Nº 10.

29TH JANUARY, 1913.
ONE PENNY.

Registered at the G.P.O. as a Newspape

The Cyclecar

THE CALL OF THE ROAD.

NOW, this is a true story of a lazy man, a semi-tuned-up cyclecar, and an energetic passenger. Saturday, the 18th, dawned bright and cold; the ruts had frozen into hard ridges on the hills, and were in a half-congealed, spongy condition in the valleys; lakes of water from the previous day's rain were either providing slides for small boys and beasts of toil, or mud baths for those who use the roads and the birds of the air. The necessity for proceeding warily was thus fully apparent. The engine, which had not yet run 100 miles, had reached a state of moderate efficiency that promised increased power in return for further experiments with jets and ignition timing, and the belts, not yet tightened, were rapidly nearing the stage when the first, and most important, shortening would become necessary. After a squirt of petrol in the front cylinder, a few turns of the starting handle were rewarded with a fine, "crackly" exhaust, and we were soon slipping down the road, breathing in draughts of pure, fresh, morning air.

The ruts made driving mildly exciting for the first few miles, when the peculiar "knack" of steering, which varies with different machines and road conditions, was acquired. I found it best to give the machine its head, only pulling the wheel gently when a particularly bad stretch deflected the steering several feet, by this means keeping a straighter line than several passing cars. Some of the ruts were fully 2 in. deep, with sharp edges just commencing to thaw—about as treacherous a surface as could be found, even for this delightfully varied winter.

How beautiful the country looked, sparkling white and green and golden in the early morning sun. The passenger thought so, too, and burst into song, and then, without warning, we were enveloped in a dense mist rolling up from the valley of the Wey. The road could only be made out by driving near the gutter; speed had to be throttled down to a walking pace; a keen look-out kept for wandering pedestrians and cyclists; and ears attuned to warning noises of lumbering vehicles, or chauffeur-driven cars, proceeding regardless of fogs or traffic. We reached the little Surrey village of Addlestone in a cross-country journey to Beaconsfield (where we hoped to fall in with the Middlesex M.C.C. trial) before we were aware of it, the fog suddenly rolling back and revealing a little Rover car making straight for us. We had stopped in the centre of the cross roads, and a collision seemed inevitable, but the driver, with great presence of mind, turned the Rover broadside on, and passed us without touching; nevertheless, it was a near thing. Should he read these lines, I hope he will accept our apologies and thanks, and understand that we had just shot out of a fog bank.

A mile further on, the fog settled down as thick as ever, and we crawled into Chertsey, to find our road a river bed and impassable. Then commenced a detour of several miles over the most appalling roads, into which the wheels sank up to the spokes. The

A WEEK-END WITH SLACK BELTS.

THE JOTTINGS OF JOHN GILPIN, JNR.

THE CALL OF THE ROAD (contd.).

belts were covered with black and yellow slime, and, in their slack condition, began to slip, incidentally making it easier to keep down the engine "revs." and the speed to a safe limit. At one point we came suddenly upon a stretch of road under repair, with a hard line of new and unrolled metal fully 8 in. above the surface of the unrepaired portion, in taking which a quick acceleration just saved the engine from "conking" out. Chertsey Bridge was reached so suddenly that a right-hand turn for Slough was forgotten, and we proceeded to Egham. Here we should have taken the road across Runnymede, but this, alas! as the R.A.C. guide informed us, was under water, like most of the by-ways in the vicinity of the Thames. So up Egham Hill we went and round to the right at the Castle on bottom gear, with the engine racing and the belts slipping, but we got up, and tarried on the top for a few minutes.

A more energetic person would have seized this splendid opportunity for tightening the belts, but now that we were out of the fog, the roads were improving, and there was a fine run down ahead, we woefully neglected this obvious duty. Some time was made up on the next few miles, and then again we were enveloped in the mist, and crawled for miles that seemed leagues, to Datchet—where the proper road was lost and a detour encompassed—and Slough, where we finally ran out of the fog. The miles sped by more rapidly, the belts were gripping splendidly, the sun shone brightly, and the passenger sang—but not for long. We dipped down a lane that called to memory Devonshire by the luxuriance of its foliage and its steepness, but at the foot of the opposite rise we were baulked by a cyclist. Bravely the engine crackled away as we crawled up a rise of 1 in 8 or thereabouts, the surface like a sandy shore when the tide is coming in, and came to a standstill on the steepest part. We tumbled out and proceeded to push and pull on the wheels. Five minutes of this delightfully invigorating exercise, which is strongly recommended as a cure for cold feet, produced about as many yards progress, and there we might have been until the present time, but for a lusty labourer, whose physical "h.p." speedily brought us to the summit of the "mountain." I mildly suggested tightening the belts. The passenger would not hear of it, and remarked: "This is great fun—allons!"

In the hospitable portals of the "White Hart" at Beaconsfield we removed the stains of travel, glanced sympathetically at the belts, reflected that we had come 44 miles in about 3½ hours, gave up all idea of catching the trialists, had lunch, and heard tales of bands of dishevelled, wild-eyed men, groping in a fog, with great icicles hanging from their eyebrows, their beards, and their clothes.

Then on to Oxford on half-throttle over the slippery roads. Half-way up Dashwood Hill the overtaxed belts gave up the unequal struggle and declined to drive; so the passenger was shot out, and then the machine sailed merrily to the top. There the engine sputtered out with an empty tank, an event I was waiting for, as it enabled me to gauge the m.p.g. This worked out to about 28 miles, which is not so bad, considering the amount of engine racing at slow speed earlier in the day. The remaining 23 miles were done on a little over half a gallon, but it was pretty obvious from the fact that the throttle could not be fully opened without getting too rich a mixture with full air, that a smaller jet would have given greater efficiency and lower consumption. (Mem.—It is no good carrying spare jets if you have not the right passenger.)

At Oxford I bought some "Belt Grip"—horrible-looking, sticky, black stuff, which you carve out of a tin with a knife and proceed to smear in lumps on the belts. This operation was successfully performed the next morning, and, of course, being incorrigibly lazy, this was seized upon as an excuse for once more neglecting to tighten the belts. It was the passenger again, who was in a hurry to get on, and when we commenced to touch "35," under the influence of "Belt Grip," I was left without a reply to the information that cyclecars run better without tinkering.

We took the Iffley road, with a view to trying that very fine stretch between Oxford and Reading. What a glorious bit of driving it must be on a fine day, when the roads are hard and smooth, and not as these were, ice-bound ruts just getting slippery. However, we were now fairly used to this kind of surface, and drove without fear of slip through the charming villages of Nuneham Courtenay, Dorchester, to Shillingford, where the road across the narrow bridge turns abruptly to the left, rising steeply. Here the belts signified in the usual manner, and the passenger got out for the cold feet cure. The peculiarity of belt-slip, however, is that while on one hill the belts may pull fairly well when too slack to drive properly, on an easier gradient they may slip far more. A good deal depends upon their condition, for if passing over a sandy road, slip will be less than when the belts are splashed with a greasier compost. Should one belt be tighter than another, it will cause

A curiour car of unknown origin snapped at Oxford, from Magdalen Bridge. The road to the extreme right is the one to Reading, a fine stretch through beautiful country, referred to by "John Gilpin, Jnr."

THE OBVIOUS REMEDY.

"Hang it, I've dropped my ring!"
"You're always losing bits of things, why don't you put a spring washer on it?"

the machine to pull badly, but if the tight belt can be slackened, the equalizing of the driving strain will improve the running. This is easy to understand, for one tight and one slack belt will set up a cross and binding strain.

I managed to get up the steep hill through Wokingham with ease, but on lesser gradients the passenger had to walk. Thus we went on, the belts pulling worse and worse, especially between Virginia Water and Chertsey, where the roads were inches deep in slimy, black mud. Beyond Chertsey I stopped to fill up with oil, having used just under half a gallon for about 130 miles, liberally oiling the whole way, as one should with a new engine. The engine had been getting very sluggish over the last few miles, but after a pumpful of Price's Huile de Luxe, winter strength, suddenly jumped into form, the belts commenced to grip again, and we did the remaining seven miles to Cobham well up to legal limit, our running time for a little over 60 miles being 4½ hours —by no means a creditable performance, but not so bad considering the time wasted on hills.

Here, at the White Lion garage, I found the engineer quite equal to shortening belts, and commandeered his services forthwith. Did I not say at the beginning that this was a tale of a lazy man? Of course, thereafter, we simply romped home, took the Horseshoe Clump hill on top, and completed a run of 149 miles without trouble of any description, if the much-neglected belts are excepted. They should now go a thousand miles or more without requiring adjustment, the first stretch being the most important, and the fact that a drive of nearly 150 miles was accomplished on slack belts, with only casional shedding of the passenger, should do much to re-assure those who dread, or dislike, the tensioning of this type of transmission, which is its chief failing. It would hardly be necessary to drive this distance to find a capable repairer who could shorten a pair of belts, and if the cyclecarist has to do them himself, with a Sphinx belt punch, screw-driver, and a sharp knife it is a perfectly simple operation.

All of which points a moral. I asked the passenger if the game was worth the candle.

"Ripping!—it's great sport," was the reply. And so it is.

* * *

It was my misfortune a few weeks ago to have to drive on a particularly dark night with only a pair of paraffin side lamps, and very poor ones at that, my own headlights not having been delivered. Not having eyes like a cat, I found driving anything but easy, and not a little exciting for the passenger. Every now and then some object would loom out of the darkness almost immediately under the bonnet, and prove to be a tramp, a cyclist, or merely a shadow. The passenger frequently requested me not to remove the fence on the near side, and occasionally we appeared to be making a plunge for the fence on the other. When a car with powerful headlights was met, it was most bewildering, and I had to stop. It is unfortunate that the height of the headlights on most cars corresponds with the height of the driver's eyes. Nobody should attempt to drive at night on country roads without lamps that throw a beam of light at least 20 yards in front of the machine, and even this distance necessarily restricts speed. Many of the lamps now being fitted to cyclecars are not sufficiently powerful. Next time my acetylene lamps fail me, I shall endeavour to beg or borrow others, and if I am unsuccessful the passenger will walk!

John Gilpin, Jnr.

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Topics of the Day

THE lines of the average cyclecar give the casual observer an impression of speed and rakishness which ultimately may not be altogether beneficial to the movement, as it is only a very small minority of the public who are influenced by such things. The majority are interested in the cyclecar on account of its handiness, general utility and economical running. They use it for touring or for business purposes, and not as a machine to run in competitions and races with a number of other ultra-efficient speed models. Hence it is the duty of those who have the best interests of the movement at heart not to give too much prominence to the qualities of rakishness and speed undoubtedly possessed by most of the present-day cyclecars. There are, we must remember, a large number of men and women to whom a racy-looking machine does not appeal, for they actually object to be seen lying flat on the floorboards and sitting behind a large, excessively-raked steering wheel. The touring machine for two, provided with sufficient accommodation for luggage, is the type that appeals to them.

The Influence of Appearance.

* *

IN closing an interesting discussion on the problem of the differential effect of belt drive, we may remark that the necessity for a differential on the cyclecar with this type of transmission is by no means proved. Our own experience, and that of others, is that for ordinary driving conditions the slight slip of one of the belts in rounding a corner has an effect which is wholly negligible. On the other hand, a differential, at any rate of the conventional car type, is a prime cause of sideslip, adds somewhat to the first cost of the machine and to its weight, and whatever advantages it offers they seem to us to be more than discounted by its disadvantages. The charm of a belt-driven machine is the simplicity and flexibility of its transmission, which for a light vehicle like the simplest type of cyclecar should be sufficiently reliable and highly economical. Shaft and chain drive, which are always certain in action and which are preferred by many people, necessitate some form of differential. Those readers who have recommended pawl-and-ratchet clutches on the countershaft have overlooked the fact that such a device prevents the engine being used as a brake, or being cut out temporarily whilst travelling at high speed or in descending hills, without dismounting to re-start.

The Differential Discussion.

* *

WE are anxious to ventilate all shades of opinion in THE CYCLECAR, hence we willingly give publicity to the letter appearing in our "Thought and Opinions" page from a reader whose experience with a cyclecar has been unfortunate, although it is almost exceptional. We know that cyclecars in general are not being produced with that perfection, finish and refinement of detail that make a motorcar at once a very reliable and a most uninteresting vehicle to drive, but, at the same time, we do not think that, as a general rule, the machines are being turned out in a condition that will render them liable to drop to pieces. Most cyclecars, however, are not foolproof, and, in return for their low first cost, they demand care and attention from their owners. Many cyclecarists, who take a keen pleasure in overhauling and adjusting their machines, will endeavour to gain higher efficiency by carrying out their own ideas for improvements, but those to whom tinkering is not a joy but a hardship had better turn their machines over to competent mechanics. If the owner does the repairs and adjustments himself, however, he will certainly acquire very useful practical knowledge, will better understand his machine and learn how to handle it in a way that will give him maximum efficiency and greatly increase his interest in the pastime.

Detail Defects and Improvements.

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The Cyclecar

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Advertisements of Cyclecars for Sale, new or second-hand, Sundry Announcements, and Rates for Advertisements, will be found amongst the end pages.

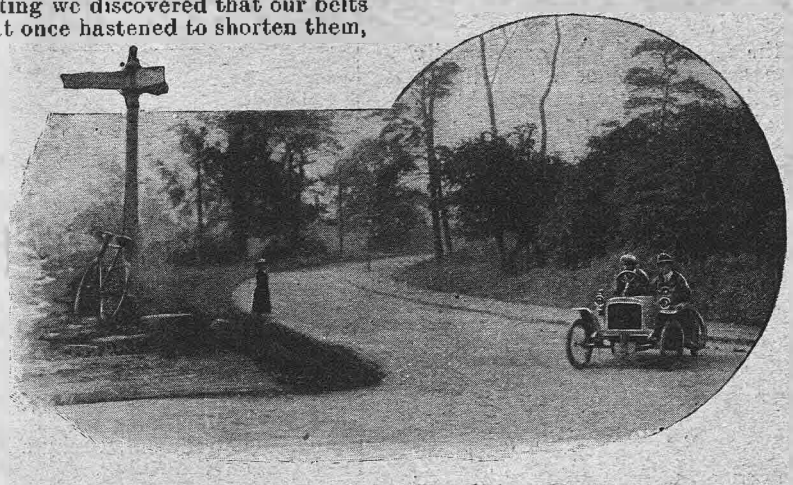
WHY NOT WALES?

Easter falls early this year—Good Friday is 21st March—and cyclecarists will be eagerly looking forward to the first holiday of the year. Why not spend it on the well-graded roads of Wales? In the next issue of "The Cyclecar" will appear an interesting illustrated description of a cyclecar holiday in the Principality. Other touring articles will appear in future issues.

A TOUR IN CORNWALL ON AN L.E.C.

Nearly 400 Miles Without Trouble.

ON the last day of 1912 my brother and I, accompanied by a friend on a motorcycle, started from Staplegrove, near Taunton, for a short tour in Cornwall. Owing to the recent rains the roads were in a very heavy condition, and we expected our progress to be somewhat slow in consequence. All went well, however, until just outside Wellington, when our friend's motorcycle broke down and he proceeded by train to Launceston, where he obtained another machine. Pushing on to Exeter, on the steep incline at Rockwell Green we were pulled up by a cart, and on restarting we discovered that our belts were slipping. We at once hastened to shorten them, and, in our hurry, broke one of the fasteners. Fortunately, however, the son of the vicar of the local church, who was an interested spectator of our misfortune, at once very kindly volunteered to cycle back to Wellington to procure us another, so we were soon speeding on to Exeter, where we had the clutch, which was slipping slightly, adjusted and tested. The cyclecar attracted much favourable attention in the garage, and we were inundated with questions about it.



An L.E.C. car snapped on the road near Coventry.

As it was nearly 6.30 when a start was made for Launceston, we decided to light the headlamps, and found that they were not charged, but at a little inn we obtained enough carbide to light one, which sufficed until we reached Okehampton, where we had both lamps charged and obtained a supply of petrol. After leaving that town we encountered torrential rain, which continued until we reached Launceston at 9.30, but, thanks to the ample protection of the hood, we arrived perfectly dry. Two things that much surprised us were the absence of belt slip and skidding. We left for Bodmin at 6.30 p.m. the next day. The road on this part of the journey was in a decidedly better condition than that previously traversed, and after an excellent run of about an hour we reached the Royal Hotel, which we made our headquarters for the night. Though we exceeded the speed limit at one point for a moment or so, the cyclecar held the road splendidly, thanks partly to the non-slipping properties of the Avon tyres with which it was fitted.

The next day's trip to Penzance, according to the contour book, traversed the finest road in Cornwall, which gave the car an opportunity of showing its excellent running qualities. We arrived at Truro in time for lunch, and on our return to the garage we were cross-examined as to the many features of the car, and were able to give answers which would have convinced even a Cornish jury. At last they let us go, and we were soon well on our way towards the chief town of the Cornish Riviera. Here some time was devoted to sight-seeing, the town being justly famous for the various attractions attributed to it. At the garage where we left the machine we spent some time discussing the machine with the proprietor, who seemed greatly impressed.

