

THE AUTOCAR

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

EDITED BY H. WALTER STANER.

No. 349. Vol. IX.]

SATURDAY, JULY 5TH, 1902.

[PRICE 3D.

THE AUTOCAR.

EDITORIAL OFFICES:

COVENTRY.

PUBLISHING OFFICES:

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

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COLONIAL AND FOREIGN EDITION.

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

The Autocar can be obtained abroad from the following:

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

Notes.

England's Victory.

No event in the history of automobile sport has caused greater interest or, so far as this country is concerned, greater satisfaction than the victory of the British-built Napier which Mr. S. F. Edge drove in the Gordon-Bennett cup race. There is no doubt that the win is thoroughly deserved. Mr. Edge has per-

severed with a pluck that is beyond all praise, for he made his first attempt to win a first-class event in 1900, and he would have raced for the cup in 1901, but for difficulty with the tyres, as he was not able to get a British set for the event, so, instead of running in the cup contest, he took his chances in the Paris-Bordeaux race itself. For both these events specially built Napiers were used, and although they were notably good machines for their date, and presented a number of features which have since been copied by the French constructors, they were beaten in the races, but neither Mr. M. S. Napier nor Mr. Edge was daunted, and the result is that at the third attempt each was rewarded, for it is necessary to remember that by his victory Edge did not merely beat the French champion, but he beat three of them and their machines, as each nation has the right of nominating three; and, consequently, everything else being equal, it was a three to one chance against the Englishman, who had to fight the redoubtable De Knyff on a 70 h.p. Panhard, Girardot on a 50 h.p. C.G.V., and Fournier on his Mors of probably eighty or more horse-power. On the first day the luck was certainly not with the Englishman. He suffered from a machine which was unquestionably slower than the French vehicles, and, further, had trouble with his coil, though as Fournier's car came to grief early, and Girardot also broke down, De Knyff only was left to uphold the supremacy of France. At the same time, his lead on the second day was so commanding that there did not appear to be much chance for the Englishman. However, in the second stage of the cup contest the conditions were reversed. De Knyff, on his higher-powered machine, got away, only to be overhauled at the finish by the British car, which had better stood the terribly trying roads. Of course, luck must enter into all these contests, and the nerve and skill of the driver must also tell, for a man who can shine in these races is one of no ordinary calibre. He must be a strong man in every sense of the word; but when it comes to nerve, pluck, and strength, there is little if anything to choose between the three Frenchmen and the one Englishman, and that brings us back to the fact that it was mainly a contest of the machines, and that the machine which was best designed and best made to stand the route won. It should be understood that we are not belittling the French cars. Far from it. They are magnificent machines, and their power is enormous, considering their light weight, but it would appear that a little too much was sacrificed to speed when the badness of the road was considered. While they were on the grand national roads of France they were irresistible, but when they had to encounter severer conditions the car which gave the right balance between speed and reliability beat them.

Next Year's Cup Race.

Under the conditions of the Gordon-Bennett cup contest, the race should take place on the roads of the nation which gains the cup. In other words, next year the Gordon-Bennett contest by rights should take place on English soil. Whether this can be arranged or not remains to be seen. If it cannot, we take it that the holder can relinquish his privilege and elect to fight for the retention of the cup on French or other soil, but it is a question whether it is impossible to hold the race in England. No one is more opposed than we are to indiscriminate speed on the highway; but we cannot see why for one day the Great North Road from London to Edinburgh, for example, should not be given over to a great motor race, particularly one of such historic interest as the Gordon-Bennett already is. With the start taking place on the borders of London at three or so in the morning, the race would be over, so far as the speediest cars were concerned, very early, and it is only necessary for proper precautions to be taken for the event to be run off quite safely. It would unquestionably provide the inhabitants of the districts, which are amongst the most lonely in the country, with a theme of sporting interest and excitement which would be welcome. The first 200 miles of the road to Scotland is almost without a town of importance, this being due to the fact that the present road to York was laid out comparatively recently, and with the one idea of getting as direct a road as possible from the capital to York, and by judicious selection of the route north of York, there would be no difficulty in steering clear of the larger centres of population, and by the establishment of neutral zones through populated areas the public safety could be absolutely safeguarded. There is no doubt that the volunteers, not to mention the regular soldiers, would take a great interest in keeping the course clear, and with the assistance of the local police and automobilists, this could be done satisfactorily, and the nation provided with a contest of the greatest interest, and we believe if it were possible to take a poll of the country traversed, the weight of opinion would be decidedly in favour of the race, provided that the roads were properly kept. There are still plenty of people who do not regard the autocar with much favour, and not a few of these reside at or by the speediest stretches of the Great North Road, but most of them are good sportsmen, and would be delighted to see the road lent for one day to a great race. This could easily be done without inconvenience to regular users of the roads, as almost everywhere there are alternative local routes. The idea may seem far fetched, but after all it is not so very different from the annual closing of a section of the Thames for the Varsity boat race.

Horse and Motor Accidents.

Accidents with horse-drawn vehicles are of such frequent occurrence that there is no novelty in them from a reporter's—which is equivalent to saying from a public—point of view. The penny-a-liner will dismiss with surprising brevity a trap accident involving the death of one or more persons, while any unusual behaviour on the part of a motor car, though it may not endanger any person, is "written up" in the most florid style, and if no real catastrophe has resulted, the imagination plays around what "might have happened." It is safe to say that

if an autocar accident should occur attended by such serious consequences as those which accompanied a trap accident near Bridgwater the other day, the press would deal with it very differently from the manner in which the occurrence in question is dealt with. A baker's horse bolted, and the baker and his wife were pitched out, the former being killed, and the latter nearly so in the presence of their daughter, but the record of the occurrence occupies only a few lines in the local press. As a contrast to this, we have a report before us of about a column in length of what is headed "The Larkhall Motor Car Fatality." The inference, of course, is that a motor car was the cause of a fatal accident, but on reading the report it appears that a horse, which was known by its owner to be restive in the presence of autocars, that is to say, it had never been properly broken in, took fright at a passing motor car, and by overturning a waggonette, caused the death of one of the occupants. The driver of the motor car was tried on a charge of culpable homicide, but was acquitted by the jury after a long and patient hearing, and yet the newspapers persist in describing the affair as a "motor car fatality." Such headings are not justified, and if it were a person instead of a thing or a pastime that was involved, such descriptions would be decidedly libellous. Though the autocarist in this case was exonerated from all blame, we cannot refrain from making the general remark that drivers of motor cars whenever they approach a horse which shows the least sign of restiveness should pull up, and if necessary stop their engines. The greatest consideration should be shown to timid horses if automobilism is to become universally popular.

Motor Waggon Transport.

The Hon. Arthur Stanley, M.P., vice-president of the Liverpool Self-propelled Traffic Association, contributes an interesting and instructive article on "Motor Waggon Transport" to the provincial press. He points out that the rapid advances made in the development of light motor cars for passengers has perhaps diverted public attention somewhat from the question of heavier transport motor vehicles for goods traffic. "It is abundantly clear," he adds, "that a great forward movement has been going on in this latter branch of the industry. This is shown, not only by the great improvements which have been introduced in each successive year by manufacturers into their own particular type of car, but also by the enormous difference in the efficiency, as evidenced in the trials undertaken under the auspices of the Liverpool Self-propelled Traffic Association, between the waggons which competed in the first trials, held in the year 1898, and the waggons which were shown in the trials held last year. That the question of cheap internal transit is one of the greatest importance to the commercial welfare of the country no one can doubt, especially at this time, when strenuous efforts are being made by our great commercial rivals, the Americans, to obtain possession of all means of transport, not only in their own country, not only on the high seas, but in Great Britain itself. It is for the purpose of supplementing the work already done by the railways, and giving concrete form to this necessity for cheap and rapid transport of goods by road over small areas, that the Road Carrying Co. has been formed in Liverpool."

The points to be considered in comparing the new method with those already in existence are speed, cost, and handling, in all of which motor waggon transport compares favourably with the railway and other kinds of transport.

Automobile Lunatics.

An "Intending Motorist" calls our attention to a letter which appears in a Halifax newspaper, in which the writer favours the proposal for the numbering of motor cars. The grounds upon which the writer's conclusions are based, however, are very weak. Simply because a couple of lunatics in a motor car ran amuck—or, rather, are alleged to have done so—somewhere between Oxford and Bath, charging a flock of sheep, and frightening a horse; and then, while their man was repairing a puncture, tearing down some railings and hustling two cyclists, he would compel every autocarist to be numbered. The great bulk of autocarists, like the majority of the public generally, are not of this class, and to frame regulations on the assumption that they are would be as absurd as it would be to legislate for the general community on the assumption that there were no sane people in the world. We regret, of course, that persons in an autocar should so flagrantly misconduct themselves as to bring discredit on the cause of automobilism in this way, and we know that autocarists as a body will discountenance such proceedings and do their best to bring such madmen to justice.

Motor Bicycle Contests.

From what we can hear, the motor cycle races held at Plymouth last week were managed in a somewhat peculiar style, though it would seem that the trouble arose mainly through no maximum size of motors being specified, or, lacking this, no system of rating attempted. In any case, more than one of the competitors refused to ride when they found that Rigal, the Frenchman, had been brought over to compete against them with an 8 h.p. monster. Then, again, on the second day penalties were imposed in the way of additional time handicaps, although, it is said, nothing was stated about this on the programme or entry forms. The timekeeping also came in for criticism, and the meeting, as a whole, showed very plainly the necessity for a thoroughly satisfactory set of rules being drafted and then rigidly adhered to. It is not merely a question of professionalism or of amateurism. This is not regarded as of much importance by real sportsmen, so long as the riders do their best and ride fairly to win. Motor racing is mainly a contest between machines, and it is high time that some practical system of rating was decided on, as it is not always satisfactory to insist that none of the engines shall exceed certain maximum dimensions. A proper system of rating is required, so that by calculation it will be quite easy to handicap every machine according to the bore and stroke of its motor. The aim of such a system is to bring the machines as nearly as possible level after calculating what their engines will do, and then we have the elements of best design and of personal skill and nerve of the rider as the deciding factor. This, with a weight limit—and at the present time 50 kilogs. (110 lbs.) is a satisfactory one—should suffice to provide good sport and afford an incentive to designers of racing

machines to what is expressively known as "improve the breed." There is another point, too, while discussing motor bicycle contests, which should not be lost sight of, and that is the hitherto half-hearted regulations with regard to pedalling in hill-climbing competitions. It appears to us that pedalling should be absolutely prohibited if the contest is to be of any value, or if the makers are to obtain fair credit for the most successful ascents, for it may happen that the fastest time is made by a bicycle which is pedalled. No one knows just how hard it is pedalled, and no one can tell. Then, again, if two men pedal it is impossible to say which is doing the most to assist his engine, as one individual may be very much stronger than the other, and if hill contests are to teach us anything there is no question that pedalling should be prohibited, and, if necessary, the pedals removed. There are some other points of minor importance which might be brought up, and there is no doubt they require the careful consideration of the Automobile Club and the N.C.U., and not only so, but with a rapidly developing sport they will require frequent revision, as the conditions alter or loopholes in the regulations are discovered.

A NEW MOTOR BICYCLE.

The "Holley" is the name of a new American motor bicycle which is being introduced into this country by Mr. D. H. Morgan, of Clarence Street, Cheltenham. We had an opportunity of inspecting one of the machines the other day. The engine, which is a relatively large one, developing $2\frac{1}{4}$ h.p., is ingeniously built in the frame, the seat tube being of special form to receive it. It is fitted with heavy fly-wheel, automatic sight-feed lubricator, and spray type of carburetter. The rims of the wheels are of wood, a notable feature being that the rear wheel rim and the belt-driving rim are in one piece. The



power is conveyed from the motor by means of a flat belt, $\frac{3}{4}$ in. wide by 3-16 in. thick. The petrol tank has a capacity sufficient for a run of sixty miles. The rear wheel hub is provided with a "New Departure" free-wheel and back-pedalling brake device, a front wheel brake being also fitted. The current switch is controlled by means of the left handle, as usual. The wheels are 28 in. in diameter, shod with 2 in. tyres. The machine, which weighs complete 104 lbs., will, it is claimed, carry a twelve-stone rider up a gradient of one in eight without pedalling.

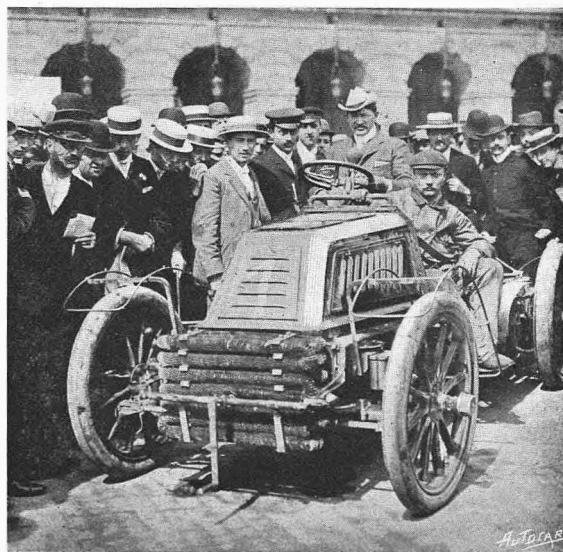
THE PARIS-VIENNA RACE.



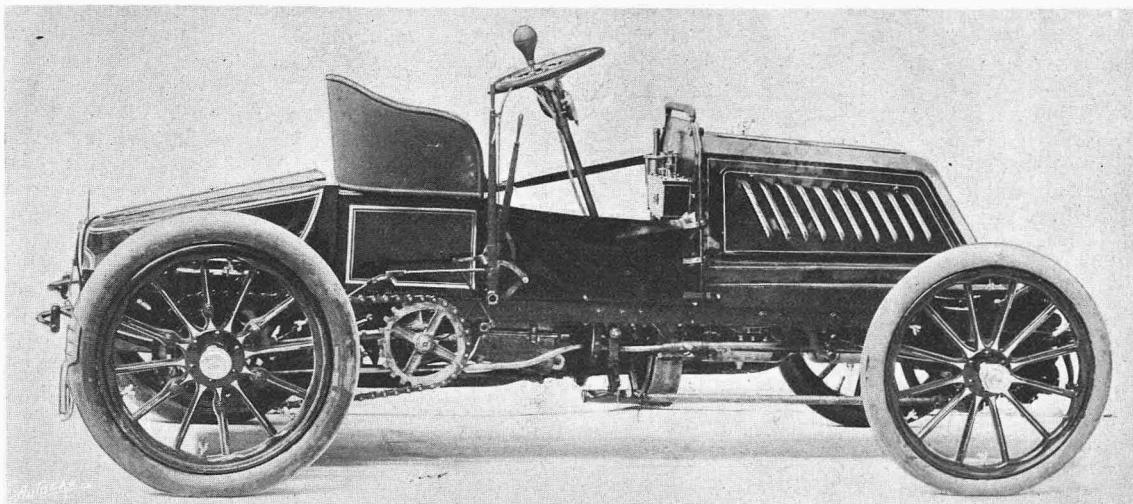
Mr. Henri Farman on his 70 h.p. Panhard, the winner of the 1,000 kilogs. class.

