THE ANNIVERSARY RUN.

The anniversary run of the Automobile Club from London to Oxford *vid* Reading will, as we announced last week, start from town at 9.30. Up to the time of going to press nearly 120 cars had been entered, and received their official names for the day. Among the makes represented are the following: Locomobile, Decauville, Renault, M.M.C., Napier, Oldsmobile, Panhard, Darracq, Star, Daimler, Dennis, Clarkson Capel (new 12 h.p. steamer), Milnes, Clément, Peugeot, Argyll, Electromobile, Benz, James and Browne, Gladiator, Marshall, Adler, Coles, Miesse, Rochet-Schneider, Hurst and Lloyd, Simms, Mors, Georges Richard, New Orleans, Wolseley, Marston, Rochet, Century, Brush, Weston, and one Mercedes Simplex. Among the motor cycles officially taking part in the run are a Mitchell, two or three Excelsiors, Phœnix, Singer, and Ormonde.

THE LIVERPOOL SELF-PROPELLED TRAFFIC ASSOCIATION.

At a recent meeting of council, the resignation of Mr. E. Shrapnell-Smith, who has been acting as honorary secretary *pro tem.* during the past few months, was announced as taking effect. Mr. Shrapnell-Smith will remain connected with the association as a member of council, but the secretarial duties will be discharged by Messrs. Lloyd and Walker, of the Accountants' Department of the Liverpool Association, pending the appointment of a new honorary secretary. Since July 1st, when a clubroom was started at the Exchange Station Hotel, Liverpool, there has been a steady increase of members, the register now including upwards of 160 names, among which figure all the best known motorists of the north-west.

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 30th October, 1902. All notices of opposition to the granting of patents on the several applications should be filed not later than 15th December, 1902.

1901.

20,011.—H. L. Schaffner. Toggle action brake to act on the wheel rim and operated by a cord.

20,025.—R. Algrin. Explosion motor with separate compression chamber and adjustable admission and exhaust.

20,085.—H. H. Lake (the Chicago Motocycle Co.) Internal combustion engine in which the motor fluid is compressed in a cool part of the cylinder and transferred to a heated part for expansion.

20,088.—B. J. Arnold. Power-transmitting mechanism with means for storing surplus power and using the same.

20,101.—B. J. Arnold. Storing and using the energy expended in braking the wheels of vehicles.

20,311.—F. Reddaway. Pneumatic tyre with tubular inextensible shaped fabric.

20,402.—W. Whitehead. Elastic transmission device introduced between the motor and driving wheels.

20,680.—A. A. Verel. Spring wheels with in one case a pneumatic hub.

23,136.—J. Dring. Friction clutch, principally for the driving wheel hub of motor bicycles.

23,501.—F. W. Lanchester. Spring-adjusting device and indicating notch plate for actuating mechanism.

24,202.—H. T. Stephens. Sheet of canvas with block of rubber for repairing pneumatic tyres.

1902.

5,713.—T. Bergmann. High tension magneto electric igniter.

7,641.—L. A. Squire. Annular repairing patch threaded on to the air tube.

15,603.—H. S. Hale. Sheet metal pedestal for seats of motor vehicles.

16,283.—C. H. Wheeler and F. W. Kremer. Means for securing solid and hollow tyres to wheel rims.

17,061.—Turcat, Mery et Cie. Bolt and nut for repairing punctures.

Answers to Correspondents.

This week the following correspondents have been, or will be, replied to by post:

E. S. Matthews.	Subscriber.
A.J.B.	M.E.K.
A. Ledger.	G.H.P. (Spilsby).
W. E. Wentworth.	Peters.
E. Hutchinson.	W. Hewitt.
N. A. Letts.	J. W. Wood.
J. L. Scott.	R. Ranger.
E.C.B.	H.S.P. (Tunbridge).
J.P. (Llanrwst).	H. Greenfield.
E. W. Wedderburn.	F. G. Stenning.
H. T. King.	G. G. Feeney.
E. F. Murray.	Gainsborough Harward.
W. E. Teschemaker.	W.B. (York).
Oscar Humfrey.	A. E. Thompson.
A. C. Eyre.	M. B.

Our thanks are due to the following for items of news and various topics of interest which have been or will be dealt with: Archibald Ford, J. R. Egerton, F. Parker, E. H. Renton, G. H. Emberlin, H. G. Wedd, L. Savory, Alfred Ledger, H. H. Gordon, D. C. Thomson, G. H. Ward, A. W. Dougill, Leopold Canning, J. Woodhead, and J. D. Bell.

NOTICES.

SUBSCRIPTIONS.

"THE AUTOCAR" is published every Friday morning in Town and Country, and may be obtained of all Newsvenders and Book stalls, or delivered first post on Friday, at the following rates:

GREAT BRITAIN.	s.	d.	ABROAD.	s.	d.
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Messrs. W. H. Smith & Son take *The Autocar*, and if ordered at one of their bookstalls they will supply it regularly at such place. Anyone not being so supplied should write to Messrs. Smith, or their head office, Strand, London, W.C.

PARIS AGENTS. M.M. Boyveau & Chevillet, 22, Rue de la Banque

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EDITORIAL matter and general queries should be addressed "The Editor, *The Autocar*, Coventry."

ADVERTISEMENTS and Business Communications should be sent to ILIFFE & SONS LIMITED, Coventry, or 3, St. Bride Street, Ludgate Circus, E.C.

Communications to the Editor should be written on one side of the paper only, and must be authenticated by the names and addresses of the writers not necessarily for publication, but as a guarantee of good faith.

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THE AUTOCAR

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

EDITED BY H. WALTER STANER.

No. 368. Vol. IX. SATURDAY, NOVEMBER 15TH, 1902. [PRICE 3D.

THE AUTOCAR.

EDITORIAL OFFICES:
COVENTRY.

PUBLISHING OFFICES:
3, ST. BRIDE STREET, LUDGATE CIRCUS, LONDON, E.C.

CONTENTS.

In "The Autocar" of November 8th, a coloured supplement plate—"The 16 h.p. Napier"—was published. Separate copies of this supplement can be obtained packed flat, post free, for 7d. from the publishers, 3, St. Bride Street, Ludgate Circus, E.C.

COLONIAL AND FOREIGN EDITION.

IN ADDITION TO THE USUAL EDITION OF "THE AUTOCAR," A SPECIAL THIN EDITION IS PUBLISHED EACH WEEK FOR CIRCULATION ABROAD. THE ENGLISH AND FOREIGN RATES WILL BE FOUND ON THE LAST PAGE. ORDERS WITH REMITTANCE SHOULD BE ADDRESSED "THE AUTOCAR," COVENTRY.

The Autocar can be obtained abroad from the following:

AUSTRALIA: Phillips, Ormonde, and Co., 533, Collins Street, Melbourne.
FRANCE: Nice, Levant, and Chevalier, 50, Quai St. Jean Baptiste
UNITED STATES: The International News Agency, New York

Notes.

The Numbering Question.

When referring to the numbering proposal at the Automobile Club dinner, Mr. Roger Wallace, the chairman of the Club, mentioned the fact that, as an alternative, he had proposed to the President of the Local Government Board some form of certification of autocar drivers, but that Mr. Long had considered this would be too complex a matter for the Government to handle. We do not see why this should be. The French Government find no difficulty, and we assume they are no more intelligent than our own Government officials. However, this is not the point. The Chairman of the Automobile Club stated that if the Local Government Board could not see their way to grant certificates of capacity for driving, the Automobile Club would be willing to undertake the work, subject, of course, to Government approval and presumably in lieu of numbering. The French Government authorities have already agreed to accept the Automobile Club's driving certificate as a sufficient guarantee for the capability of the driver, so that members of the club about to tour in France will no longer have to undergo the lengthy and trying ordeal of obtaining a motor certificate before they can drive in France. This concession has been largely due to the persistent work of Sir David Salomons. However, to return to the suggestion that the Club should grant certificates for English drivers in lieu of numbering, and as a set off against the abolition of a speed limit, there is no doubt whatever that this would be far preferable to numbering, though of course, like any other compromise, it has its objections. At the same time we still believe, as we have all along, that the present is not the time to attempt any change in the law. The safest policy appears to us to be a definite settlement among automobilists themselves on a series of propositions as to amendment of the law. Possibly, when the meeting at the Club has been held to discuss this question, something of the sort may be drafted. These propositions, which would voice the opinions of, at any rate, a very representative body of automobilists, should then be submitted to all the affiliated clubs for further discussion, and, as far as possible, consolidated. They should then be kept ready till such time as the Government shows a determination to handle the subject. In the meantime the driving of high-powered cars should be discouraged in every possible way. The Club very wisely refused to have any of these machines in its reliability trials, and any further steps which it takes to discourage their use, although they may offend a few of the wealthy irresponsibles in the Club ranks, will undoubtedly meet with the heartiest approval of the vast majority of the membership, and of every automobilist in the [illegible] who has the welfare of the pastime at heart.

The Anniversary Run.

Although the Automobile Club does not regard the anniversary run as by any means the most important fixture of its year, and in this, of course, it is perfectly right, there is no doubt that, as a demonstration of the growth of automobilism and of the organising powers of the club, it takes second place to no other event in the automobile year. The management of the run was extremely good, and reflects the greatest credit upon the secretary and his assistants. No one was overburdened with

regulations, but all essential points were provided for, and the whole thing went off smoothly and well. Some people are apt to regard these runs as of no use to the movement, but we entirely disagree with them, and believe that, so far as the encouragement of automobilism and the fostering of public interest in the pastime are concerned, it would be a good thing if similar runs were to take place very much more frequently. The weather has certainly not favoured the club this year, and Saturday was no exception; but, here again, good rather than harm resulted, as quite a number of cars which their makers believed to be weather-proof were found to be otherwise, in nearly every case the stoppages being due either to insufficient insulation, so that the continuous wet caused short circuits, or to mud and wet penetrating and clogging the air inlets. In the ordinary way the average automobilist, whether he were owner or manufacturer, would stop in shelter, and would not persist in driving in an open car through rain sufficiently heavy to sting the face, and over roads which were absolutely afloat; and, consequently, the attempt to earn a non-stop certificate has been of service to more than one manufacturer, as he has found out another spot in which his car was not weather-proof, and has proceeded to rectify it. Those who drove covered cars certainly scored on Saturday, and we are glad to note that the proportion of machines suitable for use in any weather is increasing. The wings on many of the cars were quite inadequate, and this was plainly shown by the state of the vehicles and their occupants. The fitting of triangular guards inside the front wings and coming well below the front axle, as is the general practice with the Belsize and Wolseley cars, is undoubtedly a great advantage. It not only prevents a great deal of mud flying backward on to the occupants of the car, but it keeps the vehicle much cleaner, and saves the engine from a lot of wet which would otherwise throw up. We could not help being struck with the many different styles of driving as the cars passed us at various points of vantage on the road. Quite a number of owners did not fit their cars, and we noticed them leaning forward and crouching in most uncomfortable positions; others drove as if they were parts of their vehicles, and it was a pleasure to watch them. The uncomfortable attitudes appear to be due to the steering-wheel being at the wrong height. Telescopic or adjustable steering-wheel standards are very rarely fitted, but very short or very tall people should have the standard lengthened or shortened, as the case may be, to meet their personal comfort.

Metropolitan Police and Autocars.

The Metropolitan police are now contracting motorphobia. At Marlborough Police Court on Saturday last Mr. Andrew Fletcher, an officer in the Household Cavalry, was fined £5 on a charge of alleged driving to the common danger in Piccadilly Circus. P.C. Whittington stated that defendant did not pull up when he (the policeman) held up his hand to regulate the traffic; he estimated the speed of the car at "about twenty to twenty-five miles an hour," and in cross-examination he said he had intended calling a witness, whom he was now unable to find, who remarked at the time that the speed was forty miles an hour. The lost witness appeared for the defence, and said the speed was not more than four miles an hour, and that the statement as to forty miles an hour attributed to him was an "invention." The defendant himself stated that the engine was cutting out at the time, and was going very slowly—only about two miles an hour. The magistrate came to the conclusion that the defendant had been guilty of "wanton driving," and imposed the penalty above mentioned. From information supplied to us, however, there appear to have been several points in connection with the case which the constable omitted to mention. Thus he did not say that the defendant stopped the car when ordered by the constable to do so. Nor did he say anything about the way in which he treated the defendant on the occasion of the alleged offence. The defendant, on being asked, handed to the policeman his card, but the policeman nevertheless pulled him off his car and conducted him to the police station, even refusing his request to be allowed to take a cab. At the police station he was kept waiting for nearly threequarters of an hour, until the inspector appeared on the scene. Whilst waiting, Mr. Fletcher rose and walked towards some advertisements hanging on the wall, whereupon his captor is said to have caught hold of him and pushed him back on to the bench. The inspector, it was alleged, was also uncivil, and, putting him in the dock, asked the nature of the charge. The policeman said something which Mr. Fletcher was unable to overhear. They then started taking the things out of Mr. Fletcher's pockets. Fortunately, a friend happened to recognise the defendant's car standing outside the police station; it had been driven there by the mechanician, and he at once proffered his help. The inspector inquired if he would go bail for Mr. Fletcher. As Mr. Fletcher was about to leave the station, accompanied by his friend, the inspector is stated to have jeeringly observed, "Lucky for you your friend turned up when he did; otherwise you would have enjoyed the pleasure of being locked up for a few hours." These statements speak for themselves, and show to what a condition things have arrived. In the battle now raging between the motor car and its enemies, law and justice are ignored.

A Model of Automobile Legislation.

When the British Parliament again takes up the subject of automobile legislation we would commend to its notice an Act passed by the New Zealand Parliament on September 15th last. That enlightened colony is far in advance of the mother country in this respect, for without any agitation or conflict of opposing prejudices and interests, the House of Representatives has legislated on the matter precisely as reason and commonsense would dictate. In effect the Act allows that motor cars may be driven at any reasonable pace in the country, but in towns they are subjected to the same restrictions as horse-propelled vehicles, which are controlled by local byelaws under the supervision of the Colonial Secretary. It has not been found necessary to define a speed limit, either for horse-drawn vehicles or motor cars. The only reference to the rate of speed is the following: "The person in charge of a motor car shall not permit such car to travel along a road, street, or public highway at a greater rate of speed than is reasonable."

THE NEW 12 H.P. NAPIER.

Argent Archer, Photo. *High Street, Kensington.*

One of the machines which excited great interest in the anniversary run on Saturday was the new 12 h.p. Napier, which was driven by Mr. Charles Jarrott, who was accompanied by the designer, Mr. Montagu S. Napier. The vehicle, it will be seen, is not a large one, and the great points aimed at by the designer are high speed uphill, extreme smoothness, quietness in running, and lightness. The four-cylinder engine, although nominally of 12 h.p., gives 15 h.p. upon the brake.

The transmission is of the usual four-speed Napier type, and, in fact, practically every part of the car may be described as a reduced facsimile of the redoubtable 16 h.p. That is to say, the engine is governed on the throttle, though its speed can be accelerated by the driver. The commutator is of the Napier type, which we recently illustrated and described in detail, and is fixed at the back of the dash in sight of the driver. The special type of Clarkson cooler is fitted in front of the bonnet as in the Gordon-Bennett car. Circulation is forced by a rotary pump, and a circulation gauge is fitted on the dashboard. The wheels are 34in. in diameter with Gordon-Bennett Dunlop tyres of 90 mm. cross section. Although the car is shown with a light racing body, this, of course, is only one of the alternative forms of carriage which can be fitted to the chassis, as there is plenty of frame space to accommodate a luxurious four-seated body. The bore of the cylinders is 3½in., and the stroke 4in., and the normal rate of revolution between 900 and 1,000 per minute. The weight of the chassis without body, but otherwise complete, is 12 cwt. The wheelbase is 7ft. 4in., the gauge from centre to centre of tyres 4ft. 2in., and the height of the top of frame from the ground 1ft. 10in. The finish of the car is exceptionally good, but it is obscured by a coating of mud, as our photograph was taken after the Oxford run. The new car will be exhibited at the Paris Show.

It is said that the American Westinghouse Co. have received an order from the King to supply a gas engine and dynamo plant at Sandringham for the purpose of charging electric automobiles.

* * *

The enterprise of the promoters of the National Show is certainly most commendable. They have circulated no less than 15,000 special tickets to members of the motor business and likely buyers, which can be exchanged at the secretary's office, 48, Holborn Viaduct, E.C., and will permit the owners to travel to the Crystal Palace and back by first-class carriages, free of expense, and also admit them to the Palace.

The petrol motor cars shortly to be introduced on the N.E.R. system will be 53ft. long and stand 13ft. high. At one end of the car will be the petrol engine, which will drive two dynamos for generating the electric power, and the cars will have a speed of thirty miles an hour.

* * *

We hear that Mr. J. D. Siddeley, under the title of the Siddeley Autocar Co., is about to place upon the market a series of Siddeley cars. The three models will be of 6, 12, and 18 h.p., and will be built on Mercedes lines throughout, the pressed steel frame and other well-known Mercedes features being embodied. The address of the company is Coventry.

USEFUL HINTS AND TIPS.

