

# THE AUTOCAR

A Journal published in the interests of the mechanically propelled road carriage.  
EDITED BY H. WALTER STANER.

No. 453.] VOL. XII.

SATURDAY, JUNE 25TH, 1904.

[PRICE 3D.]

## THE AUTOCAR.

(Published Weekly.)

Registered as a newspaper for transmission in the United Kingdom.

Entered as second-class matter at the New York (N.Y.) Post Office.

EDITORIAL OFFICE:

COVENTRY.

PUBLISHING OFFICES:

3, ST. BRIDE STREET, LONDON, E.C., ENGLAND.

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### "THE AUTOCAR" SUBSCRIPTION RATES.

British Isles, 16s.; Abroad (thin paper edition), 22s. 8d. per annum.

## Notes.

### The Gordon-Bennett Results.

There is no question that the result of the Gordon-Bennett race is a triumph for France in every way. Not merely did a French car win the cup, but France was the only nation which finished a complete team, and, what is more, the two cars which finished behind the winner obtained fourth and seventh places, so that had it been a team race France would still have won. This is worthy of note, because in last year's race, when Germany won, only one German car finished, while the next three places were occupied by French machines. Everyone who has followed motor racing knows how large a part luck plays in the results, but we think the French performance is sufficiently good to place it to some extent outside the pale of mere good fortune. While we admit that luck goes a very long way, we cannot say that it has played so prominent a part in this race as might have been expected. Taking it all round, France had the best team. This

of course, is what may be expected, not only on account of the many years of racing which French makers have had, but also because so many of them built cars for the French eliminating trials, so that the three machines which were selected at the eliminating trials last month were the pick of a much larger number than any other nation had to select from.

Except for Jenatzy's brilliant second, eleven minutes behind Thery, it cannot be said that Germany quite maintained her reputation, for, while it is true that De Caters's machine was third, it was only two minutes in front of Rougier's French car. At the same time, Germany did second best. Austria finished two men, one of them occupying fifth place. The next nation with two placed men was Italy, while England also finished two, Belgium only finishing one car. Unquestionably Girling's was the finest performance of the English team. He drove the lowest-powered car in the race, and at one time held third place, which he would probably have kept to the finish but for a very unlucky occurrence. His engine stopped in the Homburg control, and it took forty-five minutes to get it going again, when it was at last found that the trouble was due to some cotton waste, which had, by some unexplained means, got into the petrol pipe.

### The Effect of the Race.

Considered from a racing point of view, England might have done worse, but her position so far down the list of finishers is not one of which we can be particularly proud. We should have been extremely pleased to see England occupy a good position in this year's race, because, quite apart from patriotic considerations, it would have been so much better, in view of the Automobile Club proposals for the extinction of the monster racing car and the establishment of a class of rational racers, had we been able to show that we could live with the monsters. To some extent it looks now as though we were proposing the rational car because we had again failed to make much headway with our racing monsters against those of France and Germany. It is true that the English club proposals were made long prior to the race, but this point will be more or less overlooked by those who oppose the British proposals, and it would have been a very strong proof of Britain's disinterestedness had the British cars done better in the race.

There is a tendency on the part of the club committee at the present time to wash its hands of the Gordon-Bennett Cup altogether unless the Continental nations consent to the elimination of the monster. We think this is a mistaken attitude. When we have once won the cup by speed, and speed alone, we might very well take up this attitude, but until we have done so we should continue to struggle for it so long as there are manufacturers or individuals with enterprise and pluck enough to challenge its possession. It would not greatly matter if the club would have nothing to do with the Gordon-Bennett race, if the rules did not insist that the Gordon-Bennett champions for any particular country be nominated

by their national club. Whether the English club is justified in spending large sums of money for an eliminating trial or not is a matter which is open to discussion, but the least it can do, so long as challengers for the cup remain, is to give them the necessary official sanction. It is all very well to say that the utilitarian results of the Gordon-Bennett race are not worth the sacrifice of time and money involved, but the same may be said of almost any sport, and while we are strongly in favour of the construction of the rational racer, we shall be unable to advocate it if the sporting side of the question is ignored. The monster has made the fortunes of the race too much a question of luck, but we shall have to take very great care that the rational car is not over-rationalised, to the elimination of the sporting side of the contest. In short, we do not want motor races that are really reliability trials under another name.

### Graceful Designs.

We publish in our Correspondence columns to-day a letter on the subject of graceful designs for motor cars. A great many people who do not own motor cars, and a very few who do are dissatisfied with the appearance of the motor car of to-day. They complain of its lack of gracefulness; but, unfortunately, they never get any further. Our correspondent refers to the handsome appearance of a fine railway locomotive, and the symmetry of a modern battleship. We are entirely in accord with him, but we cannot see how the artist can help to improve the design of the motor car, as it is necessary to remember that the locomotive and battleship have come to their present state entirely without the assistance of the artist; in fact, the great majority of artists can draw neither the one nor the other.

It must not be imagined that we think it impossible to improve the appearance of the motor car. Far from it. But there are some types which, so far as combination of symmetry and fitness for the work they are called upon to do are concerned, would be very difficult to beat. At the same time, it would be an excellent thing if the prejudices of those who object to the look of the car could be overcome if only we could find out what sort of thing they would like. Up to the present their criticism has been entirely of a destructive character, and we do not seem to have made any progress in ascertaining what their ideal outline is. The only thing on which they are in most cases agreed is the question of the bonnet. They do not approve of the motor bonnet at all, but the cars which have no bonnets are not what they want.

A great deal is said about flowing outlines and graceful curves, but any makers who have attempted these have certainly not received remarkable encouragement, and there appear to be a great many more people who would not buy a motor car unless it looked like one than there are of the class which abstain from buying because the motor car does not look like something else; whether it is a swan-shaped basket on wheels or a modernised Roman chariot no one seems to know.

We have spoken strongly, not because we are out of sympathy with those artistic souls who are dissatisfied with the modern motor car, but because we want to find out what their ideal is. So far as we are personally concerned we consider a well-proportioned car of the conventional type a remarkably clever design, as it has an individuality of its own, and, at the same time, a great deal of that symmetry which shows that it is really cut out for its work. However, we should only

be too pleased to see something better if it can be suggested, and we have little doubt that those concerned in the design of motor cars would be equally pleased.

There is one point which should not be forgotten in this matter, and that is, it is not a question of national pigheadedness. We cannot turn to any foreign country and say that their designs are more attractive than our own, for at the present moment most of the English designs are taken from the best French outlines. If any improvement is to be made it must be something better than that which has been turned out in any country in the world up till now.

### Hill-climbing Contests.

Some months since we dwelt upon the necessity for a satisfactory hill-climbing formula, whereby clubs holding informal hill-climbs could get some comprehensible system for handicapping, or, at any rate, for setting an approximate value upon the performance of each vehicle. So far no one has been able to prepare an altogether satisfactory formula, and it must be confessed that the formulae used by the Automobile Club in its trials, as well as the one adopted in the recent Glasgow-London run, have not been satisfactory. Within very wide limits, in the eye of the motorist, the best car on a hill is the one which makes the best speed. Of course, if a freak machine is used of enormous power and very light weight, it is admitted on all hands that its performance, when regarded as one of time alone, is more or less misleading.

To return to the Glasgow-London system of awarding hill-climbing marks, it is evident that this was to all intents and purposes a test of engine efficiency, and might almost as well be worked upon the simple horsepower formula alone. If the Glasgow-London figures are referred to, it will be seen that weight is really the dominating factor, and, therefore, the marks are given almost entirely upon engine performance. The efficiency of the car as a whole has nothing whatever to do with the case, though to some extent it may be said that the heavier it is the better for it, the weight of the car being stated no less than three times in the top line of the formula. Now, this is not exactly the sort of thing that is wanted, as all the best constructors are endeavouring to reduce weight by every means in their power so long as they can effect this saving of weight without sacrificing strength. It would be far more satisfactory to deal with the weight carried by the car, not the weight of the car itself. This, the amount of fuel used, and the time taken to climb the hill, are unquestionably the three factors which appeal to the private user. To give a needlessly heavy car credit for elevating its own weight is wrong.

Weight reduction is only possible by using selected materials and scientifically correct designs. Looked at from the other side, equations like those which have hitherto been used are altogether too complex for amateur sporting events: some system is wanted which any intelligent observer can understand on the spot. Unfortunately, it is much easier to state what the requirements are than to fill them, and up to the present no one has succeeded in filling them. We hope, however, that something may yet be done, as it would greatly increase the interest taken in hill-climbing events if a simple and approximately accurate system of handicapping could be evolved. In the interval, the best solution seems to be to hold two climbs—one a scratch event and the other a handicap. In the handicap the fastest car in the scratch event would be put

on scratch, and the other vehicles given time starts proportionate to the number of seconds they took over the scratch car in climbing the hill. Of course, the objection to this is that it might be a temptation to "rope"—that is, to hold back a car in the scratch event so that it might get a good start in the handicap. This, however, would never be done by amateurs worthy the name; but, to disarm suspicion and unpleasantness should a car happen to run much better in one event than the other, the point could be met by disqualifying any machine which showed more than a certain percentage of improvement in the handicap event.

### Motor Car Accidents.

On Wednesday last week, in the House of Commons, Captain Donelan asked the Secretary of State for the Home Department if there were no way of ascertaining how many persons were killed and injured by those infernal machines (motor cars). Strangely enough, some members actually applauded this language, and thereby afforded another evidence that there are still many in the House of Commons who are bitter enemies of automobilism. It is true that they may be ignorant persons merely giving vent to sentiments dictated by petty spleen or vested interests, but the fact remains that they are members of the House, and, therefore, are in a position to do harm. We have no objection whatever to a return of the motor accidents when they really are genuine motor accidents, but the return should be accompanied by one giving the facts and figures about horse accidents. Readers of *The Autocar* know that on an average one person is killed every working day throughout the year by horses, and over 2,000 are injured more or less permanently per year by horse accidents. How many trams are responsible for we do not know, but the number is by no means a small one. Bicycles, too, cause some accidents, most of them due to the absolute carelessness of the pedestrian

wanderer on the highway, but however this might be it is only right that before an outcry is made about motor accidents the truth should be known about road accidents generally. It is an extraordinary thing that these pusillanimous complaints are frequently made, as in this instance, by gentlemen who presumably hold His Majesty's commission.

It would scarcely be expected that these gallant gentlemen could be so extremely frightened of motor cars. The mere reference to a motor car seems to place them in a state of hysteric terror. What would really happen to them if they were faced by real dangers we do not know; we can only hope and trust for their sakes and for the sake of the country, they will never be faced by the dangers of actual warfare. We all pity the poor heathen who refers to the motor car as the "devil carriage," but surely he is less to be pitied than the civilised officer of a great country who regards everything as "infernal" if it is new or not understood by him.

We have spoken strongly, because we feel that these blind, unreasonable prejudices of so many members of Parliament are a terrible handicap to the country. It stands to sense that the man who cannot control himself when discussing the motor car is equally unreasonable and unreliable when anything with which he is not well acquainted is brought up for discussion. This kind of vulgar speech may "tickle the ears of groundlings," and find a response in the prejudices of ignorant people; but do those who indulge in it realise that they are keeping company with all who have ever barred the world's progress? Nevertheless, regarded philosophically, even such people may be held to serve a useful purpose. Except for them and their prejudices the pioneers of new movements might probably find themselves with too easy a task, and in want of an incentive for vigorous and determined action in overcoming difficulties.



Photograph by

Argent Archer, Kensington, W.  
Cagno leaving the Saalburg, which crowns the summit of the hill seen in the background.

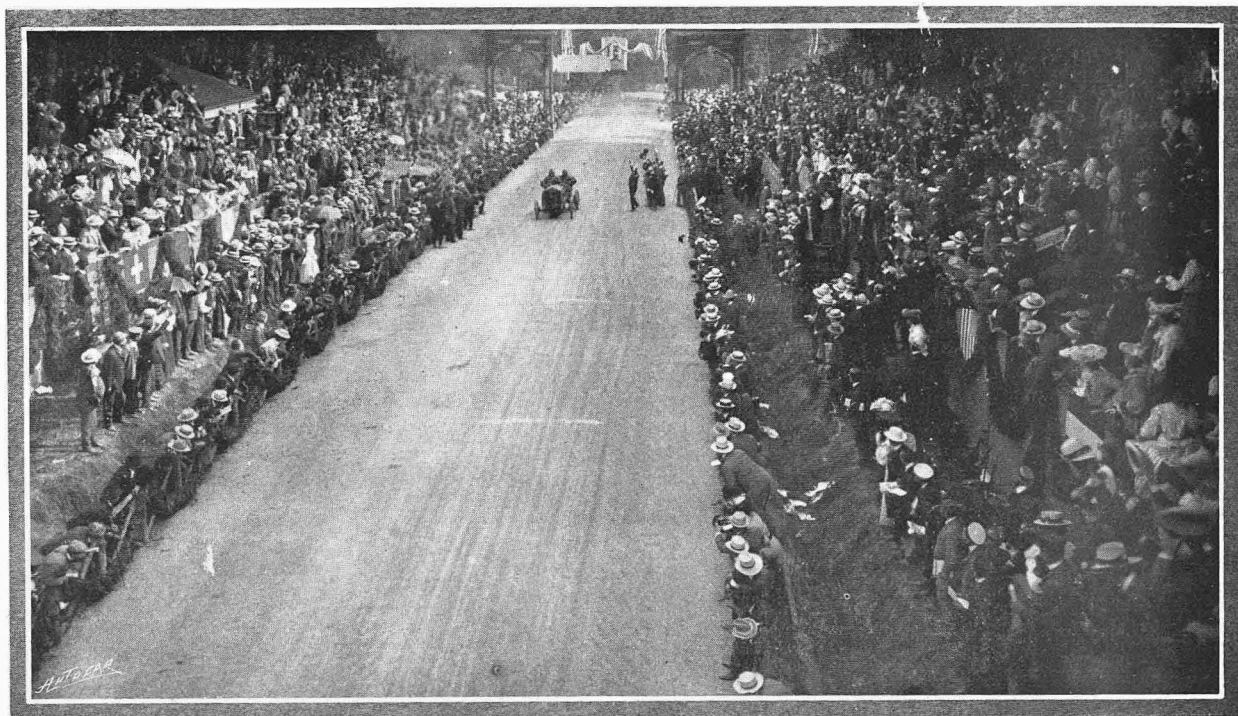
## GORDON-BENNETT ECHOES.

All Englishmen who affect the slightest interest in automobilism are assuredly more or less disappointed at the poor show made by our cars in the Taunus last week. The Little Englander and the home-grown pro-foreigner—to wit, the man who is not only ever ready to indulge in, but who exhibits, hysterical delight in decrying and abusing anything of home production—have in the poor positions of Girling and Jarrott and the failure of Edge something upon which they may batten for months to come. There is no sort of use in discussing the matter with such folk; they are past all persuasion or argument. Therefore, we leave them to belittle the gallant efforts of our trio to bring back the Gordon-Bennett Cup to this country. We are not attempting to make excuses, because to all who have, as we have, the actual details and figures of the race before them,

reported at the Saalburg that when the moment came for doing this his people were not ready, and while the operation appears to have occupied about three minutes in Théry's case, it would seem to have taken quite ten minutes to perform the like service for Jenatzy. But even allowing both men an equal period for refilling, Théry would still have proved the victor by five or six minutes. Neither suffered from mechanical or tyre troubles.

### England's Delays.

On the other hand, Edge was the victim of tyre and other troubles, for according to Mr. Napier, whom we have interrogated upon the subject, the right-hand steering and driving tyres had both to be blown up during the first round, wherein he lost 4m. 48s. on Jenatzy and about the same period on Théry. In the



Photograph by

The grandstand at the Saalburg. Théry passing the royal box.

Berlin Illustrations Gesellschaft.

The original photograph was taken from the bridge across the road.

there is no gainsaying the fact that the fastest car in combination with the best luck secured the blue ribbon of the automobile world.

### Théry's Wonderful Regularity.

M. Théry, on his Georges-Richard-Brazier, ran through the whole 350 miles without let or hindrance, his vehicle exhibiting the most astonishing regularity, as its circuit times showed. Except for the period of the third circuit, in which he filled up with petrol, the greatest variation in the times is that between 1h. 26m. 57s., the time of the first circuit, and 1h. 26m. 23s., which is that of the last round, a difference of 34s. only. And further excepting the space of about three minutes or so, which appear to have been occupied in filling up, each successive circuit was faster than the one before it, and each one faster than Jenatzy's. The Mercedes driver is said to have had bad luck, when in the third round he too was refilling. It was

second circuit he nail-punctured his near side driving tyre, and his commutator chain jumped the chain wheel. In the third circuit he ran without mishap, but in the fourth and last round the commutator chain again came off, and the stud bearing upon the intermediate wheel of the half-time gearing fired, the stud twisting in the aluminium and upsetting the timing. Mr. Napier is of opinion that the new engine he sent over so expeditiously should have been fitted complete, and not its crankshaft only.

Jarrott's troubles consisted of a deranged governor and a mishap to his second speed. He also had a tyre stop, but his most serious trouble is reported to be due to a leak in the water circulation, which caused his engine to heat, and so brought about the main loss of time. Girling's worries were concerned with the broken link of his main driving chain—the chain which connects the clutchshaft with the first gearshaft—and



trouble with a choked petrol pipe. This was by far the most serious trouble of all, as he was stopped in the Homburg control for forty-five minutes, and it was found at last that the petrol pipe was stopped with a piece of waste. When this was removed he started off gaily, and would certainly have secured third place but for this serious delay.

#### The German Arrangements.

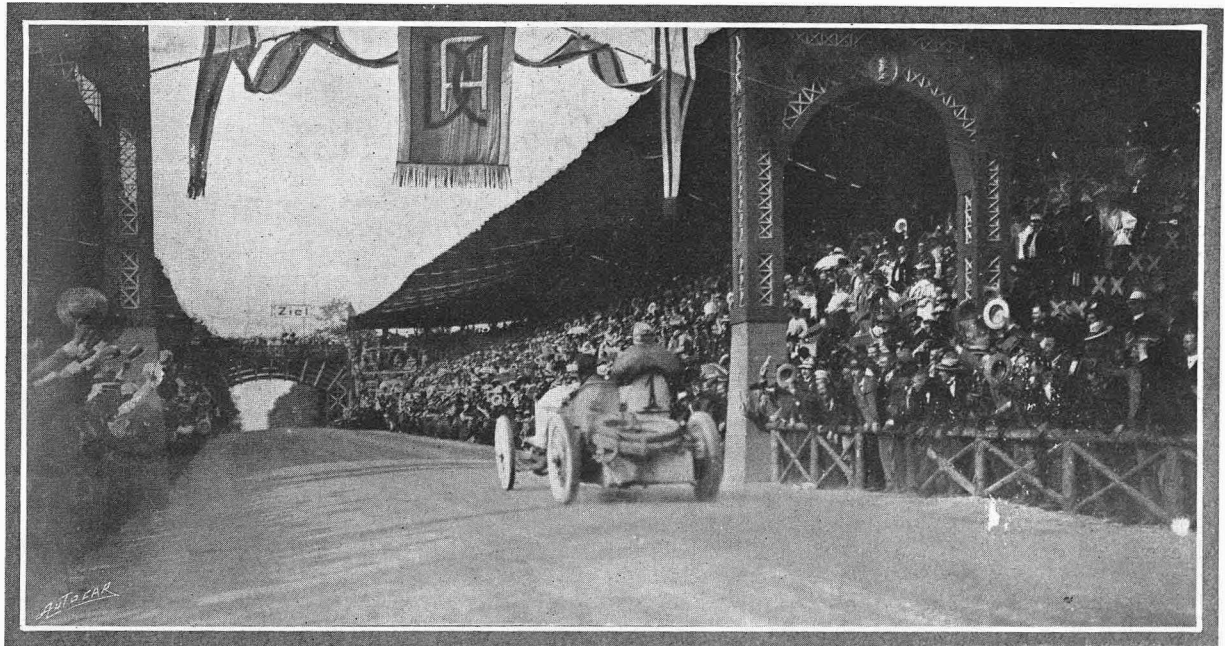
The organising members of the German Automobile Club, though willing enough to gain glory from the columns of the world's newspapers, afforded the members of the fourth estate no accommodation whatever. This was also the case with the two English timekeepers, but for whom the timing of this important race, decided upon the watch and upon the watch alone, would have been altogether unchecked. Everyone, even Monsieur Tampier, is liable to error, and this the English club recognised last year in Ireland, when to ensure accuracy it placed the timing in the hands of Messrs. Swindley, Coleman, and

#### Gordon-Bennett Echoes.

took the slightest notice of the flag-wagging; indeed, the flag-wagger was twice parous near being run over by cars which got under way very rapidly. As we intimated in our telegraphed account from Saalburg, the intelligence department, in which we had been informed the telegraph, telephones, and cyclists were to figure, utterly broke down, for no news of any interest from any part of the course was made known by their agency either to the press or to the public.

#### Excellent Telegraphic Facilities.

On the other hand, too much credit cannot be given to the telegraphic department of the German Post Office, who provided a large and most capable body of skilled operators, by whose earnest and careful work long telegrams in four different languages were most successfully and carefully transmitted. In the heavy mass of telegraphed matter which we telegraphed from the course on Friday last, a slight error crept in, viz., the misplacement of one of the competitors who made up the tail which can only be ascribed



The grandstand as seen from the course, taking the opposite view from that shown in the illustration on the preceding page.

Woollen, Monsieur Tampier being invited to check on behalf of and for the satisfaction of his club. At the Saalburg the worst possible arrangements existed for the performance of timing. A chair and a table were certainly provided for the French timekeeper, but no seats and no shelter were offered to the two Englishmen upon whom the responsibility of carrying on the clocking would have devolved had anything occurred to M. Tampier. Yet these two gentlemen were not only left to shift for themselves, but several attempts to harass and browbeat them were made during the early part of the race. The idiocy of an ornamental starter was again perpetrated, but even more farcically than in our own case in Ireland. At Ballyshannon a "starter" performed the duty of sending each car on its way, which can only be done accurately by the official or officials who are to time the race throughout, while at Saalburg the German Automobile Club had appointed some titled inefficiency to wave a red flag as a signal for departure. As a matter of fact, no one

to the exhaustion of the operators, who worked so hard throughout the day in a very hot and ill-ventilated temporary building. The exact order of finishing and the times of each competitor for the competitive distance were correct as given last week, except in the case of Jarrott. He was bracketed with Cagno as finishing in 7h. 23m. 36 $\frac{3}{4}$ s., but he should have been placed twelfth and last in 7h. 36m. 52s.

#### The Winning Car.

It will be interesting to give a few particulars of the Richard-Brasier car which Théry drove to victory. The engine itself was first publicly tested at Nice when the Tréfle-à-Quatre launch carried all before it. However, the real test was in the French eliminating trials last month, when Théry completed each circuit with the same regularity that he did last week. The cylinders are cast in pairs, with a bore of 150 mm. and a stroke of 140 mm. (5 $\frac{7}{8}$ in. x 5 $\frac{1}{2}$ in.), thus following the Mercedes lead in having a slightly larger bore than

*Gordon-Bennett Echoes.*

stroke. The inlet valves are mechanically operated, they and the exhaust valves being on opposite sides of the engine, and driven by separate layshafts. The inlet shaft also drives the magneto and the governor,



Werner at the wheel of an Austrian Mercedes. This illustration shows the control on these cars.

while the exhaust shaft runs the fan. The governor acts on two throttles, one between each pair of inlet valves. The magneto is of M. Brasier's own design, and the armature is of the Simms-Bosch rotating type. The clutch is of the conical variety, with new positive drive by bolts locking into the flywheel. Three speeds are provided, the third being direct. The drive from the differential-shaft to back wheels is by outside chains. The frame is of stamped steel, and the differential-shaft and road wheels run on ball bearings.