As the speed contest last year from Paris to Berlin marked the beginning of what was hoped to be an annual series of great international races, and showed for the first time the marvellous possibilities of heavy racing machines propelled by motors of exceptional power, so the race from Paris to Vienna has again aroused a vast international interest in automobilism, and is proving a still more severe test to the latest productions of the autocar industry. Last year the object of the tests was to show whether the vehicles could be safely driven at the terrific speeds which had been calculated with their powerful engines, but on the present occasion manufacturers find the problem of a more technical and scientific character, for not only are they obliged to do what they can to improve on their previous performances as regards speed, but they must accomplish this result under less favourable conditions by bringing the weight of their cars within the limit of a thousand kilogs. (19 cwt. 2 qrs. 20 lbs.), fixed by the Automobile Club de France. Any heavy reduction in the powers of the motors is out of the question, and thus makers have aimed first of all at diminishing the weight per horse-power, with the result that the majority of manufacturers are fitting more powerful engines than last year without increasing the weight. In fact, in many cases the engines, while being more powerful than last year, are appreciably lighter. It is, however, in the frames and propelling machinery that makers have been cutting away material, and a cursory examination of the vehicles would seem to show that they have narrowly skirted the bounds of imprudence; but when it is seen how much care has been taken in the construction of each piece, and how nothing has been left to hazard in the selecting and working of the best possible material, there seems to be

every reason for believing that manufacturers have got the maximum of power and strength for the weight allotted to them. We have shown how this has been done in the Charron, Girardot et Voigt cars, and how in the Panhards the power of the motor has been greatly increased without appreciably adding to the weight, while it is actually lighter than the Paris-Berlin engines. In several types of new racing vehicles, the secondary or "false" chassis has been suppressed, and the motor and gear box are bolted directly on to the main frame. In the Mors cars there is some mystery about the powers of the new motors, which are rated at 45 h.p., though, of



Fournier on the Mors.



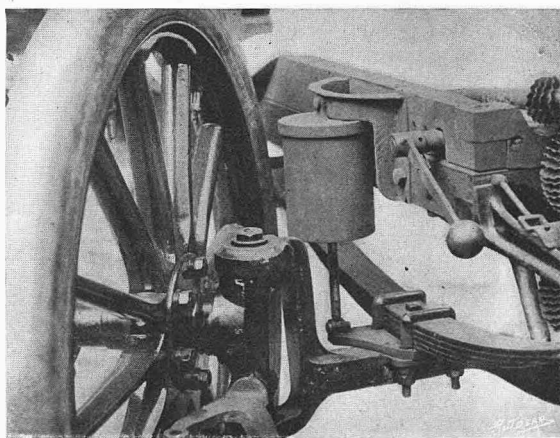
Fournier's 80 h.p. Mors.

course, developing much more, and the firm are said to have made no attempt to construct more powerful engines, since they have preferred to secure a better utilisation of propelling effort. In the Gordon-Bennett cup car, driven by Fournier, however, the engine is much more powerful, and we should think that it is one of the biggest engines yet fitted to a French autocar. The four cylinders are enormous, and look more like developing between 70 and 80 h.p. than the 45 or 50 h.p. at which it is rated. For such an engine the under-frame appears extremely light. The change speed

airtight they serve the purpose of pneumatic buffers to prevent the wheels from jumping on the road, at the same time that they save the springs and considerably reduce any liability to breakage.

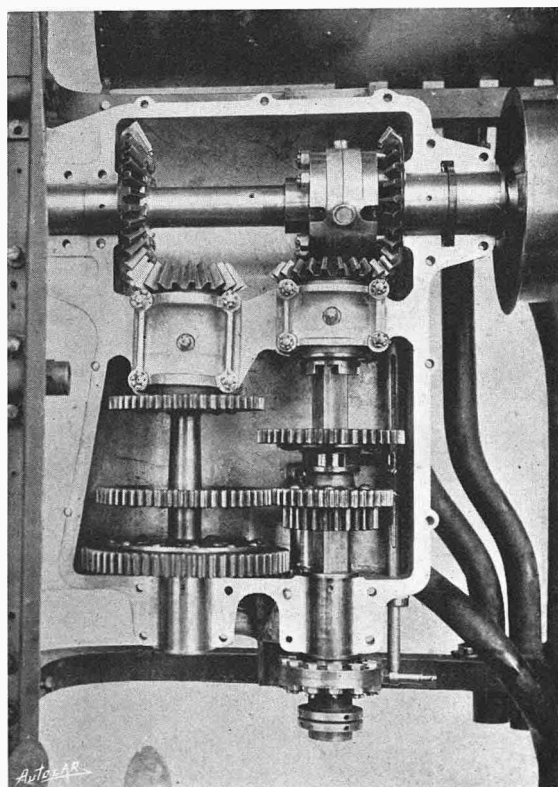
Some Reflections before the Start.

The race to Vienna is not only a test for speed, but more especially for endurance, as it appears that the road over a third of the distance is far from being as good as the course to Berlin last year. From Paris to Belfort, a distance of 253 miles, the cars will be able to travel at full speed, and it is



One of the Mors pneumatic spring checks.

gear is entirely different from that on the old Mors cars. For the first three speeds the primary shaft carries the usual train of sliding wheels, and both the primary and secondary shaft gear on bevel wheels on each side of the differential. At the low speeds the end bevel on the primary shaft runs free, and when the sliding train is pushed right forward a clutch keys this loose pinion, and the drive is direct. A feature of these cars is the system of pneumatic suspension, consisting of a series of cylinders and pistons interposing between the axles and the frame. The cylinder is fixed to the frame above the spring, and the piston rod at the junction of the spring with the axle, and as the pistons are



Plan of the new Mors change speed gear. The second speed in operation.

quite possible that we may look for some phenomenal performances on this section. Between Belfort and Bregenz the distance is 194 miles, and the competitors will have to travel through Switzerland as tourists. The decision not to race over this section seems to have disappointed the Swiss, who had been looking forward to an opportunity of seeing the cars travel at high speeds, but the authorities express themselves satisfied with the determination of the Automobile Club to neutralise this part of the course, for though they would not have run the risk of being accused of hostility to the automobile by prohibiting the race, they nevertheless recognise that some of the roads are not suitable for racing speeds. Between Bregenz and Salzburg—209½ miles—the troubles begin. Until a few days ago there was a question of neutralising a part of the course, and especially the passage of the Arlberg, which was blocked with snow, but it is now stated that the pass has been cleared, and though extreme care will be needed in driving the cars, there is now no longer any question of neutralising this section. Those competitors who have been over the course are far from being enamoured of the road to Salzburg, which is not only narrow and often in bad condition, but the gradients here and there are very

dangerous, some of them being said to be as much as one in five, while the drains and ridges crossing the road are innumerable, and will keep competitors perpetually on the look-out. To make matters

worse, the heavy rains made the going terrible for those who have been prospecting the route, but it is to be hoped that this difficulty at least will be overcome with the change in the weather, though it is clear that we cannot look for fast speeds on the way to Salzburg, and if the vehicles come through unscathed it will be a question of good luck and careful driving. From Salzburg to Vienna the going is satisfactory, and competitors will be able to once again fully test the speed capabilities

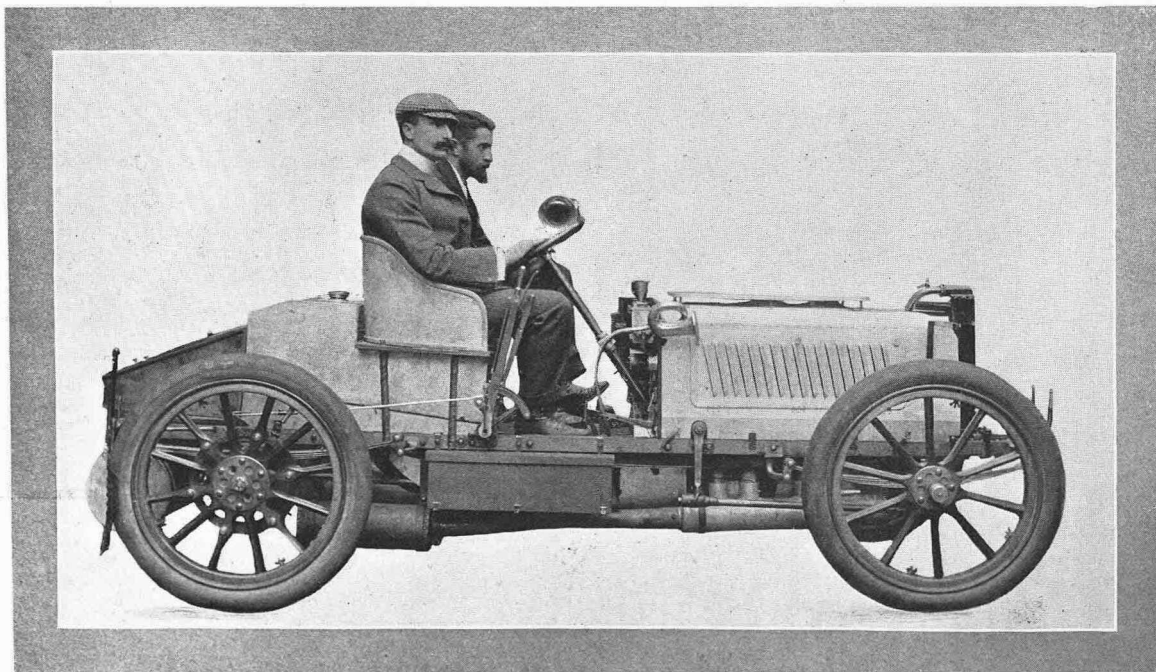


The Gordon-Bennett trophy.

of their vehicles upon this section of the route.

The Tourists' Section.

The Vienna event was inaugurated with a competition of touring vehicles, which started from Paris on June 19th. It also marked the commencement of fine weather, which has dissipated all doubts as to the success of the race, for given good weather there can be no question of the event proving highly satisfactory, any more than that a continuance of the rains with such roads as are met with in Austria would certainly have done much to spoil it. The



Messrs. S. F. Edge and M. S. Napier on the 40 h.p. Napier.

vehicles assembled in the Place de la Concorde, in front of the club premises, and looked remarkably effective with their touring load and their decoration of French, Swiss, and Austrian flags. Forty-three cars started, and several others left on the following days, with the idea of doing longer journeys, and joining the leaders at Innsbruck, so that they would all enter Vienna together. The daily stages were as follow: Auxerre, Dijon, Neuchâtel, Interlaken, Ragatz, Innsbruck, Tolbach, Klagenfurt, Graz, and Vienna. There was, of course, no question of fast driving, and the competition was merely a test of regularity, but nevertheless even with the greatest prudence it was not always possible to avoid accidents. The fine weather at the start did not long accompany the tourists, for it was still raining in Central Europe, and on entering Switzerland the roads, often skirting precipices, were found to be



One of the touring Panhards equipped for the long run

very greasy. On the way to Neuchâtel Mr. Dunbar Wright drove his Mors car into a bank and overturned, but, happily, the personal damage was slight. A much more serious accident befell M. and Mme. Brantsen de Rhoderord, whose Mercedes is said to have been travelling at a fast rate when a cart suddenly crossed the road. M. Brantsen ran into the vehicle, and having at the same time put the brakes down hard, the Mercedes swung round and overturned. M. Brantsen injured his leg, though not seriously. The original route had now to be changed owing to the presence of snow on the mountain roads, but henceforth the weather was very fine, and the excursion would have been thoroughly enjoyable if the going in places had not been so bad. At Interlaken the arrival of the tourists was made the occasion of festivities, and what with banquets and illuminations the excursion had become a great triumph. After staying over the

Sunday at Interlaken, the tourists continued with good roads on to Ragatz, through magnificent mountain scenery, but with gradients that fully tested the climbing powers of the vehicles. All the way the excursionists were received enthusiastically by the populations, who threw flowers into the cars, and there was no sign of the hostility the Swiss have been credited with displaying towards autocars. Two or three more vehicles were put out of the running, the Panhard of M. Dufour being



A touring Bollee.

burnt from some unexplained cause, while Mrs. Clarke's vehicle was said to have been destroyed through a spectator approaching with a light at the moment of filling the tank with petrol. This, however, turns out to be incorrect. M. Dufour had the coolness to photograph his burning car, but then it appears that he was insured. Altogether,



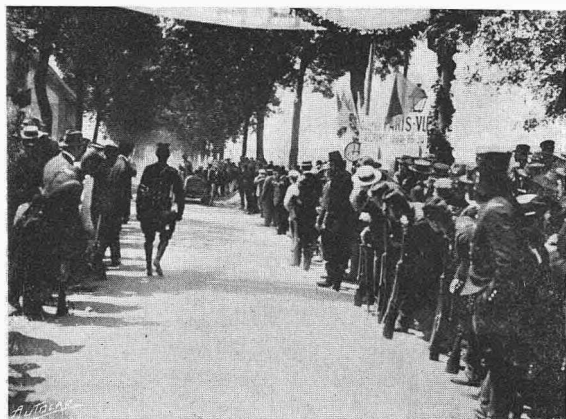
Tart on the 20 h.p. Clement.

thirty-four vehicles reached Ragatz within the official time. The number to reach Innsbruck was thirty-one, so that there appears to be every probability of a very large proportion of the cars getting to Vienna, though the rain had now again started to fall, and made the going very heavy. The success of the tourists' excursion is, at all events, assured, for it is excellent testimony to the reliability of the cars that such a large number should cover such

a long distance within the official time through the mountainous country of Central Europe, with the roads for a good part of the way in bad condition.

The Start of the Race.

A special train, which had been organised to follow the race, carried more than its usual complement of passengers, including Baron de Zuylen, president of the Automobile Club de France,



Count Zborowski on his 40 h.p. Mercedes arriving at Belfort.

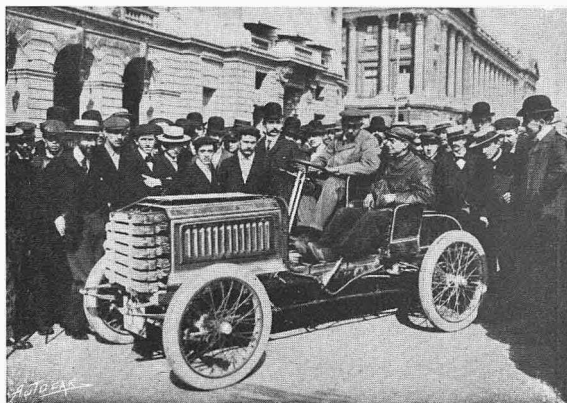
Baroness Zuylen, and nearly all the autocar makers and others interested in the sport and pastime of automobilism. Starting in the small hours of Thursday morning, the special went to Nogent le Perreux, where another train took the passengers to Champigny. The morning opened remarkably fine, and gave every promise of a hot and clear day. It was broad daylight when we left Champigny by the long hill leading to the plateau which had been the scene of several similar gatherings, and it was from here that the start took place for the races to Amsterdam and Berlin. Though these famous events had proved a powerful attraction before, not



The Belfort control

one had ever brought together such a large crowd as assembled to see the vehicles sent off to Vienna. During the night many hundreds of cyclists had gone in a body from Paris, and the last train had discharged a heavy burden at Champigny, where the visitors made the best of the town's limited resources to pass the small hours as agreeably as they could until the cars began to come up for the start.

