novy-Chevrières, and from Rethel back to Mazargan. The circuit thus established was 128 kilometres 500 metres in length, and the competitors were to do it four times over. As soon as the modification was announced, the competitors expressed their disapproval and their opinion that the proposed new route cuts the circuit practically in half by taking a westward course at Le Chesne across to Bouffalmont, and reduces the length of the circuit to 92 kilometres = 57½ miles. In the new circuit all the northern portion is suppressed, as also the climb up to the Crêtes de Poix. Reduced to 92 kilometres, it will be necessary to go six times round to accomplish the required distance. One of the competitors complained also that the Circuit des Ardennes as now arranged had not the hills and turns necessary to prove which were the most suitable cars to compete on a course like the Taunus in Germany, for the new circuit misses out the hilly parts of Chemery and Crêtes de Poix. It means testing on a level course the Gordon-

Bennett cars which are to compete on a hilly one.

Manufacturers and changes in the course.

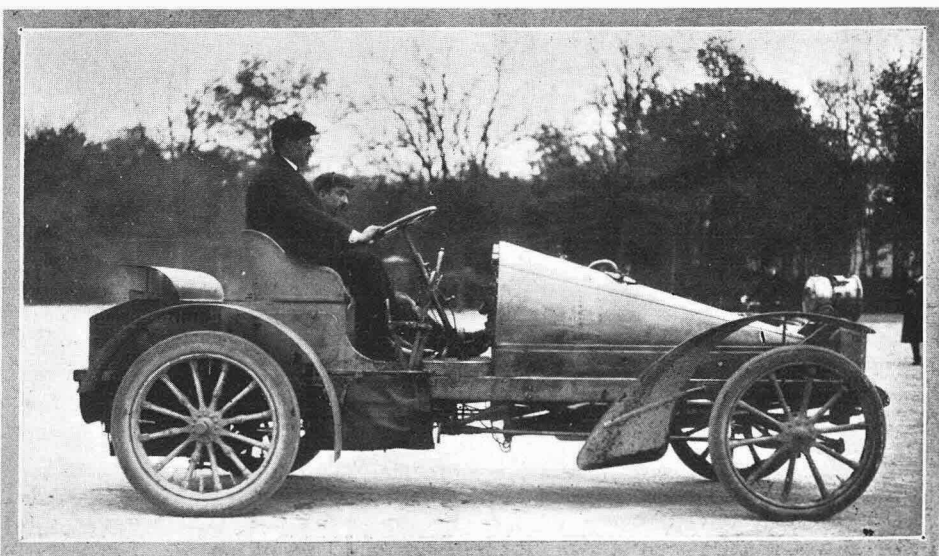
The principal manufacturers met to discuss the matter on Friday last week. Representatives of the following firms were present: Gobron-Brillié, Georges-Richard, De Dietrich, Turcat-Méry, Hotchkiss, Darracq, Mors, and Panhard and Levassor. M. Michelin also attended the meeting to give his assistance and advice. M. René de Knyff explained the motives which had decided the sporting committee of the A.C.F. to change the route of the race, and declared that the Minister of the Interior would only grant his authorisation for the larger circuit if the number of neutralisations were greatly increased—increased so much that there would be constant stops in the northern part of the course which would entirely spoil the race.

M. René de Knyff therefore proposed that the shortened circuit should be adopted, as the best means of getting out of a bad situation. In addition to this, the question of the number and length of the neutralisations was discussed, as also the question where and how the supply of petrol, etc., should take place, and the following recommendations were made:

First. That the number of neutralisations should be as small as possible and confined to four, namely, Vouziers, Le Chesne, Novy-Chevrières at the level crossing, and Rethel. As the competitors have to go six times round the course, there will therefore be twenty-four neutralisations per car, twenty-four starts, and twenty-four stops, which plus the first start and the final stop at Mazargan, makes altogether fifty controls of time to be taken per car, which being repeated twenty-nine times makes the total number 1,450.

Second. That each car should be kept long enough in each neutralised spot, so that there should be no racing out of the controls. Thus each car should be delayed two minutes at Vouziers, three minutes at Le Chesne, two minutes at Novy-Chevrières, and three minutes at Rethel. In this manner the organisation will be perfect, and accidents will be avoided, for the course as at present proposed will be less secure than the larger course on account of the extra number of the passings that there will be.

In addition to this, the increase in the number of calculations of time to be made at the controls will



One of the Serpollet steam cars which are entered for the French eliminating trials

Continental Notes and News.

complicate matters, and it will be quite possible that the winner of the race will arrive at the winning-post half an hour after the first car has completed the course, and it will not be known till some time after the race is finished who is the winner.

Following the decision with regard to the shortening of the course, M. Tampier, the official timekeeper of the Automobile Club de France, has gone over the new route, and will place the report on it before the racing committee of the Automobile Club on his return.

A Petrol Consumption Competition.

After the interesting trials made last year at the Nice meeting and this year at the Cannes meeting, the Automobile Club of Marseilles announces that on the 15th of May next it will hold a petrol consumption competition, which will take the following form:

Before starting, the cars will be drawn up in order with all their passengers on board, and to each car will be given a can containing half a litre of petrol for each hundred kilogrammes of weight. The winner will be the car that goes furthest on this supply.

Driving Licenses.

The extra-Parliamentary Commission for the circulation of automobiles has held another meeting at the Ministry of the Interior, at which the question of driving licenses was considered, and after much discussion it was decided that the *status quo* should be maintained, and everyone should be obliged to obtain driving licenses in the usual manner. It had been proposed to hand over the examining of candidates to the Association Générale Automobile, but too many difficulties were found in the way of such an arrangement, which has been abandoned for the present.

A Touring Competition.

In 1903 the Automobile Club of Touraine organised a touring competition, which obtained a great measure of success, and it has been decided to organise a meeting to be held on the 12th, 13th, 14th, and 15th of May, for touring vehicles, including motor cycles. The competition will be over a total distance of about three hundred miles. It will be run in two days; that is to say, on the 13th and 14th of May, round about the city of Tours. The other days will be occupied

with the weighing and the exhibiting of the cars. All the seats in the cars must be occupied during the whole course, and the weight of each passenger must not be less than eleven stones on the average, or should there be no passenger, some thirteen and a half stones weight must be carried. The cars must not travel any faster than the speed allowed by law, and after each day's running the car must come back to the garage and have its reservoirs filled and sealed. There will be three categories of cars, namely:

1. Cars whose chassis cost not more than £240.
2. Cars whose chassis cost between £240 and £680.
3. Cars whose chassis cost more than £680.

The classification will be as follows:

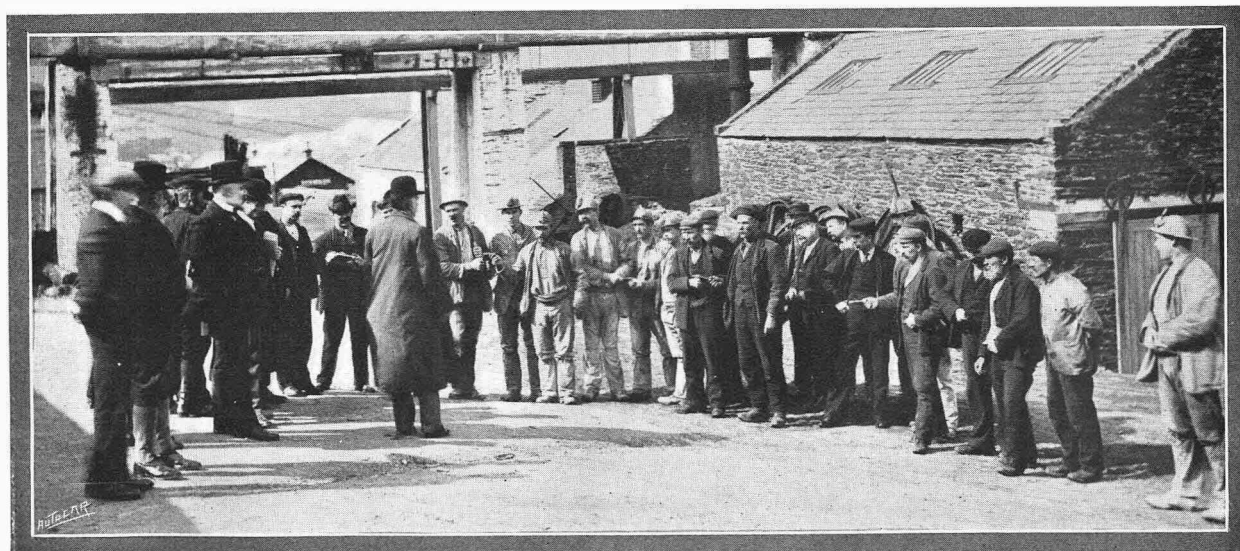
For regularity	600 marks.
Consumption	300 ..
For dead weight per passenger	300 ..
For average speed	100 ..
Clutch power on the hills	200 ..
Price of the chassis	100 ..
Carriage work	200 ..
Facility of starting the motor	100 ..

French Exports.

France is the country which takes the lead of all other countries as far as the export of automobiles is concerned. Last year, automobiles to the amount of 46,562,000f. were exported. England absorbed the maximum with 33,887,000f. worth, whilst Austria only reached the figure of 137,000f. On the other hand, the foreign imports of automobiles into France amounts to 1,568,000f. As will be seen, there is a considerable difference between the figures for export and those for import.

The Automobile Boat Meeting at Lucerne.

The Regatta Club of Lucerne has organised for the 23rd and 25th of July next an important meeting for automobile boats. On the 23rd of July there will be races exclusively reserved for cruisers. On the 25th of July there will be races exclusively reserved for racers, which will compete for the cup of the Lake of Lucerne, which consists in a trophy of a value of £200. This cup must be won three times running to become the property of the winner. The course for the Lucerne cup will be about seventy miles, and is open to boats 26ft. 3in. in length.



Photograph by

THE ISLE OF MAN ELIMINATING TRIALS. Swearing in special constables at Foxdale mines for duty on the day of the speed trials.

Keig, Douglas.

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.

AUTOMOBILE CLUB TIMEKEEPING.

[8741].—As the article on "Automobile Club Timekeeping" in your issue of the 23rd ult. is as much a personal attack on myself as a criticism of the methods of timekeeping employed by the Automobile Club, I take upon myself the burden of traversing the contentions set forth therein.

First to deal with the inaccuracies. Taking them as they occur—

(1.) Mr. Coleman did not officiate as a timekeeper at Welbeck.

(2.) My electrical timing apparatus did not only frequently work, and that by good luck only. The few records missed arose through my assistants not carrying out my instructions after the change of starting points after the luncheon interval.

(3.) There were no auxiliary timekeepers employed in counter-checking the times of the Gordon-Bennett race.

(4.) The delay in publishing the result of the Gordon-Bennett race was not due in the least degree to the timekeeping arrangements, but arose entirely from the pressing of a protest that had been lodged against one of the competitors.

(5.) The International Committee did not discuss, deliberate on, or adjust the report of the head timekeepers, but accepted their report without a moment's consideration.

(6.) Mr. Coleman did not officiate as a timekeeper at Phoenix Park.

With reference to the action of the Automobile Club in timekeeping matters, I hold no brief for the club, and possibly no one has objected more strongly than I have to the casual way in which timekeeping is considered and treated. As to the arrangements made for the timekeepers during the Irish fortnight, they received my severest condemnation. Before I left London for Ireland I supplied the secretary with a complete list of the timekeepers for all the events, in which lists, by the way, the names of the hand timekeepers were invariably placed first, and no one was more astonished than myself at the omissions and commissions that appeared in the official programmes of the various events.

I have persistently held that the club timekeepers should be paid officials, and not honorary ones. It cannot be conducive to accurate timing for timekeepers to combine journalistic work with timing.

As to the scheme employed for timing the controls of the Gordon-Bennett race, I am content to know that it received the highest commendation from every quarter but one that you are well aware of, and that the present holders of the cup have decided to time the controls in the race this year in the same way. Further, Mons. Tampier, the head timekeeper of the Automobile Club de France, informed me that the same system has been tried in France, and was only abandoned on account of the difficulty of obtaining the requisite number of reliable watches.

