

THE AUTOCAR

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

EDITED BY H. WALTER STANER.

No. 364. Vol. IX.]

SATURDAY, OCTOBER 18TH, 1902.

[PRICE 3D.

THE AUTOCAR.

EDITORIAL OFFICES:
COVENTRY.

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

CONTENTS.

	PAGE
LEADER: FREQUENT LOCAL SERVICES	389
THE LOCOMOBILE PETROL CAR	391
THE MAUDSLAY 20 H.P. CAR (Illustrated)... ..	392
A PORTABLE FOLDING TORNEAU TENT (Illustrated)	394
USEFUL HINTS AND TIPS	395
BRITISH CARS IN SOUTH AFRICA (Illustrated)	396
THE SURREY MAGISTRATE AND MOTORISTS	396
CONTINENTAL NOTES AND NEWS (Illustrated)	397
THE 8 H.P. M.M.C. VOITURETTE (Illustrated)	401
CORRESPONDENCE: A WARNING—THE AUTOMOBILE VOLUNTEERS —THE 12 H.P. BELSIZE—DASHBOARD ORNAMENTS—WORN VALVES—THE PICK CAR—A GOOD ROUTE FROM LONDON TO MANCHESTER—EXPERIENCE WITH A WOLSELEY CAR MOTOR BROUGHAMS—STEAM CARS—PETROL CONSUMPTION—CONCERN- ING ACCIDENTS	402-403
FLASHES (Illustrated)	404
ROUND THE WORLD ON A MOTOR CAR (Illustrated)	407
TRIAL TRIP OF A 68 H.P. SIMMS MOTOR LAUNCH	408
THE MIDLAND AUTOMOBILE CLUB HILL CLIMB	409
THE UNCONTROLLABLE HORSE	409
THE ROAD RAIL RING TRACTOR	410
THE KING AND HIS PRIME MINISTER	411
THE WORTHING BENCH AND AUTOCARISTS	412
TO CORRESPONDENTS	412

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

FREQUENT LOCAL SERVICES.

Last week it was announced that the North-Eastern Railway Co. had decided to electrify their local system around Newcastle to enable them to run frequent local services of short trains. Although these matters are not exactly within the scope of *The Autocar*, as it confines itself almost entirely to self-propelled vehicles for road use, at the same time it appears to us that the suitability of the internal combustion engines for work of this kind is so pronounced that it should not be overlooked. Moreover, it is unquestionably in the interests of automobilism that as much local traffic as possible shall be confined to the channels originally constructed to take it—that is to say, the railways. Any tendency to increase passenger traffic by tram at the expense of the local railway system is undoubtedly against the interests of automobilism, as it means that the already over-charged main streets will be still further encumbered by trams, and, consequently, the automobilist, as he passes through towns, will find that the populated areas are not only

more and more congested, but that he will have to penetrate still farther into the country before he is able to enjoy driving on a good macadam road free from the more or less objectionable tramway.

It is now generally accepted that the future policy of the railway companies, so far as local traffic is concerned, is to run more frequent and lighter trains—in other words, to more nearly approximate to the conditions of the tram services, which in many cases have diverted some of their legitimate traffic, and it is, we believe, with the idea of meeting this competition that the N.E.R. intend to run three-car trains. The first and last car will be driven by electric motors, but the middle carriage will not be a motor carriage. Now the capital outlay for electrifying the system will be enormous, and it appears to us that every requirement of a frequent local service could be obtained by means of internal combustion engines fitted to the first and third carriages in place of the electric motors proposed by the North-Eastern Railway Co. In the first place, the internal combustion engine is much more efficient than an electric motor. In other words, the bill for oil fuel will be less than the coal bill at the generating station. A railway motor carriage, driven by an internal combustion engine, will cost little, if any, more than a similar carriage propelled by an electric motor, and either is equally easy and simple to drive. In each case new rolling stock will be necessary, or, at any rate, expedient; but it applies equally to both, the great point in favour of the internal combustion engine being that no change or addition whatever will have to be made to the permanent way, as there will be no central feeder rail to lay, no cables, and no generating stations to provide, and then, as we have already said, the cost of power will be less, even without considering the interest on the capital.

If it were proposed to electrify the whole of the North-Eastern system the case would be different; but it is generally accepted that the times are not ripe for anything of this kind at present, either on the North-Eastern or any other great main line, as the main lines on most sections of the systems away from the large towns are not occupied with sufficient regularity throughout the twenty-four hours to provide an approximately constant load on the generating stations. It is only for the local traffic that the need for a number of light trains is felt, and we commend to the notice of the railway companies the suitability of the internal combustion engine—engines which in themselves would be merely enlargements of the types used for automobile propulsion. In fact, more than one firm are already constructing engines that are in every way suited for the purpose. As to the transmission of power from the engine to the wheels it would merely have to be an enlargement of one of the accepted types used for motor

work, though owing to the absence of balance gear it would be simplified, and, of course, all the shafts would be parallel. Probably three speeds would be required, and certainly the ordinary friction clutch or its equivalent. A simple form of self-starter would also be fitted, so that the engine need never waste oil by running idly.

There is nothing experimental about the matter, and the mere gain of being able to use these internal combustion trains on existing rails without any alteration whatever or addition to the permanent way is so great as to be at once apparent. Last, and not by any means least, there is the question of safety of the passengers to be considered, and there is no doubt that the electric train does not compare favourably with the oil engine in this respect, and, moreover, with an electric installation there are the numerous costly provisions to be made for the public safety at all points of the system at which it is possible for them to penetrate.

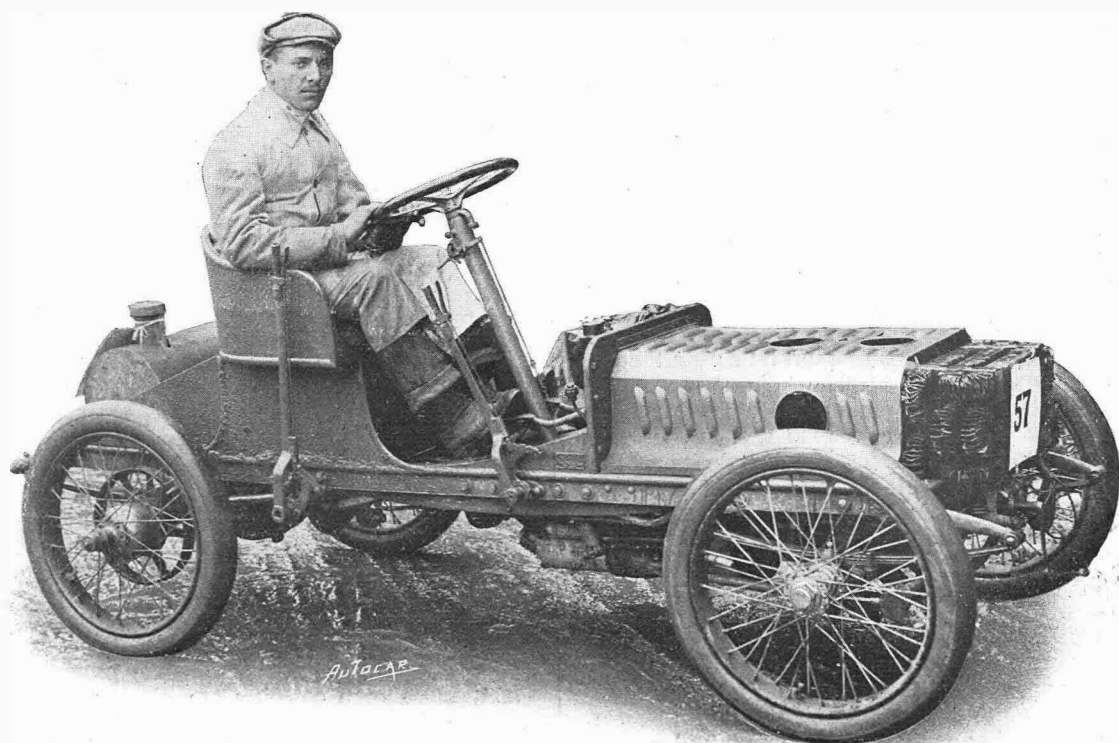
There is another opening, too, for the light two or three-car train driven by oil engines which should not be missed, and that is on the many short branches on which at the present time only four to six trains per day are run to connect with the main line. The rolling stock is of the same construction and weight as that used upon the main line, and it is only possible by running the trains at long intervals to obtain anything like a paying load, and there is no doubt whatever that traffic receipts would be greatly increased and outlying districts far better served if light frequent trains between the junction and the place or places on the branch line were run instead of the few heavy ones at present employed. We do not go so far as to say in all cases that electrification of the traffic would be inadvisable, but there is no question whatever that in the vast majority the re-

quirements of the locality would be as well met by the internal combustion engine, and that the railway companies would save an immense capital outlay by adopting it in preference to electricity.

Matters would undoubtedly be facilitated if those motor manufacturers who are in a position to meet the requirements of the railway companies would put themselves into communication with the locomotive superintendents, as we feel certain that the claims of the oil engine have only to be properly presented to be appreciated, and that the locomotive and traffic superintendents and directors of most of the great railways will welcome any practical advances from members of the motor trade, as they are fully aware of the immense cost and other objections to the employment of electricity on railways, and they are also keenly alive to the necessity for running more frequent local services.

It is all very well for people who are prone to think that everything from the other side of the Atlantic is good to argue that because certain railways in the United States are electrifying some of their local lines England should do the same. For our part we consider that England would be much better advised to cut out a line of her own, and not to copy America for the benefit, in nine cases out of ten, of some foreign firm supplying most of the tackle for the electrification of the road.

At the time of the reliability trials we noticed that a large number of the cars running were fitted with Clipper-Continental tyres, but we omitted to make a count. In any case, they came through exceedingly well, and we are now informed by the makers that four of the gold medal cars were fitted with these tyres.



Vonlatur, the winner of the Voiturette Class (250 to 400 kilogs.) at Gaillon, on his 12 h.p. Clement. A sister machine driven by Oury also won in its class at the Spa hill climb held the same day.

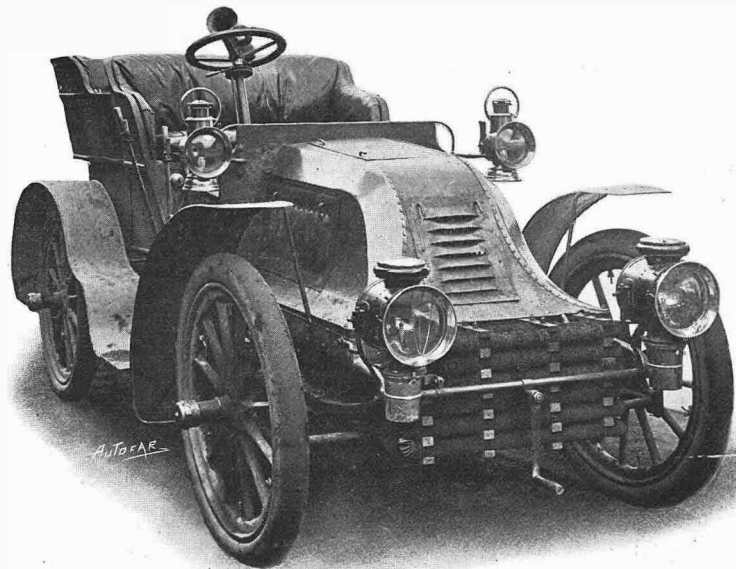
THE LOCOMOBILE PETROL CAR.

The accompanying illustration gives an excellent idea of the four-cylindered 12 h.p. petrol car just turned out experimentally by the Locomobile Co. of America. Many American and some English journals have jumped to the conclusion that, because the details of this vehicle have been made public on the other side of the Atlantic, the Locomobile Co. are about to plunge wholesale into petrol car manufacture, but we learn from the best source on this side that this is by no means the case. The Locomobile Co. have lately acquired the services of that clever electrical engineer, Mr. A. L. Riker, and it is from his designs that ten, and ten only, of these petrol cars have been put in hand. To describe the car briefly it is only necessary to say that the engine is vertical, and placed beneath the motor bonnet in the front of the car. Its cylinders have a bore of 4 in. and a piston travel of 5 in. The engine runs normally at nine hundred revolutions per minute, but can be accelerated to two thousand revolutions per minute. The engine speed is controlled by a governor, but a hand-operated throttle valve, while giving the engine more mixture when it is desired to increase the speed, cuts this governor out. The cylinder casting includes cylinder head and water-jackets in one casting, so that there are no water joints save where the water tubes enter and exit. Indeed, the design of the engine offers no novel features. If the Locomobile Co. intend to build petrol cars in the future they have missed opportunities in not profiting by the latest Mercedes, Panhard, and Napier practice, with which Mr. Riker should be well acquainted.

The engine is fired by induced current and sparking plugs in the usual way, but a dynamo driven off the engineshaft can be alternated with the accumulators for ignition purposes when desired. The transmission gear of the ordinary Panhard type allows of three speeds forward and a reverse, the

road-driving wheels being rotated by chains off the countershaft. Loyal radiators are used, a nest thereof being set below and in front of the frame.

The chassis is formed of longitudinal steel channels, the flanges tapering away from the centre to each end. The water tank, with a capacity of seven gallons, is set in front of the dashboard, and



the lubricating tank is placed beneath the motor bonnet also in front of dashboard. This is done to keep the oil fluid in cold weather, but it does not appear that any means of noting whether oil is feeding or not are provided. The car, which weighs 19 cwt., 1 qr. 19 lbs. with test body *in situ*, has a wheelbase 6 ft. 10 in., and wheel gauge of 4 ft. 3 in.

Indeed, we are bound to say that with the latest European models before them the Locomobile Co. have turned out a petrol car the details of which will rank it with the designs of eighteen months or two years ago. For instance, the lower half of the base chamber only is of aluminium, the upper part of the gear case being presumably of cast iron.

From the time of the immortal pump and tub scene in "Nicholas Nickleby," it has always been felt, when any special properties are introduced into a play or a tale, that the plot must be more or less written round the special feature introduced. We must confess that these were our feelings when we received "The Lightning Conductor—the Strange Adventures of a Motor Car" (Methuen), and we were agreeably surprised to find the adventures of the heroine, Mollie Randolph, and the hero, Lightning Conductor Brown, were really amusing and interesting. We consider the book is somewhat spoiled by references to certain cars by name, but this in no way affects the interest of the tale or amusement to be derived from a perusal of its pages. The illustrations, of which there are sixteen, are good, and more than one face well known in the automobile world will be recognised.

The Piccadilly Motor Co., Ltd., have acquired the goodwill of the Piccadilly Motor and Cycle Depot of 200, Piccadilly. The company have motors for hiring purposes, and undertake to give lessons in driving.

* * *

Mr. Warne, of the well-known Warne's Hotel, of Worthing, writes us that now the season is over, he is closing his hotel till January 1st. However, though this is the case, he will be in residence, and motorists will be able to obtain light refreshment, while last, but by no means least, the garage will be kept open all the year round, and petrol, oils, etc., will be obtainable as usual. Although the Worthing bench have a deservedly anti-motor reputation, it is interesting to know that out of the 800 cars which have called at Warne's Hotel this year, only seven of their owners have been fined.

THE MAUDSLAY 20 H.P. CAR.

