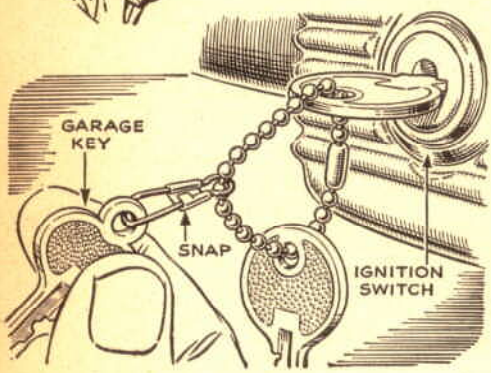
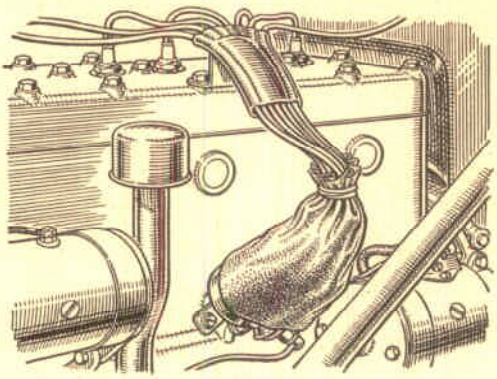
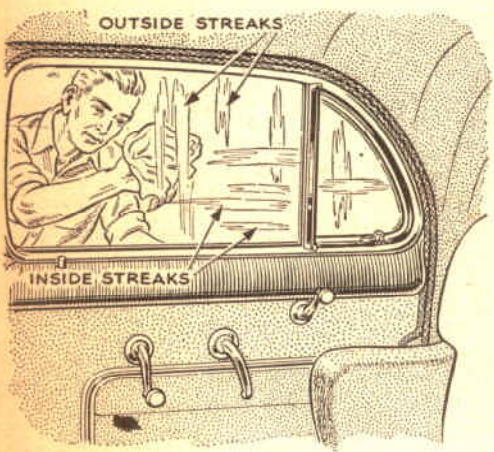
Hints from the Model Garage



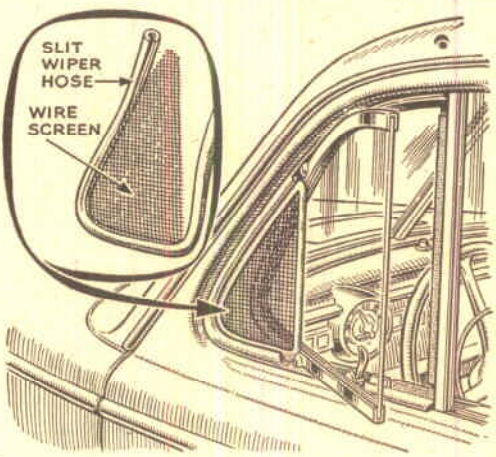
Garage Key Slips off Ring. It's always a nuisance if you must turn off the ignition and carry along all your keys when you unlock the garage door. This can be avoided if you have a quick, easy way to remove the garage key from the ring. Here's one possible way. The fishing-tackle snap shown can be bought in most tackle shops.



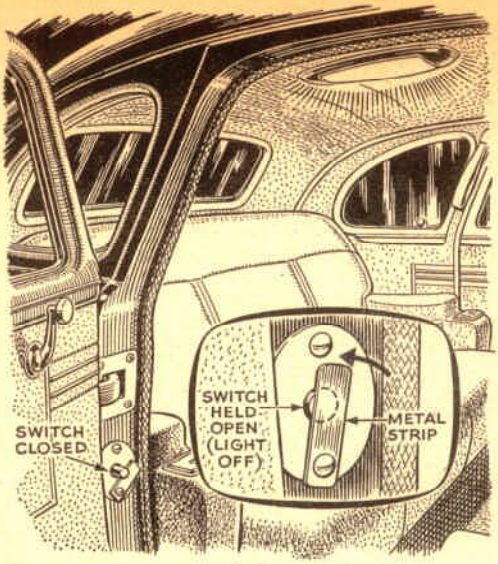
Sleeve Protects Ignition. If you have had trouble with the ignition shorting out during heavy rain, here's an idea that may help you. Cut an 8″ section from an old inner tube, snap loose the distributor cap, slip the rubber sleeve over the high-tension wires, and replace the cap. Draw together and tie the sleeve at the topmost edge.