**Jenatzy's Disappointment.**

We were necessarily detained at the Saalburg until Jarrott finished, which was not until a few minutes before eight, and consequently were not present at the weighing-in; but we heard that Jenatzy behaved there like a child, refusing to come on to the weigh-bridge with his car, as required by the regulations, and



Cagno, the Queen of Italy's driver, who drove a F.I.A.T. car in the race.

showing temper at his disappointment in quite a childish manner. After the enormous amount of care he had bestowed upon his car—for during the last few days he had two fresh sets of tyres each day, to say

nothing of the amount of time he had spent upon the road—his defeat must have shocked him somewhat. We are bound to say that the sympathy of the visitors was not with him, for his week's devotion to the course was regarded as hardly sportsmanlike. It was asserted that before he lined up for the start he had made over fifty trips. If anything could have given him the victory it should have been so intimate a knowledge of a road, which to be driven over with safety at an average speed of some fifty-three and a half miles per hour distinctly required special knowledge. There, as far as we could learn, had not traversed the course more than half a dozen times, so that Jenatzy held a very considerable advantage over him in this respect.

**Next Year's Course.**

We note that the course for next year's race is proposed in the Auvergne, a district we toured some years ago on a tandem bicycle. The roads there are broad and straight, but some of the lifts are awful, not as to gradient, but as to length. For instance, if Veille Brionde, Fix, and Le Puy were brought into the itinerary of the course the cars would have to face a

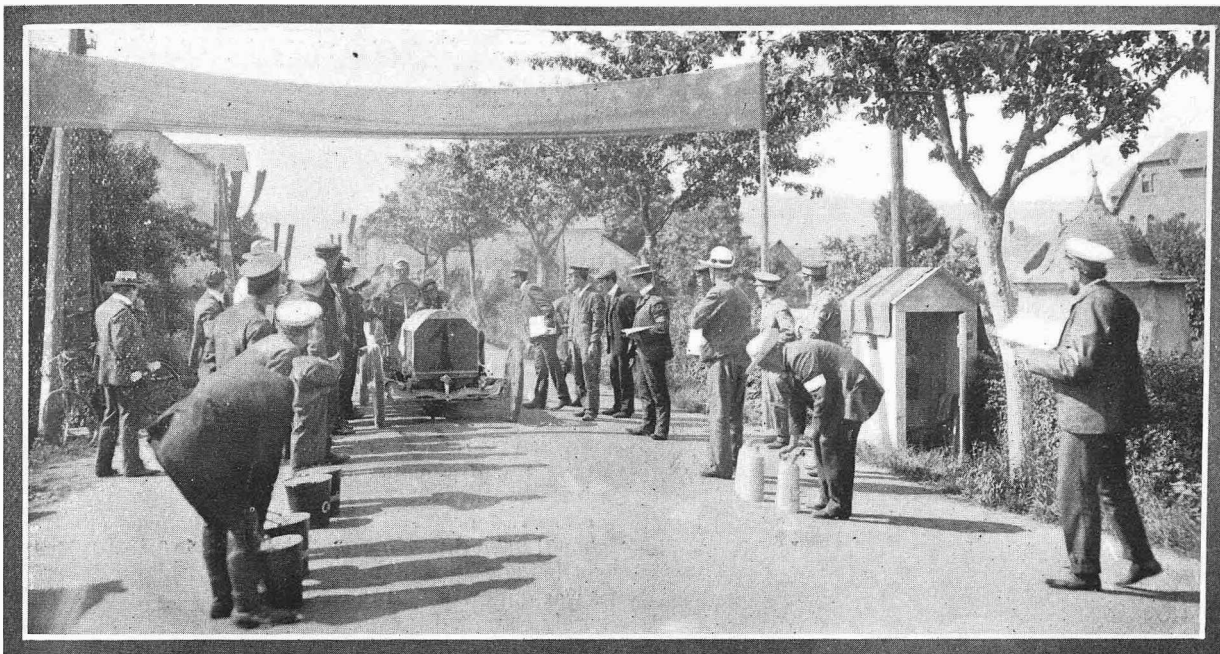


Warden, the American driver of one of the Austrian Mercedes.

continuous climb of no less than fifteen miles between Veille Brionde and Fix. The Auvergne, which is an extinct volcano country, contains some of the most picturesque scenery in France. If Clermont-Ferrand were made the starting point things would be very rosy for our good friends the Michelins.

**M. Thery's Characteristics.**

A phrenologist favours us with the following "delineation" of the leading characteristics of 'be Gordon-Bennett hero, and those who know the victor personally will be able to judge whether or not it is an accurate estimate. To our mind it sums him up admirably: M. Thery carries with him many of the characteristics of John Bull, and for that reason will be admired by Englishmen. Stolid qualities of body and mind, love of ease, comfort, and enjoyment, together with great powers of endurance. These are the prevailing indications, as gathered from photographs of the hero. Under ordinary circumstances he would not be disposed to distress himself, but pursues the even tenor of his way with steady and persevering energy.

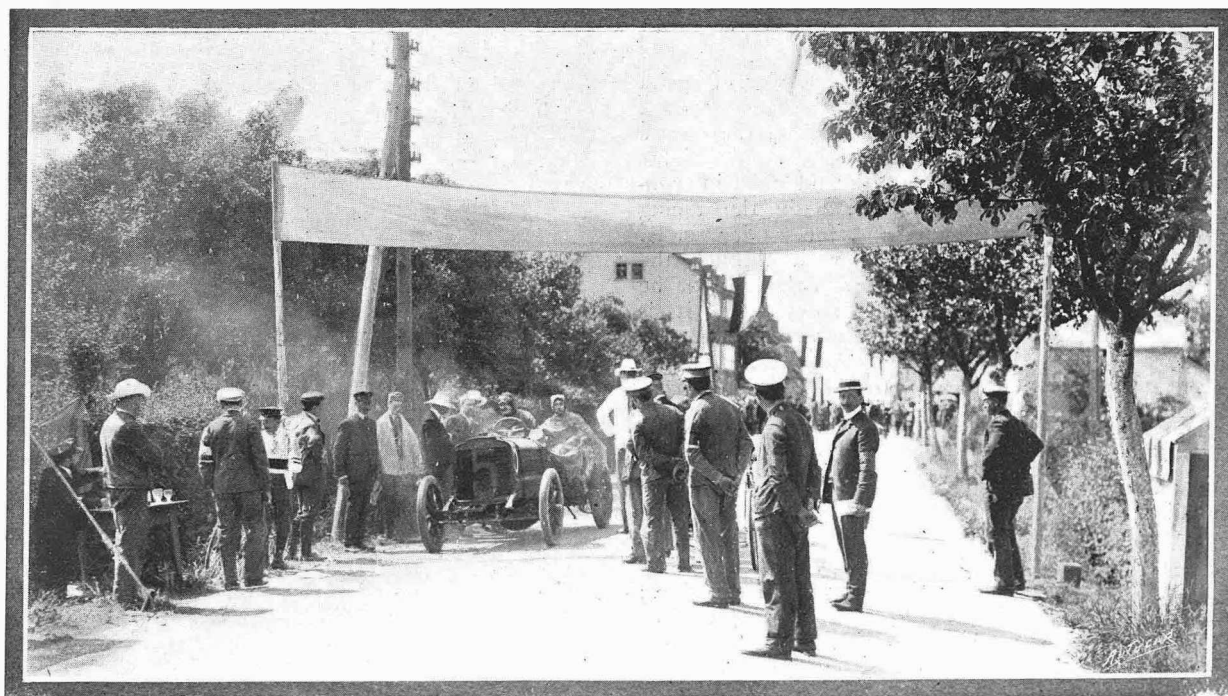


*Photographs by*  
Jenatzy coming into control, where the men in attendance are all ready to cool down his tyres with the contents of their buckets, while on the opposite side further supplies were in readiness.

*Argent Archer.*

It is on great occasions, such as the one in which he has so signally distinguished himself, that his reserve power is put forth to the fullest extent, so that ordinary folk open their eyes in wonderment that he was able to do so well, as compared with the lighter and more active competitors. But it is this reserve of power that is the secret of his success. The wide and round head shows tremendous driving force, and the total volume of brain is above that of ordinary mortals, so

that he possesses mental power in a high degree, fitting him naturally to surmount obstacles and become re-eminent. The purely intellectual part is well developed, giving superior intelligence for the direction of his strength, whether of mind or of body. The practical idea of things commends itself to a mind built on these lines, quick in observing, ready in adapting his knowledge to use, prompt, decisive, and skilful. An all-round man, at home anywhere.



They arriving at the same control, but his tyres being of another make the operators' interest is of a distinctly passive nature.



*Gordon-Bennett Echoes.***The Race at a Glance.**

At the Automobile Club the progress of the race was pictorially shown on a screen, the relative positions of the cars at the end of each circuit being shown by small models of the cars numbered and coloured according to their nationality. The plan upon which this was worked was extremely ingenious, the credit for its introduction being due to Mr. R. E. Phillips. The accompanying illustration shows the nature of the arrangement. The thin vertical lines represent divisions of time in intervals of five minutes, covering altogether two

GORDON BENNETT CUP RACE 1904																											
HOURS	2													1													HOURS
MINUTES	15	10	5	55	50	45	40	35	30	25	20	15	10	5	55	50	45	40	35	30	25	20	15	10	5	MINUTES	
POSITION OF CARS AT START																											LEADER AT END OF CIRCUITS
AT END OF 1 <sup>ST</sup> CIRCUIT																											No 5
AT END OF 2 <sup>ND</sup> CIRCUIT																											No 5
AT END OF 3 <sup>RD</sup> CIRCUIT																											No 5
AT FINISH																											No 5
RETIREMENTS {																											

hours fifteen minutes. The top row of model cars starting from the right-hand side, shows the order in which the competitors were started, and the second and three subsequent rows show the order in which they completed the four circuits, also the approximate times of their arrival after the first man in. The large figures at the extreme right show the winner at the end of each circuit. The other details are self-explanatory. Needless to say, the screen excited the keenest interest amongst members, as it enabled them to see at a glance how the race was progressing.

**Speed Trials at Frankfurt.**

As a wind up to the race proper, a series of speed trials was organised to take place on the racecourse at Oberforsthaus. The distance available on the course was just about a mile, and comprised two long straights with semi-circular ends, unbanked, and this, in conjunction with a loose dirt surface, made the racing very unsafe, not to say dangerous, for, as it was, A. Opel on a 45 h.p. Opel-Darracq went through the railings, and had he not been a first-class driver he must have run into some of the spectators. It is estimated that there were some 12,500 people present on the course when Prince Henry of Prussia represented the Kaiser, who gave one of the first prizes. Leaving the motor cycle events to be dealt with by our offspring *The Motor Cycle*, the results were as follow:

Five miles race for cars propelled by engines using alcohol, and under 15 h.p.: 1. Paul Henz, 13.6 h.p. Cudell, 8m. 10 $\frac{2}{5}$ s.; 2. Gleich, 10.2 h.p. Adler; 3. Lorenzen, Beaufort.

Five miles race for cars under 14 h.p., driven by amateurs: 1. Adam Opel, 11 h.p. Darracq, 8m. 10 $\frac{4}{5}$ s.; 2. T. Bohm, 12 h.p. Benz; 3. Lorenzen, 12 h.p. Beaufort.

Ten miles race for cars under 40 h.p., using alcohol: 1. Willy Pöge, 40 h.p. Mercedes, 12m. 29 $\frac{1}{5}$ s.; 2. Adam Opel, 39 h.p. Darracq; 3. — — — 39 h.p. Darracq.

Eight miles race for cars of less than 24 h.p. weighing

over 600 kilos: 1. Opel, 24 h.p. Opel-Darracq, 11m. 51 $\frac{1}{5}$ s.; 2. Teves, Adler; 3. — — — 24 h.p. Opel-Darracq.

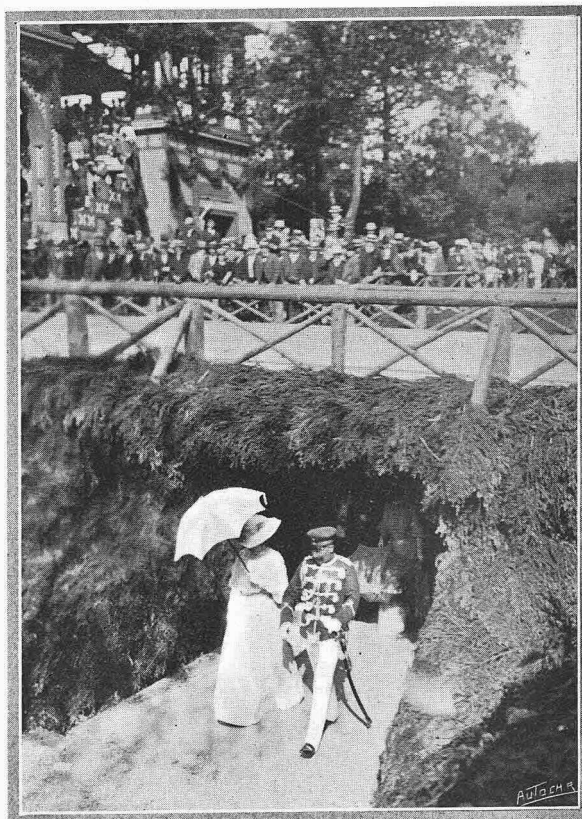
Ten miles race for touring cars of less than 30 h.p.: 1. Opel, 26 h.p. Opel-Darracq, 15m. 24 $\frac{4}{5}$ s.; 2. Percy Martin, 28 h.p. Daimler, 15m. 28s.; 3. — — — 26 h.p. Opel-Darracq.

Ten miles race for cars up to 60 h.p.: 1. Willy Pöge, 37 h.p. Mercedes, 12m. 12s.; 2. Opel, Opel-Darracq; 3. — — — Opel-Darracq. Opel drove wide at one of the bends and broke through the railings. The race was declared void, and restarted, when Opel came to scratch on another car similar to that with which he had previously made wild evolutions.

About halfway through the programme, and before the contest for the touring cars took place, M. Thery drove on to the course amidst the strains of the "Marseillaise," played by the excellent band which provided music for the entertainment of the spectators during the afternoon. His car was tastefully decorated with the tricolour, and he drove carefully round the course two or three times. It was arranged that he should have driven a slow lap and then a fast one, but not being acquainted with the course, and noting that it was quite unsuitable for the top speed of his car, he wisely refrained from doing more than a steady jaunt round the course.

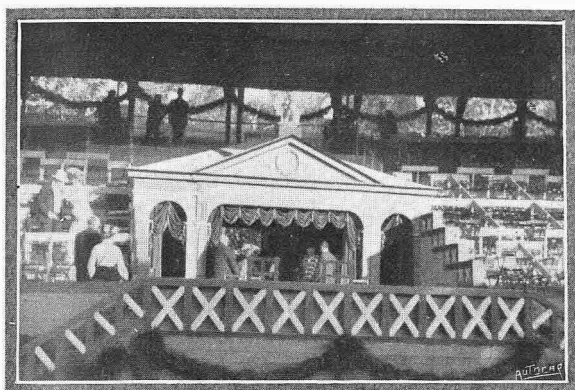
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Messrs. Van Raden and Co. inform us that the 72 h.p. Wolseley driven by Mr. S. Girling was fitted with one of their induction coils.

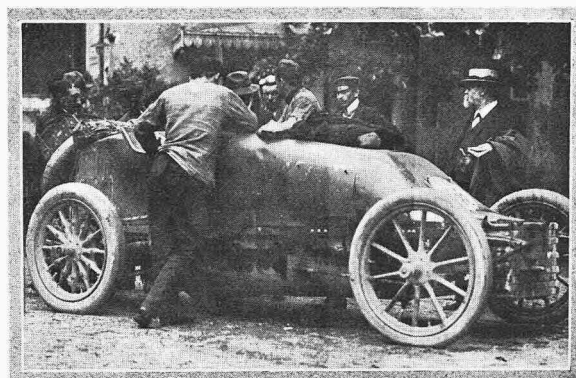


The Kaiser and the Kaiserin at the Saalburg. His Imperial Majesty was most enthusiastic about the race. He arrived before half-past six in the morning, and after a visit to Hamburg, at noon, was back again in time to welcome the winner. The Empress of Germany was also present, and followed the events of the day with the keenest interest. This is the first time that the Gordon-Bennett race has been attended by Royalty, but we have no doubt it will not be the last.

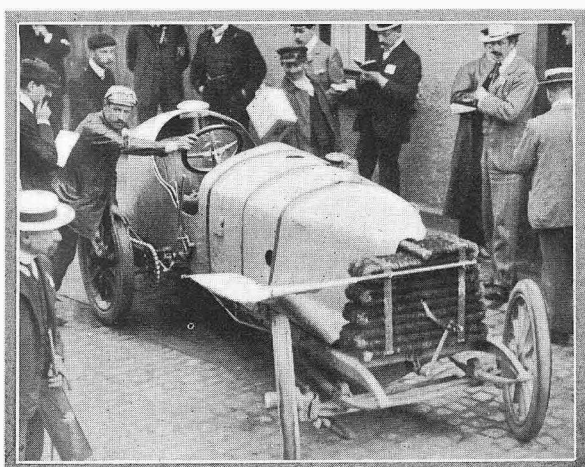
# REMINISCENCES OF THE RACE.



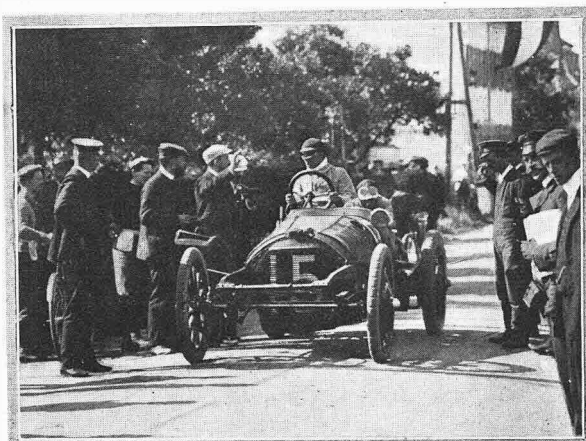
The Royal box at Saalburg. H.M. the Emperor is seen on the right of the picture in uniform.



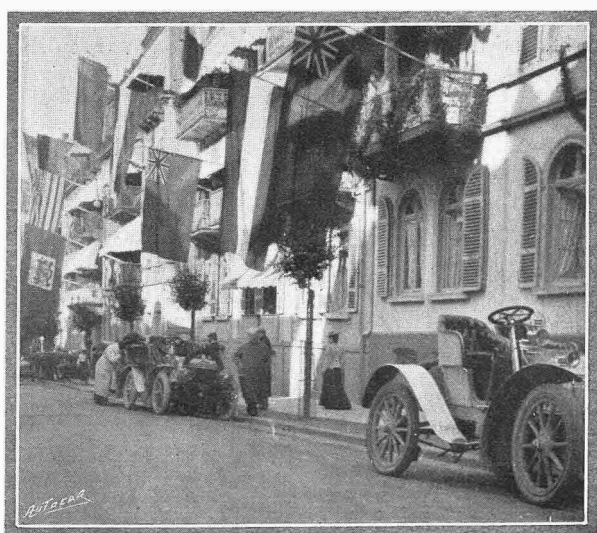
Photograph by *Argent Archer.*  
A late arrival at the Belgian headquarters and a consultation over a Pipe car.



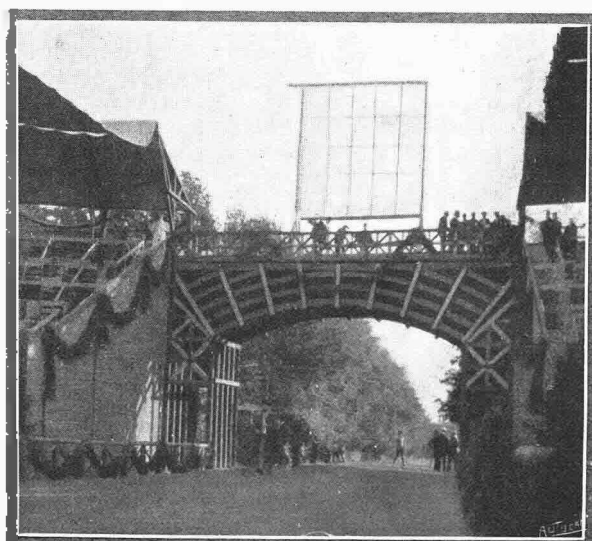
Photograph by *Argent Archer.*  
Salleron coming off the weighbridge.



Photograph by *Argent Archer.*  
Jarrold at the Usingen control.



A sample of the G.B. decorations in Homburg.



The telegraph board at the Saalburg.



# WATER CIRCULATING PUMPS.

By F. Strickland.

Among the small parts that have frequently given a great deal of trouble in cars, pumps are one of the worst. It would seem a very simple thing to make a pump that would do all that is required in a car for a good many thousand miles' running, but very often this at all events is not done.

It must be remembered that few pleasure cars run more than one or two days a week, and not so many hours a day, so that they have a very easy time indeed compared with other machinery which usually runs nine hours a day, and often three hundred days a year. Consequently, to be as satisfactory as other machinery, they should run something like years with a little attention, but without breakdown. I believe that we shall get to this in time, but at present we are a good way from it, largely in consequence of bad details.

There have been four principal types of pumps in use at different times in cars, and we will take, in the first instance, the semi-rotary of the old Daimlers. This has a great many parts in it, and is consequently an expensive one, and it has to be driven by a crank and connecting rod, which is an expensive thing to fit up. Nevertheless some of these pumps have given very good results indeed, and are running well, although years old. They gave a good flow of water, which was positive, and would suck from some depth, which was sometimes an advantage. Probably the rocking motion is not suitable for the speeds at which modern engines are usually run, and they are hardly ever now fitted.

The second type is the rotary positive pump with a sliding shutter. This is a type of which I have not had personal experience, but it does not seem at all good, and seems to require a great deal of lubrication to prevent it sticking.

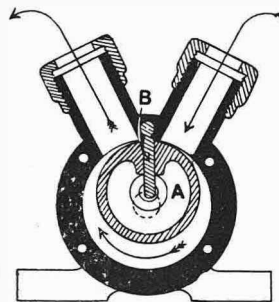


Fig. 1. The rotary force pump. A, rotary disc. B, spring vane.

