

THE AUTOCAR

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

EDITED BY H. WALTER STANER.

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Notes.

A Suggested Tax on Petrol.

Last week we referred to the rumour in the Lobby of the House of Commons with regard to a tax on petrol. Motorists are already overtaxed, and the suggested further burden is of a nature which only has one thing to recommend it, and that is, it would bear less hardly upon the man of limited income and limited time than upon the man with plenty of time and plenty of money. Speaking broadly, the consumption of petrol represents the amount of work done in speed, weight carrying or distance. Hence a man who drives a fast heavy car long distances will use vastly more petrol than the man who drives a smaller, lighter, and slower machine shorter distances. At first sight, therefore, the tax seems less objectionable than some others which have been suggested, because it is fair all round; but this is only a negative virtue.

On the other hand, the man who uses much petrol is doing more for the industry of the country than the man who uses little, as he is spending more money upon his automobilism, and it is hardly reasonable that he should be taxed for this. Every additional mile covered by a car adds to the industrial prosperity of the country, as it means work and trade for all who participate in any way in the manufacture and maintenance of motor cars, or, to put it still more convincingly, the more cars are driven the sooner will they be worn out and the more they are used the greater will be the sums spent on tyres, renewals, and replacements as well as upon petrol. However, it is a question whether the matter need be gone into at all seriously, because we understand that the Chancellor of the Exchequer is entirely opposed to taxation on this principle, so that unless he is about to change his beliefs the suggested new form of taxation is out of the question.

Horse-power Denomination.

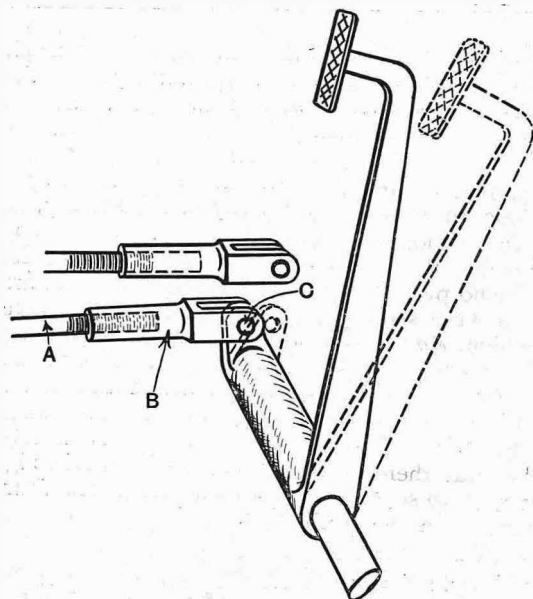
From time to time we have referred to the unsatisfactory practice which is so general of giving an engine two nominal horse-powers. Instead of calling an engine one definite horse-power it is given two, such as 8-10, 10-12, 16-21, 18-22, and so on. Quite the best system of double horse-powering is that adopted by a few makers who give their own horse-power and the horse-power by the R.A.C. formula. For instance, if they call a particular model the 18 h.p., and the R.A.C. formula makes it 23, they call it the 18-23 h.p. model, and so on. This is all very well so far as it goes, but there is no uniform custom, and the consequence is we still find one maker calling a car 16 h.p. while another with the same size of engine calls it 22 h.p.

The fact remains that, unless a uniform system is adopted, the present slipshod method will always give rise to all sorts of misunderstandings, and in some cases we fear to misrepresentation. This side of the question has been particularly brought home to us by a custom which appears to be growing, and that is of selling second-hand cars with a double horse-power title; cars which in some cases were never sold by their makers as possessing two horse-powers. For instance, we find an 8 h.p. car becomes an 8-10 or 8-11 on the second-hand market, or a 15 h.p. develops unexpectedly into 15-20, although the makers never sold such a model. We are afraid this sort of thing will go on till such time as the members of the Society of Motor Manufacturers agree definitely among themselves that they will designate their cars by one horse-power alone. It will be a little troublesome at first, as quite a number of makes have become well known by double horse-power titles, but it will be an excellent thing to get the matter on to a definite basis.

In the meantime buyers of second-hand cars should look with suspicion upon vendors who call their cars by different powers from the makers, and if they have any doubt as to the correctness of the title given they should at once refer to our Buyers' Guide or write to the makers.

ADJUSTABLE PEDALS.

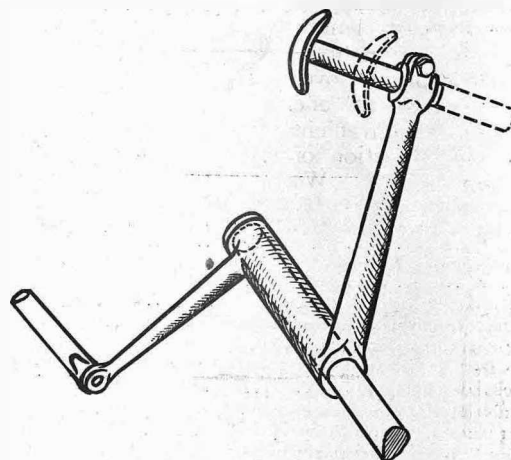
Comfort in driving is very much affected by the position of the pedals in relation to the driver. It stands to reason that the position of pedals which would be comfortable for a man of medium size would



The Lanchester adjustable clutch or brake pedal.

be hopelessly uncomfortable for a short man, and a tall man would be so cramped that he could hardly drive at all. Unfortunately, in the average car no provision is made for short men or tall men. The difference of an inch or so in the position of the pedal is very great so far as comfort is concerned, particularly in any case of slight over-reach. Adjustment has been provided in the pedals of the new wheel-steered, foot-controlled Lanchesters. The illustrations are

almost self-explanatory. The first shows the brake or clutch pedal, as both are precisely the same. The link B is connected to the clutch spring mechanism or to the brake lever as the case may be by means of a rod A. It will be seen that the link B has a long shank on it, into which the rod A screws. By taking out the pin C the link B can be screwed on or off A and the position of the pedal altered, as indicated in the sketch. No locking device of the adjustment itself is required, as the pin C holds it firm. For the sake of clearness the link B is also shown with the rod A almost fully screwed out as well as in the other position and screwed home. The other illustration shows the adjustable throttle pedal, the means of adjustment being so plain as to require no explanation,



The Lanchester adjustable throttle pedal.

as it is only necessary to move the pedal up and down in the split shank on the end of the pedal lever, the split shank being provided with a screw bolt which locks it in the best position.

MOTORING IN SOUTH AMERICA.

Taking advantage of the Olympia Show, and realising that nowadays "British cars are equal, if not superior, to those made abroad," *The South American Journal* published in supplement form an account of the principal exhibits in the Spanish language. In an introduction to the report interesting facts and figures as to cost of transport, Customs charges, and other regulations interesting to manufacturers were given. By also giving some indication of the physical features of the more important South American countries and the extent and condition of the existing roads, the *S.A.J.* essays to show makers what they should bear in mind when catering for these markets. It is suggested that the prospective trade is quite worthy of cultivation, for most of the countries dealt with have enjoyed some years of prosperity, and their inhabitants have money to indulge their fancy for motor cars. The general impression that there are no roads suitable for motor traffic in South America is really only true of the lesser Republics like Honduras and Salvador, whereas the roads of the capitals and important cities are quite good on the average, and a considerable number of roads specially suitable for motor traffic are being constructed in many of the countries. The *S.A.J.* then goes on to give many

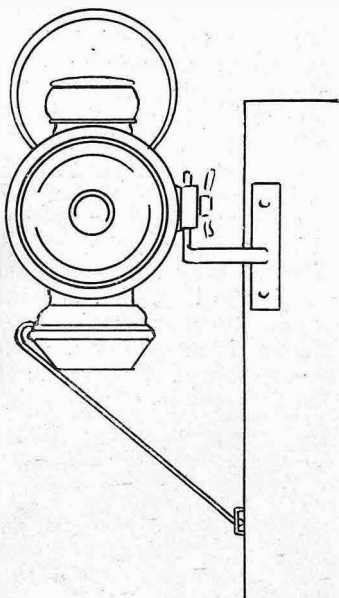
examples of cities where good roads abound, and cites the construction of a most important highway between Pancartambo and the Madre de Dios river in Peru—a distance of 125 miles—at a cost of £34,000. A road from Cajamarca *viâ* Chachapoyas to Moyobamba, and thence to Balza Puerto and Yurimaguas, which is destined to become an important factor in the material development of the northern portion of Peru, is also under construction. The length of this road is 373 miles, and about 31 miles are already completed. The existing roads from Casas to Huaras (93 miles), and from Recuay to Caraz *viâ* Carhuaz and Yungay (63 miles), and other roads are being improved and extended. Statistics are difficult to obtain in South America, but in Argentina the municipal returns show that at the end of 1907 there were in Buenos Ayres 969 private cars, 277 taxis, 81 motor lorries, and 77 motor cycles. Of these vehicles ninety-five per cent. were of French origin. Since then the number has largely increased, and include such cars as Daimlers, Sidelleys, Napiers, Humbers, and Argylls. There is much more that we could quote from the most excellent and instructive article, but space forbids.

USEFUL HINTS AND TIPS.

Fixing a Side Lamp or Tail Lamp.

On cars producing a fair degree of either road or engine vibration difficulty is often experienced in finding a secure fixing for the side and tail lamps. We recently saw an excellent tip applied to an 8 h.p.

single-cylinder car, the detail of which we illustrate. A brass picture eye is screwed into the dashboard, and to this is attached a piece of stout steel wire with an S hook. The length of the wire is the secret to the successful use of the device. It must be of that exact length which compels it to be forcibly sprung over the brass eye at one end and any convenient ridge or projection of the lamp body. We have employed this wrinkle with the three small lamps on a car, and have found that it entirely removes the jarring effects of those vibrations, which previously caused the makers' clamps to work loose periodically.



Some Effects of Tyre Sizes.

After the comparatively lengthy experience of tyres, the correct size and design of same for various purposes is now pretty well understood. It is obvious that, apart from other things, tyre dimensions should more or less depend upon the weight they have to carry, while if the engine power is high it is advisable to increase them a little more still. As to how far one can go in this direction is as yet uncertain, tyres of six inches in diameter being at present the exception. Most people are content with a very small amount of experimenting, owing to the expense of fitting new rims to suit. Yet there are occasions where a change is cheaper in the end, as, for instance, when a tyre is just too small for the work it has to do. This entails frequent replacing, the owner wondering all the time why his tyres seem to wear so badly compared to other people's. The benefit due to an increase in size—from 870 by 90 mm. to 880 by 120 mm.—made by a friend of ours last year has delighted him immensely. When using the smaller ones he has spent as much as £9 for inner tubes in a run from London to Northampton on a 14-18 h.p. Renault fitted with a light touring body. Being somewhat tired of this expensive proceeding, he decided to try the effect of larger tyres fitted to suitable rims. The experiment proved highly satisfactory, the life of the tubes averaging something like 3,000 or 4,000 miles apiece, apart, of course, from punctures. Another friend had much the same results with a 10-12 h.p. Humber when the tyres were changed from 810 by 90 mm. to 815 by 105 mm. The inner tubes lasted very much longer, but there was a great tendency to skid on wet roads. From this and other cases it appears that there is a limit to the size of smooth treaded tyres one can use with regard to safety

from skidding, though studded tyres are not affected. When riding a motor bicycle fitted with 3in. tyres of a foreign make we never knew what it was to suffer from punctures, but it was horribly dangerous in wet weather. A similar machine fitted with British tyres of an absurdly small size could be used with the greatest safety under the same conditions, but life was one long anxiety, owing to their extreme liability to puncture on the slightest provocation. To get the best results from tyres non-skids of fairly large size should be used, the extra cost being more than repaid by their durable properties.

Buying a Cape Hood.

See that it can be swiftly erected. Some hoods take so long to unfurl that the passengers are drenched before erection is complete.

See that the tilt comes well forward over the bonnet, or else no protection for the front seat will be afforded.

If a wind screen is used in conjunction, see that provision, *e.g.*, a short drop curtain, is provided to fill any gap between the top of the screen and the roof of the hood. Otherwise discomforting draughts will sweep the rear body. Such drop curtain should button along the top of the screen.

See that there is a complete set of side curtains, especially to shield the front seats. Many hoods permit the front seat occupants to be quickly drenched in a side wind.

Eschew spring-push attachments for the curtains. They function very well while new, but may wear slack at any moment, and the curtains will then flap about loosely in windy weather. Turn-buttons are essential.

Be content with a very small rear window. A big window is sure to split or crack sooner or later, and, however big it is, you will not be able to reverse conveniently by looking through it. Therefore have a window just large enough for the passengers to peep through.

Precautions in Using.

Never furl the hood till it is dry. If lady passengers insist on the hood being refurled when a shower is over, resist them to the death, if wife or blood relation; if guest or fiancée, submit, but put up hood again to dry immediately on reaching garage, unless it be made of Kamac, which is the only material we have found which can be furled wet without damage.

Sternly forbid lady passengers to place salmon or other impedimenta in the folds of the hood when furled.

Always carry the winch-handle for the lazy-tongs in an accessible position, such as a door wallet.

Overhaul the joints of the framework for any unpinned nuts. Most hoods embody several unsecured nuts, which are very liable to jar off, and their loss may render the entire hood useless. Either carry spares, or fit split pins or fastnut washers.

TO NOVICES.

The intending motorist and the new motorist cannot always follow all the terms used in articles published in *The Autocar*, despite the fact that technical subjects are dealt with as plainly as possible. All who experience difficulties of this sort are referred to "The Autocar Handbook" (1s. 6d. post paid), which is designed to help one to a clear understanding of such subjects. Those who wish for practical hints and tips concerning the driving, adjustment, and maintenance of their cars are referred to "Useful Hints and Tips for Automobilers" (2s. 6d. post paid). Both can be obtained from our publishers, Iliffe and Sons, Ltd., 20, Tudor Street, London, E.C.

O, O, DOUBLE O, ANDORRA!

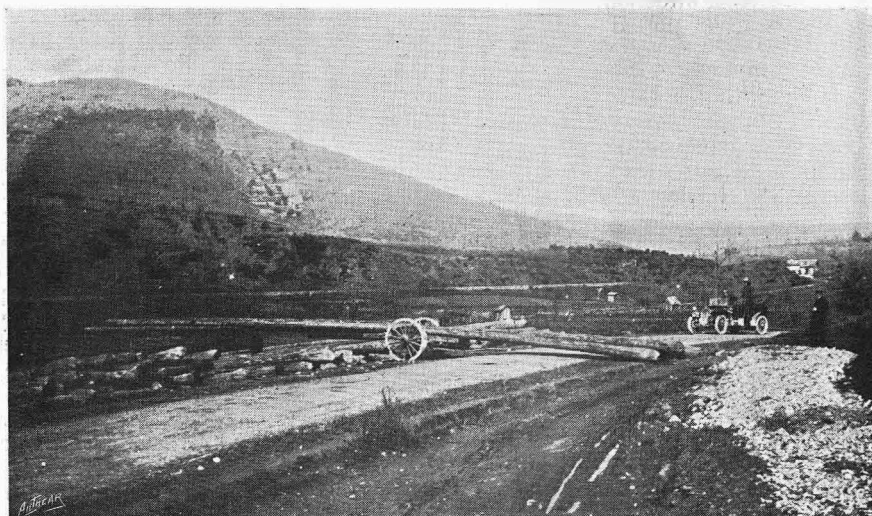
AN UNAUTHENTIC ADVENTURE. BY OWEN JOHN.

The Why and Wherefore.

Quillan, nestling on the Aude, where, weary of brawling through dark cañons and rocky defiles, the water begins to slide in more decorous manner towards the blue Mediterranean, we had left behind. For miles we had been running along a road carved out of the mountain side parallel with a new and wonderful railway, enclosed for the most part in the rock itself, ever keeping alongside of the noisy river. Then, when the railway turns east for Axat, we had left it and were climbing, climbing, twisting, and turning up the cliff-side itself, with nothing beneath us but the bottom of the valley, and nothing above us but vast pine forests stretching away to the snowline itself. Civilisation, except for the wonderfully engineered road, had almost petered out, and life, except for occasional fur-wrapped timbermen and their long mule teams with their still longer loads, seemed nearly inexistent. We were pointing, for once in a way, in the direction we were aiming at and following the contour of the mountain, when—had I been driving horses instead of a motor car, they would have assuredly been frightened over the edge into the valley a thousand feet below—a man rushed into the middle of the road and called on us to halt. With the instinctive desire to save a fellow creature's life I jammed on the brakes, and the wheels slid along the oozy slime of decayed pine needles. Just as I was designing a few words to meet the situation I heard a rattling noise above, and, while I wondered, a huge lopped fir-tree shot like a ricocheting arrow across the road not fifty yards ahead of us and disappeared into the depth beneath, followed by a nondescript aftermath of small rocks, loose earth, and torn boughs. Therefore I checked my language, got out of the car, and shook hands with our preserver. It may be as well at this point to give a few details as to who we were and what we were doing in the Pyrenees, because, in the light of recent developments, we may possibly become famous, or infamous, to posterity. The car was an open 25 h.p. Talbot, distinguished above ordinary cars in that it was always in the best of health. I, its driver as well, was an unpractising and unpractical barrister, and the other male was a visionary little man in spectacles, who wrote quaint and untranslatable articles for unusually short-lived journals. Otherwise he was comfortably well-off, amusing, possessed of an insatiable curiosity and the name of Percy Pineo. The two womenfolk on the car consisted of my aunt, Mrs. Agabeg, a widow with very pronounced leanings, and her late husband's niece, who, for short, I shall call Anna. I may here remark that my aunt's latest leanings were strongly Suffragist, and that this very trip was in the nature of a rest cure after a very strenuous winter. Apparently Mr. Pineo was minded much the same way, and as Anna did not express contrary opinions it may be said that we were all much

of the same way of thinking. I should explain that my aunt is reputed wealthy, and that I am her nearest relative—except Anna.

When I pulled up the car so suddenly there was the usual yell from behind that my aunt let off at every sharp corner, *caniveau*, or snow-patch, accompanied on this occasion with a mild expression from Mr. Pineo who was sitting in the back with her. It had been originally arranged that he should sit in front with me, look after the drips, turn the handle, and generally make himself useful, but half a day of inattention to his duties, coupled with an erroneous idea that the driver can admire the scenery, and enter into conversation, at forty miles an hour, soon cured him of his longing to be useful, and bestowed Anna upon me as my front seat companion. I rejoiced for more reasons than satisfactory drips, and, judging from the never-ending torrent of words that for ever went on behind, the arrangement proved satisfactory there as well.



"Mule teams and their still longer loads."

To return to our preserver, who bowed and smiled at us all without stopping while we thanked him for his heroism. I suppose it was because we were near to Spain that I likened him at once to a young Don Quixote, not only because he was long, cadaverous, and courtly, but also because he had the same sad, far-away, kindly look in his eyes that Doré has given to the dolorous knight of La Mancha. He was dressed in a truly Spanish-looking pelerine, soft hat, and long buttoned gaiters, and also carried by the middle a steel-shod staff, which it would be an insult to have called a stick. We had intended to have had a late lunch when we had reached the top, but the happy thought seized Anna that now was the time and that here was our guest. So with no more ado we made ready, and the stranger almost perforce found himself the hero of the banquet. My aunt rose to the occasion to the extent of insisting on my opening one of the emergency bottles of champagne we carried with us, and under the influence of the well-filled luncheon basket and the very much "up" wine even our melancholy friend became quite genial, and presented Pineo and me with long, thin, black cigars manufactured on much the same model as their owner. My aunt took out a

cigarette, and he promptly apologised profusely, almost in tears, for his rudeness in not having offered her, too, a cigar. With coffee (hot from a Thermos) and a liqueur of cognac (emergency also) he quite thawed, and, to our surprise, asked if it would fatigue us to hear his reason for being in such an out of the world place. Of course, we said that nothing in the world would give us more pleasure, that we were but ten miles from our journey's end, Montlouis, and that anything that was ours was his, and so on. It will be noticed we had been studying books on Spanish etiquette. He began in that hesitating French which makes it so much easier to be understood than the real native article: "My friends, I am not a Frenchman; no, nor, as you undoubtedly think, am I a Spaniard."

We gazed at him in wonder.

A Modern Romance.

"No," he resumed; "I am an Andorran, or rather, I was an Andorran. But, ah! I have had to fly; I am an exile for conscience sake and"—here he kissed the tips of his left hand fingers—"for the sake of a lady." Here he went through the motion of flipping the kiss with his right hand over the mountains in a south-westerly direction. My aunt took out a smelling bottle, and pulled Anna's skirt down over a just visible ankle. "You would like to know why? Very well. You must know that in Andorra we are a Republic, and that we pay France and Spain to fight for us, instead of having our own army. Therefore we are men of peace, and lived contented and happy lives. You notice I say 'lived.' For why? I will tell. Now I am of the best and oldest family in Andorra. There is only one family as good, the Ramonels, and it is to them that my Dolores belongs," he sighed. "Ah! the Ramonels are the richest family in all Andorra, so rich that Dolores' father sent her to Paris—aye, and to London—to become accomplished. You see, she is his only daughter, and her excellent mother is dead. She came back only two months ago more beautiful than ever; but accomplished?" He raised his eyes to heaven. "Yes—and no. Of course, she is very clever, and can sing and play and talk many languages. Ah! if that were all. But she has come back discontented. No, not unhappy quite, but not content with her lot—full of ideas, or rather of one idea—and it is because she is the daughter of the President of Andorra it is so sad. You will be surprised and sad, too, when I tell you. For centuries in my country we have elected our Conseil Général, and our Constitution says that everyone has a vote. Therefore, since time immemorial every man has had the right to vote, and has used it with discretion and love of his country. Then—oh! it is terrible—back home comes Dolores from England, and says, 'The law is that everyone has a vote. Is, then, a woman no one?' And she speaks to other women about it, and they agree with her—some of them; not by any means all of them, for many are mothers, and content to leave such things to their husbands. But she has upset Andorra, and it is not the happy place it was. But as for me—I tell you this in secret—of course, I love Dolores, and we are affianced from our cradles, ruling families both; but my position is hard. Could I betray my country and my sex? No! I tell Dolores so. Then she told me she did not want me any more, and she would not marry me. Then she got other women to help her, and interrupted the country's business in the *Palais* with her cries for 'Votes for everyone according to the law.' Alas! I am of the

Conseil, and was told by her father to quell the disorder. But I could not, for I love her; so I have had to leave Andorra, and I hear—ah! heaven and earth and my country!—that they have put her in prison for disobedience, and that she is happy, because the prison is the *Palais* itself, and while she is there there cannot be any *Conseil* without her being present! Ah! she is mad, mad, mad, and I am mad, too." Here he took his cigar out of his mouth and burst into tears.

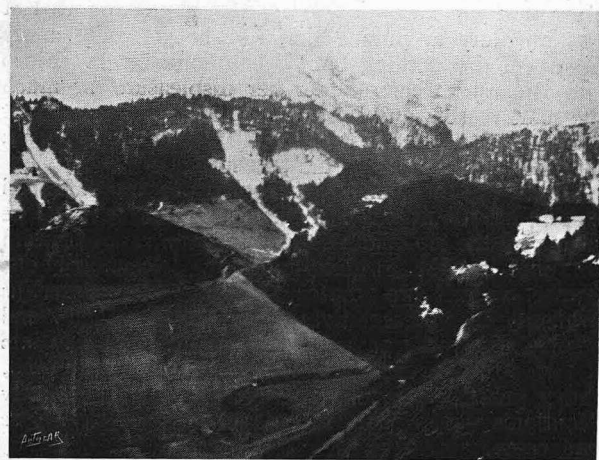
My aunt rose to her feet and the occasion.

