

THE AUTOCAR

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

EDITED BY H. WALTER STANER.

No. 397. Vol. X.]

SATURDAY, JUNE 6TH, 1903.

[PRICE 3D.

THE AUTOCAR.

EDITORIAL OFFICES:

COVENTRY.

PUBLISHING OFFICES:

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

CONTENTS.

	PAGE
NOTES: TO SOLVE THE PETROL QUESTION—THE RELIABILITY TRIALS—RACING—ON THE SAME SUBJECT—NUMBERING—QUIET TRAVELLING	649-651
THE EARL OF DUDLEY, LORD LIEUTENANT OF IRELAND, ON HIS 12 H.P. PANHARD (illustrated)	650
USEFUL HINTS AND TIPS: HOW TO USE TOOLS TO THE NOVICE—THE SPANNER—TIGHTENING NUTS—THE HAMMER	652
THE SILENT SILencers: MR. J. B. DUNLOP'S PATENTS (illustrated)	653-654
THE DECAUVILLE ENGINE BED-PLATE (illustrated)	654
THE CLUB RUN TO HERTFORD (illustrated)	655-656
HOW TO SOLVE THE PETROL PROBLEM	657-658
THE WELLSER TWENTY HORSE-POWER CAR (illustrated)	659-661
A SHORT STROKE ENGINE	661
CONTINENTAL NOTES AND NEWS: THE SPANISH INTERDICTION—THE SITUATION IN FRANCE—CONSTRUCTION OF MOTOR TRACKS—THE RACING PROGRAMME—MARCEL RENAULT—AN AUTOCAR EXHIBITION—AUSTRIAN ITEMS	662-665
CORRESPONDENCE: A NATIONAL AUTOMOBILE UNION—RACING—THE KNEEL OF ROAD RACING—A FREE ROAD FROM SOUTHAMPTON TO SOUTHSEA—CARRIAGES—IDENTIFICATION OF CARS—THANKS FROM A DISABLED MOTORIST—PRACTICAL SUGGESTIONS TO STEAM VAN USERS—THE SIZE OF ROAD WHEELS—LEGISLATION—GOODYEAR TYRES—MOTOR BURGLARIES—SUMMARY OF OTHER CORRESPONDENCE	666-668
"THE AUTOCAR" DIARY	669
FLASHES (illustrated)	669-670
THE PARIS-MADRID RACE: MR. CHAS. JARROTT INTERVIEWED (illustrated)	671-672
GORDON-BENNETT ITEMS	673-674
THE CROSSING ACCIDENT IN THE PARIS MADRID (illustrated)	674
SIDE-SLIPPING AND OVERTURNING (illustrated)	674
THE GLASGOW-LONDON NON-STOP TRIAL	675
CLUB DOINGS (illustrated)	676
THE SHEFFIELD HILL CONTEST	677
A NEW MOTOR FACTORY	677
A TWENTY HORSE-POWER DECAUVILLE RACER (illustration)	677
SOME REPLIES TO QUERIES: ENGINE LUBRICATION—GEARING FOR A LIGHT CAR (illustrated)	678

COLONIAL AND FOREIGN EDITION.

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

The *Autocar* can be obtained abroad from the following:
AUSTRALIA: Phillips, Ormonde, and Co., 533, Collins Street, Melbourne.
NICE: Levant & Chevalier, 50, Quai St. Jean Baptiste.
UNITED STATES: The International News Agency, New York.
PARIS: Neal's English Library, 248, Rue Rivoli.
MELBOURNE, Victoria,
SYDNEY, N.S.W.,
BRISBANE, Q.L.D.,
PERTH, W. A.,
WELLINGTON, N. Z.,
CHRISTCHURCH, N. Z.,
CAPE TOWN, S. Africa,
DURBAN, Natal, S. Africa.

Messrs. Gordon and Gotch.

Notes.

To Solve the Petrol Question.

Every automobilist who has toured in France must have asked himself how it is that, while there is trouble in Great Britain and Ireland over heavy spirit, and uncertainty as to the particular density which he may procure if he buys away from home, in France the quality should be unvarying,

always good and always satisfactory to use. The article which we publish on another page makes the reason for this very clear, and at the same time it conveys an important lesson which we feel sure will not be lost upon the Automobile Club. The French A.C., as is well known, have made a great feature of alcohol fuel, and they have done a very great deal indeed to encourage its use, a course in which they have been supported to a very large extent by the Minister of Agriculture. Now, petrol, so far as England is concerned, is entirely a foreign product, and it brings no benefit whatever to the revenue, as it is imported free of all duty, and it is perfectly evident that the Automobile Club would not only be doing a good turn to motorists throughout the land, but it would also be helping the agriculturist if it were to start an active propaganda in favour of alcohol fuel. Incidentally it would probably lead to .680 spirit being everywhere obtainable again, and possibly to a reduction in price, though this *per se* is not so important as the absolute uniformity of the spirit throughout the land. We know there are many difficulties in the way of the use of alcohol fuel, but they will never be surmounted unless its use is encouraged in every possible manner, and there is no question whatever that the body which should undertake this good work for the benefit of British and Irish automobilism is the Automobile Club of Great Britain and Ireland. They have the strongest possible argument in favour of everything they do in the simple question, "Why should we buy from abroad what we could produce at home?" It may be argued that at the present time this is scarcely the true position, but it is only a question of combined effort and experiment to make it absolutely true.

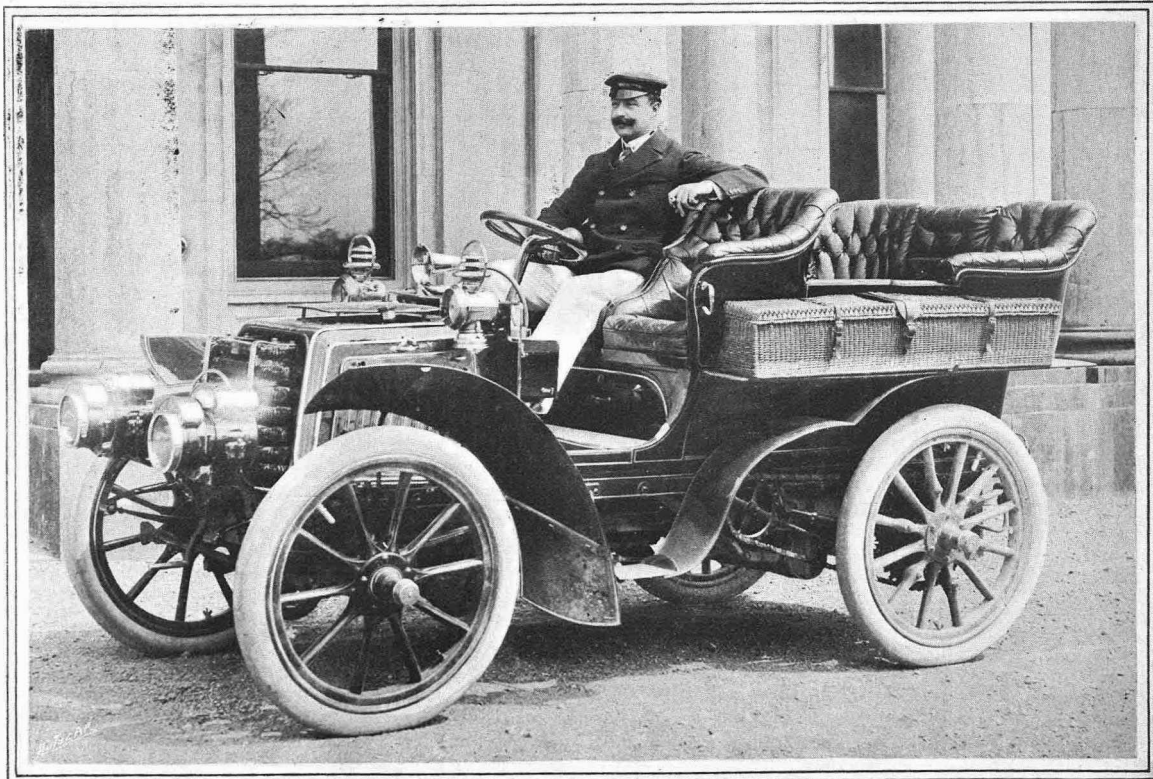
The Reliability Trials.

Last week we gave some details of the proposed system of marking for the club trials next September. Since then some further details are available, and we are glad to note that so many of the suggestions which we made at the time of the last trials have been adopted. Among the points on which further information is required at the present time, and which are, from the user's point of view, of vital importance, may be mentioned vibration. Why vibration, or rather its absence, should only earn 250 marks while speed is awarded 500 may seem strange, as there is no comparison in their relative importance, and if the markings had been reversed the majority of users of cars would have considered it a far more reasonable award, particularly as hill climbing comes under a separate head, and marks are awarded for it. In fact, ease of starting on hills may obtain a maximum of 250 marks, so that it is well to point out that while 250 may seem a small

award for smoothness of running compared with 500 for speed, there is method in this award, which does not appear on the surface, inasmuch as practically all the other qualities, reliability 3,000, stops for refilling and adjustment 1,500, and so forth, deal with points of vital importance to the private owner and are quite irrespective of speed, the comparatively high number of marks awarded for this being to ensure that machines specially built to run through the trial at the regulation twelve miles an hour and no more shall not attain undue credit. It is assumed that the vibration tests will be made at a moderate speed. The majority of well-built cars run delightfully at fairly high speeds, but the users, who are most anxious to have smoothness of running, are those who want lower speeds, and we think it is advisable that these tests should be made at speeds not greatly in excess of fifteen miles an hour, or, at any rate, if it is decided to make a set at higher speeds, there should be a separate test at lower speeds. Accessibility of all such parts as require attention or adjustment should have been one of the items for which marks were awarded. But although it has been decided not to give marks on this most important heading, a sort of compromise has been arrived at, and it is agreed that one at least of the three medals which the judges are to award for special points of excellence shall go to the car having the most accessible parts. This is all very well so far as it goes, but it deals merely with the most accessible car, and does not give any idea as to the relative accessibility of the competing vehicles, and this is where the marking would have been the most valuable guide to the prospective purchaser.

Racing.

The letter which we publish in another column on this subject may be taken as a very fair summary of the opinions which are being expressed at the present time by the majority of practical motorists. We use the word practical to designate those who, while fully recognising that the present conditions make the continuance of racing practically impossible, are still of the opinion that with regulations devised for that end the sport may continue in the future as it has done in the past to have a very great and beneficial influence upon the development of the car. The remedy is a commonsense and very obvious one, and simply amounts to restriction in the size of the cylinders and the imposition of a minimum weight for the car complete. These two simple rules will at once prevent the building of unduly powerful engines—engines which give a car dangerous speed, and are so far abnormal that they teach little or nothing to the designer of ordinary medium-speeded vehicles; while the refusal to allow featherweight cars will prevent the construction of machines which would be dangerously weak. The imposition of a minimum weight instead of a maximum weight is most important. The minimum weight has served its purpose for the time being, but it has already led to the construction of machines which are not strong enough. There is no doubt that a carefully-considered set of rules which were drawn up with the one idea of ensuring that racing should have the maximum beneficial effect on the construction of cars would be welcomed by all, and the suggestion which our correspondent makes that an international committee might well discuss



The Earl of Dudley, the Lord Lieutenant of Ireland, on his 12 h.p. Panhard. His Excellency's latest photograph by Lafayette, Ltd Dublin.

the question either immediately before or after the Gordon-Bennett race is a good one, and one which should be taken up by the Automobile Club, so that the matter might be put upon an authoritative basis at once, as the time is very short for the arrangement of a meeting of this kind.

On the Same Subject.

While discussing the racing question, it is not without interest to look at the sudden change of opinion which has been brought about by the Paris-Madrid race. In this event little occurred which was not expected—that is to say, everyone in the automobile world was well aware of the fact that it was a most dangerous undertaking to drive a car in the event, and accidents to the cars themselves and their drivers were expected; but what was not anticipated was the careless way in which the road would be guarded and the public protected against themselves. We are not proposing to go into the question of right or wrong in making over a highway for a race; but there is no doubt if this is done, the road should be properly guarded. It is perfectly clear from the record of the Paris-Madrid race that nothing of this sort was done, and in some cases it is even stated that those who should have been custodians of the road were intoxicated and were incapable of looking after their own safety or that of others. In fact, numerous as the accidents were, there is no doubt that when the circumstances are impartially considered, the race is actually a testimony to the remarkable manner in which even a racing monster of 90 h.p. can be controlled. A prominent engineering paper in discussing the matter asks what would be said if 200 locomotives were started on a main line at minute intervals without signals. This is a very appropriate question, and the answer is self-evident. When the matter is looked at in this light, which, after all, is the only fair one in which it can be regarded, it must be admitted that the motor car has achieved what would have been regarded only a short while since as impossible. We do not wish to dwell upon the speed side of the question, as it is of really little importance, inasmuch as it is out of the question for similar speeds to be used in the ordinary way; but it really is wonderful that a road vehicle should have been built which will exceed railway speeds, and that despite the fact that it is run upon a railless road with hills and dales and curves far sharper than would be permitted on the most crude of railways. This is indeed a wonderful achievement; but, as we have pointed out, is of little practical value. In other words, if one wishes to proceed at railway speeds, it is best to go by rail.

Numbering.

In last week's issue of the *Club Journal*, a statement is made which cannot fail to be of the greatest interest to a very large number of motorists. In dealing with the proposed bill, it is stated: "The claims of the particular classes of vehicles for special treatment were also considered. It has been urged that certain types of mechanically-propelled carriages, *e.g.* the motor bicycle and the electric brougham, should not be subjected to the same regulations as the heavier and swifter cars. This is a point which it is not for the Legislative Committee to decide. But the Definition Clause has been so

worded that if the users of these classes of vehicles, or those of any other class, can show that there is no cause for them to be numbered in a conspicuous manner, then the Local Government Board will have power to exempt them from the general proposals as to identification." This is satisfactory so far as it goes, but the motorist will at once ask who is to show cause for the exemption of certain classes of vehicles if the club cannot see its way to do so? We admit that it is a difficult matter for the club to take up in one way, but we do not think that the delicacy of the position should prevent the attempt being made. The proposed indiscriminate numbering really encourages speed, *i.e.*, if a man who owns a slow electric brougham or a low-powered petrol car finds that his car is numbered in the same way as that of his neighbour who drives a 30 h.p. car, and whose speed is somewhere about three times as high as his, incidentally rendering his number illegible, the owner of the slow vehicle will feel that he may just as well go in for something faster. As this is the case, it appears to us that manufacturers, and, in fact, all those who have business interests in the making or selling of motor cars, should combine together and present a petition to Parliament, asking that if certain specified types which they may make now or in the future are submitted to the authorities as being incapable of a speed in excess of, say, fifteen miles, such vehicles shall be exempt from numbering, so that any vehicle which cannot exceed in speed a good average horse shall be exempt; for, after all, it is only on the speed question that there is any trouble about identification. If motors had not exceeded the speed of a fast trotter, there would be no agitation for numbering.

Quiet Travelling.

We pass over the difference in stopping, which is in favour of the autocar, as this does not appear to weigh with the authorities; but we think a good case would be made if horse carriage speed were taken as the definition for the exemption from numbering. We shall be told, no doubt, that very few cars are made which are not faster than horse vehicles, and that, therefore, agitation in this matter is vain; but it is necessary to look ahead. We have maintained, as we believe most firmly, that a type of car will come into increasing use for the driving of middle-aged and elderly people, and for those who do not want to go fast. As we have pointed out before, this class of user, to a large extent, is ignored at the present time, because he has not made his wants felt; but he undoubtedly will do so, and why he or any other person who owns a car which does not run faster than a horse carriage, and which is used for precisely the same purposes and in the same way, should be numbered, we fail to see. All such people do not ask for the abolition of the speed limit. They do not want it. It is true they would like a little more than twelve miles an hour, but they would be content with this in many cases. As to the electric brougham, the case is even stronger than that of the slow-moving petrol car, for the simple reason that not many really slow petrol cars are now made, but electric broughams are coming into greater use every day, particularly in London. They are essentially private carriages, and there is absolutely no more necessity to number them than there is to number the horse brougham.

USEFUL HINTS AND TIPS.

How to Use Tools.

To the Novice.

To the skilled mechanic it is often very painful to witness the manner in which the novice handles his tools when effecting repairs. Like everything else, there is a right and a wrong way of using the various implements which are required in repairing or overhauling a motor vehicle. Having had some years' experience in engineering workshops, we may fairly claim to be able to give our readers some hints as to the use of such tools. The advent of the motor vehicle has awakened in many their mechanical instincts, and they now make a practice of carrying out as far as possible their own repairs. These repairs, even if they be of the most simple description, are always interesting to their less practical brethren, and we are always pleased to receive particulars of the modes and methods adopted by amateur mechanics, particularly where they are of a difficult or complicated nature, and where the outfit of tools at their disposal is of a limited character.

The Spanner.

Every car should be provided with a set of solid-ended spanners which will fit every nut and bolt in the vehicle. This is not at all an impossible thing, as both English and French screw pitches have standard sizes for every nut and bolt head from $\frac{1}{8}$ in. upwards. If every vehicle was so provided, the outfit of spanners would not be excessively large, as there is not a wider range of sizes employed. Anyhow, a screw spanner should be included in every outfit, in case of a solid spanner being mislaid, or in the event of a nut or bolt head not being properly gauged so that a spanner will not fit it. Unfortunately, this is only too frequently the case, and one finds a spanner marked, say, for $\frac{1}{2}$ in. nuts and bolts, which, when one comes to use it upon that size nut or bolt, is found to be too big for it. In such cases the screw spanner, of course, comes in extremely useful. In other instances one is by force of circumstances compelled to use a larger size spanner upon a nut than it is intended for. In some cases the difference between the two is not a great deal, and many use the spanner so long as it will hold on to the nut. The natural consequence of this is that the corners of the nut get pulled off, and instead of having nice flat sides to the hexagon, it eventually becomes almost a perfect circle—in fact, it may be described as of no shape at all. Instead of being subjected to such treatment, the spanner should be packed up to fit the nut, and this may be easily done by means of a copper coin. In instances where the spanner is so large that it will not fit at all, it must then, of course, be packed up until it does so. This is particularly the case with the union nuts of the pipes in connection with the water-cooling system, as these nuts, being made to gaspipe pitch, have a different standard.

Tightening Nuts.

