Motor Cycling & Motoring

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TOURING ON THE MOTOR-BICYCLE.

Notes and Hints on Preparing for the Coming Touring Season.

The advent of the motor-bicycle has opened up quite a new field for the cycling tourist. Numerous as are the charms of touring on the pedal-driven machine—and this charm of cycle touring has formed a favourite theme for cycling writers since the days of the high bicycle—what a far vaster field is opened up now that greater distances can be covered with the minimum amount of work—if any at all. Hilly districts with their varied scenery, the charms of which have formerly been denied to a large class of the cycling tourist owing to the necessary hard work which inclines to make a toil of pleasure, are now brought within reach of all by the advent of the motor-bicycle. Far longer and more interesting tours can be mapped out than was formerly possible with the ordinary cycle, and thus time is greatly saved. The question of luggage and touring equipment becomes no longer a problem of having to reduce everything to an absolute minimum of weight and size to avoid overloading the machine and exhausting its rider. With the powerful little motor doing all the work, an addition of 30 pounds or so of personal luggage makes no practical difference whatever to the running. In fact, it is only a question of storage capacity that has to be considered, as machines vary somewhat in this respect. Thus considered, motorcycle touring scores well above ordinary cycle touring on the question of personal comfort and convenience alone.

The Object of this Article

is to put the would-be motorcycle tourist in possession of such information (as has been gained by actual experience) so as to be of assistance to him in preparing and equipping his machine for starting, and also with advice on keeping the machine up to the highest efficiency during the progress of the tour. It is accepted that the would-be tourist is actually in possession of his machine, as it is not proposed here to discuss the respective merits of the various makes of motor-bicycles, but we will suppose that he has some experience in the management and riding of the machine.

Overhauling the Machine.

If the machine has had some hundreds of miles of previous running without attention, the details that should receive attention first are the valves and contact breaker. The valves should be taken out and re-ground if the compression does not seem perfect. By this is meant that it should require a very considerable effort to turn the motor pulley round by hand. The methods of grinding the valves have been fully described in a recent issue of "MOTOR CYCLING." Of course, if the machine is comparatively new this valve grinding will not be necessary. Next the contact blade should be unscrewed from its block and the platinum tip filed quite smooth. If it is very thin get a new rivet put in. Then the contact screw will require to be touched up. Now replace these parts and thoroughly clean out any oil that may have leaked into the contact breaker cover, and before covering up see that the points do actually make and break contact.

The battery should next receive attention. If it has not been charged for some weeks get it charged up again. This will only cost a few pence, and will remove any anxiety as to whether there is enough current to last through the tour. When replacing it in its case and re-con

Breaking in harness horses to the noise and smell of the motorcar. A scene at Mr. Burdett-Coutts' Stud Farm, Highgate.

necting the wires to its terminals, see that any green corrosive matter is cleaned off the ends of the wires, and that the nuts of the terminals are screwed down quite tight. Some packing is occasionally required to keep the battery firmly fixed in its case. The best material for this is a piece of very stout sheet rubber, a quarter of an inch thick, but this is not always easy to get. A few strips of cardboard will do as a substitute. Press these well in between the terminals and the case.

Next look at

The Sparking Plug.

Probably this will have its points and insulation somewhat charred. Clean this off with some petrol and, if necessary, reset the points so that a worn threepenny piece will just slip in between them. Clean the face of the screwed aperture for the plug to ensure good contact, and then screw the plug well home, re-attach the high tension wire, and if the strands appear to be weakened or broken cut them off and strip an inch or so of the insulation and re-fix the wires to the plug terminal. This will avoid a chance of the wire breaking away from the plug during the tour. As a precaution, before attaching the wire to the plug, just try the spark on the frame.

The Driving Belt

will require to be dressed with castor oil to get it into a pliable condition (the oil should be rubbed well into the leather with a piece of rag), and then see that the fastener holes are not worn (this is more likely to be the case if the belt is of the twisted hide variety than if it is a flat belt). The holes for the fastener should be made three-eights of an inch from the end, and are best punched through, or, at any rate, they may be carefully bored through with a stout bradawl—don't use the point of a penknife, it weakens the leather too much.

All the wheel bearings, and especially the free-wheel, are to be well oiled, and a little attention might also be paid to the chain by giving it a dressing with Grapholine or Gartor lubricant. Some motorcycle riders are inclined to neglect the chain, and this increases the work if some pedalling has to be done occasionally.

The steering head of motor-bicycles has a tendency to work loose after a few hundred miles riding. This should be tightened up until the shake has just disappeared. If this looseness is not taken up the balls will wear a series of dents into the cups, causing the steering to work very erratic.

Lubrication arrangements for the motor must be inspected, taking care to note that the pump is actually drawing in a charge of oil, and that the reservoir in the tank is full.

The brakes must be perfectly adjusted. If the blocks are much worn replace them with new ones and set them the correct distance from the rim. The importance of having the brake mechanism in perfect order cannot be too strongly impressed upon the rider, as life and limb have to be trusted to them at times. It will now be advisable to go over the whole machine with a spanner and see that every nut is quite secure. Then, having refilled the petrol tank and having injected some paraffin into the cylinder, put the machine on the stand and start up. The belt may require tightening, and one or two small adjustments to the control required to be made when the machine may be considered to be in first rate order. The next question will be what extra parts is it advisable to take, also tools and luggage carriers. You will first see that the tool valise is of good capacity (an ordinary bicycle valise is no use. Into this it is advisable to neatly pack the following: Spare sparking-plug, exhaust and inlet valve, with springs, spare trembler blade and screw, two belt fasteners, few inches of belting, one yard No. 16 copper wire, one yard insulated wire (low tension), length of rubber insulating tape, good adjustable spanner, one pair cutting pliers, one small (but strong) screw driver, jeweller's flat file, belt punch, two oil cans—one for paraffin, one for cycle lubricating oil—full sized repairing outfit for tyres, good sized duster of soft material—don't use cotton waste, as the threads get entangled with the working parts of the motor, etc. It is hardly necessary to mention that a first-class lamp, pump, horn or loud toned bell, must form part of the motor-bicycle's equipment.

Provision for Carrying Luggage.

On almost all machines it is possible to clip a Turner's carrier on to the rear stays just over the back mudguard. These are now made in different sizes with bags to suit them, and quite a large amount of personal requisites can be stowed away therein. When fitting the bag on, see that all the straps are made quite secure, as everything has to be very firmly fixed to stand the vibration of a motor-bicycle. The nature and quantity of the personal requirements to be taken will, of course, depend to a large extent on the length and duration of the tour, and can best be determined by the rider himself. But it is always advisable to include such items as a hair brush, soap and towel, toothbrush, small mirror, waterproof cape, not forgetting a few spare studs and buttons, as these things have a knack of getting lost when touring.

Suitable Clothing for Motor Cycling.

Although just for short runs the usual cycling costume may be adopted, some modifications are necessary for longish runs and tours. The lack of exercise and the greater speed attained, the rider consequently feels the cold more, necessitating the donning of stouter clothing. The regulation motor-cycling costume is held by some riders to consist of a leather jacket and cap, riding breeches, leather leggings and boots, but this specification is subject to much variation according to the rider's fancy, but the prospective tourist will be well advised to provide himself with a stout jacket and leggings and some warmer underclothing than usual.

Keeping the Machine in Order During the Tour.

To be able to go through the tour with the motor giving the least possible trouble will, of course, require that some attention be paid to certain details. One of the most vital points to remember is not to overwork the motor by keeping it up to top speed for miles at a stretch. Excessive speed means overheating and abnormal wear of the parts and also the tyres. Be content with a moderate pace not exceeding 15 miles an hour on clear roads. Then as to hill climbing, if your motor is of the usual touring standard, 1¾ h.p., it will always be an advantage to do a little light pedalling even though the motor may be able to take the hill alone. The pedalling will provide some slight exercise, and also economise your petrol and prevent overheating the motor. The next point to remember is to on every possible occasion give the motor an opportunity to get cool. As soon as the top of a hill is reached and there is a run down on the other side shut off the electric current and gas, and open or lift up the exhaust valve, thus enabling cold air to be rapidly drawn into the cylinder, with a most beneficial effect. This will be at once apparent as soon as you have to switch the motor on again.

Lubrication.

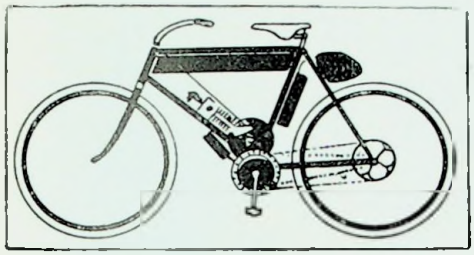
Then as to lubrication, the main point is not to overdo this, and at the same time it must be performed at regular intervals —say every 25 to 30 miles. Over-lubrication shows itself by clouds of smoke being ejected from the exhaust box. The oil may also get through the bearings into the contact breaker case, and cause misfiring or an actual stoppage.

When the day's run is completed the machine should be run over to see that all the nuts are tight, connections firm and clean of any excess of oil that may have collected about the crank case. Now as to petrol replenishment, most tanks carry ample for a day's run, and fresh supplies can be obtained at almost any small town. Remember to take a list of depots with you. Get this from the agent who supplied the machine. Another point of importance is to be sure and remove the connecting plug from your main switch when stopping for the day, and also close your petrol tap. Before making a start next day just look at the belt fastening to see if new holes are wanted. Then as to the tyres, keep these quite hard, the back one more so than the front, and then there can be little fear of punctures. When running over greasy roads steer straight, keep the speed down, and shut off power when going round corners, thereby reducing risk of side-slip.

SOME INTERESTING FEATURES OF AMERICAN MOTOR-BICYCLE DESIGN.—*Concluded.*

The Clemens.

This is a chain-driven machine built by Chester E. Clemens, of Springfield, Mass. It is of about 1¼ horse power, and is powerful enough to climb a 19% grade without pedalling with the ordinary gear—9 to 1. The crank case of the motor is permanently built into and forms a part of the frame, thus ensuring rigidity and perfect alignment of the chain sprockets. The cylinder and combustion chamber are cast in one piece, and extra large cooling surface is provided. The silencer is provided with a cut-off for exhausting straight into the air, to obtain more power in hill-climbing, etc. A special feature of this machine is the arrangement of all the control in the handle. The left grip, when turned slightly forward, opens the exhaust and puts on the current; turning the grip still further advances the spark. The right grip controls the throttle valve, thus altering the speed without changing position of the spark advance.



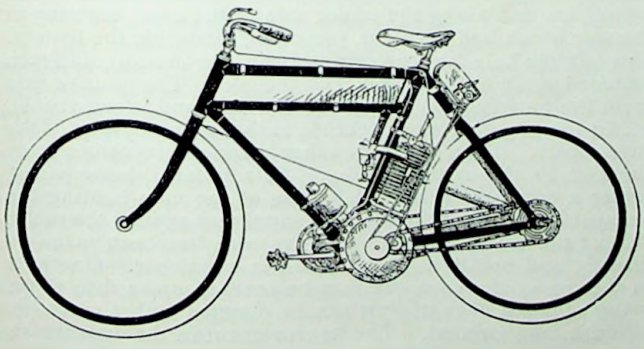
THE CLEMENS.

The ignition is provided by a coil and four dry batteries—these being carried in a leather case behind the back stays. The petrol tank carries sufficient for 75 miles.

The Freyer and Miller.