The experience of the Automobile Club in the past has been that timekeeping by means of two watches—one at each end of the course—is most unsatisfactory, the errors being such as to preclude the possibility of accepting times taken by two timekeepers only. Hence the duplicating of timekeepers, and even then the variations are so great that the times can only be arrived at by striking an average. Whether the errors arise from the timekeepers or from their watches it is not for me to say, but as showing to what extent they occur I will refer to the times taken by the hand timers at the eliminating trials at Welbeck last year. The timekeepers on that occasion were Messrs. Woollen, Griffin, Wilson, Swindley, and Straight, divided into two groups. There were in all forty-eight runs. On only ten and a half per cent. of these did the times taken by the two groups of timekeepers agree. On fourteen and a half per cent. they varied by one-fifth of a second; on eight and one-third per cent., two-fifths of a second; on eight and one-third per cent., three-fifths of a second; on eight and one-third per cent., four-fifths of a second; on two per cent., one second; on twenty-nine per

cent., between one and two seconds; on nineteen per cent., by over two seconds. So that in nearly half the runs the times taken by the two groups of timekeepers did not agree by over one second, and this in a period of time ranging between thirty seconds and one minute thirty-two seconds. Little wonder that the officials of the Automobile Club have turned to mechanical timing.

The reasons why the times recorded by the several timers both at Welbeck and elsewhere were collected and collated by an independent person were threefold. First, to ascertain the accuracy of the human system of timing. Secondly, to ascertain to what extent it was necessary to adjust the times arrived at by the timekeepers to correct errors, etc.; and, thirdly, to prevent the publication of the times until such time—if at all—as the club decided.

Apart, however, from the errors that appear inseparably from human timing, the divisions of time possible with a chronograph are not sufficiently minute to accurately time high speed motor vehicles, and no division less than a twentieth of a second is of any use. An apparatus has now been constructed for the club to time to the hundredth part of a second, so that hand timing for speed events will be a thing of the past.

ROBERT E. PHILLIPS.

THE GORDON-BENNETT RACERS.

[8742].—Permit me to say "ditto" to "Englishman" in your last issue about the Darracq Gordon-Bennett cars, and to supplement this by asking if a car can fairly be called British which has never been run on British soil, but goes "home" to be tested and "tuned up." I wonder how many new pieces and how much French labour on French soil will find their way into the cars before they appear in the Isle of Man. Is the whole thing sportsmanlike? Is it not pretty much of a farce, to say the least of it?

ANOTHER ENGLISHMAN.

COURTESIES OF THE ROAD.

[8743].—I have read your leader entitled "Courtesies of the Road" in last week's issue with great interest.

Although I am not a motorist of longer standing than one year, yet I have always had the impression deep in my mind that to slow up and to offer assistance to a fellow motorist in trouble was the absolute correct thing to do. I have, therefore, adopted this plan upon every occasion that I have considered help might be wanted. There are times in passing a car in trouble when it is plainly evident what is the matter, i.e., tyre troubles, bursts, or punctures. On these occasions it is not always necessary to stop and offer assistance, as taking out and putting in an inner tube is not difficult, nor is it hard to take off an outer cover or put another on. However, should a man be alone and showing signs of desperate struggles with a new and refractory outer cover, then by all means stop and help. In the case that you write of in your article, where the trouble was of so serious a nature that it was considered necessary to "assume an ever-useful working smock," then I can only say that those "passers by on the other side" were absolutely lacking in those feelings of sympathy and *esprit de corps* which are supposed to exist so largely, and do to a certain extent, among motorists.

Road stops become more and more of a rarity as each year goes by, and as motorists with reliable cars so seldom have to stop for trouble of their own, they should be thankful for that fact and be only the more ready to assist their less fortunate brethren who are temporarily "hung up."

It does not take long to outclutch and slow up on nearing a car and offer assistance. Nine times out of ten you will receive a courteous "No thank you," and in goes your clutch again, but the tenth time you may be able to act the good Samaritan and perhaps be of real service. One never knows when one's own turn may come, and then will be the time, if it has not already been experienced, to find out how maddening it is to see car upon car go dashing by without even a look at one.

The paid driver, I fancy, has had a good deal to do with the breaking of this unwritten law. He would have to ask his master's permission to stop, and perhaps does not like doing so, and most probably would not like the bother that it might possibly entail.

Then, again, the look of scorn that is sometimes hurled at one from the paid driver tinkering away may have the effect

Correspondence.

on some people of making them resolve not to stop for anyone in future. In conclusion, it should be a hard and fast rule with every self-respecting motorist that it is his duty to help other motorists who may be in trouble on the road.

P.S.—In Lieut. Windham's article upon accessories, writing about lamps, he never even mentions the name of Salsbury. It is scarcely justice to that firm whose lamps are quite as good as, if not better than, those of any other make.

GLADIATOR.

QUIET CARS.

[8744.]—"Absolutely silent." "As silent as a sewing machine." "We especially desire to point out the absolute silence of the car. When the car is standing still one can hardly hear the engine working, and the beautiful balance practically eliminates all vibration, and it is further interesting to note that on the first, second, third, or fourth speed this same silence and non-vibration exists."

So say the makers, and I was therefore much amused to see that a 20 h.p. Talbot had been used to accustom the Prince of Wales's horses to motor cars. From this I gather that a teakettle would be a good thing to accustom horses to traction engines, or else that the Talbot cars are not quite as quiet as the makers claim.

CTIK No. 1,002.

[We publish this letter, as it shows how statements are analysed by automobilists. It is only fair to the car in question to say it is one of the quietest on the road.—ED.]

BORON CHARGING CELLS.

[8745.]—In reply to "Cantab's" letter [8735] where he states that from what I do with these cells he thinks he can use them to give two ten to twelve candle-power lamps for one or two hours. This is quite different from what I represented. I especially mentioned that in my opinion if used for main lights they would be a failure. I should call these lights main lights. Twenty candle-power would take a lot of current; it would not be feasible to use these cells for that purpose. My lights are all small one candle-power at outside, and seldom more than one going at the same time, and then only for a short period. Used in this way it is a great convenience in a country house. I think "Cantab" is much too nervous about lights in his motor house. If the lights are fairly high there is not the least danger. I should advise acetylene gas.

E. ESTCOURT.

CHAUFFEURS.

[8746.]—I have read with great interest the correspondence recently appearing in *The Autocar* with regard to motor car drivers, etc., and having just gone through an experience with a "thoroughly capable man," I should like to recount some for the benefit of your readers.

Being in want of a good driver, I advertised in the usual channels for a capable driver of a car on Panhard lines, and finally engaged a man, who stated that he was thoroughly conversant with this type of car; and, further, furnished me with excellent testimonials, including one from a so-called "motor expert" in the trade. On his arrival I sent him out with one of my men for a trial. On their return my man told me he did not think him much good, but being reluctant to believe this (after perusing the many testimonials) I sent him out for a further trial with my works' manager. I was astounded to learn on their return that not only was the man incapable of driving even passably, but he was absolutely ignorant of the use of the reversing lever, the accelerators, or ignition lever. I, of course, dismissed him immediately.

Now, in my case not much harm was done, as I was able to fall back upon other members of my staff, but supposing it was the case of a private owner, what might have occurred? The owner would doubtless have relied upon the testimonials he produced, and engaged him, placing him in charge of a car worth, perhaps, hundreds of pounds. What would have been the result? Repairs, repairs, repairs, unsatisfactory running of the car, and another dissatisfied owner. The car would doubtless have been blamed for what was really the result of this man's incompetence and ignorance. I call it monstrous that a man should be given references as to capability when he certainly is not capable.

This illustration shows how extremely careful owners should be as to whose hands they place their valuable cars in if they wish to have satisfaction. There are many really good men to be obtained—men who take a pride in their work and are really capable—but it is such wasters as the above who keep them out of their right place. So much of the successful running of an autocar depends on the man under whose care it is placed that it appears to me that manufacturers should

combine in some way to protect themselves, and at the same time ensure that purchasers of cars shall obtain satisfaction in this respect. No car ever made would give satisfaction if placed in the hands of such a man as presented himself to me.

We are all endeavouring to make our cars as far as possible independent of the "care" of such gentlemen as these, but until that time arrives or until only competent men are allowed to take charge of cars what shall we do? F.M.

INCONSIDERATE DRIVING.

[8747.]—As there has been lately in your paper some discussion as regards "inconsiderate driving," and rumours as to the movement that the Automobile Club is about to take against such "inconsiderate persons," I should like, with your kind permission, to give a little of my experience of the so-called "justice" of the Automobile Club and the reliability that can be placed upon it to see that justice is done. Some time last year I was suspended by the Automobile Club for testing my racing car in the wilds of Lincolnshire at three o'clock in the morning, "when all the world was asleep." At that time I refused to go before the Automobile Club committee, as, in the first place, I was not a member of the club, and I refuse to recognise its authority until I learn that it is justly applied; and, in the second place, as the committee is so crowded with my trade opponents, I did not believe I should get a very fair hearing. Now I suggest that what is good for one person is good for another, and I would like to know why the powers that be behind the enterprising firm that have started the record of 2,000 miles to be done in roughly 100 hours, or at an average speed of twenty miles per hour, are not called over the coals by the Automobile Club instead of being aided by that club officially, as they are being?

I should like to know why Mr. Charles Jarrott was not suspended at the time the article entitled "The Roaring Forty" was written, and I should like to know, also, why the same gentleman was not suspended on the evidence of an article, written by himself, that he had averaged forty miles an hour on a certain vehicle? I should like to know where all the racing cars that are entered for the eliminating tests are being tried, and, as I presume the gentlemen who are driving these cars do not train themselves to the use of their vehicles by doing twenty miles an hour, I wonder why they are not suspended? I should also like to know why Mr. Carlisle, who killed the famous dog, is not suspended instead of being officially justified by the Automobile Club? I also saw Mr. Edge two years ago go down Regent Street on a 50 h.p. car that sounded like a 4.7 gun (I can recall to Mr. Edge the circumstances). In fact I can mention another fifty cases of the publication of rides at high speeds when the drivers have not been suspended. I trust that the gentlemen whose names I mention will not imagine that I am in any way blaming them, but I am only utilising their names to apply facts, and to point out the powerless position of the Automobile Club, and to further point out that its methods of "justice" are rather extraordinary, and that one can hardly look up to such a club as this for protection where it has no discrimination. As I would suggest that a ride done at three o'clock in the morning in a lonely wilderness over two miles of road can affect nobody, whereas a 2,000 miles scorch throughout the length and breadth of the country, run with the approval of the Automobile Club, is slightly more detrimental to the interest of the sport and pastime.

I have driven motor cars now for the matter of ten years, and with the exception of one accident, caused by a side-slip, I have never yet been found fault with. I have suffered the usual persecutions of a pioneer at the hands of the police, a persecution that has existed in the past and will undoubtedly exist for ever in the future to all pioneers of new methods, but otherwise I have yet failed to find a person that objected to my methods of driving.

The method of the Automobile Club when it is administering justice is to make an accusation on information from an unknown person. Now I suggest that the person who has ever made an accusation against myself is somebody in the trade, and I challenge the Automobile Club to give me his name. In fact, things leak out of the Automobile Club, and I at once state that the name of the person who brought the matter up before the Automobile Club is a person interested in preventing me from driving cars in racing, the success of which would be detrimental to his own make of vehicle.

All the letters in your esteemed journal suggesting methods of coping with "inconsiderate driving" are absolutely, in my opinion, pure waste paper, as the Automobile Club has no power whatsoever. Take my own case, for instance. It

suspended me from racing, whereas, owing to domestic reasons, I shall never race again; therefore the club's presumed punishment is ridiculous. I take it that there is one man in a thousand that goes in for racing—what punishment is the Automobile Club going to apply to the other nine hundred and ninety-nine who do not race?

I suggest to you, sir, that the Automobile Club look after its own business and let the police look after theirs. I have seen hundreds of cases that some would term "inconsiderate driving" that is entirely a question of the knowledge of the driver. I have found gentlemen who drive 6 h.p. cars designate as "inconsiderate driving" the mere fact that a man drives a 20 h.p. car, but when that same gentleman gets a 20 h.p. car himself, he changes his tone and laughs at the man on the 6 h.p. car.