So large was the crowd that a strong force of police had to be organised to keep the hill clear for the racing cars, which dashed up the gradient one after the other, leaving behind them a perpetual cloud of dust. It was already clear that after the spell of dry weather the dust would be a serious factor in the fortunes of the race. The start was first of all given to the vehicles for the Gordon-Bennett cup, which was to be competed for in two stages, from Paris to Belfort and from Bregenz to Innsbruck, making a total distance of 379 miles. Of the three Wolseley cars, only one, driven by Mr. Austin, took part in the race, and Mr. S. F. Edge therefore competed with his new Napier vehicle. Promptly at 3.30 M. Girardot was sent off with his C.G.V. car, and then followed, at intervals of two minutes, Fournier in a Mors, Mr. S. F. Edge, and the Chevalier René de Knyff. Considerable interest centred in the Mors, which started in remarkably fine style, and got up full speed in a way that did not leave the slightest doubt as to the power of



Baras on one of the 24 h.p. racing Darracqs.

the vehicle. The others were sent off, and the chief machines were as follow:

Cars weighing from 650 to 1,000 kilograms. (12 cwt. 3 qrs. 5 lbs. to 19 cwt. 2 qrs. 20 lbs.)—Seven 70 h.p. Panhards, one 60 h.p. Panhard, five 40 h.p. Panhards, five 60 h.p. Mors, two 40 h.p. Mors, two 50 h.p. Peugeots, five 12 h.p. Gardner-Serpollets, three 40 h.p. Mercedes, one 24 h.p. De Dion, one 40 h.p. Napier, and one 30 h.p. Wolseley.

Cars weighing from 400 to 650 kilograms. (7 cwt. 3 qrs. 14 lbs. to 12 cwt. 3 qrs. 5 lbs.)—Two 20 h.p. Mors, six 24 h.p. Darracqs, three 18 h.p. Decauvilles, three 18 h.p. Gobron-Brilliés, one 24 h.p. Panhard-Levassor, four 20 h.p. Cléments, one 16 h.p. Peugeot, and one 16 h.p. Renault.

Cars weighing 450 to 650 kilograms. (8 cwt. 3 qrs. 12 lbs. to 12 cwt. 3 qrs. 5 lbs.)—Four 18 h.p. Gobron-Brilliés, five 18 h.p. Decauvilles, two 16 h.p. Renaults (the one driven by M. Marcel Renault did fastest time for the entire course), four 24 h.p. Panhard-Levassors, three 16 h.p. Delahayes, three 16 h.p. Darracqs, four 24 h.p. Cléments, and three 20 h.p. Déchamps.

Cars up to 400 kilograms weight (7 cwt. 3 qrs. 14 lbs.)—Two 10 h.p. Georges Richards, four 8 h.p. Renaults, two 12 h.p. Darracqs, and three 8 h.p. Corrolls.

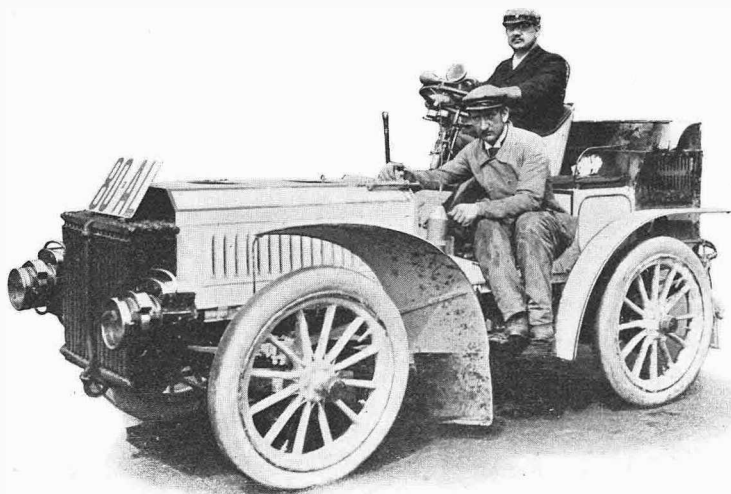
Motor tricycles.—Three 7 h.p. De Dions.

Motor quadricycles.—Two 7 h.p. De Dions.

Motor bicycles.—Three 3 h.p. Cléments, two 2 h.p. Werners, and three 3 h.p. Laurin-Kléments.

After seeing the first vehicle started the passengers by the special had to return to Nogent le Perreux, and then another interesting element developed itself in a race between the express and the cars, for though the train was handicapped in starting one hour after the cup vehicles, the neutralisation of two and a half hours on the road gave the special an excellent chance of being in before the finish. At Nangis we saw the first incident in the race. The road in places was lined with hundreds of people, and even away out in the country the course was marked by groups of cyclists and automobilists, while here and there the red, blue, and yellow flags indicated the places where the vehicles had to slow down or stop. Just as we were leaving Nangis a car flew past along the road running parallel with the railway. It was going at a terrific speed, appreciably faster than the special, which was doing its fifty to fifty-five miles an hour. Nothing was more impressive than this demonstration of speed with a powerful, modern express and a car looking in the distance quite insignificant in size, but flying along like a comet with a tail of dust in its wake. For some time the car gradually forged ahead, and then the road curved outwards, when the car got smaller in the distance, like a speck with a white tail, and then disappeared altogether. This was probably Fournier. At Nogent-sur-Seine the train again skirted the road for a considerable distance, but there was no sign of the cars, from which it was clear that they were going as fast as the special express. At Troyes there was a short halt, when it was announced that Fournier had passed through first, with De Knyff second, and Edge third. So far as could be roughly calculated, the net racing speed was terrific, and it seemed extremely doubtful whether the special would get to Belfort in time unless it was sufficiently favoured by the neutralisation on the road. Another short stop was made at Chaumont, where we learnt

from the control that Fournier had just passed through. This was at 7h. 27m., and the distance was 149 miles, though, of course, the neutralised times had to be taken into account. Neither De Knyff nor Edge had yet passed, and it had long been understood that Girardot had broken down. Soon

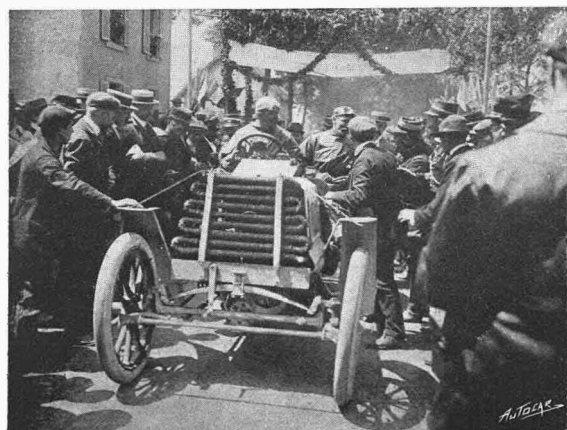


A Serpollet steamer using alcohol as fuel.

after leaving Chaumont the road again ran parallel with the railway, and the dust, which was still hanging in the air, showed that Fournier could not be far ahead. The dust thickened, and just as we were anticipating a fine struggle between the Mors and the express, which was now travelling at its maximum rate, Fournier drew up to the side of the road and stopped. He threw up his arms as a signal that something was seriously wrong. It turned out afterwards that a shaft had broken, and it was said to be the starting shaft, though it is difficult to understand how this could have stopped Fournier so long as his engine was running. When Maurice Farman slowed down to enquire as he passed later on, Fournier declared that the damage was "irreparable," so it was probably one of the gearshafts. It was clear now that the special was in no danger of being beaten, and it continued to Belfort, with occasional glimpses of road, showing all along that the greatest interest was being taken in the race.

The Arrival at Belfort.

The arrival took place on the outskirts of Belfort on the top of a slight up-grade, giving a view of a half-mile stretch thickly shaded by trees. The local committee had done things very well here by erecting a sort of triumphal arch, and all the arrangements were excellently carried out. The road on each side was roped off, and was kept under guard by a strong force of soldiers and police, who were kept perpetually busy in moving back the huge crowd at the approach of each vehicle. The weather was hot, so much so that in the afternoon it became almost unbearable. But notwithstanding the discomfort of the heat and dust, the crowd swelled until it was a matter of some difficulty to keep the way clear for the cars. At about 10.40 a succession of bugle sounds was heard, very faint in the distance, and then growing louder, and a few minutes afterwards a car dropped down the hill in



Jarrott complains of the dust.



A flashlight photograph of Mr. S. F. Edge and his amateur mechanic, Mr. Cecil Edge, at the start.

the distance with a cloud of dust, and then dashed up the gradient to the control. It was the Chevalier René de Knyff, with his fifty nominal horse-power Panhard, whose time for the full distance of 253.3 miles, including neutralisations, was 7h. 11m. 30s. As M. de Knyff was running with alcohol, for which he had carried out slight modifications to his carburettor and engine, he won the alcohol cup offered by Prince d'Arenberg for the first car arriving at Belfort with this spirit. Though the Gordon-Bennett Cup race was, of course, not yet finished, its fate already seemed to be decided, for both Girardot and Fournier were now out of the race, and the only competitor left in it was Mr. Edge, who was so far behind that his only chance lay in an accident to the big Panhard. De Knyff declared that he had not met with the slightest trouble on the road, and had not even been obliged to stop for punctured tyres. Several other competitors spoke highly of the way in which the tyres (Continental and Michels) had come out of the ordeal, for they had rarely been put to a more trying test. On finishing they were quite hot. About twenty minutes after the arrival of De Knyff the bugles announced the second car, and Henry Farman stopped at the control, followed nine minutes afterwards by his brother Maurice, with C. Jarrott close in the rear, though, calculating the starting times, Mr. Jarrott was third, and he said that as Henry Farman did not stay the full time at all the controls, he thought that he had secured the second position. Mr. Jarrott declared that his run was remarkably

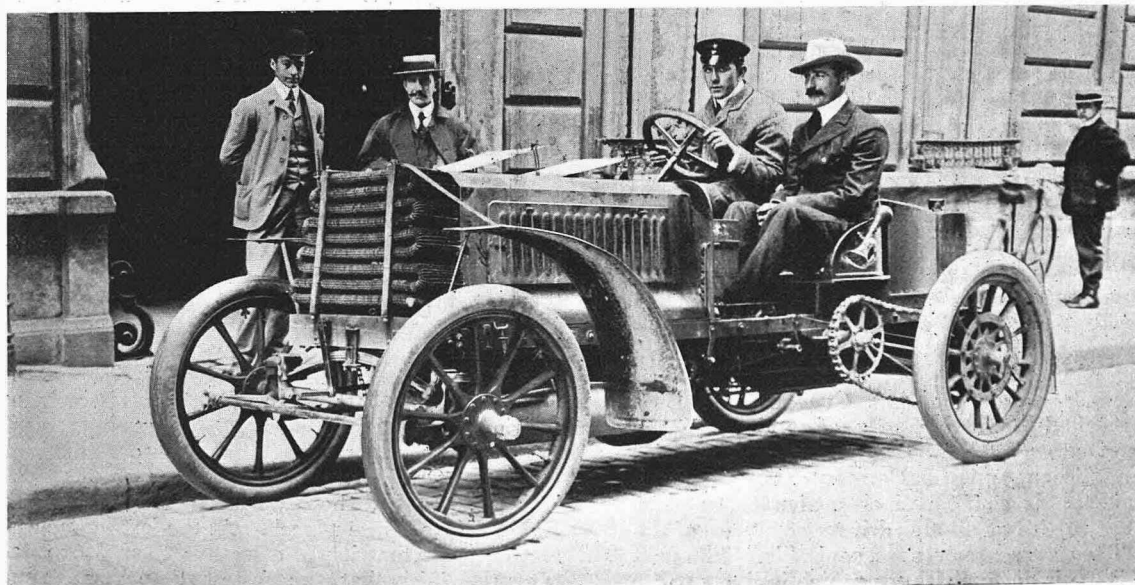
uneventful. The only trouble he experienced was the dust. He tried repeatedly to pass the cars that preceded him, but finding himself blinded with the dust, and unable to distinguish either the road or the car, he prudently contented himself with following at a respectful distance. Mr. Jarrott had heard that one of the Mors cars had been smashed up through driving into a tree, and it afterwards turned out that this was the Mors driven by the Hon. C. S. Rolls, who, however, fortunately escaped without injury. Already rumours were coming through of fatal accidents, and it seems unhappily certain that the driver of a Gobron-Brillié car was killed through a collision in the dust, but other alarming reports have proved to be unfounded, though Caillors on his Peugeot, and some other drivers, were more or less badly injured through accidents.

The first stage of the race was a great triumph for the Panhards. They kept coming through with remarkable regularity, and the arrival of Pinson and Teste almost together saw the first half a dozen places fall to Panhard cars. L. Renault showed up in the first flight with a Renault voiturette specially built for this race, and then came a Darracq, the Mercedes of M. Zborowski, and a Darracq running with alcohol. The next was Mr. S. F. Edge, and then came the first Mors, driven by Baron de Caters. Among the other cars finishing were a C.G.V., driven by Giraud, two or three of the Gobron-Brillié-Nagants, which did very good performances despite their somewhat original construction with rear motors, and it is probably on

account of their great simplicity that they ran with so much regularity; the Serpollet cars, in which the generators are fired with alcohol; and the new De Dietrich cars, which are constructed upon the Turcat-Méry system, of which we gave an account at the time of the Nice meeting. Despite the stupendous efforts made by Mors to make up for their recent abstention from racing by plucking fresh laurels in the Vienna event, only four of their cars finished, but whether this is due principally to bad luck can only be ascertained by an examination of the causes which put the cars out of the running. That they are fast there can be no question, for Fournier was travelling at a phenomenal rate during the first 150 miles, and it is probable that had he got through, his performance would have been a record one. The Darracqs were, as usual, consistently good, but the Napier seems to have been somewhat underpowered, and though travelling with great regularity, it was unable to compete with the fastest of the new highly-powered French vehicles. The cars followed each other at short intervals all the afternoon, and altogether nearly 120 arrived before the start on the next stage the following morning. The gross times taken, including the neutralisations, are as follow:

De Knyff, 70 h.p. Panhard, 7h. 11m. 30s.; Henry Farman, 70 h.p. Panhard, 7h. 13m. 1s.; C. Jarrott, 70 h.p. Panhard, 7h. 21m. 9s.; Maurice Farman, 70 h.p. Panhard, 7h. 23m. 45s.; Pinson, 70 h.p. Panhard, 7h. 47m. 55s.; Teste, 70 h.p. Panhard, 7h. 40m. 45s.; L. Renault, 16 h.p. Renault, 7h. 56m. 49s.; Edmond, 24 h.p. Darracq, 7h. 41m. 58s.; Zbrowski, 40 h.p. Mercedes, 7h. 56m. 50s.; Baras, 24 h.p. Darracq (running with alcohol), 7h. 58m. 28s.; S. F. Edge, 40 h.p. Napier, 8h. 58m.; Baron de Caters, 60 h.p. Mors, 8h. 45m.; Hemery, 24 h.p. Darracq, 8h. 5m.; Giraud, 10 h.p. C.G.V., 8h. 41m.; Marcellin, 24 h.p. Darracq, 8h. 24m.; Rigolly, 18 h.p. Gobron-Brillié, 7h. 48m.; Leys, 70 h.p. Panhard, 9h. 8m.; Collins, 24 h.p. Darracq, 8h. 42m.; Wherlé, 24 h.p. Darracq, 8h. 50m. 35s.; Forest, 40 h.p. Mercedes, 9h. 4m.; Salleron, 16 h.p. Georges-Richard, 8h. 48m.; Tart, 20 h.p. Clément, 8h. 55m.; Berteaux, 24 h.p. Panhard, 9h. 25m.; Dernier, 18 h.p. Gobron-Brillié-Nagant, 9h. 7m.; Chauhaud, 12 h.p.