This machine was shown for the first time at the recent Chicago Autocar Exhibition, and there are some rather novel features in the construction. The drive is by chain on to the rear hub, which is provided with a friction clutch providing for a certain amount of slip in starting.

The motor is mounted behind the diagonal and the crank case is built into the frame and there is also a reducing gear in the crank case so that only one chain is required. The petrol tank is mounted between the two top tubes of the frame and a spray carburetter is fitted which will be observed just forward of the diagonal. The distinguishing feature of the machine, however, is the ignition gear, which consists of a small magneto dynamo mounted on the back forks. This is driven by a small band from the motor pulley. This gear is remarkably efficient. Control is effected by two levers mounted on the handlebar; one advances the spark and the other opens the throttle valve. The silencer is of good size and will be observed clamped to the main down tube.



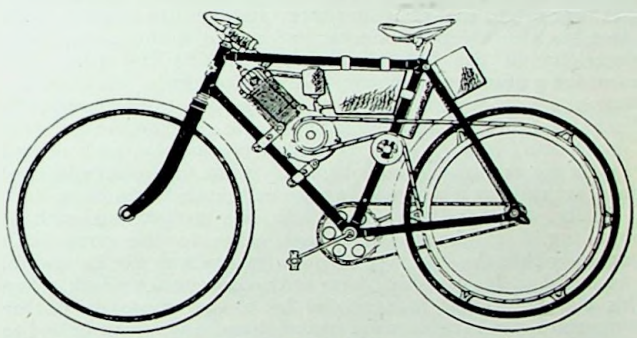
THE FREYER AND MILLER.

The Morgan.

The Morgan Motor Co., 54, Columbia Heights, Brooklyn, manufacture a motor-bicycle on familiar lines. The motor is clamped on to the main tube in an inclined position, and drives on to the rear wheel by means of a twisted rawhide belt, a jockey pulley being provided for tensioning. The battery is carried on the rear stays and the coil is clipped to the diagonal. The petrol tank is carried from the top tube and supplies a spray carburetter.

Summary.

A fair idea will be obtained from the foregoing of the general trend of motorcycle design in the States. One feature that stands out is the position generally adopted: in almost every case an inclined position is favoured. The surface carburetter is practically non-existent, spray carburetters or mixing valves being generally used. Chain driving seems to be fairly popular, and there have also been one or two successful attempts to combine a reducing gear on the motor with a chain drive on to the rear wheel. Very few of the machines are fitted with flat belts, the round

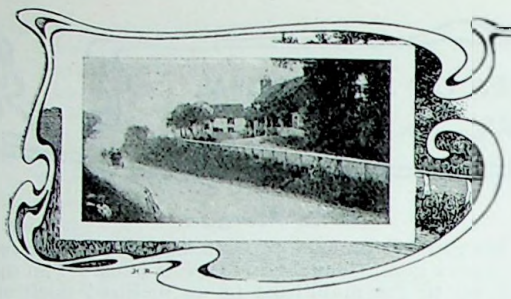


THE MORGAN.

section twisted hide belt, as used over here, being employed. A good deal of ingenuity has been expended in simplifying the controlling gear, rarely more than two levers being fitted. Several patterns of motor-bicycles have the crank case built up as an integral part of the frame. The ignition gear generally adopted is the coil and battery system. Dry batteries are preferred to accumulators, although it is difficult to see a reason for this; the dry cells taking up a lot of valuable space and giving a much inferior current to an accumulator. One or two makers fit a special magneto igniter, just as some makers in England fit the Simms-Bosch magneto ignition.

Efficient braking and mudguard equipment seems to be wanting on the motor-bicycles, just as it is on many of the ordinary bicycles, and makers anxious to find a market for their machines in England would do well to fit rim brakes detachable tyres, and efficient mudguards.

Another feature that might be commented upon is, that in almost every type of American motor-bicycles the original De Dion principle of constructing the motor is adopted—that is, inside fly wheels and built-up crank axles. Over here, in England and France, the outside fly wheel and one-piece crank and shaft principle of construction is being largely adopted, and with excellent results. Another point that wants explaining away is why it is that the obsolete block chain is still retained in the States, both for the motor drive and the pedal gear. The greater efficiency of the roller chain has been established beyond a doubt.



IN TRANSIT.

Some Experiences of a Cyclist in the Transition Stage.

Railway Vagaries. At the week end there was a motor-bicycle to be taken home. It had arrived at Rosebery Avenue in the morning, and had been duly inspected and critically discussed during the day by our staff of enthusiasts, and, as the roads were in their chronic state of swamp, we elected to take the machine home by train, a portion of the journey being per Underground Railway. A through ticket for a cycle was demanded at the booking office and issued, and we were on the point of carrying the machine down the stairs, when a porter came up and said that "them things" could not be taken on that railway. He was so absolutely positive about the matter that we halted, and then went and made inquiries. The booking clerk, on being informed that it was a motor-bicycle, said that they could not take it. But, said one of us, it has neither petrol nor oil; in fact, being brand new, there was nothing inflammable or explosive about it. He thought that that might make a difference, and went to inquire. He came back in a few moments, and asked if there was "any electricity in the batteries." We smiled inwardly, and hazarded a negative, because, in our experience, the accumulator of a new machine generally turns out to be practically discharged. After another absence, he returned to say that they couldn't take it, so he refunded the money, and we had to walk the machine for a couple of miles to the terminus of the other railway which was to take us to our destination.

Really, the ignorance that one has to put up with is appalling. If the railways had come to the conclusion generally that the carriage of motorcycles was not desirable, one could at least credit them with consistency; but, when this class of traffic is accepted by a vast majority of the companies, yet is refused by two of them, one is compelled to wonder what reason they can have for differing in their practice. Again, one could understand it if the companies refused to carry the machines unless the tanks were quite empty. That would be a reasonable provision, because of the general carelessness of people unacquainted with the instrument. But only on very few lines is this condition of things insisted upon. On my own line, an ordinary cycle ticket franks a motor-bicycle through, whilst no questions of any kind are asked. The guard is usually very much interested, and tells you that he never thought those things were so heavy as all that. But he is usually satisfied if you tell him that the reason for the extra weight is that you have just had your batteries recharged!

Courting Trouble. I have only had to take a motor-bicycle by train on about three occasions, and then only once because of a breakdown; the other times were for the purpose of avoiding the traffic and greasy roads in wet weather. And only on one occasion have I found the guard to be an idiot. At the terminus, on the occasion in question, I was asked to take my machine into the van last, as I was only going a short way down the line. When I got in, I found a cycle laying over against some boxes, with a tandem inclining upon it at an angle of about 45 degrees. The guard wheeled my machine over, and was actually going to lay it over against the tandem! Just fancy what would have happened! The slope of the machines would have set them on the move when the train got in motion, and the damage done would at least have equalled the wages of that man for about a month! I told him what I thought of him: that that was precisely the way in which annoyance was caused to owners of valuable cycles, and claims on railway companies were caused. I insisted upon a proper place being provided for my machine, resting against the side of the van. He was as mad as could be at having to do it, and I was not at all happy at having to leave the machine in his charge. Very few railways go out of their way to encourage cycling traffic, which is very shortsighted policy, because the machines are handled by their owners, and many a rider would be only too glad to avoid suburban roads and traffic if the railway journey were not even more troublesome.

A Distinct Improvement. At the very first I took a great objection to what I considered was the untidy condition of the electric wiring on the standard Minerva motor, and among my earliest efforts was the removal of the surplus wire that was festooned all over the machine. The wires were tautened up, and that which was superfluous was either cut off, or was drawn into the case and there carefully stowed away. The improvement was undoubted, but I was never really satisfied, and so, a little while ago, I embarked on a bigger task, and, as it turned out to be an advantage, I will give it in detail for the benefit of those who may care to follow my example. The positive wire of the primary circuit goes from the battery (red terminal) to the coil, and then from the coil goes out at the hole in the top of the case, and then follows the sparking advance rod, entering the tube near the end and, coming out, is attached to the insulated block of the contact breaker. This wire was detached from the coil and entirely withdrawn from the case. With a file a slot was cut in the bottom of the case, just inside the door, the slot being made nearly half an inch deep by a quarter of an inch wide. The positive wire was placed in this slot, and then again attached to the terminal, the effect being that it now came out at the bottom of the case instead of the top, and only about three inches showed instead of about 15 inches. Then the earth wire from the coil, which comes out of one of the holes in the top of the case and is usually attached to the seat bolt, was detached entirely. This was necessary because the ring on the outer end would not pass through the hole in the case. The end taken from the terminal on the coil could, however, be passed through. Then the outer end was attached to one of the nuts which clips the engine to the frame, and the wire was then taken to the diagonal tube, where it was clipped, passed up and along the under side of the case, entering at the slot which had been cut, passed up alongside the battery, through the hole into the compartment for the coil, and then fastened again to the terminal on the coil. The positive wire from the battery goes straight to the coil, and is not visible, whilst the negative wire proceeds to the switch by way of the interrupter. Then the only other visible wire comes from the coil to the sparking-plug. This latter I have passed under a clip, which is held by one of the nuts holding the exhaust box, so that the wire lies snugly up against the under side of the case; then the negative wire has been taken as directly and neatly as possible to the handlebar. One hole in the top of the case can now be covered up, a disc of tin being soldered over it, or it can be plugged with a cork, cut off flush, and painted. The improvement in the appearance of the machine is very marked.

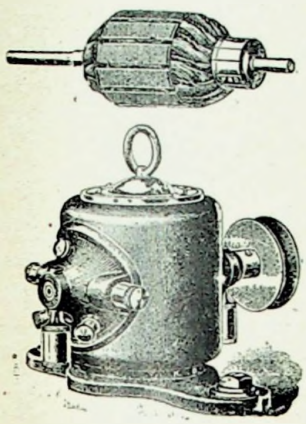
CYCLOMOT.

INVENTION.

The latest improvements in motors, motorcycles, and accessories.

A Compact Accumulator-charging Dynamo.

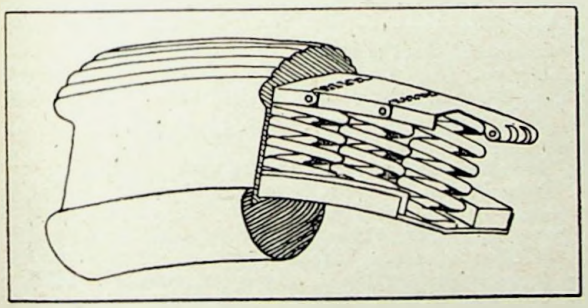
We show an illustration of a neat little dynamo for charging cycle accumulators. It is of American manufacture, and is sold by Kendrick and Davies, Lebanon, N.H. At 1,400 revolutions per minute it gives eight volts and five amperes; total weight, 15 lbs. It is quite self-contained, and fitted with self-oiling bearings and self-adjusting brushes. The armature is of the best type drum-wound slotted core, and commutator has 12 parts. It can be had for either friction drive or with flat or V-shaped pulley.



A COMPACT DYNAMO.

A Novelty in Tyre Construction.

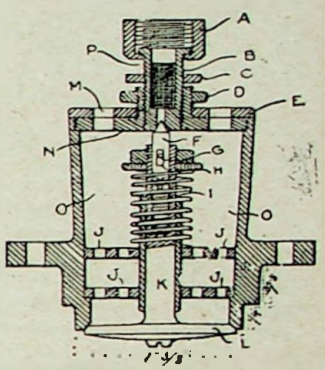
That the idea of making a spring tyre is by no means extinct will be evident from the accompanying illustration, showing the interior of a spring tyre for autocar work. It consists of a large number of steel springs mounted between the rim and a series of jointed plates or hinges, to provide the necessary flexibility. An outer cover of the usual fabric and rubber construction encloses the springs and plates, and takes the wear and tear of the road. There could not, of course, be any puncture troubles with a tyre of this sort, and it seems a more practicable invention than many of its predecessors. The tyre is put upon the market by an American firm.