When tightening up a nut or bolt, the operator should use discretion in the operation, otherwise he is liable to strip the nut or break a bolt or stud, as the case may be. It sometimes happens in tighten-

ing up union joints on oil or water pipes that the end of the nut is burst away. This happens because the operator, not finding the nut offer much resistance, continues screwing as if it were an ordinary nut, and the leverage usually obtained is sufficient to break the nut without its being known, until it absolutely slips over the pipe. Nuts or bolts tightened from above work from left to right; when tightened from below in the opposite direction. This is a little point which is often forgotten, and when the nut is located beneath a part, the natural action is to turn it in the same direction as if it were on the top. The result is tightening instead of slackening or *vice versa*. Box spanners are included in many outfits; but as these are made for standard size nuts, there is no need to comment on them. We have before stated that it is necessary to include a good and well-made adjustable spanner in the outfit, and we would here emphasise the word "good," as we have had some lamentable specimens of this useful tool offered to us and recommended on the strength of the statement that it is a pattern supplied to large firms. There are several good makes of spanner upon the market, and it is only false economy to buy those of the cheap and nasty type.

The Hammer.

This is such an everyday tool that it seems almost superfluous to mention it; but, nevertheless, there is some art in using the hammer in connection with mechanical contrivances and movements. For instance, the tool should not be used upon a cast iron piece as though it were a lump of coal, for, whereas it is desired to break the coal, the iron is intended to be preserved, and to this end the hammer should be used as little as possible on cast iron parts, as, owing to their brittle nature, it is the easiest thing in the world to crack or break a casting. When it becomes necessary to employ the hammer at all it should be used carefully and with moderately hard blows, which should be distributed over the largest surface possible, *i.e.*, repeated blows should not be given upon one place where it is possible to deliver a series of blows over a large area which will ultimately have the same result. As an example, suppose it is desired to remove the cylinder from its crank chamber. It may so happen that this is a tight fit when recessed, as it should be, and it is impossible to move it by simply lifting; here the hammer must be brought into use, and in an extremely careful manner, too. Having first seen that all the nuts are free, and it is possible for the cylinder to lift, it will be necessary in the majority of cases to deliver the blows on to the lower edge of the water jacket. In such a case the blows must not be delivered direct, but through the medium of a piece of hard wood, which should be placed beneath the water jacket at the junction of the jacket to the cylinder, where, of course, the metal is thickest, and a steady even and deliberate blow given, first to one side and then to the other, these being divided as nearly equal as possible at four equal distant points of the circle, and these points should be worked upon alternately.

(To be continued.)

THE SILENT SILENCERS.

Mr. J. B. Dunlop's Patents.

The name Dunlop is so associated with the introduction of the pneumatic tyre, which has, perhaps, done more for cycling than any other invention of the age, that it will hardly surprise our readers that the prolific genius of Mr. Dunlop, which has been for the past three years concentrated upon subjects connected with motoring generally, has produced something remarkably simple and efficient.

Two years ago Mr. Dunlop set to work on the problem of silencing the exhaust gases from intermittent impulse engines, and he has produced in that time no fewer than three patterns, all of which give excellent results, and are now ready for the market.

Fig. 1 shows the pattern which he employs at present on his own car, which attracts much attention on account of its extreme silence and sweetness of running.

The exhaust box has a straight tube through its centre, and this tube has apertures oppositely cut in it at three points in its length. Between the holes, and forming the tube into compartments, is a diagonal partition which completely closes the bore of the pipe, at the same time deflecting the gases outward into the surrounding chamber. The external casing is also formed with two parallel partitions, so that the whole silencer is divided into three compartments of considerable volume, one for each pair of diametrically opposed holes. The

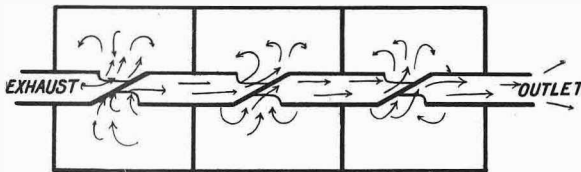


Fig. 1.

path of the gas is outward, therefore into the first of these chambers, where it expands, and then in through the opposite aperture through the central pipe to the second compartment, thence to the third in a similar manner, and from the third to the atmosphere by the pipe again. The arrows indicate the path of the gases. This is the type that Mr. Dunlop employs on his own car, and the egress of the exhaust gas to the air is completely inaudible at six feet.

However, the inventor lays great stress on the fact that exhausting should be accompanied by as little back pressure as possible, and with the elimination of this in view he constructed a second pattern of silencing apparatus which would give greater freedom to the passage of gas than the first; and, although his intention was to employ this type solely for motor cycles, the results have been so eminently satisfactory that he has adopted it as the standard pattern. A section is seen in fig. 2.

In this apparatus the exhaust gas enters a tube having a partition in the centre which has a large number of holes (of considerable area) drilled in it for its whole length, but only on one side of it. Parallel with this tube is another, drilled in the same manner as the first, but so arranged that the holes are turned away from the first tube, as seen in

the figure. Surrounding these tubes is a casing having a central division plate, which coincides with the partition in the first tube, whilst the second

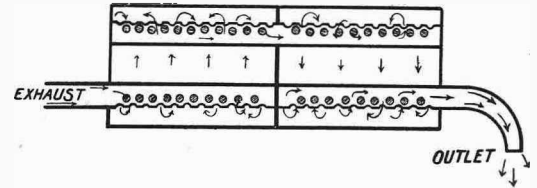


Fig. 2.

tube is clear throughout its length, being only closed at the ends. The gas enters the inlet end of the first tube, and, being checked in its flow by the partition therein, issues through the numerous holes in the side and expands into the surrounding chamber, afterward entering the second tube, through which it is transferred to the lower compartment, into which it expands again through the lower series of holes, and from there it passes to the first tube again, below the interception, and to the atmosphere by means of the bent flattened nozzle.

It will be observed that the theory of both is identical. The gases in the first case are emitted with considerable force through a single aperture into an expansion chamber where they divide and expand, afterward having to pass through a second hole opposite to, but distinct from, the first. The gas is however entering this second hole in two separate streams, owing to the former division of the gas, and these streams are moving with considerable force, the whole gas being in a state of violent vibration. The impact, or collision of the streams, however, since both are equal in force, and the amount of vibration, cause them to neutralise one another, with the result that both the vibration and resultant velocity of the two streams coming together are greatly checked, and, further, the sound waves on impact are flung outward into the body of the silencer instead of being carried forward. The series of expansions and contractions, too, tend largely to cool the gas, and it is only just warm when it leaves the last chamber. With the parallel pipe type the same action goes on. There is an expansion outward into the chamber, the re-entering, on the opposite side (of another pipe in this case), a re-expansion and a second influx, precisely the same fundamental principle as that of the first mentioned apparatus, the only variation being that two tubes are employed in the place of one. This silencer is remarkably free, and as an instance of its freedom Mr. Dunlop states that for one square inch area of exhaust pipe the egress gives one and threequarter square inches. The results, as regards noise, are even more remarkable, and no sound except that of the engine mechanism and the gear is audible at all. Even an explosion in the silencer is barely noticeable, and experiments have shown, further demonstrating the unusual immunity from back pressure, that it is impossible to burst it by firing in the silencer.

By far the most novel and interesting of all the three is the last. Mr. Dunlop handed us a silencer and told us to look through it. We did, and lo, it

appeared to be a straight clear tube, stuck through a cylinder of sheet metal. Absolutely no obstruction whatever. Amused at our amazement, he then asked us to shout through a piece of piping. We complied, and the volume of sound in the room was deafening. He then presented the silencer and

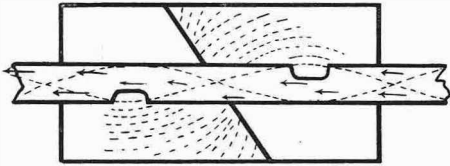


Fig. 3.

again we shouted, louder than before, but could hardly make our voice heard, although, apparently, the tube was identical with the first. After tantalising us for some time, the wizard disclosed the

mystery by treating us to a short interesting enumeration of the physical phenomena of sound. He said that in a tube sound travelled in waves as in the open; but, owing to the sound being enclosed, the waves could not spread properly, with the result that they were projected in a series of undulations which crossed one another at certain points called "nodes." The motion of the sound waves at these nodes was nothing, while at the centre of the loop formed between two nodes the vibration was greatest. This theory was taken advantage of in the silencer under consideration, and the quieting properties were obtained by cutting away the walls of the tube where the vibration of the sound waves was greatest and surrounding the whole by a chamber having a diagonal partition. The sound, consequently, passed into the chambers and was reflected in various directions and lost. The arrangement can be seen in fig. 3.

THE DECAUVILLE ENGINE BED-PLATE.

It has already been noted that the 1903 Decauville cars contain a new construction feature in the method of fixing the engine to the car frame. Hitherto, this method has never been clearly illustrated, and many automobilists are not at all clear as to how the attachment is made. A two-piece sheet steel plate A and

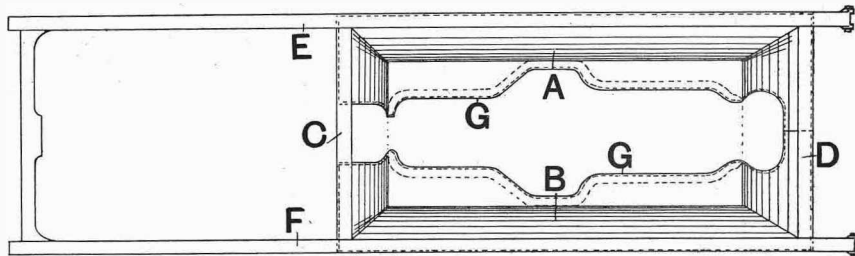


Fig. 1.—Plan of the Decauville frame and engine bed-plate.

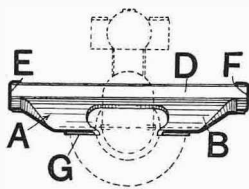


Fig. 2.—Cross section of the line A' B'.

The same reference letters apply equally to all figures. A and B, two piece sheet steel bed-plate; C and D, transverse members of the frame; E and F, longitudinal members of the frame; G G, flange on the steel bed-plate A B to which the engine is bolted.

B is attached to the channel steel frame members C, D, E, and F (figs. 1, 2, and 3), by means of rivets which are not shown, as they are placed in the lower angle of the channel. The bed-plate falls inward and downward from the frame members to which it is attached, as shown in the end section fig. 2. The inner edges of the plates are flanged to the horizontal and cut out to the plan shape of the engine and gear box. These are dropped into position and secured with bolts. Such a construc-

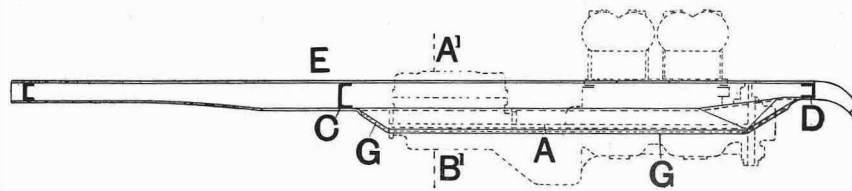


Fig. 3.—Longitudinal elevation of frame bed-plate.

tion makes a light and rigid connection between the mechanism and the car frame, while it further affords full protection from dust and dirt to the engine, the lower part of this and the gear box only being exposed. This protection is made one of the claims of the patent. It is further specified that the sheet steel casing may be stamped out of one piece and not built up out of two pieces as at present. As will be seen, the clutch is entirely protected, so that the whole mechanism is weather-proof.

The Osborne edition of "The Country Gentleman's Estate Book, 1903," edited and compiled by Mr. Broomhall, and published by the Country Gentleman's Association, is just to hand. It is a most voluminous and useful work, dealing thoroughly and expertly with the manifold duties and work to be performed on a country estate. It lacks only some information as to the care and use of automobiles, and the erection of suitable automobile housing. Perhaps we shall find such desirable information in the next edition.

The Cardiff Corporation recently discussed the advisability of adopting motor watercarts instead of their present carts drawn by horses. A sub-committee was appointed to visit the Bath and West of England Show with the view of seeing the latest designs in motor vehicles suitable for watercarts, refuse carts, etc. As the number required will be considerable, makers would do well to communicate with the Chairman of the committee of the council, Councillor Robert Hughes, Cardiff, if they desire to obtain a share in what should be a big order.

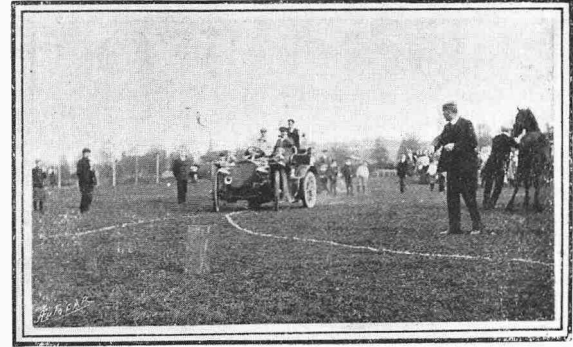
THE CLUB RUN TO HERTFORD.

At the invitation of His Worship the Mayor of Hertford, Mr. C. Kenneth Murchison, a number of the members of the Automobile Club and their friends met at 119, Piccadilly, on Thursday, May 28th, and drove to the Herts County Town, there to lunch in the fine Shire Hall with His Worship, and

afterwards to give comparative brake tests against a horse-drawn vehicle in Fore Street, a demonstration of stopping by unexpected signal descending Port Hill, a steering exhibition on Hartham, followed by tea with the Mayor at Bengoe Lodge. The events were followed with great interest.

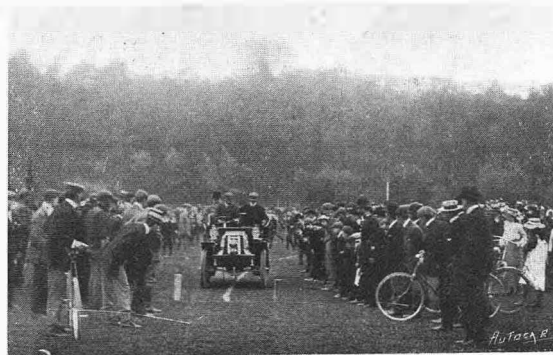


A 20 h.p. Wolseley at the stop and reverse test



Bending. On the right a restive horse will be seen

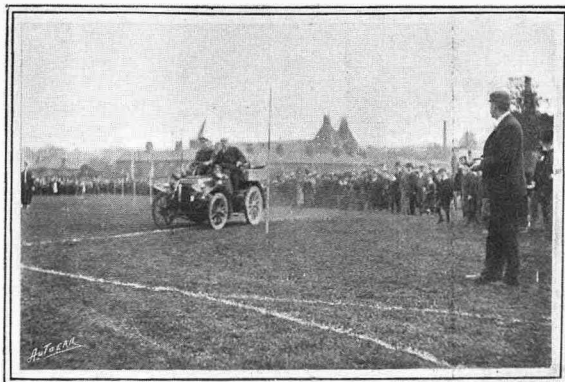
The orders for the day appointed 10 a.m. for the start from the club—a sufficiently early departure, which resulted in the arrival of only Mr. Owers's 16 h.p. Napier, Capt. Deasy's 22 h.p. Rochet Schneider, Mr. W. Peall's 12 h.p. Daimler, Mr. T. B. Browne's 18 h.p. James and Browne, and Mr. Granville Kenyon's 10 h.p. Panhard, upon which Mr. Swindley was most kindly accommodated. Colonel Henry Daniell, the chief constable of Herts., travelled down on Capt. Deasy's Rochet, while Mr. Harrington Moore travelled on Mr. Kenyon's Panhard.



Passing between the pegs in the steering demonstration.

The route taken out of town was by the Finchley Road, Tally Ho Corner, Barnet, Hatfield, and right to Hertingfordbury and Hertford, where the cars arrived in particularly good time, and lined up opposite the Dimsdale Arms. The run down was particularly enjoyable, for the dust had been well laid to considerably the other side of Barnet, and the country could not have presented itself under better aspects.

At 1.30 a numerous company sat down to an excellent cold lunch in the Shire Hall, and did ample justice to the cold collation, and during its discussion petrol talk reigned



The steering exhibition.



Stopping tests in the high street of Hertford. Lancaester v. horse.

Mr. Lloyd Price was with Mr. T. B. Browne, and Mr. Rees Jeffreys was on Mr. Cordingley's Mercedes. Mr. G. Weller drove over from Amersham on his 24 h.p. Prunel. Mr. Art. Blomfield took down the Rev. A. B. Whatton on his 9 h.p. New Orleans, and Mr. Walter Munn appeared after lunch driving a remarkably smart 10 h.p. De Dion, with a very tasteful French Limousine body.

supreme, as is usual at such functions.

After the royal toast had been proposed in fitting terms by His Worship the Mayor, and reference had been made to His Majesty's penchant for automobilism, and the value of his support to the industry, Colonel Daniell, the chief constable of Herts., gave "Prosperity and Continued Success to Automobilism." The gallant speaker arched him



A view of part of the field at Hertford [Mr. Peall's Daimler on the left. On the right is the 10 h.p. De Dion which Mr. Walter Munn drove on to the ground with a full load of police constables.

self an enthusiastic automobilist, and spoke of the many enjoyable and successful drives he had experienced, not the least of which was his trip down from town that morning. He thought the fears expressed with regard to the breeding and sale of horses consequent upon the spread of automobilism quite unfounded. The same thing had been said upon the introduction of railways and upon the popularisation of cycles, but only the other day at a large sale of trade horses no less than 900 of these animals averaged £40 apiece. With regard to the objection shown by some horses shied at railway trains still. The Colonel then referred to reckless driving on the roads, and deprecated it in severe terms, giving instances of several cases of the same which had come under his particular knowledge. Railway speed could not be tolerated on the public roads. For some reason that quite escaped us, Colonel Daniell said that he personally held the Automobile Club responsible for such driving. He thought the club should deal with motorists as the Jockey Club does with jockeys. In touching upon the late most regrettable incidents of the Paris-Bordeaux stage of the Paris-Madrid race, Colonel Daniell was of opinion that the Gordon-Bennett race in Ireland could not be regarded from the same point of view. The gallant speaker also said that the City Council of Herts. was opposed to the retention of the speed limit. He thought motorists should enjoy the same rights as others on the road, and if they misbehaved should, in addition to a heavy penalty, have their names inscribed upon a black list. A motorist who had once been convicted of an offence should be obliged to carry a number on his car. Colonel Daniell closed a very interesting and much-applauded speech by expressing a hope that the time was not far distant when the majority of cars upon our roads would be of British and not foreign manufacture.

The Hon. Jno. Scott Montagu returned thanks, and at the close of his speech gave the health of the Mayor, their host, which was enthusiastically honoured.

