THE AUTOCAR

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

EDITED BY H. WALTER STANER.

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Notes.

The Lords and the Motor Bill.

It should be clearly understood that the following remarks are penned entirely without political bias, as politics are entirely outside the province of *The Autocar*. Having thus cleared the ground we must at once express our sorrow—we cannot say disappointment—that the House of Lords should have failed in its duty towards the Motor Bill. In other words, it accepted the amendments made in the Commons without a murmur, thereby committing one of the most inconsistent acts of which it has ever been guilty. The Upper House is understood to be the safeguard of the country against waves of prejudice or hysteria which may temporarily overthrow the judgment of the Commons, and it is not necessary for us to say that this important duty has often been performed by the Lords, thus making its conduct last week all the more inexplicable. It was plainly stated in the House of Lords that the numbering, heavy fines, and other restrictions were imposed because the speed limit was to be removed, and this was the essential feature of the Bill. Yet, when the Commons sent it back with the original purport entirely destroyed by the addition of the speed limit, the Upper Chamber accepted it without comment, though, under the circumstances, as the intent of the Bill had been entirely altered, it should have refused to accept the vital amendment, or at least raised the speed limit to 25 miles an hour. Had the Lords taken the trouble to acquaint themselves with the particulars of the debate which took place in the Commons over the Bill they would have seen at once that hysteria and bitter prejudice had entirely, for the time being, beclouded the judgment of the majority of the members of the House of Commons. Besides that, it is perfectly absurd to imagine that principles which the Lords endorsed scarcely a week before could have been changed. We suppose the whole thing may be summed up as a combination of indifference, with a feverish desire to be well over 400 miles north of Westminster. Undoubtedly the Motor Bill has suffered exceedingly for being introduced at the end of the Session.

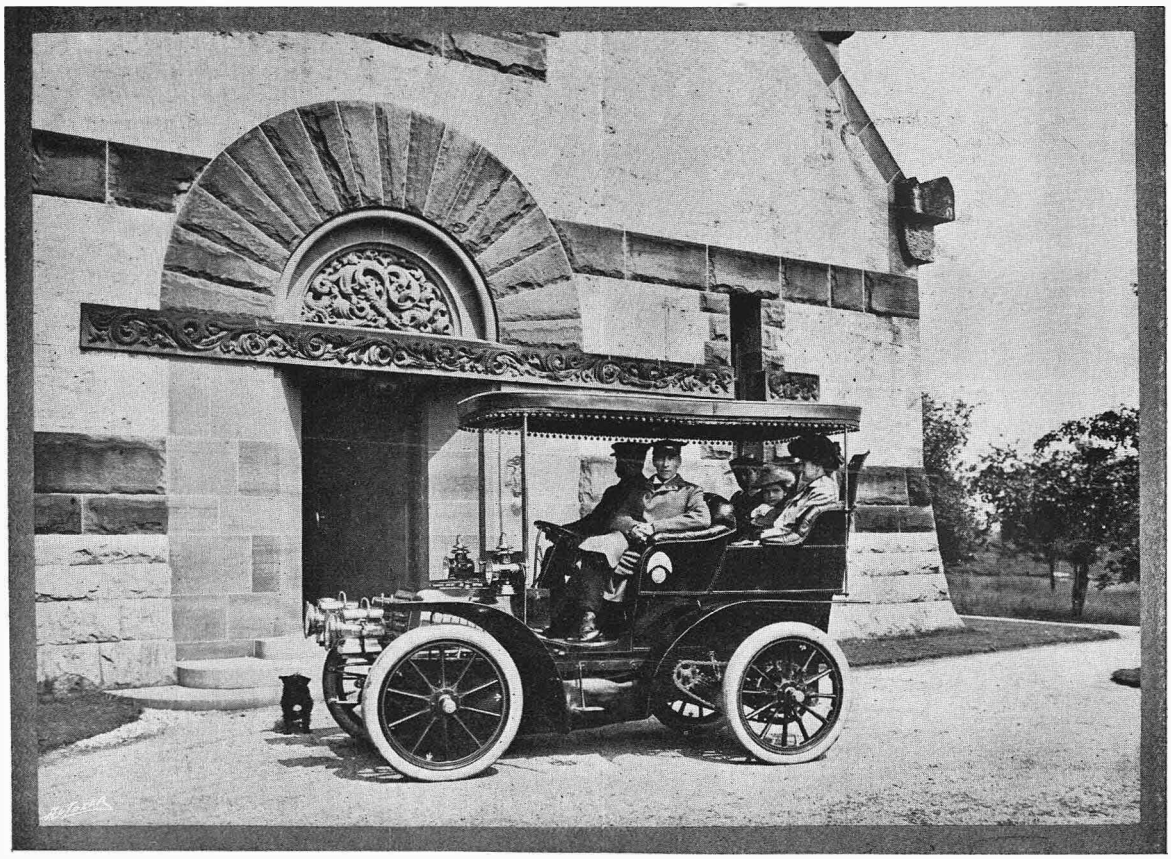
Self Defence.

Among the minor amendments introduced in the Motor Cars Bill by the House of Commons is one to the effect that no one under seventeen shall be allowed to drive a motor vehicle. We take it this will not apply to motor cycles, but it seems to us an altogether one-sided proviso, because a motor is so much more easily controlled than a horse, and yet there is no law to prevent horses being sent out in charge of children of very tender years, or else with men so old and infirm that they are no more than children in strength, and far behind them in activity. In fact, in some cases powerful horses are left to children so small that it is really a matter of a wild beast being placed in the hands of a baby. This is one of the points which the friends of the motor should take up, and a bill should be introduced to prevent horses being driven by anyone

under seventeen years of age. This would not only stop many dangers of the country road, but it would eliminate that great one of towns—the boy with the tradesman's cart, particularly the butcher's boy. The age limit for horse drivers is certainly far more necessary than the same proviso with regard to motors, for the simple reason that it is a much more widespread evil, and one which, in the interests of public safety, not to mention common humanity, should be seen to at once, as the children, both on the road or in charge of the horse, are in far greater danger than those from which the law so carefully protects them in factories. It would not be going beyond its province if the National Society for the Prevention of Cruelty to Children were to take the matter up.

The Known Danger.

Further than this, there is the question of the vicious and uncontrollable horse, which should be sternly dealt with. Everyone knows the law with regard to a dog being allowed its first bite, and a similar restriction should certainly be made in the case of the horse and his first bolt. That is to say, if a horse bolts more than once its owner should be convicted for keeping an animal which is a grave danger to the public safety. Some people will regard this as far-fetched, but it is nothing of the kind, and a few regulations of this sort would be of the greatest benefit to the public at large, besides giving horse owners a sense of responsibility, which too many of them do not at present seem to understand. Not only so, it is at least desirable that the people who are so anxious to impose all sorts of restrictions upon the drivers of motors should know something about the irksomeness of these restrictive rules and regulations which they are so willing others should suffer. Another very important point which should be agitated for is the lighting of animals at night. At the present time, horses and cattle are allowed to stray upon the roads, or to be driven or ridden thereon without any light to indicate their presence, and they are a very great danger to horse drivers and cyclists. So far as motorists are concerned, they do not usually constitute a serious menace, as the majority of cars have much more powerful lights than cycles or horse vehicles, and consequently the horse or other animal can be seen in good time. There are other restrictions which should be considered, but it will be admitted by every unbiassed man that none of those we have suggested are inconsistent or unreasonable in the light of the Motor Cars Bill, and the sooner automobilists commence to agitate for such requirements the better it will be for the community at large. Another little point, too, which might well be taken up in the interests of all road users is the persistent breaking of the law by devotees of the gun. It is illegal to fire within fifty feet of the centre of a road, and yet, as all automobilists know, it is a common thing to find the law broken. There have been very narrow escapes by road users, and many instances are on record in which they have received a charge of shot, particularly bicyclists



Professor Herkomer, and family, in front of his house at Bushey. The gifted artist is a most enthusiastic automobilist, and greatly enamoured of his 10 h.p. Panhard, which he procured not long since from the British Automobile Commercial Syndicate.

and pedestrians. We are afraid it is a law, too, which a good many automobilists have broken themselves at one time or another, but not in their capacity as drivers of cars. It would be a particularly good weapon to use in certain districts, especially as a number of magistrates break the law regularly, and it would be a salutary training for some of these gentlemen if they were to be fined for not conforming to the law. They would, of course, say that the law was passed with the idea of safeguarding the public, and so long as they endangered no one a mere technical offence such as they had committed should not lead to conviction. To this the reply is obvious, as we have only got to insert speed for distance and the motor car for the gun, and the excuse for the persecution of the man who might exceed the legal limit by a small fraction without endangering anyone holds good.

Future Prospects

Although we advocate a firm policy, and that automobilists should see to it that their rights are not infringed and that other road-users also are strictly kept to the law, it should be understood that we do not suggest that the thing shall be done indiscriminately. The regulations which govern horse traffic, and any which we may succeed in getting passed, should not be used as weapons of offence unless the regulations of the new Motor Cars Bill are enforced with undue rigour. In other words, in districts where the law was fairly administered and no attempt was made at persecution, nothing should be done by the motorists which would be looked upon by horse drivers as an attempt to restrict their freedom, but directly the letter rather than the spirit of the law was the motto of a district or county, the motorist should make it his motto also. It must not be imagined from this that we look upon the new Act as one which is likely to cause the automobilist serious inconvenience. It will not do so if it is fairly administered. The main thing to which we take exception is the fact that in addition to a speed limit lower than that permitted to other traffic in populated areas, there is a 20 miles an hour limit in the open country, and taking a line through past experience we can only expect that in some prejudiced districts this will be taken advantage of by the authorities. If the speed had been 25 miles an hour it would have mattered very little, but 20 is an awkward limit, and it is perfectly certain to be exceeded at times on open stretches of the highway, and there is no reason whatever why it should not be so long as vehicles are not overtaken or passed at a high speed. However, as we have numbering in addition to the speed limit, there is little doubt that the excessively high-powered car will fall out of use. If the Act results in this it will not be altogether regrettable, as these monster machines are a nuisance to every class of traffic—quite as much to the average automobilist as to any other user of the road. If these unduly high-speeded machines pass away, prejudice should also, and, provided automobilists at large use ordinary circumspection and drive with consideration, we firmly believe that the 20 miles an hour limit will be ignored by the authorities, and that so long as it is not grossly exceeded it will be of no inconvenience. In other words, that the rational motorist will not be troubled by the new Act. A good many people have delayed taking up automobilism till they knew exactly what the restrictions were, and now that these are known they will decide on what type of machine to buy, and in most cases we find that the ideas of very powerful engines have been dropped, and that the purchasers are more intent upon absolute reliability, smoothness of running, and the other qualifications of a pleasant running and comfortable car.

The Fighting Organisation.

While it is necessary that we should discuss ways and means to see that our rights as automobilists are not unduly infringed either by the administrators of the law or by the public, it is idle to suppose that very much can be done except through wholehearted combination. It is quite right that every automobilist of influence and position should do all he can in his own district, but he should also work in conjunction with a central authority. This central authority is unquestionably the Motor Union. Some may at once say, Why not the Automobile Club? but they do not recognise perhaps that the club, while a powerful body, cannot claim to appeal to every automobilist. Now, with the Motor Union, the case is entirely different. It appeals to every man who uses a motor vehicle, and everything it does for the movement will have the hearty co-operation of the Automobile Club, for every member of that club is, *ipso facto*, a member of the Motor Union, though there are many members of the Motor Union who are not members of the club. The union is formed entirely with the idea of defending the rights of every user of a motor, and we are glad to know from the secretary that it intends to do its utmost to fight for the rights of automobilists; in fact, its programme is already decided on, and has been broadly defined as follows:

(1) To secure the adoption of practical Local Government Board regulations as regards numbering, registration, licensing, tare limit, and other matters.

(2) To bring influence to bear upon the county and borough councils to ensure that no applications are made to the Local Government Board to fix the ten miles limit, except for really dangerous roads.

(3) To resist proposals to close any roads entirely and absolutely to motor car traffic.

(4) To secure the ready issue of numbers by county councils, so that all automobilists who at present own and drive cars shall be in possession of their numbers and licences on January 1st next, and be able to ride and drive forthwith.

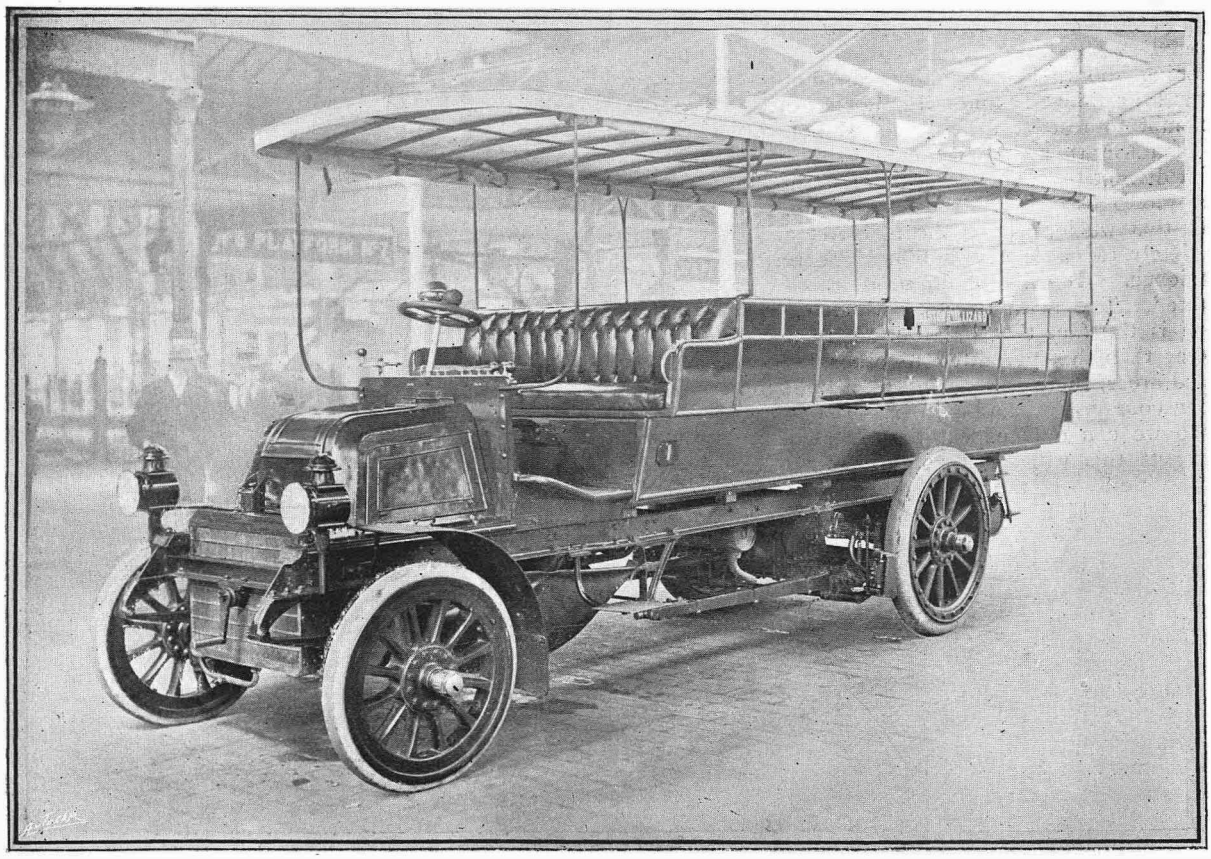
(5) To organise for the next Parliamentary and county council elections.

Every one of these is a most important point, for, as the Union points out, each one of them requires the fullest and most careful consideration, so that there may be no danger of the interests of automobilists being placed in jeopardy. The great thing to be borne in mind is that, not only do the general public require to be educated up to a proper conception of automobilism, but that local authorities and officials are no less in need of education as to their position and powers under the new Act. The

attitude of the rural police, too, demands instant attention, and it is absolutely essential that steps should be taken to meet and cope with the serious situation created by the prevalence of traps everywhere along the roads. If the Act is to work smoothly, the present unseemly and lamentable persecution of motorists must cease, and its place be taken by a better spirit of give-and-take, so that the use of the roads may be rendered possible as much for the automobile as for the horse. To sum up the whole situation, the future of automobilism is at stake, and by the happenings of the next three years, it will be in a great degree made or marred.

What the Individual Can Do.

The first work of the individual motorist, if he is not already a member of the Motor Union, is unquestionably to send his guinea to the secretary, Mr. Rees Jeffries, at 16, Down Street, Piccadilly, W. Having done that, he should notify his willingness to co-operate with the union in every possible way. In fact, it appears to us that nothing solid will result unless the union has a band of willing workers and correspondents who are representing them in every corner of the kingdom, not only in the towns, but in the country districts as well. At the present time the duties which suggest themselves for the local correspondents are numerous; but among those which are the most important at the moment may be mentioned the keeping of the central committee posted upon all such points as applications by the local authorities for the enforcement of the ten miles limit or for permission to close 16ft. roads to motors, as well as details of the proceedings in connection with the registration and the issue of licences, attitude of the police locally, and, in fact, to report everything which appeared to have any bearing upon the welfare of automobilism. It is most important that the Act shall be administered all over the country in the same manner, so that there will be no difficulty for the automobilist when he is out of his own district; but, of course, the most important thing is to see that the restrictions are administered in the most intelligent manner and with the minimum of friction to all parties. Last, but not least, the voluntary worker should do all he can to obtain new members for the union directly, or induce them to join the Automobile Club or one of its affiliated clubs. We do not think the union will call for volunteers in vain, and we urge every automobilist, who can possibly make the time to help, to send his name in to the secretary. The provincial clubs, too, will no doubt work loyally and each one do its utmost in its own district not only to influence things the right way, but to obtain the co-operation of the union in all points where it can be of service.



The Great Western Railway Co. have purchased two motor 'buses to connect their station of Helston with the Lizard, some ten miles away. These vehicles hold 22 passengers, and are of the standard 16 h.p. four-cylinder Milnes-Daimler type, with gear transmission throughout and solid tyres. For a long time a light railway has been projected, but it is believed that the motor vehicles will provide for the requirements of the district quite well, and this of course will save the heavy expenditure for a railway, and further, will obviate the spoiling of the roads of the district. The Great Western Railway are to be congratulated upon their enterprise, and we have no doubt that other companies will shortly follow their example and will use motor cars as feeders to the line as we have so often advocated.

USEFUL HINTS AND TIPS.

Road Wheel Adjustments.

