

Motor Cycling

&
Motoring

Vol. 2, No. 33,
September 24th, 1902.

"THE AUTOMOBILE HOOLIGAN."

SOME REFLECTIONS ON THE REFLECTIONS OF "DAGONET."

In a recent issue of the "Referee," "Dagonet" looses off a few virulent paragraphs at what he calls the *Automobile Hooligan*. No doubt many readers of this journal will have read for themselves in the "Referee," of August 31st, the matter in question. For the benefit of those who have not it may be explained that "Dagonet" was doing Geneva on a fete night in a little victoria, and that after passing through the crowded and "almost impassable" main thoroughfares, "at a snail's pace," he arrived at a diverging street where he was able to go a little faster, although "even here locomotion was not easy." Yet—*horrible dictu*—"it was here that an automobile fiend, pressing his horrible squeaker, came on heedless of everybody and coolly ran into the back of"—"Dagonet's" little victoria!

Having thoroughly digested this remarkable incident, and having adequately realised the enormity of the automobile hooligan's crime, the reader is in a position to appreciate the moderate impartiality with which "Dagonet" proceeds to discuss

THE AUTOMOBILE HOOLIGAN

and his wicked ways. Such expressions as "outrage on common sense," "forty miles an hour," "dashing about amongst men, women and children," are lavishly scattered throughout the half-column which the writer fills with his indignant protest; expressions with which the automobilist and the cyclist are already sufficiently familiar to treat in the proverbial way. But "Dagonet" deprecates any suspicion of prejudice on his part. "I am not," he says, "an anti-automobilist. I like to motor well enough, and possibly, some day, I may have one of my own." Already, it appears, he hankers after the delight of running into rather than of being run into. Little victorias are all very well in their way, but they have their drawbacks when they happen to get in the way of something else. Has it not always been, and, until some one form of locomotion becomes universal, will it not always be the case that the more old-fashioned and the more slowly-moving individuals and vehicles have opposed progress, change, increase of power and velocity accompanied—to their narrow vision—by increase of inconvenience and danger? What the bicycle was twenty years ago to the pedestrian and the cab-driver so is the motor vehicle to-day—

A VEHICLE WHICH CAN GO FORTY MILES AN HOUR,

and which *does* go twelve or fifteen, must of necessity constitute a moving menace to something which *cannot* go more than ten, and *does not*, as a rule, go more than six. One or the

other must go to the wall, and the experience of the past gives us no good reason for inferring that it will be the stronger. Of what avail is it to prosecute experiment and invention in electric lighting, wireless telegraphy, aero-navigation, and other scientific marvels, if

THE ROAD TRAFFIC OF THE FUTURE

is to be reserved for the two-horse 'bus and the little victoria!

Another peculiarity of the automobilist which seems to annoy our non-anti-automobilist is that he "looks upon the roadway as his sole property." We lay no claim to the modesty of a "Dagonet," and we frankly admit that when we go out upon the roadway, whether it be on an automobile or a motor-cycle, or a penny 'bus, or—*raro intervallo*—in a little victoria, or even on our own two feet, we have a tendency to look upon the roadway as our sole property, and we have noticed that other users of the roadway, ay! and of the footpath, too, from the drayman down through the irresponsible coster and the pert nursemaid to the unlicensed mongrel, do ditto. It is one of the besetting sins of human and canine nature, to say nothing of poultry.

In conclusion, we may venture, on the strength of the sub-joined paragraph in our morning paper, to doubt whether all the danger of street traffic is due to the automobile hooligan or to the sadder and outrageous increase of velocity which the motor vehicle has brought into our midst:—

"AN ALARMING ACCIDENT"

to a London County Council tramcar occurred in Kennington Park Road on Saturday morning about nine o'clock. A horse attached to a van belonging to a Streatham fishmonger was *being driven slowly* along Kennington Park Road towards Streatham, but when near Kennington Church the animal took fright at a passing *furniture van* and bolted, dashing into a tramcar which was proceeding towards the Elephant and Castle. A shaft of the van pierced the front of the car, and the driver, John Smith, was hurled into the roadway. He was conveyed to St. Thomas's Hospital, suffering from a dislocated shoulder. The passengers were severely shaken and several sustained cuts and bruises. The horse of the van was killed. The front of the tramcar was wrecked and all the windows smashed, and traffic was seriously interfered with for some time."

The only comment needed on the above is that the italics are our own.

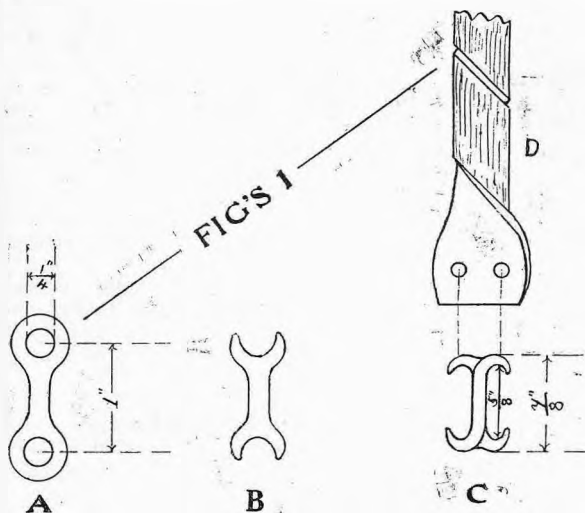
NOTES ON MOTOR-BICYCLES AND THEIR MANAGEMENT AND REPAIR.

BY A MOTOR REPAIR MAN.

The motor repair-man is undoubtedly a person well acquainted with the faults and vagaries of various motor vehicles, for if he is engaged at a motor repair works of any standing, his daily miscellany of problems to be solved must assuredly suggest many useful ideas to be put into practice as opportunity occurs, with other work entrusted to him. In our repair shop we "take in" anything which comes along needing repairs (customers, of course, excepted), and some queer things come along at times. For instance, a motorcycle tourist called recently for a repair to his *fabric sided* tyre. He had actually fitted, or rather, "hung on" a 2½ h.p. engine to drive his old light bicycle with *fabric sided* tyres. He admitted that he dare not drive the machine at full speed because it "wobbled so"; however he "hoped" to try it on a track when he reached his "journey's end." We fancied his last words sounded ominous. The moral is obvious.

A FASTENER FOR TWISTED RAW HIDE BELTS,

which will neither pull out, nor rattle and cause slipping upon the engine pulley, as C hooks do, is shown in Fig. 1. It can be readily made at any cycle shop. Take a steel side link, A, off a disused old pattern 1-inch pitch cycle chain, cut a portion off each end across the ¼-inch holes; point the four ends as B, and remove all sharp edges; take a pair of round nose pliers, heat the points of link and curl them into a double grappler shape, as C. Flatten both ends of the twisted



hide, as D, and make two holes in each end about ⅜-inch apart, as if for a C hook; do not use a hollow punch, it wastes the belt strength; a file tang will answer admirably. The points of the grappler are twisted into these holes, and when the belt ends are coupled up its tendency to untwist itself beds the grappler deeper into the ends; its stem being in the belt centre there is nothing but the extreme points exposed. It has double the hold of a C hook; it preserves the belt shape, it cannot rattle nor pull out. Disused chain link side plates make excellent and economical couplers for all kinds of flat belts for motorcycles, or other machinery. There are several

sizes to choose from to suit the strength of belts to be coupled. They are countersunk on the outside and copper riveted to the belt.

TO PREVENT THE BELT SLIPPING.

It is unwise to be continually twisting it up and so making it tighter and thinner each time until it finally breaks; such a procedure is unnecessary. Moreover, it wastes power in friction, and unduly wears the bearings so that oil leaks out of the crank case on to the belt, via the pulley, and is a further cause of slipping and wearing the corrugations out of the pulley. In a factory rope drive we observe the rope does not run in the *bottom* of its groove, but is thick enough to wedge into the *sides* of the groove, hence, if it is worn too thin, it should be discarded, or, otherwise, it may be thickened up by putting a long strip of hide lace through its centre, which will virtually become part of the belt. Then remove the worn engine pulley and drill and tap four equally spaced holes about ⅜-inch diameter through each side where the belt has worn the groove smooth; each hole being spaced in between those through the opposite side. Fit eight set screws into these holes, having their small cup heads inside the pulley groove, rivet their ends into the pulley to prevent them screwing out. When the belt has been cleaned with petrol, and a small quantity of dressing rubbed into it, it may be put on the machine much slacker than previously, and it will drive with a side gripping action equal to the admirable Lincona belt, without the somewhat expensive disadvantage of adopting the latter, which necessitates a new V groove engine pulley and, in some machines, a wider belt rim, or the old one setting out from the rear wheel, to prevent the Lincona belt chafing upon the side of the tyre.

THE CONTACT BREAKER

has been so frequently discussed that it would almost appear superfluous to say more, but the following hints and experiences may prove useful. The De Dion contact breaker usually gives best results when the spring blade is set so that its shoe normally drops about half the depth into the notch of the cam; when in this position the platinum contacts should just lightly touch each other, because the action of the blade is to spring into contact, thus producing the most rapid make and break and, consequently, the best spark at the plug. I say "spark" advisedly, because it can be theoretically demonstrated that in actual running at high speed the shoe is not in the notch of the cam long enough for more than one contact to be made with the platinum tipped screw. In the Minerva form of contact breaker the spring action is reversed, and as the spring blade *opposes* instead of *assists* the touching of the contacts, it is necessary to adjust them to make much firmer contact than is necessary in the De Dion; moreover, the Minerva blade being much weaker than the De Dion, the constant lifting by the cam bends the blade near its centre, necessitating frequent adjustment of the contact screw, until it will go no further. However, before this undesirable position is reached, it is advisable to take off the blade, straighten it after removing the bit of platinum, carefully retemper it in oil, leaving it slightly harder than before, after which it should act as satisfactorily as a retempered Minerva blade which I have in use; it shows no tendency to again bend out of contact as the others do.

(To be continued.)

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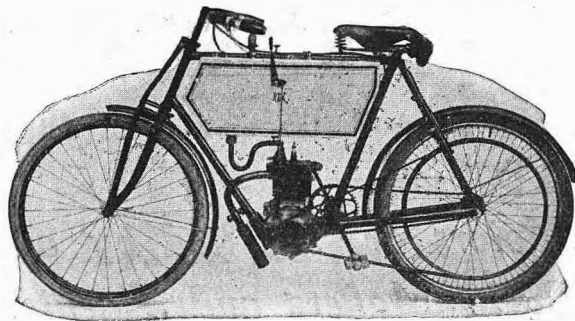
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London Agents: THE MOTOR CAR CO., 168, Shaftesbury Avenue, London.

THE LIGHT SIDE.

The residents of a fashionable Belgian watering place are greatly disturbed, says a society journal, at the news that the King of the Belgians has recently placed a large order for motor-cars, as it may signify that his Majesty is not going to 'oss tend so much as before ; at least this they take to be an *ostensible* reason for the Royal move.

* * *

The Sensation Factory.

There lived a certain editor who longed for wealth and fame ; No matter what the means he used he meant to make a name. He knew no trade except the one of swamping sheets with ink, So down he sat and smoked a pipe, and thunk a great big think.

" There's nothing happens nowadays," he gave his head a shake, " And when we manufacture news, it doesn't seem to take. Our present need is something that will raise the public hair ; We'd best set to and organise some new and startling scare.

" We've howled about the Army, and the Navy's had a turn ; We've sworn the London Fire Brigade would leave us all to burn; And when Pélee erupted, we were first to seize the chance, And to find a live volcano all a-threatening of France."

Again he thought a moment, then " I have it ! This is grand," He cried. " A frightful danger that will overwhelm the land ! Our duty's to the public, and we'll put 'em on their guard Against the ever-present risk of being auto-carred !"

He set a special staff to work. They brought him day by day Long lists of motor accidents—they made a fine array. He published correspondence of a kind that's known as " rot," Where the epithets were sulph'rous, and the adjectives were hot !

These lines are being written while the scare is going strong ; 'Twill have vanished ere they're printed, for it cannot last for long.

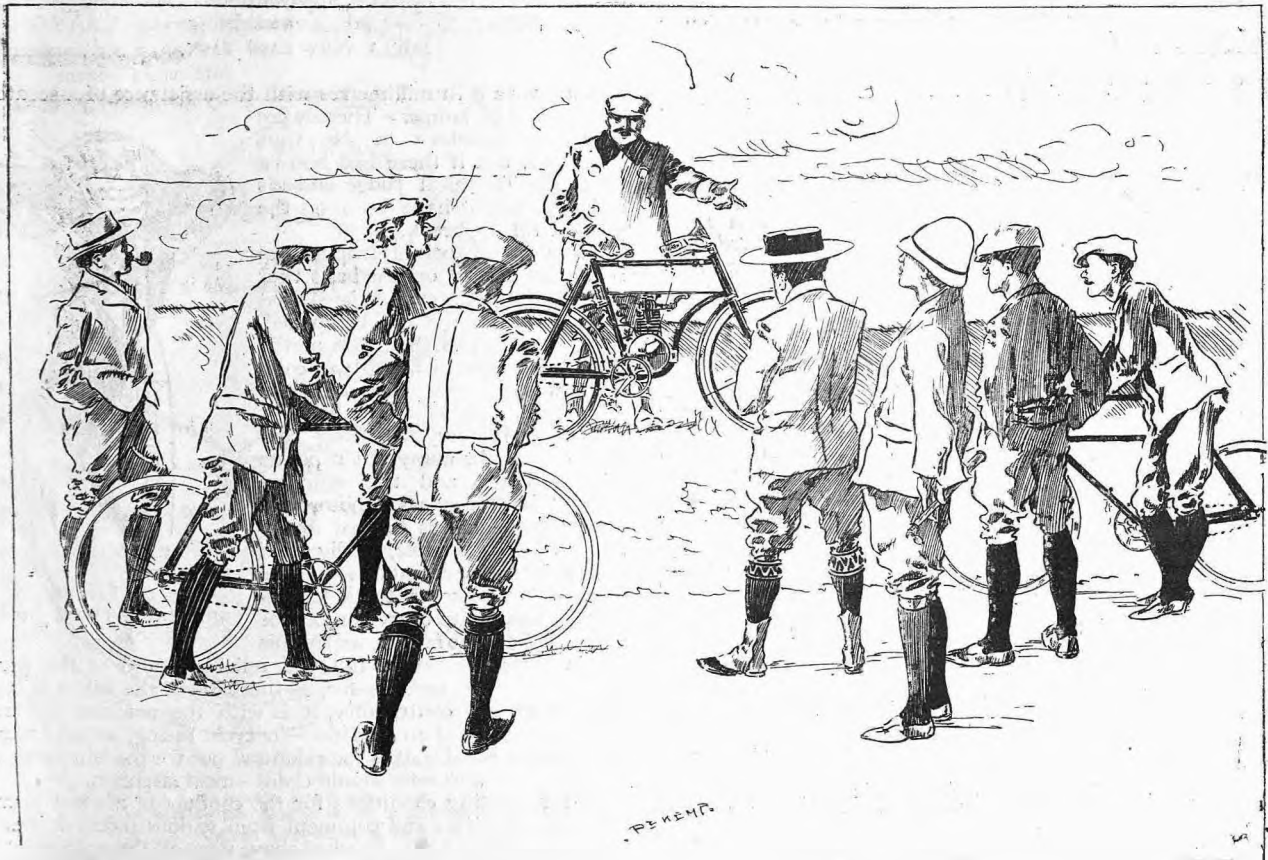
And I'm told it's very likely—though I can't be sure, of course, That the next will be a scare about the swift and deadly horse !

