

# THE AUTOCAR

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

EDITED BY H. WALTER STANER.

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## The Autocar.

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An Index to Advertisements appears on page 5a.

## Notes.

### Radiators, Bonnets, and Dashboards.

On February 17th last year we published our Appearance Number, in which illustrations of the radiators and bonnets of 1912 cars were given. Today we again devote a number of pages to this subject, so that almost every car likely to be met on British roads now or during the next few months is illustrated.

Last year we referred to the tendency to taper the bonnets and to merge the dashboards with the bonnets so that the body, dashboard, and bonnet became one pleasing unit instead of a very ill-matched trio with a profile as beautiful as that of a flight of stairs. Never-

theless, there are still many cars which are needlessly ugly because of these painfully sudden disparities in outline heights and plan widths. The first step towards improving appearance and, incidentally, comfort was the fitting of high side doors to the front seats; then the body became clean in outline, all meaningless holes and corners in its surface being given up, and what was known as the torpedo, or flush-sided body first came into general use some three years ago, having been introduced a year earlier. Next the dashboard was tackled, and from a flat board was curved convexly, as it had been on the old Daimler cars long before the days of driving seat doors. This helped matters, but still left considerable disparity in section between dashboard and bonnet. The next step was to taper the bonnet, and this was, almost naturally, followed by the concave dashboard, which makes a much more pleasing form, and one which presents far less air resistance than the bluff convex type, while the latest tendency has been to point the radiator more or less.

### Evolution in Body Design.

The problem of harmonising a body, dashboard, bonnet, and radiator is comparatively easy on large cars, which, necessarily, start with a big radiator and a big bonnet, not only big in height and width, but also in length, so that there is practically continuous taper from the radiator to the full width of the dashboard, which in its turn is almost the full width of the body; therefore, quite an easy taper of the body will harmonise a wide back seat with the narrowest part of the car, the radiator, inasmuch as from the radiator to the full width there is a practically continuous taper. With smaller cars the problem becomes more difficult as the size goes down, for the simple reason that the body width is, necessarily, almost as great, if comfort is to be considered at all, with a little car as with a big one, because the people who occupy it are not any smaller than the average persons who occupy a big car. On the other hand, with the small car we have a short, small bonnet, and below a certain limit in size it is difficult to make a really smart outline unless everything is sacrificed to appearance. Great ingenuity and considerable artistic talent have been devoted to the task, and every year we find the small car as well as the large car becoming more pleasing in appearance, simply because the contour is persistently improved.

Some few designers appear to have reached almost as pleasing proportions as are possible with the conventional type of car, but, speaking of cars generally and excepting the best examples, there is still very much to be done. Nevertheless, since last year's Appearance Number very considerable advances have been made, as the number of tapered bonnets and nicely harmonised dashboards has very considerably increased, and there is no doubt whatever that this most desirable improvement will continue steadily as motorists come to recognise more and more what are the "points" of a handsome car.

**Notes.**

The number of firms who now make two types of bonnet is increasing rapidly. They stick to the old-fashioned parallel bonnet for most of their closed models, but for the lighter and faster open cars use some form of taper bonnet and perhaps a pointed radiator as well. A few of the more advanced have adopted the taper bonnet and concave dash as standard for all their models. Then, again, the coachbuilders are doing their part, as they frequently scrap the parallel-sided bonnet supplied by the chassis builder and replace it by a tapered bonnet to harmonise with the lines of their dashboard and body. They do this either to satisfy their own fine sense of proportion or that of their clients.

While discussing this subject, it is, perhaps, well to add, though we have said it often before, that pleasing outline is not merely a question of appearance: it tends towards comfort and economy if carried out properly, comfort because the eddies and cross draughts are reduced by the clean tapering surfaces and economy because the air resistance is reduced and, consequently, less power required for a given speed. And it must be remembered that very modest speeds and quite moderate head winds combine to make it common for the car to be driven in what is practically equivalent to a fifty-mile wind blowing against a stationary object it being obvious that, say, a twenty-five mile an hour car speed and a twenty five mile an hour head wind would produce this effect, while it follows that any higher speeds either of car or of wind result in proportionate increases of atmospheric resistance. In writing thus we are not advocating the Brooklands record or "devil's darning needle" type of body shell, but that happy compromise which merges bonnet, dashboard, and body into a pleasing whole.

**Unofficial Trials.**

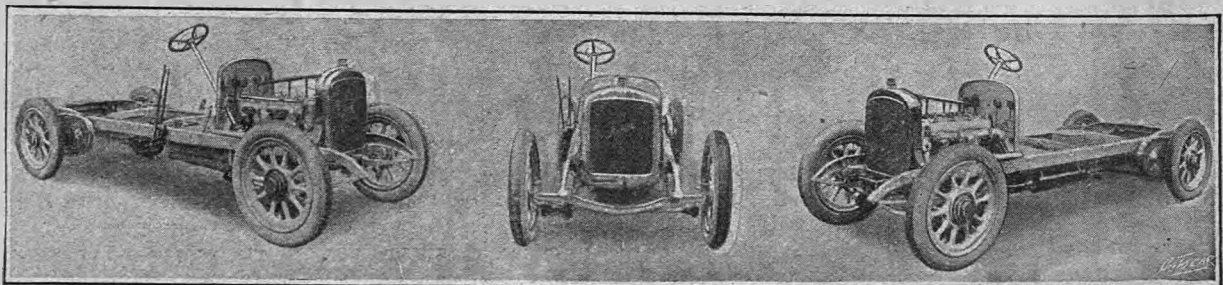
Last summer, when the Victor comparative tyre test commenced, we addressed ourselves to the subject of unofficial trials in general, *i.e.*, trials conducted by any other authority than the Royal Automobile Club, and we expressed the opinion that we had always held and frequently previously expressed: that, in the best interests of motoring, no reliability trials or tests of any similar nature should be conducted by any other authority than the R.A.C. We also pointed out that in saying this we had no sort of suspicion that the Victor test was not being carried out in a perfectly fair manner. Indeed, despite their unofficial test we need hardly point out that the Victor Tyre Co. themselves are believers in R.A.C. trials, otherwise they would not have applied to the R.A.C. to hold a trial for them. Moreover, had they not done this we question if the test that has been conducted for them by

the volunteer committee of motorists would have been taken seriously, nor would motorists of any standing have lent their aid and their names to the test.

Nevertheless, despite our thorough disbelief in unofficial trials we have dealt with the Victor test and recorded its progress from time to time in its three stages, and it has now been brought to a lamentable ending by the accident near the Devil's Punch Bowl, Hindhead, on the Portsmouth Road. This occurred on Monday last, when the sole surviving cover of the third and last round was the plain-treaded Victor.

It is perfectly natural for our readers to ask why with our strong disbelief in unofficial trials we should have dealt with this by far the most important and protracted unofficial test that has ever been held. It may, therefore, be well to offer a few words of explanation. Within wide limits, as records of things which happen in the world of motoring, it is hardly our part to pick and choose what we shall record and what we shall ignore, yet we may say that any ordinary unofficial trial would have been ignored in these pages; indeed, it was our intention to ignore the Victor event, not because we disbelieved in it, but because we considered it a mistake to give publicity to an unofficial event, but we found that this attitude on our part was entirely misunderstood by a large number of our readers, representative private motorists: they did not regard our reticence as evidence of a desire to uphold the authority of the R.A.C. as the one body which should conduct such events, but jumped to the conclusion that we proposed to ignore it because the other tyre makers had asked us to do so. Nothing could have been further from the truth, and it is only fair to the makers of the Dunlop, Michelin, and Continental tyres to say that never once from the time the trial was proposed up to the present time have they or any other tyre makers approached us on the matter either directly or indirectly.

Another reason why we dealt with the Victor trial was that, quite apart from its method of conduct, which has been in the hands of a volunteer committee throughout, it was only launched after a request had been made to the R.A.C. to conduct it; indeed, the R.A.C. had consented to conduct it and had laid down its own conditions, which had been accepted by the Victor Tyre Co. Therefore the one sin of the company was that, as the Club would not hold its trial after consenting to hold it, it persisted in running it itself, or, rather, in turning over its conduct to the volunteer committee representing motorists in all parts of the country. We have no wish to reopen the discussion as to the attitude of the R.A.C. in this matter, as nothing new upon the subject remains to be said; still, we have felt it due to our readers and to ourselves to explain our attitude.



Three 40 h.p. Austin chain-driven chassis which have been supplied for express delivery of "The Daily Mail." Austin-Sankey detachable wheels are fitted.

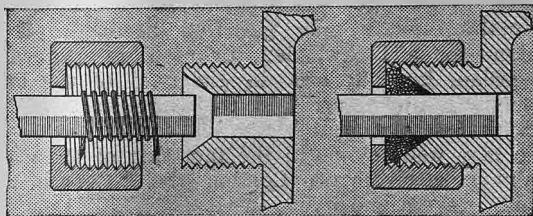
## Useful Hints and Tips.

### Petrol Pipe Breakages.

IT may well be a very serious matter for a petrol pipe to break, not only because one may be stranded far from home, but because of the risk of fire, even though the lamps may not be alight.

Some years ago the writer owned a small car in which the petrol pipe was somewhat long, devoid of any support apart from its attachments to the carburetter and tank, and of poor material. Added to this, the engine was a twin-cylinder one, causing considerable vibration, and it was a very common thing for the petrol pipe to break. I know of one or two cases where the undershield of similar cars became saturated with petrol and caught fire, with a result that the car was completely burnt out. On modern cars there may be little or no engine vibration to cause trouble in this respect, but the fact remains that petrol pipes do break far more frequently than should be the case.

On the writer's present car some six petrol pipes or their attachments fractured in three months. It should, however, be explained that on this car the engine is carried on a pivoted underframe, whilst the



*Suggested method of making a temporary petrol pipe joint with the carburetter.*

petrol tank is supported on the main frame, which is free to move relatively to the underframe without distorting the latter. Hence there can be considerable relative movement between the carburetter and the petrol tank, and in addition to this there is a big filter carried by the pipe, which at certain engine speeds used to vibrate very considerably. When the car was stationary and the engine running fast, it could be seen that the petrol pipe gradually worked up an oscillation of increasing amplitude, but when the pipe was clipped to some stationary part to prevent this vibration, the trouble was overcome and no further breakages were experienced.

Any motorist who has experienced more than one petrol pipe fracture on any one car should see that the pipe contains one or more coils, and that it is well supported at points two or three feet apart. If there be a petrol filter fitted to the pipe, its weight should not be carried by the pipe, but the filter should be fixed to some part of the car, so as to act as a support to the pipe.

With a broken pipe, the usual practice is to join the fractured parts together with a piece of rubber tubing, firmly tied on to the abutting pipe ends. A piece of tubing of this nature is very useful to have on the car for other purposes, but if none be in the toolbox a piece can generally be found on some part of the acetylene lamp system, or, by chance, the tyre inflator tube may serve, though generally the passage through the inflator tube is too small. In no case, however, should the temporary junction of the two pipe parts be left unsupported.

When the fracture is some distance from the union,

the makeshift mentioned can be carried out, but the procedure is more difficult if the breakage be short off at the union, or if the union nipple be broken.

In many cases the passage in the carburetter union boss is of the same size as the petrol pipe; hence, if the union nipple be broken off, a very fairly satisfactory repair can be effected by pushing the end of the petrol pipe into the carburetter, having previously wrapped round the pipe some wool or fine string. This should be put on somewhat loosely and well smeared with soft soap, or any soap fairly soft. The union nut should then be screwed home, and it will be found that the nut will compress the greased string in the form of hard packing, which jams into the conical recess on the carburetter boss somewhat after the manner of a gland or stuffing box. This is shown in the accompanying diagram. There is, however, nothing in this makeshift to prevent the petrol pipe pulling out of the carburetter boss, so the pipe should be bent so as to have a natural "set" or tendency to keep in place, supplemented by securing the pipe to the carburetter with string or copper wire. If the union nipple be broken off short at the shoulder, the remainder of the nipple should be cut off the pipe and the repair just described effected.

On one occasion the petrol pipe of the writer's car broke not half a mile from home. The fracture was immediately under the carburetter, and it could not be attended to without taking the carburetter off the engine. This usually took about a quarter of an hour, and as time was of importance and the distance short it was decided not to tackle the fracture, but to leave things as they were and reach home by another makeshift. The float chamber lid was removed and the float taken out. The needle valve was disconnected from the remainder of the float mechanism and was put in position in the carburetter so that it closed the inlet at the bottom of the carburetter. The float chamber was then filled nearly to the brim with petrol from the spare can, the lid replaced, and the engine started up. It must be remembered that the float chamber was filled above its normal level and that the carburetter was flooded. However, no time was lost in starting up and getting under way. Before reaching home one more stop had to be made to refill the float chamber, but the garage was reached without delay of more than three or four minutes, and the repair to the petrol pipe was carried out at leisure. It is obvious that when the float is removed the float chamber is of fairly large capacity, and in most cases will hold enough petrol for a quarter of a mile, particularly if the driver be careful in husbanding the fuel.

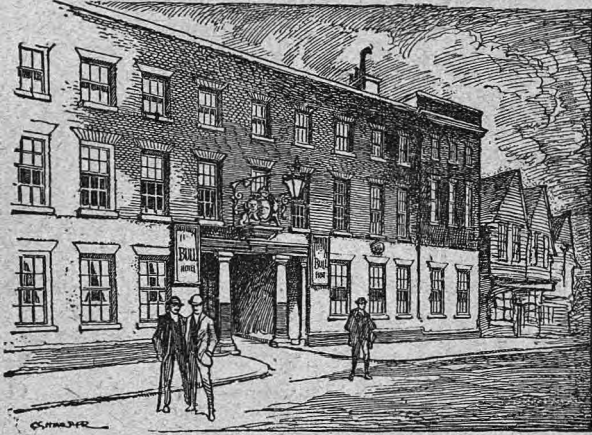
In fixing up a petrol pipe care must, of course, be taken to see that the union nipples come naturally to their proper positions without any strain on the pipe. If a copper petrol pipe be used, and if this be not annealed or softened it may possess a good deal of spring and will break often under tension. It is a very simple matter to anneal a pipe, but it entails the removal of the union nipple unless it is brazed on. The pipe should be heated to a dull red heat and then dipped in water. The part heated will then be found to be quite soft. The treatment can be extended gradually along the pipe, as unless there is a brazing hearth available it is difficult to deal with more than a short piece at a time with a blow lamp. E.W.W.



## Mr. Pickwick's Inns.

By Charles G. Harper, Author of "The Autocar" Road Book.

THAT most famous and light-hearted of all the works of Dickens, the "Posthumous Papers of the Pickwick Club"—which is so gay and lightsome that it seems quite out of place to style it a "work" at all—is the very Odyssey of inns; a galaxy, a constellation, a veritable Milky Way—a rum-and-milky way—of taverns. The word "hotel"



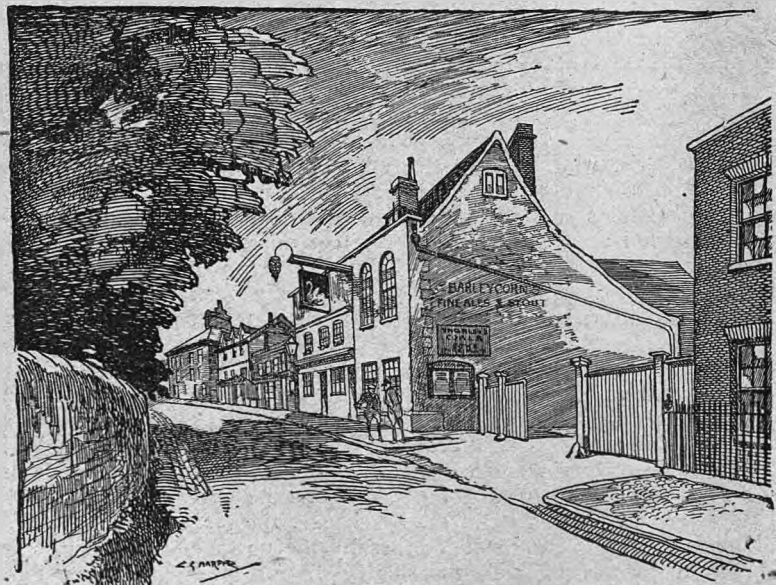
*The "Bull" at Rochester, the largest, most characteristic, and most famous of Pickwickian houses.*

was, when "Pickwick" was written, eighty years ago, a new-fangled, foreign importation, dimly understood to shadow forth something rather improper; and at any rate was certainly a place where foreign cookery and unsatisfying kickshaws might be expected, instead of the roast beef of Old England, washed down by ale in its native pewter, or by port—the only drinks for gentlemen. The typical old English inn was at its very best when "Pickwick" burst upon a delighted world. It had come gradually into existence, as a byword for comfort and generous hospitality, during a period of about a hundred and thirty years, and by about 1832 had attained full perfection. The reason for the growth of inns during that period? you ask. That growth was due to the rise of the coaching era. Soon after 1700 the age of coaching may be said to have begun, and travelling by stage-coach, and afterwards by mail, by degrees brought life upon many a road once lonely, necessitating in turn accommodation for weary travellers. In 1825 opened the golden age of coaching, and great was the prosperity which attended it until the forties, when railways quenched road travel and ruined many a fine old inn. Travellers in those days still merited their name, which, deriving as it does from "travailleur," indicates something of the difficulties and perils of getting about in what some people still style the "good old times"; and when they came to their inns they not only sought ease, but expected that good and extensive feeding of which they stood in need after many hours' exposure to the open air, and possibly to the rigours of severe weather. For these and other reasons our ancestors were the valiant trencher-men we read of in "Pick-

wick," and indeed in the literature of the age in general. We could not, if we tried, compete with them in their feats at table; but we do not make the attempt—we, in fact, think them not a little gross. I do not know where, in these very different days, you would find such monumental sideboards, such stupendous sirloins of beef, or such monstrous cheeses as used to decorate the dining-rooms of those old inns; while as for the punch, the rum-and-milk, the port, and the ale which flowed so abundantly, they have dwindled away to very small proportions in the estimates of modern hotel life. What would Mr. Pickwick say if he could see the position occupied by mineral and other waters at the modern festive board? Imagination halts aghast at the thought of it.

The curious explorer of this attractive subject, searching the pages of "Pickwick" with the object of extracting Pickwickian inns, will find no fewer than fifty-five inns, taverns, and chop-houses mentioned in those classic pages, some of them at considerable length. It is a solemn thought that of this imposing number only twelve now remain, and that but two of that reduced band are in London. It is, of course, an error to mistake the old galleried "George" inn, in Southwark—the only galleried hostelry left in London—for a Pickwickian, or even in general a Dickensian, inn. It was in the yard of the long-vanished "White Hart" in the Borough that Mr. Pickwick first met Sam Weller.

We may well rejoice in the fact that of these two remaining survivors in London the "George and Vulture" tavern and hotel, in George Yard, Lombard Street, is one, even though it survives only with a difference; for it has the most intimate Pickwickian association. To this safe retreat in the City retired Mr. Pickwick, from the nerve-shaking care of Mrs. Bardell, that treacherous landlady in the Goswell Road. At the "George and Vulture," be sure of it, references to "chops and tomato-sauce" and to not troubling about warming-pans could bear no double meaning, and middle-aged bachelors could be at peace. We know the "George and Vulture" formed "very



*The "Swan," Town Malling, Kent. One of the rival claimants to the honour of identity with the "Blue Lion," of "Muggleton."*



good old-fashioned and comfortable quarters," and pity, therefore, it is that, as an inn, or hotel, it no longer exists; surviving, however, as a famous City chop-house. Although one may no longer stay or "hang out" there, in the words of Bob Sawyer, it is delightful to lunch there, as no doubt Mr. Pickwick did, often enough, on chops or beefsteaks, cooked as beefsteaks and chops demand to be cooked—artistically on the grill—to the accompaniment of deep draughts of ale from its native pewter. Ah! me; if Mr. Samuel Pickwick, jovial soul, who could drink variously and extensively from morn to dewy eve, and be never a whit the worse for it, could but know how even a simple draught of ale could cause a man to be suspect in these days, how astounded he would be.

Bath, unfortunately, to which Mr. Pickwick wended his way in Chapter XXXV., has witnessed the destruction of all its Pickwickian inns. Even that once famed London coaching inn, the "White Horse Cellar," in Piccadilly, whence he took coach for Bath, has disappeared, having been pulled down in 1884. In its day the "White Horse Cellar" was celebrated, not only for its wines and "neat liquors," but for the excellence of its cuisine. Travellers fed as prodigiously there as they did at the equally famed "Swan with Two Necks" in Gresham Street, City, or at the "Bull and Mouth," also in the City, hard by the General Post Office; houses celebrated by the convivial songster in the lines.

"At the Swan with Two Throttles  
I finished two bottles,  
And punished the beef at the Bull and the Mouth."

Alas! where is the "White Hart" at Bath? Gone, and the Grand Pump Room Hotel stands on the site of it. But the old sign, that of the bold and statuesque White Hart himself, is to be seen to this day at the Bath suburb of Widcombe, transferred to a mere public-house. The old "White Hart" was owned by one Moses Pickwick, who was in his day a person of no little importance, being both hotel-keeper and coach-proprietor. Dickens no doubt derived the name of his jovial hero from this Bath personage: it would be *infra dig.*, I suppose, to call him a "Bath chap"; and there can be no doubt that Moses Pickwick's ancestors in turn took the name from the hamlet of Pickwick, on the Bath Road, near Chippenham.



"Shepherd's Shore," situated midway between Beckhampton and Devizes, thought by some to be the "inn on Marlborough Downs," mentioned in the Bagman's Story. Many people, however, associate the "Waggon and Horses" at Beckhampton with this inn.

*Mr. Pickwick's Inns.*

The very last house to be mentioned in "Pickwick" is "Osborne's Hotel in the Adelphi." It still remains unchanged in all but name, in John Street, Adelphi, and is now known as the "Adelphi Family Hotel." Here Mr. Snodgrass and Emily Wardle were discovered, after their flight.



The "Leather Bottle," Cobham. The rural inn to which the lovelorn Tupman fled.

The very site of the original "Golden Cross" at Charing Cross, whence the Pickwickians began their travels in the "Commodore" coach bound for Rochester, has been thrown into the roadway of Trafalgar Square; but, fortunately, their destination on that first day of pilgrimage, the "Bull" at Rochester, is still its old self; at once the largest, the most characteristic, and the most famous of the Pickwickian houses. It is not a noble frontage that looks on to the narrow High Street of Rochester, and it is absolutely lacking in interest architecturally, this long range of commonplace grey brick, with three tiers of twelve excessively plain windows all in a row, each one exactly like its fellow; but there does not exist that person who would be daring enough to lay hands upon it with the object of adorning its very negation of style. "Good house—nice beds," was Jingle's recommendation: not so extravagant as "Wright's, next house," which, it will be remembered, "was dear—very dear—half a crown in the bill if you look at the waiter—charge you more if you dine at a friend's than they would if you dined in the coffee-room—rum fellows—very." The "Bull" remains, while Wright's, otherwise the "Crown," has disappeared; by which it would seem that the humour of those charges, and the exquisite "rumminess" of them, was not fully appreciated. Still, as you enter the "Bull," you see the "illustrious larder," rather like a Chippendale bookcase, and behind its glass doors are yet "noble joints and tarts" and cold fowls, while a "very grove of dangling, uncooked joints" depends from hooks in the archway. Bedroom No. 17 is "Mr. Pickwick's room," shown with an authentic air before whose amiable assurance criticism stands abashed. The ball room is really disappointing. You expect to see an apartment of magnificent

*Mr. Pickwick's Inns.*

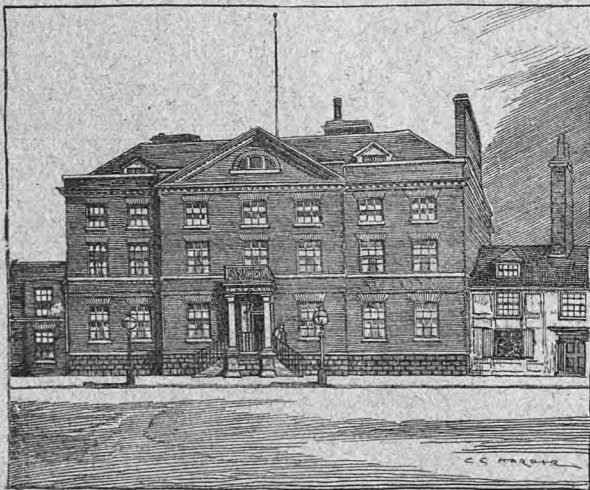
dimensions, and it is really small, while the "elevated den" at one end, for the musicians seems a den for quite small animals. When Tupman and Jingle, the fiery Dr. Slammer, and the fine flower of dock-yard and garrison society mingled and danced here, they must have moved at very close quarters.

It would be a sorry business nowadays to attempt, where all others have failed, to identify the "Muggleton" of "Pickwick" with any one town. Some declare it to be Maidstone, while others contend for Town Malling, the "White Lion" at Maidstone, and the "Swan" at Malling being the rival claimants to the honour of identity with the "Blue Lion" of that joyous book.

As to the identity of the rural inn to which the love-lorn Tupman fled, in Chapter XI., to hide his sorrows, there is no doubt. It is the "Old Leather-Bottle" at Cobham. "Really," said Mr. Pickwick, when half an hour's walk had brought the Pickwickians to the village, "really, for a misanthrope's choice, this is one of the prettiest and most desirable places of residence I ever met with." The "Leather Bottle" is now much more than the "clean and commodious alehouse" it was then; for the fame given it by this association has brought about its conversion into a kind of Dickens museum; and below the olden sign of the leather bottle, swinging in the breeze, is a signboard displaying the rotund and comfortable figure of Mr. Pickwick himself.

The "inn on Marlborough Downs," mentioned in Chapter XIV. in the "Bagman's Story," is that highly picturesque rustic thatched alehouse, the "Waggon and Horses," at Beckhampton; although some will insist that it is "Shepherd's Shore," midway between that place and Devizes. The older "Shepherd's Shore" no longer exists, and of the newer only a fragment remains, and it is not any longer an inn.

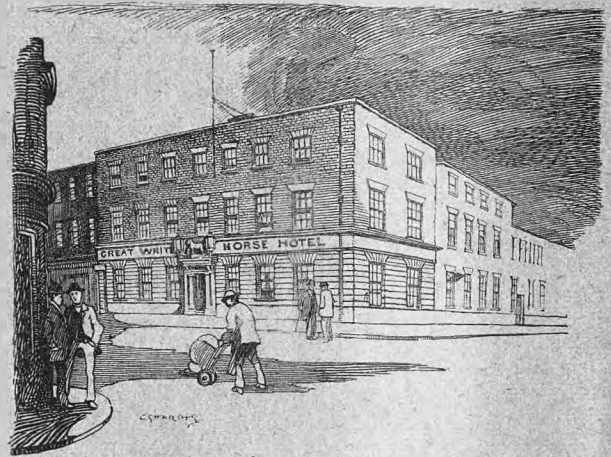
The "Angel" at Bury St. Edmunds, scene of many incidents in Chapters XV. and XVI., is a huge build-



The "Angel," Bury St. Edmunds. This inn dates from 1779. It was built upon the site of an ancient monastic inn of the same name.

ing of a severe style and built of East Anglian "white brick," a grey, dismal brick rather than white, the hue of unwholesome pastry. It dates from 1779, when it was built upon the site of an ancient monastic inn of the same name. The groined crypts and cellars of that vanished house still remain. The "Great White Horse" at Ipswich—that famous house in which Mr.

Pickwick had his nerve-shaking adventure in the double-bedded room occupied by the elderly spinster in the yellow curl-papers—is great and grim and grey, built as it is with the same mis-called "white" East Anglian brick. There, over the pillared entrance, still ramps the effigy of the "Great White Horse" himself, "a stone statue of some rampacious animal.



The "Great White Horse," Ipswich, where Mr. Pickwick had his nerve-shaking adventure in the double-bedded room occupied by the elderly spinster in the yellow curl papers.

with flowing mane and tail, distantly resembling an insane cart-horse." The bedroom numbered 36 is identified with Mr. Pickwick's escapade, and still you may roam the labyrinthine passages described by Dickens. Fortunately the prospects of guests under the roof of the "Great White Horse" nowadays are much more encouraging than those of the travellers described by Dickens in the "Pickwick Papers."

I know the "Great White Horse" well. I made acquaintance with that celebrated hostelry in the early years of motoring, when the Automobile Club, not yet Royal, nor dreaming ever of gigantesque buildings in Pall Mall, was a new thing and very keen upon that side of its activities, a "society of encouragement." The "encouraging" largely took the form of organising Easter and Whitsuntide trips on the motor cars of the period. On one of these trips we came, in the course of an exploration of East Anglia, to Ipswich. (I may add, *en parenthèse*, that East Anglia was selected probably because of the scarcity of hills to be met with in that favoured region; this being a decided consideration in those times; all the same, I have a vivid recollection of helping to shoulder a car up the tricky rise of Dedham Gun Hill, near Colchester.)

The piquancy of visiting the "Great White Horse" in those early days of the motor car is something to be remembered. I do not suppose we were—in the words of the "Ancient Mariner"—"the first that ever burst" into Ipswich; but the motor car was yet so new a thing that our procession, numbering some thirty-five or forty, drew huge crowds as we crawled, stinking and quivering, after the manner of the early cars, into Tavern Street, in which the "Great White Horse" stands. Here we, heirs of the ages, alighted and passed through that pillared portico which had admitted Charles Dickens, and in fiction had welcomed the portly person of Samuel Pickwick, Esq., P.P.C., initials of distinction which, of course, signify, I need scarce inform Pickwickians, "President of the Pickwick Club."



The incident seemed to me to mark, with extreme and clear-cut definition, the passing of an era. Not Mr. Pickwick's era: that had passed long before, with the final establishment of railways. Mr. Pickwick's period at this moment seemed to one observer—myself, to wit—to have died the second death. I do not know

taking them, in fact, in a "Pickwickian sense," and rather rejoicing than otherwise in the association with the author: would we all had the like philosophy. I take off my hat to the effigy of him over the doorway, above the two Ionic columns that are painted to resemble marble, and are really, you

know, plaster; wherefore I rightly style them thus: though their capitals be sufficiently Ionic. I respect him: long may he prance!

As the story progresses we find Mrs. Bardell arrested at the "Spaniards" inn, Hampstead Heath; still, at this time of writing, the same old Cockney resort, with the same old earwiggy arbours in its garden. Then the reader is made to accompany the Pickwickians to Bristol and Berkeley Heath. There, on what was then a lonely heath, still stands the "Bell" inn, displaying on its sign-board the information that "Charles Dickens and party lunched here." Here, at any rate, the Pickwickians lunched, and Bob Sawyer afterwards saw to it that when they set off again in the post-chaise for Tewkesbury, the case-bottle was filled with "the best substitute for milk-punch that could be procured on so short a notice."



The "Spaniards" inn, Hampstead, the scene of Mrs. Bardell's arrest

that anyone else observed these things: probably he did not, because, so far as my recollection of the conversation of the company is concerned, it consisted chiefly of the enthralled topic of "grinding in valves," a technical detail of much pith and moment with which invariably the days were begun and ended.

So much for personal matters. The "Great White Horse" was severely treated by Dickens. It was, in his description, just the exception that proved the rule of good cheer and comfort at the old English inn. The uncarpeted passages were labyrinthine, the clusters of mouldy, ill-lighted rooms were things to wonder at, together with the "huge numbers of small dens for eating and sleeping in," and the waiter, corpulent and insolent, "with a fortnight's napkin under his arm and coeval stockings on his legs," attended upon a dining-room which was "a large, badly-furnished apartment, with a dirty grate, in which a small fire was making a wretched attempt to be cheerful, but was fast sinking beneath the dispiriting influence of the place."

No. 36, the double-bedded room of Mr. Pickwick's horrific adventure with the lady of the yellow curl-papers, fell to myself and another traveller on the occasion to which I have already referred: and indeed we early automobile tourists pretty well peopled the hotel that night, and made merry in the glass-roofed lounge that was once the courtyard.

The "Great White Horse" is truly, like all horses, great, white, or otherwise, "a noble creature, the friend of man": he is really great, and unquestionably white, for he forgives Dickens all those flouts, and jibes, and jeers:

When they halted at the "Hop Pole," at Tewkesbury, for dinner they partook of more bottled ale, more Madeira and port; and "the case-bottle was replenished for the fourth time." The "Hop Pole," still extant, is certainly the most picturesque by far of all the Pickwickian inns, for it is in fifteenth-century black and white half-timbered work.

The tablet placed boldly upon the frontage of the "Hop Pole," proudly recording the Pickwickian association, is evidence sufficient that they take Mr. Pickwick almost as seriously as they are reported once to have done at the "Bull," Rochester, when an earnest pilgrim, shown by the landlord the bedroom



The "Bell," Berkeley Heath. An inn situated on a lonely heath at which the Pickwickians once lunched.



*Mr. Pickwick's Inns.*

associated with that immortal figure of fiction, and exclaiming, "So this is where Mr. Pickwick is supposed to have slept!" was staggered by the rejoinder: "Supposed to have slept! He *did* sleep here, sir!"

