

THE AUTOMOTOR JOURNAL

A RECORD AND REVIEW OF APPLIED AUTOMATIC LOCOMOTION.

Circulates amongst Makers and Users of Motor Cars, Cycles, etc., in the United Kingdom, the Colonies, and the Continent.

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Photo by Mr. Frederic Coleman.

Clifford Earp finishing his fastest kilometre = 97·2 m.p.h. At the time of crossing the tape the speed must have been over 100 m.p.h. This snap was taken in $\frac{1}{1500}$ th part of a second, showing the car almost as clear as if standing still.

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DIARY OF FORTHCOMING EVENTS.

British Events.

1905.	
July 27-28-29	*Blackpool Motor Meeting.
July ...	24 Hours Run (Motor Cycling Club).
Aug. 1	Motor Boat Races, Sea View (M.Y.C.).
Aug. 2-3	Motor Boat Races, Southampton Water (M.Y.C.).
Aug. 2-3	*Motor Boat Trials (Southampton).
Aug. 7	Motor Boat Races, Solent (B.M.B.C.).
Aug. 8	Motor Boat Races, Solent (M.Y.C.).
Aug. 9	Motor Boat Races, Southampton (B.M.B.C.).
Aug. 10	Motor Boat Races, Cowes (B.M.B.C.).
Aug. 11-12	Motor Boat Races, Solent (M.Y.C.).
Aug. 11 or 18	*Quarterly 100 Miles Trials.
Aug. 14-19	Auto Cycle Club 750 Miles Reliability Trial.
Aug. 15-16	Motor Boat Races, Ryde (B.M.B.C.).
Aug. 26	Inter-Team Trial (Motor Cycling Club).
Sept. 2	Skegness Races on Sands (Notts A.C.).
Sept. 2	Auto Cycle Club, Consumption Trial.
Sept. 9	Brown Cup (Motor Cycling Club).
Sept. 14	*Tourist Trophy (Isle of Man).
Sept. 15	*Daily Graphic Cup (Isle of Man).
Sept. 20	Motor Boat Burnham-on-Crouch (B.M.B.C.).
Sept. 20, Oct. 24	*Van Trials.
Sept. 23	Scottish A.C. Hill Climb.
Sept. 30	Auto Cycle Club Race Meeting, Crystal Palace.
Oct. 4	*Speed Trials.
Oct. 7	Scottish A.C. 100 Miles Run.
Oct. 14	Scottish A.C. Anniversary Run (Ayr).
Nov. 10 or 17	*Quarterly 100 Miles Trials.
Nov. 17-25	Society of Motor Manufacturers and Traders Exhibition at Olympia.

Foreign Events (Trials, Races, &c.).

1905.	
July 28-Aug. 8	Paris Industrial Vehicles Trials (A.C. France).
July 27	Gaston Menier Cup (Motor Boats).
July 31	Anthony Drexel Cup (Motor Boats).
Aug. 6-7	Circuit des Ardennes.
Aug. 10-11	Paris-Deauville (Electric Vehicles).
Aug. 10-16	Herkomer and Bleichroder Races.

* Automobile Club of Great Britain and Ireland Events and Papers.

Aug. 12	...	International Cup for Motor Boats.
Aug. 19, 20, 21	...	Lake Lucerne Motor Boat Meeting.
Sept. 1	...	Lake Geneva Motor Boat Meeting.
Sept. 2-3	...	Ventoux Hill Climb.
Sept. 2-10	...	Brescia Automobile Meeting.
Sept. ...	...	Tri-Car Competition (L'Auto).
Sept. 10	...	Vincenzo-Florio Cup.
Sept. ...	...	Tourist Car Trial (A. C. de France).
Sept. 3-10	...	Royan Meeting.
Sept. 3-10	...	Spa Automobile Club.
Sept. 11	...	British International Cup (Motor Boats Arcachon).
Sept. 19	...	$\frac{1}{2}$ Litre Consumption Trials (Motor Cycles).
Sept.	...	Motor Bicycle Race (French Ardennes).
Oct. ...	...	Vanderbilt Cup.
Oct. 1	...	Chateau Thierry Hill Climb.
Oct. 15	...	Gaillon Hill Climb.

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PASSING EVENTS.

Oxinebriation.

ONE of those sprightly writers, the frisking and curvetting of whose pens in the columns of the half-penny daily Press are an ever renewed source of delight to the reading public, has got another theory—a quasi-medical one of course. We are not quite sure whether it is his hundred and nineteenth or his hundred and twentieth new theory, but, like all the others, it is amusing. One writer professes to hold the opinion that speed mania is a special form of intoxication—oxygen-intoxication to wit. Many of us have seen the unkind experiment of putting a blue-bottle fly into a bottle of oxygen, when he buzzes about in a state of wild excitement until he ultimately falls down dead. This has no doubt been observed by the writer to whom we refer. He has also no doubt heard that the same thing occurs to human beings if they inhale the gas in large quantities, and that a mild form of intoxication is experienced by people climbing elevated mountains. Our writer concludes that they are the same thing. As a matter of fact they are the opposite to one another. The mountain intoxication is due to want of oxygen. That, however, is a trifle, and does not at all stand in his way in drawing the conclusion that the reason people drive recklessly on our high roads is that going through the air at high speed in a motor car produces oxygen intoxication in much the same way as climbing mountains does not. The unfortunate part of this argument is that logically one should not become intoxicated until after one has developed high speed, and therefore it is the old familiar fallacy of the cart before the horse. We wish the matter were quite as simple, for then the speed mania could be cured by appropriate dosing, which might be administered in a liquid and even palatable form, and there would be no need for such drastic and unpleasant remedies as proposed by Mr. Soares and others, of clapping the offenders straightway into gaol. It would only be needful to give them something in their tea and they would at once be reformed. We like the idea, and this must be said in favour of it, that nothing has so thoroughly succeeded with ordinary inebriation as suitable dosing.

* * *

Tourist Trophy Symposium.

OUR readers who are interested in the Tourist Trophy question—and we trust that this description applies to them all—will find the concluding instalment of our special article published this week, and followed by the first foretaste of the coming harvest of discussion on this fruitful subject. We anticipated that the discussion which we have opened on this highly important question would be general and representative. But we must admit that the enthusiastic character of the response to our invitation for correspondence, the number of letters we have received, and the extent to which all the leaders in the automobile world have taken part in the discussion, has even exceeded our anticipations. No better proof of the extent to which those who are at present guiding the movement are on the alert as regards everything that can affect its welfare than is supplied by this fact, can be asked for, and no one can desire a better proof of how widely the importance of the Tourist Trophy as a coming national event is recognised.

Our Attitude Not Critical.

FROM some of the letters which we have received, and from more or less informal discussions on the question, we find that there are just a few people who have misunderstood our attitude, and are grasping the situation at the wrong end. We refer to those who imagine that our articles on the subject form a criticism of what has been done already by the A.C.G.B.I., and of the rules which have been promulgated for this year's event. We should have thought it quite unnecessary to point out that this is an absolute misapprehension. On the contrary, we have repeatedly stated, and would again state, that the rules for this year's event as promulgated by the Club form a most admirably well thought out programme for obtaining the objects aimed at.

Never yet was there a scheme promulgated by man which could not be improved upon, and nothing in the nature of a hostile or critical attitude is involved in considering the whole question of racing rules and regulations from an abstract point of view, and pointing out that the conclusions to which such a consideration leads, involve further elaboration of the rules actually proposed. That this consideration naturally leads to the formulation of somewhat different proposals from those that the club has put forward can excite no surprise, particularly when we consider that, so far, the club has only had in view one single class or category of competitors, and that the race this year—for which the existing rules have been drawn up specifically—is bound to be more or less of an experimental character. Some of the letters which we have received for publication show quite plainly that the leading members of the Automobile Club fully understand and appreciate our attitude in the matter.

* * *

The Wisdom of an Allied Trade.

THE Institute of British Carriage Manufacturers has always been a progressive institution, and has done its best to march with the times. It is therefore specially appropriate that it should be possessed, in the person of its president, Mr. G. J. Jacobs, of a business head possessing a singularly broad and, at the same time, powerful grasp of the present-day requirements of the industry which his institute represents. For solid wisdom and incisiveness commend us to the presidential address which Mr. Jacobs delivered to this year's annual meeting. For an accurate and carefully considered presentation of the position which the automobile industry, in its various branches, now occupies, and is likely to occupy in the future economic development of the country, we have not seen anything to surpass Mr. Jacobs' presidential address. In fact there are large portions of it which are fully worthy not only of the attention of the carriage builders and other allied industries, but of our legislators and political economists. Mr. Jacobs has the true constructive historic imagination, for he realises that had the motor car obtained anything like its present degree of development before the introduction of railways, it would have proved a much more formidable competitor. Considering the amount of cutting and tunnelling that had to be done for the railways, Mr. Jacobs evidently thinks it is possible that in that case railways might not have developed at all, being replaced instead by automobile road traction. It is an interesting speculation, but in this country there is always a great degree of driving force behind any move

ment that requires enormous capitalisation. The explanation being that once the initial difficulty of capitalisation is overcome, such undertakings have an enormous amount to give away, and can bring such influence to bear in the way of commissions or otherwise, that they are placed in a very advantageous position in competing with possibly more useful but less powerfully-capitalised concerns. We see this sort of thing at the present day very forcibly illustrated by the recent municipal history of the electric tram development, particularly in London.

* * *

"The Survival of the Fittest" should Triumph.

WHERE Mr. Jacobs deals with the proper attitude that an independent, though allied, industry should adopt towards the new locomotion, his observations are models of common sense and reasonableness. The proper line to adopt, he maintains, is to recognise that the law of the survival of the fittest is inexorable, and that it is the duty of the individual to prevent as far as possible vested interests from causing loss to the community by hampering the natural operation of this beneficent law. From this point of view, the future of the automobile movement is assured, and consequently carriage builders may successfully look to it to supply them with more than a compensation for what they may be losing in the manufacture of horse-drawn carriages. Mr. Jacobs' width of view, and how fully he is entitled to be heard on such a question, may be suitably illustrated by a few of his observations:—

The advantages of the movement are not merely those of offering an alternative means of locomotion, but the up-to-date motor may justly be regarded as embodying a combination of the highest results of modern science and engineering, and there is no doubt that in an indirect way it will assist in advancing or revolutionising other branches of engineering.

And again:—

The fascination of such discoveries as these, and the delight of using the newly-born appliances, have given immense zest to the adoption of the motor, and have also educated the general public to a greater extent in the knowledge of the principles of elementary practical engineering during the last three years, than would have been possible in the same time by any amount of State organised technical instruction.

While his view of the future prospects of the industry, and the rôle it will play in the national life, are well illustrated by the following:—

When the motor car has proved that its existence in such numbers as to encroach seriously on horse traction is a *necessity*, even as a sport, then will the capitalists be found who will do for it what has already been done in far greater measure for coach roads, canals, and railways, by providing suitable tracks for its operation, and this provision will, at the same time, protect the rights and the lives of pedestrian and equestrian travellers on high roads, and relieve them of the hardships of grievously unfair discomforts.

After this it seems to us that Mr. Jacobs is a little timorous in his advice to the members of his profession. He seems to think that they incur some danger should they go too enthusiastically into automobile body manufacturing, and seems rather to dread that the pleasure automobile, with which of course they are chiefly concerned, may prove to be something of the nature of a passing craze, and that ultimately when the novelty of it is worn off society will return *à ces premiers amours*, even though the commercial vehicle may go on and prosper, and go back to the hippomobile. Mr. Jacobs and the other carriage builders may dismiss that fear from their minds. Horses will always be kept, no doubt, for riding and hunting, and even perhaps as pets. But that the day will dawn when the man who has become

accustomed to the extended range of action will voluntarily go back and seek his pleasure in the hippomobile is as likely an event as that we shall live to see the maxim gun abandoned for the cross-bow of our ancestors.

* * *

A Vision of the future.

AMONGST the things the motor car may do for us in the near future is to depopulate or partially depopulate our towns. This may not sound pleasing, but what it, of course, means is that it may probably have the effect, to a very large extent, of taking back to the land a large proportion of the population that has flocked into the towns for the sake of the greater conveniences and the greater facilities for obtaining work which are, or used to be, there available. This, at any rate, is the view of Mr. F. E. Baines, C.B., formerly leading official of the General Post Office, and his view is of more importance than that of a good many prophets, speculators, or dreamers, because, knowing the work of the Post Office, he is of opinion that the Postmaster-General ought, and might effectively and profitably come to the assistance, of such a movement. This would be done by the Post Office granting a subvention to a motor mail service which could also be arranged to carry passengers. Then Mr. Baines points out that parish councils have also power to contribute a certain amount of money to any scheme which benefits their districts. If the Post Office and the rural councils could be got to join, either with or without external backing, we might see such a passenger service established to a very large number of villages, and then we might witness to a large extent the reversal of the movement which characterised the greater part of the nineteenth century.

* * *

Pity the Poor Ratepayer.—We have seen no better presentation of the case for the motor 'bus *versus* the tram than is provided in a letter by Mr. Edward Bond to the general press, which we accordingly reproduce in full. Mr. Bond writes as follows:—

Please allow me to call the attention of "The Ratepayers' Conference," recently presided over by the Duke of Norfolk, to the following points:—

Why spend more millions of the ratepayers' money in laying down new tramways when private enterprise is already at work in placing motor 'buses on the streets?

The motor 'bus is a great improvement on the tramcar. It is faster in practice, because it can, in the event of a block, pass off into another route. It is less dangerous to life, and does not ruin the roads by wires or conduits. Tramcars have the following disadvantages:—

1. Their wires, or their conduits, drive away "carriage people," to the serious disadvantage of shops.
2. They are very costly to put down and to maintain.
3. The wires are very liable to come down and kill outside passengers, especially during the winter, when loaded with frozen snow.

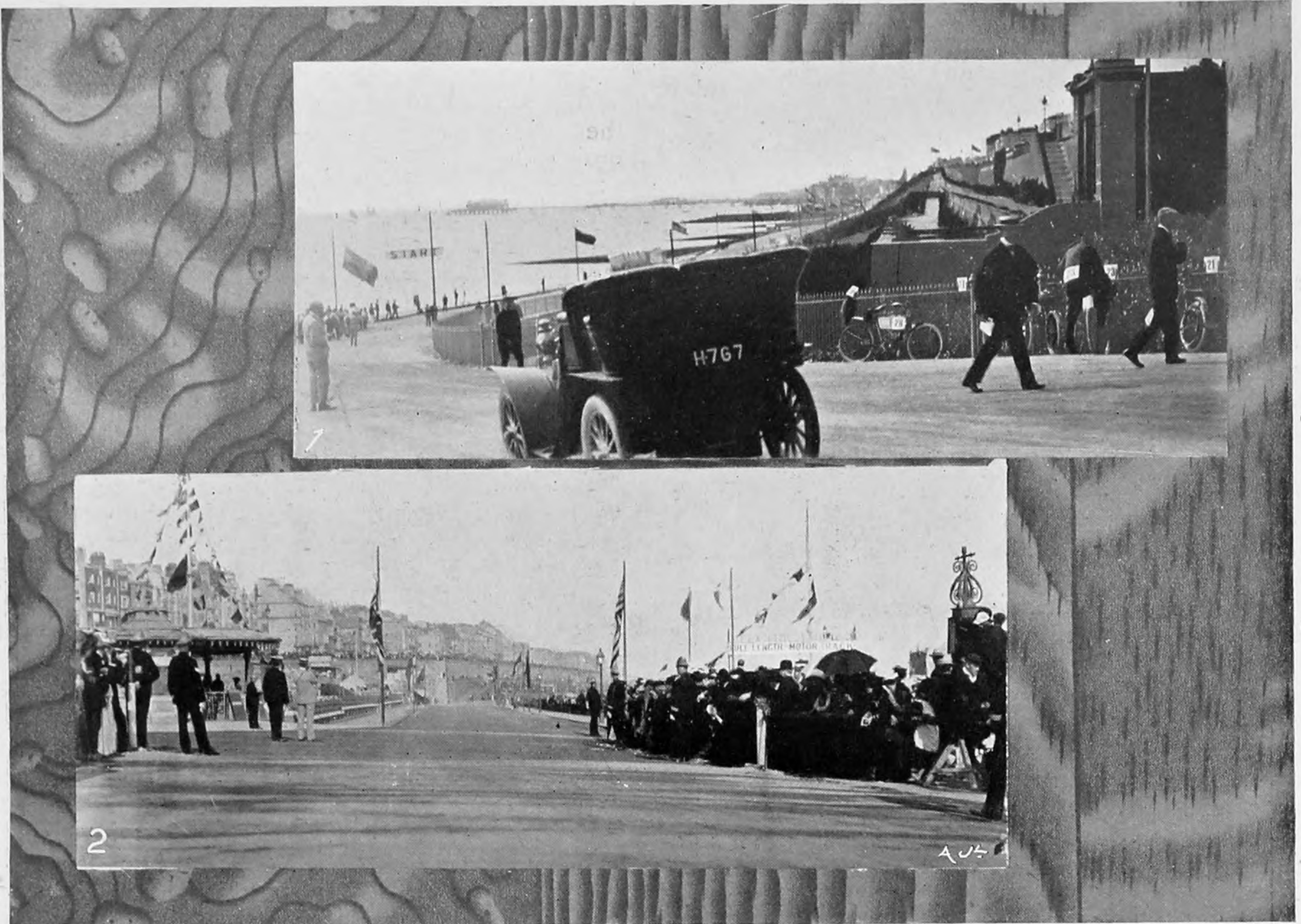
If millions must be spent in relieving traffic, let it be done as follows:—

1. In the construction of two great trunk roads running east and west and north and south.
2. In the building of artistic bridges over crossings.
3. In the widening of certain streets.

Here are ample ways of spending more millions, without entering into rivalry with private enterprise.

Comment on the extreme condensation and unanswerable logic of this communication would only weaken it, and we would point out that it amounts to a very drastic condemnation of the report of the Royal Commission on London Traffic, and a very ample justification of the minority opinion held by Sir George Bartley, Sir Joseph Dimsdale, and Sir G. Gibb.

THE BRIGHTON RACE MEETING.



BRIGHTON MOTOR MEETING.—1. The run down to the starting line from where the racing cars were timed for the flying kilometre. 2. The end of the course, where the cars pulled up after passing the winning post.

To organise and to control a motor race meeting extending over four days, and comprising a total of some 375 entries, is a task of no mean magnitude. To do it

successfully is worthy of praise, and this congratulation we have no hesitation in giving to those organising officials of the club who were more directly responsible



BRIGHTON MOTOR MEETING.—The start for the first race of the meeting. A scratch event for 15-h.p. Darracq Cars. The cars are owned by No. 1. Mr. Warwick J. Wright, No. 2. Mr. G. Hill, No. 3. Mr. Hugh Kennedy.



1. Mrs. Neville Copland on her 12-h.p. Talbot, and Mrs. Maud Manville on her 35-h.p. Daimler.
2. Miss C. Brown on her 10-h.p. Cupelle, and Mrs. Herbert Lloyd on her 30-h.p. Daimler.
3. Mrs. Guy Hardy ready with her 10-h.p. Panhard.

BRIGHTON MOTOR MEETING.—LADIES' HANDICAP RACE. AT THE STARTING POINT.

for the general success of the meeting. We have already mentioned the important part which the hospitable people of Brighton played in the proceedings prior to the actual meeting, and it is only fair to commend them now for the admirable patience with which they viewed the almost interminable procession of cars on the four eventful days. Some—and there were an even greater number on the second day than on the first—clung lustily to the thin wire fence which borders the track on the seaward side, and there they stayed for a full five hours *per diem* watching the cars go by, occasionally being rewarded by a close finish, at intervals, being gratified by the roar of a racer at speed, and ever and anon finding slight verbal relief in derisively cheering some belated wanderer whose engine refused (either because it couldn't or wouldn't) to move the car at a speed more nearly equal to that of its ill-matched rival. There were others—and in justice to the prosperity of Brighton it must be said they were

in the majority—who occupied seats, which they paid for in advance, on the elevated terrace extending for some three-quarters of the full length of the track. Here those who were lucky enough to obtain seats (for there was, we noticed, a certain disregard for proprietary rights as established by corresponding numbers on tickets and chair-backs) could view the course for a considerable distance, although they, so to speak, looked down on everything that passed.

High up above them all was the energetic secretary, Mr. Orde, who while doing his best to please all men “when on earth,” was in far too exalted a position up in his conning-tower to be a prey to the worries of the unofficial world below. Although so far removed, Mr. Orde could not have been in a better place from which to control the proceedings, he could see the whole track from end to end, and the interior of the tower was fitted up as a veritable telephone exchange, from which wires placed him in touch with every point on the course.

Originally it was intended that no times of any description whatever should be published for the touring cars, but in the end and mainly owing to the endeavours of Mr. H. Massac-Buist whose mind was troubled at the thought of no statistics for the *Morning Post*, the Races Committee came to a compromise and decided to publish the time differences between competing cars. This entailed a certain amount of additional labour for the timekeepers, Messrs. T. H. Wollen, Ebbelwhite, Dutton, and Glazebrook, but they made light work of it, and through the agency of Mr. H. Sturmey the results were in the hands of the Press with an expeditiousness that has not always characterised official announcements on similar occasions. The compromise, while it relieves the club from a virtual declaration of speed, cannot be considered as of any real value to the public, and we merely give the "won by" times in our table of results for what they are worth. The winning car of each event may be taken as having generally done the best average performance throughout, but the second car need not necessarily have

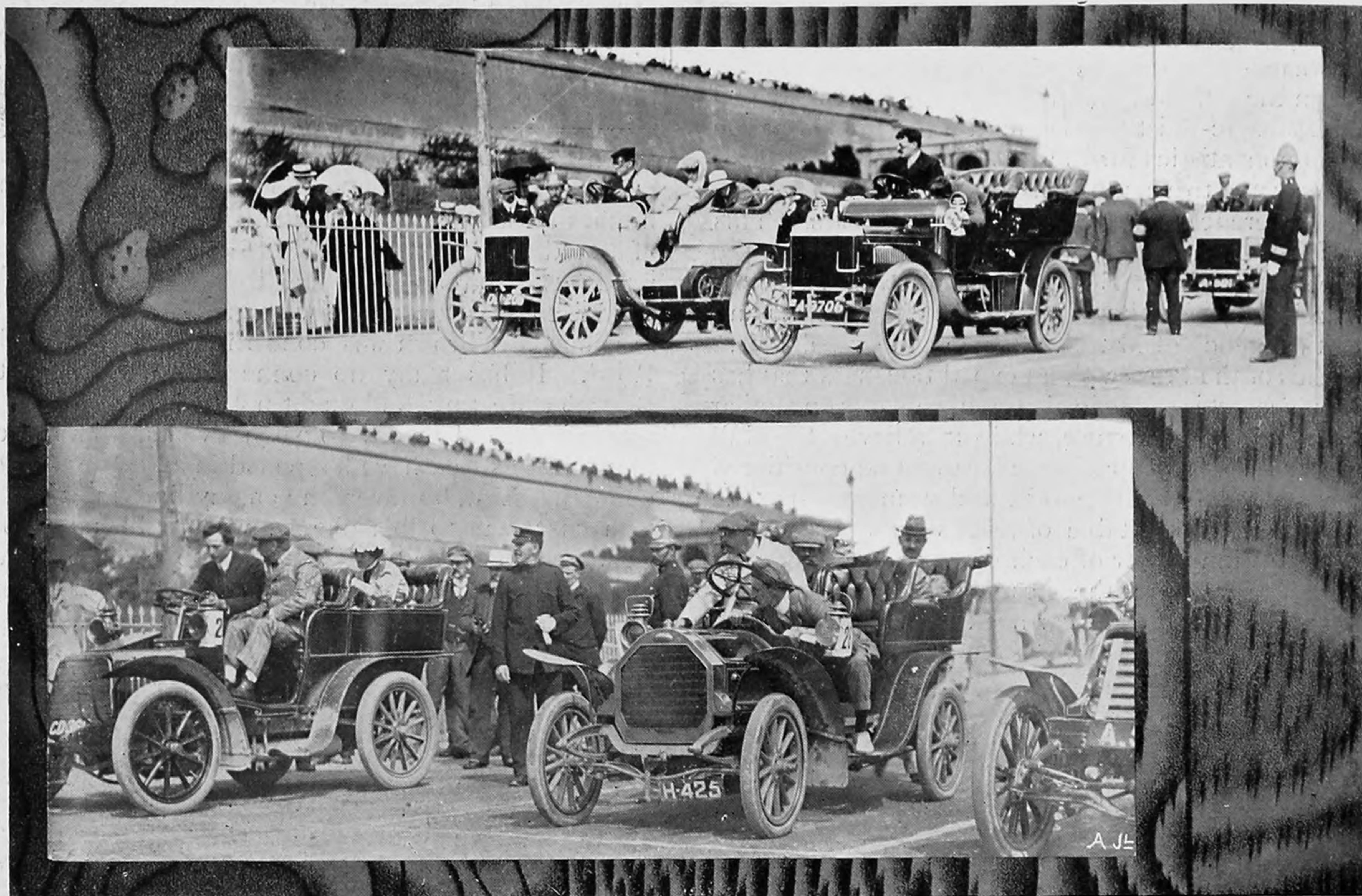
made a meritorious performance at all, and in any case there is nothing to show which car actually did make the best time over the course.

Everything went off so excellently at the Brighton meeting, the management was so good, and the events conducted so absolutely without anything approaching a hitch, that universal regret will be felt that the shadow of a fatal accident has been thrown—not on the meeting itself but upon its near neighbourhood. We refer, of course, to the catastrophe with the 80-h.p. Napier racer, in which Mr. Brown was concerned, on the Newhaven Road. It has really no connection whatever with the Brighton Meeting, and ought not to be allowed to have any influence in regard to such events. The accident might just as well have happened in any other part of the country. Lest, however, the enemy find in it an occasion as usual to blaspheme, we would point out as forcibly as possible that the Automobile Club have discouraged the employment of racing cars at high speeds on ordinary roads, even for testing purposes, and have



1. The three cars in Event 3, Heat 1, on Wednesday, in line for the start. Mr. F. W. Wilkinson's 8-h.p. Stanley steamer (No. 29), Miss E. W. Madeley's 6½-h.p. Cadillac (No. 30), and Mr. M. McCraith's 12-h.p. Leader (No. 31).
2. Event 3, Heat 5, Mr. A. J. Dew's 9-h.p. Speedwell (No. 41), Capt. W. H. Bennett's 7-9-h.p. Dixi (No. 42), and Mr. E. N. Greaves' 8-h.p. Rover (No. 43).
3. Event 3, Heat 5, Thursday, Mr. E. W. Lewis' 20-h.p. Rover, Mr. H. Gordon's 28-h.p. Wayne, and Mr. H. Carver's 16-h.p. Bridgwater.

BRIGHTON MOTOR MEETING.

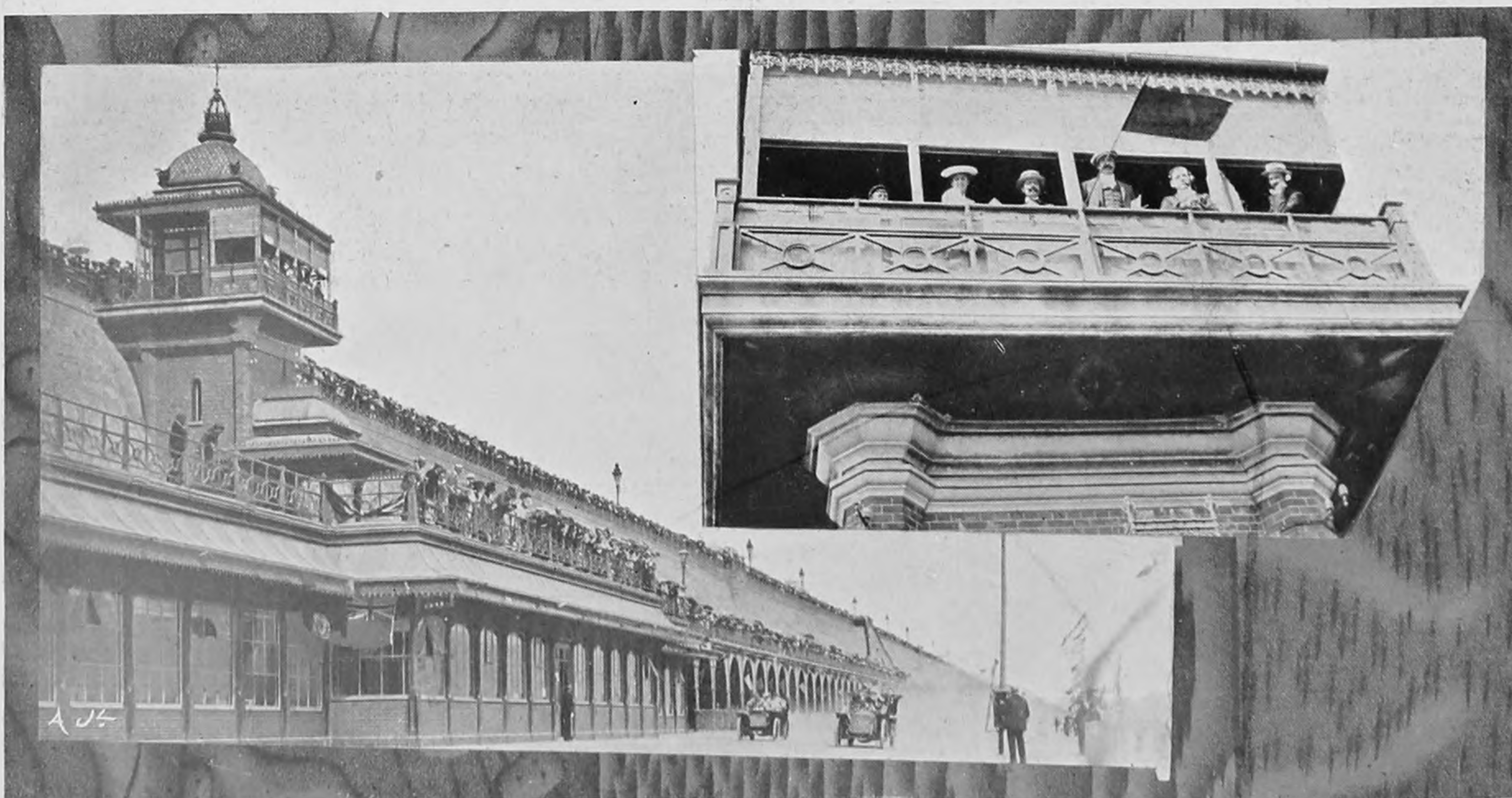


BRIGHTON MOTOR MEETING.—Event 6, Heat 4, Thursday. 1. Mr. P. Martin and A. Horden starting on their 30-h.p. Daimlers. 2. Event 2, Heat 5, Mr. Hill on his 12-h.p. Darracq versus Mr. W. D. Fair on his 10-h.p. Cupelle.

passed the most drastic resolutions providing for offences of the kind. No club or association in the world, however powerful and representative, can prevent breaches of its regulations by anyone who is determined to break them.

