

HINTS FOR THE MOTORIST

By ALBERT L. CLOUGH.

"Spotting" A Weak Cylinder

A Preliminary To Securing Smooth Operation And Maximum Power
IF ONE HAS OR CAN RIG UP a cylinder cut-out, with a separate switch for short-circuiting each spark plug individually, a very satisfactory idea can be obtained by its use as to the contribution being made by each cylinder to the total engine power.

Rigging Up For Test

In making such a test, the engine—a six, for instance which fires 1, 5, 3, 6, 2, 4—has its plugs connected to the switches and is set idling. Cylinders are then cut out, one by one, by closing their switches (speed being maintained by progressively opening the hand throttle) until the engine is running at a fair speed on two cylinders only, for instance 1 and 2. This speed is carefully noted.

Running Cylinders By Pairs

With the throttle setting unchanged, by opening and closing the required switches, the engine is then run on other successive combinations of two cylinders each and the speed produced by each of them is observed. If the pairs of cylinders allowed to fire are, for example, 1-2, 2-3, 3-1, 4-5, 5-4 and 6-5, each cylinder will be included in two combinations and usually those two combinations which produce the lowest speeds, will both be found to include the same cylinder, which can be properly regarded as the weakest of the six. Other groupings can be made use of to obtain further information as to the relative activity of other cylinders.

Operating Cylinders Staggerly

It is usually possible, instead of idling an engine on pairs of cylinders, to cut out all but one and let it run on one cylinder only, changing from it to each of the others successively, by opening one switch and closing another, alterations in speed being noted and conclusions as to relative power being formed.

The Weak Cylinder The Leaky One

Ordinarily a "weak sister" among the cylinders will be found to be one which retains its charges imperfectly and could have been picked out by a compression test made by hand-cranking, but inequalities in charge distribution, the presence of air leaks and certain ignition shortcomings are also brought to light by the method above described.

MAY BE CARBURETOR TROUBLE



D. J. H. writes: The engine of my four-cylinder car loses power almost completely on hills and "spits" frequently, as though it were not getting gas. It also misses when I try to make it pick up speed, after slowing down and in changing from second speed to high. It runs normally on level going and I am sure the plugs are clean and good. What is the matter?

Answer: Possibly the fuel strainer in the carburetor needs cleaning, but it may be that the carburetor is giving trouble. The carburetor of this engine depends for its action upon a piston, moved up and down by suction in a vertical cylinder, and if this piston becomes rough, it is likely to stick and interfere with the quality of the mixture, so that the engine will hardly run on it. This piston should be highly polished with metal polish and the same treatment accorded to the walls of the cylinder, once each one thousand

miles. Are you sure your dash adjustment is set to give a rich enough mixture?

KEEPING A CAR POLISHED

S. J. S. writes: What is the best way in which to keep a car polished? Is it advisable to rub it down after a run and how should this be done? Answer: Lack of space prevents a full answer to these questions, but among the main points are these: Remove mud and dust gently by means of a slow hose stream and by sopping with a clean water-soaked sponge. Don't use soap except to remove greasy matter. After all dirt has been removed, dry the finish with a clean, wet chamomile skin, rubbing very gently. Never rub the finish unless it is perfectly clean. A very little approved body polish can be occasionally used. Excessively frequent washing and polishing is more destructive than preservative to the finish, according to our experience, and rubbing a car down after each run "whether it needs it or not" is not only of doubtful benefit, but absorbs more time and energy than it is practicable for the ordinary user to expend.



Locating The Elusive "Miss"

Determining Which Cylinders Fail To Fire

WHEN LACK OF POWER and jerky engine action indicate that one or more cylinders are failing to fire, firing only part of the time or giving very weak impulses, the first procedure is to identify which ones are at fault.

