

AUTOMOTIVE SECTION

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The Auto Shop

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AUTO SHOWS BRING OUT MANY NEW MOTOR CAR FEATURES.

It is hardly possible to pick up a newspaper these days without noting a reference to something new in the motor-car industry. Improvements in springs, bodies, carburetors, motors, and other important working parts of the car are seemingly everyday affairs.

Altogether the tendency is to decrease first cost as far as is consistent with good workmanship and material, keeping constantly in mind the fact that long life must be maintained and upkeep cost must be held down to a low level.

The most notable exception to the general tendency to cut manufacturing costs by substituting new materials, new designs, and new methods of production, is the automobile storage battery. The staunchness with which the principal battery manufacturers hold to their standards and to the details of construction of their product is striking proof of their faith that each is making a battery which is in his opinion, as good as can be built.

Contrary to the general demand for lower priced materials and parts to be put into cars, one of the largest battery manufacturers the Willard Storage Battery Company, of Cleveland, reports that there is more general use than ever before of their Threaded Rubber Battery. This is a higher priced product than the other types of automobile batteries which it manufacturers, but notwithstanding that fact, there are 191 builders of motor cars and trucks furnishing this battery as standard equipment.

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SUGGESTIONS ON WINTER DRIVING

Motor Expert Tells How to Secure Best Results With Car During Cold Weather

RICH MIXTURE IS REQUIRED

Where Heated Garage Is Used Little Difficulty Will Be Experienced in Starting—Drain Radiator on Cold Nights.

Present day grades of gasoline do not easily vaporize unless a sufficient amount of heat is present. For this reason, an excessively rich mixture is required when starting in cold weather. Some of it will retain its vapor like form and reach the cylinders. The remainder will develop and either flow back through the manifold or leak past the piston rings and finally reach the oil in the crank case. Gasoline is an enemy of lubrication and for this reason the crank case oil should be changed more frequently in winter than in summer, says H. W. Slauson, M. E., in Leslie's Weekly.

If a car is kept in a heated garage no difficulty will be experienced in winter starting, for the interior of the cylinders and the cooling water will be kept at summer temperature. Starting conditions in a cold garage are different, however, and it must be remembered that excessive amounts of gasoline are required for the "warming up" process which seems to be so necessary before a engine can be expected to develop its normal power.

Drain Radiator.

From the standpoint of efficiency rather than convenience, the best way is to drain the radiator on cold nights and to fill the cooling system with warm water when the car is to be used. This then places the entire engine in the same condition, as regards temperature, as though it had been operated for fifteen or twenty minutes, and will save the amount of gasoline which would otherwise be required to warm the entire system to this temperature. It will save dilution of the crank case oil, and through the ease of starting which is thus assured will save the severe strain on the battery which cold weather usually entails. The battery is an expensive necessity of car operation, and long periods of use of the same battery for the motor will respond, represent a punishment which the battery manufacturer deprecates and which amounts to a serious item of cost to the owner for battery technology, repair, rental, or replacement.

Radiator covers, robes and the like will serve to retain the heat of a water cooled car for several hours. Cars which are kept standing idle on the street or in garages for more than three or four hours, however, in exceedingly cold weather should be provided with some form of anti-freezing mixture in the radiator. A 25 per cent solution of alcohol (one-quarter alcohol and three-quarters water) will freeze at zero, a 30 per cent solution will freeze at five degrees below and a 40 per cent solution will freeze at twenty degrees below.

Glycerin Can Be Used.

It should be remembered that the boiling point of alcohol is much lower than that of water and consequently this proportion of alcohol will be reduced rapidly as a car is operated. Glycerin may prevent this evaporation to a certain extent, but one manufacturer recommends the following anti-freezing solution: Alcohol 20 per cent, glycerin, 20 per cent and water 80 per cent, thus giving a nonfreezing insurance to the point of twenty degrees below zero. Proportions of 10, 10 and 80, respectively, will prevent freezing to points within five degrees below zero.

The above suggestions, of course, apply only to the water cooled car. The air cooled car lends itself to the operating conditions of the moment almost immediately.

PLAN TO BLACKEN FITTINGS

Wash in Solution of Acetate of Lead, Hydro-Sulphate of Soda and Water—Then Lacquer.

The motor car owner who takes care of his own vehicle, frequently has occasion to blacken brass or bronze fittings that are no longer ornamental in their original state. By washing the part to be operated upon in the following solution the black will "take." Acetate of lead (four ounces), hydro-sulphate of soda (four ounces), and water, two quarts. The parts are placed in this solution, which must be hot, until they have assumed the desired hue when they are dried and given a coat of clear lacquer.

Dogs Trained Not to Bark. The dingy, or wild dog of Australia, neither barks nor growls at its victims, but learns to do both when tamed and placed among domestic dogs. The Australian teaches the new breed of cattle dogs, which are a strain of dingy blood, and they never bark.

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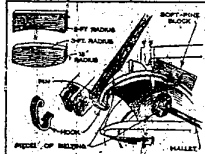
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REMOVING MUD GUARD DENTS

Illustration Shows Simple Tools of Special Service in Any Garage or Repair Shop.

Three simple tools that are of special service in the garage or repair shop, for restoring buckled and dented bodies and fenders, are shown in the drawing. The wooden mallet is faced with a section of heavy leather, being and is used with the wooden supporting blocks, which are of soft pine. One block has a concave face



Tools Made From Soft Wood for Removing Dents From Fenders and Bodies and for Straightening Fenders.

while another is provided with convex face of soft wood. Various other shapes may be easily made to meet special cases.

A lever, about six feet long, is made with its lower face concave and is faced with leather or rubber. The end of this lever is provided with a hook that engages underneath a buckled fender in the manner shown, so that the fender will be restored to nearly its original shape. Popular Mechanics Magazine.

Danger Often Overlooked.

There is one danger which is frequently overlooked and that is an accumulation of water at the bottom of the sump or oil well. This comes from the products of combustion leaking past the piston and also from occasional leakage of the cooling system. If the sump is exposed to freezing temperature this water will freeze. If there is enough of it, some may freeze in the oil pump, wrecking it. So draw off a little oil from the bottom of the sump at least once a week, carefully draining out all water, if found. Remove the grease in the gear case to prevent a case to a heavy oil. Grease or gear compound should be put in winter and will prevent where attention to these details, lubrication of the car, is simply MUST be right.

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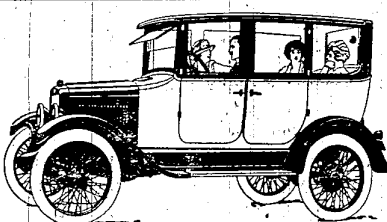
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