A SPRING TYRE.

The Carlton Carburetter.

We have received the following particulars from a correspondent concerning the working of the Carlton carburetter which may prove of interest to several readers who have sent us inquiries on the subject. The makers' address is Carlton Motor Co., 19, Elm Grove, Cricklewood, N.W. On referring to the sectional diagram, the lettered parts can be compared with the text. Here is the action :—On the commencement of the suction stroke the inlet valve L opens, and after moving the least shade begins to open the needle valve F. Now the petrol or other motive liquid is drawn partly by suction and partly by gravity through the gauze filter P, and spreading on the conical head of F is whirled in corkscrew fashion through the baffle plates J J and at the same time mixed with the air. Then it passes the head of inlet valve L, which, after the first few explosions, becomes warm, and thus the finely divided liquid is finally completely vaporised by a gentle heat just at the moment of ignition. At the upper part of the casing is fitted a perforated cap which may be used in the first instance to regulate the mixture. After this is once set to get the best results it should be marked and allowed to remain in that position always, as the altering of the mixture produces a very doubtful benefit and effects no practical economy. The seating for the needle valve is adjustable for the regulation of the quantity of petrol drawn in for each charge. One feature seems to strike one as being conducive to economical working, and that is, after the piston nearly reaches the end of the suction stroke the valve commences to close and the needle valve being closed before the main inlet valve the air still passing through the casing uses up the last drop of the petrol that has been drawn through the valve F.

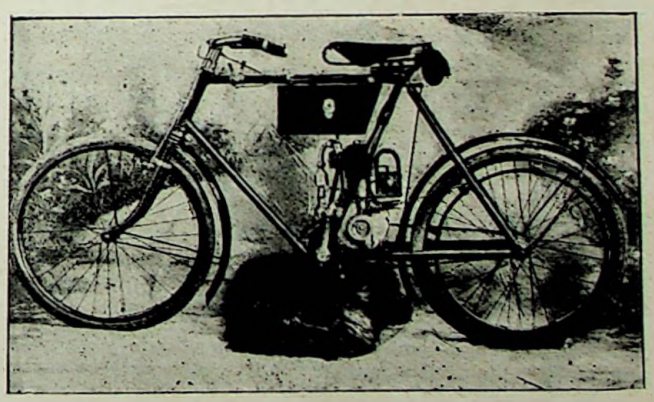


CARLTON CARBURETTER.

A. Union. B. Adjustable seating. O. Spray chamber. C. D. Lock nuts. E. Air adjusting disc. F. Needle valve. G. Pin through needle valve. H. Slot through valve stem. I. Spring to keep needle valve against seating. J. Atomisers or baffle plates. K. Valve stem. L. Valve. P. Filtering gauze.

The "New Bowdon" Motorcycle.

Cragg and Sons, Altrincham, Cheshire, have just brought out a new design for a motor-cycle frame, specially built to accommodate the motor. The motor is a Simms 2 h.p., fixed vertically and clamped securely to the bottom tube which is joined under the bottom bracket. The latter is of special design, six inches wide. The motor is fitted between two tubes (D section) taken up from the outside ends of bracket to a fork lug 16½ inches from such bracket, which also takes the seat pillar tube. The motor is held at the top by a connection from the fork lug referred to, and the crank chamber is well secured from behind by two upright arms from a strong steel bridge, strengthening the back forks. This bridge also acts as the mudguard and exhaust-box holder. The motor is thus held perfectly rigid. The back hub is also of special pattern, seven inches wide, which allows plenty of room for a one inch flat belt. The adjusting of the belt is from the back, and the chain by an eccentric bracket. There are only two levers to manipulate, i.e., the exhaust valve lifter and the advance spark lever.



A good front rim brake is fitted, which, used in conjunction with the exhaust valve lifter, enables the cycle to be pulled up in a few yards. The ignition is magneto-electric, doing away entirely with coil and accumulator.

C

Motor Cycling & Motoring

Conducted by

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OPINION.

Comparisons on the Road.

To the man of careful and continuous observation it is becoming daily more evident that the advantages of the motor car as a vehicle for street traffic largely outnumber its disadvantages. The behaviour of the modern motor in town and city is gradually approaching that point which in our school reports used to be denoted by the epithet "exemplary." It was not ever thus. We can all of us remember the time when a comparison between the horse-driven vehicle and the motor variety was anything but flattering to the latter. The motor had a bad habit of running away on the slightest provocation, and a still worse habit of standing still on no provocation whatever. It emitted sounds cacophonous enough to annoy the living and its smell was calculated to offend the dead. It had many of the drawbacks from an ornamental point of view of the steam roller, without any of its utilitarian advantages to set against them. It frightened horses and old ladies; pet dogs who displayed the vivacity of their nature by yapping at it, invariably retired from action with loss of dignity. Its note of warning, decided and distinctive, was pronounced aggressive, and Harley Street discovered an entirely new phase of nervous irritation which, if it had attained the same permanent footing in our midst as influenza, might have been christened "croak-o'-motor-attacks-ye." Even the stolid policeman had his doubts about the prudence of "holding up" this panting, palpitating monster, whose petrolic pressure might at any moment burst its bonds and hurl the entire fabric at the small of the constabulary back.

Indeed, there can be little doubt that the motor of a year or so back was, in many ways, what it was largely voted to be, "an unmitigated nuisance"—in a crowded street, at any rate. Well, for the matter of that, most of our noteworthy inventions and innovations have, at one time, been looked upon as unmitigated nuisances. Look at the referee's whistle in a football match; we can most of us remember the days when this remarkable innovation was introduced, and the burst of derision with which it was received. Mr. A. N. Hornby, one of the ablest referees in England, was said to have hailed the idea with the sarcastic sobriquet of "Pig and Whistle"—and he subsequently played on the offending instrument with marked success. Can any cycling or moting footballer imagine the chaos which would result in a League match to-day if that "unmitigated nuisance," the whistle, were suppressed. Can any right-minded citizen view with equanimity any attempt to thwart the career of the motor now that it has proved itself to be a suitable vehicle for street traffic!

Horse Power.

"Subscriber" is nonplussed at our definition of horse power. He says: In an early issue of "MOTOR CYCLING," one horse power was stated to be equal to power expended in raising 550 lbs. one foot high in one second, but in No. 20 he sees it stated that it is equal to 33,000 lbs. This is truly startling, and he wishes to know which is correct. Is it really possible for the ordinary small bicycle engine to lift even 550 lbs. from the ground?

Both definitions are correct. Horse power is made up of three components—viz., weight, distance, and time—and if an engine will wind up 550 lbs. to a height of one foot in *one second*, and if it takes 60 times as long over it, 60 *times the weight* could be raised through the same distance. Theoretically, a one horse power motor should be able to wind up 550 lbs. one foot in one second, or 33,000 lbs. in 60 seconds. Whether a motor would do so could only be determined by making a brake test. Some of them are over-rated.

"MOTOR CYCLING" AND THE PARIS-VIENNA RACE.

How We Shall Deal with this Great Event in Our Next Issue.

What is perhaps the most important motor event of the year starts at 3 a.m. on Thursday next a few miles out of Paris. This is the great race from the French capital to Vienna over an intervening distance of more than a thousand kilometres. In another part of this issue the reader will find some interesting details concerning this great motor ride, but we may say here that there are no fewer than

Two Hundred and Eight Entries,

and deducting the entries originally made and since withdrawn, no less than 180 cars and cycles are expected to line up for the start. Among the English motorists Messrs. Jarrott, Edge, Rolls, and Mark Mayhew are regarded as certain starters, and in the cycle section

Fifteen Motor-bicycles,

four tricycles, and one quad figure in the programme. Now this is an event clearly calling for special treatment in a motor journal, and "MOTOR CYCLING" has made all arrangements for dealing with it in a thoroughly efficient manner. Discarding the allurements of the Coronation festivities, two representatives will leave London on Wednesday morning, and in conjunction with our Paris correspondent they will prepare a most complete and most interesting article, giving the details of the start and incidents of the great ride. In addition they will secure a series of striking and exclusive photographs at the start and on the route. "MOTOR CYCLING" will be published on Tuesday morning as usual, and although the ride is not expected to conclude till Sunday, every effort will be made to

Announce the Result.

"MOTOR" CYCLING will thus be out several days before any of its motor contemporaries with a fully illustrated description of the greatest motor event of the year.

The Editor of "MOTOR CYCLING" is at all times pleased to give his best consideration to the contributions of readers, either literary or artistic. The experiences of practical riders of motorcycles are always welcomed, and their publication assured if they are of such a character as to be helpful to others. In submitting MSS., drawings, or snap-shots, it should be stated whether remuneration is expected.

PARIS-VIENNA.

The Greatest Event of the Year. There are 208 Entries, including many Notable English Motorists, Twenty Motorcycles taking part.

"Motor Cycling" sends Two Representatives, and a special description will appear next week

The great ride which begins on Thursday next from the outskirts of Paris, to be continued right away to far distant Vienna, is undoubtedly one of the greatest events of this fruitful year of automobile incidents. No fewer than 208 entries have been received for the ride, and it is considered certain that very few short of 200 will actually participate. All the well-known chauffeurs of France, noted for the dash and daring of their driving, will compete on the latest speed monsters of the road, and the most elaborate arrangements have been made along the whole route for facilitating the progress of the cars. England is represented in the entries by Messrs. Charles Jarrott, S. F. Edge, Mark Mayhew, and the Hon. C. S. Rolls, and all are certain to start. America will be represented by Messrs. Foxhall Keene and W. K. Vanderbilt, jan., both driving Mors cars. Fourteen Panhard-Levassors have been entered, and included in the list of starters there are riders of fifteen motor-bicycles, four motor-tricycles, and one quad.

FULL DETAILS OF THE RACE.

(From our Special Correspondent.)

When these lines appear in print the biggest automobile race on record will be nearly under weigh. We, of course, refer to the Paris-Vienna race, which is attracting universal attention, and bids fair to eclipse every previous attempt in the way of motor racing.

The class and number of entries, the distance of the race, and the fact that the event is almost certain to be

The Last Automobile Race

to be allowed on the Continent, makes the occasion a more remarkable one.

As in most of the previous big races promoted by the Automobile Club de France, there are two distinct classes, one

Reserved for "Tourists,"

as they are styled, and the other a purely speed contest, although divided in several sections.

The tourist section was started on Thursday last, 57 vehicles of all descriptions being sent on their way. We shall not, however, attempt to describe the event, as there is really no contest, and no placings at the end of each daily section. Suffice it to say that the cavalcade is to reach Vienna after nine days' journey, just in time, according to the schedule, to witness the finish of the speed contest.

This will, of course, attract all attention. The start is to be made on Thursday morning very early from Champigny, and it is expected that nearly 200 will start, including all the best chauffeurs in Europe.

The List of Entries

is really a splendid one, as a glance over the names will show. The list includes all the motor champions both in France and all the other countries.

At the time of writing it is not an easy matter to give a reliable road map of the race, as difficulties arising from the Swiss authorities have prevented the promoters fixing the itinerary up exactly.

The Austrian itinerary has, however, been fixed in due time.