Get Off All the Streaks. Did you ever wash a car window and find when you're through that it's still streaked? H. R. Schaaf, of Louisville, Ky., says he has found it's best to use horizontal strokes of the cleaning cloth on one side of the glass and vertical strokes on the other. Then, if there are any streaks, you know at once which side they are on.

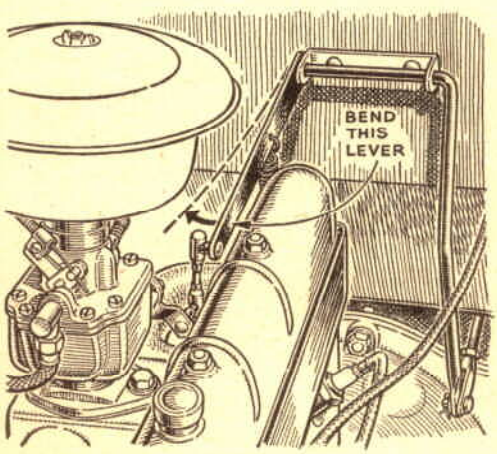


Screen Catches the Bugs. For summer driving, a triangular piece of screening fitted into the area in front of the vent pane will catch any insects that are drawn in with the air. You can solder a heavy wire around the screening or just slip on slit wiper tubing as in the sketch. It's only a moment's work to slip out the screen and close the ventilator.

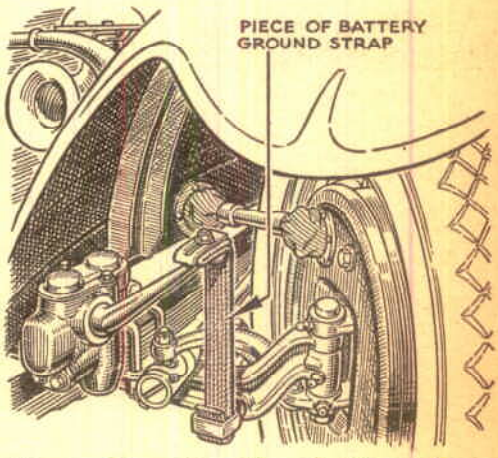


Door Open, Light Off. Door-operated dome lights can't ordinarily be shut off if you just want to park with the door open. Wesley E. Charter, of Rockville, Conn., suggests that this can be done with a strip pivoted on one switch screw, preferably the lower one. It takes only a moment then to pivot the strip over the switch button.

Mirror Is Always Handy. Here's the way W. M. Dierks, of Chicago, filled the bill when his wife asked for a convenient mirror for use in the car. Buying a large compact, he mounted it as shown inside the glove-compartment door, drilling holes and attaching it with screws. While not in use, the compact is kept closed.



It Wasn't a Ghost. On right turns, Eric St. Clair, Richmond, Va., found his Crosley accelerating of its own accord. He traced the cause to contact between the throttle linkage and camshaft cover. Bending the link cured the trouble. His explanation: On right turns the engine mounting was flexible enough to let the camshaft cover bear against the linkage.



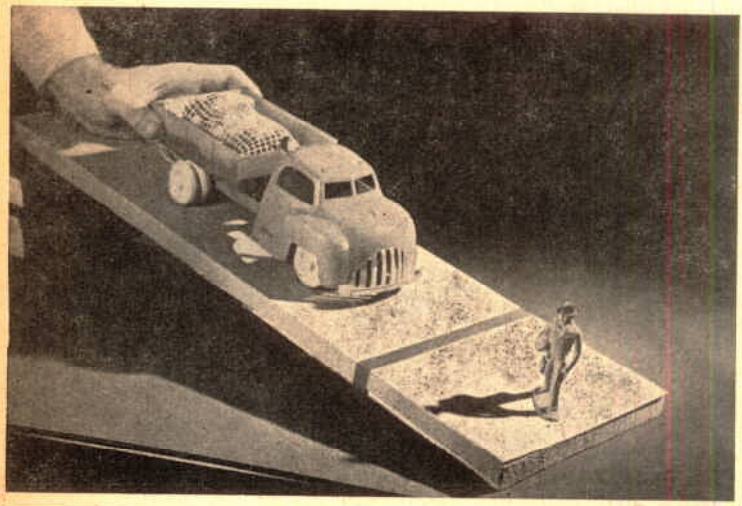
Strap Repairs Shock Absorber. This is how E. V. Collins, of Bantam, Conn., repaired an old-type shock absorber when the web strap broke. Unable to buy a new one, he tried woven brake lining but it soon broke. Then he used woven copper braid made for ground straps on batteries, installing it as shown in the sketch. It's given good service ever since.