As to the events themselves they were really very monotonous. Seldom was there a close finish, and only

when the racers passed was there any sense of speed. A match between two touring cars is very exciting when both nearly win, as the Irishman would say, but as witnessed in the Brighton events, the majority of such matches were hopeless *mesalliances*, and the succession of heats degenerated into a kind of disorganised procession.



BRIGHTON MOTOR MEETING.—Secretary Orde's observation tower on the course. In this tower, telephones were connected up to every point of the track, enabling Mr. Orde to keep in touch with all parts. The cars racing are Mr. Sydney Barrett's 18-28-h.p. Mercedes and Mr. D'Arcy Baker's 24-h.p. Fiat. In the corner of the picture we give a snap, by Mr. Frederic Coleman, of Mr. Orde in his conning tower, as seen from below. Mr. F. P. Armstrong and Mrs. Manville are also in this picture.



1. Event 4, Heat 4, Wednesday. Soon after the start (which point can be seen in the distance), Mr. H. O. Hall's 15-h.p. Darracq making the pace against Mr. H. E. Hall's 12-16-h.p. Talbot and Miss A. M. Hind's 18-28-h.p. Gnome.
2. Event 3, Heat 6, Thursday. Mr. Searight's 12-16-h.p. Decauville, a 20-h.p. Winton and Mr. Arnold's 12-14-h.p. Whitlock-Aster.
3. Miss Victoria Godwin on her Ariel Simplex, getting near to the finishing line.
4. Mr. Clifford Bowring winning his race for 15-h.p. White cars. This photograph is by Mr. Frederic Coleman.

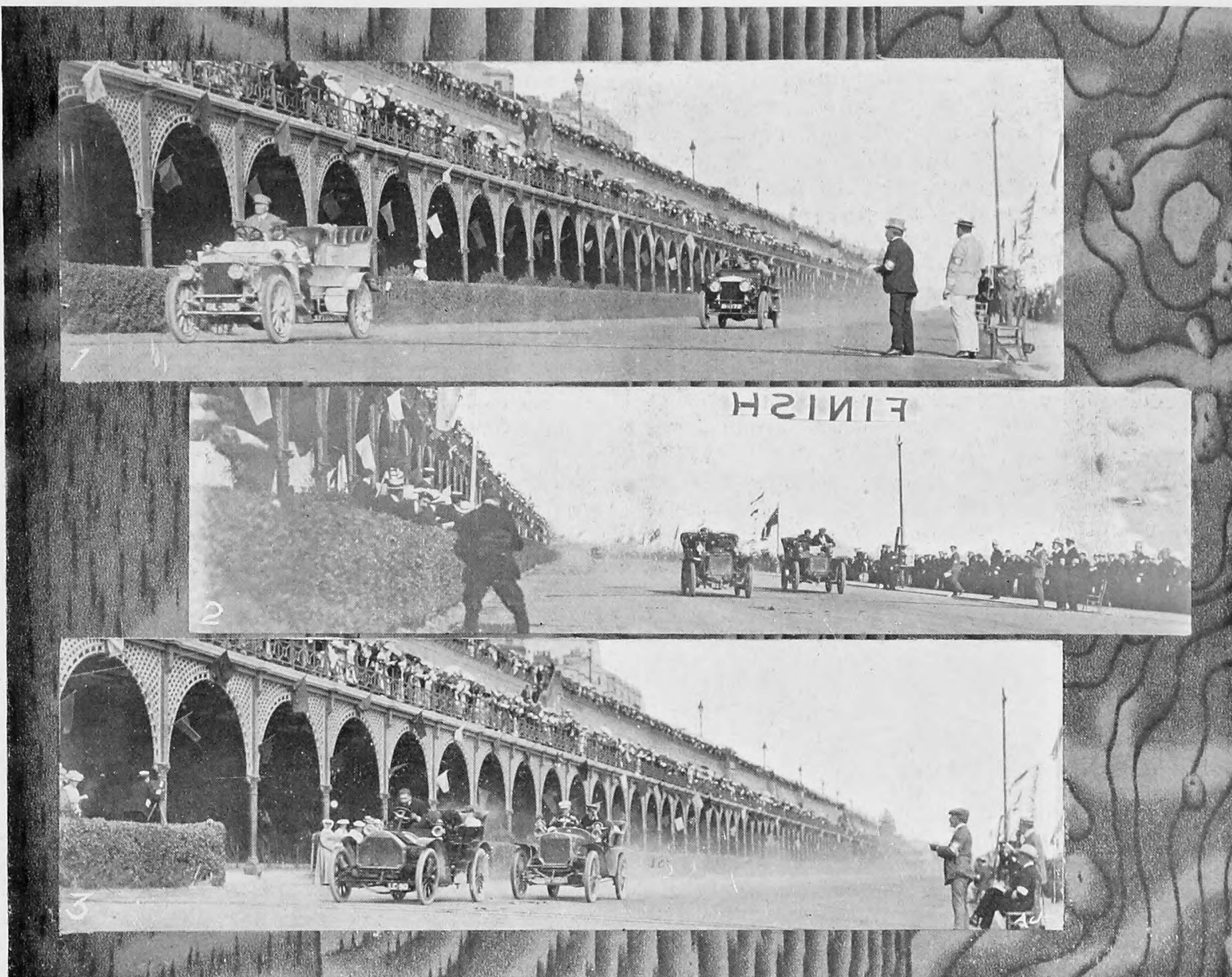
BRIGHTON MOTOR MEETING.—THE CARS AT SPEED.

Car *v.* Cycle.

Perhaps the most interesting event of the whole meeting was the match between Cissac, on his 12-h.p. Peugeot bicycle, and J. E. Hutton, on his 120-h.p. Mercedes car, also a similar match between Rignold, whose machine was similar to Cissac's, and Lee Guinness, who drove his 100-h.p. Darracq.

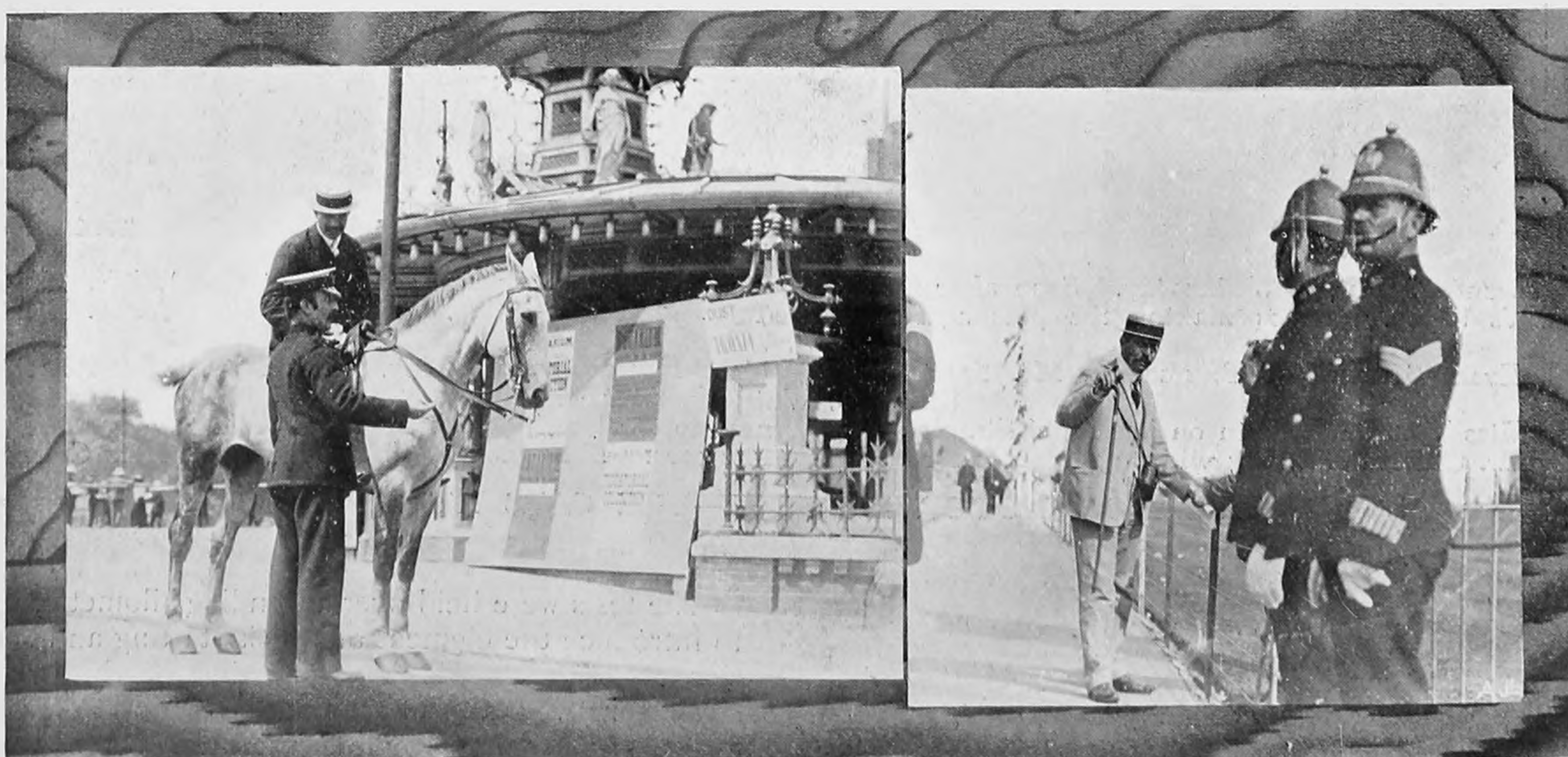
The tests were held over a standing kilometre, in order to introduce the element of quick starting and acceleration as much as possible. Neither of the cycles got away very well at the start, and both were eventually losers, nevertheless Rignold established a new world's record for motor cycles in this event, and so also did Lee Guinness for racing cars.

There is a great deal in mere speed, and it is curious



1. Mr. A. D. Grigg's 28-h.p. Daimler and Mr. A. Bush's 28-h.p. Daimler.
2. Mr. H. O. Hall's 15-h.p. Darracq (No. 56) versus Mr. W. J. Wright's car of the same type in the final Heat, Event No. 4, Wednesday.
3. Mr. Ramoisey's 24-h.p. Germain and Mr. Tom Thornycroft's 24-h.p. Thornycroft Car.

BRIGHTON MOTOR MEETING.—Some close finishes.



BRIGHTON MOTOR MEETING.—The Chief Constable, Mr. Gentle, was one of the most important factors contributing to the success of the meeting. To his whole-hearted co-operation, tact, and personal work, must be largely attributed the perfect carrying out of the general arrangements. Either riding or on foot, Mr. Gentle was ever on the alert, personally directing his fine body of men.



BRIGHTON MOTOR MEETING.—Racing Autocycles. Preparing for the final. Cissac and his 12-h.p. Peugeot (No. 5), Barnes and his 10-h.p. Barnes (No. 10).

that the sensation of anything unusual does not—even from the spectacular point of view—become apparent until these speeds are very great indeed. It was a sight worth seeing to witness Earp drive his six-cylinder Napier at over 97 m.p.h., for the machine travels unlike anything else on the road and, without disparagement to other racing cars, it may justly be termed the finest example of a racing car extant.

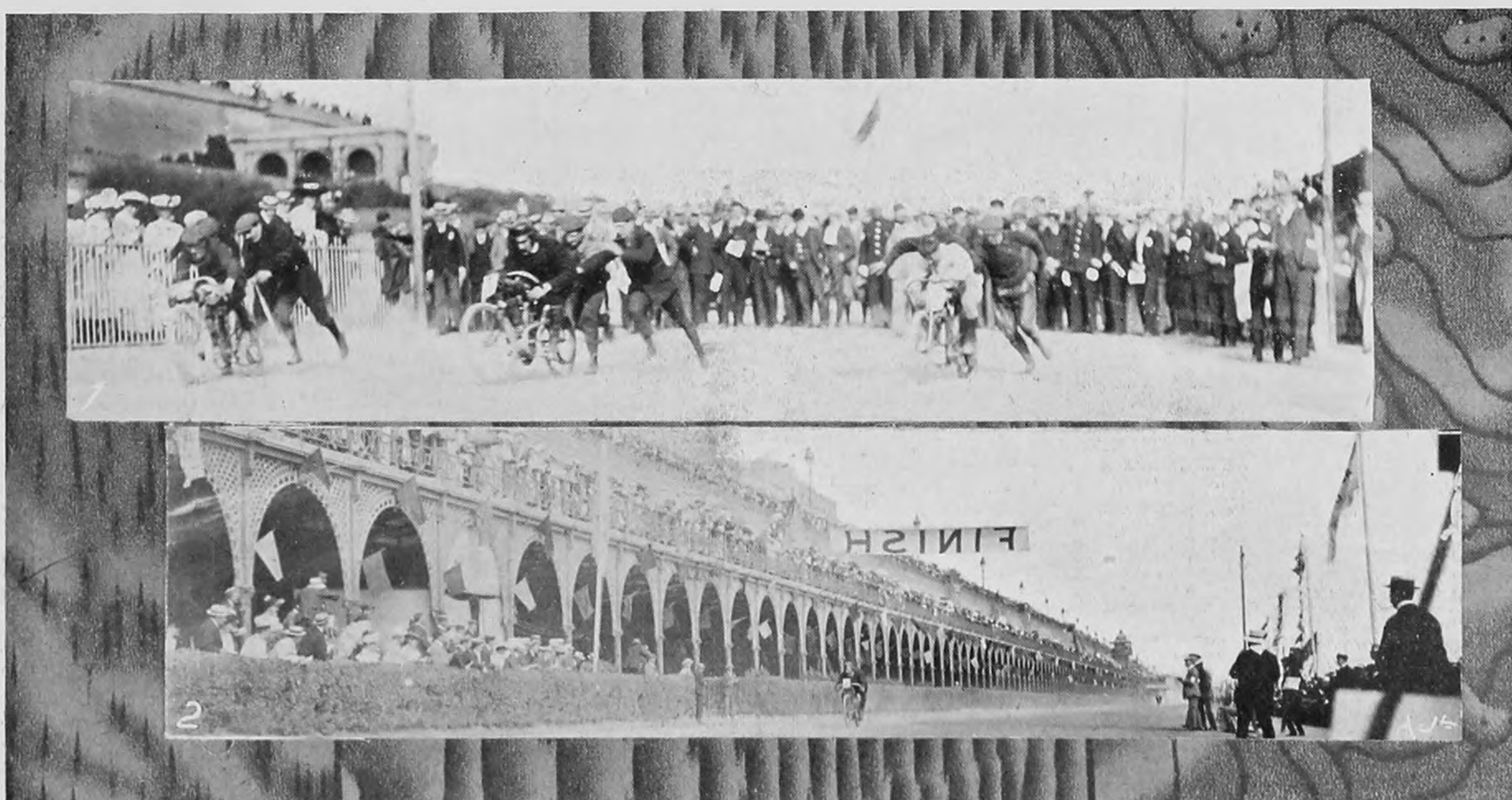
Had it not been that some derangement took place in the bevel-gear which drives the commutator, Earp would in all probability have been successful in the Flying Kilometer Event for the *Autocar* Challenge Cup. As

it was, however, the result lay between Guinness and Hutton, the former eventually proving the winner, all his times for each of the three tries being better than those of the 120-h.p. Mercedes, which did so well on the second day in the standing mile.

Later in the afternoon, Earp got his car going in good condition again, and essayed to lower the British Flying Kilometre record, which he had put up on Friday. In this he was unsuccessful, but he did actually make exactly the same time of 23 secs.

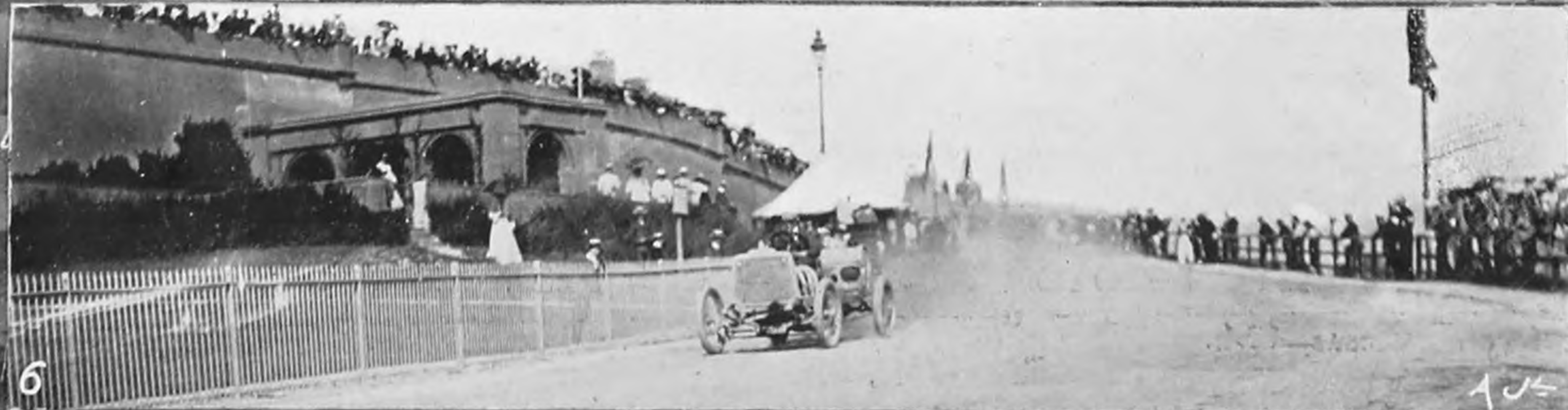
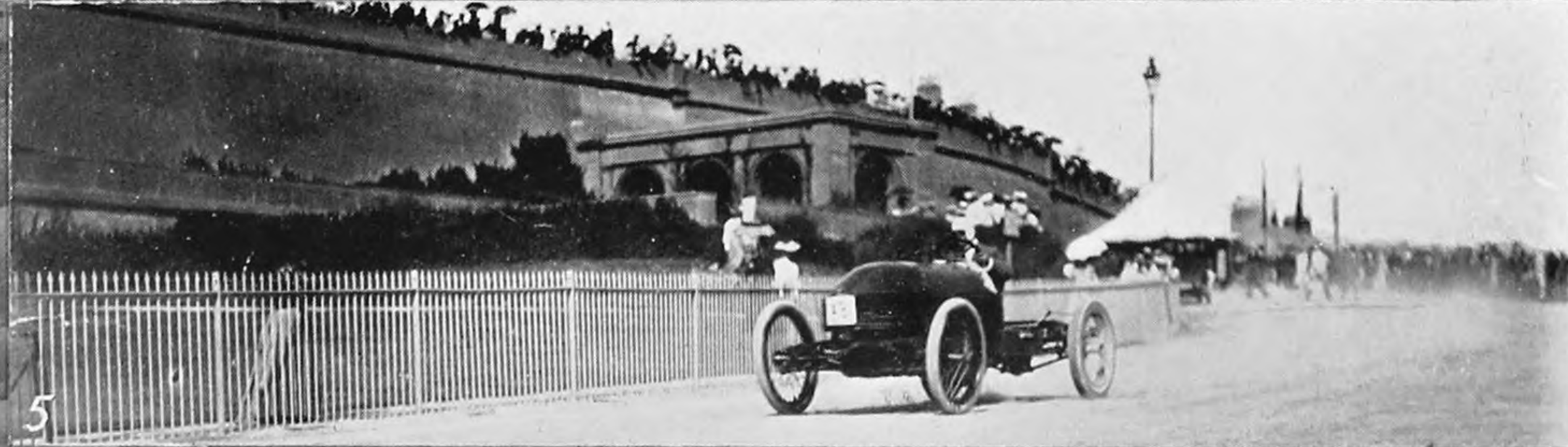
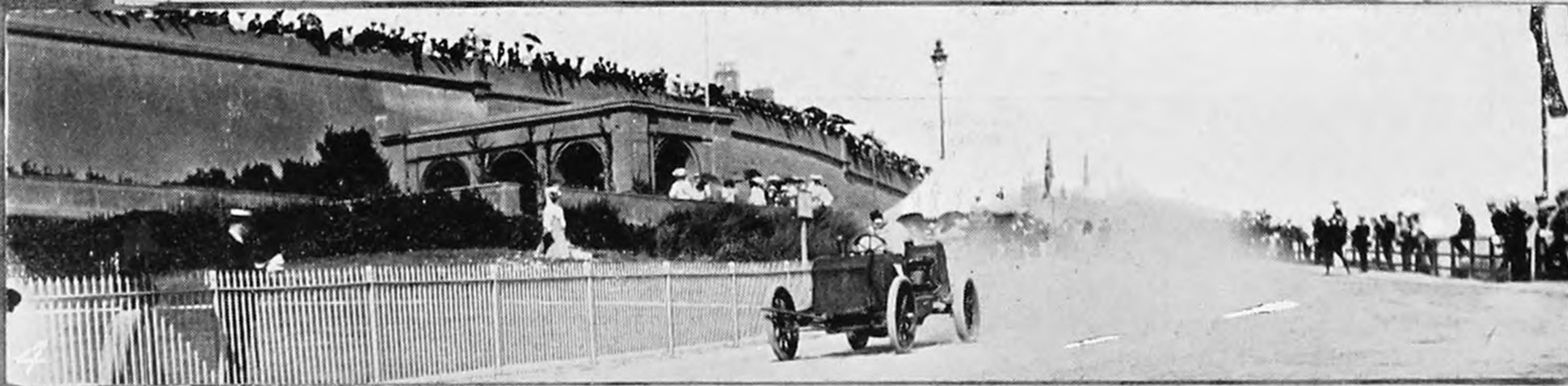
Racing Car Handicap.

One of the most interesting events was the handicap



BRIGHTON MOTOR MEETING.—Racing Cycles.

1. The start for the final. Cissac, 12-h.p. Peugeot (No. 5), Barnes, 10-h.p. Barnes (No. 10), Collier, 7-h.p. Matchless (No. 14).
2. Cissac crossing the line when making his new world's record.



BRIGHTON MOTOR MEETING.—The racers at the starting end. 1. Mr. Clifford Earp on his 6-cylinder Napier and Mr. Moore Brabazon (90-h.p. Mors) in line. 2. Mr. J. E. Hutton on his 120-h.p. Mercedes waiting for the word to start for the "Daily Mail" Cup. 3. The Mors and Sir Ralph Gore's Mercedes ready for the signal. 4. Miss Dorothy Levitt getting up pace on the 80-h.p. Napier for the "Daily Mail" Cup Race. 5. Mr. Earp on the way for the Flying Kilometre. 6. Mr. Lee Guinness on his 100-h.p. Darracq taking his turn in the "Daily Mail" event.

BRIGHTON MOTOR MEETING. The racers at the starting end. 1. Mr. Clifford Earp on his 6-cylinder Napier and Mr. Moore Brabazon on his 120-h.p. Mercedes ready for the "Daily Mail" Cup. 2. Mr. J. E. Hulton on his 120-h.p. Mercedes waiting for the word to start for the "Daily Mail" Cup. 3. The Mors and Sir Ralph Gore's Mercedes ready for the signal. 4. Miss Dorothy Leitch getting up race on the 30-h.p. Napier for the "Daily Mail" Cup Race. 5. Mr. Earp on the way for the Flying Kilometre. 6. Mr. Lee

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1. Miss Dorothy Levitt finishing on her Napier.
2. Mr. Clifford Earp completing his fastest mile on the 6-cylinder Napier.
3. Mr. Moore Brabazon driving the 90-h.p. Mors at the finish of the course.
4. Sir Ralph Gore, Bart., on his 100-h.p. Mercedes at the finishing tape.

5. Mr. J. E. Hutton on his 120-h.p. Mercedes.
6. Mr. Lee Guinness about to cross the tape with his 100-h.p. Darracq.
7. Mr. Theodore Schneider on the 100-h.p. Rochet-Schneider.
8. Mr. Moore Brabazon on the 90-h.p. Mors at the finish.

BRIGHTON MOTOR MEETING.—THE RACERS (see page 925 for photographs).

Results in Tourist Car Section.

Entrant and Car.	Won by*				
	secs.	secs.	secs.	secs.	secs.
<i>Cars up to £200.</i>					
E. W. Lewis' 8-h.p. Rover ...	9 ³ / ₅	1 ¹ / ₅	3 ¹ / ₅ †		
F. Wilkinson's 8-h.p. Stanley (Steam) ...	19 ² / ₅	1			
Spencer Downing's 10-h.p. Allday ...	10				
E. N. Greaves' 8-h.p. Rover ...	14 ³ / ₅				
J. C. Madeley's 8 h.p. Cadillac ...	9				
W. H. Tribe's 6-h.p. Peugeot ...	2 ¹ / ₅				
<i>Cars priced £200 to £350.</i>					
J. W. Adams' 10-h.p. Humber ...	32 ³ / ₅	15 ¹ / ₅	8 ² / ₅ †		
C. S. Rolls' 14-h.p. Minerva ...	0	9 ¹ / ₅			
A. J. Dew's 10-h.p. Speedwell ...	21 ³ / ₅				
L. Russell's 10 h.p. Star ...	6				
W. Whiteway's 14-h.p. Regal ...	9 ¹ / ₅				
M. Hawnt's 10-h.p. Motobloc ...	16				
<i>Chassis, price £300 to £400.</i>					
E. W. Lewis' 20-h.p. Rover ...	4 ² / ₅	4 ³ / ₅	2 ³ / ₅ †		
J. Keel's 16-h.p. Spyker ...	2	3 ³ / ₅			
J. P. Searight's 16-h.p. Decauville ...	15	9			
F. Lanchester's 12-h.p. Lanchester ...	9 ³ / ₅				
F. Churchill's 14-h.p. Hallamshire ...	6				
A. F. King's 24-h.p. Mass ...	10 ³ / ₅				
<i>Chassis, price £400 to £500.</i>					
J. Keel's 15-h.p. Darracq... ...	3 ³ / ₅	4 ³ / ₅	3 ² / ₅	1 ² / ₅ †	
J. Keel's 15-h.p. Darracq... ...	B	18 ² / ₅	7 ¹ / ₅		
F. Coleman's 15-h.p. White (Steam) ...	12	1 ¹ / ₅			
A. Rawlinson's 15-h.p. Darracq ...	3 ⁴ / ₅	F.L.			
H. O. Hall's 15-h.p. Darracq ...	5 ¹ / ₅	1 ¹ / ₅			
W. Rose's 18-h.p. National ...	3 ¹ / ₅	1 ¹ / ₅			
J. A. Lloyd's 15-h.p. Darracq ...	40 ¹ / ₅				
W. J. Wright's 15-h.p. Darracq ...	9 ² / ₅				
C. E. Steut's 15-h.p. White (Steam) ...	3 ³ / ₅				
Malcolm Brooke's 20-h.p. Malcolm ...	7 ¹ / ₅				
W. H. Astell's 15-h.p. Orleans ...	14 ⁴ / ₅				
H. Kennedy's 15-h.p. Darracq ...	25 ³ / ₅				
<i>Chassis, price £500 to £600.</i>					
H. B. Nearn's 30-h.p. Darracq ...	B	B	11 ⁴ / ₅	1	4 ³ / ₅ †
F. F. Wellington's 28-h.p. Spyker ...	2 ² / ₅	B	F.L.	39	
J. E. Lound's 24 h.p. Beaufort ...	13 ³ / ₅	11 ² / ₅	O		
T. B. Brown's 18-h.p. James and Brown ...	6	7 ⁴ / ₅			
C. Gray's 24-h.p. Decauville ...	8				
Capt. E. D. Townsley's 30-h.p. Darracq ...	2 ² / ₅				
<i>Chassis, price £600 to £700.</i>					
J. McDonnell's 28-h.p. Daimler ...	B	6 ³ / ₅	7	3 ² / ₅	3 ² / ₅ †
J. E. Lound's 35-h.p. Beaufort ...	B	2 ¹ / ₅	B	1 ⁴ / ₅	
E. P. Prestwich's 28-h.p. Daimler ...	B	28 ¹ / ₅	1 ³ / ₅		
J. C. Wilson's 28-h.p. Daimler ...	14	B	F.L.		
A. D. Grigg's 28-h.p. Daimler ...	5 ³ / ₅	3 ³ / ₅			
W. H. Tribe's 18-h.p. Peugeot ...	5 ⁴ / ₅				
Capt. Théo. Masui's 24-h.p. Germain ...	O				
R. W. R. Gill's 28-h.p. Daimler ...	46 ² / ₅				
<i>Chassis, price £700 to £800.</i>					
G. H. Warne's 28-h.p. Daimler ...	1 ³ / ₅	15	4 ⁴ / ₅	4 ¹ / ₅ †	
Miss V. Godwin's 30-h.p. Ariel ...	17 ¹ / ₅	12 ³ / ₅	B		
E. E. Clarke's 24-h.p. Fiat ...	B	3			
<i>Chassis, price £800 to £900.</i>					
Perrey Martin's 30-h.p. Daimler ...	O	4 ³ / ₅	4 ¹ / ₅	15†	
E. M. C. Instone's 30-h.p. Daimler ...	4 ³ / ₅	B	B		
Mrs. Herbert Lloyd's 30-h.p. Daimler ...	1	5			
J. T. Clifton's 30-h.p. Daimler ...	27 ³ / ₅				
<i>15-h.p. Darracq Cars.</i>					
H. Kennedy ...	3 ³ / ₅	5 ¹ / ₅ †			
H. E. Hall ...	7				
J. Keel ...	6 ² / ₅				
<i>30-h.p. Daimler Cars.</i>					
J. M. Gorham ...	9 ¹ / ₅	B	O†		
A. Horden ...	B	1			
J. T. Clifton ...	4				

35-h.p. Daimler Cars.

Mrs. Manville ...	B	4 ¹ / ₅
Hon. J. S. Montague ...	3 ² / ₅	B
Chas. Hardy ...	1	

15-h.p. Orleans Cars.

W. H. Astell ...	1 ² / ₅	16
T. Jenner ...	B	

15-h.p. White Steam Cars.

C. Bowring ...	B	10 ¹ / ₅
A. J. Walter ...	4 ¹ / ₅	

Ladies' Handicap.

Mrs. H. Lloyd's 30-h.p. Daimler ...	Strt.	18	20 ⁴ / ₅	1 ¹ / ₅	10
Mrs. M. Manville's 35-h.p. Daimler ...	scr.	26	B		

Handicap Sweepstake.

Open to Competitors in any of the Standard Car Events.

Capt. F. D. Lyons' 7-h.p. Panhard ...	Strt.	121	32	17 ⁴ / ₅	24 ¹ / ₅	15 ¹ / ₅
G. H. Warne's 28-h.p. Daimler ...	22	1 ² / ₅	3	4 ⁴ / ₅		
H. Kennedy's 15-h.p. Darracq ...	34	3 ² / ₅	6 ¹ / ₅			
U. Stratton's 30-h.p. Daimler ...	11	37	3			
J. Keel's 15-h.p. Darracq... ...	26	5 ² / ₅				
A. Salmon's 5-h.p. Peugeot ...	80	5 ³ / ₅				
A. D. Grigg's 28-h.p. Daimler ...	25	1				

Handicap Sweepstake.

Open to cars which ran in any touring events, other than for Standard Types.