One regrets rather that the dignified, though amiable and convivial, Samuel Pickwick, Esq., who in the early chapters of those "Posthumous Papers" never



The "Hop Pole," Tewkesbury, the most picturesque of all the Pickwickian inns. It is in fifteenth century black and white half-timbered work, and it was here that "the case bottle was replenished for the fourth time."

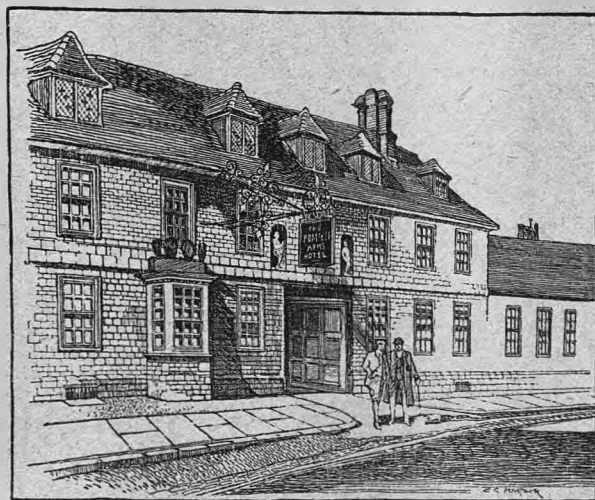
lost his self-respect, becomes—oh! horror—distinctly a rowdy person from Berkeley Heath, onward through Tewkesbury to Birmingham. What with the bottled ale, the Maderia, the port, and the fourth replenishing of the case-bottle, he and his companions were pretty well sprung. Evil communications—that is to say, the society of those unchoice sons of Belial, Mr. Ben Allen and Mr. Bob Sawyer—were responsible for this declension from grace in the respected President. A drunken sleep silenced Mr. P. and Ben Allen, who were the "insides" of the post-chaise on the way to Birmingham; while Bob Sawyer and Sam Weller, rejoicing outside on the dickey, the fumes of their drinks becoming dissipated in the open air, "sang duets." By the time they were approaching Birmingham, it had grown quite dark. The postboy drove them to the "Old Royal Hotel," where a very wise and very necessary order for soda-water having been given, the waiter "imperceptibly melted away." The hotel itself did the like thing, strange to say, before the date, 1827, at which the Pickwickians are represented as having set out upon their travels: the "Old Royal Hotel" having, as a matter of fact, been transferred about 1825 from Temple Row to New Street; where, in its new situation, it became the "New Royal."

The inn at Coventry, at which the post-horses were changed on the journey southwards from Birmingham, is not named, and the doings of Mr. Pickwick and his friends are slurred over: a kindly veil drawn across their perhaps extravagant antics. But the long wet journey to Towcester—"Toaster," as it is called locally—sufficiently sobered them, it may well be supposed.

As the story draws to its close we are introduced to the "Saracen's Head" at Towcester, on the road from Birmingham to London. In all essentials it

remains the same as when Mr. Pickwick and his friends drove up after their long wet journey. "There's beds here," reported Sam Weller, "everything's clean and comfortable. Wery good little dinner, sir, they can get ready in half an hour,—pair of fowls, sir, and a weal cutlet; French beans, 'taters, tarts, and tidiness." And with these recommendations as inducements the travellers stayed the night, incidentally meeting the representatives of the rival *Eatanswill Gazette* and *Eatanswill Independent*. The house is now, and for long past been, re-named the "Pomfret Arms," but its frontage is still the same; plain, but cheerful, built as it is, of the rich russet brown stone of Northamptonshire, locally known, from its resemblance to brown sugar, as "sugar stone."

A curious sidelight is cast upon the treatment of smokers in those days, and an odd comparison is to be instituted with the consideration shown them to-day, in the account given of the proceedings when the house was closed for the night. Then Slurk, the editor of the *Eatanswill Independent*, retired from the dining room to the kitchen to drink his rum-and-water by the fire; followed shortly after by Mr. Pickwick and his party, who were accompanied by Pott, editor of the rival *Eatanswill Gazette*, intent upon smoking a cigar or two before bed. How remote and strange seems that old practice, once usual, of guests, whether at inns or country houses, resorting the last thing at night to the kitchen to smoke! Those were the times when the smoker existed in the house only on sufferance, as a rather nasty fellow; and he was only afforded the concession of the kitchen when the servants had gone to bed, because the fireplace was large and the chimney wide, to correspond: so that his fumes might be expected the more rapidly to disperse. What was formerly the kitchen of the "Saracen's Head" is now the bar-parlour.



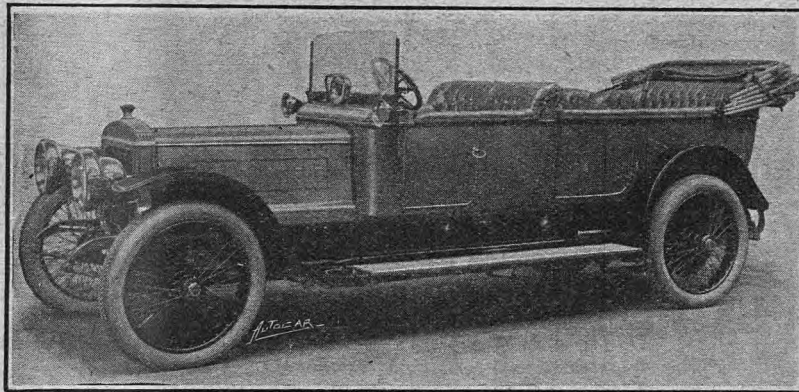
The "Saracen's Head," Towcester. This house has been re-named the "Pomfret Arms," but in outward appearance it remains the same as when Mr. Pickwick and his friends stayed there, and met the editors of "The Eatanswill Gazette" and "The Eatanswill Independent."

## On the Road.

### A Most Delightful Book, "The Rollings of a Mossless Stone." Manchester Garages and Direction Posts.

A MOST delightful book entitled "The Rollings of a Mossless Stone" was sent to me a few weeks ago because the writer did me the honour of taking me for a kindred spirit. Since it details the impressions and adventures of one who might be an own brother to my fellow-contributor Mr. Fairfax Blakeborough, of sporting fame, the early portions of the volume are of all sorts, including most odd places in the world, any amount of foxhunting,

Farnham to Winchester, where got a man to look at the car, which was running badly. Then on *via* Romsey; got stuck there up a fearful hill covered with stones; had to be pushed. Stretched driving belt and had to shorten it by lamp light. Got to Salisbury at 7.30. Tuesday: Left Salisbury at 9.30 *via* Warminster and Frome to Shepton Mallet, where we lunched, and then on home at 4.30. This is a fair specimen of one's journeys in those days. I have been pulled," he goes on, "by a horse through Reading, Lewes, and many other towns. And in those days such an occurrence was the signal for an enormous and jeering crowd to follow, giving vent to howls of delight at a 'mowter browken dawn.' I have before now found it impossible to get near my car when I have stopped for some trouble and left it for a moment to get some tool out of the back, a crowd having formed some six or eight deep round the engine, and deeply resenting my efforts to get back to it."

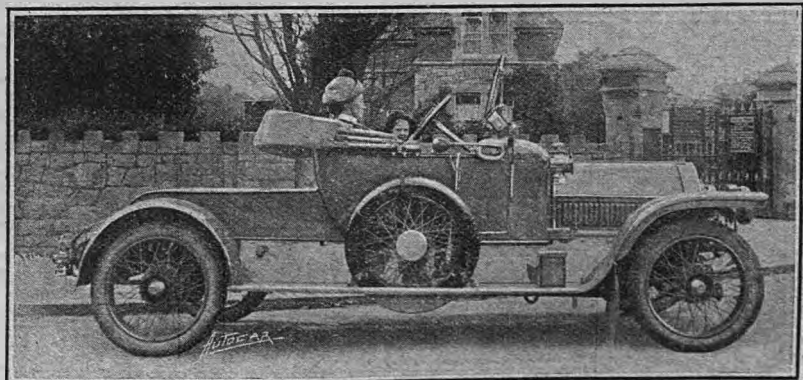


A Daimler "special" six-cylinder chassis, with a standard "Chelsea" body. The wheelbase is 11ft. 11in., and the springs are half elliptics in front, and three-quarter underlung elliptics behind. The bore and stroke are 102 and 140 mm. respectively.

and wise and caustic comments of the people he came across or got cross with. Later on in life, having married, he settled down—he, I might remark, was the author, Mr. Percy L. Naish—and after this his tale is that of a motorist who is a perfect type of the average country gentleman, and who motors and delights in motoring without any desire to manage the politics of it or to get anything out of it. I should like to quote *in extenso* one of Mr. "Bald Pebble's" opening remarks anent motors, because times have moved so fast and things are so easily forgotten that to many motorists—of quite respectable antiquity as motorists—such ideas must be quite inconceivable in these days of automatic perfection and knowledge.

"I do not think," says he. "that motorists who have comparatively lately taken to keeping cars can picture to themselves what motoring meant in those days, particularly if you got hold of a bad car, which they generally were, and did not know much about them, which few people did. For instance, the journey from Kent to Somerset, about one hundred and seventy miles, which I now do with the regularity of an express in nine hours' running time, and one and a half hours for lunch and tea, used to occupy three days. Looking at an old diary, I see, for example: 'Sunday: Started at nine, drove *via* Redhill and Dorking, where car broke down. Had to be pushed by men up a hill. Left car there and went by train to Kew to get another coil; did not get back to Dorking till 9.30. Monday: left Dorking 9.30, ran *via* Guildford and

made on quite a modern S.C.A.T., and his hints and tips to tourists are as good and useful as any I have ever come across anywhere. As I do, he praises the *Guide Michelin*, for undoubtedly it is the best guide book to France that exists, and with it one should never go wrong in any way whatever. But it is sad to read, on the arrival of the car at Dieppe, that petrol at 1s. 10½d. per gallon—inside the *octroi*—was rather a "princely figure." I fear that it will be two shillings for us over here in a very short time. Then he meets his first *pavé*—and since I have often remarked in print that in the South of France *pavé* is not always as black as it is painted, perhaps he will retract—of which he says, "There may be a man who after three or four miles of *pavé* has not used a word—I cannot believe it, and certainly hope I may never meet him, for I feel sure we should dislike each other."



A 20 h.p. Humber (90 x 120 mm.) specially built for Captain E. Smith, Manor House, Bishop's Cleeve, Cheltenham. It has a wheelbase of 11 ft., and the body has been built specially wide. The car was supplied by Messrs. Norton and Co., of Cheltenham.

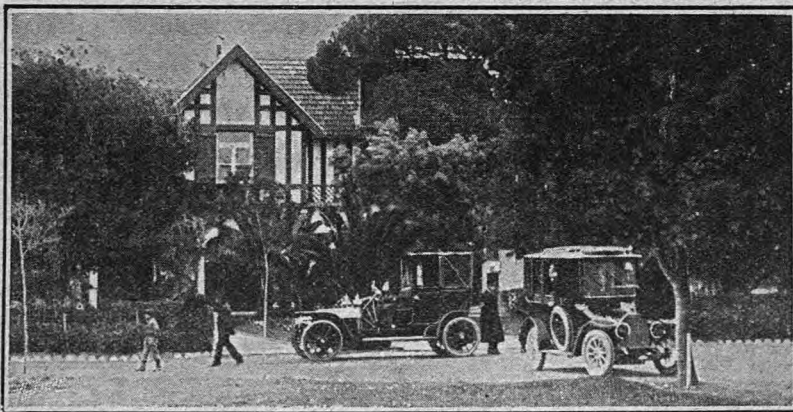
*On the Road.*

Almost all the remainder of this most interesting book is concerned with the incidents and delights of motor touring in the North of France, and the writer's hints and tips as to hotels, and how to enjoy it all, are as good as any I have ever come across. Perhaps had he not in the earlier part of the book let it be known plainly that he was one who knew the good things of the world and was used to them, his advice and recommendations would not have the same value; but, since one knows these things, it is proof that he is not talking through his hat at all, but rather as an expert in showing where and how he got value for his money. Men and women writing of their travels often fall into the error he has avoided because they do not make it clear whether they are economical because of necessity or from disposition. Though we all want the best we can get for our money, yet very often our ideals differ to an extraordinary degree. In this example the author makes no bones about expenses, and by his frankness his experiences are all the more valuable.

As one more proof of the affection motorists have for motoring and their cars, the joy of Mr. "Bald Pebble" is remarkable. Here is a man capable of enjoying every kind of sport that comes his way and going with the best in them. His chapters on horses, on shooting, and all other amusements might lead one to think that to such an one all else would be dull. Yet, when motors arrive, he is there, and it is most palpable to all readers that in dealing with the joys and sorrows of them he is writing on a subject that is as pleasant to him as any of the earlier ones. Yet—it is typical of the author and hundreds of other good fellows—he finishes the book with Whyte Melville's famous lines, and by doing so he proves that the gulf which once separated the horse-loving man from the motorist is not only bridged over but indeed has entirely ceased to exist.

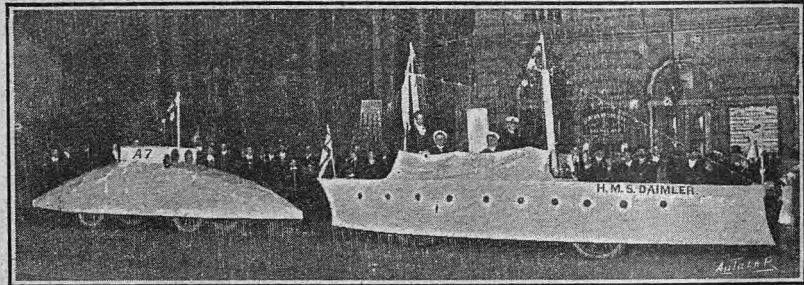
"I have lived my life, I am nearly done,  
I have played the game all round,  
But I freely admit that the best of my fun  
I owe it to horse and to hound."

Personally, I am not a "horsey" man. Once upon a time I tried to be, and carried a straw in the corner of my mouth and wore gaiters at all times. But the



MOTORING AND GOLF ON THE RIVIERA. The golf club house at Cannes.

necessity to earn my living, and fifteen stone odd of weight, cured me, and now I only get across a horse when engaged in military duties or where nothing on wheels is of any use. But it is a very good form of exercise and does one an immense deal of good. This is beside the point. What I am aiming at is to impress on someone who knows—the author of "Rollings," etc., for example—that there is a book to be written on the Reconciliation of the Horse to the Motor, not as rivals, but as adjuncts and partners.



MOTOR CARS IN A GYMKHANA. Two of the vehicles in a recent carnival at Melbourne, Australia, were decorated to represent a battleship and a submarine. The battleship was erected on a Daimler chassis and the submarine on a 10 h.p. Austin. The effect was considerably enhanced by the great number of electric lights carried on the battleship and by the clouds of smoke emitted from the funnel from purposely over lubricated cylinders. In place of a machine gun, bombs were exploded at intervals.

He could trace the hideous dislike that began their acquaintance, the open hatred, the jealousy, and the fear. How afterwards, little by little, they agreed to differ, met on common ground, became of use to each other, and finally have concluded an alliance whereby the machine does all the dirty and weary work that was once the horse's, while the animal survives purely as a means of enjoyment, and so a pure aristocrat among all quadrupeds. It would indeed be a masterpiece of literature, if it were well done.

On Manchester garages. This is indeed a jump, but when the Manchester papers take up the subject and deny my correspondent's assertions that Manchester is very badly off for these, it is not for me to be still. In these columns, at any rate, there has been no denial, but the local *Despatch* became quite angry and, most extraordinary, sent off a reporter to the local A.A. offices in order to learn its opinion on the subject. The A.A., as we all know, is supposed to be a supporter of motoring and motorists, and a very great number of motorists pay their guineas towards keeping it going. Yet Mr. Hatton, the local secretary, was "surprised" at the idea, and claimed that "within one minute's motor run of the Midland Hotel there are at least seven or eight garages where any motorist can take his car and get it out at any hour of the night or day."

Is this so? and, if it is so, why has it not been asserted in the pages where my accusation first saw the light? I know Manchester pretty well, and I should like to hear of the "minute's run" garages that are available. Certainly they are not well advertised, although they may appear in the A.A. Handbook. Very possibly Mr. Hatton, as the local secretary of a very flourishing business, is not troubled as mere



strangers are, but let me tell him that a garage where a car can properly be left is not a place where all the world can come and smoke and chat and loaf. We are sick of these "chauffeur clubs," and motoring is quite costly enough as it is without the constant re-purchasing of essentials. In Birmingham, for instance, in the heart of the city there are many establishments where one's car is as safe as it is at home, and, as in Glasgow, there is no difficulty in finding them.

It is a curious commentary on the assertions of the A.A. local secretary that a Manchester motorist, by name Mr. E. H. Monk (in letter 19308), emphasises my correspondent's points and suggests that the idea should be taken up by motorists concerned, as at present "we are very badly catered for." Nor does "Londoner's" letter (19309) assist the A.A. local secretary's point as to the "one minute's run."

My original grumbler, in a further communication, emphasises the point that he said *decent* garage, and he is surprised at Mr. Hatton's reply, especially as he carefully omits the word in italics, for the only ones my correspondent knows are under railway arches, and do not necessarily come under that heading. He also notices that his expression "at night"—by which he meant till, say, midnight—has been altered to "all night," a very different thing. There were two

answers in the *Despatch*, one on Feb. 25th, wherein, discussing the subject of the lack of direction posts in Manchester, Mr. Hatton is made to say, "With regard to directions—is there any city in the world where they have direction signs in the central areas? *The thing is ridiculous* (my italics). The motorist who is in the centre of the city and wants to find his way through can surely ask any policeman on point duty or anybody in the street. There are plenty of people about, and he will not be on an uninhabited island." Then, on the 27th of February, two days afterwards, comes this contradictory statement on signposts: "The Automobile Association has been dealing with the subject, and the matter has progressed so far that sample signs have been submitted to the Corporation. . . . The idea is to utilise the tramway standards."

It is not for me to say on which occasion the A.A. or its local secretary was right and on which occasion wrong. You pay your money and you take your choice. But I do regret the way in which the opinion of an official of a society is looked on as a certainty, while the cry of a mere motorist who lives near and suffers is held to be of no account whatever.

I hear, however, that the little we have done has already had a good effect, which was exactly the idea I had in my mind's eye originally. OWEN JOHN.

## The Brooks Grid Trunk.

Dust-proof and Weather-proof.

MOTORISTS are realising more and more fully the total inefficiency of the ordinary trunk for motor travel purposes, and certainly we know of no firm which has given more attention to this branch of trunk manufacture than Messrs. J. B. Brooks and Co., Ltd., Criterion Works, Birmingham, who, in such connection, have had the benefit of many



The Brooks grid trunk with double lid.

years' experience in the design and manufacture of travelling equipment of every possible description. One of their latest productions is the grid trunk illustrated herewith. This is fitted with a weather-proof inside lid, and with this neither rain, snow, dust, nor mud can penetrate to the interior, and no matter how

severe the weather, the protective qualities are such as to ensure the perfect cleanliness of the contents. The illustration shows the inner lid, and it should be noted that this fits inside the ordinary lid and is provided with a double lip which closes tightly on a corresponding upturned flange on the body of the trunk. Additionally, the outer lid is provided with a special flange which closes tightly into a channel running right round the body of the trunk, and this lid is made absolutely weatherproof by the tension which is put upon it by the Brooks patent clip. The latter embodies a screw attachment which enables the tension to be varied according to the requirements of the moment, so that under any condition the lid can be kept quite tightly closed. The inner lid is secured by means of a web strapping, and the outer one has two metal stays for its support when open. With the single lid there is always a possibility of dust blowing or falling into the trunk, but in this case the inner lid entirely obviates that difficulty. This trunk is, in addition, fitted with the Brooks instantaneous clips for securing it to the grid, by the use of which holding down straps are rendered unnecessary. The grid trunk is made in eight different sizes, the smallest being 27 x 14 x 12in., and the largest 36 x 18 x 14in., the prices varying from £4 2s. to £4 16s.

The fourth annual dinner of the National Society of Chauffeurs was held on Wednesday last week in the Victoria Station Restaurant, Mr. W. M. Letts presiding. The Hon. Arthur Stanley, M.P., in the course of an interesting speech, said he thought it was absurd that licences of men driving to-day should bear endorsements that were made, perhaps, years ago, when the prejudice against motor cars was very great, and when the ignorance about cars was, if anything, greater than it was to-day.

## A New Poppet Valve Darracq.

Four Cylinders, 85 × 130 mm. Four Speeds. Bevel Drive.

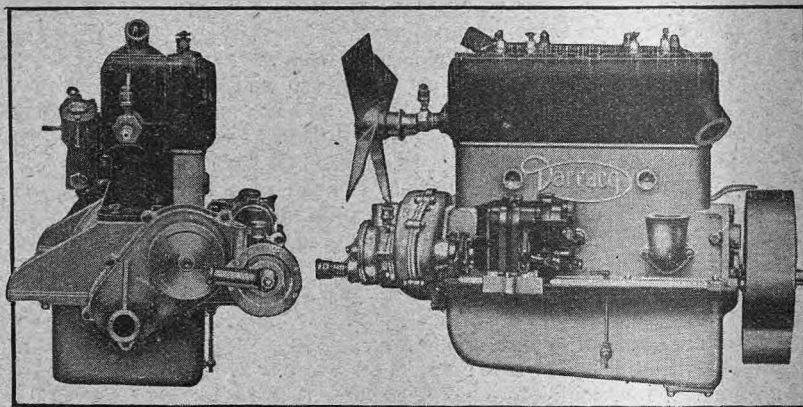
**A**N entirely new model Darracq car has just been announced by Messrs. A. Darracq and Co., Ltd., this new model being the first production from the designs of Mr. Owen Clegg (late of the Rover Co.), who some twelve months ago was appointed to the Darracq works in Paris. The new model is termed 16 h.p., and has four cylinders, the bore and stroke being 85 × 130 mm., these being the same dimensions as the 16 h.p. Valveless Darracq.

As will be seen from the illustrations, the engine is a particularly neat *en bloc* casting, with valve springs and tappets enclosed by one easily detachable cover plate. The camshaft is silent chain driven, another chain extending from the camshaft to the near side and driving the magneto and water pump. The carburetter is made under S.U. licence, and is bolted direct to the off-side of the cylinder casting, air being taken from inside the valve cover on the opposite side of the cylinders. The carburetter is heated by water taken directly from the cylinder jackets. This follows the plan which has proved so successful in the 12 h.p. Rover, for the design of which Mr. Clegg was responsible.

As suggested, the water circulation is by centrifugal pump, this being driven from the forward end of the magneto-shaft. A gilled tube radiator is used with a flat belt-driven fan. Trough lubrication is adopted, the oil being delivered from the sump to the troughs under the connecting rods by a pump driven from the camshaft, one and a half gallons of oil being carried in the sump. Ignition is by Bosch magneto with variable

control by lever on the steering wheel. A petrol tank of large capacity is carried on the dashboard, and shaped so as to set well within the scuttle dash.

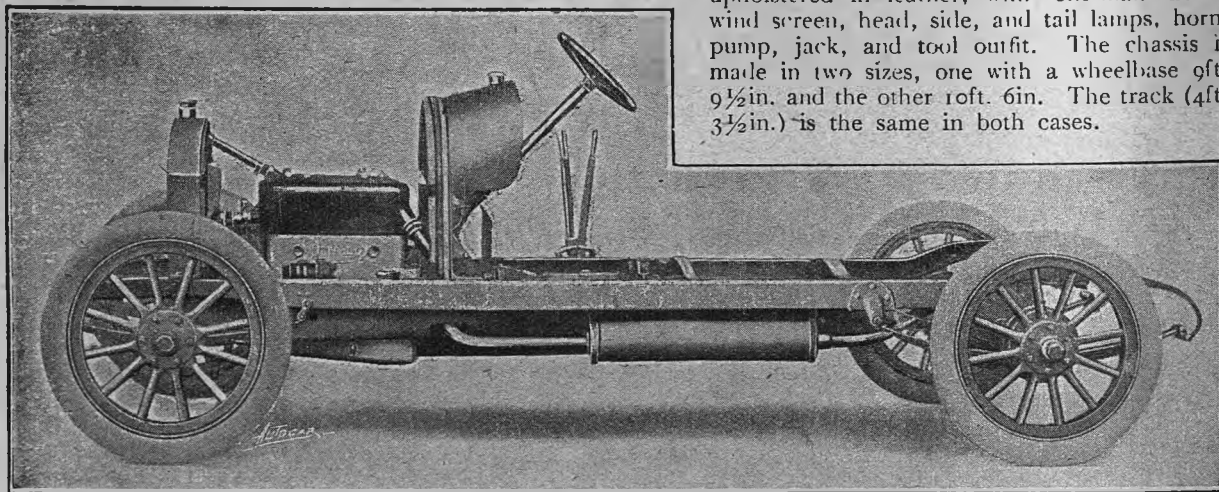
With regard to transmission, a leather-faced cone clutch is used, and a four-speed gear box with gate control and direct drive on top gear. The propeller-shaft is enclosed, and the final drive is by



A near side view of the new 16 h.p. poppet valve Darracq engine, showing the position of the magneto and the oil filler, and a front view showing on the left the S.U. type of carburetter bolted to the cylinder water jacket.

bevel. The pedal brake acts upon contracting shoes on a brake drum on the front end of the propeller-shaft, while the hand brake lever operates internal expanding shoes within drums on the rear wheels. Semi-elliptical springs occur in front and three-quarter elliptics behind, the latter having the lower, semi-elliptical portion, of each spring underslung from the back axle.

The price of this new model is £350 with 8.5 × 10.5 mm. Dunlop tyres and a fifth wheel without tyres. The price includes a flush-sided body to seat five, upholstered in leather, with one-man hood, wind screen, head, side, and tail lamps, horn, pump, jack, and tool outfit. The chassis is made in two sizes, one with a wheelbase 9ft. 9½in. and the other 10ft. 6in. The track (4ft. 3½in.) is the same in both cases.



Near side view of the 16 h.p. poppet valve Darracq chassis.

In connection with the forthcoming visit of the Institution of Automobile Engineers to the States, Mr. C. A. Branston, 20, Trinity Street, Cambridge, would like to make up a party for a Trans-continental trip by car, say, from New York to San Francisco. The trip would start as soon as the organised visit of the

Institution was over, *i.e.*, about the middle of June, and it is very roughly estimated that the cost would be something like £100 per person, and the trip should occupy two months. If any of our readers would like to participate in this proposed trip they should communicate with Mr. Branston at the address given.

## Motor Fuels.

Some Other Aspects of the Many-sided Subject. Experiments with Alcohol-Benzole Mixtures to be conducted for "The Autocar."

By W. R. Ormandy, D Sc.

### Personal.

SINCE my article on motor fuels was published in *The Autocar* a fortnight ago criticisms of it have appeared in which it is suggested that, from jealousy or some other unworthy motive, *The Autocar* has procured me to write pessimistic articles on the subject of benzole. This kind of thing is not worthy of the name of criticism, and is hardly worth replying to, but, as it might mislead, it is, perhaps, well to say that when, some time since, the Editor of *The Autocar* approached me with a request to write a comprehensive article upon the subject of benzole in particular and liquid fuels available for motor cars in general, he made no suggestions whatever as to the tone which the article should adopt: his one request was for facts, as he said it appeared to him that for some time previously many statements had been made in the press about benzole of so contradictory a nature that it was difficult to get at the true facts. He added that, in his opinion, the reason so much obviously inaccurate matter had been published was due to the fact that the writers, while no doubt well meaning enough, in very few cases had more than a superficial knowledge, and, knowing that I had interested myself in this subject for many years, he requested me to send in an article dealing with the matter as fully as possible, which I did.

The suggestions as to bias are absolutely unfounded, and, presumably, have only been made because my would-be critics are annoyed that I have dealt with facts and not with fancies, and those facts are unpalatable to them. Personally, I only wish it were otherwise, as I know the Editor of this paper does too; that is to say, I wish I could have supplied facts which would have led all to believe that benzole, and benzole alone, could be the solution of the petrol question within a reasonable time. As a matter of fact, in my article I was bound to come to the conclusion that benzole alone was out of the question, much as I wished it were otherwise, and the only practical solution of the difficulty in view at the present time is alcohol and benzole. Even here the difficulties are enormous, as, quite apart from the experimental work which must be done, when we have completed the experimental work we still have to convince the Government that the excise restrictions should be reduced on alcohol for power purposes, and then, having done that, there is still the capital outlay necessary for the manufacture of industrial alcohol on a sufficiently large scale. Nevertheless, great as are these difficulties, the sum total of them is vastly less than any attempt to solve the fuel problem on benzole alone, as the capital involved in such an undertaking would be almost infinitely greater; and it is not a question of capital only, but of revolutionising the use and production of fuel in many of the leading industries of the country, and, perhaps more difficult still, of revolutionising its domestic use.

### "The Autocar" Lectures.

To read some of the articles that have appeared recently one might draw the conclusion that benzole had been discovered during the last twelve months. In the year 1908 *The Autocar* made itself responsible for a series of lectures on the motor car and

all that pertains thereto, and such lectures were given at Newcastle, Leeds, and Birmingham Universities, and at Manchester and London by the writer in conjunction with Mr. J. H. Lester, M.Sc. At that early period the subject of fuels was seldom discussed by the press or public, but long before then *The Autocar* had attached importance to the matter, and requested the writer to deal briefly with the subject both of benzole and alcohol at the lectures, and in order to be able to deal with the matter first-hand the writer ran his car for the whole preceding year on benzole with such successful results as to encourage many acquaintances living in the vicinity of tar distilleries to do likewise. In the previous article little importance was attached to bringing forward proof as to the suitability of benzole as a motor fuel, as it was assumed that this required no further demonstration.

### Early Experiences.

From the correspondence columns, however, one judges there are still some few who have doubts chiefly owing to their ignorance of the behaviour of mixed fuels. Benzole and petrol are miscible in all proportions; therefore it is possible to start out from home with a tank full of benzole and add petrol as may be necessary if the journey is to be of such length as will prohibit the possibility of return to the home base before the supplies taken on board the car at starting are exhausted.

When it is known that the journey will necessitate petrol being used eventually, the greatest satisfaction is obtained by adding petrol to the tank from time to time rather than allowing it to run empty and changing over suddenly from benzole to petrol. In such a way of working the addition of the auxiliary air can be altered little by little as the nature of the fuel gradually changes.

Shortly before the date above referred to I ran a 4 h.p. single-cylinder water-cooled quadricycle on a mixture of equal parts of petrol and paraffin oil. The chief difficulty experienced with the mixture was in starting, but otherwise the mileage and speed were practically the same, but as the prices in those days were much more equal than at present these experiments were not persisted in, but the majority of petrol engines will work quite satisfactorily with the addition of anything up to 20% paraffin oil to the petrol.

### A Correction.

In referring to an article which recently appeared in *The Times* I stated that it was customary for large tar distillers to purchase 150,000 gallons or more of crude naphtha at one time. Those connected with the distilling trade will recognise from the subsequent figures that by error a reference to crude coke oven naphtha had been put in. Such quantities as these of crude coke oven naphtha are frequently purchased, and such naphtha contains up to 75% of benzole suitable for the motorist. Of gas works crude, purchases of 60 to 70,000 gallons, though not everyday occurrences, are very frequent, but few gas works have storage room for accumulating these quantities. A gasworks crude naphtha would yield about 70% of purified products of which, roughly, 25% would be benzole, 15% toluol, 20% light solvent naphtha, and 10% heavy solvent naphtha.



### On Export.

Complaints are made that this fuel is allowed to go abroad. It is not likely, in spite of statements to the contrary which have appeared elsewhere, that any of the tar distillers are contracting for the sale of purified benzole to the Continent. It will probably be found that such sales are made direct from the large bye-product recovery coke oven owners. These people naturally prefer to sell the whole of their output for a period of time in one deal rather than be bothered with the worry of merchandising their product in small quantities. I have no doubt that any of these coke oven owners would be prepared to sell their output to an English taxicab company, or a distributing company at the price they are obtaining for shipment abroad. The fact that the various duties on petrol in Paris enable the Paris merchant to offer a higher price for benzole than our large companies are willing to pay in this country is merely evidence that we are better situated in respect to petrol prices and taxation than our neighbours. So long as the benzole producer can obtain 11d. per gallon or thereabouts for his product he is not likely to offer to sell it to the London 'Bus Company, for instance, at a price which will beat the price at which the 'bus company can still purchase petrol in the quantities in which they use it. At a time when benzole could be purchased at very low prices (1906-7) the writer went to very considerable trouble to arrange for the placing of this product on the retail market. The scheme was worked out in conjunction with a firm owning probably more coke ovens than any other in this country. Much correspondence and many meetings with those in the trade did not disclose a sufficiently promising outlook to enable the scheme to be put through. The question of distribution was the rock whereon the scheme foundered, not only because of the cost of tins and questions of freights, but because garages and petrol middlemen assured us that, if they started to sell benzole, they would not be allowed to sell petrol, which even in those days, when the motor was a comparative stranger in the land, was a position which the trade could not face.

From what has been said it will be gathered that the whole subject of motor fuels in its widest aspect is not new either to the writer or *The Autocar*, and if *The Autocar* in its Editorials chooses to express its complete agreement with the point of view taken in the article it is a tribute to its intelligence or otherwise according to the point of view.