"Señor," she said, "this is the finger of Fate! We come with you to Andorra—now. Your—your *er—fiancée* shall be free. Women shall be free! See here!"

She took out from amongst her many garments a locket with a picture of an odd-looking female surrounded by the legend "Votes for Women."

Guido—he had told us that was his name—looked at it, at her, and then up at his late hiding place in the pine woods. But he said nothing.

"Come," said my aunt, "now, at once, immediately!"—her French was rather ejaculative, but it always got there.



On the road to Andorra.

Guido looked for me—I was busy helping Anna to pack up behind the car, or pretending to. I think he was about to enquire of Mr. Pineo concerning many things, but that gentleman had taken refuge in silence and a Baedeker. Therefore, he stood still, scratching his head, until all things were ready for departure. My aunt got in at the back and invited Guido to sit between her and Pineo. I put down the fact that he did so to his tumbler of champagne and the two glasses of liqueur brandy he had so appreciated. Anna and I got in, and we were off.

The road we traversed for the next four miles consisted of black mould, with snow at intervals lying in heaps where the sun had not got at it, and no wall whatever on the cliff side. Therefore I had but little time to look round, and contented my curiosity with listening to the hubbub in the back, varied with occasional international oaths at particularly elegant angles. I think at one time Pineo nearly persuaded my aunt to let him go, and that she was wavering. But about this period the valley shot up to our level, and—lo and behold—we were out of the forest on to the top of a big white plateau, on a straight bare road, marked on each side by scarred snow posts. The car loved it and darted off as if glad to be free of careful restraint once more, but the odd expressions of fear still went on

behind, though now my aunt was content to reply to them with gentle soothing. Higher and higher we ran along well graded roads till, at a signpost that points—amongst other directions—to a monasterial-looking building on the hill-side, we stopped. The guide book said we were on the Col de Casteillou (5,640ft.), and Guido remarked that this was so, that there—indicating the mountains across the next valley—was Spain, and that there—beneath the setting sun—lay Andorra, to which, alas! he can never return.

An Unexpected Departure.

"Don't you worry about that, Señor," said my Aunt. "I've been thinking out a plan. You leave it to me. We shall take you on to-night with us to Montlouis, and then in the morning we will motor over to Andorra and reconnoitre the position, leaving you behind outside the territory till the evening—when we rescue her."

"Caramba!" I heard our guest mutter. "Montlouis! To-night! Revanche!" He stopped, plunged in meditation—then suddenly sprang out of the car and was off across country, over the crackling snow-ice and slush, in the direction of the biggest and blackest of the pine woods.

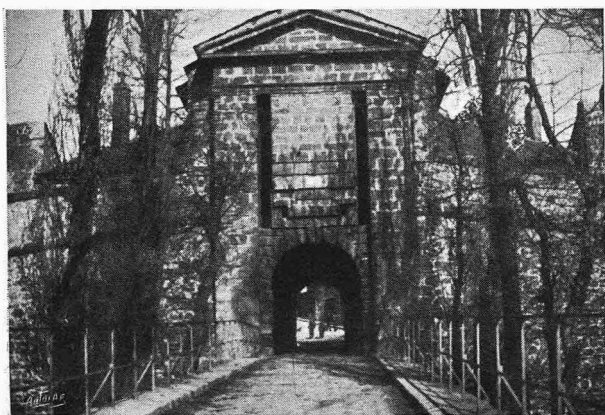
I think my aunt was under the impression that it was my duty to pursue him, for she got quite angry because I did nothing but lie back and laugh. Pineo and Anna also came under her displeasure for much the same reason, and I felt the situation so intense that I had to put an end to it by starting the motor up again and letting it out along the splendid road.

About two miles on some fur-clad peasants informed us that Montlouis was four kilometres away, and as we swung off the top of the plateau into the valley beneath we once caught a glimpse of it. Rounding one corner, we met two courteous officers, who saluted us evidently as representatives of the world without, and shortly afterwards passed a curious little gateway into a fort. Then came winding and steep roads, and, rather puzzled, I enquired of a boy as to where exactly Montlouis was. The lad pointed in the direction we had come.

"How very extraordinary," said Pineo, "to miss a town with a garrison, an *octroi*, and an hotel. I have never heard of such a thing." So I turned the car round, and it hummed up again past the fort till we came to a dividing of the ways. There was a goat-herd here, so I asked him where the road we had come by went to.

"Puycerda," said he.

"Puycerda!" said Anna, "that's Spain. Hi! boy, where's Montlouis! Montlouis! Montlouis?"



One of the gates of Montlouis.



A roadside lunch in the snow.

The youth's hand pointed down the road again.

"Well, I'm blowed!" said I. "Let's ask at the fort." So round she came again, and I drove her right into the little archway. Over the gate was a little carved label "Montlouis." The other side of the passage was an *octroi*, and inside was a little town in full swing—Montlouis, of course, but whoever would have looked for a town down a rabbit hole like that?

We charged up the steep little main street through crackling heaps of brushed snow to the imposing sounding Hotel de Paris that forms the centre of Montlouis rank and fashion. Out came the proprietor, all bows and smiles, and soon our baggage was inside and the car stabled in the great stone hall of the *Mairie*.

I could write pages on Montlouis—the big wood fires, the large bearded sportsmen with their enormous spike-collared dogs, the exiled soldiery, the many horsed diligences, and the mysterious strangers. But this is a story, and I must get on with the relating of it.

* * * * *

During dinner that evening my aunt was unusually quiet. Possibly the other diners—for the hotel seemed to be the mess for most of the garrison—had something to do with it, for no sooner had they all departed, with profound bows and highly ornamental salutes, which we returned with much ceremony and wreathed smiles, than the spirit moved her to speak. I knew we were in for something special, because she began by addressing us as comrades.

"Comrades," said she, "I have been considering the matter, and I have come to the conclusion that the defection of our preserver was entirely owing to his inexperience of motors." She looked round for opposition, but we knew auntie too well to interrupt. "I am convinced that he will contrive to be with us on foot, and that his story is absolutely true. Therefore my proposal is this: To-morrow after *déjeuner*, for the distance is small, we will, leaving our luggage here, visit Andorra, and as ordinary tourists see the sights of the place, though secretly take careful note of the prison, and, if possible, communicate with the brave girl. We will then withdraw, as if for here, but when darkness falls we will return to the

vicinity and carry out our purpose of rescuing this intrepid pioneer." To the female attendant "*Fille! Meilleur vin, vite!*" The landlord returned with something evidently very special, filled our glasses, and apparently withdrew. "A toast! 'Dolores Ramonell—the Premier Suffragist of Andorra.'" We stood up, muttered something, and emptied our glasses. After this the proceedings became by contrast dull, and, since the *café* was crowded and suffocating, sought our comfortable beds at an unreasonably early hour.

Across to Spain.

Anna and I managed to enjoy a before-breakfast stroll around the grassy bastions of the old fort, and appreciated to the full the delicious trout that were set before us at *déjeuner*. About midday we were off, running along the big highway that leads into Spain at Bourg-Madame. After twenty miles or so we turned off, and then the long rough track to Andorra—and apparently nowhere else—took all our attention. Motors seemed uncommon sights here, both to mules and their drivers, and the Andorrans almost mobbed us when we entered their capital. We drew up outside the Palais, and an obliging kind of official showed us over the building without any demur. We admired the big fireplace, and the stalls beneath where the horses of the M.P.'s are stabled during their deliberations. At the back of the president's chair there was a door. My aunt casually approached it and tried to open it, but it was locked. During this manoeuvre the custodian's back was turned, but no sooner did he hear the rattle of the handle than he sprang towards my aunt and yelled out that the room was strictly *defendu*. I saw my aunt smile, come away, and then sit down at the big table and write something with her stylograph—which, by the way, owing to our elevation, had leaked all over her dress—on a visiting card. What she wrote I know not, but I watched her edge once more towards the door, and with a sudden motion flick her message underneath it into the unknown chamber. After that she emerged into the street again, surprised our guide with a big tip, and called me to her side. "Edgar," she whispered, "the key of Dolores' prison was hanging up just outside the door on a carving of a man with wings. I have altered our plans. We dine here early, and afterwards you light the big lamps. Then, leaving the engine running, you and I steal up into the Council Chamber, enter her cell, throw Pineo's big fur coat and cap on her, rush her downstairs, bundle her into the car, slam in the clutch—and hey! for Freedom, Love, and Liberty!"

I said "Yes, auntie." So would you if you knew Mrs. Agabeg.

* * * * *

Too soon that afternoon passed, and the resources of the host of the Cheval Blanco did not extend to more than three garlicky courses and very bad coffee. At a sign from my aunt I went out to light the Kings of the Road, and their glare brought out a crowd of about twice as many people as the guide book ever allowed to the little republic. I started up the engine, and we emerged into the street. An agitated whisper from my aunt told me she had altered her plans again, and that I was to stay on the car while she and Pineo did the fearful deed. Poor old Percy! Shivering with fear of the unknown consequences of detection and the laws of Andorra, he was now to be deprived as well of his fur coat. He almost struck, and expressed his fears in such unmeasured terms that he only consented to

become an accomplice on my aunt threatening to do it all alone. So they left us, ostentatiously taking the contrary direction they intended. Out of the corner of my eye I saw them skirt the populace—far too intent on listening open-mouthed to me playing fantazias on the cut-out, siren, whistle, and engine itself to pay attention to anything else—enter the stable shadows and disappear up the dark staircase. The custodian, after our afternoon's appreciation of him, had constituted himself chief inspector of motor cars for Andorra, and therefore we could see, if the key fitted and the unfortunate Dolores was within, that all would be plain sailing. The moments dragged by. Suddenly Anna whispered they were coming back. I raced the engine and played all the car music at once, while my aunt, arm in arm, and even more familiarly, escorted, pushed, and pulled a figure in Pineo's fur coat and cap into the back of the car.

"Go on!" she yelled.

"But where's Pineo?" I answered.

"Coming!" she screamed, and as I roved off a



Outside the Hotel de France, the centre of Montlouis rank and fashion

thin, bald-headed little figure sprang over the sidedoor and collapsed into the bottom of the machine. Over him went all the rugs, and I could hear my aunt telling him to lie still, while a new volume of shrieks began from the muffled figure.

"Stop kicking me, for Heaven's sake," yelled Pineo.

I could feel Anna shaking with suppressed laughter at the row behind, but narrow streets and dazed pedestrians gave me too much to do then to be able to join in the giddy whirl. Half the inhabitants were running with and behind us, all the dogs were barking, and most of the mules—home-coming from the valley plantations—were shying in every direction. Then I became a road hog, literally and truly, for just as I came in sight of the city gates I saw a herd of Andorran swine coming in the opposite direction. Off went the siren, the whistle, and the cut-out again, and straight for the opening I steered. Bumpety! bumpety! went the wheels, and new demoniacal noises started, almost drowning my own mechanical wails. But I got outside without stopping, and up and down the rickety stone-strewn track I let her go at a truly reckless pace. The

crowd was left behind, though at the turn I could see it thickening around the corpses of the poor pigs killed in the noble cause of women's rights. I had stopped making the night hideous with artificial noise, but nothing our back-seaters could do could quiet the screams of the rescued damsel.

"A most extraordinary thing," yelled my aunt between the shrieks. "I can't understand a word she says, and Mr. Guido told us she was highly accomplished."

"It sounds to me," I heard Pineo reply, "as if she was using nothing but low class French swearing."

"Poor girl!" said auntie, "they have evidently driven her nearly mad with their brutality. Shame that women should so suffer!" and I heard her soothing, patting, and caressing the terror-stricken victim.

About ten miles of the weary mountain road flitted by, and then at last we got on the big main highway, and the car slipped along through the darkness like a thing of life. About five miles from Montlouis there is a twisting pass which requires careful steering, and as I slowed down my aunt commanded me to stop, for—being now safe from pursuit—she would explain all to the poor innocent sufferer.

I pulled off one of the side lamps and slewed it round on to our visitor. My aunt took off the borrowed cap of Pineo and opened out the fur coat. But—instead of the classic, cultured, young, and refined visage we had expected—the light showed a vacant-looking, dirty, middle-aged, blotched countenance that gazed, one-eyed, in amazement at our strange faces! Then it began to yell again, and yell, and yell!

I saw awful doubt spring out on my aunt's face.

"*Do-lo-res Ram-on-el? Do-lo-res Ram-on-el?*" she demanded.

There was no reply—but yelling.

"English!" my aunt went on, "We are English—friends!"

No answer—even the yelling ceased.

My aunt played her remaining trump. "See here"—she fumbled in her own dress, brought out her badge, and held it up. "*Regardez—Votes for Women!*"

This settled it. With even a fiercer yell than hitherto the figure rose, tore open Pineo's coat, and displayed a card pinned on to her coarse black shawl.

"'Tis she! 'Tis she," shouted my aunt. "Imprison—"

[THE END.]

ment has driven her mad!" And snatching away the paper she eagerly scanned it. She frowned. "I cannot understand it at all, and I thought I knew enough French and Spanish for that. Take it, Pineo, and see if you can understand it."

The little man put it up to his nose, and I saw an irrepressible smile steal all over his face.

"I'm very sorry, Mrs. Agabeg," he said quietly, "but I think we have made a mistake. The translation of this seems to be that the prisoner it is attached to is a habitual—as we should call it—drunk and disorderly."

* * * * *

Very soon after this a car drew up near the little wayside Hotel de l'Univers, and a little bald-headed man might have been seen in earnest conversation with an astonished landlord.

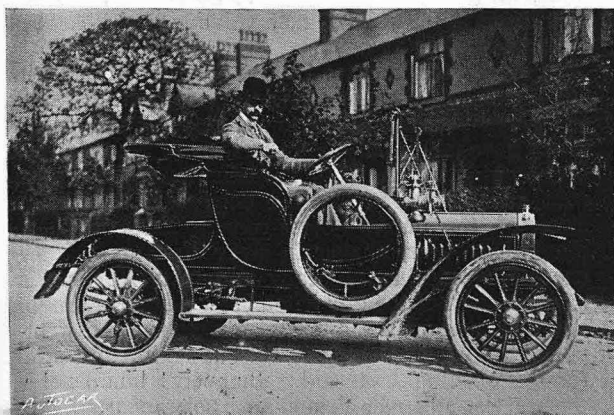
Possibly the clink of gold pieces passing may have had something to do with the fact that, after the car had rolled away towards the mountains, an unparalleled scene of excess took place at the said hotel, and continued till an unholy silence proclaimed that there was no one left who had room for anything more in the way of refreshment.

* * * * *

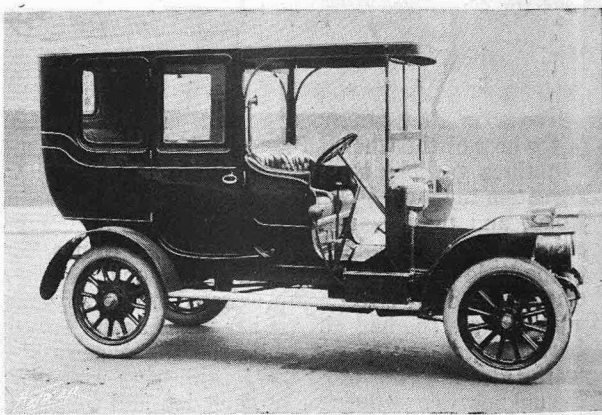
I gathered this latter detail next day from the garrison of Montlouis, which we found waiting that same night for the purpose of arresting the driver of an automobile, with wheels that made little *zeros* all the way, for the crimes of rescuing state prisoners from gaol and slaughtering swine, the property of the republic of Andorra. Telephones are occasionally a nuisance, as we found to our sorrow on this occasion.

And the only moral I have managed to extract during my brief incarceration in the hateful *Palais* at Andorra is that criminals who desire to escape capture should stick to plain covers, and not use tyres that leave such fancy patterns as ours did.

As for Dolores Ramonel, between you and me, I don't believe there ever was such a person, and from what I have heard I believe Guido was a rank impostor in the shape of a member of our own British Government taking a short recuperative respite from his distracting labours—and a little revenge—far from the maddening crowd.



A 14 h.p. Vulcan car, the property of Dr. T. A. Rothwell, of Hale, who is at the wheel. The car is fitted with a particularly handsome hooded coupe, making it an ideal doctor's vehicle, but it might well have higher side doors.



The 14-16 h.p. Belsize fitted with a limousine body. This car is sold at a remarkably reasonable price, and attracted considerable attention at the recent show at Olympia.

SECURITY BOLTS ABOLISHED.

THE VALVE CONSTRUCTED TO PREVENT THE TYRE COVER FROM CREEPING.

How much wasted time and bad temper, and how many barked knuckles can be ascribed to tyre security bolts? How many of our readers can recall much labour lost by the recalcitrant behaviour of a security bolt, its stern refusal to bed down into its place, which made necessary the partial or entire withdrawal of a cover after much time and energy had been expended in getting it into its rim; and worse, when the same or another wrong-headed security bolt, making no sign of its ill-disposition at the time, waited until one was far from home, and then at the most awkward time and place

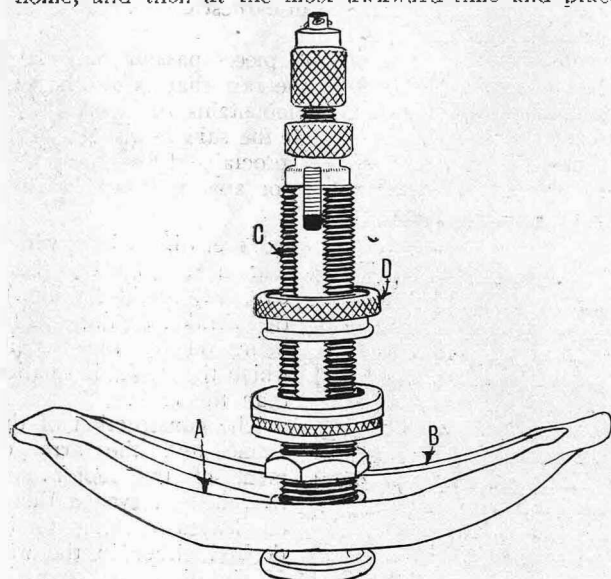


Fig. 1.—The security valve.

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|---|-------------------------------------|
| A, security plate carried on valve tube | C, valve tube |
| B, rounded edges of security plate bearing on inside faces of beaded edges of cover | D, milled nut securing valve in rim |

gave signal of its presence by startling report or a long ominous hiss?

Now Michelins have come to the rescue with a development of the valve stem, or rather an addition

thereto, which it is claimed abolishes the exasperating security bolt for ever. This single substitute for the usual quartet of security bolts takes the form of a boat-shaped plate with overturned rounded edges and flattened tongued ends, through which the valve tube passes and screws as in the illustration, and is further secured by the thin hexagon nut shown just clear of it. The valve is introduced into the rim within the cover in the usual way, so that the rounded edges B bear upon the inside of the beaded edges of the cover. Then the milled nut D is screwed up into position in the usual way, and the cover is securely anchored in the rim and prevented from creeping without the further aid of the tiresome security bolts. What it practically amounts to is the endowment of the valve stem with a newly designed form of security bolt head, and though those long accustomed to consider a tyre insecure without security bolts may at first question whether the boat-shaped valve plate will give hold enough, it is sufficient guarantee of its effectiveness that Messrs. Michelin and Co. are marketing it. That they do so is more than earnest of the fact that, in accordance with the honoured traditions of their house, they have tested the device to destruction before offering it to the use of the world. For having thus swept security bolts with all their imperfections and the innumerable troubles they bring in their train from the path of the motorist they have earned his undying gratitude.

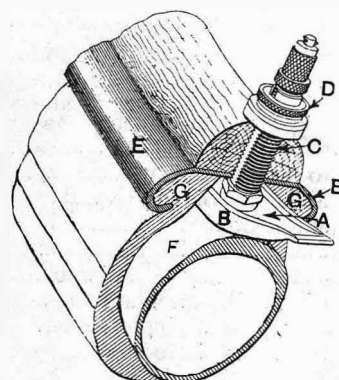


Fig. 2.—Sectional view.

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|---|
| A, security plate carried on valve tube |
| B, rounded edges of security plate bearing on inside faces of beaded edges of cover |
| C, valve tube |
| D, milled nut securing valve in rim |
| E, overturned edges of rim holding tyre |
| F, inner tube |
| G, beaded edges of tyre cover |

The Society of Engineers at its 54th annual general meeting on December 14th awarded to Mr. Herbert Chatley the Bessemer premium of books for his paper on "Mechanical Flight." The society's premium of books was awarded to Mr. Conradi for his paper on "The History of Mechanical Traction on Tramways and Roads."

* * *

A particularly appropriate and enlightened remark was overheard in a provincial town from the lips of an elderly lady who witnessed a horse accident the other day. The horse had bolted, frightened by a tramcar, and had caused great commotion and consternation in the narrow streets. It was brought to earth eventually by colliding with a lamp-post. A policeman rushed to the poor affrighted animal, seized its head and prostrated himself with his whole weight upon it as it lay struggling on the ground between the broken shafts of the vehicle to which it was attached. Other people rushed forward and sat upon its flanks. When after a long delay the affrighted animal was liberated it was found necessary to slaughter the poor

beast. The old lady's comment was: "When will they use motors? There will be no slaughtering of horses and no such cruelty as this then." But her protest was as the voice of one crying in—Pandemonium.

The Autocar

THREE EDITIONS. — EVERY FRIDAY.

The Threepenny Edition.

Printed on Art Paper.

The Penny Edition.

Printed on thinner paper.

The Foreign Edition.

Printed on light "bank" paper for circulation abroad (price 3d.)

Both the threepenny and penny editions can be obtained from all Booksellers and Newsagents. There is no difference in these editions except in the quality of the paper on which they are printed.

THE 1909 14-16 H.P. STRAKER SQUIRE.

AN INTERESTING EXAMPLE OF A
POPULAR TYPE OF CAR.

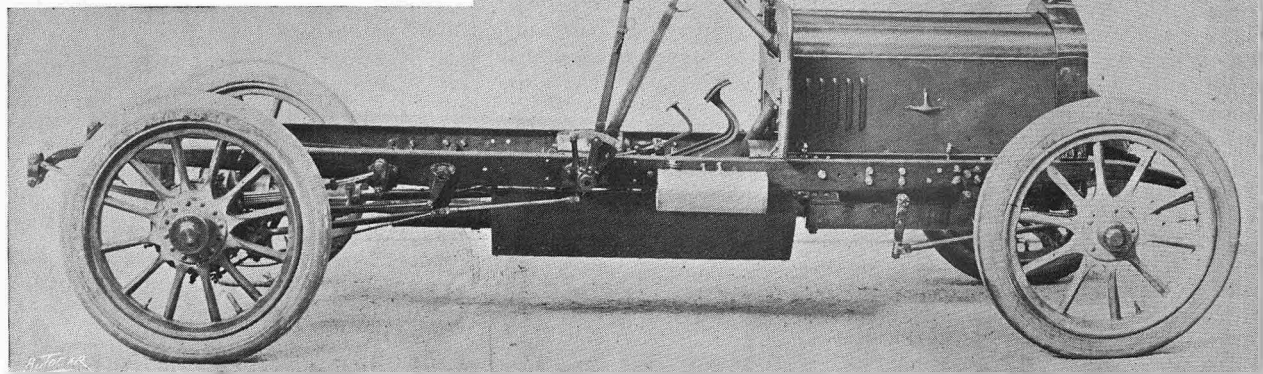


Fig. 1.—Side elevation of the 14-16 h.p. Straker-Squire chassis.