Capt. Théo. Masui's 24-h.p. Germain ...	Strt.	20	2 ² / ₅	3 ¹ / ₅	3 ¹ / ₅	0 ⁵ / ₅
J. E. Lound's 24-h.p. Beaufort ...	22	3 ¹ / ₅	5 ³ / ₅	3 ¹ / ₅		
G. W. Honk's 30-h.p. Ariel ...	21	2 ¹ / ₅	5			
J. C. Wilson's 28-h.p. Daimler ...	10	1 ¹ / ₅	1 ¹ / ₅			
H. Kennedy's 15-h.p. Darracq ...	34	21	10 ² / ₅	3 ¹ / ₅		
Miss V. Godwin's 30-h.p. Ariel ...	13	F.L.	3 ¹ / ₅			
F. S. Bennett's 8 ¹ / ₂ -h.p. Cadillac ...	42	2 ⁴ / ₅				
Mrs. H. Lloyd's 30-h.p. Daimler ...	2	303 ¹ / ₅				
T. B. Brown's 18-h.p. James and Brown ...	30	16 ¹ / ₅				
T. Underwood's 18-h.p. Gnome ...	40	5 ¹ / ₅				
L. Beadle's 12-h.p. Regal ...	42	5				
A. J. Dew's 10-h.p. Speedwell ...	40	0				
B. André's 20-h.p. Bridgwater ...	26	0				
L. Coatalen's 8-h.p. C. Humber ...	21	3 ² / ₅				
C. S. Rolls' 15-h.p. Minerva ...	29	9 ² / ₅				
E. M. C. Instone's 30-h.p. Daimler ...	Scr.	26 ⁴ / ₅				
O. Thompson's 18-h.p. Siddeley ...	40	7 ⁴ / ₅				
R. Lascelles' 20-h.p. Simms ...	20	27 ¹ / ₅				
A. H. Walker's 15-h.p. Darracq ...	23	27				

Touring Cycle Section.

Handicap.

W. W. Genn's Minerva ...	Strt.	Scr.	B	5 ¹ / ₅ †
F. W. Applebee's Rex ...	10	9 ¹ / ₅		
A. E. Lowe's J.A.P. ...	5	4		
T. G. Hetherington's Riley ...	15	12		

Racing Cycle Section.†

H. Cissac's 12-h.p. Peugeot ...	—	53 ¹ / ₅	49 ³ / ₅ †
G. A. Barnes' 10-h.p. Barnes ...	—	63 ² / ₅	69 ¹ / ₅
C. R. Collier's 7-h.p. Matchless ...	—	64 ¹ / ₅	104 ³ / ₅
H. Rignold's 12-h.p. Peugeot ...	—	57 ² / ₅	
H. A. Collier's 6-h.p. Matchless ...	—	70 ² / ₅	
T. Jones's 8-h.p. Peugeot ...	—	83 ² / ₅	
A. Westlake's 6-h.p. Westlake ...	—	85 ¹ / ₅	
E. Varney ...	—	89 ³ / ₅	

* Only the differences between the actual times of the winner and his losing opponent are available, and these are given for each successive heat in the above table. Losers of the first heat are not included. Time differences less than $\frac{1}{5}$ sec. are given as zero.

B = bye.

F.L. = fastest loser.

† Won prize.

‡ Actual times are given for the racing cycle, but the distance is about 80 yards short of a mile.

§ Handicap allowance altered for final. Winners agree to divide prize money rather than run over again.

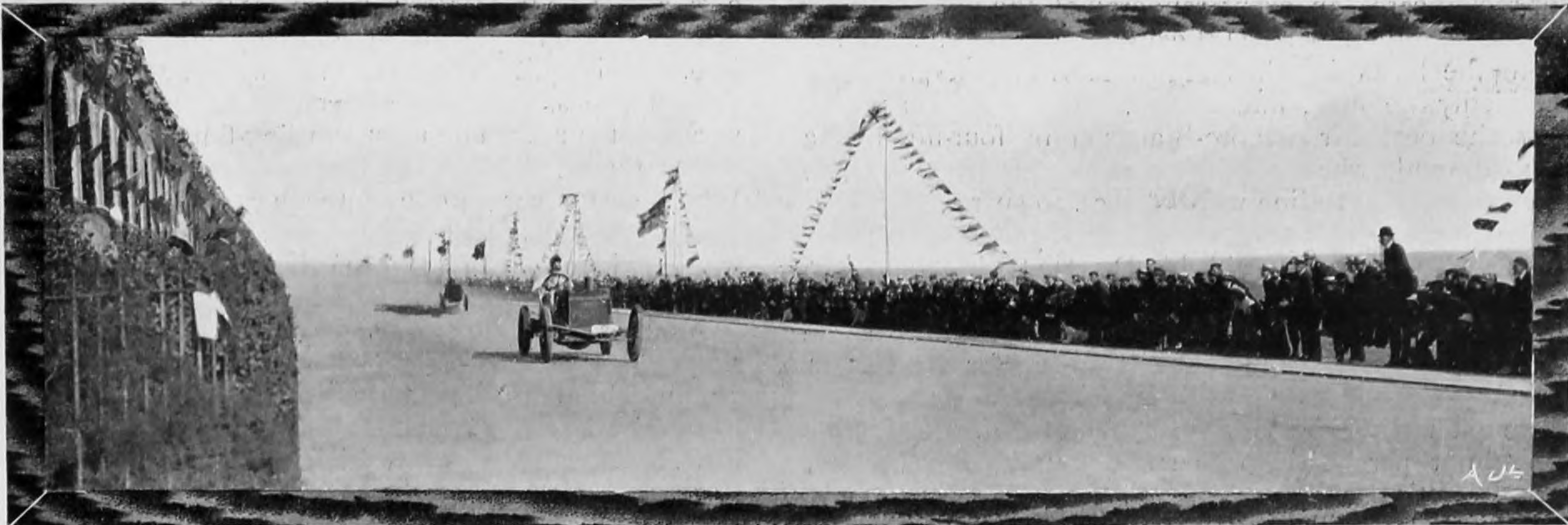


Photo by Mr. Frederic Coleman.

BRIGHTON MOTOR MEETING.—Miss Dorothy Levitt, on her 80-h.p. Napier, winning, in the Sweepstake Handicap for Racing Cars, against Mr. Moore Brabazon on his 90-h.p. Mors.

RESULTS IN RACING CAR SECTION.

Driver.	Car.	Standing Mile.*								Flying Kilometre.							
		First Day.				Second Day.				Third Day.— Daily Mail Cup.		Average.	Fourth Day.— Autocar Cup.		Average.		
		secs.	secs.	secs.	secs.	secs.	secs.	secs.	secs.	secs.	secs.	secs.	secs.	secs.	secs.	secs.	secs.
Clifford Earp	90 Napier ...	53	45 ¹ / ₅	47	47 ³ / ₅ †	47 ⁴ / ₅	48 ⁴ / ₅	49 ¹ / ₅	48 ³ / ₅	24 ³ / ₅	24 ³ / ₅	23 ⁺ / ₅	24 ⁺ / ₅	30	—	—	—
J. E. Hutton	120 Mercedes ...	49 ² / ₅	48 ⁴ / ₅	48 ¹ / ₅	53	50 ¹ / ₅	50 ² / ₅	50	48 ² / ₅ †	26 ¹ / ₅	26	25 ² / ₅	26	25 ³ / ₅	26 ¹ / ₅	25 ¹ / ₅	25 ⁺ / ₅
Sir R. Gore	100 Mercedes ...	55 ⁴ / ₅	54 ³ / ₅	53	—	56 ³ / ₅	58 ³ / ₅	56 ¹ / ₅	—	29 ³ / ₅	29 ¹ / ₅	28 ¹ / ₅	29 ³ / ₅	31 ³ / ₅	31	30 ⁴ / ₅	31 ¹ / ₅
T. Schneider	100 R.-Schneider...	71 ³ / ₅	71 ⁴ / ₅	—	—	71	66	73	—	34 ² / ₅	33 ¹ / ₅	—	—	34 ⁴ / ₅	32 ¹ / ₅	31 ² / ₅	33
A. Lee Guinness	100 Darracq ...	—	—	—	—	52 ¹ / ₅	—	—	—	25 ¹ / ₅	24 ³ / ₅	25 ³ / ₅	25 ¹ / ₅	25 ¹ / ₅	25 ³ / ₅	24 ² / ₅	25 ⁺ / ₅
Moore-Brabazon	90 Mors ...	58 ¹ / ₅	56 ³ / ₅	67 ¹ / ₅	—	59 ¹ / ₅	—	—	—	29 ¹ / ₅	30 ³ / ₅	30 ³ / ₅	30 ¹ / ₅	28	29 ¹ / ₅	28 ³ / ₅	28 ⁺ / ₅
A. Brown	80 Napier ...	58 ¹ / ₅	—	—	—	—	71 ¹ / ₅	—	—	—	—	—	—	—	—	—	—
Hon. C. S. Rolls	150 Dufaux ...	—	83	—	—	—	—	—	—	45 ² / ₅	—	—	—	—	—	—	—
Miss D. Levitt	80 Napier ...	—	—	—	—	—	—	—	—	30 ² / ₅	28 ² / ₅	28 ¹ / ₅	29 ² / ₅	29	29 ¹ / ₅	28 ³ / ₅	29

* Distance covered was about 80 yards short of a mile. † Winning times which secured the cups.
‡ Earp's time of 23 secs. for the flying kilometre constitutes a new English record.

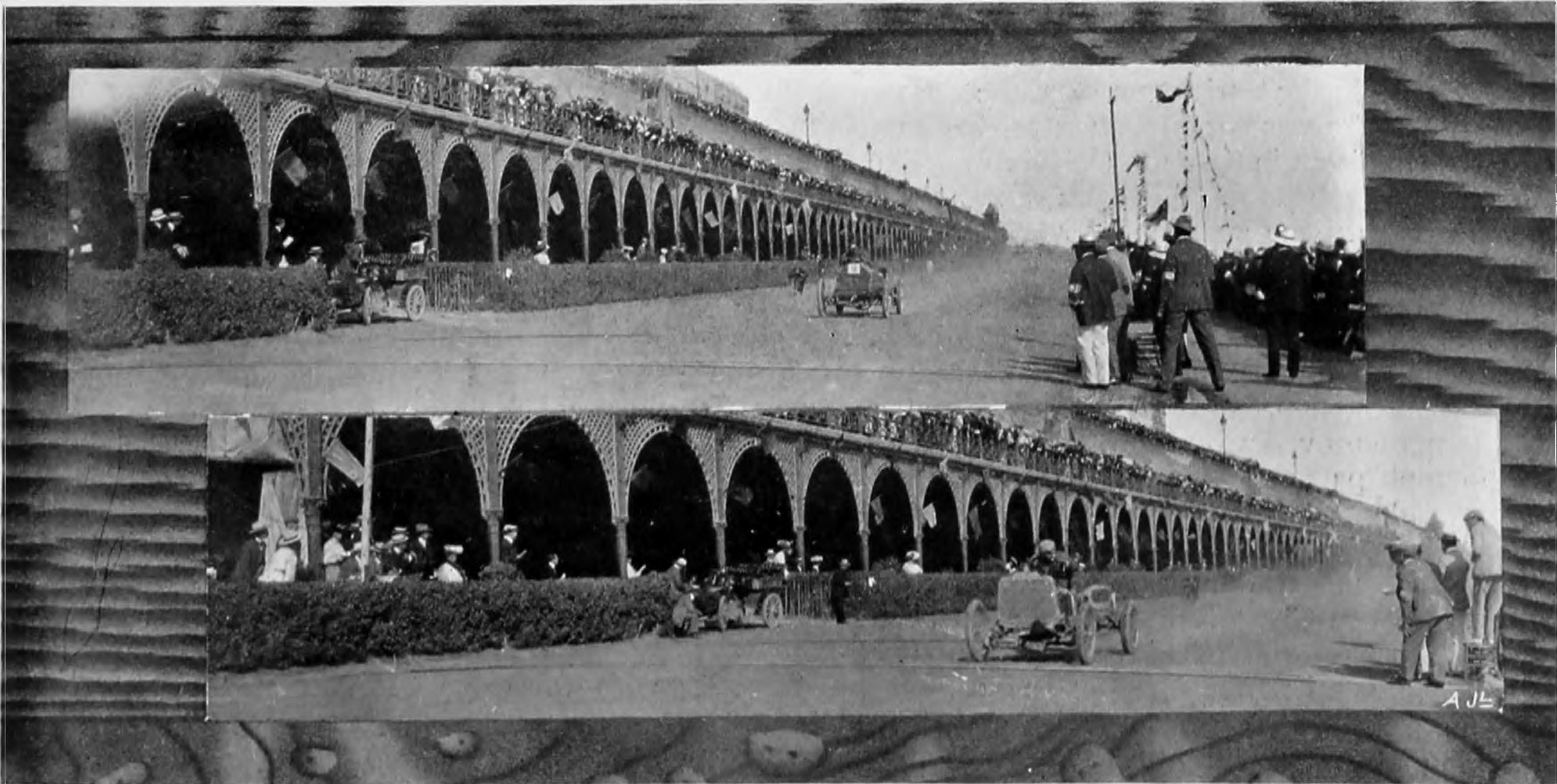


Photo by Mr. Frederic Coleman.

BRIGHTON MOTOR MEETING.—The Hybrid Matches. Cycle v. racing car. Mr. J. E. Hutton on his 120-h.p. Mercedes v. Cissac, and Mr. Lee Guinness on his 100-h.p. Darracq v. Rignold.

for racing cars—an event rendered all the more popular by the victory of Miss D. Levitt on the 80-h.p. Napier. Both the heats in which Miss Levitt took part were decidedly the most interesting of this event, for in the first she beat Mr. Moore-Brabazon by four-fifths of a second, and, when running against Sir Ralph Gore, her car passed the line with $1\frac{2}{5}$ secs. to spare.

Much disappointment was felt at the non-appearance of Mr. Charles Jarrott with his De Dietrich racing car, and no one, it appears, was more disappointed over this than himself, for we hear from him that Messrs. De Dietrich and Co., having entered the car for the Circuit des Ardennes—together with the other two cars, which were entered for the Gordon-Bennett—found that time would not permit them to spare Duray's machine for Mr. Jarrott's use.

Mr. Victor Miller was another disappointed entrant for the racing section, his 100-h.p. Fiat—from which much was expected in view of the splendid performance of the Fiat cars on the Auvergne Circuit—not having arrived in England in time for the event. The 150-h.p. Dufaux driven by the Hon. C. S. Rolls was only completed on board the boat which brought it to England, and not unnaturally Mr. Rolls found it impossible to get it tuned up properly for the event.

Cissac and Rignold, on their racing motor cycles, were second only to Earp and Hutton in the interest which they aroused by their sensational performances, but, of the two, Cissac's manner of riding his machine was the more impressive. Both competitors used 12-h.p. Peugeot machines, but Cissac had actually the most powerful engine. These bicycles weighed only 110 lbs., and 40 per cent. of this was utilised in the engine. Frame and spokes were cut to the finest degree, so that any sudden swerve from the true course would inevitably buckle the whole machine, which is merely designed for sprint racing, and would, of course, be useless for an international circuit event. Cissac and Rignold were both delighted at having lowered the world's records, and the latter expressed confidence in being able to still further improve his time at Blackpool, after he has slightly altered the gearing of his machine, which is now about 2:1. Another 12-h.p. Peugeot was entered by an amateur rider, Mr. O. L. Bickford, but unfortunately the wheel collapsed during a trial spin over the course, and Mr. Bickford—who was happily unhurt—was unable to get a new wheel fitted in time for the event. The difficulty of getting such powerful machines under way without breaking the driving wheel is very great indeed, and Mr. Bickford's gear was, we understand, even higher than those of Cissac and Rignold, representing about 100 m.p.h. at normal engine speed.

An event in which ladies are actually the competitors is always an attraction, and the Ladies' Handicap on Friday afternoon proved no exception to the rule. All the ladies who took part are well known in the automobile world, especially Mrs. Herbert Lloyd, who won the event, and Mrs. Manville, who was second. In winning, Mrs. Lloyd secured a fan presented by the London, Brighton and South Coast Railway, while Mrs. Manville was awarded a Cup which had been presented by her successful rival competitor.

Considerable difficulty was naturally experienced in handicapping so many different cars as those entered for the other handicap events—more especially as some of them had not actually competed in the other races.

Among the touring cars, there was one very noticeable feature, namely, the extraordinary number of Daimler

cars and 15-h.p. Darracqs which were in evidence, but not only were they great in numbers but great in deeds also. It is quite true that there were not over many close finishes, but those which took place were well worth watching. The most startling finish of the whole meeting was undoubtedly the one made by a 15-h.p. White steam car in one of the heats on the first day. The White was actually behind until just before the finish, when suddenly, with a turn of the throttle-valve, the car shot forward and won the heat in "real sporting" style.

Another good race was that between Mr. F. F. Wellington, on a 20-h.p. Spyker, and Mr. Sharp, on a 20-h.p. Thornycroft, while in another heat of the same event Mr. Tom Thornycroft almost ran a dead heat with Mr. H. Ramoisy, who was driving Capt. Masui's 24-h.p. Germain. It is a curious coincidence, which has not passed remark, that these two well-known motorists are always being drawn against one another for first heats, and there is no question but that they always give the public an exciting finish, which is more worthy of a final than a mere heat.

The idea of having separate events for standard types of touring cars was popular, and it demonstrated how much difference may exist in similar cars when controlled by dissimilar drivers. On the first day, there was an event for 15-h.p. Darracq cars, and, in the first round, as much as 6 and 7 secs. divided the heat winners from their unsuccessful competitors. Two similar "standard car" events took place for 30 and 35-h.p. Daimler cars on the first and third days respectively, but it is difficult to dissociate these particular events from two others—unreserved—which took place on the second day, when out of 17 and 11 entries respectively, 5 and 8 of the cars entered in the two events were Daimlers. Some really close finishes were witnessed in these inter-Daimler events, and Mr. Anthony Horden is to be congratulated on the very close running which he made, first against Mr. J. M. Gorham and then against Mr. Percy Martin, only losing both events by a mere half length. In competition with Mr. G. M. C. Instone, Mr. J. M. Gorham was himself beaten by less than a second, and in the race between 35-h.p. Daimlers, Mrs. Manville won the semi-final against Mr. Chas. Hardy by only $\frac{2}{5}$ sec.

Among other lady drivers who took part in the racing were Miss A. M. Hind, who drives an 18-28-h.p. Gnome, and Miss Victoria Godwin, who made some excellent runs with the new 30-35-h.p. Ariel-Simplex, with which she only missed securing the cup, in the fourth and final round, by four-fifths of a second. Miss Dorothy Levitt was not in evidence in the touring class events, but her new rôle was admirably performed on the 80-h.p. Napier racer, on which her clever manipulation was a source of considerable admiration.

New Records.

Standing Kilometre (World's Record).

Lee Guinness... 100-h.p. Darracq ... $35\frac{1}{2}$ secs. = 62.48 m.p.h.

Flying Kilometre (British Record).

C. Earp ... 90-h.p. Napier (6-cyl.) 23 secs. = 97.25 m.p.h.

New World's Motor Cycle Records.

Standing Mile.

Cissac ... 12-h.p. Peugeot ... $53\frac{1}{2}$ secs. = 67.7 m.p.h.

Flying Mile.

Rignold ... 12-h.p. Peugeot ... 46½ secs. = 71.0 m.p.h.

Flying Kilometre.

Cissac ... 12-h.p. Peugeot ... 26 secs. = 85.98 m.p.h.

Standing Kilometre.

Rignold ... 12-h.p. Peugeot ... 36½ secs. = 61.79 m.p.h.

THE 1905 DE DIETRICH CARS.—PART V.

The Change-Speed-Gear.

IN Figs. 18, 19, and 20, the change-speed-gear, and the manner in which the gear-box is fixed to the chassis, are very clearly shown. The box is made in two parts, the upper (M) of which has a large inspection-door, M¹, and the lower (M²) is secured to the cross-tubes, S¹. The casting, M², is only fixed rigidly to the one cross-tube when the upper casting, M, is tightened down upon

shafts—runs in ball-bearings, has four keys formed solid with it, for the spur-wheels to slide upon, and all the four wheels are secured together so as to move in unison. They are controlled in much the usual way, by an engaging fork which is fixed to the rod, M⁶, and this rod is connected to the sleeve, M⁸ (to which the gear-lever is fixed) by the rod, M⁷. The second-motion-shaft, N, has a hardened steel thrust block, N¹, at its front end, to take the thrust of its bevel-pinion, and there is a ball-thrust-bearing behind the large bevel-wheel on the differential countershaft. A special feature of the countershaft is that universal joints, N⁴, are introduced into both ends, so that no distortions of the main frame can have any detrimental effect on the differential-gear, N³, or on the gear-box.

The “reverse” gear consists of the two intermediate spur-wheels, N², which lie beneath the first-motion-shaft, N⁵, these wheels being brought into mesh with the “first-speed” wheels on the two main shafts by the sliding sleeve on the shaft, M⁵. The wheel on the first-motion-shaft comes into mesh with one of the intermediate wheels, N², when the gear-lever is moved into its neutral notch, and the effect of moving the lever into the “reverse” notch is to make the “fourth speed” wheel slide the other wheel, N², into gear with the large wheel on the shaft, N. A spring tends to press the wheels, N², rearwardly. The sprockets on the ends of the countershaft

are fitted in such a way that they can be quickly changed at any time.

The Brakes.

The foot-brake, which is operated by the pedal, P, acts upon the drum, P¹, that lies just outside the gear-box and is solid with the shell of the differential-gear. The brake-shoes, P², which are normally held apart by the two springs, P³, are forced up together, to grip the

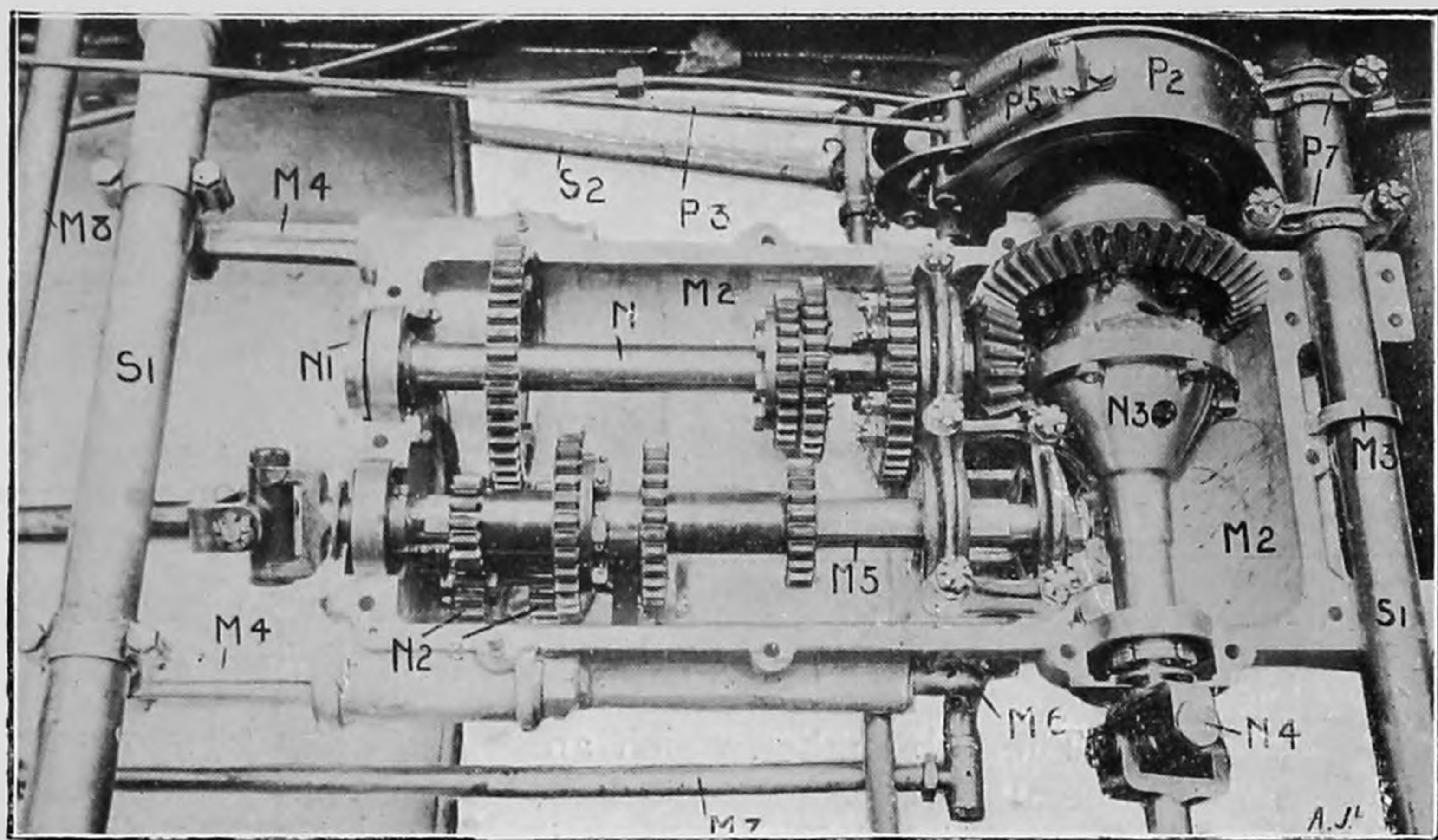


Fig. 18.—View of the De Dietrich Change-Speed-Gear in place in the chassis. In this illustration, which shows the mechanism from above, the upper portion of the gear-box has been removed.

it, but it has a projecting lug, M³, which rests upon that tube and serves to support it when the gear-box is dismantled. At the front end, the two forgings, M⁴, are secured to the casting, M², and these in turn are bolted up from underneath to two brackets on the other cross-tube, S¹. This method of fixing not only renders it very easy to “line up” the gear properly in the chassis, but facilitates the removal of the mechanism, intact or in parts. The first-motion-shaft, M⁵, which—like the other

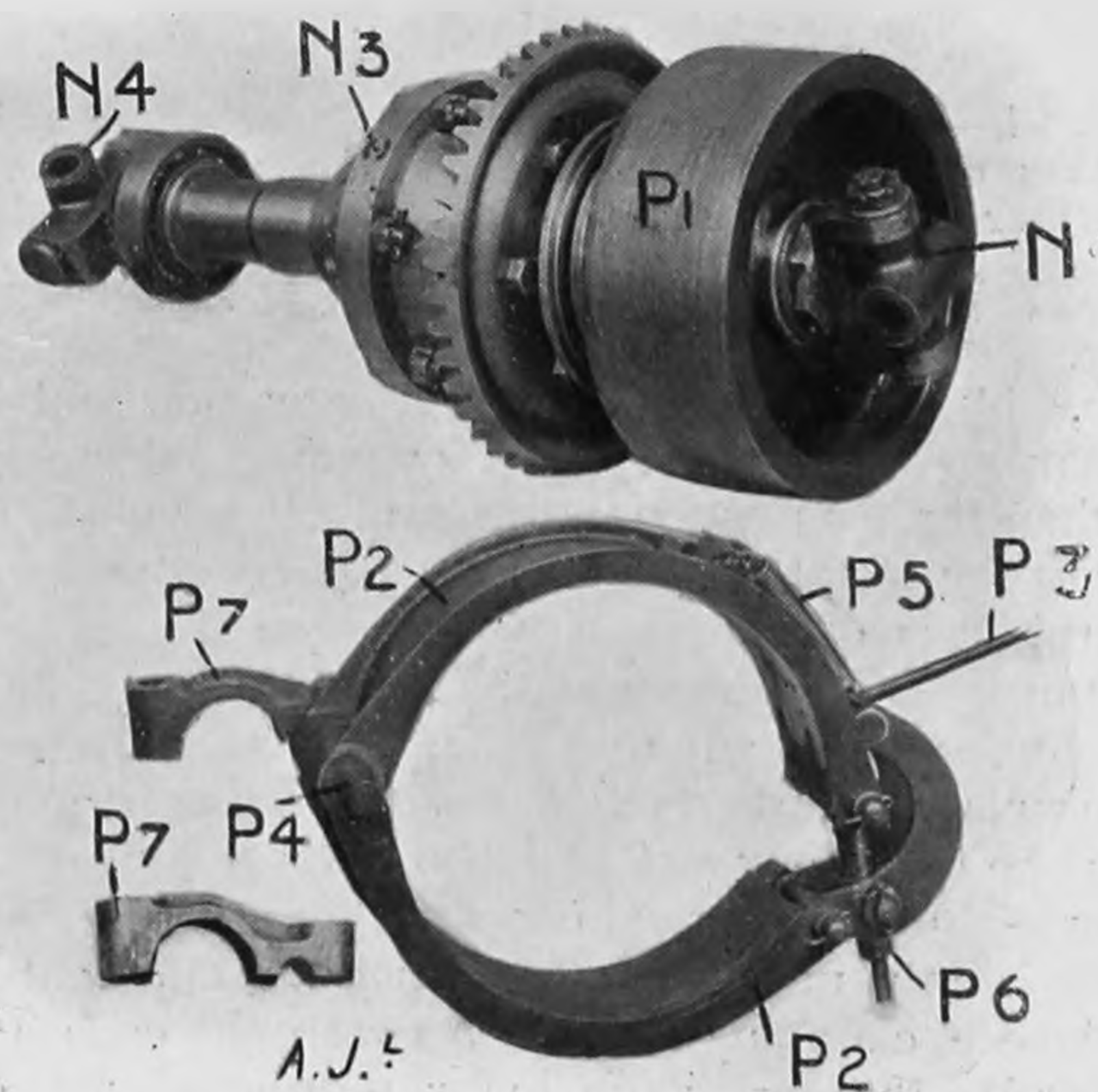
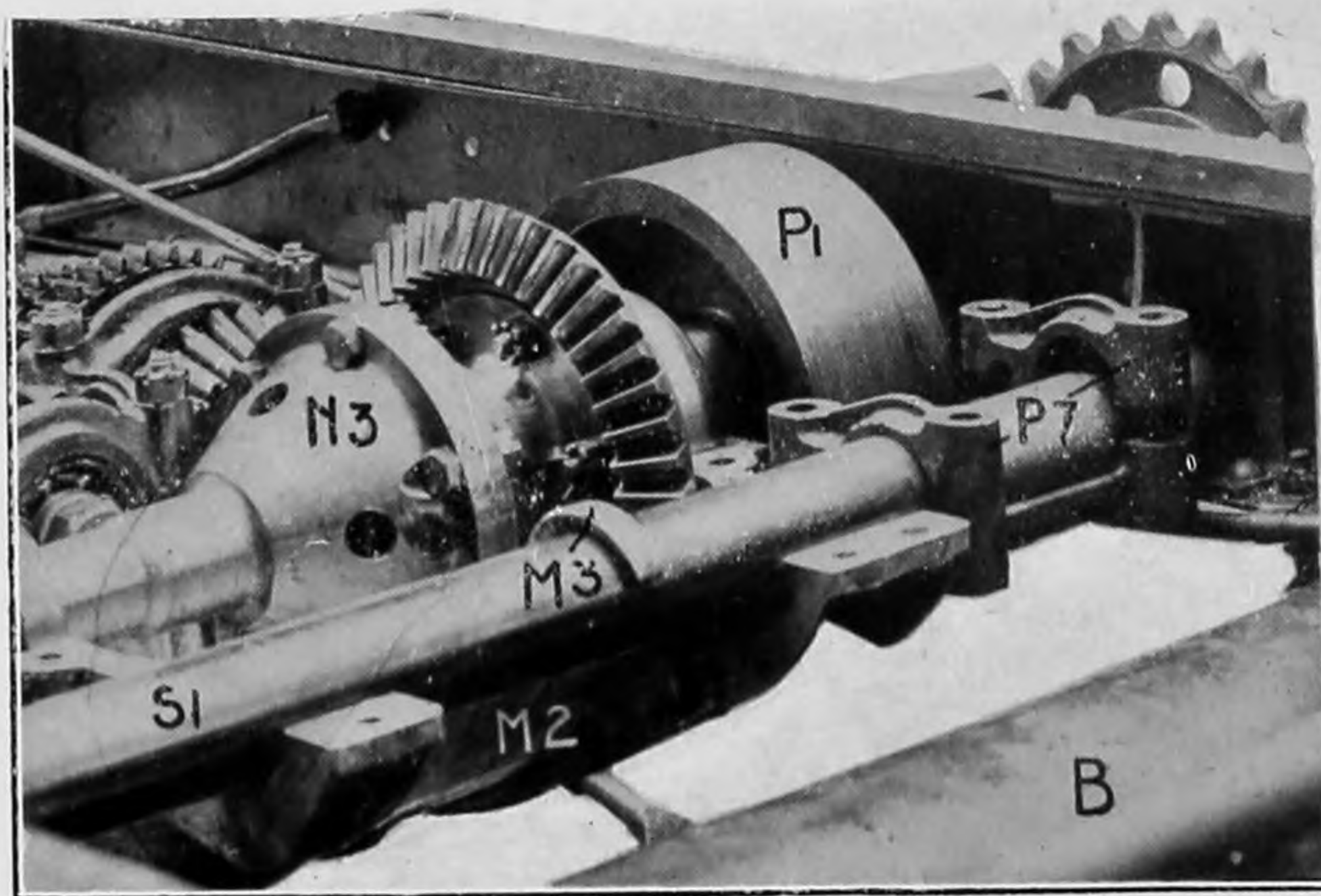


Fig. 19.—On the left is a view showing the rear portion of the gear-box in place, in the De Dietrich Chassis, with the foot-operated brake-band removed from the brake-drum on the counter-shaft. On the right, the differential countershaft is shown separately, and the brake-band is seen lying beneath it.