The Laws No Car Can Violate

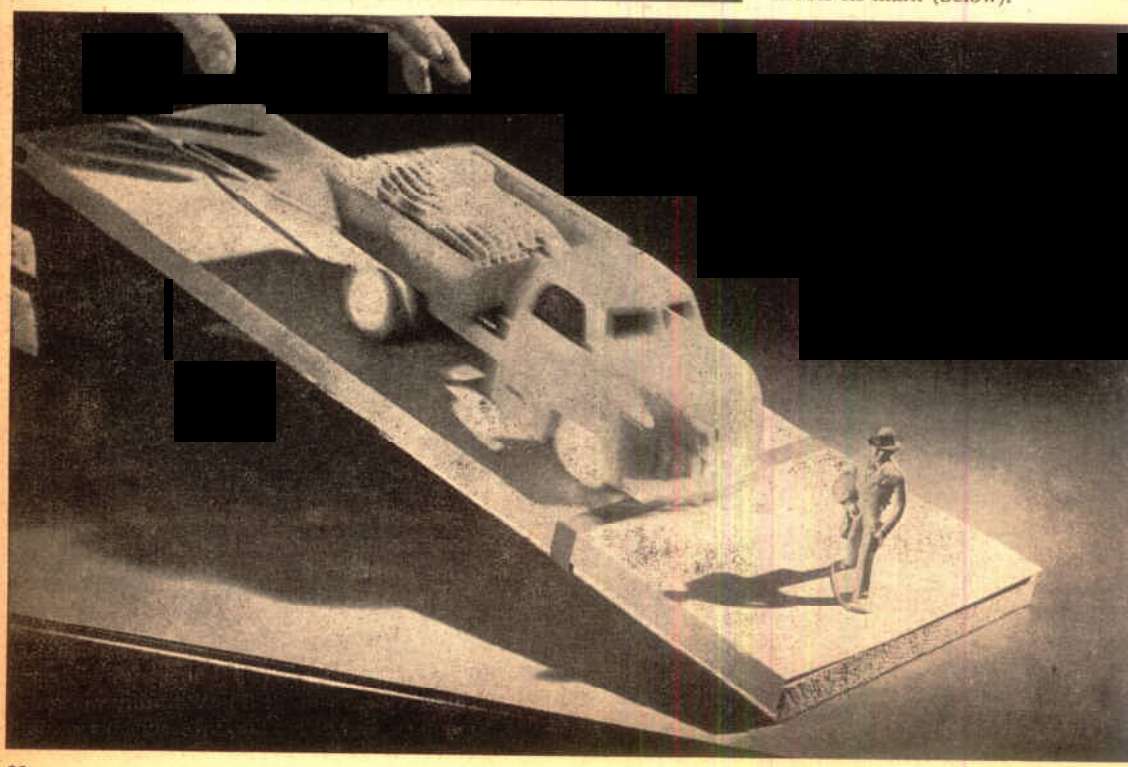
These simple home experiments will show you why.

By Kenneth M. Swezey

SIR Isaac Newton's First and Second Laws of Motion, set down nearly three centuries ago, are far different from the laws on the local statute books. *You can't*



You can observe Newton's laws at work with this simple setup. Attach a toy car to the top of an incline by linked rubber bands so that its front bumper normally just reaches a line marked on the slope—the spot at which the driver supposedly applies the brakes. Now pull the car back halfway up the incline, as shown at left, and let it go. At such slow speed, car barely overshoots its mark (below).