After lunch the cars were again taken to and driven in procession round the town, with His Worship the Mayor leading. At the summit of Port Hill the procession was topped, and each car descending singly was unexpectedly

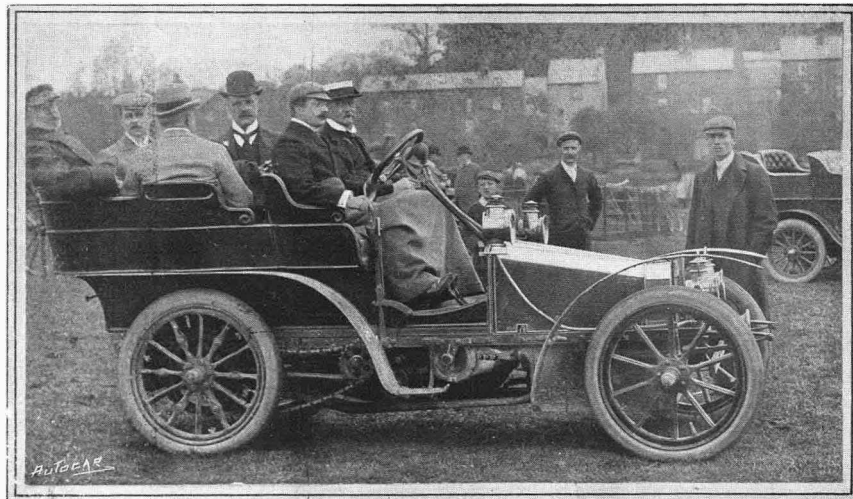
signalled to stop on different parts of the descent. All the stops were most successfully made, the only things to suffer being tyres. The vehicles then proceeded to a field at Hartham, where backward and forward steering demonstrations were given by eleven of the cars present, the Mayor, on his 9 h.p. De Dion, taking part.

This being ended, to the regret of a large crowd of interested spectators, the company proceeded to Bengeo Lodge, where they were again entertained by the Mayor—this time to tea. Then home by devious routes, after a most successful day, during which a large proportion of the citizens of the ancient town of Hertford, with many county worthies and notabilities, had been wholly converted to the handiness and controllability of motor cars.

The West Surrey A.C. Opening Run.

This newly formed club held its opening run on Saturday, the 23rd ult., when thirty-five members and friends drove to the Huts Hotel, Hindhead. The return journey was made by way of Frensham and Farnham, roads and weather being alike all that could be desired. Among those present were: Rev. A. Armitage, Colonel Fairclough (12 h.p. Darracq); Mr. Tessier (9 h.p. Argyll); Mr. E. Baring-Gould (10 h.p. Panhard); Messrs. Pousford and Leon (8 h.p. Clements); Messrs. Simmonds and Buttemer (10 h.p. Decauville); Major Matheson, Dr. Fenning, and Mr. King (6½, 5, and 3 h.p. Benz cars); Mr. Crothers (9 h.p. Darracq) and Miss Crothers (5 h.p. Peugeot).

It was announced during the afternoon that arrangements were in progress for the establishment of a garage in Guildford for the use of members, and it may be added that



Mr. T. B. Browne at the wheel of his four-cylinder 18 h.p. James and Browne. By his side is the Chief Constable of Herts. In the tonneau the Mayor of Hertford will be seen in a light cloth cap; the Clerk of the Peace in a black felt hat; Mr. Lloyd Price on the extreme left; and Mr. V. Austin with back to the camera.

provision is contemplated for the admission of summer visitors to this popular neighbourhood to temporary membership.

Mr. A. Cornell tells us that the Kent Auto Club is progressing rapidly, already numbering between seventy and eighty members.

HOW TO SOLVE THE PETROL PROBLEM.

A Lesson from France.

The distribution of petrol is one of those things they do infinitely better in France. In whatever part of the country the automobilist may find himself he can always be sure of procuring supplies of spirit, and what is more he can rely upon getting it of the required density, and at a price which undergoes scarcely any variation. He is rarely troubled with the quality of the spirit, and accepts what is supplied him with the practical certainty that the petrol is up to the standard claimed for it. There is an implicit confidence between the maker and the seller, and, as we shall show, this enables refiners to make a successful stand against certain influences which might otherwise have very serious consequences for the petrol industry.

How the French are Handicapped.

How is it that in a protectionist country like France petrol should be supplied under better conditions than in England where no duties whatever are imposed upon the spirit? We do not say that the petrol is cheaper; on the contrary, it costs appreciably more, but this higher figure is due solely to the duties on imported petroleum, the excise dues, and the octroi on the spirit going into the various towns. The petrol thus bears a triple burden, which certainly represents considerably more than the difference between English and French prices, and if these charges were suppressed, as they are in England, the spirit would probably be selling at much less than a shilling a gallon. If the spirit is dearer in France it is not the fault of the refiners, but of the State and Municipal authorities, who look upon petrol as one of the chief sources of revenue, and it is evident that the French refiners content themselves with very much smaller profits than the Anglo-American producers. If the French can make the business pay well under these conditions it is only reasonable to suppose that the British and American monopolists could sell their petrol with a satisfactory profit at twenty-five per cent. below the present minimum figures.

The Present State of Affairs—the Cause.

That British automobilists are being supplied with a spirit of unsatisfactory quality, and at increasingly high prices, seems to be due to the fact that the Standard Oil Trust is not making so much profit out of the trade in petrol as it had anticipated. This, at least, is the prevailing impression in the United States. The profits on the spirit are partly lost in the depreciation of the by-products, which are accumulating to such an extent that it is becoming more and more difficult to find a market for them; consequently, as the depreciation continues the nett profit on petrol declines, and the refiners have been trying to meet the difficulty by raising prices. It is probably also for this reason that they have been putting on the market a heavier spirit. If this explanation be the true one, it is to be feared that the situation is anything but satisfactory for consumers.

Influence of By-products.

It amounts to this, that the price of petrol is to be regulated by the depreciation of the by-products,

and, as their selling values continue to decline, the price of petrol must be advanced to make up the difference. Of course, this excuse cannot be accepted by consumers, who know very well that, having to bear no fiscal charges, the refiners must be making enormous profits, and if they are unable to make so much out of the by-products they ought to content themselves with setting off the loss against the huge profits on the spirit, instead of still further increasing these profits by compelling consumers to pay dearly for an inferior petrol. Fortunately, the automobilist need not always be at the mercy of the monopoly. The Trust is all-powerful at the moment, but the time will come when it will look very small beside the competition of other fuels, and the refiners will then be glad to content themselves with reasonable profits instead of forcing upon consumers an inferior product at high prices.

Checking French Monopolies.

In France the refining industry is also practically a monopoly to the extent that it is confined to a few firms, of whom the most important are Henry Deutsch et Fils, the Société des Huiles Minérales de Colombes, a firm at Bonnières, and one or two others who make a speciality of motor spirit. There would have been nothing to prevent these concerns from tacitly combining for an advance in prices had they considered it worth their while to do so. It is true that the French law prohibits any combination for the raising of prices beyond what may be justified by the supply and demand; but there is little difficulty in evading this law, as, indeed, is often done in other branches of industry. The refiners, however, saw at once that their interest lay not so much in putting up the price of petrol as in getting more profit on a larger bulk by encouraging its consumption. If we remember rightly, petrol could not be obtained in Paris a few years ago for less than seventy or eighty centimes a litre. Moreover, supplies were irregular and deficient, even at a time when only a comparatively few cars were running, and as it passed through the hands of grocers and other dealers the petrol had an unpleasant habit of deteriorating in quality.

Alcohol v. Petrol.

At that time an agitation was started in favour of alcohol as a fuel, the advocates of this spirit urging that if the petroleum refiners could not supply what was needed, the agriculturist would be happy to do so, and thus a home industry would get hold of the millions sterling which are paid every year into the pockets of foreign petroleum producers. This was quite sufficient to arouse the refiners to action. They began to make a speciality of motor spirit, with a sp. gr. of .680 and put up in sealed cans of five litres. These cans, sealed at the works in such a way that they cannot be tampered with subsequently before reaching the consumer, are accepted as an absolute guarantee, and we have never heard of any complaint as to the quality of the spirit supplied. Moreover, the price was brought down in Paris to sixty centimes a litre, while outside the city it varies from forty-two centimes to forty-

five centimes a litre, the former figure representing about 1s. 6d. a gallon. This can be taken as the price paid by tourists and by provincial automobilists who are able to avoid the octroi dues, so that the usual figure is only fourpence a gallon above the average price of English petrol, and this, too, despite the fact that it is burdened with import duties on petroleum and excise duties on spirit. At the same time, the refiners set themselves the task of organising a supply of spirit throughout the country, in which, it should be added, they are favoured by the railway companies, who only insist on ordinary precautions being taken, and do not impose specially high rates for the conveyance of petrol. There is now not a single town in France where the spirit cannot be purchased.

The French Distillers.

To a certain extent it must be admitted that the French refiners have made a virtue of necessity, though in so doing they have excellently served their interests in two ways—first by increasing their profits by facilitating the consumption of spirit, and, again, by placing themselves in a position which, for the time being, enables them to resist the attacks being made on the petrol monopoly. We do not think we are far wrong in saying that if the French refiners had followed the example of the Anglo-American Co. the industry would have been irretrievably ruined, simply because it would have succumbed to the competition of alcohol. Those who are advocating the use of the agricultural spirit would be delighted at any false step on the part of the petroleum refiners. They are looking for a weak spot in the armour of the petrol monopoly, but the defence is strong, because the refiners are doing their best to give every satisfaction to automobilists, and so long as consumers can buy good petrol in the provinces at the same price as alcohol they are quite satisfied with the situation, merely contenting themselves with approving of the alcohol propaganda in so far as it serves as a healthy check to the petroleum refiners.

The Attitude of the French Government.

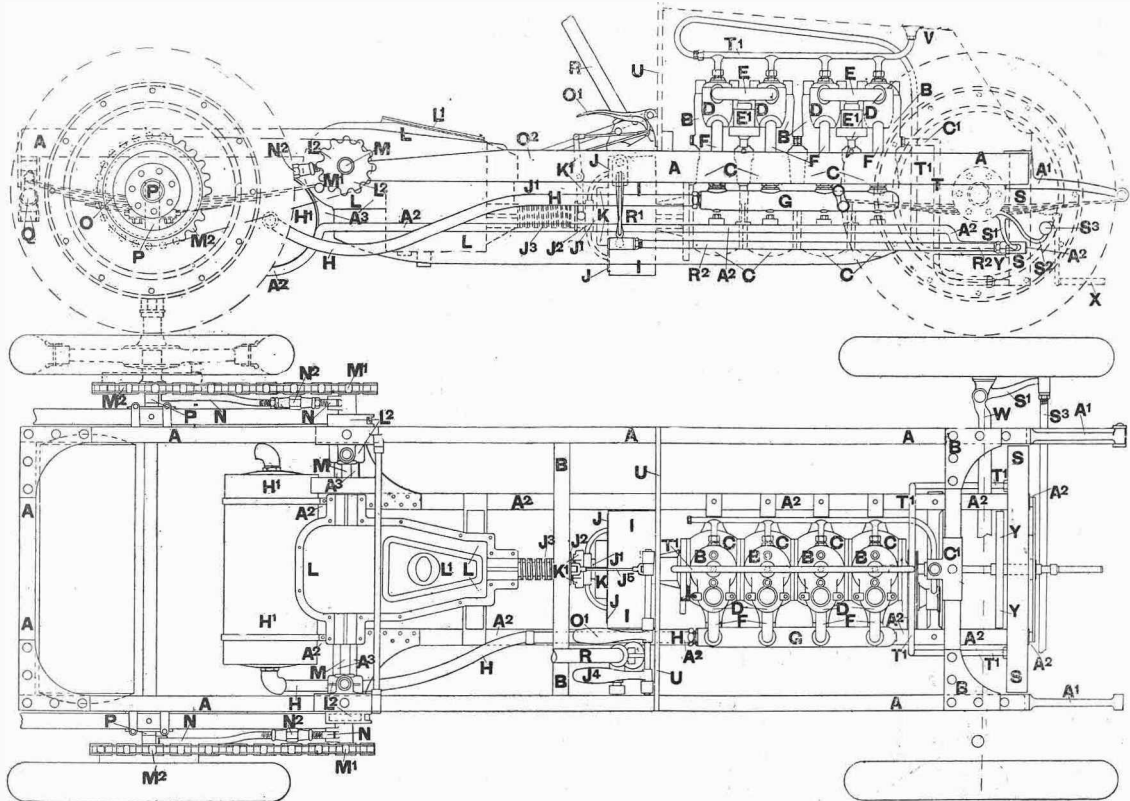
Nevertheless, the position of the refiners is by no means secure. As the Government is actively advancing the interests of alcohol it is quite possible that something will be done to reduce the heavy excise duties on this spirit, though the sacrifice of revenue would be so great that it is hardly likely the Minister of Finance will consent to any such diminution until it is found possible to compensate for the loss by carrying out considerable economies in the Budget. It is certain that the time will come—though it may not be for a few years—when alcohol will be considerably cheapened, but the petroleum refiners profess to believe that this will not materially affect their situation, as they say they will always be able to bring down the price of petrol low enough to compete with the agricultural spirit. If this be so, it throws a singular light upon the profits being made by the Standard Oil Trust, for if the French refiners are able still further to reduce their prices after paying import duties on Pennsylvanian and Russian petroleum, as well as the excise duties on the manufactured spirit, what must be the situation of the people who are supplying petrol to

British consumers? Nor does this statement of the French refiners seem to be any idle boast or bluff, as is evident from the attitude of the Government towards the petrol monopoly. It is clear that the Government would not concern itself about the future of the petrol industry unless it were satisfied about its possibilities, and as a means of clearing the way for alcohol the Chamber of Deputies has appointed a Commission to draw up a report upon the proposed taking over of the petroleum refining industry as a State monopoly. The idea of the Government apparently is not that the competition of alcohol is impossible so long as the petroleum refiners are able to cut prices, since it is admitted that alcohol can be produced at a figure which would oust petrol entirely out of the market, but by controlling the petrol supply the State will be able to give a preference to alcohol without altogether suppressing the revenue from this spirit.

The Solution of the Problem.

From what we have said it is easy to see that the solution of the petrol problem in England lies in the consumers' own hands. They have simply to organise an agitation in favour of alcohol, such as is being carried on over the whole of the western part of the Continent—in France, Germany, Belgium, Italy, Spain, and Portugal—to say nothing of South America, where the respective Governments have in all cases taken the initiative in support of the agricultural industry. In England the problem is apparently more difficult than it is in other countries where the alcohol propaganda is facilitated by import duties on petroleum, which duties, in the case of Germany and Spain, are almost prohibitive; but against this may be set off the ability of the British Government to suppress entirely the excise duties on methylated spirits, and thus sacrifice a source of revenue which is of far less importance in this country than it is on the Continent. No doubt the Standard Oil Trust would fight and would bring down prices in the hope of strangling the movement, and even for this result the automobilist would have reason to be thankful, but the final issue would be inevitable. It is not exaggerating matters to say that the production of cheap alcohol would bring back prosperity to the agricultural industry of this country, while in Ireland its importance could not be over estimated. This solution seems to be the only one that is open to automobilists. The supplies of petroleum are not capable of unlimited expansion, and if automobilists cannot get good petrol now at reasonable prices, what will be the position a few years hence when the demand will have enormously increased? On the one hand, we see that refiners are unable to supply consumers with the petrol they require, and on the other, the agricultural industry would be able to put on the market unlimited quantities of cheap alcohol if only it were assisted by a suppression of excise duties and other fiscal restrictions. There can be no question of hesitating over the alternative to be adopted. In another article we shall deal with the progress made on the Continent in the utilisation of alcohol as a fuel, when we hope to show that automobilists need not be dependent upon the petroleum refiners for their supply of spirit.

THE WELLER TWENTY HORSE-POWER CAR.



Figs. 1 and 2.—Elevation and Plan.

- A A A, stamped nickel steel frame.
- A¹ A¹, spring arm
- A² A², three point suspended underframe carrying all running gears
- A³, two points of suspension to A².
- B B B, water jacketed cylinders.
- C C C, aluminium crank chambers.
- C¹, pivotal suspension point to underframe.
- D D D, valve chambers.
- E E, induction pipes.
- E¹ E¹, carburetters.
- F F, exhaust pipes.
- G, exhaust receiver.
- H H, exhaust pipe to silencer.
- H¹, silencer.
- I I, flywheel.
- J J, friction clutch

- J¹, clutchshaft.
- J², clutch spring collar.
- J³, clutch spring.
- J⁴, clutch pedal.
- J⁵, clutch draw rod.
- K K, epicycloidal reverse gear.
- K¹, clutch striking fork.
- L L, gear box.
- L¹, inspection lid.
- L², L², differential shaft outer bearings.
- M M, differential gearshaft.
- M¹ M¹, chain sprockets.
- M² M², chain rings.
- N N, radius rods.
- N¹, coupling to N N.
- O, expanding and compensating brakes.
- O¹, brake pedal.

- P P, rear axle.
- Q Q, rear cross spring with rubber buffer.
- R, steering standard
- R², spring steering blade.
- R³ R³, steering rod.
- S S, combination tank and tubular radiator.
- S¹ and S², steering levers.
- S³, steering wheel distance rod.
- T, delivery pipe to cylinders.
- T¹, return pipe to radiator.
- U, dashboard.
- V, water filler.
- W, front axle.
- X, starting handle.
- Y Y, rotary fan to radiator.

This remarkably ingeniously designed automobile, which first attracted attention at the Crystal Palace Show, and there earned the unstinted praise, not only of our home, but also of foreign experts, who, as a rule, are very slow to laud anything in the shape of British automobile mechanism, we are now able to illustrate and describe for the benefit of our readers. Although not so shown in the drawings, the frames and the underframes of the 20 h.p. Weller cars will in future be of stamped U section steel, the main frame being stiffened by four transverse steel channel section members. The wheels are 36in. x 5in. of artillery pattern built up on stamped steel hubs. All wheel bearings are plain.

The first noticeable feature with regard to the Weller car is the underframe already referred to, and upon which is set the engine, gear box, differential gear shaft, silencer, and water tank—in fact, all the running gear. This underframe, which is most clearly shown in fig. 3, is suspended in front from the forward transverse member of the main frame by one pivotal hanger, and in rear from

brackets depending from the side members of the main frame immediately over sprocket wheel bearings. The hangers by which the underframe is suspended from the three points indicated above are secured to the lugs or brackets from which they depend by one big castled nut each, and by detaching these three nuts and detaching the chains the whole of the running gear, as above given, can be immediately detached from the car, and the latter easily moved clear of it. The triple suspension with the forward pivotal hanging point prohibits any tension or whip of the frame proper due to road shock from visiting the underframe in such a way as to interfere with the alignment of the shafting.