I do not mean to suggest that there is no "inconsiderate driving," but I do most distinctly suggest that it is the motorist himself who makes the loudest outcry, and calls the attention of non-motorists to himself and his fellow motorists by his loud shouting.

There is great jealousy in my opinion amongst drivers, and the lower horse-powered motorists seem to take a distinct objection to the man who drives a high-powered car.

To prevent any argument or the entering into any personalities, permit me to at once say that for the last twelve months I have been driving a 12 h.p. car myself, and have taken a great liking to slow driving, so that I am not holding up the argument as a driver of a high horse-powered car.

I would finally suggest that the police are the proper persons to look after the speed on the road, as laws have been framed by the country for the protection of the public, and cars now have a huge number upon them, so that the police are quite able to identify an "inconsiderate driver." If the Automobile Club will support the police, it will not be going so very far wrong (admitted that the police sometimes exaggerate), yet I think if the Automobile Club or the powers that be would simply back the magistrates, you will find that things will gradually come round all right, and that the "inconsiderate driver" will be the man looked after and nobody else.

I believe my argument to be a new one, but it seems to me that the motorists have set themselves up in defiance of the law and are all shouting at each other and calling public attention to alleged wilful acts, which in reality exist to a very small degree, and they are raising a storm themselves that is very likely to do them more injury than they can foresee.

D. M. WEIGEL.

TRUING UP PLATINUM CONTACTS.

[8748].—I was much interested in the letter of your correspondent Mr. Corcutt (No. 8718) on platinum contacts. Unfortunately, I lost my copy of *The Autocar* of the 16th before I read the article referred to, and am now awaiting the back number from my bookseller. It so happens that I am at present greatly troubled by sparking at the platinum contacts of the trembler of No. 1 cylinder. I have never had any great difficulty before in truing and adjusting the points of the tremblers, but about ten days ago No. 1 trembler commenced to spark, and all my efforts to adjust without sparking have been unsuccessful. If Mr. Corcutt, or any other reader, will kindly tell me the cause and remedy of such sparking I shall be greatly obliged. I cannot get No. 1 cylinder to work like the others singly, although there is a sparking at the plug when I take it out and rest it on the cylinder, working the other engines.

H. E.

AN INTERESTING CASE AND A WARNING.

[8749].—Last week my motor, which is a 12 h.p. Talbot, was being driven from London through Towcester to Burton-on-Trent. On reaching a point two miles outside my chauffeur saw a policeman and a man with a bicycle standing together talking. The policeman held up his hand, and my chauffeur immediately stopped the car in its own length. The policeman informed my chauffeur that he was driving at the rate of fifty miles an hour (would that any 12 h.p. car was able to perform such a marvellous feat). However, his name and address having been taken, he was informed that the individual with the bicycle could give expert evidence, he was allowed to proceed on his journey to Burton-on-Trent. In due course a summons arrived. Knowing my chauffeur to be an experienced and most careful driver, I took the trouble to engage the services of a well-known London lawyer, who, together with myself and chauffeur, travelled down to — from London to defend the case. To make a long story short, Mr. T. W. Staplee Pirth, the well-known London lawyer, on

Correspondence.

commencing the defence, found that the bench of most able and not to say one most distinguished magistrate had apparently made up their minds that a defence was absurd, and interrupted during examination and cross-examination to such a degree that Mr. T. W. Staplee Pirth talked gently but firmly to them, which so surprised and nonplussed these noble gentlemen that the case proceeded, and he obtained a fair and uninterrupted hearing. The policeman having been minutely cross-examined, also the expert witness, the statement elicited from each was as follows: The policeman swore on his oath that the car was travelling to London, and the expert witness that the car was travelling from London. The discomfiture of the policeman and his so-called expert witness was complete. The bench were painfully aware of the incompetency of their trusted minion of the law, but were, I hope, sufficiently consoled by listening to a most able and instructive peroration delivered by one who has forgotten more law than any one of them are likely to learn. In conclusion, I should most strongly advise anyone who may find himself in the vicinity of —, which is not seventy miles from London, and is stopped by an extremely ponderous and well-developed policeman, who is invariably attended by an anæmic looking gentleman with black hair, who practises the role of expert witness, to obtain the services of some London lawyer who is as well acquainted with motor law as Mr. T. W. Staplee Pirth (if this is possible), and I have no doubt that he will find that he has spent not only an extremely amusing and interesting day listening to the wild and rambling statements of a policeman who is absolutely unfit to carry out the intricacies of laying a trap, but he will have the satisfaction of knowing that the money disbursed has been done so profitably, and especially on this occasion, as the result was instrumental in disposing of a similar case which followed this one, in the defendant's favour; and the chief constable, being thoroughly disgusted, promptly withdrew a third case, which was of a similar character.

C. E.

SUMMARY OF OTHER CORRESPONDENCE.

THE ACCESSORIES OF A MOTOR CAR. In reference to Lieut. Wyndham's article, or rather to that portion dealing with lamps, the Bleriot Lamp Depot point out that ordinary calcium carbide can now be used in the genuine Bleriot lamps. For this purpose tin cartridges are supplied. These retain all the spent carbide, so that no residue is left in the generator.

THE PIONEER OF THREE-CYLINDER ENGINES. The Duryea Co., referring to a statement in the last issue of *The Autocar* that Messrs. Brooke were the first to introduce the three-cylinder motor in this country, if not in the world, claim that the credit of this introduction rests with Mr. Charles E. Duryea, who has been continuously commercially making three-cylinder engines since the autumn of 1897. The company believe they antedate Messrs. Brooke by a few weeks in placing a three-cylindered car on the market in Great Britain, which they did in December, 1901, although, of course, they were working on their car before this date.

PEACH'S MOTOR ANNUAL. We reviewed this most useful publication on the 23rd ult., and Messrs. Frank Peach and Co., of 48, Holborn Viaduct, E.C., write us as follows: "You refer to our system as being 'hire purchase,' and we desire to put it as clearly as we possibly can to intending purchasers that ours is not a 'hire purchase' system. It has nothing whatever to do with hiring nor hiring with the intent to purchase, but is an absolute sale, exactly in the same way as if the customer had paid his cash down direct to the manufacturer. The motor car or cycle becomes the property of the purchaser directly he receives it, and we do not even require any lien upon it."

REPAIR CHARGES. On April 9th we published a letter from a correspondent referring to his treatment by the Motor Mfg. Co. His only complaint was that he was required to send his cheque before his man was allowed to take the car away. We have now been sent copies of the correspondence between the company and our correspondent. We have read this correspondence, and it appears that the request for payment was made in a perfectly courteous manner, and that considerable pains were taken to carry out the repairs properly. Many firms have the same custom, as they say they have found it necessary owing to the difficulty they sometimes have in convincing their clients that the charges are reasonable for the work carried out. It appears to us it would save a good deal of friction and misunderstanding if all who make a practice of requiring payment before the repaired car is removed from their works would plainly state this upon the letter paper they use when writing about repairs.

Flashes.

Messrs. Alfred Dunhill, Ltd., have received the highest award and gold medal for motoring and sporting clothing at the Crystal Palace International Dress, Clothing, and Textile Exhibition.

* * *

It will probably be news to many that there is a publication known as the *International Sugar Journal*. Not only so, but it appears to be a thoroughly energetic and up-to-date medium, though of necessity only interesting for the most part to a special class. We are interested to see that the journal, in referring to the growth of beet in the United Kingdom, points out that it should be grown not with the idea of manufacturing sugar from it, as sugar is the staple industry of some of our own colonies; but the beet should be grown for the manufacture of alcohol for power purposes, thus producing at home what we cannot obtain from our own colonies.

* * *

Referring to the subject of the courtesies of the road, dealt with last week under the heading of "Notes," a correspondent writes: "I was stuck four miles from Oxford, on the Banbury Road, last Tuesday week. A Daimler (painted white) came along, pulled up at once, and gave me what I wanted—a bit of copper wire. I believe the car belonged to Tunbridge Wells. Owing to the kindness of the occupants, I got home all right. I should like, through *The Autocar*, to thank them for their kindness. My car is a 7 h.p. Panhard."

* * *

Several Welsh papers last week published with more or less colour the details of a "Motor Car Collision"—how a motor car collided with a cyclist at Dinas Powis, how terribly the cyclist was injured, and how another cyclist had to ride up a bank to escape the motor, etc. Mr. Graham, of Barry, the owner of the car, however, supplies the true facts as follows: Accompanied by his wife and two sons, Mr. Graham was motoring from Barry to Cardiff. When proceeding up Easterbrook Hill at a slow pace, he saw three cyclists coming down towards him at a rather fast speed. The three passed the car, and when they had got thirty yards lower down one of his sons called to Mr. Graham and stated that the cyclists had collided with each other. He immediately slackened the pace of the car, looked round, and saw that two of the cyclists who had fallen were walking away. Considering that they were not badly injured and that his services were not required, he drove off.

* * *

It may interest those automobilists who have access to an alternating current to know that the Noden valve—a short description of which was given under the heading of "Replies to Queries" in *The Autocar* of April 2nd, page 465—may be obtained from Mr. Harry Snowdon, A.M.I.E.E., Balfour House, Finsbury Pavement, E.C.

A very useful metal polish known as "Dazlit" is being made by Messrs. Salsbury and Sons, of Long Acre. They have, of course, had to use polishes in their own works for many years, and this polish is the sort which they have found most satisfactory. It is guaranteed to be free from acid or grit, and we have tried it on several delicate articles with very great success.

* * *

Specimens of outside and inside plasters for the temporary repair of pneumatic tyres have been sent us by the Crown Manufacturing Co., of Green Lane, Small Heath, Birmingham. They are made for all sizes of tyres, and the one for inside use is very strong and large, so that there should be no trouble in effecting a satisfactory roadside repair to a really bad burst. Long flaps are provided for turning under the cover to hold the plaster in position, so that it can, when time presses, be used without any solution, though, of course, it is better to solution it to the inside of the cover. This company makes a speciality of repairing motor tyres, and has a rubber for the purpose of a particularly tough description, which is stated to be very durable.

* * *

Mr. Claude Johnson has an interesting article in the current *Badminton* on automobiles costing £1,000 or thereabouts.

* * *

Glasgow to London Reliability Trial. Besides the car mentioned last week (page 592), the following additional entry has been made under the special conditions applicable to late entries: 8-10 h.p. two-cylinder Vulcan car, by the Scottish Motor Garage Co., Ltd., 96, Renfrew Street, Glasgow.

* * *

At the Bingham Petty Sessions on April 28th, David Roberts, West Bridgford, was fined 20s. for driving a car between Nottingham and Grantham without a number

attached. In explanation, the defendant stated that when the car was in the garage of a local manufacturer the number plates were taken off while the car was being cleaned, and the foreman omitted to put them on again.

* * *

The 20 h.p. Talbot which we illustrated a fortnight since with the very striking body built to meet Colonel Ord's requirements was, we are informed, built by Messrs. J. Rothschild et Fils, as also was the body of the large touring Panhard illustrated in the same issue. We feel it is due to the makers to mention this, as both bodies are sufficiently striking in design to attract attention.

* * *

Mr. F. T. Bersey, of the Laystall Motor Engineering Works, 27 and 29, Laystall Street, Rosebery Avenue, E.C., informs us that his premises are fully equipped with machine tools and plant, enabling him to undertake repairs to cars of all descriptions at moderate charges. He has accommodation for fifty cars, and the place will be open at all times for the convenience of motorists.