A Four Days' Race.

The total number of sections in the race numbers four, which have been mapped out as follows:—Paris to Belfort; Belfort to Bregenz; Bregenz to Salzburg; Salzburg to Vienna, making up a total distance of 1,400 kilometres (nearly 800 miles).

The finish of the race will therefore take place on Sunday next, the 29th.

The Arenberg Cup.

An interesting contest run in conjunction with the Paris–Vienna event is the Arenberg Cup, which the Automobile Club de France hold as a national challenge trophy. The cup can only be raced for by alcohol-driven motors, and the racing regulations of the A.C.F. govern the contest. The cup, which has been presented by the Prince d'Arenberg, is to stimulate competition between the French manufacturers, and should prove of decided interest to the competitors. The cup has to be raced for every year, between May 15 and September 15, and is open to voiturettes, light cars, and heavy cars up to 1,000 kilos. The interest at home naturally centres more particularly in

The Gordon-Bennett,

in which the requisite three Britishers are expected to compete. Mr. Grahame-White will drive a three-cylindered 45 h.p. car of Wolseley make, while probably Mr. Austin will drive another Wolseley, a four-cylinder pattern, of something like 35 h.p. The third contestant will be Mr. S. F. Edge, on his new Napier, weighing 16 cwt., and nominally of 30 h.p., the power being direct to the back wheels by means of a drive on the high speed to a live axle. Of the three, S. F. Edge may be looked upon as the only experienced driver in these classic races.

On our editorial page we give some interesting details of the manner in which "MOTOR CYCLING" will deal with this most important event. Two representatives are leaving London on Wednesday morning, and in the next issue of "MOTOR CYCLING" will appear a most interesting narrative of the ride, with many illustrations.

THE LIGHT SIDE.

A good deal of interest has been aroused by a photo published in "Cycling" of May 31 last showing Chambers spurting behind a motor pacer. The peculiarity consists in the fact that Chambers' hair, instead of flowing back over his temples, as one would imagine in the case of a man riding at such a speed, is blowing out in the direction in which he is travelling, a fact which would seem to indicate that so far from meeting a considerable air resistance the motor-paced cyclist is actually being drawn along by a powerful air current. Someone has already defined motor-pacing as the process of "being towed with a rope of *air*," and it seems that the gentleman spoke a truer word than he imagined.

* * *

If the theory is sound we shall have our cycle racing men cultivating a very Paderewskian wealth of capillary tegument. One famous and popular "Poly." boy already rides with a tolerable crop, and should have no difficulty in winning a close race by a hair's length.

* * *

In the days of our childhood we gathered a lot
From the tale of the hare and the tortoise;
But the moral it pointed is nothing to what
The *hair* has just recently *taught us*.

* * *

People who growl at the noise created by a motor, even when it is minus any silencing apparatus, forget the years of suffering they endured from the rattle of cabs and 'buses, before London was paved with wood. The latter, however, being perfectly useless, noise was tolerated, in the same way that many superfluous street cries are; whereas the former, the crepitation of the motorcycle, being a more or less necessary operation, on which the very motion of the machine depends, is condemned as outrageous, barbarous, horrible, ——ble, and a whole lot of other adjectives ending in "ous" and "ble."

* * *

We know people, very honest and worthy people in many ways, who will listen cheerfully to the maddening tintinabulation of a cracked chapel bell for half an hour on end, regardless of its sublime superfluousness, and who will put up their hands to their ears with a sort of good-heavens-my-head's-splitting expression if a motorcar throbs audibly within a hundred yards.

* * *

We suffer the cry of "Swe—ee—eep!" and "Coal!"
And the man who has "Pot-plants!" to sell:
When Jones makes a hundred, or Smith kicks a goal,
With impunity newsvendors yell.
But let the "Phit-phit!" of a car or a bike
On the scandalised ear of the ratepayer strike,
And he promptly consigns them to—Coventry.

* * *

Motoring is an older sport than some people think. The Latin poet Horace begins one of his odes with the words "Motum ex metello," which clearly refer to a motor made of metal.

* * *

Some people are never satisfied. If a cyclist is buzzing along at fifteen miles an hour they cry out, "How dangerous," if he reduces speed to a modest eight they suspect puncture trouble, petrol perplexity, or some similar embarrassment. But the mass of the public gets more accustomed to the thing every day, and begins to realise that life on a motorcycle need not necessarily be any shorter than life on a dustcart, and may be a good deal merrier.

* * *

By the time that the authorities have definitely settled once and for all whether a motorcycle is or is not a carriage, motors will outnumber carriages by ten to one, and the question will then arise, "Is a carriage a motorcycle?"

* * *

Not to be outdone by the G.E.R. with their trip through the Constable country, a rival railway announces a jaunt through the Sarjent district; most of this will be "on the line."

* * *

As one by one the prejudices against motoring and motor cycling are exploded by the voices of commonsense and daily experience, the faddists find it hard to formulate any plausible charges against the sport; and now some of them are reduced to the "personal vituperation" mode of attack, and are sneering at the leather garments and goggles of the profession.

* * *

It is, of course, purely a matter of opinion, but to our mind nothing looks more appropriate and in better taste than well-made leather "togs" on a motor machine, with goggles handy for a protracted speed run. Some men would, perhaps, prefer frock coats and silk hats, forgetting that there is a time and place for everything.

* * *

If the motist errs in adapting his costume to his surroundings, he errs in good company. Most sporting Britons make the same mistake: the cricketer conceals the graceful contours of his limbs and extremities with clumsy pads and gloves; the fencer puts on a hideous mask; and the brave knights of the good old times used to perform their deeds of derring-do (whatever that may mean) in a costume which, if you look at it in the right sort of carping spirit, was eminently suggestive of a Dutch oven on horseback.

* * *

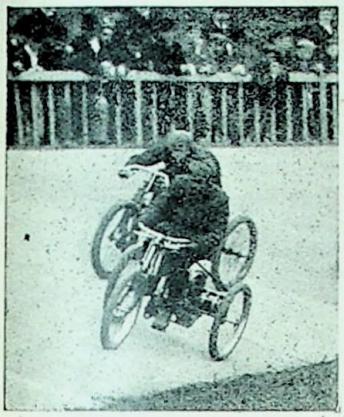
Why, if a man's occupation or recreation puts an abnormal strain upon any of his senses or members, he should be regarded as a fool or a knave for protecting them, it is hard to imagine. If these objectors were to wrap up their brains in cotton wool, before subjecting them to the strain of thinking out these grave problems, we should be the last to cry out upon them for their folly.

* * *

A question which is being discussed just now is as to what is the best insulator for a sparking-plug; porcelain, mica, or glass, and quartz, all have their advantages, and time alone will tell which is really the best. Our own experience on the bicycle proper shows that "glass" and "quartz" (in moderation) are very beneficial *after* the 'plug, but somewhat apt to defeat their own object if used *before*.

* * *

Unless the motorcycle supersedes the pedal-driven variety entirely, which is hardly likely, there will be some confusion of terms in the future; for unless some simple, distinctive and appropriate name is found for the motor-bike it will assuredly before long claim to be known as a bicycle; motor bicycle is too much of a mouthful for everyday use, but why not "moke"? In a year or two the present lessee of that name will have no further use for it, and it has the advantage of combining the motor or self-propelling principle with the bike, or two-wheeled characteristic of the modern machine. The man on it could equally appropriately be known as a "Coster," with the accent on the "o."



NEWS.

Paris-Vienna.

The motor ride of the year.

It will be reported and illustrated in "Motor Cycling."

The Duke of Connaught has just had a new Napier car delivered to him.

Mr. J. D. Siddeley has been elected to fill a vacancy upon the committee of the Automobile Club.

The Welbeck speed trials will be held on Friday, August 8, the classes being the same as at Bexhill, but there will be no competition or appearance.

Pro and Con.

Scene I.—The City.

The leaden sky is streaming rain, the gutters run with mud,
The City man is thirsting for the Weather Clerk's berlud;
With weather-beaten brolley, and with macintosh to boot,
Each time a horse goes stamping past, splattered from head to foot.
He plods disgustedly along, and when at length there are
A hundred mud-spots—more or less—
Upon his clothes; 'tis then he'll bless
The cleanly motorcar.

Scene II.—The Country.

The sun glares through a haze of heat, the roads are thick with dust,
The hapless cyclist breathes it in, because perforce he must.
His back is arched, his throat is parched, He's half inclined to die,
And feels serenely happy when a motor whizzes by.
And as it swiftly disappears on the horizon far,
Then he sits up and vainly tries
To wipe the dust out of his eyes
And bless the motorcar.

Sydney J. Taylor.

The total membership of the Automobile Club is now 1,604.

The Motorcycle Club, of New York, is the latest addition to America's clubs.

Some interesting details of the great American motor smash appear on another page.

The endurance trials promoted by the Automobile Club of America were a great success.

Motor-bicycles are, it is stated, not allowed on the cycle paths made in Belgium along the country roads.

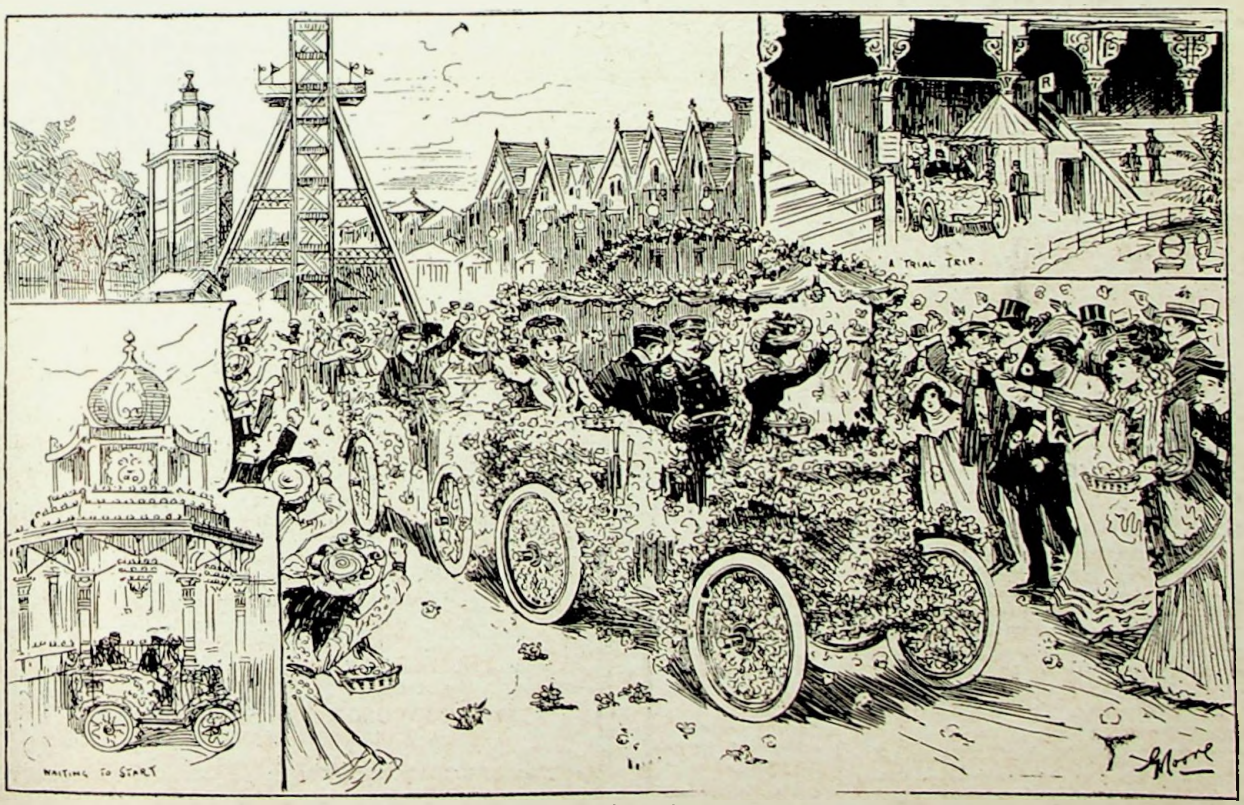
St. Louis, U.S.A., has decided that a licence of £2 per annum must be paid on motorcycles.