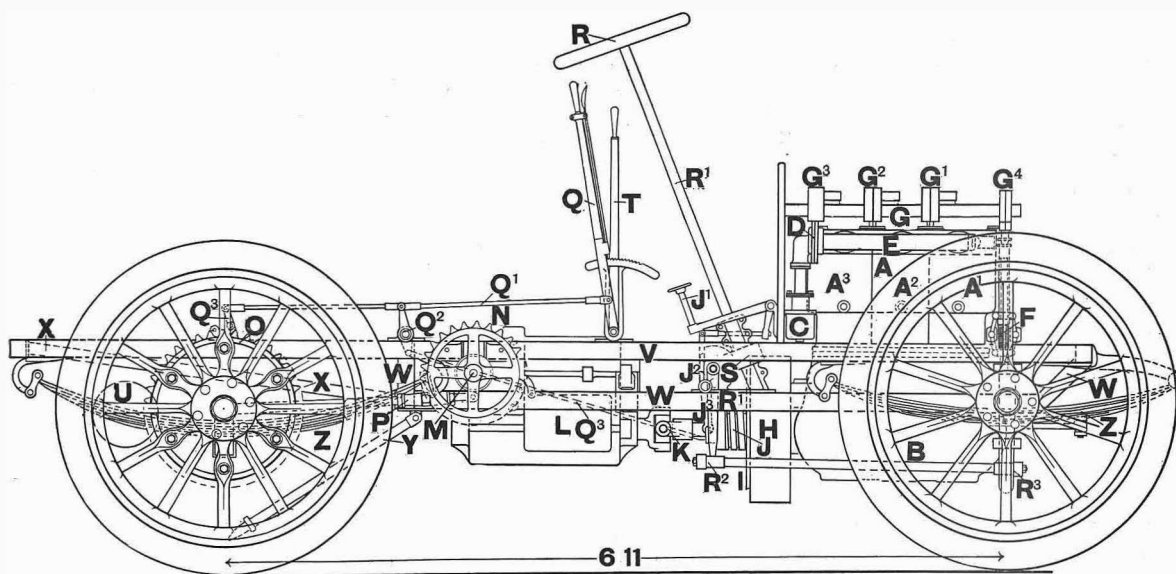


Fig. 1.—Side elevation.

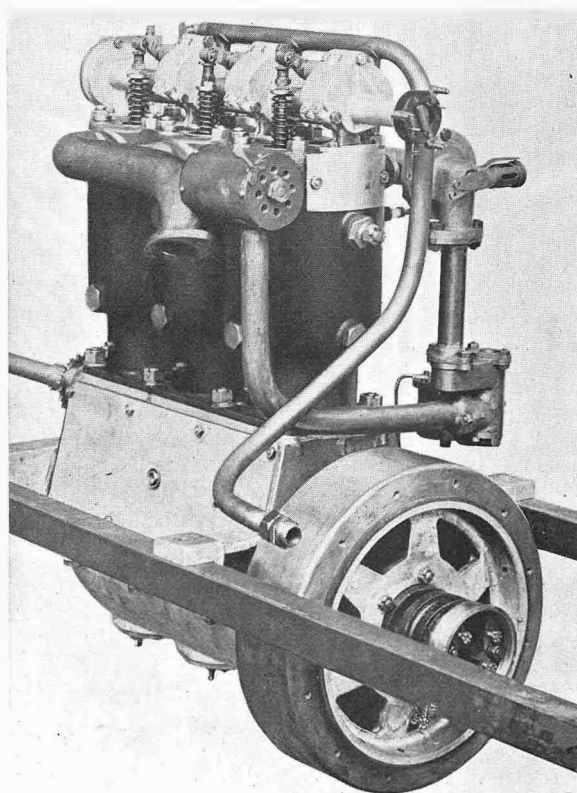
A, longitudinally placed motor.
A¹ A² A³, three cylinders of the motor.
B, crank chamber.

C, carburetter.
D, throttle valve.
E, induction chamber.
F, governor.
G, camshaft casing.
G¹ G² G³, exhaust valve cam cases.
G⁴, casing containing the skew gears driving the camshaft.
H, flywheel and female cone of the friction clutch.

J, male cone of friction clutch.
J¹, clutch spring.
J², clutch pedal.
J³ J⁴, clutch pedal connections.
K, universal joint.
L, gear box.
M, countershaft.
N, sprocket wheel.
O, chain wheel on back driving hub.
P, adjusting nut on radius rod.
Q, brake lever.
Q¹ Q² Q³, brake connections.

R, steering wheel.
R¹, steering column.
R² R³ R⁴, steering connections.
S, steering gear-box.
T, speed changing lever.
U, silencer.
V, main frame.
W W, lower frame carrying engine and gearing.
X X, lower frame stay.
Y, spring.
Z Z, springs.

It is with considerable pleasure that we put before our readers some particulars of a car containing new features. This is the 20 h.p. vehicle now being turned out by the Maudslay Motor Co., of Parkside, Coventry. The car which the firm ran through the recent reliability trials, it will be remembered, did exceedingly well, and only missed winning a gold medal by a very few points. In view of the firm's recent entry into the motor industry, it will no doubt be of interest to our readers to learn that its heads are of a family whose name is writ large in the history of engineering. It was, in fact, a Maudslay who brought out the compound slide-rest for a turning lathe, and up to a few years ago many of the original lathes were to be seen at their old works in London. The firm, therefore, enter into their new work equipped with a wide experience and supported by very able men, and there is no doubt as to the merits of the car they have produced. We must acknowledge our indebtedness to the Maudslay Co., and to Mr. Alex. Craig, the designer of the car, for their courtesy in enabling us to examine every detail of the motor, gearing, and frame, and not only so, but for placing at our disposal a complete set of working drawings. Our first illustration (fig. 1) gives a side elevation of the chassis. Reference to the letters and key will enable the reader to locate the general disposition of its component parts. In the unmarked views a right and left-handed diagonal view of the motor, as seen from either end, is given, while figs. 2 and 3 give a side elevation and end section respectively. It is these figures that we have to deal with first.



Three-quarter view of engine from the back showing overhead valve gear.

The motor is a three-cylinder vertical one, the cylinders being in one casting with their water jackets. The dimensions of the cylinders are—bore 5 in. and stroke 5 in., the normal power of 20 b.h.p. being developed at 800 revolutions per minute. The cylinder heads B, with their water

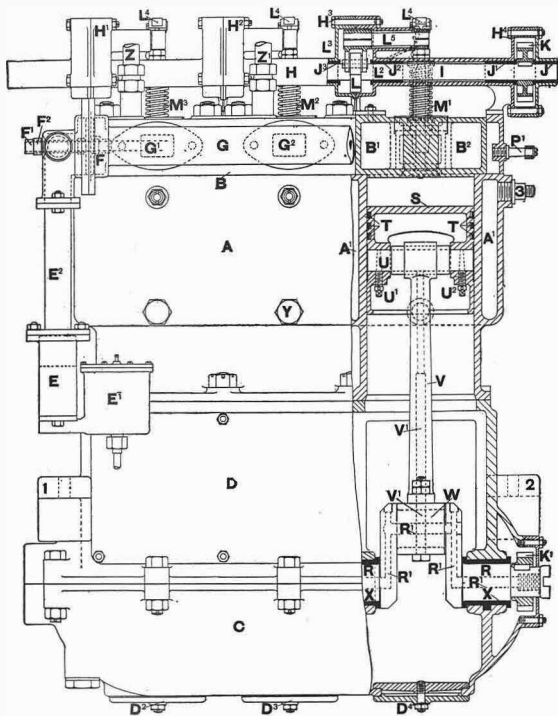


Fig. 2.

- | | |
|---|---|
| A, cylinders with water jackets in one casting. | M ¹ M ² M ³ , exhaust valve springs. |
| A ² A ³ , water jacket, in section. | N, exhaust pipe. |
| B, cylinder heads with water jackets. | O, inlet valve. |
| B ¹ B ² , water jackets in section. | P, centrifugal governor. |
| C, crank chamber. | P ¹ , stud upon which the governor fork works. |
| D, crank chamber inspection lids. | Q, vertical shaft actuating camshaft. |
| D ² D ³ D ⁴ , inspection holes. | R, crankshaft. |
| E, spray carburetter. | R ¹ (repeated), oil passage through crankshaft. |
| E ¹ , float feed chamber. | S, piston. |
| F, throttle valve. | T, T, piston rings. |
| F ¹ F ² , levers on throttle valve. | U, gudgeon. |
| G, induction chamber. | U ¹ U ² , gudgeon keeper pins. |
| G ¹ G ² , gas inlet ports. | V, connecting rod. |
| H, camshaft casing. | V ¹ , oil passage through connecting rod. |
| H ¹ H ² H ³ H ⁴ , cam and gear boxes. | W, W, crank pins. |
| I, camshaft. | X, crankshaft bearings. |
| J, J ¹ J ² J ³ , camshaft bearings. | Y, water inlet pipe. |
| K, K ¹ , skew gear wheels. | Z, Z ¹ , water outlet pipes. |
| L, exhaust valve cam. | 1, 2, arms by means of which the motor is fixed to the frame. |
| L ¹ , compression release cam. | 3, stay stud. |
| L ² , rocking lever. | 4, sparking plug. |
| L ³ , L ⁴ , rollers on the rocking lever. | |
| L ⁵ , rocking lever spindle. | |
| M, exhaust valve. | |

jackets B¹ B², are in one casting and bolted to the cylinders, the inlet and exhaust valves M being placed in the heads directly above the piston. The reference letters used in this description refer to figs. 2 and 3, unless otherwise stated. The camshaft operating the exhaust valves is placed longitudinally above the cylinder head—a constructional feature not to be found in any other motor. The camshaft I traverses the length of the motor head, and is enclosed in an oil and dustproof aluminium casing H, the cams working in the boxes H¹, H², and H³. The shaft runs in bearings, as shown by J, J¹, J², and J³, and is kept well lubricated. The operation of the camshaft is effected by the skew gears K on the crankshaft and K¹ on the camshaft

through a vertical shaft Q, which carries the throttle governor P. The contact breaker is carried on the rear end of the camshaft, as will be seen in the first photo view. This position should appeal strongly to the practical motorist, as it makes this important fitment extremely easy of access, and its height secures its immunity from dust or mud, as the case may be. It should be mentioned that the cam boxes are provided with inspection lids, and we understand that the inlet, as well as the exhaust, valves are to be mechanically operated in the near future. The pistons are of the usual trunk type, and are connected to the crankshaft by forged and turned connecting rods. The crankshaft R has its three crank pins at an angle of 120°, and is carried in four bearings similar to X X. The crankshaft is machined from a forging, and through its centre is an oil passage R¹ R¹ R¹. The connecting rods have also a similar passage, as shown by V¹. Oil is forced by a pump, driven off the forward end of the crankshaft by a worm and worm wheel, through these passages, and by means of oil holes in the crankshaft the bearings, crank pins, and gudgeons are all lubricated. The oil passes from the bearings into the crank chamber, whence it is

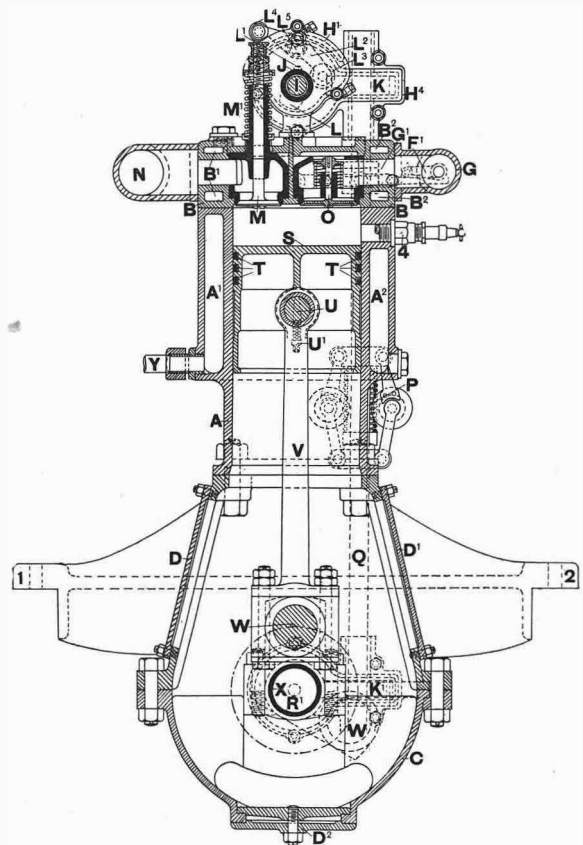
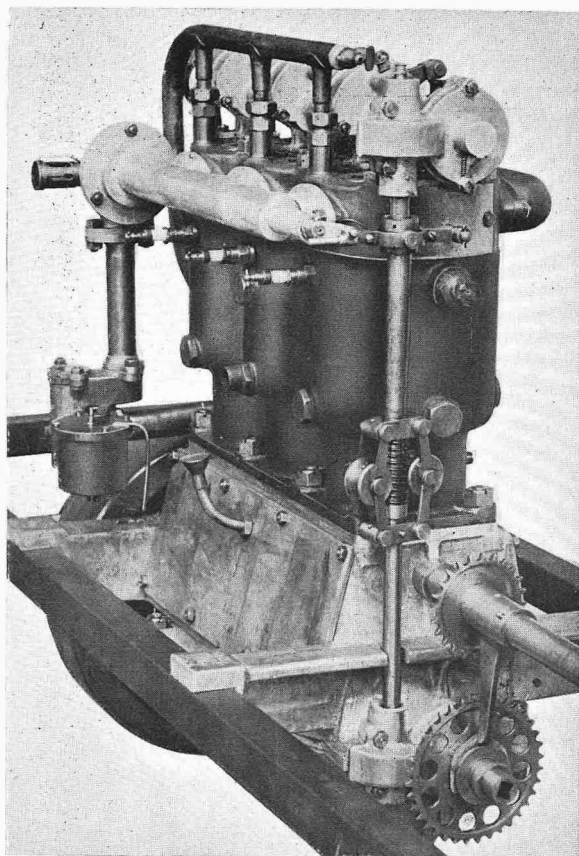


Fig. 3.

The letters on the above figure correspond to those on fig. 2, and its reference key applies to both equally. Letters missing from one figure will be found upon the other.

drawn by the pump. For the inspection or adjustment of the connecting rods, bearings, etc., two large inspection lids D and D¹ are fitted to the crank chamber, while at the bottom there are three smaller ones D², D³, and D⁴. Gas is supplied to the motor by a spray carburetter E, with a float

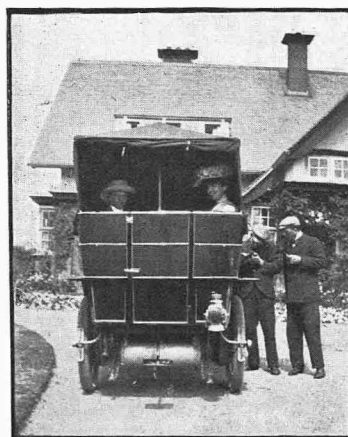


Threequarter view of engine from front showing vertical valv shaft and governor.

chamber E¹. Between the carburetter and induction chamber G a throttle valve F is interposed, which is actuated by the governor P. This valve is composed of a movable disc, having in its face a number of holes, which correspond to similar holes in a fixed plate, forming one end of the induction chamber. The moving disc is operated by the governor through the lever F², so that the orifices in disc and plate are increased or diminished, according to the movement of the governor which causes the disc to revolve, thus changing the relative positions of the holes in the disc and plate. A lever F¹, operated by the driver, causes the valve to be held open against the action of the governor for acceleration purposes. The cooling of the cylinders is effected by passing through the water jackets, by means of a centrifugal pump, fluid drawn from a tank placed under the body of the car. From the jackets the water passes through a stack of radiators, placed in front of the car, back to the water tank. The compressed charge in the cylinders is ignited by the usual electric spark, produced by accumulator and coils, and the exploded charge is ejected through the exhaust pipe N to the silencer U (fig. 1) at the back of the car. For starting purposes there is a short countershaft carrying the starting handle, which is connected to the crankshaft by a chain and chain wheels, as shown in the opposite engraving. A slight inward push engages the starting clutch on the countershaft, and as soon as the engine starts up this is automatically thrown out. To relieve the compression on starting there is a small cam L¹ on the camshaft, which when moved into position by a lever slightly opens the exhaust valve, permitting a small amount of the charge to escape.

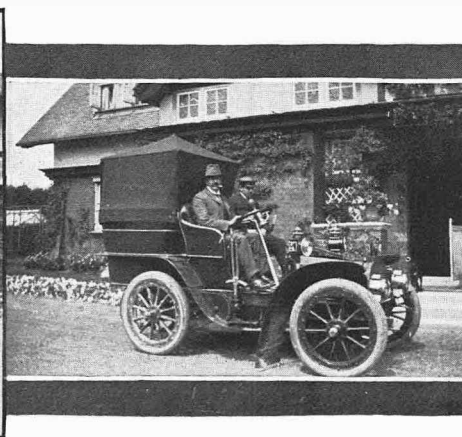
(To be continued.)