Although a centrally placed chain picks up less dirt than double side chains, now the dirty weather is with us it is as well to take some step to protect it. A simple arrangement is to fix to the bottom of the car a light iron frame, covering it with leather laced or strapped to the frame to permit of ready removal. With such an arrangement, allowance must be made for the movement of the carriage body upon the springs, otherwise the gear case rapidly becomes a wreck.

× × × ×

If users of steam cars ever notice their water gauge at a standstill while under steam, they should without delay try the lower check valve to see that it has not become seated. These check valves have above them a small hand wheel, the screwing down of which releases the valve. It is possible for this to happen and the boiler tubes to get burnt as a consequence, as we know by a case of this description which lately came under our notice.

× × × ×

If your car is unprovided with means by which paraffin can be injected into the cylinder, and the latter is not fitted with a compression tap, have a paraffin pump lubricator fitted to the dashboard with a delivery pipe, or, in the case of multiple cylinder forked delivery pipes to the lubricating pipes, as close to the entrance of the latter to the cylinder as possible. The cylinder oil pipes must be provided with cocks just above the junction of the paraffin pipes, so that by turning off these before you do your paraffin pumping on coming in from your run, the latter oil is not forced back, as it may be, into the cylinder oil tank. Above all, do not forget to turn these added lubricating oil cocks on directly after you have flushed with paraffin. Forgetfulness in this particular may mean seizing, with all its horrors.

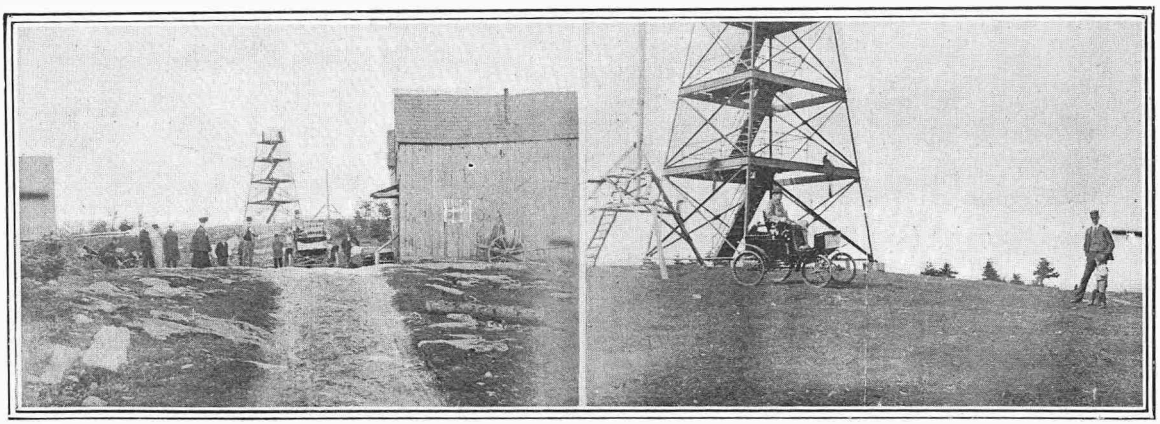
× × × ×

After running a new car about three hundred miles or so, it is advisable to drain all the lubricant out of the gear box, wash the latter out well with paraffin, and having allowed the gear box to remain open and drain, to replenish with fresh lubricant.

Take particular care to see that the cross-head guides of a steam car engine are plentifully supplied with oil, and that undue wear does not take place. These guides have to take the angular thrust from the connecting rod, and if they become much worn there is a danger of the piston rod bending in an extreme case. However little the wear may be on the guides, the bending movement distorts the packing in the stuffing box, causing it to leak. Constant repacking will keep the cylinder steam tight at the stuffing box, but the real cause of the trouble lies in the bending of the connecting rod.

× × × ×

A curious case of stoppage recently came under our notice, and as it arose from a cause liable to affect any motor, automobilists should lay it to heart. The autocar in question was travelling through very bad weather and awful roads, when it developed a fit of the slows. Stale petrol, excess of lubricating oil, and too rich a mixture, were all laid under suspicion in turn, and as the car became slower, and sometimes stopped altogether, and was very difficult to restart, successive sparking plugs were taken out and found to be very sooty; but the mysterious feature about the business was that even a perfectly new sparking plug effected no perceptible improvement. Emptying the crank case and cleaning it with paraffin was equally ineffectual; and when it became obvious that the use of the air lever failed to effect a satisfactory regulation of the mixture, derangement of the carburetter was supposed, but upon complete dissection of the carburetter nothing could be found amiss with it. Yet mile after mile the car got slower, and at last failed to climb the least hill, and was eventually driven at a crawl, which ceased within a hundred yards of its stable. At last the cause of all the trouble was traced to the fact that first dust, then moisture from the humid atmosphere that prevailed, had combined to form a cake of mud outside the gauze screen upon the end of the air intake pipe, resulting in throttling the intake and causing such gas as did reach the engine to be too rich.



Mount Greylock is the highest mountain in Mass., U.S.A., and was recently climbed by a Weston steam car. The feat was undertaken to demonstrate to an incredulous representative of an American daily what could be done in the way of endurance and hill climbing by a good steam car. The climb is two miles in all to the summit, and most of the gradients are from 1 in 15 to 1 in 7, with the exception of a few hundred yards of 1 in 5. The route is, of course, circuitous, and as the weather was extremely bad, the surface was a mass of soft yielding mud, which came right over the rims, so that upon arriving at the top it was hard to tell the original colour of the carriage so thickly was it covered with mud and slime. Our illustrations give two views of the summit, showing the observatory tower and the Weston resting from its labours.

LIQUID AIR AS A MOTIVE POWER.

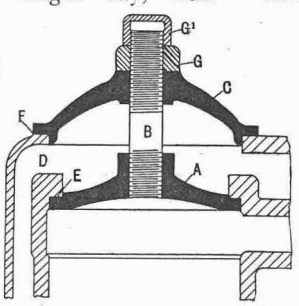
By SYDNEY F. WALKER, M.I.MECH.E., M.I.E.E., ETC.

At a recent meeting of the Cold Storage and Ice Association, Dr. Carl Linde, the eminent German specialist, read a paper on liquid air. After exploding several fallacies in connection with the use of liquid air for cold storage purposes and showing that it would only be economical in cold storage where the quantity of cold required was so small that convenience was the most important factor and cost not so important, Dr. Linde went on to deal shortly with the aspects of the problem involved in the use of liquid air for automobiles. Not much on this point was said in the paper, but in the subsequent discussion Dr. Linde stated, in response to questions, that it would be very inefficient. In theory, he stated, the very best result that could be obtained would be thirty-three and one-third per cent. That is to say, if everything in connection with the apparatus was mechanically perfect, only one-third of the mechanical power required to produce the liquid air could be recovered as mechanical energy, by using the air to drive a motor; and as an efficiency of fifty per cent. in mechanical apparatus was rarely exceeded, the probable practical results, the best that could be expected, would be a return of only one-sixth of the power put into the air in the process of liquefaction.

Other points which were of considerable interest which came out in the discussion were the cost of producing liquid air and the possibility of storing it. Dr. Linde stated, in a former lecture, that the best results that had then been obtained in the matter of the production of liquid air by mechanical methods was the production of 1.1 lb. of liquid air for the expenditure of 1 h.p. for one hour, and that the utmost limit that could be hoped for in that direction would be double those figures. A speaker at the meeting stated that M. George Claude, of Paris, has succeeded in obtaining 2.2 lbs. of liquid air for the expenditure of 1 h.p. for one hour, and he hoped for better results in the future. From these figures and the figures given as to the possible efficiency of liquid air when used for motive power, it will be seen that, on economical grounds alone, it could not approach the cost of petrol at present for automobiles. But it must be remembered that liquid air is truly in that condition in which electricity is supposed to be, and in which it has been supposed to be for the last forty years—literally in its infancy. Methods of producing liquid air will be developed which will be more economical—Dr. Linde himself is already responsible for one important development in that direction—and we may even hope that the law laid down by Dr. Linde, as to the efficiency of liquid air in the process of reconversion to the gaseous form, may have its exceptions. The present writer can recall many instances where eminent men have given it as their opinion that no further economy was possible in certain cases, in which continuous economies have been made ever since. In looking at problems of this kind, men do not always look at the whole of the conditions. Sometimes some important term is omitted from the equation. The duration of a charge of liquid air is also of importance, as well as the method of storage. Steel vessels are useless for this purpose. Storage of liquid air is carried out in a very novel manner. It is stored in glass vessels, each vessel consisting of two distinct bottles, separated from each other by a space, which is maintained at as high a vacuum as possible, and the outer vessel is quicksilvered all over its outer surface, the object of these two arrangements being, the one to resist the passage of heat into the air and the other to reflect the heat waves away from the bottle in which the air is contained. The mouth of the bottle is left open to the atmosphere, the reason of this peculiar arrangement being that once liquid air is formed it is not pressure it fears: it is heat. Under the most perfect conditions of insulation for heat, some will pass through, and this, converting the liquid air into its original gaseous form, creates an enormous pressure, which would burst any bottle that could be made. The pressure is given by Dr. Linde as 800 atmospheres, or nearly 12,000 lbs. per square inch. On the other hand, evaporation goes on slowly, and the film formed upon the surface of the liquid air is a moderately good thermal insulator. Dr. Linde stated that a charge, if placed in one of the bottles described, with its mouth open to the atmosphere, would last for fourteen days before it had all finally disappeared.

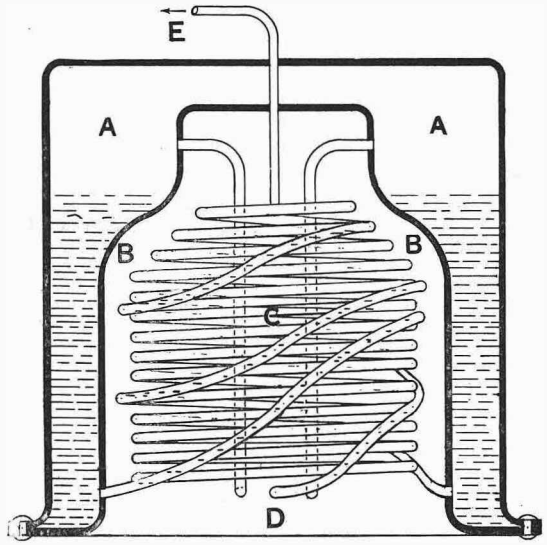
THE NEW DE DION CYLINDER HEAD.

The accompanying illustration shows a method of forming the combustion chamber end of the cylinders of petrol engines just protected by Messrs. De Dion and Bouton. In lieu of casting the cylinder with its water jacket in one casting, the combustion chamber end of the cylinder and above the water space are closed or capped by two solid concave ends, or, we might say, lids. The lower A, forming the crown to the combustion chamber, is held up against the underside of an internal flange E at the end of the cylinder barrel, while the upper C, closing the water space over the combustion chamber, bears on an outer flange F formed on the walls of the water jacket. The screwed stud B is screwed fast to the cap A. The joints of the caps A and C on their respective flanges are obtained by screwing down the nut G and lock-nut G^1 on to the cap C. The inventors claim that by this arrangement they can easily vary the compression space in each cylinder, until by a few simple experiments they find just the space to give the best results with each cylinder. Further, they suggest that the above arrangement gives easy access to the cylinder, both from above and below. Whatever may be the good points of this arrangement, we cannot close our eyes to the fact that the joint E is both a gas and water joint, from which trouble is very likely to arise.



THE TOLEDO STEAM CAR.

Those who follow the doings of the automobile world in the States are cognisant of the success that has attended the production of the Toledo steam car, built by the International Motor Car Co., of Toledo, Ohio, U.S.A. This car, which in the scheme of its design presents many interesting features fresh to the student of steam cars in this country, has now found a home on this side of the Atlantic, the Victoria Carriage Works, Ltd., of 24-26 and 121-122, Long Acre, having become the representatives of its builders in this country. The Toledo cars are generally on the now well-known American steam car lines, but are certainly more heavily built than the majority. They are built in



A A, boiler. C, coiled water tubes.
B B, firebox. D, burner space.
F, steam pipe to engine, taken from the steam space A and through superheating coil within C.

four types, the model A being an ordinary two-seater, B a similar car, but with skeleton frame hood, C a Surrey to seat four looking forward, and D a *dos-à-dos*. In the Surrey, the water tank and petrol tanks are of larger capacity—56 gallons and 13½ gallons respectively—than in the other three cars. The boilers in these cars are of special design, being formed of an outer and inner shell—the outer cylindrical, and the inner of the shape of a dumpy, short-necked jar. This inner shell is, as a matter of fact, the fire-box, and contains special coils of water tubes, which at their lower ends open into the water and at their upper extremities into the steam space. Small dams or scoops are placed at the mouth of each of these tubes, where they open into the annular water space, which, together with the shape of the water tubes, is claimed to cause the water within the space to circulate circumferentially, and so greatly to enhance the steaming qualities of the boiler. A mud settling drum is also provided below the line of the flame action, wherein dirt, etc., may settle, and this may be got rid of by a blow-off cock placed at its lowest point. The boiler is tested to a pressure of 600 lbs. to the square inch, and the working pressure is 200 lbs. to 250 lbs. The burner is a special bronze casting, and is provided with a pilot light which maintains a steady flame independent of the regulator.

The engine, which is placed as usual under the front seat, is a particularly good job. It is of the ordinary two-cylinder type, with cylinders 3in. diameter and 4in. stroke. Piston valves in lieu of slide valves are fitted, these having rings which are effectual in preventing leakage. The valve ends are ball-jointed. Marine practice is largely followed in the design of this engine. The crank-shaft bearings are of large diameter (1⅝in.), and have ring lubrication, while the cross-heads and cranks are enclosed in oil-tight casings, the cranks working in an oil bath. A self-acting lubricator provides for the lubrication of the cylinders. In conjunction with the boiler, the makers claim that they have been able to produce a horse-power with 24 lbs. of water per hour. A boiler feed-pump worked off the cross-head pumps water through a feed water heater placed in the muffler, and raises it to a temperature of 208° before it passes to the boiler. An auxiliary water pump of large diameter is ingeniously fitted to the base of the steering lever, the leverage of the latter making actuation easy and possible when running, should the engine pump strike from any cause. An automatic air pump is also worked from engine cross-head, and a water-lift is likewise provided. The frame, which is specially strongly constructed, is of seamless steel tube of large diameter, and possesses several recommendatory features. Two powerful band brakes are fitted—one on each side of the differential gear—and these are applied by a foot pedal with pawl and ratchet, which hold brake on in any desired position, taking strain off the foot, and is released by pressure on a trip on the upper portion of the pedal. The workmanship and finish throughout are more than up to American standard, but we hope to have more to say with regard to this car after a trial to be taken at an early date.

According to the *Daily Mail* certain landlords of up-to-date flats in Paris are providing motor cars for the use of their tenants. These are about the most go-ahead landlords of which we have ever heard, but we are inclined to think their enterprise will bring them trouble unless their tenants are altogether exceptional people.

* * *

Messrs. Jesse Ellis and Co., Ltd., of Maidstone, shipped to Egypt early this week one of their steam goods waggons for trial by the Egyptian Government. The waggon is similar in general design to those made for the English market, the wheels being specially made to enable the vehicle to run over the loose sandy tracks up country. The wheels are traction engine pattern, the front 2ft. and the back 3ft. 6in. in diameter, the tyres on both being 12in. wide, with the edges covered to prevent them sticking in the sand. We understand that the managing director of the firm is proceeding to Egypt to superintend the trials, which will be carried out by the firm's own men. We might add that the tractor above mentioned was shipped in a packing case measuring 19ft. by 12ft.

PROSPECTS OF THE NICE WEEK.

BY THE HON. LEOPOLD CANNING.

According to the preliminary programme just issued by the Nice Automobile Club, no big road race seems to be in contemplation for the Nice week of 28th March to 6th April, 1903. Last year the proposed Nice-Abbazia race attracted hundreds of competitors from all parts of Europe, and the big motor companies sent teams of their cars to compete in this race; but all were doomed to disappointment and useless expense. Governments are fickle things and broken reeds to lean upon, as the unfortunate A.C.N. discovered to their cost. It will be remembered that in organising the great Nice-Abbazia race, which was to cross Italy and to include a part of France and a part of Austria, the A.C.N. obtained the sanction—if not the approval and encouragement—of the Italian Government, and proceeded to make exhaustive arrangements, and went to much expense in ensuring the successful running of the race. Nice at that time simply throbbed with countless motors; never had such a brilliant array of cars been gathered together. As an enthusiastic French friend exclaimed, "L'atmosphere c'est une carburation!" (the air is one carburation)—and indeed it was so. Everywhere there was a delicious and exhilarating flavour of petrol in the air; and in the midst of all this festivity down came the Italian Government with a foul dagger-thrust in the heart of the proceedings and without reason or warning prohibited the great Nice-Abbazia race at the eleventh hour. Needless to dwell upon the consternation and confusion that ensued; that is past history. It is not absolutely a foregone conclusion that there will be no big road race this season; the A.C.N. keeps its own counsel so far on that matter, and broadly mentions that automobile races will be held on these days. The preliminary programme states that there will be £400 worth of prizes, and will comprise a grand combined run, Paris-Nice, organised by *L'Auto-Vélo*, and a grand competition for heavy-weights, organised by *La France Automobile*. On Saturday, 28th March, there will be a brake test competition; prizes Gallice and Marconnet; cars taking part in these tests will have the privilege of taking part in the exhibition. Sunday, 29th March, decorated automobile procession in the "Jardin-Public"; distribution of banners to the best decorated cars. Monday, Tuesday, and Wednesday (March 30, 31st, and April 1st.), automobile races. Thursday, 2nd April, annual hill-climbing competition, Nice-La Turbie (ten miles). At Monte Carlo the same day, at 2 p.m., there will be an appearance competition on the "Place du Casino," followed by the distribution of prizes to the best cars. Friday and Saturday (April 3rd and 4th), grand automobile exhibition in the garage of the Automobile Club of Nice. Sunday, 5th April, speed mile test (Course du Mille) and flying kilometre. Third competition for the Baron Henry de Rothschild cup. There will also be attempts to break the time records on the cement track of the "Promenade des Anglais." Monday, 6th April, Baron Henry de Caters cup. Kilometre test on rise of one in ten (no flying start permitted) on the Turbie road. Entries for the race are received at the Automobile Club of Nice, 5, Boulevard Gambetta, until the 15th March at 12 noon, and after this the entrance fees will be doubled until closure at 12 noon on March 25th. Entrance fees: Vehicles weighing less than 400 kilogs., £3; vehicles weighing more than 400 kilogs., £6.