* * *

I cull the following from an evening paper, which reprints it from a Corcan journal :

" Lately the police headquarters ordered to forbid the servants, etc., to run the horses fastly on the big streets, as they sometimes pressed the children down and hurted them on the ground. And the police stopped a mapoo running a horse hardly on its back, but a number of soldiers came along quickly and captured the police away."

What a remarkable relationship this bears to the attitude of our police with regard to motors, only, in the event of a chauffeur being stopped for, so to speak, " running a motor hardly on its back " (a truly eloquent description of furious speed !), there are seldom any friendly soldiers (or others) at hand to " capture the police away ! "



NEW TRADING !

Happy thought on the part of (never mind) of the eminent firm of (no matter) who instituted roadside lectures to interested cyclists ! His lucid and explanatory discourses result always in a batch of converts and a sheaf of orders.

THE MANAGEMENT OF MOTORCYCLE RACE MEETINGS.

By G. LACY HILLIER. (Concluded.)

A second and smaller number should be placed high up on the rider's left shoulder, or, possibly, on the front of his cap, for the convenience of the judge, and the numbers should be attached top and bottom, so as not to be blown up. As already pointed out, this is in the interests of the rider, and in several cases where competitors questioned the accuracy of the lap scoring, their numbers were affixed in such a manner as to account for their being missed and thereby losing credit for a lap. If promoting bodies provide suitable numbers, it rests entirely with the competitor to see that he wears them so as to ensure their being visible to scorer and judge, and should he fail to do so he must put up with the inevitable result—errors against him in the lap scoring sheet.

Starting is another matter which calls for immediate reform. At present it is provided that "To assist in getting engines to work, each competitor will go behind the starting line so far as he may deem necessary." The competitor then pedals

UNTIL HIS MOTOR STARTS,

but is disqualified if he does so after passing the scratch, or his handicap mark. If, as was suggested, this procedure is adopted to keep motorcycle racing outside the purview of the National Cyclists' Union, it is a matter upon which negotiations should be opened with that body at once; and so long as the pedalling is solely to start the motor, the Union would probably be willing to meet the Automobile Club in the matter. In actual working these rules produced absurd results; the actual handicap mark was not the point of departure, and one sanguine rider who at first desired to start from his mark, did not go far enough back and was disqualified for pedalling a yard or two beyond it.

As one of the objects is to offer inducements for the improvement of the machine, a course should be adopted which puts a premium on quick starting. It is obvious that nothing is gained by pedalling a moment after the engine starts running. The rider whose engine is running gains rapidly upon the rider who has to continue pedalling, and my suggestion is that in future races each rider should start *quite unassisted* from his mark, with liberty to pedal until his engine is running—just as he or any other motorcycle user would start on the road.

A point not yet considered by the ruling body would arise

IN DISTANCE RACES,

as to the re-starting of competitors whose engines stopped. At the Palace, two competitors thus circumstanced who re-started had to be disqualified under the rule which precludes pedalling after passing the scratch or handicap mark at the start, and it would perhaps be wise to make a rule that in short distance races a competitor whose engine stops should leave the track and not return. In long distance contests stoppages may be necessary, and some rule should be laid down as to re-starting, but as a strong rider with a high gear could obviously accelerate the speed of his mount—if only by a supreme effort at the finish—pedalling, except for starting purposes, should be prohibited.

To enable the public to follow the progress of the races, without which the interest must fail, the handicapping arrangements must be altered. Short distance handicaps should be run, and I see no reason why mile handicaps should not be promoted. The limit in the five-miles handicap on August 29th was four laps 300 yards. The limit in a mile on that basis would be something less than one lap (one-third mile). The Automobile Club might make a rule similar to that of the N.C.U., and limit the start to be given in handicaps to, say, 500 yards on a three laps to the mile track. That would result in all

THE COMPETITORS

starting from their handicap mark, as suggested, being in the same lap, and the progress of the race could be easily followed

by the spectators. If handicaps over longer distances, say; up to and including five miles, are necessary, they should be "limited handicaps," no start to exceed one lap. This would, of course, lead to the abstention of riders of slow motors, and, if necessary, a second-class handicap, for machines receiving, say, 550 yards or more in a mile might be included in the programme.

In handicaps of ten miles or more, by far the best way is to give time starts, and send every competitor off the scratch mark. In the ten miles handicap at the Palace, the limit man received 14 laps 490 yards—four miles 1664 yards—start, and actually rode 5 miles 96 yards in 9 mins. 36 secs., which is recorded in his 10 miles handicap time! Had he been started from the mark in a time handicap, he would have had to cover ten miles before he won, and would have had his time for the full distance recorded. Again, it would be advisable to fix a handicap limit with a view to thinning the field; and a rule similar to that of the N.C.U., limiting the number of competitors to be started on a track would also be a useful precaution against the possibility of accident.

The reform in starting suggested above will remove the necessity of having a marksman on each handicap mark at the start, and economy in numbers is an important point where honorary assistance is necessary. Further, the elimination of the "pusher off" will keep the enclosure clearer, and, if the public are to see the racing, a clear enclosure is a necessity:

The checking of the actual measurements of the engines falls within the province of the Technical Judge, but I think that conditions should be laid down and arrangements made at the track to enable him to carry out his somewhat delicate duties in comfort. As it was, Mr. Edge and his assistants, pressed upon by the crowd—on the running track in the dark—had to dismount a cylinder, apparently

NOT A VERY EASY TASK,

and measure it in millimetres with the assistance of a scratch assortment of lamps. There were only two machines to be thus examined, but if there had been a dozen the Technical Judge and his assistants might have been on the ground till daybreak.

Some minor points cropped up and were settled on the basis that where no A.C. rule existed the racing rules of the N.C.U. applied. One of these was the "Top of the banking" start which two competitors sought to secure in the handicap. They were brought down. If motorcycle racing continues no doubt many other points will crop up, and the soundest policy that the rulers of motorcycle racing can adopt is to deal firmly and, as far as possible, finally with each point as it presents itself. The whole object of actual track legislation is to secure to every competitor a fair field and no favour, and in this particular connection a full and reliable record of the performances of his mount—for, as the basis of the whole thing is a mechanical contrivance, it is with the machine we are more concerned than its rider—in cycle racing, at any rate, on the amateur side, it is the rider and not the machine which claims—or at any rate, should claim—most attention.

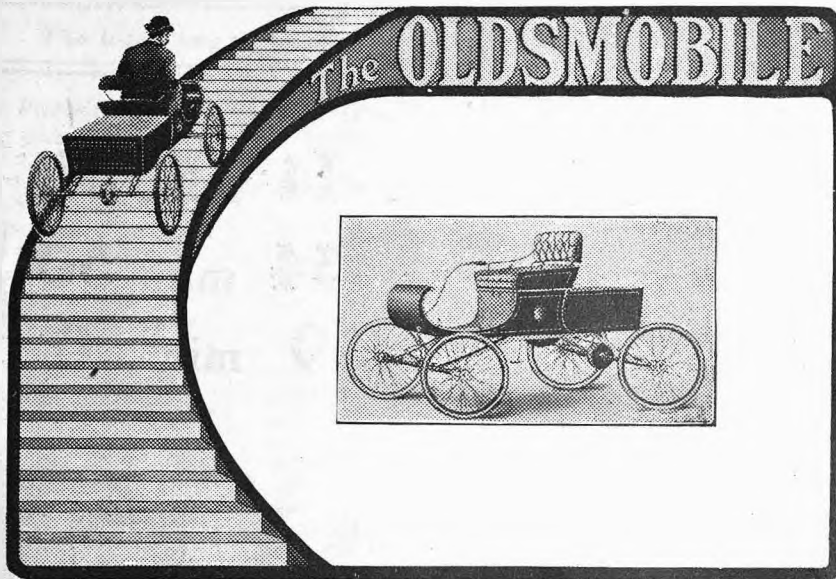
In formulating conditions for the conduct of a novel form of sport, criticisms and comment from various points of view are very useful. I have touched above upon all the main points which presented themselves in the racing, with the intention of eliciting the views and opinions of all persons interested in motorcycle racing, either as competitors or makers, and it will assist the promotion of the sport and industry, as well as the ruling body, if the matter is freely and fully discussed in the columns of "MOTOR CYCLING."



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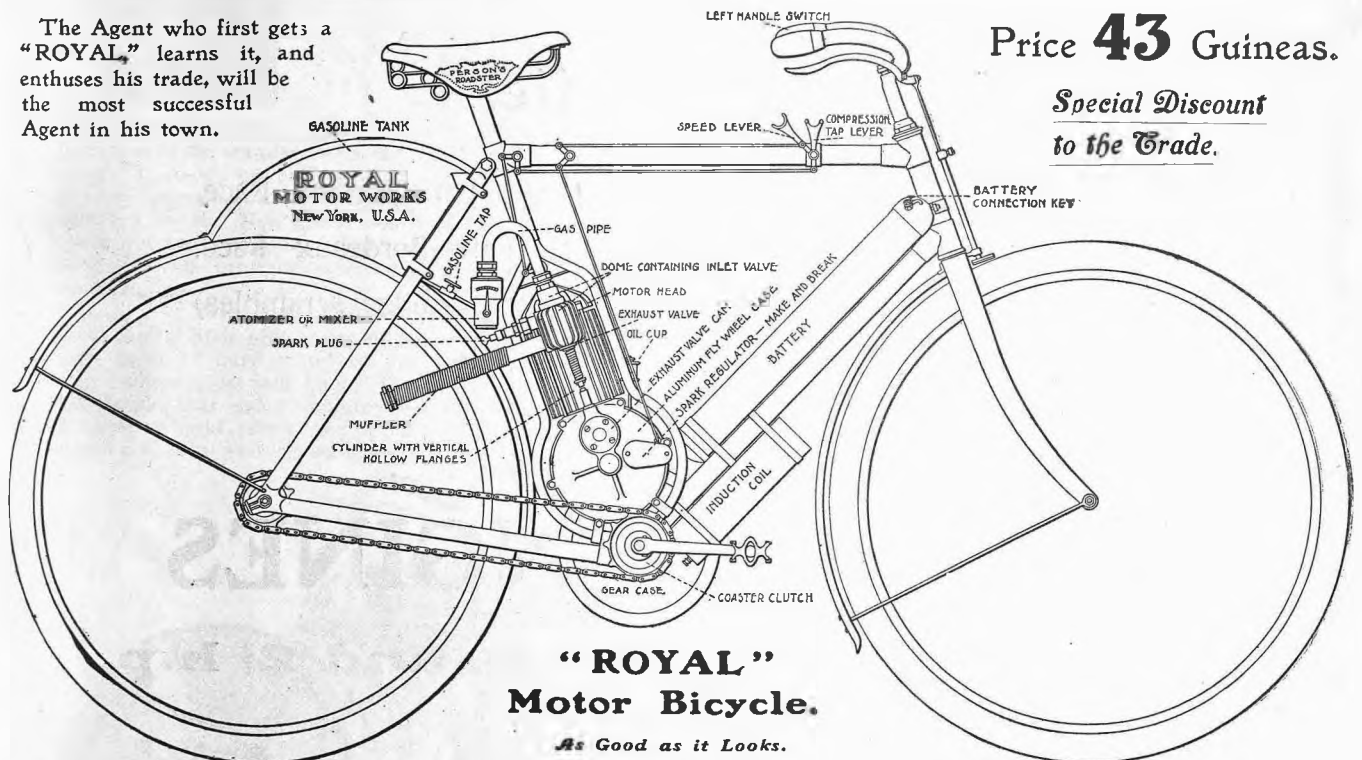
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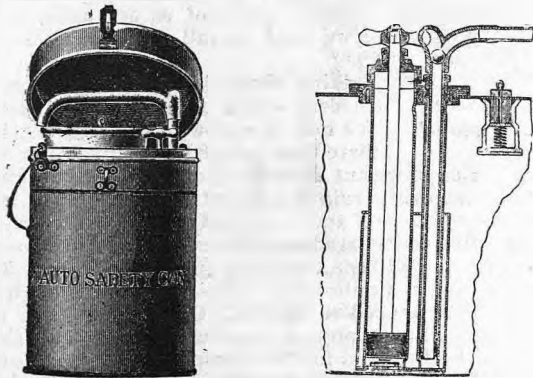
INVENTION.

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Here is something which bids fair to fill a long-felt want. It is a safety storage can for transporting petrol or other oils, and is being placed on the market by the Hall Manufacturing Co., of 40, Cortlandt Street, New York, U.S.A.

The pumping apparatus shown is included in the can, which is absolutely vapour tight. The parts are few in number, and easily accessible for inspection or cleaning. An ingenious funnel is supplied for filling the tank, and it is so placed that it does not in any way project so as to take up additional space. The joint between the funnel and tank is also vapour tight, so that leakage is made impossible. The funnel saves the loss of fuel which usually occurs from filling a tank without some appliance of this kind.



These tanks are made in any shape or any size to order, independent of the standard sizes of three, five and ten gallons capacity. Convincing evidence of the can's safety and efficiency is proved from the fact that it has been approved as satisfactory by the New York Board of Fire Underwriters, who are not any too kindly disposed to the extended use of inflammable oils brought about by the popularity of the automobile.

The B.K. Sparking-plug.

These capital little plugs are now supplied with a protecting cap or cover of hard wood to prevent the points being damaged when in the tool bag. The price of these plugs is so reasonable that every motorcyclist can afford to always have a few on hand; they take up very little room. (Messrs. Bransom and Kent's advertisement appears on another page.)

A New Motoring Garment.

A novelty in the way of garments introduced by Messrs. Reveley and Haggart, of 63-64, New Broad Street, London, E.C., causes one to wonder why so simple and eminently practical an idea was never thought of before. The disadvantages of trousers are in the new garment completely avoided equally with the disadvantages of separate knickers and leggings. At the same time, the advantages of both methods of dressing the legs are retained. For the first time within our experience a close-fitting legging is provided, which does not entail a cumbersome mass of material at the knee, and we feel certain that motorcyclists, apart from golfers, tourists, and other sportsmen will immediately realise the benefits of the new design. The garment will be made in any material, and as Mr. Reveley is himself a motorcyclist, it follows that he is fully conversant with the requirements of those who drive the self-propelled bicycle.