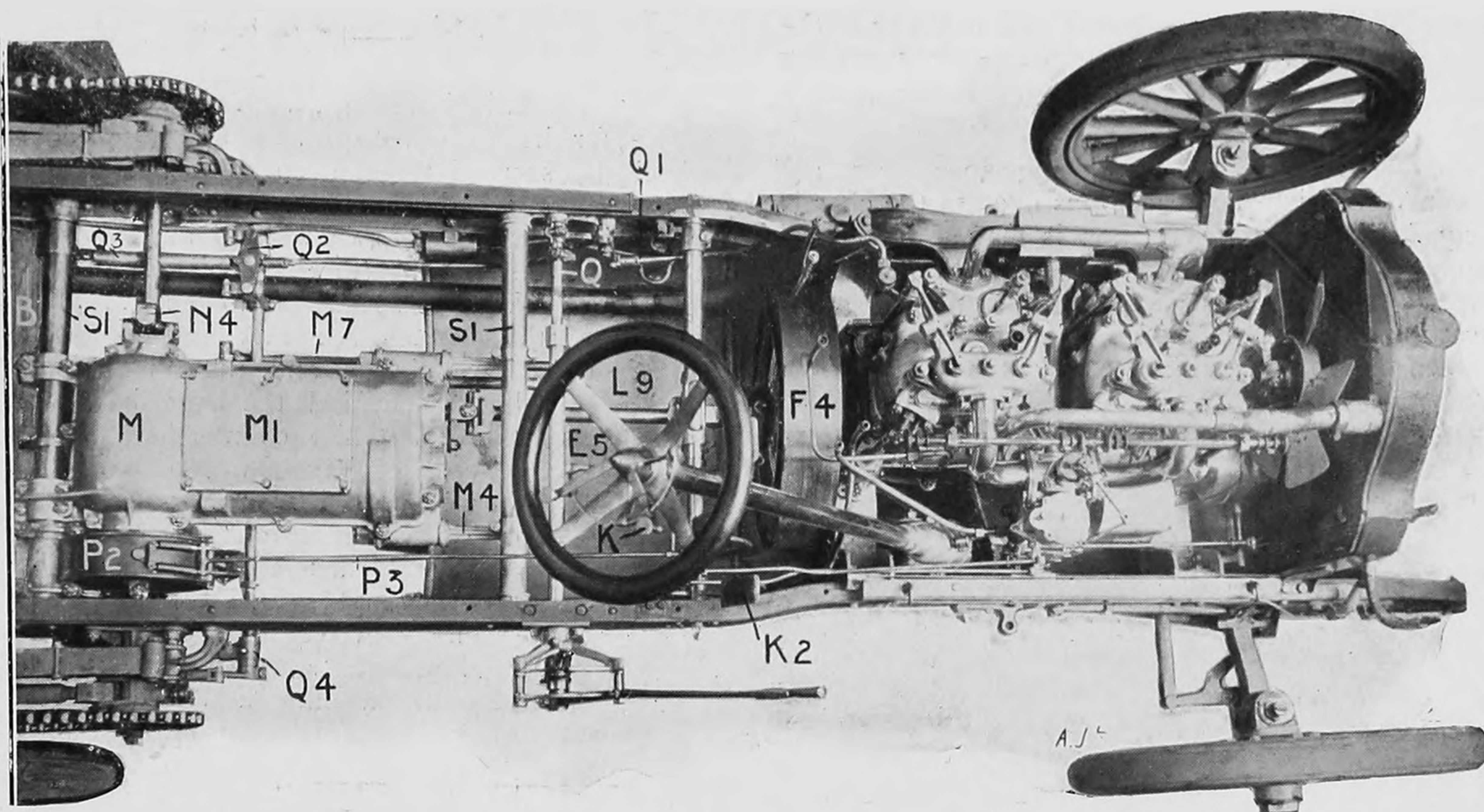


Fig. 20.—View (from above) of the front portion of the 24-h.p. De Dietrich Chassis, with the dashboard removed; showing the complete gear-box in place, and the compensating device for the hub-brakes alongside it.

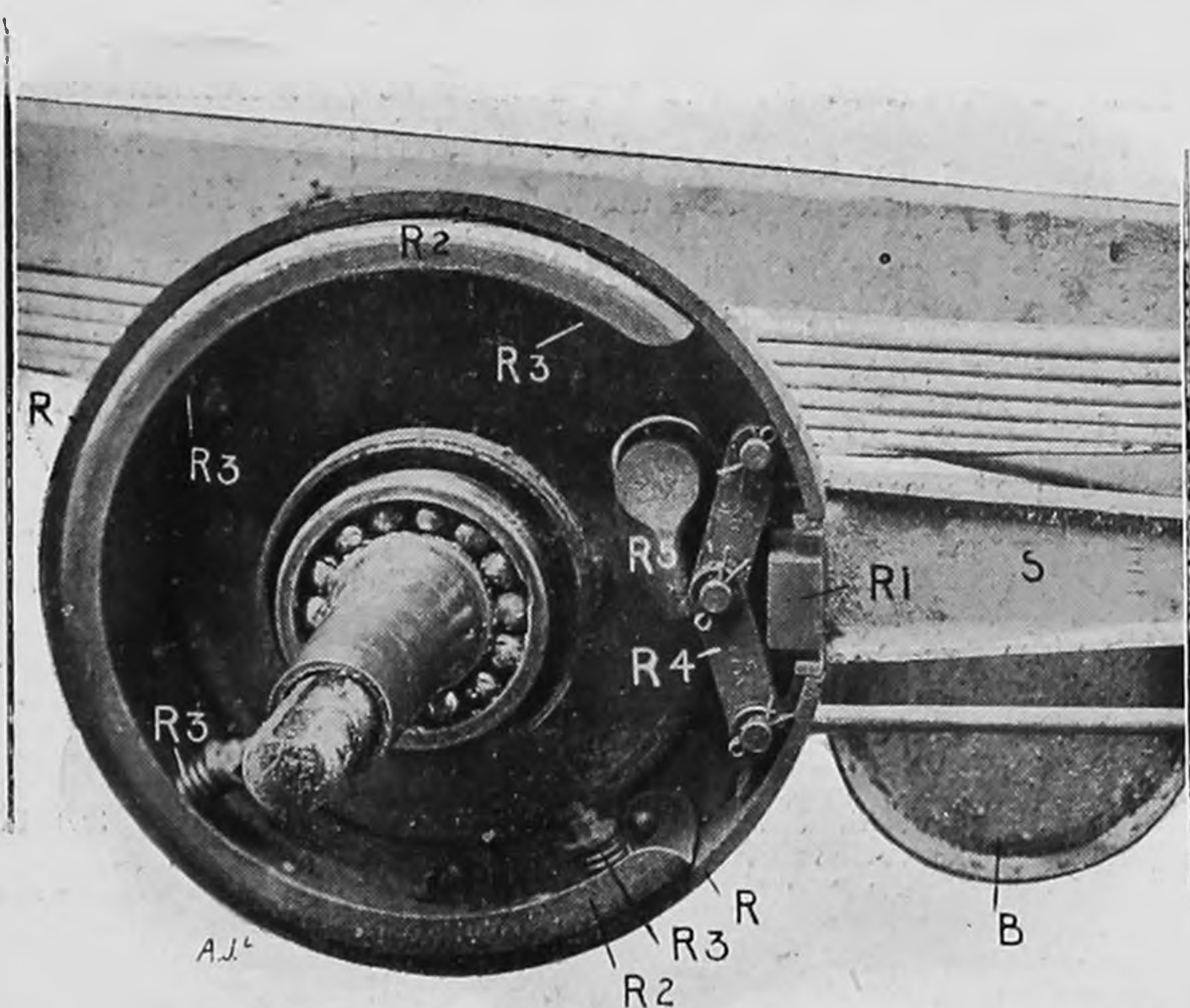


Fig. 21.—Interior view of one of the expanding hub-brakes on the De Dietrich Chassis; the road wheel, together with its brake-drum and chain-wheel, has been taken off.

drum, by the rod, P^3 , and a very powerful toggle mechanism renders the brake extremely effective. No less than three adjustments are available for enabling any wear of the metal friction-faces to be taken up, though as a rule it is only necessary to tighten the nut, P^6 , for this purpose, an operation that can be done by hand without the use of any tool. The other adjustments are for properly centring the shoes about the drum, both when the brake is "off" and also when it is "on." The fulcrum-pin, P^4 , is turned eccentric for this purpose, and thus it is only necessary to partially rotate it about its axis before clamping it down between the caps, P^7 , and the forging that forms the lower portion of these clips. The other adjustment referred to consists of a set-screw (not visible), which is screwed into the under-side of the lower shoe, P^2 , and forms an adjustable stop for it.

The hub brakes, which are operated by the rock-shaft, Q , to which the hand lever is fixed, can be interconnected if desired with the main clutch by means of the rod, Q^1 . They are compensated in their action by means of the swinging link, Q^2 , the ends of which are coupled up with two independent rock-shafts that in turn are connected

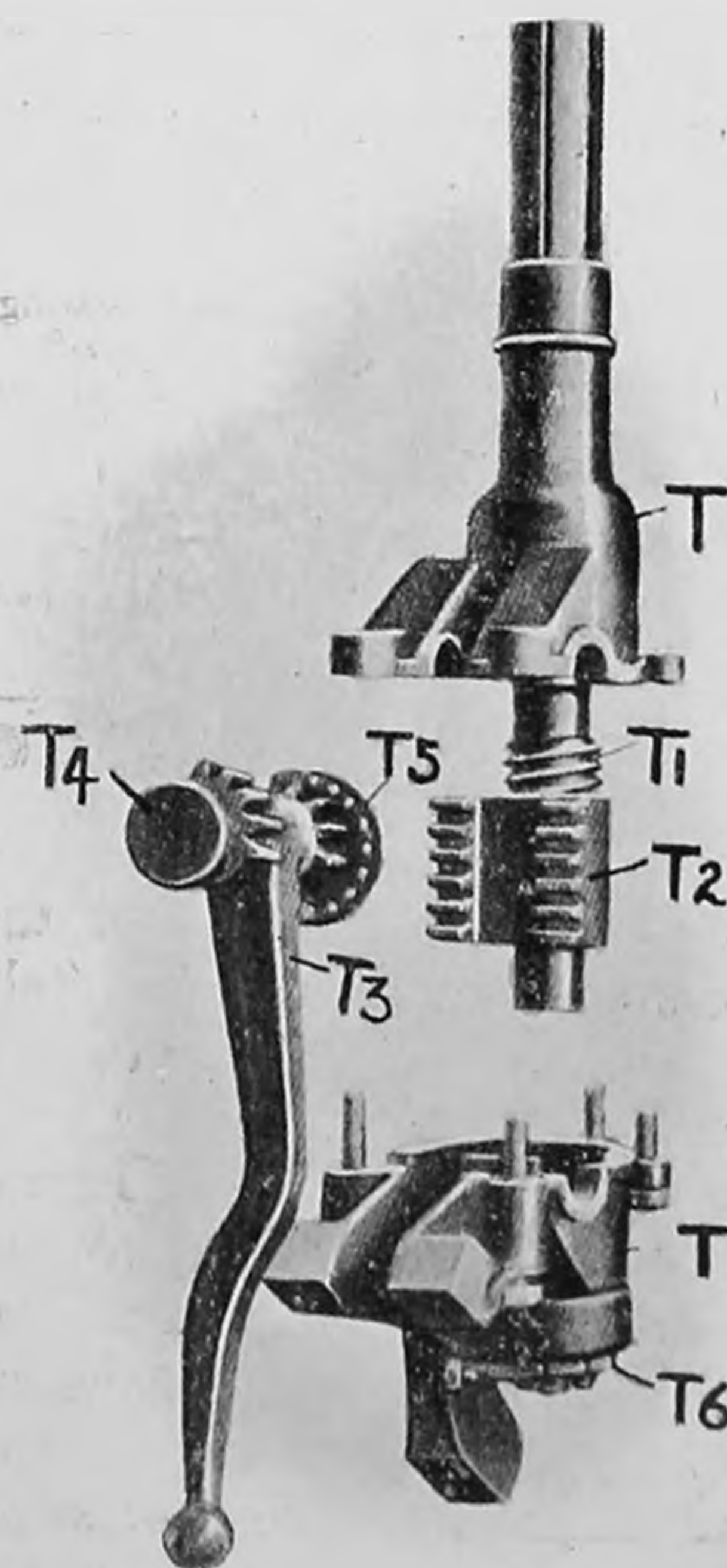


Fig. 23.—View of the De Dietrich steering-gear, dismantled to show the internal construction.

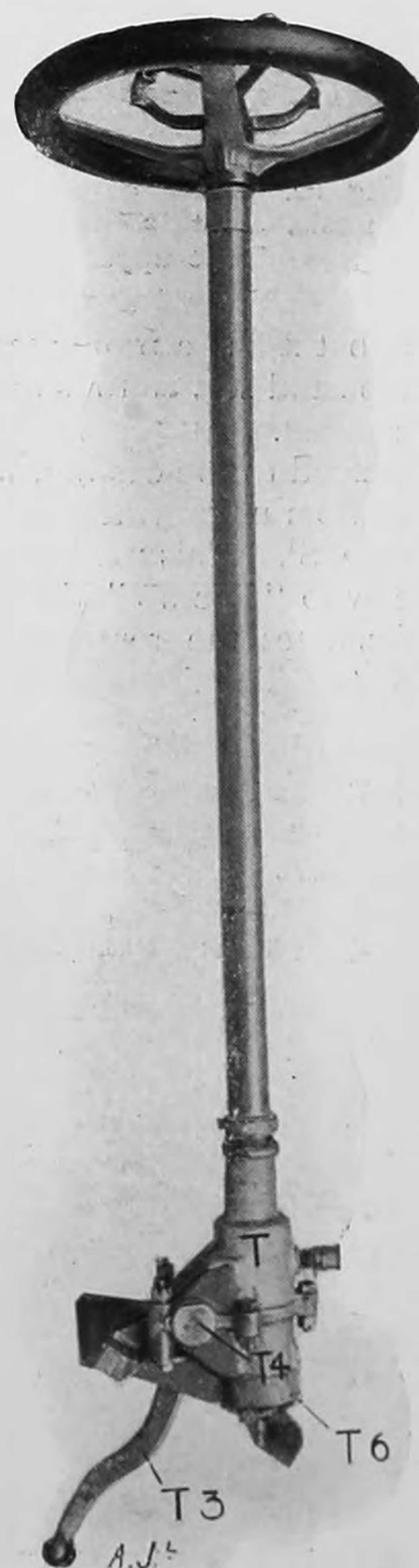


Fig. 22.—The De Dietrich steering-gear, complete with its pillar and wheel.

with the brakes. The spring, Q^3 , is fitted between the compensating link, Q^2 , and the cross tube, S^1 , of the frame, and the two rock-shafts are supported at their ends by the brackets, Q^4 .

In Fig. 21, the construction of the brakes themselves is very clearly shown, and it is worthy of notice that although the internal parts are rendered dust proof, yet access can be obtained to them at any time by merely taking off the road wheel. The rod, Q^5 , is that which passes from the compensated rock-shaft already mentioned, and it is hinged to a lever arm that projects from the same shaft as that to which the cam, R^5 , is fixed.

The expanding brake-ring, R , is normally held up against the stationary circular guide, R^2 , by the four springs, R^3 , and it is prevented from rotating in either direction by the stop-block, R^1 . Connecting the two ends of the rings together are the toggle links, R^4 , which naturally cause the ring to expand when the cam, R^5 , presses against the pin to which both are hinged. The stationary guide, R^2 , not only serves for holding the ring clear of the brake-drum, but it also tends to prevent any excess of oil from finding its way from the axle on to the brake surfaces.

The Steering Gear.

Fig. 23 clearly demonstrates the construction of the steering gear, for in this illustration the two portions of the containing casing, T , have been taken apart, and the triple-threaded worm, T^1 , is shown with the nut, T^2 , only partly screwed over it. Beneath the worm, T^1 , is an adjustable ball-bearing, T^6 , by which all end play can be taken up, and, formed solid with the nut, T^2 , are a pair of toothed racks which mesh with the corresponding segments on either side of the lever-arm, T^3 . This lever-arm, together with its segments, is mounted upon an eccentric pin, T^4 , which not only forms a stationary bearing surface for it, but enables the segments to be brought properly into mesh with the toothed racks. The pin, T^4 , can itself be locked tightly to the casing, T^1 , in any required position, for there are a series of holes in the flange, T^5 , at its inner end, and the locking set-screw can pass through either of them. Owing to the fact that the lever-arm, T^3 , does not overhang, and that any back-lash can be taken up when required, this steering gear is of an unusual strong and durable character.

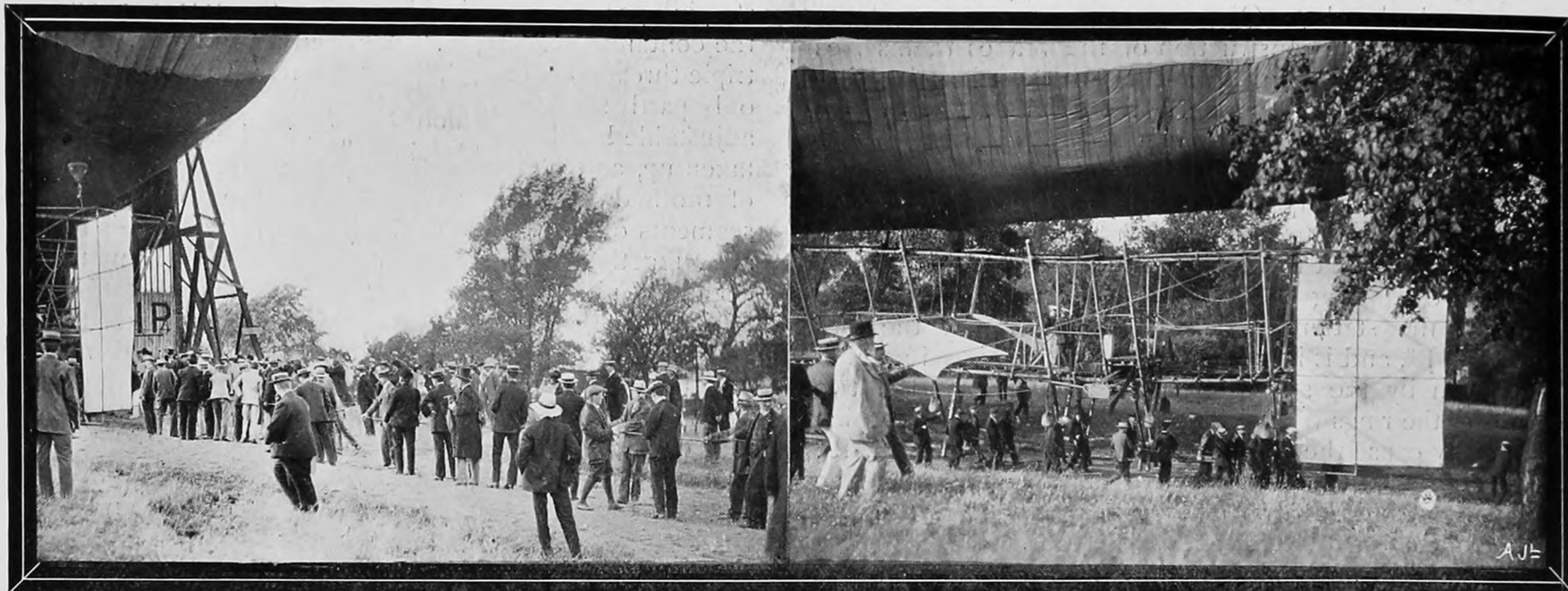
Table of Reference Letters for the 24-h.p. De Dietrich Car Illustrations.

A Petrol tank.	E ⁴ Lever-arm at base of steering-pillar.	J ⁶ Engagement pins on the sliding rod.	N ² Intermediate wheels for reverse gear.
A ¹ Auxiliary tank on dash.	E ⁵ Timing lever.	J ⁷ Lever arms controlling throttle-valve.	N ³ Differential gear.
A ² Main fuel cock.	E ⁶ Magneto	K Throttle lever above wheel.	N ⁴ Universal joints for countershaft.
A ³ Air cock on A ¹ .	E ⁷ Driving-shaft for same.	K ¹ Lever arm at base of steering-pillar.	P Brake-pedal.
A ⁴ Float-feed-chamber.	F Upper crank-chamber casting.	K ² Accelerator pedal.	P ¹ Brake-drum on countershaft.
A ⁵ Agitator.	F ¹ Base casting.	K ³ Spring for same	P ² Brake-shoes.
A ⁶ Spray jet.	F ² Detachable doors.	K ⁴ Rod connecting pedal with throttle mechanism.	P ³ Rod operating brake.
A ⁷ Detachable valve seat and filter.	F ³ Crank-shaft.	K ⁵ Rock-shaft operated by clutch-pedal.	P ⁴ Eccentric fulcrum pin.
A ⁸ Plug beneath jet.	F ⁴ Fan flywheel.	K ⁶ Roller carried on same.	P ⁵ Springs.
A ⁹ Exhaust relief lever.	F ⁵ Ball-thrust-bearing on same.	K ⁷ Spring for rock-shaft.	P ⁶ Adjustment screw.
B Exhaust box	F ⁶ Spur-wheel driving cam-shafts.	K ⁸ Rod connecting rock-shaft with throttle mechanism.	P ⁷ Caps for fulcrum pin.
B ¹ Exhaust pipe fitting.	F ⁷ Intermediate spur-wheel.	L Clutch-pedal.	Q Rock-shaft for hub brakes.
B ² Inspection plugs above exhaust-valves.	F ⁸ Clutch for starting handle.	L ¹ Clutch-spring.	Q ¹ Inter-connecting rod for clutch.
B ³ Push-rods for exhaust-valves.	G Circulating pump.	L ² Lever arm carrying clutch-pedal.	Q ² Compensating link.
B ⁴ Exhaust-cams.	G ¹ Sprocket on same.	L ³ Arms operating clutch.	Q ³ Brake-spring.
B ⁵ Rock-shafts for sliding half compression cams.	G ² Chain-wheel on crank-shaft.	L ⁴ Forked forging engaging thrust collar.	O ⁴ Brackets carrying individual rock-shafts.
B ⁶ Pivoted lever operating same.	G ³ Delivery-pipe to jackets.	L ⁵ Leather-faced clutch-cone.	Q ⁵ Rods actuating brakes.
B ⁷ Pressure-valve for petrol and oil supplies.	G ⁴ Return pipe from jackets.	L ⁶ Hollow clutch-shaft.	R Expanding brake-ring.
C Induction pipe fittings.	G ⁵ Fan.	L ⁷ Driving pins on same.	R ¹ Thrust-block for same.
C ¹ Induction pipes.	G ⁶ Pulley on crank-shaft for same.	L ⁸ Universal joint forging.	R ² Stationary guide-ring.
C ² Pluniers operating inlet-valves.	G ⁷ Belt-tightening spring.	L ⁹ Propeller shaft to gear-box.	R ³ Springs for contracting brake-ring.
C ³ Pivoted levers for ditto.	G ⁸ Drain cocks for jackets.	M Upper half of gear-box.	R ⁴ Toggles for expanding same.
C ⁴ Push-rods for same.	H Pressure tank for lubricating oil.	M ¹ Inspection cover.	R ⁵ Cam arm acting on toggle links.
C ⁵ Induction-valves.	H ¹ Mechanical lubricator on dash.	M ² Lower gear-box casting.	S Adjustable radius rods.
C ⁶ Inlet cams.	H ² Auxiliary hand pump.	M ³ Projecting lug at rear.	S ¹ Transverse tubes supporting gear-box.
D Ignit-ers	H ³ Feed-pipe to engine.	M ⁴ Projecting forgings in front.	S ² Sprag.
D ¹ Rocking contact arms.	H ⁴ Sight feed glass.	M ⁵ First-motion-shaft.	T Casing for steering-gear.
D ² Springs.	H ⁵ Branched feed-pipe.	M ⁶ Sliding rod operating gear.	T ¹ Worm fixed to steering wheel.
D ³ Insulated contact blocks.	H ⁶ Lubricator over central bearing.	M ⁷ Connecting-rod actuating same.	T ² Nut with toothed racks.
D ⁴ Rotary switches for igniters.	H ⁷ Vent cocks in cylinder heads.	M ⁸ Rock-sleeve fixed to gear lever.	T ³ Lever arm with toothed sectors.
D ⁵ Contact blades for same.	J Mixing chamber for carburettor.	N Second-motion-shaft.	T ⁴ Eccentric fulcrum pin.
D ⁶ Switch on dashboard.	J ¹ Main air inlet	N ¹ Thrust-block for same.	T ⁵ Adjustment flange for same.
E Operating rods.	J ² Auxiliary air inlets		T ⁶ Adjustable ball-bearing.
E ¹ Ignition cam-shaft.	J ³ Sliding valve sleeve.		
E ² Rock-shaft for timing gear.	J ⁴ Adjustable stop.		
E ³ Rod operating same.	J ⁵ Pivoted lever operating throttle-valve.		

A Sussex Magistrate gives Sound Advice.—We have often observed that, with the extension of the automobile movement, magistrates would ultimately become automobilists, and prejudice would die out. We have already had occasion to draw attention to the very sensible remarks made by a member of the Guildford Bench on the subject of the unfair prosecution of motorists, and the vindictive convictions with which that Bench is specially associated. And now a Sussex magistrate—Mr. E. M. Crookshank, of East Grinstead—has stepped into the rostrum and made some very sensible observations on the general situation. In Mr. Crookshank's opinion the great motor car industry has come to stay, and with a large number of unemployed about the growth of the new industry is of the highest importance to the country. There is no limit, in his

opinion, to the possibilities of motor vehicles in dealing with agricultural produce and fruit. A great deal was said about going back to the land; but his view was that a great deal would also be learned about the true meaning of going back to the roads. Mr. Crookshank is in favour of the French method of restricting speed at corners, through villages, towns, and dangerous places, and letting people go as they like in the open country; but, as a motorist of experience, he recognises that children are the great terror of the motor car driver; and he thinks it would be a good plan if the teachers in elementary schools were to point out to children generally how dangerous it is to get in front of approaching cars, as they often do, and how difficult it is to estimate the speed at which they are approaching.

THE BARTON-RAWSON AIRSHIP.



Willing helpers hauling out the huge airship from its lair.

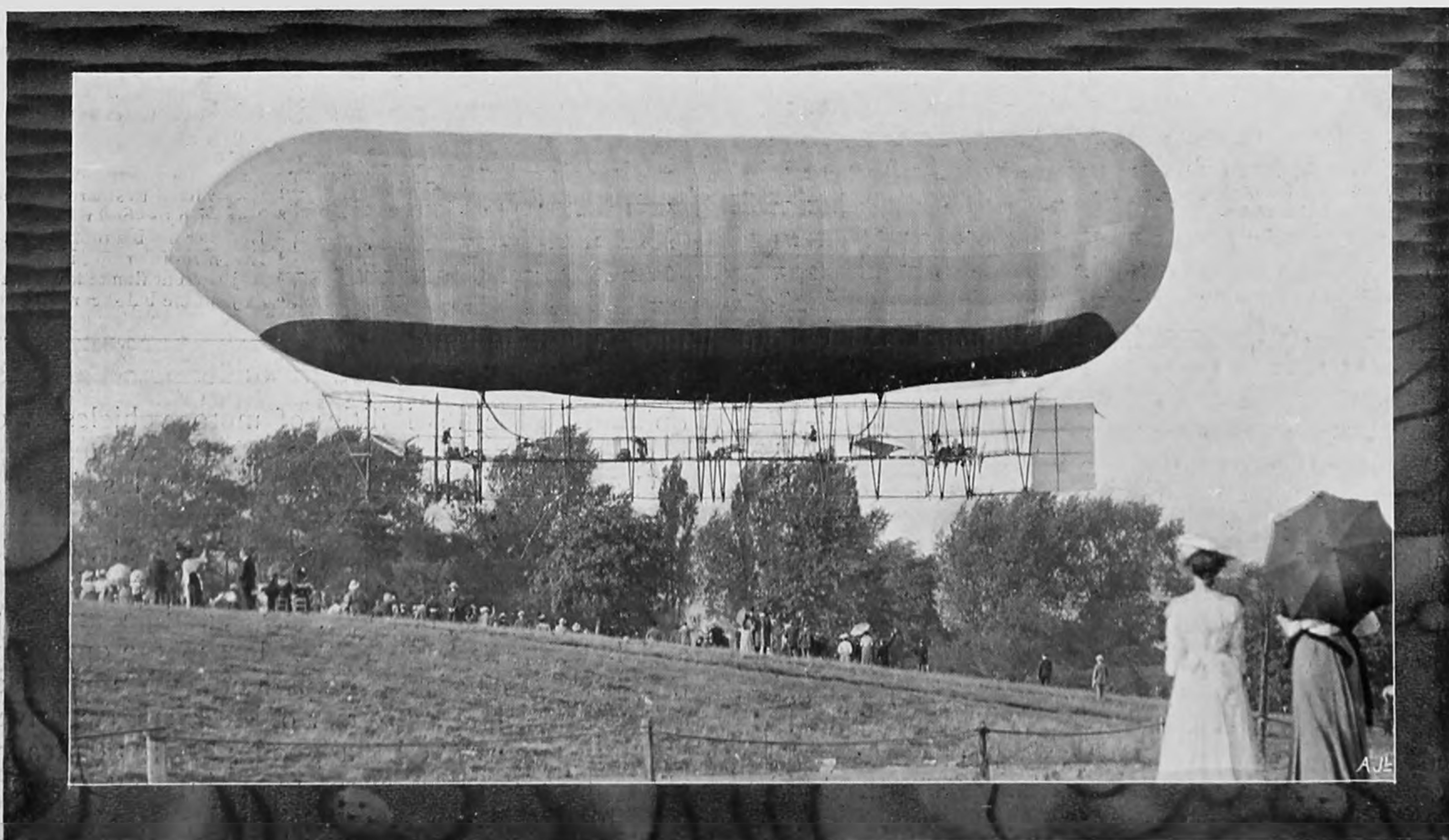
The airship half out of its shed. The helpers steadying the hull during the process of "trimming up."

