



The Nurse told Her to Give

OLIVEINE EMULSION

THE GREAT HEALTH RESTORER

South Brookfield, Queens Co., N.S., Oct. 1919. "Our little girl was very sick with Stomach Trouble and different foods were recommended, but everything failed until a nurse told me to give her OLIVEINE EMULSION. She is now a big, healthy baby and I would not be without it in the house. For coughs and colds and as a health builder, it is the best to be had. We recommend OLIVEINE EMULSION to quite a few who were suffering from the effects of Influenza and they used it with good results."

OLIVEINE EMULSION is more than an ideal cough remedy, to pave the way for a quick recovery from heavy colds and deep-seated coughs. It is a body builder—gives strength to the weak—tones up and invigorates the whole system. It is pleasant to take and is agreeable to the most sensitive stomach.

Sold everywhere.

Prepared by Frasier, Thornton & Co. Limited, Cookshire, Que.

HINTS FOR - The Motorist

BY ALBERT L. CLOUGH

AVOIDING MUFFLER EXPLOSIONS

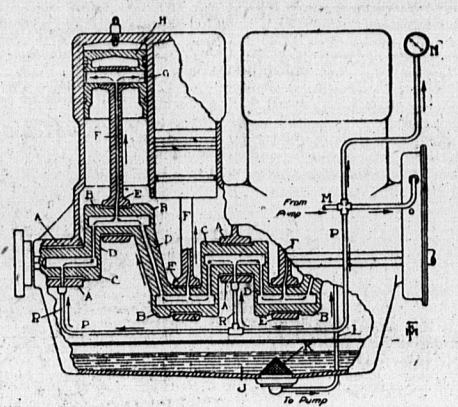
The explosion in the Muffler of unburned gas discharged from the cylinders is always annoyingly startling to all in the immediate vicinity and furthermore there is the ever present danger that the muffler may be burst thereby. Rarely it happens that some internal part of the muffler becomes red hot, after severe service, and fires the charges of unburned mixture that are forced out of the cylinders by the momentum of the engine just after ignition has been switched off, thus causing an explosion when the engine stops, but usually such explosions are due to the firing of mixture that has escaped to the muffler, by the flame of succeeding cylinder impulses reaching the muffler through the exhaust pipe. In order to avoid such explosions it is necessary to prevent large volumes of unburned mixture from entering the muffler and this implies the careful avoidance of misfires in the cylinders, for every charge that fails to be fired by the spark is ejected into the muffler ready, under favorable circumstances, to be exploded there. The combination of uncertain ignition with an over-rich mixture is a bad one, as the exhaust flame is long and persistent and likely to fire rejected charges. In the case of cars that are prone to "muffler explosions," when their engines are first started—necessarily with rich mixtures—these explosions can usually be prevented by opening the muffler cut out, if one is provided, thus allowing unburned charges to escape into the open air. Violent muffler explosions often take place after the engine has been used as a brake in descending hills, with ignition switched off. Under these conditions, all the charges passing through the cylinders are rejected unburned and collect in the muffler, with the result that, when the spark is again switched on and a cylinder fires, its exhaust flame "touches off" the muffler contents.

If the throttle is entirely closed while the engine is used as a brake and the switch is put on a second or two before opening the throttle, these explosions will be prevented, but it is still better not to shut off the ignition at all, while coasting. Keeping the ignition apparatus in good order and the spark plugs clean and avoiding the use of over-rich mixtures, will minimize this form of trouble.

FORCED FEED ENGINE LUBRICATION

Instead of causing the moving connecting-rods to fill the tight crank-case with a mist of oil and permitting this splash to collect at and enter into the various bearings, as in the splash system of lubrication, oil may be positively forced, by pump pressure, into each bearing and distributed over its surfaces and no dependence be placed upon the lubricating effect of such oil as may be splattered about. In

Moreover, under the considerable pressure acting, the likelihood of oil passages becoming stopped up with solid matter is very slight. The accompanying diagram illustrates a complete system of forced feed or direct pressure lubrication, applied to a four-cylinder engine, a partial, vertical, lengthwise cross section being shown. Here A. A. represents two of the three main bearings, which support the crankshaft; BBB crank-pins; CC the bearings portions of the crank; DDD, the web or cheek portions of the crankshaft, joining the crank-pins with the bearing portions; EEE the connecting-rod bearings upon the crank pins; FF connecting-rods; G a wrist-pin (piston pin) and H a piston. The pump (not shown) draws oil from the supply in the sump J, through strainer K and suction-pipe L and delivers it, under pressure, through pipe M, from which runs a branch pipe, filled with air to pressure-gauge N, another



the splash system, the oil supply falls into the collecting pockets which feed the bearing surfaces and is under no pressure, but in the forced feed system, there is an oil pressure of a number of pounds per square inch maintained by the pump and applied to the supply pipes, so that there is a very strong tendency for the oil film to be maintained unbroken even when the bearing surfaces press against one another very violently, the shafts being often spoken of as "floating in oil" within their bearings.