Serpollet, 10h. 4m.; Théry, 18 h.p. Decauville, 8h. 43m.; Déchamps, 20 h.p. Déchamps, 10h. 8m.; Courard, 16 h.p. Gobron-Brillié-Nagant, 9h. 39m.; M. Renault, 16 h.p. Renault, 8h. 13m.; Stead, 16 h.p. Georges-Richard, 9h. 40m.; Max, 24 h.p. Darracq, 8h. 12m.; Oury, 8 h.p. Renault, 9h. 13m.; Bardeaux, 7 h.p. De Dion tricycle, 9h. 12m.; A. Fournier, 18 h.p. Gobron-Brillié, 9h. 8m.; Grüss, 8 h.p. Renault, 9h. 34m.; Osmont, 7 h.p. De Dion tricycle, 9h. 27m.; Chauchard, 40 h.p. Panhard, 9h. 21m.; De Crawhez, 40 h.p. Panhard, 7h. 59m.; Ullman, 18 h.p. Decauville, 9h. 38m.; Mistayre, 18 h.p. Decauville, 9h. 53m.; Augières, 40 h.p. Mors, 9h. 52m.; Axt, 40 h.p. Panhard, 10h. 27m.; Merville, 16 h.p. De Dietrich (Turcat-Méry system), 10h. 55m.; Comiot, 20 h.p. Clément, 10h. 24m.; Fouret, 16 h.p. Cottetereau, 11h. 27m.; Guillaume, 12 h.p. Darracq, 9h. 18m.; Weigel, 20 h.p. Clément, 10h. 34m.; De la Touloubre, 18 h.p. Decauville (alcohol), 10h. 22m.; Rivière, 10 h.p. Georges-Richard, 10h. 54m.; Lorraine-Barrow, 15 h.p. De Dietrich (Turcat-Méry), 11h. 15m.; Heath, 60 h.p. Panhard, 11h. 35m.; Marbais, 12 h.p. Darracq, 9h. 47m.; Vanderbilt, 40 h.p. Mors, 10h. 38m.; Lazan, 7 h.p. De Dion tricycle, 10h. 34m.; Barbereau, 20 h.p. Clément, 9h. 21m.; Sabis Bey, 40 h.p. Panhard, 9h. 23m.; Volatum, 20 h.p. Clément, 9h. 36m.; Pierre de Crawhez, 40 h.p. Panhard, 9h. 2m.; Leger, 16 h.p. Georges-Richard, 11h. 51m.; Berru, 18 h.p. Gobron-Brillié, 10h. 47m.; Bucquet, 2 h.p. Werner bicycle, 10h. 51m.; Cozie, 20 h.p. Déchamps, 9h. 42m.; Cornier, 8 h.p. Renault, 10h. 34m.; Waleker, 30 h.p. Chapard-Waleker, 10h. 28m.; Labitte, 2 h.p. Werner bicycle, 11h. 16m.; Cottard, 12 h.p. Serpollet, 12h. 2m.; Masson, 5 h.p. Clément bicycle, 12h. 23m.; Ribes, 24 h.p. Panhard, 11h. 16m.; Georges-Richard, 10 h.p. Georges-Richard, 12h. 3m.; P. Rivière, 20 h.p. Déchamps, 10h. 28m.; Pirmez, 16 h.p. Delahaye, 11h. 8m.; Gavaris, 24 h.p. De Dion, 10h. 38m.; Buchillet, 8 h.p. Corre, 11h. 18m.; Baron Henri de Rothschild, 40 h.p. Mercedes, 10h. 34m.; Durand, 8 h.p. Corre, 11h. 12m.; Podsenick, 3 h.p. Laurin-Klément bicycle, 11h. 7m. 2s.; Rouquette, 16 h.p. Peugeot, 12h. 21m.; Legrand, 12 h.p. Crouan, 11h. 7m.; Page, 18 h.p. Decauville, 12h. 23m.; Bardin, 7 h.p. De Dion quad, 12h. 38m.; Meyan, 16 h.p. De Dietrich, 11h. 17m.; Dorny, 3 h.p. Clément bicycle, 11h. 23m.; Kirchheim, 15 h.p. Farzenfabrik, 11h. 20m.; Olliver, 12 h.p. Serpollet, 11h. 38m.; Marot, 18 h.p. Decauville, 12h. 52m.; Gasté, 16 h.p. Automotrice, 14h. 22m.; Godard-Demarest, 20 h.p. Mors, 14h. 1m.; Rutishauser, 12 h.p. Serpollet, 14h. 30m.; Thellier, 8 h.p. Passy-Thellier, 14h. 35m.; Williams, 3 h.p. Clément bicycle, 15h. 29m.; Lamy, 8 h.p. Renault, 14h. 29m.; Holley, 7 h.p. De Dion tricycle, 13h. 13m.; Rieger, 3 h.p. Laurin-Klément bicycle,



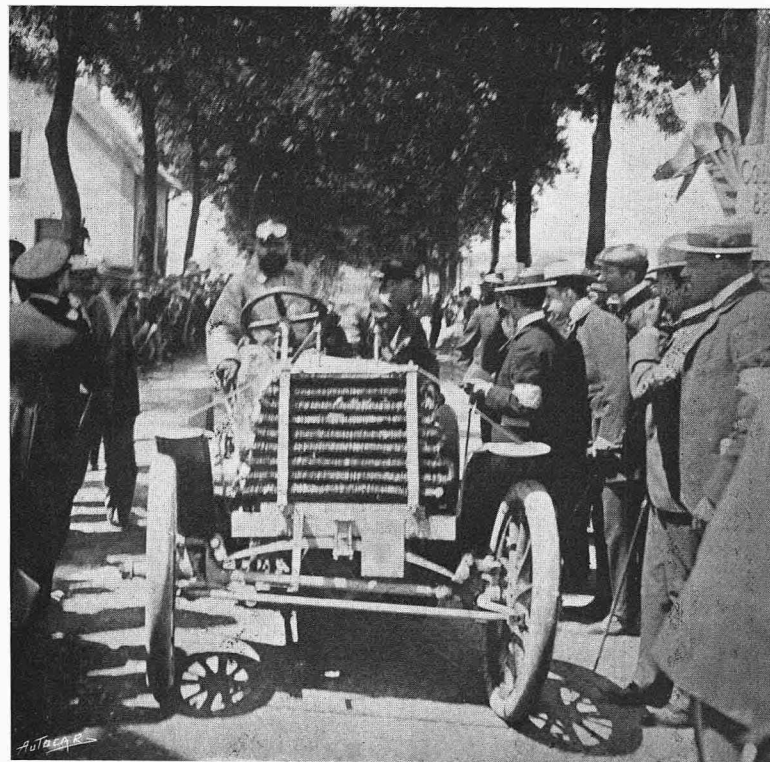
Mr. C. Jarrott and his amateur mechanic, Mr. Geo. Du Cros, on the 70 h.p. Panhard.

14h. 19m.; Koechlin, 18 h.p. Gobron-Brillié, 14h. 33m.; Perrin, 16 h.p. Delahaye, 14h. 12m.

Baron Henri de Rothschild did not, properly speaking, compete in the race, but fitted up his Mercedes with medical requisites to give first aid to the wounded in case of necessity.

The Second Day.

Friday was a sort of informal day. As the whole of Switzerland had been neutralised, the vehicles went from Belfort to Bregenz as tourists, and were required to keep time at the different towns to prevent any possibility of excessive speed. If Belfort



The winner of the first stage. The arrival of the Chevalier de Knyff on his 70 h.p. Panhard (alcohol fuel).

had been enthusiastic to the extent of charging absurdly extortionate rates for their visitors who had not previously booked room in the hotels, Bregenz was utterly absorbed in the autocar race. The town was decorated with flags, and the event was made the occasion of a holiday, for the whole population was out of doors to witness the arrival of the cars. The day was intensely hot, despite a rather stiff breeze, which had no other effect than to raise blinding clouds of dust. Starting from Belfort at four o'clock in the morning, Chevalier René de Knyff reached Bregenz shortly after three in the afternoon, closely followed by Henry and Maurice Farman, Pinson, and the Darracq cars. So far it does not appear as if any incident has taken place along the road, but all the drivers complain of the dust. They were nearly unrecognisable. The next racing stage is on to Salzburg, which is likely to be one of the most trying courses the cars have ever travelled over at high speeds in a race.

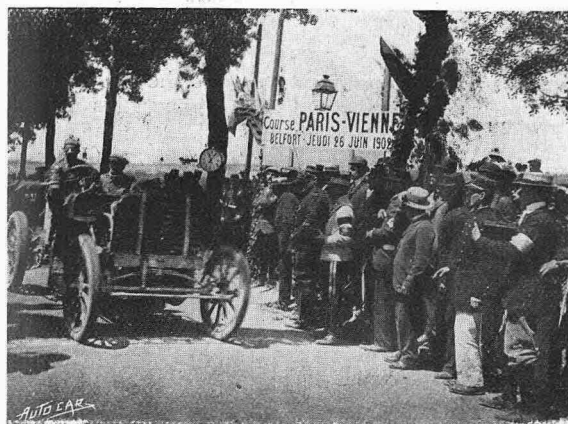
The Third Day. (By telegram.)

The third day and second stage of the racing, from Bregenz to Salzburg, 226 miles, included the ascent and descent of the Arlberg, the road being over 5,000ft. above the sea at the summit of the pass. The event of the day was the finish of the Gordon-Bennett at Innsbruck, which, deducting the distance of the procession through Switzerland, made the cup contest 379 miles of actual racing. De Knyff led away on his 70 h.p. Panhard, only to be overhauled by Edge not very far from Innsbruck, the French champion having broken down. Both of them—in fact, the same remark applies to all the competitors—had a most exciting time in going down the Arlberg, as the roads were in a shocking condition, and the very steep and dangerous descents and sudden twists and bends of the road made driving at speed little less than a nightmare. The fastest time was made by Baron de Forest on his Mercedes—4h. 39m. 50s. Next came Marcel Renault nearly an hour later, although he did fastest light car time, and the performance of the Baron de Forest, considering the course, was nothing less than remarkable. The third man was Henry Farman on his big Panhard, followed closely by Count Zborowski and Edmond. The fastest in the voiturette class was Guillaume, while Osmont did the best among the motor cycles, though his time was very poor.

The Last Day. (By telegram.)

M. Marcel Renault, on his 16 h.p. light car, made the fastest time from Salzburg to Vienna (210 miles). He was followed by Baras, Zborowski, Emery, M. Farman, and De Caters. The fastest nett time—5h. 15m. 5s.—in the heavy car class was accomplished by Count Zborowski on the Mercedes, and M. Farman on the Panhard was two minutes later. Edge's time for this section was eighth in order of merit. In the light car section the Renault Bros. were, of course, the first and second, as their times were fastest of the day irrespective of class, these being 4h. 40m. 7s. and 5h. 11m. 1s. In the voiturette class Guillaume, on a Darracq, finished first in 6h. 18m., while Osmont did best motor cycle time on his tricycle, occupying 7h. 49m. 54s. for the journey, and Bucquet, on a Werner, did fastest motor bicycle time, less than two minutes inside Osmont's time. After the excitement of the previous day, the last stage was comparatively unexciting. The above times are without the neutralisations, as there was not time to work them out finally. Owing to this and other causes, it is impossible to deal thoroughly with the events of the two last days till next week. At the last moment we learn by wire that it was officially declared two days after the finish that the fastest time (26h. 10m.) was accredited to M. Marcel Renault on his 16 h.p. light Renault. The second fastest time was Henry

Farman's, on the 70 h.p. Panhard—26h. 34m.—Mr. Farman consequently wins the 650 to 1,000 kilog. section, while M. Renault is the victor of the light car 450 to 650 kilog. section. The third fastest time goes to M. Edmond, who drove a 24 h.p. Darracq in 26h. 46m., and thereby takes second



H. Farman at Belfort.

place in the light car section. M. Maurice Farman, on his 70 h.p. Panhard, 26h. 51m., and Count Zborowski, on his Mercedes, 26h. 58m., are fourth and fifth respectively. It would appear Zborowski did the fastest time, as he was penalised forty minutes for an alleged infringement of one of the rules while passing through Switzerland, but until we have details of the matter it is impossible to say whether he really did the fastest time or not, though it would appear his actual racing time was the best, as the Swiss section was not a speed trial. Guillaume, on a Darracq, won the voiturette section. The first place among the tricycles goes to Osmond, while Bucquet, on the Werner, took the first place among the motor bicycles, and the second position was also obtained by a machine of the same make, all or nearly all the other bicycles failing to stand the tremendous strain.

SOME IMPRESSIONS OF THE RACING CARS.

By an English On-looker.

The most noticeable feature about the new French cars was the enormous and unmanageable horse-power of the motors, to get which every other part, including transmission, had been sacrificed. The result was, of course, a magnificent speed on the good roads to Belfort, where some five Panhards arrived ahead of all other cars; but as soon as the bad roads were encountered many of these monsters, of nearly all muscle and very little bone, began to see trouble.

The difficulty in starting the big Panhards appeared to be very great. Mr. Foxhall Keene's stood for some time outside the Automobile Club while those in charge tried all they knew to get it going. Eventually it was pushed across the Place de la Concorde by a large and good-natured crowd, and in this ignominious manner induced to start.

With regard to the 40 h.p. Napier, it has been pointed out that this was not so fast as some of the French cars. It should, however, be remembered

that the Napier car was built to compete for the Gordon-Bennett Cup, and not for the Paris-Vienna race. According to the conditions, it had to be fitted with an English sparking coil, which did not permit of the motor running at a very high speed, and with English tyres, which were given every chance by the light weight of the car (about 16½ cwt.) and the comparatively low horse-power.