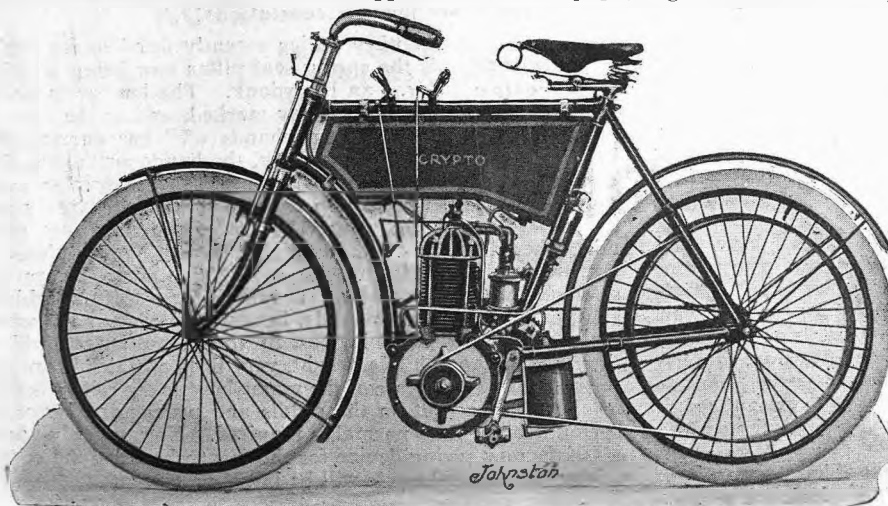


Ready-made Lengths of Connecting Wire.

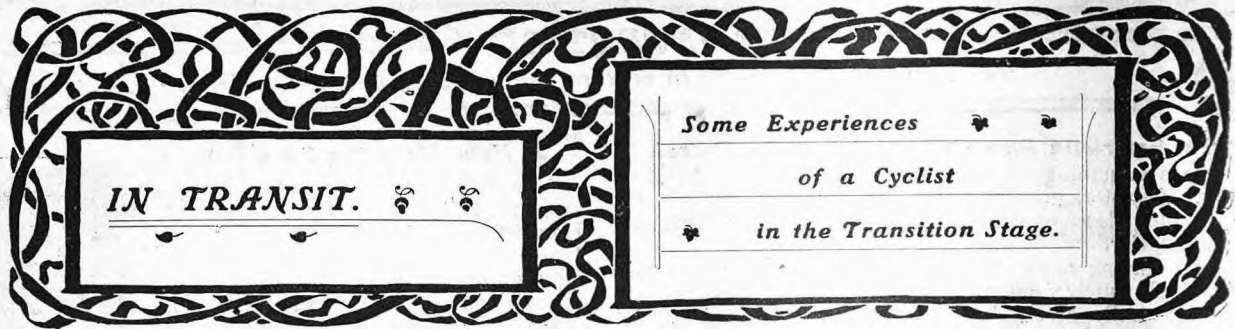
It is not an unusual occurrence for motorists to experience trouble with the wiring on their machines, especially with the high tension cable running from coil to sparking-plug. This part of the motor probably requires more attention than any other part, necessitating frequent handling, and causing the cable ends in course of time to become ragged and frayed. If any detail on a motor-bicycle should be of the very highest quality it is the insulating wire, else a great deal of trouble may arise from inferior quality or unsuitable cable. Motor-cyclists will therefore appreciate the made-up cables, with solid copper terminals, soldered and taped, manufactured by the Electric Ignition Company. These cables being electrically perfect, and of the highest guaranteed quality, there is no chance of leakage or misfiring.

The Crypto Motorbicycle.

The Crypto motor-bicycle which we now illustrate does very great credit to Mr. W. J. James and the Crypto Works Co. Its lines are exceedingly shapely and trim, no space is wasted, and yet ample room is given for getting at any part that may need attention. The framework is particularly strong, the crank chamber of the motor being used to complete the lower member of the frame. Instead of clips, lugs brazed to the frame form bearings for the various taps and levers, and each of these bearings being coned, any slack is capable of being quickly taken up. The motor is of 2 h.p., but at customer's option one of 2½ h.p. can be fitted. A spray carburettor has been adopted, together with belt drive, and large silencer. The tank is of large capacity and ignition apparatus of best quality is provided. For substantiability and reliability the Crypto will have no superior, and we fully anticipate for it a large measure of popularity.



The Crypto Motor-bicycle.



Some Devices.

We all have our little fads and fancies, and in these early days of the motorcycle the average rider thinks it incumbent upon him to effect some alteration or modification in his machine as soon as he has become familiar with it. Therefore, it has been with no spirit of disrespect to the makers that certain—I will not say improvements, because opinions upon such matters widely differ: changes will, perhaps, be the better word—that certain changes have been introduced into my Excelsior. These little things generally excite comment when two or more of us meet with our motors, so a description of some of them may not be altogether out of place. I have already described the methods by which the wiring that used to be festooned in decorative coils around the top tube of the frame has been reduced in visibility to the smallest possible extent. The only wire which can now be seen is the negative wire running to the handlebar switch, and this takes its shortest course, being bound to the Bowden brake wire.

The ordinary twisting handle switch has been done away with. It is curious what an aversion I have to twisting handles, whatever their function may be. I would never accept it for operating the Bowden brake on a cycle, preferring the lever, and so an early opportunity was grasped for dispensing with it as a switch. Mr. Calvert's combined interrupter and switch, although not quite so neat in appearance, is at once effective and free from petty annoyances. It consists of a piece of vulcanite tube, into which are screwed two terminals. The negative wire from the battery is brought to one, and the other is connected to the frame. The interrupting plug, revolved in the vulcanite tube, makes or breaks the circuit. Placed on the handlebar, the plug is operated by the thumb and forefinger, whilst the third and fourth fingers can at the same time reach the brake lever. It is much more simple and rapid to switch off with a touch of the thumb, and at the same time grip the brake lever, than is the case when a handle has first to be twisted in order to cut off the current. Moreover, the switch and interrupter being in one piece, the rider is spared the ignominy and mortification of pedalling for a distance in order to get the engine started, only to find that his interrupter has not been replaced! The apparatus being so simple, and every detail of it being visible, the difficulty of locating and repairing a short circuit, when it occurs in the handle, is entirely obviated. The device is so cheap that I often wonder that Mr. Calvert does not push it.

The Transparent Plug.

Another ignition device which I have tried and found satisfactory is the transparent sparking-plug, also a product of Mr. Calvert's. In this, the insulating core, instead of being made of porcelain, is of glass, the idea being that, should the explosions be irregular, there is no need to detach the plug in order to see if the spark is regular. Now that platinum is being used to pass through the end of the glass insulator, the plug answers quite as well as any other that I have tried, and I have never yet known it to misfire or give the slightest trouble. What I like about it is its cheerfulness at night time. In the dark the glass is

in a brilliant glow, and it is quite practical to judge the quality of the mixture by the colour of the exploded gases. The colour ranges from a red-violet to a blue-violet according to the character of the mixture, and, after a very short experience, a glance at it tells one at once if the mixture tap needs adjusting. Two or three of us are using the transparent plugs, and we used to call them our "Coronation Illuminations!"

Easily Deceived.

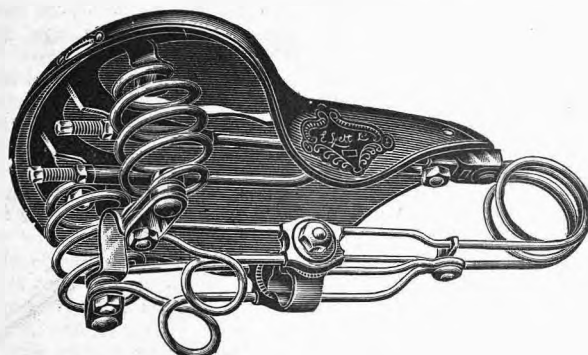
Talking about this plug reminds me of an incident which occurred a few weeks ago. We had been down to St. Albans, and had there been delayed by rain. After a couple of hours of incessant downpour, and when there was every appearance of the rain having set in for the night, mackintoshes were donned and we started on the homeward journey. I was riding a borrowed machine of bigger horse-power than my own. It had been travelling splendidly all day, but after going a couple of miles over sloppy roads and through driving rain, it commenced to misfire. On looking down I saw a familiar brilliance around the plug, and, as my friend the owner has a fondness for the transparent plug, I at once told myself that the ignition was all right because the flash was visible. The explosions were fitful for another mile or so, and then I suddenly ran out of the rain zone on to perfectly dry roads, which continued all the way home. And very soon afterwards the motor settled down to regular firing, leaving me still puzzled at the cause of the previous irregularity. Travelling along, I now and again looked for the brilliant sparking-plug and failed to see it, and another puzzle was provided, because I could not understand what could be hiding it, or why it was invisible, because the charges were exploding splendidly. At the stopping-place I remarked on the circumstance to my friend, and then stooped down to inspect the plug. It was an ordinary De Dion plug, with the usual porcelain insulation! And the brilliance I had seen was an occasional short circuiting taking place over the wet porcelain, resulting in irregular firing! I suppose the moral (if any) is: Never jump at conclusions!

Saving Vibration.

Another device recently fitted to my cycle is the spring seat pillar now being sold by Mr. Van Hooydonk. The improvement in comfort is very marked, and as the fact of learning the trick of riding "hands off" has enormously improved the balance of the body, the hands now touch the handlebar but lightly, and, as a consequence, vibration over rough roads is, so far as the rider is concerned, largely reduced. I should not care to return to the rigid seat post now, whereas at first I thought that the spring pillar would not prove to be sufficient. In buying this pillar the spring selected should be one that is marked for a rider weighing another thirty or forty pounds, because these seat posts were designed for ordinary bicycles, in the propulsion of which the rider is so much live weight, very little of which bears on the saddle. In the case of the motor-bicycle the rider sits the whole of his weight on the saddle and pedals, and hence a spring heavier than normal is required. Now, we only want a satisfactory spring device for the front wheel and the comfort of the motor-bicycle will be largely increased.

CYCLOMOT.

LYCETT'S MOTOR GOODS.



L30 LA GRANDE.

The only perfect Motor Saddle made.

Comfortable and Unbreakable.

Size of seat 11 inches x 10 inches.

Straight tension wires.

Being hinged in front there is no rising at the peak.

Large coils placed well under the seat which kill all vibration.

This is the most expensive saddle on the market and the best.

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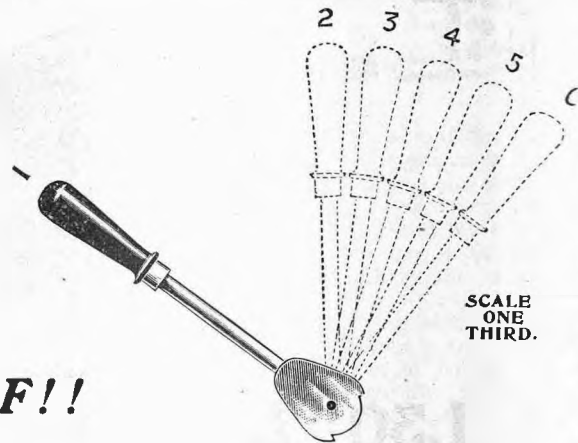
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Any
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can mount
and ride
it straight
away.



SIMPLICITY ITSELF!!

How the "One Lever does the work of Four."

Position No. 1.—*The electric switch is off, the gas is off, the exhaust valve is open. The machine rides as an ordinary bicycle in city traffic, in passing restive horses, or in coasting hills. One pull of the lever puts the rider in absolute safety in any time of danger, and gives facility to cool the engine down every slope.*

Position No. 2.—*The electric switch is on, the exhaust valve closed, the gas on sufficient for moderate speed, ignition not advanced.*

Position No. 3.—*Gas on full, ignition not advanced. This is the position for climbing hills.*

Position No. 4 to 5.—*Gas on full, ignition advancing according to the speed required.*

Position No. 5 to 6.—*Commences to cut off gas, ignition still advancing. This is the position for favourable circumstances such as driving down gentle slopes. The forward ignition gives the high speed, a small amount of gas is used, and thus the engine does not get over-heated, notwithstanding the rapid explosions.*

"My brother-in-law and myself rode 233 miles on our motor cycles on Saturday last. I think you may call this testing the machines."

"In my first five weeks I have done a total distance of 1,300 miles of the most satisfactory running possible, and I have yet to experience my first breakdown."

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**THE QUADRANT
CYCLE Co., Ltd.,
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Branches:—LONDON: 119, Newgate Street. LEEDS: 8, New Station Street. MANCHESTER: 13, Victoria Street.
CARDIFF: 35, Castle Street. BRISTOL: 45, Park Street. Agencies everywhere.

KINDLY MENTION "MOTOR CYCLING" WHEN CORRESPONDING WITH ADVERTISERS.

IGNITION SYSTEMS EXPLAINED.—FOR THE NOVICE.

(Continued from last issue.)

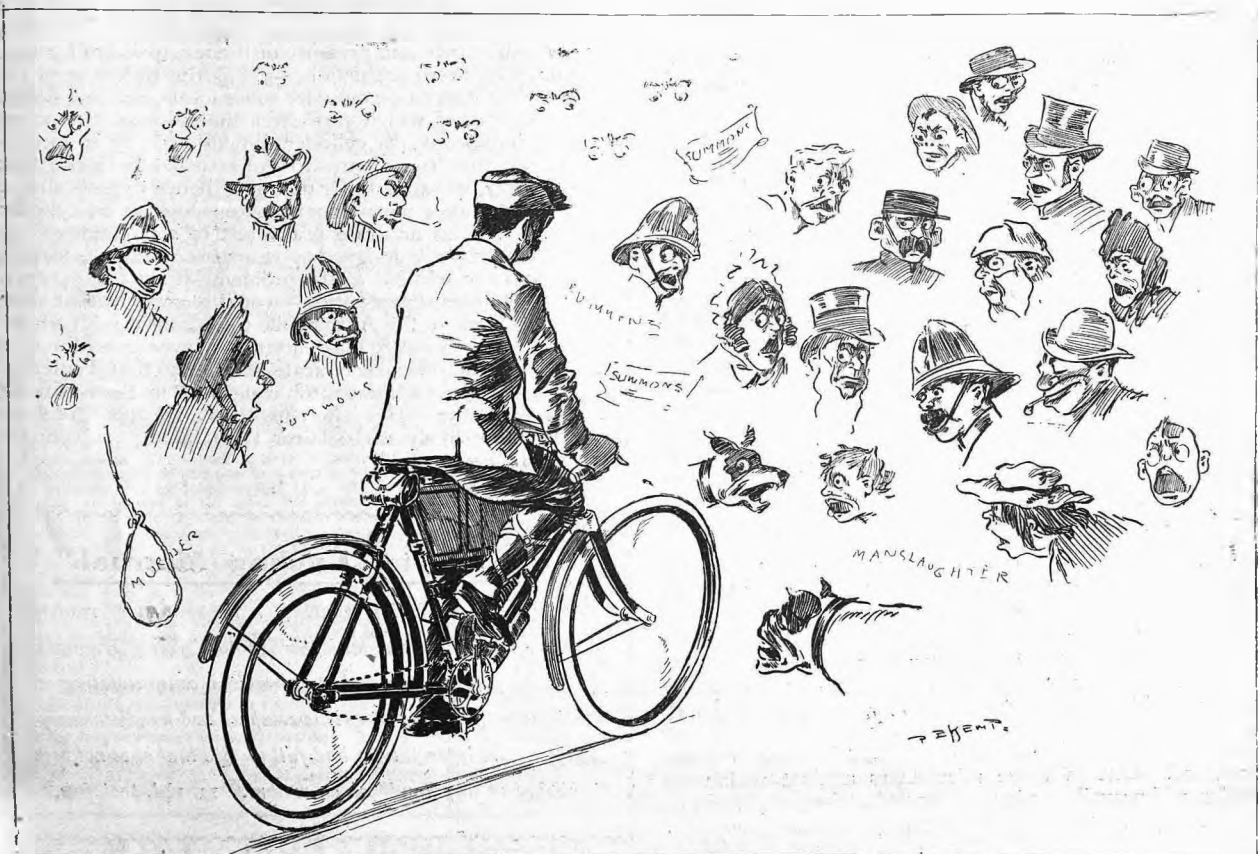
Dry Batteries.