The four-cylinder engine also presents some particularly interesting features. The stroke is 5in. and the bore of the cylinders 4in. The crankshaft rotates in five bearings of generous length, and the pistons are constructed on similar lines to those of the Weller motor bicycle, that is, they are made with a special form of gudgeon holder by which the walls are not perforated. Further, the design of these

pistons permits of them being machined inside and out, so that while they can thus be turned out very light, by the removal of all really superfluous metal they can be made of exactly the same weight throughout the engine. That this feature must

levers come in contact to open the valves. The columnar looking rods seen on the right of the cylinders are what in an ordinary engine would be termed the induction valve lifting rods; but, in the Weller engine, they bring about the closing of the

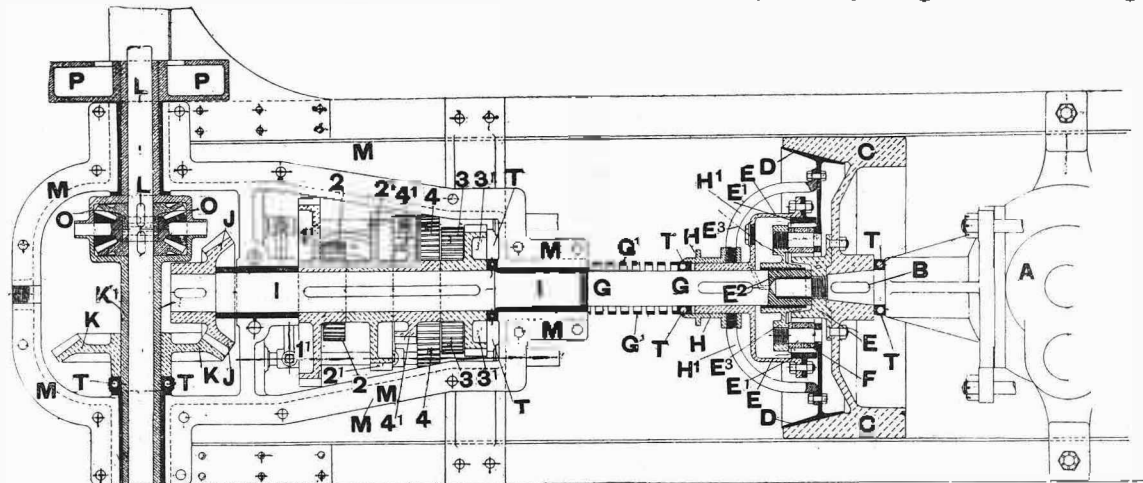


Fig. 3.—Underframe

- A, rear cylinder
- B, rear end of crankshaft
- C, flywheel
- D, clutch, metal to metal
- E, casing fixed on clutch shaft enclosing reverse gear
- E¹, internally toothed ring bolted to E
- E², centre pinion bolted to flywheel web
- E³, spider piece carrying intermediate pinions of reverse and also clutch D, running free on clutch shaft G
- F, pinions of reverse gear
- G, clutch shaft
- G¹, clutch spring
- H, clutch fork collar
- H¹, H², arms (four in number) attaching clutch collar H to clutch D
- I, secondary gear shaft
- J, driving bevel wheel
- K, driven bevel wheel on an extension of differential gear case
- K¹, differential sleeve
- L, L, L, countershaft
- M (repeated), gear box
- O, differential gear
- P, P, water cooled countershaft brake drum
- Q, ring lubricating collar to shaft bearing
- R, chain sprocket
- S, S, outer differential shaft bearing slung from main frame
- T (repeated), ball thrust bearings
- 1, first speed pinion
- 1¹, first speed gear wheel
- 2, 2, second speed pinion
- 2¹, 2¹, second speed gear wheel
- 3, 3, third speed pinion
- 3¹, 3¹, third speed gear wheel
- 4, 4, fourth speed gear wheel
- 4¹, 4¹, fourth speed gear wheel

conduce to the sweet running of the engine, and the reduction of vibration will be fully admitted. Each cylinder with its water jacket is a separate casting, and has its own separate base chamber, which, by the way, are interchangeable, and are assembled by cone jointing diaphragms containing partition bearings for the crankshaft, as shown in the detail fig. 4. By this arrangement each base chamber retains its own oil, and no big end is deprived of lubrication when ascending or descending slopes. The camshafts are separate, but are coupled together by a square coupling. The circulating pump, which is of the rotary arm type, has its arm mounted directly on the end of the camshaft, and is thus worked without the intervention of gear.

While the exhaust valves are lifted in the ordinary way, the induction valves are opened in a manner not previously shown on any automobile engine that we can recall. The arrangement will best be comprehended by reference to fig. 5, which is from a photograph of a complete engine. The four lever tappets seen across the top of the valve chambers have their fulcrums in the eyes formed in the rods seen on the left of the cylinders. The induction valve spindles project upwards through glands in the tops of the valve chambers, and with the ends of these the lower extremities of the set screws set in the bosses formed in the centre of the tappet

valve, for when the cam on the camshaft with which each is in relation, lifts the rod to the full throw of the cam, the set screw in the centre of the tappet lever is raised from contact with the upper end of the valve spindle, and the valve closes under the stress of its own spring. It can be perceived that the cam rod lifts the tappet lever against the tension of the conical spring seen hooked on to its right hand end, so that when the cam rod falls again, it is the compression of the spiral spring that really opens the induction valve against the pressure of the spring set around the valve spindle in the usual

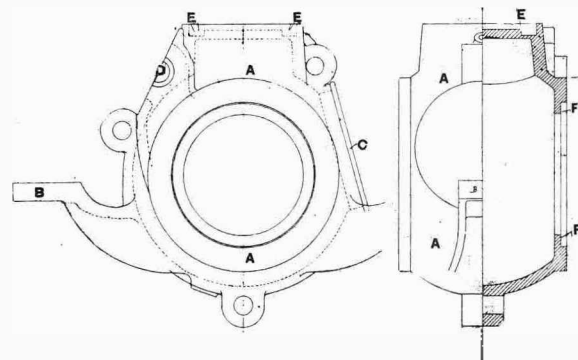


Fig. 4.—One of the crank chambers.
 A, crank chamber
 B, arm for attaching the engine to the frame
 C, inspection lid
 E, E, groove to take the cylinders
 FF, joint between crank chambers

way. The spiral springs can be adjusted to an absolute nicety by right and left-handed couplings on the light rods seen anchoring them to the top of

pipes lead the exhaust to the receiver G, figs. 1 and 2, from which the products of combustion pass to the silencer H¹H², in the same figures.

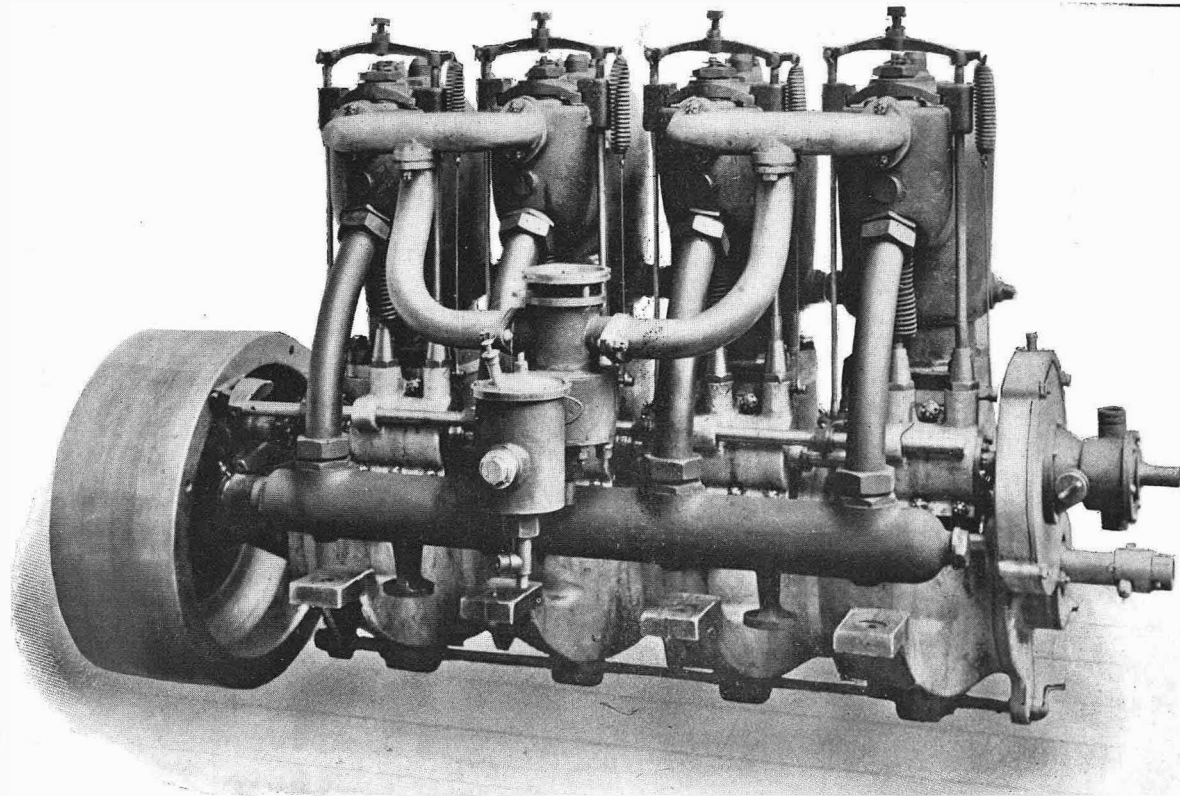


Fig. 5.—The 20 h.p. Weller engine. The action of the valve mechanism will be seen in this illustration.

the base chambers. Both the induction and exhaust valves are instantly accessible by slackening off the nuts seen securing the dogs over the valve chambers below the tappet levers. Separate exhaust

(To be continued.)

Two sparking plugs are provided to each cylinder, one for high tension spark provided by the usual electrical installation, and the other for high tension spark from a magneto.

A SHORT STROKE ENGINE.

The Standard Motor Co. are a new firm to embark on the manufacture of motor cars, and have been working for some months on the design of their vehicles. They are now installing themselves in a factory in Much Park Street, Coventry, a modern building well adapted for the purpose, and with plenty of room for extension. Their first pattern will be driven by a single cylinder engine; but, unlike many of the single cylinder cars, cheapness will not be the first aim, the endeavour being to construct the simplest possible engine and gear in the best possible manner. The engine has a five inch bore and three inch stroke, so that it is much lower than usual. It is governed on the inlet. Special attention is being paid to balancing, so that it will be as smooth in running as possible. The inlet valve is mechanically operated, and very large wearing surfaces are provided throughout the engine. The change speed gear is of a simple type, but we are not at liberty to give details concerning it at the

moment. The car will be built in two main patterns—one with the engine beneath the bonnet in the accepted fashion, and seated for three people, and the other, while keeping the engine in front as usual, will have no bonnet, a slight raising of the footboard forward being sufficient to hold the engine, which, owing to its short stroke, takes up very little head room. Very great attention is being paid to the design of the body for this pattern, which, we are glad to note, will be low geared. It will not be intended for speed, but will be built entirely with a view to comfort. It will be seen that the two designs, while preserving practically identical engines and transmission, will permit of a light fast car on conventional lines, and a still larger and altogether more comfortable vehicle, which, despite its ample seating accommodation, will be by no means a heavy carriage.

We hope to say more about this very interesting design after trial in three or four weeks' time.

CONTINENTAL NOTES AND NEWS.

"The Spanish Interdiction.

So much discussion has been raging around the collapse of the Paris-Madrid race that there would be little excuse for returning to the matter if it were not for the interest raised by the question as to whether Spain was wholly responsible for the decision forbidding a continuance of the race on Spanish territory. If it be not responsible, then the interdiction wears an entirely different aspect from that which it did at the time it was put into force. The uncompromising attitude of the Government in placing all the cars that crossed the frontier under the closest supervision and preventing them from running at more than twenty kilometres an hour, with the result that those few automobilists who attempted to enter Spain found that they had no alternative but to turn back, looked at first as if a new order of things were being instituted which would have a very serious influence upon the future of automobilism in the Peninsula. A panic legislation is always bad, because it is invariably unfair and oppressive; but in the case of Spain there was nothing approaching a panic, and the measures were taken simply because Spain was coerced into doing so. There can be no doubt whatever upon this point. When the French Minister of the Interior prohibited the race from continuing, he thought that it would be undignified to have his action disregarded by a foreign country; wherefore, the Government of Spain was requested by the French representative in Madrid to stop the race on Spanish territory. This was done much against the will of the majority.



Mr. J. B. Warden on his 60 h.p. Mercedes. Mr. Warden was the second Englishman in the Paris-Madrid race to arrive at Bordeaux, and made the fourth fastest time in the heavy car class.

The King himself was anxious to see the racing machines arrive in Madrid, not simply out of curiosity, but on account of the friendly sentiments that could not fail to be awakened by the reception which the Spanish people were prepared to give the French visitors; and the capital had gone to such enormous expense for the reception of the automo-

bilists that the stopping of the race would entail an incalculable loss upon all classes. Spain, therefore, had to give way under pressure from the French Government. Naturally, this measure was officially approved of through the press, because it could not be otherwise; but at the same time it was well understood in Spain that, after the experience between Paris and Bordeaux, the racing automobilists would show much more caution over the

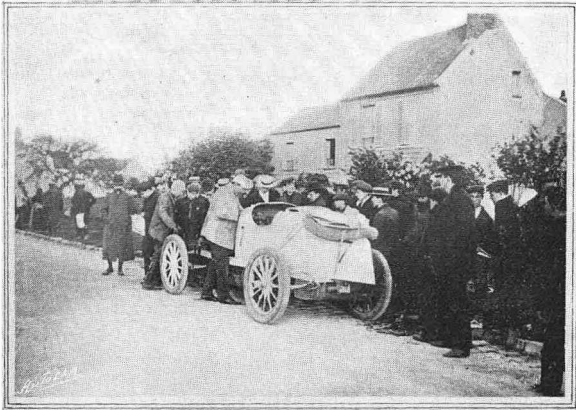


Gabriel, who made fastest time in full flight on his Mors.

Spanish roads, which they knew were not favourable to high speeds; and, in fact, no objection would have been raised among competitors against travelling to Madrid as tourists, if the French Government had not effectually put a stop to such a project by ordering that the cars should not leave the "parc" at Bordeaux by their own motive power. Whether the competitors had driven their cars in Spain at touring or racing speeds, the chances of accidents would no doubt have been greatly reduced. The organisation appears to have been nearly perfect, for the whole line was guarded by soldiers and gendarmes, who on Monday of last week were still camping along the course, and the mayors of the different towns had carried precaution to the extent of ordering the children to be locked up in the schoolrooms during the progress of the race. If accidents took place, it could only have been to the drivers themselves; and, knowing that the roads were not good, they would certainly not have attempted to drive at the speeds attained over the Paris-Bordeaux course. We have thought it necessary to deal with this point as a matter of historical interest, because it is only right that Spain should be given the credit for maintaining a dignified attitude during the whole of these regrettable proceedings; and for this reason we do not think that the failure of the race will have any serious effect upon the future of automobilism in the Peninsula, except, it may be, in delaying the great movement in favour of the new vehicles which would certainly have followed upon the arrival of the racing cars in Madrid.

The Situation in France.

The first impression that struck people when they came to reflect upon the incidents of the big race was that things looked very black indeed for automobilism in France. There is always a certain number of people both in and out of Parliament who



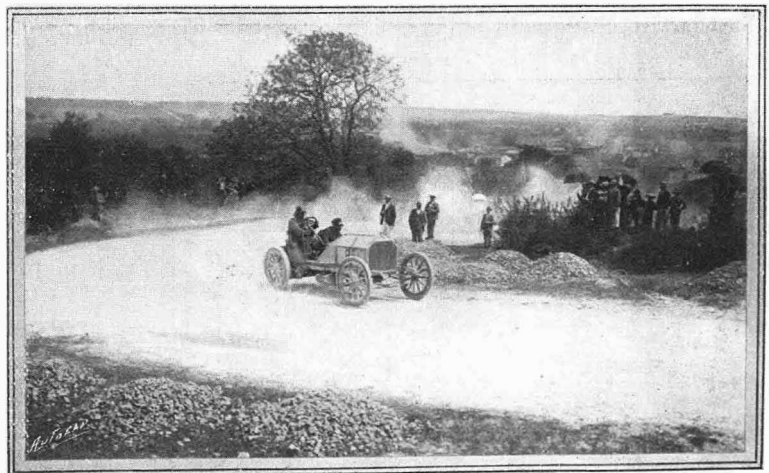
Paris-Madrid. The first of the favourites to fail. Fournier stopped by ignition troubles near Rambouillet.

are ready to seize upon any pretext for inveighing against the dangers of the autocar, and forcing the Government into putting further burdens upon owners, apparently with the idea that, by piling up the load of trouble, the average-powered automobile will have little margin left for speed. If the solitary fatal accident in the Paris-Berlin race had such an evil effect upon autocar legislation, what could be expected from the disastrous failure of the contest from Paris to Madrid? The outlook was certainly not reassuring. The members representing the automobile industry hastened back to Paris to fight against the expected attack in Parliament; but to the surprise of everyone, the feeling was so far from being antagonistic that there was a distinct current of sympathy, not only for the victims, but also for the industry itself, which it was felt could in no way be held responsible for the Paris-Madrid disaster. Times have certainly changed during the past two years, and public opinion has changed with them. This was evident from the tone of the Prime Minister's speech in reply to a reproof for having sanctioned the race. He told the Chamber that he had made a mistake in authorising the contest, but assured them that it would not be repeated. When he gave permission he had no idea that the cars would attain the speeds they did in the Paris-Madrid race. He urged the members to make a clear distinction between the huge racing "monsters" and the touring car; and, while he was determined to give no more opportunities for the big machines to be driven at full speed on the public highways, it was very desirable that nothing should be done to interfere with the development of the automobile industry. This is a matter upon which all parties are now agreed. The automobile industry has

been growing to such an extent that no politician and no newspaper writer now dare to say a word against it. It gives employment to something like 100,000 hands, and brings millions sterling into the country. It is one of the most promising sources of national prosperity, and all classes, therefore, are of the opinion that nothing should be done which may help to hinder its extension. It is for this reason that the voice of the detractor has been silenced, even at a time when he would seem to have the best chance of getting a hearing, and that events which a couple of years ago would almost have ruined automobilism have merely served to show the public that the building of purely speed machines can no longer serve a useful purpose in developing the practical carriage.