There is no great difficulty attached to the adjusting of the road wheel bearings on a motor vehicle; yet, like everything else, there is a right and a wrong method of procedure in the operation. Any slackness of the bearings in the steering wheels is usually visible, and, if not, is often perceptible at the steering wheel. In the rear driving wheels any looseness is rather more difficult to find, but it may frequently be indicated by an increased noise from the driving chains, as the wheels work backwards and forwards upon their axles, constantly bringing the chain wheels into and out of line with the sprockets. If one has reason to believe that the wheels are in need of adjustment, the back axle should be jacked up clear of the ground, and the wheel tried. It will invariably be found that, although there is no actual side shake on the wheel, it will move backwards and forwards upon its axle. In testing for slackness, one should always grasp the wheel by the spokes near the hub, and pull it backwards and forwards, thereby judging the amount of slackness in the bearing. To test the side shake, the spokes should be grasped near the rim top and bottom on a vertical line, not a horizontal, as the weight of the car is upon the bottom side of the axle, and while any side play is noticeable on the vertical line, it would not be so upon the horizontal, as there is practically no wear in this direction. As a matter of fact, the wear is not actually upon the bottom of the axle, it being about halfway between the horizontal and vertical lines, towards the front of the axle. The same method of testing for slackness should be observed on each of the wheels, adjustments, of course, being made separately.

To Adjust the Wheel.

There are two types of adjustment for the road wheels chiefly in use at the present time. One is adjustment by a right or left-hand screw, as the case may be, the adjusting nut being held by a lock nut working in an opposite direction. It is always as well to remember that the adjusting nuts upon the right-hand side wheels are made with a right-hand thread, while those upon the left-hand side of the car have a left-hand threaded adjusting nut. The reason of this is that, should the lock nut by any means work loose, the tendency of the adjusting nut is to tighten itself upon the spindle, so that the possibilities of the nut working off and the wheel becoming detached are absolutely nil. If, on the other hand, the left-hand wheels were held by a right-hand threaded nut, should the lock nut become non-effective, the wheel would immediately commence to unscrew the adjusting nut, and the wheel would probably become detached before one was aware that anything was adrift. The second method of adjustment is by a single nut provided with a hardened steel washer, the nut being castellated, so that all that is necessary is to withdraw the split pin from the nut, giving this the necessary number of turns to effect the adjustment, then replacing the pin and the cap of the hub. If the wheel shows any tendency to be tight when the nut is in one position, and when given one-sixth of a turn, so as to bring the next slot in the nut opposite the pinhole, it appears to be loose, the wheel should be left on the loose adjustment rather than the tight.

Untraceable Squeaks.

A very peculiar experience was brought to our notice a week or two back. A motorist was very much troubled by a peculiar squeaking noise that was somewhere about the vehicle, but was for some time absolutely undiscoverable. Every possible and impossible place was examined, and oil put upon all necessary, and in some cases unnecessary, parts without having any effect whatever. Now, the engine fitted in this particular vehicle has the inlet valve seats screwed into the combustion head, the joint being made by a copper and asbestos washer. One of these washers had slightly cracked, and the escape of the gas on the compression stroke caused the peculiar squeaking noise referred to. It was not until the engine, which was a four-cylinder one, came to be tested for compression, each cylinder separately, that the noise was discovered. Two of the cylinders were tested, and found to have satisfactory compression, but when the third one was reached, the second time the compression was tested, the starting-handle was pulled up rather quickly, and the squeak was heard. The operation was repeated three or four times, and the same squeak occurred on each occasion. The valve was removed for examination and found to be in good condition, but when the packing ring was removed and examined the cause of the trouble was at once apparent. This is one of those little things which happen occasionally, and give the experienced motorist a good deal of trouble to discover. Should an engine develop any of these peculiar squeaking noises, it is as well to look to the seat of the inlet valve and to the stem of the exhaust valve. The latter is a source of many squeaking noises.

To Remove Patches from Inner Tubes.

When the tyres suffer from punctures the chief trouble is to get the necessary patch to adhere to the tube, but it is also necessary at times to remove such patches, and if the operation of repairing has been successfully performed the removal is sometimes a matter of difficulty. Mons. G. A. Le Roy recommends the use of hot irons for the removal of any patches or bandages on rubber goods which have been stuck down by solution and not by vulcanisation. An ordinary domestic flat-iron immersed in boiling water for a sufficient time to heat the iron thoroughly is specially mentioned, as by this means the correct heat is obtained, and there is no fear of damaging the principal part. In the event of this method not being to hand, or a more convenient one is required, take a clean hammer head or other similar piece of metal, and heat this on the cylinder head, or, better still, on the exhaust pipe. To use the heated object it should be held close up to the patch, or, if the heat is not too great, actually upon it until the whole of the patch and the surface of the main rubber is heated, when the patch or bandage may be easily peeled off without the use of naphtha or other rubber solvent.

MR. LONG'S DEFENCE OF THE MOTOR CARS BILL.

AT THE MOMENT THE CHIEF TOPIC IN AUTOMOBILE CIRCLES IS THE MOTOR CARS BILL. CONSEQUENTLY THE CORRESPONDENCE WHICH WE PRINT BELOW, BETWEEN MR. STURMEY, AS A MEMBER OF THE MOTOR INDUSTRY, AND MR. WALTER LONG, THE PRESIDENT OF THE LOCAL GOVERNMENT BOARD, WILL BE OF EXCEPTIONAL INTEREST, AS IT IS TO ALL INTENTS AND PURPOSES A DEFENCE OF THE BILL BY MR. LONG.

Coventry, August 11th, 1903.

The Right Hon. Walter Long.

Re MOTOR BILL.

Dear Sir,—This Bill, as it now stands, is a most serious matter for the trade, which in this city employs some thousands of hands, and which is just beginning to hold its own against the foreigner. You may not be aware of the harm it is already suffering, but I can assure you the damage will be incalculable. I enclose you two letters received this morning, and I can tell you that not only are no orders being received by the makers here, but orders are being cancelled right and left, and capital which was just about to be put into the industry has been withdrawn. Cannot something be done to save the industry from ruin? It is the duty of governments to assist, and not to ruin, British industries. Can you not withdraw the Bill, or refer to a Royal Commission? It is panic legislation at present.

Yours faithfully,

(Signed) HENRY STURMEY.

[The letters referred to were one from Mr. Lionel Cooke relating his prison experiences, and one from a well-known motorist announcing his intention to sell all his cars.]

MR. LONG'S DEFENCE OF THE BILL.

Local Government Board, Whitehall, S.W.

Dear Sir,—I am desired by Mr. Long to thank you for the letters of yourself and your correspondents expressing the fears of manufacturers lest the Motor Cars Bill should injure the motor car industry.

Mr. Long is aware that some anxiety in this respect exists in commercial circles, but he very confidently hopes that this anxiety will prove to be without foundation, and that the Motor Cars Bill, instead of prejudicing, will in the end be found to have stimulated the construction of motor cars in this country.

It is true that the Bill if properly enforced will discourage the demand for powerfully-engined motors intended to run at a high speed. But Mr. Long ventures to think that the employment of capital in the construction of this class of cars was at the best a hazardous enterprise, big with risks for the whole motor industry, apart altogether from any effect of the Bill. In the first place, the demand for these express highway engines was, by reason of the combined magnitude of the cost and the peril of them, bound to be restricted, and by reason of the proverbial transitoriness of fashion, likely also not only to diminish, but even to vanish altogether. And in the second place the nuisance and the panic which these racers created threatened, as was amply shown in the recent discussion on the Bill, to involve the whole practice of motor driving in such a wave of execration as might very conceivably have succeeded in sweeping the motorist altogether off the English roads for several years to come.

This danger the Bill has, in Mr. Long's opinion, averted. In the interests, therefore, alike of the public and of the industry, he hopes that the new legislation will effectually divert the attention of manufacturers from the construction of costly racing machines beyond the reach of all but millionaires to what he ventures to think will in the end be a much more profitable and stable undertaking—viz., the construction of moderately-engined reliable cars to go at a moderate speed and adapted to the purse of the man of moderate means. The Bill has undoubtedly allayed the public panic, and will undoubtedly penalise the over-rapid driver, but in the very proportion that it diminishes the abuse of motor cars, it should increase and stimulate the use of them; and in a very few years Mr. Long ventures to predict that road motors will be considered as innocuous and indispensable as are now the once well-hated bicycles.

With regard to the contention that the Bill will handicap the British trade in its competition against the foreigners, Mr. Long wishes me to point out that a maximum speed limit of *less* than twenty miles an hour is in force in France, Italy, and the United States; while, so far as he has been able to ascertain, in Germany the police criterion of allowable speed is the safe speed at which a *horse* can travel. Nor do the other restrictive provisions in force abroad appear to be appreciably less than those set up in England by the Bill. Mr. Long has therefore too great a confidence in the ability of the British manufacturer to believe that he will be worsted by the enforcement of conditions which do not seem to have affected his foreign competitors.

Indeed, in one respect the enforcement of the new conditions will very conceivably handicap foreign enterprise, for it should prevent the foreign manufacturer from obtaining an entry into the English market by dumping down in England large quantities of racing machines, for which he has been unable to find purchasers in his own country, owing to the speed limit and other restrictive provisions there in force.

Mr. Long desires me also to call your attention to the facilities in the Bill for increasing the permissible weight of motors and to the great future which lies before the trade in the direction of providing low-speed motors for commercial purposes, and he trusts that before the manufacturers come to any decision as to the future of their industry they will take time to study the provisions of the Bill in all its aspects.

He is confident that if they do so they will come to the conclusion that it has not been the result, as it certainly was not the intention, of the Bill to in any way cripple the legitimate development of the motor car industry.

I am, faithfully yours,

R. G. DUFF.

Coventry, August 18th, 1893.

The Right Hon. Walter Long.

Re MOTOR BILL.

Dear Sir,—I am obliged by your communication of 14th *re* the above, and, whilst concurring in much of what you say, I can only regret that you could not see your way to adhere to your own very practical and clearly expressed views regarding the speed limit. The manufacturers of this country are almost solely engaged in the production of touring and business cars of moderate powers, and have no interest as a whole in the construction of racing machines. They do, however, feel that in the form the Bill has finally taken, particularly as regards the unfortunate speed maximum adopted, grave injustice and much annoyance and inconvenience may be caused to their patrons. The motor car of to-day is safer and more readily controlled and stopped at any speed up to twenty-five miles per hour than are horse vehicles at the pace usually travelled by them, and even the lowest-powered motor vehicles can and do attain this speed upon level roads. The usual travelling speed in the open country of the most careful and considerate motorists will be found to range

from about eighteen to twenty-two or twenty-three miles per hour. The speed limit of twenty miles, therefore, is set at a critical point at or about the usual rate of travel, which it will be exceedingly difficult for the driver to avoid unwittingly exceeding at times, and it is the man of moderate means—for whom the British manufacturer is catering, and in whose interests you claim the Bill to be framed—who will and does hesitate to place himself in a position to be savagely and unreasonably fined for a mere technical and unintentional infraction of an unworkable statute. It would be less objectionable were the law administered with reason, justice, and discretion, but, unfortunately, past experience has shown that such is not the case, and motorists are vindictively fined the maximum penalties for technical offences by a biassed and prejudiced magistracy, upon evidence which will not bear impartial investigation, and I am afraid we can scarcely hope for any improvement. If it were possible for the Local Government Board to intimate to these gentlemen that slight infractions only of the speed limit should be met by merely nominal fines it might perhaps do some good, though I am afraid not much. I am perfectly aware of the speed limits imposed by statute on the Continent, but I am informed by Continental automobilists that in the open country, and away from the towns, these limits are ignored by the authorities, whereas here it is only upon such roads, where higher than normal speeds are absolutely safe, that "police traps" are set, the while the really reckless motorist is allowed to pursue his course through comparatively congested areas unchecked. Yours faithfully,

HENRY STURMEY.

We have also received an immense volume of correspondence on the same subject. We print a selection of the letters which have come to hand. Those selected are as far as possible typical of the views expressed by the majority of our correspondents. To give them all would nearly fill a complete issue of *The Autocar*.

The Feeling in the House.

Sir,—A very natural irritation has prevailed in the automobile world at the result of the debate on the Motor Cars Bill recently brought forward by the Government, and passed through Parliament. Some automobilists seem under the impression (1) that I am the author of the Bill, and (2) that the Parliamentary motorist party had it in their power at any time to stop its passage or alter it in any way they chose. Both these ideas are erroneous. The Bill was brought in by the Government on their own initiative in consequence of a peremptory demand from the general public for more protection, which produced a feeling in the House of Commons so strong that neither this nor any other Government could have resisted.

The measure, though admittedly far from satisfactory from a motorist's point of view, is much better than might have been anticipated a fortnight ago. The Government instead of being abused ought to be thanked for having endeavoured, to the best of their ability, to hold the balance fairly, and having resisted so far as they could the strong unreasoning anti-motorist prejudice shown by the majority of members of Parliament irrespective of party. If some bill had not been passed this session the Government intended carrying through a two-clause bill early next year, solely providing identification and increased penalties without any alteration of the speed limit at all, a proceeding which would have been very disastrous from a motorist point of view.

Those who were not in the House of Commons can hardly realise the violent feeling existing against motor cars, and on behalf of the Automobile Parliamentary Committee I may say that if every point worth fighting had not been fought for, and the most strenuous opposition offered to many deleterious amendments moved from the other side, the measure would be far worse than it is.

It matters little to me how much my actions during this crisis may be either unintentionally or intentionally distorted, but in justice to the forty-five members of Parliament who did their best to protect the interests of automobilism against over-whelming odds, I think that instead of abuse they should receive the thanks of the motoring community. For nearly twenty-four hours of Parliamentary time they fought hard to improve a measure which they were unable to throw out, and the number and value of the amendments accepted testifies to their labours.

My own opinion (for what it may be worth) is that the Act will not turn out to be so bad as many think, and if all motorists—amateur and professional—show proper consideration and courtesy during the next three years to the public and road user, it is possible that Parliament may modify the meagreness of the speed limit, and diminish the harshness of the penalties in 1906.

J. S. MONTAGU.

Motorists and the General Election.

Sir,—Deeply as we may resent the attitude of some members of Parliament in regard to the motor question, there are other questions to be decided at the general election which are of greater national importance. The vote even of the justly-incensed motorist can hardly be given without some regard to these. We cannot "throw over politics altogether." But although, possibly, it may seem to some of us that our votes must be given to those whose opinions on fiscal reform, or education, or Home Rule we believe to be sound, it does not follow that our cars must be lent to anti-motorists who abhor them. I regret, personally, that I cannot lend my car to the member for North Hereford, who was one of those who voted for the fifteen miles limit. He would not, I am sure, be guilty of the inconsistency of accepting my offer. Whether we should lend our cars to those with whose opinions on general politics we disagree is another matter. Perhaps, after all, in these days of invertebrate politicians political opinions, or rather professions, do not very much matter, and motorists may with a clear conscience consult their own interests. H. GEORGE MORGAN.

The Club and the Bill.

Sir,—As an unostentatious automobilist who has been driving the light locomotive for over two years all round about, may I be permitted to "shove my oar in" for a moment? It seems to me that motorists are now, as they say in the navy, "in the dirt tub," and why? "All along of the Automobile Club," I take it. It appears that they have simply given us away bound hand and foot, and for no reason. Who gave *them* a mandate to speak for everyone who chooses to proceed along the road in a carriage pushed by machinery inside, instead of in one hauled by animals outside? No one. I do not even know where the Automobile Club "hangs out," and do not want to. I do not know and do not care who "runs" it, or who are its members, but as far as I understand the Bill, any policeman who objects to the colour of my necktie can take me by the neck and push me into gaol, and for this I do not thank the A.C.G.B.I.

You, sir, conducting a business paper with which is connected the interests of all motorists, and not only those of a wealthy but inconsiderate section, have consistently and wisely opposed going to Parliament, at any rate for the present. The club has been to Parliament, and we have got it "in the eye."

The idea seems to have been that if the ordinary motorist would kindly consent to have large numbers on his car, then "the scorcher" would be free to tear about all over the country as fast as he chose. Well, the House of Commons has clipped his claws, and the selfish brute who does not care to what inconvenience he puts all the rest of the community so long as he can gratify his own taste for speed will, I take it, now be brought to his bearings not only by the law, but by what is above the law, that is, public opinion, which is sick of him. For *nous autres* it is of no use squealing even if one's tail is shut in the door, and so hey for the merry placard, the license, and the skilly and the plank bed (not forgetting the A.C.G.B.I.) Perhaps, however, after a bit things will begin to cool down, and makers may drop the making of, and dealers drop the bellowing about, racing monstrosities, which are not allowed to race, in favour of the sensible, practical, economical car for every-day family use, which I maintain has so far been neglected. Only a few people can keep racing cars. Thousands want the other sort, if they only knew where to get them. C.G.M.

Immediate Political Organisation Necessary.

Sir,—Your leader of last week upon the Motor Bill was certainly right and to the point, but to carry out its recommendations immediate political organisation is necessary.

I would suggest that a set of test questions be drawn up and submitted to every parliamentary candidate (no matter what party he belongs to), and if his answers are unsatisfactory he must be opposed in every possible way, and it will certainly be a disgrace to any man who lends him his car to assist him at the election. If, on the other hand, the answers are satisfactory, every assistance must be given him.

Party politics must not be taken into account at all; our industry is of more importance than party quibbles, unless, of course, both candidates are favourable to our cause.

It would be of benefit if you would publish the principal laws and regulations regarding horse traffic, and the best way to act when any breach of the same is observed. It is not much use, however, acting individually. Central committees must be formed, and the question is how best to begin forming such committees.

Regarding a check on police evidence, a correspondent to the *Engineer* this week proposes that cars should be fitted with a speed recorder combined with a clock, which shall mark on a removable paper record the speed which the car was going at any particular time. This idea is good, and I would advise that it be so constructed that a name could be signed across the record opposite the pencil of the recorder. Then our friends of the Automobile Club ought to be able to get such instruments passed and marked as reliable by an official of the Local Government Board, and also instructions issued to the police that when they challenge the speed of a car they must sign their name across the record. It would then be a case of the police swearing against their own signature.

The Editor of the *Engineer* (a gentleman who seems not always on the side of progress), thinks such instruments will have to be too bulky to be reliable, but I am convinced such is not the case. I did some experimenting with one some time ago myself, and I am convinced that one could be made about four inches in diameter that will be correct to about two per cent., which would be good enough.

J. JOHNSTON.

The Next General Election.

Sir,—As an automobilist who was struck with indignation at the outrageous terms in the latest effort at legislation on the part of the talented gentlemen who have the destinies of this country placed in their hands, I beg to suggest a scheme by which, if a combined effort is made, the autocar industry may get a little of its own back. There can be no doubt that in a short time there will be a dissolution of Parliament. Therefore let a careful list be compiled, by some gentleman with the interest of the motor industry at heart, of all those honourable gentlemen who denounced in such unmeasured terms the motor vehicle, and did their best to throttle what is destined to be one of the greatest industries of modern times, so that when the election comes on and these honourable gentlemen appeal to their constituents, they will not be able to procure a single motor car to help them in their campaign.

