

# Hints for the Motorist

By Albert L. Clough

Editor Motor Service Bureau, Review of Reviews

## UNDERCHARGING OR OVER-CHARGING—WHICH

So long as the generator keeps the battery fully charged, but still does not subject it to serious overcharging, an ideal condition prevails but, like most other ideal situations this is seldom realized for any great length of time. Despite all the precautions taken, the average battery is either being undercharged or overcharged a great part of the time that its car is in service, and every motorist ought to know how to tell which of these two evils his battery is laboring under, at any given time, so that he may be able to act intelligently in bringing about more favorably conditions.

Here are a few suggestions: A battery is undercharged in proportion as the density of the electrolyte in its cell falls below 1280 and toward 1150 and it is obviously undercharged when the lights supplied by it burn below their normal brilliancy and when the starter motor operates less actively than it should. On the other hand, a battery is being overcharged when it becomes decidedly hot, after a long trip has been made; when an unusual amount of water is required to keep the cells filled and when the lamps burn too brightly and fall early. Undercharging is to be avoided for the obvious reason that it results in poor starting and lighting service but also because it leads finally to sulphatation of battery plates.

Overcharging is to be avoided because, if persistently practised, it results in the destruction of the battery (statements to the contrary notwithstanding), it calls for unnecessary work in supplying water, wastes some fuel, shortens the life of lamps and causes needless wear and tear on ignition apparatus. Assuming there is

nothing wrong with the battery or generator equipment, undercharging can be reduced by having the generator output increased by practising economy in the use of lights; using the starter only after carburation and ignition conditions have been adjusted to insure a prompt response from the engine; by running in second gear, when very low car speed is required, and providing auxiliary charging current from a rectifier or other outside source.

Overcharging can be lessened by having the generator's charging rate reduced, but the most effective method is the provision of a switch, by means of which the generator can be stopped from furnishing charging current, when it is not needed—as on long daylight trips. Many manufacturers advise against such charging cut-offs, lest the careless operator leave the generator inactive when charging is necessary. However, the device, if used intelligently, is of great value in regulating the state of the battery.

## INADJUSTABLE CARBURETOR

J. L. writes: I have come into possession of a 1911 car. There seems to be nothing wrong about it, but yet has hardly any power, running weakly and spitting back into the carburetor. Someone has suggested that the carburetor needs adjustment, but there is absolutely no means for adjusting the gasoline supply that I or the local garage man can discover. What is to be done in a case like this?

Answer: There have been many cars built with unadjustable carburetors, the idea of the manufacturers evidently being that such carburetors could not be put into an inoperative condition by careless operators. This construction, how-

ever, prevents a carburetor from being conveniently made to handle present-day gasoline, as can one provided with adjustments. Your engine is not getting gasoline enough. Possibly you can obtain a larger jet from the makers of this carburetor, but more likely you will have to drill out the gasoline spraying passage slightly, to give it somewhat greater capacity. By doing this carefully, you should obtain good results. Try a drill also very slightly larger than the present passage and, if this does not prove sufficient, try the next largest size.

## CUTTING LOUVRES IN HOOD

C. writes: I have had a good deal of trouble from water boiling in the radiator of my car. There are no slits in the sides of my car's hood, as there are in so many others and I have wondered if having such slits cut would result in any improvement in the cooling effect?

Answer: We hardly think so. These slits or louvres are not depended upon to let out the hot air; the space under the car floor being supposed to be of ample area to give egress to the air current, with out serious friction. Louvres are used to improve the looks of hoods and possibly to reduce weight slightly not to furnish added cooling effect. Perhaps you can increase the effect of your gas, make your radiator more active, by cleaning it out thoroughly, or do something that will stop this overheating.

## REALIZING FUEL ECONOMY EXPECTATIONS

Not infrequently it happens that a motorist who purchases a car, fails to

obtain from it as high gasoline economy as he has been told in advance that he should secure or so high as other users of cars of the same intake and model are known to be achieving. This is always a cause of dissatisfaction and chagrin, for it is natural for every owner to desire to do as well as anyone else in this regard. Some of the chief causes for low fuel economy are comprised among the following: Too rich running adjustment of the carburetor. Means should be provided for temporary enriching the mixture, when it is required, but the regular adjustment should be made while the engine is heated and should be a little leaner than that given maximum pulling power.