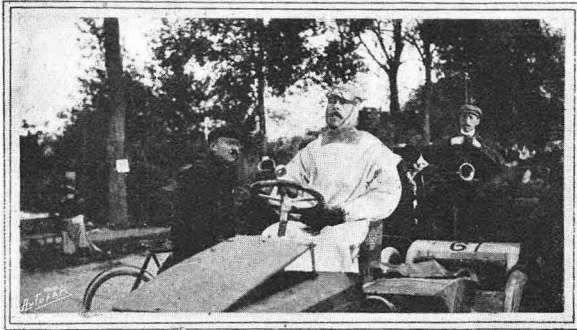
Construction of Motor Tracks.

Those people who have been insisting that racing is no longer possible on account of the dangerously high speeds attained by cars, which tend to separate more and more from the type of touring vehicle, are under the impression that, as these high speeds can be of no more service to manufacturers, there is no necessity for holding speed tests of any kind. This view of the case, of course, is entirely wrong, for the most important factor to be tested in a car is its resistance, and this can only be done satisfactorily by running it at a greater speed than is done in ordinary use. It is not indispensable that this speed should be dangerously high, since for all practical purposes the same result would be obtained by limiting the power of the engine, and testing the various constructional details with motors of the same cylinder capacity. The partial failure of the big engines in the race shows that there is nothing to be gained by simply increasing powers; and as the limit has obviously now been reached, if not exceeded, makers have no alternative but to augment the efficiency of their engines and gears. It is doubtful whether they will be permitted to do this by speed tests on the public highways. The question, therefore, is once more being revived of creating motor tracks, which, it will be remembered, attracted a great deal of attention a year ago, when



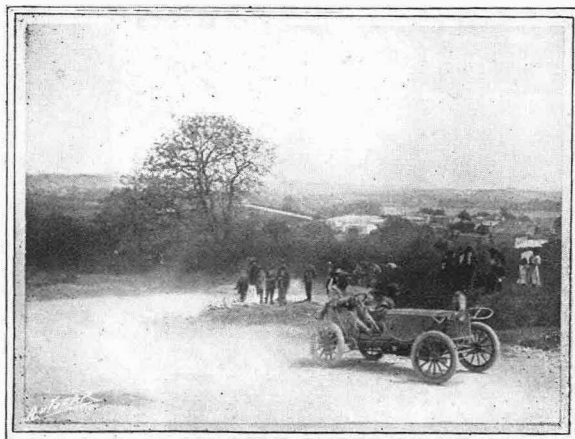
Jenatzy negotiating a sharp turn. This gives some idea of the dust, despite the fact that the car had been slowed considerably for the bend. Although only dimly discernible in the engraving, we may say that the original photograph shows the dust cloud hanging over the road, which bears away to the left, for over a mile.

there seemed to be every prospect of the historical Chambord estate being turned into a "motodrome." The idea, however, was abandoned as soon as it was found that the Government was looking more leniently upon automobile racing; but after the recent incidents, it has become evident that the automobile track is indispensable, though, of course, it



Mr. Loraine Barrow. A snap shot before the start.

can never replace the road as a satisfactory means of testing cars. It is evident that there is no want of sites for the creation of such a track. About a dozen suggestions have been made, one of them by the A.C. Béarnais, which proposes to lay down a vast track on the "landes," or gorse-covered plains in the south-west, where it would be within a convenient distance of Pau. The only expense lies in clearing the ground of the brushwood, and the A.C. Béarnais is willing to contribute one-half the amount if the A.C.F. or French automobilists will subscribe the remainder. Another suggestion is a course around the forest of Fontainebleau, where it would have a length of close upon a hundred miles. The track would be boarded or hedged in, and would be carried over the highways by bridges. No track can be entertained unless it has a length of at least fifty miles, and the longer it is the better; while it is also desirable that it should possess all the gradients, varieties of surface, and other features of the ordinary road. The A.C.F. is seriously considering some of these proposals, and the one which is just now receiving most attention is the construc-

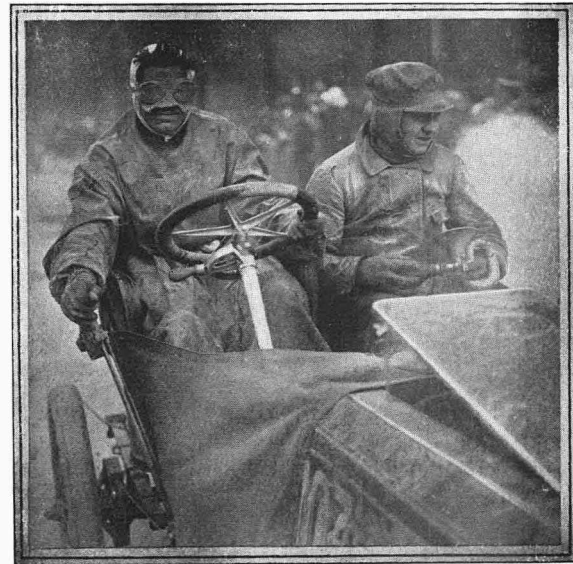


One of the eight-cylinder 35 h.p. Ader cars. These machines weighed just inside the 650 kilog (12 cwt. 5 qrs. 5 lbs.) limit.

tion of a "motodrome" to the south-west of Paris on a site which is at present kept secret. It is probable that if the first automobile track is a success others will be established in different parts of the country, for it is evident that the provincial makers and automobilists will not content themselves with coming to Paris to race their cars.

The Racing Programme.

It is considered very doubtful whether permission will be obtained for running off the Circuit de l'Argonne next month, or, for the matter of that, whether any of the races on the programme will be sanctioned. This doubt is strengthened by the action of the Government in withdrawing permission to hold the kilometre trial at Pau. The Association Générale Automobile, who are organising the Circuit de l'Argonne, will probably wait some time before approaching the Minister in the hope that the next few weeks may bring about a change in the situation; and if prospects are not then hopeful, it is



Paris-Madrid. Edmond on his 40 h.p. Darracq. This gives a fair idea of the appearance of the racers as they arrived at Bordeaux.

possible that the date of the race will be postponed. This is what is to be done in the case of the Circuit des Ardennes, which it is feared is likely to be affected by the antagonism against racing. The date originally fixed was June 20th, but it is now found desirable to hold it later; and meanwhile the A.C. of Belgium is modifying the regulations with a view of preventing any possibility of accident. In the first place, the number of vehicles starting will be limited to forty, and those cars that show a decided inferiority in speed, and necessitate the frequent passing of others, will be required to leave the track. The whole of the circular route will be closed in with ropes. The start and finish will take place as far as possible away from towns and villages, so as to avoid any great crowds of spectators. It is hoped that with these precautions the Belgian Government will give its sanction for the holding of the race, though this seems doubtful at the moment.

Marcel Renault.

The most pathetic manifestation which has marked the history of automobilism was the funeral last week of M. Marcel Renault, who was followed to his last resting-place by many hundreds of automobilists and others. No one was held in greater esteem than he who was popularly known as Marcel. Alike as an automobile engineer and as a sportsman, he was beloved by all, because he was so earnest and conscientious, and withal so thoroughly modest. If he and his brother Louis have acquired a leading position in the autocar industry, it was through sheer merit and hard work, and there are few examples of such a big business being built up from small beginnings in so short a time. Seven years ago the two brothers possessed a small repair shop at Billancourt for a steam yacht which they owned, and in their spare time they built a quadricycle with a new form of change-speed gear. This was followed up with a voiturette to which they adapted the change-speed gear and the cardan propeller-shaft, which latter has since come into almost universal use on light vehicles. The brothers Renault got orders from their friends for several of these voiturettes, and this suggested to them the idea of founding the Billancourt works, which were established in 1898. The following year the Renault cars astonished automobilists by their performances in the different races, when they were always driven by Marcel and Louis. The first great victory was in 1900, when Louis won in the voiturette class in the race from Paris to Toulouse and back. He also won in his category in Paris-Berlin, and then Marcel secured a sensational victory in the race to Vienna. Since then Marcel had not driven a racing machine, and it is said that he started in the Paris-Madrid race with a good deal of misgiving; in fact, some time ago, when his men came out on strike, he said he was glad they were giving him an excuse for not getting his cars ready for this event. His presentiment was justified, unfortunately, and his death deprived the automobile industry of one possessing sterling merit. He was only thirty-one years of age.

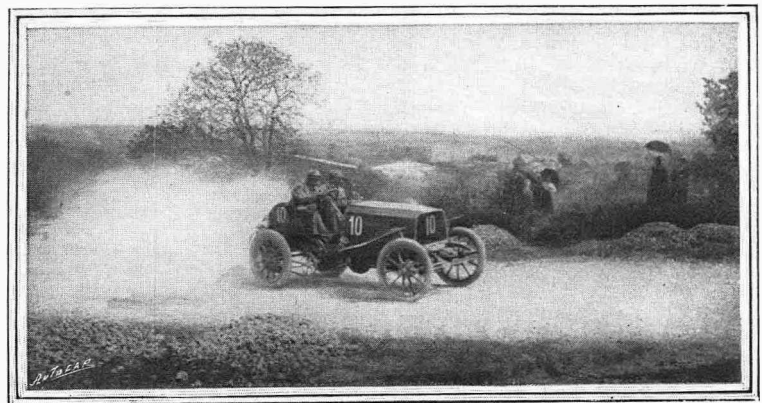
An Autocar Exhibition.

A bill has been introduced into the Chamber of Deputies for the organisation of a great international exhibition of automobiles and everything relating to these vehicles and to sports generally. The author of the bill points out that universal exhibitions have now reached such a point that they cannot have satisfactory results unless split up into different sections, and, therefore, it is proposed that the next international exhibition, to be held in Paris in 1905, will be devoted exclusively to automobiles and sports.

Austrian Items.

A series of experiments as to the relative value of balloons and motor cars in warfare was recently carried out under the auspices of the Austrian Motor Cycle Club. Vienna was for the occasion con-

sidered a beleaguered city, and the outskirts in all directions were occupied by motor cyclists. At 8 a.m. a balloon was sent up from the interior of the city. In this balloon were representatives of the aeronautical division of the army, whose orders were to descend within a radius of 150 kiloms. of the city. If they were able to do this safely and within a quarter of an hour of the descent no cyclist had reached the balloon, it was considered that they had successfully escaped and put themselves in communication with a relieving force. The Archduke Leopold Salvator, a well-known aeronaut and motorist, instituted these experiments, which he followed with the liveliest interest. During the tests he accompanied Dr. Stern in his new 60 h.p. car, which was the only machine to approach the balloon, though even then not within the time limit. A descent was successfully made on the left bank of the Danube, near Raab. As no cyclist approached within the time limit, the aeronauts packed



Teste on a 70 h.p. Panhard at Petignac.

up their balloon; and crossing the Danube, soon met the Archduke.

This is the second time that the balloon has baffled the motors. On the first occasion the balloon "Meteor," with Archduke Leopold on board, easily escaped from its pursuers.

The new military motor waggons built by the Daimler Motor Company in Wiener, Neustadt, have given the greatest satisfaction to the authorities. One of the waggons heavily laden accomplished the journey from Vienna to Buda Pest in three days, running eight hours a day. It is worthy of note that at the present time thirty officers of the Austro-Hungarian Army are going through a mechanical course in the workshops of the Daimler Company. Besides these heavy waggons, contracts have been placed by the military authorities for thirty motor traction engines and waggons. The motors will be 30 h.p., and will each draw two waggons, which are so constructed that they can also be drawn by horses.

A regular service of automobiles will shortly be opened between Memel and Libau in Russia. Despite the bad state of the roads the experiments made over the route have been successful. The cars will have twelve seats.

Correspondence.

The Editor is not responsible for the opinions of his correspondents.

A NATIONAL AUTOMOBILE UNION.

[2987.]—It is in every way desirable that the automobile clubs so rapidly increasing in the country should in some way be banded together for at least defensive alliance, if not for offensive alliance also. I believe it was I who first suggested to the A.C.G.B. and I. the desirability of the various clubs being affiliated to that body, so that they could work with it and assist it in the various campaigns taken up for the benefit of the movement, and the scheme was outlined in *The Autocar*. To an extent that idea was followed, but, in my opinion, one mistake was that the A.C.G.B. and I. required an affiliation fee of ten and six per member, for that is an average of the half of the subscription of each member of the various affiliated clubs. To pay £50 for every 100 members is a heavy item, and so serious a drain on the funds of the clubs that it is sometimes impossible to affiliate. As it is, at the moment, all the provincial clubs, except three, which have very special reasons for affiliation, have left the Automobile Club; and, with these three exceptions, each of the provincial clubs stands alone and without any direct connection with the Automobile Club or the other provincial clubs. This means that unless something is done at once, the various clubs will each go their own ways, and, instead of working in concert, we shall have isolated campaigns, no uniformity, and anything but the union that is strength.

I have offered to present to my club—the Lincolnshire A.C.—therefore, a scheme for the banding together of the whole of the motor clubs in the country, and have asked them to take the necessary steps for starting such a union, or whatever it is to be called, or federating all the clubs, and as Lincoln is so very central, I purpose asking my club to invite, say, the chairman and the honorary secretary of each club to meet at Lincoln on a convenient date for the purpose of considering and, I hope, forming such a union. In doing so, however, I wish it to be understood that there is no wish to in any way supersede or rival the parent body—indeed, on the other hand, I hope the new union will work hand in hand with the A.C.G.B. and I., and even be an offshoot of the parent body, with the offices at 119, Piccadilly. There is no antagonism whatever against the big club, but it is apparent that the Automobile Club cannot very well take the provincial clubs as part and parcel of it, and that for the good of all it is best that the power to be obtained from the banding together of the club shall not be lost.

In order that there may be something on which discussion may be based, and which the clubs may consider, I present the following rough scheme, and hope it will be generally pulled about, and something acceptable to all be got out of it. I suggest that all the clubs should join together into what might be called the National Automobile or Autocar Union. That the basis of representation should be a delegate for, say, each fifty members. This would give an average of about two to a club, and they should be the representatives of their club district, which should be the area of the local centre of the N.A.U. As automobilism develops and extends and clubs multiply, the centres would still remain, but the clubs would be each attached to its own centre. There should be a fee of about five shillings per member, with a minimum, which should be the revenue for the N.A.U., and which should provide the necessary funds for the work to be taken by the new body, and out of which it might be arranged that the railway fares of the delegates, or part of them, should be paid. The "objects" of the N.A.U. should receive careful consideration, and I need not outline them here. They are fairly obvious. The delegates or council will meet at least quarterly and once in London; then at the headquarters of some club or, rather, centre, and next in town again, and so on. In this way there would be a visit to all parts of the country, and the interest would be maintained, and each district would be stimulated to action. A general committee is also a necessity, and that should also have its meetings perambulatory. In this way every club or centre would have a say and be able to propose certain work, and could make itself felt, and do far more good than if, as now, isolated. For instance, how much more beneficial would the work of any club be

every club in the country was working with it under a federation of clubs? As for the good to be derived, that is so obvious that I need not discuss it.

This is admittedly a rough sketch and only a mere outline, and I am well aware that it can be improved and amplified. I do feel that such a union is possible, desirable, and necessary, however, and if I can do anything to assist in its formation I shall be pleased. More I have no time for. A really good secretary is necessary, and it might be, as there will be a lot of hard work and organisation of a high order, that it should be a paid post, or that some gentleman with ample time and the necessary inclination would take the work up, and receive a decent honorarium to defray out-of-pocket expenses. A good chairman could be found, and as the centres would each send its own representative, there ought to be, out of them all, some two gentlemen to take the matter up. I believe in the secretary and chairman of each centre being the delegates, for they know—or ought to know—more of the work of their districts than any other members of their club or centre, and they would attend the meetings of the N.A.U. with the decisions or instructions of their constituents. It should be arranged that, say, the secretary and the chairman of the A.C.G.B. and I. should be *ex officio* members of the council and general committee; and, *vice versa*, the secretary and chairman of the N.A.U. should be *ex officio* on the committee of the A.C.G.B. and I. In this way the two bodies could work together, and might call upon each other to assist in certain work, even to providing the smews of war.

G. J. WILKINSON.

RACING.

[2988.]—Do you think the time has now come when an international committee should meet and settle rules that would make racing of much greater interest than it is at present, make it open to many more than it is at present, and at the same time improve the efficiency of motor cars in every direction?

Broadly speaking, my suggestion is that the gross cubic capacity of the cylinders should be settled with a maximum limit, and that the weight of the carriages should not be less than a certain amount. The effect of this would be that makers would build their carriages up to the biggest cylinder capacity, and by various arrangements of stroke and bore a highly efficient engine would probably be evolved.

By setting out that a carriage should not weigh less than a certain amount, the weights could not be cut down to a dangerous extent, and then the only way one could improve a carriage would be by friction reducing devices, more efficient gears, more efficient tyres, and improvements in a hundred and one small points, which all go to make up a perfect motor carriage.

If everyone was mounted on a car which did a maximum speed of thirty-five or forty miles an hour, it would be just as interesting—in fact, racing would be more interesting, as the personal element would come in to a large extent, and the condition in which the car was kept.

I think if the whole matter was thoroughly well ventilated by an international committee, and if this took place immediately before or after the Gordon-Bennett race, when representatives of all countries would be present, a highly satisfactory result could be achieved and an interesting sport preserved.

It is, of course, necessary to settle this very quickly, so that the models that would be suitable to come under new racing rules can be put in hand at once.

S. F. EDGE.

THE KNEEL OF ROAD RACING.

[2989.]—I quite agree with Mr. Moffat Ford on the question of racing speeds, and consider that the makers are doing their utmost to get restrictive laws passed. To my mind it seems a waste of time and material to build cars of 100 h.p. just to carry two people at a speed that can never be used on British roads. The way some cars are driven along the streets is a public danger as well as a disgrace to both makers and owners, and every racing car built adds to the present bad odour into which motoring has fallen. I think that while the proposal to allow unlimited speed will be approved by motorists who like to start late and arrive early, it will only rouse the public more against us, as there will always be "motor microbes"

that will make things hum whenever they go out. My advice is for the speed of all cars to be fixed mechanically, irrespective of size and power, at twenty or twenty-five miles. This will be nothing to the restrictions that will be imposed if we have a few more disasters in England. If makers were to build cars that would go at ten times the speed there would be a supply of lunatics ready to risk being smashed up for empty glory. I consider that racing men are the wrong side of Colney Hatch. I have never been able to see any pleasure in rushing along amid a cloud of dust and in a costume that would turn Dick Turpin green with envy. W. T. W.