There can be few, we think, who will find reason to doubt the wisdom of Messrs. Sidney Straker and Squire, Ltd., in taking the bold step of concentrating the whole of their attention and energy on a single model. Since its introduction to the market—it made its first appearance at last year's Dublin show—the 12-14 h.p. car, of which the 14-16 h.p. is but a slight elaboration, has met with a deserved popularity that must have been exceedingly gratifying to those responsible for its production, and this reception they have rightly taken to indicate that the lines they were working upon were correct. Such alterations as the chassis has undergone are principally concerned with details, and comprise the provision of a foot accelerator in addition to hand control, a high-tension magneto as standard, larger wheels, and radius rods in conjunction with double shackled springs to the back axle. The most noticeable alteration—that of nominal horsepower—is due to the increased efficiency which the makers have been enabled to obtain by detail improvement in the engine, and is not the result of any increase in

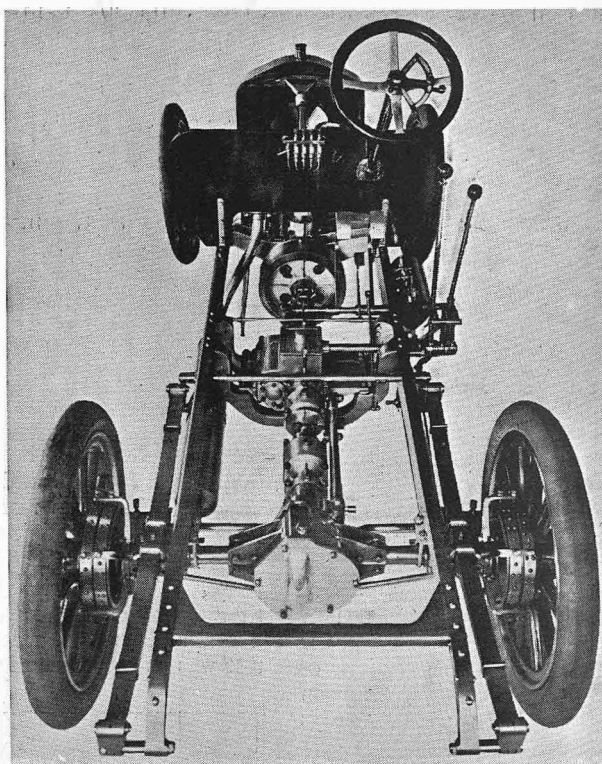


Fig. 2.—Rear view of the 14-16 h.p. Straker-Squire chassis.

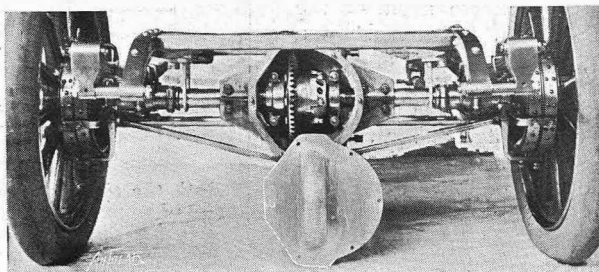


Fig. 3.—View of the rear axle with differential open

cylinder dimensions, which remain as before (bore 87 mm., stroke 85 mm.), the Straker-Squire engine being one of the few in which the stroke is smaller than the bore.

The construction of the frame and the arrangement of the motor and transmission system thereon leaves nothing to be desired either in the way of simplicity or strength. The side members of the pressed steel frame are parallel throughout their length without either up-sweep or insweep. Apart from the cross bearers of the engine, the frame is braced together by four cross members, all of U-section, the middle pair of which, placed close together in the centre of the frame, and very considerably dropped and hollowed, serve to support the gear box very firmly. Half-elliptic springs, with lubricated box-shackles, are used for both front and back axles, the former of which is tubular, and strengthened by a tie rod.

The four-cylinder engine is mounted directly upon the main frame by means of U-section aluminium arms cast into the upper portion of the crank chamber, which, it should be noted, alone supports the crankshaft main bearings. The cylinders are

cast in pairs, complete with common water jacket and internal two-way cast-in induction port to each pair. The water space around the cylinders is of ample proportions, as are the diameters of both inlet and outlet water pipes, through which the circulation is maintained on the thermo-syphon principle in con-

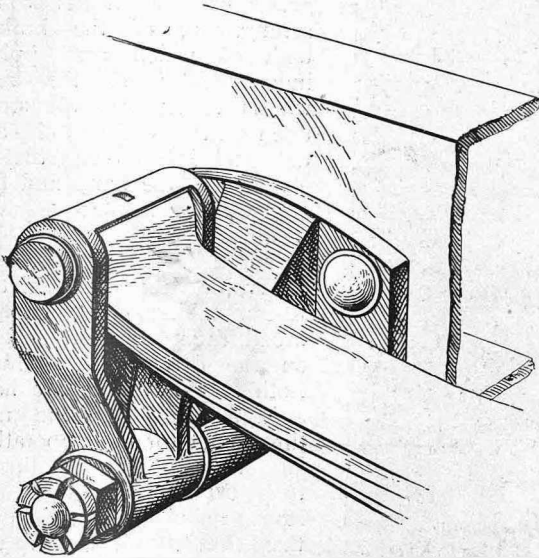


Fig. 4.—The method of attaching the rear springs on the Straker-Squire chassis.

junction with a nicely designed tank and gilled tube radiator. The inclined outlet pipe from the tops of the water jackets, to which it is attached by circular cover plates, is splayed out in a Y-shaped nozzle to join the water tank, and thus the hot water from the cylinders is very evenly distributed over the water space above the radiator tubes. In order to enhance the circulation, a six-bladed fan of sensible diameter is arranged behind the radiator, and is driven by a flat belt from the crankshaft.

The valves, arranged all on the near side of the engine, are of equal diameter and interchangeable, and are operated by a single camshaft enclosed in the crankcase and driven by spur gearing from the forward end of the crankshaft. This arrangement detracts, however, not an iota from the accessibility of this portion of the engine, by reason of the fact that, whereas the T induction pipe sits squarely on the valve ports, the exhaust pipe has turned up T-pieces, which cause it to lie just above the inlet pipe, the valve springs and tappets, therefore, remaining entirely unobscured.

The carburetter is the Wore automatic, and is simple in construction and principle. The jet is horizontal, and is furnished with an unusually wide orifice, through which a mixture of petrol and air is drawn, with an excellent evaporative effect, the air being regulated by a needle valve situated between the mixing chamber and the float. The jet delivers

the gas direct into the horizontal throttle valve, which, as it is opened, permits of the admission of additional air. The spindle of this valve is very neatly actuated by a lever mounted in a bracket cast on to the inlet pipe. In the previous season's model of this car the engine control was effected by means of two vertical thumb levers attached to the steering wheel. In the 1909 model their place is taken by the more general horizontal ratchet levers actuating the throttle and igni-

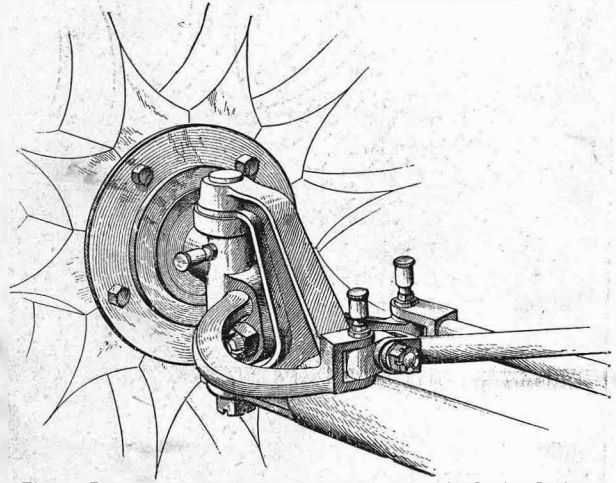


Fig. 5.—The steering axle, jaw, and connections on the Straker-Squire chassis.

tion advance; an accelerator pedal is also provided.

A Ruthardt high-tension magneto is fitted, and is mounted across the front of the engine in a commendably accessible position, the drive being by skew gear from the camshaft. It should be noted that provision is also made for the easy fitting of coil and accumulator ignition as a stand-by.

A leather-to-metal cone clutch of standard pattern is enclosed in the flywheel, and slides upon the six-keyway main gearshaft, between which and the clutch two universal joints, each fitted with a lubricator, are interposed.

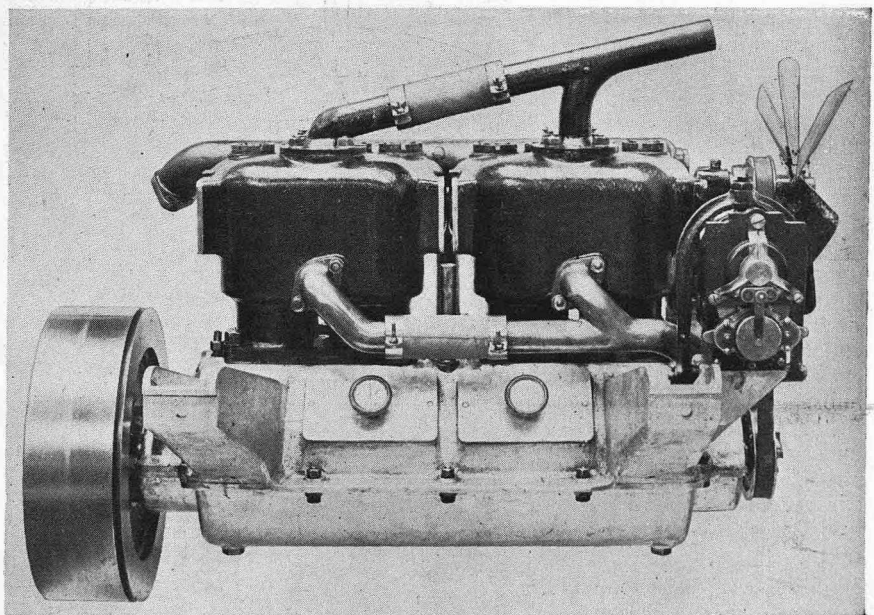


Fig. 6.—The neat appearance of the Straker-Squire engine is well illustrated in this view taken from the off-side. The two inspection doors to the crank chamber and the accessibility of the magneto will be noted.

The gear box, which can readily be dismantled without disturbance to the rest of the car, gives three speeds forward, with a direct drive on third speed, and a reverse under the control of a gate change gear

and to undo the differential cover, when the crown wheel and cage may be easily drawn by undoing four nuts. There is, therefore, no need to disturb the arrangement of the axle, or even to jack up the road wheels.

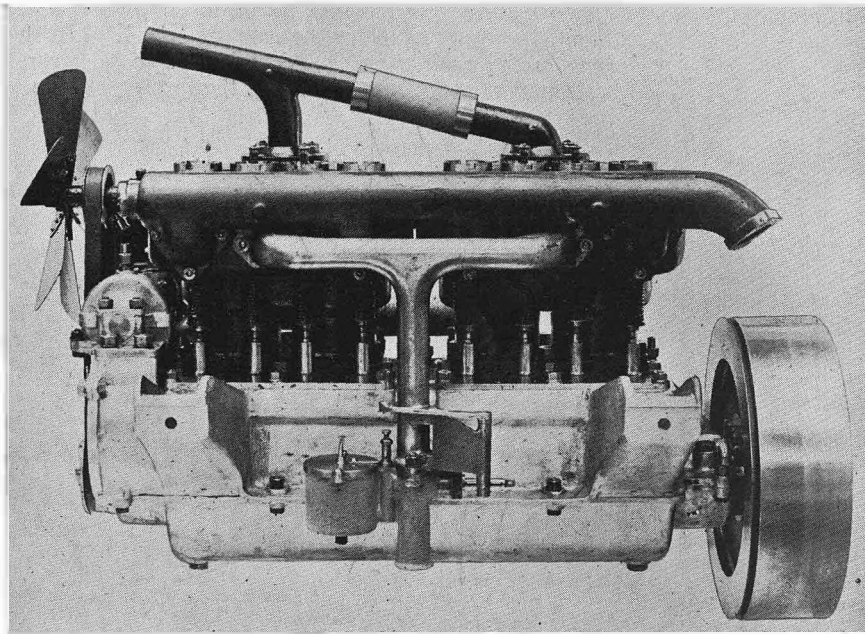


Fig. 7.—Valve side of the Straker-Squire engine. The accessibility of all the valves should be noted.

lever, which has been thoughtfully provided with a safety latch well out of the way of inadvertent handling, with the consequent engagement of the reverse. The entire gear striking mechanism is enclosed within the gear box, for the easy inspection of which a large cover plate is fitted, being normally held in position by a couple of spring clips. Behind the gear box is a universal joint (in the same centre with which are hinged the triangular torque rod and the radius rods), and which is furnished with an oil-tight casing. A second and similarly enclosed joint is placed midway along the propeller-shaft. The live axle is of more than ordinary merit, and gives evidence of very careful thought in every detail. The road wheels are mounted on the axle sleeves upon Hoffmann ball bearings and ball thrusts, the axle shafts having dogs at either end to engage with the differential, and also with their hubs. The differential case, furthermore, is split vertically and longitudinally, the smaller half forming a cover which, when removed, gives immediate and full access to the whole of the differential mechanism. In order to entirely remove the axle for inspection it is only necessary to detach the hub caps, and through them withdraw the driving-shafts,

power obtained with this system, which, we are pleased to observe, is slowly gaining in popular favour.

The back axle is strengthened by a trussed tie-rod in a similar manner to that employed in the front.

The system of lubrication adopted is extremely simple, yet complete. Oil is fed from a tank situated on the off side of the frame close by the driver's

seat by exhaust pressure to a four-way visible drip-feed on the dashboard, whence it passes to the main bearings, crank chamber, and clutch-thrust block, all other parts being fitted with grease pots. A switch

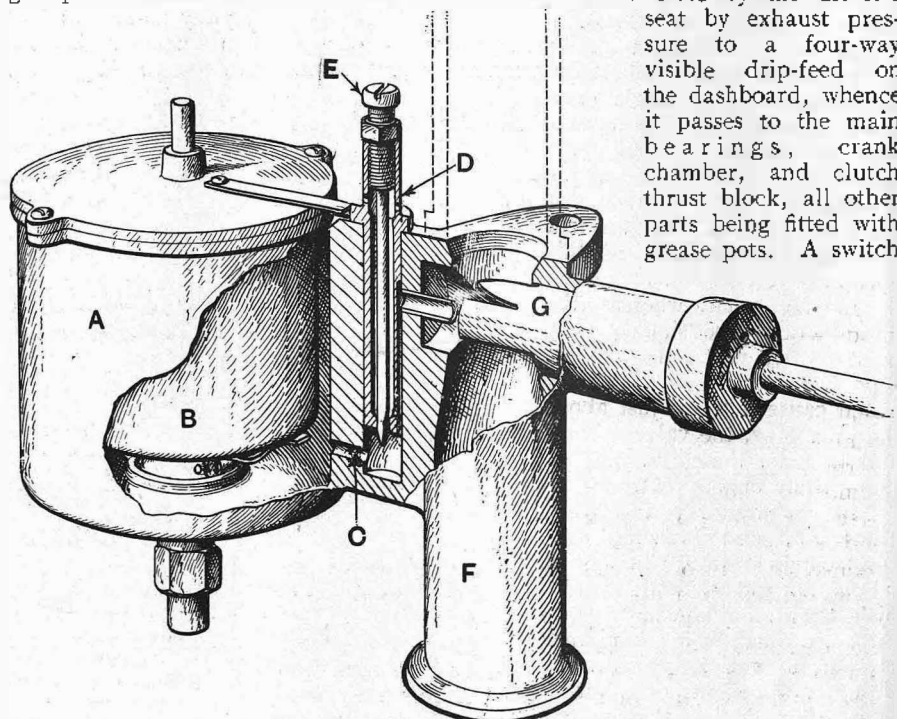


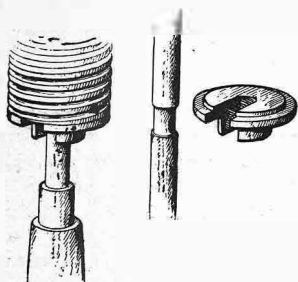
Fig. 8.—Part sectional sketch of the Straker-Squire carburetter.

A, float feed chamber
B, float

C, petrol passage
D, jet chamber

E, jet regulator
F, air column

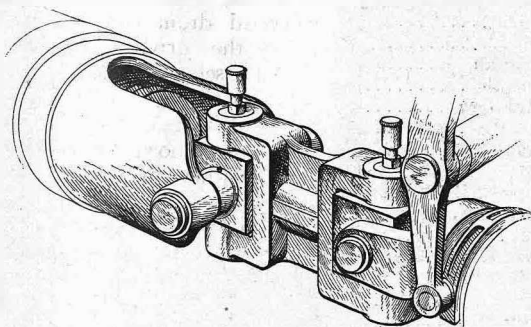
G, graduated throttle valve



Sketch of part of a valve spindle showing the method of releasing the spring seating; no cotter is used.

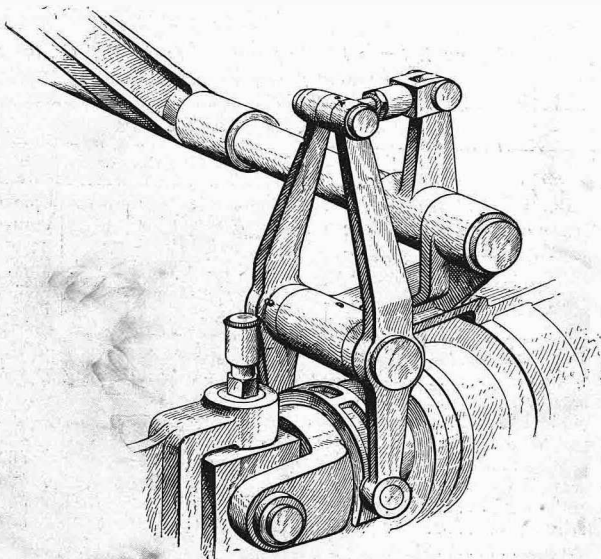
is the only other fitting on the dashboard. Spencer-Moulton pneumatic tyres are fitted as standard, all wheels being 810 by 90 mm. The wheelbase of the chassis is 8ft. 10in. and the track 3ft. 11in., whilst the following types of bodies can be fitted to order: Two-seater, four-seater (side entrance), landaulet, and racer.

Not long ago we were accorded the pleasure of an extended run on one of these fascinating little cars, during which it was put through a series of most arduous tests under very



The universal joint connecting the clutch sleeve and gearshaft, which is very readily dismantled.

adverse conditions, through which it came in just that fine style which, it is only fair to say, its capable design, workmanship, and many excellent points had but led us to expect.



Clutch-withdrawing mechanism of the Straker-Squire car.

Although it may be described as a "top-gear" car—one can worm one's way through traffic with it in a remarkable manner—it has a good turn of speed, whilst its hill-climbing qualities, which we very thoroughly tested, are distinctly satisfactory.

"THE AUTOCAR" LECTURES.

The last of the series of lectures organised by *The Autocar* was delivered at Birmingham University on Wednesday, December 16th. Dr. Ormandy dealt first with hoods and screens, showing by means of illustrations the best forms these should take. He also dealt with lamps and speed indicators, pressure-feed indicators for petrol tanks, etc. A great portion of the lecture was concerned with tyres and their manufacture, special reference being made to the advances made by the Palmer Tyre, Ltd., in devising a machine for the construction of their Cord tyre fabric. Non-skid devices also came in for attention, as well as rims, detachable and otherwise, tyre repairs, and vulcanisation.

In closing the lecturer invited the members of the audience to communicate with the lecture secretary at

The Autocar offices, stating freely their impressions and criticisms of the lectures, with a view to guiding the promoters in arranging another series, if such a course were considered advisable. Mr. Otto Thomas, on behalf of the proprietors of *The Autocar*, thanked the audiences for their interest in the lectures, and Dr. Ormandy for the great amount of work he had done in connection with their preparation and arrangement, and added that the proprietors would be only too pleased to hear from members of the audience in regard to their impressions, together with suggestions as to any future course.

We on our part wish to thank all those manufacturers (too numerous to particularise) who have lent articles and component parts of motor cars for the purpose of illustrating the lectures at the various centres.

In all motor touring outfits, particularly those appertaining to the man who shaves, and who can do nothing worth doing until he has shaved, a Gillette safety razor equipment should be found. In saying this the writer bases his advice on his own experiences, for at home and abroad the Gillette has long been his faithful companion. Abroad particularly, for its possession has preserved him from the chin-skinning attentions of provincial French barbers again and again, and enabled him to appear as an Englishman likes to appear. Moreover, the whole outfit packs away into pill box area, without strop, hone, or other of the usual razor impedimenta. And then the shave obtained by its use is particularly clean and comfortable, and all risks of the not over clean foreign barber's shop are avoided.

To Colonial and Foreign Readers.

We are constantly receiving enquiries from readers abroad asking the addresses of the Secretaries of the leading motor institutions in Great Britain. We therefore give them below, and shall repeat them at intervals as space permits. The addresses in all cases are those of the secretaries:

- Royal Automobile Club, 119, Piccadilly, London, W.
- Motor Union, 1, Albemarle Street, Piccadilly, W.
- Automobile Association, Prince's Buildings, Coventry Street, London, W.
- Society of Motor Manufacturers and Traders, Maxwell House, Arundel Street, Strand, London, W.
- Incorporated Institution of Automobile Engineers, 1, Albemarle Street, Piccadilly, W.
- Scottish Automobile Club, 163, West George Street, Glasgow.
- Irish Automobile Club, Dawson Street, Dublin.

THE NUMBER OF MOTOR VEHICLES

[REGISTERED IN THE UNITED KINGDOM]

UP TO SEPTEMBER 30th, 1908, WITH COMPARATIVE FIGURES FOR THE SAME DATE IN 1905.

(Compiled from Returns kindly furnished to the R.A.C., the S.A.C., and the I.A.C., by the Registering Authorities through the courtesy of their respective Clerks and Registrars, and published in the "R.A.C. Journal.")