A motor exhibition is to held at the Rotherbaum track, Hamburg, from the 3rd to the 12th October next.

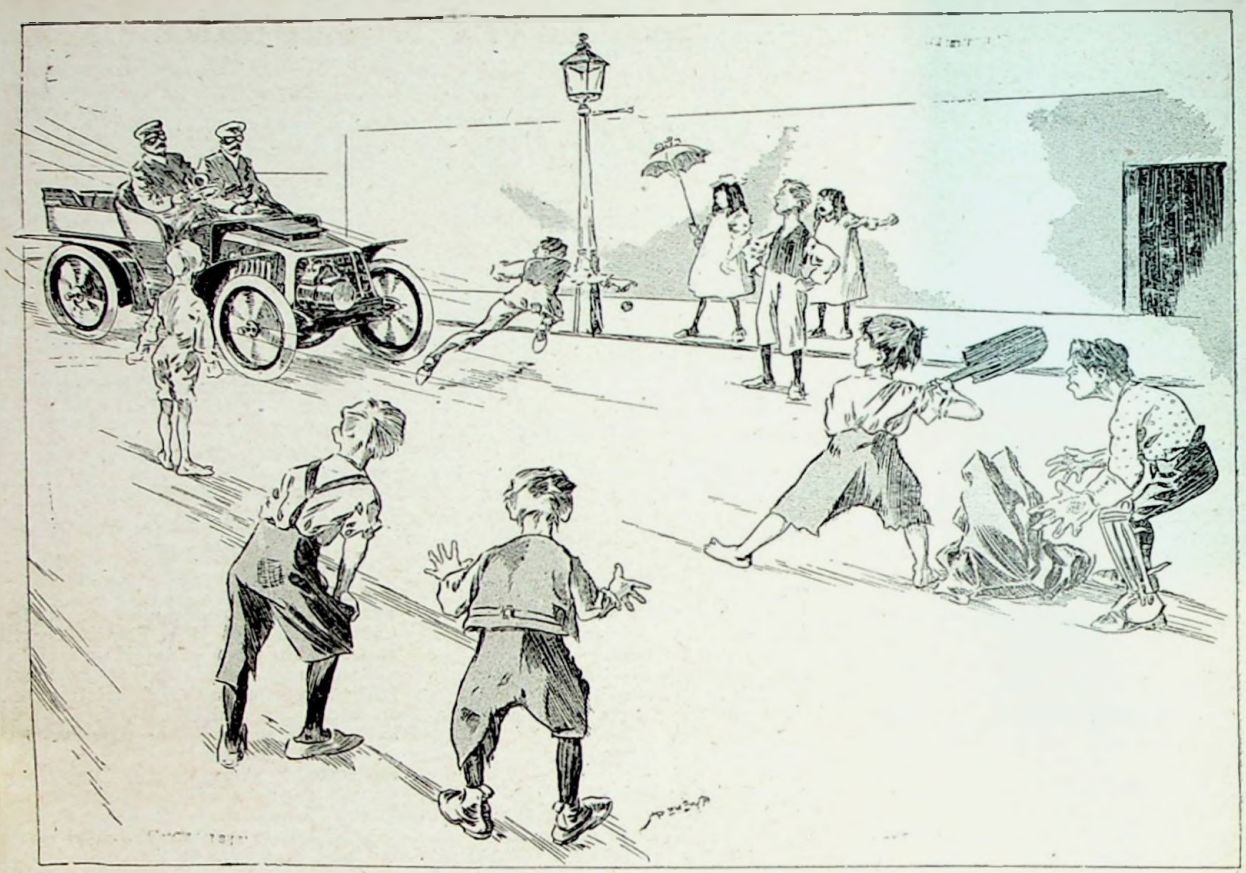
The French Government are sending a number of motors to Eastern Africa for use from the coast to Lake Tanganyika.

The Automobile Battle of Flowers.

The wretched weather which has been our lot this summer (?) caused a postponement of the Automobile Fete at Earl's Court in aid of the French charities. However, the weather cleared up sufficiently well to make the deferred celebrations fairly successful, although the rain came on later. Mr. and Mrs. S. F. Edge were individually successful, as they carried off the Mayor's banner and that of the "Car Illustrated" respectively. Mr. Charles Jarrott was awarded the "Gentlewoman" banner, while that presented by the "Graphic" was won by Mr. F. W. Peckham and Miss Vera Edwardine.



THE AUTOMOBILE BATTLE OF FLOWERS AT EARL'S COURT.



JOYS OF MOTORING.

The national game as sometimes observed when you are out on your 50 h.p. car. Should one of these budding Britons get scratched you are held responsible and abused according to taste.

Apropos of the Paris-Vienna race, the rule of the road in Austria is that the vehicles keep to the left.

Acquitted!

J. van Hooydonk, whose case on the charge of furiously driving a motor-bicycle had been postponed, was heard at Uckfield on Friday. He not only got off, but had the pleasure of driving back to London with one of the magistrates on his motorcar! Mr. Staplee Firth, who defended, was also a passenger on the same car. We shall give a fuller report of the case next week, as the amazing evidence of the policeman is well worthy of placing on record.

The Next Trials at Bexhill.

Another series of speed trials will be held on the Bexhill track on Bank Holiday, August 4. There will be two sections—for tourists and speed cars. Class A Tourist Section will be for motorcycles; the handicap open to motorcycles of all kinds weighing under 250 kilogs. (552 lbs.); entrance fee, half-a guinea. In the speed section there will be a scratch race for motorcycles, irrespective of power, not weighing more than 250 kilogs. If there are not three starters the winner cannot take the prize unless he covers the flying kilometre in 63⅘ secs., that is, at 35 miles an hour. Altogether a most interesting programme in the two sections has been arranged. No entry will be received after July 26.

"Motor Cycling" is sending two representatives to specially describe the great ride from Paris to Vienna.

Mr. Bert Yates won the race for the Starley Cup on Saturday week, at Coventry, but Mr. William Starley informs us that a protest has been entered against the win.

The first motor-bicycle road race was held last month in the States. Six men started, and five finished, the winner covering the 10 miles in 18 mins. 17 secs. The race was limited to motors of 2¼ inch bore.

High Explosives in Petrol Motors.

Some reports to hand from France state that Girardot, the racing motor tricyclist, achieved his great speeds through the use of picric acid dissolved in the petrol, and which greatly increases the force of the explosion.

Their Three Days' Tour.

The moting world of America is going through a lot of "firsts" just now. Among other innovations, the Alpha Motorcycle Club has just held its first long distance tour from Jersey to New York. Five out of the fourteen starters managed to cover the 316 miles in three days, the others suffering from the effects of dogs, belts, and bad roads. It is interesting to note that none of the engines, carburetters, or fittings gave trouble, the chief difficulty being with the belts, all being united in advocating the flat belt from ¾ to 1 and 1¼ inch.

Inquiries regarding motor-bicycles are more numerous every day.

Contrary to the ruling of our British Automobile Club, motor cyclists in the States are allowed to remove their silencer in races and speed trials.

New Werner engines and fittings, with the bicycle portion built in England, can now be delivered in about three weeks from date of order. Frames are 22 inch, 24 inch, ½ and 26 inch.

Paris-Vienna Race.

There are over 200 entries for the speed section, comprising the most noted chauffeurs of the day. As we mention elsewhere, no racing can take place through Switzerland, and the cars must be simply driven over. The Wolseley Co. have entered three cars for the event, two taking part in the Gordon-Bennett contest. The drivers in the latter will be Messrs. Graham-White and Austin, who have hitherto taken no part in classic races. The other competitor for the Gordon-Bennett trophy will be Mr. S. F. Edge, on his new Napier, nominally of 30 h.p., weighing 16 cwt. The power is transmitted direct to the back wheels by means of a direct drive on the high speed to a live axle. The first stage of the speed section, Paris-Vienna, starts on Thursday of this week, the objective being Belfort, 257 miles; second stage to Bregenz, third to Salzburg, 209 miles, fourth to Vienna, 208 miles. The tourists' section left Paris on the 19th, and arrive on the 28th.

At the Crystal Palace on Thursday Mr. H. Martin, on an Excelsior motor-bicycle, broke the world's one mile amateur motor-bicycle record. Time, 1 min 25¼ secs., the previous best time being 1 min. 35⅖ secs.

We are informed that the inventions of frictional driving and speed gears, described under the heading of "Invention" in our issues of May 21st and June 18th, have already been covered by the patent of Mr. F. S. Griesbach, No. 23,337, taken out last year.

Electric Railway Train attains a Speed of 100 miles per hour.

The engineers of the Berlin-Zossen Electric Railway have recently been experimenting with cars running at high velocities; 100 miles per hour was attained, but this could not be kept up, simply because of the destructive effect of the car on the track. It would appear as though some new principle of constructing the cars and rails must be discovered before such high velocities are possible for practical purposes.

Interesting Brake Tests in New York.

A series of tests have recently been made by the Automobile Club of America to show that motorcars are more easily stopped than other vehicles. The idea of the demonstration was to obtain an increase of speed from the present limit of 8 to 10 miles per hour. The tests were held on a track measuring 1-10th of a mile, and the timing was very accurately performed by an electrical timer. The results of the tests were graphically depicted on a chart, and it was conclusively proved that an automobile could be pulled up in a very short distance indeed. This made a favourable impression on the spectators, and it is expected the law will shortly be altered in favour of a 10 mile per hour limit of speed.

The Speed Trials in the States.

The Automobile Club of America appear to have learnt a bitter lesson in accepting the entry of "freak" machines, which are absolutely of no use to anyone except to demonstrate how dangerous to life and limb these "monstrosities" are. Until these trials were stopped by the "Baker" vehicle already alluded to, some interesting times were made by the 26 vehicles covering the course. The trials were held on the South Shore Boulevard on Staten Island, and were divided into various classes and sections, and the arrangements as to timing were excellently carried out by means of the Mors electrical device. Fournier's old 60 h.p. Mors easily did fastest time for both the kilometre and mile, doing 34⅖ secs and 55⅕ secs. respectively, but made no alteration in the record times, while in the electric vehicle class, the ill-fated Baker easily broke record for the kilometre. In the steam class, a 10 h.p. Locomobile reduced the mile record to 1 min. 12 secs., and in the gasoline class section, for cars weighing between 1,000 to 2,000 lbs., a 15 h.p. Winton, driven by Percy Owen, brought the mile times down to 1 min. 17⅗ secs. Class 1 for motor-bicycles provided a surprise, as Metz covered the mile in 1 min. 10⅖ secs. Further particulars are given elsewhere of his performance.

THE BAKER AUTOMOBILE.

Some more details of the "Freak" Speed Motor, and the reasons for its Disastrous Collapse.