THE name "dry battery" rather implies the dryness of the ingredients for producing the current, but it would be better if it were read as the absence of liquid in the battery, for if it were dry, no current could be produced. Having a zinc enclosing case which forms one of the poles of the battery, it is in turn filled with a mixture of plaster of Paris, flour, sal-ammoniac and chloride of zinc, the whole being well mixed into a paste with sufficient water and being placed in its position it quickly sets into its required form. Another mixture composed of carbon, peroxide of manganese, chloride of zinc, and a little water, is then filled into the inside, a carbon rod is placed in the centre, and this rod forms the other pole of the battery. The whole is sealed at the top and ventilated. The chloride of zinc is a diliquescent salt and one of its functions is to assist in keeping the whole mixture damp. There is no necessity to go into the question as to how the current is formed, but a steady though low one will be formed, and until the ingredients have become absolutely dry, this will go on, and on its giving out, the battery is removed entirely. The mode herein described is one of the simplest forms on which the dry battery is made. There are others, in which the outer case is composed of porcelain, then the zinc case is enclosed in it, and bedded in with the first mixture mentioned. The results are the same in either case. The cells or batteries when worn out are easily replaced at a moderate cost. This battery is termed a primary one, and it produces a current of very little electro motive force, about equal to the ordinary wet battery; it possesses many advantages as to handling and stowage, but not sufficiently powerful to produce the necessary spark required to fire the charge without the aid of an intensifier or induction coil, as this apparatus is called, and by its means the current is increased so that it will leap the two points of the sparking plug before mentioned.

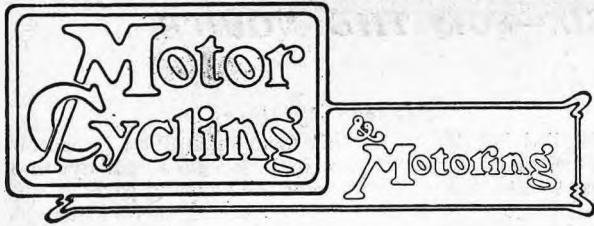
Magneto Ignition.

As implied by the name, this form of ignition is accomplished from a direct-acting source in the form of a small dynamo attached to and driven from one of the working parts of the engine. The current is generated by causing coils of insulated copper wire to oscillate or revolve between magnets. No charging is required or changing of batteries is necessary, but there is one disadvantage, that as there is no storage no current can be obtained without the engine being at work. These three forms of ignition having been dealt with, it now becomes a necessity to decide, in a measure, which is the best for all purposes. The dry battery is light in weight, easy to replace, not costly, but is subject to running down without warning. The accumulator is heavy in weight, costly to make, requires to be charged at a charging station, but knowing the length of its running a more accurate account can be kept of its performances. It has, however, the great disadvantage of the necessary liquid. The magneto ignition is of nominal weight, rather on the expensive side, absorbing a certain amount of power from the total of that given off by the engine, but having no storage cannot be used until the engine is running. It becomes somewhat difficult to be able to judge from these three, which is the most suitable for the requirements of the engine, but seeing the large number of motor cycles fitted with the accumulator, it cannot be doubted that it is the most popular. The attention of the makers, however, is seriously drawn to the want of a magneto ignition coupled with a small accumulator, and if the demand becomes one which is sufficiently strong, then there is no doubt that there will soon be one in the market which will meet the views of riders. Its working parts must be durable, and the weight not to exceed that of the coil and accumulator, and price to be moderate.

THE PHANTOM;



FACES SEEN IN A DAYS RUN ON A MOTOR-BICYCLE.



Conducted by

EDMUND DANGERFIELD
and WALTER GROVES.

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Proprietors :

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OPINION.

"Furious" Journalism.

"According to the 'New York Herald,' Mr. Matthews, who was killed in the motorcar accident at Long Branch, New Jersey, had been fined three hours previously for furious driving, the judge remarking: 'Some day your steering gear will get disordered, or something will break, with serious results'"

The above paragraph, complete with headings in bold type, is extracted *verbatim* from the front page of a leading London daily, and affords a good example of the attitude assumed by the daily Press towards motoring in general and motoring accidents in particular. Any accident which involves a motorcar or a motor-bicycle, or which can be ever so indirectly traced back to one or other of these accursed vehicles, is made the text of a sermon, expressed or implied, against the sport. Circumstances, which in other matters are allowed to alter cases, have no great importance attached to them when criticising motor accidents, and if the accident ends, as all accidents sometimes do, fatally, it is "farewell, a long farewell" to any moderation of language, any calmness of criticism, any weighing of evidence, so far as the daily Press is concerned; except, oddly enough, in the special column which appears periodically over the signature of some well-known and approved expert, a writer whose views do not usually coincide with those which are voiced in other columns of the paper. The general public, however, reads the spicy "par," embellished as it is by flaring headlines, and passes over the serious article, and the general public, consequently, get a distorted impression of motoring and its dangers.

To take as an instance the paragraph quoted above, the general reader cannot help concluding that the accident in question was the direct result of furious driving. He pictures a headstrong chauffeur, with the marks of a previous fine fresh upon him, smarting under the sting of a righteous judge's well-merited rebuke, regardless of his own life or that of his neighbour, dashing to his death. The chance reader who may happen to have come across a reliable report of the accident will realise that the accident was an accident in the true sense of the word. One of those mischances against which no precaution will prevail—an incautious pedestrian to be avoided, a swerve too great for successful recovery, and then disaster.

But what the previous fine, or the judge's gratuitous remarks have to do with the case, the reporter of the "New York Herald" alone knows. If a judge, either in America or in this country, chooses to go out of his way to impart to a more experienced person than himself that particular kind of information known as "teaching one's grandmother to suck eggs," is there any reason why the Press should draw attention to his want of tact by means of a headline! We confess that we are unable to decide what lesson the "New York Herald" wishes to convey; whether the accident took place in consequence of the judge's warning, or in spite of it; whether motorists should dispense with a steering-gear that is liable to become disordered, and should ride only such vehicles as are constructed of unbreakable material, or whether one should think twice about riding within three hours of a fine; but we do protest most profoundly against a stupid sensationalism which seems to have invaded the columns of even reputable journals.

Determining the Power of Small Motors.

It must be plainly evident to every one who is taking an interest in the future of motorcycle racing, that it will be a difficult matter to handicap a motor-bicycle fairly unless some ready and accurate method of making a test of the brake horse power of any particular motor can be applied. The b.h.p. *must be the determining factor* in making a handicap. Cylinder capacity as a unit for rating cannot be accepted as entirely satisfactory, but, so far, it has been the best that could be adopted; but that it is no true criterion of what power a motor can develop is proved by the fact that there are motors made with abnormally small cylinder capacity, and designed to run at a very high speed, which can undoubtedly develop more energy than many of considerably greater capacity. As the power developed by any motor is calculated from the two factors of pulley leverage and speed, it can be seen that it would be an error to say that a 54 by 60 cylinder is capable of developing less power than a 60 by 65 unless the piston speed is taken into consideration. Practical engineers will admit the fact that it is more difficult to get the brake power of the small high-speed petrol motor than of a steam or electric motor. Its working depends upon so many variable conditions, such as temperature and pressure of the air, quality of petrol, etc.; and then there are details, such as the tightness of the valves, fit of piston rings, cylinder cover joints, size and design of silencer—any of which can effect the value of the power developed irrespective of cylinder dimensions. It is open to question whether two identical engines could be made that would develop the same power on a test, hence there is almost sure to be mistakes when handicapping engines on cylinder capacity. That an accurate brake test of small motors can be made, if a properly designed apparatus is at hand, is feasible enough, and the solution to the problem—it may or may not be capable of general application—would seem to be that some firms, recognised by the Automobile Club, might with advantage set themselves out to make accurate power tests of motor-cycles and give an official certificate of same, so that if entering in motorcycle races a competitor could send up the certificate of the power of the engine, and thus the handicapping of same would be more likely to be fairer than taking the cylinder capacity as a basis;

The "Motor Cycling Manual."

"Just the very thing wanted," is the opinion of readers who are highly satisfied with the "Motor Cycling Manual." We could fill pages with letters received congratulating us on its advent. Remember, it is compact and handy to carry, concise in its information, and full of tips that have not been published in any handbook on motors. 1s. 1½d. post free.

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A Medium for the Sale and Exchange of Motor Cycles, Cars and Accessories, and for Miscellaneous Advertisements

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COMMUNICATIONS.—All letters regarding subscriptions, advertisements, and other business matters must be addressed to "The Manager."

EDITORIAL.—All Editorial Communications and copy must be addressed to "The Editor," and must reach him not later than first post Saturday morning. If stamps are enclosed with drawings or MSS. which are not considered suitable, same will be returned, but the Editor does not hold himself responsible for the safe keeping or safe return of anything submitted for his consideration.

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All instructions and matter for general trade advertisements must reach this office by WEDNESDAY MORNING, FIRST POST, to ensure insertion in the following Tuesday's issue.

Advertisements of Motor Cycles, Cars, Accessories, Sundries, etc., from private sellers and buyers, are inserted in the "Sale and Exchange" Columns at the rate of

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In the interests of our readers, we shall not hesitate to take proceedings against any persons in the trade who succeed in obtaining their advertisements published as "Private," and shall insist to the utmost upon the payment of all law costs incurred.

DEPOSIT SYSTEM.—For the convenience and security of our readers, we have decided to institute a deposit system. The intending buyer forwards to our office the amount of the purchase money, which will be acknowledged to both parties. If a sale is concluded, we forward to the seller the amount agreed upon. If no sale is made we return the amount deposited. In either case we deduct a commission of 1/4 per cent. (3d. in the £) on the amount deposited, to cover our expenses of booking, postage, etc.

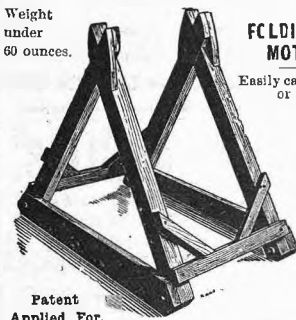
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DISPLAYED ADVERTISEMENTS of all kinds are inserted in this Section at 7/6 per inch, single column. Terms for a series or for larger spaces on application.

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NO LATERAL SWAY

Weight under 60 ounces.



Patent Applied For.

Hinged hooks to facilitate removal of back wheel or for use as stand for ordinary Bicycles. 1/6 per pair extra. Agents for CARLESS' PETROL.

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IMPERIAL MOTOR CO.,

MOTOR CARS and CYCLES—any make Supplied.

MAKER'S I.M.C. MOTORCYCLE, 1 1/2 h.p., 2 h.p. Cash or Easy Terms.

TANDEMS MOTORISED; Special Engine.

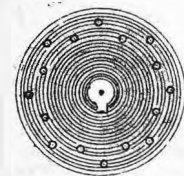
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No more belt troubles if you use the pulley as here illustrated. Guaranteed not to slip on any hill or in any weather. Stock sizes made in cast steel to suit 1 1/4 and 1 1/2 h.p. Minerva Engines.

Send for full descriptive pamphlet.

Net Cash 10/6, Carriage Paid.

Sole Maker and Inventor,

O. C. PAYNE,
Cycle & Motor Works,
Hartlepool.

Motor-Bicycles.

(20 words 1/- First post Thursday.)

SINGER motor-bicycle, in splendid condition, all latest improvements, and complete with large spare tank, £38. Wm. Barr, Gateside, Paisley. 297a

ROYAL ENFIELD, new last March, and now in perfect running order, ridden only 600 miles, engine 1 1/4 h.p., long belt drive, weight 110 lbs., splendid hill climber, price, including spare valves, springs, belt, trembler, and screw, etc., £35 (maker's price £50). To be seen at Lycett and Co., cycle agents, Lee Green, S.E., where trial can be arranged, or write owner, E. Perman, 7-15, Rosebery Avenue, London, E.C. 222

SINGER, 2 h.p., new last May, magneto ignition, extra petrol tank, spring seat pillar, lamp, horn, stand, etc., faultless condition, cost £71, accept £50. Wells, 31, Cambridge Road, Seaforth, Liverpool. 309a

ORMONDE motor-bicycle, with Kelecom motor, all latest improvements, new last July, perfect condition, trial given, £30. Also Ormonde trailer, new, £7. Wilks, Crickhowell. 396a

1 1/2 h.p. WERNER motorcyclette, 1902 pattern, English built, fitted with new float-fed carburetter, valve lifter, two brakes, tyres in perfect condition. Bargain, £35. Seen by appointment. 4, Ashburnham Mansions, Chelsea. 222

PRECISION Co.'s motor-bicycle, 2 h.p., luxuriously fitted, delivered last week, flat belt, spring handle-bar, front Bowden brake, back-pedalling brake, exhaust lifter, extra large tank, spray carburetter, oil pump, solid luggage carrier, spare plug, valves, springs, as new, with Clipper tyres £35; trial in London; owner, who is an engineer, is buying a car. Box No. 82, "MOTOR CYCLING." 285a

REGINA, 1 1/2 h.p., practically new, splendid condition, valve lifter, etc., £35, or offer. Seen by appointment. Arthur Bromage, 9, Gracechurch Street, E.C. 488a

1 1/2 h.p. MOTOR-BICYCLE, chain driven, free engine by clutch, 2 inch Dunlop motor tyres, thorough working order, £20. Reynolds, 173, Lower Richmond Road, Putney. 487a

1 1/2 h.p. DAW motor-bike, A Won tyres, driving tyre with special cover, 1 1/2 gallon petrol tank, two accumulators, Blake coil, new three months ago, £37 10s. or arrange exchange, good trike or quad. Lush, 45, Rossiter Road, Balham. 483a

WERNER, front driver, ridden 200 miles, Dunlop tyres, Bowden exhaust lifter, perfect order, £23. Bargain. "Motor," 2, Arundel Villas, Chelmsford Road, Woodford. 478a

MINERVA, 1902, cycle, built by Chater-Lea, fitted with Bowden exhaust lift, Lincoln belt, two brakes, Lycett's saddle, Clincher A 1 motor tyres, machine as good as new, with spare parts and accessories, £26. Manning, St. John's Cottage, South End Road, Hamstead. 460a

ORMONDE motor-bicycle, ridden 400 miles, Lincoln belt, perfect condition, 34 guineas. Bender, 31, Carson Road, West Dulwich. 469b

WERNER, 1901, front driver, spray carburetter, new tanks, coil, enamelled and plated, valve lifter, £32, offers. Sandhill Villa, Moortown, Leeds. 468a

MINERVA, 1902, cycle, B.S.A. throughout, Dunlop motor tyres, complete, recently purchased. Warranty transferred. Approval. Accept lowest, £32. 15, Alkham Road, near Stoke Newington Station. 466b

MOTOR-BICYCLE, Calvert's engine, coil, etc., perfect condition, sacrifice, £19 10s. Also new 26 by 2 1/2 inch Grappler inner tube, with valve, 12s. Cash or exchange. Offers. Vane, Railway Road, King's Lynn. 465a

2 1/2 h.p. MOTOR-BICYCLE, better than new, vertical engine, flat belt, spray carburetter, all English made and up-to-date, sure to please any purchaser, £39. Take first-class ordinary bicycle part exchange. Seen any time. 5, Balfour Road (just outside Ilford Station, G.E.R.). 464a

DE DION, genuine, combustion chamber, complete cylinder, piston, 2 1/2 h.p., for sale, also one inlet and one exhaust valve. Open to offer. Waghorn, Southborough, Kent. 463a

2 h.p. PRECISION motor, B.S.A. fittings, fast and reliable machine, new in May, £24 10s. H., 30, Albert Grove, Southsea. 461a

"WHITE LION" Hotel, Cobham, Portsmouth Road.—C. A. Smith (PROPRIETOR)

THE FIRST EDITION

OF

Motor Cycling
Manual

Published on SEPTEMBER 6th, is

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2,000 COPIES

is now on our printing machines.