ENGLAND AND WALES.							ENGLAND AND WALES—(Continued).						
Names of Registering Authorities.	Vehicles Registered.					Com- para- tive Figs. for 1905.	Names of Registering Authorities.	Vehicles Registered.					Com- para- tive Figs. for 1905.
	For Pri- vate Use.	For Trade Pur- poses.	As Public Con- vey- ances.	Motor Cycles.	Total.			For Pri- vate Use.	For Trade Pur- poses.	As Public Con- vey- ances.	Motor Cycles.	Total.	
COUNTIES—							COUNTIES—						
Bedford	194	62	12	678	946	476	Denbigh	149	24	7	139	319	164
Berkshire	682	82	8	581	1353	746	Flint	98	26	7	122	253	136
Buckingham*	462	54	8	514	1038	573	Glamorgan	336	89	19	582	1026	589
Cambridge	253	38	32	481	804	399	Merioneth	71	10	3	90	174	85
Cheshire	833	500	11	718	2062	967	Montgomery	24	6	3	71	104	71
Cornwall	270	55	58	327	710	368	Pembroke	66	1	1	56	124	74
Cumberland	221	64	15	281	581	362	Radnor	36	8	3	84	131	68
Derbyshire	495	110	39	591	1235	651	COUNTY BOROUGH—						
Devon	694	130	29	505	1358	623	Barrow-in-Furness	54	5	—	140	199	98
Dorset	389	85	6	348	828	416	Bath	108	17	4	123	252	148
Durham	408	73	8	604	1093	588	Birkenhead	164	26	10	188	388	166
Ely, Isle of	82	18	1	161	262	179	Birmingham	1606	206	43	1796	3651	1755
Essex*	1235	191	33	1891	3350	1734	Blackburn	97	8	—	169	274	138
Gloucestershire	555	139	19	484	1197	622	Blackpool	96	8	9	82	195	42
Hereford	281	47	22	196	546	249	Bolton	182	57	7	222	468	264
Hertford	643	114	11	833	1601	923	Bootle	36	7	—	59	102	37
Huntingdon	85	18	—	198	301	171	Bournemouth	247	86	40	251	624	342
Kent	1925	238	101	1807	4071	2187	Bradford	453	81	26	468	1028	500
Lancaster	1039	256	36	1187	2518	1661	Brighton	265	59	104	398	826	401
Leicestershire*	353	78	29	420	880	440	Bristol	370	172	40	789	1371	698
Lincoln (parts of Holland)	129	23	1	254	407	227	Burnley*	78	27	7	163	275	147
Lincoln (Kesteven)	193	12	4	290	499	298	Burton-on-Trent	49	25	2	82	158	101
Lincoln (Lindsey)	245	15	5	364	629	317	Bury	52	8	1	87	148	59
London*	19440	2888	3369	9211	34908	13107	Canterbury	240	50	14	206	510	165
Middlesex	2124	331	57	2265	4777	2379	Chester	127	15	—	83	225	103
Monmouth	213	28	12	125	378	203	Coventry	1244	128	6	456	1834	414
Norfolk	574	138	49	528	1289	630	Croydon	442	59	8	665	1174	629
Northamptonshire	292	39	10	419	760	507	Derby*	139	27	12	216	394	205
Northumberland	704	111	20	479	1314	613	Devonport	11	—	—	15	26	50
Nottinghamshire	476	67	10	522	1075	561	Dudley	64	34	1	67	166	69
Oxfordshire	314	45	2	285	646	338	Exeter	75	14	3	57	149	84
Peterborough, Soke of	56	19	7	184	266	132	Gateshead	30	12	—	72	114	50
Rutland	58	4	3	96	161	106	Gloucester	61	17	—	101	179	94
Shropshire	400	52	15	372	839	411	Great Yarmouth	19	6	12	70	107	60
Somerset	789	154	30	708	1681	891	Grimsby	55	11	8	228	302	165
Southampton	792	520	34	858	2204	1275	Halifax	94	19	3	112	228	110
Stafford	760	17	2	868	1647	876	Hanley	107	13	4	139	263	122
Suffolk, East	329	29	17	251	626	369	Hastings	83	21	20	98	222	145
Suffolk, West	152	36	5	210	403	239	Huddersfield	313	21	13	96	443	226
Surrey	2191	204	46	1941	4382	2470	Ipswich	160	42	4	130	336	175
Sussex, East	357	181	57	666	1761	892	Kingston-upon-Hull	200	49	6	370	625	309
Sussex, West	457	88	37	533	1115	598	Leeds	544	272	16	576	1408	726
Warwick	597	73	8	728	1406	700	Leicester	178	35	17	373	603	336
Westmoreland	141	12	13	117	283	230	Lincoln	134	113	4	224	475	205
Wight, Isle of	148	24	19	162	353	222	Liverpool	1294	185	78	883	2440	983
Wiltshire†	452	95	19	717	1283	737	Manchester	1790	240	141	850	3021	1325
Worcestershire	464	102	21	468	1055	506	Middlesbrough	160	9	—	178	347	144
York, East Riding	131	44	54	194	423	190	Newcastle-on-Tyne	255	145	1	616	1017	278
„ North Riding	352	79	20	289	740	391	Newport (Mon.)	75	8	4	103	190	100
„ West Riding	1065	179	54	1211	2509	1169	Northampton	87	56	1	202	346	172
Anglesey†	53	2	—	65	120	69	Norwich	229	50	2	173	454	181
Brecon	58	23	3	86	170	93	Nottingham	349	15	4	353	721	405
Cardigan	59	—	4	60	123	67	Oldham	137	20	—	152	309	139
Carmarthen	77	19	15	146	257	143	Oxford	136	21	6	257	420	251
Carnarvon†	121	11	7	108	247	141	Plymouth	95	21	14	158	288	169
							Portsmouth	223	24	5	208	460	463

*The total number of motor vehicles (other than cycles) was given only, and the numbers of each class of vehicle have been estimated. The number of vehicles used as public conveyances in London is based upon the number licensed by the Metropolitan Police. †No return was forthcoming from this Council, and the figures here given are estimated.

ENGLAND AND WALES (Continued).						
Names of Registering Authorities	Vehicles Registered					Com- para- tive Figs for 1905
	For Pri- vate Use	For Trade Pur- poses	As Public Con- vey- ances	Motor Cycles	Total	
COUNTY BOROUGHES—						
Preston	97	15	12	231	355	204
Reading	197	30	—	192	419	210
Rochdale	62	4	2	79	147	61
Rotherham	31	4	—	154	189	84
St. Helens	54	12	1	89	156	74
Salford	205	24	—	170	399	146
Sheffield	420	40	50	525	1035	577
Southampton	350	52	8	247	657	325
South Shields	32	3	—	68	103	51
Stockport	207	19	11	144	381	130
Sunderland	140	17	—	153	310	192
Tynemouth	22	—	—	41	63	15
Walsall	36	7	—	136	179	111
Warrington	97	7	—	134	238	115
West Bromwich	37	—	—	58	95	58
West Ham	115	20	86	548	769	409
West Hartlepool	70	8	1	115	194	129
Wigan	108	7	—	124	239	98
Wolverhampton	227	38	9	190	464	259
Worcester	46	24	—	91	161	90
York	131	19	2	205	360	196
Cardiff	241	58	21	303	628	341
Swansea	163	40	8	237	448	218
TOTAL—ENGLAND AND WALES	63240	11172	5461	57472	137345	65705

SCOTLAND.						
COUNTIES—						
Aberdeenshire	149	24	29	255	457	193
Argyll	77	7	13	31	128	49
Ayr	207	23	26	194	450	228
Banff	45	3	—	53	101	52
Berwick	42	9	8	67	126	63
Bute	24	2	2	45	73	32
Caithness	23	2	3	42	70	30
Clackmannan	36	5	1	61	102	55
Dumfries	209	6	33	88	336	131
Dumbarton	135	14	5	93	247	126
Elgin	74	2	—	65	141	81
Fife	184	54	16	283	537	226
Forfar	110	19	2	117	248	136
Haddington	80	5	10	70	165	87
Inverness	78	20	6	54	158	64
Kincairdine	46	2	8	34	90	47
Kinross	14	1	—	51	66	45
Kirkcudbright	66	19	1	47	133	68
Lanark	236	124	23	305	688	349
Linlithgow	53	6	2	45	106	50
Midlothian	191	16	15	129	351	162
Nairn	14	3	—	25	42	20
Orkney	30	4	3	36	73	33
Peebles	64	31	7	47	149	75
Perth	234	22	11	213	480	211
Renfrew	100	16	5	98	228	114
Ross and Cromarty	52	6	11	60	129	48
Roxburgh	82	16	24	48	170	85
Selkirk	43	6	8	85	142	81
Stirling	142	22	12	156	332	187
Sutherland	31	9	20	39	99	34
Wigtown	46	6	5	58	113	57
Zetland	13	1	1	51	66	32
BURGHES—						
Aberdeen	178	43	5	199	425	201
Dundee	205	20	1	102	328	141
Edinburgh	627	92	36	419	1174	537
Glasgow	1023	104	17	472	1616	693
Govan	9	2	—	35	46	28
Greenock	29	4	2	48	83	44
Leith	63	18	5	57	143	73
Paisley	133	18	9	69	229	121
Partick	26	4	1	36	67	38
TOTAL—SCOTLAND	5231	810	384	4482	10907	5127

IRELAND.						
Names of Registering Authorities	Vehicles Registered					Com- para- tive Figs for 1905
	For Pri- vate Use	For Trade Pur- poses	As Public Con- vey- ances	Motor Cycles	Total	
COUNTIES—						
Antrim	88	13	3	132	236	131
Armagh	50	7	—	55	112	49
Carlow	39	2	—	48	89	69
Cavan	33	—	—	99	132	97
Clare	37	—	—	32	69	36
Cork §	97	—	—	69	166	80
Donegal	29	2	3	34	68	41
Down	137	8	3	150	298	171
Dublin §	403	—	—	304	707	385
Fermanagh	20	—	—	51	71	37
Galway	153	—	—	—	153	46
Kerry	36	7	1	78	122	57
Kildare	136	10	—	44	190	124
Kilkenny §	31	—	—	30	61	30
King's Co.	32	—	—	31	63	43
Leitrim	16	—	—	29	45	27
Limerick	43	—	—	30	73	31
Londonderry	29	6	—	60	95	48
Longford	16	—	—	35	51	20
Louth	46	—	1	68	115	71
Mayo	25	5	1	34	65	39
Meath §	86	—	—	65	151	79
Monaghan	23	—	—	23	46	23
Queen's Co.	42	—	—	49	91	56
Roscommon	36	—	—	96	132	23
Sligo	12	—	2	48	62	20
Tipperary, N.R.	30	1	—	24	55	24
Tipperary, S.R.	73	—	—	42	115	55
Tyrone	52	1	—	78	131	66
Waterford	19	5	—	26	50	26
Westmeath	40	2	—	33	75	45
Wexford	61	—	—	78	139	111
Wicklow	55	—	—	73	128	78
COUNTY BOROUGHES—						
Belfast	337	15	7	394	753	342
Cork	43	11	—	46	100	60
Dublin	286	27	14	461	888	456
Limerick §	33	—	—	38	71	35
Londonderry	31	—	—	45	76	26
Waterford §	55	—	—	40	95	49
TOTAL—IRELAND ..	2910	122	35	3072	6139	3206
TOTALS.						
ENGLAND AND WALES	63240	11172	5461	57472	137345	65705
SCOTLAND	5231	810	384	4482	10907	5127
IRELAND	2910	122	35	3072	6139	3206
GRAND TOTALS	71381	12104	5880	65026	154391	74038

§No return was forthcoming from this Council, and the figures here given relate to 31st December, 1907, which are the latest available.

The Aero Club de France calls attention to the fact that for competition in 1909 it holds a sum of no less than frs. 455,250 (£18,210), in addition to the frs. 100,000 (£4,000) offered by the International Sporting Club of Monte Carlo.

* * *

The London County Council has decided to distribute copies of the order made on December 20th, 1898, prohibiting any petroleum, or product of or residue from petroleum, or any liquid or substance giving off or liable to give off inflammable vapour, from being caused or permitted to fall, flow, or enter or from being carried into any sewer, either directly or indirectly.

THE UNSPEAKABLE WILKINS.

BEING THE RECITAL OF AN UNPLEASANT EXPERIENCE, SOMEWHAT ELABORATED.



The conversation in the Club smoking room.

The conversation in the club smoking room had veered round to the speculations of chauffeurs, and young Bellairs of the Guards was detailing his characteristic remedy.

"If you sack 'em, you may get another of the same breed," he grunted, extending his long limbs like a pair of lazytongs in the depths of a huge armchair; "if you lag them, they don't get dropped on half as plumb as if they'd done the Fair Mile at twenty-five. My man brought me my F.I.A.T. up to Scotland last August, and when I looked at it I thought it had come up thundering easy on its tyres. 'Tyres look very new, Tomlin,' says I. 'Yessir,' says the villain, 'had to get new ones at Inverness; long patch of fresh stone near Struan cut 'em to ribbons, sir!' and he outs with an invoice for about fifty quid. Well, I wanted to see those cut covers, and he couldn't find 'em. So I cut him pretty well to ribbons with my whangee. Now he daren't leave me, because I wouldn't give him a character, and everyone knows I've had him three years; and he daren't try to do me again, because he's in a blue funk. See?"

Laughter bubbled out of the recesses of many chairs, but a tall West-Country medico was observed to look grim. "Saunders has a yarn," we shouted. "Out with it, old man!"

"Saunders has a yarn," observed that individual dryly, "and when you've heard it, you'll think twice before you lay into your 'shovers' with a quirt."

We were all agog to hear it, and knocking out his briar, Saunders unfolded a tale of no mean order.

"It happened before I came up to Harley Street. I was still a G.P. down in Devon, but getting every year an increasing number of consultations; in fact, you can measure the exact period of my prosperity by the fact that I'd laid my motor bicycle up in the stables that spring and got a 20 h.p. Humber instead. Well, just about the first quarter day after I'd had the car I'd told Wilkins to drive down into B— one morning and pay the bill at the garage there. I heard him come in with the car, and about ten minutes after young Dennis from the garage at B— drove up on his car in no end of a wax. Dennis was a decent little chap, and my man Wilkins had unfolded a precious scheme to him for chewing up my engine somehow, and sharing the profits on a big repair bill. I took young Dennis

out to the garage to confront my man Wilkins, and, getting a bit hot over things, they went for each other baldheaded. Well, Dennis is only a little chap, and he was getting the worst of it when I dived into the scramble and hauled Wilkins off him. Well, as soon as I got my hands on the beggar's collar, the old Adam rose in me, and I laid into him considerably with an odd bit of rope that lay handy on the shelf, and when he'd had about enough and I was getting rather blown, I dropped him and told him he'd had a lesson, and I shouldn't prosecute.

"Well, he drove me round that afternoon, much the same as usual, but distinctly sulky. But next morning when the maid went to the stable to say I should want the car at 2.30, there wasn't any Humber, and there wasn't any Wilkins. And when we came to look round, the beggar had collared my musquash coat, and left me his black leathers, which he hadn't even troubled to clean. It landed me particularly badly, because I'd been wired for to operate on old Squire Chick at S—, right down on the moors in the south; his appendix was in a fearful state, and poor fussy old Collingtree, the local man, didn't dare touch him single-handed. I had a nice hour after this discovery. Young Dennis was away samaritaning some tourist with his car, so I could not get a car for love or money, and the railway, as usual, was useless. Well, I lugged out the old motor bicycle, rigged myself out in that scoundrel Wilkins's black leather jacket and breeches, and started. I called at B— on my way, saw the police and my solicitor, and was fool enough to offer a reward of £25 for the villain's apprehension.

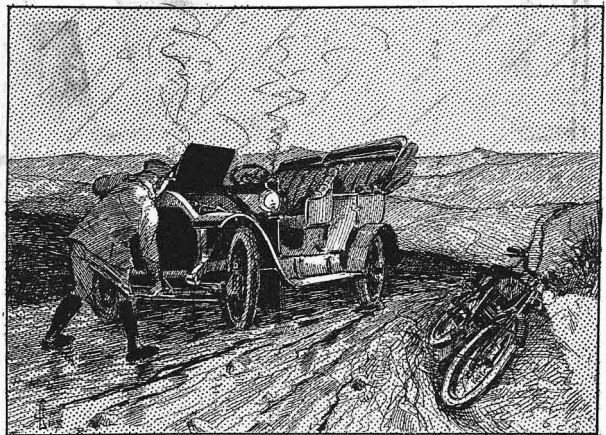
"I got to S— all right, and not a minute too soon. Had a ticklish job with the Squire—you know if a speck of pus gets into the abdominal cavity in such cases, it means death from blood poisoning within twelve hours—had a rare good dinner, and began to think about getting back. Just my luck, for the dear old Devon mizzle set in—so thick you couldn't see twenty yards, and if those moor roads are bad enough on a car and in dry weather, they're too beastly for words in wet weather on a two-wheeler. Still, I had to get back, for I'd not been my home round at all that day, so after old Collingtree had fitted me out with a flask of cherry brandy I got on the road. Somewhere about 8.30 p.m.,

and as soon as it was dark, I completely lost all notion of where I was. Dim ghostly shapes of tors looming through the soaking mist, and lots of single-figure gradient, with deep ruts scoring the narrow lanes, and ribs of naked rock jutting up through the slimy surface. Well, I rode and tumbled, and tumbled and rode, until at last I came on a weather-beaten signpost bearing the legend 'Plymouth 15m.' Plymouth was about ninety miles from home, and bang in the wrong direction, but I'd no earthly chance of getting home that night, and the idea of a warm bed in Plymouth and the fast train back to North Devon next morning fetched me all the way. I could have hugged that cold, wet post, and I started off for Plymouth with the spark well forward. Up the very next hill—a wicked twister of about 1 in 5—I fell off just in time to dodge the rear of a car blocking up the fairway. I cursed and yelled, but no one answered, and at last I squeezed round between the tonneau and the hedge to find the car was standing there empty—never a soul in it, and all lights burning. But the oddest thing is yet to come—that car was my own Humber!

"I didn't bother to wonder how it came there or what had happened to Wilkins. I just dropped the bicycle in the ditch and flew at its starting handle. Well, I jolly nearly broke my back trying to get the pistons on the move, and in a minute or two I spotted that the radiator was almost too hot to touch, though the lamps were burning rather low. I had a look round, and at last it dawned on me that the only trouble I'd ever had with it had repeated itself. A pin had dropped out of the pump gear, and it had run hot on the hill and pretty nearly seized up, so that Wilkins had left her. Well, I fished a bit of silver steel out of the toolbag on the bicycle and filed down a pin; then I poured oil and paraffin into the engine anyhow, until at last I induced it to crank round stiffly. Then I got on board, put the reverse in, and dropped down the lane with the clutch out till it was well on the move; then in with the clutch, and it began firing feebly. I had a rare old job to get up the hill, but with lashings of oil and some cold water from the little torrents raging down each side of the lane I did eventually get up, just as the carbide was about finished, and after some thrilling lane work in the mist with only the side lamps burning I trickled into Plymouth just as the oil in the side lamps was used up, an hour or so before sunrise. Naturally, the first bobby I met stopped me and asked to see my licence. I fished in my jacket without thinking, and, of course, the licence I hauled out was in favour of Josiah Wilkins. Worse still, that bobby had sighted it. I tumbled to the situation, shoved him off the step with a gentle back-hander, and let my clutch in; but he blew his whistle, and at the top of the street a sergeant and a constable got in the middle of the road, and I had to stop. The sergeant had a ghastly paper headed "*£25 Reward*" from the police at B—, and the bed I got in Plymouth was neither very warm nor very soft, for I presently found myself in the cells. Next morning I told my tale first to the inspector and then to the magistrate, but it wasn't a bit of use. They began by giving me a week for assaulting the police in the execution of their duty: they refused to let me communicate with anyone except Mrs. Wilkins, and as I didn't know if there was such a person, or where my late 'shover's' precious relations (if any) were to be found, I was nicely up a tree. When my week was up I was promptly rearrested for stealing my own car.

My word, how I looked forward to that trial. But my fool of a solicitor at B— had instructed a local man to prosecute me, instead of coming down himself, and, to my amazement, I was awarded another three months for resuming possession of my own Humber. Incidentally, I had the pleasure of seeing my £25 handed over by the prosecuting solicitor to the juggins of a constable who'd blown his infernal whistle, and of hearing that 'my late employer's family' had offered a reward of £100 for information about 'my late employer,' and that 'my late employer's wife' was simply prostrate with grief.

"I only served three days (not three months)," he said viciously, "and then one morning my cell door opened, and my own solicitor rushed in, too perturbed to talk sense. But even then I wasn't pleased. Some villainous accomplice of Wilkins's had got at my wife



I just dropped the bicycle in the ditch and flew at the car's starting handle.

with a yarn that I was being kept safe somewhere up on the moors, that if she saw the police my throat would be cut, but that if she handed over £250 to him on the spot he would tell her where I was. Well, the poor girl was crazy with trouble, and she meekly forked out what he wanted, only to hear the astounding fact I was in Exeter gaol. She didn't believe it, but when my solicitor wired the police they asked him to make sure by identifying 'Wilkins' himself, and so I was released."

"And Wilkins?" we queried, fiercely.

"Half-way to New York by that time. He was taken at the stage, and got seven years, but I never recovered the wife's £250. I only hope his scoundrelly accomplice did him out of it."

We dispersed into the night a little later, meditating on the wisdom of taking the law into one's own hands.

During 1909 the committee of the B.A.R.C. propose to hold race meetings on Bank Holidays and other days to be announced later, and has decided to greatly increase the privileges of members. In addition to the regular race meetings, open to all comers, it is intended to hold one or more club meetings, when contests for ordinary touring cars, hill-climbing tests, and handicap races will be arranged for the cars and motor cycles of members only. It is also proposed to hold meetings of county and other clubs, at which members of the B.A.R.C. can be present. Ladies' races for touring cars will also be held, and private races can be arranged at any time by application to the London office of the Club.

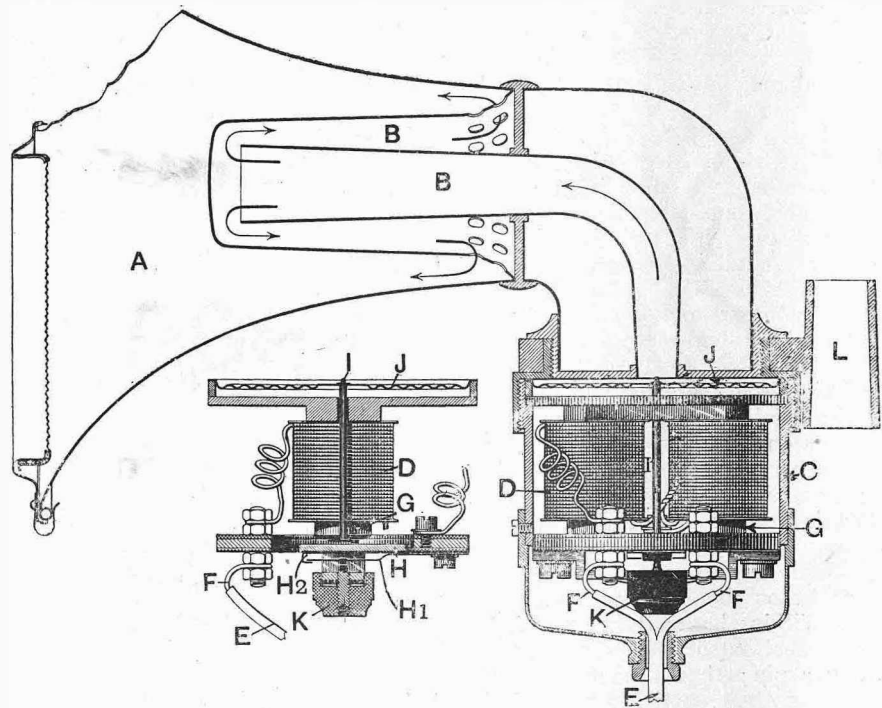
THE GODIN ELECTRIC HORN.