What this will mean one has only to review the amount of work done by these machines in past elections.

The boycott to be effectual would have to be complete both by the trade and private users, but I venture to assert that the result would be such as to bring home, even to the prejudiced minds of these honourable gentlemen, the fact that the supporters of self-propelled vehicles are powerful enough to combine and support only a candidate who goes in for fair play and justice to the motor car movement.

F. H. HARRIS.

Police Charities.

Sir,—I have just perused the letter in your issue of August 15th from Mr. J. W. Hunter, and should like to express my approval of his remarks.

I have just been fined £10 at Brentford, although the pace of the car at the time was not more than fifteen miles an hour, and there was absolutely no question of danger or carelessness. It is simply another case of an unjust fine through a police trap.

I shall most certainly adopt Mr. Hunter's suggestion *re* subscriptions to charitable and religious causes, but in addition to this I think a still better suggestion is to refuse to subscribe to all police charities, sports, etc., till these unjust doings are stopped. This latter course will touch the pocket of the police themselves, whereas, I fear very much, that their morals are not good enough to be affected by the suffering of ordinary charitable and religious funds.

Whilst writing I should like to suggest that through the medium of *The Autocar* a system of signals be published enabling motorists to warn each other of police traps; also that, especially in country places, if motorists adopted the plan of stopping and giving a small reward to any person who informed them of their imminence to a police trap, we should nearly always get the information required. On several occasions lately I have adopted this system, and then ran to the middle of the trap, pulling up the car and stopping the engine for a few minutes, then starting up and going on again past the policeman; any little trouble which this has caused has been amply repaid by the pleasure of watching the rueful countenance of the policeman, who has himself been trapped.

CAUTIOUS DRIVER.

The Narrow Road Clause.

Sir,—Being a house agent, collecting weekly rents six miles to the west, three to the east, three to the south, and three miles to bank my money, I used to keep a pony and cart, for which I was taxed 15s., but for the last two and a half years I have used a 3½ h.p. Benz, for which I am taxed £2 2s. I shall be very sorry to have to go back to a pony and cart again, but according to the Motor Cars Bill I shall have to pay 21s. for registration, and 5s. for a license to drive, making £3 8s. in all, which seems to be taxing business men with a vengeance. Moreover, the question is whether I shall be able to keep the car at all, as I have to go half a mile through the village street with a dangerous corner before I can get on the main road, the said village street being 11ft. 4in. wide in some parts between the kerb stones. Many of our country lanes do not exceed 16ft. It seems to me that the miserable clause sprung on us last Tuesday by Mr. Long has made it competent for a Parish Council, composed of workmen and a bigoted magistrate thrown in as chairman, to represent to the Local Government Board that such of their roads and streets are dangerous for motor traffic, which will render my car useless, and prevent doctors using theirs to attend country patients. Another question that occurs to me is whether the 16ft. includes the footpaths on each side, or the width of the roadway between kerbs.

T. H. B.

Sound on the Automobile Question.

Sir,—I note that in one of your very able editorials in last week's issue, the advice is given to all automobilists that in view of the way in which we are being treated by Parliament, at the next general election all automobilists should combine and refuse to lend their cars or to give votes to any candidate who will not pledge himself that if he should be returned to Parliament he will use his best endeavours to procure a favourable alternative in the law governing the use of motor cars. With this I am entirely in accordance, and I am doing all that I can to persuade my many motoring friends to adopt the same attitude. There is, however, one thing which, to my mind, to a very great extent, destroys the whole of the utility. I have not the article before me at this moment, but the sentence is to the effect that we should do this providing "the candidate is politically sound in other respects."

If we adopt this attitude, I fear that automobilists will divide into two parties in the usual manner, and will vote for their political party man, irrespective of his views regarding automobilists.

I cannot help feeling that this question is such a pressing one, and of such great importance to the automobile industry, that we ought to give up all other conditions and support that candidate who is sound on the automobile question. I am prepared to do this personally if I find that other automobilists are prepared to do the same.

Hitherto, I have been a strong party man, and have always voted upon the one side, believing that in so doing I was serving the best interests of my country, but I am quite prepared at the next election, not only to vote for the candidate, but to lend a number of motor cars at election time to that candidate, even though he belongs to the opposite political party, if he will give a definite promise to use his best efforts to ameliorate the present burdensome legislation, and if my own party representatives will not undertake to do the same. J. R. RICHARDSON.

A Government Committee of Car Construction.

Sir,—I have been interested in Mr. J. W. Hunter's letter on the above subject in your last issue. If the new Bill is as your correspondent describes it—"a barbarous and shameful piece of legislation"—motorists have largely to thank themselves for it. They failed to recognise the strength of antagonistic feeling, and fought the Bill with wrong weapons.

I am aware that it is generally regarded as rank heresy in this country to advocate any form of government departmental control where a comparatively safe industry is concerned. The remarks of your correspondent, however, on the question of the maximum speed limit of motor cars induce me to send you an extract from a letter I wrote to the *Standard* some weeks ago, in which I suggest a method by which a mild and optional form of government control might be established, with, I venture to think, advantage to all concerned.

I am one of the overwhelming majority of motorists who would accept, and be perfectly satisfied with, a maximum speed limit of twenty miles an hour if the regulation were effected by reasonable means, and without liability to police persecution.

It is there that the sting of the Bill lies, and if the A.C.G.B.I. and other automobile organisations—to all of whom apparently any legal speed limit is anathema will now accept the inevitable in this respect, and exert their influence in the direction I have indicated, much may yet be done to better the position of the motorist.

K. S. MURRAY.

Extract from the "Standard," 28th July.

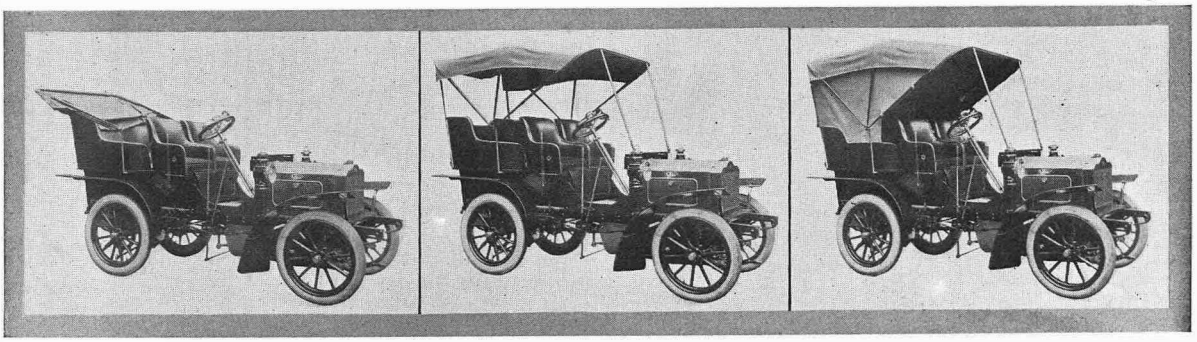
At the present moment there is a tendency amongst motor car makers to over-engine their cars, and to compete in the matter of power and speed, to the detriment of other and more important features. It is considered an excellent trade advertisement to be "held up" by the police. Speeds of fifty miles an hour on the high gear are boldly advertised. Direct driving, where it is effected, is always on the fastest gear, and the car is invariably constructed to run at its quietest and best on this gear. In fact, as cars are constructed to-day, the conscientious, easy-going, and law-abiding motorist who wishes to glide comfortably and peacefully along the public highway is compelled, for this very reason, to exceed all legal speed limits. This condition of affairs is partly due to the early importation of fast French cars and drivers, and partly to the fact that hitherto motoring has been developed as a sport rather than as a pastime. Sporting instinct creates the demand for faster cars, and can makers in keen competition with each other be blamed for meeting the demand when, so far as they are concerned, no official regulations have to be complied with?

It is an easy thing to construct a car to give its best results at any desired speed on the level, and also to give excellent hill-climbing results. My suggestion is that the Government should fix this maximum speed limit at twenty miles an hour, and then appoint a committee of professional men of the best engineering experience and highest standing to investigate the question of car construction, and to suggest some simple regulations for the guidance of the trade. These regulations need not in the least limit the scope for legitimate invention or originality on the part of makers. Any committee of British engineers would see to that. The committee would deal only with such points as the relation of engine power at fixed maximum speeds to the weight of the car and the transmission of this power to the driving wheels of the car in such a manner that, whilst the best hill-climbing efficiency was insured, the legal limit on level roads could not be exceeded. The committee's recommendations would then be issued by the Board of Trade in the form of a Blue Book, and the physic allowed to work! How long, I wonder, should we have to wait before the public were being offered cars "made in accordance with Board of Trade recommendations"?

I would, however, go further than this. Makers constructing cars in accordance with these Board of Trade recommendations should be able, on the payment of a small fee, to have their cars branded by a Board of Trade inspector, and this brand should protect the purchaser of the car from police persecution. Cars bearing the Board of Trade brand should be liable to attack—on the question of speed—only for infringement of district regulations or for exceeding the legal limit down hill.

A good motorist is too careful of his car on hills to risk high speeds, and district speeds should be regulated by notice boards. There would be compulsion nowhere in this Board of Trade control, but I predict that branded and British-made cars would in a few years become universal on our roads. The phantom of prosecution would vanish from the land. The motorist and the Jehu would live together in brotherly love; and last, but not least, the lynx-eyed rural policeman would once again be at liberty to supervise the welfare of his neglected parish.

M.INST.M.E.



A 16 h.p. four-cylinder Argyll car fitted with one of the most useful hoods we have yet seen. As shown by the left-hand picture, when the hood is down it provides an efficient dust protector. In the central picture the hood forms an excellent protection from the sun's rays, while in the last illustration it depicts the side curtains put down for stormy weather.

A useful roadside combination tool is being made by Messrs. W. Glover and Sons, Ltd., engineers, Warwick. In its ordinary form, it constitutes a lifting jack capable of elevating two tons, but by turning up the feet and putting the screw at right angles to its former position, it becomes a hand vice, which can be clamped to a gate or any other convenient object by the roadside. Then by another small manipulation it can be used as a hand vice and drill for drilling holes up to ½in. in diameter. It strikes us from the drawings as being a very ingenious, simple, and practical combination, as it takes up no more room and is no heavier than an ordinary jack, and, although one may very rarely require the other two alternative forms, it is no small advantage to have them available in case they should be wanted. There is nothing like being prepared for any eventuality.

THE STANLEY STEAM CAR.

By Hugh Dolnar. *(Continued from page 212.)*

The Water-level Regulator.

From the first use of steam boilers up to the present time, it has been difficult to regulate the boiler water level in a satisfactory and certain manner, and a vast number of devices for this purpose have been invented.

Stanley first used a glass gauge tube outside the carriage body. This type of gauge is well enough for moderate pressures and in a good light, with clean water which does not foul the inside of the glass, and so prevent the observation of the water height. But even with low pressures, the gauge glass is often broken, and for use in cold weather the gauge must be placed in an undesirable location to avoid freezing.

Plenty of trouble was experienced with glass water gauges at the low pressures first used, but when the pressure was advanced beyond 200 lbs. mischief began in earnest, and after one unlucky morning, in which Stanley had five gauge glasses break, he set to work to find a really good water level regulation scheme for his steam boilers. The conditions called for something which would show the true water level at all times, daylight or dark, hot or cold, no matter what pressure was to be used. The location of the indicator should be close to the driver's right hand, and it should be capable of being read by touch or by sight.

Inside three days from his unlucky morning with the glass gauges, Stanley produced and fitted to his carriage the water column shown in fig. 11.

Something in the nature of a float was required, as the indicator should recognise the difference between foam and solid water; but it is very difficult to make a float which will not take water at 400 lbs. pressure. Therefore, instead of a float in the water column, a metal bucket was employed, which was to

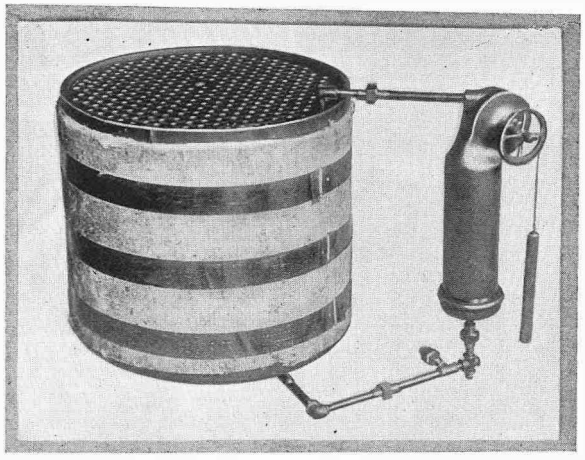


Fig. 11.—The Stanley water column connected to the boiler. When placed in car the weight seen on the right is loosely enclosed in a tube to prevent it swinging about.

be normally full of water, and counterbalanced by an outside weight, so that the middle of the bucket would always stand at the solid water line.

This arrangement gives the weight of half the bucketful of water as a moving agent for the index, which is sufficient, but could not give a reliable indication if hampered by a stuffing box. Therefore, a shive spindle was made with a taper shoulder, forming a steam valve, which gives just friction enough to keep the index wire from dancing up and down.

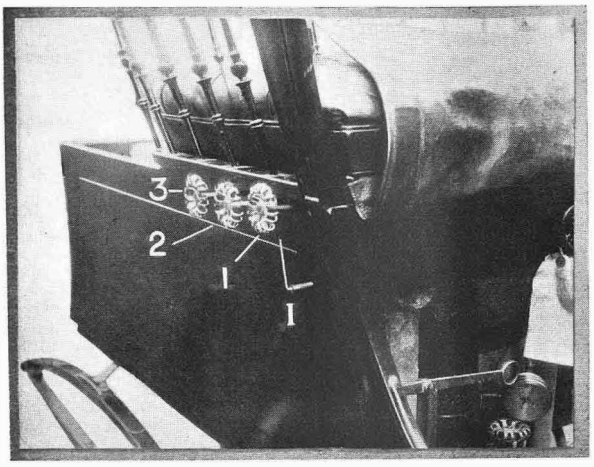


Fig. 12. The right-hand side of the Stanley steam car, showing the control handles. Nos. 1, 2, and 3. No. 1 is the boiler feed-water regulator. No. 2 is the hand fuel regulator, and No. 3 regulates the pilot light. I is the water level index. In the position shown the boiler is full of water.

The index wire was carried by a coupling on a rocker outside the carriage body, just under the three hand wheels. The driver has his right hand on the throttle lever all the time, and it is perfectly easy for him to drop his hand down and feel the index wire, which is horizontal when the water level is right, and goes up and down with the water in the boiler.

This indicator has but one fault. If the boiler is cooled down slowly, the bucket stays full of water, and the indicator reads right. But if the boiler is blown off, the water in the bucket flashes into steam, and this makes the balance weight draw the bucket up to the top of the column, causing the index to say "full" when the bucket is empty, no matter whether the boiler has water in it or not. Hence, to avoid the chance of attempting to fire up an empty boiler, two hand try-cocks are fitted to the water column, and before firing up the water is tried with the top cock, which is located at high water level.

When filling the boiler after it has been blown off, the bucket is let down to the bottom, by manipulating the index wire, and so filled. The index then correctly indicates the water level until the boiler is again blown off.

This water column, with its bucket and balance weight, is perfectly truthful in action, but does not cover the field, where a boiler can evaporate all its water in a very few minutes; and plenty of car boilers have had their lower tube plates burned by the driver neglecting to attend to the water level for a few minutes.

The Fusible Plug Seating.

The fusible plug, as commonly applied to steam boilers, consists of a threaded plug of some metal

which will melt at a comparatively low temperature, this is screwed into the boiler shell where it is exposed to the full heat of the fire, and is also covered by water so long as the boiler has water enough in it to be safe. When the water becomes too low, the plug is no longer protected by water in contact with it, and melts, and so lets the steam out of the boiler. As the plug is usually placed, the boiler must be allowed to cool before a fresh fusible plug can be screwed into the boiler shell, in place of one that has melted out.

For a motor car this cooling meant an intolerable delay, and, besides that, the Stanley boiler offered no suitable location for a fusible plug.

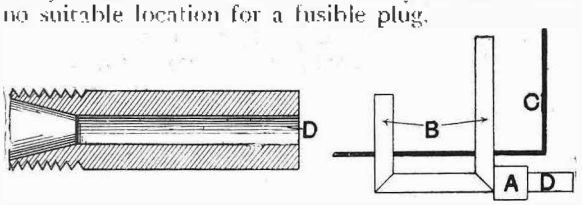


Fig. 13 The Stanley fusible plug—A is a joint in the water-piping, into which the fusible plug D is screwed. B indicates two tubes open to water and steam within the boiler shell C, while D is the fusible plug—an enlarged drawing of which is seen on the left.

To meet these conditions, a branch pipe was made with two upturned taper nipples, the right size to drive into the boiler tubes, the angle being introduced to give a small length variation between the tapered tube ends, and two boiler tubes were sacrificed by cutting the middle one off to stand up 3in. high in the boiler, while the outer one stands 6in. high. Obviously, both ends of the cut-off tubes will be exposed to the steam space as soon as the water falls to 3in. deep in the boiler, no matter at what angle the boiler may be inclined. As soon as both ends of the plug fitting open to the steam, the water in the pipe, which is in full flame of the burner, at once flashes into steam, and the lead plug instantly melts and the steam blows out with a screech. The outside end of the brass plug tube projects beyond the burner casing, and as soon as the steam has done blowing out, the brass tube can be unscrewed and a fresh tapered lead plug pressed into the threaded end, the brass tube can then be replaced and the boiler filled and fired at once. The plug has been blown out and replaced, and steam raised again and the car started within eleven minutes from the time of blowing out.

The addition of the water column and the fusible plug made the vertical fire tube boiler safe, and the steam syphon, with its 8½ft. of rubber hose unobtrusively carried by being hung in hooks underneath the car body, made it easy to fill the water tank, but the steam was wet, and wasted heat, and made a great show of the exhaust, and used far more water than it should. Stanley then became aware of the necessity for superheating.

Here again, as with the fusible plug, peculiarities of construction and operation made superheating difficult, because there was no constantly burning fire available to heat the superheating coil.

The Superheating.

The only constant heat was in the boiler itself, and, therefore, it was decided to carry the steam from the throttle down through the boiler, then by a tube over the burner to another vertical superheating tube up through the boiler, and from the top end of this tube, to lead the steam through a curved pipe in the smoke box to the engines.