We made the return journey by Hayle, stopping the night there, and in the morning proceeded by Redruth to Falmouth. The road from Redruth to Penryn was the worst we have ever experienced, but for the cyclecar it had no terrors. Not so for our friend on his motorcycle, however, for he seemed to spend most of his time in getting out of the gutter and ejaculating in terrible tones "Impossible," "Can't be done," etc. Bodmin was reached about five o'clock.

It was eleven o'clock before we started next day on our homeward journey, and the rain was falling heavily. We reached Launceston in one hour, but our friend was about twice as long owing, as he stated, to belt, carburetter, and magneto troubles, and his condition when he arrived can be better imagined than expressed. A good lunch and then to Okehampton, which was notable for the only real trouble we had during the whole of the journey: the snapping of the plug connection on the high-tension wire—a small matter speedily put right. Our motorcyclist friend was not so fortunate, however, as he broke his belt, but managed with our help to rig it up sufficiently to enable him to traverse the remaining six miles to Okehampton. Such a trouble as this could scarcely happen to us on the L.E.C., owing to the arrangement of the transmission. It will be remembered that the transmission includes shaft drive through a three-speed-and-reverse gearbox on the countershaft, which also carries a differential. The belts thus do nothing but drive.

After tea we started for Exeter, a ride we shall never forget. We had unceasing rain the whole of the way, and to add to our discomfort a real Dartmoor mist, which was so thick that our progress was very slow, whilst, as we were forced to ride without the hood, we were soaked through when we eventually reached the city.

At 11.30 p.m. we entered upon the last stage of our journey to Staplegrove, and the cyclecar never went better than on this portion of the journey, it being only necessary to change down three times. Home was reached at 1.45 a.m., the total distance covered being 393 miles, or an average of nearly 80 miles per day. The most striking features of the L.E.C. demonstrated by the tour were: absolute freedom from skidding; no belt adjustments except the one mentioned; splendid mudguarding system; petrol consumption working out at 45 miles to the gallon; no punctures or tyre trouble; hill-climbing capabilities proved by the fact that it was never put into first speed.

TIME AND TROUBLE SAVED.

Useful Hints and Suggestions Supplied by Readers of "The Cyclecar."

A Useful Cover.

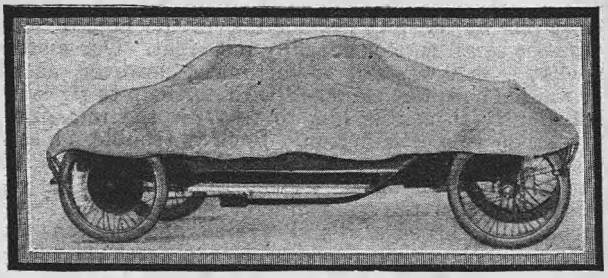
A USEFUL accessory to a cyclecar outfit is a light tarpaulin cover which can be fastened to the four wheels by padlock straps such as are used for locking bonnets. I am having one made for my cyclecar, as it has more often than not to be stored in "open" garages when touring. I think that this contrivance will not only prevent joy-riding, but will keep the car clean, prevent tampering by the over-curious and theft, and be useful when leaving the cyclecar in exposed places in wet weather, whilst, if made of proper material, very little space is required when not in use. D.K.

Steering Details.

IF wires are used the ends should be occasionally examined, broken springs replaced, and if the wire is frayed it should be promptly renewed. This is merely a preventive measure, as in practice, if properly arranged, there is so little strain on the wires that the steering could be quite well accomplished merely with a piece of string. Of course, this does not apply to pivotal steering, where strength of wire is absolutely essential. In the other and more ordinary form of steering the ball joints should be watched, and all connections examined periodically. T.A.H.

Adjusting Chains.

CHAINS, when substantially made, are most reliable; still, it is not an unknown occurrence for one to break. To replace the broken link with a spare one is a simple matter, provided the necessary tools are available, but it is surprising how many people spend hours in endeavouring to join up the ends when the chain is in position, for it can be done in quite a short time thus: Place the chain over the

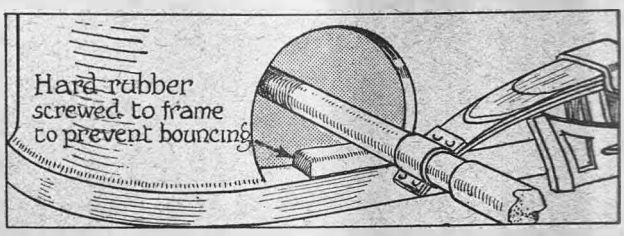


Covering up a cyclecar with a tarpaulin fastened to the four wheels by padlock straps.

sprockets in such a manner that the ends meet on one of them, and by making the teeth engage with the right links the ends will come together and the necessary bolt can be inserted. Should this method be impossible, owing to the inaccessibility of the sprockets, it will be necessary to join the chain up perhaps midway between the sprockets. Unless a piece of strong cord is passed through the last link but one on either end of the chain and tightly tied, it will be exceedingly difficult to make the ends meet so that the bolt may be inserted. As a matter of fact, a special tool can be bought for this purpose at most motor dealers. Very often a new chain has to be requisitioned, but this may prove to be so short that neither of the foregoing methods is possible. If that is the case, join the two ends together before putting the chain over the second sprocket, and then guide it on to this sprocket, at the same time making it revolve by turning the starting handle or pushing the machine, until the chain is in its proper position. When this has to be resorted to, it means that the chain is too tight, and it should only be run in this state for a short distance. If any difficulty is experienced, it is advisable to slack the adjustment for the chain to its limit, and when the latter has been joined up, the proper tension can be obtained. P.J.T.

A Cure for Knocking Rear Axles.

ON some cyclecars, when travelling over bumpy roads, annoyance is caused by the rear axle hitting the outer longitudinal members of the body. A remedy for this is a small block of rubber screwed



A cure for knocking rear axles. (See hint from S.C.H.)

on top of the wooden frame, which is very effective in silencing the rebound of the axle. The knock would doubtless disappear in the ordinary way after a few months use, as the springs weaken, but it is better to take the foregoing precaution directly it is detected. The rebound, I may add, only occurs when a light person is driving. S.C.H.

Converting a Tandem-seater into a Monocar.

IN a tandem-seated cyclecar having the driver's seat in front the machine can be readily converted into a monocar at will, if the seats are built on the hammock principle. The upright forming the support for the passenger's back can be cut diagonally at a point below the top of the body, and on the front of the supports hinges could be fixed. It would thus be easy for the top half of the seat to be folded down into the space usually occupied by the passenger, whilst the back could be firmly fixed when in an upright position by means of a fastening on the back of the supports. The seat space usually occupied by the passenger could be utilized for luggage whilst driving solo, and provision for a waterproof cover to clip over the entire space would be quite a simple matter. C.H.B.

Chain Adjustment and Upkeep.

THESE important links in the transmission system require most careful attention. They should always be kept in correct adjustment, that is, roughly speaking, when top run is tight the under run should have about 1 to 1½ in. vertical play at the centre, but, of course, this would be less with very small sprockets, and more with larger. Lubricate with flake graphite and engine oil; it is certainly messy, but will last very much longer and do its work infinitely better than anything else. Watch for broken rollers, and replace with new ones at once or the sprockets will suffer. When it is necessary to replace a chain that is worn out examine the sprockets, particularly the smaller one, and see if the new chain fits it. Probably the latter will appear to ride on the teeth; if so, do not hesitate to renew the sprocket as well, or it will soon ruin the new chain. A.H.T.

THE CYCLECAR WORLD.

Notes, News and Gossip of The New Motoring.

A noisy exhaust does not a speedman make nor disc wheels prove the m.p.h.

One of the great events of the year will be the Grand Prix race for cyclecars, to take place near Amiens on 13th July.

Five new members, including one lady, were elected at the committee meeting of the Cyclecar Club last week. There are only three lady members at present.

The question of lubrication of cyclecar engines is a very important one, especially the choice of oil. The driver should carefully note results with different lubricants.

A very important consideration for cyclecar manufacturers is the question of silencing the valves. The noise from some air-cooled engines drowns the crackle of the exhaust.

All letters asking for information are answered by post and not through the paper, and readers will simplify this task by enclosing stamped, addressed envelopes for the replies.

We have already heard expressions of opinion from actual cyclecar owners that they do not care to be seen reading motorcycle journals—they feel that they have gone a step beyond motorcycling.

An air-cooled engine should not be run for more than a minute or so when the machine is standing still, a point that immediately suggests a starting handle that can be operated from the driver's seat.

A reader in Prague, Bohemia, is asking for advice upon taking up an agency for English cyclecars, where, owing to there being more bad roads than good ones, reliability and substantial construction are important.

The R.A.C. Journal thinks that the engine should be placed behind the back axle of cyclecars, to increase the road adhesion of the back wheels. By looking at cyclecars it is possible to imagine all sorts of funny things like this.

As the "Thoughts and Opinions" pages close for press earlier in the week, readers are asked to note that letters received on Friday are too late for insertion in the next issue, and are invariably held over to the following week.

The number of cyclecars coming on to the second-hand market is increasing, but the supply is still far below the demand. Readers who want a cheap investment in a cyclecar should advertise their requirements in our columns.

In the recent North Middlesex M.C.C. one-day trial 11 cyclecars started, and of these 7 gained awards, including one silver cup, two silver medals, and four bronze medals, an excellent result, considering the arduous nature of the course, the fog, and bad surface.

Healthy signs of the new pastime are the very large number of inquiries received asking our opinion of various cyclecars, and the hundreds of congratulatory letters that continue to pour into our offices, indicating that The Cyclecar really does meet the demand of the new movement for a journal of its own.

Easter falls early this year, Good Friday comes on the 21st March, and the interesting article on touring in Wales which will appear next week should stimulate plans for spending the holidays in the Principality. It would be difficult to beat as a touring ground for Easter. Incidentally, the Cyclecar Club Easter Tour will centre round the Snowdon district.

The next run of the Cyclecar Club will be on 9th February, to Forest Row (Brambletye Hotel), for lunch.

This week's great hint—to tread on the accelerator pedal is sometimes the quickest method of making a sudden stop.

The "Star" and the "Evening Standard" are evidently in doubt as to what is a cyclecar, for in the report of a recent sidecar accident the machine was termed a cyclecar as well as a sidecar.

We hear of a doctor who has given up cycling, after breaking his wrist as the result of a sideslip, and is investing in a cyclecar. Another doctor of our acquaintance, with a country practice, finds cycling such a serious strain that he also is buying a cyclecar.

The flange of the exhaust pipe of a machine driven by one of the staff of The Cyclecar came asunder in the North Middlesex Trial. The driver and passenger of the Gordon cyclecar, which was following for many miles must have been deafened by the din.

An evening journal is complaining of the low horse-power of the English cyclecars, compared with the 18 h.p. of a so-called cyclecar hailing from America. Oh, those arbitrary definitions, but for which we might admit the six-cylinder Napier to the cyclecar class.

Two cyclecarists, the week-end before last, had the disadvantages of an excess of clothing brought home to them. They had muffled themselves up with three overcoats each, but, unfortunately, their machine broke down, and a three-mile run to the nearest railway station, thus burdened, was an athletic feat.

Scottish motorists and visitors to the Scottish Show will find this week's issue of "The Motor" of more than usual interest. In addition to illustrated reports of the Show, and the various Show functions, there are many particularly well-illustrated articles dealing with Scottish motoring and notable Scotch motorists.

Forthcoming events of the Cyclecar Club include a one-day reliability trial, a cigarette smoker (ladies specially welcome), a lecture on cyclecar design, by Mr. A. E. Parnacott, whose own cyclecar is designed on most original and clever lines, an Easter tour to North Wales, and runs to Forest Row, Beaconsfield and Biggleswade.

One of the joys the new motorist will revel in will be the salutes from A.A. scouts and R.A.C. guides—providing the proper badges are affixed to the machine. One reader, who found the saluting business highly exhilarating, wants to know if the attentions of the A.A. scouts should be acknowledged, and how. What does Mr. Stenson Cooke say?

The Dew monocar figuring on our cover this week, a full illustrated description of which appeared in the last number of The Cyclecar, is a machine that for its very simplicity should appeal to many who are searching for a solo machine other than the motor-bicycle. The fine gateway, which forms a striking background to the picture, is a part of the Kentish seat of Sir William Hart-Dyke, Lullingstone Castle, Eynsford, which is built in the Jacobean style and stands in a park of many acres, with a pretty lake and 4½ miles of private road—an ideal testing ground for Mr. H. E. Dew, the designer of the machine, who is the chief motor engineer of the garage attached to the castle.

FRENCH GRAND PRIX RACE FOR CYCLECARS.

Our Suggestion Practically Certain to be Adopted—13th July the Date, and the Circuit to be 12 Miles.

A CYCLECAR and motorcycle race on the Grand Prix course near Amiens is now certain. Up to the present the officials have been concerned with the possibility of holding this race immediately before or after the French Grand Prix. After a careful examination of the problem, it appears that the most suitable day will be Sunday, 13th July, the day following the big car race. The objection has been that the bends will be badly cut up after the passage of a score of heavy high-speed cars; but this has been overcome by shortening the course and only making use of one of the turns employed by the big cars. As this turn is a specially-prepared cement track in front of the grand-stands, it will be in no way deteriorated.

A Special Course.

The course for the big cars is triangular in shape, with two sides each measuring about 8 miles, and the base 3 miles; but for the cyclecar race it is proposed to bring the base higher up, making the two long sides about 5 miles in length, with a base of about 2 miles, and giving a total distance of not more than 12 miles. To guard this course only a small number of soldiers will be required, and this is important, for the 13th July is the eve of the French national fête, when troops are difficult to obtain. This difficulty, however, has been removed by an announcement of the military authorities that troops will be available for guarding the course. It would be impossible to find a more suitable date than the 13th July, for not only will a number of spectators remain over from the big car race, but thousands will take advantage of the week-end holiday to come from Paris and the northern manufacturing centres to witness the race at Amiens.

Probably within a week an official announcement will be made by the Sporting Commission of the Automobile Club of France, now the supreme authority in cyclecar and motorcycle matters, regarding this important race. There can be no doubt whatever regarding their decision. There will be a single race for cyclecars having two persons aboard, and probably for two classes of motorcycles. The full course prepared for the big cars will not be used for the cyclecars, but a short cut will be made uniting the two long sides of the triangle, so as to give a course of 12 instead of 19 miles round. One of the advantages of this change is that it will eliminate the two practically right angle turns at the base of the triangle, which turns will, of course, be badly cut up after having been used by powerful racing cars capable of speeds of 100 miles an hour. The main grand-stands will be retained for the cyclecar and motorcycle race, also the specially-built cement-surfaced banked turn at the Amiens end of the course. As it is the custom of the Automobile Club of France to build very elaborate grand-stands, and to make minute provision for the convenience of both riders and spectators, there will be at the race such an organization as is rarely found in connection with motorcycle and cyclecar events.

The French manufacturers of cyclecars are all in favour of the race. Already a definite announcement has been made by Bedelia,, Automobilette, and Violette that they will be among the starters. A good deal of interest is being shown in Paris in connection with what English makers and riders are likely to do with regard to the cyclecar Grand Prix. We shall be pleased to forward inquiries for entry forms from English manufacturers to the proper quarter. It is to be hoped that many of them will compete.

EVENTS AND FIXTURES.

Jan.
30th ... Essex Motor Club Debate, "Cyclecars v. Sidecars."
24th to 1st Feb. Scottish Motor Show, Waverley Market, Edinburgh.
Feb.
5th to 8th ... Leicestershire Motor and Cycle Show, Empress Rink, Leicester.
8th ... Liverpool A.-C.C. Trial.
9th ... Cyclecar Club Run to Forest Row (Brambletye Hotel).
14th to 22nd ... North of England Show (Car Section), Rusholme, Manchester.
15th ... Sutton Coldfield and Mid-Warwick A.C. Colmore Cup Reliability Trial.
17th ... North-West London M.C.C., Paper on "The Trend of Design in Cyclecars," by Messrs. Frank Thomas and H. J. Pooley.
18th ... Cyclecar Club Cigarette Smoker.
21st ... A.-C.U. Annual Dinner, Holborn Restaurant.
22nd ... Cyclecar Club Run to Beaconsfield (White Hart).
26th ... Cyclecar Club, Lecture by Mr. A. E. Parnacott.
Mar.
1st ... A.-C.U. One-Day Trial.
2nd ... Cyclecar Club, Run to Biggleswade (Swan).
15th ... Cyclecar Club, First Cyclecar Trial.
21st to 24th ... Cyclecar Club, Easter Tour (North Wales).

Light up 1st Feb. 5.47 p.m.

"The Cyclecar" Party.

The Grand Prix race for cyclecars will be the chief event of a spectacular character in the cyclecar world. THE CYCLECAR will organize a special party of visitors to see the race.

The Paris-Nice Run.