There are two types at present largely used, the first being made of two cogwheels gearing into each other. This is a type which should be so made that it will run practically for ever with very little wear, and in which the wearing parts are easily replaced. In practice, however, in a great many cases it is very unsatisfactory, and there are lots of cases of pumps of this kind completely wearing out in a

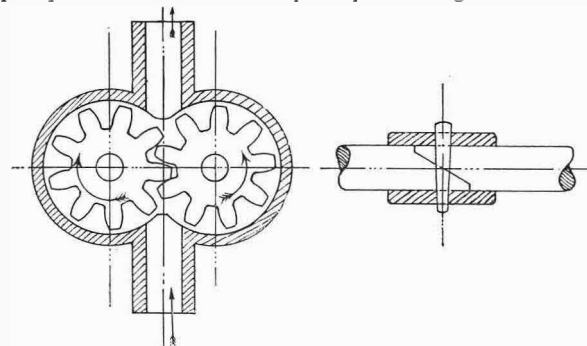


Fig. 2. The gear type of pump and a good form of connection.

thousand miles running, say ten days' hard work. Fig. 2 gives a section of one of these pumps, showing the

action of pumping the water. It will be seen that there is a considerable side pressure on the spindles, owing to the thrust of the cogs in the pump. Now, a pump to be satisfactory should run without any lubrication except the water which it pumps. Obviously it is not a good thing to put grease in the water, as this will cover the sides of the water jacket round the cylinders, and also the inside of the radiator, and take away from their power of dispersing heat. Further, the fewer places there are in a car to be lubricated the better. What is at present wanted is not a car that

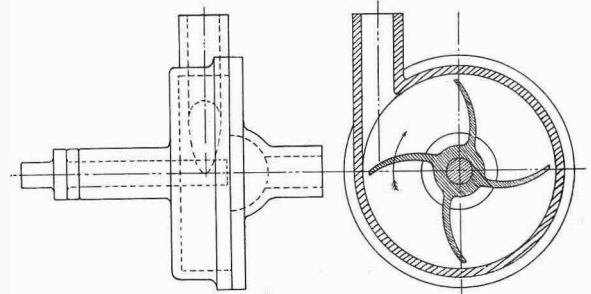


Fig. 3. The centrifugal pump.

can be made to go with a great deal of attention, but one that will go with the *least* amount of attention possible.

Now, most of the pumps I have seen are made with steel spindles running in the brass casing of the pump as a bearing. The result is exactly what takes place when steel is run on brass with water lubrication anywhere else. The steel cuts the brass, and the pump is soon worn out. I have had one of these pumps in use now for about a year, and its history is interesting. It ran very well for some 3,000 miles, and then the spindle wore through the side of the pump. This was bushed, and it was then found that the cogs had worn by rubbing against the sides of the pump case, while the spindle was so worn that the pump could not pump properly, as there was a leakage there. To save time, a new pump was put on, and this broke down in a couple of hours from the cog coming loose on the spindle. This was repaired, and the pump ran several runs all right, and then seized, twisting off the shaft that drives it. Fig. 2 also shows what I consider to be a good method of making the connection. It does not seem to be at all a difficult matter to place a sleeve over the two ends, and simply put a pin through each, as the latter is cheaper, and if anything sticks the pin goes, and a new pin can be put in on the road. As it was, I spent a day at the repair shop having it repaired.

The remedies for these troubles would seem to be: (1.) The spindles and cogwheels should all be turned out of one piece of gunmetal. (2.) They should run in proper white metal bushes instead of brass bearings, like all other bearings that have to be run with water lubrication. There is a regular white metal that is used for the tail shafts of boats, which is 80 parts zinc, 16 tin, and 4 copper. Many other white metals will run very well, though I believe not so well, but it has been known for long years enough that brass will *not*. Even with this, I think this form of pump inferior to the centrifugal (fig. 3), as, first, it costs more than twice as much to make; second, even if properly made with white

metal bushes it is much more liable to wear if it gets sand in it, as is often the case. The centrifugal is the last form in common use, and seems much the best. It used to be driven from a friction wheel off the flywheel, which does not seem to be a good way of driving, as it is uncertain. Now, however, a great many makers are fitting gear-driven centrifugals which work well if they are of sufficient diameter without having to

be driven at any very extraordinary speed. It is in every way the simplest, and as it does not depend on any part being a watertight fit inside it does not suffer from dirt in the water. There is one slight improvement that I think might be made, and that is doing away with the stuffing-box, and making the spindle tight by a collar running against a flange. This would be cheaper and less likely to seize.

## CASUAL COMMENTS. By A. J. Wilson.

### Spoiling the Ship.

Why is it that so many cars—at any rate, of the small and medium classes—are sent out without throttles? The only answer that I ever obtained was, when questioning the maker of a car which had cost £600, that “you could not expect everything on a cheap car.” A car listed at £600 may be cheap from some people’s point of view, but it seems to me that the purchaser of such a car has the right to expect an efficient throttle-valve to be fitted to it. It is quite a common thing to find cars furnished with Longuemare carburetters destitute of any means of controlling the quantity of gas passed from the carburetter to the induction pipe. In some cases, even when a wire and lever are fitted to the throttle lever, the throttle of the carburetter is so extremely loose that it allows so much gas to leak past it as to make the throttle practically useless. In such a case the only remedy that the owner of the £600 “cheap” car has is to get some intelligent mechanic to fit a butterfly throttle to the induction pipe, worked by a Bowden wire terminating in a lever on the steering pillar.

### Violent Government.

Another common defect of the “cheap” £600 car is that the governor is so imperfectly proportioned that it works with extreme violence, not coming into action until the engine races excessively, and then cutting off the supply of gas with such suddenness that the car slows down to a mere crawl; then the vehicle is propelled forward with a jerk most disconcerting to the passengers. To prevent this, the accelerator pedal has to be depressed to an excessive degree, and the only way to compel the car to progress with anything approaching smoothness is to let the clutch slip and the engine race in a most injurious fashion. The fact is that insufficient attention is paid to the requirements of the average automobilist who wants to drive in a rational and law-abiding manner: methods of smoothly controlling the pace are subordinated to means of forcing the car along at the highest speed that can be flogged out of it.

### Luck or Coincidence?

Of course there is no such thing as luck; but it is difficult to avoid the conviction that certain roads are lucky and others the reverse. For years past, for example, I have been consistently unfortunate whenever I have ventured to travel westward along the Exeter Road. Whether on motor cycle or motor car, I have never been able to get as far as Basingstoke without some more or less disconcerting *pause*. On the other hand, the Portsmouth Road has always proved very kind to me. I can always make a non-stop run to Southsea and a non-stop run back.

### More about Roads.

What a splendid surface the Coventry Road has this year! For two years past steam rollers have been continually at work along practically the whole of the

distance between St. Alban’s and Coventry, and the result is now seen in the uniformly excellent state of the surface. This is another of my lucky roads, whereupon I have never met with the slightest trouble during the scores of times I have traversed it. A popular *détour* from the main road is from Weedon, through Northampton and Bedford; but just now the main street of Northampton is undergoing the same upheaval for tramways as most of the highways within a dozen miles of London. Reading of the police traps that have recently been reported at Wallop reminds me that unless you are driving a very powerful car it is best to forsake the main road from Andover to Salisbury, with its almost interminable series of hills over bleak country, and find your way through Wallops, provided, of course, that you are a law-abiding motorist free from dread of the police. It must be quite a quarter of a century since this tip was given to me by Mr. E. R. Shipton, of the Cyclists’ Touring Club, and I always adopted it when cycling, but it was not until recently driving a car by the main road that I fully realised the advantage I had enjoyed, thanks to the secretary’s local knowledge.



The old and the new methods of long distance road travelling undergoing repairs to their tyres. This interesting picture was snap shot by Mr. E. J. Thomas, of the Western Club, Glasgow.

A reader of *The Autocar* is anxious to know whether self-contained portable acetylene lamps similar to the head lights used on motor vehicles are obtainable for house illumination. Of course, he does not refer to the acetylene gas plant, such as is occasionally used in the country, but to portable self-contained acetylene lamps to take the place of the ordinary gas or oil lamps now in use. We do not know whether such lamps are made, but we imagine there would be some difficulty, as all gas lamps we have used on motor cars have some little escape, either through over-production of gas or other causes, and while this is of no inconvenience whatever on a motor car, as the air current takes it away, it would be unpleasant and possibly even dangerous indoors.

## MOTORING IN A NEW LIGHT.

When we first thought of investing in a motor one of the chief drawbacks presented to my mind was a dread of the inconvenience we should inflict on passers-by, and even more of the black looks we should encounter from owners of restive horses, etc., and the general unpopularity we should incur from all classes of the community. My husband partially relieved my mind by assuring me that if we drove carefully we should arouse no resentment, but so convinced was I of the popular hatred of the motorist, that when we first started from London on our tour through England my one comfort was in the thought that my tall motor screen might shut out from my view some of the more ferocious scowls directed at me. This being my preconceived notion, my surprise was all the greater at the real state of things, and I am glad to have this chance of recording my sense of the extraordinary kindness we met with from the very classes whose resentment I so dreaded.

Instead of being regarded as a feared and hated monster—a sort of Juggernaut tearing through the country lanes on errands of destruction, and whose breakdown should be a cause of jubilation—the motor was looked upon as a source of amusement when in motion, and of absorbing interest and sympathy when compulsorily stationary.

My first surprise was in the attitude of the policemen in London and the suburbs, as I expected them, of all people, to look at us askance, and, if they gave information at all, to give it grudgingly and of necessity, instead of which, from first to last, they were our true and constant friends.

I still thought, however, that once we got into the country and among restive horses our career of unpopularity was sure to begin. The first specimen we met was in a farmer's cart, while we were, alas! broken down by the side of the road with what turned out to be a piece of dirt in the carburetter (perhaps under these circumstances we could hardly be said to *meet* the horse). Anyhow, the farmer in charge of it was most amiable, and walked the horse backwards and forwards to get him accustomed to it. About the same time an old woman came up, asking if she might look on and examine the motor, and her interest in it all was amazing. We offered her a ride in it, which she declined with thanks and a good deal of obvious alarm. She entertained me pleasantly, while the obstruction was being removed from the carburetter, with scraps of local information, such as "That's Mr. Fairbrother!" in an awed tone of voice, as a burly farmer drove past in his trap. I duly followed Mr. Fairbrother with glances of respectful admiration, and the old lady and I parted the best of friends.

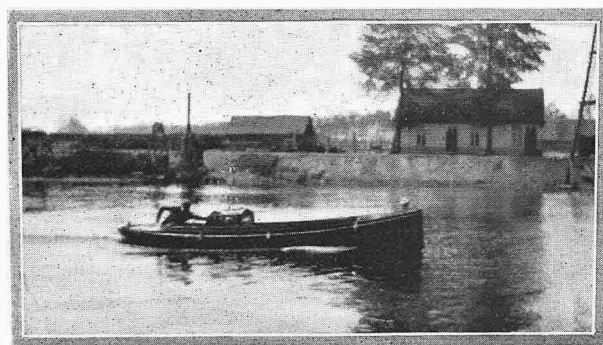
My fears were now beginning to subside, but I was still far from realising the facts which our five hundred miles of travel were so forcibly to bring home to me—namely, that a careful, considerate, motor driver makes friends, not foes, on his journey, and that the unpopularity of motors (where it exists) is owing to the careless and reckless driving of professional chauffeurs; that, on the contrary, motoring is a means of bringing different classes together on a friendly and intimate footing, such as has not existed since the days of coaching, and scarcely even then. Compare a motor journey such as ours with a railway journey of the same length, where one never speaks to a soul, and never even sees the third-class passengers. We, on

the contrary, got advice and assistance from carters, navvies, schoolboys, sailors, commercial travellers, to say nothing of the village schoolmaster, who came to our rescue when we had lost our way, or the muscular parson, who pushed us out of the ditch when our engine would not start!

Then the dear little village inns, one (in Wales) so primitive that tea, toast, and eggs were the only viands forthcoming for lunch, and these we ate in a lovely old kitchen, while drying our clothes before a blazing fire, in company with an old woman and her little grandchild—wayfarers sheltering from the storm—all of whose family affairs and troubles I had learnt before our sojourn was ended. One felt one had got back into the Dickens days, and would not have been surprised to see little Nell and her grandfather step in at the open door.

Space fails me to give the details of our route and adventures, of our sole casualty—a slightly maimed hen—and of the hill we could not climb till about twenty schoolboys came to our rescue and pushed the car up, making it look, as I walked behind, like a monstrous insect crawling up the incline. I have said enough, I hope, to prove my point, and perhaps to induce a little more consideration in some who have hitherto been deficient in it. I can assure them it is well worth it—that is, if they appreciate smiles and kindness as much as I do, and have the same dread of scowling faces and unpopularity. A. M. B.

In defence of my much-maligned car, whose shortcomings my wife has so unfeelingly if graphically described, I may say that the causes were: First, a slipping clutch; secondly, displacement of an ignition arm magneto, causing the car to run on three cylinders for a long time before being discovered and put right; and thirdly, that I had only had an hour and a half's instruction from an expert in Regent's Park before starting on our travels, never having driven a car before, though knowing something of motor engines, and I brought the car alone with my wife from Suffolk to Holyhead, and thence eighty miles to my home in Ireland, where it arrived in splendid running order. I had to execute all necessary repairs on the way, and the run from Chester to Holyhead was in the teeth of a furious gale and torrents of rain.—G. M. B.



This smart looking little craft is the property of Captain Theo. Masui, agent general for the Germain motor cars in this country, and lately took the first prize at Ghent in a five kilometres' race, covering that distance in 16m. 14s. This speed is equal to close on 111 miles per hour. The launch will accommodate from six to eight persons, is 21ft. long, and is propelled by a 7½ h.p. two-cylinder Germain motor.

## THE STRENGTH OF THE PRESSED STEEL FRAME.

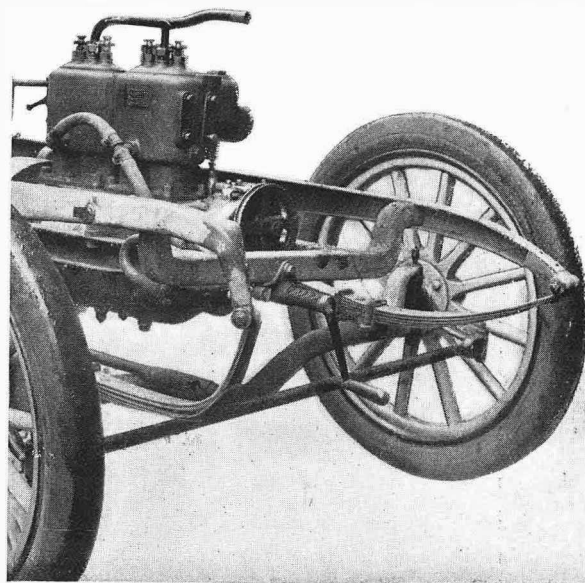
There was a widespread impression at one time that pressed steel frames, satisfactory though they were in most respects, and smart as they looked, were not satisfactory if the car to which they were fitted met with a collision or any serious shock. The two photographs we reproduce are therefore of particular interest, as they not only prove the strength of a good stamped frame, but also show that it is easily repaired. The first picture represents a pair of oak gates of solid construction into which the owner of a 14 h.p. Talbot absent-mindedly drove his car. It never struck him till too late that he had omitted to call his lodge-keeper. The planks forming the lower portion of the gate are eight inches wide and two inches thick, while the main frame of the gate is ten inches deep and three inches thick. The front of the car, of course, took the brunt of the shock, but no damage was done to it—only the paint knocked off the nose of the right-hand extremity of the steel frame. The state of the gates gives a good idea of the shock. The owner drove 120 miles straight away after the accident, when he had satisfied himself that no damage had been done.

The other illustration of the front of a car of the same type is even more instructive. It will be noticed



that the right-hand member of this frame is doubled up at right angles, while the right-hand spring is also similarly damaged. This was caused by the driver

running into the side of an electric tramcar at right angles. The left-hand member burst one of the panels of the car, but the right-hand member unfortunately



struck one of the stays to which the panels were bolted and so doubled back. As it was, the left-hand prong not only burst the panel of the tramcar, but remained engaged with it, and the car was dragged for one hundred yards sideways. The owner had the radiator, dash, and body removed, and the car carefully examined. Everything was all right, including the steering and even the starting handle. The differential was taken down, as was also the change-speed gear, both these and the engine being found in perfect trim. The bent frame was straightened without difficulty. Neither the top part which is in tension, nor the bottom which is under compression, showed the slightest fracture after the inspection was made. The car has been driven some eight hundred miles since it was put right. We think these two examples afford excellent proofs that a good stamped frame will stand a very great deal more knocking about than many people imagine.

Some illustrations of body designs by Messrs. Jas. Walmsley and Co., Ltd., of Guildhall Street, Preston, are among the most original and striking we have seen. Some of the designs for detachable tops are particularly smart. They are composed chiefly of canvas and glass, and are made so that they can be quickly removed, though, of course, those who wish it can have stronger and more permanent structures to the same designs. One of the uncommon devices is that a sort of pent house or screen is fitted over the front glass, so that the upper portion of it is kept free from rain to a very large extent, and consequently that part through which the driver looks is not blurred by the wet. Not only so, but no water runs down from the roof over the glass. These are distinctly practical points which could only be thought of by practical men. Reference to this firm reminds us that not only have the Lancashire coachbuilders a very fine garage at Preston, but they also have a new and very handsome place at Bridge Street, Manchester.

"De Dion-Bouton Motor Carriages: Their Mechanism and How to Drive Them." is the title of a most useful handbook by Mr. R. J. Meccredy. It is the fourth edition of the little book, which deals very clearly and in untechnical language with the De Dion system, so that any careful reader who has no knowledge of mechanics or of motor cars can get a proper grasp of the subject. It describes the internal combustion engine briefly, and then gives a description of the De Dion engine and mechanism. This is followed by chapters on the care of the car, and on driving it to get the best results. There is also a most useful chapter on roadside troubles, how to cure them, and last, but not least, how to trace the cause of an involuntary stop. Though the De Dion is the subject, the greater part of the book is applicable to almost any single-cylinder motor car. It is published by *The Motor News*, of Dublin, but can be obtained from *The Autocar* Offices, 3, St. Bride Street, London, E.C., for 2s. 2d., post free.

## USEFUL HINTS AND TIPS.

### On Lubricating Oils.

In a number of motors, although the compression is good, power is not developed in accordance with the size of the cylinders, and there appears to be a decided tendency to overheat in the engine. This is often due to using a lubricating oil which is not suitable for the type of engine, as it is found that an oil which gives good results with one type is worthless for another. An oil may appear thick, and yet under the heat and working conditions may thin out to such an extent as altogether to lose its lubricating quality. If this is experienced with water-cooled motors, a good brand of oil usually employed for air-cooled motors should be tried. The results will be found to give satisfaction in most cases.

### Overheated Bearings.

When the main bearings and big end of the connecting rod brasses are scraped in when new or after running some considerable time, it is necessary to take up the wear and re-scrape the brasses after a greater or less period. On again running the motor it is sometimes found that there is a tendency to overheat the bearings, and liberal supplies of oil must be given to avoid seizing. It will be found that if after scraping in the brass, and before putting on lubricating oil, the wearing surfaces are well rubbed with flaked graphite, they will run much sweeter and will not have the same tendency to heat up. When examined under a microscope the brasses appear to be porous, and made up of more or less sharp crystals. The effect of the graphite appears to be that the pores are filled up with this unctuous material and a smooth surface formed, friction thus being materially reduced.

### Trouble with Distorted or Sticking Valves.

There are times when misfiring takes place at intervals and the ignition appears to be at fault, but may prove to be that owing to the overheating of the exhaust valve it has become distorted, pitted on its seat, or the stem is slightly seizing in its guide. The symptoms are very similar. In the first place it will require carefully truing up in a light lathe, care being taken to preserve the correct angle of the valve seating, and to keep it absolutely true and straight with the stem, the slightest eccentricity of one with the other being fatal to the running of the motor. If pitted badly it will also require turning in the lathe and grinding in afterwards, or if

slightly pitted grinding-in only will suffice, fine flour of emery and common lubricating oil only being required. To cure the sticking stem, smoothen it up with fine emery cloth to slightly reduce the diameter and remove the roughness, oil slightly, and replace after grinding in the seat. If the valve stem become slightly bent in any way it is sure to stick. It is better to put in a new true valve at once, if the old one cannot be made perfectly true.

### Strain all Petrol.

Before being poured into the tank all petrol should be passed through an efficient strainer, as at the present time there appears to be a very fine cotton or woolly substance present which the ordinary gauze strainer is too coarse to prevent passing through. The result is that after a time the gauze strainer through which the petrol passes before reaching the float chamber becomes choked with this foreign substance, and irregular supply to the nipple follows, with consequent irregular working. The use of a piece of fine old muslin in addition to the gauze of the funnel used for filling is recommended, and if the muslin is, before the first time of using, well scoured by passing some petrol through it, all lint is removed, and perfectly filtered petrol only passes through.

### The Connection of the Earth Wire.

When the earth wire is connected to the frame at some distance from the contact-maker, the engine very often appears to be sluggish in action, and does not develop its best power. This is due to the voltage of the battery being of too low a pressure to overcome the many more or less clean metallic connections existing between the earth wire and its final contact to complete the primary circuit, as, although the resistance is small when the parts are first put in place, oil and dirt work in and increase the resistance to the passage of the current after working for some time. Therefore the earth wire should be connected to any part of the motor near to the contact-maker, so that the current has to pass through the smallest number of joints. The battery will then give a hot, efficient spark at the sparking plug, even when almost run down to 3.8 volts, and a marked improvement in the speed and power developed by the engine is noticed. Care should be taken that the wire connection is made quite tight, or misfiring is certain to take place, the sparking plug often being blamed for this when it is faultless.



A sharp turn near Idstein.



Views on the Taunus course.

Idstein from the course.



## CONTINENTAL NOTES AND NEWS.

**The General Meeting of the Chambre Syndicale de l'Automobile.**

The general meeting of this institution has been held at the Automobile Club de France under the presidency of the Marquis De Dion. All the members of the association save two were present, and after the president had read over the report on the financial situation, which was approved unanimously, the committee and officers for 1904-5 were elected. The presidential seat the Marquis De Dion was requested to take again, but he staunchly refused on account of a precedent which had been set down three years ago, and on the proposition of M. Gobron he was unanimously named honorary president. The following officers were elected: President: M. F. Max Richard; vice-presidents, MM. A. Peugeot and E. Mors; general secretary, M. Bocandé; treasurer, M. Lemoine; secretary, M. Gobron. M. Max Richard thanked his colleagues in the name of the committee for the confidence they had reposed in them, and added that he felt personally very much the great honour that had been conferred on him for the second time. In a short speech he traced the success that had attended the society's efforts for the good of the automobile trade. Amongst other successes he mentioned the re-establishment of racing in France and the creation of the eliminating trials for the Gordon-Bennett Cup, which were due to the efforts of the association.

**The Spa Automobile Week.**

The Automobile Club of Spa is organising an automobile week, commencing on the 26th of July and ending on the 1st of August—that is to say, just after the Ardennes Circuit. The following are the general lines of the programme:

July 26th. Weighing-in.

July 27th. Hill-climbing trial at Spa, from Spa to Malchamps—about three miles—for all classes of cars, heavy and light, and also for motor cycles. On the same evening the Spa Cup will be run over a mile course with a standing start on a hill.

July 28th. Criterion of motor cycles over a circuit of about sixty-two miles.

July 29th. Touring circuit over about seventy-nine miles. Then will follow an exhibition, gymkhana, and rally-ballon.

**Automobile Boat Race from Poissy to Meulan.**

The automobile boat race organised by the *Yacht* and the Yacht Club at Poissy over a distance of sixty-two miles took place last week in the basin of Poissy to Meulan. We may say at the outset that the two chief favourites were a disappointment—first, the *Trèfle-à-Quatre*, the great victor at Monaco, did not take part in the race; then the *Marsouin II*. was forced to abandon the race shortly after the start.