On some of the racing cars the mechanic had to remain in a sitting posture, with his legs straight out in front of him. This looked uncomfortable enough, but when one saw on motor cycles men whose position made them look like animated figure twos being bumped by high-powered motors over bad *paré*, one could scarcely believe that they would ever reach Vienna.

In the Paris-Vienna race the Clipper-Continental tyres, manufactured by the Continental Caoutchouc and Guttapercha Co., came out most successfully. In the heavy car class the 1st, 3rd, 4th, and 5th places were taken by cars fitted with these tyres. These were the cars of Count Zborowski (40 h.p. Mercedes, 978 kilogs.), Baron de Forest (40 h.p. Mercedes, 980 kilogs.), M. Maurice Farman (70 h.p.



The arrival of Louis Renault at Belfort.

Panhard, 986 kilogs.), and M. Teste (70 h.p. Panhard, 994 kilogs.) Mr. S. F. Edge's 40 h.p. Napier was shod with Dunlop tyres.

An autocarist was fined £7 10s. and costs the other day at Preston for driving a car at night without a light. A passenger in the car was carrying a bicycle lamp, which, however, was extinguished by a collision with a cab, brought about by the autocar driving on its wrong side of the road. The magistrates, who hesitated about inflicting the full penalty, pointed out the danger of driving on the wrong side of the road.

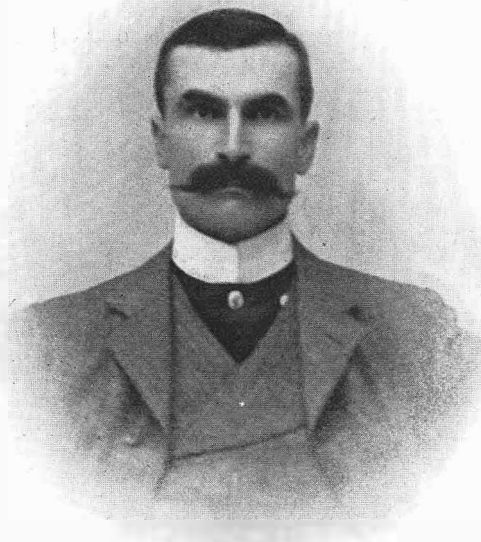
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The Ormonde Motor Co., who send everyone of their motor bicycles for a road test of at least fifty miles before delivering it to the purchaser, tell us they will always be pleased to arrange for one of their expert riders to call upon any prospective motor cyclist within a radius of fifty miles of London, of course by appointment. This is a good idea, as it gives the prospective purchaser an opportunity of seeing how the machines perform in his own district.

THE WINNER OF THE GORDON-BENNETT.

By One who Knows Him.

Mr. S. F. Edge, the first man to wrest the Gordon-Bennett trophy from France, is in every sense of the word an English pioneer of automobilism, and



Mr. S. F. Edge.

therefore all must feel that his recent triumph is very appropriate. From the very start of motoring in this country, immediately on the abolition of the red flag, Edge took a keen and practical interest in motors, and an enthusiasm was created in his mind that the chaff and discouraging advice of sceptical friends by no means damped, but which now, six years after, is more real and intense than ever.

We well remember the first motor vehicle he possessed, for we chanced to meet him a few moments after it came into his hands. It was a Léon Bollée motor tandem, and Edge was steering a slightly dubious course along Hatton Garden. He invited us to occupy the vacant seat in front, and, greatly to his surprise we afterwards heard, we did so. Nothing untoward happened on that occasion, but the things that Bollée did in after life would fill many issues of *The Autocar* if detailed.

The noise it made was truly remarkable. As it travelled along the country road, workers in the fields could be seen running from long distances towards the startling sound, and whenever a village was reached all the inhabitants were usually at the gates and windows, having received ample warning of the approach of something strange and awe-inspiring. It was in its continuous breakdowns, however, that it was most useful to the owner. As he had to do all the roadside repairs himself, he learnt a vast deal, and possibly some of the modern refinements of an up-to-date Napier car owe their inception from weary hours of struggle with that all uncertain Bollée.

His next investment was a motor tricycle in 1897, and within two and a half years he had owned and

ridden no less than seven of these speedy machines, so that his motor cycling experience is exceptionally varied. His great tricycle year was 1899, when he did a lot of track riding, and scored more firsts than any other rider, not excepting his chief rival Jarrott, who was always very near the front at the finish, if not actually leading. Amongst his notable tricycle performances that year might be mentioned the winning of the Crystal Palace Brassard Cup with an hour's score of 35 miles 1,026 yards (a big pace for those days), a ten miles scratch race, and a five miles handicap from scratch, all in one afternoon, and against such a field as Jarrott, Stocks, Wridgway, Buck, etc.

These tricycle races are interesting, inasmuch that they formed practically the only real training for Continental road racing available for the future winner of the Gordon-Bennett Cup. Poor and inadequate though they were, they yet doubtless taught many a useful lesson for the fiercer work of driving a big car at top speed on the highway for hours at a time, as, for instance, in that exciting moment at Aston in August, 1899, when, in a ten miles race, and in the midst of a terrific finish on the corner, Edge punctured, and, although, of course, he lost the race, he, by dint of sheer nerve and fine driving, avoided an accident both to himself and other competitors.

Strange as it may sound, extreme caution is one of Edge's characteristics when driving, whether on tour or in a race, and it is this doubtless, coupled with pluck, determination, and that instinct for taking legitimate advantage of a rival that comes with racing experience—for Edge is an old hand at cycle racing on road and path—that has enabled him



Mr. M. S. Napier, the designer and maker of the Napier cars.

to get a good car through to the coveted winning post of the Gordon-Bennett. And talking of cars reminds us that Edge's experiences with four-wheeled

motor vehicles have been very varied, and date from driving jaunts on the earliest importations from France, including an antique Peugeot waggonette and an old-fashioned tiller steering Panhard—the actual car that finished second in the Marseilles-Paris race of 1896. This latter car Edge eventually bought, and it afterwards had a further claim to historic interest by having the first Napier motor fitted to it, the little seedling from which has sprung the speedy giant that has at length lowered the hitherto always triumphant colours of France. We believe, but are not sure, that this interesting car is still running, and with the same Napier motor in it—the property of a certain noble earl. It was this car and motor, too, that gained the first of those hundred miles non-stop certificates given by the Automobile Club, which in the earlier days of the speed was attained, managed to steer the car safely backwards to the bottom.

Mr. Edge was one of the most successful competitors in the great thousand miles trial of the Automobile Club in 1900, driving a Napier car built for Mr. Kennard. This car was one of Napier's earliest efforts, and was not really finished when it started on the journey, and had not even its proper brakes on. This, however, gave Edge an opportunity of displaying his coolness and nerve, for in a hill climb near Kendal, when changing speeds, his clutch slipped, and the back brakes being non-existent the car started to run backwards. The two other occupants leapt for their lives, but Edge stuck to the wheel, and, although it was a long drop and a big speed was attained, managed to steer the car safely backwards to the bottom.

It was in 1900 that Edge essayed his first motor car race on French soil, although he had previously attempted the Paris-Bordeaux on a motor tricycle. The event was the Paris-Toulouse contest, and he was put out of the hunt by tyre and ignition delays. All will remember, too, how tyre troubles before the start of the Gordon-Bennett forced him to fit French tyres, and thus, after all the trouble and expense, disqualified him at the last moment, and how, too, clutch troubles put him out of the open race.

The visit to France, however, was not allowed to pass without giving the world a taste of the quality of the 70 h.p. Napier, for, timed by Mr. H. J. Swinley, over French roads, the car was clocked for a flying kilom. in 32.2-5s., and five miles in 4m. 44.3-5s.—figures that gave the Frenchmen the first inkling that there was a car in England that required watching, and, judging from the way they have since adopted Napier ideas, they have evidently watched it with commendable assiduity.

Whether regarded as a motor clubman, a motor business man, or a motor sportsman and enthusiast, the subject of our brief sketch is always to be found full of untiring energy and delight of the thing in hand—an energy and persistency that tire out opposition, and command eventually acquiescence, all the more readily, no doubt, because the views he puts forward have so often turned out correct. Still athletic and young in body and mind, with almost unique motor experience, it is not improbable that he will not only have won the Gordon-Bennett trophy this year, but that he will hold it against the challengers of the coming year.

A DUST INTERCEPTOR.

The accompanying photograph shows a new arrangement of the hood or top which is now being fitted to the Duryea phaetons with the object of providing a dust screen or interceptor, and we understand the arrangement is very effective. It consists in fitting the rear section of the hood with a pair of hinged stiffeners, which hold it in the position shown when the hood is folded back, and so provide a screen, higher than the heads of the



occupants of the carriage, between them and the following dust cloud. If the side curtains are put on, dust over the sides of the car is also excluded. When not needed for dust the top can be folded right down in the usual way. Now that motorists are experiencing the dust nuisance once more the method will be interesting, and it shows how practical details are thought out and dealt with in these very original carriages.

We understand that the Weston motors secured the first prize awarded by the Long Island Endurance Test Committee for the lowest fuel consumption for steam cars.

* * *

For the convenience of his West-End connection, Mr. Alfred Dunhill has opened suitable and well-appointed premises for the sale of his well-known "Motorities" at 2, Conduit Street, Regent Street, W. Here he will carry an extensive stock of all kinds of garments suitable to automobilists of both sexes. Mr. Dunhill's stock of these articles is well worth the inspection of owners and drivers of cars.

* * *

As the trains would not serve for getting the letters out to the villages in Lincolnshire on Coronation day, arrangements were made with Messrs. Gilbert, of Lincoln, whose Christmas mails a year or two ago will be remembered, to again take the mail bags out on a motor for the district between Lincoln and a few miles from Boston. Owing to the abandonment of the Coronation, there was the usual train service, so that the motor was not needed. The car would, however, have shown again that it was capable of doing the work of some seven horses, and far more quickly.

THE RULES FOR THE TRIALS.

Some Criticisms and Suggestions. By Henry Sturmev, Hon. M.C.E.I.

Now that the rules have been published, I presume they are open to criticism with the object of their improvement, if possible, and a few points occur to me.

Vehicles will be started from outside the Crystal Palace in order of numbers which will be secured by drawing lots for each day.

In the first place, I am glad to note the start will be by ballot, and not by order of arrival on previous day. This will help to stop racing, and I think every effort should be made to that end. Therefore, is the deduction of an odd mark or two for being under the minimum sufficient? I suggest that disqualification should follow, at any rate, a second offence in this direction. Further, should not some notice be taken of the practice which was such a feature of the Glasgow trials? I mean the racing over three parts of the route, and crawling the last mile or two at about two miles an hour—just keeping moving, in fact—to lose time gained by excessive speed, and so prevent losing marks.

20. In order to prevent excess in speeds, vehicles will not be permitted to pass certain points before the expiration of a certain period from the time of passing a previous point, plus the total time occupied by stops from all causes.

21. Vehicles which arrive before time will, *by that fact*, become disqualified from continuing the run. The hon. observers will cease to take notes, and no marks will be given for the run.

22. If a vehicle arrives before time near one of these points, and has to stop in order to wait for the expiration of the period, the stop will be counted an involuntary stop, and marks will be deducted. If a car loses from this cause more than ten marks in a day, the car shall not receive its record for the day, and if the same car continues the practice it will be disqualified. Detours made to avoid arriving at a point before time will be accounted as stops, and marks will be deducted accordingly.

Rule 22 does not appear to go far enough. It is difficult to draft an effective rule, but there should be at least discretionary power on the part of observer or judges, or organising committee. The American Automobile Club has not hesitated to disqualify those who broke its rules in the matter of speed in its endurance trial, and I hope the A.C.G.B.I. will not show less backbone. It must be remembered that a considerable portion of the trials will be run through the most hostile parts of the country, so far as the authorities are concerned.

In fixing the minimum times observable between points, I would suggest that these differ with each class, and should be somewhat proportionate to the average capabilities of the class. At Glasgow we had one minimum time for all classes. Result: Whilst the big cars were able, if they chose, to go easy all the time, the smaller or less powerful vehicles were raced for all their worth all the time in the effort to approach the minimum, and so do as well as the big cars, which was not fair to either. I know the answer is that they gained nothing by it, and were not obliged to do it, but we must not forget the weakness of human nature and the natural spirit of emulation which have to be reckoned with.

A further suggestion is that, as the cars will all "come home to roost" in the same place every night, each car should have its allotted place in the

garage, which should be marked by its number. This would not only be another incentive to finishing first—to get first position "on view" afterwards—removed, but would be a great help to that portion of the intelligent public desiring to watch the performances, and see the condition of individual cars from day to day.

29. There will be a maximum number of marks for reliability for each day's run, viz., 300, and one mark will be deducted for every minute during which the vehicle is at rest from the time of starting to the conclusion of the run except for:

Three compulsory stops per day for refreshments, viz., a quarter of an hour in the morning; luncheon, three-quarters of an hour; tea, a quarter of an hour. The engine must be stopped, and the car may not be adjusted or replenished during the two morning and afternoon stops of a quarter of an hour each, but only during the three-quarters of an hour luncheon interval. These stops may only be made at the specified places indicated in the programme, and cars must not restart after the luncheon interval until the hour specified in the programme.

Traffic.

Tyre trouble.

Accidental detours.

Lighting carriage lamps.

31. Five marks will be deducted from the marks for reliability for every stop for tyre trouble.

Rules 29 and 31, *re* tyre troubles, are contradictory. Will tyre troubles count? Rule 29 says no. Rule 31 says yes. Perhaps the committee will explain.

32. The trials will comprise certain hills on which separate records from those of the day's run will be taken of the time occupied by the various vehicles in making the ascents. The marks awarded for the hill-climbing trials will be calculated as follows:

$$\text{H.P.} \times 100,000.$$

Price in £ × 6 for every shillingsworth of fuel consumed.

H.P. = horse-power as shown by performance, which, for the purpose of this formula, will be roughly calculated as follows:

$$\frac{\text{Vertical height of hill in feet.} \times \text{Weight of car and load in lbs.} + 40 \text{ lbs.}}{\text{Time in minutes.}} \div \text{for every ton of total weight.}$$

$$33,000.$$

The number of passengers carried during the hill-climbing must not exceed the number carried during the other portions of the run.

Rule 32. "Every shillingsworth of fuel consumed." Is it proposed to fill the tanks at top and bottom of each of the three test hills, or how is this factor proposed to be determined? Some explanation of the methods proposed to be adopted will be interesting. Anyway, as fuel consumption of some cars will be fractional for each hill, it is to be hoped some really accurate system of measurement will be adopted.

33. The Judges' Committee will hold special tests on Saturday, 30th August, and at other times, to ascertain whether the trial vehicles are fitted with sufficient brake power, and specially whether the brakes are so constructed that they will prevent the vehicle from running backwards if stopped on a steep up-gradient. Marks will be deducted in accordance with the inefficiency of the brakes.