A FREE ROAD FROM SOUTHAMPTON TO SOUTHSEA.

[2990.]—I have seen a paragraph in *The Autocar* of May 30th under the "Flashes" column that the Lanchester Engine Co. informed you that for the journey Southampton to Southsea and back tolls to the extent of 3s. 6d. on motor vehicles are charged.

I am a frequent rider, and know various routes between these two places. The route in question is no doubt the one *via* Northam and Bursledon Bridges, for crossing which excessive tolls are charged, and is eighteen and a half miles *via* Gosport and twenty-one miles *via* Cosham.

There is another route quite free from tolls, twenty-one and a half miles *via* Bitterne Bridge, Bot'ev, Wickham, and Cosham, which route all motorists should use, and which is a most suitable one for motor cars.

JEFFERY M. PHILPOT.

CARBURETTERS.

[2991.]—I am glad to know that my letter has been of some interest to the readers of *The Autocar*. I am sorry I cannot just yet give a detailed description of the carburetter on account of patents pending. I may mention, however, that the design of the carburetter is in many respects contrary to the conceptions and opinions of the majority of motor engineers. The float chamber is rectangular instead of round. It is usual to have the spray nozzle very fine. In this instance the bore of the nozzle is 1-8in.

This carburetter had the nozzle at first $\frac{1}{16}$ in., but my son enlarged it to 1-8in. without my knowledge and I noticed no difference in the running of the engine. There is no proper nozzle. The hole corresponding to the nozzle is a plain opening, which is rather recessed. The spray chamber is not well defined, but is rather a continuation of the air inlet and mixture pipes. There is only one air inlet pipe, and it is fixed. The nozzle opening is adjusted by means a set screw (not new), but this screw can be given several turns without affecting appreciably the running of the engine. There is no spring or moving parts about the carburetter excepting the bubbling of the needle and float.

The petrol we have been using is about .700, and we have experienced no difficulty in starting.

The motor has been running in very cold weather and *av.*, when it is fairly warm, without altering any adjustment.

I attach some importance to a good spray carburetter, but I attach far greater importance to having the petrol perfectly clean, and, perhaps, I cannot do better (if the editor can find room in another issue) than give my son's experience and practice in relation to dirty petrol.

J. B. DUNLOP.

We shall be pleased to publish the information off red, as it is likely to be of practical use to our readers.—Ed.]

THANKS FROM A DISABLED MOTORIST.

[2992.]—A few days ago a motor car which I will not describe arrived at my house in a broken-down condition, having a bent steering lever and two petrol pipe joints broken.

It is evident that this generous motorist heard that I was possessed of a very complete repairing shop, with three mechanics always in attendance.

My men thoroughly sweated the two petrol pipe joints, which, by the way, had never been properly made in the first instance. Also straightened the steering lever in our forge, in addition to providing a spring, spare washers, and petrol

I may mention that all this work was done out of working hours.

The gratuity that my men received was "Thank you!"

Now from this I do not infer that I expected my men to be bribed heavily or that the work should have been paid for on trade scale, but I ask you, Mr. Editor, is not a small gratuity to the men expected, especially as the work was carried out after working hours so far as the shop is concerned.

I should not have found this out only that my leading hand gave notice the following day, stating he did not mind working for me any hour, but objected to repairing strange cars without even so much as a drink.

I of course paid the men myself. This kind of meanness is not conducive to encourage the private mechanic to help motorists in trouble. I should like to have your views on the matter. Wherever I go in a car I pay my way. There are evidently some persons who will take all they can get.

AN OWNER OF FIVE MOTOR CARS.

IDENTIFICATION OF CARS.

[2993.]—I cannot help noticing the fact that when a horse drawn vehicle is driven furiously (as is the case with butchers' carts) nobody thinks of complaining, not even the poor old ladies so subject to fits. Though I can sympathise with your correspondent "L" in letter 2951. I cannot help thinking that he must have exaggerated the matter a little. I noticed when in Worthing that all the motorists I encountered were quite prudent (with, perhaps, one exception out of 150), and I feel pretty sure that Worthing sees as many motors as the highly-esteemed town of X mentioned by your correspondent. Since the average motor car can be heard a good way off, the old ladies must be aware of its approach, and should look about them

before crossing roads. I do not wish to encourage fast driving, but—here let me propose a remedy. A notable motor scorcher, for example, is apprehended for the third time driving furiously through a town. Compel him to carry a large placard on his car with a number to it, say, for two or three months. Size of placard, at least 1ft. square. A cross (X) or O marked on the placard would perhaps be better than a number, easily misread. For instance, here are a variety of signs easily distinguished.

In any case signs like these could be better applied to cars than numbers, and would look better.

On the first and second offence fines only are levied; on the third offence, the usual fine and compulsory number on the car. This only to apply when the car in question was endangering the life and limb of people in a town. In the open country speed is not objectionable.

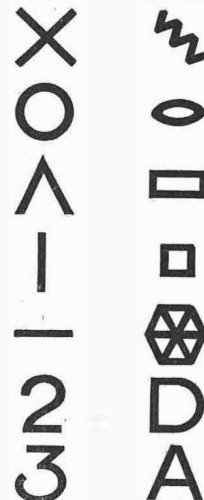
E. P. AMPHLETT.

PRACTICAL SUGGESTIONS TO STEAM VAN USERS.

[2994.]—As a practical man, will you permit me to make a few suggestions to the steam lorry which may benefit both employer and employees.

It is a great advantage to have an overhauling pit and a good shelter, as the exposure to the cold does the boiler a great deal of harm. In some makes of lorries the top half of the boiler is protected, and the bottom half left bare. The resulting consequences are that the boiler leaks, and the driver gets the credit of bad management, and in most cases he is not allowed to remedy it, even if he could. If the boiler was protected all over, it would last twice as long. Boilers should be fitted with expansion brackets.

Water is a very important thing to look after, and the driver should endeavour to use as much rain or main water as possible, and do without hard water if he can, or he will soon have a one-sixteenth of an inch of scale. Another great advantage to the driver is to have some dry



sand boxes, worked by a valve in the box, and a lever arrangement which will fully compensate him for the trouble taken in sifting and drying the sand.

Given a fair chance, the majority of locomotive men make excellent drivers for steam lorries, as most locomotive men have worked for an economy bonus, besides their standing wages. Employers should engage them in preference to other engineers or novices, as it is very seldom you see an old locomotive man working his lorry home empty with full travel of the valve. It is not an uncommon thing to see drivers working the lorry home under full travel of the valve, which is a waste of fuel and steam, besides giving the makers of the lorry a bad reputation as consumers of fuel. Each time the driver puts the motor away, he should, from right-hand leading end, go round, looking at nuts and bolts before leaving it for the night. This will satisfy him for his next trip. Putting away without looking round often causes a breakdown, and a bad name to maker and the driver. With regard to repairs, it is well to give them to practical men, as doing otherwise causes a loss of time and also dissatisfaction with the work done. I should think that a driver who studies the above points ought to be paid a wage of £2 a week and overtime, with two suits of overalls a year. A driver should have a full set of tools, a four-ton hydraulic jack, two pieces of timber 2ft. long, 2½in. to 3in. thick, and 9in., in case of sinking in bad roads.

ECONOMY.

THE SIZE OF ROAD WHEELS.

[2995.]—In *The Autocar* of the 16th ult., dealing with a query on the size of road wheels, you say that the larger the diameter of the tyre the more costly it is to purchase. This is—to a great extent—compensated for by the increased life of the tyre. Tyres are worn by friction with the road, and it will be admitted that the higher the wheel the less often will a given point of the tyre come in contact with the road. There is undoubtedly a tendency to fit larger wheels to touring cars, especially when cars are designed with an eye to comfort rather than to speed. No doubt it will have been noticed that many of the latest Napiers (including that owned by the Prime Minister) are fitted with forty inch wheels instead of the usual thirty-six inch.

HORACE W. BARTLEET.

LEGISLATION.

[2996.]—I quite agree with your remarks with regard to the slower and smaller machines, and that it ought to be possible to obtain leave from the local authorities, or a license, not to carry a number in one's own town or district. For instance, I use a small car to run to business or the station, where I am personally known; the numbers would be of no use except for the amusement of the boys in the streets.

I was out motoring on Saturday with a friend when we ran over a hen. On offering to pay damages the owner said, Oh, no, he had plenty more, and added perhaps we would do better next time.

J. F. PEASE.

GOODYEAR TYRES.

[2997.]—I note the letter in your last issue over the signature of Mr. F. V. Wentworth, and my attention has also been called to the letter in the issue of May 23rd of Mr. E. H. Hepper. With your permission, I will reply to these together, the reason for not doing so before being that I have been away on a business journey, and have not seen my *Autocar*.

With regard to Mr. Wentworth's complaint, it is true that we had some tyres some time ago which were over-vulcanised, and which therefore wore badly. In every case which, so far, has come under my notice I have been able to satisfy customers by making replacements in the majority of cases free of charge.

Mr. Hepper appears to take a reasonable view, but seems to have misunderstood the position. If a tyre has once burst we cannot do anything to remedy that particular tyre, but the Goodyear Co. have most certainly now got over the bursting difficulty, and Goodyear tyres of the latest make do not burst.

Dealing with Mr. Wentworth's case, over-vulcanisation appears to have been the trouble, but with regard to the solid tyres, this is a most unusual difficulty, being the first complaint we have had with regard to this class of tyre in connection with pleasure vehicles.

If Mr. Wentworth had waited a few days until my return he would no doubt have found that the Goodyear Co. would be quite willing to meet him in a reasonable manner, provided he also took a reasonable attitude. Instead of that, he writes off to the papers with the obvious intention of doing us as much harm as possible. If he could find any maker of motor tyres who has not had trouble at some time or other, that course might possibly be justified to some extent, though even then one might be forgiven for holding one's own view as to whether it is quite "playing the game."

I am sorry to find from my experience in the tyre business that it is very usual for gentlemen (who would no doubt be quite sportsmanlike in other matters) to write off an angry letter to the unfortunate tyre firm immediately they have trouble: and, without waiting to see whether the tyre firm is prepared to meet them decently or not, to threaten all sorts of things. The most usual form is to threaten to "show us up" either in the motor papers or at the Automobile Club. I usually make some allowance for the annoyance caused by tyre troubles, but it is needless to state that such a line of argument very often makes one less disposed to treat the matter liberally than one would otherwise have been.

If it has not been possible to satisfy everybody; the failure must be laid personally at the door of

The GOODYEAR TYRE AND RUBBER CO., LTD.,

A. C. HILLS, managing director.

P.S.—We always take the word of gentlemen with regard to mileage. As this matter has been raised, however, I would like to point out that although Mr. Wentworth refers to only 750 miles, his tyres were sent out by us in June last.

MOTOR BURGLARIES.

[2998.] Allow us to warn everyone who has valuable cars under his charge that there is a regular epidemic of burglary raging in the West End of London. We have suffered three times, the last time somewhat seriously.

The articles chiefly stolen are platinum tubes, but on the last occasion a large sparking coil was removed from a Panhard car, and one of the two Dinin accumulators as well.

As the market for these articles is very limited, it should not be difficult to trace them, and in the common interest we would advise all proprietors of garages to make very careful inquiries when articles taken from cars are offered for sale. This is almost an everyday occurrence with us, but hitherto, much as we have suspected that the articles offered are the proceeds of robberies, we have unfortunately never yet been able to do anything in the interest of justice.

WASTNAGE AND CO., LTD.,

THOMAS GROVES, managing director.

SUMMARY OF OTHER CORRESPONDENCE.

THE PARIS-MADRID RACE.—The Maison Talbot Co. direct attention to the fact that the announcement that Mr. Jarrott arrived first in his class at Bordeaux on Continental tyres, while literally true, should not be misunderstood, as the fastest cars used Michelin tyres both in the heavy and light car classes. On the same subject, the British Automobile Commercial Syndicate draw attention to the advertised statement that Mr. Chas. Jarrott on his 45 h.p. racing De Dietrich car arrived first in Bordeaux in the heavy vehicle class. They consider this is an attempt to foster an impression that Mr. Jarrott did fastest time in his class, whereas, as a matter of fact, his time was the third fastest among the heavy cars, and the fourth in the race as a whole, as one of the light cars also did faster time. Although this matter, strictly speaking, is outside our province, we think it is one to which attention should be drawn, as it is unquestionably a mistake, not only morally, but from a business aspect, to make any assertion which, as a half truth, might be mistaken to present matters in a better light than facts actually warrant.

THE MIESSE STEAM CARS.—G. C. W., of Maritzburg, is anxious to have the experience of any of our readers—private owners who have used Miesse steam cars—as he thinks of buying a steam vehicle for use in Natal, burning paraffin fuel. It must be able to negotiate hills of bad surface, and one in eight grade, and would be fitted with solid rubber tyres. The machine is for pleasure use, and would have a tonneau body and canopy.

Flashes.

We understand that Mr. E. Shrapnell Smith has resigned his position as general manager and secretary of the Road Carrying Co., Liverpool.

Up to the time of his collision with the wall in the Paris-Madrid race, Lieut. Cumming's Wolseley car was making splendid time. He tells us he left Versailles at 3.56 a.m., and arrived at Chartres at 4.57 a.m. Out of this time has to be taken the fifteen minutes in control, so that the seventy-four kilometres were covered in forty-six minutes. There was also a stop at Ablis through misunderstanding the flag signals, therefore the average works out at about one hundred kilometres an hour. Only one kilometre was timed, and that came out at 110½. The collision with the wall was a regrettable affair in every respect, as Lieut. Cumming's car was in good form, and had been thoroughly tested.

In the garage which has been established at Cauldon Bridge, Stoke-on-Trent, Mr. W. A. Vincent is able to find accommodation for thirty cars, and as he has a staff of skilled mechanics and can supply petrol and motor accessories, his new depot will be appreciated by motorists journeying through the Potteries.

The versatile Emperor of Germany is said to be responsible for the plans of an autocar which he is having built for his own use. Several new and interesting features mark the vehicle, which will have accommodation for three Royal motorists and two attendants, an 8 h.p. engine being employed. Deutz is said to be the town honoured by His Majesty's order.

Judge Emden, whose County Court decisions have become almost canonical, was the unfortunate cause of a bad accident a few days ago, which may be mentioned simply to indicate a way to some of those motorists who are bringing a bad name upon the pastime. His Honour lives at Walmer, and while driving through Sandwich a pony took fright at the autocar, and threw out the occupant of the trap, Mrs. A. R. Kennedy. The lady was severely injured, and, indeed, after a lengthy unconsciousness, followed by several days' confinement to her room, she is only now recovering. However, the point is that Judge Emden—to whom not the slightest blame was attached by anyone—saw that the lady was taken safely home, and since has been most unremitting in his attentions and enquiries. The plain fact is that the driving of an automobile does not change a gentleman into the other thing, nor will the reverse be accomplished. Most owners would act with similar thoughtfulness, but a few ill-bred persons will do more harm than hundreds of considerate drivers can repair.

We have seen some tolerably savage attacks upon motors and motor users generally by correspondents to the daily press, but we have never come across one to equal that published in the *Yorkshire Post* of Wednesday last week, in which a person whose horse appears to have been frightened by a motor, states his firm conviction that, numbering or no numbering, if the speed limit is abolished, the horse-driver will take the law into his own hands and "will empty his revolver at the retreating motor car demon." We do not think suggestions of this sort should be published. We wonder what would be said if a correspondent were allowed to suggest in *The Autocar* that persons who persisted in driving uncontrollable horses upon the highway should be shot to prevent them from further imperilling other road users. Another person has written to *The Times* suggesting that small shot should be used, and that for the purpose the police should supply "motor cartridges."

The Clarkson steam vehicles, which have attracted so much attention since their first public appearance last autumn, have been selected for the new public service which is being started at Torquay. A long series of tests were made with one of the Clarkson buses on all the roads and hills in the Torquay district before the final selection was made.

The Marquis of Londonderry is having a 22 h.p. Daimler shooting brake built to his order similar to the car recently supplied to His

Majesty the King. Another recent buyer of Daimlers is the Earl of Morton.

The Continental Caoutchouc and Guttapercha Co. beg us to correct the misstatement they made in regard to their announcements about the Glasgow-London trial, as they gave by mistake the second to arrive in London as Mr. Prosser. This should have been Mr. Thomas Shaw.

In order to bring the picturesque health resort of Chaumont, in Switzerland, before the public, and to secure easy access, a line of automobiles is being organised between that place and Neunburg. The car has fourteen seats, and will run the distance in threequarters of an hour.

Users of M.M.C. cars need not be surprised if there should be a slight delay in the supply of any duplicate parts or spares which they may order, as the works are closed for a few days during stock-taking. Every effort is being made that no delay shall occur, but, of course, it is impossible in some instances to avoid a little under the circumstances.

"THE AUTOCAR" DIARY.

- June 6.—Scottish A.C.'s Joint Meet. Phillipshaugh, Selkirk.
- " 7.—Latest Date of Entry for Aix Automobile Races.
- " 13.—Cheltenham and Gloucestershire A.C. Week-end Drive to Stow-on-the-Wold and Malmesbury.
- " 13.—Scottish A.C. Western Section. Drive to Tarbet.
- " 13.—Manchester A.C. Drive to Nantwich.
- " 13.—A.C.G.B. & I. Gymkhana at Ranelagh Club.
- " 13.—Sheffield A.C. Drive to Wentworth Castle.
- " 15.—Entries close for Circuit de l'Argonne.
- " 15-20.—International Congress on Automobilmism at Paris.
- " 18.—German Agricultural Society Heavy Vehicle Trials (Hanover).
- " 18.—Mont-Ventoux Hill-climb & Water Consumption Trial.
- " 18-20.—A. C. de France. Three Days' Fête.
- " 18-28.—Frankfort Automobile Exhibition.
- " 20.—Manchester A.C. Hill-climbing Competition.
- " 20-21.—Circuit des Ardennes.
- " 25-July 2.—Aix les Bains Automobile Week.
- " 27.—Manchester A.C. Week-end drive to Llangollen.
- " 27.—Sheffield A.C. Drive to the Snake.
- July 2.—Gordon-Bennett Race.

The motor punt is one of the latest novelties, and is said to be quite an ideal craft, on which a good pace can be obtained.