The following are the results of the different trials:

**RACERS** (sixty-two miles).—First Class (for boats of less than 26.2ft. in length): 1, *Titan II*. (M. Mestayer), hull made by Tellier, Delahaye motor, 2h. 56m. 36s. (First round, about twenty and a half miles, 57m. 38 $\frac{3}{5}$ s.; second round, about forty-one miles, 1h. 55m. 41s.; third round, sixty-two miles, 2h. 56m. 36s.) *Titan II*. has thus won the Marius Dubonnet Cup, hitherto held by the *Flore*, belonging to M. Senot. 2, *Princesse Elisabeth* (MM. Pirmez), hull made by Tellier, Delahaye motor, 3h. 8m. 24 $\frac{2}{5}$ s.

Second Class (racers of more than 26.2ft. in length): 1, *Musette* (M. Vinot-Deguignand), 4h. 18m.

**CRUISERS** (forty-one miles).—First Category (for boats of less than 21ft. 6in. in length): 1, *La Marguerite* (M. Jacques Desprez), Mutei motor, 3h. 14m. 13s. 2, *Alecyon* (M. Lermustiaux), 5h. 47m. 15 $\frac{1}{5}$ s.

Second Category (for boats of from 21ft. 6in. to 26.2ft.): 1, *Consul* (Messrs. Artus and Walton), hull made by Luce and Houllie, Bayard-Clément motor, 3h. 14m. 22s. 2, *Betsy*, 5h. 2m. 21 $\frac{3}{5}$ s.

**CRUISERS** (sixty-two miles).—For boats of from 21.2ft. to 39.3ft. in length: 1, *Vasy* (M. Albert Jean), hull made by Pitre, Delahaye motor, 5h. 7m. 42s. (record for cruisers). 2, *Usona II*. (MM. Felix Fournier and Knopf), 5h. 20m. 13 $\frac{1}{5}$ s.

**RACE FOR SPECIAL CRUISERS** (extra-réglementaire).—First Class: *Arion III*. (M. Fayaud), hull made by Lemarchand, Filtz motor, 6h. 35m.

Second Class: 1, *Saphir*, 6h. 59m. 39 $\frac{3}{5}$ s.

Third Class: 1, *Korrigan* (M. Leroy), 7h. 2m. 37 $\frac{1}{5}$ s.

**The Vanderbilt Cup.**

The racing committee of the American Automobile Association has just added a new article to the rules of the Vanderbilt Cup. The foreign cars must be entered as foreign cars, even though their owners live in America. This relates principally to all the American millionaires who are the owners of French or German cars, such as Messrs. Bowden, Stevens, Shandlew, Brokaw, etc. We may add that the donor of the cup himself, Mr. W. K. Vanderbilt, jun., is, as is well known, a great admirer of European motor products.

**An Automobile Balloon Rally.**

The French Aero Club organised last week, under the auspices of the *Figaro*, a grand automobile balloon rally. The starts of the balloons and of the chauffeurs took place from the Aeronautic Parc at St. Cloud. The aeronauts set out at thirty-one minutes past four in the afternoon. The *Bengali* (430 cubic metres), which led the rally, rose rapidly. The Count de la Vaulx, who was in charge, was to land in a territory between nineteen and twenty-eight miles from the starting point.

The other balloons set out in pursuit in the following order: At 4.33 *Moriciana* (700 cubic metres), Count de Contades, the Duke d'Uzes, and the Count de Frise; at 4.35, *L'Espoir* (980 cubic metres), Count d'Oultremont and one passenger; 4.40, *L'Oubli*, (1,000 cubic metres), M. André Legrand and M. de Vilmorin; 4.44, *L'Eden*, (800 cubic metres), M. Georges Dubois, M. Janets and M. P. Tissandier; 4.48, *L'Aero Club IV*. (530 cubic metres), M. G. le Brun and M. Nicol-leau; 4.50, *L'Esterel* (430 cubic metres), M. Barbotte.

The start and the weighing in passed off very well, under the direction of M. Mallet, notwithstanding a fairly strong wind.

The *Moriciana* and the *Espoir*, which sailed fairly low, seemed to deviate a little to the left of the *Bengali*, which the others followed perfectly.

Previous to the start of the balloons, the greater part of the chauffeurs had already taken the field. M. Huet, of the Racing Committee, had received eleven entries from the following automobilists: MM. E. Giraud, Count Brunetta d'Usseaux, Guffroy, Prince Radziwill, Bordé, Plassard, the Baron Lepic, M. de la Preugne, Count d'Urnella, Lionel Marie, and the Marquis of Clermont-Tonnerre.

The chased balloon Bengali landed at six p.m., at Friches-Blanches, about twenty-five miles from Paris. L'Esterel, steered by M. Barbotte, landed one mile to the right, and was captured by the Count Brunetta d'Usseaux.

### The Huy Automobile Meeting.

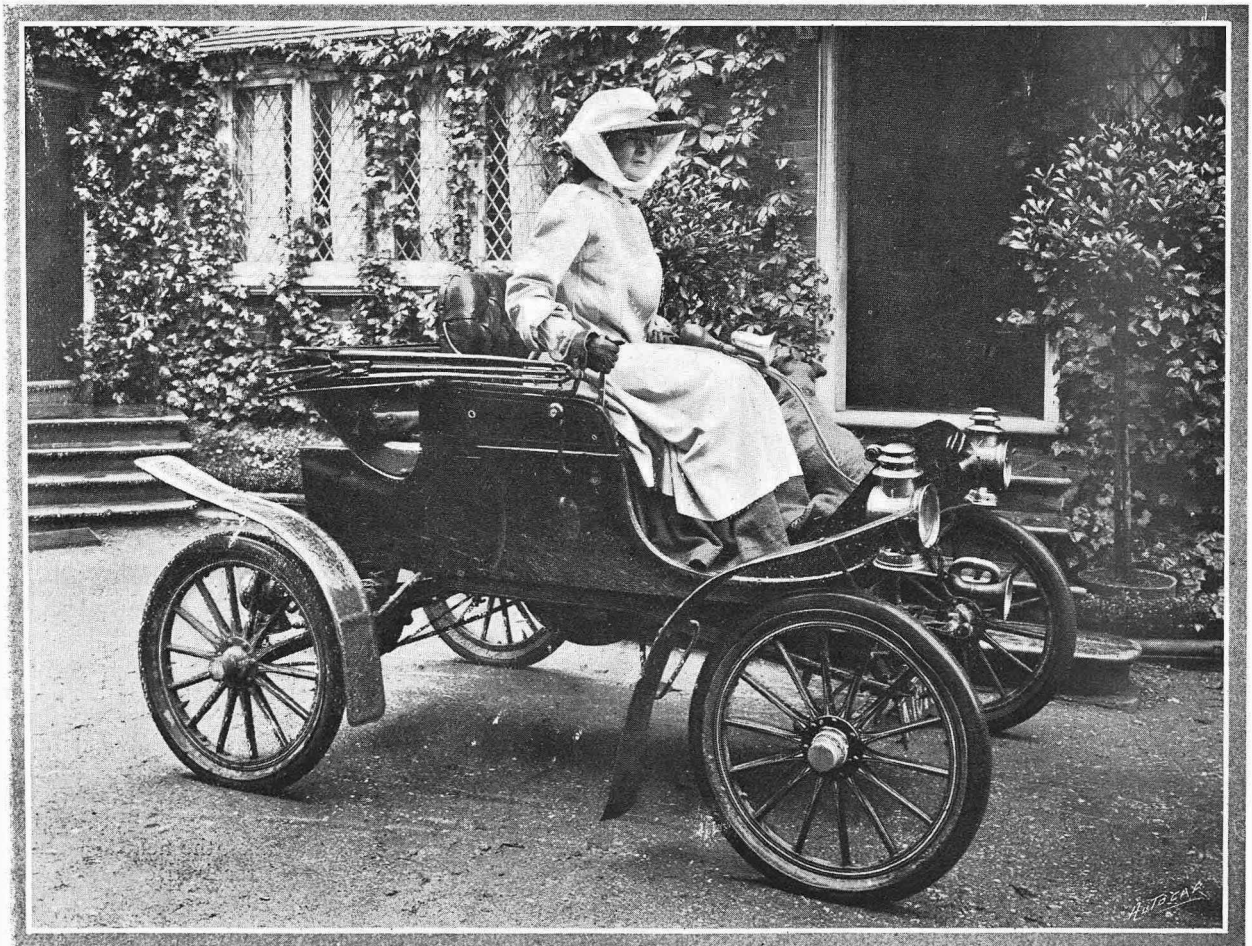
The Automobile Club of Namur and Luxembourg is organising for the 12th of July next a series of automobile trials, of which the following is the programme: (1) Kilometre with a flying start, in the morning; (2) hill-climbing trial over a kilometre, in the afternoon. The races are only open to members of the Automobile Club of Namur and Luxembourg, and to the members of a club recognised by the Automobile Club of Belgium, except for Categories 4 and 5, mentioned below, which are open to all competitors. The categories are the following: (1) Cars weighing more than 700 kilos; (2) light cars weighing from 400 to 700 kilos; (3) voitures up to 700 kilos; (4) motor bicycles of more than 50 and up to 250 kilos; (5) motor bicycles of 50 kilos and under.

### The Gordon-Bennett Cup in France.

The Gordon-Bennett cup has just come back to France. Such is the consequence of the victory of Théry on the Richard-Brasier. Having been held for

two years by other countries—England first and then Germany—the famous trophy will, in a few days, retake its place in the "Salon d'Honneur" of the Automobile Club of France, who will give this magnificent trophy a warm welcome. Théry has won a brilliant and indisputable victory. While he has proved himself a clever and capable conductor, he has brought to the front the Richard-Brasier car, and made famous the name of the skilful engineer to whom France owes to-day the honour of bringing back to her the cup. We refer to M. Brasier.

The French victory is so much the more meritorious in that the adversaries were more to be feared than they ever have been before. We saw at the Taunus first-class cars and drivers, all fully prepared for the struggle in which they were about to engage. Out of these elements the best has triumphed, or, we may say, the best have triumphed—the conductor, the constructor, and the car. We shall have next year the cup in France. No doubt the competition will be still more keen than this year's, although to-day the race has become the greatest automobile trial of the whole world—that which renders famous those who have the rare honour of possessing it. It would be unjust not to impute to the Marquis De Dion a great part of the French success. It is, in fact, due to him that France had eliminating trials.



Photograph by

Foulsham and Banfield, Wignmore Street, W.

Mrs. Brown Potter, the talented actress, at the helm of her Oldsmobile.

## CORRESPONDENCE.

## EDITORIAL NOTICES.

No letters from members of the motor industry will be published when they deal with subjects which may be regarded as advertisements for the writers' or their business interests. At the same time as many of the most practical suggestions come from those engaged in the motor industry, their letters will be inserted when possible, though the names of the firms they represent may be expunged, and the initials of the writers substituted.

Letters of a personal nature will be withheld.

The Editor, although accepting no responsibility for the opinions expressed by correspondents, reserves the right to publish a portion of a letter, and to omit any part which he does not consider interesting or essential.

All communications under a nom de plume should be accompanied by the name and address of the writer, not necessarily for publication, but to assure the Editor as to good faith.

Enquirers who ask for the experiences of private owners with specified cars, parts, or accessories, are requested to enclose a stamped addressed envelope so that replies which space will not permit us to publish may be forwarded to them. Circulars or letters from interested parties will not be forwarded.

## WANTED: GRACEFUL DESIGNS FOR MOTOR CARS.

[8853].—I venture to suggest, in the best interests of the motor car industry, that the time has come for our manufacturers to devote much more attention to appearances and design than has been attempted hitherto in these directions. A motor car is still, alas! alluded to contemptuously by the public as a hideous, evil-smelling monster. And I am regretfully—as the owner of a car—compelled to echo these sentiments. The large cars are, almost without exception, arks of primitive design—aboriginal from every point of view—ungainly monstrosities. This should not be; and need not be. It is a national failing to attach too much importance to what Britons, in their folly, call a "workmanlike appearance." And this fetish of ugliness has cost the nation millions of pounds in the last decade. Our manufacturers have scorned "appearances." Nay, rather pride themselves on their contempt for "the look of the thing." Good, sound work is to be commended, but this can easily be combined with good looks. It is the latter—other things being equal—that carries all before it in the long run.

Truth to tell, the trade has been too long dominated by the mechanic—the engineer, of all human beings the most hopelessly inartistic, slovenly, and careless of appearances—incompetent even to keep a car decently clean and well groomed. "When a car comes into my shop," said the manager of a large motor business to the writer, "I can tell at a glance if it is looked after by a groom or a mechanic. No one turns a car out so well as a regular coachman." Let our makers have recourse to the artist, the designer, the man of cultivated taste, and the result, I venture to predict, will be an immense increase in the popularity of, and consequent demand for, the motor car. For the reasons above stated, the public are prejudiced against motors. Don't sneer and rail at these prejudices, but try and remove the causes. Turn out a car that is "a thing of beauty and a joy for ever." Look at the locomotive engines on some of our best railways. Have they not a grace of their own—a symmetry of form which gives evidence of thought and design? Look at a modern battleship as compared with some of the early abominations, and admit that they combine grace of form with a suggestion of latent suppressed power. In designing a motor car there is no necessity to obtrude its motive force in all its native repulsiveness. Screen its unsightly parts and endeavour to make the car attract rather than repel by its ugliness.

That some of our makers and "experts" possess a sort of embryonic sense of the value of appearances is evidenced by the advice that crops up in handbooks from time to time, addressed to novices in search of a car, "not to be led away by appearances." And thus while regretfully admitting the value of good looks the wisecracks who dominate the trade make no effort to meet this "prejudice." It is all too silly. It is this British pightheadedness which has played havoc with our commercial supremacy all the world over. "Take it or leave it alone; but don't ask me to go out of my way to meet your wishes!" These are the sentiments, alas! of too many of our manufacturers, and the consequences are writ so large across the face of the globe that those who run may read—if they will.

The firm that first tackles this question of appearances has a great future before it. Let the trade journals assist by offering prizes for designs—something apart from the monstrosities that now disfigure the highways and country side.

COMMANDER R.N.

## RATIONAL RACERS.

[8854].—I have read with interest an editorial note in your June 11th issue with reference to "Rational Racers." I have given some study to this matter lately, and have worked out a scheme which may perhaps prove interesting at this juncture.

It seems to me that what is wanted is the establishment of a class of racing machines which will fulfil the conditions of speed and strength required in four-cylinder touring cars of medium power and weight. Cylinder capacity should certainly be limited as you suggest, although I think that 34 in. by 54 in. cylinders would not provide a motor powerful enough to fulfil ordinary touring requirements. My suggestion is to limit the total piston displacement to not exceeding 4,000 cubic centimetres. I would dispose of the matter of excessively high engine speeds by providing that the length or

the stroke of the piston shall not be less than the bore of the cylinders.

A car of this description is usually designed to seat at least five passengers in a moderately heavy body, which is equivalent to saying that such a chassis would have to carry a dead load of at least 400 to 500 kilograms. I would suggest a fixed limit of not less than 1,000 kilograms for the weight of the car loaded, including driver and mechanic, but without petrol and oil, and that any car falling short of this figure should be loaded with lead plates or other heavy material until it turns the scale at 1,000 kilograms. This limit could be lowered from year to year as the committee governing the rules of such a contest might decide. Manufacturers would thus have no direct incentive to build light racing shells, but would have a sufficient margin in hand to make every part thoroughly strong and of efficient size. At the same time, the manufacturer who can reduce weight in the running parts of his vehicle (that is to say "live" weight) would certainly gain an advantage over his competitors. I would also propose that the net weights of the cars in racing order (but without driver, mechanic, petrol, oil, and extra load) be made public so that this shall be an additional incentive to reasonable reduction in tare weight. The contest should take the form of a speed race over a 250 miles course.

Briefly, the adoption of such a scheme offers the following advantages:

- (1.) The speed interest would be maintained but at a greatly diminished risk.
- (2.) The expense to manufacturers would be so reduced that a larger number would be able to compete.
- (3.) The efficiency of the motor and transmission would receive greater attention at the hands of a far larger number of makers than heretofore.
- (4.) There would be no inducement to reduce weight at the expense of strength, but every incentive to keep it down to reasonable limits.
- (5.) Engines would have a reasonable speed of rotation and be quite practical for touring cars.
- (6.) Chassis, engine, gearing, etc., would be designed to carry the usual load placed upon touring cars, and not specially for racing purposes. The most successful cars would sell afterwards at good prices.

STEPHEN A. MARPLES, A.M.I.M.E.

## IMPROVING OLD DE DIONS.

[8855].—I would advise "Sigma" and other numerous correspondents to thoroughly study the drawings that have appeared from time to time of this most interesting, ingenious, and, to my mind, eminently practical gear—the De Dion.

I have often been surprised on seeing so many enquiries from "sufferers" that the makers or their agents have not taken the trouble to enlighten users how to adjust their clutches.

The remedy is as follows, and if carefully carried out should be extremely simple.

Within the gear box and extending for some length externally is a clutch-operating shaft, having formed upon it a right and left-hand thread at one end, each thread operating each of the two clutches. This shaft, for the purposes of determining its position after adjustment, has two keyways cut for the greater portion of its length at the opposite or outside end, a set-screw and lock-nut being arranged usually through the boss of the brake drum, adapted to engage the keyway and prevent the rotation of the sliding shaft. At a certain position will be seen a mark inscribed around the shaft. This indicates the neutral or midway position between the two clutches when that mark is close up to the gear box or case.

It often happens that the gears have been dismantled for some purpose, and the principle of the gears not being properly understood, they have been re-assembled with the clutches not in their original order. In that case there is

*Correspondence.*

nothing for it but to submit the car for inspection to a specialist who thoroughly understands the gear.

Should the clutches have been properly refitted they can be adjusted in the following manner without disturbing the gear box.

Put the speed-changing lever over to one gear, not too firmly; now release the set-screw and lock-nut out of engagement with the key way, and turn the shaft as far as possible (this has the effect of reducing the clutch on that side); now replace the set-screw for a moment, and set the shaft on the opposite side of gear box, and repeat the operation. Both clutches are now completely disengaged. Now bring the shaft to the midway position (the circular mark will indicate this), and wind the shaft all one way as far as necessary (usually about two turns from maximum). This will effect the expansion of both clutches, and leave sufficient clearance for neutrality. Particularly notice during these operations which gear was operated at either end and the direction necessary, and as the clutches wear set the shaft as described for adjusting both clutches together, or by bringing the shaft to the end for adjusting either gear separately, being careful to relock the set-screw firmly, but not binding on the bottom of the key way. It is not necessary to go through all these operations every time you adjust the clutches. I have purposely explained the method of making a clean sweep of all previous adjustments, and making a fresh start it will only be necessary afterwards to give half a turn to the shaft as the clutches wear, hence the reason of the two key ways.

If the foregoing is not quite clear I shall be pleased to further enlighten your correspondents. AUTO VET.

[Several other correspondents have written on the same subject, and as many of them desire to have full particulars of the method in which "Sigma" effected his improvements, we would suggest that he sends us for publication a detailed description of what he has done to his old De Dion car.—ED.]

**BENZOLINE AS A MOTOR FUEL.**

[8856].—Mr. S 261, who wrote letter 8849, can see the carburettor and have a sample of the liquid if he will make an appointment with me. He will then be convinced that the alterations did not cost me above one halfpenny.

I used less than a square foot of the old sacking the machine came in, and a short length of old string was used to fasten the sacking round the gas forming part of the carburettor. It only took a few minutes to make the alteration, and I never had occasion to examine or alter it again.

The carburettor has never been heated in any way.

I heard of benzoline ten years before I heard the term petrol. I have had much less difficulty in getting any quantity of benzoline than any kind of petrol. The cost is about twenty per cent. less here, and I found it less than petrol when I was touring 150 miles away. I asked for benzoline then. I have never come across a shopkeeper who did not know what benzoline was, and have never been offered kerosene instead. EDMUND HERBERT.

P.S.—The carburettor is at 24, Upper King Street, Leicester.

**MOTOR CARS FOR MEDICAL MEN.**

[8857].—The letter [8840] appearing in your last issue over the signature of "T. Janders Worboys" merely furnishes another example of the disappointment which must usually result when a buyer expects to obtain any good article for less money than it actually costs to produce it. I hold no brief for the makers of the car he complains of, but really Mr. Worboys should take himself to task for wanting too much for his money rather than seek to put all the blame on the car. In the first place most people would consider a belt-driven car now obsolete, which shows that Mr. Worboys had not studied his subject much before parting with his £160; and, in the second place, a little reflection ought to have convinced him that it is impossible to buy a thoroughly reliable up-to-date two-cylinder car for £160. He may take it from me as an indisputable fact that the actual works' cost for a perfectly constructed car of this description considerably exceeds that amount, and when establishment charges and a reasonable manufacturing profit have been added, such a car of 8 h.p. cannot be sold under about 250 guineas. Mr. Worboys may argue that £100 or so is a considerable difference, but how much better it would have proved for him to have given a fair price, which would have ensured his getting a car capable of giving him permanent satisfaction, instead of

considering only the question of first cost, and practically throwing his money away.

No man can afford to buy a car at some of the "cheap and nasty" prices which now obtain, because everyone of them is almost sure to prove a very costly experience to him in the end, and it does not usually take him very long to find it out, but if intending buyers will bear in mind that manufacturers cannot afford to sell a really reliable two-cylinder 8 h.p. car with mechanically-operated valves and all the latest improvements for less than 250 guineas they will realise it is better to wait for a time until they can reconcile themselves to paying that reasonable figure, and they would then have the satisfaction of being among the majority of doctors who have tried motoring with great advantage and economy, instead of finding themselves in company with Mr. Worboys, and other "exceptions" who have expected to get something for which they were unwilling to pay.

Mr. Worboys's concluding remark that he would consider a single-cylinder car and solid tyres "two absolutely essential details" is another evidence that his unfortunate experience has not advanced him far in his study of the motor car most suitable for medical men, as most people know that noise and vibration are perhaps more objectionable for a doctor's carriage than for any other purpose, and both these objections necessarily exist, to a very pronounced degree, in a single-cylinder car as compared with a properly-constructed two-cylinder car. Then, again, a doctor's carriage should be extremely reliable, and have a sufficient reserve of power to meet emergencies, and a 6 h.p. single-cylinder car at £160 or any other price cannot meet these requirements. A.F.

[8858].—I think that there is a good deal in what Dr. Worboys says. Of course, a two-cylinder car for £160 seems "too much for the money." His troubles, too, suggest none too careful handling.

When all is said and done, however, if a car entails any more bother than a horse it is to that degree less economical, and the question of its owner being "mechanically minded" or otherwise is rather beside the point. The point is £s.d.

I know several medical men with cars, and those with "motor mania" are happy in them. But I don't think that most would take oath that they found economy in it—some certainly are the other way about. Of course, here and there are lucky ones with good makes of good cars who profit thereby. (Incidentally, the makers of good cars seem to go into liquidation fairly quickly.)

If Dr. Worboys tries again, he might bear in mind the following points:

(1.) The more glowing the advertisement the worse the car—probably. So at least my observation teaches me.