The normal maximum speed of the Stanley motor is 750 revolutions per minute. It is geared down in the ratio of two and a half to one, to the rear axle. Under ordinary conditions, this required about 60 lbs. steam pressure on a level road. With 400 lbs. in the boiler, saturated steam, the temperature would be about 444°, while saturated steam at 60 lbs. has a temperature of only about 300°, thus giving a difference of about 140° of temperature, which could be applied to superheating the steam by passing it through the boiler on its way from the throttle to the steam chest. A practical test proved this reasoning to be entirely correct. The exhaust became invisible under ordinary conditions of running, and the water mileage was about three times that obtained without the superheating.

With the superheating so fortunately found easy to establish, Stanley began to really enjoy driving his cars. With 400 lbs. in the boiler and only 60 lbs. needed in the steam chest for twenty or twenty-five miles an hour on the level, he could at any instant, by a little movement of the throttle lever, increase his motor power six or sevenfold, and could romp up hills where heavy motor cars had to crawl, and could go at any pace he dared make on the highway, and keep his steam pressure up with ease.

The Stanley Fuel Handling.

But let no one fancy for a moment that Stanley found out how to make a steam boiler fire itself without much trouble. A silent burner which gave a combustion so perfect as to be odourless was so easily achieved as to be obtained almost at the first attempt; but there was yet much more to be done. The first burners had two serious faults—they would "burn back," or catch fire, inside the burner tubes, and they would also blow out. It was found that an increase of pressure on the fuel tank decreased the liability to burn back, and the pressure was increased to 40 lbs. in the fuel tank, which gave trouble with leakage. Then the pressure was all taken off the fuel tank, and a fuel force pump system, comprising a hand and power pump and a fuel pressure chamber, was introduced, the pressure chamber being very small, and the fuel pressure was carried up to 80 lbs., with greatly improved results. The Stanley fuel arrangement is now perfect in action. The driver does not have to concern himself at all with the fire after it is once started, and need only look after the water level, after the fuel pressure is once established, the boiler and water tanks filled, and the fire started. The car is perfectly still, has no vibration whatever, produces no odours, and can run up any hill at any pace with four passengers up.

But the diagram of the fuel arrangements (fig. 14) will enable the reader to see what it takes to make a pigmy fire tube boiler, 105 lbs. weight, such as has been described, automatically holding somewhere about 8 or 10 h.p. constantly on tap, ready for instant use.

Referring to fig. 14, the fuel is led by gravity from the bottom of the tank A, and is carried under the front seat of the car, through check valve No. 1 to the power fuel pump B, which forces the petrol through check valve No. 2, past the branch pipe to which the hand fuel pump C is connected, through

check valve No. 3, to the diaphragm fuel bypass D. The pump scheme is the same as that of the power

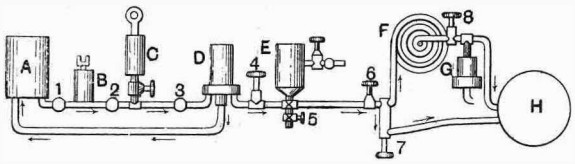


Fig. 14.—Diagram of the Stanley fuel connections.

A, petrol tank, capacity of 13 gallons
B, power-driven pump
C, hand pump
D, diaphragm petrol bypass
E, air pressure chamber
F, vaporising coil
G, automatic fuel control
H, burner
1, 2, and 3, non-return valves
4, hand shut-off valve
5, fuel drain cock to E
6, hand shut-off valve
7, burner pilot valve
8, main burner control valve

and hand water pumps. Check valve No. 1 is the power pump induction valve; No. 2 is the eduction valve for the power pump and the induction valve for the hand pump; and No. 3 is the eduction valve for the hand fuel pump; and shut-off valve No. 4 is opened by hand when the hand pump is to be operated, and closed when the hand pump is to be isolated. The diaphragm fuel bypass D contains an adjustably spring-loaded diaphragm, which controls a needle valve opening a passage to the bypass fuel return pipe from the pressure regulator E back to the fuel tank A. This arrangement merely ensures forcing all the fuel that is needed towards the burner at a pressure not exceeding the maximum determined by the spring load on the bypass valve diaphragm. Next the fuel passes through the hand stop valve No. 6 to the pressure chamber E, and from the pressure chamber it goes towards the vaporising coil F.

(To be continued.)

MOTOR CARS FOR MEDICAL MEN.

DR. HUSBAND, OF PETERBOROUGH, WHO HAS HAD A LONG EXPERIENCE WITH AUTOMOBILES IN HIS MEDICAL PRACTICE, HAS BEEN GOOD ENOUGH TO SEND US, FOR THE BENEFIT OF OUR READERS, AN ACCOUNT OF HIS EXPERIENCES. AS HIS CONCLUDING REMARKS MAY BE DISCOURAGING TO THE UNMECHANICAL, WE HAVE SUGGESTED A PRACTICAL ALTERNATIVE.

Concerning motor cars for medical men, I have run from 15,000 to 20,000 miles in a rough country practice with the following cars: A 3½ h.p. Benz, 7 h.p. New Orleans, and a 2 h.p. Minerva bicycle. As far as I can judge, a car for medical men should be something as follows: Petrol engine, 7 to 10 h.p., slow running, two cylinders, water-cooled, positive driven pump, with a water system out of which you can drain every drop of water. All pipes and tanks, etc., of copper. A crank chamber which is dirt-proof. Ignition wires completely protected from oil and water, and which can be seen without getting under the car. Wipe contacts in a clean place, and a trembler coil or coils. A two-way switch which can be easily reached from driver's seat. Lubricators to be placed where they will not freeze on a cold night. All bolts and nuts to be standard pitch and sizes, and so placed that they can easily be got at with an ordinary spanner or screwdriver, and so placed that you have not to lie on your back in the road.

As to transmission, this, in my humble opinion, is the weak point of a car. Chains if they go wrong on the road do, to say the least of it, make your hands dirty, which is rather important for a medical man. Sliding gears and a live axle seem the best if they will stand solid tyres. Two years' hard work seems to finish them. Could anything be done with our old friend the belt if made of a respectable length and breadth and cased in? Engine and gears to be covered in by a removable metal shield underneath, so that the car can be really washed down, and so that it will not take half a day to clean it underneath.

Wheels to be shod with solid tyres, as it is not an exciting pastime mending punctures on a dark and wet night. Artillery wheels to be used; wire ones take too long to clean. No ball bearings; wheels to be easily detachable. Brakes and clutch to be faced with brass; leather gets wet and keeps wet. Brake on propeller-shaft not to disconnect clutch, as on a dark night you may want to stop in a hurry. Grease cups to be large enough for one filling to last for a week, and they should be so placed that you can get at them easily. Body to be light, and quite smooth, with no pretty mouldings to hold dust in corners, and for the paint and putty to shake out of. A light detachable tonneau to be fitted. Upholstering to be plain, and no buttons to come off and make puddles to sit in when it rains. A light cover if you are a hot-house plant, but in my opinion they are a mistake, as with a bad road and a head wind they slow the car too much. A good tool drawer, with separate division for each tool and spare part, so that you can find what you want in the dark. The speed need not be great—say twenty miles—as long as the car will keep up a fair speed on heavy roads and uphill. To bring such a car as the above within the reach of the average country practitioner it must be reasonable in first costs and in repairs. Never mind about starting from the seat, as it is much better to stop your engine when making a call, especially if you are alone, and if you are not your man can start it up when he sees you coming. The motor bicycle at present seems the best hope. It is comparatively cheap and not much to go wrong, and if you have a fair set of tools you can do most of the repairs yourself. Mine has run about 5,000 miles this year, and has only been off the road three days for repairs. The disadvantages of the motor bicycle are: It is very dirty in bad weather, and it side-slips in the mud, and I know nothing that can throw you harder when it really does its best at it. It is difficult to drive slowly and keep cool, say on a dark night, especially when going down wind. Some day we may get "the car that a Kaffir can drive with a screwdriver," but till then we must be content to burn our fingers on exhaust pipes and bark our knuckles against radiators, in vain endeavours to get at an inaccessible nut, when the only solace is to think what you would do to the

designer if you had him in a quiet place. You can make almost anything run on a flat road on a summer day if you have plenty of time to play with it; but it is a different tale on a muddy road, with a December gale in your teeth at two a.m. Unless a medical man of average means cares for mechanical work or can afford to keep a good man to do it for him, he had better let motors alone. If he does care for mechanical work he will find a motor of great benefit to himself and his patients.—FRANK HUSBAND.

As Dr. Husband's concluding remarks may be disheartening to medical men, or, in fact, to other people who cannot afford to keep a good man themselves, but who are none the less absolutely unmechanical, or have no time or inclination to look after their cars themselves, we cannot do better than refer to a system which came under our notice recently when touring in Kent. To particularise, the place was Margate, and we found that three of the medical men in that place were using motor cars. In each case, these vehicles were looked after entirely, so far as the engine and mechanism were concerned, by the local motor car engineer. For this attention, which was given daily, he charged a fixed sum per annum. We are not at liberty to state the cost, but we may say that it would only be about the same as would be paid for an incompetent jobbing youth. All the doctors had to do was to have their cars washed, and they could tell to a nicety what the cost of upkeep per annum would be, with, of course, the exception of the sum which would be required for renewals of working parts, though even here there would be little difficulty, as the cars were of a simple economical type, and one at least of them had been running sufficiently long for it to be stated definitely what the annual cost of upkeep would be. Of course, there are some districts in which there is no local man sufficiently capable or enterprising to undertake the work, but these districts become fewer every day, and there will soon be no area of any consequence in which there are not one or more competent repairers. They on their part will be able to make very reasonable charges indeed for their work, as it is a regular contract, will bring them in a fixed sum per annum, and will go a long way towards paying the wages of one good man at least.

THE GORDON-BENNETT RACE.

MR. L. P. MOOERS INTERVIEWED.

Upon his arrival in New York, Mr. Louis P. Mooers was interviewed by a representative of the *Motor Age*. He talked more of his trip and the cars he had seen than of the race itself. With regard to the part he played in this, he made no excuses for not completing the course, but gave an unvarnished account of his experiences:

"The clinch of my tyres would not clinch," he said. "I was run into the gutter on the first small circuit near Athy, and it took me threequarters of an hour to put in an inner tube. This happened again on the first big circuit. This time I ran into a hedge. Luckily, it was not the usual stone wall. My time cards along stretches before Athy showed sixty miles an hour average, so my machinery was working all right. I proceeded on to Athy again. There I stopped. I was hopelessly behind through delays in making tyre repairs, and I feared to attempt high speed with them. American tyres are all right for road use, but they are not built to stand the terrific strain of rounding curves in such races. Our makers build the clinches of rubber, the Europeans of fabric. Theirs hold, ours do not. Then again, inner tubes can be put in their tyres much quicker than in ours. So the race will teach our manufacturers that much.

Mr. L. P. Mooers.

"I do not see that the European machines are so very much better than ours, as they are cracked up to be. They are better, and I looked them over well at the race, and later in Paris, and got some good pointers. What? Never mind. Wait. I have learned a thing or two. In chauffeurship and in their knowledge of this kind of racing they are way ahead of us. I watched them closely. They worked quickly in controls and bluffed their way with the officials, who at first sought to prevent them from examining or tinkering with their machines in controls. Jenatzy is lightning, but very nervous in controls. René de Knyff was the coolest operator. I fancied Jarrott most of the Englishmen.

"We were treated splendidly. The Englishmen did everything they could for us, and the Germans and Frenchmen showed us many courtesies.

"I will gladly build another racer and take part in next year's contest. I think we should be in all these races. They will teach us things of great value, and bring us into closer competition with the European makers."

The Post Office motor van running between London and Epping has had many narrow escapes owing to the tendency of hay-carters to go to sleep and leave their horses to take their own way. The Postmaster-General has communicated with the Essex police, with the result that eighteen drivers have been fined at Epping for being asleep or driving without lights.

DIVIDENDS AT LAST. By Henry Sturmey.

It may not at first sight appear a matter for more than passing remark that the directors of the Motor Mfg. Co. last week issued their balance sheet for the year just ended, and not only showed a profit of above £10,000, but paid a first dividend of five per cent. But this fact is of more interest and of more importance to the motor industry than is immediately apparent, for it certainly marks the conclusion of the "seven lean years" of the motor industry, and ushers in what I hope will be much more prosperous times for those engaged in it, for there can be no doubt that the hitherto unsuccessful career of this firm—and its near neighbour, the Daimler Co.—has had an enormously discouraging effect, and has done more than anything else to keep back the flow of capital into the trade, for the want of which the motor industry of this country has been languishing. Yet, whenever the co-operation of the capitalist has been sought for motor enterprises, that co-operation has been refused on the ground that "no one has made any money at it yet," and the records of the two oldest firms in the kingdom have been pointed to as proof. The entering of the hitherto least successful of the two on the dividend payment stage will at least remove this stigma, and it will doubtless be argued that, if the M.M.C.—which had become quite a byword in motor circles as a financial failure—can make money, others, less hampered by a past, might reasonably expect to do the same. To the cognoscenti, however, it has long been known that the non-success of this firm in the past has been due more to internal and peculiar causes than to any difficulties inherent to the motor industry; and as it is plain that the company has now outlived its past and entered upon a new career—upon which it has my heartiest congratulations—a brief sketch of its past history and the policy which led to failure may not be either uninteresting or uninstructive.

The History of the Company.

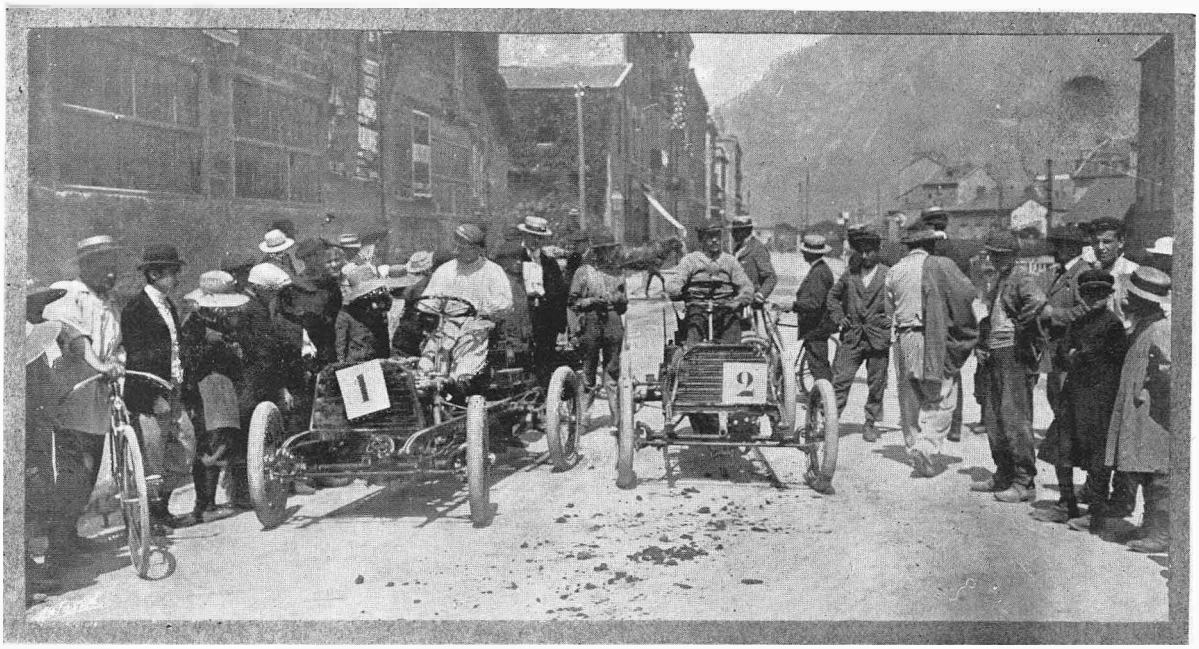
The company dates from the spring of 1896, and was originally formed as the Great Horseless Carriage Company, having working rights over all the proved systems of that period, viz., petrol, steam, and electric. There is no doubt it was over-capitalised, but it had, after paying out the vendors, something like £120,000 cash capital to work with, and with proper management could have been made to pay even on its inflated capital. But it had a "large and influential (!)" board, and that board was its ruin. I was, unfortunately for myself, a member of it. There were about three business men upon it, and the rest—well, a menagerie! Promptly the board divided into two parties, and I found myself in the minority. The party in power ignored the rest. None of them knew anything of the motor business, or, it seemed to me, of any business at all. A gentleman I introduced as a prospective works manager, who had had charge of 1,500 hands in the Armstrong-Whitworth works, was rejected as not being able—in their opinion—to "manage men"; and after many weeks' delay, one was appointed, who—like most English engineers of that period—had conceived the notion that his own untried ideas would be better than the results of Continental experience which the company had paid so much to possess, and, the board consenting, a period of experiment on a large scale was entered upon. After a year of this, and the expenditure of large sums of money in several directions without result, the "party in power" resigned, and I found myself taking a leading part in the concern. The works manager resigned, and I introduced another—a gentleman who has since proved his capacity in the successful organisation of the works of the Electrolitic Alkali Co.—and we entered upon the stage of actual manufacture, and in the next few months made and sold the only commercial cars which the company ever did produce. Just as the works and production were getting into shape, however, a shareholders' action was instituted by some seventy shareholders out of about 4,000, and the rest of the board wanted to close the works, whilst I held an opposite opinion; and although I prevented this course being adopted, the work was curtailed and interfered with to such an extent that I resigned, and a few weeks later the works manager followed suit.

Reconstruction.

A reconstruction of the company followed, the name being changed to the Motor Mfg. Co., and a few fresh directors were added. These were, of course, quite ignorant of the business, and the old ones had not learnt by their past experience, so, when a new works manager was appointed—and that gentleman, too, had his own ideas as to how motor cars should be made—another period of costly experiment, with neglect of production, was entered upon, and more time and money wasted, and ere long a second reconstruction, with further changes of the personnel of the board, took place. By now the works manager knew a great deal more of motor cars than when he began; but the board knew less, and for a year maintained a shilly-shally policy; and instead of settling upon a type, and producing it, the manager was kept at producing new patterns, no less than nine different sizes and types of engine, for instance, being got out in the year of their reign. A financial crisis again followed, and yet another reconstruction was carried through a year ago, with, for yet a third time, another "call" on the unfortunate shareholders. At that time I had a pretty considerable share holding; but, as it appeared that the same board would remain in office, I sacrificed the lot. Soon after, however, instead of making a scapegoat of the works manager, who was now thoroughly *au fait* with the business, as was, I understand, at first intended, two of the directors were replaced by a couple of business men, and the only sensible policy, viz., that of specialising on one or two types of car and manufacturing them in quantity, was adopted, with a result which is seen in the satisfactory balance sheet now produced. From this very brief sketch of the company's career, I think the causes of past failure and of present success will be apparent, and it will be clear that, had a reasonable policy been adopted at the commencement, success could have been much earlier achieved, and that its non-success has been due in the past to no special disabilities of the motor industry, but solely to the ineptitude of past boards of directors.