THE AUTOMOBILIA SPARKING PLUG ATTACHMENT.

Automobilists whose engines develop an irritating habit of throwing cylinder lubricating oil on their sparking plugs will welcome the little fitting illustrated herewith, which can now be obtained at "Automobilia," 532, Oxford Street. The

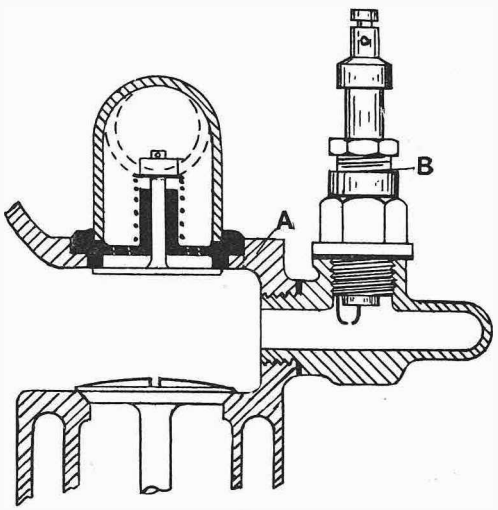


Fig. 1.
A, cylinder. B, sparking plug

fitting has a thread cut upon it to allow of it being screwed into the hole in the cylinder wall tapped to take the sparking plug at A, while a socket on its upper side is made to take the sparking plug B as shown in figs. 1 and 2. The platinum points of the plug are thereby removed from the chance of becoming spattered with oil, and keep dry and clean even in a cylinder whose piston allows the passing of more or less oil to the combustion chamber. We were shown the sparking plugs of an engine in which such oil leakage had been occurring for some time past just after the car had returned from a long run, and the plugs when withdrawn from the attachment were found to be dry and clean. Fig. 2 shows another design of this attachment in the end, with a small ball valve fitted at its

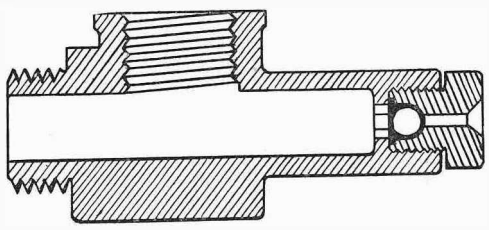


Fig. 2.

outer end, and through which a small current of cold air is drawn upon the induction stroke of the piston. This serves to keep down the temperature of the plug and cleanse the platinum points, but the vendors are loth to sell this pattern unless the purchaser realises that the ball valve requires occasional attention to prevent it from sticking up.

CONTINENTAL NOTES AND NEWS.

The New Mercedes.

Judging from the bare indications published in *La France Automobile*, we are likely to see some noteworthy improvements in the new type of Mercedes cars which will be making their first public appearance at the Nice meeting in March next. Having visited the Cannstatt works, M. Paul Meyan is greatly struck with what he has seen, and only regrets that he is not permitted to describe fully the many ingenious devices that are destined once more to make the Mercedes one of the most interesting vehicles of the year. The weight of the frame, springs, and axles has been further reduced by 220 lbs., and at the same time their solidity and rigidity have been increased. Armoured wood construction has given way to steel, and the frame members are stamped out of sheet steel U shape, the weight being only 77 lbs. This is also the weight of the rear axle, which is forged with a double T-section. The cooling surface of the radiator has been doubled by a new method of arranging the tubes without increasing the volume. There are many new features about the motor, which will have a double system of ignition, if required, the one being the usual magneto and the other, apparently, a dynamo without accumulators. The magneto is situated in front of the motor, where it is easily accessible. The French visitor was shown a 300 h.p. engine being constructed for the Russian navy, which is noteworthy for the method of starting it. A charge of gunpowder is inserted in one of the cylinders, and when the piston is brought to the compression the cartridge is exploded. The method is said to be infallible. For the cars to be sent to Nice, the motors will have a bore of 170 mm. and a stroke of 140 mm., and will run at from 1,000 to 1,200 revolutions. In view of the big demand for Mercedes cars, the company are making preparations for considerably increasing their productive capacity, and instead of building fifteen cars a month, as at present, they will soon be able to turn out forty. We have said sufficient to show that the Daimler Motor Co. are fully keeping in the van of progress, and the appearance of their cars next year will be awaited with considerable interest.

The Paris-Madrid Race.

The race from Paris to Madrid next year continues to attract a great deal of attention in Paris, and the only matter upon which opinion is divided is the method of running it off, for the reports that are being received as to the state of the roads in Spain seem to make it very doubtful whether it will be possible to race the vehicles in the Peninsula. If the original suggestion is adopted of starting from Paris and finishing the race at Bordeaux, or on the frontier, it is to be feared that the speed event will lose a great deal of its interest. It is therefore proposed that a start should be made from Madrid, and, after traversing Spanish territory in a reliability trial, the vehicles will race from the frontier to Paris, where the arrival would, of course, be much more sensational. A trophy known as the Manufacturers' Cup will be offered for five vehicles of the same type and make which do the best aggregate performance. It is by no means improbable even that the Gordon-Bennett Cup race will be run off on this occasion, as the French journals are making a good deal of a recent statement by Mr. S. F. Edge, who hints that, in view of the difficulty of finding a suitable course in Ireland, the French Automobile Club may be requested to organise the race. If this be the case, it would, of course, give the French makers a great advantage; but as there are so few opportunities of finding a suitable course elsewhere, and getting the necessary permission, the selection of France would certainly be better than racing under conditions which might detract from the interest of the event.

An Automobile Road.

The laying out of roads specially for automobiles is by no means a new idea, and it has already received application in West Africa, where some hundreds of miles of thoroughfares are being constructed exclusively for motor vehicles, while in Madagascar the splendid new highways have been built with the object of facilitating autocar traffic. But in Europe the first automobile road is the one under construction between Ostend and Dunkerque. There is no country in Europe more in need of good roads than the south-west of Belgium and the adjoining districts of France, and automobilists would still be suffering from the nerve-killing antediluvian granite setts if it were not for the initiative of King Leopold, who has learned from practical experience that even springs and pneumatic tyres are not proof against the detested *pavé*. Moreover, the King is anxious to divert autocar traffic to the Belgian watering-places, and about a year ago he stated that he hoped to see an automobile road constructed between Ostend and Paris. At the time, this was regarded as a project of so daring a character that there seemed little chance of its being put into execution. Very little, indeed, has been heard of the matter since then, and it is therefore something of a surprise to learn that work has been actively carried out on the construction of the famous road, where the granite setts are being replaced with good macadam, and that the whole undertaking, so far as Belgium is concerned, will be terminated by July next. The road is being built in two sections—from Ostend to Dunkerque by way of Snaerskerke and Furnes, and from Furnes to Menin by Ypres. It now only remains for a few miles of granite setts to be suppressed in the north of France to connect the road with the macadam thoroughfares leading to Paris, and when this is done there will be an excellent automobile road all the way from the French capital to Ostend.

Electrical Timing.

The ordinary system of timekeeping for short automobile speed tests seems to have had its day, though the sporting committee of the A.C.F. find it less easy to replace the human clockers with a reliable electrical device than they had anticipated. On the strength of the relatively satisfactory results with the Mors apparatus down at Nice a

couple of years ago, the committee notified recently that all records in future were to be timed with this appliance, but it afterwards appeared that the instrument was not even ready, and the committee were perhaps moving too fast with the times in settling upon an electrical system which had really not been sufficiently tested. Moreover, it is now clear that the Mors device is by no means certain of being finally adopted. Several more or less ingenious instruments have been brought forward, and are to be reported upon by M. Forestier, including one which is based upon the speed of the Morse telegraphic instrument. As the ribbon passes through the instrument at a certain fixed rate, the seconds and fractions will be recorded while the car is travelling from one point to another. It will, of course, be started and stopped electrically. This system is very strongly recommended by the well-known electrician, M. E. Hospitalier, who seeks to prove that it will be infallible, and will record times up to tenths of seconds, which is obviously very necessary with the speeds now being attained by autocars. The sporting committee will make a very close enquiry into the merits of these different electrical systems, and will adopt the one which gives the greatest guarantee of accuracy, in the event, that is, of its proving superior to the human timekeeper. According to M. Hospitalier, there can be no question as to its superiority, for he argues that there is nothing more unreliable than the man with the chronometer. Even when taking no account of the personal factor—that is to say, the quickness of perception, sight, and touch, which vary in every individual—he contends that no man can ensure absolute accuracy within the fifth of a second, and it is, therefore, highly probable that there would be an error of two-fifths for or against the record-breaker. Not only is the man unreliable, but the starting and stopping of the chronometer itself is a mechanical operation which absorbs a fraction of time, appreciable to a scientist like M. Hospitalier, who is accustomed to measure the infinitesimal, though, perhaps, negligible to those who think that the splitting of fifths is like splitting hairs, and in order to secure mathematical accuracy to the tenth of a second the only system is to measure the time by a recording instrument which is stopped and started electrically. Now that the sporting committee are carefully investigating the matter, it can only be hoped that they will succeed in discovering an ideal time-measuring device which will be equally as reliable as the human timekeeper, for, though he may not be able to clock the infinitesimal, he has certainly an advantage over his electrical competitor in that there is nothing to go wrong with the works.

Fournier's Record.

The route between Dourdans and St. Arnoult, which has been selected by the A.C.F. as the official course upon which short-distance records must be broken, was consecrated last week, when Henry Fournier was the first to go over this route with a racing machine. The rains had left the road in a very greasy state, and, passing as it does through a forest where the air is necessarily laden with moisture during the rainy season, the surface takes a long time to dry. This, however, is only a minor inconvenience, as arrangements have now been made to provide would-be record-breakers with information as to the condition of the course, and thus save them the trouble of going to Dourdans when the surface of the road is not favourable for high speeds. In private tests carried out previously, Henry Fournier had been using a very high gear, which enabled him to roll off the kiloms. well within record time, but on Thursday last week, finding he could not get sufficient momentum during the flying start, he replaced the chain wheels with smaller ones, which gave him the same gear as that used by W. K. Vanderbilt, jun., when he broke the kilom. record at Chartres. Going first over the mile, Fournier covered the distance in 47⅖s., thus beating the old record by exactly a second. Over the kilom., his time was 29⅕s., which is ⅕s. inside Vanderbilt's time, and represents an average of 76.56 miles an hour. Under the circumstances, this was certainly the best that could be done, for the slipping of the wheels on the mud now and then caused the Mors to swerve in an alarming manner, and the performance was as much an exhibition of nerve and skill in driving as of speed. Fournier will try again as soon as the conditions are more satisfactory, when he hopes to knock a couple of seconds off the kilom. record. Messrs. Charron, Serpollet, and several others have also announced their intention of going for the short-distance records, which always finish up the season previous to the Paris Show. Fournier used the same 80 h.p. Mors with the direct gear on the top speed which we illustrated at the time of the Gaillon hill trial, and his tyres were Continentals.

A PROMISING ASPIRANT.

Mr. Archibald Ford, manager of Mr. William Lea's motor car depot, Liverpool, sends us the following curious letters he has received from an aspirant to the art of driving. We omit the name and address of the writer:

Sir, how much do you charge for Teaching to drive a Morter Cars and Carridges, etc., and do you find board Lodging and what is the Lowest Price and do you garentee Situation to those you Teach and would it be possable to get a Situation on 12 Months written aggrement kindly write soon age 42 dont look more than 30.

Mr. Ford appears to have written informing his would-be pupil of the terms for tuition by the week, for the following reply was received:

Sir, I fear if I Learn to drive mortor Car it will not be any use to me because I may not get a Situation as driver which i require and peraps people would not engage anyone that has only a week's experience So if you could come to other terms To engage me for 3 years indensures (written engagement at 10s. and ali found after 2nd week (at) for a Low Figure, good refs abstainer *babtis* if you can kindly let me hear of you soon age 42

Yours truly, ——— —

Copy

I agre to Employ Mr. ——— for 3 year and not to discharge him under any condishion for 3 years and to Teach him to drive and manage a Morter Car for the Sum ——— ———

People will only trust their Lives and Morter Cars to people of Long experience.

It is interesting to note that on Monday the Kaiser and the Prince of Wales left Sandringham for a shooting excursion in an autocar, returning for luncheon in the same up-to-date manner.

Correspondence.

THE WHITE CAR FOR MEDICAL USE.

[2657.]—In reply to "Three Interested Ones" (No. 2649), I can very strongly recommend the White steam car. I have driven it over very rough roads in very bad weather. I have been an automobilist some four years now, and this is my fifth car; it is by far the most comfortable, easiest running, simplest, and most reliable car I know. The generator and burner are satisfactory. The makers say eight gallons of petrol will take one about a hundred miles. I find it costs me about a penny per mile for fuel, but that I save in other items, so that the total cost per mile is lower than with oil cars. In reply to "M.D." (2636), I should certainly advise him to try a White. It is the only car I know that he could use without a man with him. I shall be happy to give either of above any further information if they care to communicate with me privately through you. F. E. R.

THE CARRIAGE OF PETROL.

[2658.]—There has been a great outcry against the railway companies for insisting on petrol coming at owner's risk, etc., but it may seem strange to you that the petrol merchants who should have helped the agents to obtain supplies have not done so. My town is situated on the banks of a navigable river, and boats loaded with petrol pass within a stone's throw of my door, and yet they would not deliver petrol to me in barrels or cans. Can anyone inform me the real reason for this? It does not seem a business policy.

SEVERN.

PARAFFIN BURNERS FOR STEAM CARS.

[2659.]—In answer to Mr. John Graves, I would advise him to have nothing to do with "paraffin burners" on light steam cars. About twelve months ago I had one fitted to a Locomobile, and I consider it a complete failure; it gave nothing but trouble, and I was very pleased to have it off and go back to petrol. I believe this is one reason why there are so many advertisements of steam cars so fitted for sale. I find with a forced draught the petrol burner is first rate, the forced draught increasing the speed of the car at least five miles an hour.

As I see you mention in last week's *Autocar* several instances of motor cars being used at elections, I may state that I used my Locomobile *dos-à-dos* at the municipal election in Birkenhead on the 1st inst. for five hours without stopping, and brought up an immense number of voters.

EDWARD H. BRIEN, M.D.

THE RIPLEY TRAP.

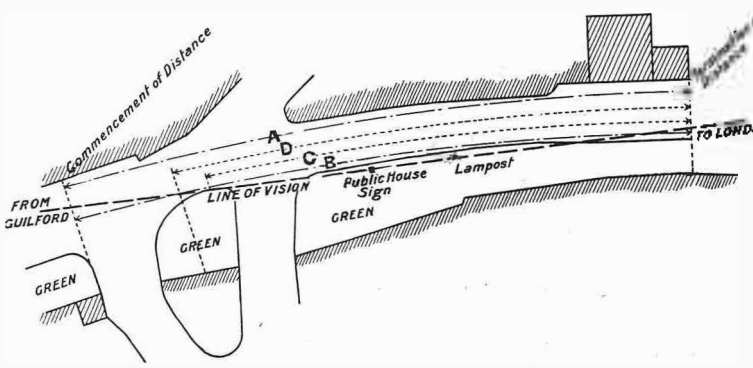
[2660.]—For the benefit of fellow motorists who drive their cars in a proper and careful manner, I should be obliged if you would publish the following facts as to the methods of the Ripley police, headed by Sergeant Jarrett. This officer spends much of his time checking motor cars over an alleged distance of 176 yards (one-tenth mile), measured from a certain side street in Ripley to the corner of a cottage near Mr. Green's, who keeps an "ironmonger's shop." The road here is on a curve, and this distance can only be obtained by measuring from the extreme corner of the street, at Mr. Hopkins's (the butcher) to the extreme corner of the above cottage on the outside edge of the road. (Dimension "A" shows this.) If measured on the short side of the road, this distance measures only 173½ yards (dimension "B").