* * *

The Continental Automobile Co., Ltd., of 20, Long Acre, W.C., inform us they are prepared to supply their Continental cars on the instalment system of gradual payments spread over twelve months.

* * *

The Technical Secretary of the Automobile Club informs us that, in the light of the conflicting statements with regard to the arrival at the Automobile Club of the motor bicycles in the Glasgow to London non-stop trial, the following are the facts of the case: "No. 6, a Wolseley car, was the second to arrive at the club, and the Brown Bros. bicycle arrived immediately in its train. The Quadrant cycle did not report itself to me at the club entrance; but if it is a fact that it arrived immediately in the train of Mr. Jarrott's car, there is then no doubt that it was the first to arrive. There cannot, however, have been more than a few seconds' interval between the two machines." It is a matter which is not of great importance, for, as the responsible official points out, there were only a few seconds between the two machines.

* * *

As an argument in favour of numbering, "Pro Bono Publico" sends us an account of the ungentlemanly behaviour of a motorist who called at a village inn, and, after being told he would have to wait for a meal and agreeing to do so for a quarter of an hour, jumped up at the expiration of ten minutes, and rushed off, declaring he would wait no longer, and refusing to pay for the meal that had been prepared.

* * *

Mr. J. E. Hutton, of 23, Regent Street, W., has issued a useful map of the Gordon-Bennett course.

* * *

A new design of artillery wheel for motor carriages has been patented by the Mulliner Motor Body Co., of Church Accrington. From the accompanying illustration it will be seen that the new wheel is really a double artillery one. The hub, which is of the usual type, is provided with two flanges from which the spokes converge to one felloe. It is claimed that the wheel will withstand all side strains by slip or twist when negotiating corners.

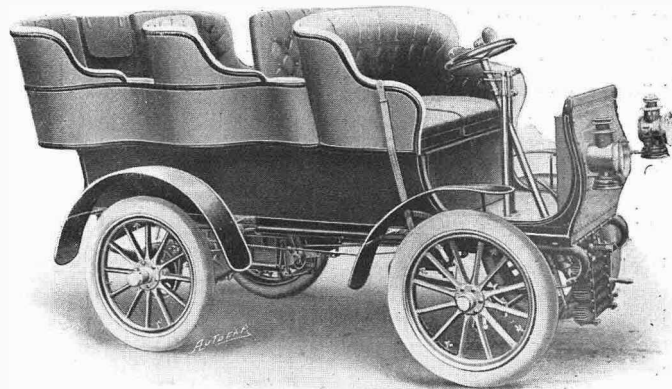


Of course, the great point in the wheel is its strength, and owing to its construction it can be made quite as light, if not lighter, than the ordinary wheel, while the makers claim that it is three times as strong. Our illustration is made from a photograph of the first rough model of the wheel.

Mental arithmetic. A chauffeur travelling through Switzerland has merely to study nineteen separate sets of cantonal regulations to avoid being "held up."

* * *

The Bradford Motor Car Co., Belle Vue, Bradford, now have garage accommodation for a hundred cars, and are fully equipped to undertake repairs. At Harrogate, Messrs. Chippendale and Co. have taken the Grand Hotel Garage; and Mr. Sydney A. Jones, 6, High Street, Littlehampton, has just acquired extensive premises which he is adapting to the requirements of motorists generally.



An original design for a four-seated tonneau. This body is built upon a standard pattern 8 h.p. chassis, as used for the De Dion delivery van, and is a design of Mr. Walter Munn's. The frame, of course, is longer than that of the standard 8 h.p. car for pleasure purposes, the motor being underneath the driving seat, with the footboard and dash mostly built on the prolongation of the frame. The driving seat gives ample accommodation for two, and in the double tonneau there is plenty of room for four to be accommodated most comfortably, a 1 facing forward.

On April 4th we illustrated the Peters solid tyre. We now understand that the makers are guaranteeing this for 10,000 miles. This, so far as we recollect, is the first time a rubber tyre, either solid or pneumatic, has been guaranteed for any specified distance.

* * *

Recently, when referring to the work of the Scottish Automobile Club in approaching the railway companies of Scotland with a view to obtaining lower rates for the carriage of autocars, it was mentioned that a car could be taken from Leith to London for 14s. It seems from enquiries which have been made by a correspondent that this only applies to very small light cars indeed. For an ordinary size car we understand that the charge would be under £3.

* * *

Comparing modern travel with that of the middle of last century is always interesting. The father of an enthusiastic automobilist has sent us a description of his experiences between London and Madrid in the winter of 1850. The journey took him eight days, the railway running only as far as Orleans, the rest being covered by diligence—four horses in France and twelve mules in Spain. The roads in France were tolerably fair in those days, but very narrow in the towns and villages, the diligence being about the same height as the cottages, and as the places were entirely unlighted, it was a common occurrence for the diligence to scrape off the tiles from the projecting roofs in passing through the villages at night. The roads in Spain were even worse than they are to-day.

THE PARIS—MADRID RACE.

Mr. Chas. Jarrott Interviewed.

As is well known, Mr. Chas. Jarrott, last year's Circuit des Ardennes winner, was lucky enough to start No. 1 in the fateful event of last Sunday week, so that, opining he might have something of interest to say with regard to the mad scramble (which has set so many folks venting opinions upon a subject of which they know next to nothing), we sought him at his place in Great Marlborough Street, and found him there late on Monday evening, struggling with the arrears of work his absence in France had piled up for him. It was perhaps not quite an opportune moment to tackle so busy a man, but Mr. Jarrott cheerfully resigned himself for a chat.

We naturally congratulated him upon coming unscathed out of the struggle, and were pleased to find him nervously unwrung by the incidents he had experienced and witnessed. He was just as cool and calm as when, sitting behind his snorting 35 h.p. De Dietrich, we had shaken hands with him under the "Départ" banner at Versailles, and wished him good luck.

"Now, Mr. Jarrott," said we, "you told us at 3.30 a.m. on that fateful Sunday that you didn't expect to get through, yet you seem to have done pretty well, on the whole."

"Yes, I know I did," he returned, "and so I thought at the time, for, as I told you, I had not had my fourth speed in before I left in the race, and the car, as I drove it, was only delivered to me on the Saturday. Besides, I started without any knowledge of the road, at least to Chartres, and had only previously been over the course between Chartres and Ruffec."

"Well, you did very well for a stranger, Mr. Jarrott, but tell us, did you find the spectator nuisance quite as serious and as perilous as has been stated?"

Solid Walls of People.

"It *cannot* be understated," returned our subject, with considerable emphasis; "it was altogether too absurd. For miles from the start, I drove into a solid wall of people standing wedge-shaped across the road, and they only just cleared and gave way before me, very much in the way the City crowd gives way before the police heading a Lord Mayor's show. Even then they only separated sufficiently to clear my axle boxes, and then only at the last moment."

"That must have tried your nerves a bit?"

"It would if I had thought much about it, and I should have slackened frequently because of it, if I had not realised that I should do as much damage at forty miles per hour as at sixty, and so I let the car go. Indeed, the crowd was so bewildering that I nearly missed the road just after the start, and only just turned to the left in time."

"You had trouble with your engine, didn't you?"

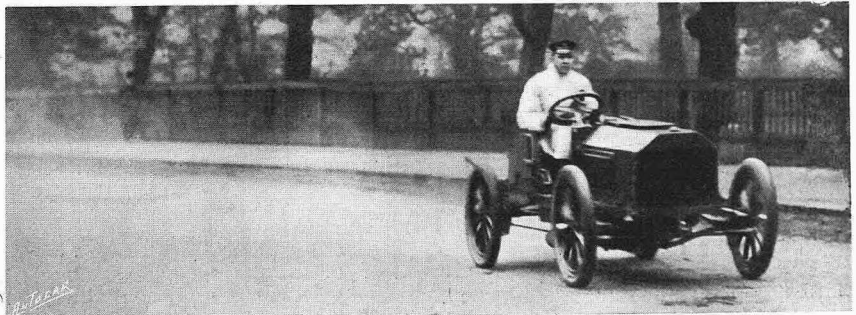
"Yes, my motor had never been run fast before, and I was obliged to keep my mechanic at the lubricating oil pump almost continuously. Indeed, so badly did I go at the beginning that René de Knyff came up to me before I had covered ten miles."

"When did you actually lose the lead?" we asked.

"After the first control, when Louis Renault and Knyff went ahead, and I was left third. Later, Knyff's coil went wrong, and so I was shortly second again."

"We suppose you were surprised, then, that you were not passed earlier by others?" we asked.

"Yes, I was very much surprised," was the reply. "Just before Chartres I saw No. 14—Werner on his Mercedes—come up, and, my petrol ceasing to feed



Mr. Jarrott taking a training spin on his Napier in the early morning. The car was travelling at high speed when the photograph was taken, but the roads were not-dry, and consequently very little dust was raised.

a little later, and having to get down to disconnect and clear the tube. I expected the cars to come by in dozens, and could not imagine why they didn't."

"Were you much troubled by dust?" was our next query.

"No," said Jarrott. "I got pretty clear of it, for at Tours I had only Werner and Louis Renault in front of me, and they were too far away to matter. There Stead on another De Dietrich came up, looking very glum and black, on account of his engine not performing as it should. I tried to cheer him up, and said, 'Buck up, old chap. We shall soon be dead,' quoting a frequent expression of his to me, and little dreaming that before long he would come very near meeting his end."

Callous Crowds.

"You passed Werner again?"

"Yes, about six or seven miles further on; his car was by the roadside, and I think the back axle had gone. This left me second again, with Louis Renault 35m. in front. From there I went well to Ruffec, having no bother except from the crowds of people in the villages, who this year crowded down into the roads instead of, as in former times, keeping well clear. How it was whole rows of them were not mown down, I cannot say. They were curiously unsympathetic towards the racing men, too, and seemed disappointed if you went through without an accident. For instance, at one point, I saw two clusters of people, and, going slow, as I thought someone might be hurt there. I found they

were standing by two bad *caniveaux*, awaiting the inevitable when cars took these humps at speed."

"But weren't such dangerous points flagged?" we asked.

"My dear sir," returned Jarrott, "if you had raced as long as I have, you would have learnt to expect nothing from flags. This was borne in upon me in the Paris-Vienna race. The flag-waggers get tired after a bit, and spread their flags for sitting upon a stone, to avoid peril from damp I suppose. No, I don't trust my life to the flaggists. But things will be better done in the Gordon-Bennett."

"You said you went well to Ruffec, Mr. Jarrott. What after that?"

"Oh, owing to little magneto ignition troubles, I had only three cylinders going, and had to stop to fit a new spring, and, later, to refix the plate. I had six stops altogether before I ran into Angoulême, and when I left there I was only 35m. behind Louis Renault, so that on actual running I had gained on him. After that my dotty cylinder chipped in, and the car went like a dream, averaging 97 kilometres, which, I think, will be found about equal to Gabriel's. I picked up 20m. on Renault in the last 110 kilometres, finishing only 15m. behind him at Bordeaux."

"You saw nothing of the smashes, then, Mr. Jarrott?"

"No, but I went out on the road afterwards and inspected them."

"What, in your opinion, was the cause of poor Marcel Renault's disaster?" we asked.

The Disasters.

"There is no doubt but that he was overtaking a car just as it went for a level crossing, and in the smother failed to clear the left-hand gatepost. I also saw the scene of Loraine Barrow's awful crump. There was an opening sweep of the road to his right, and he swung into it to escape running over two dogs which were standing in the road. In swinging out he was unable to clear one of the line of trees bordering the road, and hit it with his left-hand spring hanger with most fearful force. The hanger, which was about 18in. long, was driven the whole way into the trunk of the tree, and so great was the force of impact that portions of the strap securing the starting-handle and the wire and the sealing lead were driven into the tree, too. About a square foot of bark was cleared right off the tree where the head of his unfortunate mechanic hit it, but Barrow was thrown just clear, and fifteen yards away, into a ditch. The whole car was absolutely scrapped, and the motor was hurled in pieces ten yards clear of the tree. So small were the fragments into which the car was smashed that you might have swept all the bits up under the bonnet. Salleron collided with Stead, and the latter had a wonderful escape. The car was turned quite upside down over a ditch, with Stead beneath, pinned down by the gear lever sticking in his back. They had to lift the car to get him out. He is terribly bruised all over, but has nothing broken. Another De Dietrich, driven by Delaney, turned turtle at an easy corner not far from the finish, Delaney being so done that he could not hold the car on the road. Delaney jumped, and was not much hurt, while his mechanic, who was hurled from his seat, escaped with bruises."

"And you drive in the Circuit des Ardennes?" we queried.

"Yes, certainly," was the reply.

"And the Gordon-Bennett?"

"Most decidedly," returned Mr. Jarrott, in tones of such surprise at being asked the questions that we did not pursue the subject.

"What faults do you find, then, with the organisation and arrangements for the Paris-Madrid race?" we went on.

Undue Horse-power.

"Well, I think that indiscriminate horse-power was a mistake, as it was also a mistake to permit such immensely powerful machines—some of them capable, for a time at least, of ninety miles per hour—to be driven by men of little or no experience."

"Have you nothing to say about the time gap?"

"No, I don't think that very much matters, you know."

"Then you don't agree with the necessity for the seven minutes' interval in the Gordon-Bennett?"

"No, because the dust danger is not at the start, but in overtaking and passing, and overtaking and passing are bound to take place, even with seven minutes' intervals. Further, with the arrangements as made, there is a possibility of the first car being quickly on top of that last started. Five minutes between the cars would be ample."

"You think France has seen the last of automobile racing on the road?"

"I am afraid so, and I'm sorry, for motor racing is always a grand sport, even on 4½ h.p. De Dions. It might be again permitted if horse-power and minimum weight were restricted, and magnificent racing at reasonable speeds could be enjoyed. Manufacturers should only be permitted to run three cars at the outside, if so many, and I think 30 h.p., with vehicle weighing not less than 17 cwt., should be about the standard. But," continued our subject, "I think racing has served its object, and of late the true object of motor racing has been entirely overlooked."

"Were you sorry the race was prohibited?"

"Very, for, don't you see, I was well placed at Bordeaux, and my new engine had fairly run into itself."

"You feel no anxiety re the Gordon-Bennett?" we asked, finally.

"Not as to the spectators," replied Jarrott. "Of course, it would be absurd to say that such a contest was without any risk to those taking part in it, but, after all, motor racing, even at such speeds as those of last Sunday week, is not so dangerous as riding across country, and where is the charm of a sport in which is no danger? Why, even croquet—"

But we cut the illustration short by rising, for we felt no analogy could be made therefrom, and took leave of the man who has scored third, and perhaps second, berth in the first stage of the Paris-Madrid, scatheless.

A petition from one hundred and seven owners of electric broughams and landaulettes, the signatories including numerous peers and peeresses, and many well-known society people, has been sent to the House of Commons urging that such vehicles should be exempt from any provisions for numbering motor cars.

GORDON-BENNETT ITEMS.

The Winton Eight-cylinder Racer.

In our last issue, page 645, we published a photograph of the Winton eight-cylinder racing car which Mr. Alexander Winton will drive in the Gordon-Bennett race. Our American correspondent, Hugh Dolnar, has written a brief description of the vehicle, which embodies several original features, and the description which we publish below has been signed by Mr. Alexander Winton, so that there is no doubt as to its accuracy. We mention this matter, for, although no details whatever of any kind have been given of this car in England, some extraordinary tales concerning it have been circulated in the United States.

"Motor, eight cylinders, cast-iron pistons and rings, sectional construction of water-jacket, aluminium water shell. The motor may be described as two units of four cylinders each. Each four-cylinder unit has an independent water-circulating centrifugal pump, the pump making two turns to one turn of the motorshaft. A single radiator and a single carburettor answer for all eight cylinders.

Bore of cylinders 5in., stroke 6in., drop forged connecting rods, bronze bushings, and float feed lubrication with syphon wicks and gravity oil distribution. The cylinders are horizontal, all on one side of the fore and aft eight-throw crankshaft, which has a bevel gear transmission to the balance gear drum, reduction 1 to $1\frac{1}{4}$, 700 turns of motorshaft driving the vehicle sixty-four miles per hour, with 32in. driving wheels, 4in. tyres, Goodrich double tubes, and 80 lbs. air pressure. This machine has made seven miles in 6m. 40s. standing start, and full stop finish, course three and a half miles, turn at the end and run back to the starting point, asphalt pavement.

Wheelbase 114in., wheel gauge 56in., weight 2,150 lbs. (tanks empty); tank capacity, gasoline, 22 gallons, 100 lbs. of water.

This car has no reverse, and can only be driven forward. The original design had two speeds forward and a slow speed reverse, all of this variable gearing weighing only 50 lbs.; but after trial, this change gear and reverse appearing to serve no useful purpose, the whole speed change was discarded, and the car now has a clutch from the motorshaft to the bevel pinion-shaft, and one fixed ratio forward gear only. Four semi-elliptic springs, having about $2\frac{1}{2}$ in. rise and fall, carry the body, which seats two passengers. The chassis is of ash scantling, $3\frac{1}{2}$ in. by 2in., armoured with steel plates $\frac{1}{16}$ in. thick.

There are two brakes (Winton's patent) on each rear wheel hub, independently actuated, one brake being applied to the outside of the cylindrical brake-shell fixed to the wheel hub, and the other brake expanding by a reversed bell crank action, to coact with the interior surface of the same cylindrical brake-shell or drum.

The steering is by hand wheel, tangent screw and worm gear sector, with globe end bell crank and tubular rod connection.

The spark advance is by hand. Jump spark plugs are used, one battery and one coil for the eight cylinders, a second reserve coil being fitted for use in case of failure of the first. Columbia dry cells are

employed as giving better results than any type of storage battery tested.

It seems strange that American storage battery makers fail, so far at least, to produce reliable and efficient constructions which will equal the performance of European batteries; but such, unfortunately, seems to be the present condition of affairs."

The Automobile Fortnight.

In addition to the race for the Harmsworth cup, which is open to any boat not exceeding forty feet over all, whatever the horse-power, there will also be races for other boats, to be held on Friday, July 10th, for a prize of the value of £10, given by Mr. Norman D. Macdonald, the chairman of the Scottish Automobile Club, and a cup of the value of fifteen guineas, given by the editor of the *Yachtsman*. The prizes will be offered for the classes for which there are the most numerous entries, and probably two or three classes will be grouped together, and race under the handicap of the Marine Motor Association.

Official Timekeepers.

The Automobile Club have appointed Messrs. G. P. Coleman and T. H. Woollen to act as official timekeepers at the Gordon-Bennett contest.

Good Intentions.