BARTON-RAWSON AIRSHIP.

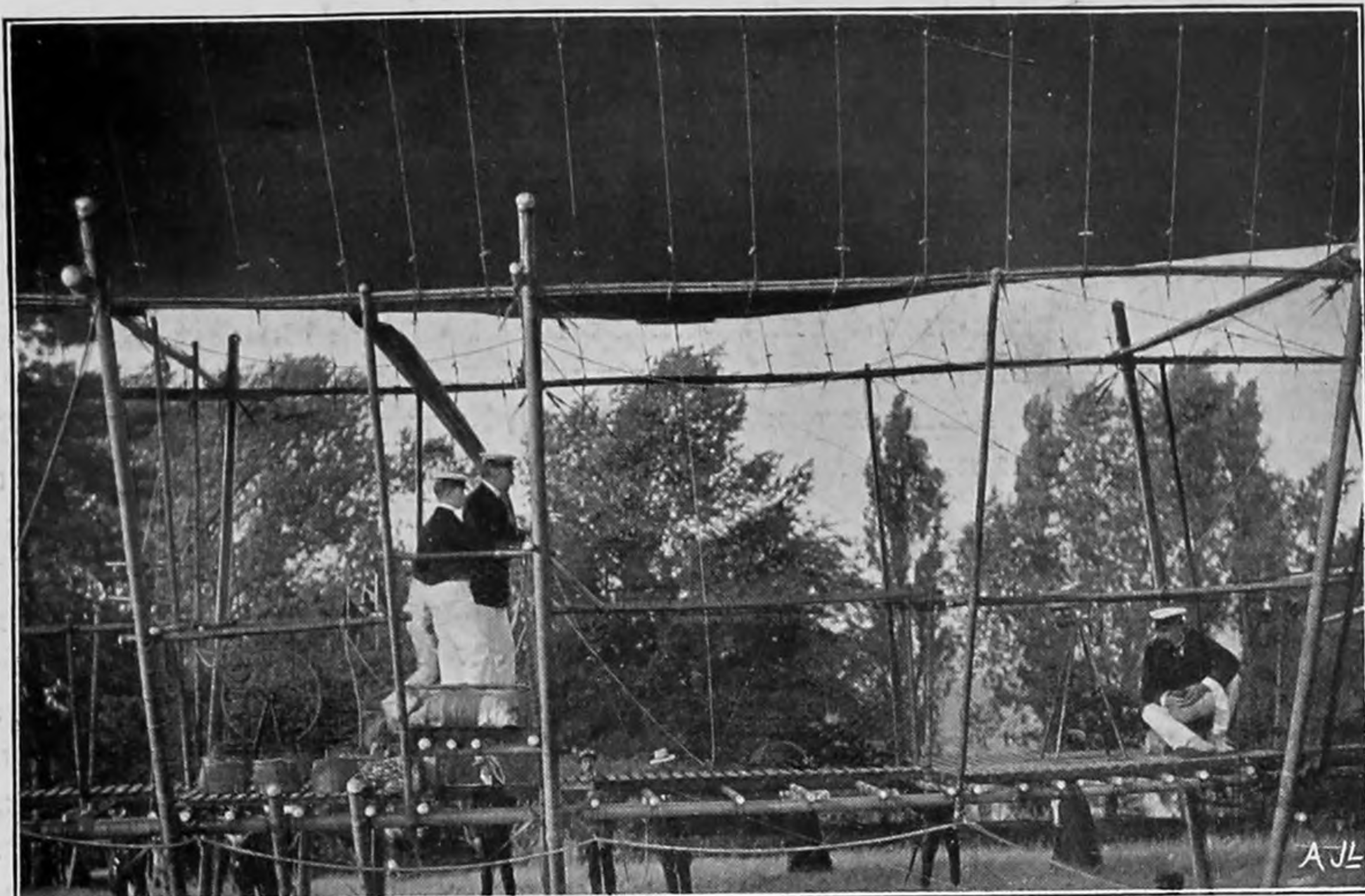
IT was with very keen interest that we journeyed to the Alexandra Palace on Saturday last to attend the first—and, as it has proved, the last—public performance of the Barton-Rawson airship, which, as everyone knows, has been under construction and completion for a very long time. The airship had gone up on the previous Wednesday, making a circuit of the Palace grounds (a sort of "*voyage autour de ma chambre*") and this experiment proved so satisfactory that it was determined to give the great construction a day, or, at any rate, afternoon, out on Saturday.

Since our last description of the Barton airship it has

undergone many modifications. Its general appearance remains the same, but the propellers have been reduced in size to 7 ft. in diameter, and their speed has been increased from 140 to 1,000 revs. per min. The clutches and gear-down between the 50-h.p. motors and the propellers have also been abandoned, and the motors now drive the propellers directly by belts. The aeroplanes, too, which were a feature of the original construction, have on account of weight also been practically abandoned. We say *practically*, since they have been replaced by comparatively insignificant constructions of canvas, which, considering the general size of the air-



BARTON-RAWSON AIRSHIP.—The airship, immediately after its release, clearing the trees while passing into the higher atmosphere.



BARTON-RAWSON AIRSHIP.—Ready for flight. Mr. Rawson is in his place on the right. Dr. Barton (with his son) is at his post to the left.

ship, could not be expected to produce much practical effect.

Originally—when described and illustrated by us on November 14th, 1903—there were three pairs of propellers, each propeller consisting of three 2-bladed fans 12 feet in diameter, and there were to be three motors of 50-h.p. each. The propellers were, moreover, driven at low-speed through 8 to 1 gearing, introduced between the crankshafts and the belt-driving pulleys. Later—when fully dealt with again in our columns on July 9th, 1904—the central motor with its two propellers had been abandoned, but it was only comparatively recently that the small high-speed propellers were substituted. Until lately, also, there were no less than 30 aeroplanes fitted between the deck and the top of the framework, these being arranged in three banks, each bank having two sets of five, mounted “venetian-blind fashion”; each aeroplane had an area of 45 square feet—a very different matter in comparison with the latest small affairs. Another device that was also abandoned, when remodeling the ship, was that for maintaining a level keel, by means of ballast tanks at each end, and a pump for displacing the water from one to the other. As will be remembered, the “hull” is made of bamboo, and its length is 127 feet. The balloon is 180 feet long by 40 feet in diameter, the capacity being about 200,000 cubic feet, and the total weight of the ship is about 14,000 lbs. ($6\frac{1}{4}$ tons); taking the lifting power of pure hydrogen in air as being .074 lbs. per cubic foot, the balloon would be capable of raising a weight of 14,800 lbs.

Among the other notable alterations should be included the modification in the name by which this British “Clipper of the Clouds” is now designated. Formerly it was the Barton airship. Now it is the “Barton-Rawson.”

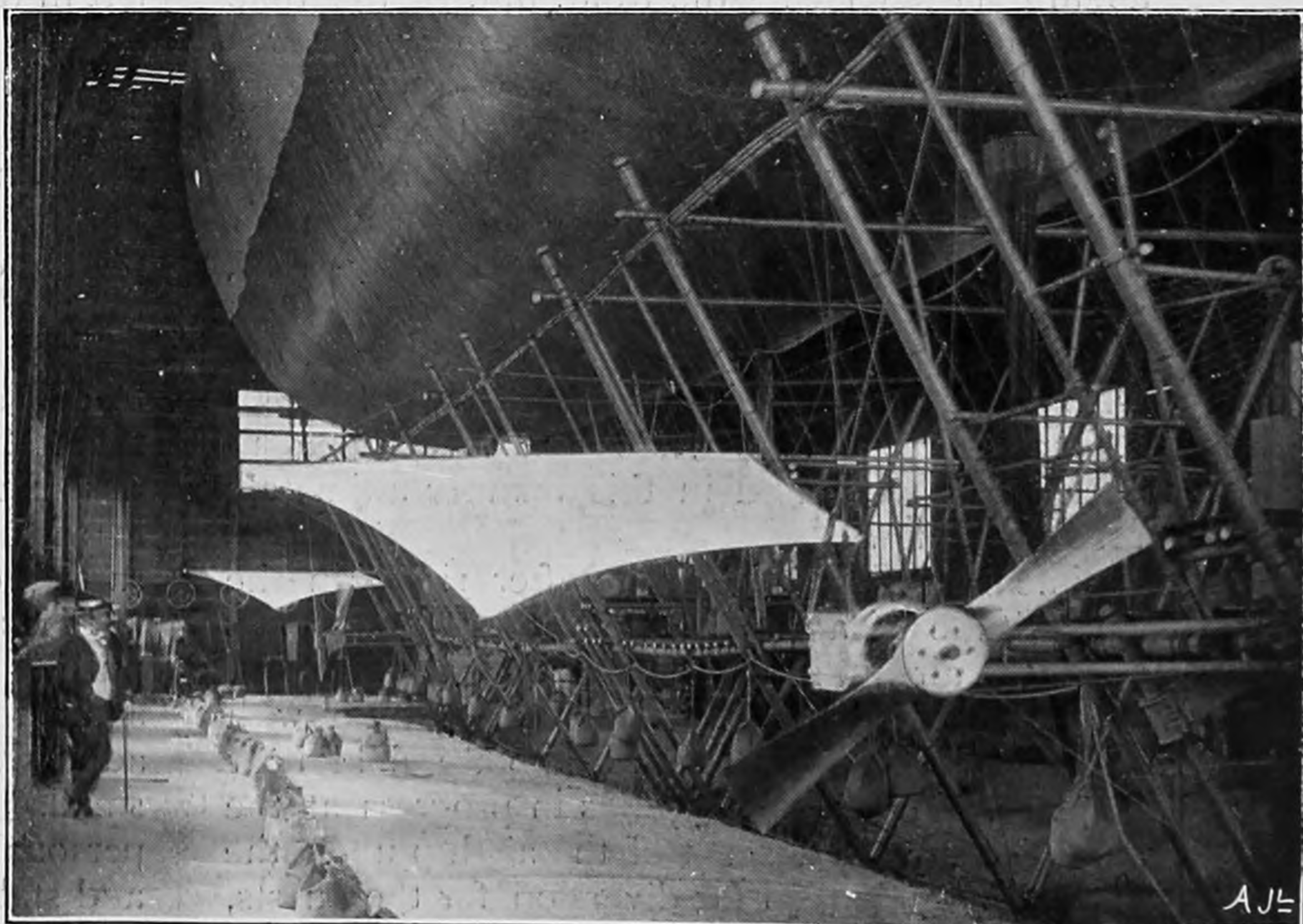
There was a large attendance of spectators at the Alexandra Palace on Saturday, filling the special enclosures that had been arranged for them, and extending not only over the grounds of the

Palace itself but along all the roads and points of vantage in the neighbourhood, most of the available house roofs also being provided with interested contingents. The public appearance of the airship was preceded by a function held inside the shed which has formed its refuge for so long a period. The great gas vessel was of course fully inflated, but getting the airship out into the open was a service of no small difficulty. Strictly speaking, it was too big for the shed, and a trench had been cut in the ground to more or less effectually accommodate the keel. While being pulled outwards by the ropes, the bamboo framework of the hull suffered somewhat in consequence, and while being held steady by numerous enthusiastic spectators and assistants outside, there was a good deal of snapping among the fine cords by which the hull is suspended from the gas-vessel, owing probably to the abnormal strains set up by the oscillations which oc-

curred between the gas-vessel itself and the hull, and by the flexibility of both.

We had an opportunity of inspecting the behaviour of the four new smaller propellers while examining the airship before the start was made. They form a departure in aeronautic propeller construction, being made entirely of light wood. When revolved at normal speed there was an unusually distinct difference between the suction produced on the front side and the draught induced on the opposite side. Apparently they drew in the air from over a very large area, and thus enabled it to find its way to them at a low velocity, whereas, on the other hand, the air was forced astern by them in a compact column that travelled at a fairly high rate of speed in consequence. One of our illustrations well shows their appearance and arrangement, besides enabling—when compared with the very complete set of views given by us formerly—the general nature of the recent modifications in construction to be realised.

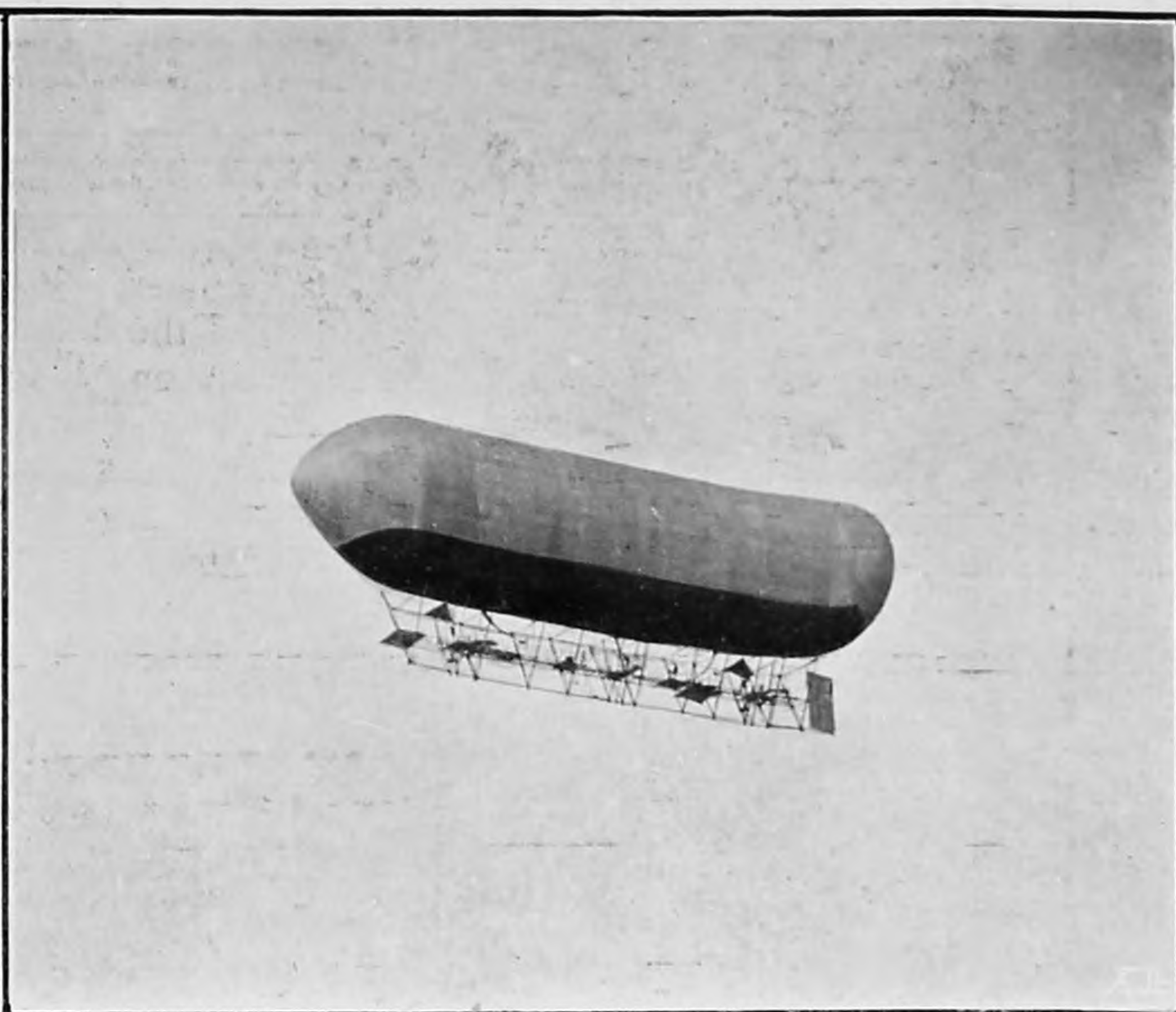
Soon after the appointed hour, the great machine was led out of the shed and held by a regular army of



BARTON-RAWSON AIRSHIP.—The ship in its shed, showing one of the new propellers and one of the new shaped aeroplanes.



Dr. Barton, Mrs. and Miss Barton in the balloon shed before the ascent.



The balloon in full, free flight.

BARTON-RAWSON AIRSHIP.

assistants, mostly volunteers from among the spectators, and about an hour later she was let go, and soared immediately, and with a certain stateliness, to a considerable elevation. The car was occupied by Mr. Barton, who was on what may be called the main bridge forward (where he had the bow engine under his control), by Mr. F. L. Rawson, who was in command, by Mr. A. Gaudron, and by Mr. Henry Spencer, who manipulated the stern motor. As soon as the vessel commenced to rise, Dr. Barton started the forward motor, the two front propellers, of course, revolving with it, and subsequently Mr. Spencer succeeded in getting his machine in action. There was a distinct breeze blowing, about the force of which a good deal of difference of opinion has prevailed.

The airship started facing the wind, but, by the time she had reached an altitude of about 500 feet, it was evident that she could make no headway, or even hold her own, against it. She was then steered round, and ran before it for some little time, while still rising, before being brought round once more to fight against it. For a time she endeavoured to return to the starting-point, but it was evident that the wind was too much for her, and soon her pilot, abandoning the contest, allowed her gradually to swing round, and she drifted away towards the east, more or less broadside on, attempting to proceed across the wind, and in this manner ultimately disappeared from view.

At one time descending, but soon after rising in the air till an altitude of about 2,400 feet or thereabouts was reached, the airship gradually approached Romford, in Essex, where she was ultimately brought down with great success by M. Gaudron in a potato field near Heaton Grange. A garden party was in progress at the Grange, and the sudden descent of the airship upon the scene provided an unlooked for diversion for the guests, of which they were not slow to take advantage. The airship was quickly surrounded, and Dr. Barton, who

was in the bow, was immediately the centre of an admiring throng of ladies, who heartily and even enthusiastically showered upon him feminine congratulations on his plucky and adventurous achievement. And that was the cause of the trouble. Both Mr. Rawson and M. Gaudron were conscious that they too had bravely "adventured" as much as Dr. Barton, and forward they moved to join him at the bow and to share in the congratulations. The balance of the airship was upset. The rear portion began to rise up, and the gas tending to accumulate at the highest portion of the gas-vessel increased the mischief. In fact, the airship was proceeding to stand upon her head, and in this way to eject Dr. Barton and Messrs. Rawson and Gaudron into the centre of their admirers, Mr. Spencer alone being left in the stern, and in danger of soaring away with the liberated airship into the blue beyond. Without wasting an instant, Mr. Spencer, with great presence of mind, grasped the "ripping-gear," and tore up the gas-vessel, the hydrogen issuing from the rent balloon with a roar. Down came the airship, the gas-vessel, of course, completely wrecked, the frame a good deal damaged, but the motors alone escaping without injury. The adventurous experimenters ultimately extricated themselves from the *débris*, and were so much elated at finding themselves safe and sound that they hardly felt the destruction of their airship. In fact, it is satisfactory to learn that Dr. Barton did not intend using the airship further even had she completely escaped injury.

It is plain to everyone that the airship's power of propulsion was wholly inadequate to enable it to proceed against even a moderate breeze, and Dr. Barton himself admits that the ship was too large, and the rudder too small. Of course a good deal has probably been learned personally by the experimenters on questions of balance and stability, but it cannot be maintained that anything in the nature of a distinct step forward in the campaign for conquering the atmosphere has been accomplished.

BRITISH INTERNATIONAL CUP FOR MOTOR BOATS—ELIMINATING TRIALS.

THE first event of importance next week will be the Eliminating Race to determine who shall represent Great Britain in the British International Race for motor boats, to be held in Arcachon Bay, on September 11th. Last year these eliminating races preceded the race itself, which was held on the same day; but on this occasion, since France now holds the cup, it has been necessary to hold the trials separately, and the Motor Yacht Club—who now control all A.C.G.B.I. marine events—have incorporated this race into a

race is due to start at half-past twelve, so that those who intend to witness it will be able to cross over from Portsmouth to Ryde in the morning. From Ryde to Sea View is only about half an hour's walk, and there is also a motor bus service between the two places.

Five entries have been received for the race, viz. :—

Lieut. Mansfield Cumming's "Competitor," which is the old Napier Minor hull fitted with a Siddeley engine.

Lord Howard de Walden's "Napier," which is a feather-weight boat, the hull being constructed on the Saunders'

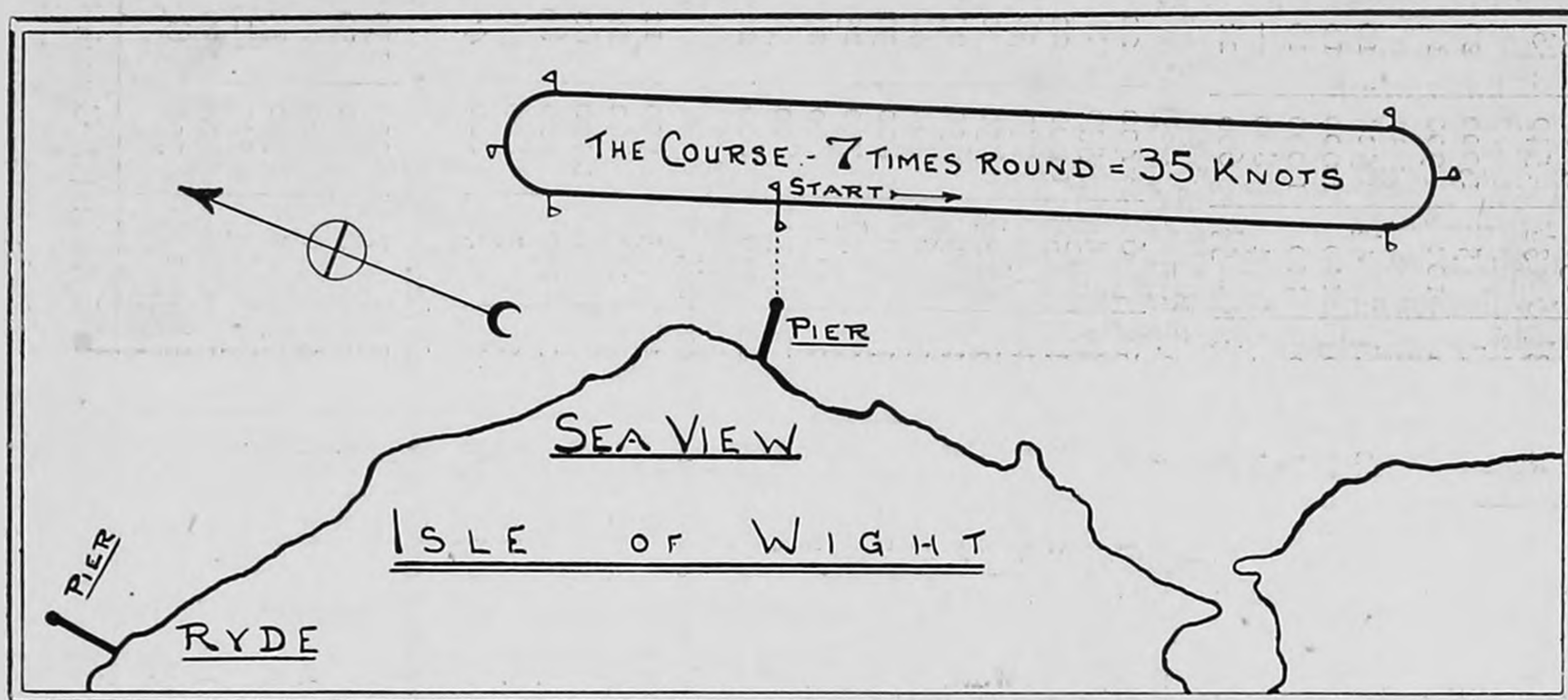
system (as is that of "Competitor"), the engine is of the standard Napier type, developing about 80-h.p. A description of this craft appeared in our issue of March 18th this year.

Mr. Lionel de Rothschild and Mr. John Scott-Montagu have entered "Napier II." in place of the special boat which is being constructed for them, but is not yet ready.

"Brooke I.," which is entered by Mr. Mawdsley Brooke and Captain Corbet, had one of the six cylinders, which have a 10-inch bore and 8-inch stroke, damaged by a

broken valve during a trial run last Monday. We understand that the entrants have petitioned the club for a postponement of the event, failing which, for permission to meet the winner at a later date, and, if successful, to be entitled to be one of Great Britain's representatives.

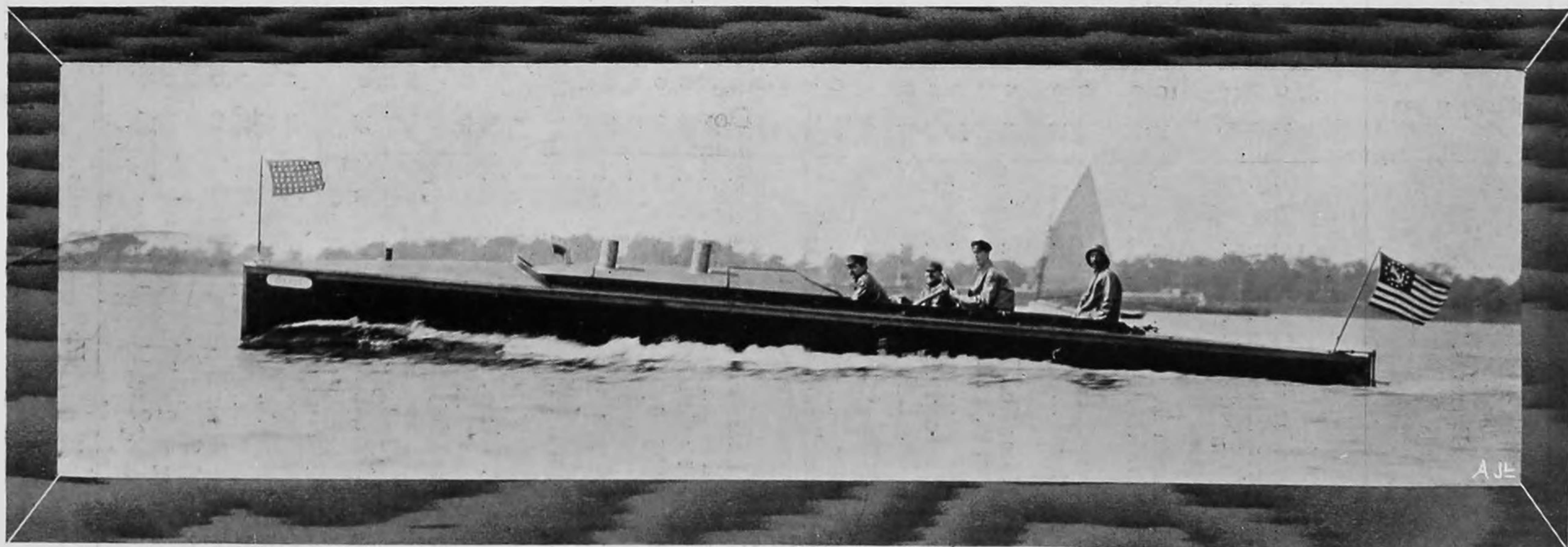
The only other entrant is Mr. J. E. Hutton, with his "Hutton II.," which is another craft fitted with a six-cylinder engine, the bore and stroke being $7\frac{1}{4}$ ins. and $6\frac{1}{2}$ ins. respectively.



BRITISH INTERNATIONAL CUP.—Eliminating Trial Course.

regatta, to be held off Sea View on Tuesday next, August 1st.

Three other events are down on the programme for the same day, viz., a cruiser handicap and two racer classes, one for boats below 25 ft. and the other for boats between 25 and 30 ft. in length. Up to the time of going to press, we have not heard that these events are likely to prove extremely exciting, but as they are not even yet closed it is possible that a goodly number may actually turn up at the start. The actual eliminating



INTERNATIONAL CUP FOR MOTOR BOATS.—America has entered for this cup, presented by Sir Alfred Harmsworth, which this year will be run off at Arcachon on September 11th. The boat shown above is Mr. E. R. Thomas's Dixie, of New York, which is one of the boats entered on behalf of America to compete.

MOTOR YACHT CLUB'S RELIABILITY TRIALS, 1905.—ENTRIES.