The electric horn or sounder marketed in this country by Messrs. André Godin, of 1, Red Lion Square, London, W.C., is shown here with all its latest improvements. It takes the form of a circular copper vessel C, within which are safely bestowed two electro magnets D and a trembler similar, with certain differences, to those of induction coils. The soft iron cores of the electro magnets carry the trembler and a bridge piece supporting a platinum-pointed screw K contained in an insulating block to avoid short circuits with the leads FF. The armature H of the trembler can impinge on the lower end of the spindle I, which as to its upper end is attached to the centre of the corrugated sound diaphragm J. The casing C is screwed on to the flanged portion of the sounding bell A. The horn is attached to the dashboard or frame of the car by means of the bracket L.

It is claimed that the trembler cannot get out of order or position. This trembler is composed of the thick plate or armature H placed below the two soft cores of the electro magnets, and supported by a strong stiff leaf spring blade. Beneath this is a thin returning spring provided with a platinum plug, as shown. The free end of this spring or tongue stands normally just clear of the inside of the lip H₂ attached to the underside of the free end of the armature. The position of the trembler screw is shown in the illustration. The arrangement functions exactly as in the case of the trembler of an ordinary induction coil.

A special feature of the construction just described is the mechanical control of the trembler spring H₁, which is solidly attached to the vibrating armature plate H, which ensures positive and well-defined making and breaking of the current, so that the reciprocating movements of the armature, while being of considerable dimensions, are always equal, and the vibrations communicated to the corrugated sound

diaphragm J are always of equal volume and intensity. This results in rendering a continuous note of the same volume and character throughout. The fact of the armature being endowed with a longer stroke than would be the case were it a free spring, results in the diaphragm spindle I being struck with unusual and sustained force, and that irrespective



Section of the new Godin electric horn.

A, sounding bell
B B, turn in horn for swelling volume of sound
C, magnet and sounder casing
D, twin electro magnet
E, twin cable

FF, single leads
G, soft iron cores
H, trembler armature
H₁, trembler spring
H₂, trembler stop

I, spindle transmitting vibrations of trembler to the sound diaphragm J
J, corrugated sound diaphragm
K, platinum-ended screw
L, carrying bracket

of the wear of the contacts or the variation of the current. To this end, too, and to the economic employment of current, the electro magnets have been specially wound, with the result that but $\frac{1}{2}$ ampere of a four-volt current is consumed.

The sound given off by the vibrating diaphragm is amplified and sonorised by the bell turns B B shown in the section. This construction of the inner part of the bell also prevents water and dust drifting through the gauze and reaching the delicate mechanism within.

Mr. George Sherrin, of the National Motor Academy and Exchange, Ltd., sends us a copy of the series of test questions used in that school. They comprise questions dealing with the engine, carburetter, accumulators, and coils, low tension magneto machines, high tension magnetos, gears, lubrication, clutches, brakes, steering, tyres, miscellaneous, motor car law, and mechanical test questions. Of the queries connected with the engine, we cite the following as perhaps the most difficult: "State as accurately as you can the timing of the inlet valve and the timing of the exhaust valve? If an engine refuses to start, all parts being in order, what is likely to be the cause, and what is

the best remedy? How can carbon in the cylinders cause pre-ignition?" As to the carburetter, the candidate is asked, amongst other things, "At what level should the petrol be maintained in the carburetter? What causes a carburetter to freeze? If with a gravity fed carburetter the car fails to climb a hill through the apparatus being raised above the level of the tank, how may the car be driven to the top of the hill?" Some very searching questions are asked as to ignition and the care of ignition apparatus and gear. A candidate who can give clear, correct, and intelligible answers to the 161 questions in this set is not without knowledge that should distinguish the practical automobilist.

THE WEIGHTS OF SOME ACCESSORIES.

In October last year under the above heading we published an article giving the weights of the accessories which were usually carried on a motor car. For a car of under 20 h.p. we made our list of necessary accessories which totalled just over 1 cwt. and included no spare wheel. For a car of 20 h.p. to 40 h.p. we made out two lists, one a sort of minimum list of $1\frac{1}{2}$ cwt., and the other and more extended list which brought the total up to just over 2 cwt., and this included spare wheel and a good many other things which were omitted from the list of accessories for a small car. All our weights were based upon the weighing of the actual parts, which were placed at our disposal by the United Motor Industries. Mr. Edge has now been giving some attention to the matter, and he has sent us a list of the actual accessories upon a 40 h.p. car over and above the chassis, which totals as nearly as possible 3 cwt. He recognises that some of the items might be left behind, though he says that for a long tour they all seem desirable, and he points this out as a rather discouraging fact after the care taken in the Napier Works to keep down the weight of the chassis. However, while this is so, and while the list of necessary spares and accessories is practically as small as it can be made, it stands to sense the lighter the chassis the better, though here again the best efforts of the chassis maker are often marred by the cumbersome bodies which are put upon the chassis. Only a few of the more advanced coachbuilders have appreciated the necessity for scientifically constructing their bodies so that they may be light. This is really rather inexcusable, as one of the earliest novelties in bodies was the aluminium panel, which was introduced many years ago from France with the sole idea of keeping down the weight of the body. Aluminium is seldom used now for bodywork because in the thin sheet form it was so easily dented. However, the fact remains that the idea of keeping bodies light is no novelty, though so many body builders have not yet appreciated its importance. We give below the list of necessary, or at any rate desirable, accessories compiled by Mr. Edge. Although it very properly includes spare tyre covers, it does not include spare wheels.

ACCESSORIES ON AVERAGE 40 H.P. CAR.

	lbs.	ozs.
One pair head lamp brackets	8	0
Pair of head lamps	24	0
Generator for above	9	0
Pair of dashboard lamps	8	0
Dustproof tail lamp	2	8
"Ever Ready" electric torch	1	0

	lbs.	ozs.
Three refills for above	2	13
Wagner electric horn, complete with eight-volt accumulator	17	8
Elliott speedometer and odometer with trip recorder	8	8
Eight-day clock in case for fitting to dashboard or interior of carriage	1	12
Two waterproof wrappers for outer covers	5	8
Nesthill air compressor	6	0
Extra accumulator, 60 amp.	13	0
Voltmeter for testing accumulators	5	5
Six sparking plugs at $4\frac{1}{2}$ ozs.	1	11
Extra strong Universal Millennium lifting jack	8	0
Set of tube spanners to fit nuts	2	0
Large leather roll of carefully selected tools	17	8
Spare outer cover for front wheel, 880×120, grooved	22	0
Spare inner tube for front wheel, 880×120	5	0
Spare outer cover for back wheel, 895×135, studded	37	8
Two spare inner tubes for back wheel, two 895×135	12	0
Three waterproof bags	8	8
Large tyre repair outfit (including patches, solution, levers, etc.)	5	0
Distributor coil (including trembler blade with screw)	3	8
Trembler blade for coil		$\frac{1}{4}$
Platinum-tipped screw		$\frac{1}{4}$
Valve (interchangeable for inlet or exhaust), complete with spring, collar, and key	1	4
Solid boxwood case for ditto	14	
Valve spring lifter	10	
Rubber diaphragm for hydraulic air regulator		
Mica commutator cam (six point), and solid boxwood case for ditto	10	
Commutator brush with solid end and spring back		$\frac{1}{4}$
Carburettor float, and solid boxwood case for ditto	10	
Pump driving chain and connecting links	1	8
Six swabs	14	
Two driving pins for water circulating pump	1	
Large petrol funnel with gauze	8	
Assortment of various springs for governors, valves, etc.	1	8
Special forked tyre levers for 90, 120, and 135 mm. tyres	1	4
4 lbs. grease in 2 lb. tins	5	0
1 lb. special pump grease	1	8
One gallon tin of engine oil	10	0
One gallon tin of gear oil	10	0
One tin of acetyloid (about 4 lbs.)	4	0
One half-gallon tin of clutch oil	5	0
Two 60 amp. accumulators (included with the car)	26	0
Set of free spares	9	0
Total	2	22 13

The technical examinations conducted by the Royal A.C. have produced many quaint answers to the questions set, a few of which are published in the Royal A.C. *Journal* as hereunder: How can compression be lost?—Through the accumulators running down. If an engine was run short of oil, what part would suffer?—The female part of the clutch would be ruined. What is a silencer for?—A silencer is to keep the engine running; engine would stop if silencer was taken away. If the water circulation were to stop, what part of the car would suffer?—The accumulator would be strained. What is compression for?—Compression is the power that drives the crooked shaft. What insulates low-tension magneto plugs?—White dough kind of stuff. What is the radiator intended for?—The radiator is fitted to the car so that the starting handle can be fastened to it.

Another flagrant contrast between the savagery exhibited towards motorists and the maudlin tenderness shown to other offenders is furnished by two recent cases which have come under our notice. The Haywards Heath magistrates inflicted on Mr. R. A. Yule fines and costs amounting to £43 13s. 3d. for exceeding the statutory speed limit without any suggestion of endangering the public, while the county magistrates sitting at South Shields inflicted only a fine of 40s. and costs on a man named Robert Foster, who was convicted of placing obstacles on the highway for the purpose of wrecking a motor omnibus. In the first case the offence was of a purely technical character, while in the second it was not the culprit's fault that his act was not followed by fatal results, in which case he would have laid himself open to a charge of manslaughter, if not to the capital charge.

PROGRESS IN MECHANICAL FLIGHT.

International Complications.

A portent of the times is the feeling of unrest aroused in the minds of public ministers and others on the Continent by reason of recent aeronautical progress. For example, M. Barthou, Minister of Public Works, is reported to be engaged upon the formation of a code of laws to govern aviation, and intends forming a commission of enquiry at once to deal with the problem. That the task is difficult, and the step essential to a nation, will, no doubt, be admitted; at any rate, the French authorities are distinctly perturbed. The line to be taken is as yet not decided upon, but will probably commence by apportioning the atmosphere in a manner similar to that adopted with the ocean. And even when this is done, difficulties are bound to arise through airships of alien nationality lighting in a country through bad weather or internal derangement.

Farman's Transformed Aeroplane.

Mr. Henry Farman has now completed the transformation of his machine into a triplane. He has fixed two "ailerons" of eight square metres each, and has suppressed the rear rudder. The turning movement will be obtained by the manipulation of the "ailerons." The new propeller which he intends to employ with the Renault engine will have a diameter of 2 metres 80 cm., and will turn at 900 revolutions per minute.

The Paris Salon.

The second part of the Paris Automobile Salon is particularly interesting this year, as it includes a fairly representative display of flying machines in addition to motor boats and commercial vehicles. Held in the Grand Palais, on the Champs Elysées, there is plenty of space at the disposal of exhibitors, and the machines can consequently be seen to great advantage. From what we were able to gather beforehand, there will be at least fifteen practical aeroplanes, a large number of models of all kinds, and possibly the

Clément airship and the Ville de Bordeaux. Among the full sized aeroplanes are those of Wright, Delagrangé, Bleriot, Farman, Esnault Pelterie, and Santos Dumont. Particularly interesting, too, will be M. Adler's "Avion," said to be the first aeroplane carrying a man to rise from the ground. It is possible also that Mr. Moore Brabazon will exhibit the machine with which he hopes to cross the English Channel.

The Ligue Nationale Aérienne.

The Ligue Nationale Aérienne has received two new prizes of 1,000 francs (£40) each, bringing the total number of prizes it controls to thirty-six. The first of these has been given by M. Georges Poignant, and is intended for the first aeroplane who succeeds in flying 100 kiloms. within an hour round an aerodrome in France. The second is from M. Ed. Rabourdin, and is for the aviator who covers the longest distance in a straight line by October 31st, 1909.

New Machines.

Mr. Melvin Vanniman, the head engineer of the Wellman Polar Expedition, has been carrying out experiments at Gennevilliers with a new triplane. The other day he made a flight of 150 metres at a height of six metres. The apparatus has two propellers driven by a 70-80 h.p. eight-cylinder Antoinette engine. Complete with driver the machine weighs 500 kilogrammes, and starts from a rail. In order to obtain lateral stability movable wing tips are fixed to the central plane. The horizontal rudder and the ordinary steering rudder are both forward, and there is a tail for steadying purposes. Steel tubing has been largely employed in its construction.

The Lazare-Weiller Company, formed for the purpose of purchasing the Wright Brothers' patents for France and its colonies, has decided to pay the brothers a sum of 500,000 francs (£20,000) for their patents.

HUMBER, LIMITED. Proposed Reconstruction.

The accounts of Humber, Ltd., for the year ending 31st August, 1908, show a loss of £23,082 7s. 9d. In view of the large expenditure on the new works and the fact that the business has now to be conducted to some extent on a credit basis, the directors state that they consider the best interests of the company make it incumbent upon them to raise fresh capital. This they propose to do by registering a new company with a capital of 550,000 shares of £1 each, of which 250,000 shall be preference shares entitled to a cumulative preferential dividend at the rate of eight per cent. per annum, ranking from 31st January, 1909, and entitled to preferential repayment of capital, and the remainder shall be ordinary shares.

The whole of the assets of Humber, Ltd., subject to the liabilities thereof, shall be sold to the new com-

pany, the preference shareholders in the old company being entitled to claim one preference share in the new company credited with 13s. 4d. paid thereon for each share held in the old company, and the ordinary shareholders are entitled to claim one share in the new company credited with 15s. paid thereon for each fully paid share in the old company. The balance of 6s. 8d. on the preference shares and 5s. on the ordinary shares to be payable as to one moiety on the shares being claimed and the other moiety on the 31st of March, 1909.

The nominal capital of the present company is £600,000, of which £250,000 is in 6% cumulative preference shares and £350,000 in ordinary shares, but the issued capital is £543,000, of which £293,000 is in ordinary shares.

In accordance with the usual custom of the Automobile Association, the A.A. patrol organisation will not be on duty at all on Christmas Day.

* * *

Major F. Lindsay Lloyd, late Royal Engineers, has been appointed Manager and Clerk of the Course to the Brooklands Automobile Racing Club, and took up his duties on Tuesday, December 22nd.

The successful mobilisation of portions of the Essex Territorial Force by means of motor car transport the other day affords proof of the excellence of the Lincolnshire A.C. and Royal A.C. scheme. It will be remembered that under this scheme every motorist undertakes to transport a certain number of men of his county force to a certain spot in case of need, and it was fully dealt with in our issue of November 7th.

ON THE TRACK. By H. C. Lafone.

Concurrently with the information that the track is to be closed from Christmas Day until the morning of Tuesday in next week we obtain from the B.A.R.C. the outline of its advance programme for the 1909 season. Judging from the present state of affairs, it seems more than probable that the Weybridge course next year will be the only place at which enthusiasts will be able to see cars travelling at high speeds, for it is almost certain that the R.A.C. will not promote any races, and the Grand Prix appears to be doomed by the decision of the A.C.F. not to hold it unless forty entries shall have been received by the 31st inst.

Several items in the 1909 Brooklands programme appear to me to be well conceived. I have more than once suggested that an endeavour should be made to encourage local automobile clubs to hold their competitions on the track. This is to be done next year, when, in addition to the open race meetings arranged for Bank Holidays and certain other dates, gatherings of county and district motoring organisations will be promoted. Ladies' races and events confined to the members of the B.A.R.C. will also relieve the monotony and foster a love of competition among purely private owners. In my opinion, the future success of the track depends upon two things—first, the support of this amateur element, and, secondly, trade patronage in connection with the various tests for which the course provides unequalled scope. So far as the former is concerned, the Club has the matter almost entirely in its own hands, success or failure depending largely upon the facilities and attractions offered to private motorists. Trade support is quite another matter, in which the Club can do no more than eliminate red-tapeism as much as may be. The present committee has, I think, adopted a wise

course in announcing that in future members wishing to learn to drive may have undisturbed possession of the finishing straight on days when the track is open to the public, i.e., whenever there is no race meeting and no special trials are taking place. Hitherto practice in driving has been obtainable on the course, but a track on which at any moment the beginner might be overtaken by other cars travelling at speeds of eighty or ninety miles an hour has scarcely afforded an ideal opportunity for the novice to acquire that self-confidence which is essential both to his own safety and to that of the public at large. It is, however, to be hoped that this setting apart of the finishing straight will not be allowed to interfere with those who wish to practise driving at the finish of a race. Some inexperienced racers seemed to imagine that once past the judges' box all is well. Nothing could be further from the truth. One fatal accident and several appallingly narrow shaves have occurred when cars were slowing down after crossing the line, and the authorities should certainly insist upon every entrant for a race practising at least half a dozen high speed finishes. Mr. Rodakowski was in the habit of devoting half an hour to finishing practice on the day immediately preceding a meeting, and novice drivers should certainly not be allowed to hamper the continuance of this excellent custom.

There has been some talk recently of the possibility of turning the land in the centre of the track into an aeroplane ground. I am afraid it would be a very expensive matter, for the river Wey winds and bends about in its course from side to side in a manner which would entail an enormous outlay either in covering over the stream or in deflecting it far out of its present course.

THE MOTOR UNION MONTHLY MEETING.

At the monthly meeting of the Motor Union on December 17th it was reported that during the eleven months ended November 30th the sum of £4,648 had been received in deposits from British and American members for Customs duties deposited for Continental tours.

The Legal Cases Committee reported that a large number of applications for advice had been dealt with, and that grants had been made in eight cases for legal defence and appeals against magisterial and county court decisions. One of the latter involves the dictum that a motorist is allowed no discretion in deciding the point at which he will stop short of a horse the driver of which holds up his hand or shouts. Two financial grants were also made to members under the car badge scheme. Aid had been given in the defence of a member's driver committed on a charge of manslaughter as the result of an accident. The case had that day been dismissed at Liverpool Assizes.

The Finance Committee's report showed that from January to November 30th the receipts were £13,272, as against £9,878 for the same period of 1907, and

that the individual membership had increased by over 1,700, or thirty-seven per cent., over the corresponding period last year. Local centres are being formed at Croydon and Watford, and a local committee at Hastings to work in county matters through the Sussex County Club.

Several appointments of local solicitors and hon. correspondents were made.

Appointment of a number of hotels and repairers was reported by the Touring Committee, and the Union will be glad to receive applications from others for free inclusion in the list of approved establishments to be given in the "British Handbook" to be published early next year.

It was reported that Messrs. E. J. Arnold and Sons, Ltd., educational publishers, were co-operating with the Union in taking steps to induce educational authorities to give children some instruction in the rules and courtesies of the road. A committee was appointed to suggest a model direction post for issue by the Union. 530 danger signs have been issued to various local authorities throughout the country.

The annual report of the directors of Rolls-Royce, Ltd., shows that after paying or providing for all trading expenses a profit has resulted of £9,063 7s. 11d., as compared with £5,389 19s. the previous year. It is proposed to pay six per cent. on the amount paid up on the preferred ordinary shares, and,

rather than utilise the balance of £6,396 12s. 2d. for the payment of further dividends (no dividend is being paid on the £40,000 ordinary shares), the directors advocate a policy of writing off the amounts set out in the appropriation account. It is proposed to call in the outstanding capital.

Motor Union Notes.

(Communicated by the Secretary.)

The following clubs have announced during the past few days their intention to affiliate with the Union during 1909:

Cardiff M.C.	Lincolnshire A.C.
Devon and Cornwall A.C.	Oxfordshire A.C.
Harrogate A.C.	

The number of clubs affiliated with the Union for 1909 is now over twenty.

Now that the petrol seal question has been satisfactorily settled it is desirable to state that the Motor Union took action in the matter almost as soon as the scheme was started. It communicated with the companies concerned and with the Society of Motor Manufacturers and Traders on November 24th. A conference of the companies was arranged by the Executive Committee for December 14th, and was duly held. As the result of the steps taken, aided by the general pressure of public opinion, the scheme has been withdrawn.

The Union has requested all its local repairers to exhibit the current price of petrol in a prominent position in their establishments, and the petrol companies have decided to co-operate with the Union in this direction.

The Union has been invited by the County Councils Association to take part in a road conference in London early in May.

Contributions to the Legal and Legislative Defence Fund received between December 11th and 18th were as appended:

£1, Lieut.-Colonel P. E. Monckton.
10s. 6d., Henry Lewis, Esq.

The Secretary will be glad to forward to any member or non-member a statement showing the operations of this fund.

Great satisfaction was expressed by the General Committee at its meeting last week with the hearty manner in which the Welsh A.C. had decided to greet the members of the Union on the occasion of the provincial meeting to be held at Swansea, when the national club will also have as its guests members of the touring clubs of Europe, on the occasion of the L.I.A.T. Congress. So heartily did the Welsh A.C. appreciate the Union's decision to include Wales in the tour to be undertaken by the visitors, that at its annual dinner over £100 was added to the hospitality fund already collected.

Another important case in which aid has been given is that of the driver employed by Mr. J. E. Stanning, and who was committed on the Salford coroner's warrant for trial at Liverpool Assizes for alleged manslaughter. A man was crossing the road, and when the horn of the car was sounded he stepped back, and was caught by one of the lamp brackets, carried about a yard, and then dropped in front of the car, which passed over him at a slow speed. Before the stipendiary magistrate the police offered no evidence, and the defendant was discharged. On December 16th the trial came on at the Assizes, when the charge was dismissed.

The Union is in a position to announce increased facilities for the transport of motor cars to France, *via* Newhaven and Dieppe, and also for entering Spain by members spending the winter in the South of France. Cars under 30 cwts. may be shipped by any passenger of the boats, the number of cars carried on the three French steamers being limited to one per voyage. Cars not exceeding 2 tons may be carried on any of the five British passenger boats, the number of cars varying according to the particular vessel, the average being three or four cars per boat. Special arrangements have to be made for cars exceeding 2 tons. Hitherto motorists have experienced very considerable difficulty in crossing the Spanish frontier. In future, with the aid of the Union, entry may be made on the same easy conditions as in the case of six other Continental countries.

Grants have been made by the Union as follow: £10 for appeal by Mr. A. Duckham against a decision of the Oakham bench recording a conviction for alleged driving to the danger of the public; £5 for a proposed application by Mr. Leveson-Gower to quash a conviction for driving a car with the tail lamp unlighted at Portsmouth; and £1 rs. to Mr. H. S. Broom, an individual member, fined for driving without a licence and in a manner dangerous to the public by accidentally driving on the wrong side of a refuge. Mr. H. R. Oldfield, of Walbrook, E.C., solicitor to the Union, defended. None of these contributions were made under the car badge scheme; each constitutes an example of the legal aid for which any member is entitled to apply when his or her case is of general importance. Mr. Moresby White is the counsel in the first mentioned case, and the second is in the hands of Mr. J. H. Franckeiss, the Union's solicitor at Portsmouth.

Under the provisions of the badge scheme the following grants have been sanctioned: £3 os. 4d. to Mr. A. P. Robson, a member of the Yorkshire A.C., towards cost of defence by Mr. A. Masser, the Union's solicitor at Leeds. £2 7s. 3d. to Mr. F. W. Sheers, a member of the Essex M.C., in defending a summons for exceeding the speed limit at Rochford. Mr. W. H. Bishop, the Union's solicitor at Stoke Newington, defended.

Nominations for the representatives of individual members upon the General Committee must be in the Secretary's hands by January 31st next. Only individual members are eligible for election, and must be nominated and seconded by members of this class.

Mr. Arthur Kemp, of Purley, who rendered the Union much useful assistance at the Croydon speed limit inquiry, writes:

"I do not think after the practical exemplification of the advantages of the Union's work afforded me yesterday at the L.G.B.'s inquiry re the ten miles speed limit proposed there, that I ought to delay in sending you my subscription for membership of the Motor Union, and therefore beg to enclose you cheque herewith."

The Motor Union. Chairman, W. Joynton Hicks, M.P.
1, Albemarle Street, London, W. "Speedway, London." 9090 Gerrard.