Rule 33. How is "inefficiency of brakes" to be judged? and will the same methods of testing them be adopted as at Glasgow? If so, they were scarcely fair to the competing cars, as no car should be re-

quired to break itself up—or chance doing so—in an effort to do the impossible. What I mean is this. If one driver jams all brakes hard on, regardless of his car, and another, considering it, applies them with reasonable discretion, is the first car which, perhaps, nearly destroys a tyre, and strains itself badly, but stops in a couple of yards, to receive more marks than the second, which damages nothing and strains nothing, but gently comes to rest in ten? If so, the system of marking is wrong, and the test is an unfair one, and one, moreover, which is of little real utility, for, after all, the real test of a brake is the descent of a couple of miles of one in seven or thereabouts, and there are plenty of brakes which would stand any test you like to give them of the first order, but would let the car wet away on such a test as the second. In this matter I speak from experience.

47. The marks for horse-power, as shown by performance in proportion to the weight and to the number of passengers carried, shall be arrived at by the following formula:

Horse-power as shown by performance $\times 100 \times$ the number of passengers carried.

Weight in cwt. (without passengers).

Rule 47. The system of marking here proposed is misleading. In taking "number of passengers carried" as the third multiplier, a very high premium is being placed on crowding passengers in, and, as in many cars the weight of passengers bears but a small proportion to weight of car, it is giving a strong incentive to the fitment of those abominations known as tonneaus, in which the passengers, if bigger than children, have to tie their legs in a knot and put their feet in their pocket to get into them at all. Why should a car which carries four thus count nearly double the marks which the same car would do carrying two comfortably and well sailing under its true colours? Let me take an example. Say two old type Parisian Daimlers with 7 h.p. engines showing, say, 5 h.p. "by performance." In the one case, fitted with comfortable phaeton body and roomy baggage box for touring at back, in the other with "Universal" or waggonette body seating three on front seat, and three each side at the back. There would probably be not 1 cwt. difference in the weights—say 19 cwt. in the first case, and 20 cwt. in the second. Under the proposed marking the first car would receive 52.63 marks, whilst the second would score 225. Surely such figures would be no true indication of the respective merits of the two vehicles. Would it not be a fairer method to take weight of car and load as the third multiplier?

65. Sparking plugs may be changed during the time allowed for cleaning and repairing, and it shall not be necessary for a driver to give notice of the change.

Rule 65. Why should exception be made with sparking plugs? Do we not want to reach perfection in ignition more than in anything else? Is it admitted by this rule that sparking plugs are as unreliable as tyres? And if sparking plugs, why not burners, or tubes, or hammer springs, or even batteries, or magnetos? This rule gives undue consideration to the user of sparking plugs, apart from which, if one system of plug goes through without renewing, and another is constantly requiring to be renewed, the maker who uses the better system should at least get the credit of his discernment; or

perchance it may be his greater willingness to pay a fair price for a fair article. I think this rule ought to come out altogether.

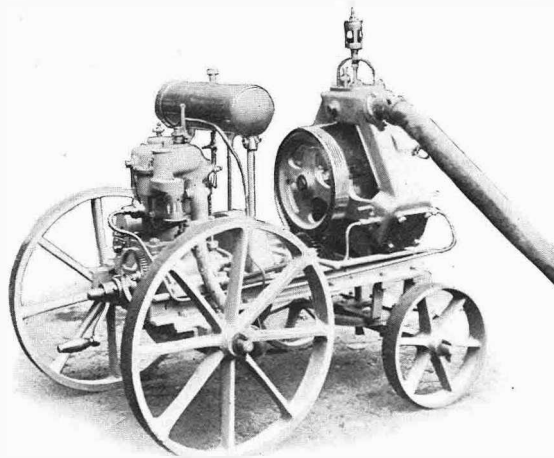
I would like to suggest that in carrying out the hill-climbing contests the cars should be started at not less than two minutes' intervals, which would to a certain extent avoid the baulking of good cars by the vagaries of faulty ones, as at Glasgow.

Finally, will not the committee give us some particulars as to the length and gradients of the several test hills? Makers in London can easily run down and test their cars up them, and so be at an advantage, as compared with makers further afield, who, if they have the data, know what the task before them is.

Concerning the Welbeck trials, will the committee say why these are for the kilometre, and not for the full mile? The latter would be far more interesting, and we have had trials over the full mile there before. Besides, coming so soon after the Bexhill meeting, a second series of kilometre trials will not be anything like so attractive as the full mile.

A MOTOR FIRE ENGINE.

A most useful portable fire engine has been made by Messrs. Merryweather and Sons, Ltd., the well-known manufacturers of fire engines, of Long Acre and Greenwich. The construction of the machine is so plainly shown by the illustration that lengthy description is unnecessary. The motive power is supplied by a standard pattern 6.8 h.p. Simms engine, with the Simms-Bosch magneto electric ignition. This drives the pump at the forward end of the fire engine frame by means of friction clutch and



toothed gear. The capacity is fifty gallons per minute, and the pump will throw a jet 100 ft. high. The machine has been designed to meet the want for a small, powerful fire engine which can be started in a few minutes, and it will be particularly suitable for use in country houses where autocars are kept, as the engine, having a motor of similar pattern, will be readily understood by the owner or his servants. The fire engine can, of course, be put to many other uses besides that of fire extinguishing. Ordinary pumping of water to tank, the watering of lawns or spraying of trees, driving chaff cutters, and a dozen other uses can be made of the machine.

CORRESPONDENCE WITH A CHIEF CONSTABLE.

Below we publish correspondence which has passed between Mr T. W. Staplee Firth, the solicitor to the Motor Union, and Major Lang, the chief constable of the East Sussex Constabulary. It will be confessed by all who peruse the correspondence that in his replies to Mr. Staplee Firth this chief constable makes a particularly poor exhibition. He has no answer to make to Mr. Firth's letter of 24th May, so that it can only be concluded that the constable found by Mr. Firth hiding in a pig-sty was so concealed at the order and under the instructions of his superior officer:

77, Chancery Lane, W.C.,
24th May, 1902.

Dear Major Lang.—Last Wednesday I was a passenger on a friend's motor car from Bexhill to London. We had passed through East Hoathly, and were travelling down a quiet country lane (which was absolutely unoccupied as far as the eye could reach), and when passing a farm, shed, and other buildings, with an enclosure, situate amongst some trees on the side of the road, I noticed a man in a crouching posture in the hedge with a watch in his hand. The moment we had passed, and I presume, thinking our backs were turned upon him, he came out and signalled to somebody whom we could not see. We decided, however, to return to see what the man was, but on seeing the motor car returning, he suddenly dived into the hedge, and disappeared like a rabbit in a warren. I alighted from the car, and walked round the buildings, but could see nothing of him. I then made a closer search, and found him squatting in the corner of a cow-stall or pig-sty, into which he had slipped, and had closed the door after him. I asked him if the watch I had seen in his hand, when passing in the motor car, had anything to do with the motor car upon which I was riding? He admitted it had. I then asked him who he was and what he was, and he said he was a police constable. I enquired if he was on duty, and he replied, yes. I then asked him under whose orders he was hiding himself and apparently running out only when a motor car came along, and he said under your orders. In answer to other questions, he informed me that his number was 125. East Sussex, that he and another man in plain clothes had measured two furlongs, and that he was taking the time. I examined the watch, and found it was an ordinary cheap silver watch with an ordinary second hand. I, on arriving at Uckfield, sent you a telegram as follows:

"Major Lang, Lewes. Is P.C. No. 125 authorised by you to hide in a pig-sty in plain clothes and appear only on arrival of a motor car. Please reply Staplee Firth, Interim, London."

Although I prepaid a reply, I have not, up to the present moment (Saturday noon), received any reply.

Assuming that the information given by your constable is correct, am I right in assuming that you were inspired to arrange this ambuscade because of the public announcement of the motor car trials at Bexhill?

It is obvious that when you send a lot of men out in plain clothes with special instructions in relation to motor cars, that they will strain every effort to procure a conviction in order to satisfy you and their other superior officers, that they have acquitted themselves worthily of their mission, and, therefore, you cannot expect unbiassed evidence under such unsportsmanlike and un-English conditions. I shall, therefore, be glad to know on behalf of myself and other automobilists whether in future, when you propose inaugurating an ambuscade of this kind, you will give me notice, so that I may arrange for competent timekeepers to check the time taken, so that at all events the automobilist may have some opportunity of fair play instead of the parrot-like performances of the police which emanate from this unworthy manner of concocting evidence?

I shall also be glad if you will kindly inform me whether this official crusade of yours emanated from yourself, or whether it emanated from instructions from others, and if so, whether from magistrates of the county (?), county

councillors, or what is known as the joint committee, and if so, whether you were instructed officially, or whether you were instructed unofficially and personally?

I shall be glad if you will kindly reply to my letter at your early convenience, and I may say I propose to publish this letter together with your reply.

Yours faithfully,

(Signed) T. W. STAPLEE FIRTH.

Major Lang, Chief Constable,
East Sussex Constabulary, Lewes, Sussex.

East Sussex Constabulary, Chief Constable's Office,
Lewes, May 25th, 1902.

Sir,—I have to acknowledge receipt of your telegram of the 21st and letter of the 24th inst., neither of which, in my opinion, requires any answer.

Yours faithfully,

HUGH J. LANG (Major),
Chief Constable.

T. W. Staplee Firth, Esq.

77, Chancery Lane, W.C.,
28th May, 1902.

Dear Major Lang,—I am in receipt of your letter dated the 25th, in which you say that my communications to you of the 21st and 24th do not require any answer.

Having regard to the fact that there are a number of direct questions in my letter, I cannot understand why you say this, unless it is with the object of being discourteous.

I can well understand the practice of tracking down criminals, who have already committed offences, with officers in plain clothes, but I am unable to conciliate such methods against gentlemen who are not criminals, and object to these underhand methods of trumping up charges against them in the manner about which I complain.

I cannot, of course, compel you to reply to my letter, but I can leave others to judge as to whether such proceedings are compatible with an English gentleman's notions of justice and fair play.

I shall be glad to have your reply.

Yours faithfully,

(Signed) T. W. STAPLEE FIRTH.

Major Lang, Chief Constable,
East Sussex Constabulary, Lewes.

East Sussex Constabulary, Chief Constable's Office,
Lewes, May 29th, 1902.

Sir,—I have to acknowledge the receipt of your letter of the 28th inst., and to inform you that the matter does not admit of further discussion.

Yours faithfully,

HUGH J. LANG (Major),
Chief Constable.

IDENTIFICATION OF MOTOR CARS.

In the House of Commons on Monday night last Sir H. Vincent asked the First Lord of the Treasury whether, with a view to providing for the identification of motor cars contravening the law, or causing damage or accident, he would give facilities for the Bill introduced by the hon. member for the New Forest division of Hampshire—Mr. Balfour: Though the subject of the Bill is one of considerable interest, it is quite impossible at present, and at this stage of the Session, that I should find Government time for it.—*The Times*.

Some hotel keepers do their best to discourage the patronage of automobilists by making a charge for allowing autocars to stand in the hotel yard while the riders are taking refreshment. Automobilists will do well in their turn to discourage such an imposition by supporting those hotels where the ordinary practice prevails of affording accommodation for the vehicles of guests free of charge.

THE PASSE-PARTOUT AND THE ARGYLL.

Mr. H. Percy Kennard, one of the passengers in the *Passe-Partout*, which is now on its tour round the world, sends us an instalment of the log of the journey. From this it appears that the departure from Paris was delayed owing to various matters, and having waited in the French capital to see the race for the Grand Prix, they set off again on June 15th, leaving Paris by the *Porte Vincennes*, the weather and roads being bad. At Meaux the electric ignition was so faulty that they had to use the tubes, and at Montmirail the washers blew out of the tubes. A series of minor disasters followed, such as the bursting of the inner tubes, etc. The route then lay through Chalons, St. Menehould, Verdun, La Croix sur Meuse, Pont Musson, to Champé on the French frontier. On leaving Lorry, the frontier town, an incident occurred, which narrowly escaped ending in the wreck of the *Passe-Partout*. A sleek, well-fed cat—apparently a public pet—got under the wheels, and was killed, whereupon the crowd, mostly women, became infuriated, and showered sticks, stones, and other missiles upon the luckless *Passe-Partout*. It was only by forming a ring round the car and forcing the crowd aside that the vehicle could be got away, happily unharmed. The Argyll car, which, as our readers will remember, is accompanying the *Passe-Partout*, received a heavy blow on its panel, but was not seriously damaged. The next town was Metz, where the plugs and commutator were cleaned and the ignition adjusted. The roads here were execrable. On Wednesday, June 18th, the fourth day from Paris, they passed through Saarburg, Trier, and the Moselle Valley, where the scenery was magnificent. Near Sehlf the car, by some unaccountable means, charged an iron fence, which had to be pulled down before the vehicle could be extricated. The ferry at Treis was crossed, and Coblenz was reached the same evening. On Thursday beautiful running was made to Cologne, where a good time was spent, and early next morning they started for Dusseldorf, and on arrival there the cyclometer registered 1,197 kiloms., 777 kiloms. of which had been done since Paris. As regards wear, both cars are said to be standing the journey well, the Argyll having gone magnificently, and the tyres (Collier Twin), notwithstanding the immense amount of work thrust upon them during the long delay in Paris, show no sign of wear. After a short stay at Dusseldorf, the cars set out for Berlin, and on the 22nd June were at Bielefeld. The following is a summary of the running times and distances: Sunday to Monday evening, 15th and 16th, 8h. 40m., 228 kiloms.; Tuesday, 17th, 9h. 31m., 188 kiloms.; Wednesday, 18th, 10h. 15m., 185 kiloms.; Thursday, 19th, 7h. 10m., 176 kiloms.; total—35h. 36m., 777 kiloms.

King Lewanika, the paramount chief of the Barotse kingdom in Africa, visited Sheffield the other day. Accompanied by a small suite, after visiting the works of Messrs. Vickers, Sons, and Maxim, he had his first ride in a motor car, the mechanism of which he insisted on being fully explained to him.

Correspondence.

We do not hold ourselves responsible for the views or opinions expressed by correspondents.

THE WARNING SIGNAL.

[2533.]—May I suggest that the danger signal *re* police from one motor man to another should be the uplifted arm with the hand holding a handkerchief. The arm held up is a military signal to halt, and is pretty generally understood, and the handkerchief in the uplifted hand is simple, and gives a special character to the signal. F.H.

128 UNATTENDED HORSES.

[2534.]—Last Tuesday week I went with Mr. Hewetson for one of his fifty runs of one hundred miles.

On the way home, coming through a part of the country where police vigilance on the road is becoming notorious, I took the trouble to count the horses that were left standing unattended on the road, the majority, as usual, being at public-houses.

This was the result: First half-hour, seven; second, six; third, seventeen; fourth, four; fifth, six; sixth, fifteen; seventh, seventeen; eighth, twenty-one; ninth, thirty-five. Total, 128.

It is interesting also to record that not a single constable was to be seen at or near where these breaches of the law were being committed.