(2.) In small cars nothing equals the Oldsmobile, but he had better carry a spare chain. The Oldsmobile is very slow on its low speed, but it is sure. If he wants something larger an 8 h.p. M.M.C. will serve him pretty faithfully. It is not a fast car, however, twenty miles an hour being about its maximum, and it crawls on hills. Still, it is pretty sure, and needs little attention. He might pick up a good second hand one for about £150. A Clement, too, is a sound car. I know of two that have been tremendously knocked about and are yet as good as ever. They are fast cars also. A really good second-hand two-cylinder 11 h.p. one should be procurable for about £200.

(3.) All British manufacture is *not* a criterion. If he gets an "all British car" I strongly advise him to get a heavy one. British attempts at light construction are very unsatisfactory and flimsy, generally speaking.

(4.) Two-cylinders are in every way better than one for smooth running, hill-climbing, and starting. They will cost more, use more plugs, and probably burn less petrol.

(5.) Two people are all that a 6 h.p. engine should carry, and three the most for an 8 h.p. It will strain the car if more weight is carried.

(6.) Things in the motor trade are cut pretty fine all round, and of two cars of the same h.p. the more expensive is pretty certain to be the better bargain. Especially is this so with a car that will be much used.

(7.) Whatever his car, he should do his own lubrication, etc. It will not take more than fifteen minutes a day. Let him be sure that he lubricates everything, being especially careful about the crank chamber. He should inspect this now and again to see that the oil splashes properly. Once a week is often enough to let out the old oil. I strongly advise him never to trust lubrication to any employee—the "shuvver-groom" can't be made to understand the importance of it. Often, too, he forgets.

## Correspondence.

(8.) Solid tyres are not to be advocated. Sampson-Hutchinson hands will save him all punctures and all skids, so pay for themselves in the end. Solids will shake the engine and prove troublesome in other ways probably.

(9.) Finally, there is no harm in remembering that the average maker or dealer when he has sold you a car regards you somewhat as the shorn lamb. Often, perhaps, regards you as a juggins for having got his car. Your own further use in the scheme of things is that someday you will buy another car, and it is extremely probable that it will be of some other make. It is wise to credit the average dealer with the honesty of the average horse dealer—certainly not with more.

Thus he may get his fun out of motoring without it costing him more than horses. But he will be very lucky to find it cheaper. He will be wiser, perhaps, not to try and make it cheaper. Thus the experience of

## ONE WHO RUNS HIS CAR HARD.

## MOUNTAIN CLIMBING.

[8859.]—With regard to Mr. Wilson's letter about this, I think that the world in general has been under the impression that Harvey du Cros, jun., Esq.—as the advertisement has it—drove up Snowden for advertisement purposes. There was some heated correspondence in *The Autocar* afterwards in connection with telegraph poles and a sceptical Lieutenant R.N., who was to know better than be critical when he became a colonel.

Now that an Oldsmobile has done the trip in about a quarter of the Ariel's time (obviously for trade purposes) trip number one becomes a tour to admire the view and so forth. Why then was the fuss made about it in the first place?

Personally, I feel that there are too many records being made altogether. None of them, from the Gordon-Bennett to the Oldsmobile on Snowden, do anything except cost money, which comes out of the pockets of purchasers in the end—for every record made swells the cost of production and so keeps up the price of cars. I think it would be a good thing if some motor manufacturer eschewed all records and said so—spending his money instead on manufacture only. Personally, I fight shy of any type that makes records, and prefer to get cars that depend upon something more reliable to the private purchaser.

OWNER.

## A GOOD RECORD.

[8860.]—I am afraid that Dr. Worboys has had bad luck. There is no doubt that it is a very important matter that the car selected by a medical man shall be in the first rank as regards reliability and workmanship, and also one that has stood the test of ordinary rough, everyday work at all seasons of the year. I bought a 7 h.p. New Orleans car in the beginning of September, 1901, and have used it in my practice ever since, and I see no reason why, with care, it should not last me for a good many years to come. I had trouble at first, principally ignition, and from flooding of the carburetter, and on one occasion from stripping of the pinions of the timing apparatus, but since stronger pinions were put in I have had practically no trouble for the last year and three-quarters, and the car is still running well. My friends tell me that it is a relic of the past, but really it is not so very much behind the times, except perhaps with regard to the front axle and steering arrangement, which strikes one as being somewhat weak, and the position of the Clarkson radiators, which, by the way, are excellent. It is driven by a live axle, and gearing on the Panhard principle, which still prevails to-day, and I was pleased to see the carburetter, a Georges-Richard, figured in *La France Automobile* of June 11th, 1904, so that as regards the carburetter I am quite up to date. I have had no occasion to renew the gear at present, although the low speed pinion will shortly require renewal, I expect. I think that unless a medical man has some engineering and mechanical instinct about him, and will take the trouble to thoroughly understand and master the intricate and delicate piece of mechanism which he contemplates buying, he had much better stick to horses. That is, unless his private means are such as to enable him to keep an expensive *mécanicien*. I gradually worked at my car until I understood it, and then taught my man, a driver in the Royal Artillery, to do all that was necessary. We are now able to take the whole car to pieces, take down the engine, put in new piston rings, etc., take down the gear, examine the clutch, and the differential, etc. If any renewals are required they are done by the company or the local engineers. My principal expense has been with the pneumatic tyres. They have been distinctly disap-

pointing and expensive, but now that other and stronger tyres are coming on the market the tyre question is less likely to be so troublesome and costly. The difficulty seems to be not so much with the rubber, but with the canvas fabric, for when it begins to rot it soon gives way. A fabric which is not affected by wet, and which is practically rot proof, is the desideratum of motorists at the present time.

I have no interest in the New Orleans Company, except as one of their customers, but I have found them always prompt and obliging in carrying out orders, and reasonable in their charges, and as regards reliability, the fact that I have been running one of their cars nearly every day for close upon three years speaks for itself.

E. GROUND, M.D.

## THE PRICE OF SPIRIT.

[8861.]—I have no doubt that many of your readers will be glad to know that the proprietor of the Beacon Hotel, Hindhead, charges 1s. 6d. for a whiskey and soda, and 1s. 8d. per gallon for petrol, which they admit is of higher specific gravity than .720.

TOURIST

## TYRES IN THE ELIMINATING TRIALS.

[8862.]—The Rev. F. A. Venables should be more sure of his facts before he writes to the papers. In your last issue he states that, "Earp's tyres gave no trouble whatever whereas this is far from the case with the rest."

As a spectator at the Gordon-Bennett eliminating trials who got details from the competitors themselves, I can assure Mr. Venables that this statement is not correct. He also states that the Dunlop Company are even yet unable to make reliable tyres. I have only just discarded a set which did twelve months' hard work over exceedingly bad roads.

FAIR PLAY.

## THE ISLE OF MAN TRIALS.

[8863.]—In my letter [8796] I made some reference to the railway race from London to Scotland which I see has come under Mr. Macdonald's observation, and I think if he reads my letter again he will see that I did not state the engines were new or specially constructed for that race. But, on the contrary, I said they were made for a good while. He also states that none of the locomotives went through the process suggested, yet he admits that most of them were old and were used for fast passenger trains, which is equivalent to my statement in letter 8796.

Of the five railway companies that took on racing, I will not question as to the construction of special locomotives or their use in the race to Edinburgh, but I will say that about the time these races were on the London and North-Western Railway Co. placed orders at Crewe for twenty new engines to be specially constructed for high speed. And in an article just before me, headed "The Race to the South," which was on about the same time as the race to the North, the South Eastern Railway Co. got special locomotives made (with large driving wheels) for their fast trains, and in the following year (1899) one of these engines was exhibited at Paris.

G.L.B.

## THE LIGHT STEAM CAR.

[8864.]—The humorous papers of your contributor describing the troubles of a light steam car in going to Southampton and to the "Derby" are most enjoyable reading, but I would venture quite humbly to suggest that this form of literature is calculated to produce a misconception of the manners and customs of the light steam car, which, for various reasons, is to be deprecated.

I have been given to understand that steamers have fallen rapidly out of favour since Rudyard Kipling exercised his wit at their expense, and yet there seems in sober fact to be no form of car more calculated to advance the cause of practical automobilism than this useful little "runabout."

A poor man with a large family. I had never aspired to the possession of a motor car until last autumn, when a three-year-old Locomobile fell into my hands. Some twenty pounds spent in putting it into thorough repair enabled me to shut down stable expenditure and to reach the railway station (six miles) with twice the speed, comfort, and convenience that horses erstwhile afforded.

So successful has been my six months' experience of this car that I have now added a second, with the extra comfort of leather hood, beneath which I drive my wife to her calls and garden parties when the weather is showery.

Contrary to all my expectations, I have had no serious



**Correspondence.**

trouble with either car, and now that I know something of their interior economy I can see no reason why trouble should be anticipated.

Finally, let me testify in favour of the light steam car that it is one of the best of all vehicles to supersede the horse-drawn carriage of a country establishment. It is noiseless, odourless, reliable, comfortable, and sufficiently fast.

I find no difficulty in running fifteen to eighteen miles an hour on hilly roads, and twenty miles on level ones, and this without the racket and dust which seem to be inseparable from all but the most costly of the petrol cars.

It is certainly a fact that second-hand steam cars are being sold at ridiculously low prices, presumably by people who have never given themselves the trouble to understand them, but it would be a great pity should this type of car be allowed to die out if only for the reason that it is entirely free from giving any cause of offence to those with whom it shares the King's highway.

B. H.

**SECOND-HAND MERCEDES CARS.**

[8865].—Could any of your readers give me advice on the purchase of a second-hand Mercedes?

I want to know if the 1903 pattern, 18-22 h.p., is considered a failure owing to the placing of the valves, and if it is advisable to let that pattern alone, as I have heard so much against it. If this is the case, it seems to me that it is not possible to get a second-hand Mercedes, as it is too early in the year to get a second-hand of this year's make, and 1902 pattern is too old.

I should like to be told the comparative upkeeps of the 16 h.p. Napier, 15 h.p. Panhard, 16 h.p. De Dietrich, and 18 h.p. Mercedes.

QUENTIN O. GROGAN.

**GUMMED UP INLET VALVES. PETROL CONSUMPTION, AND CHEAP CARS.**

[8866].—Replying to 8837 (gummed up inlet valves), I, too, drive a two-cylinder horizontal, and when using Pratt's A or B touring I find my inlets gum as he describes. At home (and elsewhere when I can get it) I use Carburene, and my valves are always quite clean. With reference to "S.L.C.'s" letter [8846], I do not see anything wonderful in his consumption of petrol. My car is a 9 h.p. tonneau with leather hood and weighs unloaded 18 cwt. It is two years old also. Yet I came from Oxford here (Wolverhampton) last week, 100 miles, in five hours running, and did thirty-two miles to the gallon, two passengers and luggage, and I always do 280 to 290 miles on my tank full (ten gallons) pottering about on ordinary country work, very often miles on the third speed because the road is too rough for the fourth. I think T. Janders Worboys's trouble [8840] is that his car was too cheap. I am sure a good two-cylinder car cannot be built to sell at anything under £200. My 9 h.p. James and Browne cost double this, but I can do 5,000 miles per annum for about £30 and have never yet had any delay or troubles on the road.

AW 24.

**SEMI-SOLID ELECTROLYTES IN ACCUMULATORS.**

[8867].—I notice in a number of *The Autocar* a reference to Messrs. Peto and Radford's new storage cell, in which sulphate of lead is packed between the plates.

Sulphate of lead cannot be considered as an electrolyte in this case. It is a most difficult substance to decompose, and has a very high resistance. I think, therefore, the advantages found in this cell must be of a mechanical nature, i.e., the surface of the sulphate in contact with the positive and negative plates keeps them in good condition and ensures a more efficient charge and output.

I enclose a copy of my paper read before the Royal Society of London in 1881. I have marked a paragraph which shows that twenty odd years ago I constructed cells with solid electrolytic packing, besides many other types that have been reinvented and patented since. Modern experimenters would do well to study that old paper.

These ancient experiments of mine, like my oil engine patent, antedate a good many of the new ideas. The following is the extract referred to:

"During my experiments I found that red oxide of lead is a very bad conductor of electricity, and the peroxide a good conductor. I also discovered that by amalgamating lead plates with mercury a marked increase was immediately manifest in polarisation effects, the plates becoming more uniformly and rapidly peroxidised when used as positive electrodes, and local action entirely disappearing. These mercury amalgamated plates at once gave me an advance of other cells. I used them in many ways, constructing cells

in which the positive plate was amalgamated, and the negative coated with red oxide, or with peroxide, produced by treating red oxide with dilute hydric nitrate till the brown precipitate of peroxide fell, the precipitate being washed and painted on the electrode. I also amalgamated the negative electrode simply. I found that in every way positive electrodes amalgamated produced the best results. I also made cells in which either peroxide or red oxide was formed into a porous conglomerate, using the conglomerates as electrodes, immersed in dilute hydric sulphate. I constructed cells with parallel plates, red oxide or peroxide being filled in between the plates; in this experiment red oxide is useless and peroxide efficient. In all these experiments I succeeded in storing electricity to different extents."

HENRY SUTTON.

**MOUNTAIN CLIMBING.**

[8868].—Referring to Mr. F. Dunbar Wilson's letter in last week's issue, I cannot understand why he is so indignant at the fact that the Oldsmobile climbed Snowdon faster than his own car.

I would like to protest, however, against the statement that I climbed Snowdon with the idea of breaking record. Mr. Wilson says that he merely wished to see whether his car was a good touring car. Equally all I intended to do was to show that the little Oldsmobile would do what I have claimed for it, namely, that it will climb any hill—and, if necessary, a mountain. In the proving of this I happened to accomplish the feat in one-fourth of the time taken by Mr. Wilson's car, and this was mentioned in the press.

Therefore I would like to protest against the suggestion he makes that the run was made "to break record."

W. M. LETTS.

**SUMMARY OF OTHER CORRESPONDENCE.**

**REGISTRATION ON CHANGE OF CAR OWNERSHIP.** Mr. Horace Law and "S N 1" write pointing out what we stated last week in regard to the registration of a car on changing ownership that it is possible to retain the old number for a new car if desired. "S N 1" also says: "Whilst on these matters could you use your influence with county authorities to get them to print the list of the cars registered in the various counties, from which lists a most useful directory of cars and owners might be compiled? I intend to set the example by having the list for this county (Dumbartonshire) printed."

**SPARE PARTS.** "A 609," referring to our doctors' issue, writes that he doubts if the members of the medical profession who gave their experiences in our columns would have been able to write them if they had suffered the experience that he has done. On March 18th he ordered four valves and a cylinder head for his car, and only received them from the British agents for the machine on June 6th. We need hardly say that his experience is an exceptional one. All properly-conducted agencies for foreign cars keep a good supply of spare parts in hand, so that unless the car is an out-of-date type renewals can be obtained almost immediately.

**SPEED EVIDENCE.** Col. W. J. Bosworth writes in reference to the wide divergence of opinion on the part of witnesses in police cases as to the speed of motor cars: "I have no doubt that each witness states what he honestly believes to be true, and herein lies the great difficulty of motorists, who, however moderate their pace, are nevertheless often assailed with reproaches and even abuse when they are proceeding with the greatest regard for the convenience of others, and in the event of an accident bystanders are always ready to affirm that the motorist was proceeding at some unreasonable and frequently impossible pace. That some motorists are reckless and inconsiderate cannot be denied. It is therefore necessary that evidence as to speed should be very carefully weighed lest the man who habitually drives carefully be punished by reason of unreliable testimony."

**DIFFICULTY IN OBTAINING PETROL.** Herbert Stone warns motorists who are thinking of travelling through Bradford to take care to carry sufficient petrol to take them well beyond that inhospitable town. On a recent Sunday evening had it not been for the kindness of Mr. J. Holmes, whom he fortunately met, and who kindly gave him some, he would have been in difficulties. Things were almost as bad at Huddersfield, where a similar good Samaritan was found in the person of a fellow motorist, Mr. Arthur F. Hughes, of Chapel Hill. Mr. Stone also says motorists should be warned against Glossop, where he was refused both food and lodgings at an hotel, against the landlord of which he has lodged a formal complaint. Had it not been for the courtesy and goodwill of the Chief Constable and his staff neither food nor shelter would have been obtained for the night.

## Flashes.

The very fine photograph of Théry, the winner of the Gordon-Bennett race, as well as most of the other illustrations which were used in our report of the Gordon-Bennett race last week, were Mr. Argent Archer's work. Many of them were secured under very difficult circumstances—how difficult only those who have attempted such work can possibly appreciate.

\* \* \*

A similar report from Lisbon states that autocars are becoming increasingly popular in Portugal. They are much used by the Portuguese Royal Family and the richer classes, as well as by the army and public works departments. Several concessions have also been granted for regular services of autocars in the country districts of Portugal and over tracts of territory in the Portuguese West and East African Colonies.

\* \* \*

In reference to the paragraph (June 11th, page 794) mentioning the fine for driving too fast in the Duchy of Baden, it should have been stated that the amount of the fine, 1,000 marks, is equivalent to £50, not £200. In any case, Baden is to be avoided. We have also received an intimation that Anhalt is another place that should be given a wide berth by motorists.

\* \* \*

Mrs. Fred T. Jane, of Southsea, has established a motor record of a novel sort, having been twice thrown out of her husband's M.M.C. car within a week. Both accidents were unique. In the first the band brake compensating wire broke, and one wheel was jammed by the band when descending a steep hill. The car went into a ditch, but, curiously enough, neither it nor its occupants were much hurt. A few days later—on its first trip out after repair—a light pony trap suddenly backed across it without warning. The trap was knocked some fifty feet away, and practically unhurt, while the car was seriously damaged in the steering gear. Mrs. Jane was again thrown out, but, luckily, escaped without serious injury, and a day or two afterwards was riding in another car.

\* \* \*

The Duryea Co. have sent us a copy of a portion of a letter received from a medical client in Jersey. He says: "It may interest you to know that during last week only in this little island three people were killed outright in horse accidents and over a dozen seriously injured, and yet people continue to carp on the dangers of motoring." He continues: "A point that strikes me very forcibly in the issue of *The Autocar* (the Doctors' Number) is that those doctors who compare the cost of motoring with that of horses must have had better luck in their stables than I ever had. The idea of keeping two horses for £150 a year seems to me preposterous. My average for the last five or six years, without counting duplications and renewals, is £220, and now that I keep three it amounts to at least £300."

Messrs. W. M. Caffyn and Sons recently opened a well-equipped motor garage at 12, the Colonnade, Eastbourne, where all descriptions of repairs are undertaken and a stock of tyres, motor spirit, etc., is kept.

\* \* \*

Mr. Alex. G. Moffat, who was summoned the other day for driving his motor car on the footpath at Swansea, explained that he did so because the road had been newly laid with stones, and he was afraid that the wheels of the car might throw up the loose material and endanger passers-by. The magistrates dismissed the case.

\* \* \*

The North British Rubber Co., Ltd., inform us that they have just received an order to supply Clincher-Michelin motor tyres for one of the King's cars; also that in the Glasgow to London non-stop run a car fitted with Clincher-Michelin tyres obtained the only gold medal awarded in Class B, while all the cars so fitted came through the trial without tyre troubles.

\* \* \*

On Tuesday night last week, the 14th inst., whilst Mr. T. Wharton Ford, of Palace Chambers, Westminster, was driving his 8 h.p. Wolseley car from Bromley to London, the leather tonneau cover, which goes right over the back of the car, was blown away. If any of our readers have found it, Mr. Ford would be pleased to have it returned to him.

\* \* \*

The Glasgow-London 12 h.p. four-cylinder Sunbeam made a good run last week. Mr. F. Eastmead left Wolverhampton at two o'clock on Monday afternoon for Farnborough, Hants. On Tuesday morning he went to London, and then drove straight from there to Plymouth. The only

incidents were a puncture on the first day and a burst cover on the second, which took 2h. 40m. to replace, as he worked single-handed. This car has already been driven 17,000 miles.

\* \* \*

The hope of providing a mechanical substitute for the pneumatic tyre is by no means dead, the last effort towards this more or less desirable end having been made by Mr. Henry S. Halford, who has lately designed and constructed a spring wheel, which, we are assured, gives really excellent results. It is formed of two opposed rows of flat loop springs, the outer set being looped forwards and the inner backwards. The inner ends of the loops are bolted to the hubs and the outer to the underside of a somewhat heavy felloe carrying a solid rubber tyre. Two slightly bossed discs, one outside and the other inside the loops, bolted to hub flanges, form guides for the felloe and prevent any lateral movement. We have not as yet ridden over these spring wheels, which Mr. Halford has fitted to his 7 h.p. Panhard, but we are assured by one who has that, though the wheels are considerably heavier than those they have replaced, they run quite as comfortable and nearly as fast. We hope shortly to give our own experiences.

### "THE AUTOCAR" DIARY.

- June 25.—Aero Club Balloon Ascent, Crystal Palace. 2.30 p.m.
  - " 27.—Automobile Mutual Protection Association Special Meeting to Confirm New Rules.
  - July 2.—Southern M.C. Reliability Trials for Passenger Cars.
  - " 2.—Aero Club Balloon Ascent, Crystal Palace. (2.30.)
  - " —Circuit des Ardennes (date not fixed).
  - " 10.—Mont Cenis Hill-climb (A.C. Italy).
  - " 12.—A.C. Namur and Luxembourg Trials.
  - " 14.—Aero Club Balloon Ascent, Crystal Palace.
  - " 15.—Ostend Automobile Week commences.
  - " 15.—Entries close for Calais-Dover Motor Boat Race.
  - " 16-17.—Ostend Motor Boat Races.
  - " 17.—Antwerp-Ostend Motor Boat Race.
  - " 18.—Motor Union Special Meeting (New Rules).
  - " 22.—Kiel Motor Boat Races.
  - " 23-30.—Belgian Auto Boat Races.
  - " 23-25.—Lucerne Motor Boat Races.
  - " 23.—Motor Car Paperchase from Esher.
  - " 23-Aug. 5.—Spa Automobile Fetes.
  - " 25.—Yorkshire A.C. Gymkhana, Harrogate.
  - " 26-27.—Motor Boats Reliability Trials.
  - " 30.—British International Cup for Motor Boats.
  - Aug. 7.—Exhibition of Motor Boats, Calais.
  - " 8.—Calais-Dover Motor Boat Race. 10 a.m.
  - " 29 to Sept. 3.—Voiturette Reliability Trials A.C.G.B. & L.
  - Oct. 8.—First Race for Vanderbilt Cup in America.
- (For Club Fixtures see Club Doings, page 869).

### Flashes.

Sir Ernest Cassel and the Duchess of Manchester recently purchased an 18-28 h.p. Mercedes from the Cannstatt Automobile Supply Association.

\* \* \*

The penalty inflicted upon a drunken motor car driver at Norwich the other day was in no way too severe. He ran his car into a flock of sheep, killing several, and throwing out two lady passengers, who were rendered insensible. He was sent to prison for three weeks, and had to pay fines amounting to £13.

\* \* \*

For throwing a stone after Dr. Lane Joynt, who was riding in a motor car along Killellen Road, Co. Kildare, Ireland, a man was fined £2, or one month's imprisonment with hard labour. A few such sentences in this country would have a salutary effect on ruffians who delight in molesting passing motorists.