CORRESPONDENCE.

EDITORIAL NOTICES.

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

Letters of a personal nature will be withheld.

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

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

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

MOTOR CARS AND LOCOMOTIVE ENGINES.

[13757].—I was interested to notice that you gave space to my letter re capacity of engine drivers for judging speeds (*The Autocar*, November 28th, page 900). This is only one of the subjects in which erroneous ideas are held. I noticed the other day a writer on motor topics stating that locomotives only worked four days per week, did not do as much as motors, and, while 1 in 100 gradients were about all they had to climb, motors ran every day and climbed grades of 1 in 5.

This is far from a correct statement. I wish I had ever been able to find things like this. My experience is that most engines work seven days a week, and passenger engines are called on for 70,000 miles per annum and goods up to 50,000, in the first case all at speeds over forty-five miles per hour. Before a heavy repair, 150,000 miles are called for in passenger work and 90,000 in goods. Further, many engines constructed thirty years ago are running to-day, and I daily see engines which I remember as chassis when I served my time. They are not on heavy work, but they still earn money.

As regards grades, I have had engines taking 1,000 tons up 1 in 100, and 520 tons up 1 in 56; this, compared with 20 or 40 h.p. on cars weighing 1 to 2 tons on 1 in 5, is, I think, in favour of the locomotive.

I see daily somewhere or other long discussions on chauffeurs, their ways, their pays, etc., and here, again, locomotive practice is instructive. Drivers are not, as a rule, mechanics, and mechanics are not drivers. The driver has, as far as his engine is concerned, leaving out the running, merely to oil, see that steam is kept up, and do such work in event of anything running badly as will bring the engine into fitters' hands. Failures should be rare. My experience abroad is that with four hundred engines running three failures per month represented good work. You cannot expect a driver to learn a separate trade and exercise both for the pay of one, and if you get a competent mechanic who can drive you cannot expect him to have less than the pay of a tradesman. If you have a coachman, you do not expect him to be a vet., nor would you expect a vet. to do coachman's work for the standard rate, though many people expect the same thing, and are upset if they do not get it.

LOCO. SUPERINTENDENT.

THE AMATEUR'S IGNITION PROBLEM.

[13758].—The homily by Mr. Sydney Walker (page 953) in previous number is quite to the point, and I fully share his view as to the principle of solving problems by varying only one factor at a time. I was fully aware that I had by no means exhausted the factors taken singly or in combination; but my life is a busy one and leisure small. Having made a few easy and obvious experiments, as well as a number of enquiries, I thought I would take a short cut by applying to the editor of *The Autocar*, whom I have always found very willing to help.

I think I may congratulate myself on the wisdom of this course, for I do not think I should have obtained a solution otherwise. It is a great source of satisfaction to know, after all the anxiety that I have had since I discovered the phenomenon, that there is nothing wrong with the engine, and I wish to convey my thanks to all who have answered the query, as well as the editor for having "started the hare."

THE AMATEUR WHO SET THE PROBLEM.

DESIGN OF BONNETS.

[13759].—I agree with your correspondent [13692] in his denunciation of the ridiculous extremes which have been approached with regard to bonnet, or, as he presumably means to say, radiator design. But I do not think he has

chosen a very representative list, if he was considering simplicity of appearance combined with absence of brass. By reason of its neatness and absence of any startling design, the Mercedes car is, in my opinion, the best. All, or nearly all, the Italian cars are close runners-up, such as the F.I.A.T., Isotta Fraschini, S.C.A.T., Züst, Lancia, etc., and of the French, Berliet, Peugeot, Westinghouse, etc., of which, of course, all originally borrowed from the Mercedes design. Of British cars, my taste leans to Roydale, Bell, Ariel, 8 h.p. Rover,

Weigel, Armstrong-Whitworth, Star, only to mention a few. The Renault, Charron, 20 h.p. Ariel, and other sloping bonnets are in a class by themselves, as being exceptionally handsome cars; as are also N.E.C. and Lanchester cars, being bonnetless, which for appearance, as well as comfort, cannot be beaten.

It would be a comparatively easy business for manufacturers to alter the designs of the radiators of their cars, thereby greatly improving the general looks. For instance, the Singer car looks undoubtedly better without the ring in the radiator than it does with that addition; I merely take this as an instance. I think a good many people will agree with me when I say that, after all, the simple honeycomb radiator is by far the nicest-looking.

B. M. HOLCROFT.

FRONT WHEEL BRAKES.

[13760].—When your correspondent [No. 13694] has been a little longer in this country he will discover that it takes, as a rule, anything up to twenty years to get an innovation established. He should not let his good fortune in having got a few people to finance him in a difficult day lead him astray. He will doubtless shortly learn that a little more argument and less of cheap sneers will secure greater approbation.

This gentleman jumps into our midst and prates of his "two years' experience" of front brakes, ignoring, or oblivious of the fact, that there are others who have spent infinitely longer periods and have produced better results than he. Their only drawback is that they have not had either his, shall we call it, "push," or his luck.

Unfortunately for the writer he happened to think out the correct principles on which front braking should be done, and consequently his longer experience has been entirely devoid of the failures, in his earlier experiments, for which your correspondent sees fit to apologise in his case re the faults which have evidently misled Mr. Hayce.

If he will look up the file of *The Autocar* he will find that the writer had a car running previously to 1904 which had, in fact, been thought out five years previously. This was tested on wet clay and soft soap. Those who tested it say "without sign of side slip."

This car was (and is) front and rear braked. Your correspondent's chief merit is his present luck. Undoubtedly the victory (i.e., the future market) must accrue to a method *à la* Renouf. Why? Because one cannot but believe in the survival of the fittest.

Now for a cheap sneer or two. The boring of the pivot pin makes it a tube, and a tube is more rigid than a solid rod. Should the boring (a very small hole suffices) make the pivot pin weaker a 1-16in. added to the diameter puts all right.

But it is not necessary to use a cable at all, and hence to bore the pin. It can be done in a better way (and still all honour to Mr. Renouf), and when your correspondent's device is removed into the limbo of forgotten things, cars will still be steered and braked either by Renouf's method or upon its principles.

Again, re the twisting of Mr. Renouf's cable during steering movement. What of it? A 6in. length, say, of cable is put through the centre of the pivot pin and subjected to a twisting movement of from 0 to 45°, average about 5° in use; or, say, allowing for steering each way 10°. Which is the greater strain upon possibilities (and the cable), this slight movement or the chafing of the wrap round your correspondent's rollers? I do not want to dwell upon the all-importance that these numerous rollers and pulleys (there are five, I believe), should never stick—they may or may not do so. What I would emphasise is that just as centre pivoting gives what your correspondent in a former letter styled "the absolute," and which he admitted was "ideal,"

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so the axis of the centre pivot gives the ideally absolutely and only perfect position for the actuation of the brake of a steering wheel. Why? Well, to answer the last sneer I shall notice, "because it (the position) is the only perfect one." C. C. WRIGHT.

[13761.]—I am afraid I must say something in reply to Mr. Allen's letter [13694], both though I naturally be to adversely criticise anyone working in so good a cause as that of front wheel braking.

The reasons Mr. Allen gives for not adopting *some* of the methods indicated by myself are so obviously discounted by the unfortunate fact of my legally established priority, and cannot well be properly refuted for the benefit of those who are not in full possession of the facts without unduly trespassing on the hospitality of these columns. But when Mr. Allen says that he realised "with" (the whole truth would be "after") Mr. Renault that the braking action *must* be on the same centre as the steering movement, I really must ask him why does he not put it there? Because in a true mechanical sense that is just what he does not do; he merely says get "near" this. Similarly, he recognises the desirability of using the plane of the wheel for locating the steering action by recommending lateral inclination of the pivots; again an attempt to get "near." But these approximations to the correct design show such improvements or attempts that are still wider off than the conclusion as to the result of "going the whole hog" is obvious.

The suggestion that to drill up the steering pivots would necessarily weaken them is, of course, wasted on real motor engineers, as is also the comparison of the possible twisting of the cable with the sawing action; but where desirable there is nothing beyond the capacity of the poorest draughtsman in substituting equivalents which do not possess these alleged defects, or even abolishing the cable altogether.

In the meantime, I welcome even the little improvements in front wheel braking in the firm conviction that if they do not die prematurely they will develop into full-grown ones.

To those who are willing to pay for the proved advantages of front wheel brakes I venture to point out that you cannot well have them without brake drums. Why not let these brake drums combine the functions of the hub itself, and why not utilise the otherwise wasted inner space by placing therein the steering centres, thus getting full value for your money by simultaneously obtaining not only (1) safe and clean braking (irrespective of even defective or non-existent differential mechanism), but also (2) wider range of lock, (3) reduction to a minimum of strains on the steering tackle and relief on the "irreversible" gear, and that steering which has over and over again been described as the "ideal"?

P. L. RENOUE.

WOULD-BE AUTOMOBILIST IN BARBADOS.

[13762.]—Could you by next mail without delay send me a catalogue of your Autocar, as I would be very much like to have one. I have two other friends of mine wish to own also but only waiting to see mine so if it is liking you Sir will get the orders without delay. We have seen an improved car of your make and we are much in love with that only it has not the top on it so as to keep off the rain or Sun otherwise that we love very much. They are a couple of particulars that I would like to know from you when you are answering my letter concerning the car I don't mean of the works particularly because I think that will be all substantial but they is a couple of little points that I would like to have of myself that is when you are making give me to the lowest a minute more faster gear, and when you are making the horn that does give notice let that be of a cool, sweet tone don't forget that particularly, let me know if the rubber tyres will be of wind, or it will be Hard Solid rubber I would like a car to carry two passenger that is, one driving and one sitting aside so let me know clearly the price of that car with the top on it and by next mail I will send you the money. Nothing more Sir till I hear from you I remains, yours truly, with thanks,

MR. WILLIAM WELCH,

Mile and Quarter, St. Peter, Barbados.

[The above communication came to hand last week addressed to the Editor, but as the granting of the request contained therein is beyond our province, we leave it to any manufacturers who may feel sufficiently interested in the matter to send out their catalogues and enlighten our correspondent on the points he raises.—ED.]

ROADS, MOTORS, AND TAXES.

[13763.]—I was very much surprised to see in *The Autocar* an article on "Roads, Motors, and Taxes," appearing in your issue of the 12th inst. over the signature "W." The language is so peculiar that it is necessary to read many of the paragraphs over several times in order to arrive at their meaning, and I am almost driven to the conclusion that it must be a translation, and can hardly think it is the writing of an educated man accustomed to express his thoughts in the King's English.

It is, however, to the sentiments expressed in it that I wish to call attention. Most of them are more suited to a meeting called for the purpose of promoting the nationalisation of land, or the columns of *Reynolds Weekly* than to the pages of a paper such as *The Autocar*. When the writer speaks of the movement towards making the upkeep of our roads a charge on the National Exchequer as merely an attempt on the part of landowners to save their own pockets at the expense of other classes of the community, and of a Royal Commission being "engineered" by these same owners, he is surely transgressing, to say the least of it, the limits of sober speech.

The question of road maintenance on a national basis has to be considered on its merits as a national benefit. It is surely the case that the benefits are shared by many others than those owning the land in the locality through which the road passes, and by many who own no land anywhere, and, therefore, pay practically nothing towards the road upkeep. That many local services, notably the administration of the Public Health Acts, are of more than local importance, and constitute a fit subject for national expenditure, has already been conceded by the Legislature, as is shown by the subventions to which the article refers. The roads may, in my opinion, be considered as of national importance, at least to an equal degree.

It is all very well to say that industry should not be taxed, but may I point out that by calling on local sources in the country districts to pay the whole of the road maintenance under modern conditions of traffic—so much more serious than in the year 1840, to which the writer of your article refers—you are taxing very severely the industry of agriculture, which is still, if only the number of workers is considered, by far the largest single industry in the country. To state, as he does in effect, that, because the rates fall eventually on the landowner, you do not hurt the farmer is sheer nonsense. You cannot inflict loss on one class connected with any trade or profession without affecting the whole. Would he seriously argue, for instance, that it would not injure the workmen in the engineering trades if the proprietors of such works had to pay income tax on their profits at double the rate levied on the rest of the community?

I trust you will find some other contributor who will take up this subject and treat it in a less one-sided fashion. It is a most important one, but if the discussion of it is to have any practical results it must be handled by men of knowledge and ability, and at least of common fairness.

A LANDOWNING MOTORIST.

[13764.] In a long letter published by you last week, entitled "Roads, Motors, and Taxes," your correspondent who signs himself "W." asserts that the proposal to put the upkeep of roads on the taxpayer in place of the ratepayer is "the old claim of agrarian territorial interests for relief at the charge of the rest of the Sovereign's lieges"; and "that the ultimate principle found in our history and institutions is that property through which roads are driven—the property, therefore, which is thus benefited—should be charged with their maintenance."

I challenge "W." to produce his authority for this statement. When land was the only form of property, it naturally was taxed for the purpose. But where is the justice of taxing the man who has put his money into land, and not taxing the man who has put his money into other forms of investment, such as consols, foreign bonds, or factories? To say that landowners are the only people that benefit by roads is simply to state an absurd untruth. Should "W." own nothing but a weekly wage, he still benefits, like other people, in having his coal and other supplies brought to him at a cheaper rate than he would otherwise get them. I need not, however, enlarge on this subject, which is obvious enough even to the most unthinking person.

As compared with other forms of property, land is most unjustly charged at present. If, for instance, "W." put his money into foreign bonds, he has to pay only income tax, and perhaps death duties, and then only on an amount above a certain minimum. The landowner has to pay not only both

of these taxes, but the latter for him is charged on a fictitious valuation of his property, not on its income value. He has also to pay land tax, tithes (which often amount to two-thirds of the gross rental), besides rates. Moreover, the returns on land, owing to the selfish class legislation which was called "free trade," brought in by manufacturers for manufacturers, has so reduced the rents that few estates pay even the cost of their upkeep. And with all this "W." has the confidence to assert "that industry should not be taxed"; he does not consider that farming is an industry.

I am happy to agree with "W." that the incidence of rating should be changed, but it should be so changed that all people pay in proportion to their means. There is neither reason nor justice in charging one form of property more than another. Nor is there any reason whatever why, if a well-to-do man choose to live in a small house, he should have to pay less rates than a poorer man the size of whose family compels him to live in a larger house.

ALFRED H. HUTH.

OVER FRENCH ROADS.

[13765].—In my last 4,000 miles tour of France on my 40 h.p. Minerva car, a few things struck me which might be of interest and use to others. This tour was very uneventful, in spite of the considerable amount of country traversed. We circled the whole of France, visiting the various frontiers, but not crossing them in order to avoid trouble, delays, and deposits. I might have left all my tools behind, as they were never touched, though I believe in carrying plenty of tools and spare parts to frighten away trouble, which they really seem to do.

My tyres are Michelins, and they did exceedingly well. I only had two punctures, and though none of the tyres were new when I left England, the same set would have brought me back had I not foolishly indulged in a prolonged top speed run on the Paris-Bordeaux road on a day that was baking hot. This was too much for one of the back tyres, which signified its inability to continue by a loud bang and a burst nearly a foot long. I found both back tyres so hot that you could have cooked an omelette on them, as the French say. A Stepney wheel proved a good friend on this occasion and the other two occasions when punctures pulled us up for a momentary delay.

I recommend motorists going to France to take as much good English oil with them as they can conveniently carry on the car, as the stuff sold in French garages for motor oil is generally of very poor quality. Nearly every garage seems to sell a different make, which is always sold as the best and only brand fit for use. Some of these oils have certainly been brewed in their own back yards. My engine has been well brought up on Price's Motorine C, and I took a good quantity along with me, which I administered from time to time.

French petrol, at any rate, is much better and lighter than that which we get in England. My G. and A. carburettor simply revelled in it, making my six-cylinder engine more flexible, giving slower running on top gear, more rapid acceleration, and much more power when the throttle was opened. However, on the other hand, it is very dear—almost twice the cost of petrol in England.

French roads have undoubtedly deteriorated greatly in the last ten years. They are still most excellent generally in the north, but in the south, south-central, and west they are usually awful.

French hotels mostly possess good accommodation for cars, and seldom make any charge for housing cars. When they do charge it is usually 2 frs. 50 cents per day—an exorbitant fee.

I carried two four-volt 60 ampere C.A.V. accumulators, their usual standard small size, and these divided the honours of starting up the engine daily and lighting four lamps, which were often in use. Not only did they do so very satisfactorily, but they never required recharging all the time I was in France. So pleased have I been with C.A.V. accumulators, during the last three years that I have used them, that I have abolished my acetylene headlights and generator, and ordered a pair of C.A.V. electric headlights with twelve-volt accumulators, as the company strongly recommend these, and I feel sure, therefore, they must be good. I have not yet been able to give them a sufficiently severe and lengthy test, but, speaking from a week's experience, I find them in every way a brilliant success. With a powerful car—and my Minerva gives a very good 60 h.p. on the brake—one has to be most particular as to one's headlights to obtain the best possible quality and quantity of light, and so far I am more than pleased with the C.A.V. headlights.

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My French tour was carried out in the latter part of November and first week of December, and the weather all through was ideal every day except one, when we ran into a furious snowstorm at Grenoble, which left us—or rather we ran out of it—near Valence, where we arrived in brilliant sunshine, on dusty roads, with a car still carrying snow, to the amazement of the inhabitants.

LEOPOLD CANNING.

HOW TO SET HEADLIGHTS.

[13766].—We have read with great interest your article on how to set headlights, and also Mr. J. F. Henderson's letter [13691] on the subject.

We take it that Mr. Henderson's letter refers more particularly to lamps having a metal reflector at the back and a condensing lens in front, with the consequent scattering of the light in all directions. With such lamps as our own, fitted with a lens mirror reflector having a perfect focal point, designed to project a beam as far ahead as possible, without any side glare, it is most important that the brackets should be fitted as explained in your article, viz., so that the lamps are absolutely perpendicular to the horizontal plane of the car, and the front doors in a dead straight line with each other. When fitted in this manner the two beams intermingle at about 30ft. from the car, and the maximum amount of light is projected far ahead for the discovery of any distant obstacle on the road. Unless care is taken that the brackets are set in the manner described, the majority of the light from the lamps is absolutely wasted.

RUSHMORE LAMPS, LTD.

BALL BEARING CRANKSHAFTS.

[13767].—I have been very pleased to see the columns of *The Autocar* open to correspondence on the merits and demerits of ball bearing crankshafts.

I think that Mr. P. L. Mummery's letter [13721] is hardly conclusive, as I think 7,000 miles with a ball bearing crankshaft is hardly to be taken as a pro or a con even if it should be unsatisfactory in the long run. I think 20,000 miles is the least possible distance to be of real value. I have always thought that, given sound design and construction, ball bearings are infinitely preferable, and I see no impossibility in our yet seeing ball bearing big end bearings (I am not aware of their use by any firm as yet in internal combustion engines), as, seeing that the balance, torque, and carburation have so vastly improved on modern engines, one does not get the "thumping" of some years ago, and which, I think, partly accounted for its being argued that ball bearings would not stand a thrust or shock.

There is one point in connection with a ball bearing shaft, and that is, as far as I can see, it would be impossible to adopt the proper forced lubrication for the big end bearings, when main bearings are ball, and it seems a pity to have to go back again to splash.

I have never understood why Hotchkiss (after having adopted) and Mercedes (after having tried) gave up balls for their crankshaft, in view of the splendid 50,000 miles official trial which the Hotchkiss underwent.

I think that such firms as the Sheffield-Simplex, Deasy, Calthorpe, Spyker, and others (Rovers I note have returned to plain bearings on their new 15 h.p. model) could give us convincing proofs from actual experience of the advantages of ball bearing crankshafts, and it would be interesting to have them.

One more word. I think that those designers and constructors who have had the courage of their own convictions on this matter deserve the utmost credit, and I think they will never regret the step they have taken.

E. R. H.

[13768].—In reference to the letter of Mr. C. E. Whitaker [13687] in your issue of December 5th, it will doubtless interest that gentleman in particular, and the motor trade in general, to know that, according to our varied experience, ball bearing crankshafts are decidedly superior to those running in plain bearings.

Those who regard the adoption of ball bearings as an innovation are sadly behind the times. At the present moment there are many makers of repute employing ball bearings for this purpose. Provided the bearings be of suitable size and correctly applied, they undoubtedly add greatly to the efficiency of the engine, and are perfectly reliable.

The secret of success lies in the size and fitting. A lack of experience or neglect of these essential conditions has been

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the principal cause of the failure of ball bearings in this direction. We strongly advise those interested to consult the makers of the ball bearings they propose to employ.

As a recent instance, showing that ball bearing crankshafts are quite reliable, we would cite the case of a Pipe car, of which the crankshaft was fitted with D.W.F. ball bearings. After having run for some 30,000 miles, principally in the course of road racing, therefore under the most exacting conditions, the bearings were taken apart and minutely examined. The result was that the wear was so slight as to be negligible.

LUDW. LOEWE AND CO., LTD.

THE NUMBER OF MOTOR VEHICLES.

[13769].—I suggest that the number of motor vehicles of which the registrations have lapsed cannot be so very great as to seriously affect the statistics compiled by the R.A.C., because it is cheaper to transfer a registration than to re-register a car, and such registrations as may have been allowed to lapse are probably counterbalanced by the large number of motor vehicles in use bearing trade identification plates, the number of which is not known to the authorities, and therefore cannot be included in the figures; thus in all probability the totals quoted very closely represent the motor vehicles in actual use.

A. J. WILSON.

AMATEURS AT BROOKLANDS.

[13770].—The account of "Amateurs at Brooklands" in last week's *Autocar* is most interesting, but your correspondent was so busy eulogising the six-cylinder car that he seems to have lost sight of the fact that the Napier was a 60 h.p., and the other two cars were 40 h.p.'s. It is very evident that the race was a friendly and sporting event, and it is a pity to give a savour of favouritism and advertisement to the account. I do not suppose my epistle will be of the least interest in "Correspondence," but if it is inserted please allow me to sign myself,

"E.P."

[Our correspondent is hard to please. In the description we gave the bore and stroke of each engine, number of cylinders, as well as its nominal horse-power, and we therefore assumed it was obvious to the meanest capacity that the Napier was considerably the most powerful of the trio. As to the savour of favouritism and advertisement, this is purely imaginary on the part of our correspondent, and may be suitably replied to by reminding her of the words of Edward I. on a certain memorable occasion, *Honi soit qui mal y pense.*—Ed.]

HOW MONEY IS WASTED.

[13771].—I cannot pretend to be so disinterested as "E. W. W." [No. 13717], who writes under this heading. His "only interest" in urging that the S.M.M.T. should "place some restriction upon its members' advertisements," i.e., in other than automobile journals, is that of an ordinary purchaser.

I am not concerned to argue with "E. W. W." about his main proposition, but lest any head should be paid to his accusation that the lay papers "decry motoring," and "are only too glad to publish anti-motoring correspondence," let me say that to hurl such an accusation against the press without adducing a word of proof is as childish as is the action of the irresponsible schoolboy who rings the door bell of an entirely respectable citizen and then runs away.

Mr. Harold Cox, M.P., whose attitude towards motors is well-known, recently declared that he and his friends could not enlist the sympathies of the press because the press was in the pay of motor advertisers. "E. W. W." and Mr. Cox are both up against the press, but they are sadly at variance with each other.