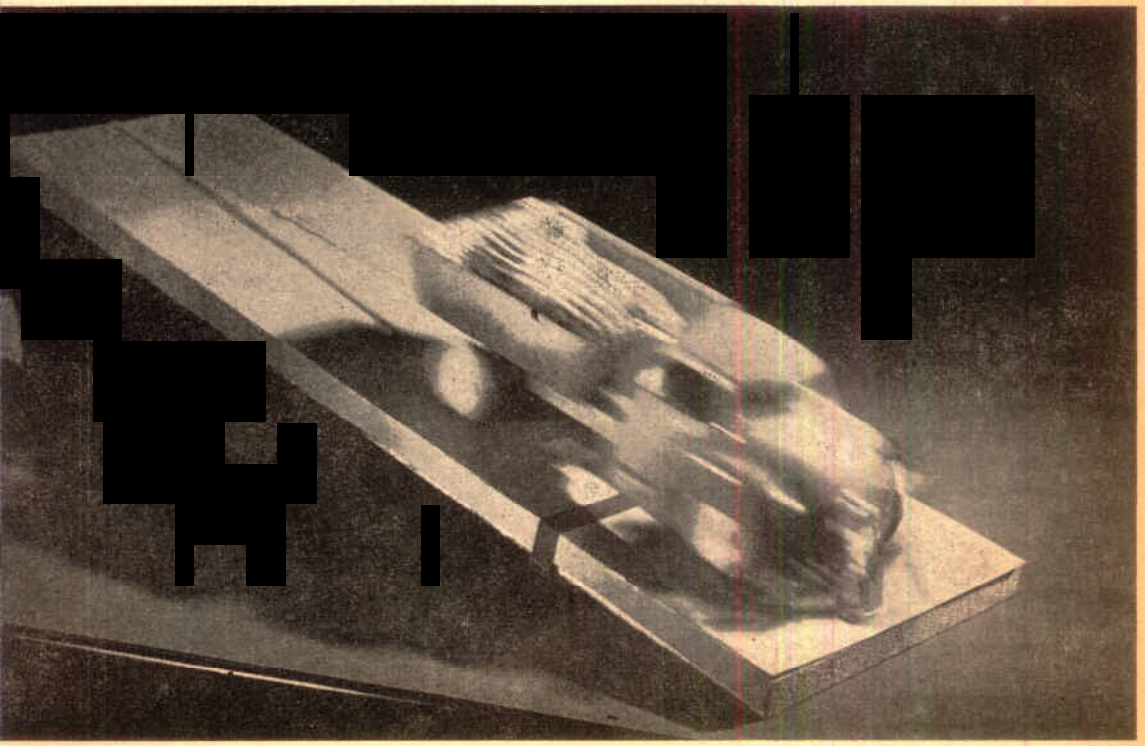


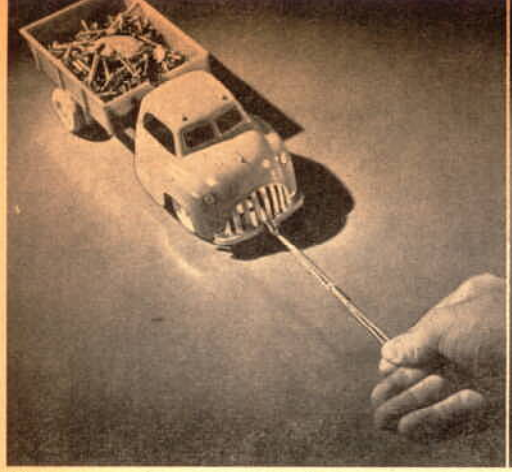
break them even if you try. But they can easily break you, causing property damage, personal injury, or even death.

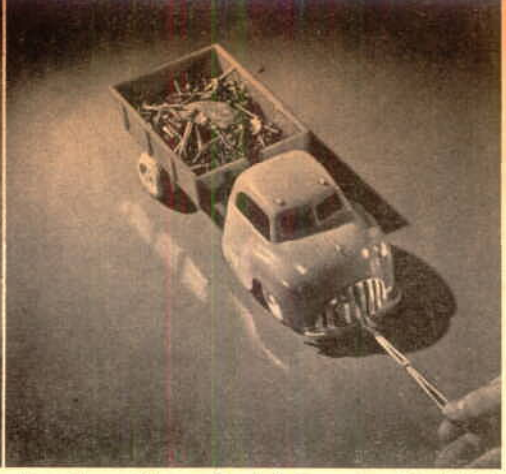
According to these laws, every body remains at rest, or continues to move at constant speed in a straight line, unless acted upon by an outside force. The amount of force required to change the motion of a body depends upon two things: the mass of the body, and the rate at which you must slow it, speed it up, or change its direction.