Number.	Entrants.	Overall Length.		Beam.	Builder of Hull.	Engine.					Tank Capacity.	Type of Propeller and Reverse.	Diameter.	Price.	Number.	
						Make.	H.P.	Number of Cylinders.	Bore.	Stroke.						Revs.
CLASS II.—Yachts' Launches (not exceeding 20 feet overall).																
† 1	Groves, Guttridge and Co. ...	ft.	in.	ft.	in.	Groves-Guttridge ...	Dean and Burden ...	6	2	8½	115	800	gals.	Gaine's reversible ...	ins.	£
† 2	J. I. Thornycroft and Co., Ltd. ...	20	0	5	6	Teddington C. and L. Co. ...	Thornycroft ...	6	1	4½	5	1,000	15	Thornycroft reversible ...	14	200
† 3	Ashton and Kilner ...	19	11	5	0	Ashton and Kilner ...	Chard (K) ...	5	2	3½	4½	650	—	Gaine's reversible ...	13	119
CLASS III.—Yachts' Launches (not exceeding 25 feet overall).																
† 4	A. G. Fentiman ...	25	0	6	0	Hart-Harden ...	Blake ...	30	4	118	130	1,000	50	Solid, Blake gear ...	19	—*
† 5	Simpson, Strickland, and Co., Ltd. ...	24	10½	5	8	Simpson-Strickland ...	Simpson-Strickland (S) ...	11	4	2½, 3½, 4½, 6,	3½	540	S	Solid (S) ...	18½	385
† 6	J. I. Thornycroft and Co., Ltd. ...	25	0	5	6	Burgoine... ..	Thornycroft ...	12	2	4½	5	1,000	20	Solid, epicyclic gear ...	15	311
† 7	P. C. Crossley ...	25	0	5	2½	Nathan, Shepherd, and Crossley ...	Blake ..	12	4	90	102	900	12	Solid, Blake gear ...	17	275*
† 8	Mitcham Motor Co., Ltd. ...	22	0	—	—	—	F. and B. (two cycle) ...	7	2	4½	4½	525	10	Solid, F. and B. gear... ..	19½	230
† 9	De Dion Bouton, Ltd. ...	25	0	5	3	Tom Taylor ...	De Dion ...	6	1	90	110	1,000	16	Gaine's reversible ...	14	175
† 10	J. W. Stocks ...	25	0	5	3	Tom Taylor ...	De Dion ...	6	1	90	110	1,000	16	Meisner reversible ...	14	175
† 11	Scott, Stirling, and Co., Ltd. ...	25	0	5	3	Scott-Stirling ...	Scott-Stirling ...	16	4	4	4	800	—	Solid, reversing gear ...	—	—
† 12	Vosper and Co., Ltd. ...	24	10	5	2	Vosper ...	Vosper (K) ...	14	4	5½	5½	600	22	Solid, reversing gear ...	18	340
CLASS IV.—Yachts' Launches (not exceeding 30 feet overall).																
† 13	Stuart Forster ...	30	0	6	0	Maynards ...	Lozier (two cycle) ...	10	2	5	6	400	20	Lozier reversible ...	24	350*
† 14	Simpson, Strickland, and Co., Ltd. ...	28	1	8	0	Simpson-Strickland ...	Simpson-Strickland (S) ...	16	2	4, 8	5	530	S	Solid (S) ...	24	561
† 15	J. I. Thornycroft and Co., Ltd. ...	30	0	6	0	Thornycroft ...	Thornycroft ...	24	4	4½	5	1,000	20	Solid, friction reverse ...	20	500
† 16	J. M. Gorham ...	30	0	5	9	J. A. Smith ...	Daimler ...	50	4	134	150	750	36 P	Solid, Blake gear ...	21	1,200*
† 17	Maudslay Motor Co., Ltd. ...	30	0	6	0	Lallow ...	Maudslay ...	40	6	5	3½	850	30	Solid, Maudslay gear... ..	22	—
† 18	E. A. Chard ...	26	0	6	0	Ashton and Kilner ...	Chard ...	14	4	4	5	650	25	Solid, reversing gear ...	22	250
† 19	Parsons Motor Co., Ltd. ...	28	0	5	11	White Bros. ...	Parsons (K) ...	14	2	4½	6	800	40	Gaine's reversible ...	18	325
† 20	Viscount Royston ...	30	0	5	9	Summers and Payne ...	Napier... ..	24	4	4	6	800	30 P	Solid, Napier gear ...	18	750
† 21	Perman and Co., Ltd. ...	30	0	5	9	Dickson and Halliday ...	Iris ...	24	4	4¾	4¾	750	25	Solid, Iris gear ...	18	450
† 22	Perman and Co., Ltd. ...	30	0	6	0	White Bros. ...	Delahaye ...	24	4	100	140	800	24	Solid, Delahaye gear... ..	18	365
† 23	Fiat Motors, Ltd. ...	30	0	6	3	Woodnutt ...	F.I.A.T. ...	40	4	4'92	5'9	800	30 P	Solid, epicyclic gear ...	19	—
† 24	C. S. Rolls and Co. ...	27	11	5	3	Picker ...	Mecanique ...	30	4	130	140	800	24	Solid, reversing gear ...	22	675
CLASS VI.—Unrestricted Vessels of any description exceeding 25 feet overall.																
† 25	Capt. R. T. Dixon, R.E. ...	30	0	5	0	Dixon and Hutchinson... ..	Dixon-Hutchinson ...	20	4	4	5	900	12	Solid, patent gear ...	—	—*
† 26	J. Percy Dean ...	30	0	5	0	Groves-Guttridge ...	Dean and Burden ...	12	4	8½	115	800	20	Gaine's reversible ...	15	350*
† 27	Lord Howard de Walden ...	39	1½	4	9¾	Saunders (A) ...	Napier... ..	80	4	6½	6	1,100	60	Solid, Napier gear ...	24	1,500*
† 28	J. M. Gorham and E. Manville ...	40	0	5	10	Cannstatt-Daimler ...	Daimler ...	28	4	110	150	720	80 P	Solid, reversing gear ...	20	650*
† 29	A. B. Collis, Ltd. ...	26	0	6	3	Collis ...	Collis ...	12	2	4½	5	800	6	Collis's reversible ...	17	200
† 30	Wolseley Tool and Motor Car Co., Ltd. ...	35	0	6	2	Summers and Payne ...	Wolseley ...	18	4	4	4	800	44 P	Solid, Hele-Shaw gear ...	—	—
CLASS VII.—Sea-going Motor Yachts with permanent cabin accommodation.																
† 31	J. H. S. Phillips ..	42	0	8	7	Vosper ...	Vosper (K) ...	16	4	7	7	350	150	Stephen's reversible ...	32	1,200
† 32	Woodnutt and Co. ...	35	0	7	8	Woodnutt ...	Standard (K) ...	12	2	6	8	400	50	Solid, epicyclic reverse ...	18	575
† 33	S. F. Edge ...	45	0	9	6	F. Miller... ..	Napier... ..	24	4	4	6	800	400	Solid, Napier gear ...	18	1,275
† 34	Kensington Motor Boat Co., Ltd. ...	40	0	8	0	Cole ...	Kensington ...	20	4	4½	5	700	75 P	Solid, reversing gear ...	24	750
† 35	Perman and Co. ...	40	0	8	8	Goedkoop (B) ...	Goedkoop (K) ...	12'7	1	196	264	325	80Pu	Solid, Kromhout gear ...	27'6	600
† 36	J. I. Thornycroft and Co., Ltd. ...	55	0	9	0	Thornycroft (C) ...	Thornycroft (K) ...	75	4	8	8	800	250 P	Solid, epicyclic reverse ...	30	2,700
† 37	J. I. Thornycroft and Co., Ltd. ...	60	0	10	0	Thornycroft (C)... ..	Thornycroft (G) ...	—	4	8½	11	300	G	Solid, epicyclic reverse ...	36	3,000

Hulls.—All boats are carvel built where not otherwise stated. (A) Saunders system ; (B) Carvel built of steel ; (C) Clench built of steel.

Engines.—All internal combustion engines work on the four-stroke cycle where not otherwise stated.

Fuel.—Petrol where not otherwise stated. (K) Kerosene ; (G) Producer gas ; (S) Steam ; (P) Pressure feed ; (Pu) Pump.

* Private boat.

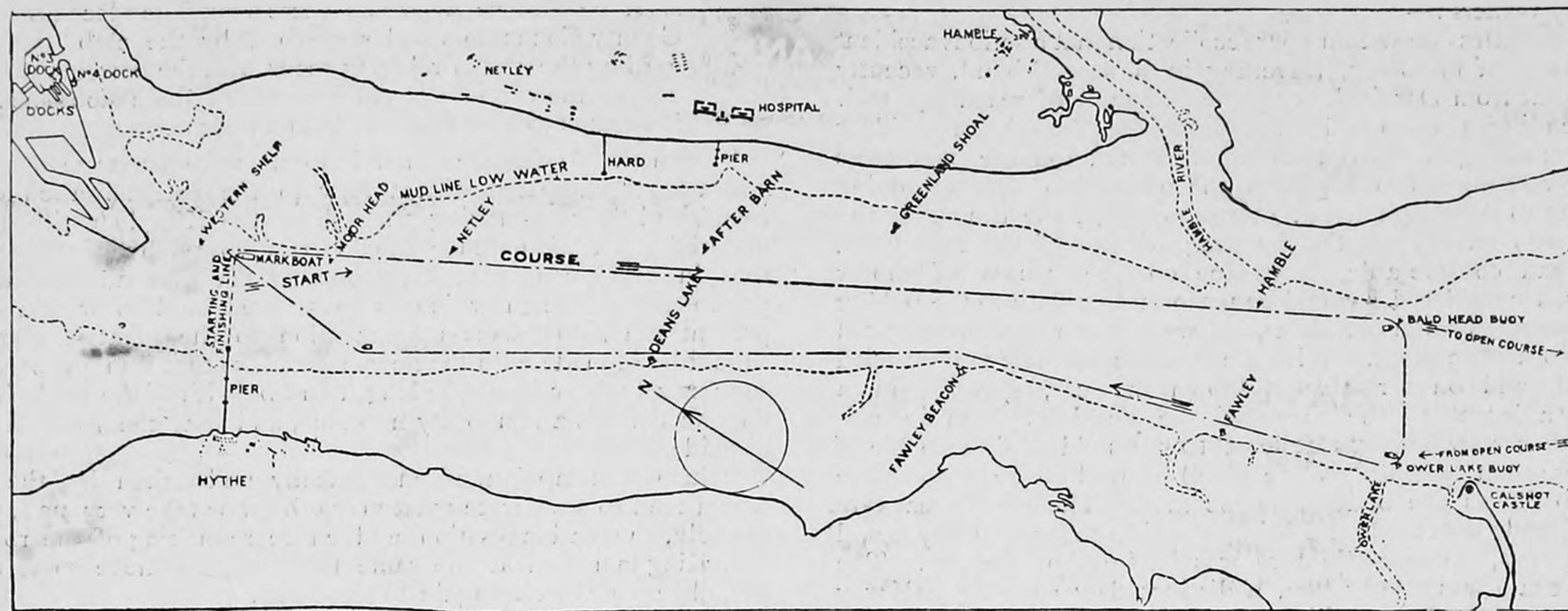
† Sheltered course.

‡ Open course.

MOTOR BOAT RELIABILITY TRIALS.

WE publish this week, on the opposite page, a complete table of entries for the motor boat reliability trials which take place on Wednesday and Thursday next week (August 2nd and 3rd). There are two courses, either of

signal will be given from the dockside, and not until then may competitors start their engines. Ten minutes later the signal to go will be given, and boats will then proceed to the starting line, as on the previous day, and

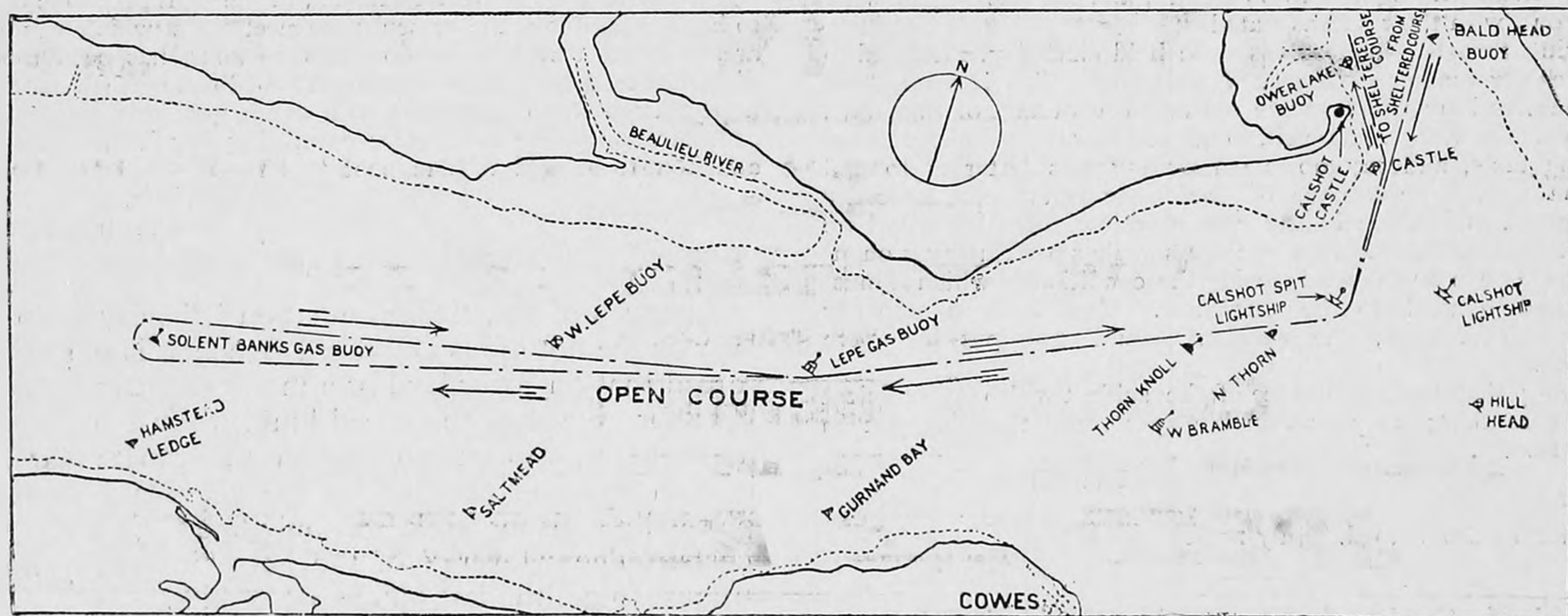


MOTOR YACHT CLUB RELIABILITY TRIALS FOR MOTOR BOATS, Aug. 2-3.—Chart of sheltered course.

which may be followed by the competing boats irrespective of class. One is an open course, which, so to speak, qualifies the competitor as a sea-going craft, and the other is a sheltered course, the same as that followed last year.

wait there for the 8 a.m. starting gun, when they again make a flying start.

The only difference between the first and second day's start is that the hon. observers' duties, as the recording angels, commence, on the second day,



MOTOR YACHT CLUB RELIABILITY TRIALS FOR MOTOR BOATS, Aug. 2-3.—Chart of open course.

The open course, of which—as also of the sheltered course—we give a chart, is only covered once on each day. Boats entered for the open course include the Solent Banks, or open section, in the first round, and afterwards continue their ten hours' trial over the sheltered course only. Competitors will, on the first day, be allowed to leave the dock when ready, and a flying start will be made, over a line between Hythe Pier and the mark boat, at 8 a.m.—all boats being considered to start simultaneously at the firing of the second gun. On the second day no one may go on board before 7 a.m. A preparatory

signal is given from the dock wall. On the first day it is the actual starting gun at 8 a.m. which indicates that the trial has commenced.

The length of the sheltered course is 9.53 knots (10.9 statute miles), and the total length of the open course including the sheltered course is 25.6 knots (29.4 miles).

Boats continue running until 6 p.m. each evening.

The Motor Yacht Club's burgee—which will distinguish all mark boats—consists of a red three-bladed propeller on a white centre section, the remainder of the flag being blue.

CORRESPONDENCE.

* * *The name and address of the writer (not necessarily for publication) MUST in all cases accompany letters intended for insertion, or containing queries.*

MOTOR "ACCIDENTS."

To the Editor of THE AUTOMOTOR JOURNAL.

SIR,—In view of the numerous accidents to motor cars, more especially in recent months, the following may be of interest to your many readers:—

It will doubtless be within your recollection that a serious accident befel a party of motorists, travelling in a second-hand, recently acquired, car from Dartford, with the intention of reaching Deal. On descending a steep hill on approaching Strood, an accident occurred resulting in the overturning of the car, and the passengers being severely injured, one of them, the owner (not driving), dying on the way to the hospital. It was reported at the time that the accident was caused by the bursting of one of the rear tyres. Having had considerable experience on the causes of motor accidents, I considered I would be performing a duty to the public, and to automobilists in particular, if I went down and investigated the cause of the accident. With the least possible delay I proceeded to Strood, and on arrival was shown the car, garaged in a farmyard adjacent to the scene of the accident. On investigation, the car (which was at least 10 years old, and incapable of doing more than 15 miles on the level) proved to be a complete wreck, so far as the body was concerned. The off-side rear tyre was completely detached, and being of solid rubber naturally could not have burst, the near-side tyre was half out of the rim. The near-side chain was also broken, a distinct flaw showing half-way through one of the links, which were of the old block type, the driving sprockets on each side being considerably out of alignment. Chain guards were also fitted around the small sprockets. My theory of the accident, the feasibility of which will doubtless appeal to your expert readers, is that in descending the hill the car was allowed to overrun the engine, and in so doing attained an unusual speed, the chains being out of line and considerably worn, one of them mounted the small sprocket, and, getting entangled in the chain guard, locked the differential on that side, thus doubling the speed of the opposite side, causing the car to swerve, the front of the car coming into violent contact with the rather high kerb of the pavement, stood on its head, so to speak, and turned on its side, the steering-wheel striking a lamp-post there, and the passengers were thrown out, with the result as stated.

Hearing that the inquest was to be held that day, I decided to attend and volunteer evidence, if necessary. The inquest stood adjourned, and my services were not taken advantage of that day; other evidence was given which, to my mind, was not in accordance with the facts, and my object in writing this letter is to call attention to the importance of these accidents being officially investigated, as is done in the case of railway accidents, and we should then hear less of motor accidents. This particular car ought not to have been on the road, seeing the condition in which it must have been handed to the purchaser. Had it been expertly inspected beforehand, the accident could not possibly have happened.

Trusting that the importance of the subject will be a sufficient excuse for taking up your valuable space, and thanking you in anticipation.

Yours faithfully,
D. DOYLE.

9, Charing Cross Road. July 19th.

THE CLUB AND THE AGITATION.

To the Editor of THE AUTOMOTOR JOURNAL.

SIR,—On Thursday, the 13th inst., I ventured to address the following letter to the Automobile Club. The matter to which it refers is of such general interest that possibly you may consider it worthy of publication or notice:—

"May I be permitted to humbly offer suggestions as to work which might be carried out by the club, in view of the public agitation against motor cars, and the fact that the law controlling motor cars is to be reconsidered by Parliament next year?"

"Those who have thought of the matter know that the roads and not the cars are at fault, that no legislation can prevent our roads from being far more used than they are at present by motor cars, and that the dust nuisance must increase unless roads are made of material suitable for the new and improved methods of travelling.

"I therefore beg to suggest that the club should, without further delay, re-make a stretch of road near London, where the dust is particularly aggravating at the present time. I do not suggest the

use of Westrumite, or tar, on existing road surfaces, as these can only be regarded as temporary expedients, but that the road should be re-made from its foundation with Tarmac, and other similar road material, and that when this has been done a general invitation should be issued by the club to the whole of the County Councillors of England and Wales, and especially to the Surveyors and Highways Committee to attend:—

"1. A demonstration on this piece of road with a view to proving that roads can be built so that motor cars are no longer a nuisance by reason of dust.

"2. A conference at which there should be placed before the County Councillors and surveyors, by the club, figures regarding the cost of relaying roads with the new material, the cost of their up-keep, and at which discussion should be invited as to how this cost is to be borne.

"Such a Conference should form a commencement of an educational campaign with a view to the nationalisation of the roads, and their re-making throughout the Kingdom with suitable material. The Conference should be followed by efforts to secure that in every county at least one stretch of road—and that, if possible, the stretch which is most used, and in which, at the present time, dust causes aggravation to the greatest number—should be re-made with the new material, so that it might be proved conclusively throughout the length and breadth of the land, that the dust nuisance is a temporary nuisance, and that the roads must be re-made.

"Such a campaign, if energetically undertaken by the club, would tend to accelerate what may otherwise take very many years, namely, the nationalisation and entire re-making of the roads of this Kingdom, and at the same time might remove some of the prejudice which exists against motor cars.

"In the interests of the movement, I venture to hope the Motor Union will avoid having club runs in various parts of the Kingdom during dusty weather. The head of an anti-motor movement, who wished to excite popular indignation against motors generally, would, I believe, organise a series of runs in various parts of the Kingdom, such as are now being organised by the Motor Union, in which car after car in rapid succession passes through a district, each car creating a huge cloud of dust, the long procession of cars as a whole making the road almost impassable for other users. Surely such demonstrations as these are particularly unwise in view of the very heated feeling throughout the country against motor cars. I took part in one, but resolved never to take part in another.

"Whether it be or be not suicidal, in the light of public opinion, to hold or permit at the present time meetings at which touring cars are exhibited travelling at 60 miles an hour, has been too often discussed to make it necessary for me to do more than express the hope that the club committee will again give this matter careful consideration before holding or permitting any further speed trials after that to be held at Blackpool."

Yours faithfully,
CLAUDE JOHNSON.



APROPPOS of the "discrimination" displayed so regularly by the notorious Guildford Bench, it is of interest to record that on Saturday last a motor car driver was fined £20 for exceeding the speed limit, while a blackguardly horse driver, who was working an unfortunate mare, lame in both legs and certified by the veterinary surgeon to be totally unfit for work, was only fined £1 and 10s. 6d. costs. The "lovers" of the horse invariably do their utmost to get the last ounce out of him.

MISS ANNESLEY KENEALY, who is so well known in the automobile world, arranged last week, with the help of a number of other car owners, to take out a small army of cripple children from the east of London for a motor car run. Altogether 100 children were loaded up on fourteen cars, about 200 others being conveyed in brakes, and the excursion to Loughton and Shaftsbury Hall and back again, was a most hilarious one. Miss Annesley Kenealy's idea was from every point of view a happy one. It has given the children an enjoyable day's outing and has demonstrated to all the villages on the line of route that motor car owners are far from being the child-destroying monsters that they are sometimes represented to be.

THE TOURIST TROPHY.— PART III.

To guard against "Freaks."

ALTHOUGH, naturally enough, the question of "freaks" has already arisen frequently in this article, there are still certain aspects of it which call for review, and should apparently be provided against in the rules. It is true that certain conceivable forms of freak cars are automatically guarded against in the restrictions that have been advocated above, but there are certain others which might not only be built to comply with those rules, but might also actually win the race. Perhaps the most probable directions in which the spirit of the rules could be successfully evaded would be in the employment of single-cylinder engines of unreasonable size, and of gear-boxes having an abnormal number of "speeds." In these two respects, therefore, it would, we think, be wise to frame special rules arbitrarily prohibiting them. The type of touring car which it is, now at least, most desired to develop always has at least two cylinders, and never has more than four forward speeds, and therefore nothing but good could result from precluding all vehicles having only one cylinder, or having more than four speeds. How much further it may be found advisable to go in respect of the number of cylinders, is a matter largely of opinion, and is one upon which the experience gained in this year's race is sure to be most valuable.

Apart from such specific cases as those just dealt with, it is so essential for all obvious "freaks" to be excluded from the Tourist Trophy, that we consider a rule should be made by which the organising officials can refuse to accept them as entries. It would, of course, be understood that the rule was not directed against any commercially useful new development, but merely to prevent clever evasions.

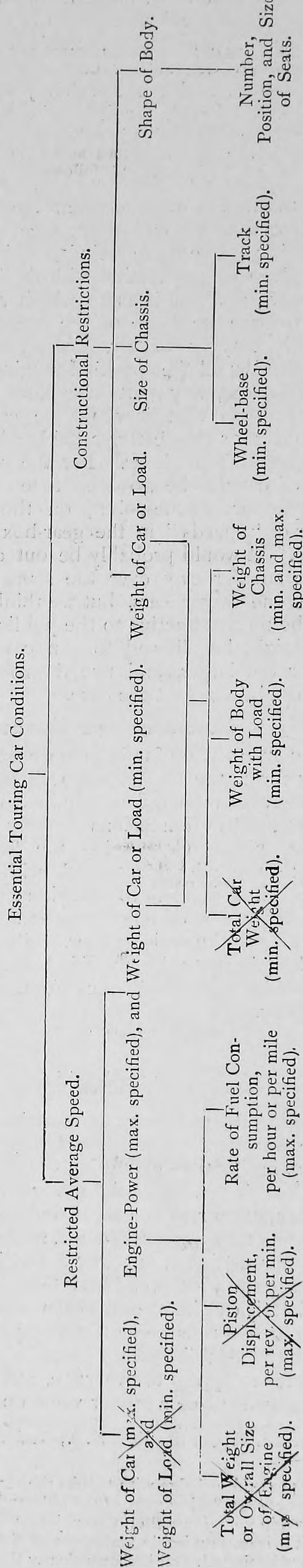
Some Further Suggestions.

There are one or two further ways in which we think the event could be rendered either more attractive or more useful to the general public than it otherwise would be. The first of these suggests itself because it is obviously impossible for all the cars to be started simultaneously, and yet is highly desirable that the spectators at every part of the route should know from their numbers the relative time allowances between the different cars. All that it is necessary to do, in order to secure this result, is to start the cars in the order of their numbers, and to allow some constant and well-understood interval of time to elapse between each start. There appears to be no reason why the cars should be delayed compulsorily at any point on the route, although it doubtless would be wise to make them come to rest for an instant at each "control," and, therefore, any spectator would—without having to make a complicated calculation—know the true relative positions of the cars at any time. Possibly, this idea might advantageously be carried even further, and a second number plate be used to indicate the number of laps that had been completed. Certain it is, at any rate, that too much cannot be done to retain the full interest of the public in the race as a spectacle of a highly interesting kind.

Our next suggestion is that the A.C.G.B.I. officials who conduct the trials should subsequently issue a full analytical report, not only expressing personal opinions

Graphic summary of the conclusions arrived at in our article: showing the various possible methods of eliminating, from the Tourist Trophy Race, all but bona fide touring cars, and indicating which suggested means have been discarded.

Read in the same way as a genealogical tree, each point leads on to the next natural consideration of possible or alternative methods of achieving the desired end. Each succeeding line—reading downwards—may therefore be regarded—in relationship to the previous line—as indicating "how to do it," as compared with "what has to be done."



concerning the merits or demerits of any special devices, but also giving as much useful data of a general character as possible. It should, too, enable comparisons to be made between the slower cars which completed the whole distance, and those which just failed to do so through lack of fuel, for it would thus do much to remove any possible injustice that might be done on this score to any firm through a misunderstanding on the part of the public. In any case, everyone would be anxious to know how much petrol each successful car had in reserve at the end of the race.

There is yet one more point to which attention might well be given in connection with the Tourist Trophy in future years, and that is as to whether it would not be wise to enlarge the scope of the event, and to develop two distinct types of car, instead of only one. By merely altering all the specified weights, dimensions and fuel allowances, any particular kind of car could be encouraged, so that it would be easy to institute a second class for two-seaters capable of averaging a speed of, say, 20 miles per hour. For the smaller class, there would, of course, be no need to exclude those having single-cylinder engines, but, on the other hand, the number of "speeds" in the gear-box might be limited to three. It would probably be out of the question to run the smaller cars over the same route at the same time as the larger cars, but we think a "motor week" would be most attractive to the public, and that the two events might be allowed to run consecutively. Three days for the larger, and two days for the smaller cars would doubtless meet the case.

Summary and Conclusion.

For convenience of reference we have summarised, in tabular form, the various suggestions contained above, and have also prepared a complete list of the weights, measures, and dimensions already specified by the existing rules. Concerning the former, we strongly advocate the adoption of all, with the exception of No. 10, which is open to question; and with regard to the latter, we would point out that, apparently, "E" and "F" require revision now, while "A" and "C" will doubtless have to be modified frequently as time goes on, in order to make them conform to the best practice of the day.

From what has been said, we think it will be agreed by all that the general basis upon which the Tourist Trophy rules have been framed is such as to render that event vastly more popular, and considerably more useful to the buying public, than any other form of competition that has been held previously. We have not only endeavoured to explain the difficulties that are essentially encountered by those who attempt to frame satisfactory rules for any automobile event, but have also tried to suggest methods whereby the desired results can be most nearly obtained, without risk of doing any injustice, or causing undue expense, to the manufacturers of the competing cars. For our own part, we feel that it is only necessary for purchasers and makers alike to realise what the value of this event might be to themselves, and the success of the Tourist Trophy Race is ensured. The event has, at any rate, the great advantage of being purely "made in England," and—being essentially practical—is typically British. We may be a "nation of shopkeepers," but even if we are, we are buyers as well as sellers, and we not only like to think that the best we sell is made in our own country, but we like to know that what we buy is the best.

Suggested Modifications of Rules.

- (1) The bodies to be comprised of four independent parts.
- (2) No cars to have engines with less than two cylinders.
- (3) No cars to have more than four forward "speeds."
- (4) Any obvious "freaks" may be refused entry at discretion.
- (5) Any unduly noisy car may be disqualified at discretion.
- (6) The race to extend over two, or three, consecutive days.
- (7) The cars to start, at equal time-intervals, in order of numbers.
- (8) The cars to be stopped, timed, and re-started immediately, at numerous "controls."
- (9) The cars to carry numbers denoting laps completed.
- (10) The cars to be driven by different drivers each day.
- (11) A class to be instituted for two-seated cars, to compete separately, and on other days.

Specified Weights, Measures, and Dimensions.

- (A) *Fuel Consumption*—1 gall. per 25 miles (dry, average road).
- (B) *Weight of Body and Load*—950 lbs. (including 300 lbs. ballast and 22 stone passengers).
- (C) *Weight of Chassis*.—Between 1,300 lbs. and 1,600 lbs.
- (D) *Wheel-Base*.—Not less than 7 ft. 6 ins.
- (E) *Track*.—Not less than 4 ft.
- (F) *Platform behind Dash*.—Not less than 6 ft. 6 ins. long and 2 ft. 6 ins. wide.
- (G) *Width of Seats* (each pair).—Not less than 3 ft. 4 ins. (between cushions).
- (H) *Height of Seats* (from ground).—Not less than 2 ft. 10 ins.



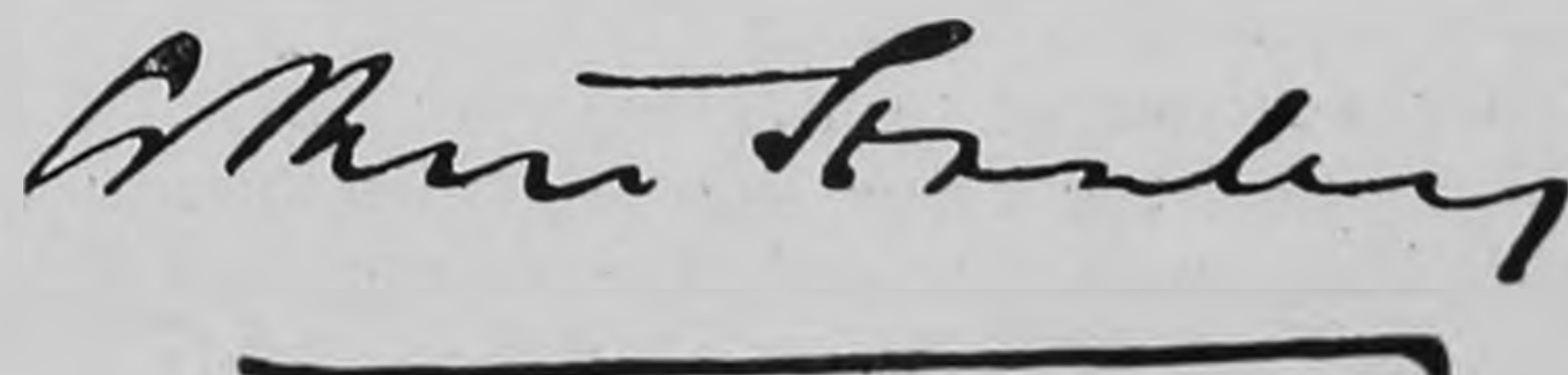
IEWS AND OPINIONS OF OUR READERS.