The American "freak" speed motor which we illustrated last week appears to have been a monumental piece of folly, and it is a pity that it was allowed to compete. "Automobile Topics" thus deals with the matter:—

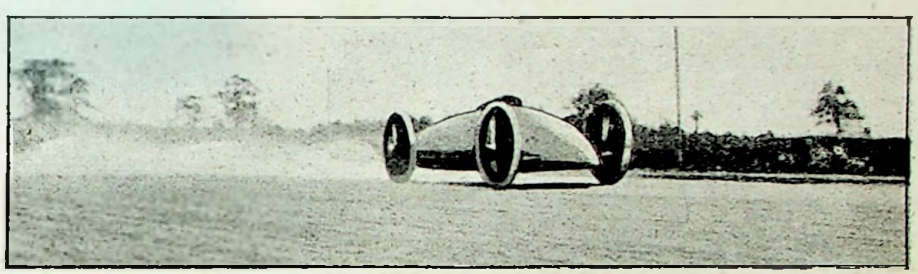
"Probably all others connected with the management of the trials saw no reason to bar the entry. Mr. Baker (the maker) himself and Mr. Denzer both staked their own lives that no such reason existed.

"The machine differed on one vital point from all automobiles ever placed on the road or on the race-track in this or any other country.

"This difference was so pronounced and so deeply important that the accident, according to all rules of reasoning, must be charged directly to it, in the absence of all supportable argument pointing to other causes.

"In no automobile of any description whatsoever, and in no speed machine graced with the name of an automobile, has it ever been attempted to place the man at the steering wheel under complete cover (strapped to his seat or unstrapped), and with his eyes limited in vision by the area of a mica pane some 10 inches in width and perhaps 2 inches high. With no other machine has it been considered as within the limits of conceivable foolhardiness to divorce the perceptive faculties of the driver from the surroundings, through which he is supposed to guide his vehicle, by placing him in such a position that the first jolt might obscure and confound his sense of sight and render it impossible for him to determine instantly, and, instinctively, the direction of the vehicle and its relation to the road bed. In all other machines built for speed purposes, at least the head of the driver has been left free and unhindered in its movements, projecting above the frame or windbreak of the vehicle."

We regret to learn that another spectator who was injured by this "freak" has since died.



The ill-fated Baker Automobile in full flight—80 miles an hour. Taken immediately before the fatal accident by which two lives were lost and many people injured.

The Fatal Trip.

The fatal trip of the speed "freak" is thus described by its inventor:—

"Mr. Baker said that in the run from the starting point to the kilometre mark, where the roadway made a slight curve, the machine had run as smoothly as if on glass, and, covered in as they were, they did not think they were running at a great speed, except as told by the speed meters within the body of the machine. As they made the turn in the road there began a slight undulating motion as if they were in a boat on the water, and then the machine began to sway. He at once called to Denzer, who was behind him watching the gauges and machinery, to hold fast and cut off the electric current, and apply both brakes. He jammed on the brakes so hard that the rear wheels were locked and the vehicle began to slew around. Then it seemed that the crowd of spectators were whirling past the little window in the conning hood in a circle to the right. The machine, having left the course, struck the trolley track sideways; there was a whirl of dust, obliterating sight, and the next he was conscious of was excited shouts and hammering on the thin body of the machine. He raised the hood and helped Denzer out."

The Big Trial in September.

The Automobile Club has now issued a prospectus with all regulations of its big trial (650 miles) to be held in the first week of September. It should be noted that the start and the finish of each day's run will be made daily at the Crystal Palace, but the return route must not be over the same road as the outward journey. The programme is as follows:—Monday, September 1st, Crystal Palace to Folkestone via Riverhead, and back via Sidcup, 136¼ miles; 2nd, to Eastbourne via Sevenoaks, back via Edenbridge, 114¼ miles; 3rd, Worthing via Epsom, and back via Arundel, 119¼ miles; 4th, Brighton via Bolney, back via Cuckfield, 93 miles; 6th, Tunbridge Wells via Riverhead, back via River Hill, Poll Hill, and Westerham Hill, 62 miles. On Friday, the 5th, the run will be to Bexhill via Sevenoaks, and back via East Grinstead. This will include speed trials on the "flying kilometre" course—123¼ miles. The event is organised primarily to prove

THE RELIABILITY OF THE CARS,

and, except in the hill-climbing contests and speed trials at Bexhill, a speed above 12 miles an hour will not be of benefit to the drivers Tourists' vehicles alone can enter, the racing cars being barred. There are eleven classes in Section 1, Class A being for vehicles (cycles or cars) declared at a selling price of £150 or less, the entrance fee being £10, and so on in varying prices up to Class L for cars over £1,200. Section 2 comprises parts of motor vehicles. Gold and silver medals will be awarded as first and second prizes in each class, and certificates will be given to those who average not less than 10 miles an hour on the total trials.

The Garrard family, two sons and the father, will be competing at the Plymouth Motor Cycling Meeting. Ernest will have a two-cylinder "Clement-Garrard" like the one Williams rode at Nice. The others will ride their roadster 65 pounders.

A Speedy Mile.

The American exchanges refer in glowing terms to the fine performance of Chas. H. Metz on a 3¼ h.p. Orient motor-bicycle in the speed trials of the A.C. of America on Staten Island. He covered the straightaway mile in 1 min. 10⅘ secs., and the kilometre, en route, in 43⅗ secs. Of the 26 cars which essayed the course, only one, a 60 h.p. Mors, did better time, and then the Baker vehicle brought about the close of the programme. The timing arrangements are reported to have been excellent.

The Essex Hill Climb.

The hill climb which is being organised by the Essex and Middlesex Cycling Union for members of clubs affiliated to that body takes place on July 12th, on the hill which crosses Nazing Common (on the road from Waltham Abbey to Great Parndon). A section for motorcycles is included in the contest, and for this motor bicycles and tricycles of any horse power are eligible. It so happens that the hill and the gradient at the starting point specially favour low-powered vehicles, so the motor section will not be split up into classes for the different powers. W. C. Russell, Hainault House, South Hackney Common, N.E., is hon. sec.

Edison's Motor Feats Equalled in England.

As a reply to the sensational reports concerning the feats accomplished by Edison's new battery, the British Electro-Mobile Co. recently undertook to demonstrate that their car was able to do anything that Edison can lay claim to.

The car was made by Krieger, of Paris, and is fitted with two compound motors which drive the front wheels independently.

The battery consists of 44 Leitner cells of 300 ampère hours capacity, and it was calculated that these would run the car 100 miles on a single charge. The route taken for the trial was along the Bath road and along the level stretches on the London side. A speed of 20 miles an hour was kept to—which could have been increased to 40, if necessary. Quite noiselessly and unaffected by the strong wind blowing against it, the car ran on. Down the long hill from the top of Savernake Forest to Marlborough, the motors were reversed and acted as dynamos re-charging the battery, and producing an excellent braking effect—in fact, rendering the application of the mechanical brakes unnecessary. Later on some exceedingly slippery roads were struck, and an alarming incident occurred which might have had disastrous results but for the driver's skill in manipulating the car. A violent side-slip occurred, the heavy car sliding sideways down a steep hill, and it had to be slewed right round. The car now began to run backwards, and things were beginning to become exciting, and to save the situation the driver had to steer the car into a hedge. Matters were soon righted, however, and the trip continued till on the completion of the 97th mile the cells showed signs of exhaustion. They were then charged up in four hours and the car run on to Windsor, thus completing a run of 140 miles in one day. Under better conditions of road surface, there is no doubt whatever the 100 miles would have been accomplished on a single charge.

Some Further Details of the De Dion Bicycle-motor.

We are enabled to give sectional diagrams in this issue of the new De Dion bicycle-motor, a general view and description of which we gave last week. In illustration (1) we show a transverse vertical section. At No. 1 we have the combustion chamber with its radiators, 3 the cylinder minus radiators, 4 piston and cross pin, 5 connecting rod, 6 crank chamber, 7 crank discs and fly wheels, 8 crank pin and nuts, 9 thread on disc to drive half-speed shaft.

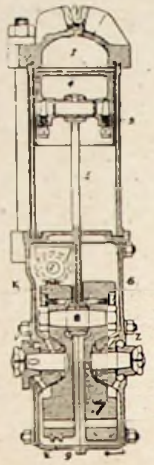


FIG. 1.

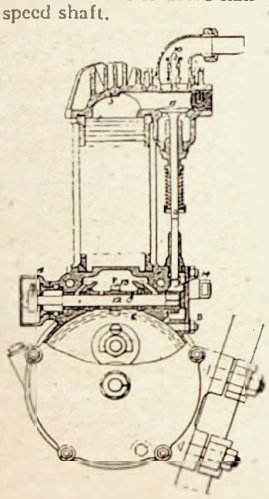


FIG. 2.

Illustration 2 is a part transverse section showing principally the valves and half-speed shaft; 10 is the inlet valve, 11 the exhaust valve and bearing, 12 the half-speed shaft, 13 worm wheel for driving from crank disc, 14 exhaust cam, 15 contact breaker cam. This shaft is carried in a long bearing provided with lubricating holes.

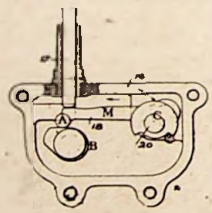


FIG. 3.

The outside of the crank case and the clamps to attach motor to bicycle frame are also shown. At the exhaust cam end of the shaft an ingenious valve lifter is fitted. This is shown in illustration 3, in which we have, 16 the gear case, 17 the valve lifter stem and guide, 18 exhaust lifting lever with roller actuated by the cam, 19 this lever is pivoted eccentrically on the disc 20, which can be moved by a rod from outside. This causes the exhaust lever to move forward and prevent the valve from closing more and more, because the roller is forced up a little inclined plane, R (carried by the cover of exhaust lifter, and shown in illustration 4). When the roller has been pushed to the top of the inclined plane it is held wide open. This is necessary for starting, as a compression release tap is not fitted.

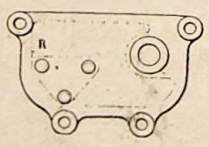


FIG. 4.

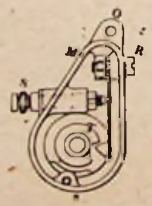


FIG. 5.

Illustration 5 shows the contact breaker, which does not materially differ from the original pattern, excepting that a long insulated bush is provided for the platinum-tipped screw. This also has a lock nut fitted for securing the adjustment.

A New Garage.

The Motor Power Co. has now thoroughly settled down in its new quarters at New Burlington Street, and very comfortable quarters they are. At the rear are the premises of the Regent Street Garage, Ltd.—a company which has been formed for the purpose of doing practically everything in the direction of storing, repairing, and cleaning—not only motor vehicles and motorcycles of all kinds, but the ordinary cycle also. There is room for 150 cars, and the premises, which are quite new, are open night and day. The charges appear to be quite moderate. For instance, the cost of standing a car for a week is 15s., for a motorcycle 7s. 6d., and for an ordinary cycle 4s. The position is halfway up Regent Street, on the left-hand side, the entrance being between 151 and 163. The enterprise is under the direction of Mr. S. F. Edge, and appears to have been well thought out, for there is scarcely anything short of actual manufacture that cannot be done, and residents in town, visitors from the country, or anyone who wishes to know where to stand a car in the middle of London, cannot do better than send to the company at 151a, Regent Street, W., for printed particulars, which are now obtainable.

A Successful Combined Electric and Petrol System.