The position taken in the last article that, though all the benzole available will be used for motor purposes, it will in no wise exert an influence on the price of petrol is still maintained.

In the article which appeared a fortnight ago the writer took the position that, although in process of time public opinion might force gas companies to produce a coke of the nature of coalite, this was by no means certain, and would in any case be a very slow process. Prof. Lewes advocates such low temperature coking in his recent work on the carbonisation of coke, and Principal Graham, of Dalton Hall, Manchester, has been advocating the same thing for an entirely different reason. It is interesting to note that in a recent issue of the *Gas Lighting Journal*, the recognised authority of the coal-gas industry, there is an article dealing with this subject in which that paper states in no measured terms the improbability of any such action being taken in the immediate future. Stress is laid upon the point referred to in my article,

namely, the enormous capital that would be required, since the whole of the existing gas works would need complete reorganisation, and a further point made by me, that the tendency at the present moment is towards the production of larger quantities of gas and the introduction of gas fires, etc., with a view to rendering solid fuels unnecessary in the house, is emphasised.

### Growing Prices.

It was not to be expected that much time would elapse before the price of benzole was put up to such an extent that, making allowances for the extra trouble in handling it, and the fact that purchasers will not yet buy the material at the same figure as they would pay for the article to which they are more accustomed, it was practically equal in price to petrol.

From one of the leading purveyors of motor spirit in Manchester a motorist recently purchased fifty gallons of 90's benzole for which he was quoted on the telephone 1s. 1d. per gallon. Calling at the garage the same day with the intention of increasing his order by a further 100 gallons, he was informed that the price was now 1s. 3d. per gallon in fifty gallon drums, and that they could not take less. He was told that the price to them in drums was 1s. 2d., and they were selling in small quantities at 1s. 4d., and that, as they could buy "Taxibus" spirit at 1s. 4d. to sell at 1s. 6d. ready put up in tins, they believed that any further increase in price would spoil the trade. As it was they had to purchase in drums, which were awkward to handle, and fill tins in order to get 2d. per gallon, which they could obtain by merely handing out the other spirit as received. From another source I hear that an analysis of reputed petroleum spirit showed it to contain benzole, and it is none the worse for that. Not having tested the material myself I cannot be sure of this, but it is more than probable that large supplies will be bought in for mixing with petrol, and it is indeed astonishing that this has not been done earlier. The proposal certainly was made to the petrol dealers when benzole was about 6d. per gallon that they should contract for large quantities ahead at or about this price, but the matter after consideration was turned down. Now that the makers of benzole are pushing the supply something of the sort may be arranged. We hear of a new spirit produced by the Anglo-American—of course, in America—which is said—also in America—to possess 25% more power than ordinary petrol. Such a statement, naturally, will be received with some scepticism by those who are aware of the difficulty in discovering a volatile liquid fuel of high enough vapour tension to be available in a carburetter which shall contain 25% more heat units than the same volume of petrol or benzole. After all, working under similar conditions, the value of fuels of the same type depends on the number of heat units which they can give out when burnt. Everyone knows that from time to time certain cars with certain carburetters when finely adjusted give ton mileages on ordinary fuel which are double those usually obtained.

As a rule the maker of the car claims that his credit, and the maker of the carburetter claims the same thing, but neither of them insinuate that his particular supply of petrol contains greater power than other petrol, and if we can get differences such as this working on a standard fuel, it is excusable if we are sceptical about the new discovery. That petrol can be produced by cracking paraffins under pressure has, of course, been long known, but the operation

as hitherto conducted is not so simple, and was certainly much to be desired that an effective and cheap method should be discovered for increasing the production of volatile fuels from crude or semi-refined oils. Unfortunately, from the public's point of view, the patents are owned by the people controlling the present supplies, and the benefit, if any, of the invention will certainly not go to the public. In an earlier article it was claimed that no production of benzole which is likely to arise in the immediate future would affect the price of petrol, and we think that the facts referred to above substantiate this claim. There is no doubt that every thinking man regrets the shameful waste of fuel which takes place in this country, and a few prophets have been preaching for fifty years the necessity for economy. Every gallon of benzole manufactured and sold in this country means so much profit retained in the country, and so much less going abroad, but the actual saving to the motor user as such from the use of benzole is not likely to be of serious moment. It is because I feel convinced that only by the introduction of some fuel that can be produced in limitless quantities will the price of liquid fuel be lowered to the customer that I so strongly advocate the utilisation of alcohol, particularly since this material can be satisfactorily used in conjunction with the benzole produced in this country to the benefit of both fuels.

#### Experimental Work to be Undertaken.

There is a good deal of experimental work to be done. In the *Gas Lighting Journal* of March 11th there is a report of a lecture given by Mr. Stenhouse, of Rochdale, on the nature of the tar produced at a gasworks using modern vertical retorts. Owing to the gradual heating which the fuel experiences in this type of retort it was found, as was to be expected, that the volatile constituents of the tar were more of a paraffin nature than of a benzine nature. It was also found that the yield of volatile material in the tar was considerably increased over the horizontal or even inclined retorts, but unfortunately the chief increase was in the less volatile portion. The material which distils at about the temperature of distillation of 90's benzole was less in quantity than is obtained from an ordinary tar, but the yield of light and heavy naphthas was considerably higher. This is probably the first article which has appeared on the constitution of a type of tar which is bound to be produced in ever increasing quantities, since there is little doubt that the vertical retort with its higher yield of gas and higher yield of tar products will gradually displace the other types of gas retorts. Although it is admitted that it is from the coke ovens that the bulk of our benzole is obtained, the fact referred to in Mr. Stenhouse's paper points to the necessity for experiments on the better utilisation of the higher boiling point naphthas. There was a time when the motorist could not use anything higher than .680 petrol, but progress in carburettor construction has enabled .740 and .760 spirit to be employed, and no doubt as the result of experiments the available supply of benzole suitable for motor cars will be largely extended by bringing in more and more of what are called the light solvent naphthas. Schemes have been proposed such as the putting down of central distilling and power stations in coal districts, but the only attempt to carry out a scheme of this sort on a large scale is that of the South Staffordshire Mond Gas (Power and Heating) Co.

If the object is to produce a power gas for use in gas engines and furnaces no system of distillation can

compete with the modern gas producer with ammonia recovery plant. For the production of even such a comparatively small power as 2,000 h.p. by means of gas engines it is possible to get a hard and fast guarantee that with fuel at 12s. per ton power shall not cost more than .12d. per kilowatt hour at the bus bars, making all allowances for depreciation and upkeep, and if fuel can be obtained at 9s. per ton the power is obtained for nothing. In the system of working employed all the efforts are directed towards procuring the maximum amount of sulphate of ammonia without any attempt to collect other volatile products which are converted into gas. It is obvious that, while the possibility exists of supplying either gas or power at such prices, any firm endeavouring to sell at ¼d. per unit would be out of the running. On the other hand, to expect the South Lancashire consumers to pay £1 per ton for a coalite type of fuel at the pit or works when they can buy good round coal at less than 15s. is an absurdity. In some of the articles which have appeared recently continual reference is made to slack and fine coal, as though these were practically valueless substances, whereas at the present moment the demand for slack is so great for boiler firing purposes that material which ten years ago would have been classed as unsaleable now fetches 8s. to 10s. per ton at the pit.

#### New Fuels.

If it were desirable it would be possible to fill *The Autocar* with hypothetical company promoting schemes dealing with the production of new fuels conjointly with power and gas production, but on examination it would be found that in all of them the rôle played by the price obtainable for the benzole would be absolutely subordinate. There is not much that is novel in any of the schemes which the writer has seen, beyond what was contained in the proposal of the Coalite Co. The scheme was a low temperature distillation with the production of larger quantities of more valuable tar, but one of the principal difficulties met by this company was the necessity for finding an outlet for the considerable quantity of high illuminating power gas of necessity produced. There are doubtless large quantities of low grade shale-like fuels available in the colliery districts, but the cost of mining them is quite as great as the cost of mining a better coal, and in these districts there will be little outlet for the very dirty coke produced in distilling such material, so that unless it could be proved that there was an outlet for the gas, and that the value of the oils and ammonia justified the scheme, there is little prospect of anything being done in this way.

As already stated, the fight of the immediate future appears likely to be between the production from coal of the largest possible amount of gas which will be distributed and sold at ever-diminishing prices and schemes for the production of coalite-like fuels for which there is an undoubted opening, but all such schemes will be up against the serious difficulty of arranging for the utilisation of the gas produced at a reasonable price and the fact that such works ought to be erected in coal-producing districts where the finished products would have to compete with coal at its cheapest. For the production of power and furnace gas as distinct from illuminating gas, and for the production of electrical energy, no distillation system yet proposed could possibly compete with the ammonia recovery gas plant.

Every thinking man realises that, if the coal at present consumed for household and industrial uses

generally were more intelligently treated, the world as a whole would profit, but, after all, this has been common knowledge for many years, and we must admit that there are inherent and great difficulties of a commercial nature to be overcome or the problem would have been attacked before.

The increase in prices of oils and volatile fuels of all descriptions, together with the high and steady price of sulphate of ammonia, will undoubtedly direct renewed attention to the subject, but although the fact that benzole is to be sold to the public at 1s. 2d. to 1s. 4d. per gallon will help in some small degree to bring capital forward, the only consolation of the motorist will be that he is encouraging a home industry and a home supply, but it will not touch the point which interests the motorist greatly, namely, the reduction in price of his fuel supply.

#### Alcohol Experiments.

Cars have been run in the past with mixtures of alcohol and benzole, and races have been held for cars using alcohol, and for some time the municipal vehicles in Germany used such fuels, but in this country few, if any, experiments have been made, and no figures of value are available. Unfortunately, pure alcohol in this country is excessively heavily taxed, and to carry out experiments in the ordinary way with pure alcohol or with admixtures of pure alcohol and benzole would necessitate paying over 20s. per gallon for the raw material. Of course, the experiments, with the consent of the Excise officials, might be carried out under Excise supervision at a distillery, as has been

suggested by Mr. Bertram Watney. On the other hand, the Government are not likely to consent to the utilisation of alcohol for a motor fuel unless it is securely denatured, and it seems to me that very valuable experience might be gained by making use, to commence with, of such methylated alcohol as can be obtained at a reasonable price in the ordinary way of trade.

The Autocar has arranged for a number of experiments to be carried out with an ordinary type of Maudslay car engine supplied with various admixtures of methylated alcohol of known strength, together with benzole, the engine being arranged in such a manner that consumption and brake horse-power tests can be carried out over a wide range of various fuels with carburettors which can be adjusted as to warmth, etc., to get the best from each fuel tried, and with water cooling which can be adjusted to give the most favourable temperatures in each individual case. It is proposed to test a number of mixtures of alcohol and benzole, and at the same time carry out a few comparative tests with pure alcohol, in order to get some idea as to the comparative influence of the denaturant at present insisted upon by the Government. In view of the desirability of increasing the range of benzole spirit available for car propulsion, it is proposed also to carry out some experiments with benzole distilling over gradually increasing ranges, but as these experiments will necessarily occupy considerable time it will be six to eight weeks before the results can be laid before the public.

## Brooklands Easter Meeting.

### The Entry List for the Car Events.

2.0. The Easter Private Competitors' Handicap (about 5½ miles). Prizes: Cups value £15, £10, and £5. For motor cars propelled by means of internal combustion engines only. To be entered and driven by private competitors of the Brooklands Automobile Racing Club.—O. D. Pollak (17.9 S.C.A.R.), A. W. Tate (41.9 Mercedes), R. Robertson-Shersby-Harvie (30.0 Rolland-Pilain), C. V. Stewart (48.6 Mercedes), S. S. Gaikwar (20.1 Vermorel), E. Erl (15.9 Hispano Suiza), M. Campbell (59.6 Darracq), C. A. Bird (15.9 Sunbeam), Neville Hardy (17.9 Vauxhall), W. R. McBain (52.9 Lorraine-Dietrich), G. N. Cadbury (18.8 Straker-Squire), and L. J. Cadbury (20.1 Vauxhall).

2.50. The Tenth 100 m.p.h. Short Handicap (about 5½ miles). Prizes: Cups value £30, £15, and £7 10s. For motor cars propelled by means of internal combustion engines only, the observed speeds of which are about 70 m.p.h. or more for a Brooklands flying lap, or, in the case of cars which have not competed before, which are likely, in the opinion of the handicappers, to exceed this speed.—A. W. Tate (41.9 Mercedes), N. S. Hind (35.7 Berliet), Gordon Watney (48.6 Mercedes), R. Robertson-Shersby-Harvie (30.0 Rolland-Pilain), C. V. Stewart (48.6 Mercedes), M. Campbell (59.6 Darracq), C. A. Bird (15.9 Sunbeam), L. R. L. Squire (18.8 Straker-Squire), L. Coatalen (30.1 Sunbeam), H. Boissy (30.0 Peugeot), Percy E. Lambert (25.5 Talbot), C. L. E. Geach (20.1 Vauxhall), and Percy E. Lambert (15.9 Singer), reserve.

3.40. The Ninth 100 m.p.h. Long Handicap (about 8½ miles). Prizes: Cups value £35, £20, and £10. For motor cars propelled by means of internal combustion engines only, the observed speeds of which are about seventy miles an hour or more for a Brooklands flying lap, or, in the case of cars which have not competed before, which are likely, in the opinion of the handicappers, to exceed this speed.—A. W. Tate (41.9 Mercedes), N. S. Hind (35.7 Berliet), Gordon Watney (48.6 Mercedes), R. Robertson-Shersby-Harvie (30.0 Rolland-Pilain), C. V. Stewart (48.6 Mercedes), W. R. McBain (52.9 Lorraine-Dietrich), C. A. Bird (15.9 Sunbeam), L. R. L. Squire (18.8 Straker-Squire), L. Coatalen (30.1 Sunbeam), H. Boissy (30.0 Peugeot), Percy E. Lambert (25.5 Talbot), 15.9 Singer reserve), and C. L. E. Geach (20.1 Vauxhall).

4.5. The Tenth 70 m.p.h. Short Handicap (about 3¼ miles). Prizes: Cups value £30, £15, and £7 10s. For motor cars propelled by means of internal combustion engines only, the maximum observed speeds of which are about seventy miles an hour or less for a Brooklands flying lap, or, in the case of cars which have not competed before, which are not likely, in the opinion of the handicappers, to exceed this speed.—O. D. Pollak (17.9 S.C.A.R.), W. R. McBain (15.9 Delage), W. T. Smith (13.9 Stower), A. G. Peppercorn (11.5 M.A.F.), M. Campbell (24.8 Darracq), H. C. Lambert (15.9 Crossley), C. R. Engley (24.8 Turcat-Mery), C. Benson (13.9 Humber), L. J. Cadbury (20.1 Vauxhall), G. N. Cadbury (18.8 Straker-Squire), H. E. S. Huth (22.5 Ford), T. B. Andre (10.4 Marlborough), C. V. Stewart (11.5 Richmond), S. C. Westall (10.4 Grégoire), H. K. Chambers (12.2 Laurin-Klement), S. G. Cummings (13.9 Cumnikar), and Neville Hardy (17.9 Vauxhall).

4.55. The Easter Sprint Race, a handicap (about 2 miles). Prizes: Cups value £25, £12 10s., and £7 10s. For cars which have been timed to do flying laps at Brooklands at about 70 m.p.h., or which are likely, in the opinion of the handicappers, to attain this speed.—O. D. Pollak (17.9 S.C.A.R.), A. W. Tate (41.9 Mercedes), N. S. Hind (35.7 Berliet), Gordon Watney (48.6 Mercedes), Colonel Thomas Cowper-Essex (48.6 Daimler), M. Campbell (24.8 Darracq), W. R. McBain (52.9 Lorraine-Dietrich), Harold C. Lambert (15.9 Crossley), L. Coatalen (30.1 Sunbeam), H. Boissy (30.0 Peugeot), Percy E. Lambert (25.5 Talbot), C. L. E. Geach (20.1 Vauxhall), C. Benson (13.9 Humber), and Percy E. Lambert (15.9 Singer), reserve.

5.20. The Easter Aeroplane Handicap. An out and home cross-country race for all classes of aeroplanes. Prizes: £52 10s. (presented by the British Petroleum Co., Ltd.), £25, and £10, or cups at option.

There will also be two motor cycle races and a race for sidecars and cycle cars.

"COMPLETE HINTS AND TIPS FOR AUTOMOBILISTS." Under this title "Useful Hints and Tips" have been reprinted from *The Autocar* in booklet form. The fifth edition now on sale has been thoroughly revised and brought up to date. The book can be obtained from *The Autocar* Offices, 20, Tudor Street, London, E.C., post paid 2s. 6d.



# On the Track.

## The Topography of Brooklands.

THE increasing popularity of Brooklands in the eyes of motorists throughout the country has led us to reproduce the accompanying plan of the motor course in the hope that it will be found of use to the many motorists visiting the Track on Easter Monday and subsequently.

Nearly all the recently published road maps show the exact position of the motor course, and we have only thought it necessary therefore to indicate the position of Weybridge Station and the direction in which the various roads adjacent to the course lead.

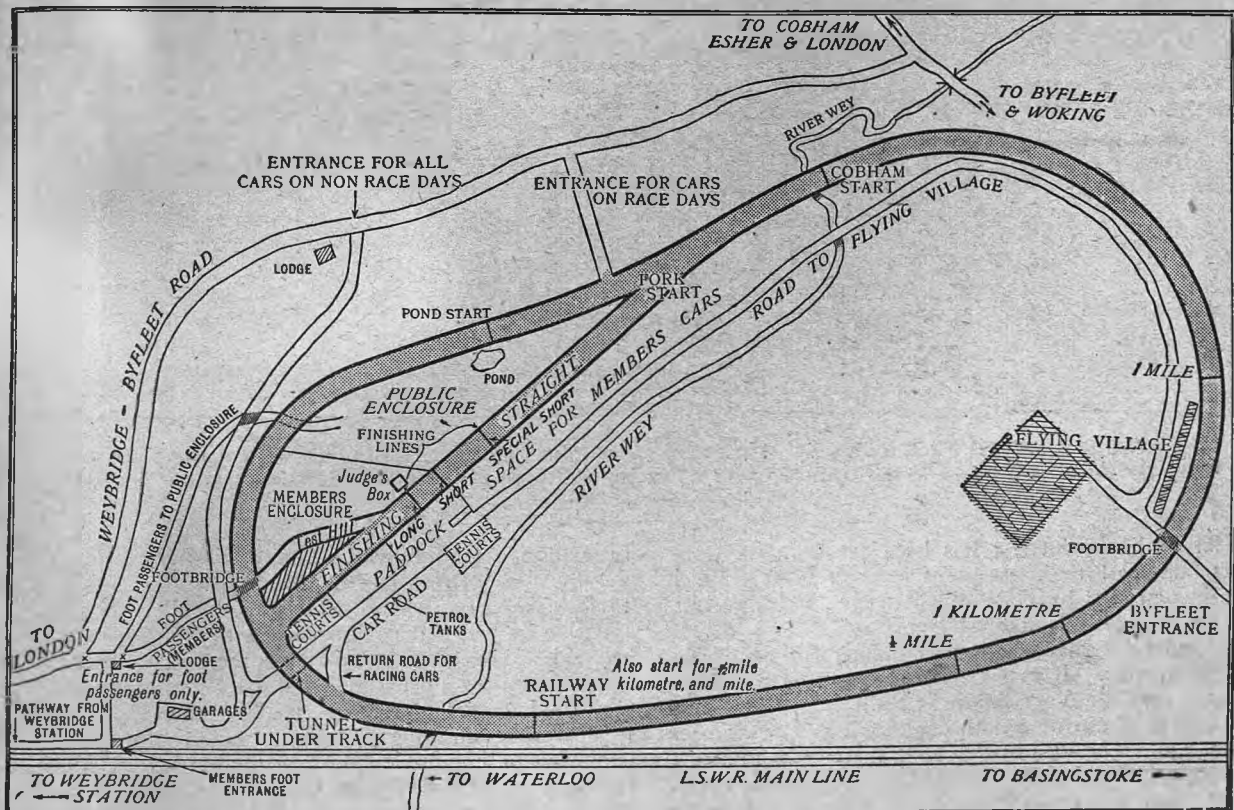
Those motoring to the Track on a race day enter by a gate in the Byfleet Road known as the "Byfleet Gate," and motorists are not likely to miss it on Monday owing to the constant stream of cars that will be found converging upon it. Members of the Brooklands Club show their badges at this gate, and should therefore wear them in a prominent position to avoid delay. Non-members will be required to pay 2s. 6d. each and 10s. for the car if they wish to take it to the favourite position alongside the track in the public enclosure so that seated in it they may be able to view the racing. Alternatively it may be left in the open air garage, just to the right of the entrance, at a charge of 2s. 6d., while the passengers alight and proceed on foot across the great track to the enclosure. There is something to be said for this method, as it enables one to roam at will over the enclosure and to walk across to the flying ground. At the same time, however, there is nothing like having one's car conveniently at hand, especially if it be furnished, as it should be, with the many little comforts that the thoughtful touring motorist always provides.

The public enclosure offers many advantages over all the other parts of the grounds, for not only do all the races finish opposite it, but nearly all of them are started near the pond, which will be seen marked on our plan.

It is well, especially if coming from a distance, to arrive early at the Track. The catering arrangements have been very greatly improved, and a really good cold luncheon can be secured in the enclosures. When cars arrive after racing has commenced they are detained at the Byfleet Gate until the next interval between races permits of their being allowed to cross the Track.

Those having the time and inclination may well arrange to spend the day visiting the Aviation Ground in the morning and lunching on the hill at noon and lingering on the pleasant lawns at the back of the Public Enclosure until the racing starts. Those paying for admission to the public (2s. 6d.) enclosure have free access to the flying ground throughout the day, and it should be remembered that on Easter Monday there is to be an out and home flying race in which some very fine machines will compete. The race will be one of ten miles, to Chertsey and back, and although part of the vast track is in the parish of Chertsey the machines will fly far beyond the limits of the Track, but owing to the rising ground in the enclosure spectators will be able to follow the progress of the aeroplanes over the whole of the course.

So far we have said nothing with regard to visitors on foot who will presumably arrive by rail. This sounds rather Irish in effect. There are three entrances for those coming on foot. If they come to Weybridge



Plan of Brooklands Track showing the various entrances, and the roads and footpaths leading thereto

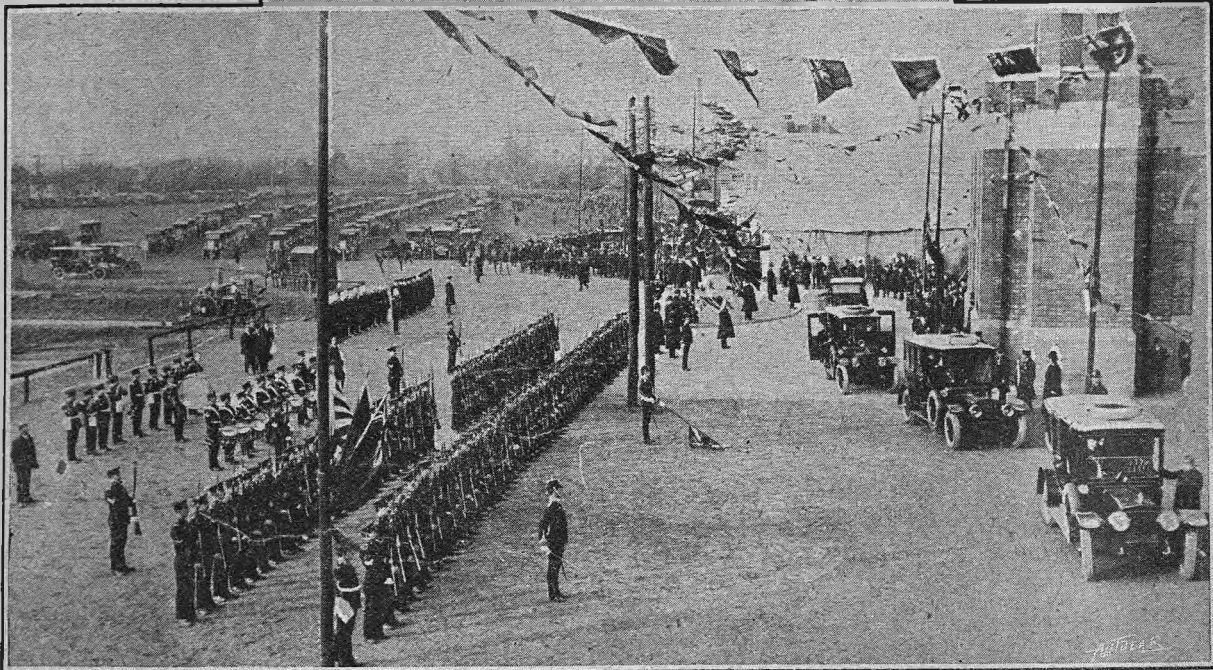
*On the Track.*

Station or from the direction of Weybridge they will enter at what is known as the old entrance lodge marked "Entrance for Foot Passengers only" on the plan. Here they will pay and receive tickets, which should not be thrown away, as they have to be given up on actually entering the enclosure a little further on. Should they come from the direction of Cobham they can enter by the turnstiles near the Byfleet Gate, already referred to. If they come from Byfleet they can enter by the foot-bridge at the back of the flying village, also shown on the plan, and where the charge is also 2s 6d.



On race days the paddock is reserved for racing cars, and no other cars, with the exception of those belonging to members of the committee and stewards, are permitted there. It always presents a scene

of great animation, and for some reason which it would be difficult to fathom everyone seems to want to go there, although the accommodation in the enclosure is much better. Consequently arrangements are made by which visitors to the enclosure can transfer to the paddock (on foot) on payment of a further 7s. 6d. at a turnstile near the judge's box, crossing the finishing straight between the races.



**THE KING'S VISIT TO EAST LONDON.** *The arrival of the Royal party at the new reservoir at Chingford. In the upper view His Majesty is seen about to resume his journey from the High Stone at Leytonstone after receiving an address from the Mayor of Woodford.*

Extraordinary interest has been taken in the great undertaking of the Metropolitan Water Board, which was inaugurated by H.M. the King on Saturday last. The reason of this interest is mainly the use of the Humphrey internal combustion pumps for filling the huge reservoir. It may be interesting to remind our readers that the Vogt internal combustion engine and Humphrey pump were both dealt with in *The Autocar* years ago. The idea of the Vogt engine was to secure an engine which worked at constant compression irrespective of the throttle position. This was done by admitting water above the piston so that, as the volume

of explosive mixture was reduced by the closing of the throttle, more water was automatically admitted to the combustion space, and, consequently, the combination of constant compression with varying volume secured. While in principle there are certain similarities between the Vogt engine and the Humphrey pump, the fundamental difference is that the Humphrey pump, after admitting a charge of water, provides an explosion or impulse on the top of that water, which is driven out of the cylinder towards the reservoir, and the backward surge of the water provides the compression stroke.



## The 30-50 H.P. Armstrong-Whitworth.

A Lengthy Maiden Trip on a 90 × 150 mm. Six-cylinder Car.

THE offer of a run from Newcastle-on-Tyne to London on a new six-cylinder Armstrong-Whitworth last week-end opened up prospects of a long day's motoring, the pleasurable anticipations of which were more than justified by the event. The car in question had not previously been tested on the road or tuned in any way—circumstances which added interest to its performance on this strenuous journey, for even now 280 miles must be considered a good day's travelling, and, adding to that another forty-five miles southward of London, we have something indeed to look back upon.

Leaving Newcastle at a quarter to six in the morning, we slid silently into the tubular bridge across the Tyne, when a shout from the drowsy tollkeeper brought us up. Relieved of the fee, we made our way out of the town in the first pale cold light of a very chilly morning into the teeth of a gusty wind from the southwest. The car swept smoothly and easily along the road to Durham and York, apparently feeling nothing

Arriving at York just a little bit early for breakfast, we changed our spare wheel, which was shod with a new steel-studded tyre, on to the front. Then, having filled up with petrol and attended very adequately to the wants of the inner man, we took the road again, feeling that to put eighty-two miles behind one before breakfast is no mean performance. Thereafter, although the car was never pressed, the running became fast and free; moreover, the sun had come out to stay, and conditions were no longer Arctic. There was much water lying on the roads in ruts and pot-holes everywhere—pools which were struck into bright foam by our rapid passage and caught up by the wind like spindrift.

Speed, easily attained and maintained, was the dominant impression of the car. Bevel and worm drive are alternative in the specification, the former, with which, we were equipped, having helically cut teeth, and we could not detect any respect in which it fell short of worm gearing in silence or smoothness.

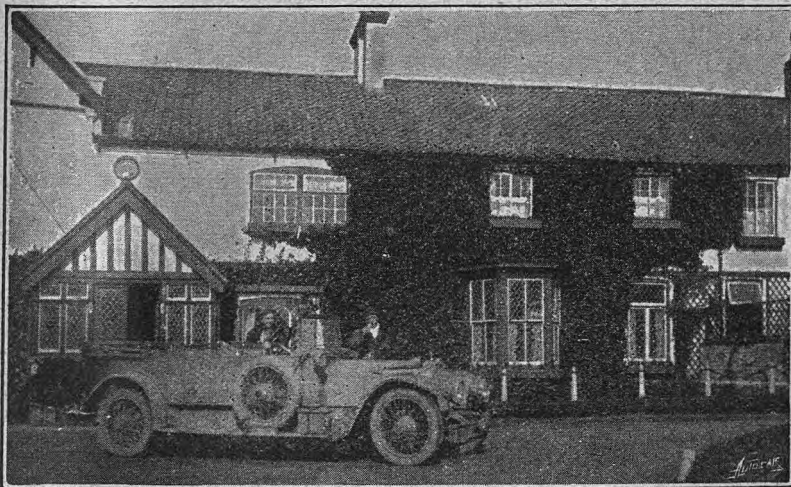
The top gear ratio was 3.1 to 1 with 935 × 135 mm. wheels.

The springing was distinctly satisfactory. In the front seats we felt nothing of road shocks, and behind the large three-quarter elliptics gave only an impression of liveliness and newness on the very worst roads. The worst and the best we traversed, but fortunately far more of the latter south of York. We had no speedometer, but were able to arrive at certain conclusions both from our average speed and by the aid of a stop watch with which we checked the flying mile posts, and these conclusions were highly satisfactory. No hitch occurred save the collapse of our steel-studded driving tyre, which failed some sixty miles or so from London, leaving us with two plain treads on the back.

We reached London in late afternoon, and left half an hour or so later. The weather had broken up and rain fell steadily. Down the Portsmouth Road we took the wheel ourselves. Tared surfaces shone like a mirror, and our two plain driving tyres made it necessary to proceed with caution. At low speeds we found the accelerator pedal control very refined and sensitive, whilst nowhere throughout the whole range did any periodic vibration from the engine make itself felt. The Zenith carburettor also responded very well to sudden and erratic openings of the throttle. Getting into hilly country, we found that on single-figure gradients either brake would bring up the car smoothly and easily.

One could not but notice as the day went on how the running improved. The car started well, and got better and better, settling down to its work on the road as to its natural element, like a living creature developing the instincts of its kind.

A new trap is being worked at St. Paul's Cray Common, on the road from Chislehurst to the Crays and Orpington. Cars are timed in an outward direction, and the furze and bushes afford concealment for the police.



The 30-50 h.p. Armstrong-Whitworth car outside Ye Olde Bell Inn, at Barnby Moor.

of the breeze which whistled under railway arches and down the wide desolate streets of cheerless little colliery towns, in one or two of which, incidentally, we missed our way. Several snow showers swept across us, and in many places the road was overlaid with a film of ice. Our tyre equipment consisted of three plain treads and one steel studded on the near side back wheel, and, pulling up once on a piece of frozen road, the car did not skid, but came to a standstill somewhat slowly: we then noticed that the steel-studded tyre had locked and drawn a perfectly straight line for quite two hundred yards behind us.

The car holds the road very well, and the steering is light and sensitive, so that it is easy to forget what power and momentum are beneath one's hands and feet. Our pilot had to slow up very considerably for every bend in the road, and these decelerations gave us the opportunity of observing the behaviour of the brakes. Both, one applied by hand lever acting on the rear wheel bands and the other by pedal acting on the propeller-shaft, were smooth, silent, and progressive in their action. Nevertheless we were cautioned that the foot brake was slightly fierce, yet on taking over the wheel later we could hardly wish it improved.



## Paraffin Fuel for Petrol Engines.

SOME misunderstanding seems to exist with regard to the use of paraffin in ordinary petrol engines, and yet there are two or three apparently successful systems at present in use which have passed the experimental stage. For example, Messrs. White and Poppe, Ltd., have been fitting paraffin carburetters on private and commercial vehicles for some little time past. Their system briefly consists of an ordinary petrol carburetter, the mixture from which passes through a vapour pipe arranged along the exhaust side of the cylinders. This vapour pipe is arranged lengthwise within the exhaust branch, which is mounted as close to the cylinders as possible. The vapour pipe is specially constructed so as to prevent excessive heating near the exhaust outlets and insufficient heating at low engine speeds, so that the paraffin gas is always converted into a vapour. The mixture then passes round the engine to the ordinary induction pipe. Petrol is used to warm things up before starting, but apertures are made in the exhaust heating chamber to enable blow lamps to be used to heat the vapour pipe so that it is not absolutely essential to employ petrol.