In placing the numerous communications that we have received with regard to our article on the Tourist Trophy before our readers, we would take this opportunity of thanking the writers of these public contributions on the subject, and of also extending our most cordial thanks to those who, from one reason or another, do not feel free to publish their personal opinions, but have, nevertheless, written assuring us of their support, and explaining the causes for the natural reticence that they experience in the matter, at the moment. It has come as an agreeable surprise to us that so many of our readers, including most of the leading men associated with the industry, should have expressed their appreciation of our article, and it is particularly encouraging to see that the subject of the Tourist Trophy race is receiving the widespread attention that it deserves. There is no doubt that the question, when dealt with in the only way that it can be at the present time—in the abstract—is difficult and intricate, but it is to be hoped that the strong light which is thus being thrown upon it, from all and every point of view, may materially assist in its solution, and may lead to the establishment of a really satisfactory type of automobile contest, that is not only of a sufficiently simple character to appeal to everyone, but will constitute a true test of all the most desirable attributes of a perfect touring car, and will place a proper value on skilful driving.

The Hon. Arthur Stanley, M.P., Chairman of the Automobile Club:—

I beg to acknowledge with thanks the receipt of your letter of the 13th instant, enclosing copy of the able and interesting article which appeared in your Journal on the subject of the Tourist Trophy Race. I think it is an admirable statement of the objects for which this race was instituted, and it shows clearly the benefits that are likely

to arise from it. I am certainly of opinion that an annual contest such as this will be of real use to purchasers of motor cars, will be beneficial to the industry, and will prove to be a popular event.



Hon. C. S. Rolls :—

I think your remarks and suggestions concerning the Tourist Trophy and its value to the buying public are very excellent.

Racing, pure and simple, has served its purpose, and the construction of special racing machines, which are of no use to the ordinary motorist, involves competing firms in enormous expense.

I have always been in favour of a limitation other than weight, and am personally in favour of limited cylinder capacity. Limitation of fuel, however, will have much the same effect. Whichever may be the best method of limiting the speed and power of competing cars, there is no doubt that the Tourist Trophy may be said to be the first race for motor cars run on rational lines, the object of which is the improvement of motor cars of a type which is useful to the ordinary purchaser, instead of encouraging the breed of more or less freak machines.

For this reason, it is to be hoped that the Tourist Trophy, with certain modifications in its rules, which experience may show to be necessary, will become a great annual National event.

Chas. S. Rolls

Mr. G. H. Baillie :—

Your articles on the Tourist Trophy constitute, I believe, the first full discussion which has been published on this race and its novel restrictions, and what you say well serves to show how much more interesting and intricate a problem the contest is than an ordinary fuel consumption trial. What you do not say, though, and have, I hope, reserved for future issues, would show this even more forcibly.

You have touched really one side of the question only, viz., the other means of limiting speed to the one adopted, and the various other restrictions required to make the race useful as a tourist car evolver. But you have not raised the question as to how far the main limitation of fuel will achieve its object of restricting speed, nor have you discussed to any extent the consequences of this limitation in engine and car, if the contest between makers becomes keen enough to induce them to experiment. A consideration of these questions brings one to many points in the working of petrol engines, about which one has to plead ignorance. Here I think the Tourist Trophy may be of great service; the competition offers to makers of cars a commercial inducement, and, at the same time, an inducement to carry out experimental work which cannot fail to benefit the industry.

I cannot now recall any figures giving the variation of fuel consumption of a petrol engine with speed. Measurements on gas engines are always made at nearly constant speed and variable power, and, as might be expected from engines with a comparatively low mechanical efficiency, show that maximum efficiency is obtained at full load. In a petrol engine maximum power is reached at or slightly under normal speed, but it is probable that maximum efficiency will be obtained at a lower speed. The lower the speed, the less throttling there will be in the inlet passages, and the greater will be the compression. High compression leads to high efficiency, but there will be, I think, an early limit to the increase of efficiency with diminishing speed, on account of the greater interchange of heat between cylinder walls and gases at lower speeds. The speed for maximum efficiency will be below the normal speed, but probably not very far below it. This, though, will depend on the engine; the more restricted the inlet passages, the lower will be the speed of maximum efficiency.

This is an important point, as on it chiefly depends the success of the fuel restriction in limiting speed. The wind and road resistance, of course, comes in, but at speeds up to, say 40 miles per hour, the wind resistance is not high, and the road resistance does not increase rapidly with speed.

The ordinary touring car is so geared as to run on the level on top gear and at nearly full speed, with the throttle partially closed. This is an uneconomical condition of running, and there is no doubt that the majority of touring cars could be run more economically on top gear by increasing the gear. For touring purposes such an increase of gear would sacrifice comfort in running by requiring a too frequent change of gear, but for racing it would tend to defeat the aim of the promoters of limiting the speed.

I notice that throughout your articles you speak of *average* speed, but surely what it is intended to restrict is the *maximum* speed. A touring car that will average 25 miles per hour with upper and lower limits of 30 and 20 miles per hour, is far better than one making the same average with limits of 40 and 10. What is wanted, and what is, I believe, the object of the Tourist Trophy, is to restrict the

maximum speed and let the best average win. I fear the full limitation will not achieve this object, and I incline to the view that the car running between 40 and 10 miles per hour will consume less fuel than the one running between 30 and 20, because the engine will be running longer at full load and moderate speed.

Where the fuel limitation is likely to lead to results of the greatest interest and importance is in carburettors and methods of regulation. In stationary gas engines it has been found that the greatest economy is obtained by using mixtures as weak as possible, and there is no reason to suppose that the same is not the case in petrol engines. The present day practice in regulation is not, however, to use weak mixtures, but to diminish the quantity of mixture when running at lower loads. Regularity of carburation is not a strong feature; too many variables—temperature, pressure, quality of petrol, &c., affect it. Consequently, under all conditions of running, there must be a margin to allow variation of mixture without going outside the limits of exposibility. From the correct mixture the margin in the direction of richness is much greater than that in the direction of poverty of mixture. So, to secure certainty of firing, the mixtures now used are usually too rich. The nose is generally able to confirm this. There is no doubt this is the right condition, for regularity in firing is more important than economy in petrol. But if carburation could be made more regular, petrol could be economised without sacrificing certainty of ignition. The best regulation for the Tourist Trophy would probably be one that gave the correct mixture at full load and weaker mixtures at lower loads; anyhow it would have the advantage of minimising the trail of smell.

The little suggestions with which you conclude your articles are worth consideration by the organisers of the race. The cut-up body is an ingenious idea, but I doubt its utility except to prevent chassis freaks. The ordinary car chassis, even if too light for its work, will give way, not after hundreds but after thousands of miles, and I do not quite agree with you that the body has much effect in strengthening it; the points of attachment of the body are usually too few, and the attachments themselves too light for the body to have much effect on the chassis.

The second suggestion I thoroughly agree with. The last reliability trials showed that petrol consumption increased largely with the number of cylinders, and there is no doubt that the larger the cylinders the more efficient is the engine. Four-cylinder engines are adopted for the sake of quiet running and absence of vibration, and it is a fault in the Tourist Trophy conditions if a premium be placed on one and two-cylinder engines. It is, though, a difficult point to meet, without having separate races for one, two, and four-cylinder cars. The four-cylinder car ought to be encouraged for the sake of those who can afford it, and the one and two-cylinder ought equally to be encouraged for the sake of those who cannot.

No. 3 is undoubtedly right; a five-speed car would be almost a freak.

Nos. 4 and 5 are good for everyone but the club officials.

I feel doubtful if much would be gained by extending the race. A three days' race now-a-days is too short to test what a car can stand, and a one-day race is long enough to test what it can do.

Nos. 7 and 8 would certainly serve to increase public interest.

In regard to No. 8, I think there should be as little stopping and as few controls as safety allows.

No. 10 I do not agree with. A private car is generally driven by one man who knows how to get the best out of it, and the best a car can do is what one wants to test, and what is tested when the car is driven by the man with most experience of the particular type.

I ought, before concluding, to apologise for the greater part of this letter being irrelevant to your articles. If, though, you were thereby stimulated to write further articles on the subject of my irrelevance, the apology would be needless, and the Tourist Trophy would be bearing fruit while yet, so to speak, in the womb.

G. H. Baillie

Mr. Claude Johnson :—

Having interested myself for many years in the possibility of arranging for a race of motor cars of moderate speeds, which would tend to improve the touring car, rather than create a car which is quite unsuitable except for racing at very high speeds, I am delighted to read the advance-proof of the articles on the Tourist Trophy Race, which you have been good enough to forward to me prior to their publication in your valuable journal.

The special commission, on which I had the honour to serve, which prepared the rules for the Tourist Trophy Race, expressly stated that they did not for one moment think that they had arrived

at the best conditions for the race, but that these could only be arrived at by experience.

The rules which control yacht racing were not framed by a body of men sitting round a table prior to the commencement of yacht racing in its present form, but are the results of years of experience. I believe that experience will enable us to arrive at far more satisfactory conditions for the Tourist Trophy Race than those compiled by the Commission.

With reference to the suggested modification of rules:—

1. Without dividing the body into four independent parts, it might be stipulated that the ballast should be carried on a floor which is born by the chassis, and not by the framework of the body.

2. and 3. I agree that the engines should not have less than two cylinders and the cars should not have more than four forward speeds.

4. The rejection of "freaks" is a difficult question. It is human to err, and the authorities might reject a car (which might eventually prove a distinct advance on anything hitherto designed) because it differed radically in design from standard cars. My impression is that the "freaks" should be allowed to run, and that if their qualities are such that the public would not buy them as touring cars, the makers would not gain much by their manufacture, and other makers would suffer little from being beaten by a car which nobody would buy. If, on the other hand, the "freak" is a car which the public would like to drive, it is right that it should be permitted to run.

5. The disqualification of a car for being noisy must again depend on human judgment. If a jury of the public, consisting of not less than twelve men, could be placed in a jury box during the race to measure how long before the arrival of a car opposite their box they could first hear its approach, some sort of standard might be arrived at, but I should not like to see the disqualification of a car placed in the hands of one or two men.

6. If, for instance, the Isle of Man authorities would permit the race to extend for two or three days, I should strongly be in favour of its extension.

7. Presumably the race will be started in the manner suggested.

8. The control stoppages should, if possible, be organised as you suggest. As regards the numbers on the cars (instead of being 1, 2, 3, 4, 5 consecutively), they might correspond with the number of minutes at which the car is started at the beginning of the race after the departure of the first car. Supposing that the intervals are 3 mins., the first car would be No. 0, the second No. 3, the third No. 6, the fourth No. 9, and so on, so that the spectators might see at a glance that the last-named car had started 9 mins. after the first-named.

9. I would suggest that the identification numbers should be carried on the front and back of the cars, and on each side of the cars there should be a case in which large cards could be slipped indicating the time in minutes occupied by the car from the beginning of the race up to the completion of the last round completed—the figures of the first round to be black, the second round blue, the third round red, and the fourth round white on black. These figures could be slipped in on the completion of each round, and the spectators would know at a glance precisely how many minutes each car had occupied from the time that it started, and therefore the relative positions of the cars irrespective of their actual order on the road, and this without any calculation whatever on the part of the spectators.

10. The suggestion is admirable, and I think, workable. There would be no difficulty in providing a different driver for each day.

11. I think it would be a mistake to have on the road at the same time cars averaging 25 miles an hour and cars averaging 20 miles an hour. This would mean that the slow cars would be



New Identification Mark.—For the County Borough of Northampton, the Local Government Board have allotted new identification letters, viz., N. H. This new mark takes effect from July 14th, but does not interfere with the validity of the identification letters of any car registered with the Council before that date.

ACTING upon official instructions, the Scarborough Chief Constable has stopped motor cars from going on to the Esplanade during Church parade. A correspondent writes and asks under what authority the police claim to take these arbitrary proceedings. We should like to know that too.

being passed all day by the faster cars, and the difficulties in passing might delay certain cars, and thus destroy the accuracy of the record, and at the same time would increase the danger of the race.

Possibly we may have fixed the chassis weight a little too light and the body weight a little too heavy, but these appear to be errors in the right direction.

Featherweight bodies are as a rule neither comfortable nor durable, and the cutting down of weight in the chassis within reasonable limits is desirable.

Personally, as a member of the trade, I am very grateful to the AUTOMOTOR for the spirited manner in which they have taken up this matter, and for the very valuable article they have contributed towards the solution of what is undoubtedly a very important, and at the same time, a very difficult problem.

Claude Johnson

We have since received the following further communication which Mr. Claude Johnson has sent out:—

If one places oneself in imagination in the place of a spectator watching the Tourist Trophy Race next September, sitting on a wall at some spot remote from a control, one can realise how difficult it will be for him to know which of the fifty or sixty cars is leading. If the cars are started at two minutes' interval, the last car may start nearly two hours after the first car. The race, therefore, to the spectator is likely to be nothing more or less than a procession of cars. I have ventured, therefore, to suggest in a letter to the Editor of THE AUTOMOTOR JOURNAL, that such a circuit race might be made more interesting if each car bore on its sides large figures denoting the number of minutes which have elapsed between the start of the car and the conclusion of the circuit it had last completed. The figures on the cars should vary in colour with each circuit. By this means the relative position of the cars would be graphically demonstrated to the spectator, who would readily know, for instance, that although a car might pass him an hour and three-quarters after the passing of the first car during the 3rd circuit, it had occupied 240 minutes in completing the first two circuits, whereas the first car had occupied 245 minutes. The difficulties of organisation do not appear to me to be great, and I beg to make the following suggestions:—

1. Each car should have fitted to its sides frames in which figures printed on stiff cards could be dropped at the end of each circuit.

2. Control keepers should, of course, note the time of the arrival of a car at a control and the time of its departure, but instead of entering this on a card and forwarding it to the chief control in the box attached to the car, he should be supplied with metal discs of various sizes, large one representing a minute, the others to represent half minutes, quarter minutes, and five seconds, and should drop these into the box attached to the car, discs to a number representing the exact time from the arrival of the car at control until its departure.

3. At the end of a circuit, the time-keeper, by a simple subtraction sum could ascertain the gross time occupied by the car from the commencement of the circuit to its finish. His assistant, by counting the discs found in the box at the end of the circuit, could quickly ascertain the number of minutes occupied in controls, and by deducting these from the gross time, the nett time for the circuit would be arrived at, and the nett time in minutes occupied from the start to the completion of the circuit could be announced and recorded by the insertion of cardboard figures in the frames on each side of the car.



MR. EDMUND E. BENTALL has been gazetted Lieutenant of the Motor Volunteer Corps, and Capt. and Hon. Maj. Hercules, Oxfordshire L.I., Captain.

At a meeting on Saturday last of the Oxford Corporation Tramways and Highways Committee, instructions were given to Mr. Worby Beaumont and to Mr. Stephen Sellon to advise the Council as to the most suitable form of traction for Oxford, the Corporation having agreed to purchase the existing horse tramways under the tramways Act of 1870. Mr. Beaumont will advise on the subject generally, and with special reference to motor omnibus transit, and Mr. Sellon more particularly with regard to tramway traction.

SIDDELEY-MEYAN RELIABILITY CONTEST.



SIDDELEY-MEYAN CONTEST.—The cars descending to Aix-les-Bains.

THIS sporting match, it will be remembered, began on the 12th instant, when Mr. Meyan's 24-h.p. De Dietrich and Mr. Siddeley's 18-h.p. Siddeley started from Paris for their long run round France, and each week we have recorded the progress of the cars.

The competitors have now completed more than half their labours, and so far neither of the adversaries has lost a point. From all accounts the passengers have fared worse than the cars; nor is this surprising when one remembers the long distances to be covered at high speeds every day, the early starts, the dust and terrific heat that has been experienced throughout.

Save that both cars lost their way in a fog soon after leaving Boulogne, the first 1,000 kiloms., occupying the first three days, was accomplished practically without incident, and the cars arrived at Vesoul soon after midday on the 14th instant, where the competitors entertained each other at luncheon. The Siddeley averaged over 35 kiloms., or 22 miles per hour over the whole of this distance (running time), including the climb over the Plombières Ridge, while the higher powered De Dietrich exceeded this slightly. Both competitors drove at high speed when possible, Mr. Meyan frequently going over 70 kiloms. per hour, while the Siddeley maintained 60 for long stretches.

On Sunday, both cars left soon after 5 a.m. for Aix-les-Bains, through Besançon and Bourg, a distance of 330 kilos. The Siddeley had a good deal of trouble with the near back tyre, which eventually had to be replaced, but both cars reached Aix in good time, the De Dietrich at 1 o'clock, and the Siddeley at 3.32. The day's run had taken them through some of the finest scenery in France, but the Dauphinais hills between Bourg and Aix were very rough on brakes and

tyres, giving the competitors a taste of what was before them on the next day's run. Our illustration shows the cars descending into Aix.

At 4.30 on Monday morning, the competitors left Aix by the Modane road to tackle the Mont Cenis pass on their way to Embrun, a distance of 287 kiloms., including a climb of 6,000 feet. The road rises all the way from Aix, but the gradient does not become stiff till after passing Modane, whence the road winds, with hairpin corners, up to the hut.

The Dietrich, as was to be expected, beat the Siddeley up by some 11 minutes, but both cars made the ascent ahead of their time, though with their cooling water boiling furiously. The descent to Embrun was made at break-neck speed, as owing to a misunderstanding both cars fancied themselves behind their schedule. Arriving at Embrun, where they slept, it was supposed that the worst of the trip was over; but, as a matter of fact, the next day's run to St. Raphael, 337 kiloms., climbing the Col D'Allos, proved even more trying than the previous day's experiences, the road being very steep and rough, the heat still excessive, while many of the corners forced the cars to reverse in order to get round. On this climb the Siddeley made a remarkable performance, doing 21 kiloms., with a total ascent of 2,200 metres in 59 minutes, and this with four passengers and a considerable amount of baggage on board. It would be difficult to conceive a more arduous trial for any car than these two days' work, and it is a matter of sincere congratulation to the makers that nothing but quite minor troubles occurred. Mr. Graham White in a letter to Mr. Siddeley remarks: "No written words of mine can give you an idea of the tremendous drubbing the car has been through during the last two days."

It should be borne in mind that both the cars have seen much hard service previously, and are by no means new, the Siddeley having been run over 40,000 miles, and Mr. Meyan's car, having had over a year's hard use, and has run some 30,000 miles.

On the 18th and 19th inst., the journey was continued to Bezières (337 kiloms.) and Luchon, in the Pyrenees (286 kiloms.), passing through flat and uninteresting country, nothing more trying was encountered than bad roads, punctures, and terrific heat.

At Luchon a day's rest was decreed, and it was decided, at Mr. Meyan's request, to cut out the run to Bayonne, and to go direct to Bordeaux.

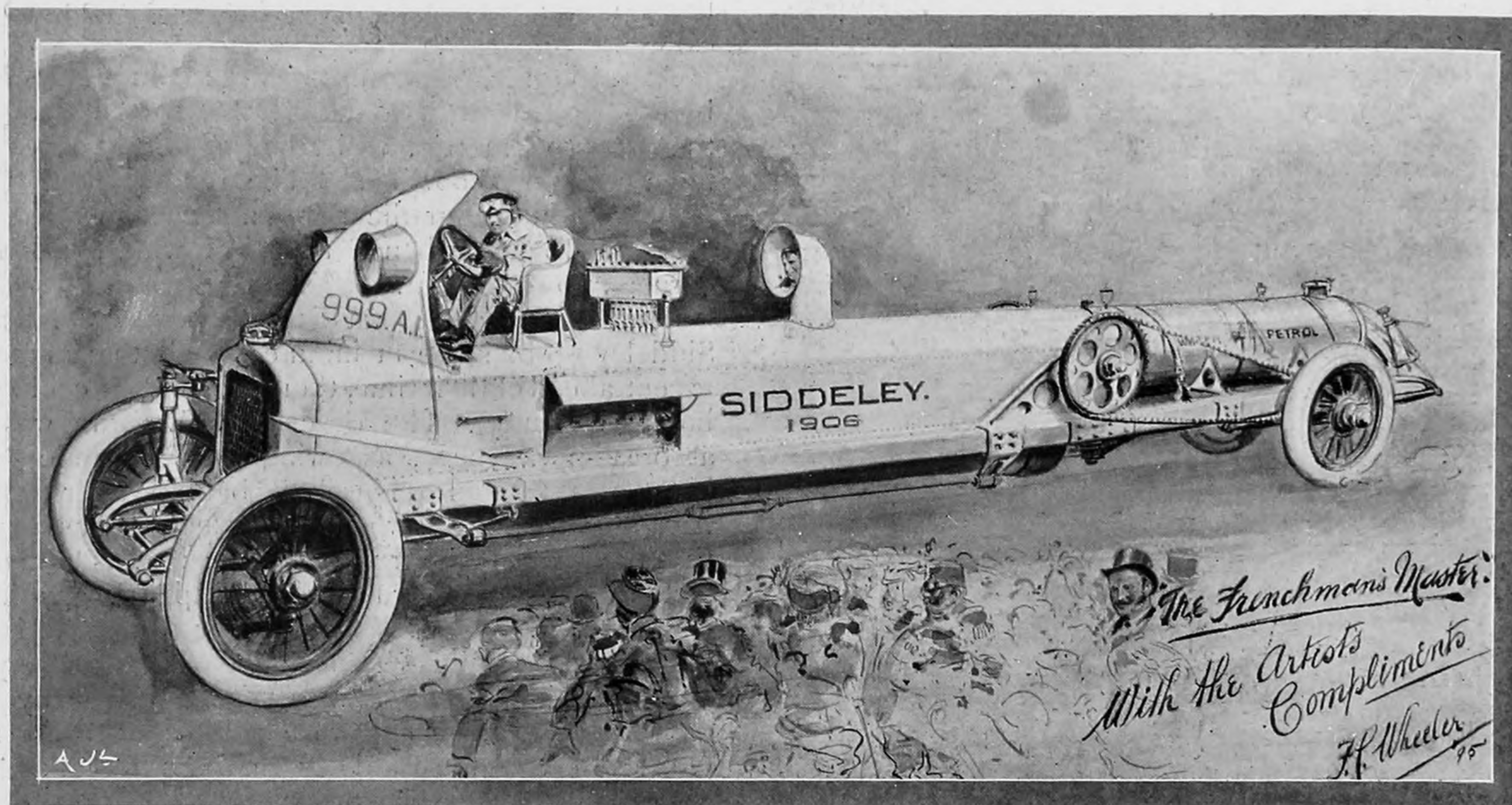
On the previous day, the Siddeley had suffered considerably from overheating owing to some of the small tubes of the radiator being choked with dirt. An opportunity was taken here to clean out the radiator with a powerful hose, and no further trouble was afterwards experienced. Two covers were also replaced, and Mr. Meyan, as a matter of precaution, renewed all his tyres and replaced his valve springs.

Subsequent telegrams show that Brest, only 800 kiloms. from Paris, was reached without mishap.

If, as we hope, the British car goes through without the loss of a mark, Mr. Siddeley will deserve and receive universal congratulations. For whether his car dead heats with, or is victorious over, Mr. Meyan's De Dietrich, he will have shown that the British Automobile of to-day can hold its own in any company and under the most trying conditions.

At the moment of going to Press, we learn by telegram that the match has resulted in a dead-heat.

RACES, RECORDS, AND TRIALS.

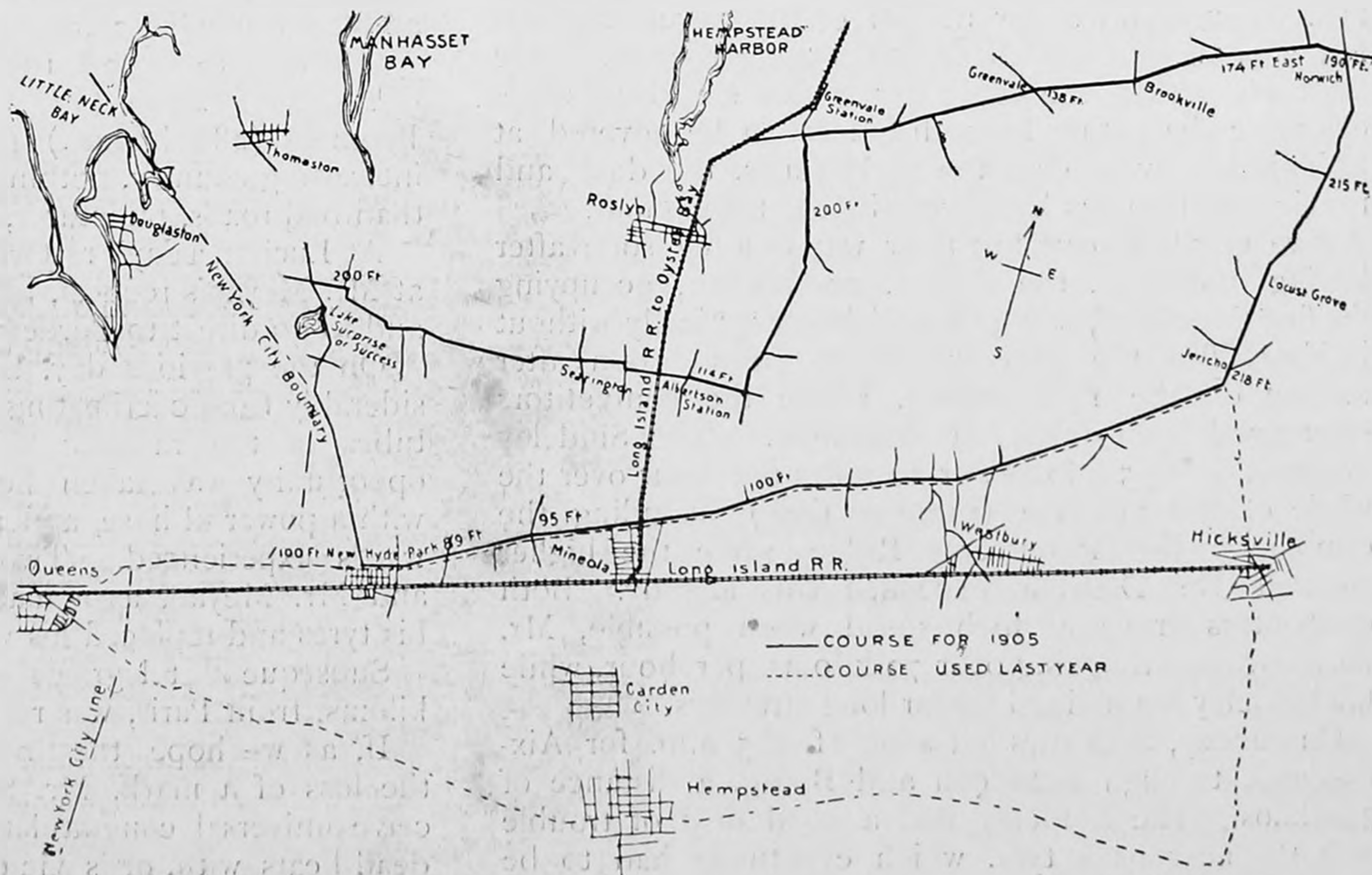


The above drawing is the work of Mr. F. C. Wheeler, a Birmingham enthusiast on speed, he having allowed his imagination to run riot over visions of the Siddeley car built by the Wolseley Motor Car Company.

Vanderbilt Cup.—We gave the points of the new course for this cup the week before last, and we now publish a sketch map. A question has arisen in France in regard to France taking part, as the race is practically identical in principle with the Gordon-Bennett Cup Race, of which France has so recently entirely washed her hands. The suggestion is that here is France upholding and taking part in a similar race, which, in the event of a French car securing the cup, will place the A.C.F. in the position of having to import a new Gordon-Bennett event in to France from America, in which France again will only be entitled to equal representation with other countries. It is this principle which has brought about all the trouble over the Gordon-Bennett Race, and, therefore, it is held that to be consistent France should take no part in the Vanderbilt Race. The situation becomes, therefore, extremely interesting. In the meantime the A.C.F. have protested against the length of the new circuit—22 miles—and the folly of starting 35 racing cars over such a short course, which will mean the cars passing and re-passing each other at such frequent intervals as to seriously add to the

dangers of the race. The French club suggest that they may follow up their objection by scratching their entries—which, after all, would be an easy solution to the main question which has been raised.

THE Electric Vehicle Contest, which was being organised by the A. C. de France for August, has been abandoned, owing to the lack of entries received.



VANDERBILT CUP.—Outline map showing the new course for this Cup, particulars of which we gave the week before last. The American Eliminating Trial will take place on September 23rd, and permission has been granted for the running of the race on October 14th. The grand stand will probably be located at a point near Mineola. Our sketch map is from the "Automobile."



Mr. Victor H. Miller and Mr. D'Arcy R. Baker on the first of the new 60-h.p. Fiat Cars which arrived in England last week. The chassis, which is intended for touring, is designed on the same lines as the 24-h.p. model, with the exception of the clutch, which is of the Mercedes type, but has a double scroll. We give a view of the engine below.