Cutting Out Cylinders Individually

The accepted means of determining this is by short-circuiting the spark-plug of each cylinder in turn, while the engine is briskly idling, thus cutting off the ignition of the cylinders successively and temporarily making their firing impossible. If, while a certain cylinder is thus cut out, the engine slows down noticeably, it indicates that it was firing before its plug was shorted, but if no slackening of speed results, it may be inferred that it was not firing previously or at least not adding perceptibly to the power developed.

The Screwdriver Test

A spark-plug can most readily be short-circuited by touching a screwdriver blade simultaneously to the head of the plug and the engine block, holding it by the wood of its handle only, so as to avoid any shock. With two screwdrivers—one in each hand—cylinders can be cut out by pairs, various combinations can be made and more dependable information gathered, because the engine can then be run with somewhat larger throttle opening, without racing, and loaded conditions be somewhat more closely approximated.

A More Refined Method

A very useful substitute for this rather crude screwdriver method is found in the cylinder cut-out—a device which anyone can readily make. It consists of a board on which are mounted six small single-pole knife-switches. One terminal of each of these is connected to a wire, the end of which is connected to the engine block while a separate wire from the other terminal of each switch can be clipped to the head of its respective plug. When a switch is closed its plug is shorted and vice versa. Cylinders can thus be cut out in any number and in all possible combinations and left inactive as long as desired. With most of the cylinders cut out the remainder can be run with considerable throttle opening and working conditions somewhat reproduced.

Limitations Of The Screwdriver Test

By the single screwdriver method any cylinder which does not fire at all or fires very weakly can usually be picked out, although not infrequently such a cylinder may fire regularly and fairly powerfully when under heavy load, but for discriminating cylinders that are slightly weak this method does not suffice.

MAIN BEARING ADJUSTMENT



A. T. writes: I have replaced the burned-out center main bearing of my engine with a new one and at the same time, I tightened the other main bearings, since when the starter will not crank the engine, and I can hardly turn it over by means of the crank or a sumped-up rear wheel. Do you think bearing adjustments are too tight? Answer: They are tighter than they should be, some of them at least. In adjusting bearings, the caps of all but the one being operated on should be loosened and the tightness of that should be adjusted, by the use of proper shims, until it just fails to cause binding of the shaft, when its cap is fully tightened. Then its cap should be loosened and the next bearing adjusted similarly and so on with the others. This will leave the shaft free, when all bearing caps are finally tightened. We should advise you to go over these adjustments again, following the above procedure, but it is possible that, by having your car towed a short distance at a time, with the lubricating system working perfectly, the bearings may be safely loosened up so that the engine can be cranked and can safely be run under its own power.

ASKS HOW TO REPAINT

Answer to B. P. H.: It is impossible to give you instructions for repainting your car in the very limited space afforded by our question and answer column, but we intend printing an article on this subject, in the near future. In the meantime, we suggest that you will probably find in the public library of your city one or more books, relative to coach and automobile painting, which will give you the information you require far more in detail than would any article suitable for publication here.

Questions of general interest to the motorist will be answered by Mr. Clough in this column, space permitting. If an immediate answer is desired, enclose self-addressed, stamped envelope.

NEW PRODUCTION RECORDS REACHED BY OVERLAND

With unfilled orders on hand covering every model in the complete line, Willys-Overland ended the first year's quarter on March 31st, with the highest record of shipments ever attained at the Toronto factory.

E. R. Paige, general sales manager, in discussing this situation, says: "In addition to the tremendous demand for Overland and Willys-Knight 4-cylinder models—the new Overland Six is meeting with the greatest public approval ever given a new Willys-Overland model.

"Construction of the new Overland Six has been carefully worked out to give the highest degree of service. The ability of the car to perform under every possible condition of road and weather, has been thoroughly proved, after months of exhaustive tests.

"Mountains have been climbed—seas of mud traversed—deserts crossed—snow-storms and blinding rains encountered in hard and relentless test trips which carried this car from coast to coast within the past year.