On the road not one horse in a hundred took any notice of the autocar, and of those left standing on the road, not one looked up or moved. Had their drivers been there, instead of drinking at the bar, they would probably have succeeded by nervous fuss in working up their animals to demonstrations of fear. J. H. A. MACDONALD.

PERSECUTION OF MOTORISTS.

[2535.]—In your article on the "Uckfield Injustices," you mention as preposterous that Mr. Mulliner's old Daimler should have been accused of going twenty miles an hour. The Hunts constabulary can easily beat this, for one of them timed my old 6 h.p. Daimler, which is older considerably than the above, as covering one thousand yards in 1m. 26s. up a slight rise. This is equal to twenty-four miles an hour, and is, of course, absurd. Nevertheless, the result was a summons and the usual prearranged fine of £5. I say prearranged advisedly, for I was told by a non-motoring native of St. Neots before entering the Court that I was certain to be fined £5. and that if they had at all a strong case it would be more. Please note the position of the trap. It is on the North road at Diddington, sixty miles from London.

C. L. SCHWIND.

[2536.]—From the numerous cases of conviction by the magistrates which one reads of week after week, it occurs to me that in trying to get the law amended it would be well if a clause could be inserted whereby all convictions against motorists should be tried before a stipendiary magistrate in the nearest town to where the alleged offence has occurred. Or there should be a right of appeal from the Lower Court to a higher one. Again, the fines should go to the credit of Inland Revenue, and not to local fund. It seems absolutely certain that many magistrates are so prejudiced as to be blind to justice and commonsense. I am in favour of all motor car drivers being certificated as competent, as undoubtedly a motor car is a dangerous machine in the hands of an incompetent driver, aside from the question of speed. In certain kinds of country traffic I find it safer and better to drive at sixteen to twenty miles than at six to ten miles an hour, as a car often runs quieter, smoother, and under better control at a good speed than at a low one. Certainly something should be done by our Government to remove present disabilities under which we suffer.

Could it not be arranged that every member of the House of Commons should be treated to a good ride, so as to demonstrate the safety and utility of the motor car? J. COOP.

OBJECTIONS TO THE NUMBERING CLAUSE.

[2537.]—Your remarks on the Bill which the Hon. John Scott Montagu, M.P., will shortly introduce in the Commons are expressive of the feelings of all the automobilists I know. I quite agree with you that the present bad state of things is better than numbering will be. At present there are only four counties in which systematic persecution of offending motorists exists, and these counties are so bad that they cannot continue as they are. In Derbyshire, for instance, I believe that no driver would be summoned unless he deserved it, and he would be punished in proportion to his offence if guilty. There is nothing to complain of here, and the same is the case in most places. If numbering is the only alternative to the present state of things, it is a doubtful improvement. The warning signals suggested recently are an excellent plan. Only recently I saw a car rushing straight for a trap, but for want of a signal I do not think they understood my warning. "Policee Verso," by his signature, suggests a good plan as any, for we are most of us provided with thumbs.

DERBY.

[2538.]—I should like to be permitted to endorse in the strongest possible manner your doubts about the propriety of tampering, as you aptly express it, with the numbering clause.

Except from the moral aspect that the twelve miles limit makes every automobilist a law breaker, there is no real objection to this clause. Contrary to what is supposed, it does not place any additional facilities in the hands of the police, except in one or two extreme cases, which are so rare as to be worth neglecting.

Some of your readers will be inclined to think that this statement of mine will be hard to support, but I think not. Their argument will be that the abolition of the twelve miles limit would render impossible the road trapping by the Surrey police and others, but is this really so? Suppose the twelve miles limit were abolished and for it were substituted a furious driving clause, and suppose the police had trapped a road and found a driver going at a speed which they could swear to at twenty miles per hour, how many of your readers would be prepared to back the defendant in the subsequent proceedings? If any of them are wishful so to do, I am quite sure they will find plenty of obliging bookies to accommodate them, and the latter gentlemen will not have to part with much money either.

I know a little of the working of justices' justice from the inside, and it is more or less of a point of honour to support a police case. It is generally assumed that the average policeman does not institute proceedings without some cause, and I believe that ninety-nine per cent. of your readers will admit that, with the exception of the open road trapping (for which the chief constable is responsible, and not the police), this is generally a justifiable assumption.

I maintain, sir, that the abolition of the twelve miles limit would not reduce by one per cent. if that, the convictions for furious driving, and the numbering of vehicles would enormously facilitate the powers of annoyance of the police and others.

Motorists have only to exercise a little patience, and the systematic persecution will die a natural death. One does not hear much about persecution of cyclists nowadays, though the papers used to be full of it, and I have never heard that there was any difficulty in getting a conviction against a cyclist for riding sixteen miles per hour through a town, even though there never was a legal limit for cyclists.

No, sir, let's let well enough alone. The twelve miles limit will fall into disuse, and will only be used as a handy clause under which to convict a really furious driver, and when all is said and done against the police, the number of cases where there is a palpable injustice committed, outside of perhaps one county, are not worth considering to-day, and will decrease as time goes on. It is hardly fair to always take the word of a driver, no matter what his standing, against the police. One is, at the very least, as prejudiced as the other, though very likely unconsciously.

J. S. V. BICKFORD.

[It is well to recollect that if the twelve miles limit is left alone, it will not be (when vexatious prosecutions cease, as they soon will, if all drivers are careful and

considerate) the only unrepealed regulation that is never enforced. There are many laws which have not been repealed which are dead, to all intents and purposes, and if an attempt were made to enforce them, it would not be countenanced. It should be clearly understood that we are in favour of the abolition of the twelve miles an hour limit *per se*, but we are firmly convinced that if it can only be expunged by the substitution of a numbering clause, it had better be let alone, at any rate for the present.—ED.]

FUEL CONSUMPTION.

[2539.]—In answer to "Motorist" in your issue of the 28th ult., we should wish to point out that the fuel consumption of a steam car will not be in the least proportional to the number of passengers carried.

The resistance, and consequently the brake horse-power, required on wheel rims, will increase roughly as the weight carried; and, as the car with supplies will not weigh much less than 1,500 lbs. without passengers, the power required will be something in the proportion of 1,650 : 1,800 : 1,950 : 2,100. Further, the consumption of steam by a small steam engine does not rise as the power, or anything like it. In an engine made by the writer, the steam consumption at no load at all was just half the steam consumption at 1 b.h.p. In other words, the steam consumption per b.h.p. falls off rapidly as the power rises. On the other hand, the boiler will not be quite as economical at high powers as at low, so that, taking one thing with another, probably we shall not be far wrong if we take the petrol consumption as follows: Assuming that the petrol consumption for fourteen miles is one gallon with one person up, it will be 1.05 gallon (8.4 pints) with two persons, 1.09 gallons (8.72 pints) with three persons, and 1.14 gallons (9.1 pints) with four persons.

THE BICKFORD BURNERS CO.

HONOUR TO THE WINNER.

[2540.] For the first time an English car in the hands of an English driver has defeated the pick of the Continental talent, and has brought the Gordon-Bennett international cup to this country, and that, too, in a single-handed fight—one against three—against the best talent and the best cars which France could produce. Whatever our views on the speed question, or whatever trade jealousies may be entertained, all must admit the immense service Mr. Edge has done to the British industry—to say nothing of its sporting side—by showing conclusively that British manufacturers can now produce at least as good cars as their Continental competitors. Mr. Edge was selected by the Automobile Club to represent it and his country. May I suggest it would be a fitting thing for the club to arrange a dinner in honour of the victory, at which the guests should be Mr. Edge and Mr. Napier, to whom jointly belong the honours of the day? I fancy it would be well supported.

HENRY STURMEY, Hon. M.C.E.I.

THE SERPOLLET RACER.

[2541.]—Replying to Mr. F. Strickland's letter 2531, we can scarcely imagine him to be as dull as he would have us believe. He accuses us of stating that there had actually been an extended run at the rate of seventy-five miles per hour. This we have never claimed, and stated very clearly in our letter of the 31st ult. what had actually taken place.

Needless to say, it would have been quite unnecessary for Mr. Strickland to have had to ask where and when this had taken place, as these mad flights are not usually done in a corner.

When we state that while driving the car at fifty miles per hour, it is only necessary to have the pumps at half stroke (thus only giving half the amount of fire and a restricted quantity of water), it is, therefore, easy for a practical steam engineer to see that there is still a considerable amount of power undeveloped, and quite capable of developing power sufficient for seventy-five miles per hour for a whole hour, when the driver and the seventy-five miles per hour straight course have been found.

We do not doubt Mr. Strickland's ability as a steam engineer, but would remind him that his experiences must

necessarily have been with saturated steam or only slightly superheated. It is with the latter that the Serpollet steam carriage develops its enormous power, using, as it does, steam superheated to 750° F. when properly driven.

Our statement that at Bexhill, Mons. Serpollet only lit the fire fifteen minutes before he was at the top of Galley Hill ready for his final trip, including half a mile run from the garage, has very great bearing upon the subject, and it proves very conclusively that Mr. Strickland's supposition that he stored a great amount of heat, which was equivalent to a large quantity of steam, as per his letter of the 7th ult.; and, finally, we must disagree with Mr. Strickland when he states that our remarks were not justified. We are glad, however, that he has consented to have a trial run on this car, when we hope to prove all we claim.

SPEEDWELL MOTOR AND ENG. CO., LTD.

MOTORS FOR IRELAND.

[2542.]—The fact that the *Irish Field* has sought to find fault with the article in *The Autocar* dealing with the opening for the profitable employment of motors in Ireland to supply a want which the railways admittedly do not fill, is indeed a matter for surprise. As one who knows Ireland and its defective means of communication thoroughly, I can only conclude that the *Irish Field* fears that its friends, the horse and the market donkey, might be superseded if motors were employed.

There is no necessity to argue that Irish railways do not satisfy the country. The most bigoted railway director in Ireland would not say that they do. Nor, in the nature of the case, is it conceivable to think that the money could be found for railway extensions, whether ordinary or light, to any extent, or, if the extensions were made, that they would pay.

For a country situated as Ireland now is, it would be nonsense to lay down rails to the multitude of country towns now without railway facilities, when the traffic could be conducted as efficiently with automobiles that require neither rails, stations, nor signal apparatus required by the Board of Trade. There is no need to argue this point.

As to any legal difficulty standing in the way of the Irish Government departments and county councils helping to start motor traffic where required, I hold that the *Irish Field* is under an entire misapprehension. There are very few things that these bodies cannot do to help the development of Irish industries by way of subsidies. Steamers are now subsidised for helping the fisheries, car routes are also helped out of public money, and even light railways are run by county councils at a loss to the ratepayers. What, then, is there to prevent a practical encouragement of motor traffic? My answer is: Nothing, except the same kind of prejudice which has tried to block railway extensions in Ireland in the supposed interests of horse owners.

JAMES O'DONOVAN.

We are compelled to hold over a number of letters through pressure on our space. Several answers to "Queries of General Interest" are also unavoidably withheld for the same reason.

TRIALS AT BEXHILL AND WELBECK

The Bexhill trials on August 4th have been formally announced. As we have already mentioned, the contests will be for two classes—tourists and racers, and no car giving over 30 h.p. will be admitted to the tourist section, and the seating accommodation must be adequate and comfortable. In the same week there will be trials at Welbeck on Friday, August 8th, also for the flying kilom., but in this instance the run will be made in each direction, and the mean time for the two trials taken. We shall give some further particulars next week. It is also probable that a hill trial will be arranged on Wednesday, August 6th.

Flashes.

It is not often that lady autocarists are fined for exceeding the ridiculous speed limit, but at East Grinstead the other day Miss Sghiff was mulcted in a penalty of £2 and costs for this "offence."

* * *

It is announced that the Colonial Premiers now in England are to be taken for an autocar spin to Three Bridges, Sussex. It is to be hoped they will escape the official reception peculiar to the locality.

* * *

Amongst firms stocking petrol, in addition to those mentioned elsewhere, are Messrs. John Wright and Sons, 15, Cannon Street, Dover; Messrs. Atkinson and Griffin, 58, Highgate, Kendal, who also have storage accommodation.

* * *

Mr. Chas. J. Glidden, the well-known American automobilist who made a 2,000 miles tour in Europe last year, and of whom we published a photograph on his 12 h.p. Napier some twelve months since, is sailing to-day on the "Lucania" for a 3,500 miles tour on his new 16 h.p. Napier. He informs us that his route will lie through France, Germany, Austria, and Switzerland.

* * *

The British representatives for the French Gardner-Serpollet cars, the Speedwell Motor and Engineering Co., only recently opened large show-rooms in the West End, but they have already found that they are too small for their requirements, and are having larger and properly-equipped premises erected. These are now almost complete, and will have a ground floor area of some 4,500 square feet, with an inspection pit the entire length of the building. These works will be equipped with a full supply of the latest machine tools electrically driven, and will enable the firm to cope with their business much more quickly than heretofore.

* * *

The North East Lancashire Automobile Club had a very successful first run on Saturday last, the weather being very propitious. The following members took part: Mrs. Thompson, Hoghton (Mabley); Dr. Stephenson, Blackburn (Progress); Mr. A. Hitchon, Wiltshire (Daimler); Mr. F. Hodgkinson, Pleasington (automobile); Mr. F. Marwood, Pleasington (Marshall); Mr. T. Eastham, Clitheroe (Argyll); Mr. G. D. Walmsley, Blackburn (New Orleans); Dr. Gornall, Clitheroe (Progress); Mr. Wm. Birtwistle, Blackburn (Daimler); Dr. Bannister, Blackburn (Dexter tricycle); Mr. P. M. Bottomley, Blackburn (Argyll); Mr. A. Birtwistle, Brinscall (Daimler); Mr. W. M. Cunningham, Clitheroe (the Midland); Mr. E. A. Riley, Haslingden (De Dion); and Mr. McNeil, of the Manchester Automobile Club (Cottareau). Practically the whole of the cars moved away together, and it must have been a revelation to the onlookers to see the ease and absolute certainty of control which each driver had over his car, as in no single instance did any of them collide. The cars made a most successful run to Clitheroe, and only one stopped *en route*, and this was owing to the pump chain having been lost.

Mr. J. D. Siddeley has been elected to the executive committee of the Automobile Club.

* * *

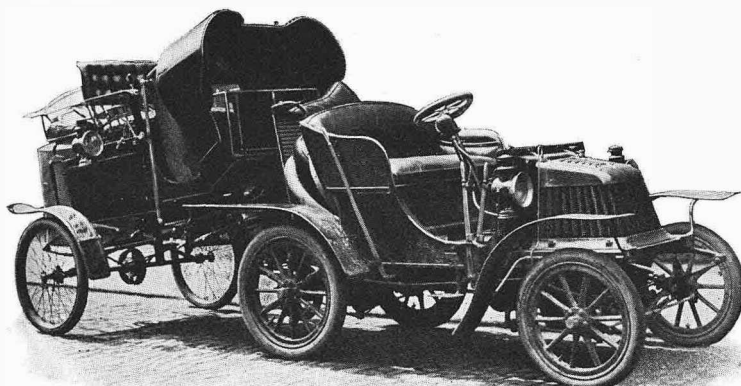
Mr. W. Stebbings, Attleborough, Norfolk, writes to the effect that if the person who on passing through Attleborough dropped a plated axle cap will communicate with him he will be pleased to forward the same.