CONTINENTAL NOTES AND NEWS.

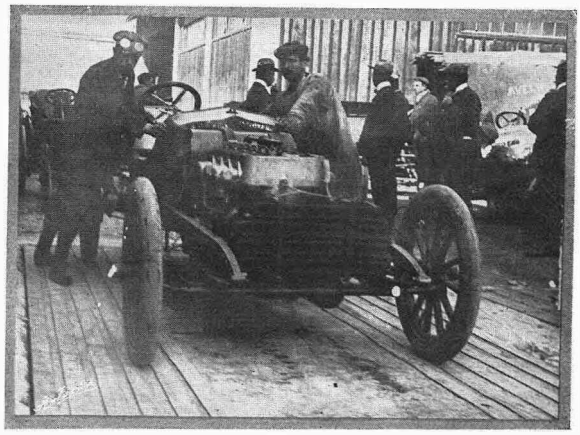
A NOVEL SERIES OF TRIALS.



Laffrey hill-climb. MM. Wagner and Villemain lined up ready to start the hill-climb. Both are driving 20 h.p. Darracqs.

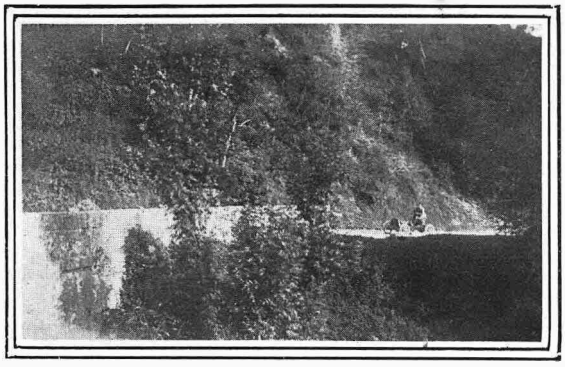
Since racing on the public roads is no longer possible, all sorts of ideas are being put forward for replacing these speed tests, and it is found that there are many ways of trying the capabilities of cars besides running them for speed and endurance over very long courses. At Laffrey a new form of trial was inaugurated, which met with so much success that it is bound to become a prominent feature on automobile programmes in the future. After the hill climb reported last week, the meeting was transferred to Uriage-les-Bains, a charming watering-place between Grenoble and Vizille, where a straight track of 500 metres had been marked out in the park for speed tests. Over such a short course, the trial would naturally have very little value as a means of trying the speed of cars, unless it were accompanied by other factors, and its interest was accordingly greatly increased by sending off the competitors from a standing start, at the same time that they were required to stop on the line marking the 500 metres. If they went over this line, they had to return, this, of course, being included in their actual running time. It will be seen that in such a trial, nearly every quality of a car is brought into play. To move a vehicle from rest to its highest speed in the shortest possible period, the greatest proportion of power must be utilised on the driving wheels, and while the transmission should be economical, the clutch must have a more or less progressive action;

Laffrey hill-climb. Le Blon and his 40 h.p. Serpollet. It will be noticed the car is a new type so far as the front part is concerned; the frame differing from those previously built.



A front view of the 40 h.p. racing Clement.

otherwise, the motor may be stopped by attempting to in-clutch on the top speed gear, or else there may



Laffrey hill-climb. A view of the road near the village of La Traverse.

be a great deal of slipping and loss of time, unless the car be in the hands of a very expert driver. The brakes, too, are put to a very severe test by compelling the drivers to finish on the line; for it is naturally to their interest to stop the vehicle from high speed in the shortest distance possible. Such a trial brings out the qualities of judgment, promptitude, and skill in handling, quite as much as in any other form of test. In the open trials Le Blon (Gardner-Serpollet) and Rougier (Turcat-Méry) dead-heated for the first place, the former crossing the line and then jumping back with remarkable dexterity, while Rougier stopped dead on the line, both of them in 39s. Duray, on his Gobron-Brillié, stopped just before the line, and consequently lost a good deal of time at the finish. Several of the competitors either stopped too soon or had to reverse after crossing the line; and this was the case with the Gardner-Serpollet touring car of Pelzer and the Mercedes of De Rougemont. Gasté, on his Automotrice, for example, seemed to be doing remarkably well, and stopped splendidly; but he had to restart to cover two or three inches to the line. In a record attempt Duray showed how perfectly

A view of one of the bends on Laffrey hill.

the huge Gobron-Brillié could be handled by covering the 500 metres in 34s. The times were as follow:

BIG CARS.

Le Blon (Gardner-Serpollet), 39s.
Rougier (40 h.p. Turcat-Méry), 39s.
Duray (100 h.p. Gobron-Brillié), 49 1/5s.
Rigolly (100 h.p. Gobron-Brillié), 49 2/5s.
Pichat (30 h.p. Mors), 1m. 4/5s.

LIGHT CARRIAGES.

Rasson (40 h.p. Clément), 45 1/5s.
Fournier (40 h.p. Clément), 46 1/5s.

VOITURETTES.

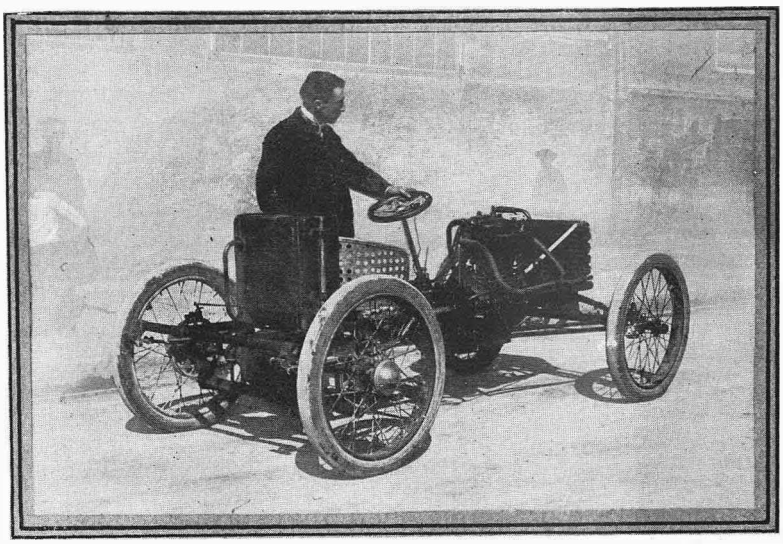
Hauriot (Clément), 46 3/5s.
Besnard (18 h.p. Clément), 50 1/5s.

TOURISTS (FOUR CYLINDERS).

Baron de Turckheim (24 h.p. De Dietrich), 43s.
Baron de Rougemont (60 h.p. Mercedes), 45 1/5s.
Dupuy (Renault), 48 3/5s.
Gasté (20 h.p. Automotrice), 1m. 4s.
Jallifier (Darracq), 1m. 4 3/5s.
Pelzer (12 h.p. Gardner-Serpollet), 1m. 6s.

TWO CYLINDERS.

De Chanteloup (Renault), 57 3/5s.



Laffrey hill-climb. M. Du Boisse with his new voiturette. This was one of the lightest machines in its class.

ONE CYLINDER.

Derex (Cottereau), 1m. 12 4/5s.

RECORD ATTEMPTS.

Duray (100 h.p. Gobron-Brillié), 34s.
De Rougemont (60 h.p. Mercedes), 36 4/5s.
Pelzer (Gardner-Serpollet), 47 1/5s.
Jallifier (Darracq), 1m. 2 4/5s.

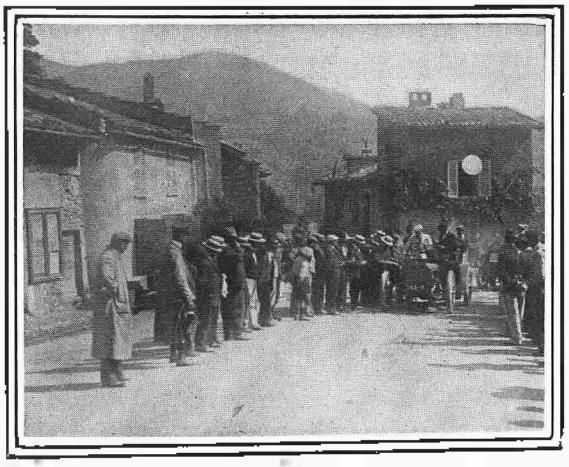
These trials are to be repeated next month to take the place of the flying kilometre tests at Deauville, which the local authorities were unable to authorise, because they feared that, with the speeds now attained, the road along the sea front is not long enough to allow of the cars being pulled up. This objection, of course, does not hold good with the 500 metres trials, since the vehicles have to be started and stopped within this distance, and there is thus every prospect of the meeting on September 10th being as popular as those held in previous years. A cup has been offered by Baron Pierre de Crawhez, who was the first to suggest the holding of trials on these lines.

A Noteworthy Climb.

The meeting organised by the Automobile Club Dauphinois wound up with an excursion to the Lautaret, a mountain village fifty-five miles from Grenoble, situated on the glacier line. Among the cars arriving here were the two Gardner-Serpollets—the 12 h.p. touring car driven by Pelzer, and the racing vehicle of Le Blon. The other tourists were quite satisfied with the performances of their vehicles in reaching an altitude of 2,500 metres, but the Serpollet drivers thought that they would do still better, and with three passengers on board Pelzer decided to drive up the Galibier, which has a rise of 600 metres in four miles. The road for most of the way is little more than a path, winding round continually on the edge of a precipice, but by dint of careful driving Pelzer got to the top in thirty-two minutes, and had the honour of being the first automobilist to reach the summit of the Galibier. If the ascent was difficult, it was ten times worse coming down the mountain, which could only be done safely at a crawl. Le Blon also took his racing car up with five passengers, and both the Serpollet drivers were warmly congratulated on their return to the Lautaret.

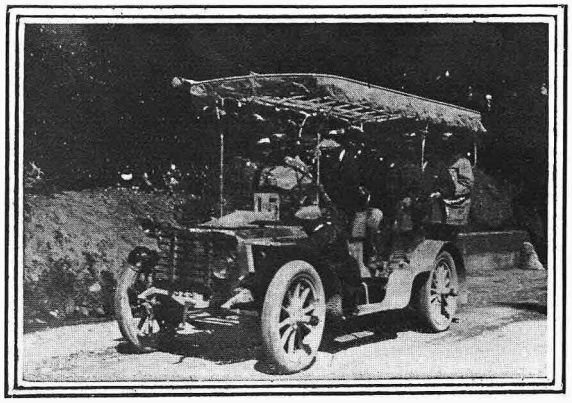
A New Motordrome.

A good deal has been said during the past two months in favour of creating motordromes, and a large number of projects have been brought forward; but it is to be feared that among all these different proposals there are very few that can have any chance of being carried out. The acquisition of a property large enough for the laying out of a track several miles in length means an expenditure of a considerable capital, and even when the site has been purchased there is still the cost of installation, the construction of roads, the building of stands, garages, and repair shops. The motor-



Laffrey hill-climb. Start of one of the tourist cars on its journey up the hill.

drome is intended to be not merely a place for racing, but also for the meeting of members who will store their cars, for it is from this source that the promoters hope to get a good deal of their revenue. It is obvious, therefore, that they cannot risk this enormous capital unless they are fairly assured of success. The motordrome must be within easy reach of Paris, and should not suffer from the competition of rival establishments. When, therefore, we hear of new motordromes being constructed it is perhaps just as well that we should wait before counting too much upon them until the negotiations reach a practical stage. A little while ago a good deal was said about the Le Tremblay motordrome near Champigny, and now another project has been brought forward to utilise the



Laffrey hill climb. The De Dietrich omnibus arriving at the end of the climb with a full load.

domains of the Chateau de Brou. The track will have a length of about seven and a half miles, with a straight stretch of 3,000 metres for the mile and kilometre records. The road will be made of tarred macadam. The automobilist can only hope that some of these enterprises will be carried out, but, unfortunately, this depends upon the ability of the promoter to find the necessary capital.

THE NEW NAPIER WORKS.

The new Napier works at Acton Vale are now in full swing. Built specially with a view to providing every modern facility for high-class automobile construction, the works are in design and equipment second to none in this country devoted to this special purpose.

During a recent visit we noticed that the machinery employed is all modern and in nearly every case quite new, and, further, was being employed to its greatest capacity. Indeed, the signs of energy and expansion were evident everywhere, and Mr. Napier mentioned that, although the works had been such a short time open, they were already inadequate and were being enlarged, proof of which statement we afterwards received by the sight of busy bricklayers at work on two separate parts of the premises. We were particularly favourably impressed with the drawing-office (which, although exceptionally large, was one of the departments receiving further increase of space) and the stores, the latter being a model of order and system, and also somewhat unique as motor factories go, from the point of view of not only the extent, but the up-to-dateness of the stock.

Although, as already mentioned, the bricklayer was busy covering up the soil, ample land is in reserve for further schemes of enlargement, and doubtless at no distant date the Napier works will be one of the largest in the London district.

THE INTERNATIONAL AUTOMOBILE CONGRESS.

(Continued from page 218.)

A Report upon Springs.

In his report upon springs, Mons. S. Pozzy said that automobile makers had no longer any hesitation about adopting the usual leaf variety, with slight differences in the method of attachment, but he spoke very highly of a type of double front spring consisting of the ordinary pattern jointed to a half leaf spring longitudinally, by which means the elasticity was greatly increased. The springs should be long and built up of a large number of thin leaves, and they should be of sufficient width. He thought that makers might increase the width of the springs with great advantage. The steel employed in their manufacture was of the same quality as that specified by the railway companies. Several kinds of steels were used, including silicon, tungsten, and wolfram steels, and there were many trade secrets in the manufacture of good spring steels.

Roller and Ball Bearings.

M. Carlo Bourlet went very fully into the theory of ball and roller bearings, which he said was not sufficiently understood by autocar makers, and, as a matter of fact, the action of ball bearings was quite different from what was generally supposed. In each ball there is always a pivoting motion which exerts a boring action on one of the surfaces in contact. The usual system of providing two points of contact was, therefore, not satisfactory, and in automobiles the ball bearings ought always to be provided with three contacts. M. Bourlet's paper is crammed with formulæ, and ought to be invaluable to the automobile engineer, for it is quite possible that his theories may have an influence upon the efficiency and durability of ball bearings.

The Construction of Frames.

M. Pierre Arbel, the well-known maker of railway carriage wheels and pressed steel waggons, has for some time past been giving special attention to autocar frames, and his report upon these was based upon a considerable experience in the application of pressed steel to all manner of purposes. He said that the frame ought to possess great resistance, lightness, flexibility, a minimum of parts, and a facility for attaching the mechanism and the carriage body. The construction of railway waggons had passed through the same stages as the automobile. They were first of all made of wood, then of sectional steel, followed by a combination of sectional steel and wood, then of tubes, and finally of pressed steel. An experience of eighteen years has shown that the waggon of pressed steel is, on account of the inherent elasticity of the metal, the best able to resist deterioration due to vibrations and shocks. The frame should not only have sufficient elasticity to prevent any permanent deformation through violent road shocks, but the system of attachment should also be able to withstand the permanent shocks of the motor. Consequently, the flexibility of the frame is a matter of great importance. M. Arbel described the various methods of construction with sectional steel, tubes, and armoured wood, and then dealt fully with pressed steel frames. At first, makers did not see the importance of connecting the side members of pressed steel with cross pieces of the same dimensions, or of assembling the pieces to give strength to the parts of the frame which were subjected to most strains, with the result that the rivets and connections had to resist stresses under the worst possible conditions. In a word, the frame should be designed to receive the motor and gear. During the many years that he had been producing hydraulic pressed steel he had been frequently struck by the extraordinary increase of resistance obtained by giving it forms specially adapted for particular purposes. He had made pressed steel railway waggons capable of carrying loads of fifty tons and more, and the great resistance of these waggons in proportion to their lightness had led him to devise an automobile frame which was known as the Chassis Arbel. The principle of its construction is that the different members are stamped with connections which fit or wedge into each other in such a way that the stresses tend to bind them together. Only a few rivets are employed, and as they only support tensile strains the effort is not considerable. This arrangement is particularly important when cars are brought to a sudden stop, for at that moment the accumulated forces represented by the momentum act throughout the mass horizontally, and exert a tremendous strain upon the rivets. The method of assembling the parts by joints is adapted to every possible variety of pressed steel frame, but one type that may be referred to is the cuirasse, or steel plate bottom, stamped out in the required form to serve as a case for the motor and gear. The whole of the mechanism is thus enclosed. In conclusion, M. Arbel said that the sole objection that had so far been raised against the pressed steel frame was its relatively high cost, but this was a temporary inconvenience due to the necessity of laying down costly machinery to turn out special pieces, but as manufacturers began to get back the capital invested in this machinery the cost of the frames would rapidly diminish, the more so as the proposed unification of types would greatly reduce the cost of manufacture. He added further that the length of frames tended to increase, and during the past year had augmented from two metres to three metres, and even 3.6 metres. He also insisted upon the importance of adopting secondary frames because they gave a much better support to the engine and avoided the necessity of employing long aluminium arms which, on account of the weakness of this metal, presented a serious inconvenience.

Several members questioned M. Arbel about the behaviour of pressed steel frames in collision, the idea being that they would twist hopelessly out of shape, and he replied that in the Paris-Madrid race there were forty cars running with his frames, and two came into collision at terrific speeds. In one of them the ends of the side members were crushed together, but there was no breakage, and there would have been nothing to prevent the straightening out of the frame if the makers had not desired to keep it as a curiosity. In the other case, the frame was straightened out without being returned to the works.

(To be continued.)

Correspondence.

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

THE GORDON-BENNETT RACE.

[3094.]—We notice that some of our foreign friends are dissatisfied with the complete vindication of the behaviour of the English-made Dunlop tyres at the Gordon-Bennett race, and they seek to suggest in your columns that 3½in. tyres of foreign make would have been quite satisfactory.

The 3½in. tyres made by this company, and used on the front wheels of the Napier cars, gave no trouble whatever, the only trouble that arose was in this solitary instance, where 3½in. tyres were used on the driving wheels, and although our foreign friends are now seeking to confuse the issue, none of them ventured to fit a 3½in. tyre on a driving wheel for very good reasons, well within their knowledge.

On the other hand, Dunlop tyres of these dimensions have done so exceptionally well that there was considerable excuse for Mr. Edge's venture, based on a somewhat unique experience of their quality.

For THE DUNLOP PNEUMATIC TYRE CO., LTD.,
LOUIS M. BERGIN, Secretary.

[3095.]—We have noticed with regret a letter signed by Mr. Paul Brodtmann in relation to Clipper Continental motor tyres, the sale of which is controlled by us in this country, and in the said letter Mr. Paul Brodtmann says that 3½in. tyres would have been quite suitable for the back wheels of the Mercedes cars competing in the above race.