Presumably, if *The Autocar* gives publicity to any phase of the anti-motor agitation, it forfeits any title to the support of the trade. Is that "E. W. W.'s" view? The daily papers have a difficult duty to perform. Their controllers cannot ignore the public agitation against automobile traffic, yet they thoroughly appreciate the usefulness of motors in the work of distribution.

To hold the balance fairly, to do no injustice to motorists, and yet to voice the perfectly legitimate objection which is taken to reckless motoring, is no easy task. Almost every daily paper of repute has an expert in automobilism to contribute to its columns on the subject. In what paper did "E. W. W." read of "a car with a clutch mounted on the steering wheel"? Perhaps it was in *Punch*. Anyhow we ought to know.

J. L. S.

HIGHLY-GLAZED PAPER.

[13772].—I am entirely in accord with "H.L.T.B." The highly-glazed paper upon which *The Autocar* is printed is most trying to the sight, particularly when reading the journal by artificial light. I quite appreciate the fact that on this burnished paper greater clearness of the illustrations is obtained. Why should not the printed matter be upon less highly-glazed paper, with interleaved glazed paper for illustrations? Of course this would make setting up and binding more difficult, but would add to readers' comfort. Or why not use such a paper as that upon which *Engineering* is printed? While upon this, is it really necessary to have the journal interleaved with advertising matter? L.N.139.

[13773].—I fully endorse the opinion expressed by "H.L.T.B." as to the discomfort of reading on such highly-glazed paper.

A. WATSON.

[13774].—I have frequently heard people complain of fatigue to the eyes caused by highly glazed papers, and if my memory serves me rightly I have seen them condemned by oculists. Since having the Motor Union edition of *The Autocar* I have read it with greater comfort and pleasure than ever before. It is the cheapest and best motor paper, and anyone wishing to get it even cheaper had better join the Motor Union and get it for nothing.

H. G. M. CONYBEARE.

[13775].—I observe in last week's issue you invite readers agreeing with letter 13743 to send you their views. I have always found *The Autocar* singularly trying to the eyes, even in good daylight; indeed, I am inclined to think that the better the light the more one suffers. I never noticed this to the same extent with other illustrated papers, which I suppose require the same smoothness of surface for their reproductions. Could this not be got with less reflection?

GEORGE T. DEAS.

[13776].—May I add my voice to your correspondent's, who, liking (as I do) your paper, is plagued by its shininess? The illustrations are so excellent that they can afford to lose a little of their lustre in exchange for ease of reading.

BERTRAM BLOUNT.

[A number of other correspondents have favoured us with their views more or less on the lines of the foregoing letters. We thank them for their interest in the matter, and assure them that their suggestions will receive the most careful consideration. In the meantime, we would repeat that the penny edition is not printed on glazed paper.—Ed.]

CARBURETTER CONSTRUCTION.

[13777].—I think the suggestions made by Mr. J. Williams [13723] for improving the car in appearance and construction most excellent. His idea of placing a brass helmet, similar to those used on locomotives, on top of the bonnet has many advantages. That which appeals to me most is that as I understand these helmets can now be secured so light that a really strong man is able to lift them. If every car had one fitted it would be necessary to carry a navy in addition to the ordinary chauffeur to lift off the bonnet when it was desired to examine the engine, and this strikes me as the most reasonable way of dealing with the unemployed question I have heard put forward. It should entitle Mr. Williams to rank with the late George Herring as a philanthropist. It would provide light labour and pleasant recreation for thousands of really deserving men.

I have a gentleman friend to whom I have communicated this suggestion, and he has promised to carry it out before he takes me for another motor ride.

A point that Mr. Williams seems to have missed is that on present cars there is only quite a small hole provided for pouring water into the radiator, and it takes a watercan and patience to accomplish the feat. Now, to keep up the simile of the railway locomotive, why not fit a funnel, say 3ft. high by 18in. wide, on the front of the car so that when it was necessary to replenish the water in the radiator a bucket (costing 1s. 3d. only) could be used, and the water thrown bodily down the funnel. From the point of view of appearance this would be most effective, as at a short distance a pleasure car might easily be taken for a traction engine. His idea of fixing a thermometer to the carburetter is excellent. I have a sister who is a hospital nurse, so I have borrowed her clinical thermometer and fever chart, and next time Regi—, I mean my man friend, takes

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me motoring we shall have great fun in stopping the car every mile or so, when the navy will lift off the bonnet and we can take the temperature of the carburettor and enter it up on the fever chart.

Many other improvements might be made; for instance, instead of the discordant horn, why not fit one of the new loud-voiced phonographs to the dashboard? If this were done I could imagine the astonishment of the coster at being saluted with a strident "Get out of the way you —," and when he looked round find only a mild looking gentleman with a respirator trying to pass him with his car. A little reflection will show that such a fitment would save an enormous amount of bad language, as a man would only have to swear into it once to have his swear words reproduced times out of number.

Another accessory for the dashboard might be a Hotchkiss gun. I suggest a Hotchkiss because another friend of mine in the Territorials tells me it has a more rapidly adjusted arc of fire than a Maxim. My idea is that every few miles a volley could be fired to clear away the sparrows which might otherwise fly into the interstices of the radiator and cause overheating.

No doubt the fertile brain of Mr. Williams will be able to suggest many other devices for making the motor car more efficient and the sport of motoring more exciting.

LILY BIRD.

MEETING THE ENEMY.

[13778].—Below I send you a copy of a letter in reply to one appearing in a Cardiff paper. Possibly similar letters have been published in other papers throughout the country, and I would suggest, if anyone who has the interests of motorists at heart replies to any such letter, much of the prejudice and ill-feeling against motorists would be allayed.

F. C. SHACKEL.

"Sir,—In your issue of to-day appears a letter from the secretary of the Highways Protection League, which on the face of it implies an alarming state of affairs. With all respect to Mr. Leonard Barnes, the secretary referred to, I for one, as a motorist, and one who takes a great interest in anything pertaining to this new industry, cannot allow such a misleading letter to pass without making a few observations on the same. To begin with, Mr. Barnes's statement that the number of accidents 'is still upon the increase' is incorrect and apt to mislead, as Mr. Barnes has not mentioned the fact, which must be apparent to him, that the number of motor cars on the road this year is very much greater than last year. Therefore I emphatically state that Mr. Barnes's 'alarming increase' is one of decrease, thus showing that both motorists and the public are more careful.

"Mr. Barnes further states that, out of the 100 fatal accidents, verdicts of accidental death were brought in in thirty-six cases, and goes on to add, 'I have received no reports giving the verdicts in the remaining cases.' I now suggest to Mr. Barnes that in future he should be more correct in his facts before making such extravagant statements, and I have much pleasure in informing him that in the very large majority of fatal accidents verdicts of 'Accidental Death' have been brought in.

"With the immense number of cars on the road I maintain that the percentage of accidents is very small.

"This is not the first time that I have had to correct Mr. Barnes in his extravagant statements, and until he prepares his statistics more carefully and disinterestedly it will not be the last.

"I intend to send a copy of this letter to the motor papers, and any of the daily papers wherein I find a similar letter to the one I am referring to. "F. C. SHACKEL."

[We should be pleased to see other motorists acting upon the suggestion contained in our article on page 958, Dec. 12th, and we publish the above as an example of the kind of letter that would serve in other similar cases.—ED.]

AN APPEAL FROM OXFORD.

[13779].—I have been asked by the committee of the Oxford and District Automobile Club to enter a protest on behalf of the club against the fast driving of some touring cars through this city. It is not so much concerning the busy streets in the centre of the town that we have to make complaint, but more with regard to the main arteries passing through the suburbs. The greatest offenders are to be found amongst those who drive large covered cars.

On account of Oxford being a University city, with many beauties to show to tourists, and of the fact that we are situated within a day's trip from London by car, we have an unusually large number of motor vehicles continually entering and leaving the city. We by no means suggest that all or even a large majority of our motoring visitors drive recklessly or too fast, but a small minority undoubtedly do so, and out of such a number of cars only a small minority becomes in itself a large number.

Only about a month ago the City Council by a majority decided to ask the Local Government Board for a ten mile speed limit for the whole city, which would be ridiculous and unnecessary in a place like Oxford, and would never have been applied for but for the minority already referred to driving through the suburbs at over twenty miles an hour.

That we are not making this accusation of inconsiderate driving without definite evidence, I may state that two or three members of our committee, including myself, who drive cars of 20 or more horse-power, and keep accurately adjusted speedometers in working order, have frequently been passed in the suburbs of the city by cars which were travelling fully half as fast again as ourselves, when our indicators pointed at something between sixteen and eighteen miles an hour.

We do not suggest that the owners of the vehicles in question always realise that they are travelling at such a high speed, and we feel sure that were accurately adjusted speedometers more generally used there would be little or nothing to complain of. We would, however, make a most urgent appeal to all motorists who visit this city to slow down to a considerate pace the moment they get to the inhabited area.

In conclusion, I would say that my committee feel very strongly on the matter, and think it very hard lines that local motorists—who are on excellent terms with the local authorities—should be penalised by a ten mile speed limit or repressive police action for the offences of strangers. Speaking personally, I feel certain that unless the nuisance is abated there will be a strong demand on behalf of our members that the committee shall seek the aid of the police in all cases that come under their notice.

CLAUDE RIPPON,

President Oxford and District Automobile Club.

MOTOR CAR INSURANCE.

[13780].—The time is approaching when no doubt many owners are considering the renewal of their policies. I wish to point out some of the difficulties occurring to me and perhaps others, and this letter may produce a solution.

Certainly I should like to insure a car by the year against fire, but as regards running risks a year is, to many, far too long a period, and under this head a car should be insurable for three or six months at a time, much as a railway passenger insures for a single journey. Many use their cars for certain periods of the year only, and to others who use their cars moderately the insurance is the heaviest item in a year's expenditure.

Perhaps your readers can suggest a way out of such difficulties.

INSURER.

EXPERIENCES.

[13781].—I notice in letter No. 13729 an account of the 20 h.p. Vauxhall car, detailing an extraordinary performance it achieved in running with a temporary body from Luton to Harrogate—a distance of 170 miles—without any involuntary stop. This is all the more marvellous when one reads that an average consumption of eighteen miles to the gallon was maintained. This would entail a total consumption of about nine and a half gallons, and as a stop had to be made for petrol, the tank capacity (as one generally starts a journey with a full tank) must be less than this. One might think that with such a wonderful car non-stop runs of this description could be indefinitely prolonged by fitting a larger tank.

I hope the Vauxhall Co. will give this matter their earnest attention in designing their Grand Prix model, for which, I understand, subscriptions are now being received. To show my appreciation of their efforts to uphold the glory of English manufacturers, I would willingly send a cheque towards the fund.

OPEN EXHAUST.

[TO CORRESPONDENTS.—Owing to *The Autocar* having to go to press earlier than usual this week on account of the holidays the publication of several letters has been necessarily deferred.—ED.]

AERONAUTICS.

Flying Records.

Judging by the splendid performance accomplished by Mr. Wilbur Wright on Friday, the 18th inst., at Le Mans, the *Daily Mail* prize is within the grasp of this celebrated aeroplanist. Without stopping the motor of his Wright aeroplane or descending to earth, he accomplished a total distance, including turnings, of seventy-four and a half miles. The distance from London to Manchester scaled on a map, and, of course, as the crow flies, is 162 miles, and in the conditions for the *Daily Mail* prize two descents to earth are allowed to replenish petrol and oil tanks. It will therefore readily be seen that even with one descent it would be possible for Wilbur Wright on a fine day to accomplish the flight from London to Manchester.

Such a performance would necessitate fixing the special starting apparatus used with the Wright aeroplane at London, and also a similar apparatus at Manchester upon which to descend; also probably another landing apparatus would have to be laid down midway between the two cities.

The record now held by Wilbur Wright was accomplished on Friday, the 18th inst., after waiting several days for the bad weather to moderate. In bright sunshine the aeroplane rose from the ground at 10.12 a.m., and immediately commenced to fly from post to post of the course measured by the Aero Club de la Sarthe. Wright flew at a height of between thirty-three and fifty feet from the ground with perfect regularity, and nothing occurred to mar the performance or to interfere with the stability of the aeroplane until the record distance of sixty-one and a half miles had been accomplished in 1h. 53m. 59 $\frac{3}{4}$ s., when, un-

fortunately, the tap of the oil tank became closed at 12.7 p.m., and compelled Wright to descend. Although the record distance flown measured from post to post was sixty-one and a half miles, it is estimated that the total distance actually accomplished, including the turnings, was seventy-four and a half miles.

The Michelin prize of £800 now belongs to Wilbur Wright unless that other intrepid aeroplanist, Henri Farman, should wrest it from him before the end of the month.

At the conclusion of the long-distance flight, Wilbur Wright accomplished another record performance by soaring to a height of 360 feet. The Aero Club de la Sarthe had prepared a small captive balloon about 6ft. in diameter, which was anchored about 330 feet (or 100 metres) from the ground, and Wilbur Wright had to fly over the top of this balloon to accomplish the record. A few slight wind squalls slightly upset the equilibrium of the aeroplane at the turning of La Fourche, but finally the machine rose above the disturbed strata, and just after 4 p.m. (he started at 3.48) Wilbur Wright passed above the captive balloon without touching it, having risen a total distance of 360 feet (or 110 metres). The aeroplanist then rapidly descended, and made a circuit of the camp, within a few feet of the ground, providing a striking contrast with the previous performance.

The Flying Clubs

A new interest has been added to those already possessed by the members of the Motor Club by the institution of a flying section under the name of the Flying Club. Although the name has been duly registered, it is not intended to strike out as a separate



AN ENGLISH EXPERIMENTAL GROUND FOR AERONAUTICS. A piece of ground having an extent of about half a mile square has been secured by the Aeronautical Society of Great Britain to give facilities for flying experiments. It is proposed to erect sheds for housing machines and to establish a scientific department. The mounds are expected to be useful for starting purposes. The ground is situated near Dagenham Station on the London and Tilbury line.

organisation in opposition to any of the clubs or societies at present existing for the study of aerial navigation. The intention is quite otherwise, and the Flying Club's one desire, we understand, is to work as amicably as possible with the other organisations, and to assist them whenever opportunity serves. The Motor Club includes in its membership people interested in every application of the motor, and as the development of the flying machine is practically dependent on the motor, it was felt that the formation of a flying section was inevitable sooner or later, and that it had better be sooner. At the time of writing, the substance of the Flying Club is, appositely enough, somewhat in the air, but the General Com-

mittee of the Motor Club are looking after the interests of this latest nursling, and we hope shortly to report progress. The Motor Club has among its members several flying men, both British and foreign. These include Wilbur Wright, Henry Farman, Count Zeppelin, Warwick Wright and his brother (both of whom are experimenting with aeroplanes), and others who are either practical or experimental fliers. These should form a useful nucleus for the new Flying Club, and should act as an encouragement to the other members of the Club to take an interest in the newest manifestation of the utility of motors. Further particulars may be obtained from Mr. R. E. Edmondson, the secretary of the Motor Club, Coventry Street, W.

AEROPLANE JOTTINGS. By W. G. Windham.

Issy-les-Moulineaux.

Mr. Moore-Brabazon, who up to the present has been daily practising at Issy, is transferring his quarters to Savigny-sur-Orge. On the whole, Issy cannot be called a suitable place for experimenters. It has, however, one good point, *i.e.*, it is near Paris. On the other hand, it is extremely wet. The writer once had the pleasure (?) of towing the *Antoinette* back to its shed with his car, owing to it having stuck in the mud. The wind, also, is liable to be very gusty, as the ground is partially surrounded by high blocks of houses. Leave has been granted by the Government for the carrying out of practice flights up to 3 p.m., subject to permission being asked beforehand.

M. Farman's Reward.

M. Farman has been awarded the gold medal by the Touring Club de France for "having taken possession of the domain of the air by a flight across country, thereby inaugurating a new kind of touring."

An Explanation Wanted.

Aviators of to-day rely solely on gliding to the earth in the event of accident. This, as we know, however, is not always possible. At present I am making a study of this point, and am working on the principle that if one gets a flat piece of ordinary thickish paper and lets it fall, say, eight feet, it invariably turns completely over, usually more than once. Now, as an experiment, turn up the two opposite corners not quite perpendicularly. The paper will now float downwards towards the earth.

The Paris Octroi.

A circular has been sent to all the Octroi stations in Paris, stating that all aeroplanists and balloonists descending in the city of Paris will do so under police surveillance. Before long it is thought the A.A. motor scouts in England will also be employed as Aeroplane Assistants. Who knows?

The Aeroplane Club.

A wit (?) has written the following: "I am not surprised to hear that Prince Ranjitsinghi has joined the Aeroplane Club, as he must have studied aerial flight, being a great 'bat'!"

An Early Prediction.

In 1842 the House of Commons was asked to incorporate a company to float an aeroplane to carry letters, goods, and passengers. The apparatus was to weigh 3,000 lbs., including coal, and the plane to have the area of 4,500 square feet, but no mention was made of the number of persons it was to carry. Allowing the average man to weigh 150 lbs., he would be given a plane of 15ft. square.

The Aeroplane Face.

The "aeroplane face" has just been discovered and described by a well-known phrenologist, Professor de Prallo. He points out the strange new features of this countenance, contrasting them with the peculiarities of the "bicycle face" and the "automobile face," but says that the aeroplane physiognomy differs from the others in all particulars. He remarks: "It is noticeable in the Wright Brothers, Léon Delagrangé, Santos Dumont, and all the other 'human birds,' except Farman, that their eyes are not exactly in front but more at an angle than normal, caused by 'the anxious side-long glance' of the aviator, whose troubles are not ahead of him but at the side."

An Aeroplane School.

At Juvisy, near Paris, a school with a ground for aeroplane flights is to be inaugurated. It is to be fully equipped with the necessary sheds and engineering plant, and, with a maximum circuit of about two miles, will occupy about 250 acres.

Lightness of an Early Engine.

In 1868 a steam engine was built with a cylinder 2in. in diameter, 3in. stroke, and designed to make 600 r.p.m. at a boiler pressure of 80 lbs. per square inch. Taking 40 lbs. as the probable mean effective pressure, the engine would give a trifle over 15 h.p. The total weight of boiler and engine was 13 lbs.

Russian Aeroplane Club.

A new club was recently formed much on the same lines as the Aeroplane Club in England. It has now about 160 members, and its temporary premises are situated at the Army and Navy Club.

New Aeroplane in Russia.

M. Tatarinoff has for some time past been experimenting on an entirely novel type of aeroplane. He calls it an aeromobile, and it is driven by compressed air. Its chief characteristic is that it is able (so he claims) to hover. He has already received 25,000 Rs. from the Tsar and 50,000 Rs. from the Government, besides which the public has subscribed large sums.

SCOTTISH RELIABILITY TRIAL 1909.

The General Committee of the Scottish A.C. at its meeting on the 8th inst. considered the matter of the Scottish Reliability Trial in 1909, and the recommendation of the Trials and Competitions Committee was adopted, *viz.*, "that the trial should comprise 1,000 miles, and should take place in the week commencing 14th June, 1909," and the matter was remitted to the Trials Committee, with full powers to frame and issue regulations and to carry out the trial.

THE GRAND PRIX ABSTENTIONS.

It was reported by the Royal A.C. last week that in all probability there will be no Grand Prix Race in 1909. It is understood that the names of the firms that have decided not to enter for the Grand Prix Race are as follows: Bayard-Clément, Benz, Berliet, Brasier, Darracq, De Dietrich, Delaunay-Belleville, Germain, Isotta-Fraschini, Leon-Bollée, Mercedes, Minerva, Motobloc, Panhard et Levassor, Peugeot, Pipe, and Renault.

1909 IRISH TRIALS.

The Irish Automobile Club purposes holding its reliability trials at or about a date which will be shortly announced, and it will probably be the last week in May or the first week in June.

The trials will extend over six running days, and tests for reliability, speed on hills and level (private course), and petrol consumption will be taken on one of the days.

A team competition similar to that which was held in the last reliability trials will also be included, and gold and silver medals will be awarded to the winners in the several classes and challenge cups to the best performance in the trials.

ROYAL A.C. AND ASSOCIATED CLUBS.

Every arrangement for the first annual dinner of the R.A.C. and associated clubs on the 14th prox. is progressing most satisfactorily, and the majority of the details in connection with the function have now been completed, including the musical programme. The dinner is being enthusiastically taken up by the local clubs, many of which will send large contingents of their members. The price of tickets is 7s. 6d. each.

The R.A.C. associates' badge continues to be issued in large numbers, and evidently enjoys a great deal of popularity. Badges with the special centres, including the design of the local club's badge, have already been adopted by several of the clubs which have only recently decided to associate with the R.A.C.

The Guernsey Motor Association has agreed to become associated with the R.A.C.

TRIALS OF TYRES, OIL, FUEL, &c.

The Technical Department of the Royal A.C. has received a number of enquiries for individual certified trials of tyres and tyre fillings. In addition to the road trial of not less than 2,000 miles, tyres and tyre fillings will be tested upon the Club's resiliometer—an instrument which accurately measures the yield and return of the tyre when subjected to concussion.

Arrangements are also being made for certified trials of the amount of oil consumed by a car. This trial should prove of great interest, as any improvement in a car which entails less upkeep will be gladly welcomed by owners.

The virtue of an improved motor fuel is a subject which is also engaging the attention of the department. Tests in this direction will also be much appreciated on the score of greater economy.

The Club's speedometer calibrating instrument is much in demand, members realising that an accurate speed recorder may very often mean the difference between a conviction and a dismissal in a police court.

A CONTRAST.

One Law for the Motorist—another for a drunken horse-driving Farmer.

Below we present the newspaper accounts of two cases, heard the other day before the Cambridge Courts. We make no comment; the comparison is sufficient.

WELL-KNOWN FARMER SUMMONED.—At the Cambridge Police Court this (Friday) morning, before the Mayor and other magistrates, James Towler, 44, a farmer of Nether Hall Farm, Cherryhinton, was summoned for having been drunk whilst in charge of a horse and trap, and also for not having kept his trap on the near side of the road on December 5th. In the first case defendant was convicted and fined 10s. and costs, and in the second case 5s. and costs.

CAMBRIDGE DIVISION, December 5th (before Prof. G. D. Liveing, W. Durrant, J. O. Vinter, and H. H. Wiles, Esqs.)

UNDERGRADUATE MOTORISTS SUMMONED.—Two undergraduates, Evelyn Walter Copland Perry (Trinity College) and Philip Horace Leyland Mellor (Pembroke College), were summoned for driving motor cars at an excessive speed on Hills Road, Trumpington. [In the case of the motorists the occurrence took place on a broad, straight, unfrequented highway, while in that of the drunken horse driver the offence was committed in narrow crowded streets.] In the case of Perry, it was stated by P.C. Salmon that the speed he was driving at was 25 m.p.h., while in the case of Mellor the speed alleged was 27½ m.p.h. Perry was fined £2 and costs and Mellor £5 and costs.

The following is a more detailed account of the runaway horse escapade cut from a local paper, from which it will be seen that it was an offence involving serious injury to several persons and considerable damage to property.

A RUNAWAY HORSE.

TWO UNDERGRADUATES INJURED.