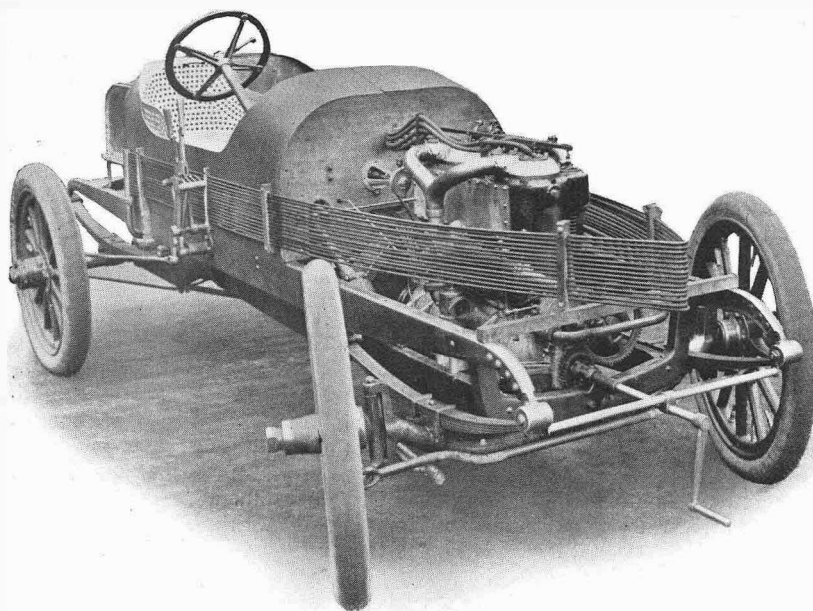
THE "AUTOCAR" DIARY.

- May 7.—Non-skidding Tests, Locomobile Garage.
- „ 8.—Ereilburg Hill-climb (A.C. Austria).
- „ 8-12.—Bordeaux Automobile Week.
- „ 10.—Gordon-Bennett Eliminating Trials, Isle of Man.
- „ 11.—Hill-climbing Trials for G.B. Cars, near Ramsey, Isle of Man.
- „ 11-15.—Milan Exhibition and Tourist Trial.
- „ 12-15.—Tours Tourist Trial.
- „ 12.—Speed Trials for Gordon-Bennett Cars, at Douglas, Isle of Man.
- „ 12.—Perigueux Hill-climb (A.C. Dordogne).
- „ 13.—A.C.G.B.I. 100 Miles Quarterly Trials.
- „ 14-15.—Nantes-Croisic (Motor Boats).
- „ 15-23.—Circuit National Belge.
- „ 19-20.—Scottish A.C. Glasgow to London Non-stop Reliability Trial.
- „ 20.—Junior Institute of Engineers. Lecture by Lieut. Windham, "Recent Developments in Motor Car Construction."
- „ 20.—French Gordon-Bennett Eliminating Trials.
- „ 23-31.—Aix-les-Bains Week.
- „ 24-29.—Arras Automobile Week (A.C. du Nord).
- May (or July 25).—A.C. Belgium Circuit des Ardennes.
- June 11.—Ranelagh Club Motor Car Races.
- „ 17.—Gordon-Bennett Cup Race in Germany.
- July 30.—British International Cup for Motor Boats.
- (1 or Club Fixtures see Club Doings, page 635.)

At the Golden Lion Royal Hotel, Dolgelly, one of their North Welsh hotels, Messrs. Quellyn Roberts and Co. have constructed a motor pit under cover.

* * *

Mr. Andre A. Godin, of Red Lion Square, Holborn, who is the sole agent for the well-known Dinin accumulators, has issued two handy pamphlets giving full instructions as to the despatch and treatment of these accumulators, charging them from accumulators, main or dynamo, also by means of the Dinin Universal charging adapter and primary cells. One of the pamphlets refers to accumulators filled with acid solution for use on motor cars, and the other to accumulators charged with a solidified electrolyte for use on motor cycles. These pamphlets have been specially got out to afford all necessary information to motorists using Dinin accumulators. The section devoted to "Essential Points" in both pamphlets is well worth study.



AN AMERICAN TRIALS RACER. The 50 h.p. Peerless car which Mr. L. P. Moores has built with a view to using it in the coming Gordon-Bennett cup race. All four cylinders are in one casting, and each cylinder has three automatic outlet valves in the head. The wheelbase is 3ft. 8in. and the track 4ft. 6in. The car weighs well under 18 cwt.

As showing the rapidity with which motor 'buses are coming into favour in various parts of the country, it is interesting to note what Messrs. Clarkson, Ltd., are doing. This firm inform us that since supplying their 'buses for use in Torquay, where they have been running satisfactorily, they have supplied vehicles of this class to the Eastbourne Corporation, and last week delivered the first 'bus on order for the North-Eastern Railway, to run from Beverley into the surrounding district. Other 'buses are following for the N.E.R. and the Eastbourne Corporation. The Great Western Railway have just ordered three large 'buses, and they have also orders from the London General Omnibus Co. and the London Road Car Co. In addition to these they have orders from the Lake District Road Traffic Co., who propose to run a service from Windermere by Ambleside to Keswick, and orders from another company, who are inaugurating a service between Fairford and Cirencester. The Torquay 'Bus Co., after a successful experience with three 'buses, have ordered further additions to their fleet.

Flashes.

At a meeting of the Parliamentary Automobile Committee on Thursday last week, Mr. Scott Montagu, who presided, referred to the smooth way in which the new Act seemed to be working. The question of alcohol for industrial and power purposes was discussed, and it was pointed out that, with excise duty at present levied, it was impossible for English manufacturers to compete against those of Germany and France. After some discussion, it was decided to present a memorial to the Prime Minister and the Chancellor of the Exchequer on the subject, urging that alcohol for non-potable and commercial use should be allowed to be manufactured free from excise duty under proper restrictions. An amendment to the Finance Bill on this point has been framed.

* * *

At the annual meeting of the Cycle Engineers' Institute last week, the scope of the institute was enlarged to embrace the motor car industry, the name of the Institute was changed to that of the Automobile and Cycle Engineers' Institute, and Mr. H. Austin, of the Wolseley Tool and Motor Car Co., was elected president for the ensuing year.

* * *

The health-giving effects of motoring are too well known amongst automobilists themselves to need mentioning, and it is gratifying to learn that the highest medical authorities are now recognising the benefits of such exercise in the cure of one of the most hopeless forms of disease. Dr. Blanchet, in a report recently presented to the Lyons University, contends that daily use of a motor car will gradually abolish or greatly diminish the cough of tuberculous patients, and produce healthy sleep and appetite. Dr. Dawson Turner, of Edinburgh, was the first physician to prescribe motoring for consumptives.

* * *

Beaconsfield, Bucks, is showing a lead to other more important and presumably more advanced places. The road surface from one end of this delightful village to the other has been treated with tar, *goudronné*, in the French style, with the result that the dust is most effectually laid.

* * *

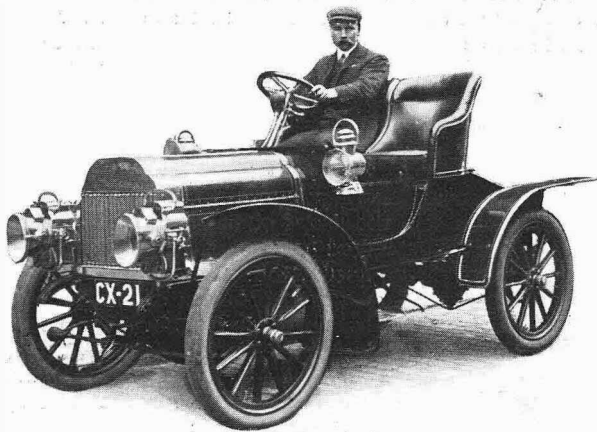
A very large percentage of the voltmeters in use today are so constructed that they do not give a correct reading of the voltage of a battery, for after a short period any accumulator will re-energise to a certain extent, and so we get an incorrect voltage on testing. To prevent this it is only necessary to introduce a certain amount of resistance which will reduce this false voltage. Messrs. Van Raden, of Coventry, have introduced an instrument which contains such a resistance, and, further, is so constructed that the needle comes to rest at once. The dial is marked from 3.2 to 4.2 volts, and as the intermediate fraction headings below 3.2 are not of interest for an accumulator, which should not be discharged below 3.8, advantage is taken of the increased index space for finer readings.

Flashes.

Some useful hints on fitting and adjusting the Cremona carburetter, which will use either paraffin or petrol, have been issued by the United Motor Industries.

* * *

The proprietors of Westrumite write us that, though that preparation is produced in accordance with a German patent, it is manufactured in this country by native labour.



The photograph from which our illustration is made, was taken after Mr. Mitchell, of Huddersfield, had driven the car—a 10-12 h.p. two-cylinder Argyll—from the works at Glasgow to Huddersfield, without a stop. The distance is 230 miles, and the fuel consumed was eight gallons, or about 28½ miles per gallon. Eighteen cars of this make have been sent into the Huddersfield district this year, and this machine is interesting, as it shows a two-seated type which is quite popular with the manufacturing magnates of this busy district who use similar two-seated vehicles as time-saving runabouts to convey them from one factory to another.

The Russian Government are having built in Paris a motor sleigh for use in connection with military transport purposes in the Far East. Propulsion is effected by means of two parallel endless screws, which obtain a grip on either snow or ice, and thus drive the vehicle forward.

The Barry Railway Co. have decided to inaugurate a railway motor car service on their line.

* * *

The Serpollet "Easter Egg," which made such a sensation a couple of years ago at Nice and then subsequently at Bexhill, has now been bought by Mr. A. E. Major, of Reading. It has been fitted with a new body and generally modernised in appearance.

* * *

We should be glad if any of our readers would give us the names of any municipal authorities who include in the curriculum of their local technical schools or other educational institutions classes or sections for imparting instruction to students in motor construction and management.

* * *

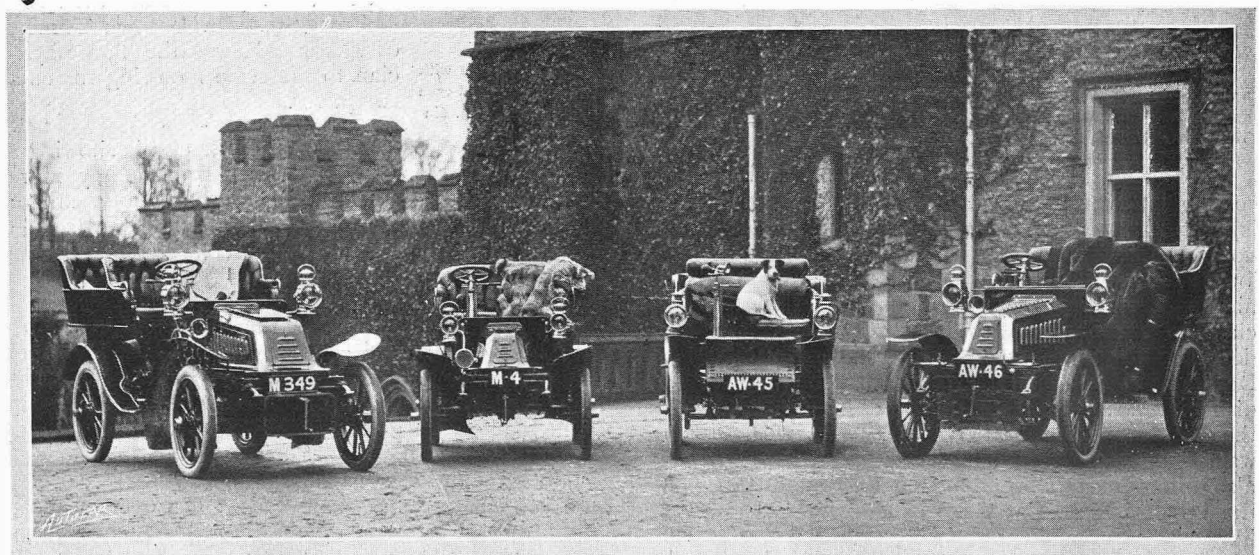
Mr. R. P. Strachan, 16, Elmgrove Road, Cotham, Bristol, informs us that he picked up on the road near Long Ashton, Bristol, on May 1st., about 10.30 a.m., a portion of a motor car lamp, which probably fell from a dark-bodied tonneau car, lettered T and numbered 53, 57, or 59. He will have pleasing in restoring it to its owner.

* * *

The Baron de Caters's attempt upon Rigolly's 23¾s. kilometre record, made last Sunday at Ostend, was not successful, 24¾s. being the best the chivalrous Belgian nobleman could achieve on his 90 h.p. Mercedes. By this time, however, he established a new Belgian record, equal to 91.28 miles per hour. Nevertheless, the Baron does not despair of yet eclipsing the Gobron-Brillie figures.

* * *

The wickedly reprehensible conduct of a motor car on a recent occasion is not to be passed over lightly. A clergyman was driving to St. Thomas's Church, Preston, to officiate at the wedding of a worthy tradesman, when his car broke down and maliciously refused to budge. The disastrous results were apparent when the wedding party, tired of waiting, left the church with mingled—not to say mangled—feelings.