We regret that Mr. Paul Brodtmann has seen fit to interfere in the business managed by this company, but since he has done so we beg to state that we do not agree with his views that it would have been safe to use a 3½in. Clipper Continental tyre on the driving wheels on any of the cars competing in the above race. In our opinion it would have been most unsafe, and we should have refused to supply 3½in. tyres for that purpose.

The object of this letter is not controversial, but to prevent our customers from being misled by the statements Mr. Paul Brodtmann has seen fit to make.

Three and a half inch tyres are quite suitable for front wheels, and tyres of that size supplied by the Dunlop people for front wheels gave no trouble in the race; but it was a fatal mistake to use them on driving wheels—a mistake which we hope no other competitor will be induced to repeat.

For THE CLIPPER PNEUMATIC TYRE CO., LTD.,
ERNEST A. STEPHENS, General Manager.

[3096.]—In your issue of the 15th, I notice a letter from Mr. Weigel bristling with inaccuracies and personalities, but as the latter, naturally, do not interest your readers, I let them pass, but when he states that the tyres on the front wheels of my Gordon-Bennett car came off, although they were slightly bigger than those of foreign makers, he is knowingly, or unknowingly, stating an absolute untruth.

For this gentleman to dare to criticise tyre manufacturers seems to me peculiar, to say the least of it, he himself having sold me tyres for my light racer, and they failed to carry me from London to Paris. One came off on the way to Paris, and the others were in such a bad state of repair that they had to be removed.

I feel that I can write very strongly on the tyre question, as I am not interested, directly or indirectly, in the manufacture or sale of any particular tyre, whereas your correspondent is. This may not be widely known, but it is well to let it be known now, so that the value of his criticism can be gauged. I hold no brief for any tyre company, but in view of the success of English tyres in the Automobile Club's trials, it is well that our foreign friends should not be allowed to too unfairly lay untruthful blame on English manufacturers of tyres. S. F. EDGE.

PETROL LAUNCH RACES.

[3097.]—In reply to Mr. Edge, we are not aware we have ever stated what we could do were the conditions governing the race altered. What we have said was that we declined to race until the rules were modified, so as to allow steam launches to compete, and until this is done it is certainly not worth our while going to the very considerable expense of building a 40ft. racing launch for the mere satisfaction of beating Mr. Edge. Moreover, as our boat was built long before Mr. Edge's, it would seem more reasonable for Mr. Edge to build and challenge us with a similar boat to ours, *i.e.*, a 30ft. yacht's launch, to be carried in davits.

Has Mr. Edge's 40ft boat ever run a trial under Admiralty conditions, and, if so, what is her true mean speed? All the trials we have seen of her so far have either been run with the tide, or in one direction only, both of which are entirely misleading, as we pointed out in our last letter.

We do not know much about motor cars, but Mr. Edge's sweeping statement is perhaps somewhat strange in the face of the many builders there are of steam cars, and the numerous successes that they have had.

There are two very strong objections to petrol engines at sea. One is their uncertainty, and the other the danger of fire. The first may possibly be overcome in the future, but the second will always be with us so long as petrol is used, and the number of serious accidents that have already occurred from this cause show it to be a very real and grave danger.

For SIMPSON, STRICKLAND, AND CO., LTD.,
WM. CROSS, Managing Director.

MOTOR CAR FOR PROFESSIONAL MEN.

[3098.]—I am sure "A Medical Man" will find a light steam car more suited to his requirements than a petrol car. I have had considerable experience with a light steam car fitted with a paraffin burner, and have no hesitation in saying it is cheaper as regards cost of running, and there is less trouble than with a petrol car, and it is undoubtedly much more easily handled in traffic. I shall be very pleased to give "A Medical Man" my experience if he will obtain my address from the editor, and if he should live in or near London I would endeavour to arrange for a run on my car. H. J. NICHOLS.

THE EMPLOYMENT OF ALCOHOL.

[3099.]—After the recent correspondence in the *Daily Telegraph* as to the merits of malt and grain whisky, I do not consider it necessary to point out that the "whisky" you allude to at tenpence per gallon is not John Jameson, but it may not be out of place to say that if alcohol can be used as the motive power for engines in the place of petrol it is only required to arrange with the excise as to the duty, and a large supply will be forthcoming on the spot without having to wait for any new factory to be built, as large raw grain distilleries already exist not merely in Ireland and the South of Scotland, but also in Liverpool, London, and Bristol.

What strength of spirit is required for motors, as the price of tenpence per gallon spoken of by you is per proof gallon, which is rather more than fifty per cent absolute alcohol? JOHN MACDONALD.

THE CLUB AFFILIATION QUESTION.

[3100.]—I see by a letter from Mr. E. Cragg, M.D., honorary secretary of the Lincolnshire Club, that he suggests London as the meeting place of the provincial clubs, and that some eight clubs have replied. There are, as I have shown, over twenty-six clubs, not including the several influential motor cycle clubs with identical interests, and every one of those clubs, including the motor cycle clubs, ought to be asked to send two representatives to the conference, and those two ought to be the honorary secretary and chairman of each club, and the secretary and chairman of the A.C.G.B. and I. The best meeting place is undoubtedly Lincoln, where the affiliation movement commenced, and the Guildhall could, doubtlessly, be obtained for the purpose. Lincoln is central for all England, and, either by road or rail, is very get-at-able. Every club ought to be represented, and the delegates should come with an open mind. If at all possible there should be affiliation to the A.C.G.B. and I., but it appears that the whole of the provincial clubs must be banded together in some form, and for each club to be represented at a conference is the best way to do it.

G. J. WILKINSON.

POLICE TRAP WARNINGS.

[3101.]—I have read with pleasure J. R. Richardson's letter. 3079 of your issue of the 8th inst. Half-way down his letter I note his remarks as to a real difficulty that presents itself as to motorists warning each other. Well, sir, please allow me to give your readers a few items in this respect. I left Beeston on the 20th of July with a car, and got on the North Road *viâ* Grantham, thence to Stamford. We had a little difficulty this side, between Stamford and Buckden. A gentleman came along, and dismounting from his bicycle, seemed a little interested in what I was doing to the car. He was very kind in his remarks, and quietly intimated to myself and the gentleman who was with me that there was a police trap in the next village. I made a mental note of his remarks, and when we started again the gentleman went on. We arrived at Buckden, and were immediately stopped by two policemen. Now the gentleman who was with me—driving—wondered why he was trapped. I distinctly called his attention to the speed he was going. He simply ignored my warning. He was fined £6 on Thursday last at St. Neots. I wonder if this young man is still surprised. After we got away from Buckden I warned every motor car and motor cycle driver I saw on the road. This is a practice I have always carried out, and, I may add, have gone out of my way to warn other motorists of a trap. During the last week I have told eight motorists of this danger, and if most of us would do the same, what a pleasure it would be, I take it, to help each other. Had the gentleman who was in my car done as Mr. Richardson suggests, he would not now be smarting under his severe fine. But again, perhaps, it is as well it should be so, and will, I have no doubt, have a salutary effect on him in the future. Our speed was about thirty miles per hour through a village. This does not help those who obtain a living by the trade, or those who motor for pleasure.

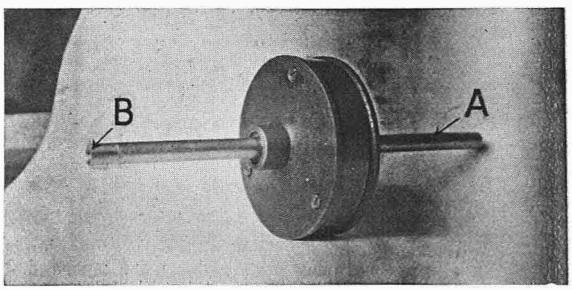
W. F. YOUNG.

[3102.]—My suggestion of how to deal with police traps is that the Automobile Club and kindred institutions should pass a rule to the effect that a motorist falling into a police trap should retrace his steps and take up a suitable position on the road from whence he can stop and save the next motorist coming up from the same direction. On the arrival of this motorist, No. 2 should relieve No. 1 at his post, and the first be able to resume his journey. No. 2 would likewise wait until relieved by No. 3, and so on. A special signal might be agreed upon, so that motorists might immediately know what was up. A motorist failing or refusing to stop to take his turn to warn others should be dismissed from all automobile clubs of which he might be a member. Every member to be bound on his honour to stay at his post of warning for the period of at least one hour, unless relieved by another motorist coming up from the same direction within that time. If there were many motorists upon the road at the time, the periods of "sentry go" might be reduced to a few minutes for some of the fortunate ones, but the police would have the mortification of seeing them all go by at traction engine speed and have only one victim to their bag. This plan would, I think, positively stamp out police traps, and if any unfortunates were caught and fined the Motor Union should pay half the amount.

LEOPOLD CANNING.

A GEARED CLUTCH.

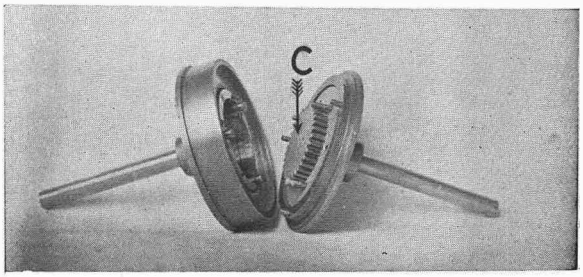
[3103.]—I have been very interested in reading in *The Autocar* the account given by Professor Hele-Shaw of his new friction clutch, as I have myself recently been seeking



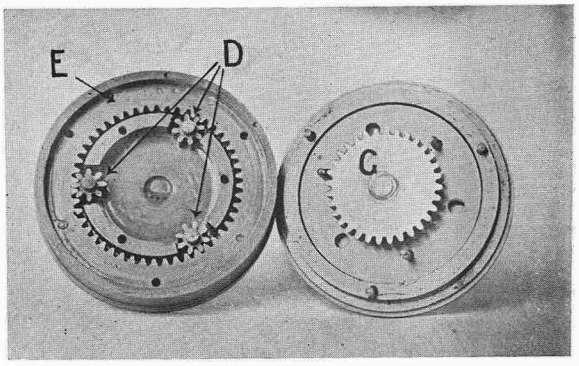
a satisfactory clutch, and as I attacked the problem in a different (as far as my judgment goes) manner, which gives a more reliable result and capable of withstanding more hard work and less liable to disarrangement, I thought it might interest you to have an account of the same.

I enclose you photographs taken from a small model I have made to illustrate its application in which it is geared down in the proportion of 2¼in. to 1in.

In this case A is the engineshaft keyed to the pinion C gearing with the three pinions D carried in a frame or cage, and free to revolve around pinion C, this cage being



keyed to the primary gear shaft. These pinions again engage with an internal gear with outside brake surface. In fact, it is the well-known epicyclic gear applied as a clutch. It will be seen that if the engineshaft carrying pinion C is running and the outside case with internal gear is free to revolve it will do so rather than transmit



the power to the cage carrying pinions D connected with the power transmission-shaft B. But if now a band or other brake be applied to the outside case the pinions D with cage and shaft are forced to revolve.

Of course, the object aimed at in the above has been to locate the wear in a part capable of easy adjustment and easily renewable—a thing readily accomplished with a band brake and wood blocks.

GEARED CLUTCH.

AN INHUMAN ACTION.

[3104.]—Having purchased a valuable black dog—Pomeranian—several weeks ago, I was very much upset at having him killed on the 10th inst. by some inhuman driver of a motor car. I was leaving town, and sent the Pomeranian to a dog fancier, and when his son was exercising him with a tiny English terrier, both on a lead, a motor car turned out of Dudding Hill (Willesden), cut the two dogs to pieces, and very much injured the boy's hand.

A number of men shouted, but the driver increased his speed and escaped. I might mention that all the prejudice against motor cars is the result of such inhuman driving, and I would reward any person giving information of the above driver.

VIOLET ALLEN.

CYLINDER POSITION.

[3105.]—There appears to be a diversity of opinion on the correct and advantageous position of cylinders (vertical or horizontal). It would be interesting to know if any of your readers have had experience with cylinders set in a diagonal position, or at a slight angle from the ground line. If so, is there any advantage gained in lubrication with cylinders set in this position?

INTERESTED.

PLAIN ENGLISH.

[3106.]—The letter in *The Autocar* of the 15th inst., to which the name of D. M. Weigel is subscribed, I think puts the private opinion of British motorists into an advertised form—at least the unprejudiced portion of them. One statement, however, is inconsistant with the other part of the letter. I refer to: "When Mr. Edge won (if such a term could be used as regards his win) the Gordon-Bennett, etc., etc." My contention is such a term can be used in all fairness. What is the difference between Edge's tyres failing him and René de Knyff's equalising gear failing him? Perhaps Mr. Weigel will explain?

Turning to the matter of tyres and tyre advertisements, my pride as an Englishman sank somewhat after reading a "Missing Word" tyre advertisement in *The Autocar* of August 1st.

I have used motor tyres, chiefly of Continental manufacture, for the past three years, and have not had serious trouble or unreasonable cost of upkeep, except in a case where I was driven to use an English made inner tube, which cost a few pence less than a sovereign, lasted for 100 miles only, and failed to get a replace or compensation. My tyres on both machines have been "celebrated" ones, but, in all-round fairness, will not distinguish them. May I suggest: Readers who appreciate Mr. Weigel's outspoken pluck, drop him a postcard; even an anonymous one.

ENGLISHMAN.

BENZINE AND BENZENE.

[3107.]—It is indeed unfortunate that, owing to a misunderstanding in regard to the word benzine in commercial language, a good deal of confusion has arisen, and the letter, "Petroleum Spirit and Benzol," from the Lanchester Engine Co., Ltd., does not tend to lessen this.

With the chemist the term *benzene* is regarded as a synonym for *benzol* (C_6H_6), whereas the term *benzine* or *benzoline* is applied to a petroleum product—a mixture of several paraffins having the general formula C_nH_{n+2}—used in a certain class of lamps and for other purposes.

Confusion has arisen owing to the popular adoption of a similar pronunciation for the two words *benzine* and *benzene*, and some have in consequence thought that the former word, like the latter, was applicable to the coal tar product benzol.

Chemists, or at any rate some of them, to mark the distinction when they use the word *benzine*—though, as a rule, they avoid it, and it would be well if it were dropped altogether—pronounce the "i" like the "i" in *recline*.

The publications referred to by your correspondents which regard *benzine* and *benzoline* as synonyms are perfectly correct in so doing. E. B. CARTWRIGHT.

BRAKE POWER.

[3108.]—Replying to Mr. Sturmey's request for experience. When last year I descended Birdlip Hill on my 7 h.p. Panhard, I had the first speed on till near the bottom. I did not have to use it, because my brakes held. As the differential brake (iron to iron) smelt hot, I stopped on the way down and cooled it. I have descended hills on first speed without brakes, but it is very disagreeable.

HENRY MARSHALL FLETCHER.

[3109.]—Mr. Sturmey writes in your issue of the 15th inst.: "I know of only two makes of car—the Wolseley and the Duryea—where both brakes, together with the engine, can be used for retardation simultaneously." My experience in descending Sun Rising Hill, the day after the accident, on my 9 h.p. James and Browne, may be of interest to him. I had my gear lever in the high speed notch, with the clutch in, and the engine throttled down completely. In addition the side brake was used, and, the hill being very wet and rather greasy, my speed down did not exceed six to seven miles an hour. I only heard of the accident later that evening. The countershaft brake was kept in reserve, but never wanted. On the James and Browne car neither brake throws the clutch out of application, hence for descending any ordinary hills the engine compression proves an efficient brake, and it is only on steep ones that use has to be made of either side or countershaft brake. This being so, it is evident that the engine compression will prove the most powerful brake with the gear lever in the top speed notch. The clutch and brakes being all metal to metal there is no fear of charring, as there might be with wood or leather. I know of no other car where this arrangement exists, but doubtless others of your readers will be able to supplement my knowledge in this respect. EDWARD ARMITAGE.

[3110.]—There is one point in "Grieved" and Mr. Sturmey's letters that I think should not pass unchallenged. That is, if the car gets out of hand down hill, *if the brake fails, provided the driver has sufficient presence of mind to make the change without hesitation*, he should use his low gears as a brake. Presuming he has started down the hill with his high gear in, there are few cars in which it is possible to reduce gears when travelling much above the relative speed given by those gears. I think I am right in saying that it is not possible in any car having the Panhard type of sliding gear. My reason for pointing this out is that it might give some novice a false sense of security. With regard to brake power, is the James and Browne the only safe car because it has metal to metal brakes? How about Peugeot, Siddeley, Clément, Gladiator, not to mention any others? They all have metal to metal brakes. A Peugeot brake will hold the car on any hill it will not slide bodily down by reason of its steepness, and I don't fancy there are any hills of that description about, as it would mean something over one in one. O.H.B.

[3111.]—I can confirm what your correspondent Mr. Weir says regarding the metal to metal clutches and brakes as used in the James and Browne. I have owned one of these cars for more than a year, and have driven it some thousands of miles, and have always found the clutch and brakes most efficient and durable. One would fancy the metal clutch at least would soon show signs of wear, especially as one never hesitates to let it slip, even for miles through London traffic. Thinking the time had arrived when I should examine the clutch, though it had never given any trouble and was acting as well as ever, I took it out a few days ago and separated the parts, and was surprised to find it perfectly clean and not a sign of wear. Probably the perfect condition of the clutch is due to occasional washing out with paraffin and regular lubrication. I may say I found the brakes and gearing in the same perfect condition.

A. NEWINGTON.

[We have also received letters from the makers of several cars referring to their construction with regard to brake application. On behalf of the Gladiator, it is mentioned that the side brake does not take out the clutch, but the pedal brake does. The pedal brake is very powerful, and is mainly intended for traffic slacks. Mr. Perman mentions that he often runs it down-hill against the compression, controlling the car almost entirely by the engine. The Century Engineering and Motor Co. say that it has always been their practice to provide for the use of the engine and both brakes as retarding mediums, separately or simultaneously at will. They have only once departed from this to a special order. The Eagle Engineering and Motor Co. draw attention to their Eagle patent change-speed gear, which allows a hill to be descended on the engine and both brakes combined. Not only so, but the engine can be put into gear as a retarder at any moment, this being one of the features of their system, which was described in *The Autocar* of November 22nd, 1902.—ED.]

ATMOSPHERIC TRANSMISSION.

[3112.]—We notice a letter under the above heading in a recent issue. It may interest Mr. Rudd and others to know that we are at present fitting an air transmission gear to a car. One of our principals patented a special form of air transmission two years ago, and the car above-mentioned is being fitted up in accordance with this invention.

The main features are as described in your correspondent's letter, but the point aimed at in the invention we refer to is the attainment of a much better efficiency than the simple arrangement the outlines could obtain.