A PORTABLE FOLDING TONNEAU TENT.

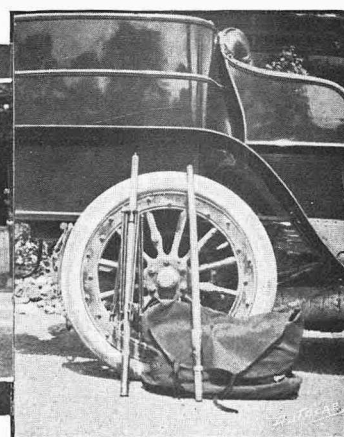


1

Mr. Claud Woakes, in sending us the photographs from which the accompanying illustrations are produced, writes: "The idea of the cover is Mr. H. W. Allingham's and his man, Harold, who are seen in the photograph (No. 1) sitting on the front seat of the former's 16 h.p. Milnes car, in which they are touring in France and Germany. It is a portable folding tonneau tent. The cover is made of waterproofed cloth, and fits tightly down on to the tonneau. The frame is practically a four-



2.



3.

ribbed umbrella, and the centre pole fits into a square hole in the floor of the car. The whole apparatus takes down and packs into a small space, as shown in the photograph (No. 3), and can be conveniently carried under the seats, so the passengers always have a cover with them in case of bad weather. It can be unpacked and fitted into position in 1m. 20s. (timed by a stop watch, not of the Surrey police pattern). It will be seen in photograph No. 1 that the flap at the back can be rolled up."

USEFUL HINTS AND TIPS.

Always strain the water as it is put into the tanks of a steam car; failure to do this sometimes results in the feed pump becoming choked and failing to act.

x x x x

Blow off fire tube boilers after running about fifty miles. It prevents the formation of scale, and so keeps the steaming powers of the boiler at their best. Before blowing off turn out the burners, otherwise the heat is liable to start the fire tubes at their lower ends.

x x x x

Drive with the engine linked up as much as possible. This gives the slide valve a short travel, resulting in an early cut-off, which enables the best results to be obtained from the expansive qualities of the steam. For hill climbing the valve requires its greatest travel, to deliver a bigger volume of steam to the cylinder.

x x x x

Always start a steam car slowly, and run slowly for the first few minutes. Water always remains in the steam pipes, and in the engine itself from the condensed steam of the previous run. This water must be got rid of first, and the cylinders, etc., warmed up before the engine is capable of doing its full amount of work.

x x x x

In making a temporary electrical connection the stranded wires should be twisted up as solid as possible, and the loop formed by turning the wire from left to right. When so made the loop closes in under the twisting action of the screw when tightening up the connection. If the loop be made in the opposite direction this same action spreads the wire and a bad connection results.

x x x x

As the weather gets colder the lubricants used should be looked to. It may be found that they are too thick for the lubricating pipes. That is to say, they will not run, owing to the small diameter of the pipe, unless slightly warmed to start with. It is also well to remember the gear box. The grease, which may be quite satisfactory in summer, sets hard, and is of very little service in winter time. It should be diluted with oil or one of the special gear oils used.

x x x x

To put in a new water gauge glass of the ordinary Locomobile type first remove the broken glass and take off the packing nuts. The indiarubber rings which form the water-tight joint must be removed, and if damaged replaced. The packing nuts should be put on the new glass, open ends outwards, and the packing rings slipped on to the ends of the glass, which should then be placed in position. Screw up the packing nuts carefully. The automatic check valves will be down on their seats, and must be released. To do this screw down the small hand wheel above each valve three or four complete turns, which will release the valve. Unscrew the hand wheel to its original position. If the gauge glass is put in while the boiler is under steam release the lower check valve first to admit water. Steam is liable to crack a new glass.

If a set of spare accumulators is carried it is advisable to have these connected up to the switch, in which case, of course, a two-way switch is needed, so that without trouble one can change over from one set of accumulators to the other without the trouble of getting at the battery and unscrewing and screwing up terminals. That the spare accumulators should be occasionally switched into operation is the more desirable, as if accumulators lie long unused they sulphate up, and require much current and time to recharge. When the spare set can be thrown in by merely pushing the switch lever over they are much more likely to obtain a little refreshing use than when the seat and seat-boards have to be taken up and the connections made afresh.

x x x x

Motor cyclists who use machines driven by twisted belts, and who have had difficulties from the belt jumping over the edge of the pulley, should try the following remedy. Unhook the belt and turn it end for end. If this does not cure the jumping unhook it again and twist it the opposite way to which it was previously twisted. That is to say, if it was twisted by turning the hand to the right, untwist it and twist it up again tightly by turning the hand to the left. The belt should be dressed with dubbin specially prepared for the purpose. This keeps the belt supple, and it will cause it to work itself down to a smooth circular belt.

x x x x

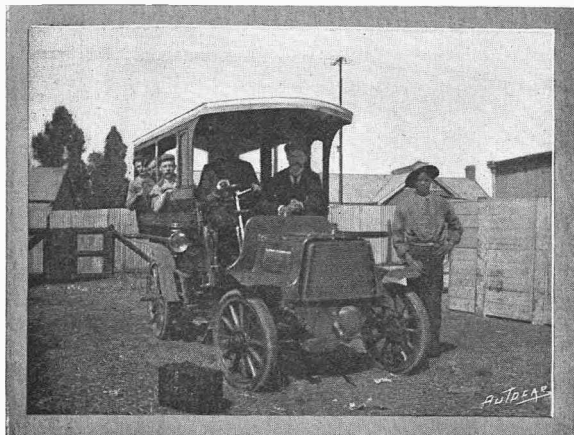
When an engine stops work, and the owner diagnoses, or believes he diagnoses, the reason, it is well to test that diagnosis first before going on to anything else, for if, say, he cleans and tests his sparking plugs, inspects and tests the valves, agitates the carburetter, varies air feed, and fills up the petrol tank all before he restarts the engine, he is then quite innocent of the real stopping reason, and has not advanced in knowledge. Whereas if the inducements to restart are tested one by one, he discovers what was really the cause of failure, and is far more likely to recognise it at once should it exercise its baleful influence at any future time.

x x x x

Bad compression is indicated by the motor running poorly and giving but little power. It generally results from badly-seated valves, worn piston rings, or bad joints. To test the compression leave the compression tap or release closed, the valve lifter down, or whatever means are adopted for relieving compression for starting purposes out of action. Take the starting handle and gently turn round the crankshaft until resistance is met with; continue the pull upon the handle and note the length of time the resistance is maintained, and the amount of power necessary to overcome it. The longer the time and the greater the strength required to overcome the resistance the better the compression and the more powerful the motor. The compression of each cylinder in a multi-cylinder motor may be tested by opening the compression taps, paraffin taps, or removing the sparking plugs in all the cylinders excepting the one to be tested, and proceeding as above. The time and resistance of each cylinder should be as nearly equal as possible.

BRITISH CARS IN SOUTH AFRICA.

The inhabitants of Johannesburg may congratulate themselves upon having at their disposal the finest and most up-to-date public service cars in South Africa. The cars are 12 h.p. M.M.C., and embody all the latest improvements, and are fitted with the latest throttle-governed twin-cylinder engines. The bodies are designed to carry fourteen

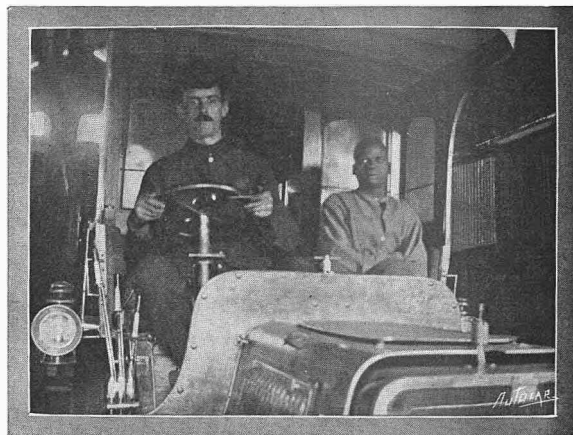


Ready for the trial run. Mr. J. H. Moulder at the wheel; Mr. W. H. Hollier being by his side.

passengers, and are luxuriously upholstered. They are so constructed that the tops may be removed if desired.

The car illustrated is the first of the twelve to be put on the road, and the fact that it was taken straight out of the shop for the trial run without any previous test speaks well for the engineer, Mr. J. H. Moulder, who is a well-known

expert, having had a wide experience with M.M.C. and Daimler cars at home. The first appearance of the car on the streets of Johannesburg caused no little sensation when the directors of the Johannesburg Consolidated Investment Company were driven round the town by Mr. Moulder. Among the passengers were Mr. Carl Hanan, Mr.



Mr. J. H. Moulder at the wheel, accompanied by his dusky assistant, Snowball.

Harold Strange (who was one of the first motorists in South Africa), and Mr. W. H. Hollier (the manager of the concern). The car behaved splendidly on its trial, and did not cause one moment's anxiety. The Johannesburg Consolidated Investment Company were well advised when they secured these cars, as they are built and designed for the work, and are not modified pleasure vehicles.

THE SURREY MAGISTRATES AND MOTORISTS.

Lord Onslow, a magistrate for the county of Surrey, brought forward a motion at the Surrey Quarter Sessions to the following effect: "That in the opinion of this court it is in the interests of the public that the police should, in their efforts to secure the due observance of the regulations as to light locomotives on highways, devote their attention to preventing danger to passengers and traffic from fast driving of motor cars in villages and populous places and round sharp corners, rather than to secure any fixed maximum of speed regardless of traffic and other conditions."

He contended that sufficient discrimination was not made in administering the law, and the methods of entrapping motorists were underhand. He did not wish to infer that the proceedings against autocarists were instituted at the direction of the magistrates; if he thought so he would resign his commission as a justice of the peace. He asked, were there enough police in the county to spare for that kind of work? It took six police to form a trap, judging by the one at Reigate. In his part of Surrey there was plenty of other work for the

police. He mentioned the theft of a clergyman's wedding presents. He himself had been trying to stop the damage done to the palings round his park. The police had never arrested anybody. On one of his farms in the same neighbourhood depredations were continually being committed, but he never caught anybody. He asked the court to take action similar to that of Hampshire, and watch motorists passing through towns and villages, so that the good reputation of Surrey and the magistrates should not suffer by the un-English practices now in vogue.

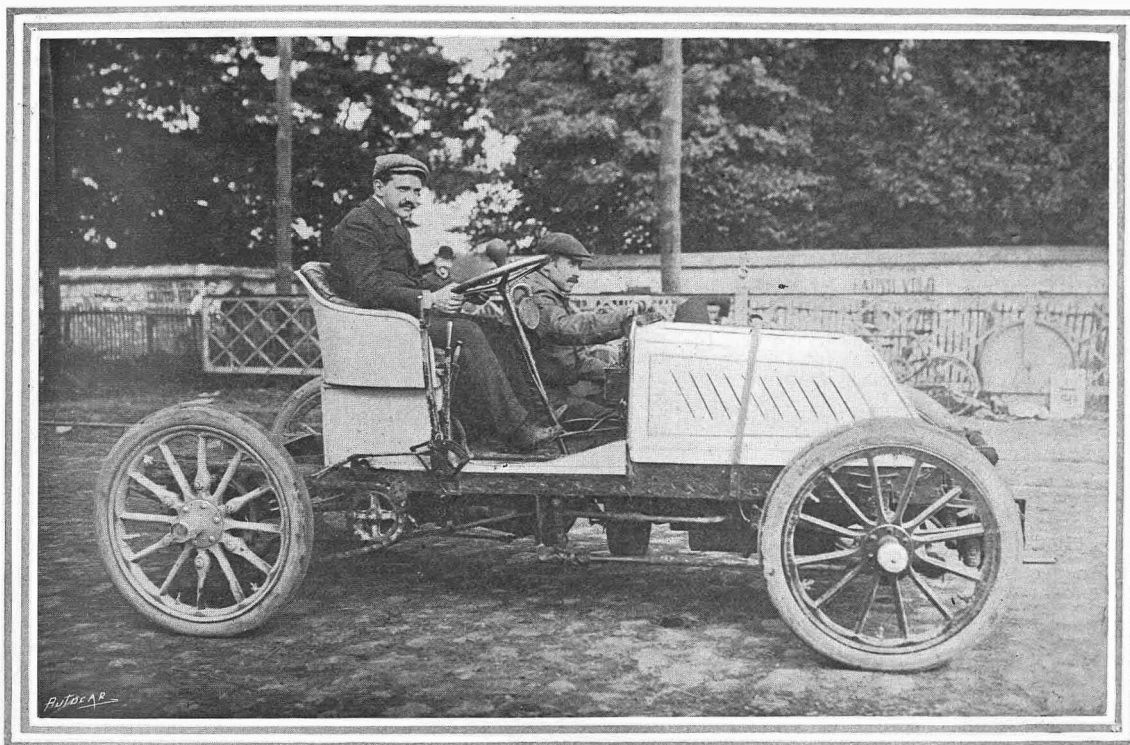
Mr. Kingsley Foster (Reigate) seconded.

Mr. G. F. Roumieu, the West Surrey coroner, said that, notwithstanding the large number of prosecutions, only one death had been caused by a motor car, and that was purely accidental, so that there was not the danger that was supposed.

Objection was taken by the Chairman (Mr. Geo. Cave) that the motion reflected on the police.

Lord Onslow thereupon offered to withdraw the offensive part, but the motion was defeated by a large majority.

CONTINENTAL NOTES AND NEWS.



Gabriel, the winner of the double hill event on the 80 h.p. Mors.

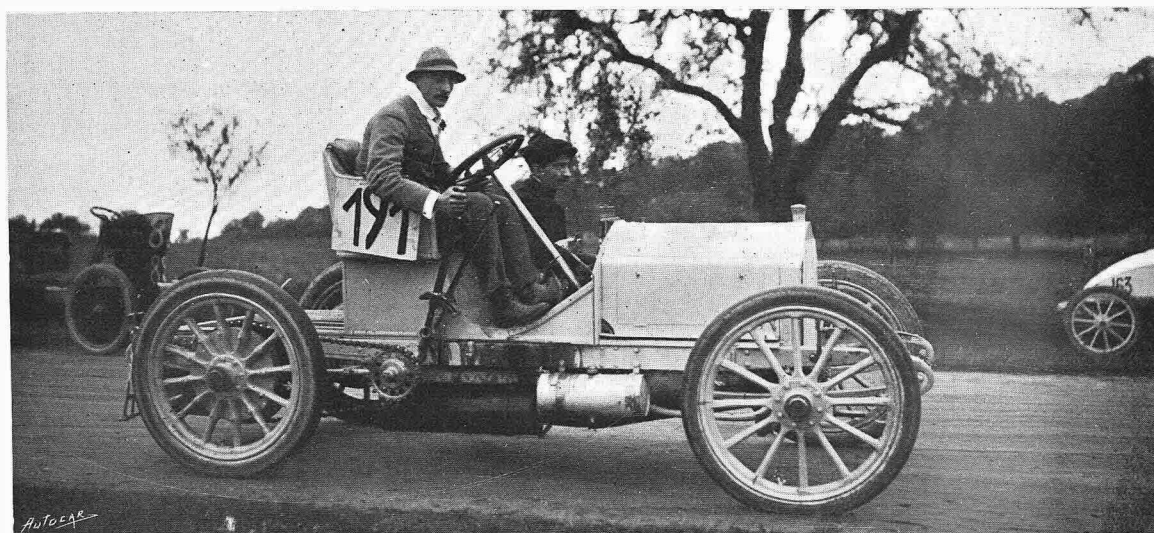
The Gaillon Hill-climbing Trials.