* * *

We are informed that the United Motor Industries, of 42, Great Castle Street, W., have secured the sole agency for Dutemple's patent box spanners for motor cars. These are very handy tools, and are largely used both here and abroad.

* * *

Among the new knights, automobilists, particularly those interested in heavy traction, were extremely gratified to see the name of Mr. J. I. Thornycroft, F.R.S. There is no question that the distinction was most thoroughly earned, and we offer our sincere congratulations to Sir John Thornycroft.



Recently Messrs. George & Jobling, of Newcastle-on-Tyne, were asked to go into the country to fetch a steam car which had been badly damaged. The steering was found to be completely gone, so the tonneau was taken from the Argyle and the front wheels and condenser from the other car. The machine was dropped on to the back frame of the whole car and securely lashed, and the damaged car was brought home at nearly full speed all the way. It shows no horse is required even if a machine is hopelessly disabled.

We learn that the War Office has just placed an order with Messrs. J. W. Brooke and Co., Ltd., of Lowestoft, for a Brooke car. We think the authorities have made a wise choice, for, as our readers may remember, we spoke of the details of construction of this vehicle most favourably at the time it was shown at the Agricultural Hall.

* * *

Mr. G. Braulik, of Upper Thames Street, E.C., informs us that he has been appointed agent for the Protos cars made by Dr. Sternberg, of Berlin. The three-seated machines are fitted with a rear motor, but the larger vehicles have the engine in front and drive through a clutch to a two-speed gear, which is not unlike the new Mors racing motor in principle, only the bevels are differently arranged. The clutchshaft is provided with a bevel, and is in constant engagement with two bevels at right angles to it on the primary shaft. These bevels are in mesh with toothed wheels of different ratios, and by means of a sliding clutch one or other bevel can be put into engagement. The drive from the second shaft is by central chain to a balance-geared live axle.

In a week's time the Empire Hotel, Buxton (Spiers and Pond), will boast excellent accommodation for from six to eight automobiles. An inspection pit is to be provided, and automobile necessities will be stored.

* * *

Mr. Alexander Davidson, one time general manager of the Motor Manufacturing Co., is still taking a keen interest in the motor movement, although his sphere now lies in superintending the mammoth works of the British Electric Alkali Co., of Middlewich.

* * *

Count Zborowski, who performed so conspicuously on his Mercedes in the Paris-Vienna contest, was initiated into the art of driving by Mr. Oliver Stanton, and it is just over two years ago that we published an illustration of the first high-powered car that he bought, a 24 h.p. Cannstatt-Daimler, and the immediate forerunner of the speedier Mercedes car which has become so famous since.

* * *

During the last few days the dust problem has once more impressed itself on the automobilist and the public. With what may be attempted on behalf of the latter we do not at the moment concern ourselves, but as every self-respecting automobilist desires to be able to descend from his car and present himself at his destination with an exterior free of the grime of the road, it will be welcome news that the well-known motor tailors, Messrs. Hoare and Son, of Central House, High Holborn, are about to produce a well-conceived and well-designed over-all garment, made in light, cool, dustproof materials, by the shedding of which the automobilist can present as clean an appearance as that with which he started on his dusty journey. Particular care is being taken to prevent the soiling of the collar and the ingress of dust up the sleeves. We shall refer to this garment in fuller terms in a later issue.

* * *

We are informed by an autocarist, who had a breakdown while riding to Felixstowe, that he was greatly assisted by Mine Host Brunnings, of the "Three Mariners," Trimley, near Felixstowe, who not only provided him with a lathe and tools, but gave his personal attention to the matter in hand. Automobilists passing that way may be glad to know this.

* * *

We understand that Messrs. Foden, Ltd., of Sandbach, Cheshire, are extremely busy on their heavy traction cars and lorries. Only recently fresh capital was brought into the concern, and Mr. Cecil Brunner elected chairman. Up-to-date shops have been laid out with the most modern plant, and the company have been already assured of work that will keep them busy for twelve months ahead. Encouraged by this satisfactory state of affairs, the company are now engaged in doubling their shops. If this progress continues, the Sandbach firm will soon be one of the most flourishing businesses in the industry.

A new establishment dealing in motor accessories and spare parts of all kinds has been opened by Messrs. G. T. Riches and Co., at 4, Gray's Inn Road, W.C., only two doors from Holborn. A special feature is made of the charging of accumulators.

* * *

It has been decided that the Liverpool Cycle and Motor Show for 1903 shall be held from the 3rd to 7th February. It will take place in the St. George's Hall under the auspices of the Automobile Club, as on the last occasion.

* * *

M. Jozon, the director of roads in the French Ministry of Public Works, has received M. Ballif, the president of the Touring Club of France, in audience, and has discussed with him the question of tarring and oiling road surfaces for the prevention of dust. This official expressed himself very favourably towards the treatment, and avowed himself prepared to devote a sum of public money sufficient for the treatment of from seven to eight miles of road surfaces on the Mediterranean.

* * *

A very useful and full list of motor parts and accessories has been sent us by Mr. E. Kalker, of 7, Little Park Street, Coventry, the sole agent for the United Kingdom and Colonies of the Société la Française. The parts include everything from water-cooled heads for 1½ h.p. engines up to fittings and parts of large and well-known makes. Electrical fittings of all kinds are included, and somewhat of a speciality is made of some heavily insulated high tension wires. We note also that Mr. Kalker is prepared to accompany intending purchasers to Paris in order to assist them in selecting cars on the spot.

* * *

Now that the main roads are coming into use again for more than merely local traffic the subject of their construction and maintenance is exciting widespread interest. The press of the country is devoting considerable space to the matter, and some able articles are to be met with from time to time. One of this kind is to be found in the *Manchester Sunday Chronicle* of June 29th, under the title of "The Gospel of Good Roads," which we believe was written by Mr. J. Fowler, of Macclesfield. A good case is made out for the establishment of a central authority, and it is contended that even roadmen should be skilled and well trained for their work.

* * *

We referred briefly last week to the successful run of the 8 h.p. Argyll from Edinburgh to London on the 21st June. The car was driven by Mr. R. C. Richie, and he reports that Edinburgh was left at 2.30 a.m. with the intention of reaching London the same night. Nearly two hours were lost before Berwick-on-Tweed was reached through missing the way, but beyond this everything went favourably till Newcastle-on-Tyne was reached at 10 a.m. After refilling with petrol the drive was resumed through Durham, Boroughbridge, and Doncaster. Between Newark and Grantham the first puncture occurred, and a mile or two later it was followed by another, and altogether six separate stops had to be made for tyre repairs before the outskirts of London were touched at 11.15 p.m., Piccadilly being reached exactly at midnight. The total time was twenty-one and a half hours, and the consumption of petrol thirteen and a half gallons, or 29.6 miles per

gallon. In addition to the driver, a passenger was carried throughout.

* * *

The compound tyre pump, made by Messrs. Hedley S. Hunt and Co., of College Street, E.C., is a most useful article. It is no longer a novelty, as it has been extensively used by automobilists for well over twelve months. The word compound is used advisedly, as the pump is not, as so many have hastily assumed on seeing the two parallel barrels, a double-acting pump in the ordinary sense of the word. The upstroke compresses the air out of the larger barrel into the one of smaller diameter, and the down stroke, the more powerful one, and the one which can be most easily made by the pumper, forces this compressed air into the tyre.

* * *

The Harrogate meet of the provincial automobile clubs was hardly so well attended as it might have been, as owing to the postponement of the Coronation most arrangements were in a state of uncertainty. However, many members arrived on Friday and Saturday, and a circular run was taken to Studley Royal, and back by Boroughbridge. Amongst the members present were Mr. and Mrs. Padley, Market Rasen (Lincoln Automobile Club), on an 8 h.p. De Dion car; Mr. and Mrs. Higginson (Manchester Automobile Club), on a 6 h.p. De Dion car; Mr. E. Shrapnell Smith (Liverpool Self-propelled Traffic Association); Mr. and Mrs. Jackson and Mr. Hey, on a 10 h.p. Daimler; Mr. R. Kirk, on a 16 h.p. Panhard; Mr. and Mrs. Firth, on a quad; Mr. A. W. and A. Dougill, on an 8 h.p. Loidis car; Mr. Newstead, on a Pieper car; Mr. and Mrs. Burrows, on a De Dion car; Mr. Jones, on a Pieper car; Mr. Boulton, on an 8 h.p. De Dion car; and Mr. E. Dougill, on a 2¼ h.p. bicycle.

* * *

Mr. Walter Jackson, of Baildon, was summoned before the Otley Justices on Friday, the 20th ult., for driving a motor car at Ilkley on Whit-Tuesday last at a greater speed than twelve miles an hour. The police officer, on whose information the charge was laid, stated that the motor car in question travelled five hundred yards in forty seconds, a speed of 25.5 miles an hour. He did not possess a stop watch. A postman corroborated, and in cross-examination said they were both looking at the watch. On being asked if either of them looked at the car, he caused some amusement by saying that they arranged to take it in turns to look at the watch and the car alternately. They looked a few seconds at each. Other witnesses estimated the speed at about twenty-five miles an hour. Mr. Jackson stated that he had been a motorist for five years, and had covered over 20,000 miles without the slightest accident or previous interference on the part of the police. He always exercised the greatest care, and on the occasion in question was only travelling at a moderate speed. The chairman (Mr. E. P. Arnold-Forster) said the Bench were well aware of the inherent difficulties of inexperienced people in timing the speed of motor cars. They were agreed that Mr. Jackson was not driving to the public danger, as he evidently understood his business thoroughly well, and his car was under complete control, but they believed he was driving above the limit fixed by the statute, and on that account he would be fined 6d. and costs, or seven days.

RACES AT BEXHILL.

Motion Against Earl De La Warr.

On Tuesday, June 24th, in the Chancery Division of the High Court the case of Maynar v. Lord de la Warr was before Mr. Justice Farwell on a motion in respect to the motor races at Bexhill.

Mr. C. E. E. Jenkins, K.C., for the defendant, said he was prepared to continue the undertaking which had already been given till Tuesday next, and on this footing he asked that the motion should stand till Tuesday next.

Mr. Upjohn, K.C. (for the plaintiff): No, no. It has already been standing over for some time. He objected to further time being given to answer an affidavit already a fortnight old.

Mr. Jenkins did not think there was anything contentious in the affidavit. He appeared for Lord de la Warr and his co-trustees, and the application, in effect, was by the plaintiff to restrain certain motor car meetings and automobile races being held at Bexhill. He thought it was reasonable that it might be allowed to stand over on the footing proposed.

His Lordship: Till when?

Mr. Jenkins said that was the difficulty, but he was in communication with the Automobile Club, who really held the last races, and the members of the committee, who were persons always travelling about, were not easy to get at. It was not a long case.

His Lordship did not see his way to giving counsel in this case special facilities for hearing this over the heads of other suitors. He directed the motion to stand over till next motion day (next week) on the same undertaking as before.

MANUFACTURERS AND MOTOR SERVANTS.

The following letter has been sent to manufacturers by the secretary of the Automobile Club:

The attention of the committee has been called to the fact that mechanics sometimes demand of sellers and manufacturers a commission in respect of the sale of cars to their employers.

On the recommendation of the Motor Servants' Committee of the club, the Executive Committee have directed me to acquaint you that they would be extremely obliged if you would kindly co-operate with them by informing them of the names and addresses of any mechanics who may make such a demand. By this means the committee will be enabled to register the complaint in the register of motor servants which is kept for members of the club.

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 15th May, 1902.

1901.

8,624.—A. H. Brintnell and E. I. Sawyer. Cellular tyre held to the rim by transverse bolts passing through embedded strips or wires.

10,265.—F. G. Seeley. Brake. The front of the frame is mounted on a pillar and spring, part of the steering gear is pivoted on the pillar, and the brake bands are caused to grip by toggle links.

10,284.—T. Clarkson. Steam engine with oscillating valve.

10,353.—W. Starley. Starley live axle with plain tooth wheels and enclosed brake.

10,360.—G. M. Holley. Motor bicycle with diagonal tube bifurcated to receive the cylinder.

10,747.—E., T. H., and L. Gardner. Ignition plug with insulator in two parts held in position by a clamp.

17,463.—W. T. G. Ellis and T. A. Jebb. Spring tyre with zigzag arched wire spring.

Answers to Correspondents.

QUERIES OF GENERAL INTEREST.

A FAULTY CLUTCH.

QUESTION.

I have been materially assisted by the valuable answers to querists in *The Autocar*. I want now some advice and help with respect to the clutch of my car. The fault is that, however slowly it is put in, it makes the car give a fearful jump, varying from 4in. to 8in. off the ground, and forward, especially on starting; it is bad on changing, but not so bad as at the start. I have cleaned the leather and tried petrol, oil, French chalk, and even blacklead (probably the most slippery substance there is), but all is of no avail. Can you suggest any alteration to present clutch, or could a new one of different principle be fitted? The present one drives off a 6½ h.p. engine, and is about 11in. in diameter.—**PERPLEXED.**

ANSWER.

If there is a spring to bring the male part of the clutch into engagement with the female part, this is probably too strong, and therefore brings the clutch into action too suddenly. If it can be adjusted by any means, try relieving the spring a little. If the spring cannot be adjusted, then a thicker piece of leather may be fitted than is at present in position. This will have the effect of giving less frictional surface, owing to the male clutch not going so deeply into the female half, and would probably remedy the evil. If this does not act, then the angle of the clutches is too flat. The outer clutch should be turned wider at the mouth, so as to increase its angle, and a new leather fitted on the inner clutch to suit this new angle. The angle can thus readily be altered so as to allow starting without the jump complained of, and yet be suitable for driving the car at the maximum resistance to be overcome.

TO CORRESPONDENTS.

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

H. Castell.	G. H. Gray.
E. H. Brien.	A. Strattin.
W. H. M. Cobbe.	G. D. Sampson.
H. Clement Baines.	A. W. Chamberlin.
A. Bolland.	E. C. Crisswell.
J. Parr.	Weston.
W. T. Lithgow.	W. R. Grove.
Enquirer.	M. B. Cambrian.
J. Graves.	"Tired."
Newbold.	E. F. Glynn (Epsom).
R. Dennis.	F. W. Pickford (Tun-
C. Brooman White	bridge Wells).
(Blackwater).	W. Jackson (Maidstone).

Letter forwarded to A. E. Davidson.

Our thanks are due to the following for items of news and various topics of interest which have been or will be dealt with: W. Jackson, W. Stebbings, A. W. Bell, J. C. Sayer, E. A. Chard, H. E. Hall, H. Wilton Bartleet, J. Fowler, W. H. Stonier, W. B. M. (Reading), C. H. Dawe, W. Barry, J.P., C. G. J., J. S. V. Bickford, Geo. D. Walmsley, and A. W. Dougill.

SUBSCRIPTIONS.

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

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