Price **1/-** Post Free **1/1¹/₂**

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NEWS.

The Motor Cycling Manual.

This handy work is in great demand.

The first edition nearly exhausted, and a reprint is in hand.

Wind shields will be used no more on the pacing motorcycles in France.

It is reported that there is quite a boom in motorcycles on the Continent.

The German Emperor used a handsome motorcar during the recent military manoeuvres.

Several favourable answers have been received in reply to a circular seeking views on the subject of holding a trial of motor vehicles suitable for use as delivery vans.

"Truth," dealing with the recent Reliability Trials, is very severe on the scorching motorist. It says: "There is little likelihood of the legal limit being altered until motor monkeys alter their manners"!

Deauville Records Annulled.

The Deauville records had to be annulled because the chronometers were wrong. The admitted error is seven seconds, and as the speed per second was 40 metres, the total amounts to a reduction of 280 metres. The total distance was only 1,000 metres, and the speed calculated per hour has to be reduced from the proclaimed 136 kilometres (84½ miles) to a modest 108 kilometres (67 1-10th miles). M. Gabriel's triumph was very short.

The date of the Gaillon Hill Climb, distance one kilometre, has been altered from the 12th prox. to the 28th inst.

Every reader of "MOTOR CYCLING" will be interested in the souvenir of the Shows which we have in preparation.

"Cycling," this week, contains a most interesting and useful article on "Cycles on Railways," from the legal aspect.

Signor Simonotti left Turin on Friday, the 5th inst., on a motor-bicycle to endeavour to gain the record for the tour of Italy.

As a touring machine, when properly managed, the motor-bicycle is unrivalled. Considering that this has been really the first motorcycle season, the number of successful tours accomplished is highly satisfactory and encouraging.

The Clément motor showed up well in the "Criterium de Provence" races. Two machines were entered and ridden by Deryn and Muller, who were second and third respectively, in 2 hours 8 mins. 8 secs., and 2 hours 29 mins. 8 secs., for the 120 kilometres.

Speed trials at Blackpool, similar to those at Bexhill, have been mooted, the events to take place next month. It was felt, however, by the Automobile Club, that makers would hardly desire such a meeting, seeing the amount of time and money which has already been expended upon trials during the present year. As expected, the proposal did not find favour in the eyes of manufacturers and sellers of motor vehicles.

A special timing clock is in course of construction for the Automobile Club.

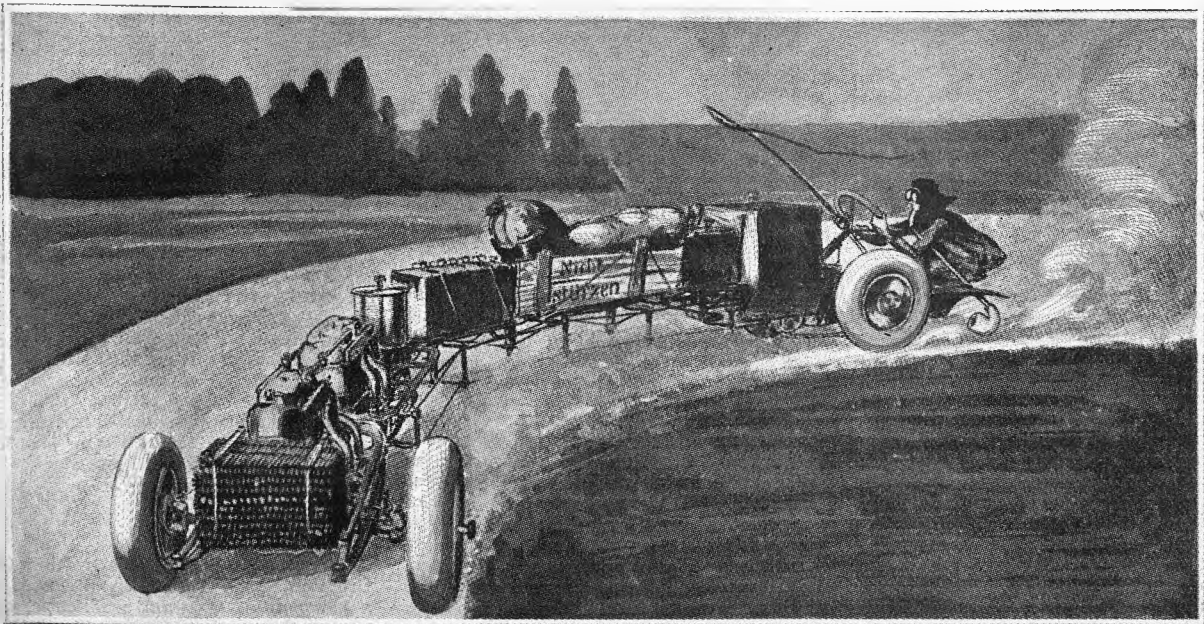
An exhibition of motors, etc., is to be held at the Crystal Palace, Leipzig, from the 18th to the 27th October.

An open motorcycle, bicycle, tricycle, and quad race is announced for the 21st inst., from Montbeliard to Besançon and back. Entries close on the 20th to M. Courtot at Montbeliard.

Mr. W. K. Vanderbilt, junr., and one or two other millionaires at present staying at Newport, have, it is stated, been summoned by the police for driving their cars at an excessive speed.

When one's tyres, after a hard season's wear, have got too bad for repair at home, it is a good plan to have them renovated by having a new tread fitted. The Dunlop Company are vulcanising new treads with the latest and most up-to-date appliances. Of course, repairs can only be done when the covers and linings are in fair condition.

One of our contributors has recently been staying in Birmingham with the members of the Institute of Journalists, and while there visited Bournville, the first of the Garden Cities advocated by Mr. Ebenezer Howard, Mr. Cadbury, and others. In every respect Bournville is up-to-date, a motor lawn mower and cutter being used in the men's recreation ground, while a Century tandem, driven by an appropriately chocolate garbed chauffeur is to be seen here, there and everywhere over the estate.



SOMETHING LIKE A WHEELBASE.

The bogey fronted motorcar of the future, as depicted in our humorous German contemporary "Das Schnauferl"

The 1903 Quadrant will be ready for delivery in about a fortnight, and we hope to furnish particulars of the same most probably in our next issue.

Petrol Consumption in Motor-cycles.

A correspondent writes:—"Whether makers of motorcycles have any idea of the capacity of the tanks they fit is a problem that few can answer, as any information given is usually in round numbers, and even then is usually stretched to its utmost limit. The tank supplied me held 'about' a gallon, sufficient for 'about' 100 miles.

"The way to ascertain the correct amount is quite simple. Take the measurement of the tank; length along top and bottom; height and width. But if the tank is angular at one end, take the half-way measurement between the top and bottom, and this will give the measure as if it was square. Here is the size of mine:—

"Top, $11\frac{1}{4}$ long; 6 deep; bottom, $9\frac{1}{2}$ long; width, 4 inches.

"As the half-way measure between $11\frac{1}{4}$ and $9\frac{1}{2}$ is $10\frac{1}{4}$, my tank is:— $10\frac{1}{4}$ multiplied by 4, multiplied by 6, which is 246 cubic inches. As the full gallon is 277 cubic inches, therefore my tank instead of holding 'about' a gallon, only contains 7-8ths. Then, when the tank is quite full the petrol is flying over one's legs at every bump, so that one cannot use the tank at its full capacity, but about an inch down (that is 40 cubic inches less), or 206 cubic inches. Therefore in actual use the tank never contains the full supply, but less than three-quarters of a gallon.

"The next thing to do is to find how much petrol is contained in an inch depth of the tank. This is quite simple also, as there being 246 cubic inches in the tank, which is 6 inches deep, each inch is, roughly, 40 cubic inches. Therefore, if you have a wire tell-tale showing the depth of the petrol in the tank, after going a certain distance this tell-tale should be measured, to see how many inches have been used.

"The result of all my experience is rather extraordinary, and it all goes to show that

A LONG SHALLOW TANK IS THE MOST ECONOMICAL.

"With 5 inches deep of petrol, 1 inch did 17-18 miles; with 4 inches, 18-19 miles; and with 2 inches, 24 miles.

"These figures are only in connection with a spray carburetter, and may not be of any use with a surface one, but comparisons would prove interesting.

"A two-gallon tin of petrol took me 220 miles, making a fairly average consumption of

TWO CUBIC INCHES PER MILE.

But as the tank became less full, the consumption lessened to $1\frac{1}{2}$ inches. Of course, speed has considerable effect in increasing the amount of petrol used. On a 60 mile non-stop run, in 4 hours, the consumption was $2\frac{1}{2}$ cubic inches per mile.

"Needless to say these experiments have proved exceedingly interesting, and are being continued. Owing to bad fittings, the first two gallon tin did only about 70 miles, and the second about 100; but after spending a considerable sum in putting various bad parts right, the above is the result I have now attained.

"The motor-bicycle is driven by a supposed 2 h.p. motor (b.h.p.), but I very much doubt if the actual power is as much, owing to the very indifferent manner in which the makers sent it out. There is really too much leakage in one part of the system."



After having the motor-bicycle carefully explained, Miss Smythe de Joones expresses great surprise that a two-horse power motor should be required for one man, and remarks that her pa's two horses frequently draw quite twenty people, easily!

The Proposed Corps of Automobile Volunteers.

This movement has so far obtained official sanction to proceed provisionally with the work of enrolment so that a large and representative force may be already formed by the time the Committee meet in October. A circular is being sent round to all the members of the motoring public throughout the kingdom, setting out the rules and conditions for enrolment. These may be summarised as follows: The corps shall consist of owners of automobiles willing to register one or more machines, motorcycles included, for military purposes when required, and to drive or provide a qualified driver for same. Members of the corps would be called upon to take part in manoeuvres, to drive inspecting officers on tours of inspection for a few days, take part in staff rides, etc. The probable amount of remuneration for owners of cars is 30s. per day and free petrol. For motorcycles there

would be a special rate of pay. The chief work of the motorcycles would be despatch work and scouting. It is proposed where necessary to divide and subdivide the country into districts and sub-districts, which could be organised on their own account under their own officers, while they on their part would be attached as units to the army corps or division belonging to their part of the country. Full information respecting the new corps can be obtained from Mr. Mark Mayhew, temporary headquarters, Scio, Roehampton, London, S.W.

In the races held on the trotting track, Brighton, Long Island, on the 23rd ult., a new pattern of steam quadricycle, which apparently requires one man to steer and another to look after the engine, covered a mile in 1 min. 7 3-5th secs. This is an American record, flying start.

The Singer Company have just brought out a new Motor Instruction Book, which is nicely got up and of a convenient size for the pocket. This new edition can be had by users of the "Singer" motors on application to any of the Company's depots.

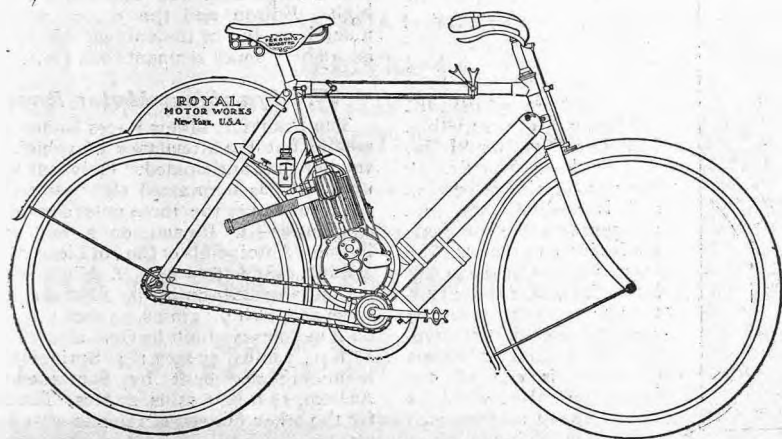
The Werner 2½ h.p. motor-bicycle has just accomplished a splendid performance in "Criterium de Provence" race. Ridden by Labitte, the 120 kilometres was reeled off in 1 hour 50 mins. 2.5th secs.—a distance of 75 miles, equal to a speed of 38 miles per hour.

A Correction.

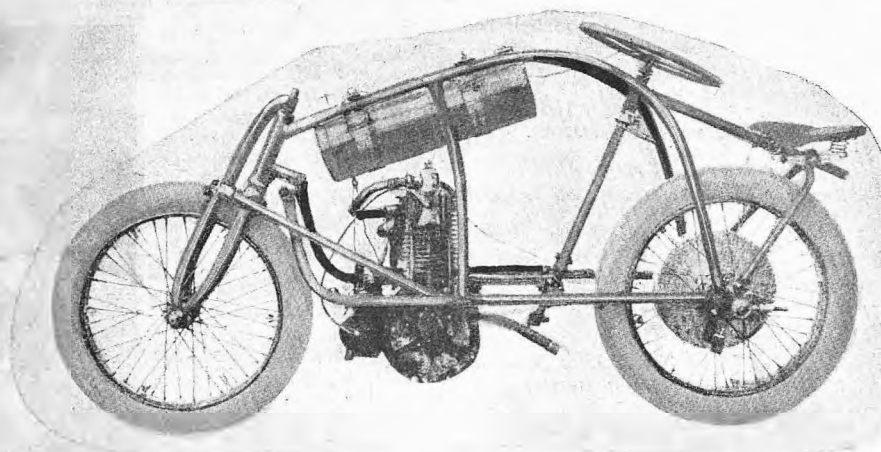
The letter which appeared last week under the heading of "Other People's Views" on the subject of the Barter engine was from Mr. P. Carlisle Wilson, the last name being left out; and the name of the motor mentioned should have been printed Schwannemeyer.

A High-class American-made Motor-bicycle.