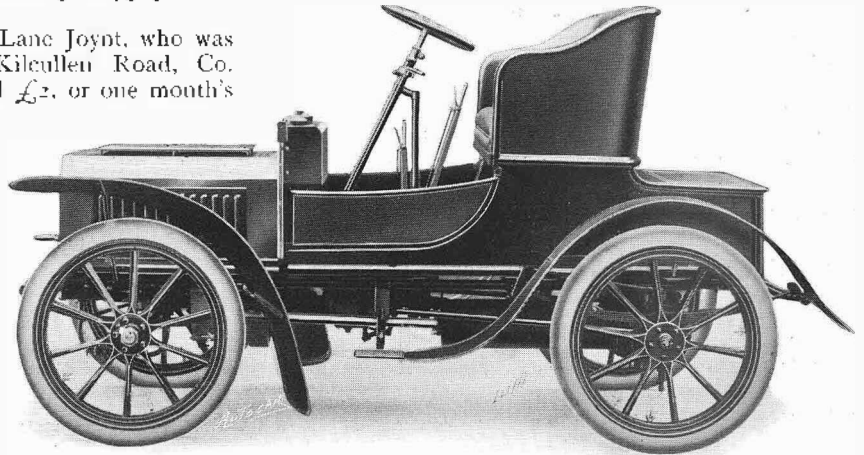
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Last week the premises of the South Hants Motor Co., Broad Street, Portsmouth, were destroyed by fire. The cars in the building were most of them saved, we believe, but very little else. The firm have written requesting us to ask makers of motor cars, launches, and motor accessories to send them their catalogues, as all their motor literature was destroyed in the fire.

\* \* \*

Mr. E. Kennard, of the Barn, Market Harborough, has forwarded us a souvenir comprising sixteen views of the Gordon-Bennett trials recently held in the Isle of Man, printed by the London Stereoscopic Co. These photographs were taken by Mr. Kennard, and have been excellently reproduced in this booklet. The pictures are of exceptional interest, and artistically mounted. One of the photographs shows a car fitted with Palmer Cord tyres, which have been over a thousand miles; even the photograph shows that the tyres appear as good as new, but it is not quite clear what this and the three prints which follow it have to do with the Isle of Man.

The authorities at Swanage have had an outbreak of motorphobia. The leader of the complaint was the borough surveyor, who appeared as chief witness against Mr. Alan Hickman, of Coventry, and swore that he drove for a measured distance of 550 yards on the promenade at thirty-two miles an hour. After a prolonged trial, in which the evidence for the prosecution was completely upset by Mr. Staplee Firth, the bench dismissed the case.



A SMART RUNABOUT. The Beeston-built Humber is the subject of this illustration. It is a model de luxe of the Coventry-built car, the special and additional features being a higher powered engine, 6½ h.p. as against 5 h.p., wood wheels instead of wire, and some slight modification in the control, while the whole is of the best possible finish.

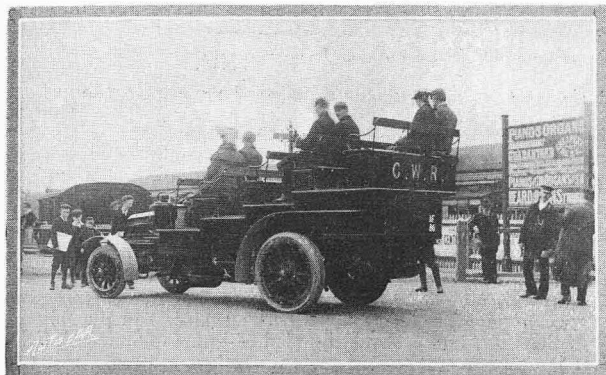
The Great Western Railway Co. has of late years been noted for its enterprise, and in most districts served by it this enterprise has been welcomed by the inhabitants. It would seem, however, that the Helston Rural District Council is not alive to the benefits conferred on it by the Great Western, which last year started a service of motor cars between Helston and the Lizard. Unfortunately, the Rural Council controls a portion of the road used by the Great Western motor vehicles, and it has decided to abandon the use of a steam road roller on the alleged excuse of the expense. Rather than have the road unfit for service the Great Western offered to roll the road from Helston to the Lizard free of charge, but this offer has been declined for no good reason whatever. It is rumoured that owners of posting stables in the locality have an influence with the members of the council, and the Lizard posting was very valuable before the advent of the Great Western motor cars. Whether this has affected the decision or not we cannot say, but it is at least a coincidence, though how the local authorities can be so narrow-minded as to attempt to drive the motor cars from their district we cannot understand, as it simply means that fewer tourists will visit the Lizard.



The motor in commercial life. Messrs. Walker and Co., Leicester, have had the vehicles illustrated above in use for some considerable time and consider them invaluable for transporting heavy or bulky goods. It has replaced five horses, and has resulted in a great saving of time and money.

At the Wirral and Birkenhead Agricultural Show last week, a 5 h.p. Oldsmobile was awarded the silver medal offered for the best and most improved car not exceeding £250 in price.

On Tuesday evening, June 14th, the Junior Institution of Engineers visited the works of Messrs. D. Napier and Sons, Acton Vale. The attendance was exceptionally numerous, upwards of one hundred and twenty being present.



A Great Western Railway char-a-banc loading up passengers at Falmouth Station. This vehicle, which will be recognised as a Milnes-Daimler, carries sixteen passengers, all of whom get a full view ahead owing to the seats being arranged tier wise. This permits of the large enclosed space beneath the seats being utilised for the conveyance of luggage.

With a view to giving the best possible attention to repair work, the Daimler Motor Co.'s depot at Brownlow Mews, Guildford Street, W.C., has been brought under the direct management of the works manager, Mr. Martin, at Coventry. The Brownlow Mews' staff has been strengthened by sending up several men from Coventry who are skilled in the adjustment of the various parts of the cars' mechanisms. Readers who are desirous of hiring vehicles should make a note that cars are also hired out by the company at Brownlow Mews.

\* \* \*

It is proposed to hold a "paperchase" for motor cars on Saturday afternoon, July 23rd, starting from Esher, on the Guildford Road. The "hares," three or four in number, will be given a start of some fifteen minutes over a course of about thirty miles, each taking a separate route, but only one laying the true trail. Those "hares" who have laid the false trails will stop, and when caught up will direct those "hounds" who have missed the true scent to a common meeting-place for tea. The event might with propriety be called a "puzzle" rather than a chase. The "hares" will from time to time at cross roads leave stretches of the road (limited to a mile) with no paper, and it will be necessary to pick up the trail again in order to resume the chase. The organiser is Lieut. W. G. Windham, Battersea Rise House, Clapham Common, who asks that anyone wishing to join will kindly write him as soon as possible. The reason for having three or four hares is that with a smaller number the cars would probably be crowded on one or two roads. The false trails will prevent any form of racing.

Plashes.

In the King's Bench Division on Monday last, Mr. James Allen, the owner of a mail van, recovered £55 from Messrs. S. F. Edge, Ltd., for damages caused by Miss Dorothy Levett driving one of the company's motor cars so as to collide with the van as it came out of a side street in Rosebery Avenue.

\* \* \*

Messrs. Chenard and Walcker inform us that they are severing their connection with the Weston Motor Syndicate on June 30th, and that they have concluded arrangements with Mr. Walter Gutman, of 2, Bury Street, St. Mary Axe, E.C., to act as their *commissionnaire exclusif* for Great Britain and Colonies.

\* \* \*

Mr. Claude Watney was summoned by the Guildford police for failing to give warning of his motor car's approach. The prosecution stated that he passed in between two cars, going at double the speed of either of them, and dashed past four cross roads outside Guildford without giving any warning. Mr. Staplee Firth defended, and the case was dismissed.

\* \* \*

The question of whether a steam engine constitutes an efficient brake on a light locomotive was decided by Mr. Lane, K.C., at the West London Police Court, on the 14th inst., when Messrs. Pickford and Co. were summoned for not having two efficient brakes on one of their steam waggons. Mr. Staplee Firth, who defended, argued that the brake usually used for motor cars of this type was the steam engine, and that that was much more effective than any friction brake that could possibly be applied. The magistrate was satisfied that this was so, and the case, which is of importance to users of heavy steamers, was dismissed.

\* \* \*

We are pleased to note that the Hallamshire cars distinguished themselves in the Sheffield and District hill-climbing competition. In fact, the performance of the 14 h.p., which won according to the Automobile Club formula, was particularly good, but the 10 h.p. did even better, as although it did not score so high a number of marks by calculation, its actual speed was the highest made, being 13.56 miles per hour. The 14 h.p.—a heavier car—did thirteen miles an hour, but that was only beaten for speed by two other cars, both of a nominally higher horse-power. We have always regarded these cars as being soundly-built machines. The only mistake which has been made with them was the fact that they were introduced to public notice before they had passed completely through their period of trial.



One of the Great Western Railway's Milnes-Daimler char-a-bancs leaving the railway station at Falmouth.

## SOME QUERIES AND REPLIES.

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

When advice concerning different makes of cars is sought, each vehicle should be given an identifying number.

Letters should be addressed The Editor, "The Autocar," Coventry.

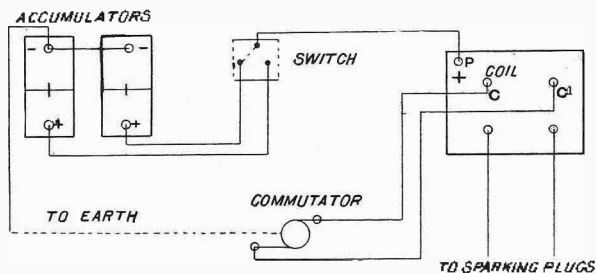
### NOISY GEARS.

Can any of your readers help me to find a solution of the following difficulty? I have a 9 h.p. single-cylinder car, which is satisfactory in every way but for the great noise it makes on the first and second speeds. Can anything be done that will make the car less noisy without the loss of speed or power?—A REGULAR READER.

### RUN-DOWN CELLS.

I should be much obliged if you could tell me the cause of the following? One cell of one of my accumulators ran down to 1.5 volts, but the other cell of the same battery remained at 2.1. This occurred several times, and with another cell of a different accumulator. Thinking the cells were at fault I sent them to a repairer, and put the other two cells, which had not been run down, in, and one of these ran down to 1.2 volts, but not the other. Am I right in supposing that if there were a short circuit, or the wires coupled wrongly—I have a two-way switch—both cells would run down evenly, and that, therefore, the fault is in the cell itself?—EUSTACE H. ILLINGWORTH.

If your cells were incorrectly coupled both would run down together equally; but this cannot be the case, for to run the cells down they would have to be doing work, in which case the coil would be receiving more current than it could carry, and would in a shorter or longer period of time break down. This being so, there can hardly be any doubt that there is a short circuit taking place on the one cell, and this will, in



all probability, be found to occur through some structural part of the accumulator box bearing upon the bridge between the two cells and the terminal of one of them. If the two-way switch is of the three-terminal type it should be wired in the manner shown in the accompanying diagram, this being irrespective of the number of cylinders in the motor. In this instance the wiring for a two-cylinder motor is depicted.

### A MATTER OF LIABILITY.

Supposing a motor car in travelling along a road frightens some horse or some animals that had broken through a fence and were straying on the road, and these animals in running forward away from the car so excited a horse in harness that it broke away from the driver and damaged itself or any persons on the road, would the driver of the horse or the owner of the car be liable?

The answer to this depends entirely on the circumstances of the case. The driver of the motor car would not be liable for any damage done to or by the excited horse provided the person in charge of the motor car were driving in a proper manner. If, however, he were driving recklessly or negligently, or at a great speed, then it would be for a jury to say whether the damage done to or by the excited horse was reasonably attributable to the way in which the motor was driven. The driver of the horse would not be liable for any damage done by it, as so far as he was concerned the matter seems to have been accidental, and he was in no way guilty of negligence. It is clearly laid down by the authorities that a man is not

*ipso facto* liable for damage done by a horse which runs away when suddenly frightened. To make him liable it must be shown that he was negligent in the management of the horse.

### PISTON FITTING.

A short time ago I sent the cylinder of my car to the makers to be reground and fitted with a new piston. On its return I took the rings off, and found the piston so loose a fit as to drop quite easily through the cylinder of its own weight. As this is so different from similar jobs I have seen, I wrote the company, and they reply, "It is not the piston which makes the compression at all, but the rings." I must admit the rings make a great improvement in this particular case, but I still think a new piston should have been a very much tighter fit, and that thereby when the rings wore on the compression would have been very much better than it can possibly be otherwise, and I should be glad of your opinion.—A.E.P.

It is quite correct for the piston to be quite a loose fit in the cylinder. The rings make the working gas tight joint, as they are split and are flexible, thus taking up any wear without undue friction. If the piston were made a good fit, as you think, the engine would not run many minutes without the piston seizing and "scoring" the cylinder, however much lubrication were given it. The power developed would also be quite small compared with what you will now obtain. The piston becomes a working fit when hot. Different makes of engines require varying clearances in the fit of the piston—some a little more and others a little less. In some cases 2-1,000in. per inch in the diameter of the piston is necessary; that is, in a 3in. diameter piston this would be made 6-1,000in. less than 3in.

### OVERHEATING.

I should greatly esteem the favour of your help in arriving at the reason of my 4½ h.p. Progress (De Dion) overheating. Not certainly to the extent of the piston seizing, but apparently there is a loss of power on hills after a few miles running. After nine or ten miles running in a hilly district the engine is so hot that I cannot place my hand on it. The water in the tank is also very hot, but the radiators only warm. Liberal lubrication given. The engine is at the rear, and I drive on the weakest possible mixture with throttle open full and spark advanced according to pace. In fact, throttle, spark advance, and mixture lever are each regulated as necessity arises. But I don't think the engine should get so hot as it does. The exhaust valve lifter and exhaust valve stem have about ¼in. clearance, but the throttle gear, having worn, this is difficult to state exactly. The exhaust valve, however, only lifts a bare ¼in. What I would ask is: (1.) Do you think the pump is worn (the spindle is a loose fit) and not throwing water fast enough in spite of the tank being hot, or too fast for cooling? (2.) Is it that the exhaust valve lifter or cam is worn? (3.) Do you suggest blocked circulation? This scarcely seems possible, seeing the cooler is so hot. But I use a good deal of water in, say, thirty miles.—W.F.C.

(1.) There is hardly any doubt that the pump is worn, and that the water is not being passed around the engine and through the radiator at a sufficiently high speed to permit of its cooling the engine and dispersing the heat when passing through the radiator. The sluggish circulation, of course, permits the water to remain in the cylinder jacket for an increased period of time, which is sufficiently long to cause overheating. (2.) Again, the overheating is attributable to an insufficient lift of the exhaust valve. There should only be quite a small space between the bottom of the valve stem and the exhaust valve lifter, which should always rest upon the plunger actuating the exhaust valve. A good guide as to the distance is an ordinary visiting card, which should only just be able to be passed between the end of the exhaust valve stem and the lifter. (3.) The answer to this query is contained in No. 1.



## A 100 HOURS MOTOR TRIP.

On Wednesday afternoon last, at three o'clock, Mr. D. M. Weigel, of the British Automobile Commercial Syndicate, left the Thames Embankment with three companions on a 20 h.p. four-cylinder Talbot car, with the avowed purpose of making a 2,000 miles non-stop run, and testing both the Talbot and a set of Clincher tyres. The car is a four-seated touring vehicle, with tonneau body—a stock car, in fact, so that if it comes successfully through so severe a test, the buying public will have testimony before them of what these cars—frequently characterised by those who know nothing of them as being too much on the light side—are capable. Arrangements have been made to take up petrol and food if necessary at intervals of 100 miles, and Mr. Weigel and Mr. Slatter will drive turn and turn about in four hours spells. If all goes well, and the time schedule is adhered to, the car, allowing for the half-hour luncheon halt at Perth with the Provost and Sir Thos Dewar, should be back on the Embankment at 7.30 p.m. next Sunday.

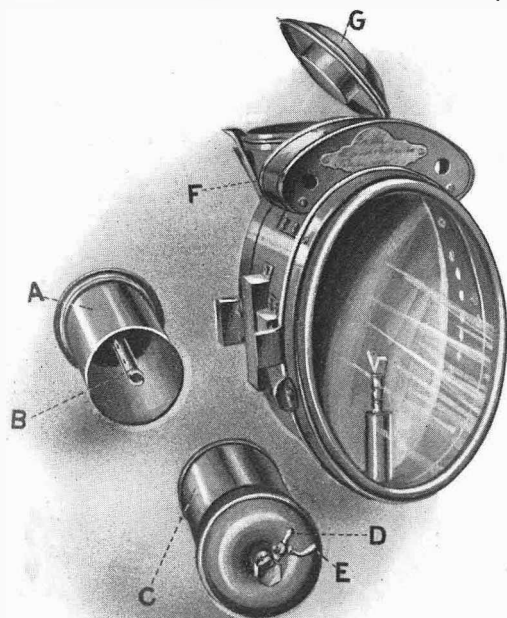
The trip will we feel sure prove as great a test of the endurance of the two drivers as of the car, for the sleep to be obtained in the tonneau of a motor car, however comfortable the interior may be, is not over and above refreshing, as we know from experience when with Capt. Deasy on the London to Glasgow trip last year. The danger consists chiefly in the possibility

of the driver falling asleep, which Capt. Deasy did no less than three times after getting north of Newcastle. The outgoing route will be direct to Perth by the east road, which will make 493 miles out of the 2,000, so that even this long route covered four times will require a detour of twenty-eight miles to make up the round distance.

Mr. Weigel and his test car were early on the scene of the start, where very rapidly a huge crowd gathered, encircling and obstructing his car and the five or six others that followed. The police, who were not prepared for such a rush, could do nothing, and traffic was quite blocked for some minutes. Punctually to the time appointed the 20 h.p. Talbot, with Mr. Weigel at the wheel, accompanied on the front seat by Mr. T. M. William, of Klondike, Galveston, and Martinique renown, moved off on the long trip, Slatter (Mr. Weigel's engineer) and Mr. Carter, of the North British Rubber Co., occupying the tonneau. Beyond carrying four spare covers, the vehicle did not exhibit any signs of having been specially prepared for the long journey, except the display of a small yellow flag on the near side. To complete the 2,000 miles, it is proposed to make four journeys between London and Perth with a divergence to Portsmouth on the last southward run. The cars were followed along the Embankment by many enthusiastic spectators.

## A NEW HEADLIGHT.

The Zanardini acetylene head light, the accompanying illustration of which shows both the form and construction, is the latest introduction in acetylene



Details of the Zanardini lamp.

- |                      |                             |
|----------------------|-----------------------------|
| A, generator.        | E, gas tap                  |
| B, water tube.       | F, air passage.             |
| C, screw down cap    | G, lid to generator chamber |
| D, gas supply nipple |                             |

one for light cars at £7 and for cars at eight guineas. The chief features of this smart-looking, light-giving article are the construction, which consists of bolting and not brazing or soldering any of the parts together, its simplicity, and the fact that only sufficient gas is formed as it is required for consumption. The water cistern is the rear part of the lamp behind the reflector, into which the generator A with its screw down cap C is lowered when charged with carbide. The water reaches the carbide by rising in the perforated tube B, the holes in which are so dimensioned that the proportionate make of gas already referred to is obtained. The gas passes from the generator through the nipple D, which is flexibly connected to the tube leading to the burner. This tube is easily accessible and is not packed away in the interior of the lamp. The supply of gas to the burner is controlled as desired by the cock E. Ordinary carbide is used in this lamp. The article is both strongly made and excellently finished with ovoid reflectors, carefully shaped to secure the best light-giving results upon the road. The lamp is perfectly safe in use, as if the quantity of gas should exceed the requirements of the burner the overplus escapes into the water tank, passes through a vent, and so into the open.

lamps for automobiles put upon the market by Messrs. Gamage, Ltd., of Holborn. It is made in two sizes,

M. and Mdme. Henri Laloux, of Liège, with M. Edmond Laloux have been making a motor tour to Tolga in Algiers, that town being the religious capital of the Ziban tribe. Theirs was the first car that had ever penetrated there, and the travellers report that loose sand hills are very numerous. It took three hours to do the forty-eight miles that separates Tolga from Biskra. At Tolga over 3,000 natives surrounded the visitors, who gave the delighted chief a ride.

## THE COMING OF THE ELECTRIC TRAM.

During the past six months, on the majority of the main roads leading out of London, the contractors responsible for the laying of lines for the many new schemes of electric trams have found a solution to a riddle. When is a highway not a highway? their boards bearing the legend "No thoroughfare" being the only too obvious answer.

Complaints as to the inconvenience caused to local inhabitants are both loud and long. To this the press of the districts concerned bears ample evidence. At Brixton a resident mournfully bewailed to us the fact that it was impossible for him to know how long it would take him to walk from his house to the railway station, to catch his City train—a distance of perhaps half a mile—for not only has the roadway been completely blocked, but stacks of wood paving blocks and other materials obstruct the footway, any space remaining being promptly occupied by a British workman with a wheelbarrow bringing up more wood blocks.

At Finchley the District Council has prolonged the state of chaos by only granting the contractor permission to take up a certain section of roadway at a time. When this is complete, another section, perhaps a quarter of a mile away, is granted him. He then has to shift all his tackle that distance forward, only to return again later on to fill up the intermediate gaps. Whole sections of this, the Great North Road, have been stopped, the traffic being diverted, and by so doing in one case a much heavier gradient has to be negotiated.

An automobilist living in the centre of one of these quarter-mile closed sections insisted upon a way out being maintained for his car. By means of planks, laid daily and specially lighted at night, he was able to drive across the road on to the opposite footway, by running along which he was able to reach the road proper. He has been troubled to know what would happen should

he desire to move or should his house take fire, for it would be practically impossible for a pantechmicon van or a fire-engine any way nearly to approach his house. On this road all the sewer manholes have had to be moved from the road centre to the side, with the consequence that large open holes have existed, which on rainy days half filled with water. More than one horse and also a child have fallen into these pits. Although the trams will not be running for some time yet, some parts of this track have had to be relaid already, owing to sinkages or bad work. Which?

On the Edgware Road a service of omnibuses has stopped for the want of the road to run on.

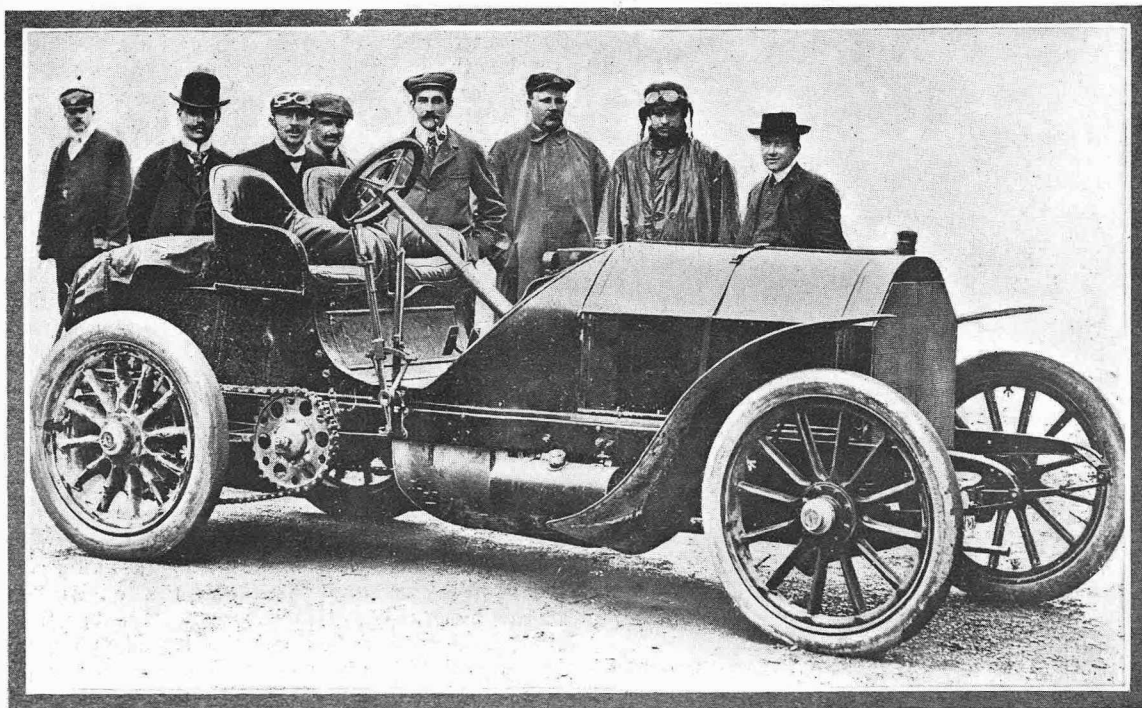
On the Tottenham and Edmonton route, poles in the road centre will support the overhead wires, as on parts of the other routes, but the Brixton trams will work on the conduit system.