As an example of the interest which is being taken in the Gordon-Bennett race in Ireland, Mr. Edge has sent us an anonymous letter which he received from Cong. In it the writer enjoins him to keep his three fliers under lock and key, and not to let any man lay a hand on them except his own people, and further to see that they are watched over at night. Besides this, it is pointed out to him that lock nuts are not to be depended upon, and that they should all be secured by split pins.

Glasgow and Liverpool to Dublin.

Mr. W. R. McTaggart draws our attention to the "Duke" line of the Dublin and Glasgow Steam Packet Co. This line sails daily between Glasgow and Dublin, the time occupied in the journey being from twelve to fourteen hours. Their maximum charge is 45s. per ton, so that a car should be got over at very reasonable rates. They provide free storage for a reasonable period.

The City of Dublin Steam Packet Co., whose boats run daily (Sunday excepted) between Liverpool and Dublin, carry cars up to 50 cwt. at 35s. each, and they can load forty cars on any one of their steamers.

The First Reserve Car.

Sir.—I see that Mr. Mark Mayhew objects to my car being described as the "first reserve" for the Gordon-Bennett race. My authority for so describing it is a letter from the Race Committee (of which Mr. Mark Mayhew is chairman) written about two days before the official weighing in. From memory I should quote the wording: "Should anything happen to either of the Napier cars, your car will be selected for the third place." This was evidently meant as a sop to me to make up for the committee's decision that their rules, so far as regarded my entry, must be kept inviolate. I have been too busy getting

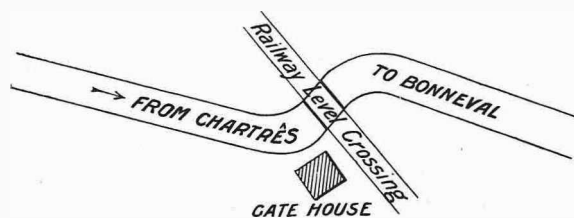
my car ready for the Paris-Madrid race to have been able to follow the somewhat twisted course of the Gordon-Bennett, but it appears that the only rule which could not be broken or turned upside down was the one which kept my car from competing. Pray be assured, however, that I have no wish to dispute Mr. Mayhew's claim to the somewhat barren honour in question, and I have only written in order to defend my car from the suspicion of having arrogated to itself a title without "proper authority."

MANSFIELD CUMMING.

Paris. 19th May.

THE CROSSING ACCIDENT IN THE PARIS-MADRID.

Writing from Paris on May 26th, Mr. Luff Smith, of the Wolseley Co., gives the following description of the accident in which Mr. Nixon lost his life: "There is a general feeling of sympathy with Porter among the other competitors in the race. The flagman placed specially to warn the cars of the dangerous level crossing and double turn had vacated his post, it is said, by orders of the official car. Here is a rough sketch of the road at the place where the accident occurred. From the time



of leaving the control at Chartres, there is a long straight road to the place where the accident happened. Porter was relying entirely on the flags being in position, and therefore approached the corner at a speed of about sixty miles an hour. The car refused to answer the helm, and dashed straight on towards the gatekeeper's house. Porter, seeing that a bad accident was inevitable, then attempted to double back so as to miss the house, and run through a hedge into a field. In this he almost succeeded, the front of the car getting clear; but then it seems that the speed threw the car sideways against the house. The petrol tank burst, and caught fire from the exhaust box. Nixon was sitting on the floor of the car with his feet against the dash, and was thrown against the wall, which he struck with his head, and was instantly killed. He fell between the car and the house, and the wind carried the flames on to him. Porter was thrown out on the other side, breaking three arms of the steering wheel. He came to himself almost immediately, and ran round the house to get at Nixon, but the fire was too fierce."

Miss Roosevelt is said to have purchased a 12 h.p. automobile. She drives the car herself, and has the reputation of being an excellent chauffeuse.

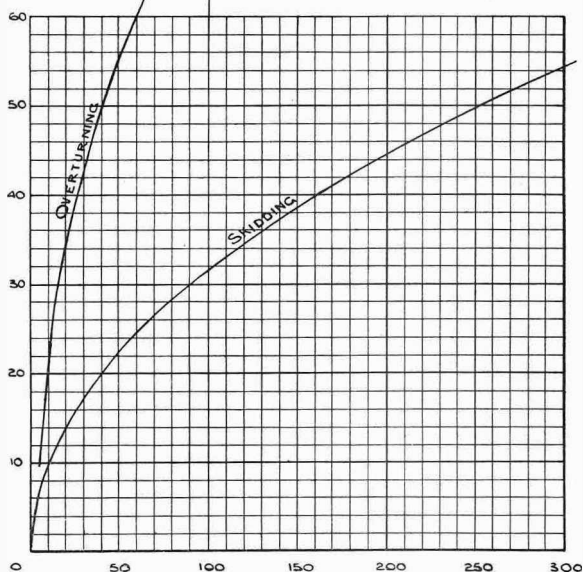
* * *

As an instance of the popularity of the small cars, it is interesting to record that Mr. O. C. Selbach tells us that last week he disposed of twenty small Rigal cars.

SIDE-SLIPPING AND OVERTURNING.

In a brief report in *The Autocar* of May 23rd, page 617, of the lecture given by Mr. W. Worby Beaumont at the Society of Arts, we mentioned a curve which he had shown giving the speeds at which cars entering upon curves would begin to slide or slip sideways; the curve also showing the speeds at which the cars would begin to overturn on curves of various radii. We are now able to reproduce the curves herewith. The ordinates give the radii of curves in feet, and the abscissæ the limiting speed in miles per hour. In calculating these curves a co-efficient of adhesion of the rubber tyres of 0.66 was employed; but it was mentioned that with roads in a dusty condition this co-efficient might be materially reduced. With roads in a greasy condition the slipping, of course, would be almost incapable of calculation, and would commence at very much smaller curvatures than those given.

From the curve it will be noticed, as was mentioned in the lecture, that with the road in good condition for rubber adhesion a car going at the speed which it is said the late Count Zborowski was travelling when his accident occurred would skid when turned from a rotolinear path to a curve of about 300 feet in radius. On the other hand it will be seen from the curve



that at, say, thirty miles per hour a car would skid when turned from the straight path to a curve of ninety feet radius. For the calculation of the overturning curve a wheelbase of 4ft. 6in. was adopted, and an assumed height of centre of gravity was taken of 2ft. 6in. from the ground. On these assumptions it will be seen that the overturning moment is reached long after the skidding has begun, overturning, for instance, commencing on a curve of about eighteen feet radius at a speed of thirty miles per hour. If the roads were flat skidding would have continued, and at the speeds whereat skidding takes place overturning would not occur unless the wheels on the outside of the car met some obstruction, as, for instance, a rise in the road, or by contact with curb or pathway hedges. With the higher centre of gravity of some cars the overturning moment would be reached much earlier.

In further reference to the curves in the course of the lecture it was pointed out that here again is evidence of the importance of well-made and well-maintained road surfaces, and the dangers that may attend high transverse curvature roads.

The "Red Devil," the motor car with which Fournier made the world's mile record at Coney Island in 1901, has been smashed up between two Broadway cars going in opposite directions.

THE GLASGOW-LONDON NON-STOP TRIAL.

This trial took place on the 13th and 14th of May, and was reported in *The Autocar* of May 23rd, and the Scottish Automobile Club (Western Section) has now issued its report based on a careful consideration of the observers' reports on the vari-

shire Automobile Club who acted as honorary storage observers at Leeds; to Mr. Rowland Wynn, of Leeds, who generously placed his garage at the disposal of the Trial Committee, and rendered further valuable aid; to the gentlemen who acted

No.	Description.	b h.p.	Approximate Weight in Udden Cwts.	Tyres.	No. of Passengers, including driver.	No. of Marks Deducted for Stops.		No. of Marks Gained	Particulars of Stops and Remarks.
						For Tyre Troubles.	For other Causes.		
1	14 h.p. Chenard & Walcker Tonneau	17	17½	Dunlop	4	—	1	999	Driving stop.
2	Gladiator	12	15	Dunlop	3	—	2	994	Puncture, 20m. Battery run down, replaced by spare 1½m. Petrol not reaching carburetter, 7m.; ditto, 2m. Engine stopped momentarily when enquiring route.
3	24 h.p. De Dietrich	30	19½	Michelin	3	—	10	990	Broke reverse gear, and withdrew between Skipton and Leeds - previously non-stop
4	10 h.p. Lancheater	10	19	Michelin	4	—	—	1000	Non-stop.
5	10 h.p. Lancheater	10	19	Michelin	4	—	—	1000	Non-stop.
6	10 h.p. Wolsley Tonneau	10	19	Continental	—	—	4	996	Ignition, 4m. Did not start.
7	Darracq Tonneau	24	20	Pneumatics	—	—	—	—	Non-stop.
8	4-cylinder Sunbeam Car	10/12	16	Collier	4	—	—	1000	Non-stop.
9	4-cylinder Sunbeam Car	10/12	16	Clipper Continental	4	—	—	1000	Non-stop.
10	Argyll	10	13	Clincher Michelin	3	—	3	994	Puncture, 15m. Delay in re-starting engine at Leeds, 3m.
11	6-seated Double Phaeton (Gardner-Scropollet steam). English made	12	32	Falconnet C'pounds	—	—	6	994	Delay in re-starting at Leeds—time occupied getting up steam. Did not start.
12	Tonneau Car	14	14	Dunlop	—	—	—	—	Stopped for broken speed lever fork, 45m., and for 2½ hours to replace pump, and was withdrawn at Kendal
13	3-cylinder Brooke Tonneau	14	20	Pneumatics	3	—	—	—	Was delayed at start, and abandoned trial. Ran unofficially to Leeds.
14	Argyll	9	12	Clipper Michelin	3	—	—	—	Driving stop, 1m. Did not start.
15	Rochet and Schneider	22	20	Clipper Continental	4	—	1	999	Driving stop, 1m. Did not start.
16	Delahave Tonneau	12	16	Michelin	—	—	—	—	Punctures, 20m., 12m., and 12m. Pumping tyre, 2m.
17	12 h.p. Georges Richard Light Car	13	13	Clipper Continental	3	11	—	989	Petrol tin found to contain water was by mistake emptied into petrol tank, and caused delay of 3h. 12m.
18	24 h.p. Georges Richard Light Car	26	16½	Clipper Continental	4	—	192	808	Non-stop.
19	Arrol-Johnston Dogcart	12	22	Solid — Shrewsbury-Challinor	3	—	—	1000	Filling tank, 2m. Replacing plug, 1m.
20	De Dion-Bouton	10	15	Dunlop	3	—	3	997	Non-stop.
21	6 seated Arrol-Johnston Carriage	12	23½	Solid — Shrewsbury-Challinor	4	—	—	1000	Non-stop.
22	10 h.p. Wolsley-Tonneau	11	18½	Clipper Continental	4	—	—	1000	Non-stop.
23	12 h.p. Argyll	16	17	Clincher Michelin	—	—	—	1000	Non-stop.
24	Peugeot, 2-seated	6½	6½	Clipper Continental	2	—	9	985	Ignition, 3m., 2m., 3m., and 1m. Punctures, 15m and 15m Replaced trembler
25	F.A.C. Tonneau	24	20	Clincher Michelin	4	—	—	—	Disqualified for non-compliance with regulations.

ous vehicles entered, and the appended table embodies all the particulars given by the Scottish Club, with the exception of the names of the observers and one or two other items which have already been published in our columns.

The club committee desire to record their indebtedness to the officials and members of the York-

as honorary observers on the cars; and to Mr. Basil H. Joy, technical secretary of the Automobile Club of Great Britain and Ireland, and other club officials.

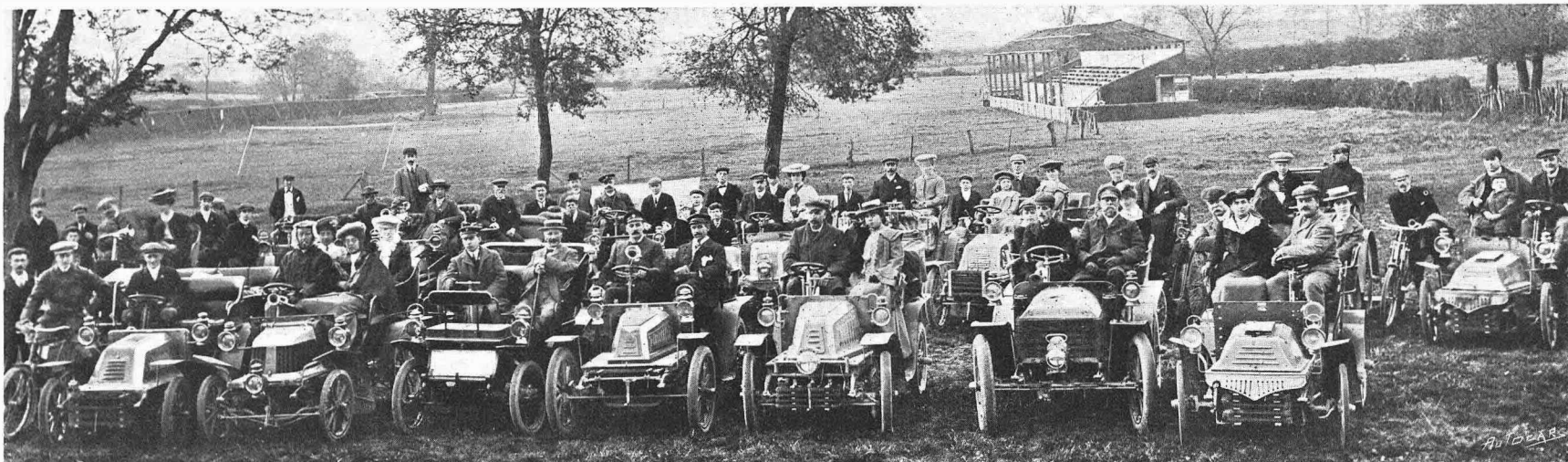
All these gentlemen have contributed largely to the successful carrying out of the trial.

The total possible marks in each case is 1,000.

Mr. Oliver Stanton has again had the honour of driving H.R.H. the Princess Christian, Princess Victoria of Schleswig-Holstein, Mrs. Dick Dunningham, and Mr. Joe Martin in attendance. The car used was H.M. the King's 1902 12 h.p. Daimler. The run was to Claremont Park, Esher, the Royalties taking tea with the Duchess of Albany, returning to town in time for the opera last Monday evening. The Princess enjoyed the ride very much. Mr. Stanton drove the Princess Christian two years ago at Alvington Manor, the residence of Sir Francis and Lady Jeune, for the first time. The Princess is now very fond of automobilism, in which she takes the keenest interest.

Automobilists in Yorkshire passing the Spacey Houses police trap will not ignore the warning which a probable victim has painted on the wall in letters 12m. high, "Motor trap." Police traps and measured distances are most elaborately arranged near Malton and York as follow: One at Four Alls public-house, six miles from York; also between the seventh, eighth, and ninth milestones, at Barton Hill, and one and a half miles from Malton past Old Malton Cross Lane. Alton, Hants, is another place where the police are particularly active, and on each side of the town motorists who are not very cautious are being stopped; and "The Avenue," Southampton, is another trap in the same county.

THE MEET OF THE DERBY AND NOTTINGHAM AUTOMOBILE CLUBS AT ASHBY-DE-LA-ZOUCH.



H. Trevor, Photo.

Ashby-de-la-Zouch.

CLUB DOINGS.

South Wales and Monmouthshire Automobile Club.

On Saturday last the South Wales and Monmouthshire Automobile Club held a most successful run from Cardiff to Brecon and back—nearly 100 miles. A large number of cars made the journey, and as the roads were in perfect condition, except for the heavy dust, the run was greatly enjoyed. The route taken was through the most charming woodland and mountain scenery in South Wales. At Brecon the townspeople made a holiday to witness the arrival of the cars. At the invitation of Captain Hughes Morgan, the Mayor and Corporation of Brecon, with most of the leading residents, met the autocarists at the Castle Hotel. The whole party, numbering eighty, sat down to an excellent luncheon provided by the gallant captain.

Captain Hughes Morgan presided, and after the usual loyal toasts had been honoured, the Mayor of Brecon proposed "Success to the Club." As a humble motorist it gave him great pleasure to welcome the visitors to Brecon. He hoped they would take away with them many pleasant memories, and that they would come again soon and often. In Breconshire they paid their rates themselves, and were not like the magistrates of Surrey, who endeavoured to reduce the rates by fining poor unfortunate motorists. As

far as he knew, they were allowed to go as fast as they liked in the county. Anyway, their police officials were not provided with German stop watches.

Many other toasts followed, the principal speakers being Messrs. A. G. Moffatt (Swansea), T. Appleby (honorary secretary), and Captain Hughes Morgan. Several photographs of the party were taken before the return journey, via Abergavenny, was made. The club has now over seventy active members.

The Lincolnshire A.C. and Affiliation.

A well attended meeting of the members of the Lincolnshire A.C. was held at the White Hart Hotel, Sleaford, on Thursday last, to consider the recommendation of the committee that the club severs its connection with the A.C.G.B. and I. The committee felt that the fee of 10s. 6d. was more than the club could afford, and that it would be crippled in funds, and that the advantages as at present given were not sufficient. The members get the club *Journal*, but as the reports of the club are not inserted as agreed, that advantage is lost, and the price of affiliation was thought to be not worth the *Journal* alone. Sir Hickman B. Bacon, the president of the club, was in the chair. Mr. Sandars questioned the regularity of the meeting, as the members had at the annual meeting decided to affiliate. He thought that if the club needed assistance

it would be better to ask for contributions to a special work, such as the surveyor's dinner, than, as suggested, to ask for subscriptions towards the affiliation fees. Mr. E. Cragg, the secretary, read several letters from other clubs showing their attitude, and said he thought that the parent club had not been of much assistance. Mr. Wilkinson urged that the mere question of the cost should not weigh, but they should consider the broad question of working together. After considerable discussion, Mr. C. W. Pennell, the first chairman of the club, moved that the club be affiliated, and Mr. Wilkinson moved as a rider a proposal, of which he had given notice, that "the committee communicates with the whole of the provincial clubs with a view of arranging a scheme of federation, of which an essential feature shall be working, or affiliation, with the A.C.G.B. and I." This was accepted by Mr. Pennell, and the proposal on being put was carried *nem. con.*

The Cheltenham and Gloucester Automobile Club, which was only started some two months ago, already numbers over fifty members.

On the last Saturday but one in May the Leicestershire Automobile Club had a most successful run to Oakham. We understand that none of the drivers had any difficulty in ascending Wardley Hill.