A MOTOR STUD. The four machines we illustrate are all De Dions and belong to Mr. Alfred Billson, of Rowton Castle, near Shrewsbury, and his son, Mr. Edgar Billson. The one on the left is a latest pattern 10 h.p., some two months old. M 4 is a 6 h.p. which has had about twelve months' work. Next to it with the dog on the seat is one of the old model 4½ h.p. De Dions with the engine at the back. The car on the right is known as the Model S which is now fitted with a 12 h.p. engine, though the one in question has a 10 h.p. This vehicle has a brougham tonneau top which can be fixed in place of the back seats. A nephew of Mr. Alfred Billson is also getting a De Dion, so that it will be seen there are no less than five of these machines in the one family, yet this is not a record, as there is another family the members of which own six De Dions between them.

SOME QUERIES AND REPLIES.

We are always pleased to reply to queries, even if they be of an elementary and untechnical description, under this heading. Only a selection of those which are of general interest will be published, though all will be answered direct through the post, for which purpose a stamped and addressed envelope should be enclosed.

When advice concerning different makes of cars is sought, each vehicle should be given an identifying number. Letters should be addressed The Editor, "The Autocar," Coventry.

DISTRIBUTION OF WEIGHT ON A STEAM LORRY.

"Steam Lorry," by ascertaining what proportion of the total weight, unloaded and loaded, is carried on each axle, can ascertain what the result of his proposed alteration would be. If he desires to maintain his present platform area the probability would be that the running of the lorry would be worse, especially in hilly districts. The full report of the War Office Committee on motor traction would give him some data to work upon. The shortening of the wheelbase would facilitate turning, but would interfere with the balance of the load on the axles.—C.B.

"Steam Lorry" does not say what the total weight is at present on the front wheels, but only what the boiler weighs, nor is the total weight given, hence weight on rear wheels cannot be calculated. Reducing the wheelbase as suggested would cause more of the weight made up of water tank, gear, engine, and frame parts with platform to be thrown further back, and this would cause less leverage on the front wheels due to the reduction in length between the wheels, and also less leverage, or rather a leverage acting in the opposite direction to the weight on the front wheels, by the extent the parts are shifted behind the rear wheel centres.

It can be conceived that the rear wheels could be moved so far forward toward the front wheels that the weight acting at its leverage behind those centres would just balance that acting in front, with the result that the whole weight could be balanced on the rear wheels, with a resulting state of unstable equilibrium.

Moving the rear wheels 2ft. may give better gripping effect on the road, but as these wheels' centres are probably so fixed as to give the best results when the lorry is loaded, with least stress on the working parts and a minimum of frame distortion, it would be better to consult the manufacturers before attempting to make such an alteration, as the result would be rather disastrous if a loaded lorry were to tip up backward when ascending a steep hill. J. W. ROBERTS.

BAD STARTING.

My motor, a double-cylinder 9 h.p., is very hard to start when it has been standing and is cold, but runs well when once started, and is easy to start when warm. I give a rich mixture and have tried varying it. It is fitted with a non-trembling coil. I thought of fitting a trembling coil or auto-trembler. Do you think this would improve the starting, and which can you recommend? W.H.

You will greatly facilitate the starting of your engine if you provide a small hole in the induction pipe as close to the valves as possible, fitting this with a small lubricator such as is used on a bicycle. Before starting, a little clean paraffin or petrol should be injected through this lubricator; this will greatly ease the engine, and make it start up much more readily. As regards the ignition, either the fitting of an auto-trembler or the substitution of a trembler coil will be a great improvement for starting, and will enable the engine to run at slower speeds in a far more satisfactory manner, but for anything above the average speed the auto-trembler is hardly so satisfactory as a really well made trembler coil, such, for instance, as the E.I.C. If you habitually run your engine at the normal speed the auto-trembler would serve your purpose admirably.

OVERHEATING.

I have a 12 h.p. double-cylinder engine. It gets very hot after a few hours' running on the top speed, and begins to knock directly the hills are started. I believe the Longmarch carburetter is perfect, and gives not too rich a mixture. In fact, the air lever is full open. The lubrication is ample, and also plenty of radiator. It knocks even when the ignition is fully retarded on the top speed,

and after an hour's running knocks on the two lower speeds. It is a nasty metallic knock, and not one you get from loose bearings. I have noticed there is often petrol dropping from the butterfly throttle valve. Why is this, for the carburetter does not flood? Would one notch in the timing gear cause this heating? I put the teeth so that the exhaust valves open just before the end of the explosion stroke and close at dead centre. There seems plenty of power. Would one notch or tooth making the valve open earlier tend to make the cylinder hotter or less hot? The pump acts well, but I wondered if anything could have got into the circulation, but that seems perfect. I should be extremely obliged if you could help me with this, also telling me exactly where the timing ought to be set.—PHYSICIAN.

The overheating of the engine is undoubtedly due to a restriction in the flow of water around the circulating system, this in its turn being probably due to a deposit on the interior of the tubes through hard water being used. If such is the case, there is no really effective method of cleaning the tubes. The only thing remaining to be done is to fit a new radiator. The knocking noise is in all probability caused by the gudgeon pin being loose in the piston, as you say it is not the sound from a loose bearing. The dropping of petrol from the butterfly valve distinctly points to the mixture being too rich, for the inrushing air carries up some portion of the spirit in a liquid form and deposits it upon the walls of the induction pipe, whence it trickles back and leaks through the butterfly when sufficient has accumulated to give the requisite weight to carry it downwards against the velocity of the ingoing mixture. The setting of the valves is quite correct as it stands at present. Any alteration would lead to a loss in power and irregular running of the motor, as it would, of course, alter the time of the firing as well as the moment at which the valves were operated.

LUBRICATION—OVERHEATING.

Could you suggest the probable cause of the cylinder of an 8 h.p. car getting so hot after ten or fifteen minutes' running that I can barely hold my hand against it? It does not seem to affect the speed of the car even if running for an hour. I may say that the water circulation seems all right, the radiating tubes being very hot. The engine runs at its best speed when the extra air inlet is three-quarter open. If open full the engine slows down. It does not make any difference (only as regards speed) if the quantity is lessened by throttling the inlet valve. Could you inform me the correct quantity of oil which should be put in the crank chamber? I do not think the fault is in over lubrication of the cylinder, as would be shown by dirty sparking plug, and blue vapour from the exhaust. Nor in too little lubrication, as would be evidenced by piston tending to stick.—K.A.Y.

It would appear that the circulating pump on your car is not working properly, and that what circulation there is will be natural or thermo-siphon, as it is sometimes called, but this would be so slow that the water would become excessively hot. Hence the over-heating of the cylinders and the great heat on the upper tubes of the radiator. It would be well to examine your pump, paying particular attention to the bearings of the same. The over-heating is evidently not due to too rich a mixture or to incorrect lubrication. With regard to the latter, it is difficult to give any definite quantity, as this varies slightly with nearly every engine, though it be of the same make. Approximately about one-third of a pint should be put into the crank chamber, but to be on the safe side it is better to keep on adding oil little by little until a blue smoke is seen to issue from the exhaust. If the oil be poured into the crank chamber from a can, the capacity of which is known, this will enable the driver of the car to ascertain within sufficiently safe limits the amount of oil which should be introduced to the crank chamber.

OCCASIONAL GOSSIP. By the Autocrat.

There are really terrible possibilities about the speed trials at Douglas on the 12th, as that, I am told, is the great day when "moving" is done. As the place is so dependent upon its summer season, all the houses are let annually from May 12th, and thus it is ensured that the tenants shall not merely stop for the summer, make their money out of their letting of rooms, and then vacate the house in which they have made it. I suppose some special arrangements have been drawn up, otherwise the pantehnicians will be seriously delayed.

x x x x

Mr. J. H. Knight, of Farnham, is one of the pioneer motorists, and there is no more considerate driver in the country than he. He is also an engineer by training, though I believe no longer engaged in the profession. I was very much interested to see that he has revived one of my favourite ideas, and that is the geared locomotive. He has been suggesting in a prominent engineering journal that the motor car has shown what can be done by gearing on the road, while the German electrical train trials have shown its possibilities on the railway. I have often wondered why some attempt at gearing was not made on the modern railway locomotives, as it would overcome many of the difficulties which seem to restrict designers at the present time. When it comes to speed, the racing motor car has shown what can be done in this direction, so it would seem well worth the consideration of railway locomotive engineers. Of course, I know that something of the sort was attempted in the middle forties of last century, and I believe it was a conspicuous failure, but the conditions, besides the facilities in the way of material and manufacture, were very different in those days, and it is quite likely that success would be attained now, though failure was the result of the experiments of some sixty years ago.

x x x x

The motor car is not only having its effect upon the sea-going launch, but also on torpedoes, which are now frequently referred to as automobile torpedoes. This is done to distinguish the self-propelled torpedo from the varieties which have not the power of independent motion, though the adjective is scarcely necessary, as torpedo is almost always used in the sense nowadays of referring to a weapon of the self-propelled type.

x x x x

Motoring and the general desire for the open air may yet bring about a revolution in railway travelling. Whenever I travel with motorists by train I hear grumbles about the stuffiness of the carriages, or else about the difficulty of getting fresh air without a draught. Now, there is no doubt that motoring hardens one wonderfully, and I have noted repeatedly that men who used to muffle themselves in overcoats rarely wear them now except when motoring, and then they wear a coat which is worthy the name, and in which they can comfortably stand almost any amount of wind. Not only stand it, but enjoy it, and I am beginning to wonder whether we shall not be able to enjoy railway travelling by having some provision made for outside travellers—a sort of observation compartment more or less open to the winds, in which the hardy motorist snugly wrapped in his driving coat and rug, with his eyes protected by goggles, can betake himself when

he feels that he wants a spell of invigoration after the stuffiness of the dining car. Of course, it will be dusty and there will be plenty of blacks from the engine, but by an arrangement of movable screens there would be no difficulty in keeping off the direct attack from the funnel of the locomotive, while the dust in these days of ballasting by granite chippings is not very serious except when the weather is exceptionally dry.

x x x x

Not a few enthusiastic motorists are young, and if the truth must be told they can only contemplate a new car as possible when the paternal cheque book is brought into requisition. Now, my young friends know that it is not always easy to persuade the disburser of finances to open his cheque book, and still less to write the necessary cheque for that four-cylinder car upon which their hearts may be set. So I am going to give them a hint which may be useful. When they have come to the conclusion that it is time the old car was disposed of and that a new one should take its place, they should make up their minds that this new mount is a car which is really an improvement on the old one. It goes without saying that they will want it faster uphill, but it should be more than this. It should be more comfortable, it should be quieter in running and smoother, too. Having once assured themselves that the car of their desires possesses these attributes and is a very distinct improvement on the old one they should arrange for the "governor" to have a drive in this car, and, if possible, immediately after he has been out on the old one. They will find that this method of convincing by contrast will often go very much farther than their most earnest and persuasive arguments.

x x x x

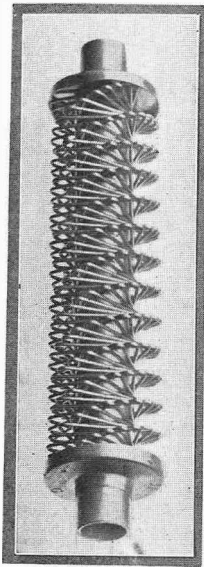
I am sometimes assailed by friends who are about to take up motoring with the question, Why do not the makers give an inclusive price instead of charging us so many hundred pounds for the car and then certain extra sums for lamps, horn, mats, spares, and last, but not least, two standby air tubes and a tyre cover? This is a very natural question, but it is too much to expect the makers to do it unless they all do it. It will be seen at once that if one maker were to take up this practice, his car would always appear dearer than the vehicles of other makers who sent the machine out without any sundries, and I suppose it would result very often in the manufacturer who included every requisite and spare in his price being passed over because of the apparent dearth of his car as compared with others of about the same general standard of excellence. At the same time, I have often thought that a sort of half-way house would be appreciated. The car might be catalogued as at present, complete and no more, and then a stated sum might be put down which would include all the necessary items I have mentioned. People would often rather pay from £15 to £50, as the case might be, for a complete selection of everything they could reasonably require for the car than buy the things one by one, and then torment themselves by wondering whether they had omitted any important item, or preferably the car might be listed in the ordinary way and a catalogue of requisites with prices set out on the same or opposite page, so that intending purchasers could see at a glance what their total outlay would be.