On the recommendation of the Sporting Commission of the Automobile Club of France, the date of the Paris-Nice motorcycle and cyclecar trials has been changed from March to 5th, 6th, 7th and 8th April. The distance from Paris to Nice is about 700 miles, which will be covered in four stages, the control towns en route being Dijon, Lyons, Marseilles and Nice. The competitors are divided into three distinct classes, comprising motorcycles, three-wheelers and four-wheelers or cyclecars, each of these classes being sub-divided according to cylinder area and weight. It appears to be accepted that the three-wheelers will be sidecars or tricars, and that all cyclecars will have four wheels. There are two divisions for the cyclecars, their limits being 750 c.c., with a minimum weight of 330 lb., and 1100 c.c., with a minimum weight of 385 lb., these weights being without oil and petrol. It will be noticed that although the official cyclecar cylinder area is imposed, there is no maximum weight limit. For these two classes of cyclecars the average speed to be maintained over the entire distance is 30 kilom. (18⅝ miles) per hour. In order to obtain a clean score, machines must arrive at the control exactly on the time indicated, and arrival either one minute before or one minute after the official hour will entail the loss of a point. A gold medal will be awarded to all competitors completing the run without the loss of a single point. It is doubtful if such a trial as this will appeal to English riders or the trade. The entry fee is as high as £6, it will mean at least a week's absence from home immediately after the Easter holidays, and will entail an expense of from £20 to £30 in hotel accommodation, transport of machine, etc. The double journey, if done by road, will involve a considerable amount of time. The event is being organized by the French journal "The Aero," and is in the nature of a spring tour.

IN PURSUIT OF SILENCE.

The A.-C.U. Conduct a Silencer Trial at Brooklands.

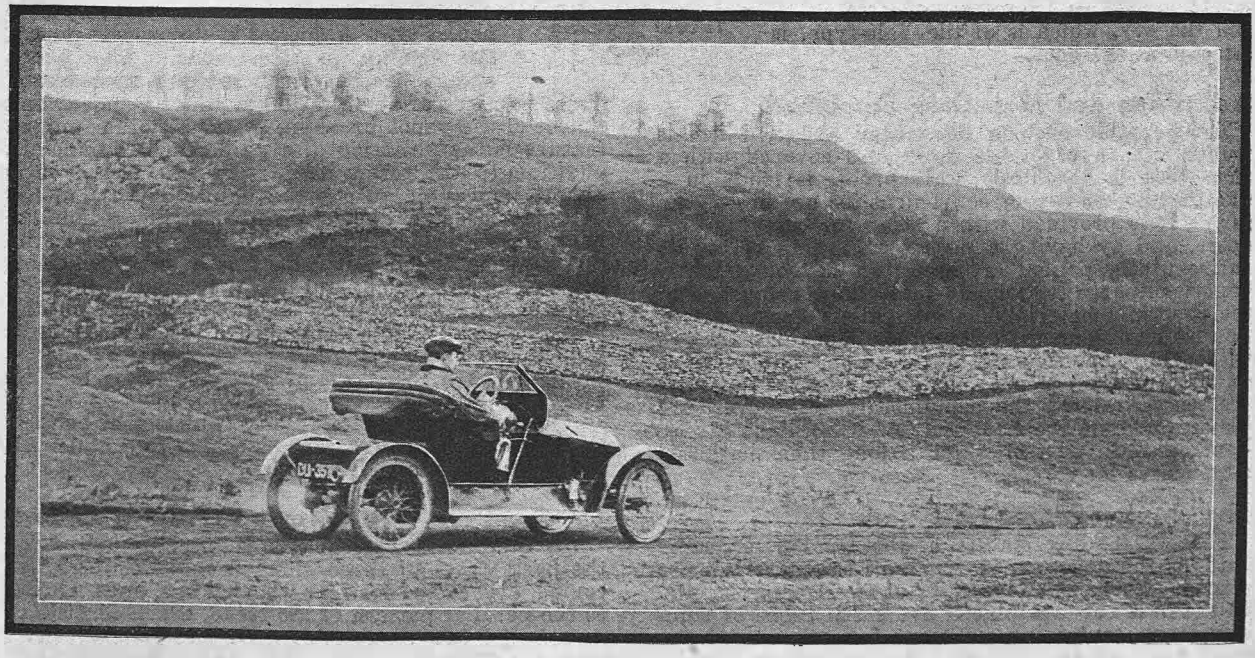
ALTHOUGH cyclecars are not nearly so ineffectively silenced as are motor-bicycles, since there is more room to fit an efficient muffler on a three or four-wheeler than on a single-track machine, the A.-C.U. motor-bicycle silencer trials, the first half of which was conducted at Brooklands last Wednesday, are by no means devoid of interest to the cyclecarist. In the first place, many cyclecars are equipped with the motor-bicycle type of engine, to which the A.-C.U. silencer could be fitted, and, in the second place, if a small and neat motorcycle silencer can be designed on efficient lines it is sure to be adopted on cyclecars.

The tests on the track, which are to be followed to-day by bench tests at the works of Auto-Carriers, Ltd., Thames Ditton, were carried out with a view to determining (1) the relative quietness of the silencers, and (2) their efficiency in minimizing back pressure. The first part of the track tests was judged simply by ear, the judges awarding marks for the machines as compared with the standard A.-C.U. silencer, which was rated at five marks, and open exhaust, which was rated at zero.

Two Rudge motor-bicycles, kindly lent by Messrs. Rudge-Whitworth, Ltd., of Coventry, were used to test the separate silencers, whilst the machines which had been entered complete with silencer—to wit—the Matchless, Triumph, Ariel, P. and M., Rover, and Rudge—were run in a class by themselves. The judges were stationed on the track and test hill, where they could hear the machines running all out, and then made notes as to how the sound of the silencers under test compared with the standard A.-C.U. silencer, which was run up and down the track from time to time. In order to determine the efficiency of the silencer in minimizing back pressure the complete machines and the trial Rudges were timed for a flying lap, both with and without the silencers under test. In some cases the silencers were so efficient that the machines equipped with them actually improved two or three m.p.h. on their speed when running with open exhaust, whereas in others they were as much as 10 m.p.h. slower. The best showing in this first preliminary track trial was made by the Rover, Rudge, Chase, Triumph, Hutton-Macbeth, and Matchless.

It is difficult to determine why some machines run better with silencers than without, though it is a recognized fact that a long pipe leading from the exhaust port is probably even more efficient from the point of view of a free exhaust than an open port. All the tests were witnessed by representatives of the Local Government Board and War Office, both of which authorities have of late shown great interest in motorcycling matters. It is by a regulation of the former that on the 31st March next motorcycles are required to be fitted with efficient silencers, and riders of noisy machines will be proceeded against.

On the whole it was evident that very great improvements had been effected, though the silencers under operation did not reveal any very novel features in construction. One, the S.D., made use of two small fans, which were driven by the exhaust, and so assisted in cooling the gases. Another, the Hutton-Macbeth, was cleverly built up of a series of units arranged on a central rod, so that should a driver desire more or less silence he could add or detract from the number of units until he had obtained the desired effect. In this device the gases were conducted so as to be always in touch with the outer and colder parts of the silencer. Some of the most efficient silencers were designed as simple expansion boxes, a pipe from the exhaust port leading into the box and another pipe, perforated with holes, leading out of the box to the rear of the machine. In this week's issue of "Motor Cycling" a very full description of the trial is published, together with illustrations of the competing silencers.



Cross-country cyclecaring. Our photograph shows an 8 h.p. Humberette being driven over the open wold country on the hills near Cheltenham. The farm road was so bad that the grass provided far better going.

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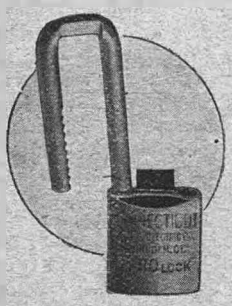
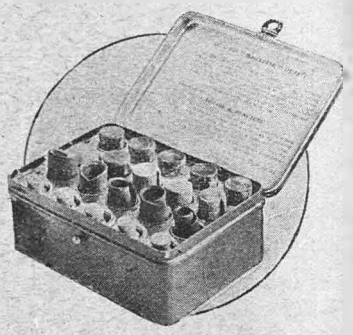
NEW ACCESSORIES FOR THE CYCLECARIST.

Some Interesting Novelties.

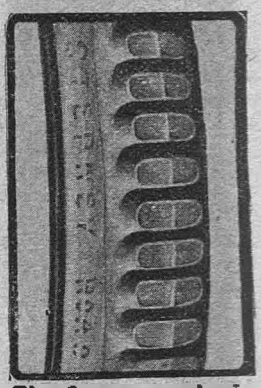


A double-purpose cyclecar padlock, which can be used to lock the gear lever.

A cyclecar cushion, with pocket for maps and papers.



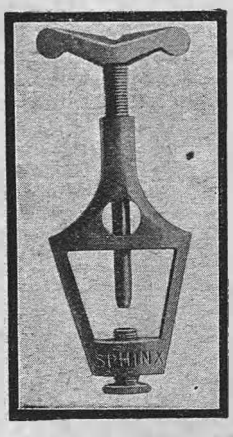
The Dunlop ingenious magazine repair outfit for repairing cyclecar tyres



The Stepney road-grip tyre.

A Double-purpose Padlock.

The theft of a cyclecar is fortunately a rare occurrence, but nevertheless it is advisable to take all ordinary precautions against the unauthorized removal of one's machine. For the owners of cyclecars which have change-speed levers working in quadrants or gates, the small patent padlock handled by Messrs. Morris, Russell and Co., 6, Great Eastern Street, illustrated above, will prove useful. By placing the padlock around the lever and the quadrant or gate, as the case may be, it will be impossible for anyone to move the former, except by drastic measures. The padlock, which is sold at 5s. complete with two keys, has a patent clip which is provided with a ratchet, so that the lock can be used in connection with different sizes of levers. It is well and stoutly made, and the key, which is of the Yale-type, is inserted at the base.



A recommended belt punch—the latest Sphinx model.

A Cushion and Map Case Combined.

The portable cushion illustrated above, which is stuffed with a vegetable down and covered with a cloth that is absolutely waterproof, is made in a size that makes it very convenient for use in a cyclecar. It is provided with a strap for carrying purposes, and by having a pocket extending across its entire width, papers or maps can be conveniently kept together. It is made in various colours, and the covering material has an artistic design on it. The makers claim that should occasion arise, it can with safety be used as a lifebuoy. The price is 2s. 8d., and the different models can be seen at most accessory dealers; the manufacturers, however, are Messrs. William Stephens and Co., 23-24, Fann Street, London, E.C., who have for a long time marketed larger sizes for cars.

The Dunlop Magazine Repair Outfit.

The outstanding feature of the Dunlop magazine outfit is the neat way in which all the materials are placed. There are four rows of five compartments. In the first row are placed five small tubes of solution, each containing sufficient for one very large patch, and in the next row suitable patches of different sizes are found. The next row contains a sulphur cleaner, valve parts, and three rolls of canvas. Small tubes of French chalk are placed in the five compartments at the back. By means of this arrangement it is possible to keep the outfit tidy, for after mending each puncture, the solution and French chalk tubes that are used may be thrown away. Another advantage is that rattling is reduced to a minimum, and the tubes are not squashed. Refills containing solution, canvas and French chalk can be obtained at a charge of 10d. each, while the price of the complete outfit is retailed at 2s. 6d. The makers of the outfit are the Dunlop Rubber Co., Ltd., Aston Cross, Birmingham.

The Sphinx Belt Punch.

To the owners of belt-driven machines a good and reliable belt punch is a necessity. A special cyclecar belt punch, the Sphinx, is illustrated. The punch and the feeding screw are now made out of the same piece of steel, a design which removes any chance of the punch breaking away. Another unique feature is the provision of a guide for the punch in addition to the screw itself. By this means it is almost impossible to cut the hole slantwise in the belt. It is often difficult, while cutting a hole, to know exactly when the punch is through, but in the Sphinx a special hollow plug has been provided at the base of the frame, and it is arranged so that the moment the cut is finished the punch bears upon the peg. Naturally, this causes the latter to revolve, thus indicating in a simple manner that the punch is through the belt. Various sizes are made for different belts, while two distinct models—a single and a duplex (the latter taking two sizes of belts)—incorporating these various sizes are sold at 1s. 6d. and 2s. 6d. respectively.

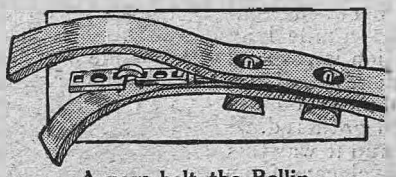
A Tyre for Three-Wheelers.

The Stepney Road-grip tyre is specially suited for the back wheel of three-wheeled vehicles. It is, of course, also suited for four-wheeled machines. Owing to the peculiar pattern of the tread, which consists of a series of lozenge-shaped projections, its gripping powers on grease are excellent. The walls of the cover are of sturdy proportions, so that there is no

NEW ACCESSORIES (contd.).

fear of them giving trouble. The price of the 26 in. by 2¼ in. is £2 10s., while that of the 26 in. by 2½ in. is £2 12s. 6d. It is made by the Stepney Spare Motor Wheel, Ltd., Stepney Works, Llanelly, South Wales, who have arranged for these covers to be stocked in practically every town, so that no difficulty need be experienced in obtaining them.

The Pollin Belt.



A new belt, the Pollin.

Every cyclecarist who has anything to do with belts is on the look-out for one that will not stretch. This quality is claimed for the chain-leather belt made by Mr. W. Pollin, Shepherdswell, near Dover, and its construction is interesting in many ways. Most belts of the steel-leather type fail in one respect, namely, the leather stretches, and, in consequence, all the strain is taken by the metal. When this takes place the driver experiences an uncomfortable sensation due to the harsh drive. The construction of the belt in question has been carefully carried out. By mechanical means the bottom layer of leather is subjected to a severe strain, and while in this strained position the top layer, the links and plates are attached to it. When the belt is released, the top leather naturally forms loops between the fastenings. The chain also contracts through the links moving along the slots in the plates, the result being that the driving strain is taken by the lower leather strip when the belt is straight. However, on rounding a pulley all three members of the belt come into action. The life of the chain is greatly prolonged by being shielded from mud and rain by the two layers of leather. The prices per foot are as follows: ⅞ in., 2s. 6d.; 1 in., 2s. 9d.; 1¼ in., 3s.

Useful Dashboard Clock.

A neat and substantial eight-day clock is sold by Messrs. Selfridge, Oxford Street, London, W., for cyclecar use. The most interesting and useful feature is the large second-hand, which rotates round the same centre as the minute and hour hands. The clock has a pleasing appearance, and sells at 13s. 6d.

A Cover for 16s.

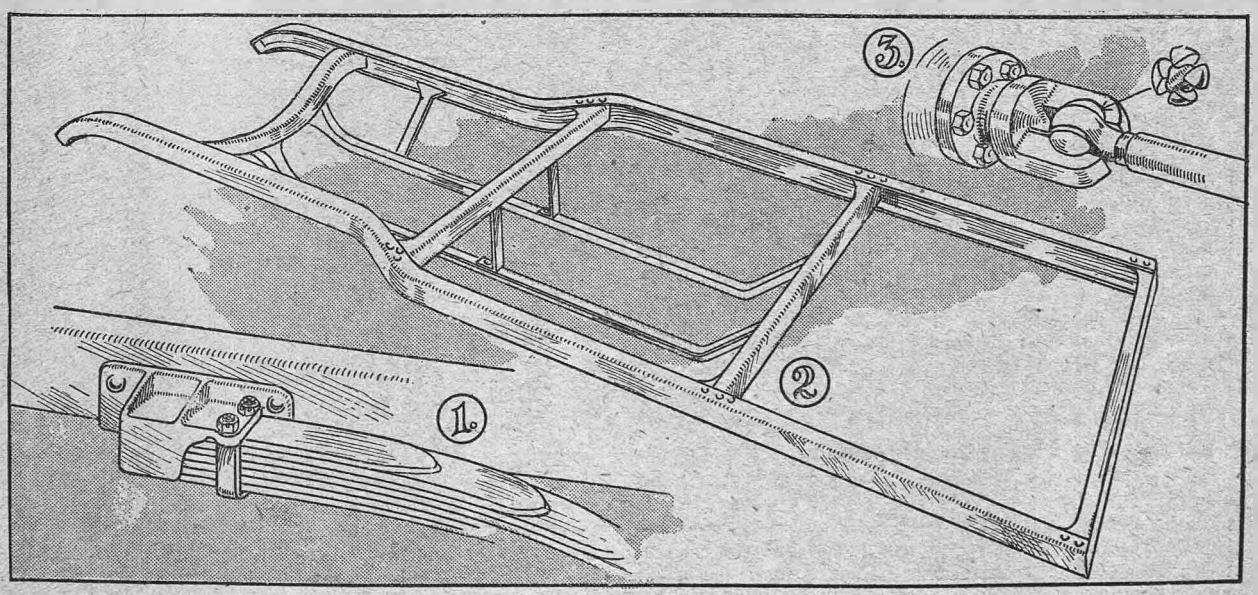
We have recently had an opportunity of examining the new Victor cyclecar tyre. So far as one is able to judge by an external examination, this seems to be a very excellent cover. When the price, which is 16s., is taken into consideration it seems marvellous value for the money. The tread is of very fair thickness; in fact, quite as thick as that of many covers of double the price. The beads are excellently designed, with a flap to cover the spoke holes in the rim, which reduces the possibility of nipping the tube to a minimum. In the near future we shall give illustrations of this tyre, complete and in section, and we shall take the earliest opportunity of testing it on the road. A rubber-studded and extra thick plain cover will also be manufactured by the Challenge Rubber Mills, Eagle Wharf Road, City Road, London, N.