J. G STATTER AND CO.

[We hope to describe this gear as soon as it is available for trial.—ED.]

Flashes.

The Continental Caoutchouc and Guttapercha Co. point out to us that there is some misconception as to the markings on tyres of their manufacture. Such tyres always bear the wording, "Clipper-Continental Pneumatic, manufactured by the C.C. and G.P. Co., Hanover." Only tyres bearing such inscription are made by the company.

* * *

In reference to the queries which appear from time to time in these columns by users of De Dion cars, Messrs. De Dion-Bouton, Ltd., write that the majority of these queries emanate from owners of De Dion vehicles which have found their way into this country through indirect sources, and consequently these owners find it difficult to obtain information, assistance, or spare parts. They add that they are always pleased to give information to users of cars which have been obtained through them.

* * *

Last week in referring to the smart performance of Mr. William Lea in so quickly delivering a special car to a St. Helens doctor, we spoke strongly against the practice of unduly accelerating the finishing process, on account of the durability of the varnish being impaired by the quick drying. This has caused Mr. William Lea to write us that, while he fully endorses all we have said, he wants it to be understood in the particular instance referred to, the finish of the car suffered in no way, as the speedy delivery of the car in question was due to knowing perfectly well the specifications of all machines available for delivery in Paris.

* * *

We hear that Mr. Moffat Ford, managing director of the Motor Car Co., Ltd., has instituted proceedings against four drivers of electric cars for exceeding the legal limit of speed—ten miles an hour, as laid down by the Board of Trade regulations. The cars were timed over a measured furlong, and in one case the distance was covered in 26⅗s., and in the other three in 28⅗s. The summonses came on for hearing on Monday, 17th inst., and the matter is adjourned until to-day (Saturday). A curious circumstance is that the speed is not disputed, the defence being that the Board of Trade regulations are *ultra vires*. It is stated that the Tramways Acts quoted did not empower the Board of Trade to make any such regulations. Mr. Ford has taken this action to prove the unpractical nature of the ten miles an hour limit in towns and other populous places that is to be enforced under the new Act, and he also hopes to demonstrate how easily malicious and vexatious prosecutions may be instituted by any individual who cares to make a note of the number of a passing motor car which he has the slightest reason to suspect of exceeding the limit of ten miles an hour.

"THE AUTOCAR" DIARY.

Aug. 22.—Lincolnshire A.C. Drive to Roxholme Hall.
" 22.—Cheltenham and Gloucestershire A.C. Drive to Worcester.
" 24.—Yorkshire A.C. Gymkhana at Horsforth.
" 29. Kent A.C Hill-climbing Competition at Wrotham.
" 29.—Sheffield & District A.C. Drive to Wentworth Castle.
" 29.—Wolverhampton and District A.C. Drive to Market Drayton.
" 30.—International Races, Frankfort-on-Maine.
" 30.—Criterium du Quart de Litre, Parc des Princes.
Sep. 5.—Sheffield and District A.C. Drive to Buxton.
" 5. Wolverhampton and District A.C. Drive to Shrewsbury.
" 6-13. Vienna Week.
" 12.—Midland A.C. Hill-climbing Competition.
" 12.—East Anglian A.C. Drive to Braintree.
" 18.—A.C.G.B. & I. 1,000 Miles Trials commence.
" 19.—Sheffield and District A.C. Drive to Baslow.

The Thompson Motor Car Works, of Armadale, Melbourne, Victoria, Australia, tell us that motor vehicles in the State of Victoria have met with great success. This applies not only to steam vehicles using kerosene, but also to light gasoline cars. The Thompson Co. also tell us that they will be glad to have price lists from all English makers of petrol, steam, and electric vehicles, and parts, not only those suitable for pleasure purposes, but also the heavier types of vehicles for commercial use.

* * *

The 1,000 miles motor cycle trials run by the Automobile Club, or rather its offspring the Auto Cycle Club, conclude to-day with a speed trial at the Crystal Palace. With this exception, the trials have all been on the road. The weather for most of the fortnight has been deplorable, and the hilly roads of Kent and Sussex very sodden, so that the riders have had a hard time, and their mounts a severe test. The daily runs are fully illustrated and described in the pages of our offspring *The Motor Cycle*.

* * *

Mr. Eccles, the chairman of the Bamber Bridge Bench, is evidently opposed to motor cars, as he is reported to have stated that all motor car drivers ought to be in a lunatic asylum. This was when he fined an automobilist for an alleged excess of the legal limit. Bamber Bridge, we may say, is a few miles outside Preston on the Manchester-Preston road. If Mr. Eccles had said no sane man would voluntarily traverse the greater portion of this road twice on any vehicle, we should have been able to endorse his sentiments to the letter, and so, we feel sure, would everyone who took part in the memorable tour of the Automobile Club in 1900.

* * *

A motor car performed valuable service last week at Aberdare. A big fire occurred, and one of the Aberdare Valley Motor Service Co.'s cars was called upon to convey a quantity of hose from the adjoining town of Aberaman to the scene of the fire—a distance of some two miles.

* * *

It will be remembered that when the Motor Cars Bill was being discussed in the House of Commons, Sir F. Dixon-Hartland told a mournful tale about an old woman at Hampton, whose butter had been ruined by the dust raised by passing motor cars. The value of this touching narrative has been somewhat discounted by a Hampton resident, who informs us that, although he has lived in the place for thirteen years, neither he nor anyone of whom he has enquired, including the vicar of Hampton, knows of a case of an old woman selling butter in that place. It would therefore appear that Sir F. Dixon-Hartland's tale, like many another concerning the enormities of the automobile, was not based upon reliable information.

New York State is considering a bill which provides that no autocar shall run faster than eight miles an hour within half a mile of any post office, or in any place where farmers erect a warning that the speed named must not be exceeded (!). One curiously-constituted legislator wishes a toll of a shilling a mile to be levied on motorists.

* * *

The makers of the White steam cars inform us that they have been subjected to a great number of enquiries as to why they did not take part in the recent hill-climbing contest at Sun Rising, Edge Hill, promoted by the Midland Automobile Club. They forward us the correspondence which took place between themselves and the honorary secretary. It seems that they entered one of their steam cars, but that the entry fee was returned to them, as the competition was open only to petrol vehicles, steam cars being barred from participation in it.

* * *

An unpleasant after-effect of the Irish tour was experienced by the Automobile Agency, Percy Place, Dublin. They were fined for keeping an excess of petrol on the quantity which their license permitted. The hard part of their case was that they would not have had this excess but for the fact that they had taken back some unused spirit from tourists, who for one cause or another did not want so much as they had specified. This, by the way, was the case with a good many. They were so afraid of being short of petrol that they sent advance instructions for enough for a tour half as long again.

* * *

An interesting paragraph appeared in a recent issue of the *Cape Times* about the Lanchester car, which is evidently making a great reputation for itself in South Africa. We extract the following from the paper in question: "The Lanchester car has created a record from Durban to Pietermaritzburg, covering the distance in 4h. 32m. The fastest mail train is timed to do the journey in four hours. This road is notorious as most difficult to negotiate, and the driver was warned by old residents before starting that the road was impassable for motor cars owing to its want of repair." It may be interesting to add that there are already a dozen of these cars at the Cape, while another half dozen will shortly be sent.

* * *

In reference to our paragraph last week under the heading of "Record Repairs," a correspondent writes: "I should like to record my experience with Turner's Motor Mfg. Co., of Wolverhampton, the manufacturers of the Miesse steam cars. Last Saturday evening I had an accident, injuring a wheel of my car. As I expected that so late on Saturday evening the works would be closed, I sent a wire to the private address of the managing director about 6 p.m., with the result that a spare wheel was at once despatched, and the car was on the road again early on Sunday morning. As the car was in an out-of-the-way Devonshire village, I was delighted at the prompt way in which my wire had been attended to." We should add that our correspondent is in no way interested in the firm in question.

What is claimed to be a new method of cooling air-cooled engines has been provisionally protected by Mr. M. K. D. Roberts, of the West Bridgford Motor Co., Chestnut Grove, Nottingham. He explains its principle in the following words: "It is known that a multiplicity of points affords the most rapid radiation of heat from surfaces, and this is the principle of my method instead of the usual cast-flange radiators. I electrically weld or cast on lengths of wire to the plain cylinder, giving it the appearance of a hairdresser's (revolving) brush, but the wires not so closely arranged. There is no difficulty with the welding and moulding, and there is little limit to the speed of the welding operation; in fact, for a standard motor the jig could effect the welding entirely in a few seconds. The method can be applied to cooling jacket water, and cool more rapidly than the present honeycomb radiator, and be made much cheaper."

* * *

The date of the Spa hill contest has been changed to the 6th, 7th, and 8th of September, the competitions to be international, and comprising (1) a hill climb from Spa to Malchamps (about three and a quarter miles); (2) the Spa Cup competition, a hill run of an English mile, with start *arrête;* (3) a tourist circuit, three times round Spa by the route Pouhon, La Sauvenière, Malchamps, Francorchamps, Sart, Nivèze, Lac de Warfaz, and Boulevard des Anglais, Spa, the average speed being about eighteen miles an hour; (4) a driving gymkhana at the Velodrome; and (5) distribution of prizes and banquet at the Hotel d'Orange. A novelty will be introduced with a standing stop, the object being by the sudden check at a given mark to test the brakes. The Spa Cup is worth £20, and must be won two years consecutively for the best time, standing start, over the mile hill course. The Mayor of Spa, M. Damseaux, has joined the new Spa Automobile Club, which raises hopes of reasonable regulations concerning speed.

Photo *Argent Archer.*

Mr. and Mrs Charles Jarrott, on their 35 h.p De Detrich car.

SOME QUERIES AND REPLIES.

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

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

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

THE REMOVAL OF OIL.

The floor of my motor shed and the yard is paved with blue bricks. In spite of a tin placed beneath the motor, both yard and shed floor get a large sprinkling of oil. This looks very untidy, and must harm the tyres. What would be best to sprinkle over floor to absorb same?—A. C.

Either sand or sawdust should be sprinkled beneath the car when standing in the shed. Sawdust is, of course, the better absorbent for the oil, but under certain circumstances it is liable to ignition by spontaneous combustion. This is particularly the case if the sawdust is allowed to remain for any length of time. With fresh sawdust sprinkled beneath the car every other day there is practically no danger of ignition if the old is removed; it is only when sawdust is allowed to accumulate that this is likely to be dangerous.

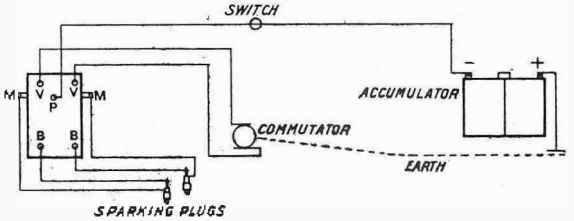
ACCUMULATOR AND DRY BATTERY CONNECTION.

In last week's *Autocar* you printed in reply to G. W. I. a very clear diagram for wiring a two-way switch. Will you kindly say if the same arrangement would do for an accumulator and a dry battery? The dry battery shows a two-volts higher current than the accumulator. If the accumulator should short-circuit internally and exhaust itself would it also run the dry battery out? This lately happened with me, but the wiring was slightly different, and the two-way switch was fixed between the earth wire and accumulators, instead of as shown in your diagram.—J. H. B.

The arrangement of the wiring for a two-way switch as shown upon page 225 of *The Autocar* of the 15th would work very satisfactorily with an accumulator and a dry battery connected up. By this method of wiring should anything happen to either accumulator or dry battery it would not affect the other element unless a perfect circuit were established, and this is hardly possible. The diagram mentioned is one method of wiring two-way switch, and is perhaps the most satisfactory of any used.

AN IGNITION TROUBLE.

Several months ago you were good enough to answer a query of mine in your valuable paper. It was in reference to a case of very bad misfiring and back-firing, which was at once cured by reversing the direction of the primary current. I have had a similar experience. My car had not been out for several days, and had been subjected to a good cleaning up. When we came to start, the firing on the back cylinder was awful, missing entirely for many revolutions, then firing well for a few, and then a big back-fire, with smoke issuing from the air-inlet of the carburetter. Occasionally the back-firing stopped the engine completely. All the time there was no missing on the front cylinder. We changed the plugs from front cylinder to back, and *vice-versâ*, with no improvement. We then altered the wiring so as to make the coil that had been working the front cylinder work the back one, and *vice-versâ*. Again, no change—still good firing on the front cylinder and awful on the back. The insulation of the wires was right, and the terminals were all clean. After long puzzling, we remembered our former experience, and reversed the direction of the primary current, and our trouble was at an end. We had not another misfire, and the engine ran well. The accumulator showed just under 4.2 volts. The distance of the coil from the front sparking plug is about 18in., and from the back one about 30in. Now that it is firing well, the wiring is as in the accompanying sketch. When the misfiring occurred the wires shown in the sketch, as attached to the positive and negative poles of the accumulator,



were attached to the negative and positive respectively. It appears to me that when the primary current is running in the latter direction the secondary current is not sufficiently intense to overcome the resistance of the long wires to the back cylinder, while the much shorter wires to the front cylinder only present such a resistance as can be overcome. I fancy this trouble only occurs when the accumulator shows less than 4.2 volts. I presume the difference is due to the difference in the strength and direction of the "extra-currents" generated in the coil. I have not seen this mentioned anywhere as a cause of misfiring and back firing, but it is one worth bearing in mind, at least where there is such a length of secondary wire as in my car.—S.C.

The behaviour of the coil as detailed and the present connections as shown by the sketch point to the internal connections of the coil being wrong, in which case misfiring would occur until the current was reversed. The changing of the direction of the current alters the working of the coil and affects the secondary current somewhat.

LOSS OF COMPRESSION.

Will you kindly inform me the cause of my 10 h.p. Decauville acting thus? At irregular intervals one loud and strong explosion takes place; the intermediate strokes of the piston seem weak and less powerful than used to be the case.—R.S.

The cause of the explosion is no doubt due to a faulty inlet valve or too weak an inlet valve spring, or to momentary failure of the ignition. A charge of gas is passed into the silencer and is exploded therein by the next live charge expelled. We presume that by the intermediate strokes of the piston you refer to the compression stroke, and that the resistance here is less than it was previously. The cause of this should be looked for in the inlet and exhaust valves. These will probably want regrinding, when the previous conditions will be restored. If not, the piston rings will have to be examined.

A CHEMICAL QUERY.

Would it be possible commercially to decompose water, with an electric current or otherwise, into its component elements—hydrogen and oxygen—in sufficient quantity to use the explosion formed by the combustion as a propulsion power instead of petrol and air as now used? I am afraid the difficulty would be to decompose the water sufficiently rapidly.—W.B.

A NON-STOP RUN TO GLASGOW.

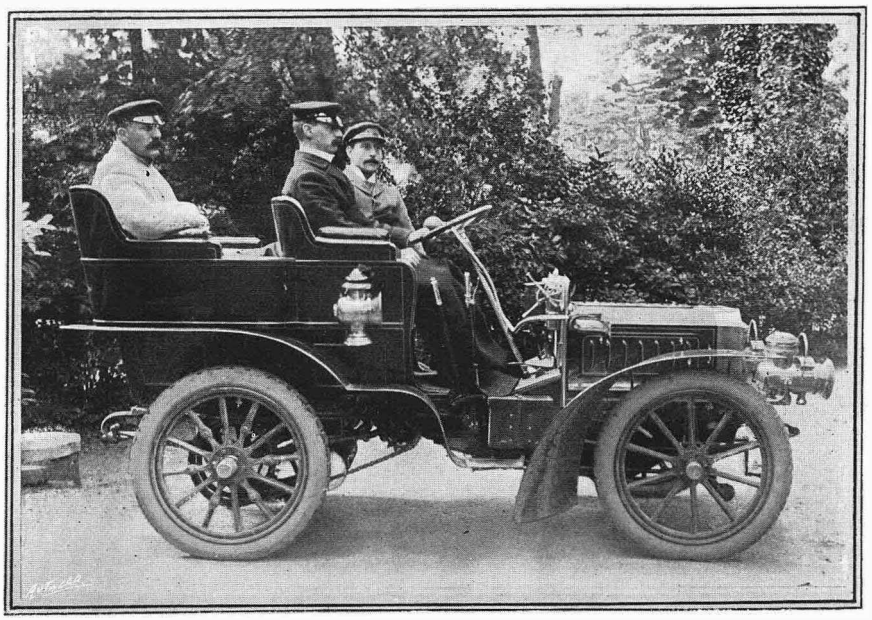
CAPTAIN DEASY'S DRIVE SURPASSED. A 10 H.P. GLADIATOR ENGINE RUNS FOR 22 HOURS 10 MINUTES WITHOUT A STOP. NO DELAYS BUT A SPLIT TYRE VALVE SLEEVE AND ONE NAIL PUNCTURE IN 442 MILES.

It was not to be supposed that Captain Deasy would be long allowed to retain the record of driving an automobile continuously single-handed between London and Glasgow *viâ* Hitchin, Biggleswade, Doncaster, York, Northallerton, Newcastle, Berwick, and Edinburgh—a total distance of 442 miles. It will be remembered that when the gallant lancer officer drove his 24 h.p. Rochet-Schneider car to Glasgow for the Scottish A.C. non-stop run, thence to London, he twice stopped his engine accidentally and once intentionally; so that, as actual non-stop runs go, this drive, good as it was, could not be so written down.

But, as briefly set out in our last issue, Mr. A. E. Perman, driving a two-cylinder Gladiator, carrying a mechanic and the writer as observer, succeeded in effecting a non-stop absolute in the accepted meaning of the term. That is to say, the engine of the car which left 14, New Burlington Street, W., at midnight exactly on Monday, 10th inst., ran without cessation until 10.10 on the following Tuesday evening, when the car drew up at the Central Hotel, Glasgow, and both driver and observer were not overgrieved at being able to quit it for a square meal and a comfortable bed. The only stops made for anything in the shape of repairs was one halt called some three miles short of Doncaster to replace a split valve rubber, and another some eight miles short of Durham to put a new tube into the near side driving tyre, which had found a short headless French nail. None of the other three tyres (all non-slipping Dunlops) were touched throughout the trip. A good moon favoured the dark hours of the drive at the commencement, but wherever the road was at all bare the alternate patches of light and deep shadow of the tree-lined sections proved rather baffling at times. As the day grew, considerable traffic, in the shape of country carts, cattle, and sheep, was encountered—distractions which did not affect Captain Deasy, as his trip was made on the Sunday, when the country roads are more innocent of users than at any other time.

