

is stopped. This prevents oil congealing on the clutch discs and causing trouble. Of course, the clutch must be released and the brakes set tightly before the motor is cranked.

Use chains on the rear wheels when driving through snow or even if it is packed hard on the streets. Hard packed snow is very slippery. If the snow is very deep, chains on the front wheels will aid you in controlling your car.

CARE OF CAR

Install the hot air pipe and use it throughout the winter.

Keep the car in a warm building whenever possible. If necessary to leave it out in the open, even for a few minutes, throw a robe over the radiator and hood to keep the engine warm.

A padded cover fitting over the radiator and engine hood is a good investment.

If you decide to lay up your car for the winter, the information in Answer No. 113 on this subject will be of value to you.

Summary of Engine Troubles and Their Causes

ENGINE FAILS TO START

1. Gas mixture too lean.
2. Water in gasoline.
3. Vibrators adjusted too close.
4. Water or congealed oil in commutator.
5. Magneto contact point (in trans. cover) obstructed with foreign matter.
6. Gasoline supply shut off.
7. Carburetor frozen (in zero weather).
8. Carburetor flooded (in hot weather.)
9. Water frozen in gasoline tank sediment bulb.
10. Coil switch off.
11. Gasoline tank empty.

ENGINE LACKS POWER— RUNS IRREGULARLY

At Low Speeds.

1. Poor compression—account leaky valves.
2. Gas mixture too rich or too lean.
3. Spark plugs dirty.
4. Coil vibrators improperly adjusted.
5. Air leak in intake manifold.
6. Weak exhaust valve spring.
7. Too great clearance between valve stem and push rod.
8. Too close gap between spark plug points.

At High Speeds.

1. Commutator contact imperfect.
2. Weak valve spring.
3. Too much gap in spark plug.
4. Imperfect gas mixture.
5. Platinum points dirty or burned.

ENGINE STOPS SUDDENLY

1. Gasoline tank empty.
2. Water in gasoline.
3. Flooded carburetor.
4. Dirt in carburetor or feed pipe.
5. Magneto wire loose at either terminal.
6. Magneto contact point obstructed.
7. Overheated—account lack of oil or water.
8. Gas mixture too lean.

ENGINE OVERHEATS

1. Lack of water.
2. Lack of oil.
3. Fan belt broken, loose or slipping.
4. Carbon deposit in combustion chamber.
5. Spark retarded too far.
6. Gas mixture too rich.
7. Water circulation retarded by sediment in radiator.
8. Dirty spark plugs.

ENGINE KNOCKS

1. Carbon deposit on piston heads.
2. Loose connecting rod bearing.
3. Loose crank shaft bearing.
4. Spark advanced too far.
5. Engine overheated.