In very dull weather the postponed hill-climbing trials were run off at Gaillon on Sunday with the same vehicles that had been present the previous week. The Prefect of the Eure gave his sanction subject to a change being carried out in the organisation, and the recent incidents failed to have the slightest effect upon the success of the meeting. As we have already dealt with the new vehicles there is very little to be said about them here, except that the list of competing cars received the addition of the Mercedes of Baron de Forest, which, it will be remembered, did so well in the Paris-Vienna race, and only missed being placed at the finish through the breakage of the petrol tank a few miles outside the Austrian capital. A decided novelty, however, was the tricycle brought to Gaillon by Rigal, which is undoubtedly the most extraordinary thing in motor cycles yet devised. Two enormous vertical cylinders are carried over the rear axle, which is itself turned as a crank, and the Buchet engine thus drives direct without the intervention of any gearing. Naturally the motor is slow running, the maximum rate being about 650 revolutions a minute, and the engine develops no less than 32 h.p. It seems hardly credible that an attempt should be made to build a tricycle on these lines with an engine suitable for a racing car, but the machine was nevertheless present at Gaillon, though whether intended as a serious demonstration of something new in construction it is difficult to say. The tricycle did not run, and there was no attempt to make it run on the hill, so that we are still in doubt as to whether there is anything in this phenomenal machine. This second

Gaillon meeting was really run off in connection with the Château-Thierry climb, and the placings were to be decided by the addition of points in the two events. Quite a large number of prizes were offered, the chief one being the hill-climbing challenge cup for the vehicle or cycle doing the best aggregate time, while challenge cups were offered in the different categories of cycles and cars, and several money prizes were given, including one by Sir Coleridge Kennard for motor bicycles and another by Mr. Hart, of Luton, for light carriages. There were about eighty competitors, and owing to the number the motor cycles and voiturettes were sent off in the morning, while the light carriages and big cars were started in the afternoon. In the class



Extremes meet Weighing the cars at Vernon.



Baron de Forest on his 40 h.p. Mercedes.

of motor cycles weighing less than thirty kilograms. Dorny did the fastest time on a Clément with a two-cylinder motor. In this engine the cylinders are bored out of steel, and are destitute of cooling ribs. His time of 1m. 2 $\frac{2}{5}$ s. was nearly eighteen seconds better than that of Coudert, on a Coudert-Lurquin bicycle, which is fitted with a vertical motor about half way up the down tube. A Foudre machine was third, and a Bruneau bicycle fourth. Among the heavy bicycles the two first places were taken by the big Griffon machines with Soncin motors, ridden by Lamberjack and Demester, the former getting to the top of the hill in the remarkably good time of 40 $\frac{4}{5}$ s., and then followed Barré on a Bruneau in 59 $\frac{1}{5}$ s. It should be remembered, however, that the 4 h.p. Bruneau is only about half the power of the Soncin. One of the best performances ever accomplished on a motor cycle was that done, on a four-

cylinder Clément machine, by Holley, who flew up the kilometre gradient in 40 $\frac{2}{5}$ s., beating Loste (on a Buchet), who, however, came out first in the addition of times, not only among the motor cycles, but also in the general classification, and therefore won the challenge cup. Clément following up his successes by doing the best time in the voiturette class, one of these vehicles, driven by Vonlatum, taking only 1m. 2 $\frac{1}{5}$ s. to get to the top of the hill, but a scarcely less creditable performance was that of a Passy-Thellier car, which ran the winner in this category very closely. The honours in the afternoon were carried off by the Gardner-Serpollet cars, which repeated their performance at the previous Gaillon meeting by thoroughly beating the record. Among the light cars Rutishauser won in 40 $\frac{3}{5}$ s., beating the second Théry on a Decauville by 3 $\frac{3}{5}$ s. In view of the probability of rain, Rutishauser had wound



Rutishauser who made fastest time in the light car class (400 to 650 kilograms.), up Gaillon on the Serpollet.

leather thongs round his rear tyres to prevent slipping. M. Serpollet himself was to have made an attempt on the hill, but a fire broke out in his car, which, however, was speedily extinguished, and so little damage was done that he was able to return to Paris on his vehicle. If M. Serpollet failed to beat the record himself he found an admirable substitute in his lieutenant, Le Blon, who, it will be remembered, broke the record at the previous meeting, and on Sunday he still further reduced the time to 36s., which is equal to sixty-two miles an hour, a really marvellous performance in view of the fact that at one point the gradient is rather more than nine per cent. The Panhards driven by Heath and Teste took the next places, followed by the Mors of Gabriel. The results will be found on the following page.

BIG CARS.

	M.	S.
Le Blon (Gardner-Serpollet) ...	35	
Heath (Panhard) ...	40 ²	
Teste (Panhard) ...	41 ³	
Gabriel (Mors) ...	43	
R beyrolles (Darracq) ...	45	
Axt (Panhard) ...	46 ²	
Durand (Mors) ...	46 ²	
Charrin (Foullaron) ...	51	
Augières (Mors) ...	52 ²	
Brazier (Georges-Richard) ...	59	
De Forest (Mercedes) ...	59 ⁵	
Eggy (Panhard) ...	1 16	
Lo te (Boyer) ...	1 47	

LIGHT CARRIAGES.

	M.	S.
Rutishauser (Gardner-Serpollet) ...	40 ²	
Thery (Decauville) ...	44	
Rigolly (Gobron-Brillié) ...	46 ²	
Baras (Darracq) ...	46 ³	
Ullmann (Decauville) ...	50 ¹	
De la Tonloubre (Decauville) ...	52 ²	
Edmond (Darracq) ...	56	
Duray (Gobron-Brillié) ...	58	
Ravenez (Decauville) ...	59 ¹	
Barillier (Georges-Richard) ...	1 2	
Madame Bob Walter (Vinot-Deguignard) ...	1 31 ²	
Ménard (Vinot) ...	2 12 ²	
Itasse (4 h.p. Itasse) ...	7 44	

VOITURETTES.

	M.	S.
Vonlatum (Clément) ...	1 0 ²	
Thellier (Passy-Thellier) ...	1 2	
Hanriot (Passy-Thellier) ...	1 14 ²	
Combier (Georges-Richard) ...	1 34 ²	

QUADRICYCLE.

	M.	S.
Osmont (De Dion-Bouton) ...	52	

MOTOR CYCLES FROM 50 KILOMS. TO 250 KILOMS.

	M.	S.
Holley (Clément bicycle) ...	40 ²	
Loste (Buchet) ...	41 ⁴	
Demester (Griffon) ...	43 ¹	
Osmont (De Dion-Bouton) ...	44 ⁴	
Philibert (Gamet) ...	51 ³	

MOTOR BICYCLES FROM 30 KILOMS. TO 50 KILOMS.

	M.	S.
Lamberjack (Griffon) ...	49 ⁴	
Demester (Griffon) ...	53 ¹	
Barré (Bruneau) ...	59 ¹	
Cissac (Chapelle) ...	1 54	
Carreau (Carreau) ...	1 8	
Robin (Lamaudière) ...	1 15 ¹	
Ardiot (Lamaudière) ...	1 22 ⁴	
Emile (Macquart) ...	1 37 ⁴	
Jollivet (Pécourt) ...	1 34 ²	
Madame Jollivet (Pécourt) ...	1 52 ³	

MOTOR BICYCLES OF LESS THAN 30 KILOMS.

	M.	S.
Dervy (Clément) ...	1 2 ¹	
Coudert (Coudert-Lurquin) ...	1 20 ¹	
Millo (La Foudre) ...	1 23 ¹	
Barré (Bruneau) ...	1 24	
Follaquier (La Française) ...	1 24 ²	
Soulés (Breuil) ...	1 34 ¹	
Doucin (Griffon) ...	1 38 ¹	
Breuil (Breuil) ...	2 1 ²	
Doué (Doué) ...	2 14 ²	
Ardiot (Lamaudière) ...	2 14 ¹	



M. Paul Meyan on his new De Dietrich, with Baron de Turckheim.

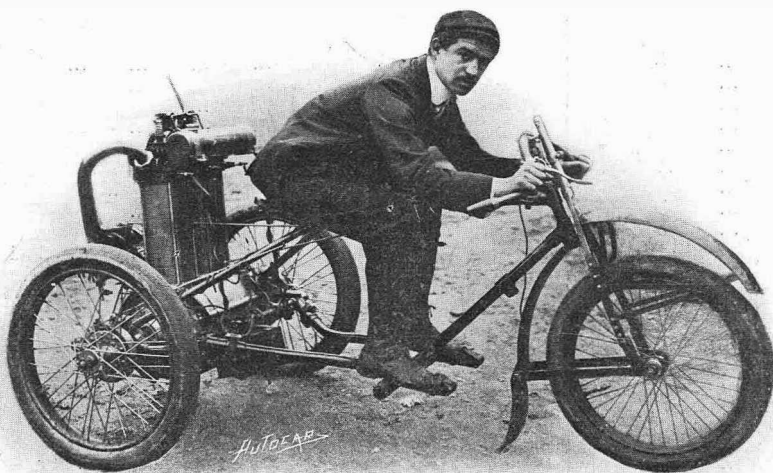
In some record attempts after the meeting Holley, on his Clément bicycle, reduced the time to 37s., or only a second outside record time for all classes of vehicles, and a Passy-Thellier voiturette took 47s. The classification for the two meetings leaves Loste with his Buchet the winner of the general challenge cup, as well as the cup for motor bicycles, and in the other categories the winners are: Gabriel (Mors), Rigolly (Gobron-Brillié), Thellier (Passy-Thellier voiturette), Lamberjack (Griffon motor cycle), and Dervy (Clément motor bicycle). Rigolly also wins the alcohol challenge cup. Mr. Hart's prize for light carriages is carried off by Rutishauser, and Sir Coleridge Kennard's prize for motor bicycles by Lamberjack.

Some More Hill Trials.

Hill-climbing trials are becoming very popular on the Continent, and at the time the meeting was taking place at Gaillon on Sunday, another was held at Spa, in Belgium, on the Sauvenière gradient, which has a length of 3.29 miles. With the exception of the Clément and De Dietrich vehicles there were no French cars competing, but nevertheless a large number of cars took part in the trials, and nearly thirty succeeded in negotiating the hill. The best time was done by a light Gobron-Nagant, driven by Roland in 4m. 32²/₅s., and then came Barbaroux on a light Clément in 4m. 44¹/₅s. There were only two big cars, a 40 h.p. Pipe, piloted by Hautvast in 5m. 32³/₅s., and a 40 h.p. Jenatzy, driven by Jenatzy himself, in 5m. 57²/₅s. Ourv, on a Clément, won easily in the voiturette class in 5m. 39³/₅s., beating a Belgian Renault by three and half minutes, while a Vivinus and a Locomobile took nineteen and twenty minutes respectively. Among the motor bicycles Prudhomme on a Red Star ascended the hill in 6m. 2²/₅s., beating an Antoine by fifty seconds, but the old professional cyclist, Van den Born, on a big Antoine bicycle, easily won in this category



The Passy-Thellier voiturette, the second fastest machine in the voiturette class (250 to 400 kilograms.) at Gaillon.



Rigal on the monster 32 h.p. Buchet tricycle.

in 9m. 58 $\frac{3}{4}$ s., while Joostens on a Korn was the only competitor in the heavy tricycle class, his time being 6m. 54 $\frac{3}{4}$ s. There were half a dozen touring cars with four passengers, and the best time was done by R. de Brou on a De Dietrich in 6m. 16s., followed by four Gobron-Nagant cars ranging from 7m. 7s. to 9m. In Switzerland also a hill-climbing competition was recently organised by the Automobile Club of Switzerland on the hill from Saint Cergues to Trelex, where the gradient of 5.3 per cent. has a length of 6.2 miles. In the speed category there were only three competitors, whose times were as follows: Benoist, on Zürcher and Luthi motor bicycle, in 19m. 51 $\frac{1}{4}$ s.; Perrot, on a light Rochet-Schneider, which met with an accident, but nevertheless finished the course in 1h. 24m. 17s.; and Manten, on a Mercedes, in 25s. In the tourist class the fastest times were accomplished by a Darraq voiturette, a Georges Richard light carriage, and a Panhard, but the awards were given on points calculated according to the weight, horse-power, number of passengers carried, and the speed, and with these coefficients the silver medals offered were secured by Bel on an Adler voiturette, Berthoud on a Jeanperrin light car, and Empeyta on a Daimler. Of course, this arrangement did not favour the French cars, which are always stripped for competitions of this kind. Owing to the rain the going was very heavy and greasy, and the special medal offered to the driver of the car breaking the record was not awarded.

The Deauville Records.

The Sporting Commission of the A.C.F. have officially announced that they are unable to ratify the record times made at the Deauville meeting, owing to the fact that there was certainly a mistake in the timekeeping. It has been found impossible to explain how this mistake could have occurred, but it seems pretty clear that there

was a sudden discrepancy of seven seconds in one of the watches soon after the big cars had been started. The motor cycle and voiturette times are probably correct, but under the circumstances the records made by these vehicles cannot, of course, be accepted. Vanderbilt's record of 29 $\frac{3}{4}$ s. for the flying kilometre has been passed, though since Jarrott's successful attempt this only applies to France. The Commission also state that after a close enquiry into the incidents of the Paris-Vienna race they have decided to annul the bicycle and tricycle results, which are therefore no longer in the classification. The motor cyclists are disqualified for having been assisted when

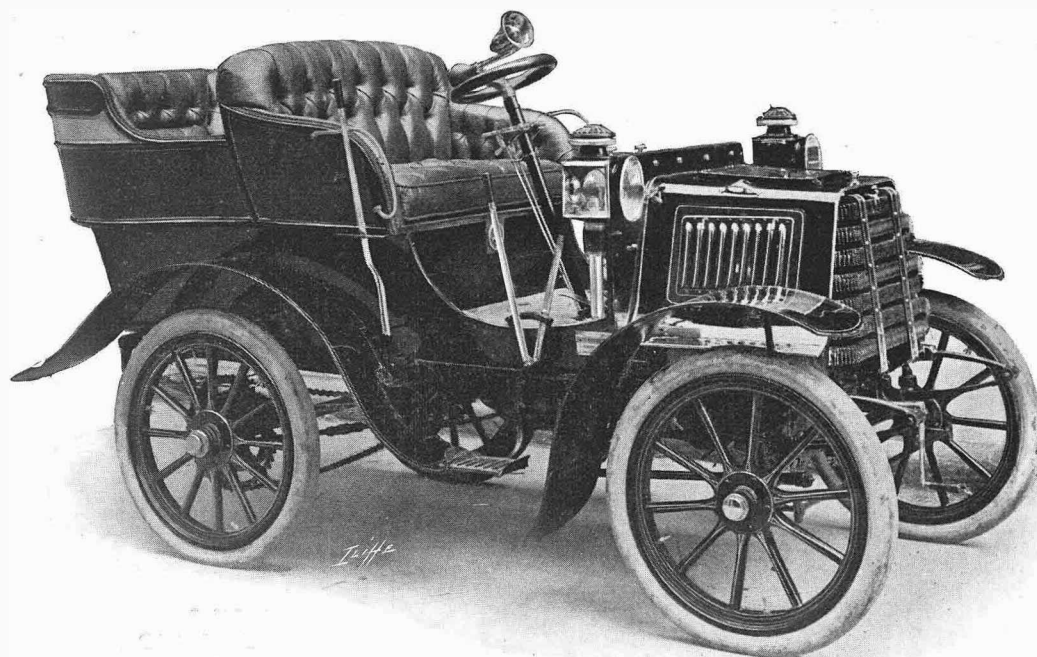
crossing the Airlberg.

The performance of the 22 h.p. Daimler car, driven by Mr. E. W. Lewis in the Gorcot hill climb, promoted by the Midland Automobile Club on Saturday last (full particulars of which appear on another page), was a very praiseworthy one, inasmuch as the car had never been on the road before, but was taken straight from the testing shop to the trials. Not only did it negotiate Gorcot Hill in good style, securing the best award in its class, but the out and home journeys from Coventry (over sixty miles) were covered in excellent times, as a representative of *The Autocar*, who was accommodated with a seat on the car, can testify. Mr. Lewis, who handled the vehicle in his usual skilful manner, expressed himself as being perfectly satisfied with the trial spin.