Another satisfactory system is that being handled by the Winchester Carburetter Co., Ltd., of 11, Gresham Street, London, E.C. The inventor, Mr. T. E. Halliday, has been experimenting for some years, and his system includes an ordinary carburetter from which the mixture passes through an exhaust-heated

vaporiser, as in the White and Poppe system, and just as the mixture enters the cylinders warm moist air is added. It is natural that in each system there are some details which contribute to the success of the system, but the above is a brief outline of both arrangements.

The writer made a short trial of the Winchester Carburetter Co.'s system in the early winter. The car had been standing in the cold for some hours, and the engine was apparently quite cold at the outset. It was started up on petrol, but as soon as the driver engaged first speed the petrol was shut off and the paraffin turned on. Gear changing was then continued until the car reached its normal speed. This is mentioned to indicate that the car ran on petrol for some thirty seconds only. The run was through traffic, and it was particularly noticeable that the exhaust was clear and that acceleration and slow running were quite normal.

From a brief trial of these two systems, it seems that success with paraffin in ordinary motor car engines and without expensive fittings can be achieved. When we say paraffin, we do not confine ourselves to lamp oil, as in both cases heavy cheap oils obtainable in bulk at about 4d. per gallon upwards have been used. For some time we have been promised extended trials of these systems, and we hope to give more ample details later.

### Detachable Rim Patents.

The action brought by Messrs. J. V. Pugh and S. F. Edge against the Vinet Rim Syndicate, Ltd., and others for the infringement of the plaintiffs' patent No. 17,449, 1906, relating to detachable rims, was tried by Mr. Justice Eve last week. His Lordship held that in view of what had been done by earlier inventors there was no subject matter for a valid patent in the plaintiffs' invention, and he dismissed the action with costs. The plaintiffs' claim is as follows: In a road wheel for motor vehicles with a detachable rim mounted on a permanent rim the combination of a rim of larger diameter than the felloe at its removal side, a pneumatic tyre on said rim, a valve on said tyre passing radially through a hole in the felloe with some clearance, the combination being arranged to permit of tilting the wheel (it was agreed that this word should be "rim") on removal, substantially as described with reference to the accompanying drawings."

### The Training of Automobile Engineers.

The Council of the Institution of Automobile Engineers have had under consideration the practical results which may be expected to arise from the recent paper on the training of automobile engineers. During the discussion a vast number of practical personal opinions were placed on record, and the Council have decided that these shall not be completely buried, and they have now appointed a committee, consisting of Messrs. L. H. Hounsfield, G. Douglas Leechman, L. H. Pomeroy, G. A. Burls, and H. Burchall, to consider carefully the whole discussion and to draw up a report. It seems almost certain that the work of this committee will lead to the drawing up of a schedule of information which will be found to be of great use to those contemplating putting their sons into the industry.

c28

### Roadside Advertisements.

Realising the antipathy which exists towards roadside advertisements, especially when these are set in positions disfiguring the natural beauties of the landscape, the Michelin Tyre Co. notify us that they will remove any of their signs advertising their tyres upon receiving a request from any individual who may take exception to them. It will be remembered that we have consistently advocated some such reconsideration of policy on the part of the various firms making or selling tyres, motor spirit, etc., and that over two years ago the Dunlop and Continental Tyre Co.'s came into line and agreed to remove signs to which objections were taken if other tyre companies would do the same. At that time, however, the Michelin Tyre Co. could not see their way to act in concert, and the projected agreement fell through. Perhaps the motor spirit and oil companies will now be able to see their way to agree to the removal of offending signs for which they may be responsible.

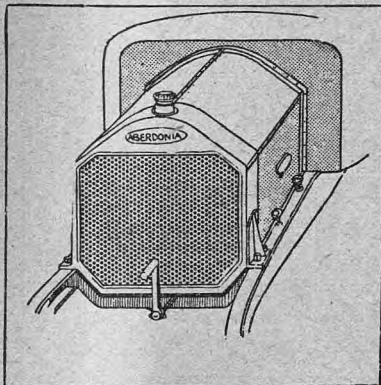
### Victor Tyre Test Mishap.

The motor car upon which the tyre tests have been carried out at the instance of the Victor Tyre Co. met with a serious accident on Monday evening near the Devil's Punch Bowl, Hindhead, on the Portsmouth Road. The car while travelling rapidly along the curved road on its homeward journey skidded and turned a complete somersault, with the result that the body left the chassis. Of the five occupants four were seriously injured, one being pinned beneath the overturned body, and were removed to Haslemere Cottage Hospital. The trial was nearing its end in any event, and it is unfortunate that it should have been hastened by this lamentable occurrence. The only remaining tyre on test was the plain tread Victor, which was being run to destruction, the others having given out some time previously.

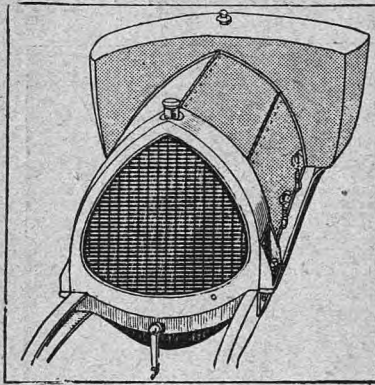
## Bonnets and Radiators.

### How to Distinguish the Autocars of 1913.

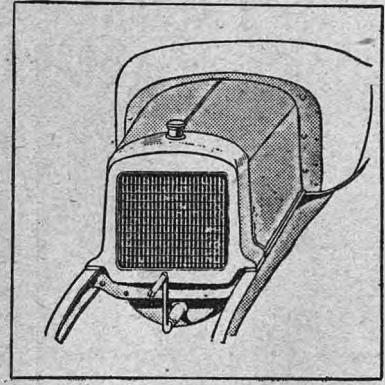
In the following pages we have endeavoured to give a typical view of the most distinctive features, *i.e.*, the bonnet, radiator, and dashboard, of each of the leading cars of the day. It will be understood that, as the bonnets themselves vary considerably in size according to the power of the particular model, it has been impossible to adhere rigidly to strict proportion; no attempt has, therefore, been made to portray accurately any one model, but merely to show the design peculiar to the type. Undoubtedly, the most noticeable tendency of the modern bonnet is to taper so that the back is both higher and wider than the front and hence merges into the dashboard with far less abruptness than of yore. The dashboard too is becoming tapered and so better meets both bonnet and body. In making comparisons between the different designs one cannot fail to be struck by the very small, though none the less very real, differences which go to make the individualities of a bonnet and radiator.



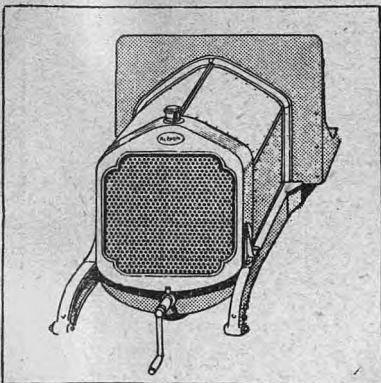
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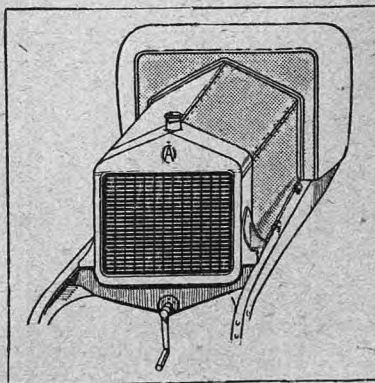
Adams.



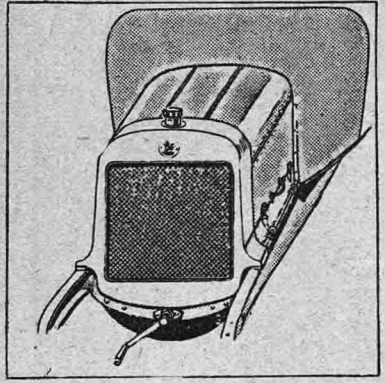
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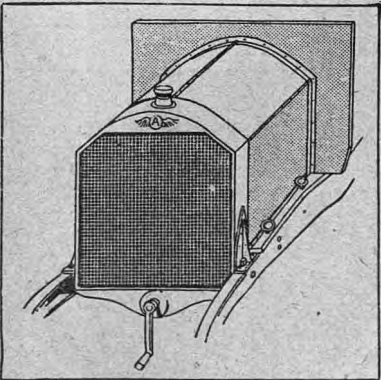
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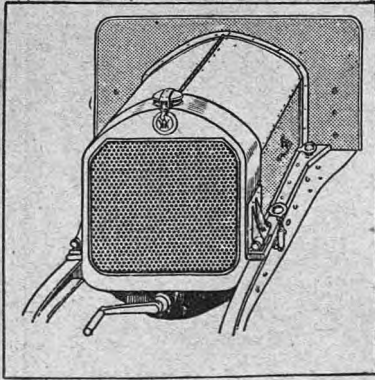
Alldays.



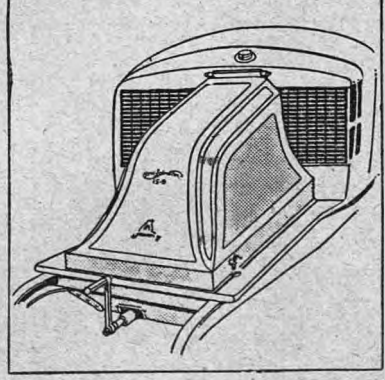
Argyll.



Ariel.



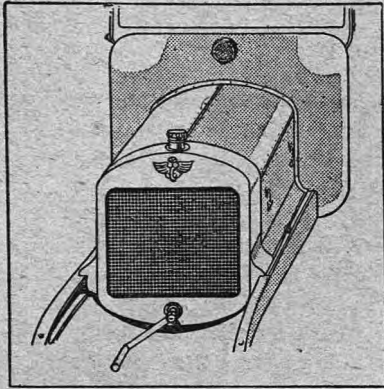
Armstrong-Whitworth.



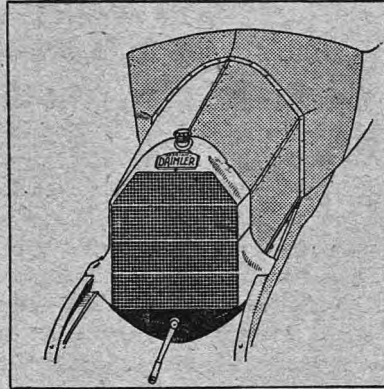
Arrol-Johnston.



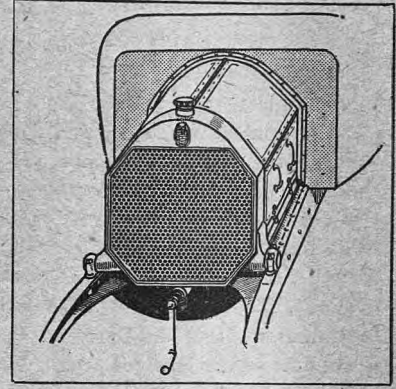
Bonnets and Radiators—



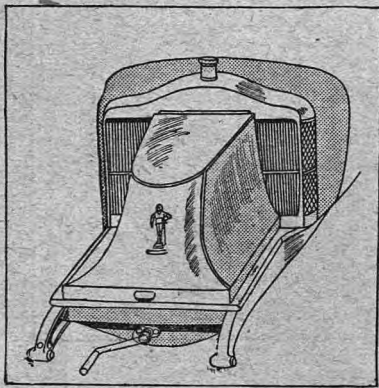
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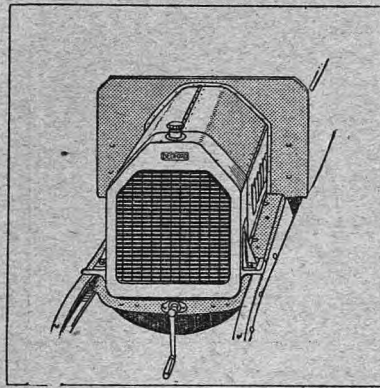
Austro-Daimler.



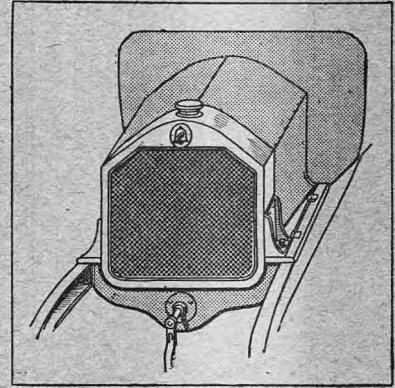
Baguley.



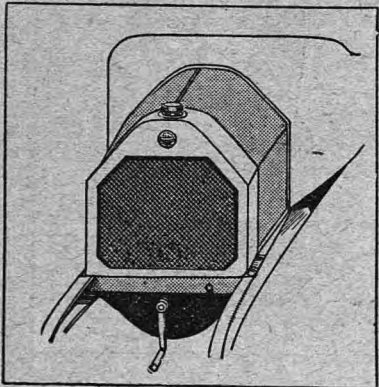
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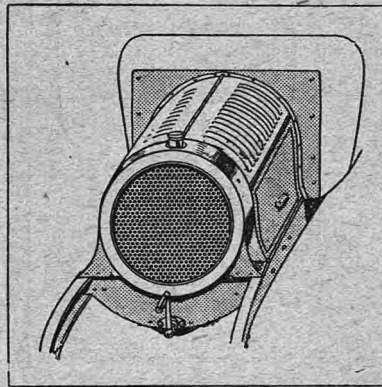
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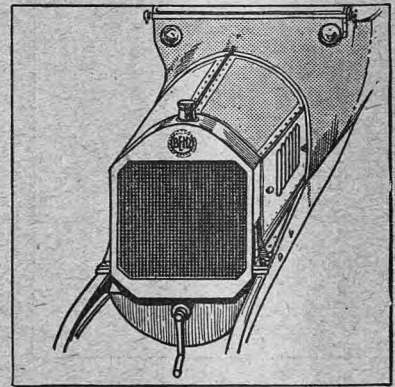
Bell.



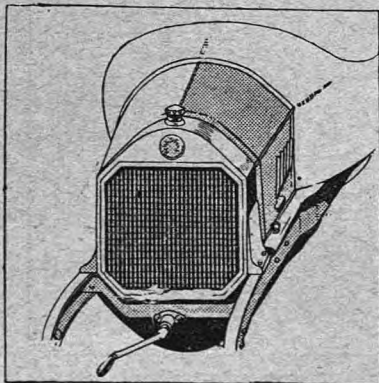
Belsize.



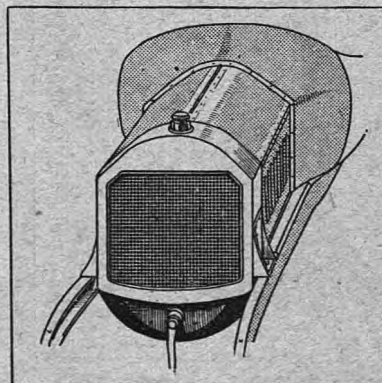
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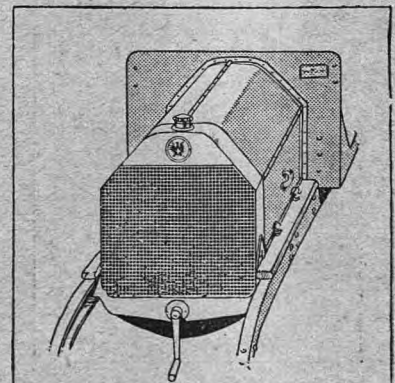
Benz.



Benz-Sohne.



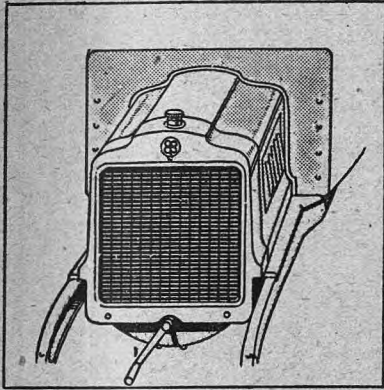
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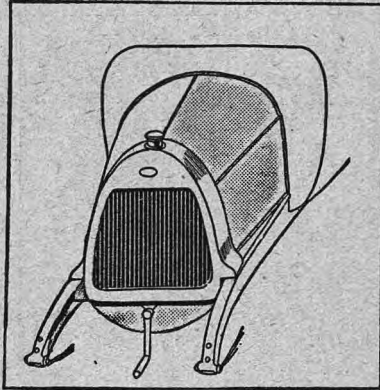
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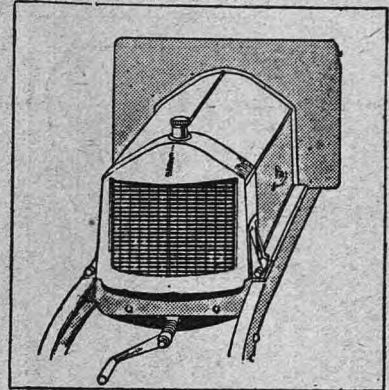
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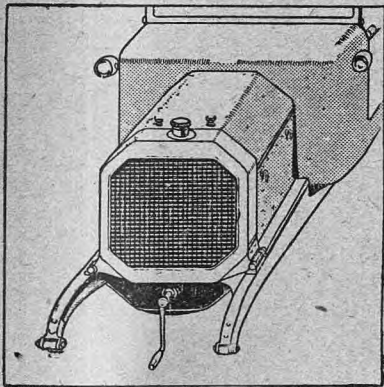
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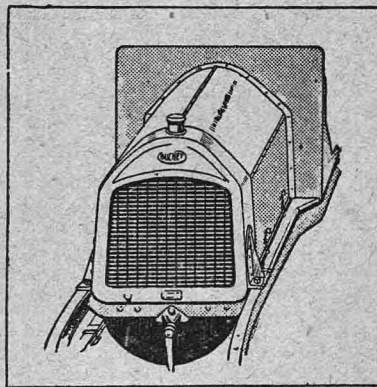
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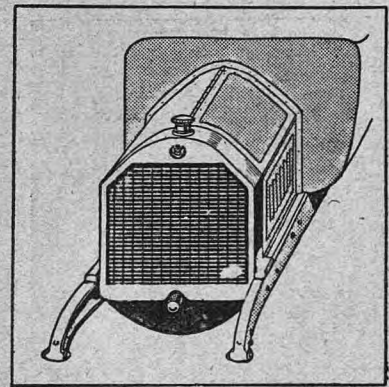
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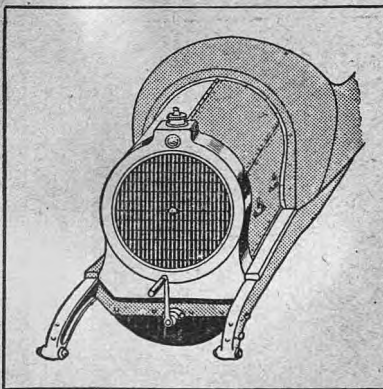
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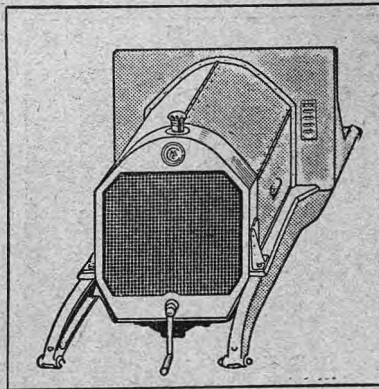
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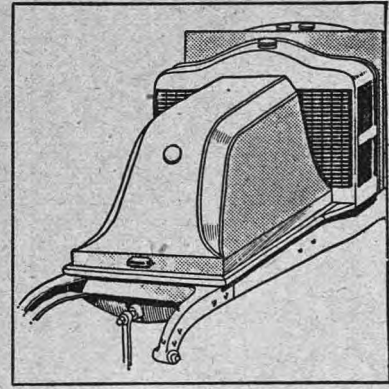
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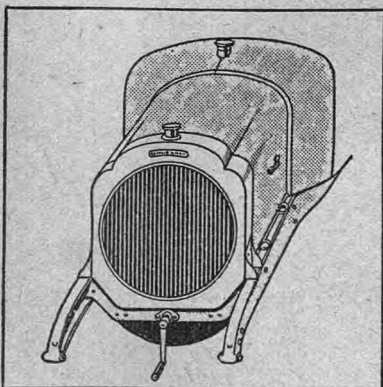
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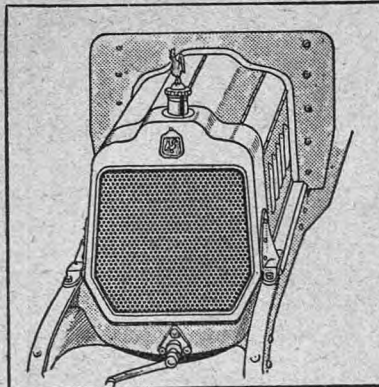
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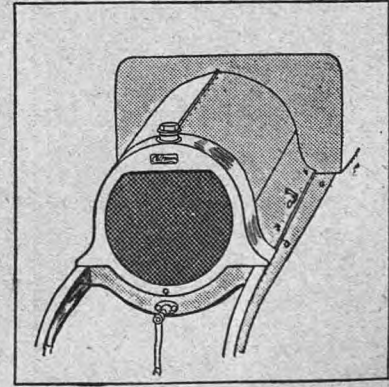
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Chenard-Walcker.

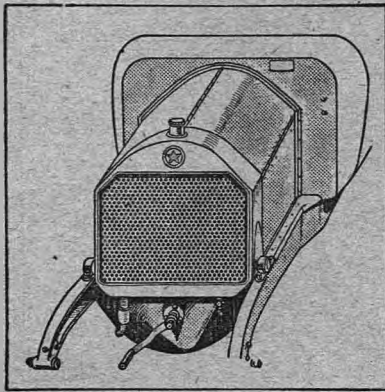


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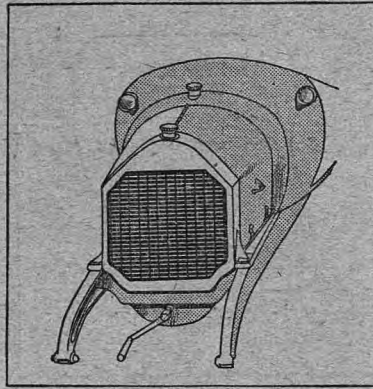


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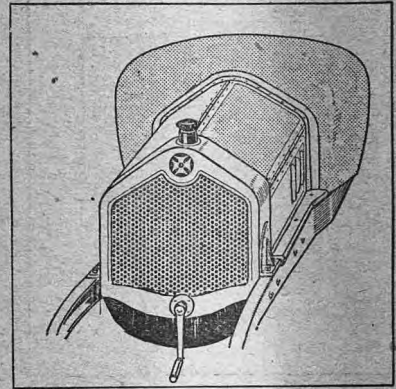
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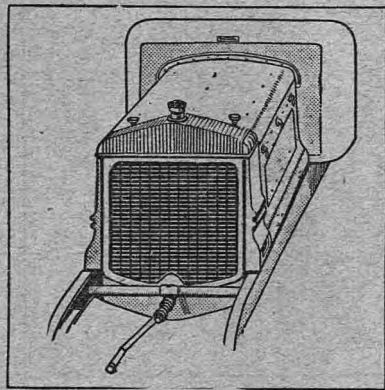
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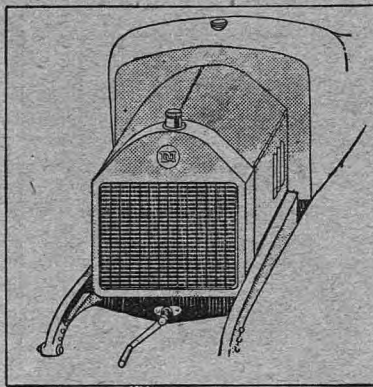
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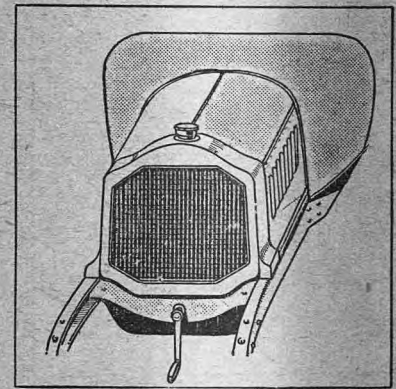
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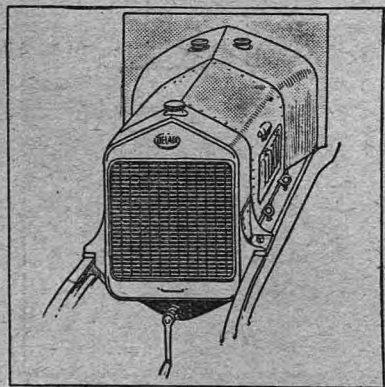
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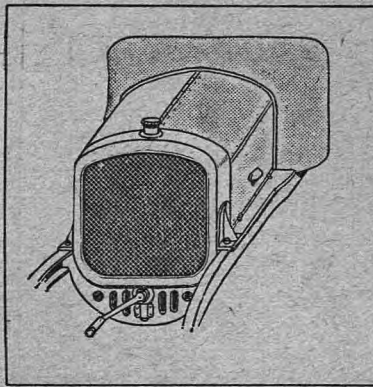
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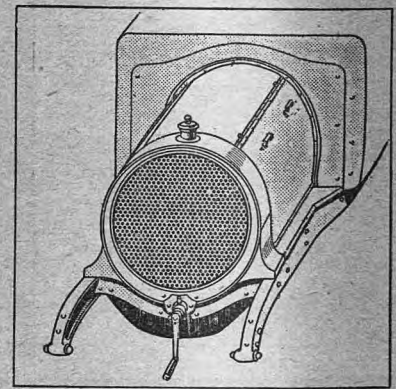
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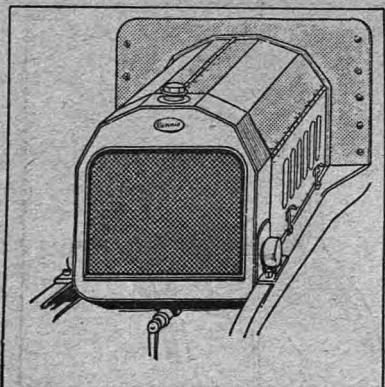
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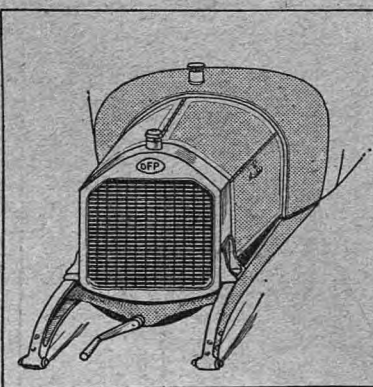
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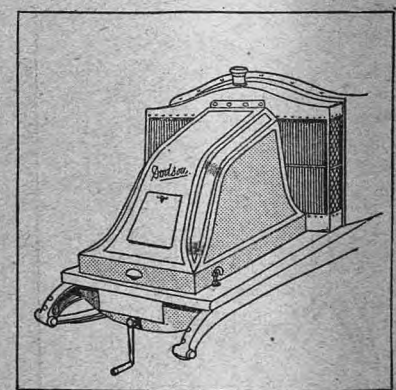
Delaunay-Belleville.



Dennis.



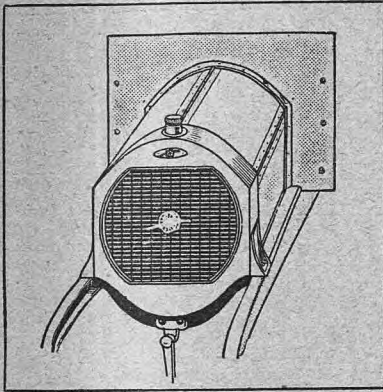
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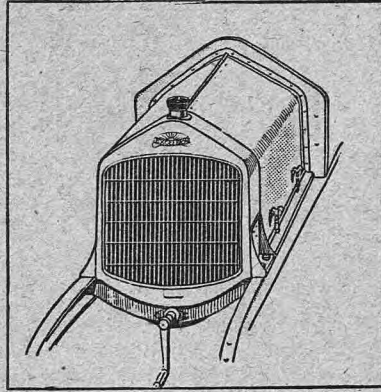
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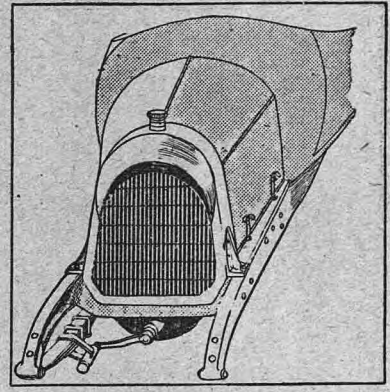
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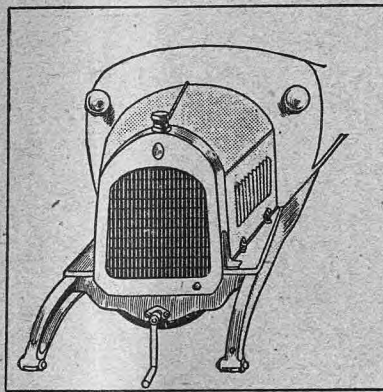
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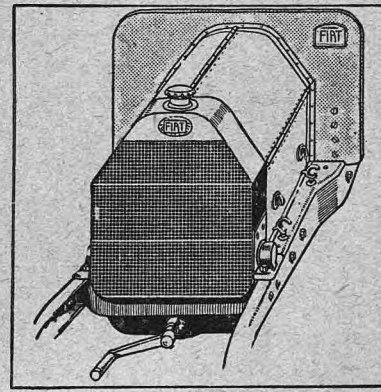
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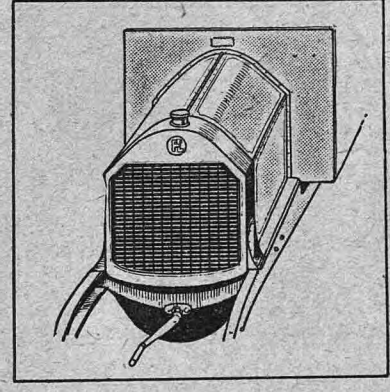
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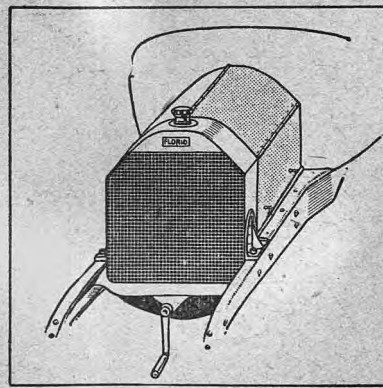
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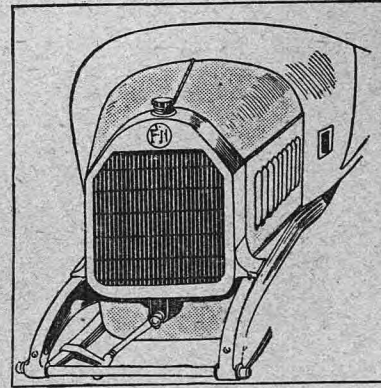
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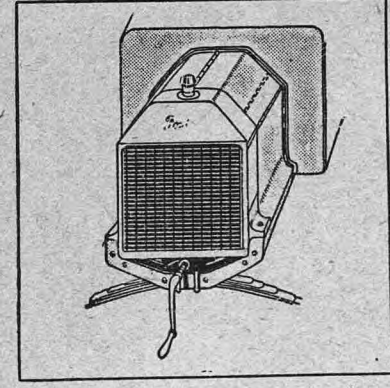
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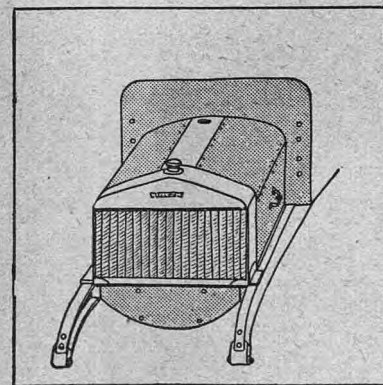
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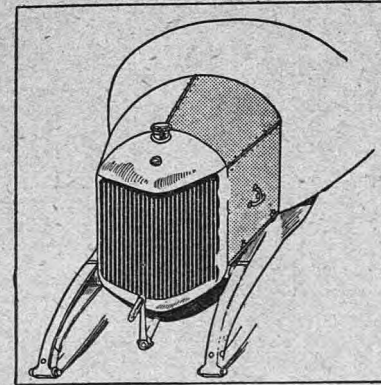
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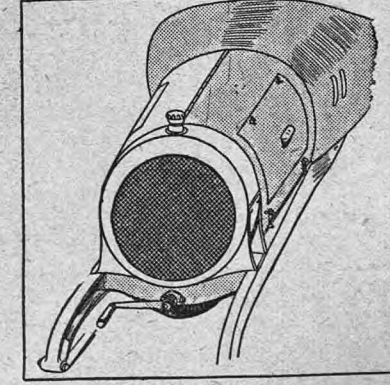
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Forest.