Applied to your car, these scientific axioms explain why you can't stop short at high speed; why you must reduce speed to keep from skidding or turning over on a sharp curve; and why it takes more power to start your car, or to accelerate it, than to keep it moving at a constant speed. The simple experiments shown here and on the next page may help you remember.

If you double your speed, the laws say, your stopping distance in a car will not merely be doubled—it will be *four times as great.* To demonstrate this rule dramatically, pull the toy car to the *top* of the incline, as at the left, and let it go. This time the car is rolling so fast when it reaches the braking line that it plunges right ahead and crashes headlong into the man in front of it (below).

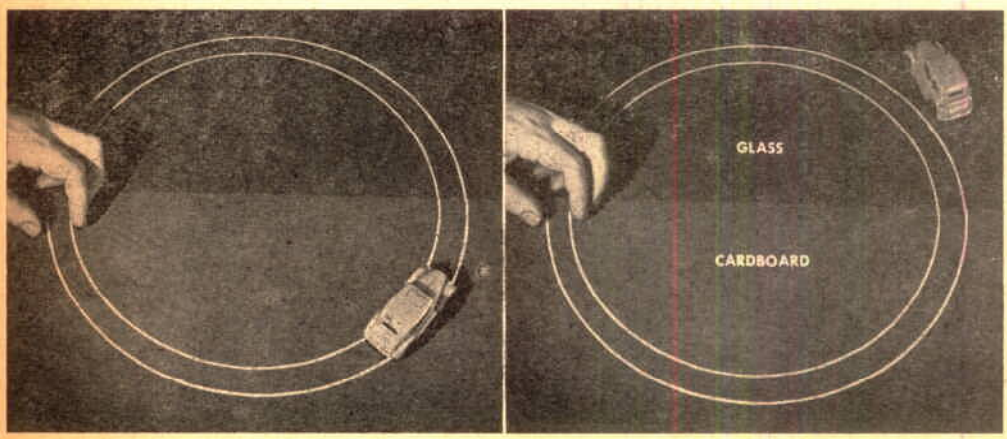






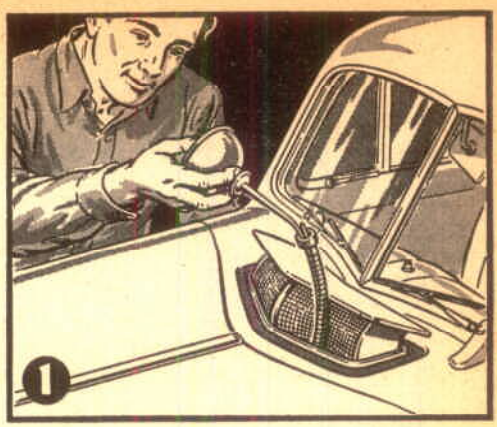
More power is required to start your car than to keep it going chiefly because of *inertia*. This can be defined as the inherent sluggishness of matter that causes it to resist any change in its motion. You can test this law on the living-room floor by pulling a loaded toy car with linked rubber bands. The bands stretch considerably while the car is starting, left above; but they contract a lot when their only work is to keep the car rolling at a steady speed, right above.

Cars skid or turn over when rounding curves because their speed is too great for the sharpness of the curve. Both speed and sharpness determine the force that tries to throw them off the road. You can show this with the experiments above. A marble rolled down a cardboard trough into a large pie tin (left) follows the curve. Rolled from same distance onto a small tin (center), marble jumps off. Rolled from halfway (right), it stays on the track.

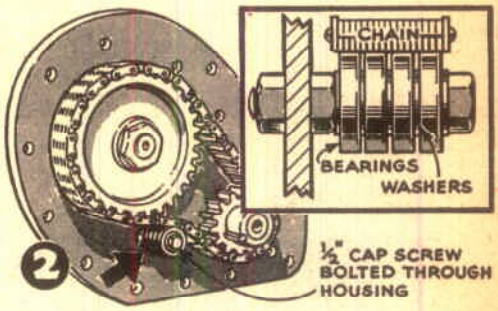


On unbanked curves, cars can keep to the curve only because of friction between the tires and road. Reduce this friction with dampness or ice, and cars may skid even at comparatively slow speeds. You can show this by running a spring-powered toy around a track that is half cardboard and half glass (to represent ice). On the cardboard, the car follows the curve exactly. But as soon as it hits the glass, at right, it swerves sharply off the track.