branch O to the timing grease case, and still another branch P, to feed the engine bearings. This delivery pipe P has branches RR that feed oil direct to the rear and central main crankshaft bearing and another branch (not shown) to the front main bearing. In this system, oil is conducted to the bearing surfaces through channels, drilled in the bearing caps, the crankshaft and the connecting-rods and the white areas in these parts are the cross-sections of such oil channels or passages no attempt has been made to show the practical details of construction necessitated in order to provide these channels the intent being merely to show the principle involved and the path of the oil, which is indicated by arrows. Referring to rear main-bearing A at the left of the diagram, oil enters it, under pressure, through R and is distributed through oil grooves in the surfaces of A, thus lubricating it. Once each revolution, a radial drill-hole in C registers with the oil supply hole through A and allows oil to flow through A and into the radial drill-hole shown therein lubricating the bearing surface of connecting-rod end E on pin B. A channel formed in connecting-rod F, allows oil to pass up it when its mouth registers with the drill-hole in B which occurs once each revolution, and oil supplied in this manner, escapes through the upper end of this channel, lubricating the upper bearing of the connecting-rod on wrist-pin G which, being hollow may become filled with oil that then flows between the cylinder walls and the piston. The crank and other parts of the third and second cylinders are usually lubricated from the center bearing supply and the parts of the first cylinder from oil delivered to the front bearing, although in this diagram additional crankshaft passages are shown through which the third cylinder receives oil from the rear bearing supply. The system just described is a complete forced feed system in which all bearings receive oil under pump pressure, but it is not very extensively used. In the ordinary forced feed system, the main and connecting-rod bearings only receive pump pressure, there being no channel in the connecting-rod. Oil is, however, allowed to spurt freely out of the crank-pins through drilled openings or elsewhere and is splashed, by the violent motion of the parts, upon the cylinder walls and other bearing surfaces, which are thus lubricated. In other words, pressure oil feed is applied to the most severely worked and vital bearing surfaces while splash is relied upon for lubrication of the rest. Cam-shaft bearings may be oiled under pressure, exactly as are the crankshaft bearings, a special oil pipe, with supply branches, being provided.

ENGINE SEEMS TO BE "STARVED"

F. V. G. writes: We have a truck engine, which will run from ten seconds to two minutes and then die, as if the fuel supply were cut off. It will not speed up, as when the throttle is opened it will stop. Magnet and carburetor have been changed without benefit and wiring and plugs are good. Where is the trouble located? Answer: This seems like a case of insufficient fuel supply, and we suggest the following test: Put some gasoline in a squirt can and, just as the engine shows signs of dying, inject a little of it into the carburetor air-intake. If the engine then picks up, it will be strong evidence that it is not getting enough fuel. The reason for this might be found in a plugged up tank-vent, in a badly working vacuum system, in a carburetor float that sticks in the up position or in obstructed fuel line or strainers. If this line of investigation proves fruitless, please write us again.

EXPOSED INTAKE RUNS TOO COLD

B. N. writes: I have a car of old model, recently overhauled, the engine of which runs light perfectly, but when required to take a hill it begins to miss. The intake pipe is 18 inches long and the carburetor, of old model cannot be adjusted to

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other light car. There will be thousands who will agree with you—probably several thousand more purchasers than there will be Gray-Dorts. We urge you to see the Gray-Dort dealer now.

Prices The Gray-Dort 5-passenger car, finished in Gray-Dort green and black and with standard equipment is \$1365 f.o.b. Chatham. War tax extra. The roomy 2-passenger roadster is the same price.

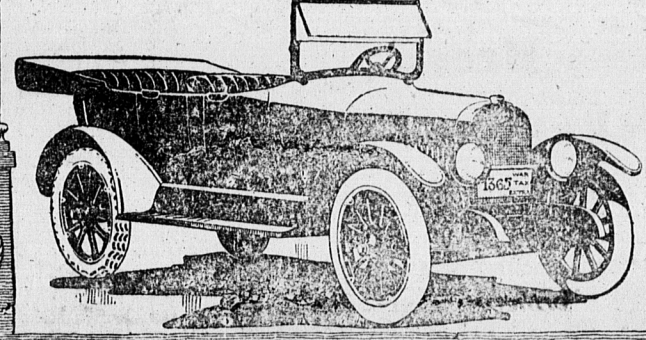
The Gray-Dort Special For the man who wishes something a little extra in his car, we have built the Gray-Dort Special. Maroon body, with brown raynite top. Plate glass rear window. Gipsy curtains. Koskie tan wheels. Motometer. Tilting steering wheel. Real leather upholstery. Mahogany instrument board. Just the touches which lift this car above the ordinary. \$150 extra on the standard.

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\$1395 GRAY-DORT

stop the missing. Is this the fault of the carburetor or the engine and what can I do to remedy the trouble? Answer: We believe that the intake pipe runs too cold to vaporize present day gasoline and we suggest that you install a combination exhaust and intake manifold, to preheat the mixture. If you cannot get one, you can make a sheet metal jacket to fit around part of the intake pipe and supply exhaust gas to this through a flexible tube. The carburetor may be partly at fault and a modern one might give better results, but we should try heat on the intake system first, as this should result in your getting a combustible mixture that would fire regularly at open throttle.

Ford

IF the Ford Motor Company of Canada, Limited, is able to build up to the limit of its capacity, only 27,350 Ford Cars will be built for use in Canada between January the first and July the thirty-first of this year. Divided among the total population of Canada this means one car to every three hundred and ten people.

It is easy to see that many people will be unable to get their Ford Cars at all, and many will have to wait for summer or fall delivery.

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