Now, as to the methods of timing as experienced by the writer: The sergeant stands near the cottage at the London end of distance, and takes a line of sight through a lamp-post and a public-house sign (shown by a dotted line). This line cuts the road at an oblique angle, commencing to intersect the road on the south side at a point 131⅓ yards from the termination of the distance, or 44⅔ yards (twenty-five per cent.) short of the proper distance (dimension "C"), and cutting the other side of the road at a point beyond the measured distance. The motor car is timed from the moment it crosses the "line of vision," and it will be seen from the enclosed diagram that this may be anywhere beyond the 176 yards to the commencement of the 131⅓ (dimension "C"). The sergeant informed the writer "he *judged* by the position of the car on the road as to when it was opposite the commencement of the distance"—that is to say, after all this elaborate arrangement of sighting, he had to fall back on his judgment, putting this "judgment" to the test by running over the course again, arranging with the sergeant to signal when the writer was, as he (the sergeant) thought, at the commencement of the distance. The writer received his signal at a point (shown by dimension "D"), only being 143 yards from the termination of the distance, or showing an *error in favour of the police* of nearly 194. The watch used was called a stop-watch, but timed over the distance three times. The times were 19s., 22s., and 25s., timed probably over only about 143 yards, the car being genuinely run at as near as possible the same rate. So much for the accuracy and methods of the Ripley police, whose evidence is taken as sufficient by an intelligent bench to condemn and fine dozens and dozens of motorists. I understand there are further cases of exceeding the legal limit this week.

I have a large plan of Ripley, which is at the disposal of any motorist to help him in any defence he may wish to make.

Further, we challenge Sergeant Jarrett or any of the Guildford magistrates to disprove the distance measured, beyond a one per cent. error, in the accompanying plan, to be measured conjointly by themselves and the writer in the presence of a referee appointed by the Automobile Club, the loser to pay £25 (twenty-five pounds) to a London hospital.

WESTMINSTER MOTOR CAR GARAGE,
L. SAVORY, manager.



Plan showing the police trap.

DELIVERY VANS.

[2661.]—I think it would be of interest to many of your readers and prospective van buyers of any who have had experience in the running of motor vans for light goods delivery would give some idea of the cost of running same. As I have to keep two horses for delivery purposes—one averaging seven and the other ten miles per day—the cost of keep alone amounts to about fourpence per mile.

Perhaps, if I give some idea of the nature of my requirements, it will assist in eliciting the desired information, which may be useful to many who are similarly placed. Loads do not exceed 6 cwts. to 10 cwts., maximum speed fourteen miles and six uphill, and no long steep rises. As there are a fair number of stops, most of them long, I suppose the engine would have to be stopped.

Being a practical mechanic, I should be able to keep the car in running order, so should not have to employ mechanic. If any replies to this are forthcoming, I should be obliged if the cost of repairs, etc., be kept separate from the actual running expenses. Personally, I should not mind if the cost were as heavy as horse keep, especially if the van could be converted into a waggonette if occasion required.

H.

SOLID TYRES ON LIGHT CARS.

[2662.]—In reply to your correspondent "Cautious" on the subject of solid tyres on light cars in your issue of the 1st inst., I should, from actual experiences with an Argyll car, advise him not to put solids on a light car, unless the car is built for and the makers assert positively that it will stand them; otherwise there will be endless expense in renewing parts even to axles, especially on gear-driven cars. The vibration is excessive, and there is no freedom from sideslip. I resorted to them owing to the endless trouble I had with Clipper-Michelin; but for the above reasons I had to discard them after one hundred miles. I have now 3½in. Grapplers fitted, which have given the greatest satisfaction, and even find that, not only in comparison with solids but also with a similar car shod with Collier tyres, I have the greater freedom from sideslipping. ACTUAL USER.

[Several other correspondents have written warnings against solid tyres, unless specially recommended by the maker of the car.—ED.]

TOURING IN FRANCE.

[2663.]—I am desirous of making a tour of ten days or a fortnight on my 3½ h.p. car in France, say from Dieppe, through Paris, and on to Nice. Will any of your readers kindly inform me if this is possible to do comfortably in the time, and any hints as to the best route and cost of getting the car across the Channel, etc., will be gladly received. A WOULD-BE NOMAD.

ANTI-FREEZING SOLUTIONS.

[2664.]—I observe in your publication of 8th November that you have not heard of anyone using a solution of calcium chloride as a preventive of freezing of the cooling water on cars in winter, and I have much pleasure in giving you my experience of it.

During the winter of 1900 I prevented damage by running off the water each night and emptying the car, and continued this until the 14th January last.

On that day I had a run of about twenty miles under a very severe frost, the thermometer being at zero nearly the whole day, and I found that the pipes of the cooler had frozen on the road, and after thawing them I found they were leaking so badly that I had to replace the cooler.

After this experience I put in a solution of commercial calcium chloride and water to a specific density of about 1,100. This effectually cured any freezing, but towards the end of the winter, having occasion to take off the water-jacket covers on the cylinders, I found that the whole of the iron or steel studs which secured them to the cylinders had been eaten away and any parts which had come in contact with malleable iron were also affected.

I at once discontinued the calcium chloride solution, and could not recommend anyone to use it as a preventive.

It did not seem to affect the copper pipes or brass fittings at all, or even the castiron, but the action upon the iron or steel was very decided.

This winter I am trying glycerine solution, and will be glad to communicate my experience upon it after a fair trial. JOHN L. MURRAY.

AN ANTI-FREEZING MIXTURE—WILKINSON TREADS—FAST DRIVING.

[2665.]—In reference to points raised in your last issue, I would like to state that during last winter I mixed twenty-five per cent. of glycerine with the cooling water of my engine. The expedient proved a complete success. For the last year I have also used Wilkinson's non-slipping treads, and latterly these have improved in durability. Both of these extras are necessities to me. But then I drive all the year round in all sorts of weather, which, it seems, is not the practice of a great number of automobilists. Schemes for warming motor houses are beside the point if a car has to stand about on frosty days. After five years' experience as an active automobilist, I cannot but look with regret on the present phase of fast driving. Frost, side-slipping, and noise are still held to be negligible trifles as long as a machine can go fast enough to infuriate dwellers in the country. I drive a car which can do 150 miles a day through rain and mud, yet I have been free from the slightest police interference from year's end to year's end. But, of course, my immunity will not last when the fast cars have succeeded in irritating the inhabitants of the retired districts where I chiefly travel. On the other hand, to take one example only, I have heard on very good authority that it is possible to almost completely silence a De Dion engine. Yet the London agents know nothing about it; and you, sir, have not troubled to follow up at least one hint on the subject which appeared in your pages.

A FOUNDER MEMBER of the A.C.G.B. and I.

[Our correspondent doubtless refers to the quietude of the running of Mr. J. B. Dunlop's 4½ h.p. De Dion voiturette, to which reference has been made in our columns before now. We can only say that more than one attempt has been made to ascertain from Mr. Dunlop how he has altered his car to make it so quiet, but he has not up to the present divulged his methods. Mr. Dunlop is the inventor of the modern pneumatic tyre, and possibly wishes to protect his ideas fully before disclosing them. In any case, if our correspondent can persuade him to divulge them, it will give us great pleasure to publish particulars.—ED.]

WHY HUNTING MEN ARE AGAINST AUTOCARS.

[2666.]—I must call attention to a very serious drawback to motoring, and one which was not contemplated when the authorising Act was passed in 1896.

The drawback in question is the serious damage that will be done to people who supply and breed hunters in the first place, and, later on, to the manly youth of England. I say later on, because the shade of the great Duke of Wellington would certainly not say that the best cavalry officers were made out of those who rode donkeys and bicycles to hounds.

When I saw soldier magistrates, old hunting magistrates, and other good men and true rising in their wrath against the dreadful motors, I said it can but be that theirs are non-hunting counties, and their nerves are not what they were or their judgment of pace; but when a crack hunting county like Huntingdon took a leading hand in stamping out the evil, it caused consideration.

Light has at last dawned upon me, and I see that these good men and true are really working in the interests of their country in a far-seeing way.

At the opening meet of the Fitzwilliam the brush was "won" by a man on a donkey. To think that judgment of pace and the awful rush of motors going a few miles an hour, chiefly in open country, should have reduced to this a hunt which always numbered some of the best and bravest among its followers.

I ask you in all fairness to insert this letter in your columns. True it is against your own interests, but for imperial purposes we must sink all self-interest, and, if possible, put a stop to a dreadful industry which is ruining the manhood of England.

ONE WHO WAS FINED AT HUNTINGDON.

[A number of letters are held over this week.—ED.]

Dr. F. Stephenson, of Mayfield, Blackburn, asks us to say that the following subscriptions have been received towards purchasing a new car for the gentleman who, in befriending a fellow automobilist recently by giving him some petrol, had his own car accidentally destroyed by fire: Dr. F. Stephenson, Blackburn, £5; Mr. Thomas Brindle, Blackburn, 2s. 6d.; Messrs. Thos. Burton and Co., Blackburn, 7s. 6d.; Mr. Fred Hodgkinson, Pleasington, £1 1s.; Mr. Thos. Goldby, jun., Surbiton, 10s.; Mrs. Sarah Gouldesbrough, Worksop, £1 1s.; Mr. Edward Thompson, Tarbolton, Ayrshire, £1; Mr. Wm. Thompson, Hoghton, £1 1s.; Dr. E. Scott-Heyliger, Blackburn, £1 1s.; Mr. Robert Price, Northfield, £1 1s.; Mr. F. W. Hutchinson, Cambridge, £3 3s.; Mr. J. P. Huhouse, Edgbaston, 5s.; F. C. H., £5; Mr. Arthur Cayley, Lovely Hall, Blackburn, £1; and Mr. J. Macdonald, Edinburgh, £1. The fund is not yet closed.

Flashes.

The statement that cars to carry three passengers and driver, or six passengers and driver, can be hired by the half-day, day, week, or month of the Clingoe Automobile Syndicate, Ltd., 93 and 94, Long Acre, W.C., will answer the queries of many correspondents. We may add that first-class up-to-date cars are so let, and the prices asked are reasonable.

* * *

In reference to the remarks recently made by two correspondents with regard to the manufacture of motor bodies in England, Messrs. J. Rothschild et Fils write they consider that whatever may be said with regard to British workmanship, originality is the point on which they regard themselves as being well ahead. Their finish, they think, speaks for itself. They send us a photograph of a new brougham, which we hope to reproduce next week.

* * *

During the very dramatic murder trial that has just taken place at Ipswich, and in which the jury failed to agree, the use of an autocar was requisitioned under rather interesting circumstances. The judge and jury expressed a wish to see certain letters written by the prisoner since his incarceration. In order to obtain these it was necessary to send to Peasenhall—a distance of twenty-seven miles. The counsel for the defence thereupon asked Mr. A. F. Garnham, the well-known local automobile agent, to convey his representative to the scene of the crime, in order that he might obtain any letters procurable. Without a moment's delay, Mr. Garnham started upon a Clément car — the same vehicle recently used by Lord Kitchener when he visited Aspal. The journey to Peasenhall (*via* Yoxford) and back to Ipswich was made under three hours, the return being accomplished in just over sixty minutes. This speed was made possible on the understanding that the urgency and importance of the mission would exempt Mr. Garnham from any penalties that might be threatened by over-zealous police constables. This is yet another instance where the autocar has proved itself superior to all other forms of conveyance.

* * *

In our issue of November 1st we stated that Mr. D. Duncan, of Messrs. Duncan Bros., the proprietors of the *South Wales Daily News*, had ordered two 12 h.p. Daimlers. This is hardly correct, as the gentleman in question has ordered one car and his brother, Mr. A. Duncan, the other. Both are supplied by the South Wales Motor Co., the Cardiff agents for Daimlers.

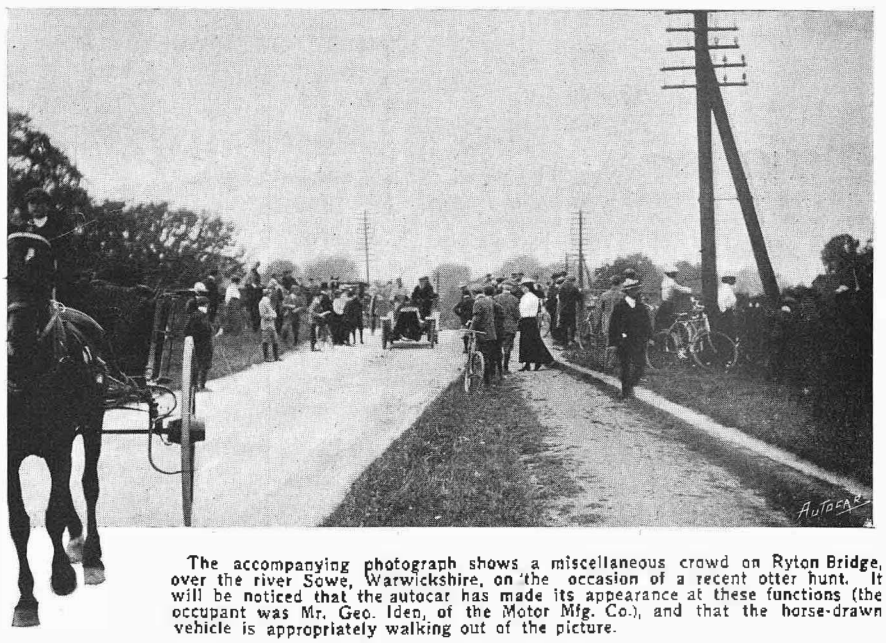
The London Motor Garage Co. have secured space at the forthcoming Paris show, and will be showing the Pipe and Magnet cars. The latter is a new model.

* * *

Last week we had the opportunity of examining the gear out of one of the old 6 h.p. Star cars, which was made well over two years ago. The car has been driven many thousands of miles—the exact number is unknown—but it has been in constant use. Despite this the gears show no sign of wear, and are only nicely polished by the work they have done.

* * *

We recently recorded the success of the Weston steam car in the American reliability contest from New York to Boston. Three Westons were entered, and all three arrived, one of them being awarded a gold medal, another qualifying for the silver cup for not losing a single mark, while the third only lost five marks for running short of water—a very clean record.



The accompanying photograph shows a miscellaneous crowd on Ryton Bridge, over the river Sowe, Warwickshire, on the occasion of a recent otter hunt. It will be noticed that the autocar has made its appearance at these functions (the occupant was Mr. Geo. Iden, of the Motor Mfg. Co.), and that the horse-drawn vehicle is appropriately walking out of the picture.

Messrs. Currie and Sanders, of 6, St. Luke's Yard, Bravington Road, Harrow Road, W., tell us that they have opened a garage, and are prepared to undertake repairs and renewals to all descriptions of cars. They are official repairers to several well-known firms, and appear to have every convenience at their premises. They are also building a new 2½ h.p. motor bicycle.

* * *

Mr. S. K. Kendall writes to thank a lady and a gentleman and another gentleman who warned him of the existence of two police traps on the Brighton-Worthing road on Sunday last. He adds: "Perhaps you number amongst your readers the two gentlemen who were stranded last Sunday night for want of petrol five miles from Dorking. It may interest these gentlemen to know that I eventually arrived safely at Dorking, after having a breakdown caused by nearly emptying my petrol tank for their benefit."

The Institution of Junior Engineers, whose headquarters are 39, Victoria Street, Westminster, have a very comprehensive winter programme. A paper which will probably be of interest to users of steam cars will be read on April 3rd by Mr. W. Paterson on "Greasy Condensation Water as Boiler Feed."

* * *

An acetylene lamp called the "Arclite" has been introduced by Messrs. Miller and Co., of Miller Street, Birmingham, who have followed the example of other well-known lamp manufacturers, and have turned out a special lamp for motor car work. It is built with contained but removable generator, and makes a handsome headlight.

* * *

A protecting covering of insulating material for the sparking plugs of cycle motors, or of other motors where the plug is in an exposed position, is being retailed by the United Motor Industries, and is well worth attention. The cover is of a hard fibrous material, screwing over the plug close up to the cylinder, so as to retain a dry surface upon the otherwise exposed portion of the plug. An enclosed spring terminal receives the end of the high tension wire, which is secured by a small screw, whose head is recessed into the cover. The insulation of the high tension wire is inserted in a socket at the end of the cover, and when the binding screw head is covered by a bit of guttapercha, the whole plug is water-tight. The coverings may be obtained to suit any standard make of plug.

* * *

The British Germain Motor Car Co., of Hanover Court, Hanover Square, W., inform us that they have been appointed sole agents for Great Britain and the Colonies for the sale of the Germain car. It seems that, owing to the increasing demand for these cars, which, it will be remembered, performed most conspicuously in the reliability trials, it has been found necessary to reorganise the business in England, and consequently the showrooms in Hanover Court have been taken, and the alterations of the premises will be completed within a fortnight or so. In addition to the present types of Germain, there will be a new 7 h.p. voiturette, to sell at a very attractive figure. Mr. J. H. Adams, who is well known in the motor business, will be the general manager for the company.