The Oldsmobile Co., of Queen Victoria Street, London, E.C., have taken up the "Royal" motor-bicycle, and are the sole dealers in this excellent line for the United Kingdom. Mention has been made before in "MOTOR CYCLING" as to the general lines upon which this machine is constructed, but the latest type, which is now on view at the company's showrooms in Queen Victoria Street, embodies several improvements. The frame of the machine is specially designed, and the method of supporting the 2 h.p. motor between the seat post and bottom bracket is at once mechanically good and pleasing to the eye. The transmission of power is effected by a combined gear and chain system, the motor shaft pinion gearing into a large gear wheel mounted concentrically with the pedal shaft, and thence without further reduction by a chain to the rear sprocket. A special type of radiator is fitted to the cylinder, which keeps the cylinder remarkably cool. The cylinder of the "Royal" motor differs from all others inasmuch as it is constructed from steel instead of cast iron, and the bore is lapped and polished by the aid of special automatic machinery. The control is effected by a single lever and the switch handle. The carburettor is of the spray type, and the petrol tank has a capacity for 100 miles' running. Either single tube or detachable tyres can be had, and the weight of the machine complete comes out at 90 lbs. The standard size of frame is 23 inches, and wheels are 28 inch diameter. The price is £45 complete.



The Royal Motor-bicycle.



Jacquelin's Racing Motor-bicycle, shown without the belt.

It is officially notified by the Automobile Club that the awards in connection with the recent Reliability Trials, cannot be published until Thursday of this week at the earliest.

The Mitchell Motor Bicycle has established a big reputation for itself by accomplishing 634½ miles in 24 hours on the Garfield Park bicycle track, Chicago, U.S.A., ridden by A. A. Hansen. This record was made on an ordinary stock machine of 2 h.p.

Endurance and Economy.

At the Canning Town track, on Wednesday, September 17th, J. Van Hooydonk went for an endurance and economy test on a "Phoenix" motor-bicycle, fully equipped and fitted with a 70x70 Minerva engine. A distance of 200 miles was completed in 6 hours 42 mins. 52.25th secs. With the exception of a momentary stop to tighten up the strap the run was to all intents and purposes a non-stop one. The petrol used was one gallon. Five pints were measured out of the tanks after the distance had been covered, so that another 50 miles could have been covered with the supply carried on the machine. In one hour 29 miles 600 yards was covered; in three hours, 87 miles 100 yards; six hours, 177 miles 1,550 yards; and in the last hour 30 miles 1,550 yards were reeled off, and the last mile occupied 1 min. 49.45th secs. The times were taken by Mr. Ebblewhite, N.C.U., and Mr. F. Straight, N.C.U., judged.

A suggestion, which will shortly be considered by the Executive Committee of the A.C., is that no motor records shall be taken unless at least ten days' notice be given, and giving the place and time at which the run is to be made.

Jacquelin's Racing Motor-Bicycle.

Jacquelin, the French cycle champion, who is now serving his time training in the army on week-days, appears on the racing track on Sundays for recreation. Since motorcycle races have become a permanent item on the programmes of Continental racing tracks, M. Jacquelin has added this sport to cycling, and, thorough as he always is, he decided at once to build a motorcycle according to his own ideas. The appearance of the machine suggests something fantastic to the eye of the ordinary rider, but, considering the machine is for high speed contests, the design contains some good features. In the full sense of the word it is only a bicycle, having only two wheels, otherwise it has no relationship with what is ordinarily considered to be a motor bicycle. The motor can develop 6 to 8 horsepower, and the total weight of the machine is 4½ cwts. A de Dion-Bouton motor with spray carburettor, and a cylinder of 114 by 120 millimetres stroke and bore has been used. The tubes of the frame are of 40 and 50 millimetres, equal to 1½ to 2 inches diameter, and the forgings of the joints have been specially designed and made. The front fork is a compound one, and strongly supported; the steering gear is not regulated by a handlebar in the usual manner, but from the rear by a steering wheel. The three levers regulating the motor speed are underneath the steering wheel—one lever for mixing the gas, another for starting the ignition, and the third for regulating the speed. The petrol tank is placed over the motor, fitted on the upper frame tube, it has two compartments, one containing 5 litres of petrol, and the other 4 litres of lubricating oil. A 4-volt accumulator supplies the ignition sparks. Both wheels are of equal diameter—760 millimetres, equal to 30 inches, and the front wheel carries a 3¼ in. and the rear wheel a 3½ in. diameter pneumatic tyre. The driver's seat is well in the rear, and it will require a considerable effort to retain the seat when going at a high speed round a sharp curve. But Jacquelin knows how to do it, and he is sure of creating a sensation on his machine whenever he rides it.

The Daimler Company at Canstadt has so many orders on hand for the next two years that the present accommodation is absolutely inadequate, and the present premises have to be considerably enlarged to cope with the increase of business.

An Aerial Triumph.

An Englishman Accomplishes the Longest Journey on Record in Mid-air.

Mr. Stanley Spencer, of the well known firm of C. G. Spencer and Sons, balloon makers, of Highbury, has accomplished a record journey by air ship. On Friday last he ascended from the Crystal Palace Grounds in the air-ship built by his firm with the financial help of Messrs. Mellins, and travelling over London he steered away into the country and eventually completed his trip to Eastcote, near Harrow, where a successful descent was made. No journey has ever been made in mid-air of equal length. Santos Dumont's trip round the Eiffel Tower in Paris, was not more than seven miles; the journey over Lake Constance was about four miles, and the experiments over the sea at Monaco extended over some ten miles. So that the credit of successfully accomplishing a really lengthy journey, in the region of the air, rests with an Englishman and an English made air-ship.

The ascent was made at 4.15 p.m. in slightly misty weather, but the air was dead still and the conditions may be said to have been quite favourable. Mr. Spencer was alone in the car, and the ship rose gracefully into the air and was soon under way. The steering was controlled with great ease, and the route taken was over Tulse Hill, Streatham, and Clapham Common. The Thames was crossed near Victoria Bridge, and the progress of the ship was watched with the keenest interest as it passed on by way of Chelsea, Earl's Court, Wormwood Scrubbs, and Ealing to Harrow. At the end of the 30 mile trip, Mr. Spencer despatched the following message to his firm:—

"Aeronaut, London.—Splendid descent, Eastcote, near Harrow. Wait for me before arranging conveyance.—Stanley."

A photograph of the air-ship in which this journey was accomplished will be found on page 241 of "MOTOR CYCLING" of May 21st last.

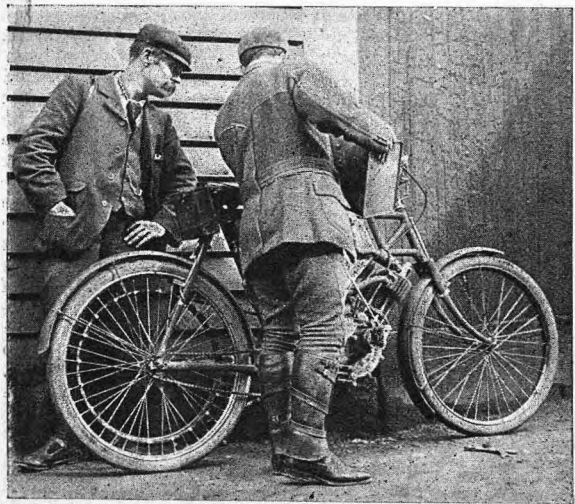


Photo by W. J. Ayres.

Filling up.

Japan is also eager to adopt motors for postal service, and all horse-drawn mail carts are to be fitted with motors of a good type. Contractors have here a chance for a large order, as all the motors have to be imported from abroad; no Japan motor industry has yet been started.

Electric Motors for Small Boats.

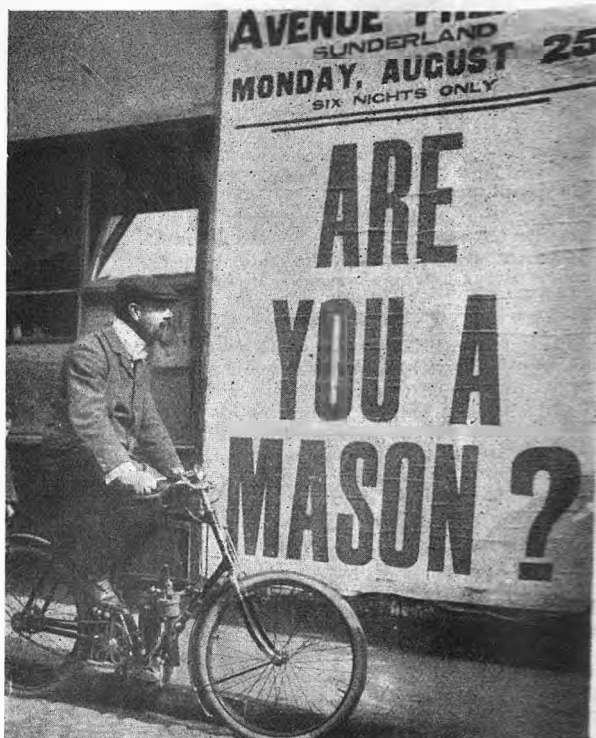
The employment of small electric motors for propelling small boats and canoes is on the increase. A German professor, M. Flaurin, has constructed a boat 16 metres long, 2.50 metres wide and 0.80 metres deep with an electric motor of 60 h.p., which can travel at a speed of 10 knots per hour. One charge of the accumulators suffices to run a distance of 30 nautical miles when going at top speed, and when this is reduced to five knots per hour the travelling distance without recharging is 200 nautical miles. The weight of the boat is enormous—11,000 kilos, or 185 kilos. = 3 2/3rd cwts. per horse power.

To the North Pole by Motor.

Per automobile to the North Pole is the idea of the son of a French savant, Pierre Bernault. The automobile shall take the place of the hitherto employed dog sleighs, and it is stated that a heavy car could easily make a journey on the ice. The car has to carry everything for a 20 days' journey, and to prevent freezing of fuel a mixture of alcohol and petrol will be employed, which has proved successful when exposed to extreme cold.

Motorcycles and the Profession.

Mr. Chester Fox, who figured largely in cycling circles some few years back, is now, as many of our readers are aware, the business manager for the George Edwardes and Charles Frohman's "Are you a Mason?" companies. The photo we reproduce of Mr. Fox, snapped by Mr. Percival Craig, the manager of the Avenue Theatre, Sunderland the other week, shows the old cyclist as a motorist inspecting his own posting. Mr. Fox has found his motorcycle—a Werner, by the way—decidedly useful, and is probably the first manager to make use of one for business purposes. The charms of cycling have not lost entire hold of him; but the motorcycle, we shrewdly expect, claims his first attention. He tells us that "MOTOR CYCLING" is one of the papers he takes, which he looks forward to seeing each week, there being a lot of news and many useful tips.



An Up-to-date Theatrical Manager, Mr. Chester Fox, who does all his travelling by motorcycle.

Aristocratic Amateurs.

Henri Fournier has been engaged by the Daimler Co. as driver for a Mercedes car for the next Nice races. Fournier is the winner of many big events, and he will have with him as amateurs, on the same type of cars, the well-known Count Zborowsky, Baron Forest, de Crawhez, and Foxhall Keene. The Mercedes cars have a chance if drivers count for anything.

Concerning Edison's Batteries.

Edison tried recently to prove that his light accumulators are not easily damaged, and he chose a very bad New Jersey road for the trial. He would not trust his experienced driver with the experiment, but the man brought him round the selected way, going at a hot pace down a steep incline at the foot of which the car jumped into a large hole and bounced a few feet high. Edison and the driver were not much hurt, but of the unbreakable accumulators only small remnants were left.

The Frankfort Motor Races.

The Frankfort Motor Races had excellent results, but the attendance of vehicles was smaller than anticipated. Only four motorcycles of the nominated eight started, and the results over the three miles course were as follows:—1. Rigaud, on a motorcycle, built by Antoine fils et Cie., of Liege, 2½ h.p., 4 mins. 58 2/5th secs.; 2. Kirchheim, on a motorcycle built by Fahrzeugfabrik Eisenach, 2½ h.p., 5 mins. 54 secs.; 3. Kolb, on a motorcycle built by Opel Ruoselsheim, 1½ h.p., 5 mins. 55 secs.; 4. Springfeld, on a motorcycle, built by Schwanemeyer-Aachen, 1½ h.p., 6 mins. 20 secs. The races for the other classes of vehicles were excellent, and in spite of the bad weather good speeds were attained.

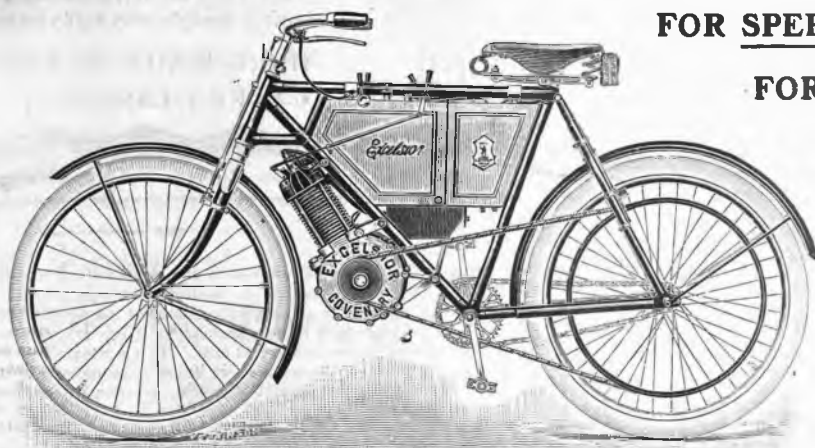
Forging Ahead.

THE CONTINUED SUCCESS OF THE . . .

EXCELSIOR MOTOR BICYCLE

is due to superior construction, workmanship, and careful attention to small details.

THE EXCELSIOR MOTOR BICYCLE has successfully competed in all principal events throughout the United Kingdom.



FOR SPEED,

FOR RELIABILITY,

FOR ECONOMY,

FOR HILL-CLIMBING,

FOR TOURING,

They have proved themselves absolutely the Best.

And for Motor Bicycles up to 2½ H.P. the "EXCELSIOR" holds WORLD'S RECORDS from 1 to 10 miles.

ACTUAL SPEED from 5 to 47 miles per hour.

DELIVERY in 7 days from receipt of order.

THE EXCELSIOR MOTOR BICYCLE is essentially a Business or Touring Machine, PRACTICAL and RELIABLE, and not a freak.

All Particulars free—

BAYLISS, THOMAS & Co., Ltd., COVENTRY.

LONDON :
3, Holborn Viaduct.

GLASGOW :
116, Hope Street.

DUBLIN :
Annsbrook, Clontarf.

MOTOR RELIABILITY TRIALS

"SINGERS" still hold the Hill Climbing Record.

How to ride Westerham Hill.

WESTERHAM HILL.

The London "Daily Telegraph," Sept. 5th, 1902, says:—

"The 3 h.p. ——— bicycle went up fast, with liberal pedalling assistance. The other two bicycles in the contest had to be pushed up."

The London "Daily Telegraph" of July 12th, 1902, speaking of the Catford Cycle Club's Westerham Hill Climbing Competition:—

"It is worth mentioning that Perks (on a 2½ h.p. Singer) rode up the hill without pedalling."