Lack of tightness of the cylinders, due to ill fitted pistons or rings, imperfectly seating valves and defective gaskets. Mistiming of the valves, including failure to open fully and close promptly and incorrect timing of the spark causing too early or delayed firing. Imperfect vaporization and mixture with air of the fuel supplied, due to faulty manifold construction, lack of heat supplied the intake system or too low cylinder wall temperatures, occasioned by too low cooling water temperature. Internal power waste, due to the negative work incident upon premature ignition, resulting from carbon incrustations of faulty jacketing.

Unusual frictional losses, caused by inadequate piston lubrication attributable to oil of improper grade, quality or condition. Abnormal power losses in housings, resulting from lack of lubrication or from the use of unduly viscous lubricants and frictional resistances produced by brake bands which do not fully clear their drums. And by badly aligned road wheels.

## CHARGING BATTERY FROM FARM LIGHTING PLANT

W. L. writes: A neighbor of mine has one of the gasoline engine driven farm lighting plants and it occurs to me that I might charge my auto battery from it and save taking it to town. If this can be done, please explain the method.

Answer: As plants of this kind generate direct current and as direct current is necessary for your purpose, you can readily charge your battery from this source. If this is a 30 volt outfit, each 40 watt lamp passes about 1.3 amperes and 5 of these will pass between 6 and 7 amperes. Arrange the circuit so that the current that supplies these lamps also flows through your battery, making sure that current is passing in the right direction. The following test can be used: Dip the wires coming from the lamps and that from the other side of the circuit into a tumbler of water, containing a little salt. The wire giving off the more gas bubbles should be connected to the negative or (-) post of the battery. The wiring is simple; from one side of the supply circuit to one side of the bank of lamps, from the other side of the lamp bank to one side of the battery and from the other battery terminal to the other side of the supply circuit. There should be a switch included.

## CAUSE OF RATTLING NOISE

H. C. asks: What is the most likely source of an annoying rattling at the forward end of my car, which occurs when driving over car tracks or rough places in the road?

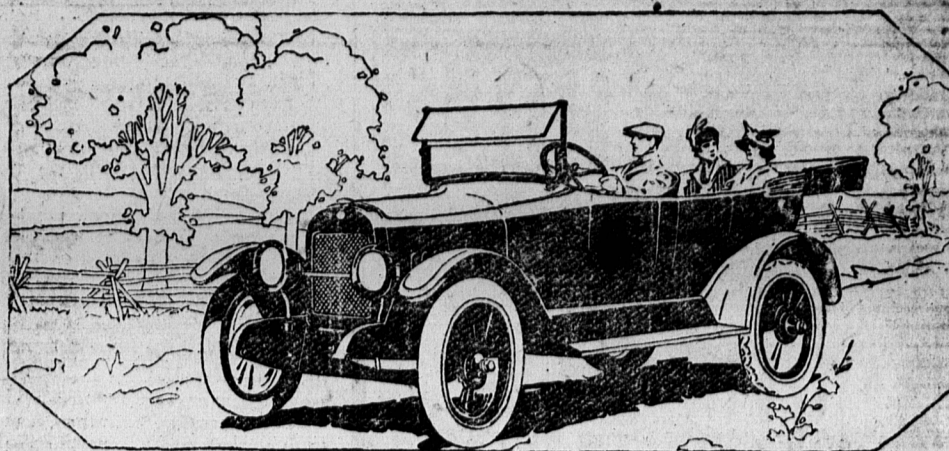
Answer: Most likely it is the steering gear. Looseness at the ends of the tie-rod, which connects the two wheels or at the ends of the rod which connects the steering device with one wheel, lost motion at the steering knuckles or loose bearing adjustments of the front wheels may cause this. Looseness of the hood upon its supports or lack of tightness at the front springs may produce such a noise.

## TUBE PATCHING OUTFIT

S. P. T. asks: Everything considered, what is the best outfit for use in mending inner tubes, that can be carried upon a car?

Answer: We presume that the little portable vulcanizers would be called the best. These make use of prepared patches, each of which carries its own fuel, sufficient to furnish the heat required to vulcanize it. A vulcanized tube repair can be quickly made in this manner. Patches, affixed merely by cement and not vulcanized give good results and such a repair is the quickest. These prepared patches, already cemented and requiring only to be moistened with gasoline and applied, are to be had of all supply dealers.

Questions of general interest to motorists will be answered in this column, space permitting. Address Albert L. Clough, care of this office.



This Car Warrants Its Price

# GRAY DORT

There are many reasons for the price of a motor car. The car may be built down to a selling price. The price may be forced up to a profit mark. There may be weight, size, speed, that you do not need. But the Gray Dort price is the lowest price at which a big, efficient organization can build a fine light car. The Gray Dort is built right first. It is built with real big car quality and comfort and appearance. It is built to give you all the service you need, free from trouble. Then by

factory efficiency the price is kept low.