* * *

We learn that Messrs. Salmon and Sons, the well-known coachbuilders of Newport Pagnell, and 6, Upper St. Martin's Lane, W.C., who have recently done good work as builders of motor car bodies, are about to embark in the motor business. They intend to introduce to the English public a car hitherto unknown in England, namely, the Stoewer car, made by Messrs. Gebruder Stoewer, Stettin, Germany. With this object in view they have purchased a large number of these cars, for which they have been fortunate to secure the sole agency for Great Britain. Messrs. Stoewer manufacture both electric and petrol cars, full particulars of which will duly appear in *The Autocar*. They have acquired the services of Mr. J. Macgregor Peter, late sub-manager of the British Automobile Commercial Syndicate, as manager of the business, and have opened showrooms at 27 and 29, Laystall Street, Rosebery Avenue, London.

We understand that the 1903 model Werner motor bicycle is to contain several improvements, among which are an exceptionally strong distribution gear, a float feed carburetter and throttle combined, and a re-arrangement of the oiling apparatus. Many other detail improvements are promised, and these we hope to deal with in due course.

* * *

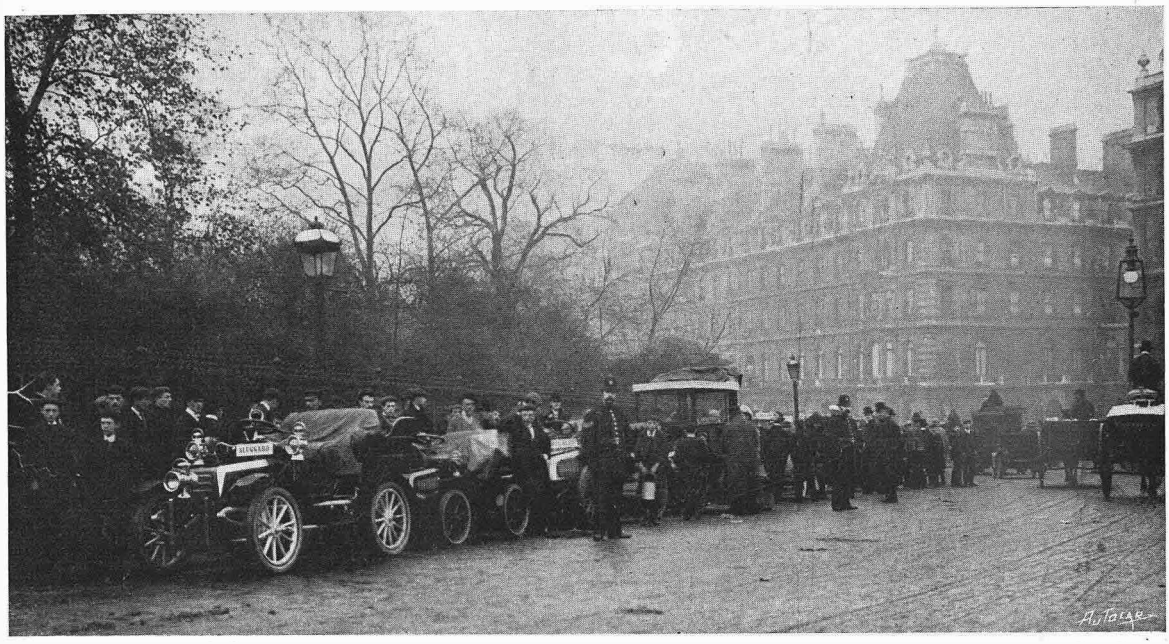
Mrs. Claude Watney, whose 24 h.p. Panhard, "Frou-Frou," was recently in the market, has disposed of it through the London Motor Garage Co., Ltd., 20, Regent Street, and has bought from the same company a 60 h.p. Mercedes-Simplex for delivery next February. This car will therefore probably be the first 60 h.p. vehicle the Daimler Cannstadt Co. have supplied to a private buyer—in fact, it will be the fourth car of that make and power to leave the works. The price paid was, we understand, a high one, although it will probably turn out a good investment if the Mercedes-Simplex of 1903 performs as well as its predecessor this year has done.

* * *

The monthly sale of the Bradford Motor Car Co. took place last Thursday week, at the Belle Vue Motor Depot, Manningham Lane, Bradford, Mr. Albert House being the auctioneer. The sale realised a total of £1,100, the attendance being good, and the bidding brisk for such lots as were wanted. A 12 h.p. Darracq realised £375, and a 8 h.p. Pieper, with two cylinders and Michelin tyres, brought £175. Three 8 h.p. Darracq single-cylinder cars went at prices averaging £178. An 8 h.p. Pieper, rather worn, with two cylinders, Michelin tyres, and tonneau body, realised £77 10s. An Oldsmobile car which cost £208 new brought £141.

Bridgwater Guy Fawkes carnival is a great event as great if not greater than the celebrated Lewes 5th of November celebration, and one of the most effective items in the Bridgwater procession was Mr. R. J. Sully's 3½ h.p. De Dion, decorated as a steamboat. The propeller was driven by a pulley fastened on the differential gear. The car has carried three average weight people and luggage eighty miles through Devon and Somerset in six hours without a stop. We have to thank Mr. W. H. Glover for the photograph from which our illustration is made.

THE CELEBRATION RUN TO OXFORD.



The start from Grosvenor Place.

On Saturday last, under meteorological conditions the reverse of favourable, the passing of the Emancipation Bill of 1896 was celebrated by the massing of no less than 193 self-propelled vehicles in Grosvenor Place, preparatory to a run to the seat of learning on the Isis, *vid* Richmond, Staines, Virginia Water, Wokingham, Reading, Pangbourne, Streatley, Wallingford, and Dorchester. The line indicated for the trip by the general press had been the Great Western Road through Brentford, Hounslow, Colnbrook, and Maidenhead, but owing to the police plagues upon that historic highway the first-named and more tortuous though more picturesque route was followed. As early as half-past five o'clock on the previous evening cars were taking up positions at the top of Grosvenor Place, three Peugeots being first brought upon the scene by the ever energetic Friswell. Next to appear was Jarrott's 12 h.p. Napier, with beautifully fitted racing body, this type of Napier car making here its first public appearance in any trial. It was certainly greatly admired, and, while driven by Mr. Jarrott himself, most fittingly carried as a passenger its designer and constructor, M. S. Napier himself.

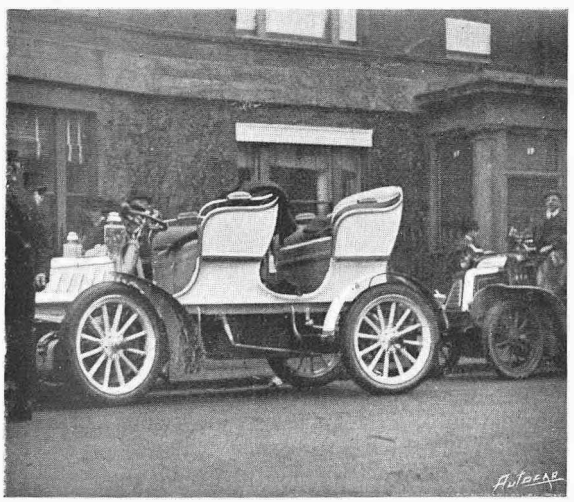
The cars were ranged exactly as on the morning of the start for the great one thousand miles trial, viz., in a long line on the right of Grosvenor Place, opposite St. George's Hospital, the head of the column being just clear of the entrance giving on Constitution Hill. But on Saturday the total of the named and private cars was three times as great as those that mustered that morning in April, 1900, while the crowd gathered to witness the departure of the long train was on Saturday last but a tithe of the multitude which lined the road upon the memorable occasion above referred to. When we arrived upon the scene a little less than an hour before the time appointed for starting, ninety cars were already in position, and, notwithstanding the threatening aspect of the weather, this number was increased by continuous arrivals. Indeed, before Mr. Claude Johnson, driving his 14 h.p. New Orleans, most inaptly named "The Sluggard," moved off at the head of the column of cars, which, standing head to tail in close proximity, stretched from the top of Grosvenor Place to the bottom, the number had increased to no less than 193 automobiles.

Every sort and condition of self-propelled vehicle (save motor lorries and similar elephantines), from the 1¼ h.p. motor bicycle stridden by Mr. C. W. Brown to the Hon. John Scott-Montagu's 24 h.p. Daimler, dubbed "Xantippe," was represented—some several times over. Of the total number of 220 odd cars officially entered for the trip, ninety-four were of home manufacture, which, in comparison with the totals of past meets of the kind, is a promising proportion.

Punctually to the appointed time, "The Sluggard" moved away, followed by column in close order, and like an elongated, many-jointed snake the long procession threaded its way through the dense traffic of Knightsbridge and the Brompton Road, pulsating at every joint. The street itinerary had not been published; indeed, it was generally supposed that the cars would leave London entirely by the Great Western Road through Kensington, but in lieu of that they ran along the Cromwell Road as far as Warwick Gardens, and turned into the main road only at Addison Road railway bridge. Upon arriving at Hammersmith Broadway, another unexpected deviation—at least, unexpected by the public—was made, and the route taken over Hammersmith Bridge, along Castelnau, across Barnes Common, and up Priory Lane to the Roehampton Gate of Richmand Park, the park being left again

by the Star and Garter Gate, and Richmond Hill descended for the second crossing of the Thames by Richmond Bridge. Thence the line held on over the newly-trammed road to Twickenham, where Mr. Macintosh, of the A.C.G.B. and I., presided at the first control. Staines was gained over fair roads, *via* Hanworth and Ashford Common, and the Thames again crossed by Staines Bridge. Almost from the moment of leaving Hyde Park Corner, the heavens had opened and the waters had descended upon the earth in manner of the flood, so that all the occupants of the cars who had come unprovided with real weather-proof garments like Dunhill's umbrella coat were in a parlous damp condition. We (on our 9½ h.p. Clément) who were thus equipped went through that blinding storm of rain and wind without wetting a thread.

The route of last year's run to Southsea was followed as far as Virginia Water, where the cars swung right for Bracknell, and through Wokingham to Reading, which was entered about one o'clock. It was only when a mile or so short of



"Electra," Mr. Roger Wallace's 12 h.p. Electromobile The house which forms the background is the residence of the Superintendent of the Royal Mews, Buckingham Palace.

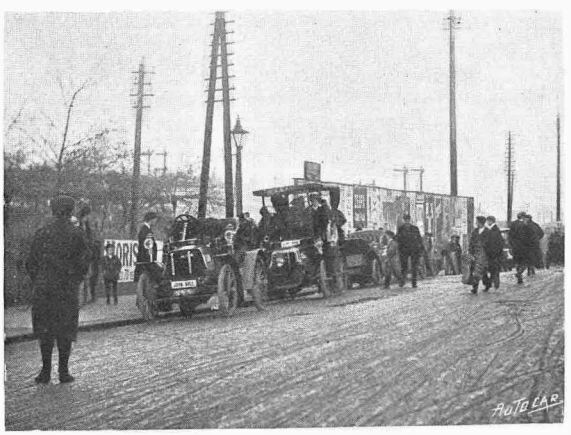
the biscuit town that the pitiless and blinding rain held up somewhat, and with a bright break in the leaden-coloured sky to the south-west seemed to promise something better for the afternoon.

An official halt was called at Reading for lunch, and after this had been discussed the first car was got away for the run to Oxford at 2.9 p.m. The weather had now cleared altogether, and was beautifully fine overhead, but the downpour had left the softish roads of the Upper Thames Valley in the condition of a quagmire. The manner in which small and big cars alike ploughed through the holding, heavy stuff was marvellous; throughout the whole run, indeed, although passing the entire line in review two or three times, we noticed no serious breakdown of any sort. Shorts from water on sparking plugs and grit and wet on tremblers were, generally speaking, at the root of the insignificant *pannes* that came under our observation. The Reading folks turned out in large numbers to watch the entry of the cars, and remained to note their departure. The borough police were most active and considerate in the direction of the traffic

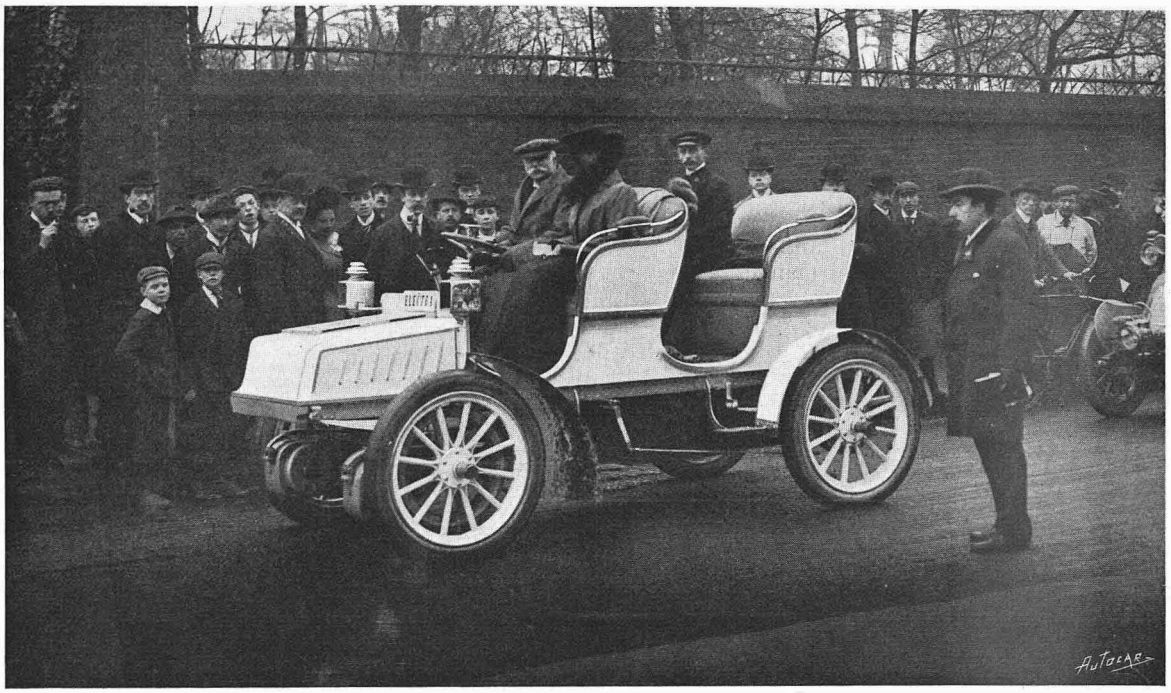
Spectators' cars in Richmond Park. Watching the procession at the top of the hill in pouring rain.

and the clearing of the streets for the passage of the cars. Indeed, it was not until well into Oxfordshire that the guardians of the peace attempted in any wise to make themselves foolish.

Occupants of the cars all along were filled with astonishment at the skill and pertinacity with which the motor cycles were driven through the awful mush. Indeed, the skids which always appeared imminent on those dreadful roads, but, happily, which never seemed to happen, were rather trying to the nerves of the car drivers in the vicinity of the motor cycles. The beauties of the run along the Upper Thames Valley where the road gives so frequently upon the river, affording delightful views even at so late a period of the year, were, notwithstanding the bad surfaces, almost compensatory for the shocking weather of the morning. The afternoon sun, glinting and reddening the browns and yellows of the autumn foliage, still heavy and luxuriant upon the trees, did what he could for the withdrawal of his morning countenance. Wallingford was all agog for the passage of the cars, and at Shillingford the river was once again crossed, this time to enter Oxfordshire. The old-world village of Dorchester, with its minster-like church, was passed, and some way beyond this quaint and once great ecclesiastical centre the first police meanness was lit upon. The expected bag of the men in blue was, however, very



"John Bull," Mr. W. M. Hodges's 8 h.p. Daimler; "Becky Sharp," Mr. H. C Sharp's 12 h.p. Napier; and "Jenny Wren," Mr. A. Hine's 3½ h.p. De Dion, at Reading.



The Chairman of the Club (Mr. Roger Wallace, K.C.), on his Electromobile, "Electra," at the start.

much interfered with by a self-sacrificing cyclist, who had gone to the trouble of himself exposing a large placard, upon which the words, BEWARE! POLICE TRAP JUST AHEAD, appeared in large letters some quarter of a mile or so in advance of the constabulary snare. Naturally the cars crawled at about three to four miles per hour, or so slowly that even the heightened and perfervid imagination of county police out automobile snatching could not magnify it into anything approaching the legal limit.

So enraged did these zealous officials become that their pains had all been for naught that they approached the good-hearted cyclist, wrested his warning placard away from him and tore it up. This action they accompanied with a blood-curdling threat that he would "hear more of it."

At Rose Hill, a mile or so outside Oxford, the inward control was fixed, and here all arriving cars were held until 4.30 p.m., when a move in procession was made into the ancient city. Muddied and weather-worn as they were, the long column of cars notwithstanding made a fine show as they rolled over Magdalen Bridge, and beneath the deepening shadow of Magdalen's Tower, up the grand old High to the Carfax. Oxford was *en fête* to welcome the automobilists, for the whole High, from bridge to cross roads and round to the huge marquees which the Oxford Automobile Agency had set up on the Cattle Market for the accommodation of the cars, was lined four or five deep with interested spectators.

The cars lined up by Reading Railway Station. From a photograph kindly placed at our disposal by Mr. T. Bernard Percy.

The college clocks pointed to five as the procession of some 150 cars moved up the High, and as the big ceremonial dinner at the Clarendon was fixed for eight o'clock, there was ample time to store the cars and purge the stains of the strenuous journey.