DETAILS AND DEVICES.

A STRONG RADIATOR TUBE.

The Kitchen radiator, which is the invention of Mr. J. G. A. Kitchen, the manager of the Lune Valley Motor Carriage Co., appears to be giving every satisfaction. It is extraordinarily strong; the triangular, helically formed roll of wire which encircles the tube grips it with remarkable tenacity. The wire is of phosphor bronze, and was only selected after a series of extended trials. The formation taken by the wire is such that it is self-gripping, and no solder is required, as it holds to the tube with this, and, consequently, never comes loose by vibration. It is self-supporting, too, in another way, as a length of the tube with the wire complete can be laid upon the ground and trodden upon without being damaged in the least, so it will be seen it is much stronger than any of the flanged type arrangements.

It is interesting to learn that this type of tube, $\frac{3}{16}$ in. internal diameter, is employed on the Wolseley Gordon-Bennett racers. This is the smallest size tube made.



THE SIMON SPRING TRANSMITTING SHAFT.

The accompanying longitudinal section will serve to show the construction of a spring transmitting shaft which has been fitted to over five hundred cars in France, and which, by the reduction of shock and wear on gear wheels it effects, has already earned a considerable reputation for itself. The spring transmission-shaft, which is more or less cousin-german to the De Dion pump drive, is preferably placed between the clutch and the primary gear shaft. The half portions of the

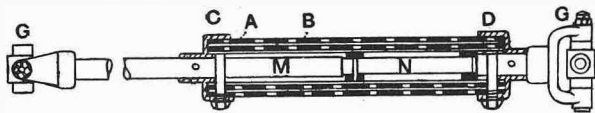


Fig. 1.—The Simon propeller-shaft in section.

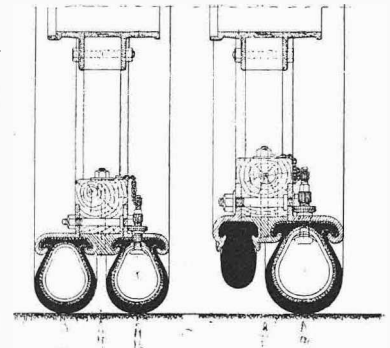


Fig. 2.—The Simon shaft complete.

universal joints G G are each attached to its own portion of the shaft N M. The universals are nevertheless connected together by the ends of two flat spiral springs A and B, which are secured by the collars C D, each fast on its own portion of the shaft M or N. The springs A B are wound in opposed spirals, so that their cushioning effect takes place whether the drive taking effect through the shaft is forward or reverse. The two springs practically grip one another, and serve in all cases to absorb either engine or clutch shock before it reaches any portion of the toothed wheel driving gear.

A DUPLICATE TYRE.

We illustrate herewith the Duplex wheel patented by Mr. E. Butler, 129, Gleneldon Road, Coventry Park, London. As may be seen, it consists of a wheel with two tyre rims in place of one, these being parallel to each other, and carrying either two pneumatic tyres or a pneumatic and a solid tyre. The invention strikes us favourably so far as its economic and antiskid properties are concerned, particularly in the form with the solid and pneumatic combination. With this arrangement the

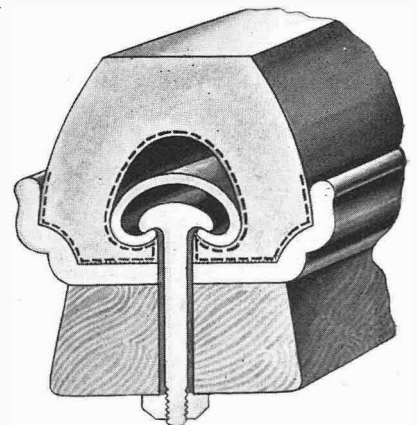


solid tyre is out of use until a puncture burst or escape of air from the tyre so deflates it to allow the wheel to settle down and run on the solid tyre, so preventing the rim from damaging the beads of the pneumatic tyre cover. The only drawback to the system, apart from the necessarily increased weight, is, to our mind, the fact that, the point of contact of neither tyre being coincident with the centre line of the wheel, an amount of side strain is bound to be set up which might possibly be detrimental to the wheel. It appears to us, also, that in the case of the solid and pneumatic combination the solid tyre might be brought nearer the road surface with advantage.

THE DUCASBLE CUSHION TYRE.

The North British Rubber Co. have for some time past been manufacturing for the French market a cushion tyre for autocars, and they are now constructing the same tyre, the Ducasble, in English sizes. The main feature

is that it has all the advantages of a first-class solid tyre with extra resiliency on account of the arch-like orifice which runs through the tyre. Hitherto, the great difficulty with such tyres has been the fixing to the rim. In the tyre in question the attachment is simple and safe, for an inner steel rim lies



in the bed of the arch-shaped hollow of the tyre, and bolts with undercut heads engage in this rim, as is shown by the illustration, and force the edges of the tyre into firm contact with the sides of the rim as well as at the same time anchoring it firmly to the bed of the tyre rim. The flat tread, it is claimed, prevents to a great extent any tendency to side-slip.

A PETROL MOTOR FIRE ENGINE.

During the past few months a great deal has been done to bring the petrol motor into use in the fire-brigade services throughout the country, and our readers will remember that the various designs as they have been produced have been illustrated and described in the pages of *The Autocar*. We have now to record a still further advance in the employment of the petrol engine, for Messrs. Merryweather have constructed for Baron Henri de Rothschild a machine in which the propelling motor is constructed to couple up to the delivery pumps, thus serving the purpose of the ordinary steam fire-engine. The 30 h.p. four-cylinder engine drives through the usual change-speed gear on to a countershaft which is fitted with clutches, so that the drive from the countershaft to the road wheels may be disconnected when pumping. A three barrel pump is driven from the countershaft by a spur gear which is thrown into engagement for pumping. The result of this arrangement is that there is a wide range in the speed of the pumps, which have a capacity of three hundred gallons per minute, and a single jet can be thrown over



120 feet high—sufficiently high to cope with any outbreak of fire in the most lofty buildings.

THE NON-SKID TRIALS.

Absorption of Power Tests.

On Friday last all the vehicles taking part in the non-skid trials, and still wearing their anti-skidding devices, proceeded to Stag Hill, near Potter's Bar, in order that the effect of the devices in retarding the run of the car might be observed. The method followed was to allow the cars, with the non-skids *in situ*, to run free down the hill, and then returning the device was removed and the car again allowed to run down the decline. The differences in the lengths of these two runs were carefully noted and measured by the judges. The figures were not made public, but will be taken into account when making the awards. The devices that were tested were as follows:

Mr. Samuel Butler's, fitted to a 15 h.p. Panhard, weighing 25 cwt.; four seats. Flat disc on tread held on by steel stems passing through the cover.

Mr. H. S. H. Cavendish's. Single disc running on ground between back wheels.

Mr. W. Hunt's, fitted to an 8 h.p. Wolseley, weighing 17 cwt.; four seats. Double roughed discs running on ground between back wheels.

Messrs. Rourke and Horsborough's, fitted to a Keenelet steam car. Double discs running on road between back wheels.

Mr. Alex. Nicholson's. Steel blades on back wheels with springs; not touching tyres.

Mr. Mark Vivian's, fitted to a 12 h.p. Parsifal, weighing 15 cwt. Tread consisting of alternative sections of hard and soft rubber.

Wilkinson Tyre and Tread Co.'s, fitted to a 12 h.p. Wolseley, weighing 18 cwt.; four seats. Fine steel wire staples embedded in tread.

Sainsbury's Anti-skidders, fitted to an Argyll; four seats. Spring fork carrying blades each side of tyre, supported on rim.

L'Empereur device fitted to a 12 h.p. Georges-Richard, weighing 15 cwt.; four seats. Steel plates connected by links fitted on tread, detachable and kept on by inflation of tyre.

Messrs. Parsons Non-skid Co.'s, fitted to a 10 h.p. car, weighing 22 cwt. Detachable chains on tread.

Messrs. the Civil Service Motor and Cycle Agency, Ltd., fitted to a 10 h.p. Service car, weighing 15 cwt.; four seats. Detachable leather cover fitted with steel studs (Billet).

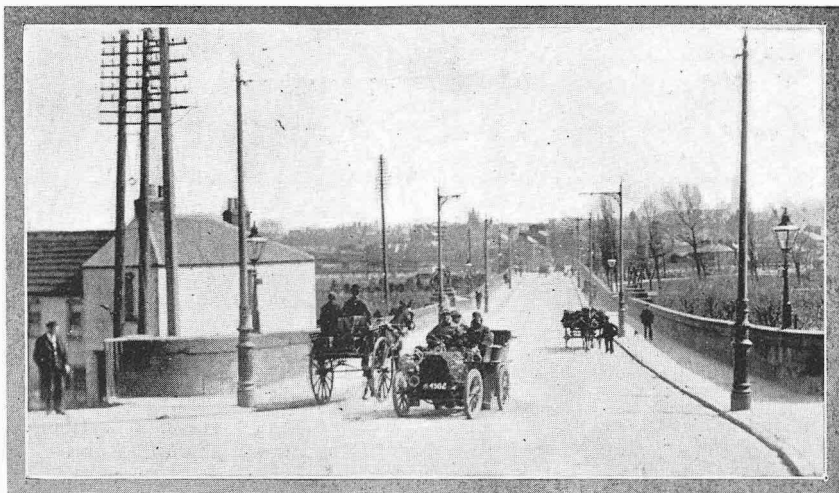
The judges present were Major Lloyd, Professor Vernon Boys, and Mr. Worby Beaumont, with Mr. Basil Joy in his capacity as technical secretary of the club. As a matter of fact, none of the devices seemed to detract largely from the free running of the cars, and we lean to the opinion that if the absorption of power could be correctly gauged when the engine is propelling the vehicle along the road surface the results might in some cases wear a different complexion. After the completion of the tests the cars returned to the Locomobile Garage at South Kensington, where during the past week they have been inspected with interest by a considerable number of visitors.

The actual trials of the non-skidding properties of the various devices will be carried out to-day (Saturday) on the cement floor of the spacious Locomobile Garage, Sussex Place, South Kensington, the area being spread with a mixture of mud and soft-soap, which Mr. Basil Joy has found to provide the most deadly slip mixture obtainable. Admission is by ticket only.

A TWO THOUSAND MILES RUN.

As we notified in our last issue, Mr. Cecil Edge, with Mr. F. G. Cundy and Mr. Douglas Miller, of *The Referee*, reached their most northerly objective, John-o'-Groat's House (1,163¾ miles) at 11.45 a.m. on Tuesday, April 26th, and after a delay of thirty-five minutes for photographic purposes the car started on its long homeward run. Owing to the terribly heavy condition of the roads and the fact that several wrong turnings were taken, the progress to Perth was extremely slow, and after leaving Inverness (1,299¾ miles) another topographical misconception led to the making of an unnecessary detour of some fifty miles through Nairn and Forres. This disappointing and irritating circumstance was in some measure compensated for by the fine running made through Stirlingshire and Lanark over grand roads and under a cloudless sky. Carlisle was gained and quitted at 7.45 p.m. on the

27th ult., and thereafter befell the most serious incident of the long trip. When on the summit of Shap Fells,



Mr. Cecil Edge leaving Carlisle on the outward journey.



Mr. Cecil Edge's arrival at the Automobile Club, Piccadilly, at the conclusion of his 2,000 miles journey.