On Saturday night, just before 11.30, when people were streaming out of the theatre, a horse dashed down the crowded street at a furious pace, coming from the direction of Hills Road, causing the greatest excitement and alarm. Opposite the Castle Hotel two undergraduates were knocked down and seriously injured; but the frightened animal pursued its mad career as far as Great St. Andrew's Church without causing further mischief. Two ladies had a narrow escape against the end of Christ's College, for the horse, turning into Hobson Street, plunged into the wall of the house a few yards from the corner. It was fortunate it did so, for a number of people were in the road and on the footpath opposite the Post Office, and there was so much bustle in the street that the approach of the animal was not noticed. A cab in front of the runaway knocked down an undergraduate against the Post Office, who had a marvellous escape. The poor brute was stunned by its collision with the wall, and lay on the pavement, until a policeman succeeded in getting it on its feet and leading it away.

It transpired that an accident had occurred against Hyde Park Corner. Mr. James Towler, of Nether Hall Farm, Cherryhinton, was driving home when his trap collided with a hansom cab driven by George Marriott, containing a Trinity undergraduate. The cab horse was knocked down and one of the shafts of the cab was broken. Fortunately, neither Mr. Towler, the cabman, nor his "fare" was injured. Mr. Towler's horse broke loose from the shafts, turned round and dashed down Regent Street. The undergraduates who were knocked down were Mr. Alan Watkin and Mr. Albert Nelson Wilmore, both of St. John's College, who had just left the theatre together. Mr. Watkin was picked up by Supt. Hargreaves in an unconscious condition and driven in a cab to Addenbrooke's Hospital. There he was found to be suffering from concussion, as well as cuts about the head and face. Mr. Wilmore was taken by his friends in a taxicab to his college, where he was attended by Dr. Haynes. He was suffering from slight concussion, and cuts and bruises.

Flashes.

The Gas Lighting Improvement Co., Ltd., advise us that they have decided to reduce the prices of their Carburine and Glico motor spirits by one halfpenny per gallon, dating from the 18th inst.

* * *

One of the biggest hauls ever made in one day from motorists in a police court was that by the Hayward's Heath bench of magistrates on the 14th inst. From seventeen defendants, most of whom had been caught in police traps and had committed nothing more than the technical offence of driving beyond the speed limit on open roads without any suggestion of danger, the amount extorted in fines and costs was £234 7s. 9d. This was in one day. Three of the defendants alone were fleeced of £43 13s. 3d., £32 17s., and £31 16s. 10d. respectively, and were disqualified from holding licenses, two of them for two years and one for twelve months.

* * *

The international body which the Motor Union has invited to England next year for the purpose of holding its annual congress during July, referred to on p. 1011 of *The Autocar* last week, is the Ligue Internationale des Associations Touristes, not the International League of Automobile Touristes.

* * *

The British Petroleum Co., Ltd., announce that their Shell and 760 motor spirits have been reduced in price one halfpenny per gallon.

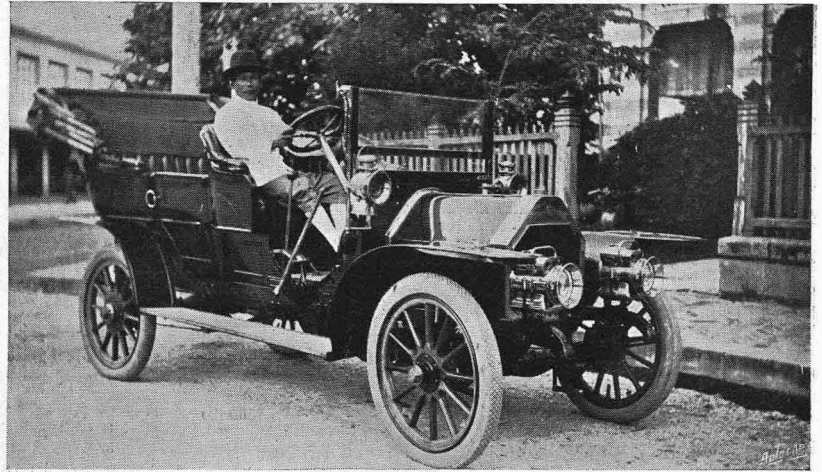
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The next election of candidates for membership of the Royal A.C. will take place on Wednesday, 13th January. Already 143 applications have been received for this election. There are at the present moment, exclusive of the above, 4,005 members. The new entrance fee of twelve guineas comes into operation on the 1st January, the present fee being six guineas.

At the last council meeting of the Institution of Automobile Engineers it was resolved in reply to a request from the Engineering Standards Committee that the council was of opinion that the American standards for screws and screw heads should be adopted for motor car work.

* * *

The other day we read an entirely new and erroneous argument in favour of unsprung weight upon the road



A BELSIZE CAR IN SIAM. The first car of this make to arrive in Siam was the popular 14-16 h.p. here depicted. It is pleasing to learn that the car has been so satisfactory that many others have been ordered for shipment to Bangkok.

wheels. The writer was arguing in favour of heavy back axles or back axles combined with change speed gear boxes, and stated that the extra unsprung weight prevented the wheels from slipping when the driving effort was applied. This has appeared in more than one paper, and it has been corrected by Mr. Austin, who has pointed out that the more dead weight there is included in the wheels and axles of a vehicle the less it will hang to the road when driven at a predetermined speed. Apart from its being right theoretically, the experience of all those who are thoroughly versed in the science of building automobiles is that the less dead weight there is in the axles (front or back) the better the car rides and the less is the amount of wear on the tyres and mechanism that takes place.

* * *

It would be a good thing if chief constables throughout the country would follow the example of the Chief Constable of Preston, who has recently taken steps to secure the better regulation of street traffic, and the more strict observance of the rule of the road. As a result of his action two cases were brought before the local magistrates in which the defendants were charged with driving carts and not keeping the same on the left or near side of the road. The fines were merely nominal (1s. and costs, or in default seven days), but it was pointed out that the Bench would probably take a more serious view of the offence in future cases.



Lady Maurice Fitzgerald and her 14-20 h.p. Siddeley which has done much useful work touring Ireland.

CLUB DOINGS.

The Motor Club.

The second house concert-dinner of the season of the Motor Club was held on the 16th inst. 150 members and their friends sat down. Mr. Walter de Frece presided, and organised the concert which followed.

The Irish A.C.

The Waterford County Council are asking the Local Government Board to impose a ten miles an hour speed limit upon motor cars on county roads and five miles an hour through towns. The Irish A.C. is offering to the proposal its most strenuous opposition, and the local press also is very much opposed to the application. The *Waterford Standard* supports the Irish A.C. as a progressive body, which is pursuing a policy of reasonableness—a policy which, it asserts, has made motoring a pleasure to the owner of the car and profitable to the general public.

Lincolnshire A.C.

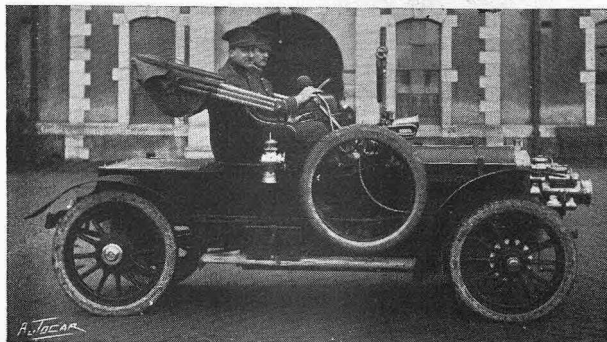
A meeting of the committee was held on Monday, December 14th. The result of the postal vote on the subject of affiliation was received as follows: Motor Union, 74; Royal A.C., 67; neutral, 4; too late, 4. The club will therefore remain affiliated to the Motor Union for 1909. The committee decided that the Motor Union scheme of providing *The Autocar* free weekly to all members of the club should be adopted. Any member who prefers *The Motor Cycle* may, however, have that paper instead. This arrangement will commence at once. A letter from the G.N.R. Co. was read, stating that, in response to the request of the club, the Weelsby Road crossing, near Grimsby, would be kept open except when trains were actually expected. The annual general meeting was fixed for Friday, February 5th, 1909, at Lincoln.

Scottish A.C.

The following further dates of examinations for driving and mechanical efficiency certificates have been fixed: Glasgow, Tuesday, January 19th, 1909; Edinburgh, Tuesday, January 26th.

A conference called together by the Scottish Automobile Club was held on December 11th at Glasgow to discuss the question of roads. Delegates attended representing the road surveyors of Scotland, one of whom, Mr. Robert Drummond, road surveyor for the County Council of Renfrewshire, read a paper on the work of the International Road Congress in Paris last October, and the findings come to as bearing on the road practice in Scotland. He mentioned the fact that there were now 250 steam rollers with forty or fifty road tractors employed by the County Councils of Scotland, as well as a large number of boring and breaking machines, the probable cost of which was £2,000. With regard to the dust nuisance, tarring was suggested as an efficient remedy when done properly; and after reviewing the several findings of the Paris Congress he stated that the Scottish road surveyors certainly recognised that it was their duty to construct and maintain the public highways in a condition fit to carry all traffic legalised to pass over them. A great advance generally, and particularly towards coping with the new methods of locomotion had undoubtedly already been attained. Sir John H. A. Macdonald, the Lord Justice Clerk of Scotland,

who presided, referred to the "holing" of the roads for which horses and sheep were responsible, and condemned the present method of binding roads with mud. So long as this continued it was practically impossible to have good roads. People were now coming to see that the motor car was not



A smart little 12-14 h.p. Singer car belonging to Mr. W. B. Twist, of the 2nd Battalion Durham L.I. The car, as well as being used for pleasure, is employed to a large extent in connection with military duties.

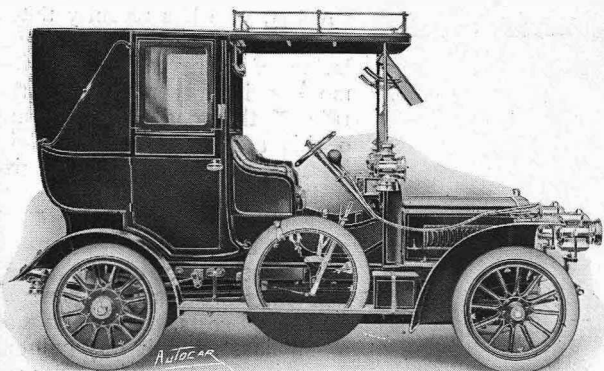
such a dangerous thing as they imagined. In order to provide a practical demonstration that motor cars were not so destructive to roads as was generally supposed, he suggested the experiment of looping a road and diverting motor traffic along one half and ordinary traffic along the other for purposes of comparison.

Sheffield A.C.

The annual dinner of this club was held on December 16th, Mr. E. F. Coupe presiding. In proposing the toast of "The Public Authorities," Mr. J. H. Pickford referred to the fact that motorists enjoyed considerable freedom in Sheffield, for they had no speed limit; nevertheless, complaints of inconsiderate driving were thoroughly investigated, and the offenders properly dealt with. The Mayor of Rotherham responded, as did also Mr. R. M. Prescott, and Mr. A. R. Fearnley. The toast of "The Visitors" was proposed by Mr. T. H. Firth and acknowledged by Mr. Thomas Winder. Supt. Bielby also spoke, referring to the speed limit, and the necessity for all vehicles carrying a rear light. Mr. P. J. Benson submitted "The Royal Automobile Club and the Motor Union" coupled in one toast. This was responded to by Mr. J. W. Orde and Mr. W. Rees Jeffreys, the secretaries of the respective organisations. The toast of "The Sheffield and District Automobile Club" was proposed by Mr. H. J. Wells, J.P., and responded to by Mr. F. B. Cawood, hon. sec.

Manchester M.C.

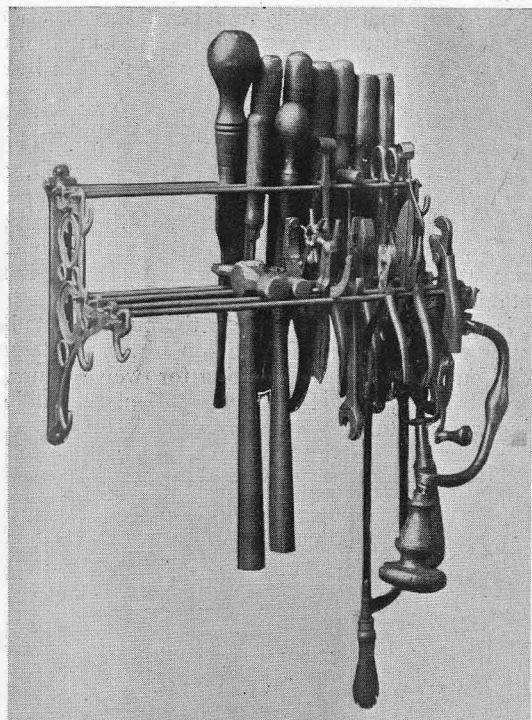
On Friday evening last this successful club held a most enjoyable function at its headquarters, the Albion Hotel, on the occasion of its fifth annual dinner and prize distribution. There was a large attendance of over 120, including many ladies. The club now numbers about 300 members, comprising about 120 car owners and 180 motor cyclists. As the club promotes many competitions during the year the prizes were both numerous and valuable, and the recipients numbered many well-known men, including Messrs. H. Hollingdrake, J. Higginson, jun., R. H. Carlisle, H. W. Cranham, P. Butler, F. C. Hunt, J. A. Bennett, Edgar Jones, Lionel Stones, Wilfred Stones, V. G. New, W. Andrews, H. Reed, J. Marshall, E. Rees, J. Tytler, A. J. Moorhouse (hon. sec.), Otto Gross, P. A. G. Bell, and others. The menu card was an artistic production designed by Mr. J. Tytler, a well-known member of the club and a prominent motor cyclist. The president, Mr. A. J. Bell, made an appeal to the members, particularly those not connected with the trade, to support the competitions as well as the social gatherings, meets, etc. A pleasant surprise was furnished by Mr. J. Higginson, jun., when he presented gold mementoes to the present and past presidents of the club, viz., J. H. Baynes (1903-4), Geo. Spencer (1905), Sawley Brown (1906), F. C. Hunt (1907), and A. J. Bell (1908). The club is in a thoroughly sound and flourishing condition, and the function was one of the most successful of its kind.



A typical 12-14 h.p. Singer single landaulet. This neat little vehicle has been built for Sir Alfred Haslam, of Derby.

FITTINGS FOR THE MOTOR HOUSE.

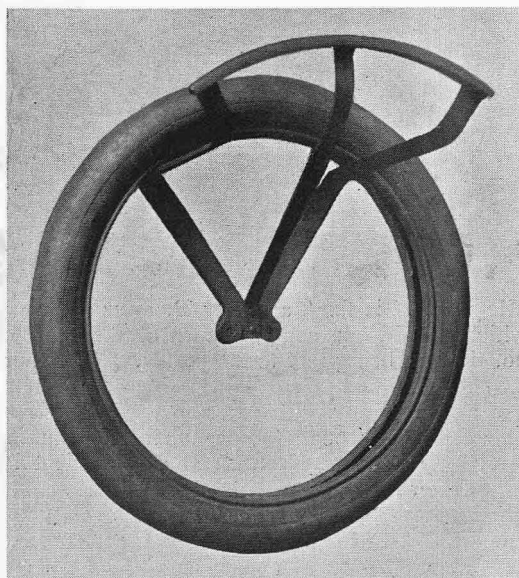
Some neat and useful fittings for use in the motor house are now being put upon the market by Messrs. Schofield and Co., of Tulketh Works, Southport, Lancs. Among them are the Ideal patent adjustable tool holder, which can be nailed to the wall over or



A useful tool rack for the car house.

close to the bench, and from which the tool required can be seen and withdrawn at a glance. Another is the Handy hose holder, by which a hose is kept out of harm's way, and not ruined by being hung upon a

nail, as is so frequently the case. It prevents the hose kinking, and keeps it circular and clean, thereby greatly adding to the life of a somewhat perishable and expensive adjunct of the motor house. Number three is the Ideal holder for tyres and covers—a really useful and valuable article in a motor garage, for it is very bad practice to allow tyres to stand about on the floor, where they come in contact with much water



A rack for fitting in car houses to prevent tyres being damaged.

and grease. The holder will take any size and diameter of tyre, and correctly fits the circle. As the cross bars are made convex, there are no sharp edges to injure the covers, which are supported at two places. Messrs. Schofield and Co. also make a car sponge basket, a radial holder for brushes, mops, and odd tools, and the Ideal oil tray of strong galvanised sheet steel, with very stiff top edge.

CONTROL OF CITY TRAFFIC.

By the invitation of the County Purposes Committee of the City Corporation a deputation of the Royal Automobile Club has waited upon that committee with a view to considering with it the draft of a Bill which it proposes to introduce into Parliament for granting greater facilities to the Chief Commissioner of Police of the City for the control of traffic. The Chairman of the committee explained to the deputation that the corporation did not propose to make any application for a reduced speed limit in respect of motor cars in the City, and he stated that the Bill now proposed to be introduced would not in any way diminish the existing rights of private motorists. The only clauses of the Bill that would affect motor cars at all were those relating to the diversion of traffic. These clauses would affect public motor omnibuses as well as

horse-drawn vehicles. The attention of the committee was called by the deputation to the practice that existed in the Metropolis outside the City of summoning drivers of motor cars who happened to pass on the wrong side of street refuges for an offence under Section 1 of the Motor Car Act (which is directed against driving recklessly or to the danger of the public), irrespective of whether the public were thereby endangered or not. The effect of this is an endorsement of the licence for driving to the danger of the public without specifying the precise offence. The Chief Commissioner of Police for the City (Capt. Nott Bower) stated that proceedings under Section 1 of the Motor Car Act, 1903, would not be taken for such an offence in the City unless there was actual danger involved to the public.

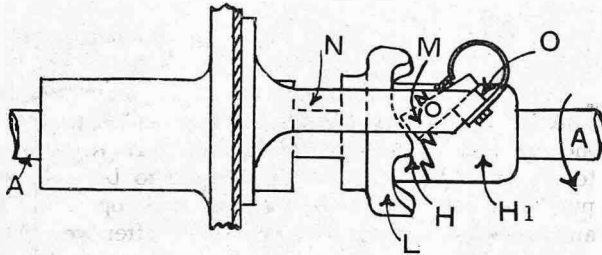
Commencing with the New Year, a series of articles dealing with the elementary and fundamental principles of operating motors for business purposes will be published in *Motor Traction*. These articles, however, not only discuss the actual operation of vehicles for business purposes, but also show the possibilities of this means of transport both from a financial and

practical point of view, and on this account they will prove of very real value not only to those engaged in operating utility motors, but also to business men of all sorts who are contemplating adopting this mode of transport and want to obtain an accurate idea concerning the possibilities and limitations of motor traction.

ENGINE-STARTING FROM THE SEAT.

Mr. C. W. Mallins, traffic manager of the Liverpool Corporation Electric Tramways, has patented a very ingenious and useful device for starting the engine of a car from the driver's seat. It has taken Mr. Mallins some twelve months to perfect his invention, which can be applied to any car at a very small cost.

Referring to the attached diagram, on the starting



Details of Mallins engine starter.

handle-shaft A is fixed a pulley B, around the groove of which is laid one complete turn of a flexible chain cable, the end being fast to the pulley. The other end is then rove through a small pulley C attached to one end of a lever D pivoted at E, and then carried inside the bonnet and through the dashboard, terminating in a hand grip or stirrup J fixed at a convenient height for the driver to operate with the right hand.

The large pulley B is controlled by a spring G, one end being fast to the pulley and the other end fixed to some stationary member, such as bracket F. This spring always tends to wind the cable on the pulley after each operation and also holds the couplings in the normal, out of action, position, thus performing the two operations, viz., rewinding the cable on the pulley and holding the couplings H and H₁ apart.

To start the engine the driver pulls the grip sharply. This pull is transmitted to the pulley C, which swings over the lever D (which is pivoted at E). This lever abuts, through suitable bearings, against the starting shaft at the point K, compressing the spring G, and bringing the coupling H into mesh with the coupling H₁ on the engine crankshaft. The continued pull revolves the pulley B and transmits through the

couplings H and H₁ the starting effort to the engine.

The effect of a back fire is guarded against by the addition of a pawl and crown cam on the starting shaft to throw the couplings out of mesh.

In the operation of starting the engine simultaneously with the couplings coming into gear, the crown cam L on the starting-shaft A is brought into mesh with a round-nosed pawl M, which is attached to the bracket N. When the starting-shaft is rotated by pulling the cable, the pawl slips over the teeth; should a back fire occur and the crankshaft be rotated in the wrong direction, the pawl M is locked against the stop O, and, owing to the formation of the nose of the pawl and the teeth of the crown cam, the starting-shaft A is forced outwards, and consequently the couplings H and H₁ are separated. An ordinary removable starting handle is retained.

It is claimed that the device is thoroughly tested and in every way reliable. The car on which the test was carried out had not been running for twelve hours, the engines being cold, yet with one pull of the cable the engine was started.

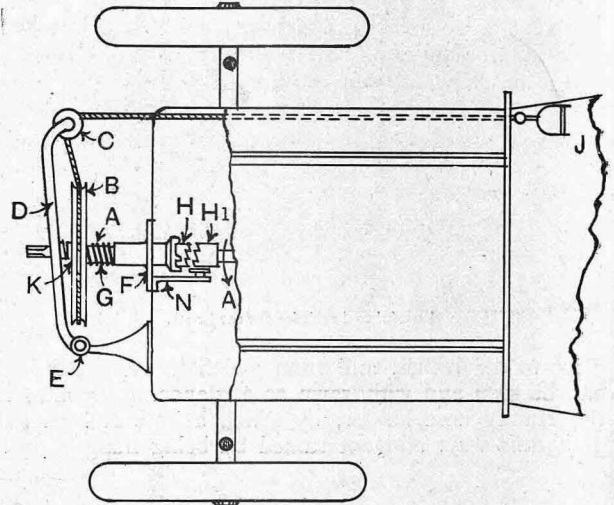


Diagram showing the application of Mallins starting device.

The British-American Co., of Widdrington Road, Coventry, have prophesied frost during Christmas week. However this may be, they bring to our notice their anti-freeze preparation, which we have tried in the liquid form and found quite satisfactory unless there be any aluminium piping in any part of the cooling system, as their anti-freeze has a most corrosive effect upon aluminium, though we have not found it to have any damaging effect on any other metal. The point the British-American Co. make is that people will not prepare for the frost which they know will come sooner or later during the winter. They either wait till their radiators and cylinders have been cracked or send in frantic haste for anti-freeze on the first signs of frost. They never think of putting the mixture into their radiators on, say, November 1st and keeping up its strength till the following spring. Those who have used anti-freeze in the past will be interested to know that it is now applied in the form of a powder, and not in liquid form, as hitherto, so that it will be more convenient to use and much more easy to transport.

Runaway horses pursue their mad careers in the narrow crowded streets of our thickly populated towns, and no one becomes incensed against the owners or drivers. On the other hand, sympathy is very often expressed towards them, and if perchance police court proceedings follow, the utmost leniency is shown by the magistrates. The dangers of the horse are not taken seriously, yet they are very substantial and real. Only the other day the busy streets in the heart of Newcastle-on-Tyne were in a state of wildest commotion, and the people were exposed to the gravest danger by the escapades of a runaway horse attached to a light van, and it is reported by eye witnesses that it was a miracle no one was killed. Collisions with other traffic, tram-cars, and tramway standards occurred, one of the latter bringing the horse down, causing it to turn a complete somersault and liberating it from the shafts. Nothing daunted, the animal made off again, but was ultimately stopped after a most harrowing run of two miles. What would be said of a motor car causing like consternation, supposing it to be even remotely possible that an uncontrolled car could run so grievously amok?