Mr. Wilfred E. Nicholson on his 12 h.p. Gladiator which won the silver medal for Class B, Tourist Section, at Welbeck. This was the class for cars weighing less than 14 cwt. if seated for four; 13 cwt. if seated for three; and 12 cwt. with two seats. Mr. Nicholson's car came in the latter category, and weighed 11 cwt. 3 qrs. His time for the flying kilo was 68 seconds, or 32.87 miles an hour. Mr. Nicholson is accompanied by Mr. E. Ward.

THE 8 H.P. M.M.C. VOITURETTE.



This car (No. 23), which won the gold medal in class C of the reliability trials, is driven by a single-cylinder 8 h.p. M.M.C. engine—100 mm. bore and 130 mm. stroke. The transmission is similar to that of the larger M.M.C. cars, three speeds forward and reverse being provided, and the weight of the car unladen is $10\frac{1}{4}$ cwt. The change speed gear is made under the Iden patent. The wheels are always in mesh or engagement with one another. The gears on the second motionshaft are normally free, and can be locked to the shaft by a sliding shaft running inside the sleeve to which they are fitted. This sliding shaft is provided with teeth, which enable it to be engaged with projections inside the boss of

any one of the spur wheels. A few days since we received from Mr. J. J. Horne, of Birmingham, an interesting account of an 800 miles tour which he had made on one of these machines mainly in North Wales, and including a return journey in response to a business call of over 150 miles in ten hours. He met with no hills which gave him a moment's anxiety, and the engine ran well throughout, the only trouble he had being caused by a short circuit, a copper water pipe vibrating against the low tension wires. Mr. Horne purchased his experience somewhat dearly, as in the early days of the movement he invested in cheap but apparently enticing foreign cars, so that he thoroughly appreciates the reliability of his present car.

M. Richard, the founder of the firm of Georges Richard, points out to us that the wording of the paragraph on page 374 last week, in his estimation, would infer that the direct drive on the top speed was not adopted by the Richard firm till they availed themselves of the services of M. Brasier, the late Mors designer. As a matter of fact, the Richard people patented the direct drive in 1900, whilst the Mors firm did not adopt it till 1902. Mr. Richard rather misses our point, as we suppose if it came to the origination of the idea it would be practically a dead heat between Mr. Alex. Craig and M. Renault. Where the novelty comes in in its application, if novelty it can be called, is the employment of the direct drive on comparatively large cars, it having been first introduced entirely for voiturette use, and we cannot say that it is no practical advantage on large cars except those built with a view to speed. That is to say, to run on their top gear most of the time.

Messrs. Merryweather inform us that the fire engine of the London County Council fire brigade, to which a steam engine and transmission-gear has been fitted, is one of their make. It is one of the latest Metropolitan type, and there is a great difference in construction between it and the direct-acting engine belonging to the Worcester branch of the Norwich Union Fire Office, to which a motor has also been fitted. We make this correction with pleasure, but it should be clearly understood that it does not in any way affect the other statements contained in our article.

* * *

Irish automobilists will be interested to know that Auto-Lubrine can now be obtained from J. Hutton and Sons, Summer Hill, Dublin, and the Northern Motor Co., of Montgomery Street, Belfast, who keep both the cylinder and gear oils, and these are the only two places in Ireland from which the lubricants referred to can be obtained.

Correspondence.

A WARNING.

[2611.]-May I be allowed, through the columns of your much read paper, to warn motorists journeying from London to Southampton that the police are very much on the alert at a small place called King's Worthy, two or three miles short of Winchester on the Basingstoke-Southampton road. Most of the captures in Hampshire have, I think, been made here.

By the way, I think it is a great pity that the gentleman whose case was first called at Winchester last Saturday should have been represented by someone who apparently knew nothing whatever of the matter, and, more important still, should have admitted in the letter which was handed to the Chairman of the Bench, that the car "had got beyond his control!" I think it is perfectly safe to assume that this to some extent prejudiced the furious driving charges following, and in any case magistrates are already far too apt to regard the motor car as dangerous and difficult to control. G. H. A.

THE AUTOMOBILE VOLUNTEERS.

[2612.]-Your correspondent Mr. Coony is evidently one of the large class of "parlour patriots," ardent enough so long as only talking and writing have to be done, but full of excuses as soon as they are asked to put themselves to a little trouble or inconvenience. He is also mistaken if he considers that the sole or even principal duty of the proposed corps will be driving officers about. Scouting, signalling, affording rapid communication between the wings and centre of an army: these are some of the duties that members of the corps will be called upon to perform, and which, by reason of their local topographical knowledge, there is every reason to believe they will be able to perform most efficiently. As regards the sneer contained in the last paragraph of your correspondent's letter, I utterly fail to see how any occupation that teaches a man how to become a more useful subject to his King in time of need can be either ungentlemanly or undignified.

CLAUDE M. VERNON.

THE 12 H.P. BELSIZE.

[2613.]-As owner of a 12 h.p. Belsize car, I endorse what your correspondent Mr. F. T. Marwood said in your last issue as to the hill-climbing powers of this car. On reading his letter, I determined to try for myself in what space of time the Westerham climb could be done on a Belsize car, and on Friday last week, with four people up, I did it without difficulty in 3m. 28s., starting and finishing exactly at the same points that were taken in the recent club trials. I ascended and descended the hill three times without stopping the engine to satisfy myself that the radiation was ample for any length of climb. The condition of the road was very heavy. I might add that this car has been over two thousand miles.

F. T. HALLOWS.

DASHBOARD ORNAMENTS.

[2614.]-The correspondent writing under the above heading in last week's issue gave prominence to the undoubted necessity (in the writer's opinion) of "more instrumental information being recorded in legible form upon the dashboard."

The combination of instruments suggested or desired by him, viz., speed indicator, distance recorder, lubricating oil sight flow tube, voltmeter (where storage system is used), and clock, cover most of the field. We may, however, add, with advantage, a cooling water sight flow tube, and where practical a petrol reserve indicator.

It would, I think, be very interesting to the readers of *The Autocar* if "Loretap" would give us a brief description, or the maker's name, of the instrument to which reference is made, as being sold in America for £7 to £8.

The wisdom of banishing the electrical gear (I presume he means the "make and break" or "commutator" of a 4.4 volt circuit) to "a place where the springs would lose their temper and the platinum fuse" is very doubtful, at least to one who has experienced its location other than upon the dashboard.

The multitude of lubricators will very probably disappear in favour of a single tank supplying the whole of the small conveying tubes, the oil being passed through a "sight flow tube" under pressure from the tank.

The so-called "dashboard" is sure to see some radical changes as a consequence of its location. It is the most conspicuous spot for the driver to read a record from while driving, and the most accessible or "get-at-able" for the mechanic to adjust or repair instruments.

When these features have been developed, its "horsey" name may disappear in favour of a more appropriate one—"instrument board." CHAS. Y. HOPKINS.

WORN VALVES.

[2615.]-In your issue of October 4th, under "Useful Hints and Tips," you give an illustration of an exhaust valve showing considerable wear. In a motor of the same make and size, viz., Ariel 2½ h.p., only air-cooled, I have run a valve about four thousand miles. My valve did not show so much wear on the stem as the one illustrated, but towards the end of its run it became considerably shorter, with the result that the exhaust was to some extent throttled. Until I discovered this, I was unable to account for the loss of power. Perhaps this may be a useful hint to anyone who, having run a motor some time, finds he is not getting the same power as at first. I would further point out that there are three points at which wear affecting the lift of the valve may take place—the end of the valve, the end of the tappet, and at the cam. J. DALRYMPLE BELL.

THE PICK CAR.

[2616.]-Would any of your numerous readers inform me through the medium of your columns as to the reliability and running of the Pick car? I would like to know whether the belt gives trouble or stretches much, and whether the use of belting instead of ordinary gearing accounts for the low price per horse-power.

A SOUTH AFRICAN READER.

A GOOD ROUTE FROM LONDON TO MANCHESTER.

[2617.]-It may be of interest to your readers to know that in driving home the 12 h.p. Belsize car from the reliability trials on the 8th ult., we selected a road which, to us at any rate, was entirely new, although we have many times driven to and from London. It was a pleasure to us to find a road in such good condition, almost entirely free from traffic, and without any gradients to speak of. The chief matter of interest to motorists will no doubt be that the police are evidently of a more sporting disposition than their *confrères* in the South, as we were not spoken to at all, although we covered the full distance of approximately 200 miles in ten hours.

We started from the Marble Arch at 7.30 in the morning, taking refreshments on board with us, and we had a non-stop run through Barnet, St. Albans, Dunstable, Woburn, Newport-Pagnell, Northampton, Market Harborough, Leicester, Loughborough, Derby, Uttoxeter, Newcastle, thence through Arclid to Holmes Chapel, Knutsford, and Manchester, where we arrived at Belsize Works exactly at 5.30 p.m., without having had to replenish either the water or the petrol tanks; and although we were very dirty and disreputable looking, we had thoroughly enjoyed the run home.

We should certainly advise your readers to make a note of the above-mentioned route, which will be found a very good one for motoring.

For MARSHALL AND CO.,
J. HOYLE SMITH.

[This is an excellent route, but from the West End it better to go straight up the Edgware Road to Edgware and Elstree to St. Albans. Leicester and Derby can also be cut out by driving from Northampton to Lutterworth, Atherstone, and Burton to Uttoxeter. Parts of this route are almost deserted and very fast, particularly between Northampton and Atherstone. An interesting variant can be made by turning off Watling Street to Hinckley, and so *via* Ashby-de-la-Zouch to Burton.—Ed.]

EXPERIENCE WITH A WOLSELEY CAR.

[2618].—Many of your readers will be interested to know the cost of running a 10 h.p. Wolseley car for twelve months on solid tyres over rough roads, winter and summer, for pleasure only.

Distance run, 3,524 miles; petrol, 241½ gallons, costing £15 12s. 6d.; grease and oil, 16s. 9d.; insurance, license, stabling, and car house, £25 4s.; repairs by self at a shilling per hour, using my own lathe and tools, 163 hours, £8 3s.; repairs by others, £2 14s. 3d. Total cost for the year, £91 1s. 6d. Renewals—one second speed gear wheel and one hand brake.

The engine has not given a moment's trouble, and the lubrication throughout seems perfect. The gears are like all others that slide into mesh. They require care in changing speed if they are to last. I ran two thousand miles with only two stops on the road; first, an accumulator broke from vibration, and I had no spare one; second—the car stopped, and took twenty minutes to restart, then ran well. I have had to repair water joints of radiators about six times, and grind in leaky union joints, also to bush all joints of the throttle and ignition levers owing to wear. I used the hard steel bushes from a Renold cycle chain for this. I also fitted collars on steering pillar above and below the stay to stop excessive vibration. The car has climbed a hill of one in five (not good surface) with three adults up, and it almost took four up; sprocket has ten teeth. My trouble is from vibration, and I have to regulate my speed mostly by the state of the road surface, which is disgraceful about here. The car might be sprung better, but these roads are very trying for a car with solid tyres at speed, and only a good one could stand it.

WESTON-S.-MARE.

MOTOR BROUGHAMS.

[2619].—For about a year I have been seeking a suitable vehicle to take the place of the ordinary horse-drawn coupé, or single brougham, in London. There are many persons like myself who need a modest equipage for use in town which shall be suitable for every-day domestic service—to take them the short distances necessary for paying calls, attending theatres, dinners, and similar social functions.

I conceive that a vehicle of this description would also be freely employed by doctors, who regard their carriages from a purely utilitarian standpoint, and simply need a vehicle in which they shall be protected from the weather and conveyed at moderate speed in comfort and with certainty. There is little doubt that if a carriage of this sort were put on the market at a moderate price, it would obtain a large sale.

At present, as far as I know, no carriage of this kind exists, with the exception of certain electrical vehicles. These constitute a creditable attempt to supply a recognised need, but their great weight, high cost, and expensive upkeep are against their general employment. A petrol motor is too noisy to find favour with the class of user who wishes to replace his brougham with a neat and unobtrusive mechanical carriage. There remains steam to be considered. With a good deal of experience in the use of steam cars, I am of opinion that steam is the best driving agent for this particular purpose. Personally, I would gladly buy a steam-driven brougham if I knew where to get one, but the makers of steam cars do not seem to have turned their attention to this branch of trade, and perhaps have hardly realised its potential importance.

My object, in asking the hospitality of your columns for this letter, is to elicit the opinion of any of your readers who may have obtained a satisfactory closed carriage for town use, and to discover the opinion of makers as to the practicability of constructing one on the lines which I have indicated.

BERTRAM BLOUNT.

STEAM CARS.

[2620].—With reference to the many erroneous statements made respecting the ability of the above to do anything but travel short distances, it may interest you to know that for the past three years I have been experimenting with a view to ascertain how far it would be possible to run, for example, a Locomobile car, on one supply of water and fuel. This, of course, necessitated a return water system, and early last year one was fitted to an ordinary light Locomobile, with the result that a distance of eighty miles was covered on a loss, due principally to

evaporation, of only three gallons of water. Since that time I have fitted up a second car with the return water system, oil separator, and filter, and the results obtained are highly satisfactory, as the car is now able to do over one hundred miles without necessitating stoppage for either oil or water. I am still working at the system, and expect that on my next test I shall be able to exceed the results named by considerably over fifty miles, which will then enable the light steam car to hold its own with its very much overrated rival, the petrol.

Great alterations are necessary if the petrol car is to be placed within everyone's reach, as at present, although its advocates boast loudly of their small consumption of petrol, the cost of upkeep, though enormous, is rarely mentioned; whereas, on the other hand, with the steam car, although it may cost a little more for petrol, if given fair attention, the cost of repairs is practically nil.

BOARD OF TRADE ENGINEER.

PETROL CONSUMPTION.

[2621].—Having recently returned from a tour in Ireland where the roads are so bad that the use of the fourth speed is practically impossible, it may interest your enquirers to know that I covered in thirty days 2,245 miles on ninety-five gallons of petrol, which works out at 23.63 miles per gallon, or about a halfpenny per mile. The car was a 10 h.p. Panhard-Levassor, with Centaure motor governing on throttle.

This included an extensive tour in Connemara and Killybeg, which are very hilly, while I must repeat that the roads are everywhere (that I saw) so bad that I do not believe I used my fourth speed more than fifty to a hundred miles, so that the car was running under adverse conditions. Twenty-six miles per gallon can be done on good English roads.

J. ERNEST HUTTON.

CONCERNING ACCIDENTS.

[2622].—Much is being said of accidents which are generally described as being caused by motor cars, but the cause is almost invariably not the motor cars, but the uncontrollable horse. It might not be out of place to enumerate a few instances in our own experience, which, though happily unattended by any accidents, appear to us just such actions from which accidents arise. The principal source of danger arises from horses being left outside public-houses, etc., and, although our drivers always give timely notice of approach, they very seldom succeed in bringing the attendant to his horse. Surely, as motor cars are allowed on the roads, in common with other vehicles, some stringent regulations ought to be imposed upon drivers leaving horses unattended. Motor vehicles are not alone a source of fright to such unattended horses. Only the other day I saw a horse bolt at the sight of a bath-chair, whilst a serious accident was narrowly averted at the Royal Lancashire Show at Preston recently by a horse shying at a standing reaping machine. We have seen drivers, on the approach of our vehicles, descend from their carts, etc., and cover their horses' heads with their coats. This invariably frightens the horses much more than they otherwise would be, and their frantic attempts to release their heads have often surprised us that an accident did not result. Again, some drivers have a habit of turning their horses' heads away from the motor. This is a mistake. If the horse is allowed to pass the motor vehicle as an ordinary vehicle, it is quite tractable. It is the driver's anxiety and unusual procedure that arouses its suspicions. The horse should be gently made to face the car. We know many horse drivers who, if possible, turn up a side road until the car has passed. This is foolish, because times will come when they have to be faced, and having always been previously guarded from an apparent enemy, they are all the more alarmed. Occasionally, drivers are found who will compel their horses to "face the music," generally by the aid of the whip. Is it strange that the horse—a knowing animal—is thereafter suspicious and alarmed? Whilst inexperienced drivers are responsible for the majority of accidents with motor vehicles, the same applies to horse drivers, and if there are to be certificates for motor drivers, it should be just as compulsory for the latter to be efficient as the former.