Below we give the names of the cars to which non-stop certificates had been awarded up to midday Wednesday. A list of cars other than these which arrived at Oxford and which adhered to the rules will be announced by the club next week, when the time records have been checked. Any objections to the cars credited with non-stop runs should be in the hands of the club secretary not later than noon on Tuesday next, November 18th. It should be understood that other cars besides those we give went through without a stop, but the applicants for non-stop certificates have either failed to have their times filled in on their time cards by the official timekeepers, or the times which have been inserted show clearly that the drivers failed to adhere to the speed limits, while in other cases complaints have been made that drivers have broken the rules which prohibited passing going downhill and in controls. All the drivers against whom these objections are raised are being

Argent Archer. *Kensington.*

Leaving Reading Station yard for Oxford.

apprised of the reasons for withholding the certificates, and if the club committee should find that they are unjustified their cars will be included in an amended list of non-stop runs.

Official Name.	Name of Owner.	Name of Car.
Aboras	Mr. F. W. Stocks ...	8 h.p. De Dion.
Albany	Locomobile Co...	11 h.p. Locomobile.
Albatross	Dennis Bros., Ltd. ...	12 h.p. Dennis.
Anglo-Saxon	Mr. G. A. Barnes	2 h.p. Mitchell bicycle.
Attractive ..	Mr. William Glass	12 h.p. Firefly.
Blind Man	W. Fayne & Co.	10 h.p. M.M.C.
Bulldog	Dennis Bros., Ltd	9 h.p. Dennis.
Certiorari ..	Mr. Ernest de Wilton	8 h.p. De Dion.
Chelmsford ..	Clarkson & Capel	12 h.p. Chelmsford.
Creeper	Mr. Alf. C. Wright ...	1¾ h.p. Ormonde bicycle.
Diana.... ..	Mr. H. H. L. Lewis ...	6 h.p. Daimler.
Doubter	Mr. Arthur F. Smith ...	12 h.p. Darracq.
Fireworks ..	Mr W. J. Crampton ..	10 h.p. Decauville.
Flying Fox ..	Mr Stuart B. Yoakes .	11 h.p. Germain.
Irene	Mr H. Melvill Simons	10 h.p. Durkopp.
Lenthall	Rawlings Bros., Ltd.	12 h.p. Belsize.
L'Orvet	Mr. A. F. Mullin ...	12 h.p. Gladiator.
Mars	Mr. F. P. Marshall ..	10 h.p. Benz.
Noiseless	Hon. A. Verney Cave	8 h.p. Wilson & Pilcher.
Patti	Mr. E. B. Palmer	2½ h.p. Singer tandem tricycle.
Petrolls	The Hon. C. S. Rolls...	10 h.p. Packard.
Rambler	Mr. Walter C. Allen	4½ h.p. Jeffrey (U.S.A.)
Reliable	John Marston, Ltd. ..	10 h.p. Sunbeam.
Rosalind	Mr. John H. Gretton ..	7 h.p. M.M.C.
Sluggard	Mr. William Exe	14 h.p. New Orleans.
Soupac	Mr. S. F. Beevor	6 h.p. Daimler.
Steadfast	Speedwell Motor Co...	6 h.p. Gardner-Serpollet.
Tempter	Mr. Harry Martin ..	2¾ h.p. Excelsior bicycle.
Toronto	Locomobile Co... ..	5½ h.p. Locomobile.
Tourist	Mr. Geo. Iden	20 h.p. M.M.C.
Violet .	Mr. C. F. Wahl.	4½ h.p. De Dion-Bouton.
Wanderer ..	Mr. Syd. D. Begbie ..	12 h.p. Century.
Watsonia	Mr. Herbert Watkins	10 h.p. Durkopp.
Weary Will ..	Mr. Philip Simpson .	6 h.p. Panhard.

THE DINNER AT THE CLARENDON.

Under the chairmanship of Mr. Frank Butler, who was supported by several prominent members of the club, amongst whom were Messrs. Roger Wallace, K.C., Manville, T. B. Browne, R. E. Phillips, M.I.M.E., and others, a company numbering some 250 guests assembled in the banqueting hall of the Clarendon Hotel to dine together in celebration of the run and the passing of the Act six years ago. An excellent repast was served, after which the usual loyal toasts were proposed from the chair and duly honoured.

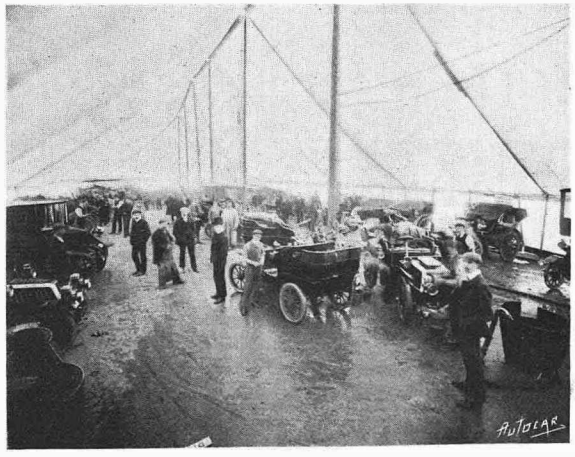
In well-chosen words, Mr. Manville, at the chairman's request, gave the toast of "Automobilism." He said he thought that automobilism scarcely required a special toast in that company, and assuredly the pleasure side of it needed no words from him in that room. He ventured to suggest that the magnitude of its future rested very largely in its application to commerce. The enormous strides the mechanical and practical sides of the matter had made since the passing of the effete Act of 1896 had never been more strongly exemplified than upon that day. Six years ago an automobilist was more than delighted if he could get his car twenty miles without a stop. Now they had seen to-day a very large number of vehicles which had travelled for the first half of the day through very bad weather and roads without any trouble. Indeed, present-day owners felt much aggrieved if they experienced necessity for one stop in a hundred miles. Mr. Manville then went on to impress upon all the car owners present the extreme necessity for exercising discretion and care for other users of the road, for they might find that the limitations of speed they all desired so much to see removed might not be raised. There was a possibility of an early removal of the restriction they so much desired, and that early amendment must not be imperilled by the wilful, selfish, and thoughtless conduct of a small section of the motoring public. He hoped that the present celebration might be the last occasion upon which they would memorialise the passing of the old, but that next year they might hold another dinner in honour of a new and more reasonable enactment, which should take the place of a measure which had long since been admitted by the Minister responsible to be an absurd and unreasonable Act. After referring to the memorable events of the past season, particularly to the bringing of the

Gordon-Bennett Cup to England

by Mr. Edge and the Napier car, Mr. Manville brought his speech to a close by referring to the possibility of running the Gordon-Bennett race in Ireland, and coupled the toast with the name of Mr. R. J. Mecredy, of the Irish Automobile Club.

The Gordon-Bennett Contest in Ireland.

Mr. R. J. Mecredy, in replying, said that, in touching upon the condition of Irish roads, he feared he might be treading on dangerous ground, and he had no desire to exaggerate the qualities of his country's highways, but he had suggested a more or less circular route of sixty-two miles, and that Mr. Johnson, of the A.C.G.B. and I., would, when he went over it in the course of next week, be able to decide upon its fitness for the great event. Mr. Jarrott had driven over the course he had selected, and had characterised it as quite practicable for the competition. He could promise them the heartiest possible reception from all grades of Irish society, not excepting that fine body of men, the Irish Constabulary. Mr. Mecredy caused much amusement by reciting numerous anecdotes descriptive of



Argent Archer, *Kensington.*

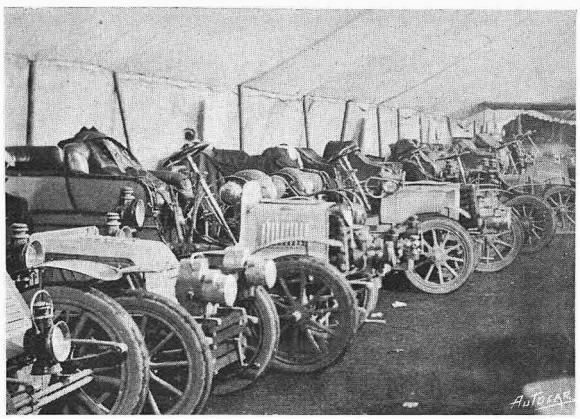
The storage tent at Oxford.

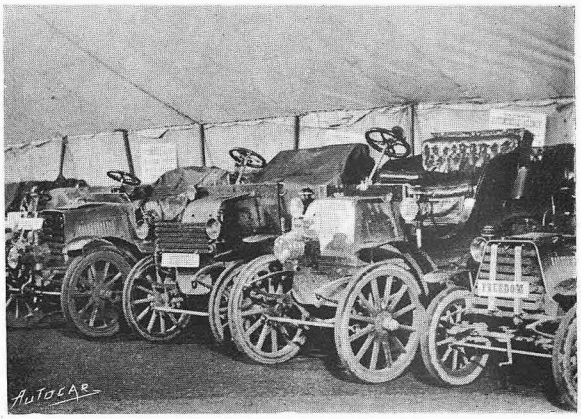
the broad-minded and sporting spirit in which the "foinest pisinthry in the wurld" welcomed automobilism.

"The Ladies" came in a characteristically humorous speech from Mr. Staplee Firth, and was replied to with spirit by Mr. Shrapnell-Smith.

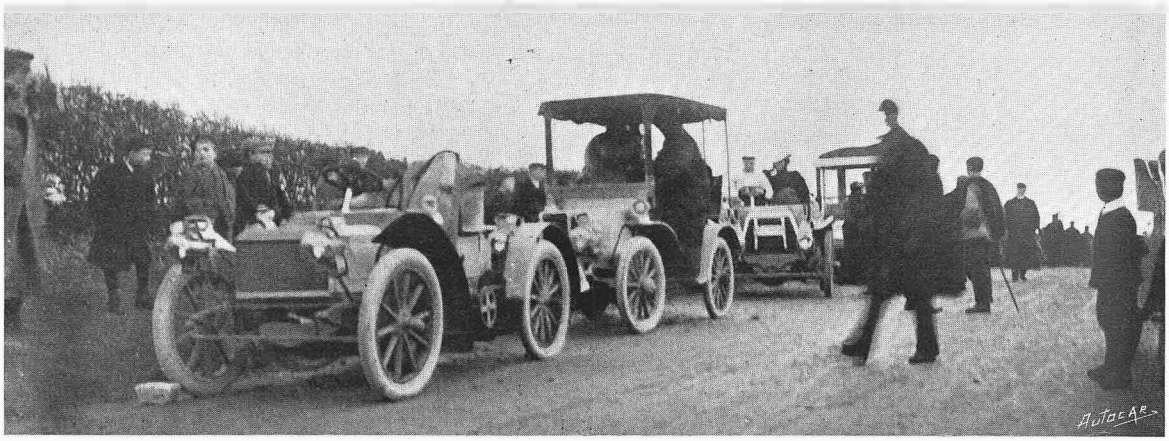
Mr. R. E. Phillips gave "The Chairman," Mr. Butler replying in the shortest possible manner.

Mr. T. B. Browne proposed "The Secretary," which was met with much applause; but when called upon to reply, the subject of the toast had folded his tent like the Arabs and as silently stole away. Notwithstanding, Mr. Roger Wallace replied for this hard-working official, and gave him that large meed of praise to which his unflagging energies and never-failing courtesy so richly entitle him.

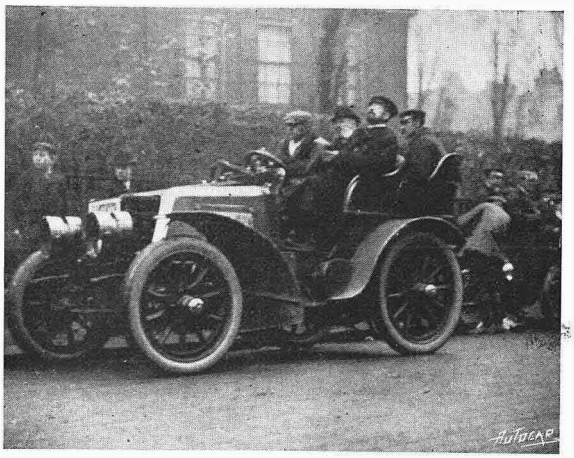




The Oxford Automobile Agency's storage tent at Oxford. Photographed by electric light.



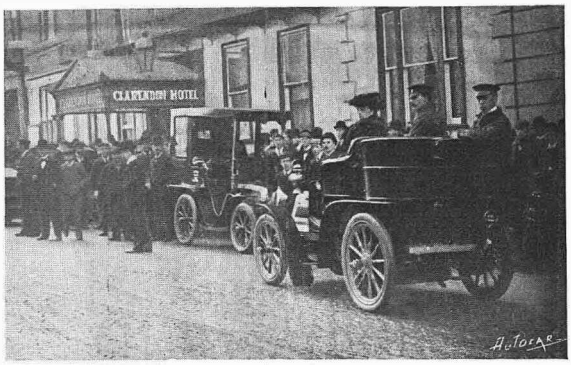
The control at Rose Hill, Oxford. The first car is the 12 h.p. Napier. The energy of the Secretary has made it difficult for Mr. T. B. Percy to do justice to him.



"Xantippe," the Hon. Scott Montagu's 24 h.p. Daimler.

The Rose Hill control, Oxford. Another view.

THE RETURN.



Argent Archer, Kensington.

Starting from Oxford for the return journey.

Of the return journey to town but little can be said, as the trip was entirely a go as you please matter. As early as 8.30 a.m. on Sunday certain cars were under weigh, and by noon the few left in Oxford were intending to make the return journey on Monday. A dozen or so cars which started out from Oxford on Sunday morning were warned of another police trap about two miles south of Red Hill, and when the constables, made evident in the garb of farm labourers and gamekeepers, were discovered alurking in their usual way, they were soundly rated by Mr. Staplee Firth, thereafter comforted with cigars, and left asorrowing. The weather notwithstanding, we think all who went the Oxford run will agree that it was, after all, a particularly pleasant and successful outing.

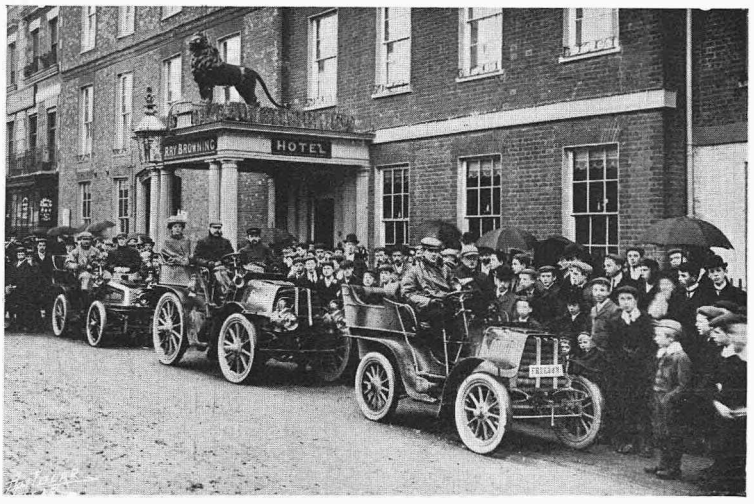
THE OXFORD POLICE TRAP.

The only police trap met with on the run last Saturday from London to Oxford was laid upon the Dorchester-Oxford road, some two miles south of the inward Oxford control at Rose Hill. Here the intelligent and energetic officers had measured off the usual quarter of a mile, and, garbed as loafers, had posted themselves in the hedge, with a uniformed official to play stop-dog some two hundred yards farther on.

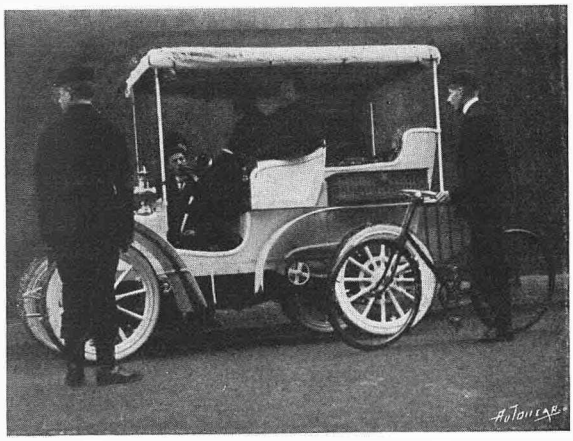
Mr. Carter, a sporting cyclist, had ridden out from Oxford to meet the incoming column of cars, and had happened upon the eerie policemen playing at surveying on the road. Being a broad-minded man, and loathing, as every decent Englishman must, such sneaking tricks as the police are instructed to carry out, he rode on a quarter of a mile or so beyond the trap, and obtaining a large square of white cardboard, printed thereon in huge black letters the words, "Beware! police trap just ahead."

This welcome and kindly warning he displayed prominently to the occupants of the oncoming cars. He was thereby instrumental in saving a very large number of automobilists from becoming victims to the snare set for them.