Catalogues Free.



Perks on a "Singer."

WESTERHAM HILL.

Singer Motors—won both Gold Medals in the Catford C.C. Hill Climbing Contests.

The time for the "Singer" 2½ h.p. up Westerham Hill equalled that of cars of 30 h.p.

The Singer is the best hill climber known. It is well made, safe and reliable. It has most perfect ignition, without troublesome batteries, and no belts to slip or break.

Catalogues Free.

SINGER CYCLE CO., Ltd., COVENTRY, 17, Holborn Viaduct, E.C., and 10, Brompton Road, Albert Gate, S.W.

Please send
for full
Particulars
Post Free.

Why are
SWAIN
Tyres
The Best for
Motor Bicycles and
Motor Cars?

This is the question we are asked daily We reply:—

BECAUSE

(1.) **SWAIN TYRES** are the result of long and costly experiments.

(2.) **SWAIN TYRES** are made by a private Company, which is not *over capitalised*, and as a consequence can supply *value for money*, do not charge extortionate prices to help pay dividends on inflated capitals.

(3.) **SWAIN TYRES** are built for the work they have to stand, and although they may appear costly in first instance, they are far cheaper in the end, because the material is in them.

When you
have
SWAIN'S
you have
the
BEST.

SWAIN TYRE CO., LTD., Horwich, Lancs.

Telegrams:—"SWAIN, Horwich."
London Depot—
74, Shaftesbury Avenue, S.W.

Telephone:—24, Horwich.
Glasgow Depot—
134, Bath Street.

Belfast Depot—
46, Victoria Street.

Same principle
of attachment as
Swain and Horwich
Tyres.

KINDLY MENTION "MOTOR CYCLING" WHEN CORRESPONDING WITH ADVERTISERS.



UTILITY OF THE MOTOR.—I.
London, 1 o'clock p.m.

A Correction Concerning Motor-cycle Licenses.

In a reply to a correspondent recently who asked us whether a motorcycle license was good for 12 months from date of issue, and to which we replied in the affirmative, we overlooked the fact that all licenses expire on December 31st each year, but that a rebate is granted on those taken out towards the close of the year.

Restrictions.

A Bavarian contemporary proposes to restrict furious motor driving by enforcing a law which permits the production of motor vehicles only on condition that the vehicles must not be able to go at a higher speed than about 18 to 22 miles per hour. Cars imported from foreign countries shall be similarly restricted, and all other cars should be confiscated and forbidden.

The Next Gordon-Bennett Cup Race.

The Gordon-Bennett Cup is still troubling our Continental friends, who offer any amount of suggestions as to holding the race. The best and most approved idea is to hold it around Dublin, where not only good roads are to be found for the 350 miles race, but it would also afford spectators an opportunity to see the race over a large part of the route. And our Irish friends are sure to welcome so excellent an advertisement of their country.

The Application of Acetylene Gas.

The researches of Mr. Caro, a Berlin doctor, to make acetylene gas useful for automobiles prove to be successful, and the application of the method may soon be felt by the industry. During the conference of the German Acetylene Association it was announced and demonstrated that the calorific value of ordinary air mixed with petrol and acetylene is 50 per cent. superior to ordinary petrol gas as hitherto used. The employment of acetylene will increase the working power and enable a lighter construction for the same speeds, so says the inventor.

The High Speed Fever.

"Our Cancer" is the term used by our excellent contemporary "La Locomotion" for the craze of French manufacturers to reach high speeds at races; 122 kilometres—76 miles in the hour is the next speed to be achieved, and an enormous car is under construction which will be able to maintain this speed over a very long distance. Only think! about 38 yards per second. The Napiers, and Mercedes, and Panhards, and Mars are all eager to go one better, and what for? Of what use are these racing monsters? The money thus thrown away on vehicles which cannot be used on ordinary roads would be better employed in encouraging improvements on ordinary cars and in cheapening the price of everyday vehicles.



UTILITY OF THE MOTOR.—II.
South Coast, 2.40 p.m.—Phew!



OTHER PEOPLE'S VIEWS.

Trailers in Grease.

Sir,—In reading the article by "Cyclomot" entitled "In Transit" in this week's "MOTOR CYCLING," I can bear out what he says with regard to the action in grease of a motor-bicycle with a trailer, as I have felt nervous when having to run through grease through the "fear" of side-slip. I have been hundreds of miles with one of these little vehicles attached, and can say positively that they hold you up when in an ordinary way one would come off. This, probably, is known to a great many motor cyclists.

I note your correspondent speaks of an extension to back of trailer for luggage, etc. It might interest your readers to know that I had a box made which was hung from underneath the trailer, between the two springs, and clear of the axle by $1\frac{1}{2}$ inches. This box is fitted with lock and key, and will hold a two-gallon tin of petrol, spare accumulator, engine oil, and all the various impedimenta one wishes to carry, besides a small quantity of personal effects. For touring it is invaluable, and for picnicing just the thing. It cost 12s. 6d.—Yours faithfully,

H. W. ELWORTHY.
(Hon. Secretary, Motor Cycling Club of Leeds and District.)

Automatic Ignition.

Sir,—I have been interested and amused by the letter appearing in your issue of the 10th inst., headed "Automatic Ignition for Motors." It is the last thing I ever desire, to damp the enthusiasm of an inventor—particularly the youthful inventor, as it would appear from this letter that your correspondent is. I am, however, prepared to supply him with numbers and dates of similar "master patents," not less than two each year, beginning from the year 1875 up to and including the year 1893, the date of this "master" patent, at the small price of half a guinea each.

The fact is that, even if there were a patent, the probability is so great as to amount almost to a certainty, that the use of spongy and like forms of platinum would never be successful for ignition purposes, owing to the rapid deterioration of platinum so used.—Yours faithfully,

M. I. M. E.

Electric Terminals.

Sir,—A case came under my notice a little time ago where one of the terminals, made of thin sheet brass, from coil to accumulator, had broken by the vibration, and a stouter one of 1-16th inch sheet brass had been fitted, the wire having been threaded through a hole, bent back, and then well soldered; but it was found that though this made a very strong joint, there was a tendency, owing to the sheet brass being so stiff, for any flexure caused in handling and otherwise gradually causing the wire strands to break, and I suggest that a terminal made of fairly stout copper wire would be an improvement, the copper wire varying in length, and so making the change from a rigid to a flexible connection less sudden, the whole and the cable to be well soldered together.—Yours faithfully,

E. J. SMITH.

A Hint to Fellow Motorcyclists.

Sir,—I have been a cyclist for more than ten years, and always regarded the motor-bicycle as more or less of a freak till about a month ago when I happened to pick up a copy of "MOTOR CYCLING." In it I read how some riders were able to run their machines many hundreds of miles without any trouble on the road. This led me to make enquiries, with the result that I ordered a machine for my own use. I got some instructions from the makers as to how the machine should be controlled, and last Saturday started for my first ride. My intention was not to exceed 12 or 15 miles, but the machine ran so well and the sensation of flying along was so pleasant that I found myself more than 20 miles from home before I could make up my mind to turn back. On the return journey I passed a large cycle club toiling hard up a steep hill. As I passed them, smoking my pipe in comfort, I remembered how often I, too, had worked hard up that same hill. About two miles farther on my engine suddenly stopped; I jumped off and tried to remember all I had been told about "mixture lever," "sparking-plug," etc. These appeared to be all right, but on examining the petrol tank I found it empty! The makers had assured me that the tank would run the machine 50 miles, and I had only done 37. However, I concluded there was nothing to do but pedal the machine to the nearest village. It was hot work and dry work, but that was not the worst of it, for I was soon overtaken by that cycle club, and my fellow-motorists will believe me when I say I got a good deal more advice than I wanted. One suggested that I should carry the "thing" (fancy calling my brand new £70 motor-bicycle a "thing!"). Another thought a donkey barrow would be useful. Just as they had left me in peace a gentleman came along on a motor-bicycle and stopped to enquire what my trouble was; a drop of

petrol was transferred to my tank and it was not long before we again passed the club and—well, "he laughs best who laughs last."

This little incident has induced me to make a resolution which I trust I shall always keep and I have written this in the hope that other motor cyclists will do the same. Whenever a brother motorist is seen in trouble on the road, always stop and offer assistance; a drop of petrol, a little advice, or the loan of a spanner is not much, but it means a very great deal to one stranded on the road.—Yours faithfully, H.D.S.

The Quadrant.

Sir,—I notice in this week's "MOTOR CYCLING" (No. 30) an article under the heading of "The Details of the Motor-bicycle," in which, on page 54, in the last paragraph, your correspondent mentions the Quadrant single lever. He says: "It follows from this that the throttle must always be full open ere the spark can be advanced." If, however, he will refer to the Quadrant advertisement, he will find "Position 5 and 6, commences to cut off gas, ignition still advancing. This is the position," etc.—Yours faithfully,

LINZEY A. WILLCOX.

Accumulators for Repair.

Sir,—You are giving so many useful hints in your valuable paper that we think the following may be useful to your readers. Accumulators are constantly being sent to us for repairs with the acid solution left in them. The consequence is that by the time they arrive a repair that may have been a simple matter, such as a broken terminal or cracked case, becomes a big job, owing to the acid escaping en route, short-circuiting the plates, corroding the terminals, and generally ruining everything on the battery.

All batteries returned for any purpose should be carefully emptied after the current in them has been discharged. Discharged plates will not oxidise if sent in a dry state, though charged plates will. Users of accumulators can save themselves much trouble and expense by using a little forethought in this matter, and it is also as well to label them clearly. We receive about 100 daily of every shape and size, some without any name or method of identification.

Hoping this may prove useful.—Yours faithfully,

WM. PETO.

(Peto and Radford, Ltd.)

The Hundred Mile Record.

Sir,—On page 74 of "MOTOR CYCLING," of September 10th, in reference to the Anerley 100 miles race, you say that Mr. Parry (who paced the winner, Mr. Daymond) at the same time secured the record for 100 miles for motorcycles in 3 hours 34 minutes 44 seconds. Will you kindly allow me to correct this as the 100 miles record is held by myself on a 2½ h.p. Werner in one hour less time. On August 26th, at the Crystal Palace track, I rode the following distances, which were officially timed by Messrs. Bidlake and Coleman and which up to the present time, I believe,



Inebriated Pedestrian: "All right, guv'ner, don't kick up such a blessed row. I shan't hurt yer!"

THE LATEST MOTOR BICYCLE

DOUBLE CYLINDER, 2 $\frac{3}{4}$ h.p.

PRINCEPS,

Chain Drive Clutch Transmission } OR { Belt Drive by Flat Belt.

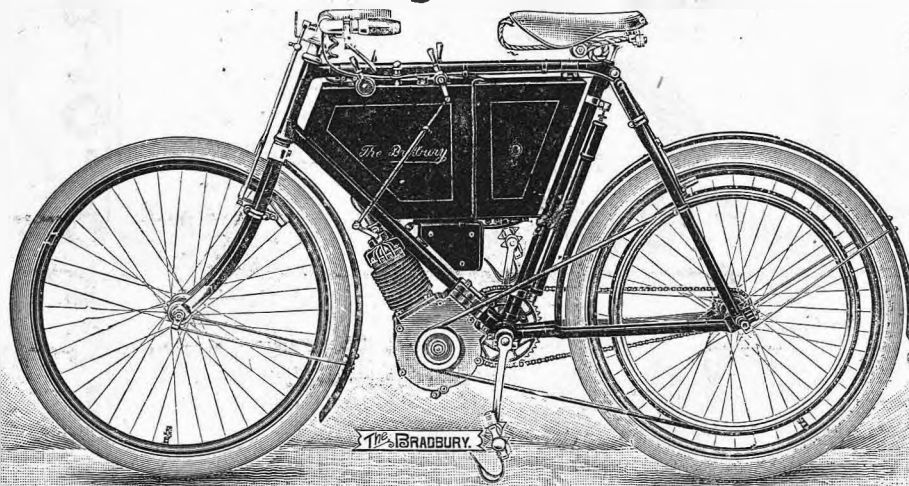
Engine placed low, quasi vertically, occupies no more room than a single cylinder, either in width or height. No extra levers. One spray carburettor serves both cylinders. One cylinder cuts out for slow driving in traffic.

POWER, SMOOTH RUNNING, NEATNESS, SIMPLE CONTROL.

The PRINCEPS, with 1 $\frac{1}{4}$ h.p. VERTICAL ENGINE, BELT DRIVE, £40; CHAIN DRIVE, £45.

PRINCEPS AUTOCAR CO., 46, Abington St., NORTHAMPTON.

Bradbury Motor Cycle.



SPECIFICATION.

- Frame**—Specially strengthened, built with Tandem Hubs, back stays, chain stays, and specially designed bridge.
- Wheels**—28 in. high tension spokes.
- Rims**—Jointless hollow motor cycle rims, plated all over.
- Tyres**—Clincher A-Won motor cycle tyres 2 in.
- Handlebar**—Straight, or to order.
- Cranks**—7 in. toughened steel.
- Gear**—87 1-5th in., 24 x 10, or to order.
- Chain**—Appleby or Renolds' 1/4 in. roller.
- Pedals**—Full size, fitted with best rubber blocks.
- Mudguards**—Extra width, strongly fitted, free from rattle.
- Saddle**—Brooks' B 28 or B 90.
- Free Wheel**—Bradbury.
- Motor**—Minerva 1 1/4 h.p. new pattern engine, fitted with new sparking-plug, automatic oiling apparatus, and enlarged exhaust valve.
- Brakes**—Bradbury front rim and Bowden inverted lever back rim.
- Finish**—Usual parts heavily plated, frame, tank, and carburettor enamelled black, tank and carburettor lined.

Simplicity, Strength, Speed.

Special Frame, New Exhaust Lifter, Other Improvements.

PRICE £50 Nett.

BRADBURY & CO., Limited, WELLINGTON WORKS, OLDHAM.

London: 8, Farringdon Avenue, E.C.

KINDLY MENTION "MOTOR CYCLING" WHEN CORRESPONDING WITH ADVERTISERS.

stand as records:—50 miles, 1 hour 14 minutes 51 3/5ths seconds; 100 miles, 2 hours 34 minutes 50 2/5ths seconds; six hours, 212 miles 550 yards.—Yours faithfully,
E. ARNOTT.

Dynamo versus Accumulator.

Sir,—I have read with great interest, although only a prospective motorist, every paragraph and I may say every advertisement in "MOTOR CYCLING." I am still in doubt as to the relative advantages of the magneto electric or accumulator ignition. To my mind the magneto has the advantage by reason of its simplicity. I have had a long and varied acquaintance with house accumulators used for electric lighting, and can unhesitatingly say that they require more attention to keep in order than all the rest of the plant put together. For lighting purposes no one would use them, save for economy and convenience, and would always run direct from the dynamo.

The reasons that weigh so much for the employment of accumulators for electric lighting have no weight in my humble opinion, when in use on a motor you only need the spark while you are running, so why keep a store of electricity by you to be a source of expense and trouble when a small dynamo will make it when you want it?