On the West London and other systems which have now been running some time, the loaded trams weigh some fourteen tons. The consequence of this weight constantly passing up and down the rails is that at the joints a pumping action takes place, even more pronounced than that on railway metals, as each wheel of the train passes over the joints.

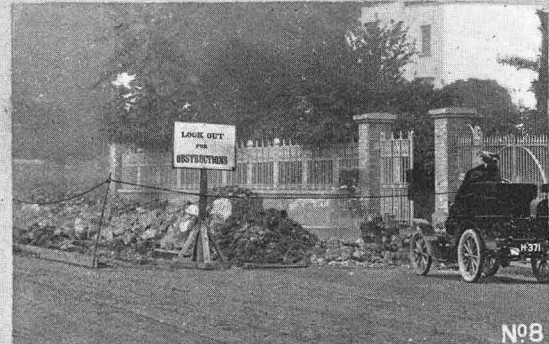
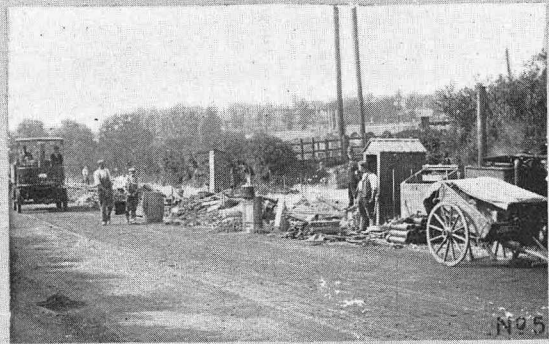
To a country motorist hardly used to driving in traffic, passing through London with a very slight knowledge of its streets, and the impossibility of keeping to the main roads, must be a source of much worry and vexation, to say nothing of loss of time.

Is not the fact that at least four main roads out of London on the northern side all being laid with electric tramrails at the same time a very good argument in favour of the speedy establishment of a great central authority, which shall order these things better and with more consideration for the convenience of other users of the road?

Jenatzy. De Caters. Braun.



A 90 h.p. Mercedes racer and a group of Mercedes drivers.

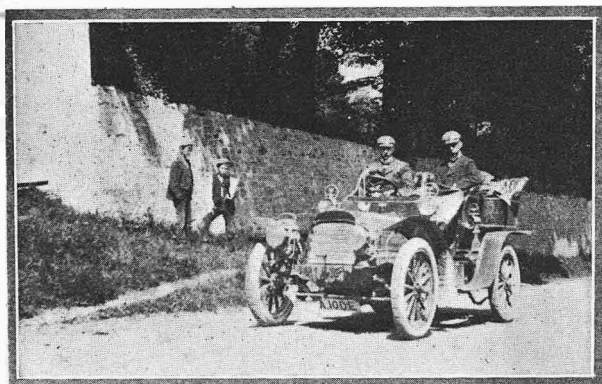


THE MONOPOLY OF THE TRAMWAY. SOME EVIDENCE FROM THE METROPOLITAN AREA.

1. Edmonton.
2. The Great North Road at Highgate. New route for trams.
3. Jolly Butchers' Hill, Wood Green, on the main road to Enfield.
4. The top of Brixton Hill, May 7th. Road entirely blocked.
5. Near the Welsh Harp, Hendon, June 7th.
6. The Great North Road at Highgate. Here the whole road is blocked.
7. Edmonton. Electrification of the horse tramway in progress.
8. The top of Brixton Hill, May 7th
9. Wood Green, May 7th

OCCASIONAL GOSSIP. *By the Autocrat.*

I am sorry to see that the time-honoured Motor Manufacturing Co. is in the hands of a receiver and manager who has been appointed by the debenture holders of the company. I have heard that this action is not really necessary, but has been brought about by extreme pressure of the company's creditors. It is further stated that really the company is in a sound position, and that before long it will blossom out once more strengthened rather than weakened by its present check. In fact, I hear, on good authority, that negotiations for amalgamation are proceeding, which, if carried through, will make the old company a very strong concern indeed. What a chequered existence the M.M.C. has had. We pioneers will remember it when it rejoiced in the ridiculous title of the Great Horseless Carriage Company—one which without any other handicap was sufficient to ruin it. Like most of the pioneer concerns it was very badly managed. Thousands of pounds were wasted upon experimental machines, among the most notable being Pennington's tricycles, which carried six people, and were a tremendous length. These were followed by one or two machines more or less of the fire engine type,



We referred a fortnight since to a drive made by Mr. Perman in the West country, which was terminated somewhat suddenly by a sunstroke which occurred at Plymouth, when he had completed 432 miles. This photograph was taken almost immediately before the sun overcame the Speyer driver.

and then came an extraordinary design known as the Princess with the engine at the back. All the time that this money was being squandered on these more or less ridiculous cars, much more satisfactory vehicles of Continental design and manufacture were available, which the company could have copied practically without expense; but the board, or, at any rate, the majority of them, did not know enough to adopt this policy, and let their mechanical people play ducks and drakes with the money.

Certain members of Parliament are doing their level best by persistent questioning of ministers to foster and nurse the prevailing prejudice against motor cars. First it is driving in the parks, then the framing of further restrictive regulations, then a return is wanted of "casualties caused by motor cars," then again (with curious irony) a Scotch member, whose constituents reside as far North as Aberdeenshire, asks the President of the Local Government Board to "do something" to relieve the rural and suburban districts of London from the "annoyance caused by motor cars." The picture which this solicitous member (Dr. Farquharson) draws of the conditions which he is so

anxious to alleviate is most terrifying—"Cars which dash along in defiance of the comfort and convenience of those who use the road, poisoning the air with fumes of petroleum, and destroying the vegetation of trees and hedges by clouds of dust, which also render safe steering difficult and impossible." Mr. Long, whose attitude towards motorists is commendably free from prejudice, replied that he could not see his way to take the action suggested, but hoped that strict observance of the law on the part of drivers of motor cars would tend to minimise the evil. It is curious to notice that it is those members who are least affected who are most strenuous in the manifestation of their dislike of motor cars. Thus it was Captain Donelan, an Irish member, who asked for the casualties return, but who, I am pleased to note, did not get much satisfaction. The only promise he got was that the Home Secretary would give what information he could, but Mr. Akers-Douglas did not consider it worth while to reply to Captain Donelan's further question as to whether any record was kept of the persons killed or injured by "these infernal machines." By the way, *The Autocar* has furnished the hon. and gallant member with some instructive information as to the number of casualties caused by the uncontrollable horse—an animal which is generally assumed to be safe and trusty, but whose vagaries do not unduly excite members of Parliament. Why does not Captain Donelan ask for these returns? Since writing the above I see by the papers that Mr. Scott Montagu has asked for a return of horse accidents, and that the Home Secretary has promised to consider whether these figures can be given at the same time as those relating to motor cars.

x x x x

It is a pity that the Gordon-Bennett race has become so much of a contest between manufacturers and their men. At the same time, it is vastly more of a sporting contest than some of its critics would have us believe. It is stated that Jenatzy would have received several thousands had he won the race. This may or may not be true, but the fact remains that Jenatzy is a born racing driver, and, what is more, he loves the game. Then, again, it may be urged that one or other of our drivers are either manufacturers or of vitally interested in the cars they drive. This is true, but they drive straight and love the sport, and they could not drive straighter or harder if they were amateurs in the sense that they had no monetary interest whatever in the matter: in fact, I am certain that, without exception, the Englishmen who have made themselves a name in motor races would have driven whether they were interested in manufacturing or not.

x x x x

At the moment the future of the Gordon-Bennett race is in some little doubt. There are the English propositions for rational racing cars, for the extinction of the big machine, which is to be replaced by pettifogging little cars which will not have the speed of the average touring car of to-day. Whether the French or Germans will seriously consider such propositions I do not know, but I scarcely think they will. I think it is quite likely that the Continental nations would be willing or even anxious to come to some arrangement which would make it impossible to use quite such terrible engines as the racers of to-day, but I can scarcely believe they will accept the milk and water type which has been offered them by the Automobile



Club of Great Britain and Ireland. Fancy racing cars which cannot average more than twenty-five miles an hour, and which must not consume more than one gallon of petrol for every twenty-five miles! Why, these things are voiturettes. It seems to be a case of panic over again. The monster is too monstrous, it is true, but do not let us go to the other extreme and endeavour to foster the breeding of a race of motor perambulators. What a sight it will be to see Jenatz and Jarrott or Thery and Edge fighting out a desperate finish at twenty-five miles an hour, while the athletic youth mounted on a pedal bicycle sprints on ahead to say they are coming.

x x x x

Because I cannot see eye to eye with the club in this matter it must not be imagined that I do not sympathise with its aims. What the club wants is so to revise the racing rules that racing cars in the future, by being made less powerful than the present giant cars, shall convey valuable experience to designers and makers. The limit of fuel will undoubtedly tend towards efficiency, and the weight limit and other conditions all have the end in view of developing the touring car, the racing conditions being of such a nature that they may help towards the evolution of the most efficient touring vehicle. These are most praiseworthy objects, but I cannot see for the life of me why motor racing should not stand on its own bottom. Why should it be of an instructional character? No one expects cricket to educate the people who make bats, nor is yacht racing conducted with the sole idea of furnishing object-lessons for yacht designers. It is true that it does so, but this is an accident; it is merely pursued because it is a fine sport, and for no other reason. It is also true that the motor racer has developed to unreasonable proportions—proportions which can advantageously be restricted, but not to the extremes proposed by our club. It will simply mean that when

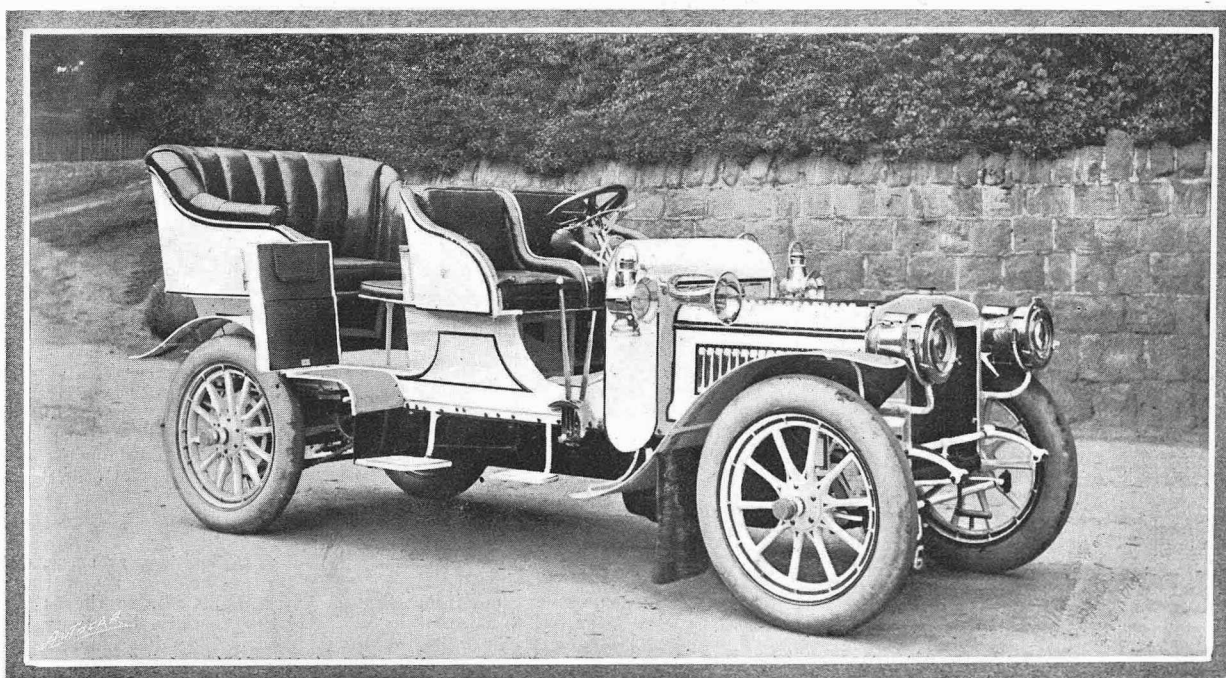
races like those at Southport or Phoenix Park are held the high speeds will be made by the touring cars, and not by the gill-a-mile racers. When a man is summoned for furious driving, the charge will be dismissed if it is found he was only practising on a Gordon-Bennett racer and not on one of those dangerous touring cars.

x x x x

No one is more sorry for Edge than I am, but I think under the circumstances the least he can do is to make some sort of withdrawal of his criticism of the Wolseley cars, as it must be borne in mind that the machines he spoke of so disparagingly finished, while he could not complete the course. There is no driver I admire more than Edge, but I think his criticisms of the Wolseleys were superfluous, and there is no question that it would have been far better if he had left them unwritten—a fact which he must recognise himself by now.

x x x x

In considering the result of the Gordon-Bennett race it is interesting to remember that the speeds accomplished by the first, and, in fact, by practically all the cars which finished, were quite beyond the capabilities of a railway locomotive. No locomotive could have compassed such speeds with stops averaging one every eleven miles. Then again, without the stops the curves on the road would have been impossible from the railway point of view, as speed would have had to be slackened so much that it could not have been picked up quickly enough to make the average. I have left out all count of the hills, because no locomotive except of the cogwheel type running on cog rails could have driven itself up them. Of course, I know the locomotive is not built for road work, and I do not make the comparison disparagingly, but in order to show the combination of elasticity and power which the motor car possesses.



**A 28 H.P. DAIMLER.** This most imposing example of motor construction has been built to the order of Mr. W. Chadburn, of Tunbridge Wells. It is a standard type 28-32 h.p. car, with a special side entrance body. The carriage work is painted pure white, the dark lines being a beautiful shade of green edged with gold, upholstery in leather to match. This car is, without exception, the finest-looking Daimler car we have yet seen, and that is saying a good deal when we think of the King's cars and other famous vehicles.

## CLUB DOINGS.

### Yorkshire A.C.

A series of hill-climbing trials for club members only will be held on Saturday, July 2nd, on Pot Bank, near Harrogate. Cars will be grouped in six classes according to their horsepower and number of cylinders, and there will be a class for motor cycles.

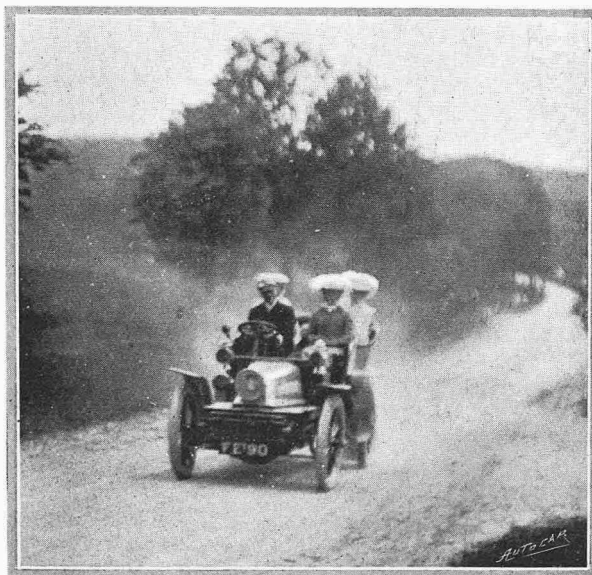
### Lincolnshire A.C. Hill-climb.

The members of the Lincolnshire A.C., at the invitation of Mr. Padley, visited Market Rasen on Thursday last week for a hill-climbing contest. There were thirty-eight motors and well over a hundred motorists present. Bully Hill (933 yards



Photograph by G. J. Wilkinson.  
The Lincolnshire A.C. hill-climb at Market Rasen. A competitor on the starting line.

long) on the Binbrook Road was the scene of the contest. After about twenty yards at one in fifteen the hill becomes appreciably steeper till at the turn, a little more than half-way up, it rises to one in seven, and then finishes nearly level. The 24 h.p. Georges-Richard, driven by Mr. W. S. Foster, the winner of the Castletwellan climb last year, made best time. Sir Hickman Bacon, president of the club, did well with his Panhard, and good performances were made by the



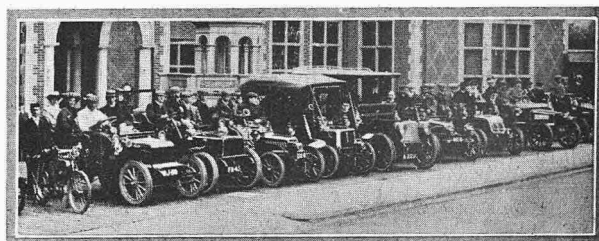
Photograph by G. J. Wilkinson.  
Lincolnshire A.C. hill-climb. Mr. W. S. Foster's 24 h.p. Richard-Brasier coming up the hill.

18 h.p. Richardson, driven by Mr. J. R. Richardson, and the 12 h.p. Richardson, driven by Mr. C. W. Pennell. The 10 h.p. Wolseley, driven by Mr. F. Richardson, made good time. The 6½ h.p. Humberette, with cabriolet top, driven by Mr.

R. M. Wright, did very well, being one of the lowest-powered cars present. The De Dions showed up creditably. From the hill top the return to Rasen was made by way of Willingham for tea. The decision as to the cars making the most meritorious performances rests with the Races Committee of the A.C.G.B. and I.

The following are the times made by the several competitors

Driver.	Car.	Passen- Time.	
		gers.	M. s.
W. S. Foster ..	24 h.p. Georges-Richard	4	1 35
Sir H. B. Bacon ..	12 h.p. Panhard	3	2 4
J. R. Richardson ..	18 h.p. Richardson	4	2 5
W. R. Pennell ..	10 h.p. Locomobile	2	2 5
C. W. Pennell ..	12 h.p. Richardson	4	2 6
F. Richardson ..	10 h.p. Wolseley	2½	2 6
R. D. Jeffery ..	12 h.p. Darracq	2	2 7
R. M. Wright ..	9 h.p. Clement	3	2 20
W. Nissler ..	8 h.p. De Dion	2	2 22
Major Goddard ..	12 h.p. Richardson	2	2 27
W. Swaby ..	9 h.p. De Dion	2	2 34
Jas. Coombes ..	8 h.p. De Dion	1	2 38
C. W. Nainby ..	7 h.p. Panhard	3	2 42
Dr. Sharp ..	12 h.p. Richardson	2	2 43
R. M. Wright ..	6½ h.p. Humberette	1½	2 52
R. M. Wright ..	12 h.p. Georges-Richard	3½	3 9
G. Garnett ..	8 h.p. M.M.C.	3	3 15
Parsons-Wright ..	6 h.p. Rigal	1	3 31
J. M. Goy ..	5½ h.p. Baby Peugeot	1	3 41
A. Day ..	10 h.p. Rex	1	4 10
A. E. Baines ..	9 h.p. Gainsborough	1	4 20
Dr. de Beauvais ..	7½ h.p. Daimler	1	4 35
F. Jecock ..	8 h.p. Dennis	2	4 52



The meet of the Eastern Counties A.C. at the Felix Hotel, Felixstowe, on Saturday, June 11th.

### The Ladies' A.C.

The following were elected to membership of this club on the 13th inst.: Mrs. Hornsey Drake, Lady Waldie Griffith, Mrs. Gunston, Mrs. R. W. B. Jardine, and Mrs. J. P. Morgan, jun.

The first annual general meeting of the club will take place on Thursday, the 30th June, at twelve noon. A biograph tea has been arranged for the same day at 3.15 p.m. The exhibition will include the Gordon-Bennett race of 1904, many pictures taken during the Homburg week, and also a picture taken from Hyde Park Corner of the procession of the L.A.C.G.B.I. on the 9th June. On Monday, the 4th July, there will be a club run to the Hall, Bushey, Herts. There will be no formal meet of the cars in London, but it is expected that many will be present at the Hall for tea about 4.30. It is suggested that members should go to Bushey via Chipping Barnet and Elstree, and return via Watford, Stanmore, and Edgware.

### The Midland A.C.

On Saturday last the Midland A.C. had a very successful meet at the British Camp, Malvern. The majority of those present came from Birmingham and district, so that their shortest run would be some thirty-two miles, but many extended their run to considerably over 100 miles before completing the journey. There were fourteen cars present at one time, though the total muster of the meet exceeded this, for members were arriving and leaving at intervals during the course of the early part of the evening, so that altogether there would be some twenty cars. The run was enjoyed by all, notwithstanding the dustiness of the roads. Other clubs which are within reasonable distance of Malvern would do



The inaugural meet of the South-east Essex A.C. at Bridge House, Prittlewell.

well to make a note of the British Camp as a rendezvous, for approached from any of the four cardinal points some highly interesting country is traversed and the view from the hills at the Camp is really worth seeing.

#### South-east Essex A.C.

The inaugural meet of the newly-formed South-east Essex A.C. was held on June 12th at Bridge House, Prittlewell, when fourteen cars and eleven motor cycles attended, and were photographed in the paddock adjoining the house. The brilliant weather rendered the meet most successful. Noticeable among the gathering was the number of ladies. It is the intention of the club to hold weekly meets covering various localities.

#### Derby A.C.

On Wednesday last week the Derby A.C. were invited to pay a visit to the Ryknield Works, Burton-on-Trent. About fifteen cars were brought, carrying about fifty members and their friends. On the completion of the tour round the works the party were photographed in front of the offices, and subsequently an enjoyable run was made to Mr. Clay's residence, eight miles from Burton, where the members and their friends were entertained to tea.