"The new Overland Six was built to meet the requirements of that large body of motor car owners who have longed for the smooth operation of a reliable 6-cylinder car at an unusually low price. It is a combination of distinctive appearance, great comfort and power at a cost not beyond the means of the average person.

"Production schedules have been materially increased in an endeavor to meet April shipping requirements.

Use Emergency Brake.

Using the emergency brake frequently has always been the surest method of learning how to use it in an emergency, but where the emergency operates on the propeller shaft, as is now the case with a large number of cars, there is another advantage to frequent use of it. These brakes usually chatter a lot because they are not used often enough to wear the lining of the band to a smooth gripping service. Owners refrain from using the propeller shaft emergency for the reason that they do not like the chatter, yet the chatter is largely caused by lack of use.

Getting the "Catch."

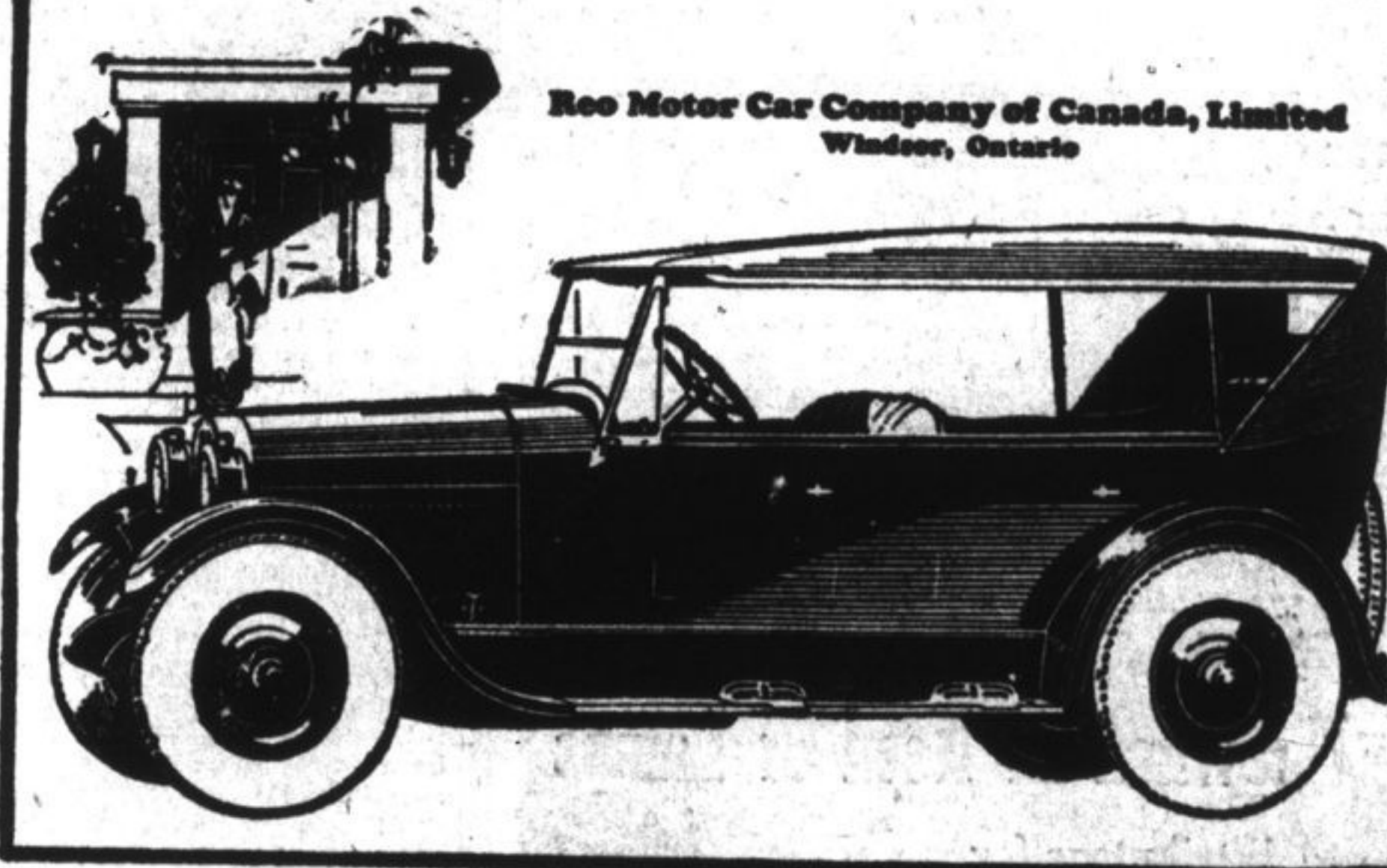
Every clutch and gear shift combination has what is known as a certain "catch" which is particularly pronounced when shifting to high gear. It varies not merely with different makes of cars, but with each individual car. You can find it only by practice, which suggests that when you go blundering through traffic a lot of people may be progressive enough to suspect that you haven't had sufficient practice in operating your particular car.