The police, finding all the cars passing over the measured quarter at a snail's pace, which even they had not the hardihood to appraise above the legal limit, walked along the road to discover the reason of the funeral speed, and lighting upon Mr. Carter with his placard, forcibly deprived him of it and tore it up. In addition to this high-handed outrage, they threatened him that he would hear more of the matter. We have discussed the matter with Mr. Staplee Firth, who is strongly of opinion that in depriving Mr. Carter of his notice, whereby he was actually preventing His Majesty's lieges from unwittingly breaking the law over a stretch of road purposely selected by the police for them to break it over, the police were acting altogether without their rights, and were guilty of an assault upon Mr. Carter. This being so, we consider that the Automobile Club should back up Mr. Carter in an action for assault against the policeman who forcibly deprived him of his cardboard, just as they should sustain him with all the legal force at their disposal should the police proceed against him as they clearly threatened to do.



The return journey. A halt at the Red Lion, High Wycombe.



"Petrolls," the Hon. C. S. Rolls's 10 h.p. Panhard.

NOTES ON THE RUN.

Lord Pirbright's Dennis car was among those which earned a non-stop certificate. Two other Dennis machines similarly distinguished themselves. Lord Pirbright's car had the full complement of passengers, as well as luggage, and carried sufficient petrol for the whole journey.

* * * *

The Oxford Cycle and Motor Car Co., of 68, St. Giles, Oxford, were most enterprising. They had some photographs taken of the cars in control at the top of Rose Hill, Oxford, on Saturday afternoon, and souvenir copies of these were presented to owners of cars taking part in the run the next morning before ten o'clock. As we announced last week, they had provided a very large supply of petrol, and it was sold at the low price of 1s. 2d. per gallon.

Probably a good many participants in the run wondered what became of the Electromobile Co.'s Victoria which started from Grosvenor Place, and then disappeared from the road, only to be found again at Oxford. It seems that the car was driven *viâ* High Wycombe owing to the excellent charging accommodation at Edmondson's Corporation. In spite of the very heavy roads, the running up Dashwood Hill was all that could be desired, the car at no time taking more than 60 ampères. The motor proved itself in every way most efficient.

"Soupac." Mr. S. F. Beevor's 6 h.p. Daimler.

We were struck with the very satisfactory behaviour of the long wheelbase Ormonde motor bicycles. They seemed to be particularly stable under the trying conditions. This we attribute in a very large measure to the satisfactory distribution of the weight. The motor, it will be recollected, is behind the crank bracket, and the lengthening of the wheelbase is therefore entirely backward. That is to say, the distance from the pedal crank to the front wheel and from the saddle to the handle-bar is no greater than with a pedal bicycle. This not only enables a comfortable position to be assumed with any unduly sweeping back of the handle-bars, but it places the rider as nearly as possible in the centre of the machine, the position in which he is least affected by vibration. Only three were entered, and each one, we believe, made a non-stop run, though only one has yet been awarded a non-stop certificate.

"Edna." Mr. H. Norfolk's 8 h.p. Renault.

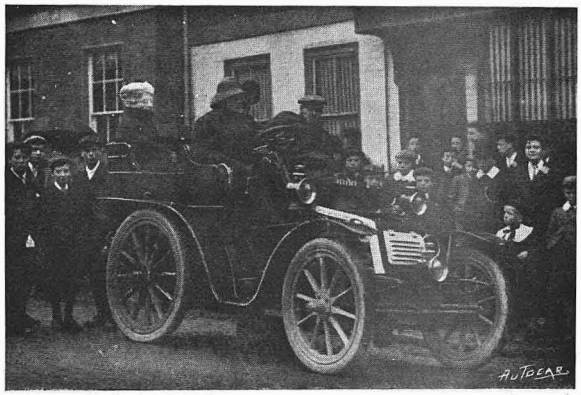
Messrs. Payne and Co., of 114, Queen's Road, Peckham, S.E., tell us that when driving to Oxford along the Brompton Road their driver had a gas lamp handed to him by a youth. It had been dropped by one of the cars which was ahead of theirs. They will let the owner have it on application.

* * * *

Mr. R. E. Phillips writes: "As so many cars entered for the non-stop run to Oxford on Saturday failed chiefly from ignition trouble owing to the wet, it will probably be interesting to your readers to know that cars not entered for non-stop certificates made non-stop runs. Although I did not enter my car—an 8 h.p. Rochet-Schneider—for a non-stop run, I made such a run with a full complement of passengers up, and also made a non-stop run back on the Sunday, *viâ* Bicester and Aylesbury, bar the stop at Aylesbury for lunch."

* * * *

Many who took part in the run had attended every anniversary celebration which has taken place from the first in 1896, and among those who went from London to Oxford on Saturday was Dr. P. E. Doolittle, a Canadian automobilist, who attended the

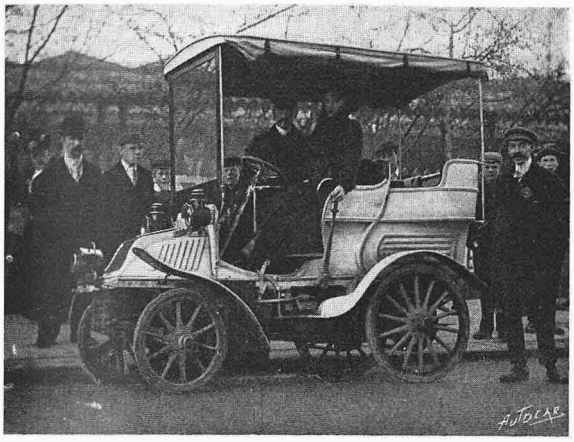


"Mammoth," Mr. H. Loeffler's 9 h.p. James & Browne. This is an interesting car, as it is the first James & Browne which was made, and the identical machine of which we gave a coloured illustration on the occasion of last year's anniversary run.

celebrated Brighton run in 1896, and who arrived in this country just in time to take part in Saturday's function. Dr. Doolittle is well known in the medical world as having introduced many ingenious inventions and improvements to surgical and other instruments. He is also the inventor of a back-pedalling brake for bicycles, which met with considerable success at the time it was brought out, and now we hear he is responsible for a new carburetter. He is a very enthusiastic automobilist.

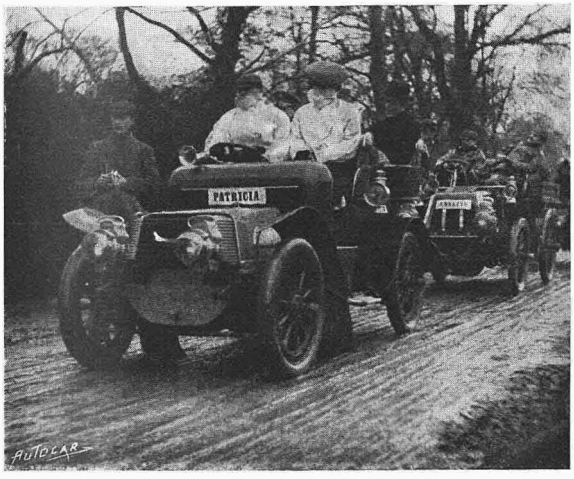
* * * *

We drove down on Mr. Swindley's 9½ h.p. Clément, and were very much pleased with its running. It possesses all the pace that could reasonably be desired, and is, at the same time, an exceedingly comfortable and easily-controlled vehicle. Despite the four hours' continuous rain there was no trouble with short circuiting, the only semblance of anything of the kind being indicated by one of the cylinders missing slightly. This was put right in less time than it takes to write—by wiping the plug. Although so light a vehicle, it is very stable in grease, and the car runs regularly well with plenty of reserve life and go about it.



"La Belle." The 7 h.p. car of Messrs. E. J. Cole & Co.

One of the noteworthy achievements of the day was the non-stop run made by two Locomobiles, one an ordinary No. 2 car and the other the new touring car. The No. 2, which Mr. Letts drove, had a small extra water tank at the back similar to the pattern illustrated at the time of the reliability trials. This did forty-four miles on one charge of water, and seventy miles without refilling with petrol. The car ran from the start to Reading *via* Richmond Park, Staines, and Wokingham. Then it was replenished with water at the luncheon stop, and when Oxford was reached the ordinary tank was still over half full. Of course, a good deal of this was due to the new superheater which the Locomobile Co. are now fitting. Before deciding to do this they have given it a very long and careful test. There are a great many alleged improvements brought out for steam cars, but the majority of them, though promising at the start, do not stand the test of time.



"Patricia." Mr. P. Richardson's 12 h.p. Daimler, and "Annette." Mr. Otto Frankel's 9 h.p. Napier.

Conspicuous among them may be mentioned several systems for burning paraffin, for which great claims have been made.

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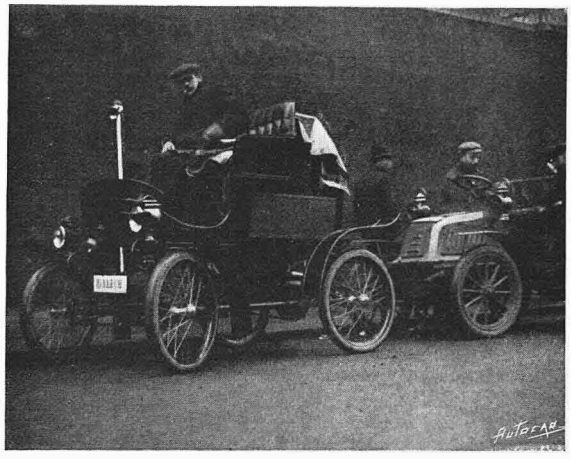
The Sandringham car made by Mr. F. Morriss, of King's Lynn, was among the unlucky ones, a nut coming loose on the valve gear while climbing the hill in Richmond Park. This car had cylinders



"Monarch." The 7 h.p. Toledo car.

and pistons the same as Mr. Morriss is now supplying to owners of old 6 h.p. Daimler engines, and which they can attach to their existing base chambers and convert these old, but none the less useful, cars into 10 h.p. machines. It seems the car was only finished on Friday afternoon, and was driven straight to town without a stop. However, although disqualified for the non-stop certificate, the car gave no other trouble, and was driven over to Lynn the day after the run without a hitch. We shall shortly be giving some particulars of this car, which should prove interesting, as Mr. Morriss has unquestionably had a great deal of practical experience with machines of the Daimler type.

THE READING AUTOMOBILE CLUB DINNER.

The annual dinner of this up-to-date fraternity took place on Thursday at the Queen's Hotel, Reading. There was a good attendance of members and friends, and the chair was occupied by the popular president, Dr. Truman.

Some interesting speeches were made, including that of the honorary secretary, Mr. Paxton Petty, who, in reply to "Success to the Club," stated that the club was going on in a very satisfactory way, and that during the past season they had elected fifteen new members. Their move to new premises had fulfilled the expectations of the committee, and they had every reason to believe that their success in years to come would become more and more marked.

The President spoke of the spirit of good fellowship that actuated all the members. A good deal of correspondence had been going on, he continued, in the motoring press respecting the formation of ladies' motoring clubs. Hitherto the various clubs had not admitted ladies, but provincial clubs would soon be called upon to answer the question as to whether they could adopt this attitude any longer. He thought in a few weeks' time a large and influential ladies' club would be started.

The treasurer and president-elect (Mr. Brigham) spoke of the interest attaching to the papers read before the club, and said the membership had now reached seventy.

One of the most pleasant evenings yet held by the club was brought to a close shortly before eleven p.m.

POLICE TRAPS.

At Nuneham Courtenay, near Oxford.
On the road between Brighton and Worthing; in several places near the latter town.
The roads of Huntingdonshire.
Ripley Road.—Sometimes on the London and sometimes on the Guildford side of Ripley.
Bath Road.—On the London side of Slough.

OIL MOTOR CARS OF 1902.

(Extracts from a paper read before the Institute of Mechanical Engineers.)

BY CAPTAIN C. C. LONGRIDGE, M.I.MECH.E.

(Continued from page 482.)

Cylinder Cooling.

This is the second point on which something has to be said. For any but the smallest motors, air-cooling, except as a supplementary aid, is impracticable, or, in any case, vastly inferior to water-cooling.

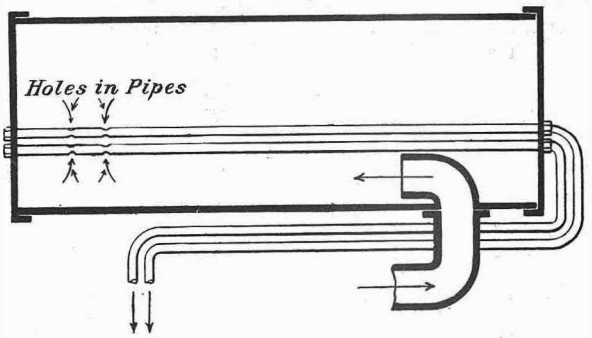
This latter system may be sub-divided into forced and natural. Of these the former, by far the more general, is affected by pump, usually of the centrifugal type; the latter, by placing the water tank higher than the cylinders, circulation following the difference of temperature. The security of this system is its only strong point. In other respects it is inferior to forced circulation. Not only to maintain a given cylinder-temperature does the slower circulation require a larger body of water to be carried, but the very cause of the circulation is defective. In the jacket water rises upwards round the cylinder, because it becomes hotter. It is thus placed in a condition to exert the least cooling effect where it is most wanted—round the combustion chamber and valves. The result is an increase in the natural tendency to unequal cylinder expansion, which adversely affects the casting, the piston rings, and general running of the engine.

Possibly the best method of all, and certainly the safest, would be a combination of the two systems. Where pump circulation alone is employed, it is advisable to provide against overheating due to breakdowns. The safeguard usually supplied is a float glass on the dashboard, in which the position of the float indicates the maintenance of the circulation. But this requires the driver's attention—a demand to be avoided. A very ingenious French method, communicated to the writer by Mr. Dugald Clerk, for indicating the piston water circulation in gas-engines, is to lead the discharge into a tank, fitted with a ball cock, and connected with the gas valve. If the circulation fails the tank water-level falls, the ball-cock sinks, cutting off the gas and stopping the engine before damage is done. On somewhat similar lines the author recently suggested fitting on the pump discharge pipe a lift valve, so connected with the electric ignition or the petrol supply that, as long as the cooling water circulated, the valve and its connection remained in their normal position; but if the pump failed the fall of the valve back to its seat broke the electric current or the petrol supply, and so brought the motor to a standstill. A mercurial tube in connection with the cylinder jackets offers another method of interrupting the firing, when, owing to a pump failure, the cylinder temperature becomes dangerously high.

The question of what is the proper cylinder temperature is one that admits of two answers, according to the standpoint taken, namely, that of efficiency or that of power. A very considerable heat loss arises from the cooling of the explosion gases by contact with the cylinder walls and piston. Hence the higher the temperature of these latter the lower their cooling effect. High cylinder temperature, therefore, conduces to efficiency, considered as the ratio of heat converted into work to the total heat imparter to the engine. Under this aspect, then, the cylinder walls should be kept as hot as they can be efficiently run. But, when power is considered, different considerations intervene. Other conditions being alike, the more charge that can be included in a cylinder of given dimensions, the more power will be produced by the explosion. Thus power depends on the weight of the charge. Now one charge, having half the absolute temperature of another, will have double its weight, and its explosion will generate proportionately greater power. Low temperature, therefore, by diminishing the heat of the incoming charge, favours increased body, and, therefore, increased power. In connection with this subject, Professor Hele-Shaw presented to the late International Engineering Congress at Glasgow a summary of power tests confirmatory of the above. His series of experiments showed that in a motor with jacket water ranging from 77° F. to 250° F. there was, with increase of the water temperature, a gradual decrease of horse-power declining from 4.775 b.h.p. to 3.94 b.h.p. A determination of the engine speed and quantity of water circulated was omitted, but the figures are still interesting as an illustration of the effect of cylinder temperature on power. In 1896 Mr. James Atkinson stated that for every 5½° F. by which the charge in the cylinder was reduced in temperature before compression, one per cent. more power could be obtained from the engine. Low cylinder temperature results in easier lubrication, and, therefore, likely enough, in reduced friction—a possible factor in the increase of power.

Mufflers or Silencers.

Until very recently these have been considered merely as sound-deadeners, and their influence on engine power quite overlooked. Many of the silencers used were thus ridiculously small, giving rise to quite unnecessary back pressure. What is the proper volume ratio between the silencer and the cylinder the author does not know. Mr. W. A. Norris states that it should be a minimum of five to one. The point could be easily settled by any manufacturer who would take the trouble to make the simple experiment. That silencers are probably yet too small, and that considerable throttling still exists, is evident from the fact that certain American makers have added to the exhaust pipe between the cylinder and silencer a by-pass valve to free the exhaust when more power is required. This method has been followed in the English Brooke car, and the German Daimler, Mercedes Simplex. In the American Friedman car the silencer consists of concentric tubes communicating with one another through perforations. The exhaust from each cylinder enters at opposite ends of the central tube, and diffuses outwards. The silencing effect is said to be very complete. The Oldsmobile silencer will be understood from the illustration. The exhaust gases



are given ample space to expand, and as their passage through the perforated tubes to the atmosphere is slow and continuous, it is said to be noiseless.

To ensure immunity from fracture in case of back-fire, a relief valve is sometimes fitted to the muffler.

Communication of the Motor Power to the Car.