W. NORRIS,

T. COULTHARD AND CO., LTD. (managing director).

Flashes.

An international engineering, machinery, hardware, and allied trades exhibition is being held at the Crystal Palace from March 2nd to May 31st, 1903. In the machinery class there is an automobile section.

* * *

Several improvements and alterations may be looked for in motor-bicycle engines for next season. One well-known make of engine will be marketed in three different patterns to suit the requirements of bicycle designers of various tastes.

* * *

Recently a challenge was published by the Singer Cycle Co. offering to race any other make of motor bicycle up Westerham Hill provided the cylinder capacity of the rival machine was the same as the Singer. The challenge was taken up by Messrs. Humber, Ltd., and we have been forwarded copies of the correspondence between the two firms. The makers of the Humber offer to match their 3 h.p. chain-driven bicycle, a similar machine to the one which won the gold medal in the reliability trials against the Singer, and they also offer to put in a 3 h.p. tricycle against the Singer tricycle, the only proviso they make being that the hill shall be climbed not less than half a dozen times. The Singer Co. decline the match on the conditions offered, because their largest engine is under $2\frac{1}{2}$ h.p., though they point out that it has climbed Westerham Hill without pedal assistance. The bore and stroke of the 3 h.p. Humber motor are 77 mm. \times 77 mm., while the Singer is 73 mm. bore \times 70 mm. stroke, so it would appear that the match cannot possibly take place, as neither company make a motor of the same bore and stroke, and the conditions that were laid down by Messrs. Singer were that these should be equal. At the same time a match would be extremely interesting, even on the unequal conditions, for taking a line through the performances of the Singer in the Catford climb and the Humber in the reliability trial, both up Westerham Hill, the speeds of the two machines do not differ greatly, the Singer doing 18.32 miles per hour, and the Humber 17.21. The start was made lower down the hill in the Catford climb, so that the hill-climbing merits of the two machines on Westerham seem to be fairly equalised, as both were pedalled during a portion of the ascent when the times referred to were taken, though, as we recorded at the time, the winner Singer came up afterwards with the pedal chain removed.

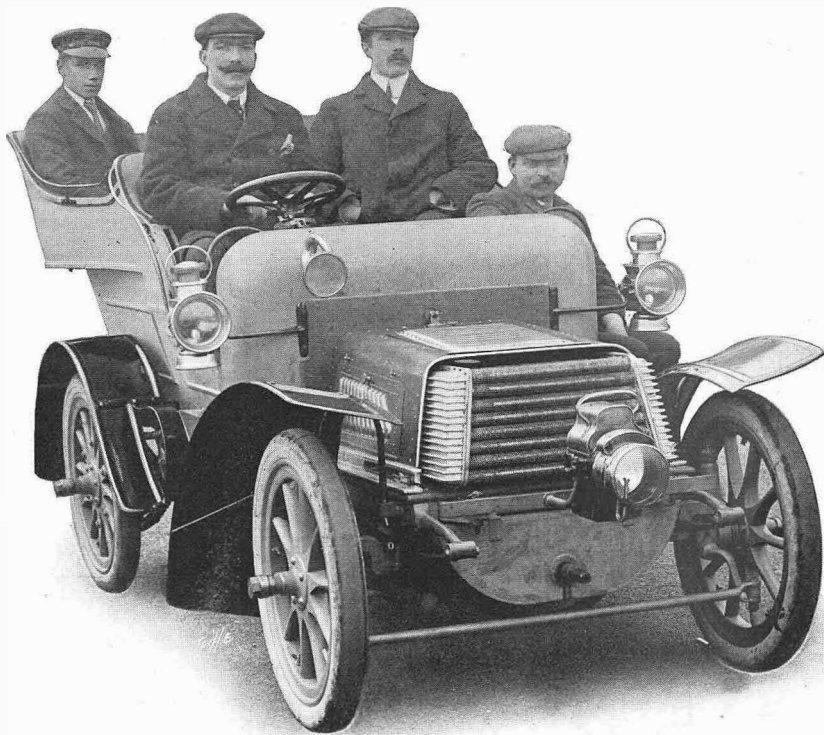
France exported motor cars to the value of £63,000 last year. Most of the trade was done with Great Britain.

* * *

We have a letter for Dr. W. W. Grove who wrote a letter to *The Autocar* in April last, and on receipt of his address shall be pleased to forward the letter.

* * *

Some surprising things are said by magistrates when dealing with motor car cases, but perhaps one of the most foolish was a declaration by the chairman of the Altrincham Bench the other day. In inflicting a fine of £5 for alleged furious driving, he said motorists were simply on sufferance on the roads, and they must ride without danger to the people using them. Has this magistrate never heard of the Act of Parliament of 1896 legalising motor cars upon our highways?



This vehicle is a sister car to the 12 h.p. Daimler which was awarded the silver medal, the highest award in Class H of the recent reliability trials. It is one of a dozen Daimler cars which the Road Carrying Co., of Liverpool, have on order, and belongs to Mr. Randle Kay, of Lytham. The car Mr. Kay drove it to London from Coventry, and then, after a day's stay in town, he ran it straight back to Lytham.

One of ours made something of a record the other day on a little car, though nothing in the way of pace was made. He left a market town two hours after the train had left for the county town he was going to, and to which the railway fare was 3s. 9d. He stopped at another town on the way home to fill up with petrol, and was home a few minutes before the train, which was punctual. The train certainly had a roundabout way to go, while the road was straight across country, but it shows how useful autocars are and what a great amount of time can be saved. That day the driver had "worked" fourteen places over a ninety miles course—a performance impossible by any other means.

We have received a price list from the Imperial Tyre and Rubber Co., to whose satisfactory work in repairing worn tyres and vulcanising on new rubber treads we have referred before now. The vulcanising process is used in all their repair work, and it may be useful to automobilists to know that they also do business in second-hand repaired tyres of all sizes.

* * *

The promotion of the Alpha Motor Car and Cycle Works Co., Ltd., which we criticised recently, does not appear to have met with success, as it is stated that only 2,500 shares were applied for, or 10,000 less than the number the directors themselves fixed as the minimum at which they would proceed to allotment. The Alpha works in Birmingham are now to be sold by auction.

* * *

On Monday week the Duke and Duchess of Connaught and Prince Arthur spent the whole day on a 16 h.p. Napier car driving about town, and then late on Monday night Prince Arthur and the Duke of Connaught were driven down to Hounslow Barracks and back again just prior to Prince Arthur sailing for South Africa. The final run of the day is particularly interesting, inasmuch as the appointment which the duke had at Hounslow could only be kept by autocar, as only half an hour was allowed to get to Hounslow, and the same time for the return journey to town.

* * *

The automobilists of Nottingham have up to now been comparatively, if not entirely, free from police persecution, and the lace city is, fortunately, blessed with a very progressive and sensible bench of magistrates. Almost the first summons which has been issued for furious driving was heard at the Nottingham Guildhall on the 9th inst., before Alderman McCraith and Mr. A. Page, the defendant being Mr. H. W. Bartleet, an old motorist and member of the Nottingham and District Automobile Club. Evidently the police were doing their best to convict, as they issued two summonses—one for furious driving and one for being on the wrong side of the road. After calling upon a considerable number of witnesses, Mr. Welles Lucas, the defending solicitor, succeeded in getting both summonses dismissed, though one of the magistrates made the gratuitous suggestion that three miles an hour ought to be the limit of speed in traffic. This magistrate ought to be taken for a drive on an up-to-date car. There could not have been any doubt as to the innocence of the automobilist in this case, as although expressing the opinion that motors were "most detestable things," the chairman of the bench gave the motor car driver a verdict. Commenting on the magistrate's remark, the Nottingham daily says that automobilists will have to engage men to walk in front of their cars and to carry red flags, but warns cautious drivers not to engage pedestrians who can walk fast! No wonder even the lay press are ridiculing such an absurd magisterial suggestion.

* * *

The Mason Regulator Co. inform us that they have appointed the Crosbie Steam Gauge and Valve Co., 147, Queen Victoria Street, E.C., agents for the sale of their parts in Great Britain. They will not be agents for the Mason engines, but will always have

a supply of parts and fittings, so that English automobilists can easily secure any needed repairs or replacements.

* * *

When the first Lanchester car arrived at Johannesburg early in September it created a very considerable sensation. The general opinion seems to be that, with its long wheelbase, wide gauge, and particularly well-hung body, it is eminently well suited for the rough going of the country, and its easy running over the bad roads is commented on very prominently by the *Johannesburg Star*, one of the most important papers in South Africa, which devotes quite half a column to the advent of the British car.

* * *

On Sunday week, about five o'clock in the afternoon, Mr. W. J. Honey, of Grove Heath Farm, Ripley, was brutally assaulted by three hooligans for venturing to remonstrate with them for chasing and stoning his cattle and trespassing on his land. It would appear that each week-end, Ripley, like many another village in Surrey, is invaded by semi-intoxicated excursionists from London and elsewhere, and these people do pretty much as they like. It would appear that the police are too busy looking after decently-behaved people who are driving motors on the Portsmouth Road to trouble their heads about drunken ruffians who assault law-abiding people in or near the villages. This instance is by no means an isolated one.

* * *

The variety of motoring garments to be inspected at Mr. Alf. Dunhill's sumptuously-equipped West-end premises, No. 2, Conduit Street, Regent Street, W., is almost bewildering. So far as automobile garb may go, everything that man or woman can desire for comfort or display may be seen there. When calling lately we were shown some particularly smartly-cut motor coats in a delightful material called "Zebeline," which in sheen and texture resembles nothing so much as blue seal. Garments of this material would lend their wearers of either sex a most *distingue* appearance. They are, moreover, absolutely wind and weather proof, throwing off rain like new thatch. Also, we noted some particularly efficient overcoats in Dunhill's drencher-proof material, lined with most comforting camel-hair and interlined with chamois leather. Mr. Dunhill is also making a special feature of motor liveries in very neat cord of blue, green, or drab shades. The buttons thereon are leather covered, and altogether the turnouts struck us as just what so many automobilists are on the look-out for for their mechanics. The "Umbrella" coats (Strom's patent), made in stout rubber-proofed material or in light water-proof material, are now so well known that they do not call for comment. As an absolute protection against the weather, they are unapproachable. The remaining patterns and designs of masculine and feminine garments for motoring in the height of summer or the depth of winter must be seen if their variety is to be comprehended. The man or woman either who cannot satisfy his or her requirements or fancies in this regard at No. 2, Conduit Street, must, indeed, be hard to please. The next best thing to a visit is to write for a catalogue, but even this does not give everything.

The Motor Cycling Club run to the "Saracen's Head," Dunstable, on Sunday next. The start will be made from the Marble Arch at 10.30 a.m.

It will no doubt be useful to designers and manufacturers to know that we have received a number of letters from correspondents very strongly endorsing our remarks on silent cars, which we published last week.

* * *

Prince Henry of Prussia has become a very enthusiastic Locomobilist, and always refers to his car as the Dandy or the Little Beauty. We are told that his delight in the pastime is quite a pleasure to witness, and he has determined to stick to the steam carriage. Up to the present his longest drive is eighty-eight miles, and he always, as all good automobilists should, drives himself.

* * *

There are many ways of furthering the cause of the automobilist, and Mr. A. Cornell, of Tonbridge, in placing a Benz car and a Belle car at the disposal of a representative of the *Kent Messenger*, performed tactful and praiseworthy work. The result is that the pressman has been loudly singing the praises of autocaring in the columns of his paper, which is bound to have a beneficial effect.

* * *

Major General Paget has just ordered a 16 h.p. Brush car, which will be used for military work. It will have the latest pattern Limousine top, with detachable glass screens both over the dashboard and behind the driver's seat. The interior of the body will be upholstered in extremely luxurious style, and the Limousine will be fitted with electric light. For summer use a dust screen will be provided, and altogether the vehicle will be fitted with several modern appliances. It will be exhibited at the Crystal Palace show next January.

* * *

In our description of the De Dietrich, page 345, October 4th, it may have appeared to those not acquainted with the car that we inferred that the frame was rather high. This is not the case, for, as a matter of fact, it is low, but the fly-wheel, gear box, etc., stand high off the ground in proportion to the lowness of the frame, so that a good clearance is given below the car. This end has been attained by placing the gear shafts in the horizontal plane, also incidentally ensuring the greatest simplicity for dismounting the gear, as mentioned in the article referred to.

* * *

We have just come across a good record to show the durability of first-class solid tyres. A set of Buffer tyres, which had been supplied to the Aberdare Valley Motor Co. by the Sirdar Rubber Co., has run 9,450 miles on one of the company's public service vehicles; or, to be correct, we should say that one of the tyres, the near-side driver, has run this distance. Its fellow is still in work, and appears likely to last some little time longer. The roads on which the cars are used are very bad, and their average distance is about forty miles a day. The Sirdar Co. are very wisely keeping any tyres which come into their hands with a long record, so that those who doubt their life can see the actual state in which they are in after covering a given distance.

Recently we recorded the move of Werner Motors, Ltd., to larger premises at 151, Regent Street, and now we hear that the French firm have taken much larger premises in the Avenue de la Grande Armée, Paris, and, further than that, have acquired land on which to erect large new works.

* * *

The Singer tricycle time up Gorcott hill on Saturday was very good, particularly as the rider, who was not used to it, got mixed in his taps, and lost some seconds at the start. Similar "driving slips" were made with several cars, notably the 16 h.p. Ariel and the Duryea, both of which performed far below their usual capabilities.

* * *

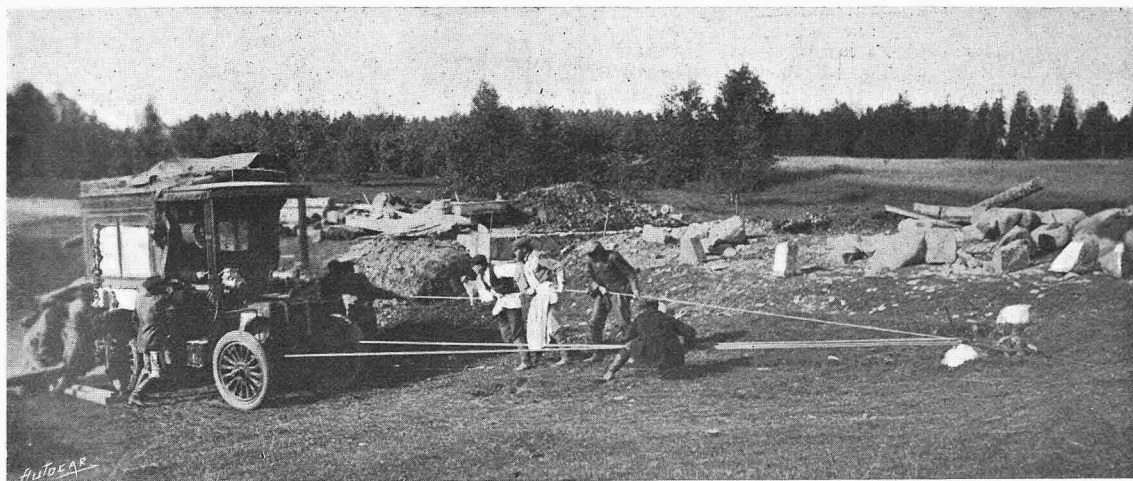
In describing the Rochet change-speed gear in our issue of September 27th, page 318, we pointed out that the idle gears were always in mesh with the driving-gear shaft. The British and Foreign Motor Car Company write us in regard to this that in practice they do not find that this increases the frictional resistance to any extent, as the gears run in oil, though they consider if grease was used instead of oil the friction would be increased. What perhaps is more to the point, however, is the intimation that Messrs. Rochet have been awarded by the test department of the Laboratory d'Auber-villiers a certificate stating that the gear and transmission of the Rochet touring car has a higher efficiency than any other which has been submitted to them for trial.