The West Cyclecar.

Mr. E. J. West has successfully concluded arrangements for the manufacture of his cyclecar in large quantities, having taken a great part of the old Centaur works in West Orchard, Coventry.

Improvements in the Wilkinson T.M.C.

The Wilkinson cyclecar, in its latest form, has a number of alterations from that shown at Olympia. A larger engine is to be fitted, having enclosed valves. The new dimensions are: 68 mm. by 75 mm., giving a capacity of 1090 c.c. as against 848 c.c. of the earlier engine. The frame is now constructed entirely of pressed steel, the engine and gearbox being supported on a sub-frame of similar construction. The rear quarter-elliptic springs, now shorter and wider, are clipped outside, instead of underneath, the frame, giving a lower body position. A larger diameter flywheel is fitted, although its weight is the same, and the reverse gearwheels are now arranged so as to be out of mesh when not in use. The gear-lever moves in a gate quadrant, making it impossible to overrun the gears. An H-section front axle, tapering bonnet, and wider body are a few other alterations of this well-made machine.



Features of the new Wilkinson cyclecar. (1) Phosphor-bronze box holding the leaf springs. (2) New pressed steel frame, showing cradle for engine. (3) Universal joint of the star plunging type.

EXCITING SCENES ARMS HILL, HENLEY.

Many Attempts on the 3, but Few Successes.

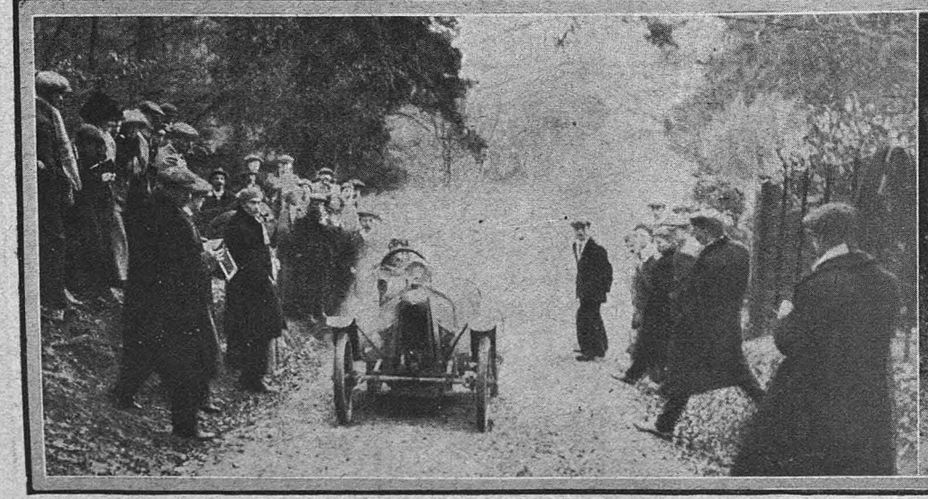
THE unofficial hill-climb on Arms Hill, Henley, organized by THE CYCLECAR, proved a very great success. There were over 50 machines at the foot of the hill at the appointed time, in addition to a large number of motorcyclists and motorcar drivers. The glorious morning had brought people from all over the country to see the devotees of the new motoring perform on the celebrated test hill. The hill is situated on a by-road between Henley and Watlington. It is close on half-a-mile long and rapidly steepens till the 1 in 3 portion is reached about halfway up. It was at this spot—called the Cannons, owing to the two big drain pipes on the road—that the crowd of spectators had gathered.

The surface of the hill was very bad, and it was this alone that prevented several of the cyclecars from making clean ascents. Mr. Cooper's Humberette, Mr. Nash's G.N., and Mr. Spencer's Morgan all had plenty of power, and it was simply the fact that the back wheels spun round without driving the machines that caused them to fail. As soon as it was known that back-wheel slip was so prevalent everybody began to look for chains and ropes which they could tie round the wheels. Mr. Messervy obtained some chain, but it flew to bits at the Cannons, whilst Mr. Spencer's rope fared no better. This driver attempted first to go up solo, then with a passenger on the carrier and then with two passengers, but every time back-wheel slip caused him to stop, owing to the very greasy surface.

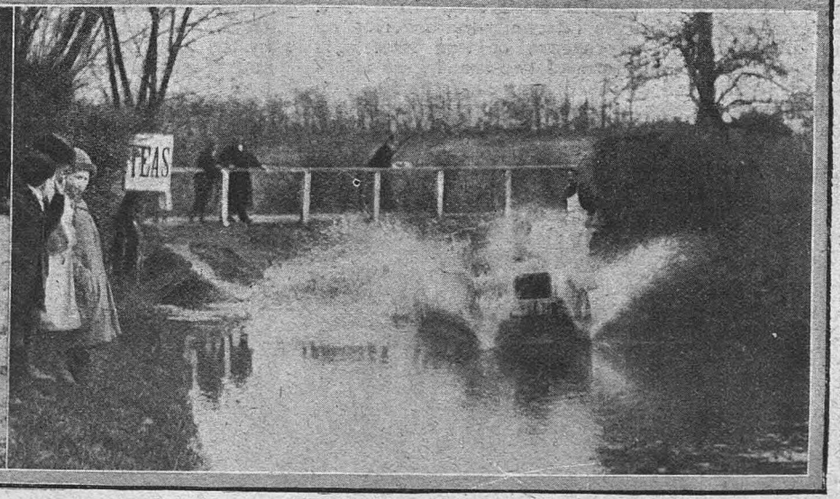
Mr. Nash also made some gallant attempts on his G.N., as did Mr. Messervy on his Duo. The latter actually reached the summit, climbing the steep part at a fair speed. Amongst others who attempted the hill were the drivers of a L.M., an A.-C., and a Gordon; this machine, though only geared 8 to 1 on low, made several very good attempts, after one of which it began to back down the hill, gradually increasing its speed. Then one tyre burst. The speed increased—then the other tyre burst, and the brakes fired, the machine rapidly gathered impetus and finally disappeared through the hedge at the side of the road. A tree trunk, however, brought it to a standstill, luckily without serious damage being done to its occupants. Later in the day, Mr. Lambert, on his 90 mm. by 85 mm. Morgan, made some fine attempts, but like the others his failure must be attributed to back-wheel slip rather than to loss of power. An incident which might have ended disastrously was the failure of a Rolls-Royce car to climb the hill. It reached the Cannons and then the back wheels began to buzz. The giant six-cylinder began to slide backwards and the driver then turned it into the bank on the 1 in 3. The result was, as can well be imagined, that the machine appeared to be canting over at a very dangerous angle. It took quite 15 minutes hard work on the part of the motorcyclists and cyclecarists present to right the car. Of course, Mr. Cooper had to have his little say in the matter, and asked how anyone expected cyclecars to climb where a Rolls-Royce wouldn't.

After the hill-climb, a number of cyclecarists repaired to Marlow for lunch, after which a series of neck-and-neck hill-climbs was run off near Biscombe. The Humberette beat the Globe, Mr. Wilberforce's Douglas was defeated by Mr. C. M. Keiller's Vauxhall cyclecar (?), whilst Mr. Nash's G.N. just beat Mr. W. G. McMinnies' Morgan by a length, after a most exciting race.

Cyclecars on land and water. On the left is shown Mr. Spen[illegible] making a gallant attempt to climb Arms Hill. On the right members of the Cyclecar Club are depicted cross[illegible]lash on the way to the meet at Burford Bridge.



The week-end on the road. Left: Mr. Fraser Nash (G.N.) on the 1 in 3 portion of Arms Hill. Centre: Mr. M[illegible]y. Right: Cyclecarists snapped in a water-sp[illegible]



Preparing for an assault on Arms Hill. Fitting chains to the wheels and treating the belts with anti-slip mixture. The machine is an 8-10 h.p. Averies.

The Cyclecar Club Run.

A large number turned out on Saturday last for the third run of the Cyclecar Club to Burford Bridge. Although the official meal was tea, many members formed parties and had lunch together at different places en route. Practically every make of machine was to be seen at the muster, amongst others, Humberettes, G.N.s, A. C.s, Duos, G.W.K.s, a Gordon, an Averies, Morgans, and the Parnacott. Some set off in search of a test hill, and having discovered one close by, attempts were made to reach the summit. The gradient was not too severe, but some machines conked out. Successful ascents were made by Mr. Nash (G.N.), Mr. Cooper (Humberette), and Mr. Wood (G.W.K.). The G.W.K. had a new type of semi-racing body, which looked very smart, and although the seats appeared somewhat narrow for two, we were told it was extremely comfortable. An excellent tea was served at the Burford Bridge Hotel.

Awards in the North Middlesex M.C.C. Trial.

In the one-day trial held on Saturday, 18th January, Mr. B. Alan Hill (8 h.p. Humberette) won a silver cup, having made a non-stop run, with not more than 3 min. error from schedule. Silver medals were awarded to Mr. V. Wilberforce (8 h.p. G.W.K.), and Mr. J. Munday (5-6 h.p. A.C.), both having made non-stops, with an error of more than 3 min. and less than 10 min. Bronze medals, which were awarded to all finishing within 60 min. of schedule, were gained by Mr. A. W. Lambert (8 h.p. Morgan), Mr. R. F. Messervy (8 h.p. Duo), Mr. L. Cass (Gordon), and Mr. A. G. Eames (5-6 h.p. A.-C.).

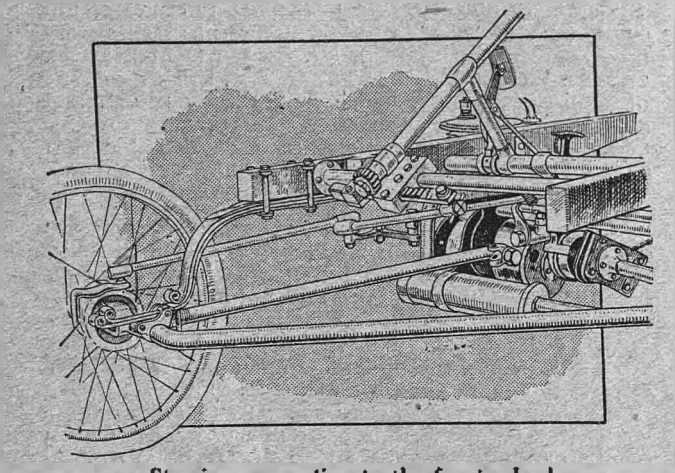
No Decision.

At a meeting of the C. and M.C.M. and T.U., Ltd., held last week the question of a standard road race for cyclecars was discussed, but not decided.

UNIQUE THREE-WHEELED CYCLECAR.

With Novel Steering and Transmission Systems.

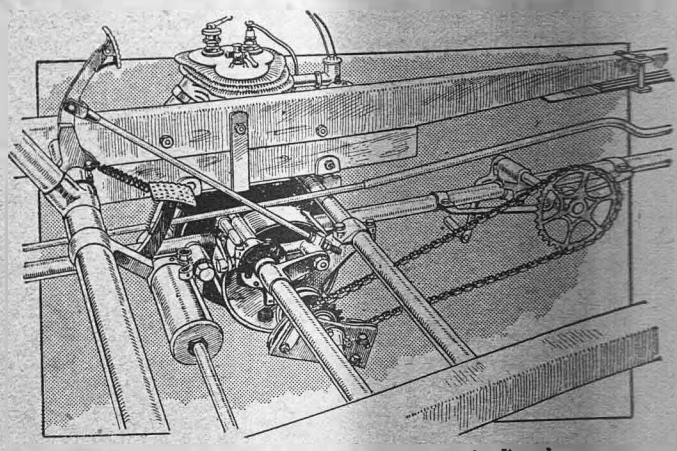
A THREE-WHEELED cyclecar, bristling with novel features, has been constructed by the Condor Motor Co., Broad Street, Coventry, to the design and specification of a customer. The machine, which is very original, has three wheels disposed in the form of an isosceles triangle, that at the apex taking the drive whilst the other two, which form the front and rear extremities of the machine, are both utilized for steering. In this way a steering action is obtained which is theoretically perfect. The engine is a 4 h.p. air-cooled Condor, and is placed mid-way between the two steering wheels, being suspended as a sprung weight from the main frame, which is tubular, reinforced with a wooden beam to take the



Steering connection to the front wheel.

weight of the engine. Long tubular radius rods connect the steering wheels to the point of attachment of the engine, and the driving wheel is braced by tubular members forming a triangle with these radius rods.

The engine is on the opposite side of the machine to the driving wheel, and the power is transmitted thereto through a propeller shaft and two leather universal couplings to an internally-toothed ring on the driving wheel. By means of this internally-toothed ring a simple form of two-speed gear is obtained. The end of the driving shaft carries two spur pinions of different sizes, which respectively give the high and the low gears of 5 and 10 to 1. The change is effected entirely by the clutch pedal. In the normal position the high gear is in mesh, locked in position by a spring catch. The movement of the clutch pedal is divided into three parts, the first of which withdraws the leather-faced cone clutch by the operation of a cam; further movement engages the high gear. Still further movement of the pedal



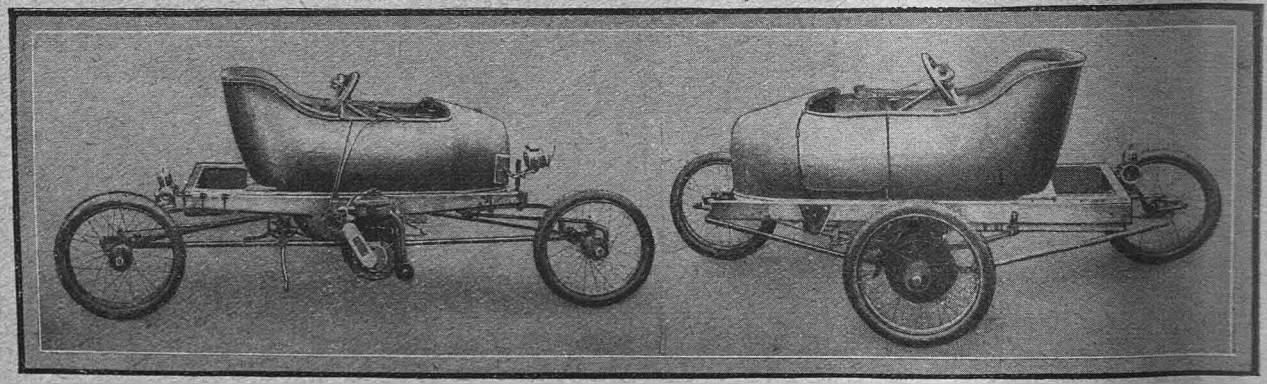
Showing how the handle starter is fitted.

pushes the high gear pinion into a recess behind the internally-toothed ring, and substitutes for it the low-speed gear.

The car is suspended on laminated springs, those on the steering side being semi-Cee-shaped, whilst the driving wheel is supported on an ordinary half-elliptic spring shackled at the back end. All three wheels are detachable and interchangeable, and the steering, which is the outstanding feature of the design, is by rack and pinion.

Official Trials for 1913.

The Cycle and Motor Cycle Manufacturers and Traders Union, Ltd., has decided to recognize the following trials to be held during 1913:—The Spring One-day Trial, the Autumn One-day Trial, the Six Days Trial, and the Tourist Trophy, all promoted by the A.-C.U., the Sutton Coldfield, the Coventry and Warwick, the Bradford, the Bristol, the Liverpool, the Irish End-to-End, the Scottish Six Days, and one other trial. This list gives the number of trials to which the trade gives its official support.



Near and offside views of the Condor three-wheeler. The central wheel is driven whilst the other two are used for steering.