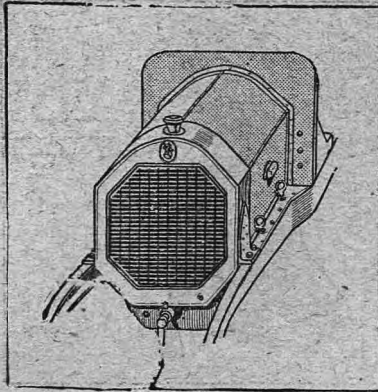
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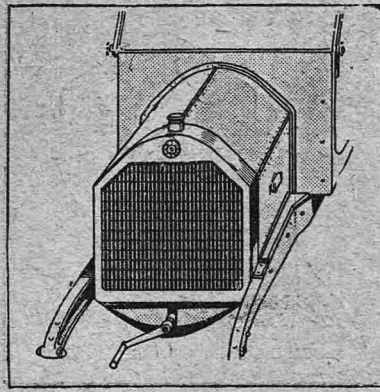
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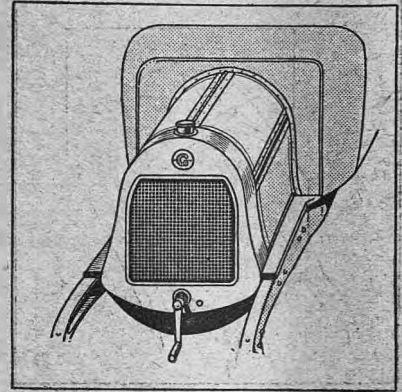
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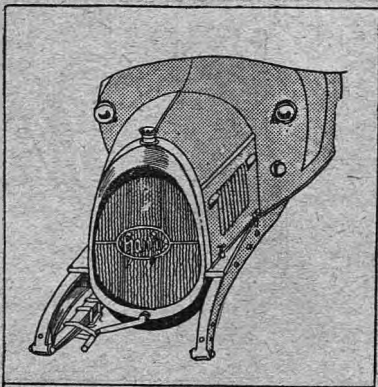
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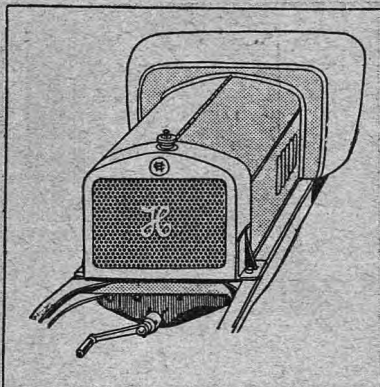
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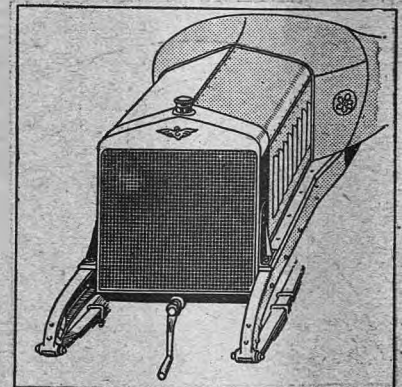
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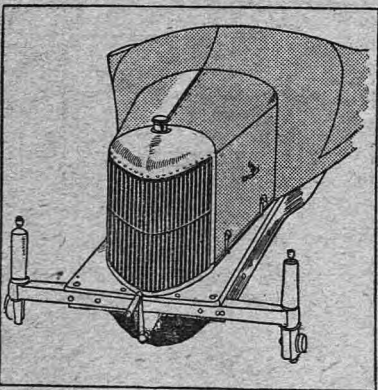
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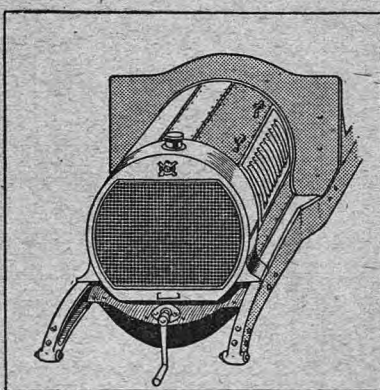
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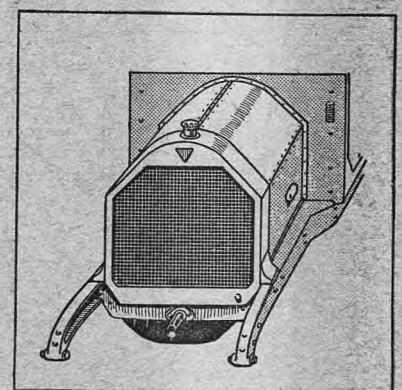
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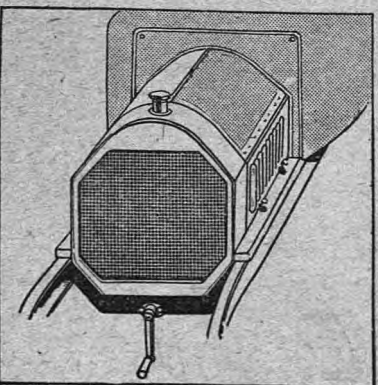
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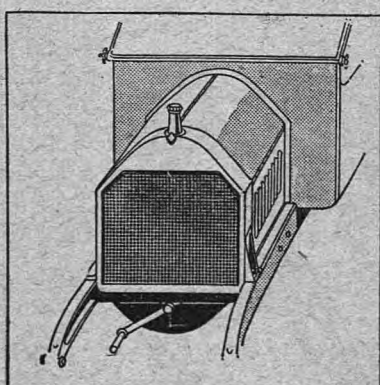
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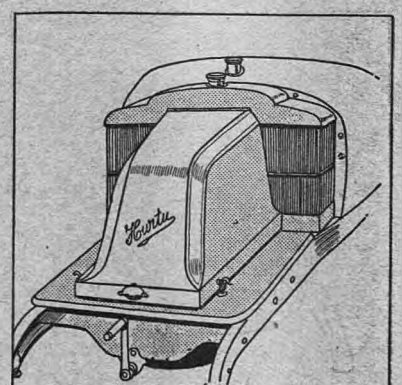
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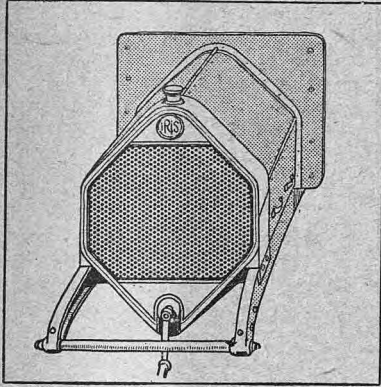


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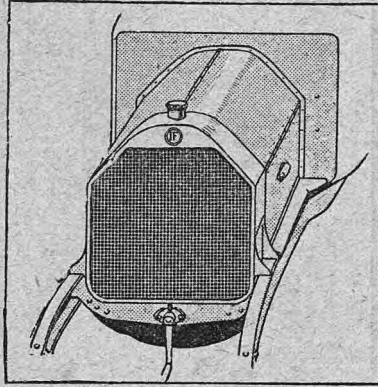


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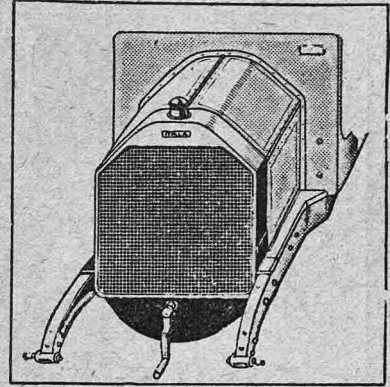
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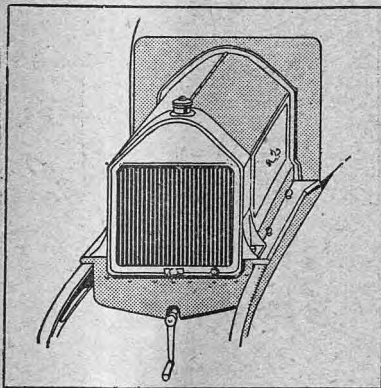
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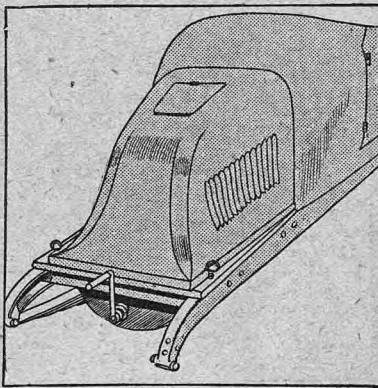
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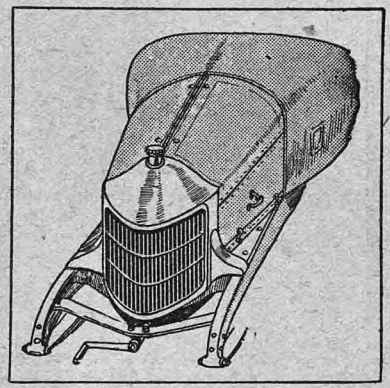
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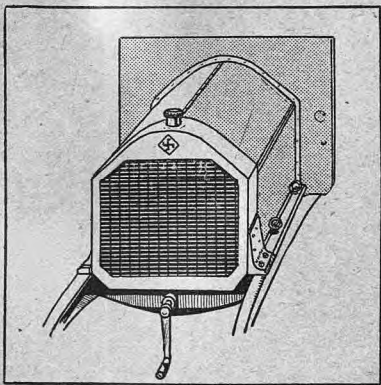
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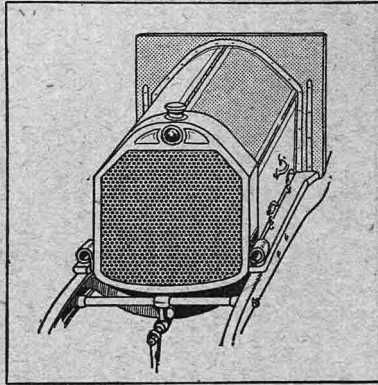
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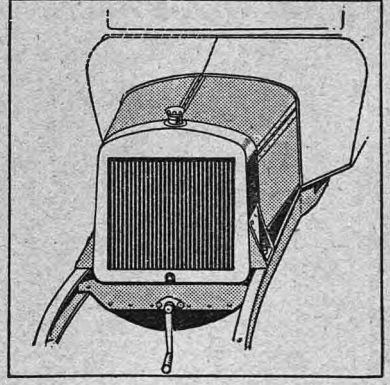
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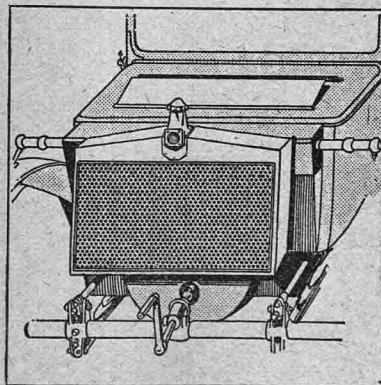
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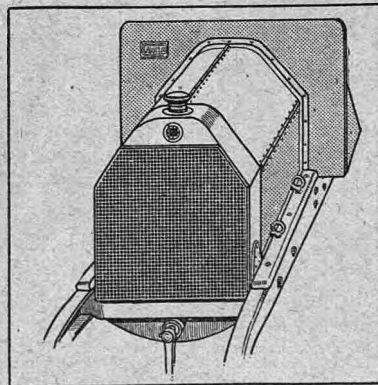
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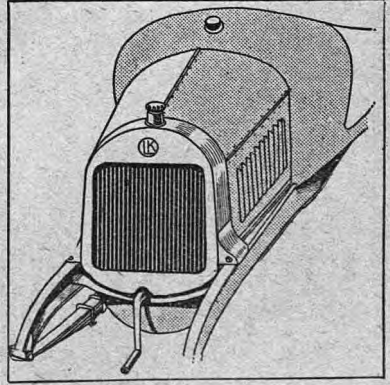
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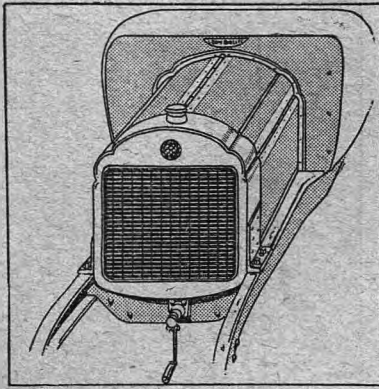
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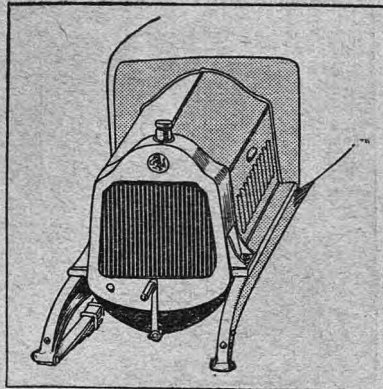
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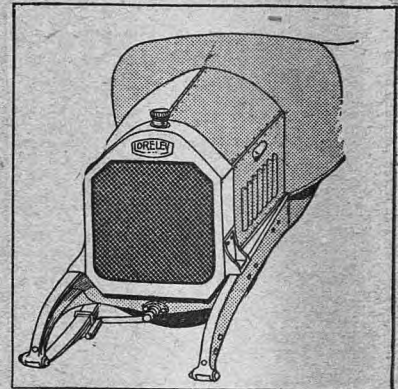
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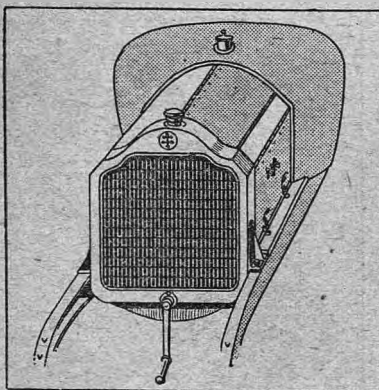
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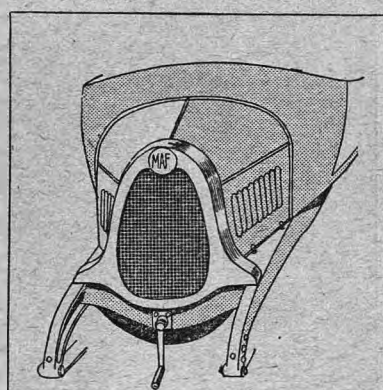
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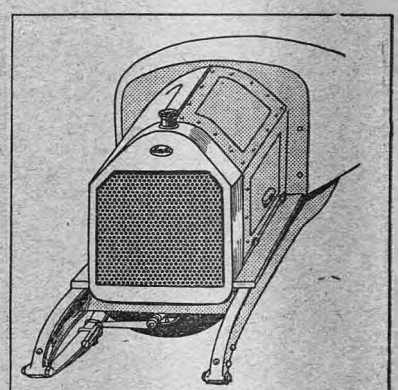
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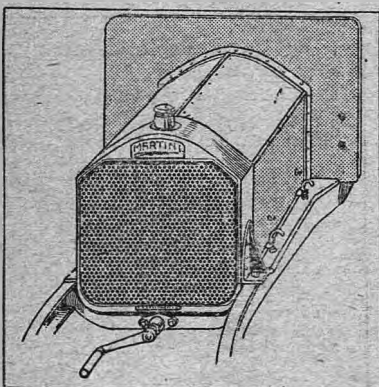
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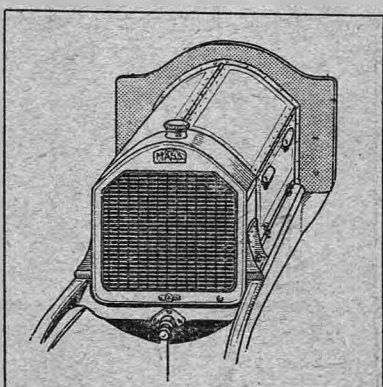
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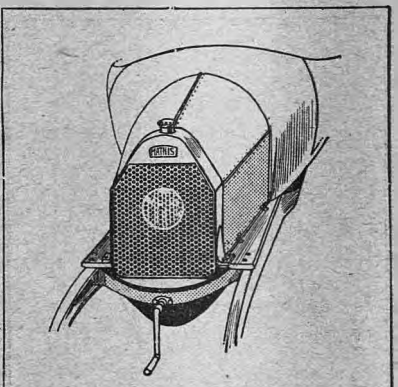
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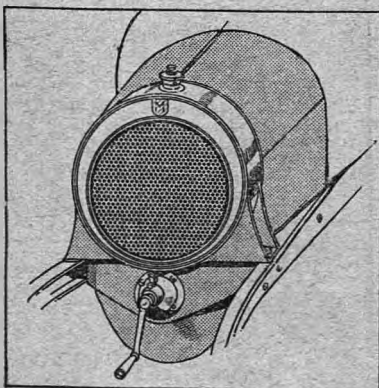
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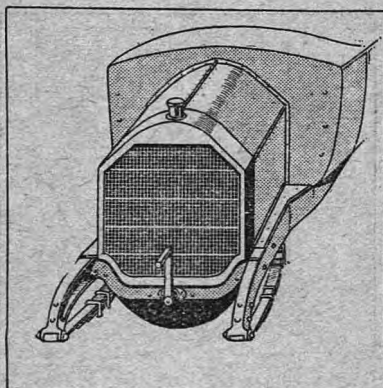
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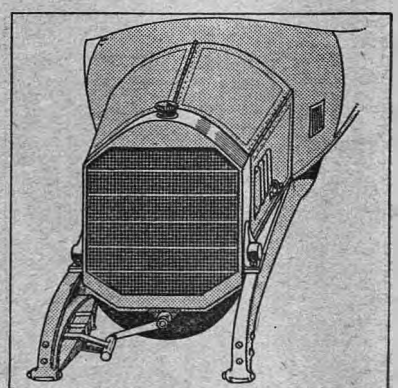
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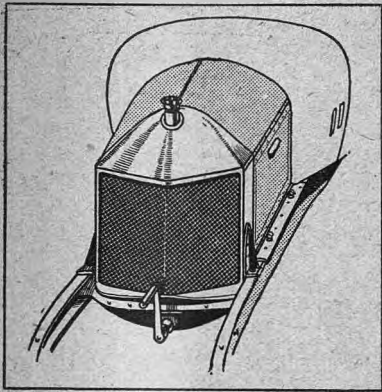
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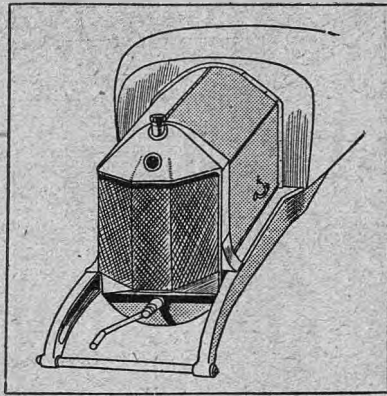
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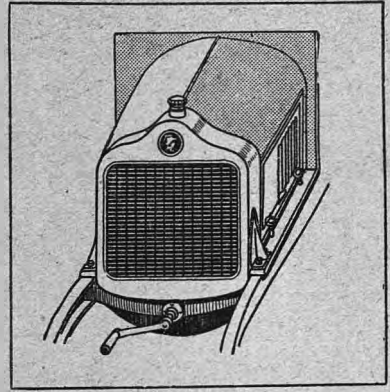
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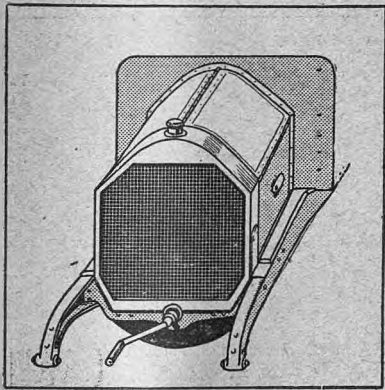
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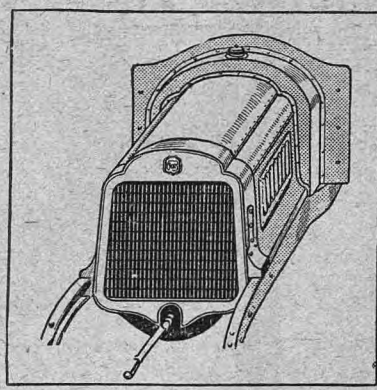
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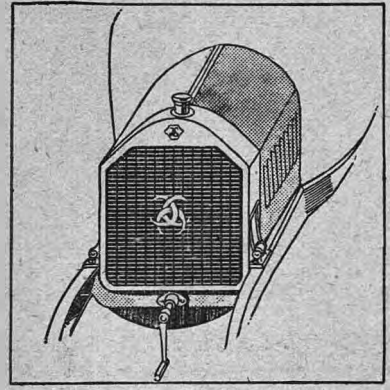
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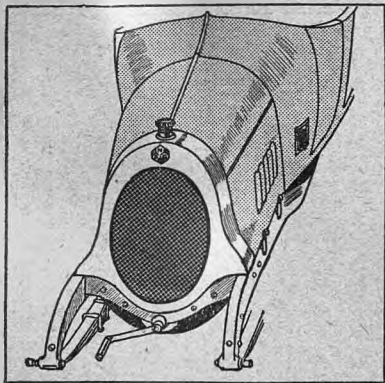
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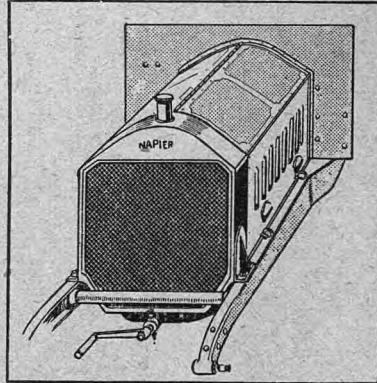
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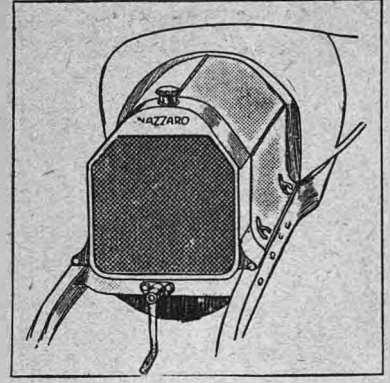
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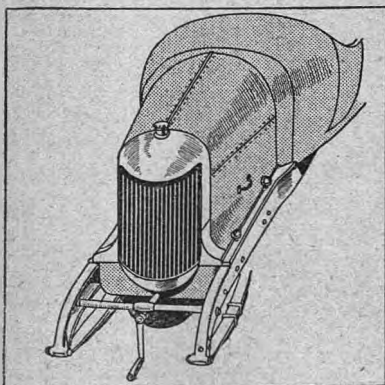
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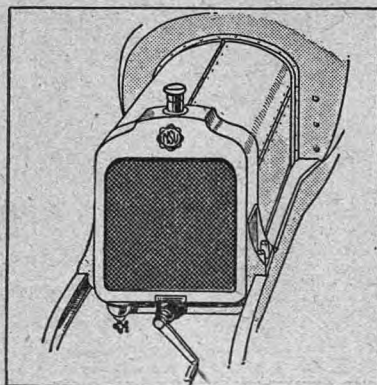
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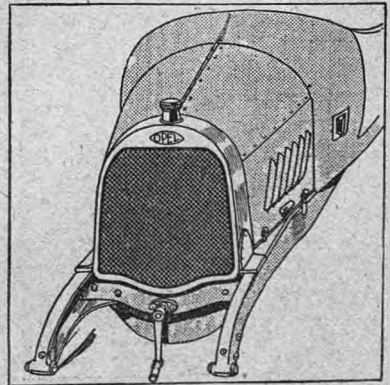
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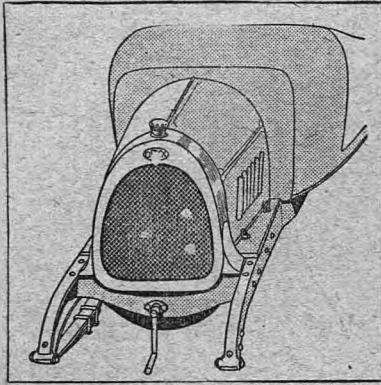


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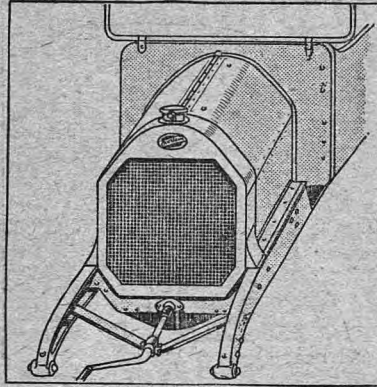


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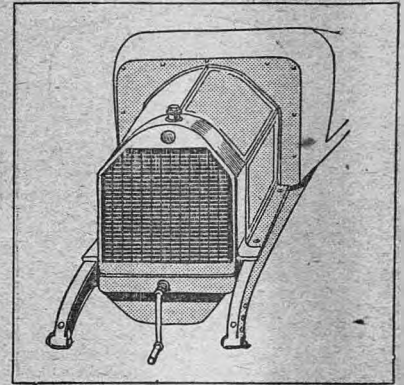
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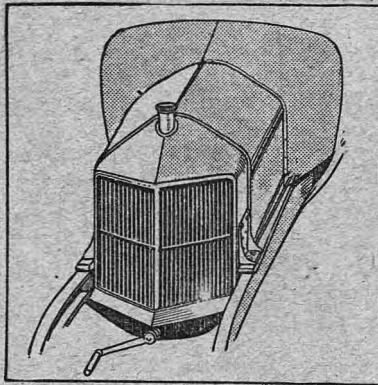
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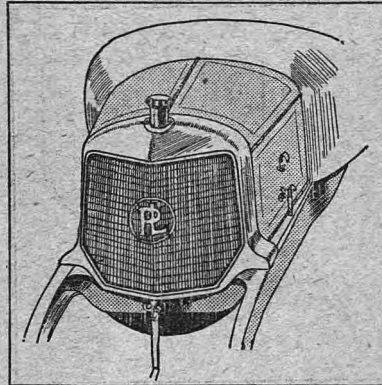
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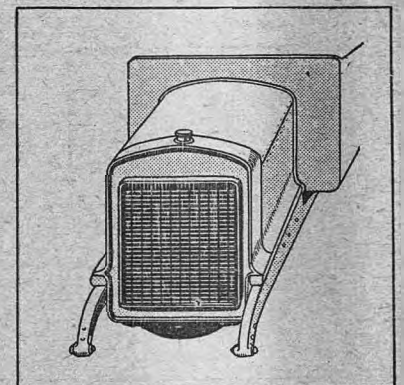
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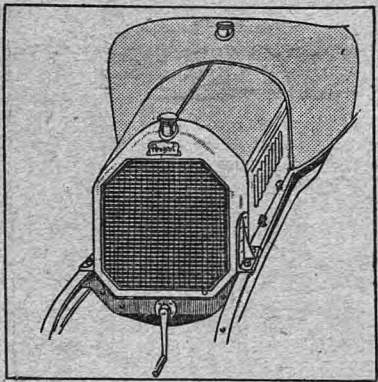
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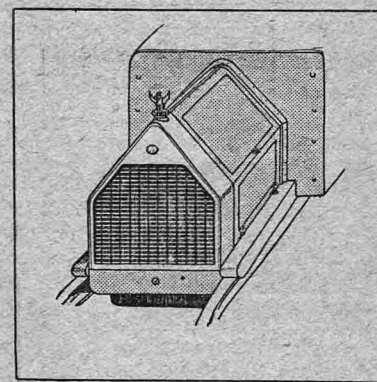
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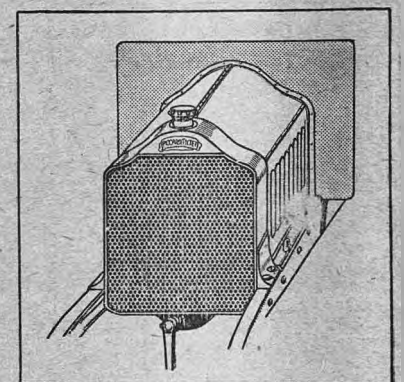
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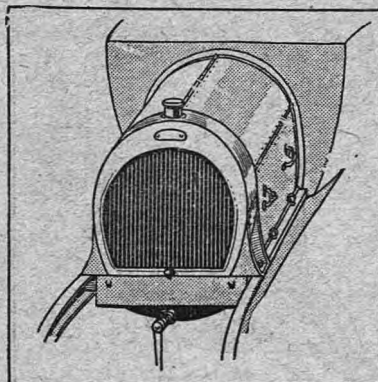
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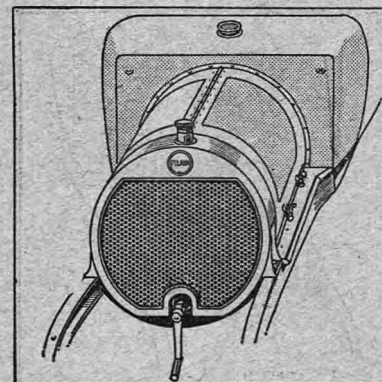
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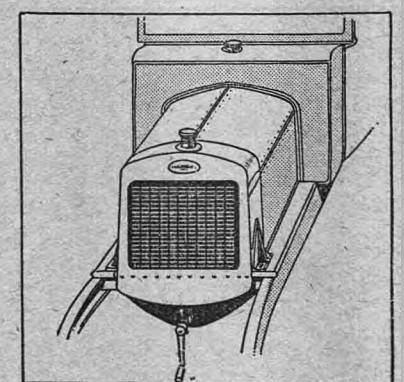
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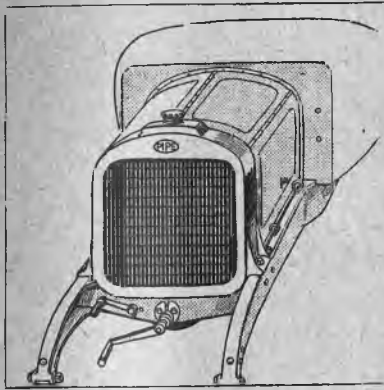
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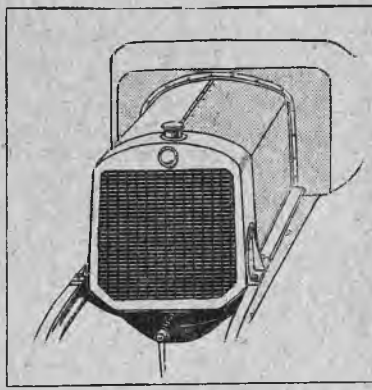
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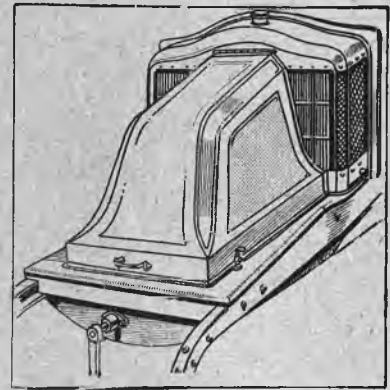
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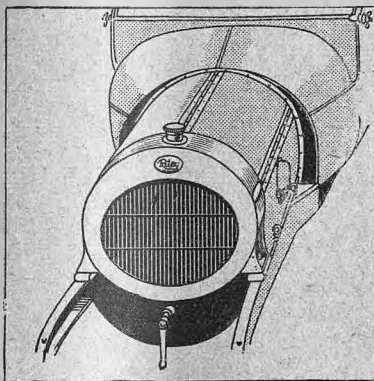
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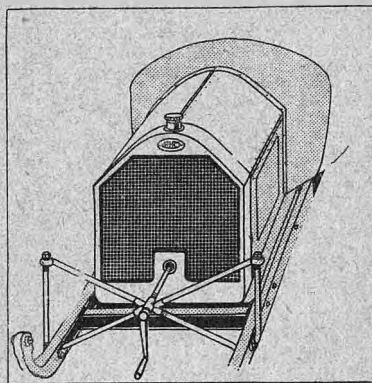
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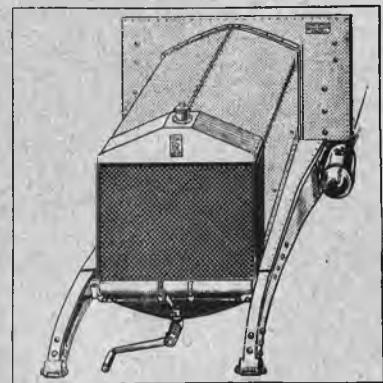
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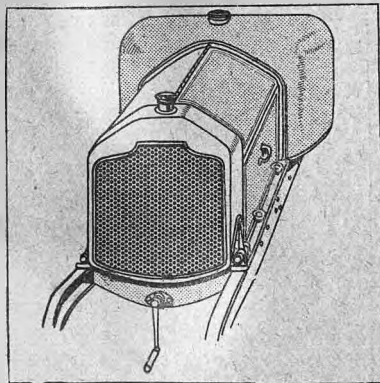
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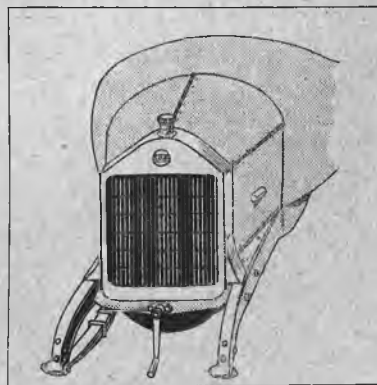
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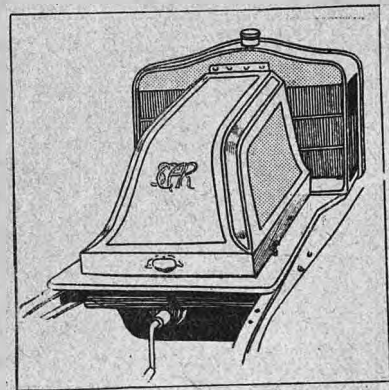
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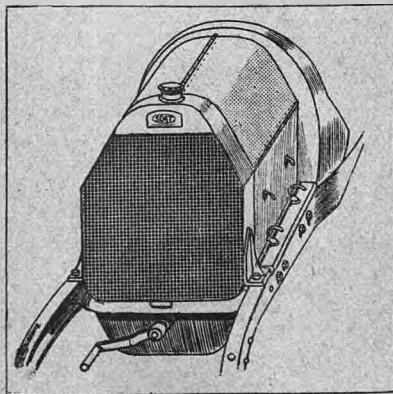
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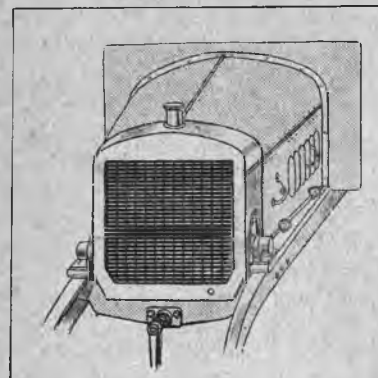
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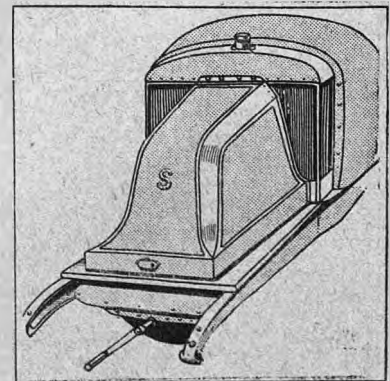
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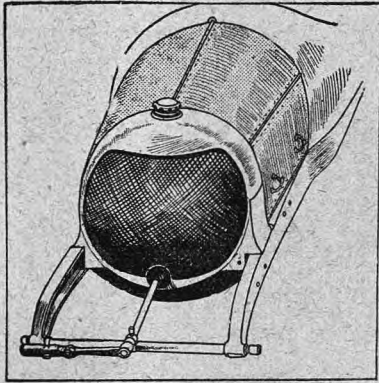
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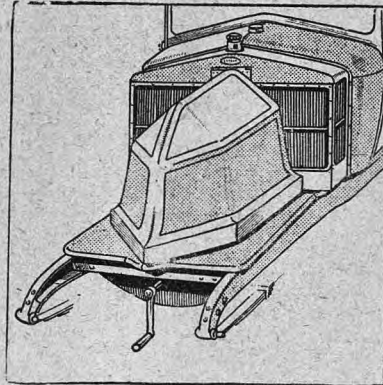
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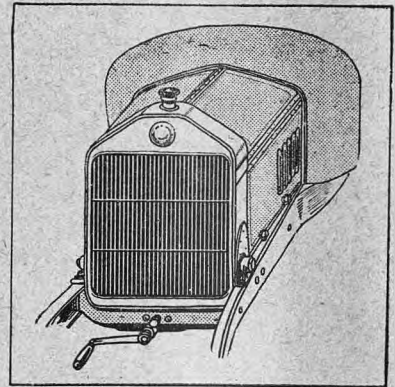
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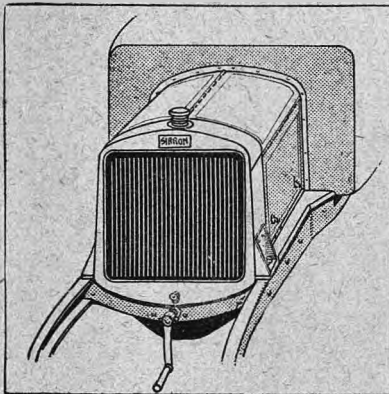
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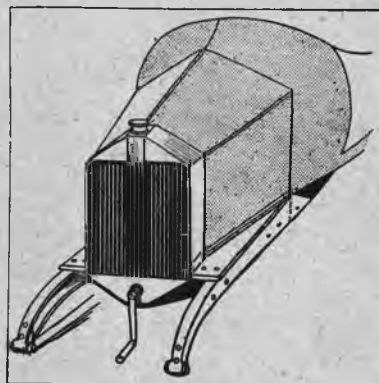
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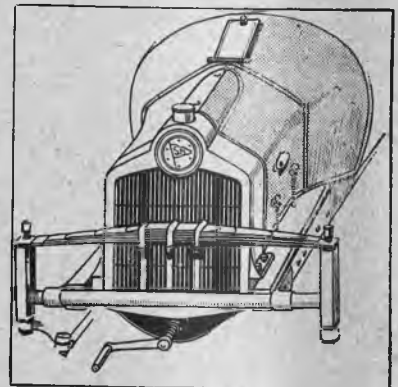
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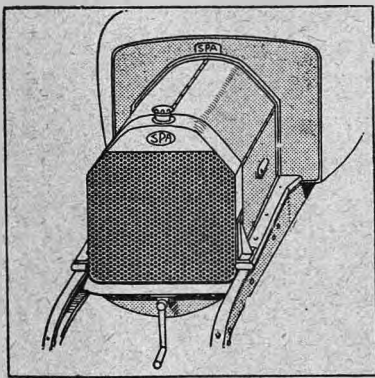
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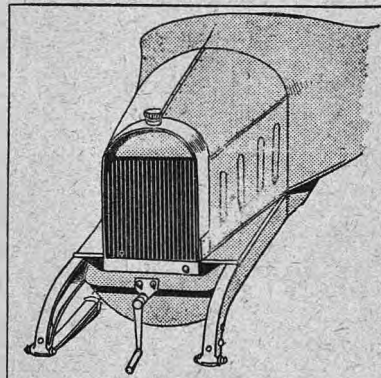
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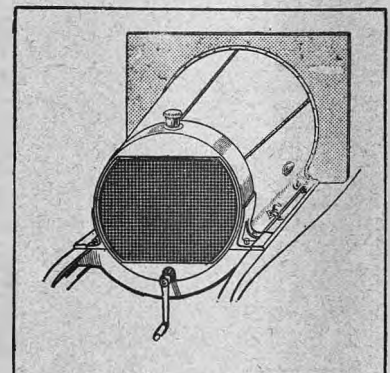
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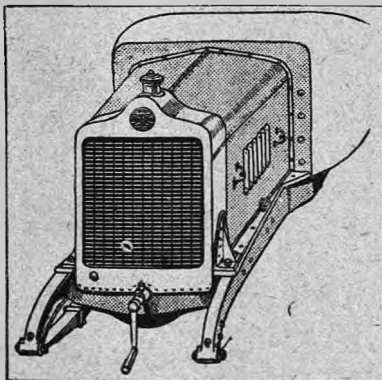
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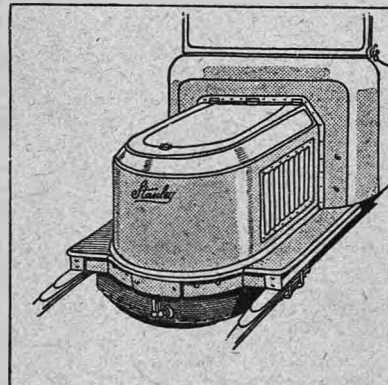
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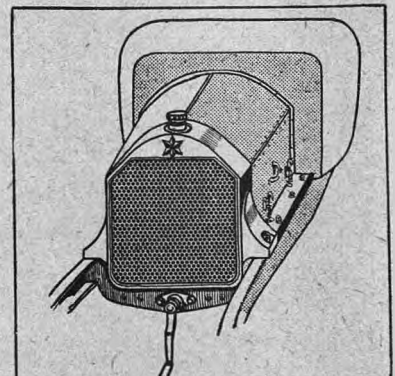
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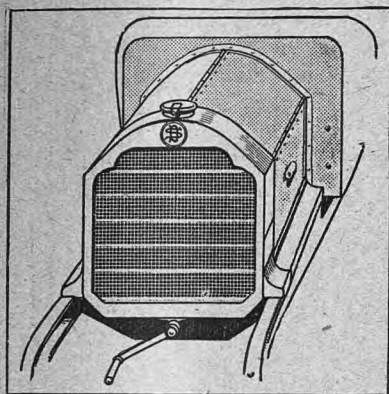