The well-known firm of Panhard and Levassor are taking over the patents of the Canstatt Daimler and Lohne Porsche firms. The principle of the system is that a dynamo is driven by a petrol engine and the electric current is transmitted to electric motors geared direct to the driving wheels of the car. In addition, there is a battery of accumulators fitted which carry a reserve of power and are a great help in hill climbing. The special feature of electric transmission is that change-speed gearing is entirely dispensed with, as by means of the controller—such as adopted on electric trams—a large range of speed can be readily obtained.

In America, the Fischer motor 'bus is run on this system. The petrol motor develops 10 horse power at 600 revolutions per minute, and is geared to a dynamo having an output of about 7½ electrical horse power. Two 5 horse power motors are geared to the driving wheels.

The accumulator consists of 50 cells having a capacity of 90 ampère hours. Total weight of the car is four tons.

The car is started by the electric motors having current switched on to them from the battery. After running a few yards, the dynamo has current switched on to it, and runs as a motor, and starts up the petrol motor, and now the electric supply from the dynamo drives the motors of the car. At an actual trial of one of these cars made in London recently, the running of the car was remarkably smooth and vibration non-existent, even at the slowest speeds. Up a steep hill having at parts a gradient of 1 in 8 the car ran easily, the current from the battery assisting the motors; down a long incline the battery is automatically recharged from the dynamo.

"MOTOR CYCLING" will be the first motor paper out next week with an illustrated description of the Paris-Vienna ride.

MISFIRING AND STARTING DIFFICULTIES.

How to detect and remedy them.
Hints to the Novice.

MISFIRING.

Trouble in starting, etc., arises in 99 cases out of 100 from little faults in the ignition which the experienced motist can locate in a short time. It is necessary to be possessed of a little patience and to go through a short series of tests, when the fault can generally be discovered. We will presume the rider starts out, petrol tank full, engine clean, etc., etc. On mounting and switching on current, and no explosion follows his preliminary revolutions, dismount at once. It is useless to continue pedalling and exhaust oneself. Detach sparking plug, first removing the small plug in interrupter or switching off at handle. Now connect wire to plug, lay it on a convenient part of the engine, with the metal portion only which screws into the combustion head touching—you can hold it there providing you touch only the rubber covered wire; switch on at handle and replace plug in interrupter. Now vibrate the trembler spring on the contact breaker, or, if trembler is the hit-and-miss type, touch the spring up against the point of the contact breaker screw. If there is no resulting spark at the points of the sparking plug, the insulation has broken down, the battery is exhausted, or one of the terminals on induction coil, battery contact breaker or frame is loose or broken. Go over all these carefully. If all are found in order, examine the sparking-plug—the porcelain may be cracked or broken. Test the accumulator with a voltmeter or glow lamp. The latter is a useful little article, costing much less than a meter, and is better for the accumulator. The voltmeter should show with nearly all motor-bicycle batteries, — when first charged, 4.2 volts or slightly over; if below 3.60, it is sufficiently discharged to render it non-effective; change it for one fully charged and put the other on one side for immediate re-charging; do not leave it standing uncharged. When down at 3.60 volts it will always spark at the plug if removed from the head, but not with a sufficiently hot spark to ignite the vapour or to leap across the points under compression.

TESTING WITH GLOW LAMPS.

Connect the two lamp wires to the terminals of the battery; if it gives a strong white light all is well, if the glow be a dull red, the battery is too low. The whole wiring on the machine can be gone over with the glow lamp or meter till the fault is found, but, generally speaking, and especially if proper wire (consisting of many fine strands) is used, breakages are rare under the covering. What should be looked for more particularly is a frayed portion of the insulation touching a metal part of the machine, or a part of wire insulation burnt through on account of being placed too near the exhaust pipe. Inside the handlebar is a wire connecting the interrupter to the switch handle, this may have broken off or the insulation frayed; it is not good to interfere with this unless you are somewhat handy with tools, as in getting out the switch you may break it. You can tell if wire is broken, as follows:

Detach wire from battery to interrupter and connect it to any part of the frame, say round the handlebar, now go through the same operation as above; if it sparks well now the wire in handlebar is broken. Machine can be ridden this way, the only drawback is that current will be continuous and cannot be switched off. On arrival at your destination detach wire or you may run battery down and spoil it.

The above sounds complicated and worrying to a novice, but it is really surprising how soon these

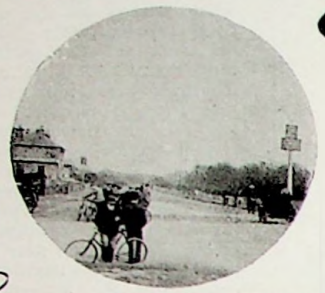
DETAILS ARE GRASPED

by anyone interested, and it becomes a pleasure to locate these troubles and master them, but it is best done at home; nothing is more exasperating, to our mind, than for these little worries to come along on a busy road where passing drivers and cyclists comfort you with their witty remarks.

Remove the belt from your machine and pedal to a secluded spot where you can examine it at your leisure. If you cannot locate it you can but pedal home and remember that you are better off than the owner of a palatial car weighing anything up to 20 cwt. He has to secure the services of the railway company, or the nearest coach house, and delay his examination to a future date.

A weekly paper suggests a series of back steering races, which our artist considers a good idea.

A correspondent is good enough to send on the following tip for those readers who have been inquiring about a petrol-tight tap that is really efficient. He says he uses a fine adjustment valve such as is fitted to limelight jets. Noakes's are good ones, and these can be obtained from any large dealer in photographic apparatus.



THE LUBRICATION OF MOTOR-BICYCLES. (Concluded)

By J. VEITCH WILSON.

The second automatic lubricator to which I refer is the invention of Mr. Arthur Goodwin, of the Ormonde Motor Company, who fit it to their motorcycles. The apparatus, which is fascinatingly beautiful and simple withal, depends for its action upon the partial vacuum, or, more correctly, the reduction below atmospheric pressure, which occurs in the crank chamber on every ascending stroke of the piston. The principle and operation of the lubricator were plainly shown in the description of the Ormonde bicycle last week (Fig. 6). The valve A, being drawn down slightly from its seating by the vacuum in the crank chamber, upon each upstroke of the piston allows a drop or two of oil to flow into the chamber below the valve, whence it passes through the channel C into the crank chamber. The tension of the spring D, which holds the valve A in position, may be regulated by the nuts upon the top of the valve spindle, and permits of the adjustment of the lubricator to feed oils of varying density and in greater or smaller quantity. It appeared to me on first examination of this apparatus that, from the small orifice and comparatively small power available to introduce the oil, lubricating oils of considerable body, such as are desirable in the case of air cooled cylinders, might fail to feed with sufficient regularity, but it has been pointed out to me that, as the oil tank and lubricator are in close proximity to the engine cylinder, both are kept warm and the contents perfectly liquid, and that, as a matter of fact, the thickest grade of motor-lubricating oil is regularly used in this apparatus with ease, certainty, and satisfaction.

The Temperature Conditions.

I have endeavoured, in the preceding remarks, to deal with systems and with general principles rather than, excepting in two or three cases, with individual types, and, although I do not profess to be acquainted with every pattern of lubricator now on the market, I venture to think that the salient features of each may be recognised among the principles which I have enumerated. I therefore leave each cyclist to determine for himself to which of the groups his lubricator belongs and, from the suggestions that follow, to select oil of the proper class.

The physical conditions which regulate the body of oil for motor cylinders are the temperature of the cylinder and the means of application. The temperature of the inner side of the walls of an efficiently water-jacketted cylinder is probably between 220 degrees F. and 250 degrees F., and may be safely lubricated by standard gas engine oil, but when the water-cooling is limited to the combustion chamber it is desirable that oils of greater body, but on gas engine lines, should be used.

The temperature of air cooled cylinders is an unknown, and must be a very variable, quantity. It is affected by the quality of the explosive mixture, by the number of explosions per minute, by the kind and area of the radiators attached to the cylinder, and by the volume of air coming into contact with these. The lowest temperature of an air-cooled cylinder must be considerably above the highest temperature attained in a water-cooled cylinder, and as it is on record that cylinders have not infrequently been seen exhibiting a "dull red heat" in the dark, it is evident that 1,000 degrees F., which is the equivalent of "dull red," may be and is attained, although, I should think, under exceptional circumstances, in conjunction with some lack of care. It may be stated at once that no oil will retain its liquid form at such a temperature. The best that can be hoped for it is that at 1,000 degrees F., when the oil will be converted into gas without leaving any injurious or troublesome deposits in the cylinders. But assuming more moderate temperatures, say 350 degrees to 400 degrees F., it may interest motorists, as enabling them to realise the effect of heat upon the body of oils, to know that, at 350 degrees to 400 degrees F., the body of ordinary engine oil is hardly greater than that of ordinary petroleum lamp oil, or kerosene, at normal temperatures. No one would, I imagine, propose to use kerosene as a lubricant, even at ordinary temperatures.

The Right Kind of Oil.

It follows that, in order to make provision for the reducing effect of heat, the oil to be used in any motorcycle engine ought to have the greatest body which is consistent with perfect fluidity at normal temperatures, and with freedom from liability to "set" in the cylinder or crank chamber when the engine is at rest and cold.* That the oil should freely pass through the lubricating apparatus on the cycle for which it is required has already been explained, and it devolves upon each cyclist to determine for himself, by actual trial in his lubricator, whether any oil which he proposes to adopt conforms to this condition.

As a general rule pale yellow mineral oils which have been produced by distillation and by treatment with sulphuric acid and soda are unsuitable for use at the high temperatures of air-cooled engines.

The dark so-called "natural" cylinder oils which are largely used in ordinary steam engines are also eminently unsuitable for the dry heat of motor cylinders in which they are liable to a process of slow distillation, by which the true oily portion may be removed, whilst the tar contained in all natural oils may be deposited on the piston and valves.

The only process by which wholly safe and satisfactory oils can be produced for motor engines is that of filtration through animal charcoal, by which all the tarry or bituminous residues are eliminated without destroying the body of the oil, as is done by distillation and by chemical treatment.

It is not within my province here to recommend particular oils, even if it were possible, in view of the ever-varying conditions, to indicate certain oils or certain grades of oil as finally and invariably adapted for certain engines. It is sufficient for me to say that there are on the market several brands of oil which conform to the conditions which have been enumerated as constituting good and safe oils, but when the motorist has found the oil which fulfils these conditions, his final task must be to select the most suitable grade for his particular engine.

* It seems hardly necessary to remind motorists that oils which, whether of fatty or of mineral origin, exhibit any tendency to oxidise on exposure to prolonged heat must be absolutely excluded from motor engines. It is, however, to be noted that the most effective results are obtained from compound oils, in which a small percentage of neutral non-oxidising fatty matter is used to increase their lubricating power.

OTHER PEOPLE'S VIEWS.

Compression.

A correspondent sends the following suggested reason to "G.D." (London), whose motor showed good compression when turned backwards and poor compression when turned in the right direction: he writes:—"Having noticed this peculiarity on a quad, I found that it was due to having a weak inlet spring. This allows a charge to be drawn in, but also part of it forced out again at compression stroke, before the valve closed, thereby only allowing half or three-quarters of a charge, or some other portion according to strength of spring, to remain in cylinder. On the other hand, when the engine is turned back, it takes its charge through the exhaust valve, the inlet remaining closed for the whole cycle. Then the strong exhaust spring closes the cylinder properly and full compression results. Therefore, if "G.D." (London) will try a stronger inlet valve spring, he will get better compression and more power.—Yours faithfully, D. Kennedy.