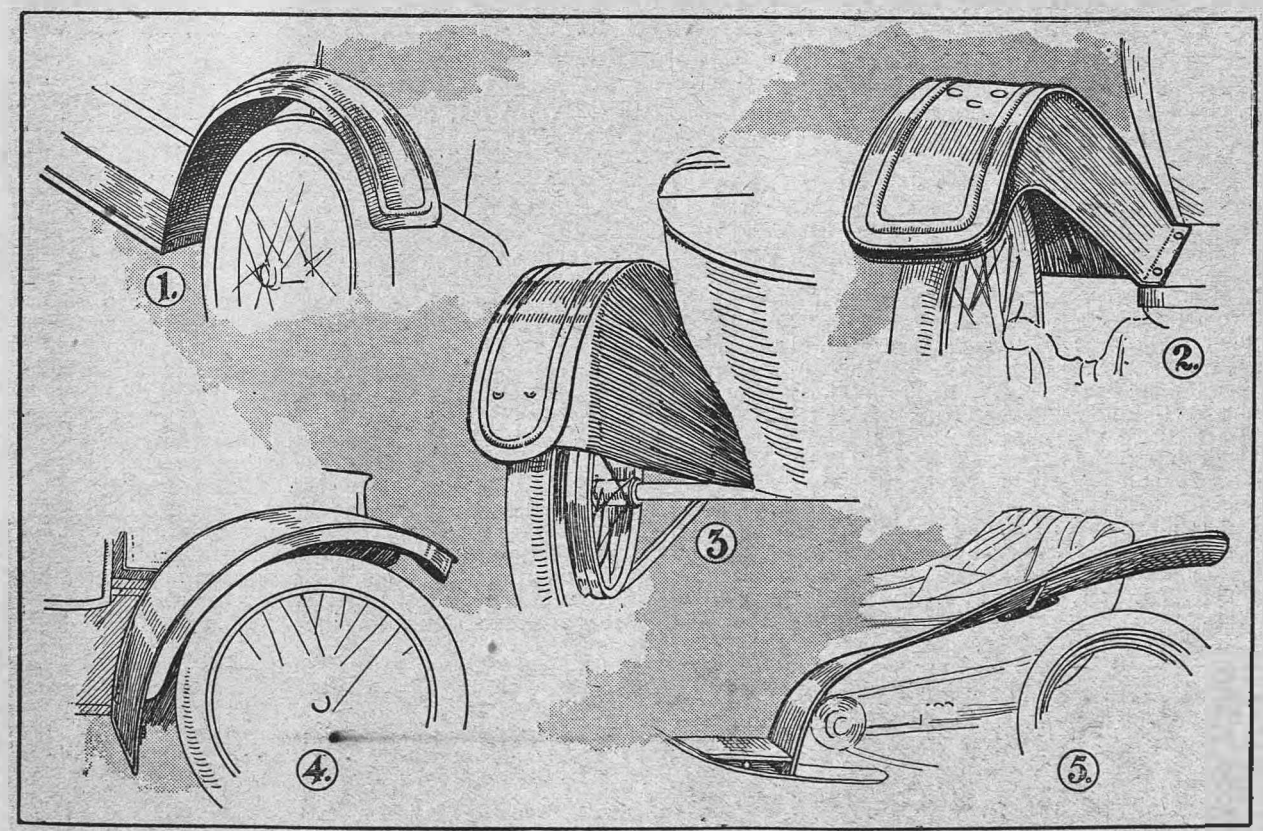
MUDGUARDING THE CYCLECAR.

A Review of the Various Types, with Suggested Improvements that can be Effected by the Owner.

CLEANLINESS should be one of the chief recommendations of the cyclecar, but unless a few additions are made to the average standard body, it is highly probable, when the roads are exceptionally wet, that both passenger and driver will be bespattered. This is not a very serious disadvantage, the ease and comfort of a Pullman carriage not being expected when cyclecarring, and it may be easily overcome, for many alterations and improvements can be effected at a very small cost.

Opinions differ as to what may be considered the ideal type of mudguard or "wing." There is the motorcycle type, which fits close to, and moves bodily with its own particular wheel. If efficiency is desired, the mudguard must be broad, whilst a "shroud" —or lipped edge—on either side should be added. Its great disadvantage is the difficulty experienced in removing a cover or tube, due to the fact that the side shields absolutely prevent access to the tyre, but if these are made detachable this difficulty disappears. Often, however, the whole guard must be removed, as the clearance between it and the wheel may not be sufficient to allow the tyre levers to be easily manipulated. It may be added that this type is specially suited for cyclecars with central pivot steering, in which the front wheels move relatively to the body to a far greater extent than with the Ackerman type of steering. For this reason an ordinary car type of wing would have to be abnormally wide, and, having a large overhang, vibration would probably be excessive.

The usual type of wing consists of a flat piece of lead-coated steel sheet, curved round to conform with the contour of the wheel. This is suitably stiffened by channels or mouldings, whilst wire is embedded round the edges. The average width is about 9 in., but it is advisable to have the wings wider, especially those in front, as the wheels, when negotiating a corner, fling the mud in an oblique direction, and unless the wings are fairly broad, the driver or his passenger will have the unpleasant experience of being speckled with mud. Another serious fault often encountered is that guards are not continued far enough forward or back, as the case may be, but it is better not to have them too long, or an ugly appearance will result. On some motorcars it may be noticed that the front wings almost meet the ground, a design which may be effective, but which certainly does not improve the look of the car. With regard to the back wheel, the wing should extend round the wheel for about half its circumference, and should follow the contour of it the whole way, with perhaps a slight outward sweep at the rear. Some machines have this sweep starting



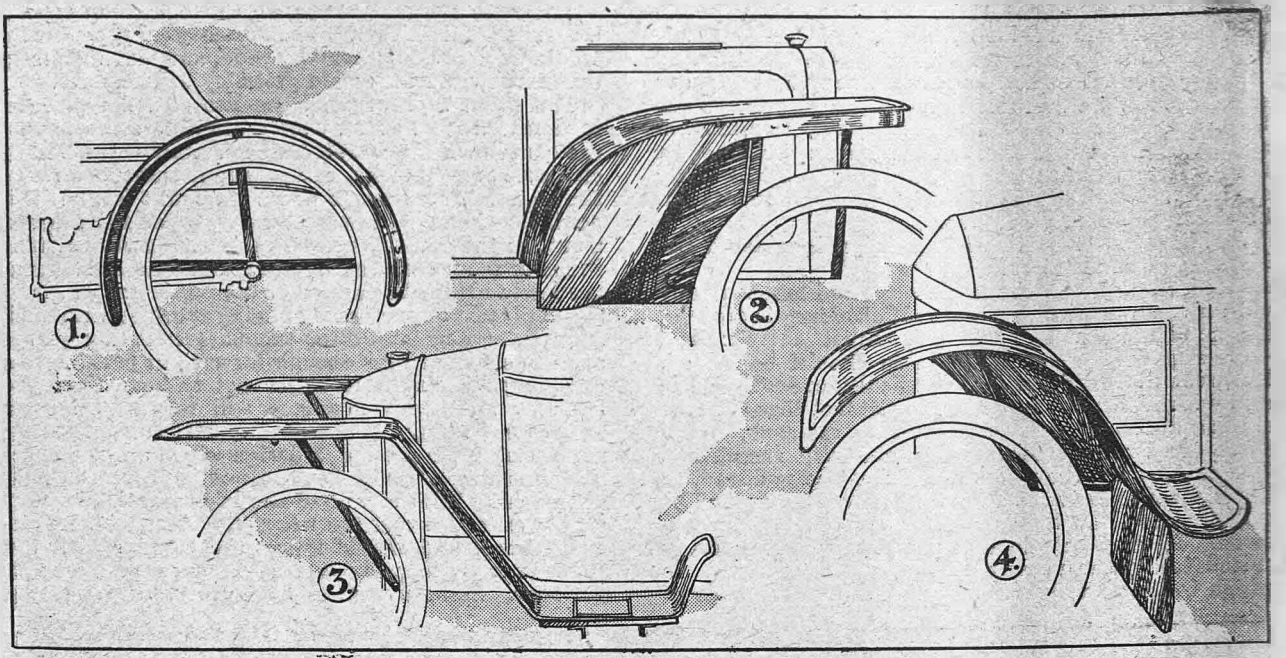
SOME TYPES OF MUDGUARDING ON CYCLECARS.

(1) Front wing on a Crescent. (2) Front wing with metal valances and drip edges on a Jennings. (3) A G.N. back wing with the special valance fitted by the agents, Messrs. G. N. Higgs. (4) A Morgan front wing. Note deep drip edge. (5) The rear wing on a Rudge.

MUDGUARDING THE CYCLECAR (contd.).

vertically over the hub, which lessens the wing's efficiency to a greater extent than is generally thought. A defect which is often noticeable is that sufficient clearance is not provided between the wheel and its wing, with the result that the two make contact when the machine goes over a bad bump. On the other hand, the distance allowed should not be excessive.

The owner should insist on having a number of supports for the wings, and they should also be of a substantial size. Nothing is more annoying than to have wings falling off, or creating noises which are often hard to locate. Even when they are suitably fixed in this respect, it is advisable to fit lock-nuts or spring washers to all bolts, as otherwise vibration will soon loosen them. Undoubtedly the most efficient wings made are those which are manufactured in one piece



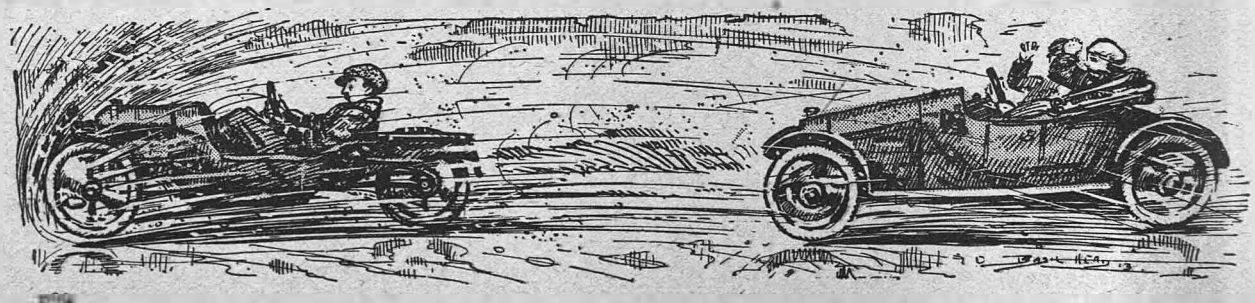
SOME TYPES OF MUDGUARDING ON CYCLECARS.

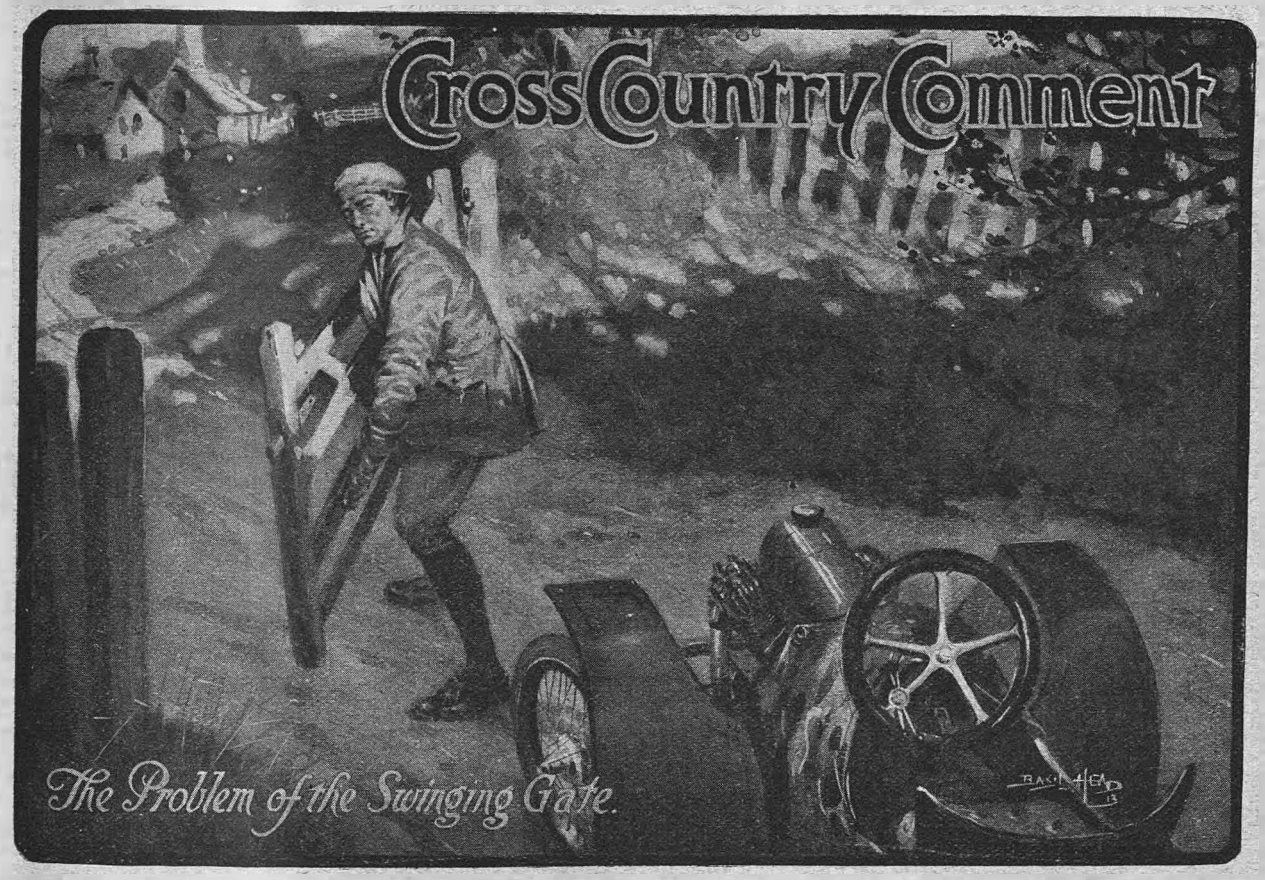
(1) The motor-bicycle type of mudguard fitted to the Worthington. (2) A Rollo front wing. Note the depth of the drip edge. (3) The front wings on the Automobilette. (4) A Duo front wing fitted with an American cloth valance and mud-flap.

Few manufacturers provide valances for the inside of either the front or the back wings, and as these are almost indispensable the owner should lose no time in fitting them. They can be made out of American cloth, suitably fastened to the wing and the frame, but if more permanent fittings are preferred, they might be made of metal, but will have to be fairly thick, or they will rattle. The metal valances will, of course, be more expensive, as their shape is rather intricate, but those for the back may well be of metal, as the conditions are simpler, and the fitting can be made secure.

Even with all these precautions, it is possible to be splashed, and the novice may wonder, and rightly so, how the mud finds its way on to the passengers. A little thought, however, will reveal the cause. The mud is flung on to the under-side of the wing, and hangs on the edges, whence it is blown by the wind on to the occupants. An effective remedy for this trouble, however, is to fit a lip round the outside edges.

with their valances; there are then no joints through which the mud can find its way, and as rigidity is another of their qualities, vibration is reduced to a minimum. There is another phase of the mudguarding problem which has not yet been given much consideration by cyclecar manufacturers. Even with the most perfect design of wings, a cyclecarist may find himself on a wet day spotted with mud, which is splashed on to him by passing vehicles, this being partly attributable to the low build of the average cyclecar. Some remedy will have to be found for this, but the simplest way out of the difficulty would be to have a kind of side shield, hung from a framework and capable of being folded out of the way when not required, somewhat after the manner of a blind. On a rainy day the driver and his passenger will, of course, be protected by the side curtains on the hood, but on a fine day, when the roads are muddy, a passing vehicle may leave its mark on the otherwise spotless cyclecarist unless a side shield is provided.





IN the course of my meteoric journeys up and down the country (I have driven nearly 2000 miles in the last month) many interesting and unusual things are brought to my attention. The other day I struck a farm road in Dorset where gates were encountered every few hundred yards. On one occasion the gate happened to be placed so awkwardly that it was no easy matter to pass it. The circumstances were as follow: The monocar was drawn up on a 1 in 6 gradient a few yards below the obstruction. There were no means available for fixing the gate open in either direction, so that it was no easy matter to decide how to reach the other side. Being alone, I could not get anyone to hold the gate whilst I drove past it, nor could I drive the machine up to the gate and then allow the mudguards to force it back when the clutch was engaged. How then did I solve the problem, assuming that it was impossible to keep the gate open whilst the machine was driven past it?

* * *

Mention of a clutch reminds me that quite a large number of cyclecarists appear to be troubled with this part of their machines. It was a slipping clutch which caused Mr. Dixon's trouble on the Singer in the M.C.C. winter trial. He had taken delivery of a showroom car the day before the event, and had not had time to see that everything was properly adjusted. The trouble in this particular machine is said to have been overcome since. Now, in some cases, slip is caused by the springs being too weak, whilst in others the clutch is too small for the work it has to do, or else the driver has abused it so much that the leather is burnt out. The only remedy in this case is to have a new leather fitted. Sometimes slip is caused by the surface of the clutch becoming oily. If, then, the clutch is taken out by moving the pedal and petrol is squirted on the inner face, it is likely that the trouble will disappear. I myself recently experienced clutch slip which was due partly to oil on the leather and partly to a ridge having worn on the outer side of the leather, when the clutch did not quite go home. When this ridge was filed off the trouble vanished. One word of advice must be added. When excessive slip is noticed, remember that such remedies as resin, French chalk, and road grit are only to be used as the last resource, as they will probably ruin the clutch in the long run.