The Secretary for Scotland (Mr. A. Graham-Murray) has issued an explanatory circular dealing with the new regulations of the Local Government Board affecting motor cars in Scotland. The regulations, which are known as the Use and Construction Order, do not differ materially from those in force in England and Wales, but they did not come into force in Scotland till the end of last month. Reference is made in the circular to communications received on the question of special speed restrictions, and the following extract is given from one of the letters sent out by the Secretary for Scotland: "The great majority of County Councils in Scotland, and all the County Councils in England, have up to the present date been satisfied not to submit any restrictive proposals." A fair inference from this, the Scottish Secretary thinks, is that local authorities are waiting to see the result of some months' unrestricted operation of the new statute.

midway between Kendal and Penrith, the last available Dunlop cover gave out, and one of the unhappy and chagrined trio set out to tramp four miles over that desolate moor to the nearest railway station. The stationmaster was there roused from his bed at 2 a.m., and induced (being, after all, a good sportsman, like all his fellows of the Fells) to get a service message through to Mr. S. F. Edge at Whitehall Court by means of a porter and a cab from the London Terminus. The result was that new covers were despatched from Euston by the first train in the morning, and reached the stranded car at 4.45 p.m. on the 28th ult., after a wait of eighteen hours on the lonely, breezy summit of Shap Fell.

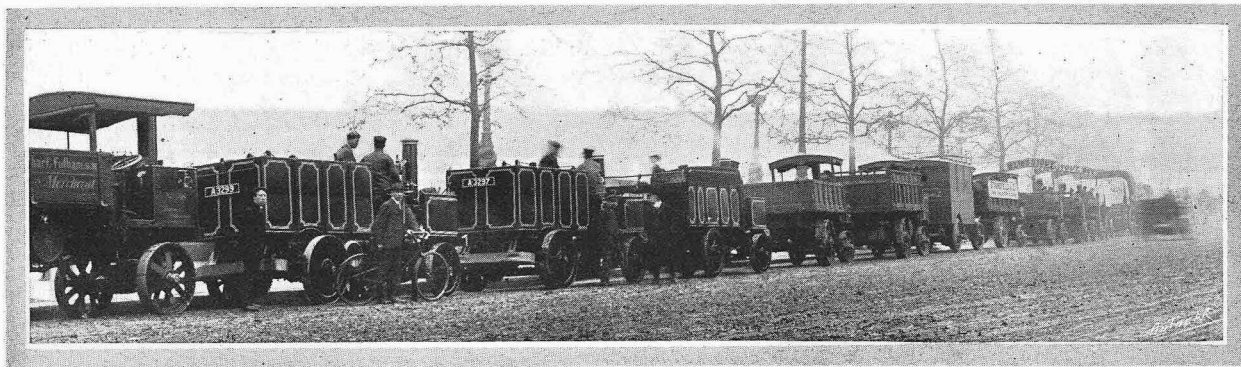
The concluding stages of the run to Brighton, Worthing, and London were remarkable only for such minor incidents as a couple of punctures and a burst tyre cover, and when the Automobile Club was reached a total distance of 2,068½ miles had been covered in 106½ hours' net running, equal to an average speed of 19.4 miles per hour.

Another photograph we have, but which space forbids us to reproduce, is interesting, as it shows that the car on its arrival at Land's End after some 310 miles of driving was practically as clean as at the start.

In the event of any motoring visitor to the eliminating trials being unfortunate with regard to his tyres, it will be of interest to learn that Dunlop motor tyres are stocked in all standard sizes by Messrs. White, Prospect Hill, Douglas; Brooke and Co., Parliament Street, Ramsey; and T. W. Ratcliffe, Castletown Engineering Works, Castletown.

* * *

In reference to the sad and harrowing fatal horse accident to Mr. J. Pethick, of Plymouth, to which we referred recently in "Flashes," Mr. S. H. Pearce, the well-known automobilist, writes us: "I knew Mr. Pethick, of Plymouth, well. He was a thoroughly horsey man, and well-known in the West. I tried hard to convert him to automobilism, and last summer took him for some long rides on my Napier. Had he taken my advice he would probably have been with us now."



MOTOR VAN PARADE. The line looking towards Westminster. The photographs illustrating the event are all by Argent Archer, High Street, Kensington.

MAY DAY PARADE OF MOTOR VANS.

On Saturday afternoon last a greater number of motor vans than was ever seen by any Londoner in one day lined the riverside on the Victoria Embankment. From within a stone's throw of the Westminster clock tower to Waterloo Bridge there was barely room for a man to stand between any two vehicles among this host of commercial autocars. The day was damp and threatening, and the condition of the Embankment, covered as it was with thick, black, greasy slime such as the Metropolis only can produce, seemed in fitter condition for a side-slip trial than a civilised thoroughfare ought to be. On the opposite side of the road a long line of hansom cabs was drawn up, the drivers of which exhibited great interest in the proceedings. In the fairway between the two motor cars bearing judges and spectators gingerly negotiated the treacherous surface.

Threading our way through a motley crowd of spectators, photographers, pressmen, policemen, and others, we gazed with pleasure on the interesting spectacle. Every means of power used in the mechanical propulsion of road vehicles was represented here, steam predominating, next in order came petrol, while one van only was driven by electricity, and this it derived from cells charged from dynamos driven by a petrol engine

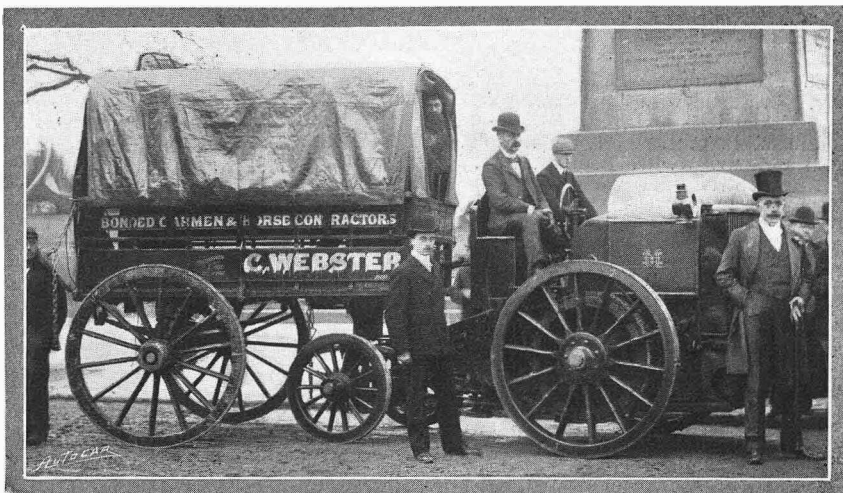
(Fischer system). This van was owned by Messrs. Hampton and Co. Had the sun but shone for a few minutes, the effect of the glittering brass and fresh paintwork would have amply repaid their mechanics for the trouble they had taken, but instead the metalwork was spotted with rain and the paint looked dull. Among those vehicles which especially attracted our attention were those Westminster water-carts by Thornycroft which are now quite common objects in that city; two neat-looking White steam cars owned by Liberty; a bright red van belonging to the British Vacuum Cleaning Co. (though the van contained a petrol motor it was hauled by a steam-engine), while the Caravan Restaurant Co.'s travelling refreshment stall attracted great attention. The stall had a spotlessly clean counter on either side, on which stood two brightly-polished tea-urns, had the forecarriage removed, and was attached to a Thornycroft tractor. Besides these, we noticed a little red 12 h.p. Gladiator van (bearing the well-known name of S. F. Edge, Ltd.) and a neat Clarkson steamer belonging to Messrs. Hamilton and Co., which literally shone with brightly-polished levers and lamps. Another interesting motor caused a good deal of comment. This was the



Lomax Motor Horse. This is a 25 h.p. steam tractor supported by two wheels of large size; the shafts of the van are removed, and the tractor attached. It is claimed that with this attachment a vehicle can be turned in its own length, and backed down the narrowest alley. Amongst others we may mention the 18 h.p. three-cylinder Durkopp Motor Royal Mail Van, a most imposing-looking vehicle; an 8 h.p. Cannstatt Berlin Gesell. waggon owned by H. W. Meredith and Co.; Messrs. Waring's 25 h.p. Gillette, resplendent in burnished brass; Messrs. Bryant and May's 10 h.p. Argyll, which has been averaging seventy-five miles a day; a Lancashire steam waggon owned by the Acme Flooring and Pavement Co.; a 12 h.p. Royal Mail van by the General Motor Car Co., Norbury; a Pickford van by Hindley and Co.; and a smart-looking Foden steam waggon. Messrs. Thornycroft also had a businesslike-looking petrol waggon, owned by the Corporation of London, and a gigantic steam van constructed for colonial use.

Among the eighty-two motor vans and lorries paraded, the condition of the following caused their drivers to be awarded first prizes:

Straker steam waggon (Messrs. Piggott Bros., Ltd.)
 Thornycroft dust cart (City of London).
 Thornycroft dust cart (City of London).
 Clarkson steam van (Messrs. Hamilton and Co.)
 Lancashire steam waggon (Messrs. H. Greenfield and Co.)
 Straker steam waggon (Messrs. Dorman, Long, and Co.)
 Thornycroft restaurants' van (Caravan Restaurant Co., Ltd.)
 Thornycroft steam waggon and trailer (British Vacuum Cleaner Co., Ltd.)
 White steam van (Messrs. Liberty and Co.)
 Thornycroft steam waggon (Messrs. T. and W. Farmiloe, Ltd.)
 Wallis tractor and trailer (Messrs. Wild, Robbin, and Co.)
 Foden tractor and trailer (Chisellhurst Mineral Water Co.)
 Milnes-Daimler petrol van (Bird's Custard Powder).



The Lomax motor horse attached to one of the terrors of the streets, a hooded van.

Thornycroft steam waggon (Messrs. Allen and Hanbury).
 Thornycroft steam waggon (Messrs. Allen and Hanbury).
 Thornycroft steam waggon (Messrs. John Dewar and Sons).
 Straker steam waggon and trailer (Messrs. Carter, Paterson, and Co.)
 Lancashire steam waggon (Messrs. Mann, Crossman, and Co.)
 Fischer petrol-electric van (Messrs. Hampton and Sons).
 Milnes-Daimler petrol bus (G. Hayes).
 Thornycroft steam waggon (Messrs. Schweppes, Ltd.)
 Thornycroft steam waggon (Messrs. Searey, Tansley, and Co.)
 Lancashire steam waggon (Provincial Carriers).
 Thornycroft steam dust cart (City of Westminster).
 Thornycroft steam water cart (City of Westminster).
 Thornycroft steam water cart (City of Westminster).

The above-named waggons, vans, etc., were found by the judges to be in first class condition, due regard being had to the time they had been running and the class of work performed. There were over thirty more vehicles than paraded last year.

The judges were Colonel Holden, R.E., Lieutenant-colonel Crompton, Messrs. Worby Beaumont, W. H. Griffith, E. R. Calcroft, and W. Bull, M.P.



Further down the line. The Midland Railway vans take a prominent position.

Mr. Maurice Hewlett, the novelist, was caught in a police trap at Nether Wallop, near Andover. The case came on for hearing at the Andover Petty Sessions on Friday, April 29th, but, owing no doubt to the able defence of Mr. Staplee Firth, was dismissed.

The Chloride Electrical Storage Co., Ltd., of Clifton Junction, Manchester, are putting some very neat Exie ignition cells upon the market for automobile use, and they will supply a pamphlet giving ampere capacity, external dimensions, weight, and prices of these cells.

CLUB DOINGS.

Blackbeath A.C.

The above club was formed at a meeting held on Wednesday, April 20th, with the following officers: Committee, Dr. J. Strickland Goodall, Messrs. L. Beadle, H. Cunis, A. Duckham, L. C. Lambert, H. Norfolk, and S. T. Norfolk; treasurer, Mr. W. O. Bedford, R.N.; honorary secretary, Mr. A. Roberts. The inaugural run took place on Saturday, April 30th, to Seal Chart near Sevenoaks.

South Lincolnshire M.C.

An enjoyable meet took place at Boston on Thursday, April 28th, in connection with the South Lincolnshire Motor Club. Although some threatening clouds were visible, the weather remained fine, and the automobilists who attended from a distance had an enjoyable run. The members met at the Red Lion Hotel, whence they proceeded to the Market Place, a parade being held in front of the Ingram monument. Pedestrians manifested much interest in the parade, a large crowd assembling. Subsequently the members returned to the Red Lion Hotel, where they partook of tea.

Lincolnshire A.C.