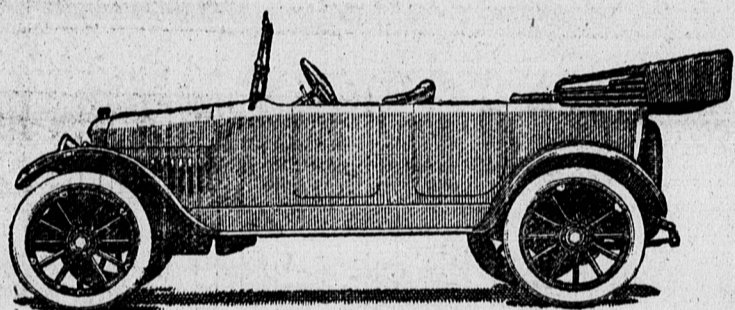
So when you buy a Gray Dort you are putting every dollar into real motor car value. Ride in a Gray Dort—then you will see how greatly cheaper cars fall short of it—and how light cars, higher-priced give you no more or not as much.

The touring car is \$1245; the Gray Dort Special—the car with added refinements and extra equipment, is \$135 extra; there are also a coupe, and a sedan. All prices f. o. b. Chatham and are subject to change without notice.

GRAY DORT MOTORS, LIMITED  
Chatham, Ont.

In the U.S.—Dort Motor Co. Inc., Flint, Mich.

R. H. STERNS, Charlottetown, P. E. I.



## Maxwell

—a car of rare charm and—able

YOUR first impression of this present day Maxwell as it passes you on the street is one of decided beauty.

Your first ride in it, whether at the wheel or in the tonneau, tells you of its rare charm.

But after six months you find a new admiration for the Maxwell. You find it shuns the repair shop, that it runs and runs and never stops running.

Then after a year is past you develop an enthusiasm for it that dictionary words don't seem to fully describe.

And then after you have had it for more than the average life of a motor car and you find it far better than even the Maxwell salesman said it was you search for the reason.

This is what you find:

For 5 years Maxwell cars have been built on the single chassis plan. To date 300,000 have been turned out on this plan. Each car better than the other. Each one better looking than the other.

There have been more than 1000 refinements in the Maxwell, but never once have the Maxwell executives swerved from the original program.

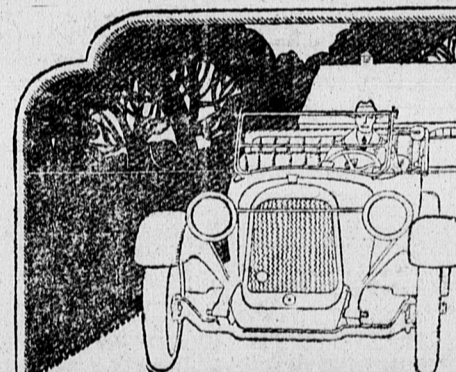
You conclude that reliability was designed "into" the car and built "into" it, and that a policy of 300,000-all-alike is the soundest kind of reason for writing your check for a present day Maxwell.

MAXWELL MOTOR COMPANY OF CANADA, Limited  
WINDSOR, ONT.



More miles per gallon  
More miles on tires

GAUDET & GRANT, Charlottetown, P. E. I.  
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## A Hot Spot Chalmers Knows Neither Altitude Nor Weather

ANYONE who has motored much knows how a change of altitude—even of 600 feet—affects the average car. And when the weather changes, even if you never leave your home town, what a terrible affair it is to get your motor "running right."

A Hot Spot Chalmers knows neither altitude nor weather. For the Hot Spot device is proof against both.

No matter what the day, no matter where you are on the map, the Hot Spot carburizes the gas into a "dry" vapor from which all the power is wrung with amazing ease.

It is throbless, frictionless power, and on a cold day the engine runs warm in an instant or on a hot day runs cold consistently.

For "pulverizing" gas nothing yet has equalled the Chalmers Hot Spot and for racing it into the cylinders (a trick that is highly important), nothing has ever been made to approach the Ram's-Horn.

Either one of these two magnificent devices are worth an hour of any man's time. Both of them provide you a mental feast on modern engineering that you'll long remember.

Come see them. They've made the Chalmers one of the few great cars of the world.

CHALMERS MOTOR CO. OF CANADA, Limited  
WINDSOR, ONT.

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