In Trouble—Help Wanted.

Sir,—I have a motor quad and shall be glad of your opinion of the cause of its faults. It will run for about a mile well, and after that distance it will begin to misfire so much that before it has gone another mile and a quarter it will stop altogether. Then, if you let it rest for a few minutes, it will go on again as well as ever for about the same distance, and then begin its old game again. The other day a friend and I had to stop no less than eleven times in a trifle over six miles.

I have put in a new set of batteries, also tried an accumulator. These have been tested with an amperemeter and a voltmeter, only to find they were perfectly satisfactory. I have tried several new sparking-plugs, also a new set of wires. I have put an extra rubber case on the wire to the sparking-plug, but none of these have made any difference. I have taken the coil out of its case to see if any of the terminals were disconnected. I have put new rings on the piston and have good compression. Have adjusted the contact breaker and then had a complete new set, insulator terminals and all the lot. The adjustment of the sparking-plug wires and the quality of the spirit were not overlooked. Nothing seems to make any difference. I have noticed that the sparking is much stronger at the contact breaker than at the plug. Have now taken it all to pieces and cannot trace any fault whatever. The machine used to run splendidly and not being a very high gear would take three people about very comfortably with the exception of steep hills.

I am a practical mechanic, having successfully made several gas engines, and also in 1897 a double cylinder motor, similar to Pennington's with 2¾ inch bore and 6½ inch stroke, only these were tube ignition, which run well at 1,800 revolutions per minute, but this motor beats me and I shall thank you in anticipation of your interest and reply.—Yours faithfully, G. Goude.

Whittlesea.

[We are inclined to attribute the failure of the motor to the sticking of the inlet valve, granting that your spark is all right. Has our correspondent tried the high tension wire about ¾-inch from the frame to see if he gets a good spark, and is he sure about the carburetter working well? Perhaps our readers can throw some further light on the subject. —Ed.]

Hot Air for Carburetters.

Sir,—The letter of "E.A.P." in last week's issue opens up a very nice point as regards the advantage of using hot air drawn from the heated cylinder.

It seems reasonable, the conclusion your correspondent comes to, viz., "that the heated and expanded air gives a slightly attenuated charge to the engine." At the same time, it must not be overlooked that after the air mixes with the gas the temperature of the air is very considerably reduced.

No doubt the object of the makers was rather to heat the air in order to make the petrol gas more volatile, than for any other reason. When petrol liquid evaporates or gasifies, it must extract the heat from the surrounding atmosphere, or must be made to do so by artificial means, and in the case of a float-feed carburetter, the first-mentioned method is next to impossible on account of the outside surface area of the carburetter parts being so small, hence the necessity of heating the air.

Take, for instance, the case where surface carburetters are used. In nine cases out of ten, a supplementary pipe from the exhaust is passed through the petrol liquid, not to make the liquid hot, but rather to supply heat that is continually passing away in gasifying the petrol spirit and I think that it is in this point where a surface carburetter scores over a float-feed, and by its means you obtain a condensed charge of explosive mixture. Not that I have anything to say against the F.N., rather, on the other hand, my experience has given me a higher opinion of it than any other motor-bicycle I have ridden. And I put this down to the machine having a large diameter outside fly wheel, and a most ingenious and certain method of electric contact for the ignition.—Yours faithfully,

Leonard Jones.

A Correction.

Sir,—I thank you heartily for the exceedingly complimentary manner in which you have been good enough to refer to my humble investigations in connection with lubrication. I am sorry that, in your desire to pay me a compliment, you have unwittingly done injustice to a gentleman for whose memory I cherish the greatest respect. You credit me with the invention of gas engine oil, but I am bound to say that, although I have been a student of gas engines ever since their introduction, and have given much attention to the subject of lubrication in connection with these, Price's gas engine oil was introduced by them before my connection with the company, and I understand that its production was due to the late Mr. W. H. Hatcher, who was at that time works manager here.

I shall be glad if you can find room for these few lines in your next issue.—Yours faithfully, J. Veitch Wilson.

The English Mechanic Bicycle.

Sir,—I beg to apologise to Mr. T. Hyler White for the mistake I made in answer to W.M., but if he will look up Mr. D. J. Smith's letter, No. 44,593, in the "English Mechanic," he will see how I came to make the error. I hope he will excuse me for giving the honour of designing such a smart little motor to the wrong man.—Yours faithfully,

Another Mechanic.

One of Many.

The advent of the "Motor Cycling Manual" is being looked forward to by the members of the trade equally as much as by the ordinary rider. In a letter to hand from one of the leading mechanics of the trade, the following sentence speaks for itself:

"I shall be glad if you will let me have one of the very first copies, as I am anxious to get all the information I can on motor-bicycles."

OUR INFORMATION BUREAU.

A large number of replies have been dealt with through the post. Information on all subjects pertaining to Motors, Motorcycles, and Motoring generally will be given to readers who seek such information or advice. Any reader who desires to ask a question with a view of ascertaining the views of other riders based upon actual experience should send his query, which will be inserted and replies to such questions will duly appear, if of general interest; if not, a reply will be sent by post; a stamp, therefore, must always be enclosed

G.C.A. (Mold).—This is at present a disputable point; latest information says an additional 15s. must be paid.

C.S. (Brentford).—We believe you will be able to get a good drain-off tap from the United Motor Industries, 42, Great Castle Street, London, W.

F.A. (Birmingham).—We are sorry we have not the exact address at hand, but will endeavour to get it through the columns of "MOTOR CYCLING."

H. Simpson (Hull).—We believe that the castings are those known as the "English Mechanic Set," and are advertised in that journal, "English Mechanic," and "World of Science."

"Enquirer" (Brixton, S.W.).—A practical electrically driven motor-bicycle does not yet exist, and until we get much fuller details concerning Edison's battery it would be difficult to say whether it would replace petrol—certainly not for a long time yet. Re insurance trouble, why not store machine in an outhouse?

Flying Motor (Peckham).—There is no actual danger in having the throttle lever open. The reason you cannot start easily, we should say, is due to your air tap being wide open, hence the sucking noise you heard, which means there is practically no petrol vapour being drawn into the motor.

Oil in Tyres.

H. Picton (Liverpool).—The cause of the oil getting on to back tyre is most probably due to your using too much oil. A single charge of oil in 30 miles should be ample. The splashing is caused by the oil getting through the bearing and thence to the belt. Only remedy is to use the lubricant sparingly.

A Steam Motor-bicycle.

J. Speight (Leeds).—We cannot trace the address of the maker of the steam-driven motor-bicycle you inquire about, and we very much question whether such a thing is now on the market. If any reader knows of the whereabouts of one, perhaps he will let us know through the "Information Bureau."

The Royal Sovereign Bicycle.

E.C. (Bicker) asks our opinion of the Royal Sovereign motor-bicycle. This is a newcomer, which has, we understand, proved most satisfactory under lengthy tests. We have given the machine a short trial, and found it run exceedingly well. We might say that it possesses several good features in its design.

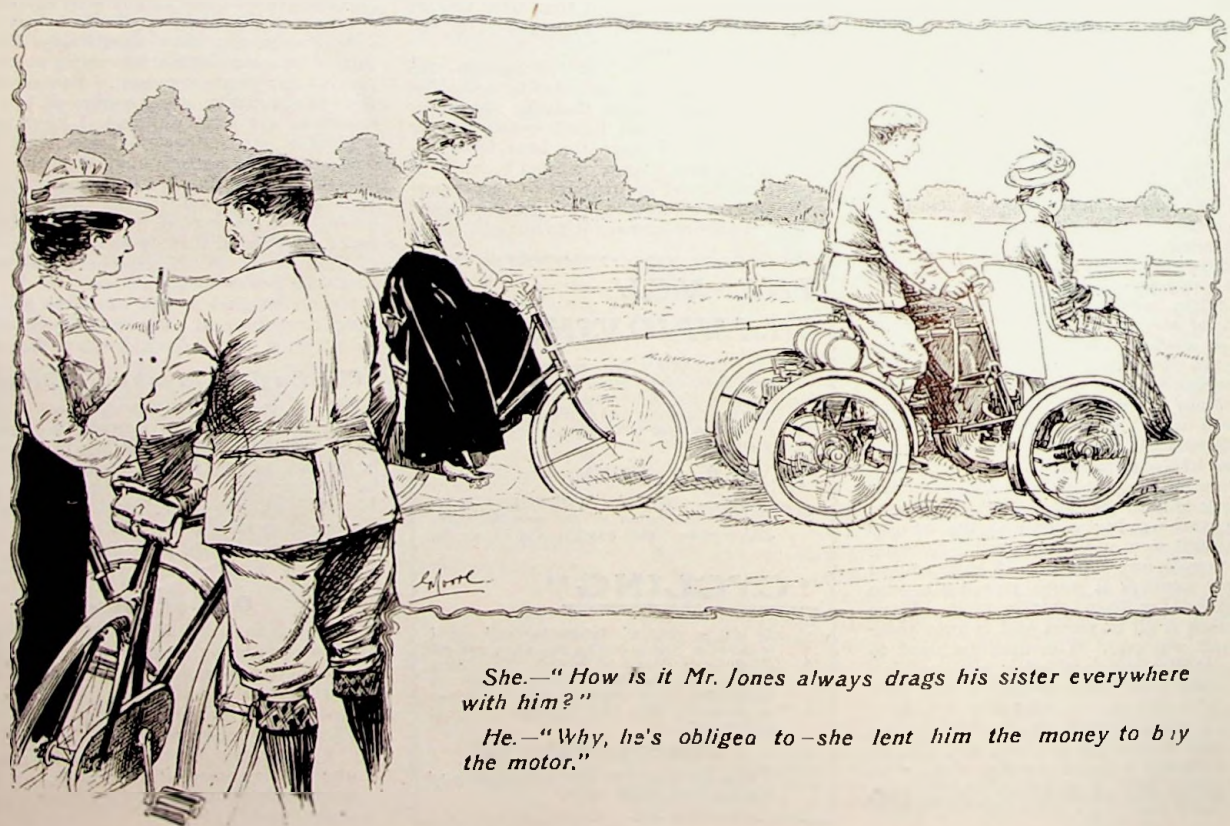
"Grateful" (Brixton, S.W.).—Of the various machines you mention, we should say the Eadie Quad is by far the best value, and think you would do well to invest.

T.A.O.D. (London, E.C.). — We think you would be suited with the 2¼ h.p. Excelsior. This is belt driven, and you will have plenty of power for hills, etc. The workmanship is also of the best possible.

H.W. (Erith) asks, "Will you please tell me where castings of water-cooled 3 h.p. engines suitable for a motor-quad can be obtained?" Most probably the London Autocar Co., 182, Gray's Inn Road, W.C., would be able to supply.

"Single Tracker" (Stockport).—The design you submit to us appeared to us to be quite practicable in its general lines. We should suggest the controlling levers be brought more forward, and also recommend you to keep well in view the feature of easy mounting and dismounting when designing the frame. A spray carburetter would also be an improvement, we think.

H.W. (Rochester) finds that his motor misses fire frequently and sometimes will not spark at all. Either his ignition gear is out of adjustment or his compression is poor. He should try the spark from the coil wire to the frame and see that the valves are tight—it ought to be quite difficult to turn the pulley round by hand if the valves are gas-tight. Then, of course, his carburetter may not be working properly.



She.—"How is it Mr. Jones always drags his sister everywhere with him?"

He.—"Why, he's obliged to—she lent him the money to buy the motor."