* * *

At the instance of Colonel Sir C. E. Howard Vincent, M.P., the annual conference of the National Union of Conservative Associations adopted a resolution urging the "paramount importance of legislating without delay for the adequate control of motor locomotion on the high roads, and especially in the direction of affording means for the identification of motorists driving to the common danger of vehicular and pedestrian traffic, and the licensing of motor men as in all other countries." Seeing that the premises upon which this grandiloquent motion is based—namely, the phrase "in view of the constant accidents recorded"—are exaggerated, and apply to other countries rather than to England, it is difficult to see the "paramount importance" of legislating in the British Parliament for dangers and abuses which exist elsewhere. In the discussion on this subject, Mr. Wm. Glossop (Rostrevor), with commendable good sense, urged that the Government should encourage rather than retard the motor industry. While admitting the necessity of a change in the law as regards the driving of motor cars, he contended that the speed limit should be raised. Amidst much laughter, he stated that he had driven 10,000 miles, and daily exceeded the speed limit, but had never once come into contact with the police. He did not claim any great credit for it, because he had chosen his district. (Laughter.) Although they did not object to being called "bounders on boilers"—(laughter)—they did object when every time they took their cars on the road to being held liable to be hauled up before "horsey" magistrates and fined £10 and costs on the evidence of a rural "bobby" with a Waterbury watch. (Loud laughter.)

ROUND THE WORLD ON A MOTOR CAR.

Log of the Passe-Partout (continued from page 339).



Getting the car out of a sand hole by means of ropes and pulleys.

Warsaw to St. Petersburg.

Our stay of seven days in Warsaw not only rested us, but was the means of the formation of the Automobile Club de Varsovie. We were universally hospitably treated, our gaieties including visits to the chateaux of the Counts Potocki and Xavier Branicki—residences and names famous in Polish history. Finally, a run of the Automobile Club, including the Passe-Partout, was organised, terminating in a dinner given to us by the club, and a photograph having been taken of the automobiles *en masse*, we returned to Warsaw. This ended our short stay, and on the 17th September, after an eight days' visit, we started at 5.15 p.m. *en route* for St. Petersburg.

The night brought with it much delay owing to tyre trouble, but we progressed nevertheless, going all night and making Lowicz by 11.20 the following morning—155 kilometres from Warsaw. Here we breakfasted, our meal as usual being disturbed by the advent of the inevitable chief local Russian official to examine us and our passports; and then, having purchased butter, bread, ham, and a few other necessities in case of emergency on the way, we proceeded to leave the town. Fortune now frowned on us in giving us the services of a well-meaning Russian colonel, who so impressed us with both his desire to serve us and his knowledge(?) of the road that it was decided to abandon the route originally fixed upon and take another road—one to the right.

From this moment our troubles began. Increasingly bad roads and a few more tyre troubles caused a slow rate of progression, and at 10.5 p.m. (206 kilometres) we decided to stop and sleep on the road.

6.35 a.m., September 19th, saw us off again, but at 8.15 a.m., the huge toolbox fixed beneath the Passe-Partout, apparently chagrined on account of its services being so seldom required, detached itself from the car, and was lost on the road. An inner tube burst at exactly the same time—no doubt out of sympathy. The brave little Argyll's kit of tools, however, proved of service, and was transferred to the Passe-Partout.

Bielystock was reached at 10.39 a.m. Everybody here assured us that we were on the "main road," and that the other road *via* Angustowo and Kovno was less favourable for automobilists. But as we left Bielystock, and slowly wended our way, we began to wish that we could discover some side street—anything rather than the "main road." An especially bad part of it soon presented itself, composed mainly of sand, and, where not of that material,

undulating meadows and ploughed fields. This "main road" is popularly, and by those who pose as authorities on the subject, spoken of as "under repair." This may be so, but, previous to the final touch of reparation, cows and horses are feeding on those green spots where sand does not happen to be.

Our automobiles made an impression a foot deep in the soil of the "main road," and it was found necessary to take to the ploughed fields in preference. At 2 p.m., after a wide detour over valleys and grassy hillocks, we arrived at Vassilykovo, lunched, and then started across a sandy desert. Time after time the Passe-Partout stuck fast, and it was found necessary to employ men to aid us in getting out of the difficulty. The aid of horses was found impossible, because the strength of the trace was not in keeping with the power required for the work. Most of the able-bodied men of Vassilykovo were employed in assisting us. From the point at which we left the village to the summit of a small incline looking down on to the sandy valley, the cyclometer registered 1.6 kilometre, and we had taken four hours to traverse it. The statement in popular guide books that the mails of His Majesty the Czar take this route to St. Petersburg is not, we believe,



The route from London to St. Petersburg.

strictly accurate.

From here the route became a little better, and after stopping at 11.30 p.m. at a little village for food, we went a few more kilometres on the road, and at 1.20 a.m. betook ourselves to well-earned rest.

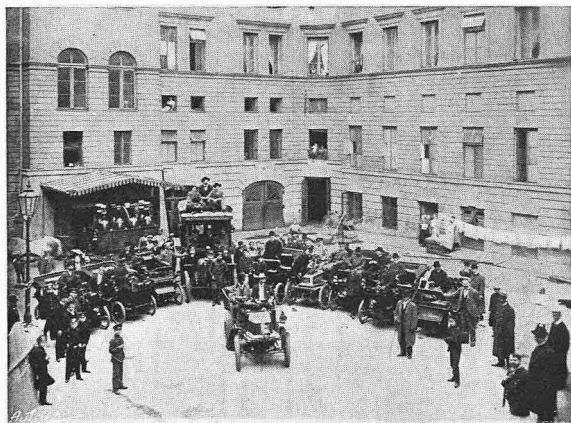
The times of this never-to-be-forgotten day are worth studying:

Time elapsed	...	...	39h. 15m.
Stops	...	...	11h. 48m.
Running time	...	...	27h. 27m.
Kilometres	...	...	79
Average per hour	...	...	2.88 kiloms.

It is only fair to the *Passe-Partout* to say that, however much external aid it received, it was marvellous to witness the way in which it faced, and to a great extent, by dint of its own efforts, emerged from, every difficulty.

The next morning, starting at 6.30, the road presented yet more difficulties in the shape of a pond surrounded by undulating meadows. The little *Argyll* successfully ran through the water, which was a foot and a half deep, and then the *Passe-Partout*, with tube ignition lit besides the electric, so as to prevent possible stoppage on the passage, putting in the low gear, and starting with engine running at highest number of revolutions possible, ran down the steep bank, through the water, and up the hill on the other side; and then, successfully extricating itself from numerous pitfalls, eventually reached fairly decent road, and arrived at Grodno (322 kilometres from Warsaw).

From Grodno, where we arrived on the 21st of September, having spent four days on the road to accomplish 322 kilometres from Warsaw, after making a further effort to follow the same route, we gave it up, and cut across country for sixty kilometres on an almost perfect road—an ideal



The gathering of the Warsaw Automobile Club, with the *Passe-Partout* in the centre of the group and the *Argyll* in front.

road for a fifty kilometres record, level and bounded on either side by forest the whole way—to Angustowo, thus getting on the other route to St. Petersburg.

Dined here, and then, going all night, passing through Suwalki, Kalwarya, and Mariampol, arrived at Kowno at 10.8 a.m. (441 kilometres from Warsaw).

On arriving there, we discovered that it would be necessary to descend an extremely precipitous hill, with a gradient of about one in seven. Down this we went with brake full on, the street Arabs in shoals lending their weight to the full three tons of the car. At the foot, our course lay across the river by means of a pontoon bridge. This actually gave to such an extent under the burthen of the *Passe-Partout* that, as we progressed, the particular part on which we rested lay under water. It was indeed an anxious moment, but we successfully negotiated it, to the wonder of the natives; and then, surrounded by many hundreds of people, we climbed an equally steep hill to that which we had descended, into the town.

We stopped a day in Kowno, and I took an opportunity of photographing the memorial erected to commemorate the historic crossing of the frontier by Napoleon in 1812. It bears the inscription, "La Russie fut surprise en 1812 par une armée de 700,000 hommes: 70,000 seulement passerent la frontière"—in its simplicity the most cruel inscription I ever read on a public memorial.

At 8.15 p.m. we left Kowno, our route lying up an extremely steep hill, which having negotiated, we soon left far behind, and arrived at 10.45 p.m. at Janow. Here we were ferried across the river, and after having dined at



The Post Station near Ucianny.

a by no means clean inn and slept two hours, we proceeded on our way.

Eighty kilometres beyond Janow, the *Argyll* was to a certain extent placed *hors de combat* for the time being, the thread that held the guide to the exhaust valve having worn out. A repair to this requiring at least two or three days, it was thought advisable to assist its progress by means of a rope, tethering it to the *Passe-Partout*, and this being done we sped on through the night (our progress from here to St. Petersburg being slightly hindered by the additional weight of the *Argyll*), arriving without mishap at 8.45 a.m. at a post-station near Ucianny, where we breakfasted. These post-stations are a feature of Russian roads. Situated always between two towns at a distance of from twenty to thirty versts, they serve an extremely useful purpose for the users of the road, whether automobilists or otherwise, relays of horses being obtainable for those driving—four copeks per verst per horse (a verst being two-thirds of a mile. One room is invariably kept clean, according to Government requirements, the peasants themselves being forbidden to inhabit it, and all the furniture belonging to the Government, and is marked as such by huge seals affixed.

The cheering steaming samovar is invariably a feature of the meals, and one which we looked for not in vain as we sat down fatigued and ready to be refreshed.

The illustration which we give of the post-station and inhabitants is typical of post-stations throughout Russia.

(To be continued.)

TRIAL TRIP OF A 6-8 H.P. SIMMS MOTOR LAUNCH.

On Saturday last the representatives of the Simms Mfg. Co. ran a little exhibition trial trip with an 18ft. clinker-built counter-sterned launch on the river between Twickenham and Kingston Bridge. In consequence of the boat's short length and rather bluff lines, the launch could only make a little over seven miles per hour, which, however, under the circumstances, we regard as very good work on the part of the engine. The latter is fitted under a teak casing, so that little or no noise is heard from it, and drives a reversible propeller of the ordinary American pattern, which makes the boat very handy. The engine is provided with a free-wheel starting handle arrangement, which permits the motor to be started without bending down into the bilges. Two petrol tanks, containing fourteen gallons of spirit under pressure, are set amidships. Owing to the cold and damp fog a necessity was found for warming up the mixing chamber, and this was quickly provided in the shape of a piece of waste soaked in the hot water from the pump, after which the engine ran most satisfactorily.

THE MIDLAND AUTOMOBILE CLUB HILL CLIMB.

The keenest interest was aroused in Midland motoring circles by the Gorcote hill-climbing contest on Saturday last. The course this year had been shortened considerably, so that the tests took place over the steep part of the hill only, without the preliminary run along the flat first. The attraction of the event was greatly increased when it was found that all classes of cars and motor vehicles were entered from the motor tricycle to the 70 h.p. Panhard car that had won so many laurels on the Continent under the skilful driving of Mr. Jarrott. Never before in the Midlands has there been such a representative gathering of the various leading types of motor cars.

A start was made with the cars of lighter build and power, and these were quickly followed by the heavier-powered touring vehicles. A *bonne bouche* was provided for the spectators in the shape of the racing cars which had been kept at the bottom of the hill during the contest, and promised some excitement for the finish. Two racing Wolseleys

(both painted royal red) and Mr. Harvey Ducros's 70 h.p. Panhard were held in leash until the last moment, when the starter released them. Each made light work of the one in eight gradient, and finished the hill, gaining speed at every yard, and provided the best sport of the afternoon.

Amongst those present who did not take part in the trials we noticed Mr. Alfred Bird, with his 42 h.p. Mors; Mr. Broughton Dugdale, J.P., with his big Gardner-Serpollet; and Mr. Frank Lanchester (10 h.p. Lanchester).

The thanks of the club are due to Messrs. Woollen and Wheelwright, who kindly gave their services as starter and timekeeper respectively, whilst the members are to be congratulated upon the event being run off so satisfactorily. We are glad to learn that the club will be able to pursue a very active policy during the winter season, holding monthly social meetings.

The following classified table gives full particulars of the hill climb:

CLASS.	DRIVER.	CAR.	HORSE-POWER.	TIME.	MARKS.	PRIZE.	REMARKS.
Racing	Du Cros, jun., Harvey	Panhard	70	M. S. 1 3 $\frac{1}{2}$	—	First	
	Crowdy, A. E.	Wolseley	45	1 11 $\frac{1}{2}$	—	Second	
	Austin, H.	Ditto	30	1 24	—		
Over £1000	Lewis, E. W.	Daimler	22	1 49 $\frac{3}{8}$	114.0	First	
	Holder, J. A.	Napier	16	2 11	99.92	Second	Stop before top
	E. M. C. Instone	Daimler	22	2 6 $\frac{3}{8}$	65.7		
£800 and under	Austin, H.	Wolseley	20	2 0 $\frac{3}{8}$	183.4	First	Stop before top
	Iden, Geo.	M.M.C.	20	1 54	157.7	Second	
	Du Cros, jun., Harvey (driven by Mr. C. Sangster)	Ariel *	16	2 16	70.6		
£600 and under	Lanchester, G.	Lanchester	10	3 21	150.5	First	
	A. J. W. Millership (for Mr. C. V. Pugh)	Ditto	10	3 33 $\frac{3}{8}$	128.8	Second	
	Dixon, C. W.	Ditto	10	4 21	113.2		
£400 and under	Siddleley, J. D.	X Car	12	3 38 $\frac{1}{2}$	—		
	Iliffe, E. M.	Wolseley	7 $\frac{1}{2}$	3 36 $\frac{1}{2}$	204.3	First	
	Sturmev, H.	Duryea *	10	3 31 $\frac{1}{2}$	136.1		
£200 and under	G. D. Leechman went up on Singer tricycle. * *		2 $\frac{1}{2}$	2 10 $\frac{1}{2}$	—	No award	

* Missed gear and stopped car.

* * Lost mixture at start.

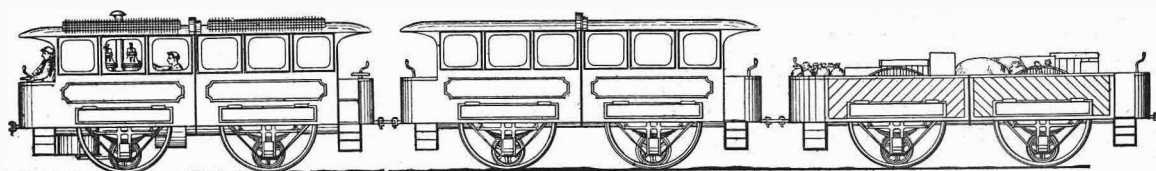
THE UNCONTROLLABLE HORSE.

636 horse accidents in 47 days; 84 persons killed; 560 injured.

The number of horse accidents which have come under our notice in the newspapers since we began taking notes is now 636; the number of persons killed has been 84; and the number injured 560.

No. of Accidents.	Injured.	Killed.	No. of Accidents.	Injured.	Killed.
552 Brought forward from last week	493	71			
OCTOBER 3RD.					
1 accident causing injuries	1		4 fatal accidents		4
1 accident, no injuries			6 accidents causing injuries	6	
OCTOBER 4TH.					
3 fatal accidents		3	OCTOBER 9TH.		
11 accidents causing injuries	24		3 fatal accidents		3
9 other accidents, none injured			7 accidents causing injuries	8	
OCTOBER 6TH.			OCTOBER 10TH.		
5 accidents causing injuries	6		1 fatal accident		1
3 accidents, no injuries			9 accidents causing injuries	13	
OCTOBER 7TH.			OCTOBER 11TH.		
1 fatal accident		1	1 fatal accident		1
2 accidents causing injuries	2		7 accidents causing injuries	7	
2 other accidents, none injured			4 other accidents, no injuries		
			636	560	84

THE ROAD RAIL RING TRACTOR.