#### CLUB FIXTURES

- June 25th.—Southern M.C. run to Chertsey.  
 „ 25th.—West Surrey A.C. run to Chiddingfold.  
 „ 25th.—Berks A.C. meet at Ockwells Manor, Maidenhead.  
 „ 25th.—Gloucestershire A.C. meet Oxfordshire A.C. at Burford.  
 „ 25th.—Eastern Counties A.C. run to Manningtree and Clacton-on-Sea.  
 „ 25th.—Wolverhampton A.C. run to Buildwas; return via Wellington.  
 „ 25th.—Herts. A.C. run to Hoddesdon.  
 „ 26th.—Southern M.C. run to Pulborough.  
 „ 30th.—N.E. Lancashire A.C. drive British Medical Association to Hurst Green.  
 „ 30th.—S. Lincolnshire M.C. meet at Kirton.  
 „ 30th.—Ladies' A.C.G.B.I. annual meeting, Claridge's Hotel (12.0).  
 July 2nd.—Lincolnshire A.C. and Sheffield A.C. meet at Oldham.  
 „ 2nd.—Southern M.C. reliability trial (passenger cars).  
 „ 2nd.—Wolverhampton A.C. run to Bewdley.  
 „ 2-4th.—Herts. A.C. run to Stratford-on-Avon.  
 „ 2nd.—Herefordshire A.C. run to Brecon.  
 „ 2nd.—Yorkshire A.C. hill climb, Pot Bank, Harrogate.  
 „ 2nd.—Derby A.C. run to Lichfield (petrol consumption trial).  
 „ 3rd.—Gloucestershire A.C. run to Eastnor Castle.  
 „ 3rd.—Southern M.C. run to Henley-on-Thames.  
 „ 4th.—Ladies' A.C.G.B.I. run to the Hall, Bushey, Herts.  
 „ 9th.—Derby A.C. driving cup contest.

#### Sheffield and District A.C.

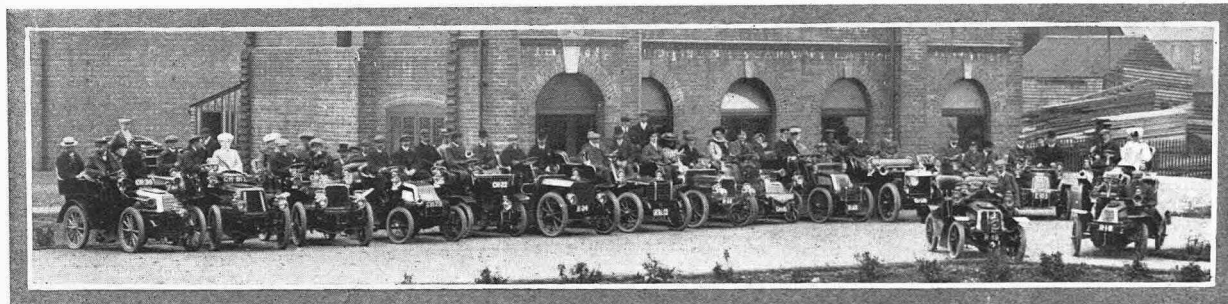
The second annual hill-climbing competition promoted by the Sheffield and District A.C. was held on Saturday afternoon from Grindleford Bridge up to near the top of Padley Wood, the distance being a little under two miles. The gradient averages approximately about one in seventeen with small stretches of one in ten. The weather, after a dull and threatening morning, turned out beautifully fine, though one could have done with less dust on the road. There were twenty-seven entries, and only one absentee. Mr. Frank Churchill (10 h.p. Hallamshire) made the fastest time, viz., 6m. 37s. Mr. A. S. Fawcett (15 h.p. Darracq) covered the course in 6m. 40s.; Mr. P. W. Fawcett (24 h.p. Darracq), 6m. 49s.; and Mr. F. Churchill (14 h.p. Hallamshire), 6m. 54s.; Mr. G. W. Grazebrook (16 h.p. Dennis) 7m. 43s. By the conditions of the handicap the positions worked out as follows:

	Marks.	Miles per hour.	Time over Course.	M. S.
1. F. Churchill, 14 h.p. Hallamshire	1349	13.0	6 54.6	
2. A. S. Fawcett, 15 h.p. Darracq	1339	13.48	6 40.6	
3. S. W. Fawcett, 21 h.p. Darracq	1233	13.18	6 49.6	
4. F. Churchill, 10 h.p. Hallamshire	1187	13.56	6 37.8	
5. Brook Shaw, 6 h.p. De Dion	1133	10.9	8 14.0	
6. J. E. Evans, 12 h.p. Darracq	1095	10.3	8 44.2	
7. J. F. Pickering, 10 h.p. Norfolk	965	10.08	8 55.4	
8. *H. Cooper, 10 h.p. Wolseley	904	9.7	9 12.4	
9. G. W. Grazebrook, 16 h.p. Dennis	874	11.66	7 43.0	
10. Ben Hind, 9 h.p. Clement	860	9.25	9 44.2	
11. Jas. Barber, 12 h.p. Belsize	855	8.3	10 51.0	
12. Harvey Foster, 10 h.p. Wolseley	835	10.08	8 55.4	
13. Jas. Hind, 12 h.p. La Plata	778	8.0	11 4.4	
14. J. H. Pickford, 10 h.p. Wolseley	773	8.3	10 50.6	
15. C. A. Clarke, 6½ h.p. Gladiator	755	6.6	13 34.0	
16. W. N. Drew, 7½ h.p. Wolseley	747	8.8	10 11.0	
17. Jas. Barber, 6 h.p. Belsize	722	7.78	11 33.4	
18. H. G. Barber, 12 h.p. La Plata	709	8.2	10 58.2	
19. Dr. O'C. Parsons, 10 h.p. Ariel	685	8.6	10 23.6	
20. E. W. Hadfield, 6 h.p. Regal	666	6.97	12 54.4	
21. H. Barber, 10 h.p. Wolseley	635	7.7	11 41.8	
22. F. Mellowes, 6 h.p. La Plata	611	6.6	13 35.6	
23. J. Ellis, 8 h.p. M.M.C.	575	6.5	13 45.4	
24. W. James, 6½ h.p. Boyer	564	4.93	18 13.8	
25. W. Watts, 6½ h.p. Humber	494	5.4	16 35.0	

\* Winner in 1903.

#### The Southern Motor Club.

A successful garden party was held on June 18th at the Glynn Arms Hotel, Ewell. Selections of music were rendered by the Grafton band, to which the members and friends danced on the lawn until a late hour. The grounds were decorated with Chinese lanterns, etc. The club ran the next



Members of the Derby A.C. assembled outside the Ryknield Motor Works.

day was to Brighton, but owing to the dulness of the weather in the morning most of the members did not leave town sufficiently early to make the whole journey, and only went as far as Crawley. Entries for the 100 miles reliability trial for passenger cars on Saturday, July 2nd, must reach the honorary secretary not later than June 30th. Route Morden to Ashted and back *via* Epsom, to be covered five times.

#### Herefordshire A.C.

The Herefordshire, Gloucestershire, and South Wales A.C.'s had a very successful inter-club run to Tintern on June 18th, when about thirty cars varying in power from a 6 h.p. De Dion to a new 18 h.p. Daimler turned up, besides motor cycles. The day could not have been more suitable, as the rain which fell the previous day laid the dust. The arrangements made by Mr. A. Arthur Dale, honorary secretary of the Gloucestershire Club, were excellent. Lunch was taken at the Beaufort Hotel, Tintern, after which short and appropriate speeches were made by Mr. Hereford (president of the

Herefordshire Club), Mr. Wyatt (president of the Gloucestershire Club), and Mr. Neale (honorary secretary of the South Wales Club).

#### Bexhill Races.

At a meeting of Bexhill townspeople on Friday last it was unanimously resolved to support Earl De La Warr in his efforts to initiate an annual automobile meeting at Bexhill, and to utilise the track already existing. The first meeting will be held on August 1st and following days. Committees were elected to carry out the details.

#### Northamptonshire A.C.

This club was recently formed with Earl Fitzwilliam as president and an influential array of vice-presidents. Mr. E. H. M. Wood has been elected hon. secretary. The opening run took place on June 2nd to Buckden, and was very successful. Further runs are arranged to take place every alternate Thursday and Saturday.

## THE SMALL CAR TRIALS.

### The Opinions of Some Probable Competitors.

THE AUTOMOBILE CLUB SIX HUNDRED MILES' TRIALS OF CARS, COSTING LESS THAN £200, TAKE PLACE AT THE END OF AUGUST. THE RULES, WHICH ARE SIMPLE, WERE SUMMARISED LAST WEEK, PAGE 807.

In previous reliability trials there has been a good deal of satisfaction expressed by the competitors with the rules and regulations governing the event. The objections of the competitors, however, have not been raised prior to the trials, but have been heard of for the first time either during the progress of the event or immediately after it was over. It is, of course, impossible for every competitor to be satisfied in any contest, but there have always been some of the objections raised at these trials which have been thoroughly sound, and had they been brought up before there is little doubt that the rules would have been modified and the trials rendered more valuable in consequence. The rules are not drafted with the idea of pleasing the competitors, but with the intention of ascertaining the most satisfactory machines. At the same time, it is easy for some regulations to be made which, after all, are not practical. There are also omissions from the rules at times which could be made good if the competitors would point them out in advance. As these trials are the first ones which have ever been held exclusively for voiturettes or small cars, it is important that they should be as representative as possible. We have obtained the opinions of several small car manufacturers upon the rules as they now stand, as there is no doubt that any reasonable objections which are raised now will receive the attention of the organising committee. Next week we shall publish some further views upon the subject. Consideration of space only enables us to give a few of the most interesting letters on the matter to-day.

#### A Poor Centre.

Sir,—It seems to me the rules for this year's competition are based on sound commonsense kind of lines, as I do not consider the ordinary man wants to do more than fifty miles at a time without stopping. The only objection I have to the event is the district in which it is held. I think Hereford a poor place for such an event, and I think the run should extend over 1,000 miles.

J. D. SINDELEY.

#### The Hill-climbing Competition.

Sir,—We beg to say that after a casual perusal of the rules the following few points strike us as being open to suggestions:

Rule 3. Classification. We think this should be made to extend from £125 to £225 instead of to £200.

Rule 4. (About makers not being allowed to enter more than one car in a class unless the engine of the second car is at least twenty per cent. larger than that of the first.) We believe that cars should be considered of a different type if constructed on different lines one from the other, without regard to cylinder capacity. In our case, we supply two distinct types of cars at different prices, but both having the same piston area. We should like to enter these as distinct types, and believe we should be permitted to do so without their being considered the same car on the basis of the cylinder capacity only being the same.

Section C, Rule 25. We believe that no deductions should be made whatever for stoppages from tyre troubles alone, for the reason that the performances of a car might be of the very highest standard, yet marred and debarred from receiving the highest award through defective or punctured tyres, whereas the car itself would be deserving and the tyres only be faulty.

Rule 32. We are inclined to think that the most unbiased opinions and reports are obtained from observers appointed by the club, and in no way whatever connected with any manufacturers, agents, or dealers of any car.

Rule 39. We think a car should be allowed to make an average of twenty miles an hour instead of eighteen.

We fail to see any special rules governing the hill-climbing competition, and beg to say that we think cars should be allowed to negotiate hills with a flying start, as they would do under ordinary conditions, and not from a standing start, unless the stand be taken at a sufficient distance from the beginning of the hill to allow of speeding up the car.

We think there should be included a kilometre or mile stretch in connection with the trials, where the cars could be tested for speed.

Aside from the above, we think the rules governing the trials most satisfactory.

THE ANGLO-AMERICAN MOTOR CAR CO., LTD.

#### A Great Improvement on Last Year's Rules.

Sir,—We are not taking part in the 600 miles small car trials in August, as we do not make a car at or under £200, which, of course, debars us from competing. We may say that we have read these rules very closely, and consider them to be a vast improvement on the rules of, for instance, the 1,000 miles reliability trials of last year. For one thing time is given for filling up with petrol, water, and oil, which, of course, is a necessary operation on any car, and therefore nothing against its reliability. It is scarcely our place to criticise the rules, but if, as we take it, the next 1,000 miles trial will be based upon these new rules, we should like to see one or two things changed: for instance, Rule 18 says that any car which drops a passenger shall be considered not to have made a non-stop run for that run. This may work out



very awkwardly, as supposing a manufacturer had a tonneau car in the trial, and, according to the request of the Automobile Club, carry (in addition to the driver, a mechanic, and observer) some representative of the Automobile Club, or a gentleman of the press, and that this last person happened to be taken seriously ill, so much so that it necessitated his being left at some town, it would be very hard lines to disqualify the car simply because this passenger was taken ill. However, possibly this would have to be left to the discretion of the committee.

Rule 32, dealing with observers, is rather entertaining in some of its questions, which are perhaps quite right in their way, but certainly make much ado about nothing.

As regards the spare tyres—Rule 47—we should like to know exactly what this means, as it appears to us to be ridiculous. Of course, the rules for the 1,000 miles reliability trials will doubtless be a bit more stringent than the rules at present under consideration. Twenty minutes for repairs, replacements, and adjustments before the car starts is a long time, especially with the twenty minutes allowed on the road for a run of fifty miles. We should like to say a word or two as regards the very important question of tyre trouble, which is sure to come up again before the 1,000 miles reliability trials in September. The tyre trouble means a long roadside stop, and we would suggest that, instead of deducting one mark for each five minutes lost over a tyre trouble, one mark per tyre trouble should be deducted, that is, if any marks for tyre troubles are to be deducted. Personally, we should be inclined to disregard tyre troubles. You will no doubt have noticed in the advertisements of *The Autocar* that recently when we were able to give a testimonial to a tyre company because a set of their tyres had gone 600 miles without puncturing, and this on a very light car with very thick tyres, they immediately published our letter with fan-fare of trumpets. If the tyre manufacturers think that 600 miles is such a splendid test for a set of tyres, then we should like to know why marks should be deducted for tyre troubles in the 1,000 miles trial. Evidently the manufacturers themselves are by no means confident of their own productions. There is always the inevitable amount of luck, but even apart from this we should like to see the tyre trouble penalty abolished.

There is another point which should be borne in mind before drawing up the new rules for the September trials, and that is with reference to some of these non-skid bands that are on the market. Some of them are without doubt a great protection to the tyre. One or two which we have been unfortunate to use have torn the tyre to bits, and taken more out of it in 500 miles than 2,000 would in the ordinary way. In case of the non-skid cover it is admittedly an efficient protection for the tyre, and we think that the manufacturer using these in the reliability trials should be handicapped, or have marks deducted so as to make things equal all round, as he has by using these a better chance of making a non-stop run than the manufacturer who does not use these unsightly puncture preventers.

THE EAGLE ENGINEERING AND MOTOR CO., LTD.

#### Passing on Hills.

Sir,—Replying to yours of the 17th inst. re light car trials, we would make the following suggestions:

We consider that where a large firm has sufficient models to enter three or four classes, it should be allowed to do so, otherwise it is unduly handicapped.

Also the price of car should have some bearing on the total number of marks obtained in each class, so as to prevent a car at the maximum price having advantage over a car in the same class, and that only by the value of only £2 or £3.

There is one other important thing, and that is in Rule 40 it states, "No passing on the road to be allowed except in the case of breakdown or by mutual agreement," but pass-

ing on hills should be allowed, otherwise cars with two-speeds which could take a hill if allowed to get away at the bottom on its top would have to take its lowest if it had to be held back for another car. We think this last suggestion probably the most important.

THE SPEEDWELL MOTOR AND ENGINEERING CO., LTD.

#### The Awards.

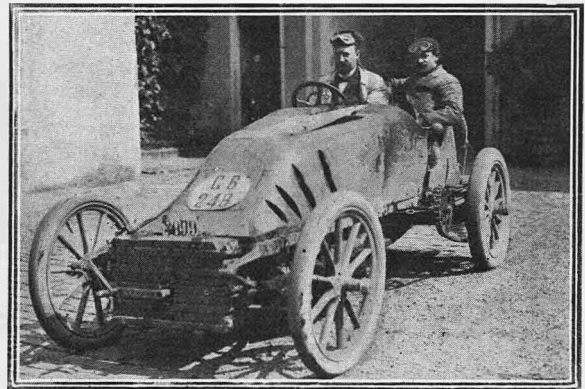
The only point about which I raise any objection, and about this I feel most strongly, is the awards.

(1.) I object to awards being left to the judges or anyone else in such a way that the personal opinions or theories of the judges may affect the awards.

(2.) I object to there being any special medal or first prize or any description.

So far as my reasons are concerned, objection No. 1 practically speaks for itself. What is wanted by both manufacturers and public is information regarding reliability, hill-climbing, and general excellence founded upon solid facts, as proved upon the road, and not flights of theoretical advantages, no matter upon whose authority these are given; and, further, in view of the trouble and heartburning which always occur after a decision which has rested upon the individual opinions of the judges, it is not fair to the judges of the A.C.G.B. and I., who, whatever their opinions may be, always endeavour to act for the best.

Objection No. 2 is, I think, also of very great importance. When a gold medal or special first prize is awarded the car



Hautvast, the only representative of Belgium to complete the course. His time was 7h. 2m. 36/10s.

which obtains the award is (in most cases wrongly) judged by the public to be very much superior to any other car in the trials, whereas it may have been awarded the first prize merely because it consumed half a pint less petrol in 600 miles, or climbed a hill in five seconds less time, or scored some other comparatively trivial advantage, which may in another car have been counterbalanced by another slight disadvantage not considered by the judges.

Can we not have a certain definite test given us—say, non-stop of 600 miles? All cars succeeding to have first-class certificates, cars not completely succeeding to have, say, one mark deducted for each minute stopped, cars losing, say, fifteen marks to have second-class certificates, cars losing thirty marks to have third-class certificates, and so on.

It is more than probable that there will be two or three cars which will perform equally well, and it would be obviously unfair to pick out one of these cars on a minor point and set it upon a pedestal above the others.

I shall be entering either one or two cars.

ERNEST H. ARNOTT.

### Second-hand Car Examinations.

In addition to examining second-hand cars for intending purchasers, "The Autocar" system will shortly be expanded to include the examination of second-hand machines for their owners who wish to sell them. A certificate of the condition of the car at a given date will be prepared in precisely the same way as the present reports are made. Details of this extension of the system will be published shortly.

### The Reprint of the Doctors' Number.

As previously announced, so many applications have been made for a second copy of the Doctors' Number of "The Autocar," that it has become necessary to reprint it. Only the portion referring to motoring for medical men is being reproduced. All who want a copy should order it at once, as there will be no second opportunity of securing this evidence of the reliability of the motor car.

## ROAD REPORTS.

*We shall be glad to receive reports from correspondents under this heading as to the condition of the roads—good and bad—in various parts of the country.*

Several of the Glamorgan roads are being widened at narrow points, several landowners having given up land for the purpose.

The road leading from Bradford to Huddersfield (writes a correspondent) has almost the worst surface of all that I encountered during a run of three hundred miles.

The oily preparation laid on a number of Cardiff thoroughfares has been successful in preventing dust, but several residents complain of the disagreeable odour emitted after a couple of days.

Motorists who may have to use the road leading from North Queen's Ferry to Alloa and Stirling, *via* Taryburn and Culross, are informed that part of the road is being remetalled, and for a considerable distance is very badly cut up by traction engine traffic. The bad portion is from Broomhall entrance gate going west to close on a point where the River Lyne crosses the road—a distance of about two miles. At the latter point one comes on the bad portion suddenly after rounding a corner, and the condition of the road is such that any car coming on to it at any speed over about five miles an hour would meet with some accident. The surface of the road resembles the Atlantic Ocean during a gale.—JOHN CUNINGHAME.

## POLICE TRAPS.

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

We are informed that regularly on Sundays there is a police trap 220 yards long on the Putney end of Wimbledon Common.

The police in the Huddersfield district are at present very vigilant. There are several traps on the roads approaching Huddersfield, and it is difficult to name any particular place, as these traps are moved every week. Motorists approaching Huddersfield from any direction should be cautious.

The police were busy at Berkhamstead on Sunday, several motorists being stopped, names taken, etc. It would appear that at Tring they telephone to Berkhamstead as each car passes, and that the police at the latter place stop the car there. A constable in plain clothes holds the watch and beckons to another in uniform, who stops the motorist. As soon as the trap was discovered a man on a bicycle was sent out to warn all motorists.

In *The Autocar* of June 11th we cautioned motorists of police traps on the road between Bridgend and Cardiff. That the warning was necessary was shown by three prosecutions for alleged "driving to the danger of the public" over the road named. The cases, however, were dismissed by the Barry magistrates, as the evidence was very weak. The traps on this road are still in operation, nearly all the village police stations between Bridgend and Cardiff being connected by telephone.

It is quite refreshing to see that at last a prosecution at York has failed. For three years Police-sergeant Henderson and P.C. Paul have been very active in trapping motorists on roads approaching York from the West Riding, but so far as we can remember the case against Mr. C. A. Cochrane's chauffeur on June 18th was the first that has been dismissed. The chief ground of the dismissal was that the police timing methods were proved to be unreliable. The roads selected by the police for these traps are particularly good for safe and fast running.

Mr. Walter Munn writes in reference to the attitude of the police at Basingstoke towards motorists. He says: "I was returning along the Basingstoke Road on Whit-Monday when the car was stopped as we approached the village of Hook. There was the usual trap of two plain clothes men and one policeman in uniform. I demanded to see the watches, and found the watch, as I anticipated, was a common Swiss stop watch, and on comparing it with mine, it in one case showed a variation of three-fifths of a second, and in the other stopped correctly, but almost invariably started backwards. I informed the sergeant that if he summoned us I should claim his watch was not a reliable timekeeper. As a matter of fact, I had five persons on the car and we crossed the bridge, within 100 yards of the timing point, at

a very slow speed indeed, and as there was a bend in the road where the second man was stationed, and we were entering a village, we did not attempt to go fast. They claimed we were doing twenty-six miles an hour, whereas no doubt the speed was well under twenty miles an hour at that particular time. At the court the police produced two watches; one they stated had been held by the first and the other by the second man. I informed the bench I could show them these watches were not reliable, and that they started back instead of starting forward. On comparing the two watches there was a variation between them. I also pointed out that according to the police evidence there was only a difference of twenty-five yards between the second and third man, and that the car was pulled up easily in ten yards, and, therefore, it was obvious the car could not have been travelling at twenty-six miles per hour. To the astonishment of the police, the bench dismissed the case."

The police trapping season has opened in Scotland, but the trappers have not received much encouragement from Mr. Sheriff McLeod, before whom one of the victims was hailed at Haddington on Monday last. The Scottish policeman, in his mistaken zeal, has altogether out-Jarretted Jarrett, inasmuch as while the latter is content to time cars over a measured distance of 176 yards from one end of such distance, Mr. Scotch Inspector Campbell undertook to dot off a whole mile at a glance. The Inspector had to determine when the car entered the measured mile while it was coming end on to him that distance away. At least this intelligent officer imagined it was a mile away, but, as a matter of fact, when the distance was checked by an expert surveyor it was found to be 320 feet short. It was also proved that according to whether the Inspector stood upon the north or south side of the road there was a possible visual error of 600 feet in one case and ninety feet in the other. The Sheriff came to the conclusion that it was necessary to have a separate witness to prove the start and finish of the mile and to be independently responsible for the working of a watch. The Scottish Automobile Club, which undertook the defence, is much to be congratulated.

## New Patents.

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

The following specifications were printed and published on the 17th June, 1904. All notices of opposition to the grant of patents on the several applications should be filed by the 2nd August, 1904.

1903.  
 11,525.—G. Mamy. High speed trembler for coils.  
 13,622.—W. H. Jane. Tyre lever.  
 13,824.—F. F. Piers. Resilient wood and cushion wheel.  
 13,915.—J. Hubbard. Combined wood and metal rim.  
 15,847.—A. Knight. Door opening mechanism for closed in car bodies.  
 16,167.—S. Griffin. Method of and apparatus for carburetting with heavy hydrocarbons.  
 1904.  
 6,451.—J. Heisig. Methods of constructing honeycomb coolers.  
 9,090.—D. Leechman. Carburetter and valve lift controlling device.  
 9,111.—M. Ferrero and A. Franchetti. Two-stroke cycle motor.

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