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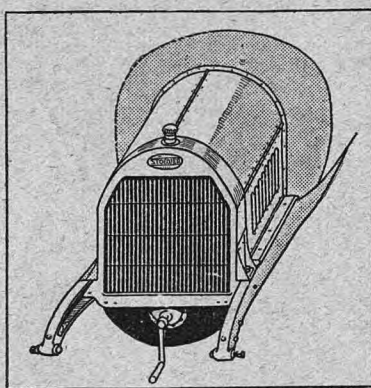


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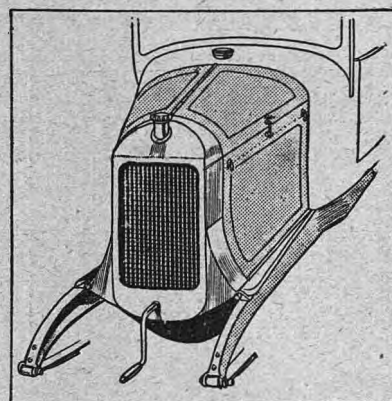
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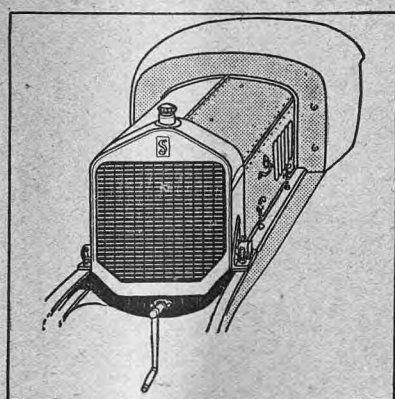
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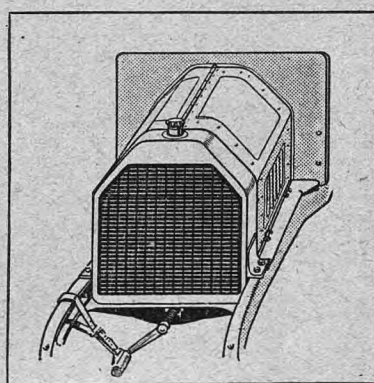
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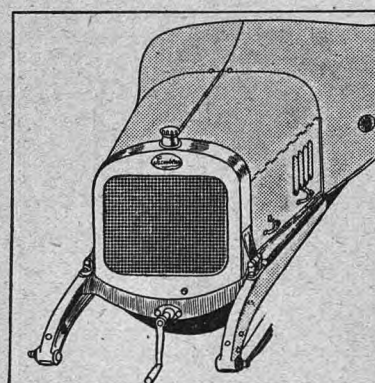
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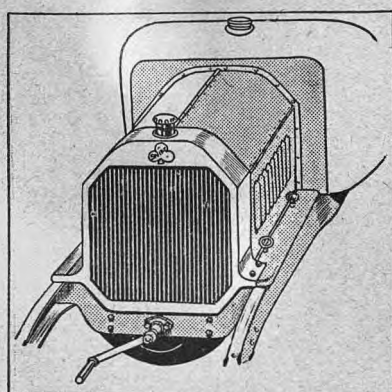
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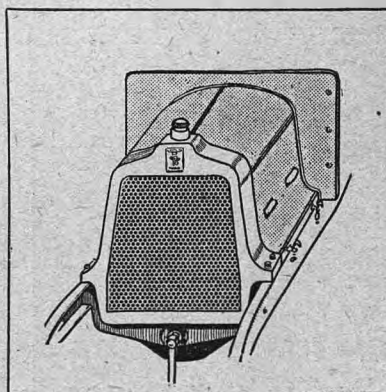
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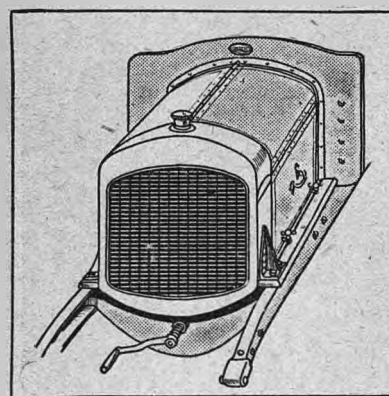
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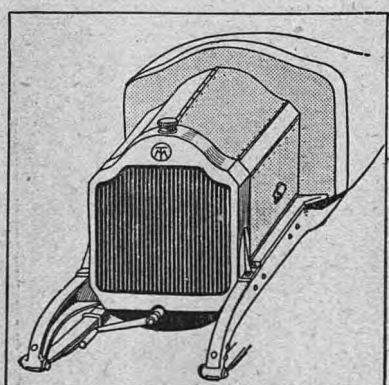
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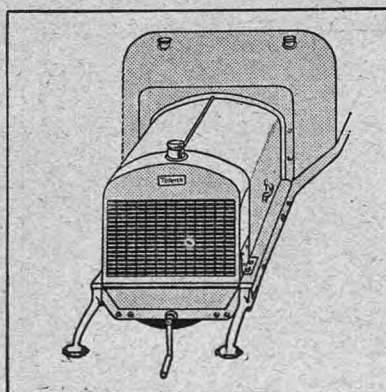
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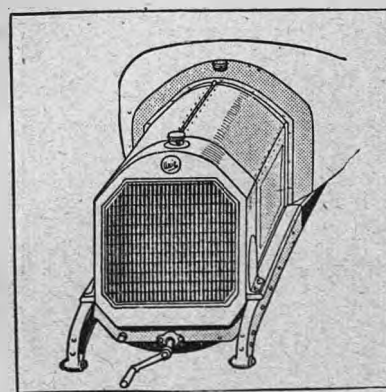
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Turcat-Mery.



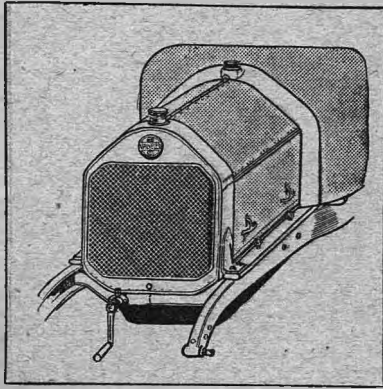
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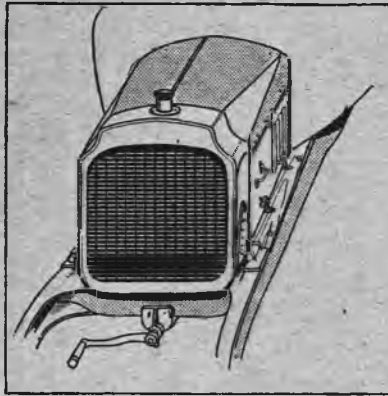
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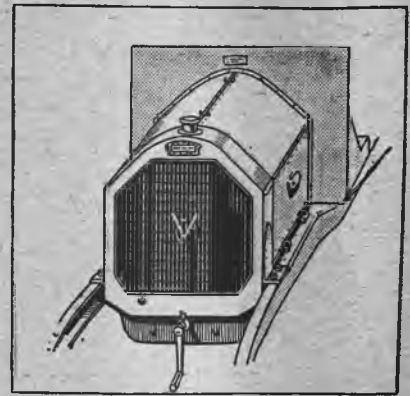
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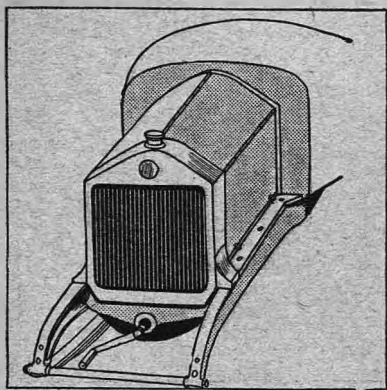
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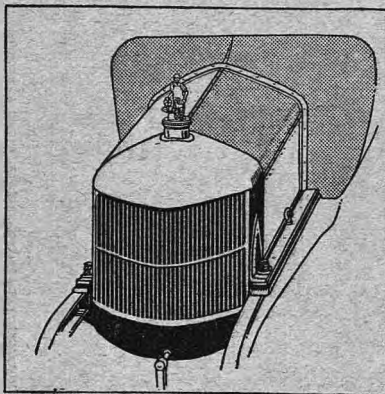
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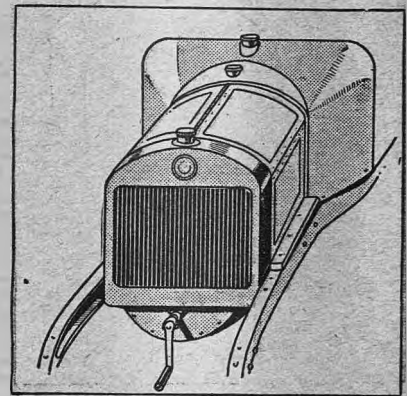
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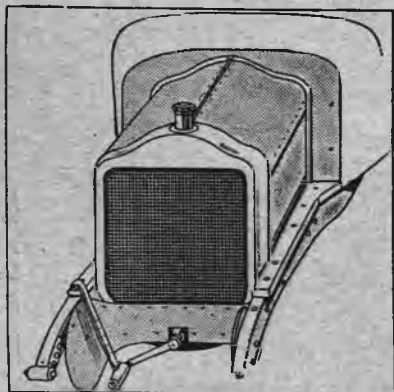
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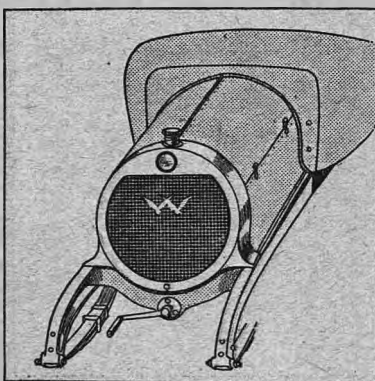
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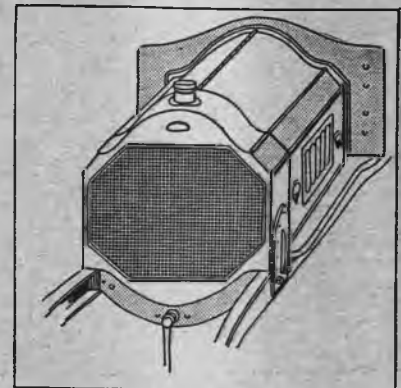
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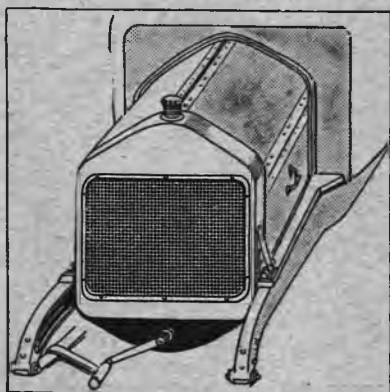
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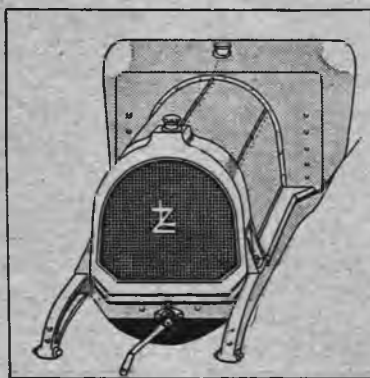
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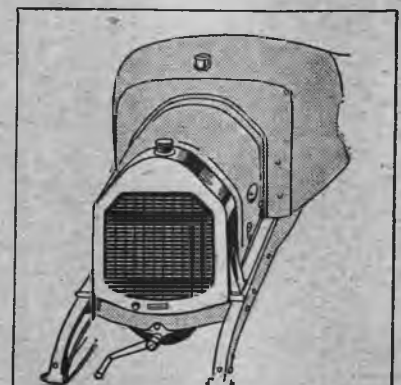
Withers.



Wolseley.



Zedel.



Zebra.



## 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.

### WORM GEAR—A CHALLENGE.

[19342.]—Under the above heading in your issue of the 8th inst., you give point to the controversy that has arisen on the subject of the relative merits of worm gear of different types (namely, the straight worm and the hollow or Hindley type) by publishing the claims of Messrs. David Brown and Sons to produce a worm gear of efficiency as high as, or higher than, the Lanchester. You point out at the same time that the one difficulty of the situation lies in the fact that the only testing machine at present in existence capable of the necessary degree of accuracy to decide the question is the Daimler-Lanchester machine, of which the only example is in the hands of the Daimler Co., by whom it was built.

We are writing now to authorise you to issue to Messrs. David Brown and Sons (or to any other maker who will take it up) a definite challenge in the terms accompanying this letter, and to say that we shall be pleased to place our testing machine at the disposal of the National Physical Laboratory for the purpose of testing any worm gear that may be submitted against us in answer to the present challenge, and otherwise to grant reasonable facilities for the use of the said machine by our competitors for the testing of worm gear of the parallel type, on the condition that a competent and independent observer is present and that the results will be open for publication.

Beyond the above, we beg to inform you that we are formally offering a worm-testing machine as a gift to the National Physical Laboratory, which, if accepted, will either be the present existing machine or a new machine of a similar design.

We should like to add that we ourselves have no doubt whatever as to the relative merits of the Lanchester and the parallel types of gear. We have not actually conducted tests with the "DBS" gear, but we have tested the parallel worm gear of other makers of repute; in fact, the parallel worm gear tested and plotted in Mr. Lanchester's paper was supplied by one of the most prominent makers of motor car worm gear, and shows, in comparison with the Lanchester, a very marked loss of efficiency, especially at heavy loads.

THE DAIMLER CO., LTD.

Percy Martin, Managing Director.

### TERMS OF CHALLENGE.

The challenge shall be open for acceptance for a period of one month from date, during which time any maker of the parallel type of worm gear is at liberty to notify his intention to enter into competition with the Daimler-Lanchester worm gear (a) on the basis of efficiency, and (b) in a test to destruction. The Daimler Co. are prepared to put up a sum of £100 on each test, namely, £100 on an efficiency test and £100 on the destruction test, and any person or firm taking up this challenge will be required to put up a like sum to cover the expenses of the trial, the balance (if any) to be awarded to the victor. The tests to be conducted on the following lines:

**Efficiency Tests.**—The Daimler Co. will stand by the report of the National Physical Laboratory, and more particularly the results tabulated in Tables I., II., and III. therein, these results relating to the performance of worm gear of 6in. centres at worm speeds ranging from about 400 to about 1,500, having ratios of 8/33, 8/25, and 9/34, the said tests being conducted with the temperature maintained at from 30° to 50° C., and the torque on the driven shaft varying from 254 to 1,035 lb.-ft.

The party taking up the challenge will be required to submit three sets of gear of approximately the same ratios and of the same centres, and submit same to efficiency tests of equivalent severity over a similar range of conditions, the results being certified by the National Physical Laboratory, and the award being based on the mean of the three mean values of the efficiency curves plotted from the observations on the three sets of gear.

**Test to Destruction.**—The test to destruction shall be conducted at a torque of 100 lb.-ft. on driven shaft. The gear shall be deemed to have failed when the efficiency falls definitely below 93%. In the event of both gears maintaining the said load for a period of twelve consecutive hours, the torque load shall be increased, and the test continued till either one or the other of the gears fail.

On the challenge being accepted and the money put up, the details of the trial shall be arranged by a committee of three, consisting of (a) a nominee of the Daimler Co., Ltd., (b) a nominee of the firm by whom the challenge is accepted, and (c) a person appointed by the president of the Institution of Automobile Engineers.

THE DAIMLER CO., LTD.  
Percy Martin, Managing Director.

### MOTOR CAR INSURANCE.

[19343.]—In your issue for March 15th you published an article on motor car insurance, by "Owen John," in which the following paragraph appears: "We have no friends to take up our case, our very 'leading automobile organisations' are wolves without disguise, and even some part of our premiums, if we insure through them, are attracted to their funds as agents."

This statement is absolutely unwarrantable so far as the R.A.C. is concerned. We do not act as agents, and no proportion of any premium paid to us goes to the Club funds. The Club is not financially interested in any way whatsoever in the question of insurance, and we get no commissions from insurance companies directly or indirectly. Some years ago a special committee was appointed to deal with the question of motor car insurance. This committee drew up what is known as the Model R.A.C. Policy, and it authorised certain companies and Lloyds' Underwriters to issue the model policy.

By this system members of the Club are not bound to any special company, and the membership obtains the benefit of competitive rates.

I enclose a copy of a memorandum which we send to all members and associates who apply to us for advice concerning the insurance of their cars, in which you will find the scheme explained in detail, and at the back of the memorandum you will find a list of the companies and Lloyds' Underwriters, who are authorised to issue our policy. No Club official gains any advantage whatsoever by the issue of the policy, and the Club funds do not benefit in any way.

Under these circumstances, it is impossible to let "Owen John's" misleading and totally inaccurate statement pass without a protest.

J. W. ORDE,  
Secretary R.A.C.

[19344.]—I would break a lance with your contributor "Owen John" over his article on insurance.

To begin with, as I am practising as a consulting engineer and the largest part of my work comes from insurance companies in connection with accidental damage to cars, I am an interested party. But I do not sell policies, and am not a commission hunter, so I am only indirectly interested.

Having cleared the ground in this matter, let us get on with our tilting. One of the chief complaints against our "L.A.O.'s" is that they are too closely connected with the trade. Surely, if they are going to start trading as insurance companies, they will be adding yet another cause of complaint. "Owen John" says that he thinks that by reading the papers he can form a fair estimate of the proportion of accidents that occur in the town and country districts. I rather doubt this, as I find that when an accident happens in the remote country parts it does not get reported to the press unless there are very serious personal injuries to some of the passengers, and often not then. Then "Owen John" writes as though there were a large number of cars that

*Correspondence.*

never went into a town or ran along a main road where there is considerable traffic, but, surely, this is rather an exaggeration, as all ships come to port sooner or later.

I am quite willing to admit that there are many very careful drivers who are not likely to cause collisions, but there is no power that can prevent them from being charged by the scorcher, and, therefore, they must insure, and I find that the average cost of repairs to a car that meets with an accident in the country is much greater than the average cost for town accidents, probably because the speed is higher.

I do not doubt that if an insurance company could devise some system for discovering the virtuous ones, they would be prepared to insure the cars of such people at a reduced premium. But at present all they have succeeded in doing is to discover and black list a few of the most "nutty" of the scorchers. And do not forget that the competition against the insurance companies is keen, and that the premiums are fixed by average cost. It does not seem likely that a lot of amateurs, as the "L.A.O.'s" would be, could find out how to distinguish the sheep from the goats, when this problem has been too much for men who have spent years trying to solve it. "Owen John" suggests a circular letter asking a man to state, amongst other things, how many accidents he has caused or incurred. Do you think the answer of the "nutty" scorcher on this point, even if fit for publication, could be accepted as evidence? "Owen John" does not often get off the map, but I think that on this occasion he is, shall I say, using his hat as a transmitter. The mixed metaphor will probably make him sit up and take notice if nothing else does.

H. P. FISHER.

[19345].—In reference to "Owen John's" attack on the Motor Union Insurance Co., Ltd., and the insurance agent, in an article in your issue of March 15th, it would be interesting if "Owen John" would reply to the following questions:

1. Does he receive payment for his articles in *The Autocar*?

2. Does he consider as a journalistic expert (he admits he is not an insurance expert) that *The Autocar* is unnecessary to the 60,000 members of the A.A. and M.U.?

3. Does he think it the right course for the A.A. and M.U. to issue a weekly journal of its own to its 60,000 members, and at the same time advise its members that *The Autocar* is no longer necessary?

4. Does he consider that the A.A. and M.U., with its 60,000 members, should endeavour to make for its organisation the profits at present undoubtedly made by the proprietors of *The Autocar*?

5. Does "Owen John" recommend the Association asking its members for the money with which to buy the machinery to print, the writers to write for, and the staff to edit and publish the journal of the A.A. and M.U. which should take the place of *The Autocar*? If not, would he indicate how it should be managed?

6. In the same way, does "Owen John" recommend the insurance scheme to be worked upon a mutual basis of contribution by each member, and where is the security, and what about the greater expense of collecting, and explaining the fairness of increased contributions from members who have had no loss to pay for the losses of members who have had losses?

7. If the insurance is to be worked on the mutual scheme of contribution on the law of average, how does "Owen John" suggest a differentiation should be made between the town and the country member?

8. If the majority of accidents occur in towns where police traps are not prevalent as on the open road, how does "Owen John" suggest the application of the Free Legal Defence statistics will help the question of decision as to rating of different classes of members?

9. Is "Owen John" aware of the percentage of cases to total prosecutions by the police where an accident is involved?

10. Does "Owen John" consider the mere question of speed of a car is the greatest contributing factor to cause of accident?

11. Is it a fact that the police only prosecute upon the question of speed after they have enquired as to whether the driver is reckless at the points which count, i.e., at cross roads, at turnings, at the meeting or overtaking of other vehicles and pedestrians?

12. If "Owen John" thinks that the insurance agent is quite unnecessary, how does he propose to deal with the many cases where insurance is not understood by the insurer, and to enable him to insure personal explanations are neces-

sary; also, when the insurer requires assistance in overcoming the difficulty of "how to claim" and to ensure that he gets his rights?

13. If, in "Owen John's" opinion, an agent is unnecessary to the insurer and to the insurance company, why does he imagine any insurer deals through an agent, and why does he imagine the insurance companies pay agents' commission?

14. In the same way, does "Owen John" argue that the A.A. and M.U. and the R.A.C. should not have agents to secure new members? If the agent is so unnecessary, how then does "Owen John" suggest the new motorist should be secured as a member?

15. Does "Owen John" suggest a combination of working between the Government and the A.A. and M.U. in order to enable the latter body to learn the names and addresses of all new motorists registered, and thus do away with the necessity of employing the agent?

16. Or, last of all, does "Owen John" suggest agents should work for the love of motoring without remuneration?

Forward, please, volunteers (with private incomes)!

J. WHITCOMB.

## ROAD CONSTRUCTION.

[19346].—As the authorities are just at present engaged in the repairing, etc., of the roads, and I also saw a few days ago a remark at a meeting of the Lancashire C.C. to the effect that the roads had suffered to the extent of about £30,000 to £40,000, due to heavy traction, would it not be well to point out to the people responsible for the roads that the whole difficulty rests upon the fact that there is no real foundation either to the old roads or the new as constructed at present? The placing of large pieces of rough rock or even laying stone sets roughly (to receive macadam) is based upon a principle which entirely ignores the main point, which is that the load carried at any given point is excessive for the area of the foundation. To repair this, it must be borne in mind that the road as at present made consists chiefly of small pieces which are not sufficiently homogeneous to present any area of solidity. When one of the large traction engines with perhaps five or six tons passes over the road, practically each stone touched by the wheels has to bear a quarter of the total load. Now a builder erecting a column to support a weight would certainly not diminish the area of the base of the column, but would place either a stone of large area or a concrete slab; yet this is just what the road maker is doing at present. To remedy this defect, it seems to me that either a concrete foundation (made of rough sharp stones and cement) should be laid, or some other substitute which will provide a more or less continuous area to support the load. It is of little use to expend all the energy on dustless or waterproof roads, excellent as the motive is, if the road will not support the load.

G. HIGGINBOTHAM.

## FLINTSHIRE ROADS.

[19347].—I motored down here (Holyhead) on March 12th in my car from Alderley Edge, and am writing to ask you to warn other motorists not to come the route I did, as I struck one of the worst and most disgraceful roads it has ever been my luck to come across, and I think it is only right something should be done. I came via Chester, Hawarden, Northop, and Holywell, and discovered this appalling road between Northop and Holywell.

I simply had to crawl for quite six or seven miles, if not more, on second speed, and even then I thought the springs of my car must go. Repairs have been started, but instead of leaving half the road open, the whole road is covered with unrolled stones and rock! I stopped to enquire what county council was doing the repair work, and was told to send complaints to the Flint C.C. Certainly if any damage had been done to my car I should have claimed from it, as it has no right to have any road in such a state. Certainly when it is done it ought to be a fine road, but during the process I consider the road ought to be entirely closed. I never even saw a notice anywhere to the effect that it was under repair.

(Miss) M. HERVEY.

## THE RECORD-BREAKING TALBOT.

[19348].—I have for the past two weeks been expecting one of your technical correspondents to comment on the wonderful performance of the 25 h.p. Talbot car at Brooklands from the petrol consumption point of view.

In your issue of February 15th, in an article on Mr. G. Brown, the designer of the winner, you published two

curves, indicating the results on a bench test of this remarkable engine.

The curve connecting horse-power and engine speed is surely unparalleled, and the carburetter that can produce such results must be unique, and I should imagine that it actually does produce a correct mixture automatically at all speeds.