You would, I think, be doing a great service to the large army of motorists, and still larger army of prospective motorists, if you would give an article in your fascinating (at least to me) paper on the relative merits of the magneto and accumulator ignition.

In conclusion I must plead ignorance in the science of motorcycles, although I have a speaking acquaintance with their construction.—Yours faithfully,

TYRO.

London to Birmingham and Back on an Excelsior.

Sir,—I have much pleasure in forwarding to you my little experience of my ride to Birmingham and back on my 1 1/2 h.p. "Excelsior" machine. Having thoroughly overhauled and examined every detail, I was in every way ready to start on my ride by a quarter to one o'clock, first passing through Streatham and Brixton. I was soon on my way to Hyde Park, which I ran through, and eventually came into Edgware Road as rain was commencing to fall, and things did not look over bright ahead. I purchased a mackintosh and was off again, buzzing along through Elstree and at last coming to the short but stiff ascent into St. Albans, turning sharp to left was soon passing through Redbourne and Dunstable, going well. Leaving Dunstable soon behind, was congratulating myself how well I was going (here rain left off), when turning a corner, luckily was going very slowly, I cannoned a horse, one of about 40, going to Barnet Fair. No damage resulted to me except a broken trace (cloth) and a crank bent. After the usual exchange of courtesies towards one another (gipsies), we parted. Arriving at Fenny Stratford, a local cycle maker, "evidently in much demand," as his shop showed, kindly put aside everything and everybody for me. His name, I might mention, is Groves. This was my second stop from London—or, rather, Croydon—neither intentional. I was soon aboard again, and my little machine, if not too slangy, was fairly eating into the miles, not a misfire or any trouble, and at last after passing through miles of, I might say, not very interesting scenery, was going through the pretty little town Towcester. Still going on, I reached Coventry at 7.45 without a

stop from Fenny. Here my trouble began. I had had my Liscona mended by a local harness maker, which he had sewn, and as I reached the King's Head Hotel snap it went. Not to be done, I put the round belt I was carrying in reserve on, and after telephoning to Birmingham to my friend, started again. Hit and miss was all I could get; examined wires as well as I could in the dark. Lo! one was broken on the handlebar; mending that, off I started again; no better results, so after testing every wire, I had the inlet valve off. Presto! there was my trouble—the collar reaching from the carburetter to valve had broken and had got in the spring, so decided to train it to my destination—rather hard luck, after going so well.

On my return journey I left Birmingham at 3 p.m. and arrived at Dunstable, about 80 miles, in pouring rain (as anybody can tell referring to August 31st) at 7.30. I never dismounted except for a second or so to get the cape over my head and was on again. This I consider a grand performance, and I believe that it's only a "Minerva" that would do it. Rain stopped me, as I was afraid of getting through London with the roads so bad—Yours faithfully,

C. J. HUSSEY.

How to Repair Punctures in Motor-Bicycle Tyres.

Sir,—In reply to the letter from Francis E. Harding, I might say I always use a small length of thin cord with brass thimbles. With this it is quite easy to mend a puncture on either back or front wheel, or tighten up the belt by lifting up a wheel, fastening the cord round any gate or guide post I may be near.—Yours faithfully,
H. B.

A Tip about the Front-driving Werner.

Sir,—In your last issue a correspondent has given me a very good piece of information about the gauge box of a Werner (1900 pattern) carburetter. In return, will you allow me to tell him how to get a constant level in his carburetter without having to let air into the tank by continually taking out the charge plug?

A thin tube is fastened on top of the tank, and the other end goes down the carburetter to the level you require to be kept constant. When the level gets below the end of the pipe, air is allowed to get into the tank until the level of the petrol again reaches to the bottom of the pipe.—Yours faithfully,

G. EDGE.



A SAD MISUNDERSTANDING.

Fair Motorenia: "My good fellow, I've had the misfortune to lose my plug, could you direct me to an emporium for the sale of such a commodity?"

Bill Barnicle (with sympathy): "Lest yer 'plug,' mum! Why, go to ole Ted Crabshell—first shop on the right—'e sells the finest chawing tobaccer in the town!"

OUR INFORMATION BUREAU.

Building a Frame.

"Dulwichite" is building a motor-tricycle somewhat on the lines of a Century tandem, and would be glad to know if the four main joints in the frame would be safe if made with laps instead of socket lugs.—This all depends on the workmanship, but we are of opinion that it would be necessary for the lap to be double thickness and thoroughly well brazed up.

Wants a Two-Speed Gear.

V.Z. (Clapham) wants answers to the following queries:—What is a good reliable two-speed gear with clutch for giving free engine for motor-trike, and also where can a large tank be obtained suitable for the cylinder cooling water?—The Bozier two-speed gear is a good one, and a tank to suit "V.Z." could be obtained from Brown Bros., Great Eastern Street, who also supply the Bozier gear.

Why Not Utilise the Current?

"Electric Light" (Camphill) has been experimenting with the 4-volt test lamp run from the accumulator of his machine and he finds it gives quite a strong light, and he wants to know why he cannot utilise this for a lamp instead of the oil lamp?—The only reason against using the sparking current for lighting purposes is that the capacity of cycle motor accumulators is comparatively small, and they would become exhausted quickly if they have extra work to do.

Repairing Accumulators.

W.R. (Beccles) wishes us to tell him what material is used to unfasten and re-cement the covers of celluloid accumulators, and also the composition used for filling up the negative plates of the accumulator.—The liquid used to dissolve the celluloid cement is amyl alcohol, and simply a small amount of celluloid cuttings dissolved in it makes a good cement to refix the covers. The material for filling up the negative grids of the accumulator is yellow oxide of lead or litharge, made into a stiff paste with sulphuric acid.

A Machine for Hard Work.

H.W. Traveller (Newport) wishes for our advice on points concerning the purchase of a motor-bicycle. At the present time he spends £1 a week in tram fares, and asks if he could get a machine that would stand the wear and tear of 60 miles a day, running for 12 months. What would be about the cost for running per 100 miles, including petrol and wear and tear of machine. He requires the machine to be able to climb hills 1 in 11 without assistance.—We should not care to say that H. W. will be able to get a machine to run 18,000 miles without certain parts requiring to be renewed. The Werner motor is as durable a piece of work as any. There are plenty of instances of six and seven thousand miles being run with them without renewals, and we do not think "H.W." can do better than get one. Preferably, one of the latest 2 h.p. type; this will take the hills; 2s. is about the average cost for running 100 miles—sometimes considerably less.

F.C.H. (Swansea) asks if there was a type of motor-bicycle on the market at one time in which everything was enclosed, including the motor, and whether this machine is obtainable now.—The machine "F.C.H." enquires about was called the Moto-Soche, but we do not know if it can be obtained now.

Where to get Electric Cable.

"High Tension" (Edgbaston) wants to renew the wire from coil to sparking-plug, and would be glad to know a good firm to obtain a length of extra high insulation cable from.—The Electric Ignition Co., Highgate Street, Birmingham, would be able to supply.

Noisy Gearing.

W.K. (Saffron Walden) would be glad if we could advise him what to do to prevent the gearing of his motor-tricycle making a roaring noise when the load is put on.—It may be due to the teeth not meshing deep enough, or, more likely, to wear of the small pinion. If "W.K." will fill up his gear box with some very thick lubricant it should reduce the noise considerably.

Finds his Sparking-plug Charred.

"Sparker" (Rickmansworth) is worried with the sparking-plug of his motor becoming coated with soot every 70 or 80 miles running, and would be glad to know the reason of this and how to prevent it.—The most likely reason will be that the lubricating oil gets past the piston into the combustion chamber, owing to an excess being put in the crank chamber. Too strong a mixture will also cause a deposit of soot on the porcelain. The best way to clean the plug is to use a stiff tooth-brush and some petrol.

Concerning the Belt in Wet Weather.

"Tourist" (Edinburgh) does a considerable amount of motor-cycling in all weathers, and his only trouble is that when he gets on to wet and gritty roads the mud gets on the belt and seems to prevent it getting a grip on the pulley. Can we tell him how to remedy this state of affairs?—As a rule, the mud gets on to the belt where it flies off the tyre, much more than that which splashes off the road, and the only way to prevent it getting on the belt is to rig up a screen or guard with a piece of patent leather and some copper wire. We have seen this done and it appears to answer well.

Converting a Tricycle.

"Trembler" (London, S.E.) asks us if we can tell him (1) the address of the maker of a motor set which can be attached to any machine. (2) Do we consider that a tandem tricycle can be fitted with a motor? (3) Can we give him the address of a maker of a good tandem motor-bicycle?—Answers: The Ixion motor set is the only one that can be adapted to a bicycle with the minimum of alteration. The "Motosoche" set we do not know the whereabouts of. A tandem tricycle could doubtless be converted into a motor-tricycle, but the alterations necessary would be too great to make it pay to do so. The "Phoenix" motor tandem is one that we can recommend with every confidence.

Concerning Dry Batteries.

W.L.N. (Brentford) asks us to describe the construction of a dry battery, and say how long it would last and how many amperes of current could be got out of it, and the number of cells required to light a 4-volt lamp.—A good description of a dry battery appeared in No. 10, "MOTOR CYCLING". The number of amperes that can be got out depends on the size. One of about a quart capacity will give 2½ amperes. Three cells will light a 4-volt lamp fairly well, but four will do so brilliantly.

Spare Parts for Touring.

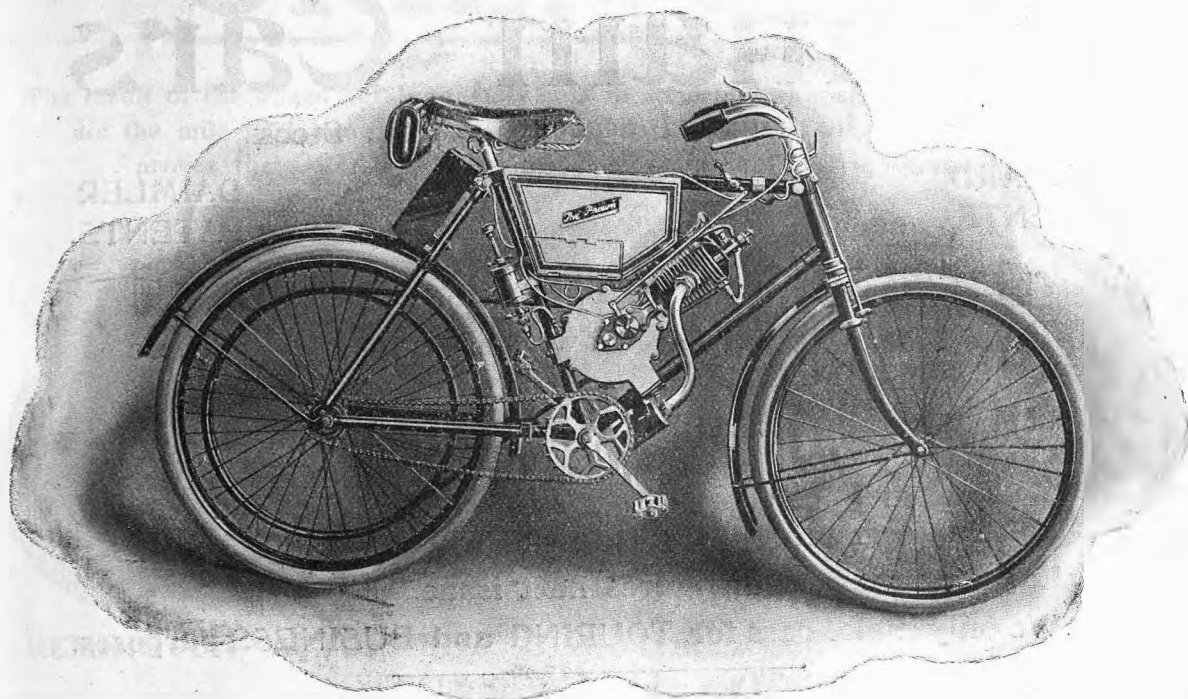
G.E.H. (Retford) is going for a tour about 350 miles on his motor-bicycle, and would be glad to know of the various odd parts he should take so as to be quite able to replace any part necessary, and also a first-class lamp, as the days are now shortening rapidly and he may have a fair amount of night riding to do.—These are the details he should take: Two sparking-plugs and washers, an exhaust and inlet valve with springs, contact blade and screw, some insulated and bare copper wire, good pair of cutting pliers, small file, adjustable spanner, screwdriver, repair outfit for tyre repairing, oil can for paraffin, some rubber, insulating tape, a piece of No. 12 spoke wire, to make a belt hook. An excellent lamp is Lucas's Holophote. Brown Bros. also make a specially strong lamp for motor-bicycles.

Cylinder Problems.

E.S. (Beckenham) thanks us for former replies, and asks for some further information. (1) What is the pressure in lbs. per square inch generated in a petrol engine when developing full power? (2) Is there any objection to the use of cast steel in place of annealed cast iron for making the cylinder, as steel would make a lighter one? (3) What is the necessary thickness of metal required in the case of annealed cast iron, not including the strengthening effect of the radiators, the cylinder being for a 1½ h.p. motor.—Answers: It is difficult to say what the maximum pressure is in the cylinder of a small motor; about 150 lbs. per square inch, we should say. (2) Cast steel and iron do not work up into such good surfaces as cast iron alone does. (3) The average thickness of the walls of a small cylinder is 3-16ths of an inch.

Motor Lacks Power.

E.L.C. (Chester) has a Minerva motor-bicycle 1½ h.p., which was very powerful for the first 400 miles, and would go up steep hills without help, but he has to give it a good deal of help with the pedals; now, on hills, although it seems fast enough on the level, the ignition is all right and the motor never misses fire; what is likely to be the cause of the loss of power, and how can it be put right?—Answer, The most usual reason for gradual loss of power is the falling off in compression due to leaky valves or weak exhaust spring, which may have lost its elasticity through heating. The two valves should be reground and if necessary a new exhaust spring added. There are also other causes that might lead to loss of power; thus, a joint at combustion chamber gone or a defective ring on the piston



THE . . .

“BROWN” MOTOR BICYCLE.

The **BICYCLE FRAME** is of the standard design, and is built of B.S.A. Motor Bicycle Fittings, with equal 28 in. wheels.

The **MOTOR** is $1\frac{3}{4}$ h.p. (actual), and its position greatly strengthens the frame and reduces vibration. It has extra large radiating surface, large fly-wheels, and wide main bearings.

The **EXHAUST** and Inlet Valves can be easily detached for inspection.

A **LUBRICATOR** is fitted holding enough oil for a 100 mile s run.

The **TANK** contains sufficient petrol for a run of 80 miles.

The **COIL** is carried in a compartment in the petrol tank.

A **BOWDEN EXHAUST VALVE LIFTER** is fitted. The electric current is cut off by slightly raising the front rim brake.

The “**ROUBEAU**” **SPRAY CARBURETTOR** is fitted, this type being acknowledged the most successful on the market.

The **REAR DRIVING RIM** is fixed to the rear wheel by means of short spokes. This method ensures the rim being perfectly centred.



Price, £40 Net.



FITTED WITH DUNLOP, CLINCHER, OR WARWICK 2 in. MOTOR CYCLE TYRES.

Full Particulars on application to

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