* * *

When so many people are complaining about the excessive charges of hotels, it is refreshing to be able to give an instance of quite the reverse. I was cyclecarring in the Chiltern district recently and happened to be in Aylesbury about tea-time. Just off the market place I espied a wholesome-looking confectioner's shop, and on entering was amazed to find one of the walls decorated by a most gorgeous showcase containing an array of silver cups, trophies, certificates and medals that would make any cyclecar prize winner envious. There must have been close on 200 awards. On inquiring what they were all for, I was informed that the owner of the shop was a champion bread maker. He had won prizes for the excellence of his bread all over the country. Under these circumstances it can well be imagined that my tea was excellent, but although I had as much bread and butter, jam and tea as I wanted the bill only came to 5d. I gave vent to my astonishment, and made a mental note to add this little place to the list of my favourite haunts up and down the length of the land.

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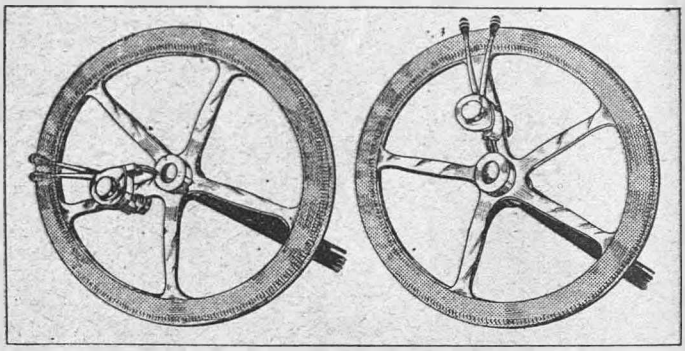
CROSS-COUNTRY COMMENT (contd.).

It is an open secret that quite a number of the competition machines which are run in trials every week end are not similar in every respect to the models sold to the public. This remark applies more than anything to the gear ratios used. Now I have no grounds for complaint in this matter, if only the public are permitted to become familiar with the facts and are not allowed to believe that it is their own fault that their cyclecars cannot climb freak hills which so-and-so's machine, that appears similar in every respect, romped up in the last trial of the Skidborough Cyclecar Club The facts of the case are these: In a reliability trial hills are included of such a severe nature as the ordinary man would never encounter. In many cases they are situated in out-of-the-way places far from the ordinary main road. Consequently it is only fair that the competition driver should equip his machine with an exceptional gear for these exceptional acclivities. In the North Middlesex M.C.C. one-day trial, for instance, I noticed that the A.-C.s were fitted with specially large rear sprockets, whilst the same remark applies to Mr. A. W. Lambert's Morgan. With the sprockets it was possible for a gear ratio of 12 to 1 or 13 to 1 to be employed, though in the ordinary case the machines will be turned out with an 8-to-1 low gear.



One advantage of direct steering, showing how the control levers are set in approximately the same relation to the driver at either lock.

* * *

All honour to those cyclecar manufacturers who are showing their confidence in their productions by entering them in the reliability trials of the day. They deserve success. But what of the others? Why do not they do likewise? Because, forsooth, in certain instances they assert that they have so many orders on their books as to make such methods of advertisement unnecessary. But to me this seems a most short-sighted policy. It is possible that a really severe reliability trial would discover some weaknesses or defects in a machine which the works test has failed to bring to light. If the public are to be left to discover these faults themselves, the reputation of that particular make of machine is gone for ever, and the policy of the concern responsible, though an economical one for the present season, will cause a mighty slump in orders for 1914. Therefore, I say to the trade: Come out into the open; enter your machines against your rivals, and prove to the public the claims you are making on paper. Of course, these remarks do not apply to concerns where it is the difficulty of manufacturing that is in the way, but rather to the larger cyclecar makers, whose output is already well under way.

* * *

As there are probably a large number of cyclecarists who are now, or, at any rate, soon will be, having their first experiences with an air-cooled engine, a few hints on obtaining the best results from this particular type of motor may be acceptable. The great thing to remember is to humour the engine in every way possible. The judicious use of the ignition, air and throttle levers, combined with the oil pump and exhaust lifter, will make a wonderful difference to the results obtained. For this reason I prefer hand-controlled air and spark levers. They help the driver in his endeavours to humour the engine. When driving on the level it is wise to keep the spark lever as far advanced as possible. The throttle or gas lever should be kept as nearly closed as is consistent with the desired speed, whilst the air lever should be worked in conjunction with the throttle, only, instead of being kept as nearly closed as possible, it should be opened as far as it can be, the driver judging the best position from the feel of the machine. On approaching a hill, open the throttle and air levers. As the machine slows, either lower the gear, if variable pulleys be fitted, give a richer mixture by slightly closing the air, or else retard the spark slightly. If the machine flags, partially reduce the air further, and then, if necessary, change gear. On approaching a hill an extra charge or two of oil will work wonders

* *

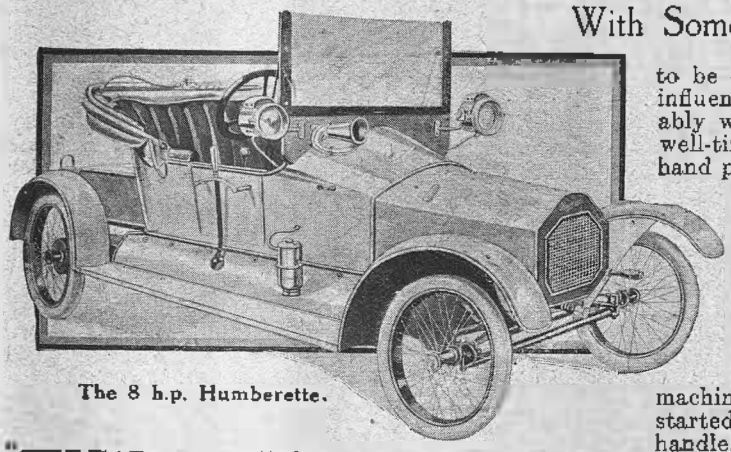
On quite a number of cyclecars the steering is direct. It is so on my monocar, and even at speeds of 40 and 50 miles per hour I find it no disadvantage. There is one point in which this system of steering scores considerably. My control levers are mounted on a spoke of the steering wheel (see sketch). Now, a quarter turn of the wheel in either direction gives me full lock. Hence the relation of the levers to my hand hardly varies at all. Now, on other machines which I have driven the steering is so much geared down that the position of the control levers at full lock is upside down, and it becomes most difficult to remember exactly which way the throttle lever is moved to open or shut it. It is a small point, but in cases where the steering is not direct, drivers would be well advised not to fit the throttle and air levers to the spokes of the steering wheel. Instead, they can mount them to the central tube, if this is fixed, for in this case the position of the levers remains the same, whatever the lock of the steering wheel.

* * *

Cyclecar chauffeurs are not likely to come into vogue—unless they may be accommodated on the dickey seat over the back wheel of the A.-C. de Luxe. Consequently, most of us have to do our own cleaning and repairs, and for this reason unless we are careful, we shall spoil many good suits of clothes. My advice to other cyclecarists, therefore, is to keep one suit for motoring entirely. It will soon be good for nothing else. I have adopted this plan for years, and though many of my cyclecar and motorcycling friends have never seen me—save in my motoring turnout—I have other suits! Naturally many will wear overalls or coats made specially for cyclecarring, but my point is that other garments must also be laid aside for following the pursuit of petrol. I recommend heavy shoes or boots without nails, as the nails would render it difficult to operate the pedals, breeches and gaiters if you will, and some kind of coat which does not easily get dirty or out of shape. There are some excellent knitted golfing coats which will meet the requirements of cyclecarists. For repair work, carry thin kid gloves—if you are a dancing man the white gloves you use on these festive occasions are just the thing—and a suit of mechanic's overalls, which can be bought for 5s. and be stored under the seat quite easily McM.

THREE DAYS ON A HUMBERETTE.

With Some Notes on Gear Changing.



The 8 h.p. Humberette.

"WHAT a sweet little machine!" was my first thought on setting eyes on the 8 h.p. Humberette which the manufacturers had placed at my disposal for a 200 miles trial. With my suit case strapped on to the back of the machine and carte blanche to go where I would and do what I liked with the little four-wheeler, I felt that I was indeed a lucky man.

At first I found difficulty in changing gear without making a noise, but after some practice I came to the conclusion that a silent change is quite easy, the system being a little different from car practice. For the benefit of other Humberette owners let me explain the process. Changing from first to second is easy enough: one simply declutches, throttles off, changes gear and reclutches. To change from second to top is not such an easy matter. First of all raise the accelerator pedal, then move the gear lever almost into the top speed notch on the quadrant and at the moment when it is about to drop into the niche apply the slightest touch to the clutch pedal, releasing it the moment the gear is in. To change down to second speed I did not find it necessary to declutch at all. It is only requisite to wait until the engine is flagging on top gear and to move the gear lever just out of top; then raise the accelerator pedal and press the lever into second speed. This operation will be found quite simple after a little practice. I give special prominence to the matter of changing speed on the Humberette, as it will be found the most difficult point to master on the machine. Otherwise this miniature car is delightfully simple to handle and extraordinarily reliable.

No Need for Tools.

The identical machine which I drove was the one that had just won a gold medal in the London-Exeter-London trial. I never even opened the toolbag for the whole of my 200-miles trial, though in the evening at the garage I found time to oil the clutch stop and fork lever, a precaution which prevents squeaking upon the clutch being released. Otherwise the machine went through the test without having a nut tightened or a puncture mended.

Starting from Coventry one cold winter afternoon I made for the Cotswold country as being likely to provide the best testing ground for the machine. It abounds, as is well known, in a great profusion of hills, varying from long, gentle inclines of 1 in 20 to steep little acclivities of 1 in 5, with appallingly greasy surfaces. On the former I found that, if the machine were given a fair rush at the first part of the hill, the V twin air-cooled engine would work steadily uphill in a really astonishing manner. If the hill were approached slowly the gear would have to be changed much sooner. Another factor which influenced the running of the machine very considerably was the amount of lubrication it received. A well-timed charge of oil injected by means of the hand pump on the dashboard will work wonders. If driving at 25-30 m.p.h. on the open wolds it is wise to keep a constant haze of blue smoke emerging from the silencer at the rear of the machine. When pottering, a charge of oil every eight miles is sufficient if the drip-feed is kept flowing fairly fast. In spite of the liberal oiling with which I dosed the engine I did not soot up a plug during the trial.

One of the most pleasing features of the machine was the way in which the engine could be started up with one upward pull of the starting handle. By retarding the spark half-way and throttling down the four-jet carburetter the engine could be made to run quite slowly, so sedately, in fact, as to enable one to count the explosions. In this connection it is perhaps worth mentioning that hand and foot accelerators are provided for the one-lever carburetter, the control of the machine being operated by the foot, whilst the hand lever is set to allow the engine to tick over slowly when the clutch is out. This brings me to yet another point in connection with the driving of the machine: the necessity of letting the clutch in most carefully after changing gear. To do so quickly imposes a very unfair strain on the gearbox, shaft and axle. It is quite easy to let it in slowly if one pivots the foot on the heel and allows the pedal to slide against the sole of the boot.

A New Use for the Passenger.

In the course of my perambulations in the Cotswold country I found it possible to average 25 miles an hour across country without unduly forcing the engine. This was when driving solo, but the curious part of it was that when I took a passenger with me the machine appeared to run quite as easily. The extra weight did not affect the speed either up hill or on the level; in fact, the machine was much more comfortable to drive, held the road better, and was steadier on corners. The explanation is that when the machine is driven solo there must be a certain amount of power lost through the rear wheels slipping on the greasy roads, and also through bouncing on rutty surfaces.

In connection with this question of back-wheel slip on cyclecars, it is worth noting that the Humberette was only shod with one non-skid cover on the rear wheel and one on the off-side front wheel, with the result that, when very steep and greasy hills were ascended, the near plain rear cover would quickly revolve when full power was applied on the low gear, though the slip could be overcome if the driver sat over in the passenger's seat and drove from this position. The worst hill I tackled with hot engine was Sudeley, near Winchcombe, the valiant little Humberette ascending this steep gradient without a falter. Where the hill eases to one in eight or thereabouts, second speed was engaged, the spark being retarded slightly at the same time, and the machine then picked up speed without the vestige of a knock.

Of course, in the winter time a long road test of a machine is a much more severe undertaking than it is in the summer. Probably few cyclecarists realize the difference that bad or good roads make to a machine. In order to test this it is only necessary to drive over frozen roads and then to come on a patch

THREE DAYS ON A HUMBERETTE (contd.).

of heavy grease. The engine will immediately slow down on the latter, and will even give the impression of seizing or running out of petrol, so great is the extra strain imposed by the greasy surface, and, consequently, I found it a good plan to keep the machine running at a fair speed over the heavy roads, so as not to have it always labouring in an attempt to pick up under distinctly unfavourable conditions. Doubtless others have noticed this.

One of my most amusing rides was to a ball at Broadway. My passenger and I were to have been taken in a big car, but, as it did not materialize, my friend and I, basely deserting the ladies, announced our intention of going on the Humberette. With heavy coats and rugs to protect our dress clothes we sallied out to the garage, lit the lamps, and departed in fine style, "a grande vitesse," as the Frenchmen say. We did the 12 miles in well under the half-hour, and quite outdistanced our host's car, which was called into service at the last moment. Coming back at 4 a.m. in the morning, we had a fine time on the long, snaky ascent out of Broadway, known as The Fish Hill, overhauling several big cars, the occupants of which were also returning from the ball. Doubtless they wondered at the tiny, low torpedo-bonneted car which flashed past them into the night so silently and swiftly. As on the outward journey, we did not experience an involuntary stop.

After a few hours rest, I set forth again on the Humberette, once more bound for Birmingham. The great Midland town was reached dead on schedule time, and the tiny cyclecar proved of inestimable value in paying a number of calls in the city, where I had rather an amusing experience. I wanted to discover where a certain street was situated, and after making several inquiries of local inhabitants and policemen, elicited the fact that it was several miles away across the town.

A Roundabout Short Cut.

A man I interrogated wanted to go to a place quite near the street I sought—at least so he said—and he volunteered to direct me if I would give him a lift, which I did only too willingly. In and out of the greasy, grimy streets we sped, now to the left, now to the right, the machine proving extraordinarily steady in the mud and on the tramlines, until at last my companion cried a halt. He wanted to dismount here, he said, and if I went on straight for half a mile I should find the street I wanted. I thanked him profusely and found that I still had a couple of miles to go in what appeared to be a semi-circular direction. Indeed, so semi-circular was it that I still have my suspicions that my passenger was really more anxious to reach his own destination than to direct me to mine. But perhaps I am uncharitable and mistake his intentions.

From Birmingham to Coventry is but a step in a cyclecar, and when the machine had been stored safely at the King's Head Garage it was with feelings of regret that I left it after a most enjoyable three days wandering. Not one moment's anxiety had it given me during the whole time. I had never been more than five minutes late for any appointments, though often 30 or 40 miles had to be covered dead to time, and, moreover, though I drove through darkness, mist and rain, up hill and down dale, all out and at a crawl, as the various conditions permitted, the little Humberette was always the same tractable, easily-handled, comfortable and reliable machine. It stood the racketing it received at my hands without losing a nut and without a falter.

The conditions of running were not a fair test of petrol consumption, which, with proper tuning up of the carburetter, I should estimate at 35 to 40 m.p.g.

M.

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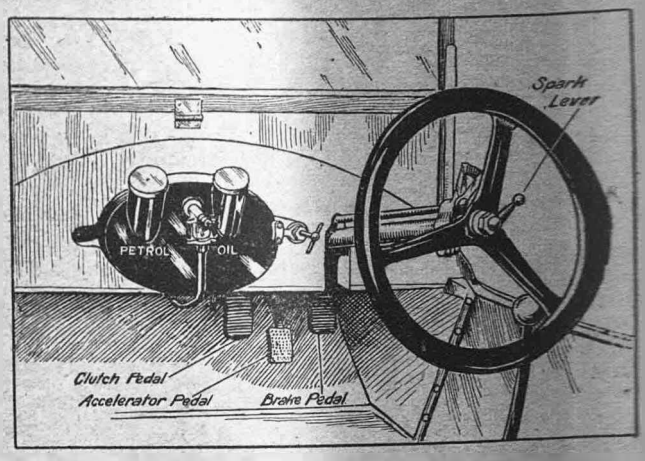
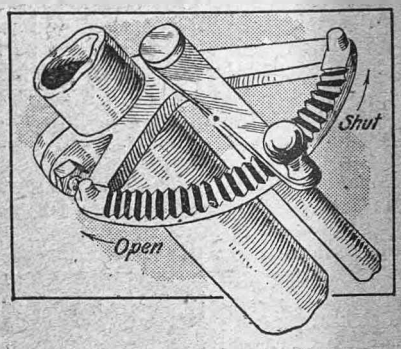
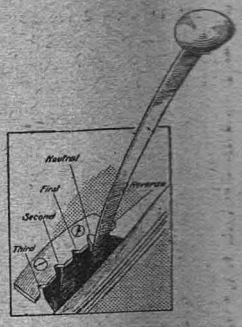
HUMBERETTE MECHANICAL DETAILS.