A footnote to the curve stated that a speed of 105 m.p.h. corresponded to an engine speed of 2,500, and you further inform us that the car accomplished a petrol consumption of seventeen ton-miles per gallon.

Reference to the curve would lead one to expect that the total work done by the Talbot engine amounted to approximately 100 h.p. during its record run, and reducing this we find that the petrol consumption at this speed must have been in the neighbourhood of .53 pint per brake horse-power hour, taking the weight of car and driver as 22 cwts. (official weight).

Until this performance I think we were all under the impression that .6 pint per b.h.p. hour was a particularly fine performance, while a good deal higher consumption was found necessary for a racing engine.

It would be interesting if the Talbot Co. would publish the actual petrol consumption of the engine on the bench, to see whether the track figures are confirmed, as the actual power developed while running on the track can only be obtained approximately.

In conclusion, now that all honours have been paid to the wonderful performance of a wonderful car, a little praise should be accorded to the carburetter that enabled the engine to develop its power. I predict a great future for this instrument. F.N.P.

#### SUCTION-CONTROLLED CARBURETTERS.

[19349.]—I really do not understand why Mr. Prangnell [letter 19321] should assume that I am desirous of wilfully misunderstanding his conclusions, and I can assure him and you that, unless a controversy can be carried on quite fairly and without methods of that kind, I have no desire to enter into it.

My view in regard to carburation in the particular circumstances which Mr. Prangnell premises may be summed up as follows: When the speed of any engine whatever falls off in climbing a hill, the suction from the petrol jet, apart altogether from the form of the carburetter, will fall off also. The difference between Mr. Prangnell and myself, therefore, resolves itself into a discussion as to whether hand manipulation of the air supply will compensate this falling off in petrol supply more quickly than will the automatic action of a suction-controlled air valve, as is used in the Stewart-Precision carburetter. What happens in the Stewart is that when the speed is diminished the suction falls off, and, therefore, the air valve closes and the petrol supply is at the same time reduced. But this is essential, as there is only one correct mixture for the engine, and, therefore, as the air supply is reduced, so must the petrol supply be reduced also, or conversely if the petrol supply be reduced the air also must be diminished, if the correct proportion of air and petrol is to be admitted to the engine.

I am not quite clear from Mr. Prangnell's letter as to whether he supposes that with other types of carburetters than the suction-controlled type, he is under the impression that the petrol supply is not reduced, but I think any carburetter manufacturer or experimenter will agree that the petrol supply—that is to say, the quantity of petrol passing in a given time—does fall off in all carburetters as the engine speed falls. Suppose, for example, that as the engine speed falls the petrol supply is not reduced, then the quantity of petrol passing to the engine would be far too much, and a corresponding loss in efficiency would result. Suppose, again, that as the air valve in a suction-controlled carburetter reduces the air supply as engine speed falls off, but that the petrol supply was left the same, you would still have far too rich a mixture and, again, very great loss in efficiency.

Your correspondent's conclusion is that the falling of the air valve, that is to say, the automatic reduction of the air supply due to diminished engine revolutions when pulling up a long gradient, starves the engine, but experiment has proved that this is not so.

When engine revolutions fall a smaller volume of mixture—that is to say, of petrol and air—has to pass from the carburetter in a given time, and it has been found by careful experiment that the automatic proportioning of the supply of mixture to the requirements of the engine, retaining as it does at all times the correct proportions of petrol and air, will enable a car to hang on to top gear for a

much longer period than when either air or petrol, or both, are manipulated by hand.

I would again like to emphasise the performance of the Talbot car at Brooklands on February 15th, using a Stewart-Precision suction controlled carburetter. The *Car Illustrated*, in referring to the amazing speed set up by the Talbot, emphasises the very adverse conditions under which carburation was carried on, and I think the very fact that Mr. Lambert, in thirty-six laps, had a maximum variation of time between his highest speed and his lowest of only four seconds, shows that the suction-controlled carburetter is as near perfection as a carburetter can be.

I would also like to refer Mr. Prangnell to *The Autocar*, October 28th, 1911, in which there appeared a reference to a hill-climbing contest on the Saintbury Hill, Gloucester.

The hill in question is over a mile and a quarter long, culminating in a run of 1 in 6.1. On the occasion in question the surface was bad, and there were two sharp corners, the sharper being on the steepest part of the hill. The gradients ran up to 1 in 5 on the steepest portion of the hill. The time of the 12 h.p. Talbot fitted with a Stewart-Precision suction-controlled carburetter was 2m. 14 $\frac{3}{4}$ s.—an average of over 35 m.p.h. The car was a four-seater with all its passengers, weighing 3,030 lbs., with a windage area of fourteen square feet.

Your contributor at the time pointed out that under the R.A.C. hill-climbing formula, making allowances for weight lifted, wind resistance, transmission losses and road resistance, the h.p. developed comes out at 48.42 h.p., and he goes on to point out that "it is good enough in all conscience, but probably it is an under-statement, as the bad surface and sharp corners would put up the transmission losses and road resistance considerably. So far as we can ascertain this is the best result for volumetric efficiency of an engine in a hill-climb on the road."

I will again emphasise that this car was using a Stewart Precision suction-controlled carburetter, and I will add that without it the car could never have set up this performance.

THE STEWART-PRECISION CARBURETTER CO., LTD.,  
H. J. Fitton (General Manager).

#### DIFFICULT STARTING IN COLD WEATHER.

[1930.]—It has long seemed to me that difficult starting in cold weather is an instance where electric heating would be invaluable, and that a far neater and more efficient way of supplying the necessary warmth would be to suspend immediately over the jet a resistance block much like an electric cigar-lighter, but giving a lower heat than that which is probably too high for safety. On this the petrol would play, and be immediately vaporised, and, as its use would be only momentary, a dry battery would probably work it as well as, if not better than, an accumulator, in cases where the car was not fitted with the latter. As an aid to starting, it would certainly be far more convenient and probably more efficient than the kitchen kettle, and even when the extra heat was not required the resistance block or cone, if skilfully shaped, would be of advantage as an atomiser.

Many of the early carburetters were fitted with such an atomising cone, shaped or grooved like the lower half of a peg top.

THE WHITE KNIGHT.

#### ACCELERATOR AND DECELERATOR CONTROL.

[19751.]—As one not entirely without experience, I write in full agreement with the remarks of Mr. Heyworth Davis [19336] in favour of decelerator control. I would emphasise the greater safety of the decelerator for the average driver, especially in a crisis. To stop the car with decelerator control, you tread down with both feet—that only. The action becomes absolutely automatic without chance of error. With accelerator control, however, reasoning has to be allowed for, consideration has to be taken, the pedal has to be chosen, so that this vitally important matter of suddenly pulling up can never become so perfectly automatic. As a matter of fact, it is enormously safer for an accelerator man to take over a decelerator car than *vice versa*.

PHILIP T. KENWAY.

#### EXPANSION OF PETROL.

[19352.]—I have a 16 h.p. car with the petrol tank on the dash, which is in many ways an excellent place, but I have found that the quantity of petrol shown in the gauge increases as the engine gets warm. In one instance, after a run of three miles, the quantity shown was half a gallon more than the car started with.

In another case, after a run of twenty-five miles, the



## Correspondence.

gauge showed only one gallon less than when the car started, but after the car had stood for fifteen hours the petrol was down another gallon, making two gallons for twenty-five miles, about the average in this hilly country (Torquay). The gauge was examined on each occasion in the garage.

I should like some expert to say whether petrol expanded by heat, as this undoubtedly is, loses or gains anything in its explosive force. In other words would three gallons which had been expanded to four gallons give more mileage than if the petrol had been kept cool, or less? T 20.

## BENZOLE.

[19353.] Referring to Mr. Masterman's letter [No. 19223] to *The Autocar* on February 15th, would he kindly give information as to where benzole can be obtained, also whether any special brand should be asked for? K.O.A.

[Our correspondent is referred to the list of firms on page 462 in *The Autocar* of last week.—Ed.]

## MIXED FUELS.

[19354.]—I have read with much interest Dr. Ormandy's valuable article on motor fuels in *The Autocar* of March 1st, especially that part dealing with the mixture of benzole and alcohol.

Some ten years ago Captain W. T. Pretty purchased a Gobron-Brillié car fitted with a special carburettor for the use of benzole and alcohol, and I believe he was the first to use this mixture in these parts. He deputed me to purchase and mix these two spirits, and, if I remember rightly, it was four parts benzole to six parts industrial spirit. At that time *clean* benzole cost 2s. 6d. per gallon, and the industrial spirit 1s. 11d. per gallon. To-day benzole can be purchased in Hull at 9d. per gallon by the barrel, but I am sorry to find that the industrial spirit has gone up this year to 2s. 3d. per gallon. Still, at this price the above mixture would be about equal to petrol at 1s. 7d. per gallon. Ten years ago .680 petrol was 1s. 9d. per gallon. Although the car ran exceedingly well on the mixture, I know we had carefully to wipe out the carburettor every other day to get rid of the water present in the industrial spirit. EAST ANGLIA.

[19355.]—In reading the result of the experiment made by Southern Automobiles, Ltd., in *The Autocar* of March 15th, page 467, of mixing a large percentage of paraffin with benzole, I am surprised that there is no mention of pre-ignition. I found this defect so pronounced when making a similar experiment (on a Ford fitted with White and Poppe carburettor) that I abandoned the mixture as useless. My heaviest mixture consisted of about 80% paraffin, with petrol 20%, and when once started the car would run well if its speed could be kept up, but if this was reduced much below 20 m.p.h. by an incline, the knocking on all the cylinders became so evident as to require throttling down. This pre-ignition was no doubt attributable to the greater tendency of heavy oil, than light, to self-ignition under compression, and might have been cured by reducing the compression or introducing water vapour into the mixture, but the great difficulty of starting (although a small petrol tank was fitted for this purpose) prevented my continuing the experiment. Incidentally I would say that I found benzole alone was a distinct improvement on petrol, as it burns more slowly, thus giving a sweeter drive, and also 3 or 4 m.p.g. more than petrol. S. K. CARTER.

## TOURING IN ITALY.

[19356.]—I have been all over that portion of Italy and Switzerland which "H.D.R." [letter 19167] intends to visit. The roads all around the Italian Lake District are magnificent, and the scenery is indeed picturesque, particularly from Arona along the shore of Lago Maggiore to Locarno, between eighty and ninety kils., I believe. Another magnificent run is from Como right around the Lake of Como, also about eighty-five or ninety kils.

The road from Piedimulera up the valley to Macugnaga is quite passable for motor cars, but it is not what you would call a first-class road, neither is it a bad road, but in places it is rather steep, but no one with any sort of a car need hesitate running up to Macugnaga from Piedimulera. It is very picturesque at Macugnaga, which lies at the foot of Monte Rosa. There is a good hotel there—the Grand Hotel—and I am sure "H.D.R." will be quite comfortable in it.

The road from Piedimulera to Domodossola was rather rough and dusty when I went over it, but this is the main road leading up the valley to the Simplon Pass, and I presume that it was the great amount of traffic that had brought

it to that condition. However, from Domodossola right up to Gondo and over the Simplon Pass is one of the most magnificent runs a person can take in a motor car. The drop from the summit of the Pass down to Brigue is rather steep in places, and there are some sharp turns which necessitate careful driving. At places the roadway up in the mountains looks like an immense boulevard overhung with large trees. I spent a night at the Hotel de la Poste, Brigue, and was most comfortable there, and the cuisine was excellent. There is a large first-class garage in the hotel yard. The next morning I was up early and motored up to Visp, and left my car in the garage of the Hotel de la Poste, which, by the way, has no connection with the Hotel de la Poste at Brigue. This garage is good, and I think "H.D.R." can rest assured that his car would be in quite safe keeping.

Probably "H.D.R." knows that motor cars are not yet allowed up the Rhone Valley beyond Morel, but a new railway is being built up the Rhone Valley, and when that is completed I understand that the road will be thrown open to motor cars. MYRON E. VANCE.

## HIGH V. LOW BODIES.

[19357.]—With reference to this subject, I agree with Mr. Woodward [19302]. Why, when sitting in a car, should one be forced to recline on one's back instead of sitting in a position which has suited the human frame from time immemorial? In the present form of excessively back-tilted seats there is little scope for changing one's position—if you wish to sit upright and look about you it is impossible to do so with any comfort. In a comfortable first-class railway carriage the seats are a fair height from the floor. Why should they be nearly on the floor of a motor vehicle?

My own opinion is that if you have an ample fairly straight seat at a fair height from the floor and a good cushion which you can arrange to your liking you are likely to be far more comfortable than with the present fashion of back-tilted low-built seats. A.D.

## TO MINIMISE ACCIDENTS.

[19358.]—1. Blow hard at all side roads, when proceeding along a main road, in order to warn traffic from the side roads.

2. Do not blow when entering main road—listen. Don't talk just then, and be prepared to give way.

3. Enter a main road dead slow— $\frac{1}{2}$  m.p.h. where necessary. Give way to main road traffic of every kind and let it proceed first.

4. Depart from main road by looking back while going at  $\frac{1}{2}$  m.p.h. on your proper side; if anything is coming, stop and let it overtake you, then make your turn.

5. If the hand is held out at arm's length in the open country, be prepared to take all damage to that member in good part; also to take full responsibility for damage caused to and by overtaking traffic.

6. In exchange for being very careful, buy yourself, say, a late date two-seated 30-40 h.p. car, as with this, which is generally heavy and large, you are not so likely to come off second-best when forging a straight line ahead. Q.E.D.

## A HEAVY SENTENCE.

[19359.]—Your correspondent 19334 thinks that the sentence recently passed upon a mechanic for knocking down and killing a woman was heavy. Why? Is he still thinking of the grey car mystery, whose driver was acquitted on a similar charge? But if three doctors certify the prisoner to be under the influence of drink, the sentence was justifiable. He also states that it was admittedly accidental and unintentional. I agree. But I don't think that motorists drive about the country and knock down pedestrians and others for a hobby. Ninety per cent. of the accidents which occur during one week, whether by motor, tram, bus or bicycle, are not intentional. [Surely no "accidents" are "intentional."—Ed.]

After all is said and done, whether he received three or thirty years' imprisonment, it will not bring the unfortunate woman back to her family and relatives.

G. J. BARTLETT.

## COMMISSIONS ON EMPLOYMENT.

[19360.]—As an old member of the R.A.C. and also of the A.A., allow me to express my surprise at the insertion in *The Autocar* of the following advertisement:

"£10 Reward.—Chauffeur-mechanic seeking re-engagement will pay above sum for introduction to good family requiring services of a thoroughly experienced and reliable man, single, abstainer, four-years works, four years private, Rolls-Royce

etc., very highest credentials, clean licence, would go abroad."

I do not think that any gentleman would engage a man if he had any idea that the introduction was the result of such a transaction. This is not only my view, but that of several of my motor car owning friends. W. J. MENZIES.

We certainly do not entirely approve of the advertisement quoted, but we cannot take it upon ourselves to censure the advertiser, for, after all, he is only following a custom firmly established in the theatrical profession, for instance, where nearly all engagements are secured through commission agents.—Ed.]

A CHALLENGE—NON-SKID TYRES.

[19361.]—For some months past your correspondence columns have been full of references to a test of different makes of tyres which has been carried out by a certain tyre firm. Amongst others they have been testing what they term "types of non-skid tyres."

We wish to combat the assertion that these said tyres are non-skid tyres at all. Steel-studded tyres have yet to prove their efficiency, and we challenge this firm to submit their so-called non-skid tyres, or any of the makes which they have been testing, to the Royal Automobile Club for a real non-skid test.

Personally, we consider the Royal Automobile Club authorities to be absolutely impartial in their official trials, and we think it only due to the purchasing public that if a tyre is a genuine non-skid it should be stamped with the hall mark of this impartial tribunal.

We therefore challenge the makers of these tyres to submit their wares to the Royal Automobile Club, so that the purchasing public can judge if they are really getting the value and the merits claimed for these tyres.

THE KEMPSHALL TYRE CO. OF EUROPE, LTD.

THE STOCK CAR RACE.

[19362.]—We have been very much interested in the regulations which have now been made public with regard to the stock car race in the Isle of Man.

Generally speaking, these regulations meet with our highest approval, but it is open to question whether they are precise enough. They still allow the query, What is the definition of a stock car? Is it to be precisely the chassis which is supplied to the public at the price contained in the catalogue or are the manufacturers to have sufficient latitude to enable them to convert a stock vehicle into something little short of an out-and-out racing machine?

Notice has been given that the judges will bar from participation any vehicle which they consider has been designed purely for speed purposes. But does this mean that they will take measurements of such important matters as the compression space, the cam profiles, the setting of the magneto, and the valve lift? Also, will they satisfy themselves that the material employed is of standard quality? If not, it is to be assumed that the race will be no more a stock car competition than the Grand Prix, because it is by the combination of these small items that so much can be done with the brake horse-power output. Other things being equal, the fastest car is the one with the best combination and adjustment of these details.

Especially so does this hold with regard to material. The conditions published apparently do not prevent a manufacturer from building a car to more or less standard design and using very much better than standard material; if this be so then they are, we think, unfair to those manufacturers who, like ourselves, employ the finest material procurable for all the parts of all their cars. Hence, we should like to see the race run under the strictest possible conditions so that *only* really standard cars could compete. If not, manufacturers who use the best and most costly material are penalised to this extent, that they obtain no benefit from this policy.

It is particularly important that some definite and comprehensive pronouncement should be made upon this point, otherwise the race would entirely fail to prove to the public any distinctive performance whatever. If this is to be really and truly a stock car competition, regulations must be framed which shall ensure that the cars running in the event have precisely the same characteristics as those of the rest of the same make and type, for without any alterations, scarcely more than adjustments in fact, a sweet and smooth running chassis can be converted into a harsh but eminently efficient racer. For instance, much can be done by carrying the compression up to a high figure, but no one would suggest that an engine of this type was suitable to be driven by the ordinary private user.

Correspondence.

We are strongly of the opinion that entrants of cars in this race should be allowed no latitude whatever, and that they should, on entering, automatically guarantee that the compression ratio, the camshaft, the material, etc., are precisely the same as supplied to the ordinary buyer, unless something to the contrary is specifically ordered.

We take particular interest in the race because we have always supported a sporting policy, and we believe that such an event would do better than anything else to demonstrate the merits of our 15-20 h.p and 20-40 h.p. Metallurgique models. We should desire to run such a car in an absolutely standard condition, not only in regard to engine dimensions, but to all dimensions and clearances great and small. By doing so we should feel that we had been able to show conclusively what Metallurgique cars, as supplied to the public, can do, but we should hardly consider the matter seriously if, owing to laxity in the regulations, our genuinely standard car had to compete against racing vehicles which had been merely principally built of standard parts.

METALLURGIQUE, LIMITED.  
Oscar Cupper.

ADVERTISING.

[19363.]—The advertising of the average British engineering firm is hopeless twaddle, a nuisance, and an eyesore to the reader of the paper in which it appears.

For one reason, British engineering firms will not look upon advertising in the right light. They relegate their advertising to the agent and the professional copy writer, who, excellent in a way, cannot, however honestly he may try, give information to the public if he himself be ignorant of the commodity he is advertising. To make up for his lack of knowledge of the car, engine, accessory, or whatever it is he may be dealing with, he puts forth his energy in the shape of the silly catch phrase, the "stunt" printer's rule, and block-maker's tint. In fact, a great many experts seem to think that advertising actually consists of fantastic lettering and pretty borders. Such things can help out an idea, but many is the time I have seen advertisements in which these things have choked the idea.

There are, on the other hand, a few firms who employ their own advertising men, who work on the premises and have at their immediate call all the information necessary for successful advertising, but there seem to be very few firms of this class who know how to treat their advertising men when they have got them.

Ridiculous conditions, snubs, brow-beating, poor pay, and the like will kill any creative sense. A "live" advertising man needs, above all, fairly free conditions of employment, broad-minded treatment, and the confidence of his employers.

Treat a man like a machine, he will become mechanical, and never put into his work that freedom of thought essential to, and invariably found in, really successful advertising.

M.K.T.H.

:: BOOKS and MAPS ::  
:: FOR MOTORISTS ::

	Price.	
	Nct.	By post.
"Complete Hints and Tips for Automobilists"	2/6	2/10
"Faults and How to Find them." J. S. Bickford		
B.A., 3rd edition	2/6	2/10
"The Maintenance of Motor Cars" Eric W. Walford	2/6	2/9
Encyclopedia of Motoring" R. J. Mccredy	7/6	7/10
"The Autocar" Log Book	1/6	1/8
Motors and Motoring. Prof. Spooner	2/-	2/4
"The Autocar" Sectional Map of England and Wales, Consisting of 24 loose sections on strong card. Scale 8 miles to the inch.		
In stout waterproof envelope	4/6	4/10
In cloth case	6/-	6/4
In solid hide case, celluloid front	12/6	12/10
"The Autocar" Map of England and Wales, Scale 3 miles to the inch.		
Dissected and lotted, in neat case cloth	8/6	8/10
Also on rollers (a good wall map)	8/6	8/10
"The Autocar" Map of Scotland.		
"The Autocar" Map of Ireland, Scale 7 miles to the inch.		
Same styles and prices as above.		
"The Autocar" Map of London and Environs.		
In stout waterproof envelope	3/6	3/10
In cloth case	4/6	4/10
In solid hide case, Celluloid front	12/6	12/10

Obtainable by post (remittance with order) from  
ILIFFE & SONS Ltd., 20, Tudor St., London, E.C.  
or of leading Booksellers and Railway Bookstalls.



## Flashes.

The Committee of Ways and Means of the House of Representatives, at Washington, U.S.A., has agreed to a reduction of the tariff on motor cars from 45% to 40%. The decision, it is stated, was due to the overwhelming proportion of exports of American cars as compared with imports of foreign cars.

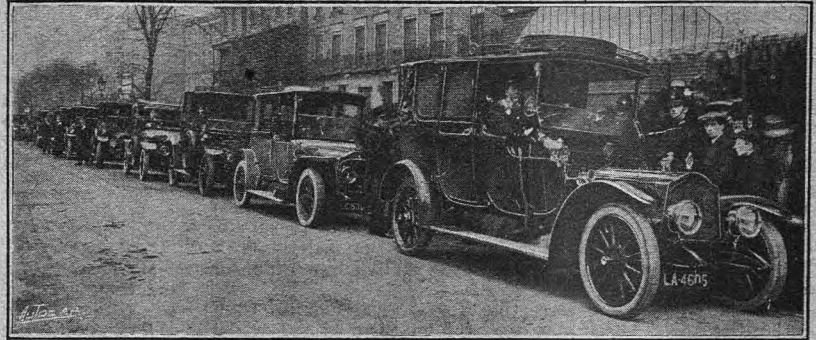
\* \* \*

The City of Birmingham possesses a fleet of municipal motor vehicles, numbering about a score, exclusive of fire engines, for the use of the various officials of the Corporation, and at present the cars have no official home. The question of garaging them has been the subject of an inquiry by a special committee of the city council, which will, it is understood, recommend the establishment of a central corporation garage. The committee in question was appointed originally to enquire into the alleged use of the municipal cars for private purposes, but it has been found that there is no appreciable abuse of the cars in this respect. It was probably the absence of a central garage that gave rise to the allegations, as the officials had to house the cars either at their own homes or at private garages.

\* \* \*

At the York County Court on March 4th a firm of milk dealers in York sued a Bradford motorist for damages alleged to have been sustained by defendant bumping into a milk cart when it was standing in the street on the evening of December 28th. The defendant, who was in company of a lady, admitted having slightly bumped the plaintiff's cart and immediately pulled up and asked the plaintiff if any harm had been done, to which he replied "No," held further conversation with him, and bade each other "good night" in a friendly manner. The bump was so slight that there was no occasion for defendant to alight. Defendant was astonished some days later to receive a claim from plaintiff for damage to horse, cart, harness, etc., and, of course, repudiated it. Fourteen days

later a claim was also made by a woman for injury to her foot on the night in question, although no woman was seen by defendant or his passenger at the time. Plaintiff denied ever having spoken to defendant, although conversation was corroborated both by defendant and passenger. Plaintiff and his witness admitted that they never saw the woman who was



One of the recent notable weddings was that of Mr. Donald Van den Bergh to Miss Norah Samuel, a niece of the Postmaster-General. The bridegroom is the eldest son of Mr. Henry Van den Bergh, who is a member of the board of De Dion Bouton (1907), Ltd., consequently De Dion cars were noticeable in great numbers, as may be gathered from the above illustration, which shows some of the guests' cars lined up during the ceremony.

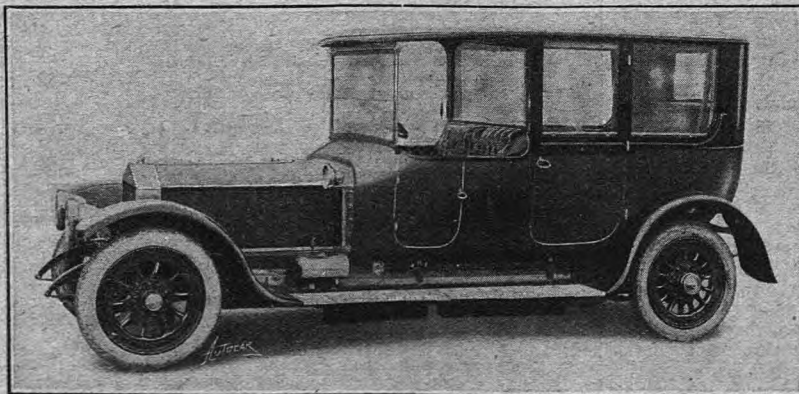
claiming for injury to her foot. The veterinary surgeon who was called to support the plaintiff's claim admitted that he did not examine the horse till January 23rd, nearly thirty days after the accident. The woman who claimed for injured foot admitted screaming out at the time, although she was neither seen nor heard by plaintiff or defendant. The defendant's car on its return home bore no traces of any accident, and was without a scratch. The defendant absolutely denied that any accident of the sort had happened, and said the case had been grossly exaggerated. Notwithstanding the evidence above narrated, Judge Templer, who tried the case, decided against the motorist.

\* \* \*

Mr. J. S. Critchley has been elected president of the Institution of Automobile Engineers for the session 1913-14, and Mr. Max R. Lawrence, Mr. Mervyn O'Gorman, and Colonel H. C. L. Holden have been elected vice-presidents.

\* \* \*

The manager of the Corporation Ferries, Birkenhead, writes to notify that the Ferries Committee of the Corporation of Birkenhead have decided that in future they will not permit motor cars to be conveyed across the river between Birkenhead and Liverpool in the passenger steamers as heretofore. This new regulation will, of course, only affect cars that desire to cross the river after the vehicle steamer has ceased her scheduled running, which is as follows, viz., from Birkenhead, last trip, 10.20 p.m. (9.45 p.m. on Sundays); from Liverpool, last trip, 10.35 p.m. (10 p.m. on Sundays). A special vehicle steamer can be arranged at any time to make a trip across the river to take cars upon special terms.



A Rolls-Royce limousine with a body by Messrs. Mulliner, of Long Acre and Northampton, who built it to the design of the Oaulands Park Motor Co., Ltd., Weybridge. This latter firm supplied the car to Mr. C. A. Houghton, Foxwarren Park, Cobham. It will be noticed that the glass area is uncommonly spacious, making the interior very light. A feature of the interior is a sliding leg rest which converts the back seats into a couch, thereby adding greatly to the comfort of the passengers on a long journey.

## Some Queries and Replies.

Readers seeking the experience of users of specified cars, parts, or accessories are invited to insert their queries in these columns, and their fellow readers are invited to reply.

Querists are asked to enclose a stamped addressed envelope, so that replies may be made direct if the subject is not considered of sufficient general interest to publish.

Letters should be addressed to the Editor, "The Autocar," Hertford Street, Coventry, and replies to queries should bear the number of the query to which they refer.

Editorial advice is at all times willingly given to our readers.

### REPLIES.

#### No. 2589.—Carburettor for 14-16 h.p. Darracq.

I have just had a Zenith carburettor fitted to my 14-16 h.p. Darracq, 1910, and I am astonished at the improvement in slow-running, in acceleration, and in power. As to consumption, I have tested this over a twenty-mile run in a hilly country, and the consumption works out at 25 m.p.g.—F.C.

#### No. 2587.—D.F.P. Car.

I am the pleased possessor of a 10-12 h.p. two-seater model of this make, purchased in October, 1911, and since run something over 10,000 miles. Tyres average 4,000-5,000 miles; petrol consumption about 30 m.p.g. Oil consumption is very moderate indeed. The car easily attains 45 m.p.h. over level, open roads, and is a good hill-climber. I have never heard the engine knock. I have averaged one puncture per 2,000 miles, i.e., five in all. The engine is very lively, and sweet-running at 27 m.p.h., which seems its best speed. On principle I have had the engine down every 4,000 miles, but carbon deposit is very small, and can be scraped off easily. The bearings needed tightening up on the last occasion of doing this. Its fault is that it dances a bit on the back wheels if speed reaches 35 m.p.h. or over, but this does not occur on tour when we are three up and luggage behind. Better results than this might be obtained by an expert, but I am only an ordinary owner-driver, who merely pours in petrol and oil and water, and finding that D.F.P. "does the rest" have no desire for experiment. Usual disclaimer.—J.B.R.

#### No. 1584.—12 h.p. Rover.

Your querist need not hesitate concerning the good qualities of the 1913 12 h.p. Rover. I purchased one of these models after inspecting them at the Show in November last, and journeyed to Coventry on the 18th of that month, together with two friends, to take possession. We were treated with every courtesy by the staff at the Rover works, and I took the car for a spin to Kenilworth just before dusk that afternoon, accompanied by one of the company's testers, for a trial trip. Left Coventry just after 10 a.m. next day, and had a splendid run to High Barnet, where we made the first stop—for lunch. Drove through London (top gear all the time, except down Ludgate Hill, where I put in second, as I was not conversant with the car's capabilities, and desired to be on the safe side in thick traffic. Found this quite unnecessary, however, and soon put in the first again). Came to Sheerness *via* Westminster Bridge, Eltham, Sidcup, Farningham, and Maidstone. The roads were very heavy, and it was now dark, so, for the first time, slipped in the second at Detling Church for the ascent of Detling Hill. This I found the engine had ample power for on this gear, and my friend struck a match and noted the speedometer registering 21 m.p.h. Including this trip (145 miles) I have done 1,206 miles,

and every one of them has been a pleasure! Nothing to worry about, nothing to think about, only sit still and steer, one may say! The only time when one realises that there is an engine attached to the car is when one is cleaning and greasing, which is all that I have done since I became the happy possessor. As regards body (four-seater), the coachwork is excellent, and all passengers remark upon the comfort of riding; one seems to glide even over roads which are not of the best of surface. The quietness and flexibility of the engine are nothing short of marvellous, the makers' claim of anything from 4 to 44 m.p.h. being the inside figures. Traffic driving is a pleasure, and as regards hill-climbing, I am extremely pleased with the show the car has made. I take great delight in our Kentish lanes, and one needs to drive in them to appreciate hill-climbing powers—sharp corners and short steep ascents following each other in quick succession. Petrol consumption, I find, works out about 20 m.p.g. On the run home from Coventry it was only 16½ m.p.g., but since then I have adjusted the needle, to give this figure without any loss of power.—W. J. COLE.

#### No. 2578.—Touring in Holland.

Last summer I had the pleasure of a tour in Holland. The country is well worth going to. The natural scenery is picturesque, while the costumes worn in many parts are charming. The roads are mostly of brick and very narrow, though straight and flat. It is seldom, except in the south, that a speed of more than 25 m.p.h. can be attained, but since the country is so small and places near together there is no necessity to hurry. The hotels are very fair, though expensive, since the standard coin, a florin worth 1s. 8d., only goes as far as a franc in France or a shilling here. The greatest objection to Holland is the smells from the canals, especially in big towns. Amsterdam is particularly unsavoury, but with a little care in choosing hotels not near a canal, no actual danger to health need be feared. It is not at all necessary to know Dutch, since most educated people in Holland speak German or English, and in most hotels one at least of the porters speaks English. One word more of advice may be appreciated—go to Volendam and stay at the Hotel Spaander. Volendam has the prettiest costumes in Holland, and the hotel people are charming.—G. COLOMB.

#### No. 2577.—S.C.A.T. Cars.

I have had a 14 h.p. S.C.A.T. car for nearly four years. During this period I have driven it over 30,000 miles mostly over the roughest highland roads, and cannot speak too highly of it. It has given me practically no trouble during all this time; in fact, £5 would easily cover my bills for spare parts. With a two-seater body I get about 22 m.p.g. and a very substantial mileage out of tyres. The car to-day is running as well and silently as when new. The clutch has never yet been adjusted, and two of the original Bosch plugs are in the engine. I drive the

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Telegrams—"Fluentness, London."

SOLE LONDON AGENTS  
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and S.C.A.R. Cars. London  
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and OVERLAND Cars.

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IMMEDIATE DELIVERY.

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- 16-20 h.p. ADAMS Self-starter Torpedo.
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- 10 h.p. BAYARD 2-seater.
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- 1913 20-25 h.p. OVERLAND 4-seater.

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All new cars can be supplied on the Deferred Payment System.

CALL AND SEE THE NEW 15.9 h.p.

### GERMAIN CHASSIS.

80 x 140 bore and stroke, Riley Detachable Wheels, gate change, 4 speeds, £350.