Mr. C. T. Crowden, of the Motor Works, Leamington, has furnished us with the following particulars regarding the road rail ring tractor, which was illustrated and briefly referred to in *The Autocar* of October 4th (page 349). He says the machine illustrated was one of the earliest constructed by the inventor, Herr Keller, some years ago. It came under the notice of Mr. Crowden, who visited Germany and tested it, with very satisfactory results—more remarkable than he had anticipated. After the close of the South African war he brought the machine under the notice of the War Office, but the experts connected with that department were somewhat sceptical, and gave it as their opinion that the results as set forth by Mr. Crowden were impossible. However, a machine was offered to be placed at their disposal, and the War Office consented to send a representative with Mr. Crowden to Germany to make experiments. The results were even better than on the previous occasion, when Mr. Crowden tested it alone, and more than bore out the representations which had been made regarding the machine. The report sent in to the War Office was very favourable, and recommended the adoption of the system for military purposes. Not only so, but the opinion was expressed that the results obtainable were far ahead of anything in present practice. Mr. Crowden was asked for designs and estimates for a tractor weighing seven tons, and another weighing thirteen tons, capable of running twenty-four hours without replenishing with fuel or water, but the order was withheld pending the result of trials before the military authorities in this country. Accordingly, Mr. Crowden had one of the road rail ring tractors brought over from Germany for inspection and trial at Aldershot. The tractor, which was a light one weighing only about five tons, arrived at London, and after many difficulties with the dock people and the police, started for Aldershot by road, and was snapped *en route* by Mr. Strickland, as shown in *The Autocar* a fortnight ago. The tractor travelled very well until it reached Thames Ditton, when trouble arose owing to the difficulty of getting oil of the proper specific gravity for the engines, and as the difficulty seemed insurmountable for the time, the War Office authorities sent out from Aldershot and towed the machine in. Suitable oil was obtained, and the engines were overhauled in preparation for the trials. These extended over five days, and were of a very severe character.

During the five days' trial the capabilities of this system of traction for military purposes were amply demonstrated, the machine being driven over apparently impassable places. The tractor also travelled over furze bushes which stood a great deal higher than the platform of the machine. It was remarkable what little sinking into the ground took place,

and the periphery of the rings had no tearing or driving action on the ground whatever. The rings act in a similar manner to a plate going through a pair of rollers, the axle wheel forming the top roller and the ground representing the bottom roller. Appended are details of the trials:

FIRST DAY.—Monday, 29th September. The tractor was inspected empty by several officers and the Committee of Mechanical Transport, including Col. Crompton, R.E., Col. Nugent, Capt. Kennedy, Col. Templar, and Major Lindsey Lloyd, R.E., etc. Mr. Crowden described the construction and principles of the tractor. The oil and water tanks were filled, and the contents measured. The engine was then started, and traversed the Army Service Corps yard, which was in a very rough and broken condition, some parts being like a ploughed field. A Fowler traction engine truck, loaded with rails and iron sleepers, was also attached.

SECOND DAY.—Tuesday, 30th September. The tractor left the Army Service Corps yard at 8 a.m. for a thirty miles run with a five-ton truck load, with Lieutenant Anderson, R.E., as observer. The route taken from Aldershot was over Hale Hill into Odiham, thence to Hartley Bridge, where a stop was made for lunch. Some difficulty was occasioned here by the low tension sparking arrangement of the paraffin engine. The tractor was soon on its way again, mounting the hill on to Hartford Bridge Flats, where it did a mile in 8m. 15s. on the level, crossing the South-Eastern Railway at Blackwater level crossing, the condition of which is not appreciated by any kind of vehicle. The tractor proceeded with its load, climbing the hill to the Jolly Farmer, Bagshot, without using the low speed. The tractor returned to Aldershot, through Frimley and Farnborough, reaching the Army Service Corps yard at 4 p.m. The consumption of oil was about .5 gallon per ton mile.

THIRD DAY.—Wednesday, 1st October. The tractor left the Army Service Corps yard at 7.15 a.m. for a forty-two miles course, with the same load as before, Captain Kennedy, R.E., acting as observer. The route taken was from Aldershot to Alton, through South Wansborough, to Odiham, thence to Hartley Bridge, Hartford Bridge Flats, to Blackwater, thence to Camberley, and back through Farnborough to Aldershot, arriving at the Army Service Corps yard at 5.30 p.m. After deducting stoppages through horses and vehicles, lunch, and electric ignition troubles, a uniform speed was obtained of 4.6 miles per hour all through.

FOURTH DAY.—Thursday, October 2nd. The tractor left the Army Service Corps yard at 9.30 a.m. for an eight miles course with a five-ton truck load, round the Long Valley, with Mr. Bagnall Wild as observer. The course was a most difficult one, having very steep hills, and the roads were so sandy and loose as to be almost impassable for motor vehicles. At the end of this course, the tractor was met by Major Lindsey Lloyd, R.E., and General Lord Elmslie, General Wace, etc. The tractor was then directed into the road leading to the Long Valley. After ascending and descending almost impossible hills and places, the tractor was detached from the truck and sent through a sandy chasm, very much like an empty canal or river-bed, a feat which it performed in a very creditable manner, much to the satisfaction of all officers and people present. These included Colonel Templar, Captain Kennedy, Lieutenant Anderson, and representatives of John Fowler and Co., of Leeds. This concluded the trials for the fourth day, and the machine was attached to the five-ton truck, which it took back to the depot.

FIFTH DAY.—Friday, 3rd October. The tractor left the depot at 10.30 a.m. to the entrance to the Long Valley, where its capabilities were tested by Colonel Holden and

other military men. On this occasion the tractor was sent right across country, quite ignoring all roads, over grass, furze bushes, etc., apparently to the satisfaction of the authorities. This concluded the trials.

The machine left Aldershot on Saturday morning under its own power for St. Katharine's Docks. Herr Keller has since written to say that the run was most successful, and the roads were very good to London. The tractor was loaded upon the steamer, which left London for Bremen on Tuesday, the 7th inst.

Throughout the whole of the trials, no breakdown of any serious character was experienced, excepting that a small fan for cooling the radiators came adrift. A certain amount of trouble was experienced by the low tension sparking, especially on the paraffin engine. Further, the system proved itself applicable not only for low speeds but for speeds up to thirty miles an hour, as on several occasions during the trials, the tractor travelled at this speed in descending hills, and yet was under perfect control. Whilst at Aldershot, this tractor climbed up a sandhill of

considerable height, in which there was a zigzag path not wide enough for the tractor to run on. It was only possible to run the wheels on one side on the path, the other wheels hanging over the hill side. This hill, with the exception of the path, was covered with furze bushes and coarse grass. For military purposes the tractor would be fitted with a wire rope drum, so that difficult places could be surmounted by the tractor, the load being hauled up afterwards. The rail ring system does not require any special kind of motor, as steam, oil, electric, or any kind of motor, could be used. It could also be used in conjunction with the overhead system, and run on the ordinary roads or flats without the necessity for laying rails.

We are informed that a syndicate has been formed to acquire this and other patents.

A description of the mechanical details of the ring-rail system (with illustrations) will be published in an early issue.

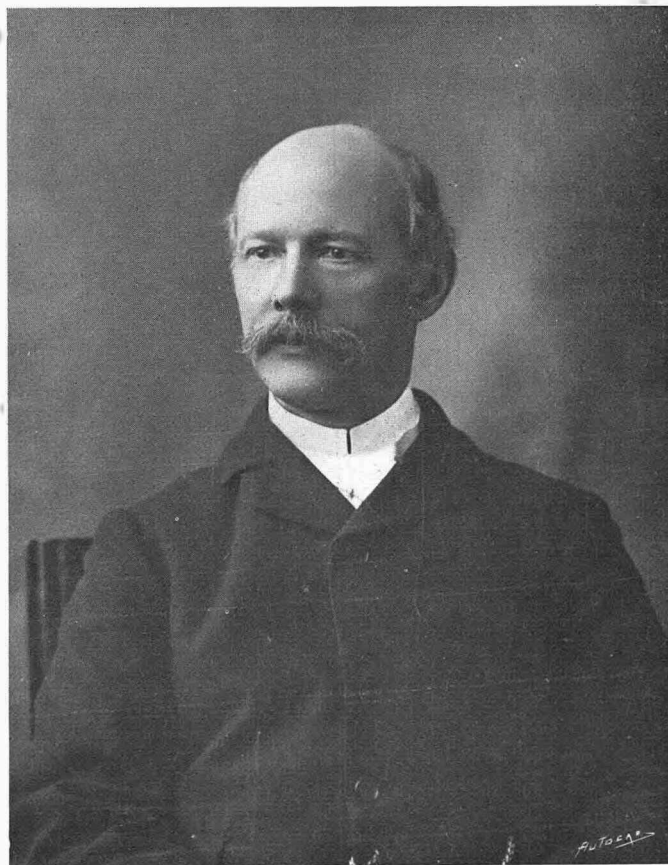
THE KING AND HIS PRIME MINISTER.

The King on Friday last, while in the neighbourhood of Berwick, went for a motor car drive in Mr. A. J. Balfour's car. Starting from the Knoll, where His Majesty had planted a commemorative oak, he was driven by his Prime Minister to Whittingehame and Tynninghame. The Premier's Napier car was preceded by another conveying Colonel Borthwick and Deputy Chief Constable Mann. The appearance of His Majesty and the Premier was greeted with great cheering and the waving of hats and handkerchiefs. His Majesty sat on the left side of the car, with Mr. Balfour on his right. The King was attired in a heavy Highland cloak of light colour, and wore a light cap. The Premier had on a motor cloak, furlined, and he likewise wore a light cap. Driving eastward through the town, the car proceeded along the west towards Cantry Bay, past Tantallon Castle, the village of Whitekirk, and Binning Wood, and at every little village or hamlet stood groups of people, who right loyally testified their appreciation of getting a glimpse of their Sovereign. Through East Linton and across the Tyne to the Swap Road, the car entered Whittingehame House by the west

lodge. The members of the house party who awaited on the steps of the mansion to welcome the King included Mr. Gerald Balfour, M.P., Colonel Eustace Balfour, and Lady Frances Balfour. His

Majesty stayed for about half an hour, and took his departure by the east gate, driving along the Dunbar Road to Tynninghame. His Majesty was received by the Earl of Had-dington, and the reception party included Lady Isobel Innes Ker, Lady Grissell, Baillie Hamilton, Lady Cecely Baillie Hamilton, Lady H. Baillie Hamilton, the Duke and Duchess of Rox-burgh, Lord and Lady Binning, Mr. and Mrs. Hamilton Ogilvy of Biel, and Mr. C. C. Turner. After tea the King paid a visit to the gardens and to the famous Tynninghame orchard. To mark his visit the King planted an oak tree facing the front of the mansion, and as a memento of the ceremony he graciously accepted from his host the gift of a full-sized spade with silver blade and shaft.

On reaching the high ground of Tantallon on his return journey. His Majesty had a splendid view of the brilliant illuminations of North Berwick, which in the darkness of the night was a sight which will long be remembered.



Capt. C. C. Longridge, M.I. Mech. E., author of the paper "Oil Motor Cars of 1902," to be read to-night (Friday), the 17th inst., before the Institution of Mechanical Engineers.

THE WORTHING BENCH AND AUTOCARISTS.

Objecting to a Magistrate.

The case brought against Mr. George Wilder for driving an automobile at a speed exceeding the legal limit at Broadwater on the 21st ult. was heard before the County Bench sitting at Worthing on Wednesday last. Five magistrates, Lieutenant-Colonel Wisden presiding, were present. On the case being called, Mr. Staplee Firth, on behalf of the defendant, made a preliminary objection to the chairman sitting in judgment on his client's case on the ground of Colonel Wisden's publicly expressed prejudice and bias against automobilists, Colonel Wisden having on a previous occasion stated in open Court that it would be a good job if the automobile industry in this country was destroyed. Mr. Firth instanced another case in support of his request, in which Colonel Wisden had ordered an automobilist to be tried twice over, contrary to the law, and had also made prejudicial remarks concerning the defendant in the present case, because an adjournment had been requested for the preparation of the defence.

Colonel Wisden declined to retire from the Bench, and thereupon Mr. Firth, on behalf of his client, objected to plead, and stated that, although he had a perfect defence to the charge, he would not waive his right to challenge the conduct of the magistrate, as such was far from conducive to the due administration of justice.

In the absence of any defence being offered, and with Colonel Wisden still retaining the chair, the full fine, with costs, was imposed. It was at once intimated that the whole proceedings would be brought without delay before the High Court.

Mr. Edw. Kennard, J.P., D.L., of Market Harborough, in paying a fine of £10 13s. imposed by the Thirk bench of magistrates upon his motor servant, J. Brooks, for a first offence in exceeding the legal limit, remarked that the law was daily broken by the highest personages in the land every time they mounted their motor cars. He further remarked: "We hunting men of the Midlands always regarded Yorkshire county magistrates as sportsmen. He would be sorry to express his opinion on those who by stealth employed the police to set offensive traps for ladies as well as gentlemen."

* * *

Mr. S. F. Edge writes in reference to the claims of a French firm of carriage-builders that they are the original and only firm who can manufacture aluminium carriage bodies, that he thinks it only fair to say that the English firms who have been and are making aluminium bodies, viz., the Regent Carriage Co. of Fulham, and Mulliners of Northampton, have made bodies for his Napier cars of the most perfect workmanship and finish, and that they are much lighter than bodies made elsewhere. They have been proved thoroughly durable in the hands of Napier car users, and Mr. Edge thinks the two firms he has named can hold their own in carriage building with any house either at home or abroad.

NOTICES.

SUBSCRIPTIONS.

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

GREAT BRITAIN.			ABROAD.		
	s.	d.		s.	d.
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Six months	8	0	Six months	9	2
Three months	4	0	Three months	4	8
Single copy	0	3½	Single copy	0	8

These prices include four special double numbers.

TO CORRESPONDENTS.

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

Stanley Feast and Co.	D. Lovett.
S. M. Hall.	W. Milward.
Sir Duncan Hay	W. Goodlet.
E. F. Glynn (Epsom).	F. W. Hayward.
A. M. Bourne	G. P. H. (Stroud).
N. Sharp.	G. W. H. (Reading).
F. Platt.	H. C. C. (Wimborne).
W. J. Forbes.	C. Woakes.
L. T. Atkins.	J. George.
H. P. Desmond	Y. and Sons.
Automo.	E. Goddard.
Herbert Eskell.	F. J. Townley.
P. P. Burton.	G. W. Davey.
R. S. K. Eyre.	T. E. (Birmingham).
T. W. Averill.	J. Johnson.
D. G. Taylor.	A. J. Shinton.
M. Kennard.	J. E. Denison.
W. P. Shaw.	E. Lloyd.
G. P. (Bristol).	E. Banbury.
Messrs. Ed.	R. J. F. Mostyn.
Carmo.	J. Orton.
Ebor Co.	

Our thanks are due to the following for items of news and various topics of interest which have been or will be dealt with: Walter Graham, L. Savory, "Ipswich," A. G. Moffatt, A. Cornell, J. J. M., E. F. Murray, G. Owen, J. A. K., E. W. K., W. Walker, C. A. S., A Motor Owner and a Member of the Statistical Society, F. Eckersley, D. H. Godwin, Capt. B. Liebert, J. Duff Gordon, W. E. Rowcliffe, A. Y. and Son, R. C. Ryan, J. H. Mayer, F. Lanchester, A. J. W. Millership, Arthur Guest, and W. J. Neason.

We understand that the success attending the recent trials made by the postal authorities in the E.C. district with the Oppermann patent electrical mail van has induced them to further test the suitability of this type of motor van on another and more difficult route, the one chosen for the present trials, which commence to-day, being in the Battersea district.

* * *

Recently we published photographs showing the climbing of the Galibier by the Lauteret Pass, but lack of space prevented our giving particulars of the feat. At the time of the hill-climbing trial near Grenoble the Automobile Club Dauphinois gave a lunch at the Hotel Lauteret, and one of the questions brought up during the conversation among the guests was the possibility of climbing the Galibier in a car, and it was pretty generally concluded that it could not be done, as the road rises 2,500ft. in three miles, and there are curves on which the grade is as steep as one in five, and even one in four. Among the luncheon party one visitor, M. F. M. Richard, volunteered to see what could be done, and accordingly the attempt was made with one of the small and speedy 10 h.p. Georges Richards. It was driven by M. Leger, who handled a similar machine at Bexhill when he won the De la Warr cup, and he also drove one in the Paris-Vienna race. The car climbed without a stop to the summit, and what was almost more difficult, came down again quite easily and safely.