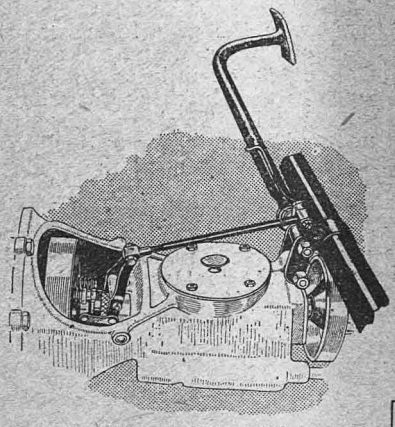
The control levers.



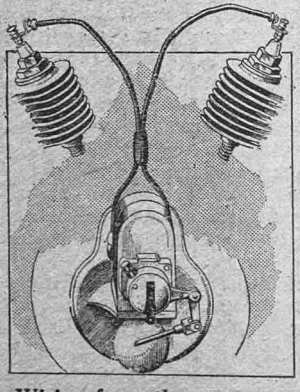
The spark lever is placed on the wheel and the throttle on a special rack below the steering wheel.



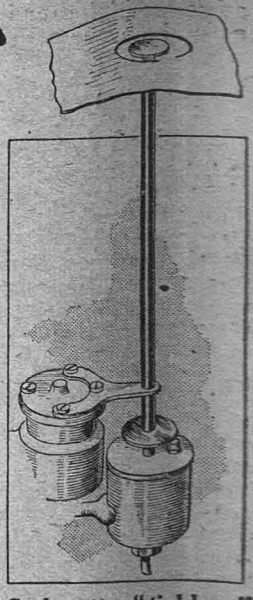
Gear lever.



The clutch pedal.

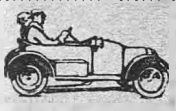


Wiring from the magneto.



Carburetter "tickler."

THOUGHTS AND OPINIONS.



"The suggestions of to-day may be the realities of to-morrow."

THE AMATEUR DESIGNER: READERS' SPECIFICATIONS.

A Specification with a Three-cylinder Engine.

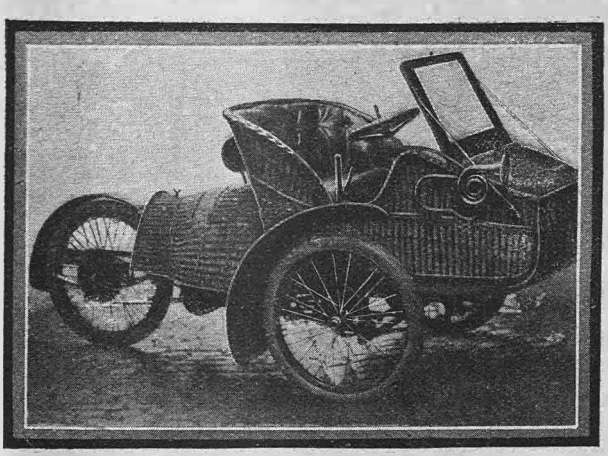
My ideal machine would have Sankey detachable steel wheels, 650 mm. by 65 mm. tyres on the front, and a 700 mm. by 75 mm. tyre on the back, a three-cylinder water-cooled engine, and a clutch incorporated in the flywheel, with shaft drive to a sliding dog two-speed gear, such as is fitted to the Morgan, and thence by two separate low and high-gear chains to the back wheel. An automatic carburetter controlled by pedal would be a necessity, whilst the steering would be by wheel direct. Half-elliptical springs would be fitted in front and quarter-elliptics at the rear. A cyclecar embodying these features, fitted with a comfortable two-seater body, could easily, I think, be sold for 95 to 105 guineas.

E. J. Smith.

Putney, S.W.

A Light Three-wheeler.

The readers of The Cyclecar may be interested in a cyclecar which I have constructed. It is extremely comfortable and speedy, and altogether is very satisfactory. The specification is as follows: 6 h.p. J.A.P.



A three-wheeler with wicker body constructed by Mr. J. Danks and described in the accompanying letter.

water-cooled twin with pump circulation; J.A.P. carburetter; multiple-disc clutch; Renold chain transmission to two-speed-and-reverse gearbox, controlled by side lever, thence to back wheel; gravity petrol feed from tank at back of body; direct wheel steering; wicker body with extension covering mechanism; two band brakes operated by pedal on front wheels; rim brake on back wheel operated by side lever.

Warrington. J. Danks.

The Simple Cyclecar.

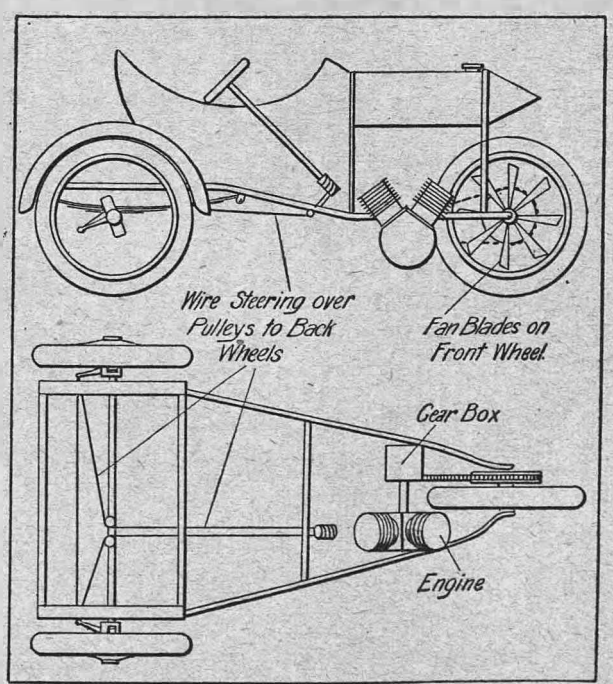
Like many others, I am waiting for the simple, reliable cyclecar, costing not more than £80, and having a specification somewhat as follows:—Steel frame; transverse front springing; quarter-elliptic back springs; bicycle wheels; worm and segment or similar steering; and 8 h.p. twin air-cooled engine, outside flywheel, incorporating N.S.U. two-speed and free engine or other suitable gear, operated by handle on dashboard. Transmission by wide leather belt on flat pulleys, the back one incorporating a simple differential, belt spring tensioned, and engine started by pedal from driving seat. Brakes: blocks working in pulleys similar to Rudge cycle, and the belt to have case under body. Senspray carburetter, splash lubrication, sight-feed drip, and large silencer complete this specification. If unpractical, perhaps some better-informed readers will enlighten me.

Torquay. T.T.

Front Drive and Rear Steering.

The accompanying design suggests a method hitherto untried, by which some of the difficulties that surround the designer might be overcome. The point of the design consists in driving by the front wheel and steering by the two back wheels. The engine, being in front, enjoys the advantage of perfect cooling, assisted by vanes on the flywheel, which, in conjunction with suitable scoops in a neat bonnet, would circulate a constant stream of air past the cylinders. The engine position also overcomes the difficulties connected with an extra long transmission, difficulties which are responsible for the introduction of the shaft drive. Side-by-side seating (between the two rear wheels) makes for stability and sociability. Steering of the wire-and-bobbin type presents no difficulty, and weight and windage being the most important factors in all low-powered vehicles, this design scores on both points, at the same time providing a narrow-fronted, wedge-shaped vehicle, whilst the weight distribution would be improved, and, on the theory that a weight is easier to pull than push, an increase of speed for power may be expected.

Glasgow. G. Scouller.



Illustrating Mr. Scouller's suggestion of front-wheel drive.

B33

4000 MILES RUNNING COSTS.

The Three-wheeler from the Business Man's Point of View.

THE following is an account of my experiences and expenses with an A.-C. three-seater over a distance of nearly 4300 miles since I obtained delivery in May last, for it has been on the road practically every day in all conditions of weather. The area covered comprises practically the whole of Lancashire and Cheshire, and the greater proportion of the mileage has been done on the sett paving which abounds in the former county.

Referring to my tabulated monthly running costs, the items under the headings "garage and water" and "insurance and licence" may at first glance, seem unduly high, but I would state in explanation that as regards garaging, I pay a rental of £1 per annum for a small piece of land near my house and 2s. 6d. per week for the privilege of putting up my machine in a garage in town. With regard to insurance, I have taken out a comprehensive policy which includes mechanical breakdown, and I should strongly advise other business men to do the same. It will be noted that I have nothing down for tyre expenses, which is due to the fact that during the whole time I have had the cyclecar I have been absolutely free from tyre trouble, never even having had a puncture. At the end of the year, in view of the possibility of very bad weather and rough roads in the ensuing two or three months, I took off my covers and fitted new ones on all the three wheels, those on the front being plain-tread Michelin, Voiturette Legere, 650 mm. by 65 mm., whilst a 700 mm. by 75 mm. Liversidge steel and rubber-studded is on the back, driving wheel. The old covers taken off were by no means worn out, and an expenditure of £3 has put all of them in a condition to do at least another 2000 or 3000 miles. Adding this cost of tyre repair to the first cost brings my tyre expenditure up to .3d. per mile, which I do not think excessive when one considers the bad roads existing in some parts of this district. This estimated expenditure on tyres brings my total running costs, including garage and insurance, to 1.46d. per mile, making, of course, a higher rate per mile than train travelling, but it must be remembered that the car will put me down at the doors of the people on whom I wish to call, and immediately my business is finished I can start for home again without any waiting for trains.

Being fond of mechanics, I do my own small repairs and adjustments whenever possible, thus saving much money, the items in my expenses under engine repairs, etc., being mostly for small repairs which I have had carried out when away from home, when time and circumstances forbade my doing them myself. My magneto and ignition have cost me the sum of 1s. 9d., this being the price of a new high-tension cable; the old one having frayed slightly, I considered it advisable to replace it with a new one before trouble came. I invariably carry a spare plug, but am still using the one originally supplied with the car. My carburetter has cost me nil, if I except a slightly increased petrol consumption in December, due to a leaky float, which the makers replaced free of charge as it was an unusual occurrence.

I used the special air-cooled oil advised by the makers of the machine as being the most suitable, but finding my oil consumption at first rather high, I was induced to try a preparation called Oildag, which, although new to this country, is, I believe, largely used in the United States. The effect obtained was most marked, my oil consumption being reduced by 40 or 50 per cent., whilst at the same time all combustion chamber troubles disappeared. I have not had a scoted plug in the last 3000 miles, whilst on dismantling my engine for overhaul and examination in December, I found the bearings in perfect condition, and was surprised at the almost complete absence of carbon deposit on the piston head and in the combustion chamber. Whilst, of course, not so speedy as a powerful motor-bicycle and side-car, and, therefore, despised by those desiring speed, from a business man's point of view there is no comparison. The cyclecar requires no special costume beyond a thick overcoat, which can be easily slipped off when calling on a customer; this, together with a waterproof rug, is all the personal equipment necessary, and, with hood and screen up, one can brave the vilest of weathers in comfort.

As regards speed, I find a steady average of 18 to 22 miles per hour can be maintained for long periods and over varying classes of road surfaces. This may seem a mere crawl to some, but I would remind them that the business man's first and chief requirement is reliability and the certainty of being able to keep an appointment. A light and cheap vehicle cannot be expected to stand up to several thousands of miles, if continually driven at a high rate over inferior road surfaces, without at times developing defects, which invariably occur when least desired. An unexpected breakdown may easily cost the owner the price of the car in lost orders. To the man who is hesitating, I say take the plunge and give the cyclecar a trial, for journeys that were previously a weariness to the flesh become a delight, whilst the fresh air sharpens the faculties and renders the business man keen and ready, instead of jaded, at the end of the journey. As a means of introduction to a new customer, the cyclecar is excellent, but what is wanted before speed is reliability.

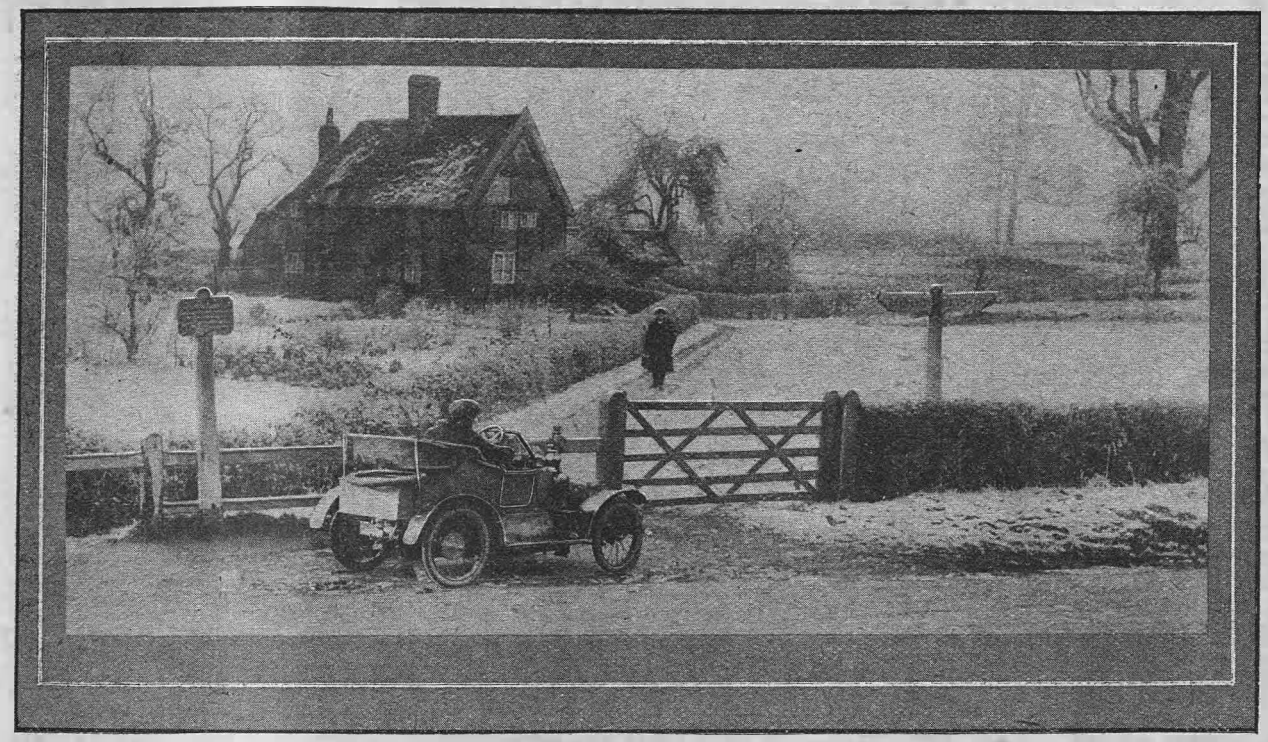
P. E. Shepherd.

Manchester

MONTHLY COSTS FOR AN A.-C. CYCLECAR USED FOR BUSINESS PURPOSES.

Month.	Miles.	Petrol.	Oil and Carbide.	Repairs, etc.	Garage and Water.	Insurance and License.	Total.	Average per Mile.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	Pence.
June	709	1 4 10	1 6 3	2 6	12 0	13 6	3 19 1	1.34
July	541	1 1 0	6 0	4 6	12 0	13 6	2 17 0	1.26
Aug.	841	1 12 7	3 4	6 1	13 0	14 6	3 9 6	0.98
Sept.	874	1 9 3	3 3	6 1	12 0	13 6	3 4 1	0.88
Oct.	767	1 9 0	3 3	2 6	12 0	13 6	3 0 3	0.94
Nov.	51	3 2	3 3	—	8 0	14 6	1 8 11	6.80
Dec.	503	1 5 4	3 3	7 6	7 0	13 6	2 16 7	1.35
Totals	4286	8 5 2	2 8 7	1 9 2	3 16 0	4 16 6	20 15 5	1.16

Total mileage to 31st December, 1912 ... ... 4286 miles.
Total cost to 31st December, 1912, excluding tyres ... £20 15s. 5d.
Average cost to 31st December, 1912, excluding tyres 1.16 pence per mile.
Estimated cost, including tyres ... ... 1.46 pence per mile.



THE DOCTOR PAYS A CALL.

The photograph reproduced above illustrates the handiness of the cyclecar for professional men. The roads were almost impassable to horse traffic, and the Premier cyclecar illustrated above, proved its utility in the circumstances.

Running Costs Required.

Kindly allow me to endorse the remarks of "Knowledge Seeker" in the issue of 15th January regarding cost of upkeep. Obviously it is not so much the initial cost of a car, miniature car or cyclecar, that is a serious matter with many: it is the upkeep. I find it difficult to obtain reliable figures to guide me in estimating the probable cost of upkeep of either class of car mentioned, therefore if some experienced private owners would oblige by giving information at their disposal, they would be conferring considerable and valued help to many like myself that are in the dark and possibly deferring purchasing until the necessary information is obtainable, which means a certain amount of loss in various ways to the industry for the time being.

Portsmouth. FASCINATED.