Mr. Perman's drive was not blessed with the best of weather, for frequent rainstorms—and one blinding, stinging down stream of hail—were encountered as the car made its way north. Once across the border, however, weather and surfaces improved somewhat, and some dust was raised. From start to finish the 10 h.p. Gladiator travelled in excellent style, and never once gave its driver or mechanic any anxiety. Non-stop runs of this description put the club quarterly trials of a hundred miles into the shade; indeed, it is a poor car these days that cannot encompass a hundred miles non-stop run.

Since writing the above, I learn that this car, too, made a most successful return journey to town, amounting, with the trip above chronicled, to a run of 900 miles on the road in three days without stopping the engine, except for the completion of the day's journey. In Glasgow the petrol and water tanks were replenished and the lubricating points gone over with an oilcan, but no sort of adjustment was made. The car then made its return journey *viâ* Hamilton, Beattock, Carlisle, Appleby, Scot's Corner, Boroughbridge, and the North Road in two days, so that the whole trip of 900 miles was covered in three days without any further trouble but the replenishment of the running tanks.—HARRY J. SWINDLEY.



The London to Glasgow 10 h.p. Gladiator. Mr. A. E. Perman at the wheel.

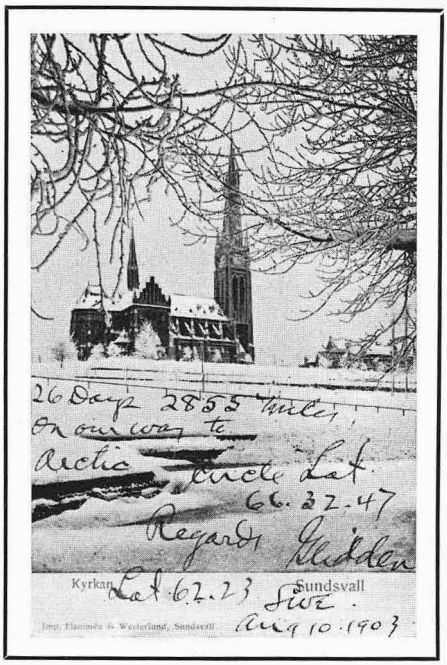
The King has not approved of the tunic and overalls proposed to be adopted by the Motor Volunteer Corps. The uniform of the corps is given in the Army List as "Drab; facings, olive green."

* * *

A novelty was introduced at the annual sports of the Oxford City Police in the shape of a "motor speed-judging competition." A motor bicycle was driven once around the track, and the policemen stood (watchless) at intervals of about twenty yards. It is somewhat interesting to note that the winner *under*-estimated the actual speed.

IN THE ARCTIC CIRCLE.

We facsimile a postcard which we received last week from Mr. C. J. Glidden, the American automobilist, who has for two years past made extensive tours in Europe upon a Napier car. We have since had a wire advising us that Mr. Glidden crossed the Arctic Circle at two o'clock on the 16th inst. This year the tour, after extending over a large portion of England and Ireland, has wound away to the far North, and so far as we know Mr. Glidden is the first automobilist to have crossed the Arctic Circle upon a motor car. The tourists were pleased with the roads in Denmark, but found those in Sweden exceedingly bad. In Stockholm only five autocars were found. The first day's run north was 130 miles over bad roads, the second 190 miles, the third 155 miles (roads still bad and hills severe), the fourth 120 miles (this day the roads were good, and only six hours were taken). The fifth day 120 miles were covered in five hours. Up to the time the car crossed the Arctic Circle, it had run 3,600 miles with no repairs, despite the very bad roads, while only one puncture had been suffered. It was the first automobile which had been seen north of Stockholm, and a great reception awaited the travellers, the people turning out all along the road to see them. In Skeleftea the Swedish flag was raised over them as they entered the town amidst tremendous cheers, and so on all along the line. Mr. Glidden's last year's European tour was the longest recorded for the year, being 5,125 miles, in traversing which distance he and his party visited 1,700 cities and towns in seven different countries in a period of thirty-eight days. Mr. Glidden's reports abound in satisfactory references to his car, and no one can wonder at it after the way it has performed. In one he expresses the hope that no attempt will be made to improve upon it. This is a sure indication that he is satisfied with his car, but 3,600 miles without a single delay except one tyre puncture is enough to reassure the most critical automobilist.



THE EASE OF THE OLDSMOBILE.

Last week Mr. W. Letts was good enough to put one of the new Oldsmobiles, which are becoming so popular now, at our disposal in order that we might obtain personal experience of the care and conduct of this handy little runabout. Even by a man long accustomed to wheel steering, the lever steering of the Oldsmobile is soon acquired, and, when acquired, the deftness with which it can be employed in worming one's way through traffic is remarkable. The handy little car is in, out, and round almost before the driver of a wheel-steered car has got half a turn on his wheel. The quietude of the engine and the running gear are features of these vehicles which are bound to recommend them to a very large public. The chain drive on the second or top speed is quite silent, while the exhaust strikes on the ear no louder than the panting of a good-sized dog, even when the car is standing still. When the single cylinder horizontal engine is driving the car at anything over ten miles per hour the stroke of the engine is not felt by the occupants of the vehicle, the springing of which is most luxurious. The hills which this natty little car will take on her top speed will surprise those accustomed to driving heavier vehicles. With a heavy passenger up, she took the White Lodge Hill in Richmond Park without the sign of a falter, and made very comfortable work of the Test Hill on her first. The system of changing gear from reverse to first and second speeds is particularly simple, and is more like the actuation of a steam car throttle lever than the ordinary gear change lever of a petrol car, which has to be moved to definite points or a slotted segment. When the second gear has been thrown in, the drive can be modified and lessened exactly as though a friction clutch were in use, while the car will pick up again on its top speed almost from a state of rest. This, coupled with the ready and quick steering to which we have already referred, makes the Oldsmobile a most adaptable little vehicle for traffic driving. The lubrication and mixture are easily and simply controlled from the seat, and altogether the Oldsmobile is a self-propelled vehicle the conduct and care of which are most easily acquired. Since our personal experience we do not marvel that the Oldsmobiles are very frequently to be seen on the road. Another point which should be mentioned about the car is the coincidence that it so nearly fulfils the conditions laid down by a medical correspondent and referred to in our notes last week. In fact, Mr. Letts has written to us, pointing out that every condition laid down is met, and as the price is only £150, or £165 if fitted with a hood, it can certainly be ranked amongst the most reasonably-priced vehicles upon the market, particularly as with the addition of a back seat it will carry three or even four persons.

THE 1,000 MILES RELIABILITY TRIALS.

AS WE HAVE ALREADY ANNOUNCED, THE 1903 RELIABILITY TRIALS, PROMOTED BY THE AUTOMOBILE CLUB, WILL TAKE PLACE FROM SEPTEMBER 18TH TO 26TH. THEY WILL BE THE FIFTH SERIES OF RELIABILITY TRIALS HELD BY THE CLUB, AND THE CONDITIONS WILL BE MORE SEVERE AND THE TEST OF THE CARS MORE THOROUGH THAN EVER BEFORE. A RECORD ENTRY OF 130 CARS HAS BEEN RECEIVED.

The club trials this year promise to be of exceptional interest, as in addition to the marks which will be deducted for every stop on the road during the course of the eight daily routes, which will total to 1,019 miles, marks will be lost for every repair, replenishment, adjustment, or renewal throughout the whole of the period. This, be it understood, does not mean that marks will merely be lost for adjustment while the car is on the road, but, as we have said, the whole period of the trials. Everything done to the vehicle from the time it is given into the judges' hands till the conclusion of the trials will be debited against it, and the cause for the loss stated. The trials are for reliability only, and excess of the legal limit will not be permitted; in fact, speed will not enter into the matter at all except for the four hill-climbs and the speed trial on the Bexhill track. Marks will also be awarded for every important quality, such as efficiency of brakes, condition after trial, restarting on hill, and absence of noise, vibration, vapour, or smoke and dust.

The trials are again to centre round the Crystal Palace, beginning, so far as the public are concerned, on September 16th, when interesting tests of the brakes of the cars will be held, and also photographic records of the amount of dust raised by the cars will be taken, a point which should specially appeal to the ordinary public. The exact details of the programme are as follow:

TUESDAY, SEPT. 15TH.—All cars must be inside the Crystal Palace by 12 o'clock noon.

WEDNESDAY, SEPT. 16TH, AND THURSDAY, SEPT. 17TH.—Various trials for brakes, noise, and dust in the Crystal Palace grounds, and examination by the judges.

FRIDAY, SEPT. 18TH.—To Margate and back. 150½ miles.

SATURDAY, SEPT. 19TH.—To Eastbourne and back. Hill-climb, Westerham Hill. 121 miles.

MONDAY, SEPT. 21ST.—To Worthing and back. Hill-climb, Bury Hill. 118¾ miles.

TUESDAY, SEPT. 22ND.—To Folkestone and back. 137½ miles.

WEDNESDAY, SEPT. 23RD.—To Southsea and back. Hill-climb, Hindhead. 144¼ miles.

THURSDAY, SEPT. 24TH.—To Bexhill and back. Speed trial on track. 121½ miles.

FRIDAY, SEPT. 25TH.—To Winchester and back. 133½ miles.

SATURDAY, SEPT. 26TH.—To Brighton and back. Hill-climb, Handcross Hill. 91¾ miles.

On the Monday and Tuesday in the following week the judges will make a detailed examination of the cars in order to award the marks for condition after the 1,000 miles of running.

Each car will have an official observer throughout the whole of the 1,000 miles covered by these trials, and he will report to the club any driver who may show want of consideration to, or drive to the danger of, other users of the road. Each and every competitor will, accordingly, have repeatedly before him the imminent risk of absolute disqualification should he at any time drive without due thought for others who may be on the road. There will, as we have said, be a special speed trial for the cars on a private track, in order that vehicles with unreasonably low gears may not be entered for the trials.

The trials about to be held will be followed by extensive trials for light delivery motor vans, a type between the passenger car and the goods lorry. These trials are to be held early in next year.

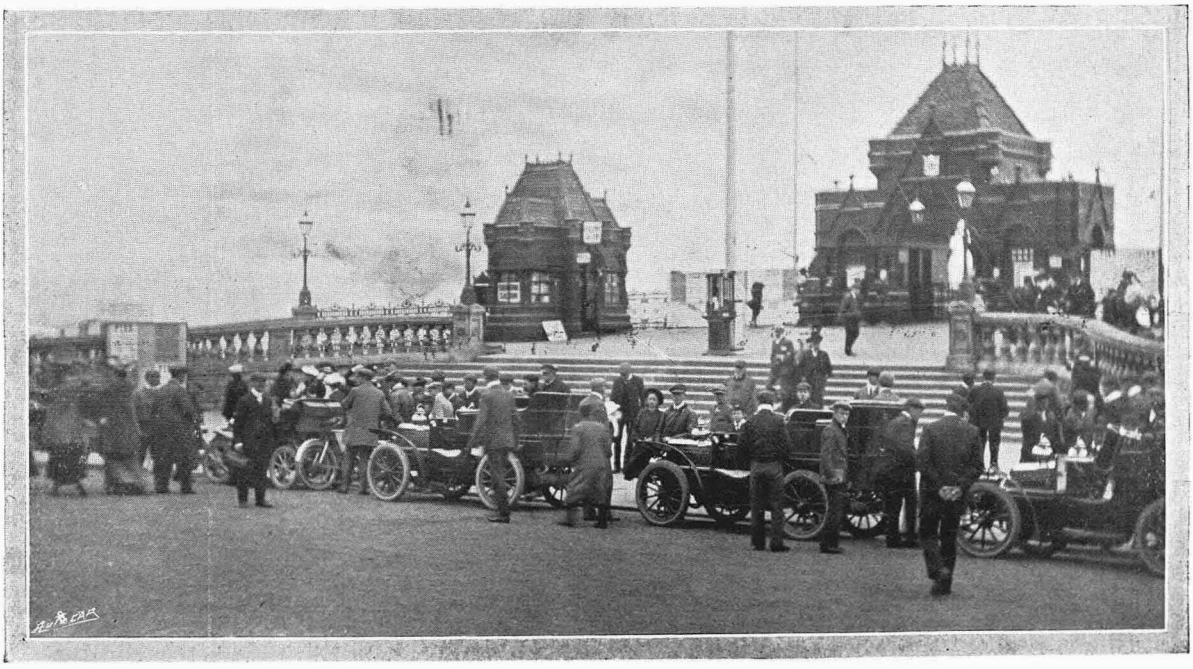


Photo The meet of the Lincolnshire A.C. at Skegness. *G. J. Wilkinson, Lincoln.*

CLUB DOINGS.

The Lincolnshire A.C.

The Lincolnshire Automobile Club had a meet at Skegness on Saturday, and though there was a strong gale there was a fair muster, cars, etc., coming from Market Deeping, Boston, Croft, Lincoln, Wold Newton, Sleaford, Billinghay, etc. As neither the honorary secretary nor the chairman had turned up, the members had to make their own arrangements. The rendezvous was at the Pier Hotel, the cars being placed near the entrance to the pier, and the members having tea at the Pier Hotel. The cars proved an attraction to the visitors, as will be seen by our photograph.

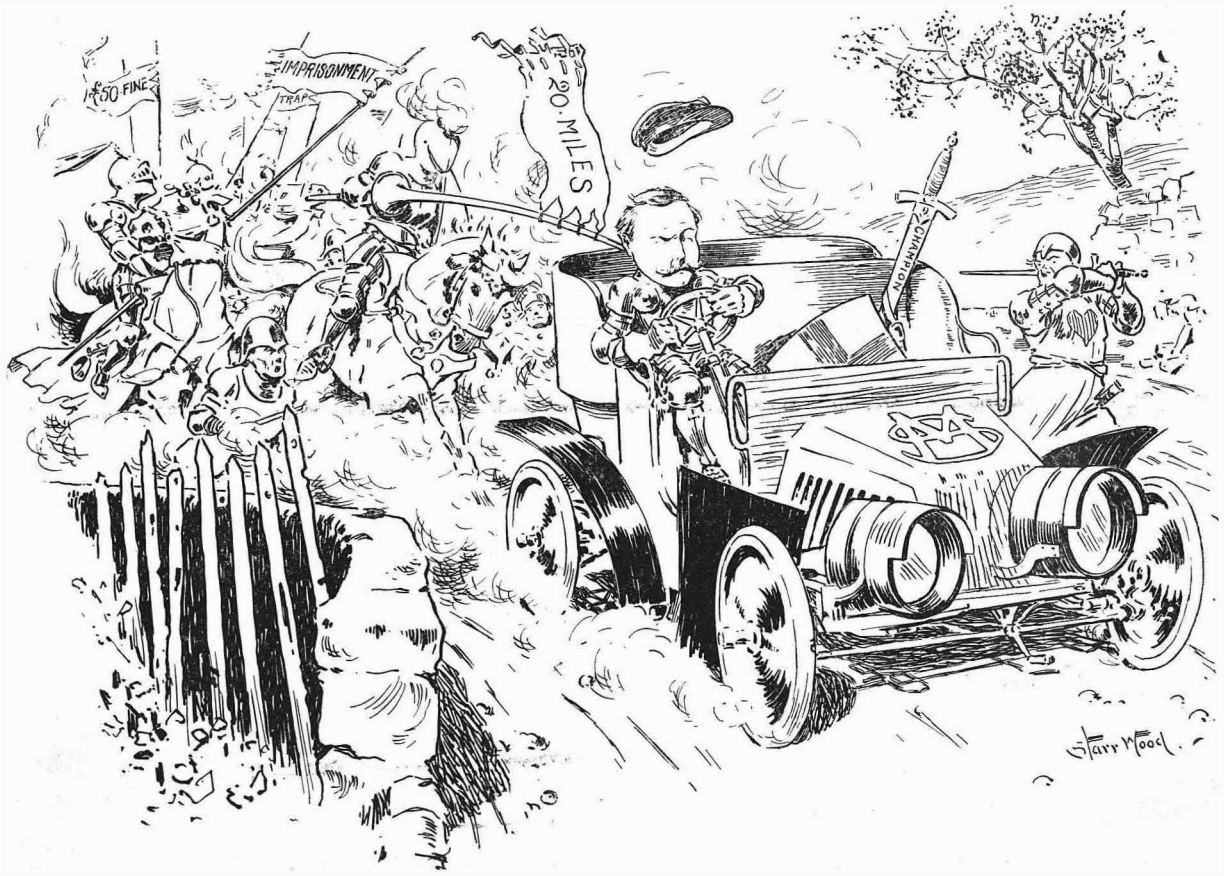
We hear that a well-known Lincoln autocarist-journalist is approaching the Lincolnshire Agricultural Society on the question of the produce of alcohol for motors, etc., by farmers. It is an important society, and we hope something will be done.

The Derby and District A.C.

The Derby and District Automobile Club held its first hill-climbing competition on Saturday, August 8th, on a hill of varied gradients about a mile long, near Turnditch. The ascent started with a very gentle rise of about 100 yards, enabling the cars to get on to their top speeds, after which, with the exception of a short, flat stretch in the middle, the gradient gradually became more severe, until it terminated in a climb of one in seven, thus being, to a certain extent, a test of the members' driving capabilities, as well as the power of their vehicles. The weather was simply perfect, and the meeting most successful, everything passing off without a hitch. Mr. Astle (of Draycott), driving a 12 h.p. De Dion, made the best time of the cars. The Serpollet, with only two seconds more, made a bad start; otherwise, judging by the way it surmounted the final steep stage, it would easily have made the fastest ascent of the afternoon, hardly excepting the cycles. Mr. Ronald Smith and Mr. Walker (riding for Mr. Collumbell) tied for the cycles, both on 2¾ Excelsiors, but on the handicap Mr. Smith takes the medal awarded, he and his machine being the heavier. There was a great muster of the club members, and the country people evinced the liveliest interest in the proceedings. At the conclusion many of the motorists took advantage of the secluded surroundings, and indulged in picnics, while others found the necessary tea supplied in neighbouring cottages. Messrs. Leech (honorary treasurer) and Allin (honorary secretary) were responsible for the arrangements, and acted respectively as starter and timer, and had the satisfaction of feeling that their efforts were rewarded by one of the most enjoyable gatherings the club has had

POLICE TRAPS.

During the past fortnight the police do not appear to have been quite so busy. Possibly they are taking a rest before recommencing their trapping after the 1st of January next, when the new laws will come into force. This week we have the following traps to record: Four miles beyond Selby towards Doncaster; at Buckden, between Huntingdon and St. Neots, on the North Road. The county of Huntingdon may be regarded as an affected area. Trap No. 14, situated outside York on the Scarborough Road, is in active operation every week-end. 250 yards have been measured off at the entrance to Sandwich on the Ramsgate Road; two traps are in operation on the Basingstoke-Salisbury Road—one between Worting, Oakley, and Deane Gate, and the other between Overton and Whitchurch.



The Parliamentary melee. Defeat and flight of the automobile champion before overwhelming odds.