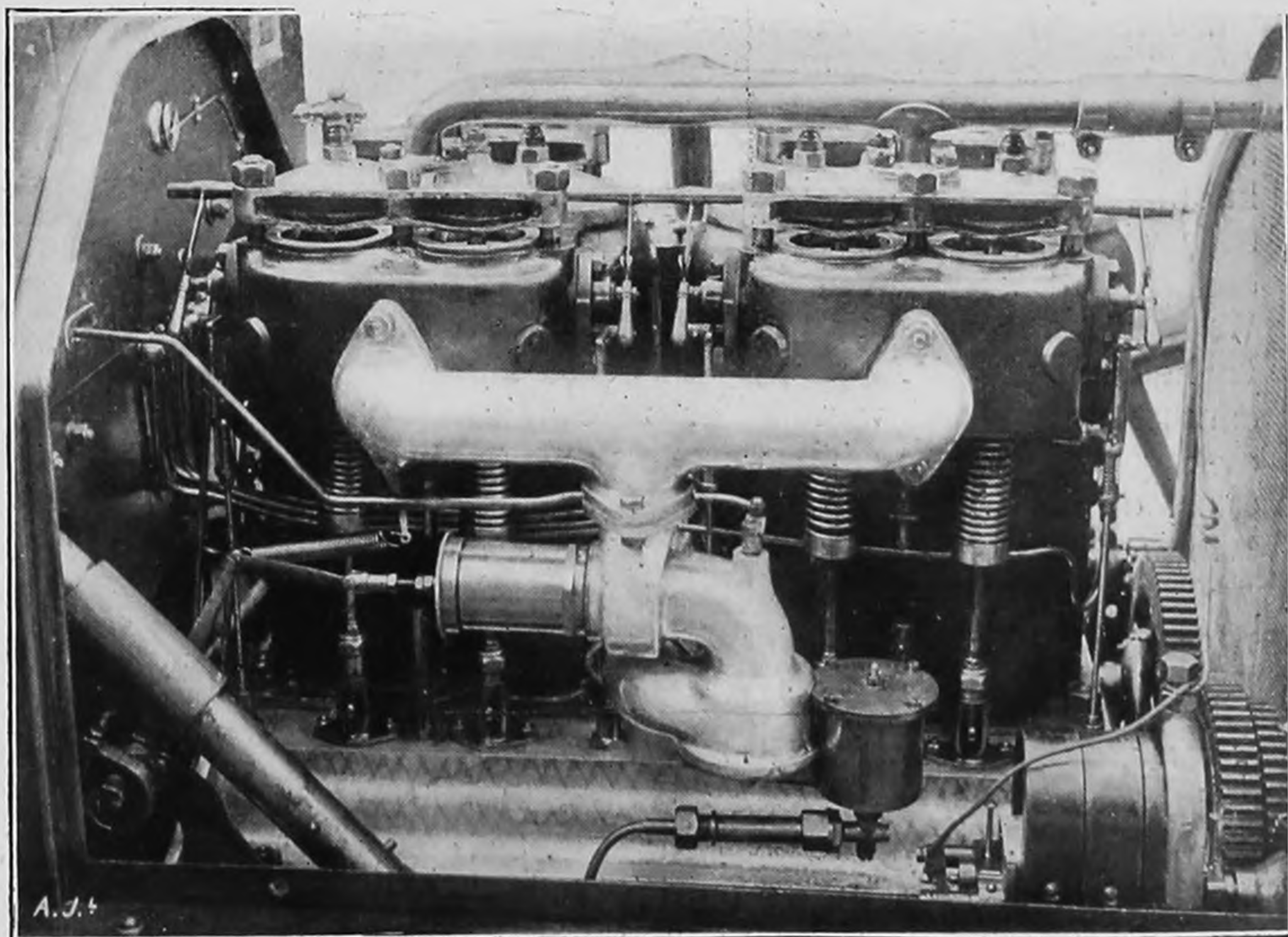
Blackpool Race Meeting.—The programme for the Blackpool meeting was of a diverse character, although restricted to high powered cars in racing trim. Three events were down for the first day, and four for the second, six of the seven being scratch races. The racing cars competed over the flying mile on Thursday, and over the flying kilometre on Friday. The other Thursday events were standing start races over about a mile and a half, while Friday was reserved for the Flying Kilometre and the Lancashire Handicap, the latter being open only to members of Lancashire Automobile Clubs. A full report will appear in our next issue.

Welbeck Speed Races.—On June 24th we gave particulars of these speed trials held under the auspices of the Notts A.C. The results of the Scratch Events and Speed Judging we gave on July 1st, and it is now officially announced that the Wilson Cup, under the Handicap formula for the best performance over the flying kilometre, is secured by Mr. R. M. Wright, of Lincoln, who drove an 8-h.p. Wolseley.

WE are glad to note that upon the suggestion of Mr. S. F. Edge, it has been resolved by the Automobile Club that the whole system of classification in relation to race meetings is to be considered by the committee in conjunction with recommendations from the Races Committee.

Gordon-Bennett Race, 1906.—Italy does not intend to let the Gordon-Bennett Cup remain with France unchallenged. A formal challenge has been sent in and Mr.

Gordon-Bennett has been notified of the fact. The Italian Club's action is hardly to be wondered at in view of the splendid running of the Fiat cars on the Auvergne Circuit. In addition it is practically certain that an eliminating race for Italy will be necessary, as besides the Fiat cars in all probability there will be other candidates to represent Italy, including the makers of the Itala car (Turin), and at Milan the Zust and Isotta Fraschini. In France, M. Darracq—one of few—is very emphatic in regard to running in 1906 if he gets the chance, he strongly feeling that France should not retire from so important a contest.



View of the 60-h.p. Fiat engine from the inlet-valve side. The general design is the same as the 24-h.p. model, but the bore and stroke are 145 mm. and 160 mm., respectively.



HERKOMER CUP.—We are able to reproduce a photograph of this important trophy presented by Professor Herkomer which will be competed for at the beginning of next month. The Trophy is of silver, and without the plinth is about 20 inches in length, and 2 feet high. It weighs 40 kilogs., and depicts the Goddess Victory seated on the apex of a cloud of dust with Mercury (personifying the commercial aspects of the movement) beside her.

Scheveningen Meeting.—An interesting series of events made up an attractive programme for this week's meeting, concluding on Saturday last. In the opening speed event over the standing kilometre, Wagner, on his 80-h.p. Darracq, tied with Jochems, on his 80-h.p. Mercedes, with 40 $\frac{3}{5}$ s., and in the re-running Wagner made best time in 37 $\frac{1}{5}$ s. against Jochem's 40 $\frac{2}{5}$ s. A novel and amusing contest was the slow race for mechanics over 500 metres, which was secured by Otto, on a C.G.V., in 7m. 52s., against Wanderwey, on a Germain, 7m., and Joubert (Renault) in 6m. 10 $\frac{4}{5}$ s. A 100 metres backwards race for mechanics was won by Paaus (80-h.p. Mercedes), 13 $\frac{1}{5}$ s.

Glidden Cup.—In the climb, during this event, up Mount Washington, the Napier did the 8 miles rise in 20m. 8s., beating all records by 4 $\frac{1}{2}$ m. The best previous time has been made by Mr. H. L. Harkness, in 24m. 37 $\frac{3}{5}$ s.

Circuit des Ardennes.—Amongst the entries for this fixture, taking place on

August 5th and 7th, were the two G.-B. Wolseley cars, the three Gordon-Bennett Fiat racers to be driven by Lancia, Nazzari, and Cagno respectively, and a 100-h.p. Itala car with Fabry as driver.

Havre Speed Events.—The speed races over the standing mile and flying kilometre, arranged by *L'Auto* for August 3rd, between Havre and Harfleur, in connection with the big commercial vehicle reliability trial, will comprise three categories, viz, for racing cars, tourist cars, and heavy vehicles. These will be divided as follows:—

Racers.—Four classes—Motor bicycles, voiturettes, light cars, and heavy cars, according to the A.C.F. regulations.

Tourist Cars.—Seven classes, according to chassis price, from 4,000 to over 25,000 francs.

Heavy Vehicles.—Awards decided by formula—

$$\frac{\text{Load carried} \times (\text{Average speed})^2}{\text{Price of chassis.}}$$

In each class the results will be governed by the combined times of the flying kilometre and the standing mile. The entrance fee is 20 francs per vehicle.

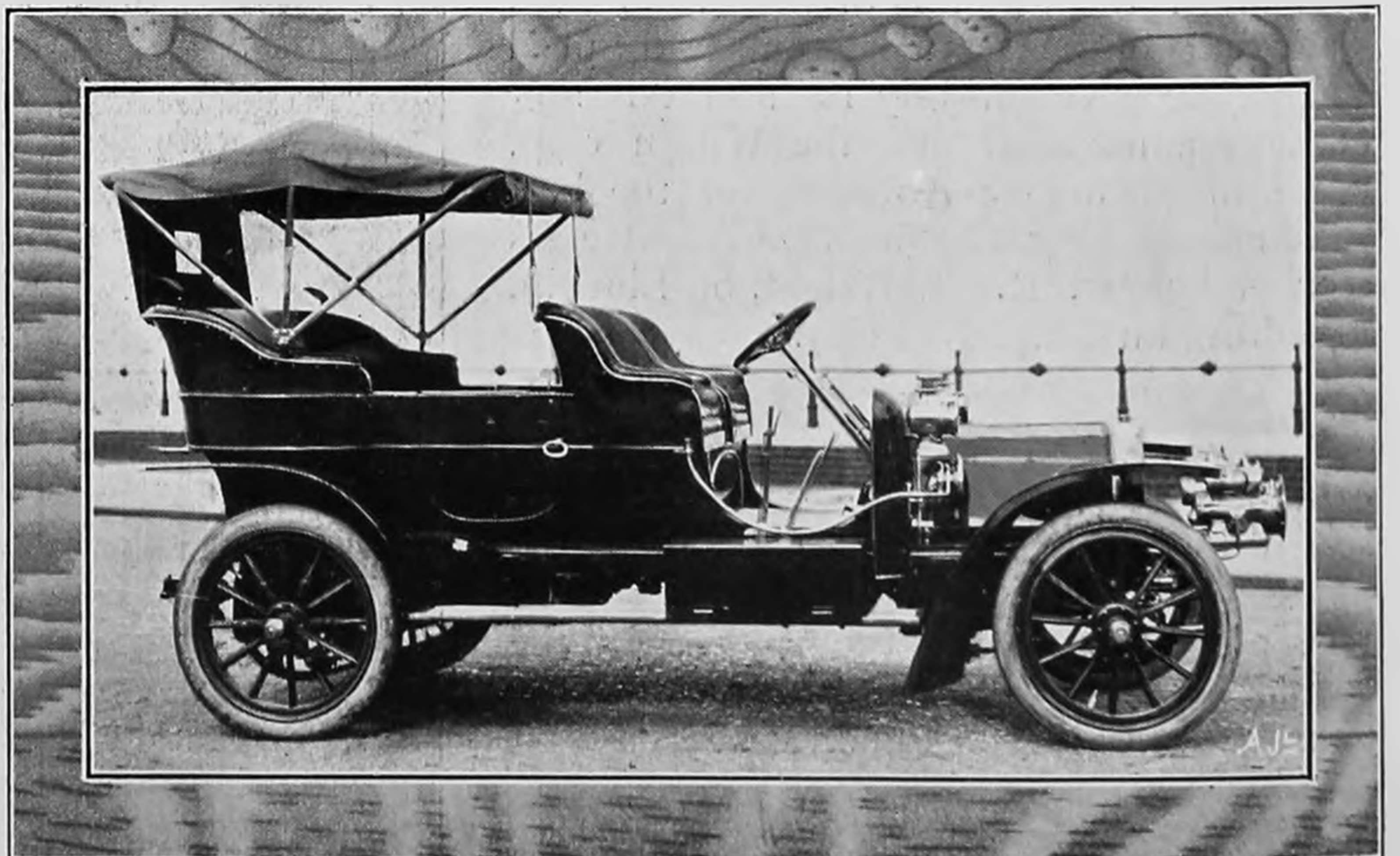


MOTOR CYCLING.

World's Championship for Motor Bicycles (Antwerp).—This race, for machines up to 50 kilogs., over 5 kilometres distance, was concluded on Monday last at the Zurenburg Velodrome, Antwerp, and was won easily in the final by Anzani, for Italy—against Olieslaeger (France), who burst a tyre, and Bac (France), who broke a chain and fractured his right foot. In the heats, the best time was 3 mins. 3 secs. for the 5 kiloms., flying start.

THE Auto-Cycle Club's Annual Race Meeting is now announced to take place on Saturday, September 2nd, at the Crystal Palace, when, amongst other trophies, THE AUTOMOTOR JOURNAL Cup will be competed for.

Silent Chains.—Those who are interested in high speed transmission of power by chains will do well to secure Messrs. Hans Renold's latest catalogue of their well-known "Silent" chains. The previous catalogue of this well-known firm bears the date of 1899, and several improvements in their chains have been introduced since that date. The present catalogue also contains a description of the principles on which their silent chains are constructed.



One of the latest 15-20-h.p. 4-cylinder Brooke cars, on which Messrs. Brooke and Co. have added a small Cape cart hood for the back portion, and have included a new type "Brooke" dashboard, giving a pleasing finish to the design of the entire car.



Capt. Duff, of the Life Guards, and Lady Julia Duff on their 18-h.p. Napier carriage.

MOTOR BOATING.

Paris-to-the-Sea.—On Saturday last this annual event organised by *Le Journal de l'Automobile* was started from Paris. A large number of entries had been announced in each of the series, but the whole affair resulted in a fiasco, as only three boats in all turned up at the starting point, viz., Mimi, Richochet, and Gardner-Serpollet. The organisers, however, insisted upon the contest being proceeded with, and these craft were accordingly sent off. The first stage was to Meulan. Richochet before this point simply disappeared, whilst Gardner-Serpollet returned to Paris, abandoning further participation under the circumstances, leaving Mimi to cover the whole course by herself. This little 8-h.p. *extra reglementaire* craft was formally escorted on its way with the exclusive services of three timekeepers, a committee, several journalists, and four motor cars, she covering the distance to Meulan in 9h. 57m. 10s., the little boat continuing its journey down to Havre in solitary state.

On Sunday a procession of cruisers started from Paris, in a run arranged by the *Yachting Gazette*, in connection with the Coupe de Trouville, organised by *Les Sports*. A very poor showing for this also resulted, although a few extra craft joined the procession from various points. The result was that for the Coupe Dubonnet, held at Mantes, under the auspices of the Helice Club, only one boat materialised, viz., Antoinette III., which indulged in a "walk over" the necessary 100 kiloms., her time being for the distance 2h. 20m. 32s.

CLUBS AND ASSOCIATIONS.

Motor Union.—The Union now includes 54 clubs with an aggregate membership of 7,070, in addition to 1,112 members who have joined individually, making a total membership of 8,182. The annual subscription is one guinea, but half the subscription at the present time will carry up till December next.

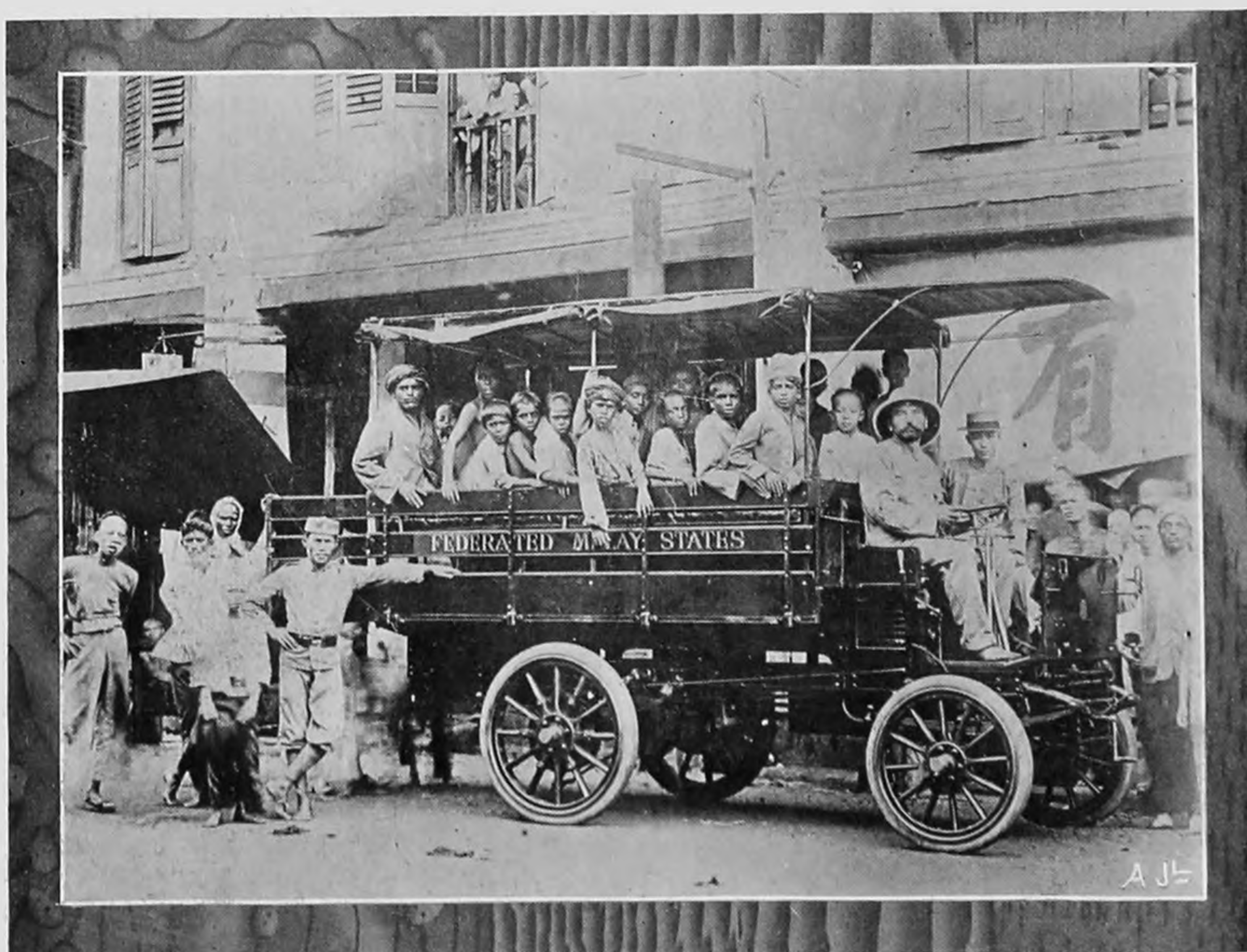
Society of Motor Manufacturers and Traders.—The first ballot for spaces at the Olympia Exhibition in November took place on Monday last, the plans of the Exhibition having at last received the approval of the London County Council. The Society have completed a contract with the owners of Olympia, whereby the use of that building for motor exhibitions is assured to the Society for a long term.

£150 has been voted by the Society in support of the trials, races, &c., to be held this season by the Motor Yacht Club and the British Motor Boat Club.

Somerset A.C.—At the annual meeting of the club held at Haygrass House, Pitminster, at which Mr. Stanley Austin presided, a satisfactory report was presented, the membership standing at 91. Sir Wroth Lethbridge was elected president, with Sir Cuthbert Slade and Messrs. John Hargreaves, J. J. Jackson-Barstow, and R. A. Sanders, vice-presidents. The following were chosen as the committee:—Col. Barrett, Messrs. Stanley Austin (Glastonbury), W. S. Donne (Castle Cary), J. Aspinall (Bridgwater), R. B. Graves - Knyfton (Uphill), H. C. Batten, Vaughan Jenkins (Monkton Combe), Dr. Benson (Bath), H. L. T. Blake (Stogursey), H. Hippisley (Stoneaston), Chester Master (Bridgwater), and P. F. Cary Elwes (Somerton). Mr. A. Armitage was re-elected hon. secretary and treasurer.



Peugeot Cars.—Messrs. Friswell, Ltd., have issued a catalogue, which is an artistic production giving illustrations of all the latest types of Peugeot motor vehicles. The baby Peugeot has undergone considerable modification, but the price remains unaltered for this popular little car.



Already a number of automobiles are in constant use in the Malay States, the commercial side of automobilism particularly commending itself to the residents in this country. An interesting photograph of a De Dion Bouton vehicle is shown above. This has been running over a considerable period and has been the means of greatly helping to spread the movement in this direction. This lorry is fitted with the De Dion expanding clutch type of gear.

POINTS OF LAW.

Liability for Chauffeurs.—A case which should prove very interesting to employers of chauffeurs was heard on the 17th inst. at the Westminster County Court. It appeared that one of Mr. E. H. Lancaster's drivers was instructed to take a customer for a trial run on a 12-16-h.p. Clément one Sunday morning. His services were dispensed with at 1.30, after which he was instructed to return to Leicester Street from Maida Vale, where the customer resided. Contrary to these definite instructions he took a party of friends for a ride on the car, and when near Bromley allowed one of the other occupants of the car to take the wheel, which resulted in a collision with a trap being driven from the opposite direction. The pony was so severely injured that it had to be killed, and some considerable damage was done to the trap. The owner of the trap brought an action against Mr. Lancaster, claiming £47 for damages sustained. The chief question was whether Mr. Lancaster was liable for his driver's actions, when the said driver was acting contrary to definite instructions. It was clearly proved by the evidence that the man was certainly acting without authority, and the judge held that in view of this fact no responsibility could be placed upon the employer. The result was a verdict in Mr. Lancaster's favour, with costs on the higher scale.

COMMERCIAL POINTS.

MESSRS. LANGDOWN AND CO., importers and indentors, of Christchurch, New Zealand, write to the secretary of the British Empire Motor Trades Alliance as follows:—"We note with much pleasure in the automobile papers that your Alliance has been formed for the furtherance of the sale of motors and motor accessories of all-British manufacture. This has especial interest for us in the face of the *new preferential tariff now in force*. We would be glad if you would hand our name to the members of your Alliance and get them to forward us catalogues, together with best prices f.o.b. for cash in London. We should like separate quotations for chassis and cars complete of from 5 to 16-h.p., also chassis suitable for delivery vans and omnibuses." Any replies should be sent to Messrs. Langdown and Co. direct.

THE Midland Railway Company's Thornycroft 'bus, of which we gave two views last week, has all four wheels shod with "Sirdar" solid rubber tyres, Mrs. Forsythe's winning Wolseley car, in Class III. in the Ceylon Non-Stop Motor Run, also has all tyres of the same make; while Lieut. Skelton's 12-h.p. Wolseley has these "high-speed" "Sirdar-buffer" tyres on the rear wheels.

BRITISH PATENT SPECIFICATIONS. Selected and Abridged by James D. Roots, M.I.Mech.E., Thanet House, Temple Bar, London.

The first date given is the date of application; the second, at the end, the date of the advertisement of the acceptance of the complete specification.

7298. 6th April, 1905. Improvements in or relating to Driving Mechanism for Motor Vehicles or the like. Rollin H. White 56, Hillburn Avenue, Cleveland, Ohio, U.S.A. Date under International Convention, 7th April, 1904. This is an improvement in that kind of automobile mechanism employed to transmit motion differentially from a longitudinally arranged driving-shaft to the axle sections, which are connected to the driving-wheels. It is the combination of change-speed gearing, differential gearing and clutch mechanism. There are four figures. Fig. 1 is a central sectional plan view, and Fig. 2 is a vertical sectional side elevation. A is the casing in which the whole of the gear is enclosed and mounted. The casing is formed of the parts a, a^1 , which are separable in a vertical plane at right angles to the axis of the axle section, in which plane the axis of the driving-shaft lies. These casing sections have flange-like lugs, a^2 , through which pass the bolts by which the casings are secured together. Two laterally-extended tubes, B, B^1 , having flanges, b, b^1 , at their ends are secured to the casing sections. The axle sections, D, D^1 , extend through the tube, B, to the casing, and they are rotated at differential speeds by gearing of ordinary construction. The axle sections pass through the drums, C, and have at their inner ends the bevel gears, d, d^1 , meshing with planet bevels, H. The axle sections are supported in ball bearings, the cups, F, F^1 , having adjusting rings, J, J^1 . The cones, k, k^1 , are the outer ends of the sleeves, K, which fit into the hubs, c^3 , of the differential drum. The

gear, c , is formed on the outer edge of the head, c^1 . The driving shaft, M, extends into the casing through an opening in the front part, a^4 , and is provided with two cones, m, m^1 , and two cups, N, N^1 , to form ball bearings for the shaft. The gear, G, has three sets of gear teeth, the level teeth, g , meshing with the bevel gear, c , the internal gear teeth, g^1 , and the external gear teeth, g^2 . On the shaft, M, is a sleeve, Q, on which is a gear, q , meshing with the internal gear, g^1 . This sleeve slides lengthwise on the shaft, and rotates therewith. When this gear meshes with the teeth, g^1 , it clutches the gear, G, and the driving-shaft together. The shaft, P, is parallel with the driving-shaft; it has a sleeve, R, slidably mounted thereon, and it carries two gears, r, r^1 , of different diameters, one of which meshes with q , and the other with the external gear teeth, g^2 , on the gear, G. The sleeve, R, has an annular groove, r^2 , which receives the pin, t^1 , passed through a rocking lever, T. The lever, T, is secured to the shaft, t , whose outer end carries the arm, t^2 , by which it may be rocked. The sleeve, R, has a groove, r^2 , which receives a pin, t^1 . The sleeve, Q, has an annular groove, q^1 , and this receives a pin, t^3 , attached to the opposite arm of the rocking lever, T. By this lever the two sleeves are caused to move in opposite directions. July 6th, 1905.

201. 4th January, 1905. Variable Speed Gearing. Thomas L. Sturtevant and Thomas J. Sturtevant, both of Harrison Square, Boston, U.S.A. In the present mechanism the low-speed train of gearing is directly connected with the driving part, without

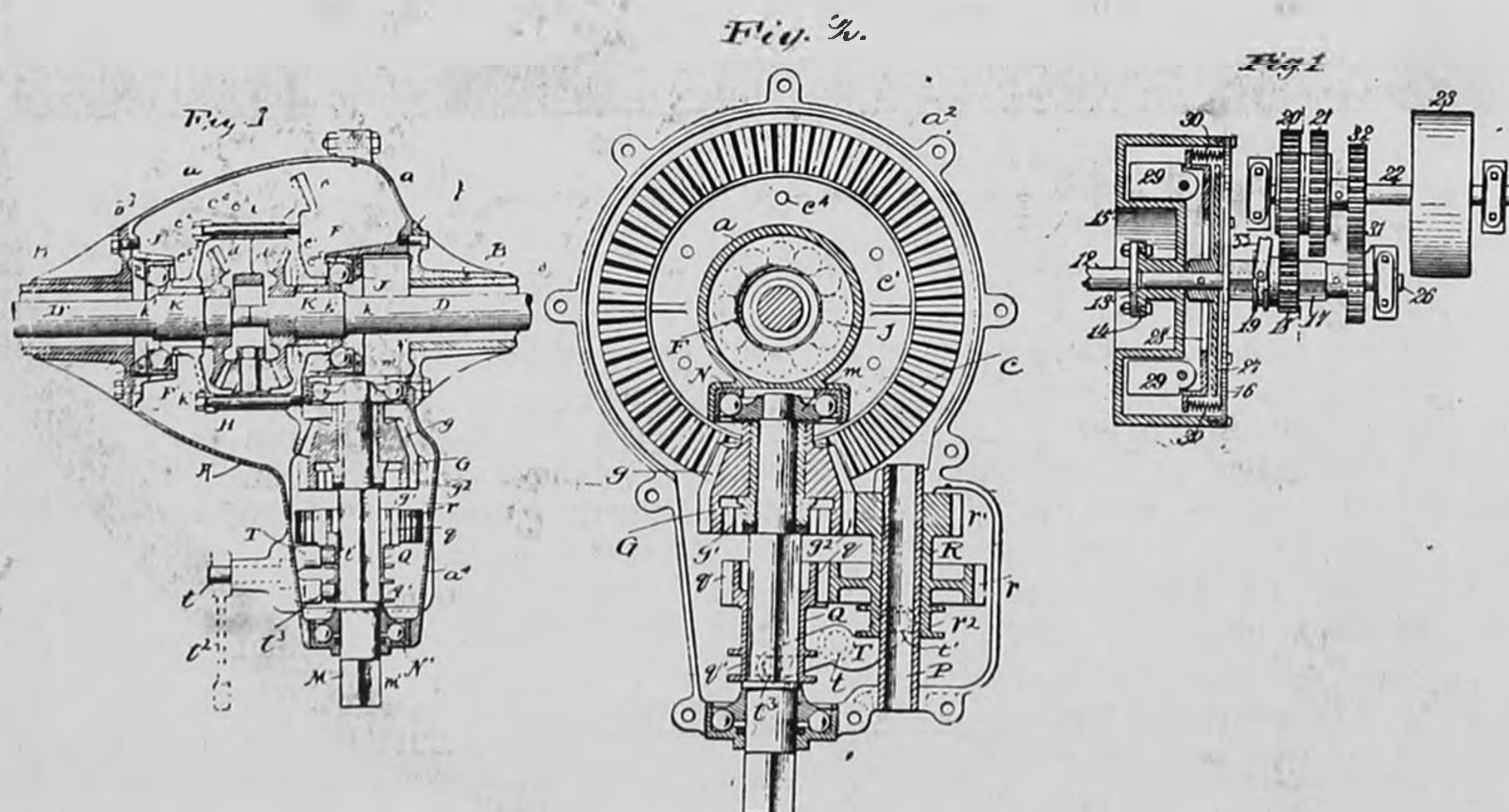
elevation, partly in section, of this mechanism; 12 denotes a portion of a motor or power-shaft having a flange, 13, bolted to a similar flange, 14, on the hub of a fly-wheel or casing, 15, having a rigidly-attached cover-plate, 16, secured to or integral with which is an exteriorly-squared sleeve. 17. On the sleeve, 17, is mounted a gear-wheel, 18, provided with a grooved sleeve, 19, adapted to slide endwise on the sleeve, 17 (which is loose on the shaft, 26), to permit the gear-wheel, 18, to be engaged with either of the gears, 20 or 21, fast on or connected with the driven-shaft, 22, which may be directly utilised for driving an automobile, boat or for other purposes, or may be provided with a pulley, 23, for transmitting power for any desired purpose. The gears, 20 and 21, are connected with the shaft, 22, by a ratchet or grip device, comprising spring-pressed friction grip rollers, 24, interposed between a hub fast on the shaft and a ring gear, 20 or 21, the ratchet or grip devices being reversely arranged in the two gear-wheels, so that one may be utilised for the forward drive of the motor or power-shaft, 12, and the other for the reverse motion, the sliding gear-wheel, 18, being shifted by a shifting arm, 33, for the forward or reverse drive, and these ratchet devices being adapted to permit the low-speed gear-wheels or gear-rings, 20 and 21, to overrun, and thus be non-operative when the high-speed clutch device is in operation. Pinned to the high-speed shaft, 26, is a clutch disc or plate, 27, with which co-operates, for the high-speed drive, a second clutch-disc or plate, 28, having shoulders engaged by shoulders on centrifugal weight, 29, pivotally mounted within the casing, 15, held in their inner or inoperative positions by springs, 30, interposed between parts of the disc and the casing, 16, of the flywheel to which the plate, 28, is fastened. When the speed of the motor is sufficient to cause the centrifugal weights, 29, to swing outward to overcome the springs, 30, the clutch-disc, 28, will be forced into frictional engagement with the clutch-disc fast on the shaft, 26, and thus the rotary movement of the motor or power-shaft and of the flywheel, 15, will be imparted to the shaft, 26, through the friction clutch discs, and the motion of the shaft, 26, will be transmitted to the driven shaft, 22, through the high-speed gears, 31 and 32, fast on the shafts, 26 and 22, respectively. Thus the changes from high-speed to low-speed and *vice versa* of the driven part or shaft will be automatically and smoothly effected in that the clutch-discs enclosed within the flywheel casing may run in oil, so that there may be more or less slip when the changes take place. July 6th, 1905.

Patent Specifications Published.

Applied for in 1905.

Published July 20th, 1905.

201. T. L. AND T. J. STURTEVANT. Variable gear.
5,540. W. H. EVERSON. Steering and propelling of motor boats.
6,163. H. GILARDONI AND H. LERICHE. Radiators.
7,298. R. H. WHITE. Driving mechanism.
8,548. A. DOWNS. Driving gear.
12,380. A. DESCHAMPS. Tyre lever.



ends of the drum hub engage with the shoulder, k^1 , which are formed upon the sleeve by the enlarged cones, k . The drum carries the bevel gear, c , which meshes with the bevel teeth, g , on the gear, G, which is loosely mounted on the driving-shaft, M. The drum is made of two heads, c^1 and c^2 , and a cylinder, c^3 , connected by bolts, c^4 . The bevel

the intervention of a clutch-device, and the high-speed operation of the driven part or shaft is effected through a centrifugally-controlled clutch device by which, when the load or resistance permits, or when sufficient power is received from the motor or driving part, power is transmitted from the driving to the driven part. There are three figures. Fig. 1 is an