A Delighted Owner.

Your correspondent "A.B.R." gives the specification of the ideal cyclecar for which he has been looking, and thinks it ought to be turned out at about £85. The owner of a tandem Rollo will soon recognize in his ideal the full description of that particular cyclecar, but the tandem Rollo costs £105. Why then, if "A.B.R." does not want to pay that price, should not he look in the columns of The Cyclecar for a second-hand 1912 Rollo. I have done so myself and feel quite pleased with my purchase. I went and fetched the Rollo from Bristol last week, and after half-an-hour's tuition and a trial run I drove the machine back to my farm near Andover in a little over three hours. The machine gave no trouble whatever, notwithstanding the fact that I afterwards discovered I had handled the clutch in the wrong way, but I must add a word of advice. If anyone looks for a second-hand cyclecar let him waste no time over it. They go like hot cakes, and I found this out by losing two or three machines I inquired for previously by wanting to know too much about them. If time permits let him go straightaway to the advertiser of the machine he fancies. P.M.

Andover.

And a Dissatisfied One.

I have been the owner of a cyclecar for some six months, and in view of this I think my experiences may be of interest. In the first place, I have never had a run without some involuntary stop or other. My troubles began as soon as I took delivery of the machine, and the following are a few of the things that happened in the first month: The high gear sprocket came adrift four times, both back springs broke, the front tyres wore out in a fortnight, and the hand brake broke clean away the first time I used it. Another of my worries is the clutch, which has two positions, full in and full out, and if it is used for starting the machine either the low gear chain or else the gear sprocket is sure to break. The only way to start the machine is to push it off and jump in as soon as the engine fires. My running costs average 2½d. per mile. I do 45 miles to the gallon of petrol, but have already spent £14 19s. 7d. on repairs alone, the tyres not being included. I have had no pleasure from my cyclecar, for it has been one long struggle with bad workmanship and bad material. My consolation, after taking four hours to do 18 miles, is to read in The Cyclecar accounts of machines that go. Wishing your paper the success it deserves. J. C. JONES.

Bournemouth.

[This is obviously an exceptional case, and although our correspondent does not mention the make of machine, we should like to know what the makers thought of its defects. Incidentally, it occurs to us that many of these would have been easily preventable by going over the machine systematically and effecting various small adjustments that had been overlooked.—Ed. "The Cyclecar."]

THE DIFFERENTIAL QUESTION.—Concluding Letters of an Interesting Discussion.

Weight on the Driving Wheels.

One of the defects of a belt-driven car not fitted with a differential gear is that, when turning, the drive is by one belt only, which means that each belt has to be strong enough to transmit the whole power instead of half. It also means that on bends on hills half the adhesive weight only is available on the one driving wheel, which will result in slipping unless the weight on that wheel is sufficient. The question of weight on the driving wheels seems to me to require more attention, as many cyclecar designs appear deficient in this respect; in fact, sufficient grip on the road is obtained only by turning the tyres into toothed wheels by means of studs, grooves, etc. The free-wheel differential, suggested by "Spectator" in The Cyclecar, has been used for many years on double driving tricycles. Two defects in it, which, however, do not apply generally to cyclecars, are that no reverse gear can be employed, and all braking must be done on the driving wheels. E. A. Forward, A.M.I.M.E.

South Kensington.

A Compensating Driving Axle.

With reference to the suggestion brought forward by a correspondent of mounting the driving pulleys at the extremities of a countershaft on ratchets to allow of the outside driving wheel rotating at the requisite greater speed than the inside wheel, we may say that we have recently taken out a provisional patent for a compensating driving axle which embodies the above principle. Robert Earl & Co.

Highbury, N.

[An interesting question: Does the compensating countershaft referred to above permit of braking with the engine?—Ed. "The Cyclecar."]

Free-wheel Pulleys on the Countershaft.

I noticed in The Cyclecar a suggestion for overcoming the difficulty of belt-slip by placing free-wheel belt pulleys on the countershaft. I have come to the conclusion that the device is not worth fitting, owing to two disadvantages:—

(1) It would be impossible to use the engine as a brake, or even to have a band brake on the countershaft.

(2) It would be just as impossible to restart the engine after having negotiated a steep hill with the engine switched off. R.S.C.

Doncaster.

A Free-wheel Advantage.

I notice in The Cyclecar of the 15th inst. a letter from a correspondent suggesting a free-wheel differential on a belt-driven cyclecar, and I should like to point out that this combination gives another action, which I maintain is more useful and important. Let us consider machines having belt drive with a free-wheel action, and with a rigid drive throughout. In the first case, when the cyclecar happens on a down gradient of, say, 1 in 20, the engine is accelerated, and then throttled almost down, so that the following forces are acting: (a) the initial inertia of the cyclecar; (b) the extra momentum caused by the gradient. It will be found that the machine will travel at an ever-increasing speed, which is governed principally by (a) and (b). From this it will be seen that the amount of petrol used is simply that required to accelerate and then merely to turn over the engine when the machine is travelling at speed. In the second case, for the engine to have no braking effect, it should turn over at a speed proportionate to the road speed of the car, and this being naturally high, a large quantity of gas is used, no matter how light the engine is running. It is true that by using the engine as a brake a cooling effect can be obtained, but I do not consider the advantage gained is sufficient to compensate for the energy wasted.

Birmingham. G. Wesley Charley.

Locking the Free-wheel Ratchets.

In answer to "Spectator's" suggestion of ratchet pulleys on the countershaft to take the place of a differential, it is obvious that the outside wheel would overrun when turning a corner, but on the straight both wheels would run free when the engine was slowed down, such as when running down hills, etc. The pulleys would act in the same way as a free wheel on a bicycle, unless a device was incorporated to lock the ratchets when not turning a corner. This would cause increased complication and would require some form of lever to operate it.

Bournemouth. H.E.M.B.

Tyre Fillings.

It would be interesting to learn if any of the readers of The Cyclecar have ever used any of the new tyre fillings in their covers. It would appear that one of these preparations would be very suitable for the back wheel of a Morgan or an A.-C. and would at once dispose of their only drawback, i.e., the difficulty of tube repairs on the road which is experienced by most owners of three-wheelers.

Shrewsbury. S. J. Hutton.

New Sources of Power: "A Ridiculous Idea."

In your issue of the 15th January you have an article advocating the use of compressed air in preference to petrol or some similar fuel, at the end of which you ask, "Is it feasible?" If you will pardon me for saying so, this appears on the face of it to be a most ridiculous idea. I would like to ask, what size of cylinder, and what quantity of air would be required to drive, say, an 8 h.p. cyclecar the same distance as two gallons of petrol would do? The size and weight of the cylinder would be so great that it would be impossible to carry it. Moreover, what would it cost to refill such a cylinder, and what efficiency would you expect to get, as between the energy contained in the compressed air and that given out by the engine? The amount of petrol contained in a two-gallon tin represents so much energy, but should the same energy be stored in a cylinder, in the shape of compressed air, the cylinder could not be carried by the average cyclecar by reason of its weight, without at all considering the space occupied. I would also like to know what arrangement would be adopted for dealing with the exhaust of the compressed air engine? The method of transmitting power, even over short distances, by compressed air is the most wasteful known.

Crook. M. Palmer.

A Two-guinea Tax Engine.

With reference to the complaints of our correspondents as to the difficulty of obtaining a cyclecar engine having a bore not exceeding 72 mm. for a twin engine, Messrs. A. S. Cheetham and Co., Foundry Square, Bolton, inform us that they will shortly be giving delivery of an engine the dimensions of which are 72 mm. by 95 mm., and capacity 774 c.c.

THOUGHTS AND OPINIONS (contd.).

The R.A.C. Journal.

Cyclecarists who are members of the R.A.C. or its affiliated clubs, and who therefore receive that somewhat stodgy publication, the "R.A.C. Journal," will be asking shortly for cyclecar notes that are not written by a motorcyclist. Not without reason, for in a recent issue, in the motorcycle notes, it is actually suggested that one of the chief advantages of the simplest type of cyclecar, viz., its lightness on tyres, should be improved away by putting the engine behind the back axle in order to increase the adhesion of the driving wheels. It suggests that the writer has merely looked at cyclecars, not driven them, for whatever test is taken—speed on the flat or hills, steadiness on grease, or anything else—the belt-driven type of cyclecar certainly does not require heavy weights to keep the back wheels down. What extraordinary ideas some people get. I am glad to see you are urging upon the A.-C.U. the formation of a cyclecar sub-committee, for cyclecar matters can only be dealt with by those who own cyclecars. Without actual experience, wrong ideas are easily formed.

A.R.G.H.

A Trial Trip on a G.W.K.

It was with doubt and many misgivings that I accepted my brother's invitation to accompany him on a trial trip in his 8 h.p. G.W.K. cyclecar, of which he had just taken delivery, and I was surprised when I saw the low, neat, grey, four-wheeler, with a smart hood and screen, a sloping back, no belts and no ugly levers—in fact, a real workmanlike machine. On lifting the small hinged cover in the sloping back, a neat, cleanly-designed little engine was exposed, with its petrol tank, carburetter and magneto compactly arranged, and it was hard to believe that the friction drive was responsible for all the driving power, and the small fibre wheel for the various gears. After oiling one or two parts, the petrol was turned on and the starting handle given one pull over, when the engine fired, and it did not seem possible that it was only a two-cylinder, so even and quiet was the running. The passenger's seat afforded plenty of leg room and general comfort, and on starting there was neither jerk, noisy gears, nor effort of any kind. We commenced our journey on top gear, having soon to slow down behind a tram, but, when opportunity afforded, the cyclecar quickly passed it without any hesitation or effort. We soon came to our first hill, at the bottom of which some sheep returning from market necessitated the use of the second speed. Once past these, however, the machine glided up without a falter, the speedometer registering well up to the legal limit. I am delighted with the general excellence of this little car, and astonished at its speed, power, liveliness, and simplicity.

Darlington. Leon Bergemot.

The Real "Jabberwock."

In your issue of the 15th inst., under "Men and Motors," you refer to a G.W.K. having been seen on the Dorking road the previous Sunday bearing the title "The Jabberwock," to which title the owner of a certain three-wheeler appears to claim the original and proprietary right. Possibly he may recall the fact that I registered my P. and M. motor-bicycle as "The Jabberwock," and a verse from "'Twas Brillig" was published in "Motor Cycling" in connection therewith. When I parted with my faithful P. and M., about six months since, I transferred the title to my G.W.K. I trust you will have space for the publication of this communication as a justification of my use of the title, and to certify that the only genuine "Jabberwock" in the cyclecar world is a little grey G.W.K. with "The Jabberwock" inscribed upon the dash, a most artistic figure of the noted beast upon the bonnet and at the feet of the figure, in a silver frame, the words—

"The Jabberwock, with eyes of flame,
Came whiffling o'er the bumpchey road,
And burbled as it came."

It "whiffles" up the hills, and, in contradistinction to many cyclecars I have met, it gently "burbles" as it goes.

Ashtead, Surrey. E. Willoughby Taunton.

American Car or Cyclecar?

As the driver of an A.-C., and a reader of your paper ever since it was issued, I want to take exception to the letter headed "American Car or Cyclecar?" The main point, which the writer avoids, is cheapness, not so much in initial expense, as in running costs. For the average American cheap car, of 20 h.p., the licence will cost £6 6s. per annum, while the insurance will probably be from £7 to £12, so that one cannot put it on the road under £13. With a cyclecar £13 goes a long way towards petrol and tyres, and in practically every way the "new motoring" spells cheaper running.

Coleraine. A Motorist.

In full cry! an unexpected encounter with the hounds.

NOTES AND QUERIES.

Readers' Problems Investigated by the Editor.

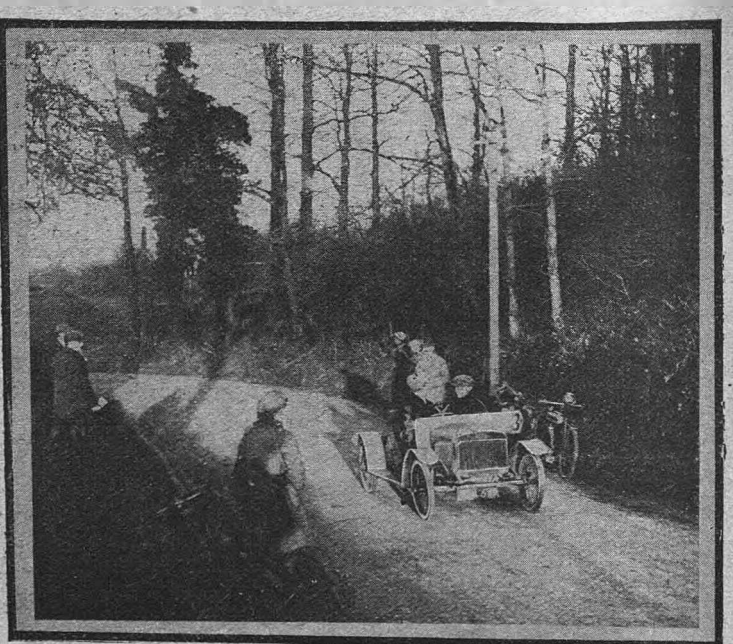
Readers are asked to write on one side of the paper only, and to use a separate slip for each question.

CYCLECARS, in the minds of many readers, appear to lack the ability to climb hills, but such is not the case. In most of the recent trials cyclecars performed as well as, if not better than, sidecar combinations on all the test hills. A case in point occurred in the recent six days trial organized by the A.-C.U., a Morgan cyclecar being one of the two passenger machines to climb the notorious Porlock Hill. These remarks arise from a query by "T.M." (Mevagissey), who considers that a cyclecar would exactly meet his requirements, as he lives five miles from a railway station and he cannot afford the expenses which would naturally have to be incurred in purchasing a large car. He lives, however, at the foot of a hill having a gradient, at the bottom, of 1 in 8, and as it is half-a-mile in length, he has serious doubts whether a certain cyclecar which he mentions would climb it time after time successfully. Obviously he should not make a purchase until after a trial run on this particular hill, which the machine should be able to climb with ease.

* * *

FREE WHEELS IN PULLEYS. A LARGE number of readers have sent in the suggestion that free wheels should be used instead of differentials. Some propose placing the free wheels in the countershaft pulleys, whilst "A.E.P." (Dublin) suggests that they should be mounted in the belt pulleys on the back wheels. He would drive the back wheels in a similar manner to that on a free-engine motor-bicycle, but instead of a clutch being interposed between the pulley and the wheel, he would have a free wheel. The obvious disadvantages in employing free wheels are that the engine cannot be used as a brake, neither can it be restarted, except by cranking, if the driver indulges in coasting down hills. It is also necessary to fit all brakes on the wheels themselves; this, however, is not really a disadvantage. To get over the difficulties, many proposals are made. "B.F.T." (Redhill) suggests fitting a device to lock the ratchet. This method may be feasible, but it entails complications which ought never to be tolerated in cyclecars. The question then arises: "Is it necessary?" and I venture to answer "No," for practical experience demonstrates that belts, unaided by any mechanical device, are quite capable of dealing with the differential problem, without any undue wear or stretch taking place.

B38



A ROAD BEAUTIFUL IN WINTER. : : **A G.W.K. ascending Sunrising Hill, Warwickshire.**

ENGINE COMPRESSION. "R.D.W." (Amhurst Park, N.) has had an accident with his engine. The cylinder has burst, and as he considers the compression is rather on the high side, he wishes to reduce it somewhat in the new cylinder which he intends to have cast from the old one. In usual cases the simplest method to reduce compression is to interpose a washer between the cylinder and the crankcase, but if a new cylinder is being obtained, and a permanent job is desired, a slightly thicker holding-down flange could be cast on it. Another means often adopted is to fit a shorter connecting rod, or a longer one, if it is desired to raise the compression. The latter can also be effected by turning the cylinder foot in a lathe.

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TRICAR CONVERSION. "F.B." (Ipswich) would like to convert his tricar into a cyclecar, and asks my advice. There have appeared recently in THE CYCLECAR accounts of machines which have been converted, but in his case there would probably be some difficulty, as the frame is built on cycle lines. So far as I can see an entire reconstruction of the machine would have to be undertaken, and the expense involved would make it in the long run hardly worth the trouble. Conversions are seldom satisfactory, and probably the best thing for "F.B." to do would be to purchase a cyclecar frame and transfer his engine and transmission to it.

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TAXATION. THE taxation problem is once more the subject of a query. "A.A." (London, W.) is at present the owner of a Triumph motor-bicycle, and wishes to know whether the £1 tax which he is about to pay will be allowed towards the three-guinea tax for which he will become liable next March when he takes delivery of his new cyclecar. He will, of course, hand over the motor-bicycle the day he receives his new machine. Once again the law is not explicit on this point, and various licensing authorities interpret it in different ways. As a rule, however, in these circumstances the smaller tax is put towards the new one, but it is not compulsory for the licensing authorities to allow it to count as part payment. In all cases of this sort place all the details before the authorities themselves, and as they practically have the last say in the matter, it is best to follow out their directions.