The meets of the Lincolnshire A.C. continue to be highly successful, that at Brigg on Saturday being notably so. There are few motorists in the town, but members of the club came from most parts of the large county, with the result that there were a great many cars—good ones, too—and a large number of members. The Angel Hotel was the venue, and soon after noon cars began to arrive, there being an important meeting of the club committee before the meet. The cars—numbering nearly thirty—were a fairly representative lot. At the committee meeting it was decided to hold the Lincoln meet, when the members are to be entertained at the Castle by the Lincoln members on August 13th. The Riseholme invitation (Mr. Moreing) was accepted for July 16th, the meet with the Sheffield club at Allerton on July 2nd, and Sir Charles Seely's invitation to Sherwood Lodge for July 23rd or August 6th, these dates, of course, being provisional. Mr. G. Godson, Mr. E. Cragg (honorary secretary), and Captain J. A. Cole (chairman) were deputed to approach the South Lincolnshire M.C. with a view to amalgamation. Mr. C. Nelson (honorary solicitor) was asked to prepare the case for the club in respect of the proposal of the Holland Council as to the Crowland road at night; and, if necessary, to engage counsel. It was decided to press on the A.C.G.B. and I. the importance of taking action in regard to the removal of the restrictions on the manufacture of alcohol for commercial purposes. The members of the committee gave in their numbers to the honorary secretary, and will ask the club members to follow suit, so that steps may be taken to check careless or inconsiderate driving.

Manchester A.C.

On Saturday, April 30th, the Manchester Automobile Club had a week-end run to Leasowe, which is situated on the Wirral Peninsula, making the Leasowe Castle Hydro their headquarters. The run was a most enjoyable one, the weather being everything that could be desired on the Saturday, and on Sunday only enough rain fell to lay the dust.

Hertfordshire A.C.

H.S.H. Prince Louis of Battenberg, who is a resident of the county and drives a Wolseley car, has consented to become one of the vice-presidents of the Hertfordshire Automobile Club. The club held a run to Toddington in Bedfordshire on Saturday, April 30th. Some twenty-five members and friends attended, the overcast condition of the sky keeping many away.

Derby and District A.C.

On Wednesday last week, at the invitation of Mr. Charles Crompton (one of the vice-presidents), this club paid a visit to Stanton. Between twenty and thirty cars participated. At the Ironworks they were met by Mr. Crompton and the heads of the various departments, and inspected the works. Returning to the cars, the short run back to the Hall was made in procession, and the guests were hospitably welcomed by Mrs. Crompton. A pleasant half-hour was spent in the grounds of the Hall, after which the party was photographed in front of the conservatory. A vote of thanks to Mr. and Mrs. Crompton was accorded before leaving.

Leicestershire A.C.

The second run of the Leicestershire Club took place on Saturday, the destination being Daventry, a distance of thirty-two miles. Ten cars and two motor bicycles started. The route was via Blaby, Lutterworth, and Rugby, through lovely country. Between Leicester and Rugby the country is rather flat, with here and there rolling uplands. From Rugby to Daventry the road is a splendid one, level nearly throughout, and with a good surface. Daventry was reached well under the two hours, and all the cars came in without having sustained mishap. A start on the return journey was made shortly after six o'clock, the way being by the old Watling Street.

A.C. of Rhodesia.

A meeting was held at Bulawayo on March 29th to form an automobile club for Rhodesia. Amongst those present was Mr. A. R. Atkey, of the Nottingham A.C., who gave an account of the manner in which clubs are managed in England. He said it was a strange coincidence that the Nottingham Club was inaugurated by a meeting attended by a similar number to those present on this occasion.



The Derby and District A.C. without their cars in front of the conservatory at Stanton Hall.

namely eight, and from that small nucleus sprang one of the strongest provincial clubs in England. Mr. Atkey having spoken on the advantages attending the formation of a club, a resolution was adopted carrying out the object of the meeting. The objects of the club were formulated as follows: "To foster and develop the use of automobilism in all its various forms; to provide a centre of information and assistance to all interested in mechanical traction; to arrange club runs, lectures, and trials demonstrating the advantages of automobilism; to control the sport of motor racing." Officers and committee were appointed, and the subscription was fixed at two guineas per annum, with one guinea entrance fee. The opening run was arranged for Easter Monday to the Matopos. Two of the members were appointed to act as whippers-in—to see that all members were on ahead before going on themselves.

Southern Motor Club.

To-day (Saturday) a 100 miles reliability trial will be held open to all members of the club. The route will be from Purley to Nutley, via Caterham, Godstone, and East Grinstead. The competing vehicles will be comprised in a single class—three-wheeled vehicles are allowed, but forecars must be removed. The maximum speed allowed is seventeen miles per hour. An entrance fee of 1s. will be charged. The conditions state that no stoppage will be allowed, even punctures counting as a disqualification. Competitors will meet at Purley at one o'clock and have their machines examined, the following parts being sealed by three judges: (1) Toolbag, (2) doors to tank, (3) make and break or wipe contact case, (4) pump, (5) float chamber, and any other parts the judges may think fit. The start is timed for 1.30 punctually, and

late arrivals will be disqualified. These details are given in the hope that they may prove useful to other clubs organising similar competitions. It is further stated that "Competitors should bring their friends for having petrol and refreshments supplied to them whilst riding," competitors being requested to bring as many friends as possible to act as observers.

CLUB FIXTURES.

- May 7.—Scottish A.C. (W. Sec.) run to Troon.
 „ 7.—Yorkshire A.C. run to Cawthorne.
 „ 7.—Southern M.C. 100 miles reliability trial.
 „ 8.—Southern M.C. run to Crawley.
 „ 10.—Herefordshire A.C. hill-climb (Dinmore).
 „ 12.—Lincolnshire and South Lincolnshire Clubs discuss amalgamation.
 „ 12.—Lincolnshire A.C. run to Boston.
 „ 14.—Nottinghamshire A.C. hill-climb.
 „ 14.—Reading A.C. meet Oxford A.C. at Watlington.
 „ 14.—Burnley and District A.C. run to Settle.
 „ 14.—South Lincolnshire A.C. meet at Market Deeping.
 „ 14.—Leicestershire A.C. run to Oakham.
 „ 14.—Gloucestershire A.C. meet South Wales A.C. at Monmouth.
 „ 14.—West Surrey A.C. run to Ockham.
 „ 14-15.—Southern M.C. run to Marlow.
 „ 14.—Derby A.C. hill-climbing competition.
 „ 21-23.—Reading A.C. Whitsuntide tour to Porlock.
 „ 21-23.—Midland A.C. Whitsun tour to Bettws-y-Coed.
 „ 25.—Leicestershire A.C. run to Rothwell.
 June 11.—Ranelagh Club motor car races.



THE MOTOR VAN PARADE. The Vacuum cleaning machines, which work with petrol or paraffin motors, are taken from place to place by a steamer

A USEFUL HANDBOOK.

"The Continental Handbook for Automobilists in Great Britain and Ireland" is a work of reference for automobilists which does the Continental Caoutchouc and Guttapercha Co., of 64-65, Holborn Viaduct, London, E.C., who have compiled and issued it, the greatest possible credit. No pains have been spared to make the handbook as complete as possible, and this, we imagine, will be granted by our readers when we have briefly summarised the contents. After a table of contents, a preface, and a calendar, we find the proper hours for lighting lamps. The full text of the several enactments which apply to motor traffic in Great Britain and Ireland appear, also the Local Government Board Regulations under the Act of 1903. These are followed by the regulations as to the use and storage of petrol and the taxes on motor cars. Then comes what must be termed the *pièce de résistance* of the volume, which takes the form of a most clearly-written and profusely-illustrated treatise on "Clipper-Continental Tyres: How to Treat and How to Repair them." The matters of repair and treatment are so set out that they can be

comprehend by all and sundry, after a little study of what should be for the automobilist a most interesting and instructive task. The full membership roll of the Automobile Club is given, and excellent articles on "Hints on Assurance," "The Cleaning and Care of Cars," and a dissertation "On Clothing while Touring." Another salient feature of the work is "The Automobilist's Gazetteer," which takes the form of an alphabetical list of towns in the United Kingdom, and under the name of each town gives its county, railway stations, post office, telegraph office, telephone fee to London, and altitude above sea level, following with addresses of oil and petrol stores, repair shops, garages, doctors, and hotels. A telegraphic code for ordering Continentals and a list of motor manufacturers and agents are also given. The railway and steamer rates of the country, Customs regulations *re* cars for the colonies and abroad, will be found of great use. In a pocket formed inside the back cover is a clearly-printed map of Great Britain and Ireland to a scale of about sixteen miles to the inch, showing routes numbered to correspond with the tours given in the text.

THE MOTOR CAR INDUSTRY.

At a recent meeting of the Institution of Engineers and Shipbuilders at Glasgow, Mr. Alex. Govan, of the Hozier Engineering Co., gave an address on motor cars. There were, he said, at the present time one hundred thousand workmen employed in France directly or indirectly on the production of motor cars, and during last year (1903) there were imported into this country motor cars to the value of £1,800,000. There was no prejudice against automobiles among the rising generation, and it was a good augury for the future of motors that the youth of the nation were displaying a passionate interest in them. Present time improvements, he remarked, appeared to lie along the line of acceleration of engine speed and reduction of weight, both of which factors demanded simplicity, for it was evident that mere weight did not mean reliability, and all the experience of designers had been concentrated in the direction of getting a reliable machine.

Judging by the report of the Hozier Engineering Co. for the past year, it may safely be asserted that the motor car industry has not only "turned the corner" towards becoming a paying business, but it is really progressing most satisfactorily. The dividend on the ordinary shares of this company for the past three years have been: 1902, five per cent.; 1903, ten per cent.; and 1904, twenty per cent. The success is attributed to the standardisation of parts, adherence to one pattern, the adoption of labour-saving machine tools, and the securing of a large market for the cars.

POLICE TRAPS.

Now that fine weather has come and the roads are again in first-class condition, automobilists will be well advised to be on the alert for the detection of police traps. We shall be pleased to receive early intimation as to the exact locality of such traps as may be noticed by our readers, so that we may give timely warning of their existence.

Motorists who have occasion to travel on the Basingstoke Road are warned to look out for a police trap at Hook, some little distance on the London side of Basingstoke. The trap in question is a quarter of a mile long, and can be easily identified, as part of the measured distance is over a new railway bridge. A plain clothes sergeant and a constable in uniform work the trap, and the time is taken at each end by means of signals and two stop watches. As there is a strong tendency to exaggeration, and the local bench have shown an antipathy to motorists, all users of the road in this neighbourhood should be careful.

New Patents.

This department is conducted by Mr. G. Douglas Leechman, consulting engineer and registered patent agent, 18, Hertford Street, Coventry, 32, York Street, Dublin; and 9, Exchange Chambers, New Street, Birmingham; from whom any further information respecting patents, designs, and trade marks may be obtained.

The following specifications were printed and published on 28th April, 1904. All notices of opposition to the grant of patents on the several applications should be filed not later than 13th June, 1904:

1903.
8,203.—H. Livesey. Change-speed gear.
10,042.—T. M. Hewitson. Device for obviating the necessity of using a differential gear.
10,219.—G. P. Clark. Front driving and steering axle.
10,292.—E. Martin. Solid tyre and attachment.
10,342.—O. H. Gray and T. Sloper. Former for moulding outer covers.
11,317.—J. T. Andrews. Front driving single-seated motor cycle.
11,454.—F. T. and W. G. Fletcher. Portable stand for motor cycles.
11,651.—C. H. Gray and T. Sloper. Rubber-treated tyre fabric built up of flat threads.
12,590.—A. B. Chapman. High-tension contact breaker.
12,743.—F. H. and C. Hall. Wheel with tubular steel spokes.
12,812.—E. J. Bonner, K. Lowdon, and W. A. Keay. Spring driving wheel for lorries.
12,889.—F. Campens. Continuous driving-gear for converting reciprocating into rotary motion.
16,389.—C. Price. Solid wood wheel for lorries.
1904.
3,968.—W. Fairweather (Billinghurst). Axial internal combustion turbine.
4,775.—T. F. Rene. Sparking plug.
4,891.—S. Brotherhood and C. W. Bryant. High-tension contact breaker.
5,129.—S. Coumont. Valve type of carburetter.

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Richmond Hill, near Douglar. The cars pass over the road on the left.