## SECOND-HAND CARS

FOR SALE:

- 1913 19 h.p. 6-cylinder DELAUNAY, Lawton Limousine body, magnificently equipped, cost £1,000, in perfect condition ..... £600
- 1911 20 h.p. 6-cylinder GERMAIN, Landulette by Van de Plas, fully equipped ready for the road .... £395
- 1911 12/16 h.p. WOLSELEY, beautifully equipped, in excellent condition £275
- 1909 25 h.p. DEASY Threequarter Landulette..... Offers wanted
- 1911 15.9 h.p. S.C.A.R. 2-seater, known as "Sans Souci." This car has won several prizes at Brooklands.... £235
- 1911 15.9 h.p. S.C.A.R. Torpedo, 4-seater £225
- 1909 15-20 h.p. F.I.A.T. Limousine, by Hamshaw, fully equipped ..... £200
- 10 h.p. ADAMS 4-seater, in excellent condition..... £60

IF NONE OF THESE SUIT, SEND US YOUR REQUIREMENTS. WE HAVE LOTS OF OTHERS.



## BARGAINS IN GUARANTEED SECOND-HAND CARS.

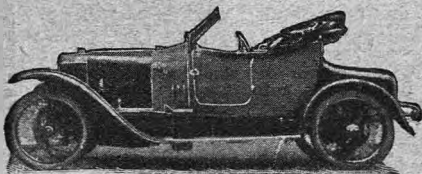
- 14-18 h.p. British Clement, 1911**  
Chassis, fitted with handsome torpedo body, Cape hood, folding glass windscreen. Painted white, upholstered in green leather. Complete with Stepany wheel and tyre, all lamps, etc., GUARANTEED ..... **£325**
- 14-18 h.p. French Clement, fitted**  
with limousine body by Vedrine. Recently overhauled and painted. In splendid condition. Fully equipped with five lamps, Stepany wheel and tyre, etc. .... **£150**
- 18 h.p. British Clement Chassis,**  
delivered new in 1912, with single landaulette body. Painted dark green. Corduroy upholstery, with detachable covers. Well equipped with five lamps, detachable wheels, including spare wheel and tyre. Speedometer, etc., ready for the road. GUARANTEED ..... **£425**
- 26 h.p. Metallurgique Chassis** with Van den Plas Torpedo body. Rudge-Whitworth detachable wheels, and one spare wheel with tyre. Head lamps with D.A. outfit. Electric side and tail lamps. Cape hood. Folding windscreen. Klaxon and bulb horns. Speedometer, etc. .... **£350**
- 18 h.p. French Clement** Chassis fitted with touring body, hood and glass windscreen. Fully equipped with head lamps, spare tyre, etc. Four-cylinder engine 95 x 130. Live axle. Four speeds gear box. Multiple disc clutch ..... **£125**

For further particulars write:

**THE CLEMENT MOTOR CO., LTD.,**  
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1917 & 1918  
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## Some Queries and Replies (Continued).

car entirely myself, and keep no-chauffeur, and find my running expenses work out at about 5d. per mile. I have never met a hill that gave me the least difficulty, though I have been over Porlock, Lynmouth, Cairn o' Mount, and the Devil's Elbow, the latter on second speed. My own car was before the days of the self-starter on the smaller model but I have driven several S.C.A.T. cars thus equipped, and always found them perfect. Messrs. Newton and Bennett are most obliging to deal with. Usual disclaimer.—**SOLDIER.**

### No. 2582.—8 h.p. 1909 Rover.

Having experienced a somewhat similar state of affairs with another car, the following remarks may be of some assistance. After trying all the ordinary tips for tuning without success, I discovered, quite by chance, that the adjustment of the throttle lever (on steering wheel) had slipped, with the result that, though the lever outside appeared to be in the "full open" position, the throttle valve *inside* carburetter was only being three-parts opened. The necessary alteration in the adjustment having been made, all was well. Another possible cause of poor running is a collection of grit and road dust inside the *switch*, producing a partial short circuit, and consequent weakening of the spark. Presuming platinum points, wiring, and contact make and break are in good order a leakage between carburetter and engine, causing too weak a mixture, might be looked for. The fact that the running on second and first speeds appears satisfactory, indicates that the trouble occurs at comparatively slow engine speeds (on third gear) under load, which in turn points to the carburation being at fault. Is the clutch slipping?—**H. ALLEN, Lieut. R.A.**

### No. 2586.—Paige Car.

I have owned a Paige car, 22 h.p., since May, 1912, and have had it in use during the whole of the time, including this winter. It has not given any trouble whatever beyond usual tyre repairs. The engine has not been touched with the exception of grinding in the valves; it has done 4,400 miles in all kinds of weather and over indifferent roads with four and five passengers without any need of repairs or replacements. After the car has stood in cold garage a week, it will start with two or three turns of the handle, although cheapest grade of petrol is being used. I give the car no attention beyond filling with petrol and oil at intervals. It is an ideal car for owner-driver or doctor who has no chauffeur. The clutch requires no attention beyond filling with oil. The universal joint and propeller-shaft are entirely enclosed in oiltight case. There is no need to get under the car; my pit has not been made use of yet. The petrol consumption varies from 18 to 20 m.p.g. The water-cooling has given no trouble beyond slight leak in radiator, which appears to occur with nearly all radiators. I use the D.A. acetylene outfit almost entirely for lighting, as the self-starter is hardly necessary. The Delco ignitor starts readily by the handle. The car was fitted with Diamond 32x3½ in. tyres; one was badly cut in the first 1,000 miles and looked hopeless. This was repaired and is still doing well on the front wheel; the other three are re-

treaded and look good enough for another 2,000 miles each. I do not trouble about non-skids, as the car is always very steady, which I attribute to the flywheel being in front of the engine. The springing is unusually good. I do not know of another car of this size and power and at such a low price that is as simple to keep in order. Quite a number of features are included that are usually found on expensive cars. My only suggestion would be a one-man hood, although the present one is very well made and rigid.—**H.B.**

### No. 2529.—15-20 Armstrong-Whitworth Car.

I have a 15.9 h.p. 1911 chassis which has covered almost 20,000 miles, and during that distance I have never had a road stop (tyre trouble excepted). During overhauling, parts that one would expect to show wear were only "polished," gears and other vital parts being in almost perfect condition. There has not been a single renewal necessary, even the plugs are the original ones supplied. The engine is running as quietly and smoothly as when I first got the car. The speed attainable is far in excess of what is necessary, thirty-five to forty miles per hour being easy, the car keeping the road splendidly, and vibration being conspicuous by its absence. A trial under fair and safe conditions revealed sixty miles per hour by Stewart speedometer. The gear change is simple and exceedingly quiet, and on hills the car excels, provided one has not the bad habit of "hanging on" to a gear which is really too high for the particular gradient. The running on top gear is exceptionally smooth and silent. Petrol consumption averages 25 m.p.g. Oil (Wakefield) 800 m.p.g. Tyres (Dunlop grooved) about 4,500 back and 6,000 front wheels. The steering is very easy, and, in fact, there is a general excellence about the whole product which makes motoring a real delight to the owner-driver. Usual disclaimer.—**NEWCASTLE-ON-TYNE.**

## QUERIES.

### No. 2608.—Carburetter for Benzole on 8 h.p. Rover.

I SHOULD be glad to have the opinion of your readers of the best carburetter for the 8 h.p. Rover, especially for running on benzole.—**F. C. SCOTT.**

### No. 2609.—S.U. Carburetter for 16-20 Wolseley Car.

I SHOULD be so grateful if owners of 16-20 h.p. Wolseley cars would tell me how the S.U. carburetter, as now fitted, answers. What is the average mileage? Is the acceleration good? Can anyone who has changed the old three-jet carburetter (which I have on my car for an S.U. tell me his experience?—**M.A.**

### No. 2610.—20 h.p. Ford.

WHAT may be considered the reasonable total mileage of this car before serious replacements may be needed? Is the absence of an intermediate speed a drawback? Is the car easily handled in traffic? Some indication of the points of disadvantage in this model (1913 two-seated) would be welcome.—**R.D.**

# Week-end and Touring Notes.

To the Welsh Border. By H. R. N.

(Concluded from page 485.)

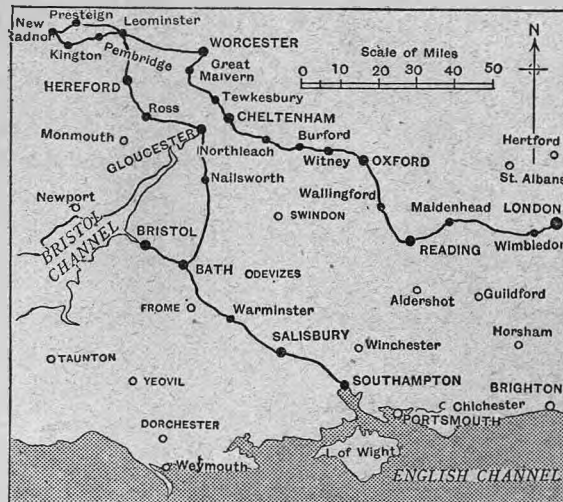
Then we went on to Leominster, making a little diversion by Sutton St. Nicholas to go through the grounds of Hampton Court, an imposing old mansion, and rejoining the main road at Hope-under-Dinnore, whence to Leominster is a continuous easy descent. At Leominster, which is a quiet little town (except on market day), we called on a friend, who later gave us tea, and then accompanied us on our way to New Radnor along an exceptionally easy road, considering that Radnor is 500 feet above Leominster. The greater part of the way, instead of rising, appeared to be level or even slightly down hill. We passed through the pretty village of Kingsland and close by the site of the battle of Mortimer's Cross (which is commemorated by a tablet on a cottage, but we failed to see it), and at Byton Cross we came into the region of real mountain scenery. We travelled along the borders of Herefordshire and Radnorshire, just avoided Presteign (a neck-and-neck rival with Radnor for being the county town), and left our friend at Walton, and came into New Radnor along an excellent road. Our plans for staying the night here were upset by the news that there was not a bed to be had in the place, so we trusted to finding room at Kington later on as we wanted to see the local waterfall called Water-break-its-neck before we left.

New Radnor, though a country town, is only a little out-at-elbows Welsh village, with no claims to picturesqueness except for its situation. The Smatcher, an abrupt hill 1,596 feet high, is immediately to the south, and to the north the great range of mountains known as Radnor Forest forms a barrier too immense to be overcome by roads or railways. We were disappointed in the air, which, instead of being fresh from the mountains, was close and oppressive. But we did not see the place at its best, for the sky was dull and misty and rain threatened. The waterfall, which is about a mile and a half away along the Pen-y-bont Road, was most difficult to find, and when we found it it was no sparkling splash of mountain stream tumbling over rocks, but simply a little trickle of lifeless water such as lies in a peaty hollow of Dartmoor. We turned our backs on this gloomy gateway of Mid-Wales, got the car out of the hotel yard, and drove to Kington in heavy rain. There we found room at an hotel, but it was hardly an inviting place, redeemed only by the cheerfulness of the ostler, who did everything he could for us.

There is not much to see in Kington, so we left early next morning. It was bright south-westerly weather, with soft white clouds in the deep blue sky, and the country, refreshed

by the rain, looked alive again. We stopped at Pembridge, one of the two villages in the county celebrated for their timbered buildings. The other—even finer, I believe—is Weobley. John Abel, who designed the black-and-white house we saw at Hereford, was the chief exponent of this very picturesque style of domestic architecture. We found the real Herefordshire draught cider, which we got here, a very pleasing drink.

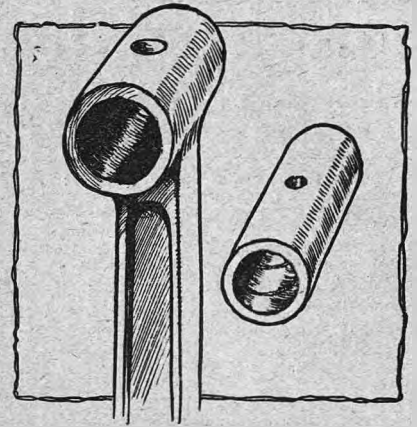
Leominster, which we passed through again, was full of cows, as it was market day—cows in the middle of the road, cows on the pavements, cows in shop doorways licking the paint off, and cows in front gardens of houses browsing on geraniums. Then there was a long climb up to Grendon Green, 818 feet above the sea (the highest point which the car touched during the tour), and there we stopped and walked across a field



to view the country we had left in disappointment, now made enchanting by the distance. Soon we came to Bromyard, which is a pleasant little town. We had lunch at a non-“recommended” hotel kept by a landlord of that most excellent type one reads of in coaching days, who greets the traveller at his arrival, who himself sees to his comfort, who carves for him, and tells him all about the place as he does it. Landlords of this type are now rare, but let us hope for another generation of them with the revival of the road.

The Worcester Road goes over the Bromyard Downs (where we had trouble with a shying horse), and then through apple orchards and hop gardens, and round the most vicious corners to the cathedral city. The cathedral and its surroundings form an imposing group from the opposite bank of the Severn.

We proposed to stay the night at Malvern, and our road lay through the pretty villages of Powick and Newland. At Newland the coil went wrong, but, as rest was the only cure for it, we had to struggle on to Great Malvern, and made a humiliating entry on the lowest gear, with occasional violent explosions in the



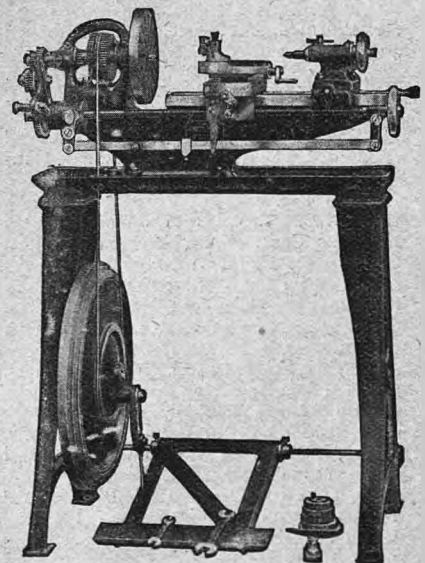
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## Week-end and Touring Notes (Continued).

silencer. We managed to get to an hotel yard, where we left the car and went to prospect for an hotel at which to stay. The "recommended" one appeared to be closed, and the others too expensive for us, so we resolved to go on to Tewkesbury, if the coil would let us.

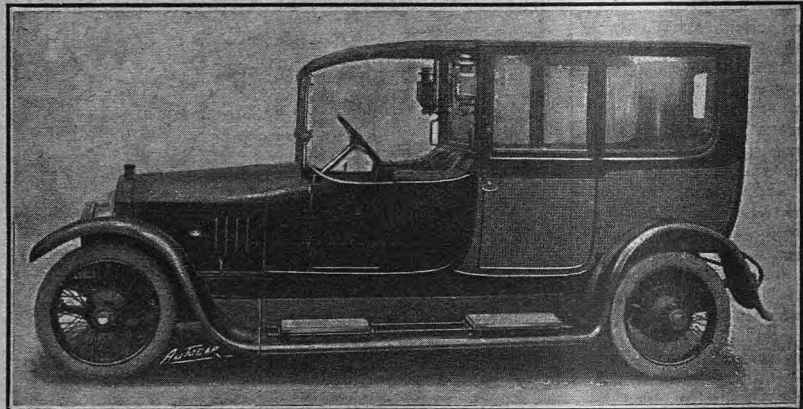
The situation of Great Malvern, on the side of a bold range of extinct volcanoes, is very fine. The highest point, which is called Worcestershire Beacon, and is 1,395 feet above sea level, is well worth the climb. It is said that, weather permitting, points so far distant as Leicester on the one hand, and the Bristol Channel on the other, are visible. At the summit is a map graven in metal, and placed on top of a pedestal, so that it shows the direction and distance of the places visible. The Abbey Church is interesting.

The coil having recovered after a rest and adjustment of the points, we set off along the side of the range, with a panorama of the beautiful shire of Worcester to our left. At Malvern Wells we turned and ran down into the Severn Valley. We soon joined the Worcester and Cheltenham road, which took us through

restive and wanting to get to bed, for his tea urns had to be in full blast by 5 a.m.

Next morning it was raining hard. We went to see the Abbey, now only the parish church of the town, but equal in size and interest to many cathedrals. It is described as having been founded in 1105 by Robert Fitzhamond, Earl of Gloucester, and it became one of the chief monasteries in the kingdom, the abbot having a seat in Parliament. Most of it is very massive Norman, but the choir is Decorated. The bold round-headed recessed arch at the west end, which is 64 feet high, is very striking. It now has a Late Perpendicular window in it.

Then we got the car ready for a wet run, with the hood and side curtains up, and proceeded to Cheltenham, passing near Deerhurst, where we should have stopped to see the famous Saxon church if it had been fine. At Cheltenham we bought petrol. A search for sandwiches revealed to us the curious fact that neither of the principal railway stations possesses a refreshment room so far as we could discover. Foiled in this attempt, we went on past numbers of railway



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charming country to Tewkesbury—a delightful old town at the confluence of the Warwickshire Avon and the Severn. We drew up in an imposing manner at the principal hotel, but were, as usual, rebuffed by the news that it was full. The proprietor could, however, manage us beds "out." We agreed, and were conducted to a pretty old timbered house turned into a coffee tavern, where we were each given an attic furnished in a decidedly economical manner, the surroundings generally giving us reason to suppose that the hotel did not lose money on its enterprise. Anyhow, we admired the beautiful oak staircase on the way up.

After dinner at the hotel, we explored the town, which quite fulfilled our expectations and more in charm and interest. Few towns are richer in picturesque timbered houses. It was too late, of course, to see the Abbey that night, but we inspected the Old Bell—a timbered inn which is one of the sights of the place. We returned to the coffee tavern quite early really, but late according to the ideas of our worthy host, who was getting

viaducts up to the top of the Cotswolds again and along to the sequestered and gaunt-looking town of Northleach, where we got lunch at an excellent inn, the Union.

Northleach, which has often been giped at for having a workhouse at one end and a prison at the other, is one of the Cotswold towns which were highly prosperous in the days when the wool industry flourished in these parts, and, later, were kept going by their position on main coach roads, but since railways came in they have been left out in the cold miles from a station. After lunch, we saw the church, one of the famous Cotswold churches built by devout wool-staplers in the fourteenth and fifteenth centuries. The porch is said to be the finest Decorated porch in Europe, and under a mat are two of the best brasses in existence. The stonework of the interior is beautifully clear and white, and the yellow glass in the windows gives it the appearance of gold.

We went on along the glorious open road on the ridge of the Cotswolds, whence, on either side, there is a view of spacious downland and deep

**Week-end and Touring Notes** (Continued).

valleys, and, in front, the road marked by telegraph poles.

I should think there is no finer road in all England. There is hardly a house all the way, for all the villages lie in the Windrush Valley to the north. We ran down into Burford, a picturesque, but decayed old town of like origin and fortune to Northleach. It possesses a church of noble proportions and full of interest; one of the finest parish churches in England; well kept and containing many beautiful adornments. The town itself should be explored by anyone interested in mediæval and Elizabethan domestic architecture, as it contains some delightful old houses and beautiful arches and doorways crop up in all sorts of unexpected places.

Within a mile we rejoined our open road, and soon came to Witney, passing several derelict woollen and paper mills, the Charterville allotments (an attempt by the Chartists at small holdings which ended in disaster), and Minster Lovell, where are the ruins of an ancient manor house, the seat of the Lovells, the last of whom, Francis Viscount Lovell, disappeared after the failure in 1487 of the Lambert Simnel rising, of which he was the prime mover. In 1708, when some alterations to the building were being made, a secret chamber with a skeleton in it was discovered, and the skeleton was thought to be that of the missing Lord Lovell.

Witney is a well-built country town famous for blanket-making, an industry which still thrives and is even growing, for not long ago, it is said, a firm which had been prosecuted for making Witney blankets in Yorkshire got its own back by setting up a branch here. The place possesses some sort of special advantage for this industry in the water of the "nitrous Windrush," the river which has been in the valley on our left all the way from beyond Burford. The green, with the fine cruciform church at one end and the ancient Butler cross at the other, makes a pleasant picture.

Between Witney and Oxford there is not much to see, except at Eynsham, where are the church of St. Leonard, an old market house now the fire brigade station, and the shaft of a market cross. We arrived at Oxford in time for dinner, and looked forward to a quiet Sunday. There, to our relief, we found our coil waiting for us. Long before we started the tour it had been sent to the makers for overhauling, but, in accordance with the usual custom, it was not returned at the promised time, and so we had to start with an old and untrustworthy coil in its place.

Oxford is familiar to so many that it does not need a long description. I would take the stranger to look up the High from the corner of Long Wall Street, and ask him if he thinks he has ever seen a finer street; to Holywell and ask him if he does not think himself in the city of his dreams, provided that he can cut out the new bit of New College; and to the lawn of Worcester gardens in June, looking towards the back of the "cottages." But these things belong to an idealised Oxford. In the scale against them are the climate, the mud, the trams, the crossings, and the traffic. The mud, which prevails from September to May, is the greasiest mud that ever was, making walking dangerous and

bicycling in the main streets suicidal, for there asphalt or wood or any other civilised street paving is unknown. Ruinous horse trams still parade the streets. The only way a horse tram can break down is, I believe, by breaking its axle, and of this one means of displaying their weakness these tottering vehicles often avail themselves; they are then dragged into the gutter to await the arrival of the man with the crowbar and the spanner. Besides, there are the awful caniveau-like stone crossings and the wildly disorganised condition of the traffic, despite the ten-mile limit.

On Monday, happy in the possession of a reliable coil, we resumed our journey to Wimbledon, where the first part of the tour was to end. Just outside Oxford, where we turned sharply to the left, is the village of Ifley, which possesses one of the most perfect examples of a Norman village church to be seen in England. At Nuneham, marked with a big slab of yellow at each end, is a model village belonging to Mr. Lewis Harcourt, whose house and park are on the right of the road. The cottages are not picturesque, however.

The next place is Dorchester, in Saxon times the cathedral city of a vast diocese, with a very fine Abbey church. Then we crossed the Thames at Shillingford Bridge, where there is a very charming bit of scenery, and came to Wallingford, a quaint riverside town with very narrow streets. From Wallingford to Reading the road passes through one of the prettiest parts of the Thames valley, and there is a succession of exquisite views.

Near Streatley we had difficulty in avoiding a Territorial under alcoholic influence, who was coming towards us on a bicycle at a high speed and in perilous zigzags. We pulled up to let him get by, which he did successfully, but within a few yards the force of gravity gained the mastery. I can well imagine an incident like this bringing up a crowd with shouts of "Pore feller knocked down by motor," "Take 'is number," and the like.

At Maidenhead, or before, we got into the troublesome London area, where ten-mile limits spring up like mushrooms, where the police aggressively focus their eyes on drivers of motor cars, and where van drivers learn from earliest youth how to keep in the middle of the road. Then, on the tramlines somewhere beyond Kingston, a prominent Socialist of Wimbledon, who was riding a bicycle in the same direction, asserted his right to the whole of the road and obstructed us for some distance. Finally, a little affair with a van driver testified to the awkwardness and obstinacy which habitual driving in London seems to breed. We arrived at Wimbledon before seven, having accomplished 415 miles in the six (travelling) days without trouble, except with the decrepit coil already referred to; even the tyres gave no cause for complaint, and nobly did their duty.

"Motor Upkeep and How to Reduce It" is the title of an interesting pamphlet published by the County Chemical Co., Ltd., of Birmingham. The reduction in upkeep is claimed to be effected by the consideration and use of the various interesting materials and accessories which are put upon the market by the firm mentioned.

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Issued Capital.	Amt. of Share	NAME OF COMPANY.	Present Prices.	Last Year.		This Year.		Last Div.	Div. Payable
				Highest	Lowest	Highest	Lowest		
£2,520	1/-	Abingdon-Ecco, Ltd. ....	2/3 3/-	3/-	2/3	3/3	3/-	%	Nov.
45,000	£5	Alldays & Onions (£3 paid)	3 3/4 4	4 1/4	3 3/4	3 3/4	3 3/4	15	Ap/Dc
50,000	£5	6% Cum. Pref.	5 1/2 5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	6	Ap/Dc
209,802	10/-	Argyll, Ltd. ....	4/9 5/3	6/-	4/-	5/3	4/9	Nil	Dec.
150,000	£1	Belsize Motors, Ltd. ....	26/- 26/6	28/1 1/2	25/-	27/6	26/-	12	My/Nv
100,000	£1	Cum. Pref.	19/9 20/3	20/9	20/3	20/9	20/-	6	Fb/Au
44,771	£1	Boyden Brake, Ltd. ....	4/3 5/-	7/-	3/1 1/2	5/-	5/-	Nil	Dec.
766,982	£1	Birmingham Sm't Arms, Ltd.	48/6 49/-	53/3	46/3	50/-	48/9	20	Mr/Sp
203,150	£5	Cum. Pref.	5 1/2 5 3/4	5 1/2	5 1/2	5 1/2	5 1/2	5	Mr/Sp
75,000	£5	Braampton Bros. Cum. Pref.	4 sellers	4 1/2	3 1/2	4	3 1/2	6	Oct.
100,000	£1	Brooks, J. B., & Co., Ltd.	35/- 36/3	37/6	31/-	36/6	35/-	15	My/Nv
100,000	£5	Cum. Pref.	5 1/2 5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	5	My/Nv
100,000	£5	Brown Bros. Cum. Pref. ...	4 1/2 bid	5	4 1/2	4 1/2	4 1/2	6	Ap/Oc
380,000	£1	Charon Par. Pref. Ord. ....	8/6 9/8	11/6	8/-	9/6	7/9	7	Ju/Dc
200,000	£1	Clement-Gladiator ....	2/6 3/-	3/-	1/6	3/-	2/1 1/2	Nil	Dec.
100,000	£1	6% Cum. Pref.	12/- 14/-	14/9	10/4 1/2	13/6	13/6	6	Ju/Dc
55,000	£1	Components, Ltd. ....	6/9 7/3	6/9	4/-	7/9	6/1 1/2	Nil	Dec.
25,347	£1	7% Cum. Pref.	12/- 13/-	15/-	11/4 1/2	12/9	12/-	7	Dec.
275,000	£1	Darracq, A., & Co., Ltd.	10/- 10/6	18/4 1/2	8/9	15/-	11/6	Nil	Ju/Dc
375,000	£1	7% Cum. Pref. Ord.	13/- sellers	19/1 1/2	11/10 1/2	16/-	13/9	7	Ap/Oc
159,229	£1	De Dion-Bouton, 7% Ord.	8/- 9/-	11/3	8/9	8/9	7/6	6	Dec.
1,000,000	£1	Dunlop Rubber ....	36/- 37 1/2	56/9	27/6	39/6	35/6	12 1/2	Ap/Oc
200,000	£1	Cum. Pref.	19/- 20/-	21/-	17/-	20/-	18/6	6	MJSD
312,785	£1	Income Stock	17/6 18/-	19/-	15/6	19/-	17/6	5	Ju/Dc
624,995	£1	Dunlop Tyre, 8% Ord. ....	15/6 16/3	18/7 1/2	10/-	18/-	13/9	10	Ju/Dc
994,990	£1	5% Cum. Pref.	13/6 sellers	16/9	10/6	15/1 1/2	12/7 1/2	5	Ju/Dc
499,962	£1	Deferred ....	10/- 10/6	15/-	6/3	10/1 1/2	8/-	Nil	Ju/Dc
99,977	£1	Enfield Cycle ....	21/6 bid	19/9	13/9	21/9	18/-	5	Oct.
24,985	£1	Cum. Pref.	21/- 22/-	21/3	20/6	23/-	21/-	7	Fb/Oc
292,904	£1	Humber, Ltd. (New) ....	10/6 11/-	7/6	3/7 1/2	10/9	6/9	Nil	Nov.
331,495	£1	6% Cum. Pref.	16/6 16/9	11/-	6/9	16/9	10/1 1/2	Nil	Nov.
50,000	£1	James Cycle, ....	13/6 bid	6/6	5/-	13/6	6/6	Nil	Oct.
100,000	£5	Lucas, Joseph, Ltd. ....	9 1/2 10	9 1/2	9	9 1/2	9 1/2	15	Ap/Nv
100,000	£5	Cum. Pref.	5 1/2 5 1/2	5 1/2	5 1/2	5 1/2	5 1/2	5	Mr/Sp
73,385	£1	New Hudson Cycle Co. ....	26/9 27/3	24/6	14/6	28/-	24/6	10	Nov.
18,033	£1	Cum. Pref.	19/- 20/-	20/-	18/-	19/6	19/6	6	Mr/Nv
50,000	£1	Premier Cycle ....	4/6 5/-	5/-	3/-	5/3	4/4 1/2	15	Sept.
125,000	10/-	Cum. Pref.	7/9 8/-	8/9	6/9	8/1 1/2	7/3	7 1/2	Sept.
31,000	£1	Riley (Coventry), Ltd. ....	5/- bid	8/9	5/3	7/4 1/2	5/3	Nil	Feb.
200,000	£1	Rolls-Royce ....	44/- 45/-	47/3	36/3	48/6	45/-	30	Ju/Ju
138,668	£1	Rover ....	38/9 39/3	31/3	12/6	40/-	30/9	10	Nov.
100,000	£1	Rudge-Whitworth, Ltd. ....	24/6 25/-	24/-	15/-	25/3	22/6	5	Oct.
100,000	£5	6% Cum. Pref.	3 3/4 4	5 1/2	3 3/4	4	3 3/4	12	Oct.
41,621	6/-	Siddeley-Deasy ....	10/3 bid	10/6	6/-	10/7 1/2	8/10 1/2	8 1/2	Dec.
50,007	£1	Singer & Co., Ltd. ....	16/- bid	19/6	6/6	19/1 1/2	16/-	Nil	Oct.
70,000	£1	Star Engineering, Ltd. ....	14/- 15/-	18/6	17/-	13/10 1/2	5	Mar.	
69,157	£1	Cum. Pref.	17/- bid	18/-	15/4 1/2	17/6	17/-	7	Mar.
87,550	£1	Stepney Wheel ....	31/- 33/-	35/-	30/-	32/6	31/-	20	Mr/Oc
120,000	£1	Sunbeam Motor Car ....	53/- bid	59/-	37/6	56/6	52/-	25	Nov.
30,000	£1	6% Cum. Pref.	22/- 23/6	23/3	20/4 1/2	22/6	22/6	6	Ap/Nv
80,000	£1	Swift Cycle ....	25/- 28/6	21/9	13/-	24/-	20/9	6	Dec.
100,000	£1	6 1/2% Cum. Pref.	16/9 17/3	17/3	14/10 1/2	17/-	16/3	6	Ju/Dc
80,000	£1	Triumph Cycle ....	73/- 73/6	71/6	43/9	74/6	68/-	30	Nov.
50,000	£1	5% Cum. Par. Pref.	23/- bid	23/6	20/7 1/2	23/3	21/6	6 1/2	Nov.

\* Including all arrears.

Market firm during past week. Humber Ordinary and Preference and Triumph Preference in request. Darracqs easier. Big turnover in Rovers and Swifts.

## "The Autocar" Diary.

<b>March.</b> 21.—Cardiff M.C. Opening Meet. 21-24.—Cycle Car Club. Easter Tour to North Wales. 24.—Brooklands A.R.C. Easter Meeting. 31.—Automobile Proprietary and R.A.C. Members' Annual General Meeting.	<b>May.</b> 21.—Cardiff M.C. Annual Hill-climb.
<b>April.</b> 1-15.—Monaco Motor Boat Meeting. 2, 5 and 9.—Examinations for R.A.C. Driving Certificates, Pall Mall, 9 a.m. 3.—Bristol and Gloucestershire A.C. Annual General Meeting. 9.—Institution of Automobile Engineers' Meeting.	<b>June.</b> 4 and 6.—Tourist Trophy Races, Isle of Man (see <i>The Motor Cycle</i> ). 7.—Shelsley Walsh Hill-climb. 19.—Cardiff M.C. and South Wales A.C. Open Hill-climb at Caerphilly. 21.—Cardiff M.C. and South Wales A.C. Open Speed Trials at Porthcawl.
<b>May.</b> 8, 11 and 12.—A.C. de la Sarthe et de l'Ouest. Le Mans Meeting. 11 and 12.—Targa Florio Race. 18.—Opening of the Russian Automobile Exhibition.	<b>July.</b> 12.—Grand Prix Race. Picardie Circuit. 12.—Cardiff M.C. Gymkhana. 28.—Grand Prix de France and Coupe de la Sarthe. Le Mans.
	<b>August.</b> 10.—Mont Ventoux. Hill Climb.
	<b>September.</b> 21.—Coupe de l'Auto Boulogne Circuit.

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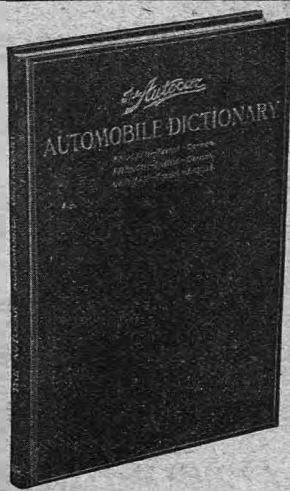
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