(a.) Crank and Crankshaft.—As regards the position of Otto cycle motor crankshafts, the practice is to set the centre of shaft below the axis of the cylinder. The method is open to objections. All Otto cycle motors are single-acting, high-speed engines of accentuated type, in as far as the initial pressure is greater, more violently applied, and more rapidly repeated—constantly in one direction, namely, on the downward stroke. This sudden blow, always applied in the same direction, throws a heavy strain on the connecting rod and crankshaft, and in large power gas-engines, necessitates crankshafts of about half the diameter of the cylinder. This is one of the mechanically weak points of all engines using the Otto cycle. The question is whether the present practice deals in the best way with this defect. The prevailing method of locating the shaft line so as to intersect the cylinder axis gives equal angularity to the connecting rod on its up-and-down stroke. The cycle, however, imposes all the working strain during the down stroke, consequently, construction should perhaps aim at keeping the connecting rod in the most favourable

position to withstand pressure in this period of the cycle. In other words, the angularity should be reduced during the working stroke, being proportionately increased for the idle strokes—less angularity when the pressure is great, more angularity when it is slight. An additional advantage is that the crosshead is kept constantly pressed against one guide if the shaft is half-stroke away from the axis of the cylinders; consequently, there is no knock from bar to bar on turning centre. All that is needed to accomplish this is to set the crankshaft in advance of the axis of the cylinder. This, as regards motors, excepting in the Duryea car, would be a new departure; but it is not unknown in the modern, single-acting, high-speed steam-engine; and the reasons for its use in the latter are certainly more cogent in the case of the former. In steam practice the Peache high-speed engine, made by Davey, Paxman, and Co., and the Westinghouse single-acting engine might be cited as instances of this method of construction—a method which motor manufacturers might do well to copy.

On the question of material for crankshafts, one of the prominent firms in this country informed the author that the steel from which they forged motor cranks averaged 32.5 tons per square inch tensile strength—that is to say, not below 30 tons nor above 35 tons; phosphorus, 0.05. They considered this steel less liable to fracture as a result of constant vibrations, shocks, and jars. The author does not at all agree with this view. He believes that for small crankshafts (also connecting rods, etc.), a more rigid steel of very much higher tensile strength—at least, 45 to 50 tons, with even lower phosphorus—in a far more suitable material. A milder steel retreats before impact, yields, and deflects; and it is this repeated deformation that does the damage. This is especially the case where, as in high-speed single-acting explosion engines, the stresses of torsion and bending are so quickly and frequently repeated and reversed. The elastic limit and ultimate tenacity of these higher tensile steels is very much higher than those of milder quality; and as they are rigid and unyielding, there is no deflection to add to the strain of the metal and to wear down the inner sides of the bearings, and thus aggravate the bending tendency. For these small forgings, steel of higher tensile strength is easily obtainable with equal safety, and should be specified by motor makers. For such purposes nickel steel has many claims to consideration.

(To be continued.)

THE AUTOMOBILE CLUB DINNER.

On Friday last week, November 7th (the evening before the anniversary run), the annual dinner of the Automobile Club of Great Britain and Ireland took place at the Trocadero Restaurant.

Mr. Roger Wallace, K.C., the chairman of the club, presided, and among the guests and members present were the following: Mr. T. P. O'Connor, M.P., Lieut.-Col. R. E. B. Crompton, C.B., Hon John Scott Montagu, M.P., Prince Victor Kumar, Sir Howard Vincent, Lord Farrer, Sir John I. Thornycroft, Sir Lewis McIvor, Bart., M.P., Major Lindsay Lloyd, R.E., Mr. Gibson Bowles, M.P., Mr. W. J. Bull, M.P., Mr. Cumming Macdona, M.P, Dr. Boverton Redwood, Mr. F. H. Butler, Mr. E. Manville, Hon. C. S. Rolls, Mr. Claude Johnson (secretary), and a host of well-known automobilists—some 240 in all. After the loyal toasts had been given from the chair.

Mr. Gibson Bowles, M.P., proposed the "Imperial Forces." He compared the old ideas of slow locomotion with the modern desire for speed and of doing things rapidly. He regarded the new idea of speed as personified by the club, but in the course of good-humoured banter of the War Office he pointed out that its conception of speed was far behind that of the navy, as the latter arm of the service had produced the destroyer, while the War Office were content that their men should march from place to place when they might be conveyed in automobiles at eighty miles an hour. (Laughter.)

Sir Howard Vincent, M.P., in responding to the toast, pointed out that the War Office was not so black as it was painted, as it already owned twenty-five motor cars capable of fairly high speeds, and in which generals and other commanding officers were conveyed from place to place.

Mr. T. P. O'Connor, M.P., who made the speech of the evening, proposed "The Success of the Automobile Movement of the Club and its Affiliated Clubs." Thanks to the secretary, he had that day learned that in 1830 there was already in this country the beginning of automobilism and the germs of a great steam road traffic, but this had been killed by the undiluted and untempered crusted conservatism of those days. He went on to bemoan the fact that there was no Irish party then to interfere with legislation, and pointed out in his own inimitable manner that the Irish party were perhaps the best friends of automobilism to-day, inasmuch as they were reputed to greatly interfere with the progress of legislation, and might be held indirectly responsible for the fact that Parliament would not be able to devote time this session to considering any alteration of the laws governing automobile traffic. He considered that the prejudice against the movement was almost entirely due to a few people, who drove their cars without regard to the comfort and safety of the humble pedestrian. Such drivers were enemies to automobilism and pests to society. He had been told that automobilism was a good remedy for want of sleep. If this were so, it would appear that it was a mistake for members of the War Department, to which Mr. Gibson Bowles had referred previously, to indulge in the pastime. (Laughter.) He regarded the Automobile Club as a great pioneer of a peaceful and beneficent institution, and cordially proposed prosperity to it.

The Chairman announced that the club had just been advised by the French Government that they would accept the club's certificate in lieu of the French driving certificate from any members who might be touring in France, and he expressed his gratitude to Sir David Salomons for the persistent way in which he had worked to bring this end about. His reference to club certificates in lieu of numbering in this country is dealt with elsewhere. He dwelt on the harm done to the movement by a very small percentage of auomobilists, whom he could only characterise as road hogs. Referring to the speed limit, he pointed out that there could be no respect for a law which was daily broken by the highest people in the land and the law makers themselves, and the logical course was to put a stop to that sort of thing. (Cheers.) In referring to the club and its progress, he expressed the highest appreciation of the services of Mr. Claude Johnson (the secretary) and his able staff, and expressed the gratitude which he and the membership at large felt towards the numerous honorary workers who spent so much time and put in so much good work on behalf of the club.

Mr. Scott Montagu, M.P., who proposed "The Visitors," said that he had met Mr. Balfour that day, and that the Premier had asked him to say that he wished the club every success, that he hoped it would prosper, and that now he was a member of the club he took a great interest in its welfare. (Applause.) He felt sure that the influence of the Prime Minister would be of the greatest service to them in the event of future legislation. (Cheers.)

Lord Farrer responded, and

Sir Lewis McIvor, M.P., who proposed the health of "The Chairman," brought the toast list to an end.

THE COURSE FOR THE GORDON-BENNETT RACE.

Mr. Claude Johnson crossed to Ireland on Thursday last for the purpose of inspecting a course of sixty-two miles in circuit in Ireland, which Mr. R. J. Mecredy has suggested as suitable for the Gordon-Bennett competition next year. Should this course be found possible of adoption, the Gordon-Bennett race would be decided on much the same lines as the late Circuit des Ardennes, so that spectators by the roadside would be enabled to see the cars pass any one point on the course five or six times. That Mr. Johnson and Mr. Hutton, who, we believe, goes with the secretary, will approve the selected route, and that no objection to the race being held thereover will be raised by the Irish authorities, is assuredly the warm hope of every British automobilist.

THE SUPPLY OF PETROL.

The firms whose names we give below have notified us that they have provided means to continue the supply of petrol without increase of cost:
CAMBRIDGE.—Humber Cycle Supply Co., 68, Regent Street.
KIDDERMINSTER.—Kidderminster Cycle Depot, Bull Ring.
LUTON.—A. P. Wills and Co., 3, New Bedford.
WINSFORD (R.S.O.)—Stubbs and Rogerson.

Many other suppliers of petrol have managed to arrange for their stock to be maintained right through the period of scarcity, but as they have not advised us of their enterprise we cannot include them in our list, which makes no pretence to completeness, and is merely published to bridge over the temporary difficulty, as it appears that the new clause which the railway companies are drafting will give satisfaction to the distributers of spirit.

Petrol by Road.

While some districts have scarcely suffered at all by the railway companies' action, others have run short, though a few agents have taken advantage of the situation and have charged exorbitant rates. In the district round London the Thornycroft Steam Waggon Co., Ltd., have performed excellent service, as during the past two or three weeks they have transported a very large quantity of petrol by road. A radius of seventy miles round London has been successfully dealt with, and many dealers in petrol have been kept supplied by these means.

The movement inaugurated by the Macclesfield Chamber of Commerce for enlisting the co-operation of the Board of Trade in the removal of the objectionable conditions is being taken up by other chambers, who are following the lead of the Macclesfield Chamber in memorialising the President of the Board of Trade on the subject.

CLUB RUNS.

Scottish Automobile Club (Western Section).

What is regarded as the most important event in the Scottish automobilists' year—namely, the anniversary run of the Western Section of the Scottish Club—took place on Saturday. Heavy rain began to fall just as the cars, which had assembled in George Square, commenced the journey to Luss, which had been chosen as their destination. Over fifty cars, containing members and friends to the number of 200, left the square, and pursued the following route: West Nile Street, Sauchiehall Street, Woodlands Road, and Great Western Road. Thereafter the route was optional.

Mr. R. J. Smith, the honorary secretary, read telegrams of greeting he had received from and despatched to the A.C.G.B.I., who were also on their anniversary run.

The return journey commenced about a quarter past four, and the first of the cars reached the city on the stroke of six.

Yorkshire A.C.

The most interesting run of the year was held on Saturday last, Worksop being the venue. A start was made from Bradford Town Hall amidst torrential rain. Quick travelling was the order of the day, Wakefield being reached in thirty-three minutes, the police being conspicuous by their absence (probably due to the lack of foliage in the hedges).

The following cars started: Mr. Jackson and party, 28 h.p. Mercedes; Mr. Albert Farnell and party, 22 h.p. Daimler; Mr. Hey (honorary treasurer) and Mr. Lancaster, 12 h.p. Daimler; Mr. Phœnix Jones and friends, 16 h.p. Panhard, Mr. A. W. Dougill (honorary secretary), 12 h.p. Loidis; Mr. Faiers and Mr. Broadbent, 11 h.p. Clément; and Mr. Tom Cottage, 2½ h.p. tricycle.

Owing to the absence of signposts outside Tickhill, an error was made in the darkness, and after traversing various back lanes and farmyards, and having several hairbreadth escapes from meres and ponds, the main roads to Worksop were regained. Owing to the greasy condition of the roads, the tricycle entered one of the ponds, and was finally towed home.

It may be noted that, despite the antagonistic attitude of the railway companies, petrol was plentiful.

The return journey was made on Sunday morning *viâ* Retford, Bawtry, and Pontefract.

Answers to Correspondents.

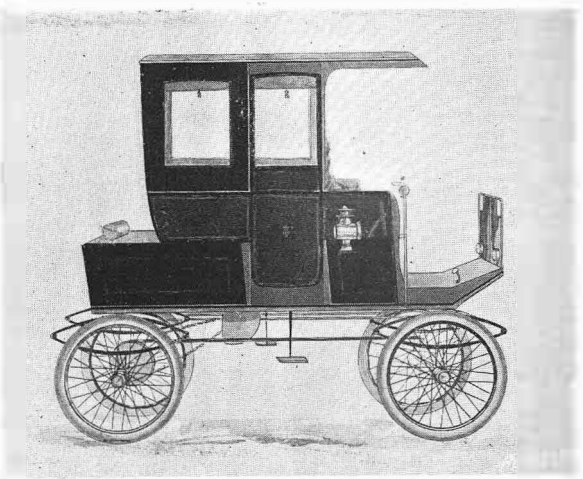
This week the following correspondents have been, or will be, replied to by post:

Connolly.
Century.
W. K. Murray.
W. L. Gullette.
H. Irvine.
"Peter."
N. Weldon.
S. Melvin.
H. Day.
P. T. Peacock.
D. E. H.
H. S. Lugg.
H. J. Wheeler.
J. C. Nixon.
K. Cookson.
H. Garner.
A. J. Hawkey.
D. G. H.
S. J. Gamnett.
F. Archer.
C. W.
Marlow.
J. J. Bell.
E. Lloyd.
J. P. Miller.
Jno. Pullman (Teddington).
H. Reeves (Saltash).
F. Rollins.
H. Percy Brown.
A. A. G.
G. Ernest Raymond (Middlesbrough).
T. La Marche (Guernsey).
Hon. E. Pierrepont.
G. F. Fenwick.
G. L. F. (London, W.)
G. Cope Dixon.
J. Locke.
C. Harvey.

Our thanks are due to the following for items of news and various topics of interest which have been or will be dealt with: R. J. Smith, G. Hurst, A. F. Garnham, J. H. Adams, B. B., T. B. Percy, W. Payne, F. G. Barton, A. Emmett, W. J. Bladder, Cautious, and R. Jenkins.

NOTICES.

SUBSCRIPTIONS.



To meet the demand for a motor brougham, Mr. W. M. Letts has designed a special body which fits on to the chassis of the No. 05 standard pattern 6½ h.p. Locomobile. It is made to detach, so that in summer time the top will lift right off, and a car very much the same as a Loco Surrey will remain. The drawing we reproduce shows the appearance of the car. It will, of course, be fitted with ample wings, though these are not shown. It will be heated by exhaust steam, and the body will be built for the Locomobile Company by a well-known West End coachbuilder.

THE AUTOCAR

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

EDITED BY H. WALTER STANER.

No. 369. Vol. IX. SATURDAY, NOVEMBER 22ND, 1902. [PRICE 3D.

THE AUTOCAR.

EDITORIAL OFFICES:

COVENTRY.

PUBLISHING OFFICES:

3, ST. BRIDE STREET, LUDGATE CIRCUS, LONDON, E.C.

CONTENTS.

In "The Autocar" of November 8th, a coloured supplement plate—"The 16 h.p. Napier"—was published. Separate copies of this supplement can be obtained packed flat, post free, for 7d. from the publishers, 3, St. Bride Street, Ludgate Circus, E.C.

COLONIAL AND FOREIGN EDITION.

IN ADDITION TO THE USUAL EDITION OF "THE AUTOCAR," A SPECIAL THIN EDITION IS PUBLISHED EACH WEEK FOR CIRCULATION ABROAD. THE ENGLISH AND FOREIGN RATES WILL BE FOUND ON THE LAST PAGE. ORDERS WITH REMITTANCE SHOULD BE ADDRESSED "THE AUTOCAR," COVENTRY.

The Autocar can be obtained abroad from the following:

AUSTRALIA: Phillips, Ormonde, and Co., 533, Collins Street, Melbourne.

FRANCE: Nice, Levant, and Chevalier, 50, Quai St. Jean Baptiste

UNITED STATES: The International News Agency, New York.

Notes.

The North-Eastern Petrol Trains.

As we have already announced, the North Eastern Railway Co. are constructing light petrol railway cars at their works at York. Each car will be 53ft. long, and will stand 13ft. above the metals. At one end of the car will be the petrol engine in a compartment. The engine will drive two dynamos for generating current for the electric motors, which will drive the bogie under the engine compartment. At the opposite end there will be a guard's compartment, but control levers will be fitted in this as well as in the engine room at the other end, so that the car can be driven from either end like a tramcar. The saloon will seat fifty-two passengers in reversible garden seats, and will have a central gangway, approached through closing doors at each end. The cars will have a maximum speed of thirty miles an hour. They will be introduced experimentally on the small section between East and West Hartlepool in the first instance. They may subsequently be introduced on other branch systems where rapid and frequent local services are necessary, but almost impossible to obtain owing to the numerous and closely-placed stations to be stopped at. They will be able to reach the maximum speed in ten seconds, as against 1m. 50s. for light trains in the ordinary way. They will be lighted with electricity, and fitted with electric brakes. The engine will be of Napier make, and 85 b.h.p. The external appearance of the cars will be very similar to that of trams placed on railway carriage frames. A small clerestory roof will be fitted to the engine room, and the running tank will carry thirty gallons of petrol, and will be sufficient for five hours without replenishing. It is proposed to give a ten minutes' service between East and West Hartlepool. The places are two and a half miles apart, and as the train service between the two towns has hitherto been very unsatisfactory, the new system will be inaugurated to meet the increasing competition of the tramway service. The cars are designed by Mr. W. Worsdell, the locomotive engineer of the N.E.R., to whose courtesy we are indebted for the particulars we are able to give. We hope that the enterprising experiment will result in success, and that some trials will also be made of a more direct drive from the engine to the wheels. At the same time, the efficiency of the modern dynamo and electric motor is so high that they afford a means of flexible transmission that for these particular requirements is hard to beat. For longer runs there is no doubt that a modification of the transmission gears fitted to ordinary autocars would be superior.

Appealing to the Superior Court.

One of the strong points which is dwelt upon considerably by those who believe in the proposed bill for the numbering of cars is that provision is to be made for an appeal against magisterial decisions to a superior court. It has already been pointed out in our columns by more than one automobilist well versed in the law that there is little likelihood that Parliament would sanction anything like a royal road to the higher court, though even if it would do so, it would be but a poor consolation to