REO

High Powered Sixes

Thoroughbreds are judged by their pedigree. Every Reo produced since 1904 has been famous for reliability.

Boyd's Garage Ltd,
129 Brock St.



Reo Motor Car Company of Canada, Limited
Windsor, Ontario

to warrant driving in the midst of those who have previously learned how to get the best results from their driving.

EFFICIENT GAS STATIONS UNKNOWN IN GERMANY

Berlin, April 17.—American way-side gasoline stations soon will be found along German highways, and it probably will not be long before the free air sign will also appear. Gasoline today is served from shops in the clumsiest sort of way, but the increase in motor traffic is

turning German eyes toward the quick and economical methods so generally used in the United States, and trade journals are showing many pictures of model stations along American highways. As a result a German firm has bought a number of American gasoline service station pumps, and will install them.

LONDON COMPLAINED OF OLD OF GENTLE STREAMS OF TRAFFIC

London, April 18.—London had its traffic problems hundreds of

years before the automobile was ever thought of. Old books set forth that, in the beginning of the 17th century, traffic troubles were so acute that a contemporary author wrote an article on the subject entitled: "Coach and Sedan, Pleasantly Disputing for Peace and Precedence."

Incidentally, London was then described as a city of "fogge and rotten moetes," suffering from traffic congestion like "mutton pies in a cooke's oven."

"I'm Tickled to Death I Took That Trip"

Just a couple of weeks ago I went up to Toronto and took a trip through the big factory where Goodyear Tires are made. Ever been through a tire factory? Well, when you get the chance . . . take my advice and go!

About the first question I popped at the people up there was: "What are the real facts about this "Supertwist" we hear so much about?"

And they showed me something that I want to broadcast to every car owner within ear-shot of Kingston.

"Supertwist is a new Cord Fabric discovered by Goodyear and used in no other tires but Goodyear's.

"Supertwist is very springy and "stretchy," in fact, it stretches instead of breaking when the tire hits a bump.

"Tires made with Supertwist are giving the longest average mileage tires ever gave. And they're not "stone-bruising" and breaking the way other tires do."

Every Goodyear Cord Tire is made of Supertwist and—at our prices—it costs not one red cent more to get a Goodyear (and Supertwist) than to get any other Tire.

If you'd been on that trip with us, your next tire would be made of Supertwist—even if it cost ten dollars more, which it doesn't.

Sincerely,
E. WRAY VAN LUVEN

VANLUVEN BROS.

Telephone 1609. FORD DEALERS.

DODGE BROTHERS COMMERCIAL CAR

A passenger car under repair may simply mean inconvenience. A work car under repair means costly loss of time.

The Commercial Car saves its owners money by remaining steadily on the job. With reasonable care it rarely calls for expert attention.

Dodge Brothers workmanship and materials are capital insurance against expensive delays and interruptions.

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