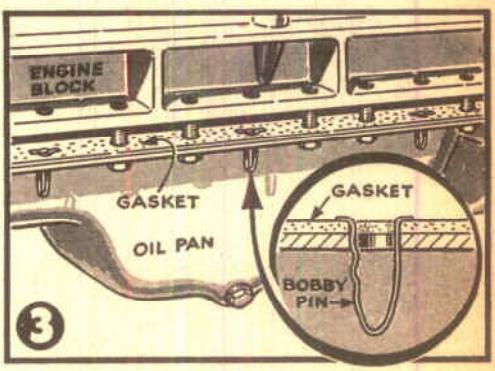
AUTO HINTS



1 Oiling Speedometer Cable. If you find that the inner part of your speedometer cable cannot be drawn out for lubrication, do not risk damage by trying to pull it out forcibly. Instead, bend aside or remove the cowl-ventilator screen and pass the cable through. This will give you ample elevation to oil it.—NORMAN E. NELSON.



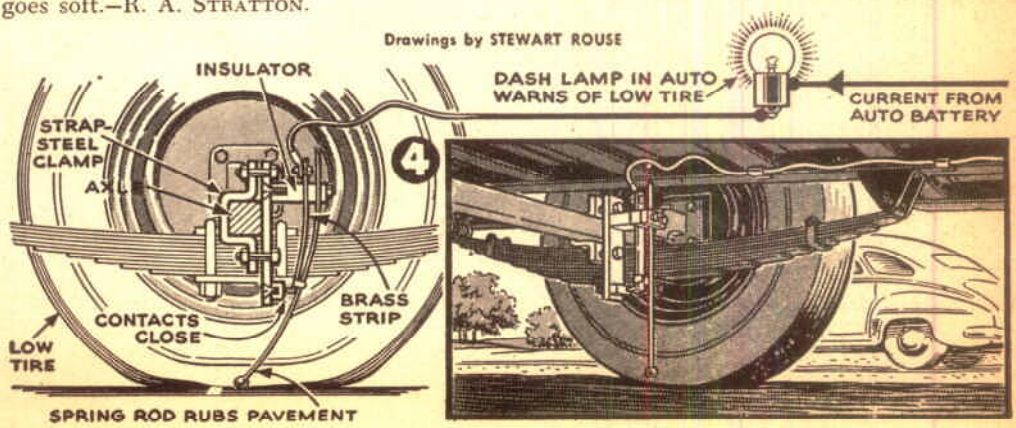
2 Takeup for Timing Chain. An idler pulley made from ball bearings on a cap screw will take up a worn timing chain. Clamp the screw to the wall on the slack side of the chain, using two nuts and a lock washer.—F. D. VANVOLKENBURG.



3 Bobby Pins Hold Gasket. A few bobby pins with their ends bent outward at a 90-deg. angle are an excellent means of keeping the gasket in place while an oil pan is being mounted. After several of the studs have been started, pinch the pins together and pull them out of the holes. —LELAND R. HALM.

4 Light Warns of Soft Tire. When a trailer tire goes flat, the car driver may not discover it in time to prevent damage. So I built this warning system on my trailer. A red light signals on the dash if the springy rod, which normally clears the ground by about 1", is bent back as a tire goes soft.—R. A. STRATTON.

Drawings by STEWART ROUSE



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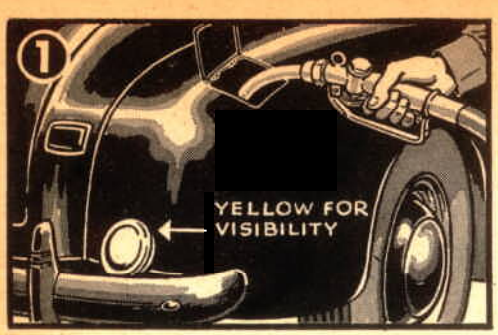
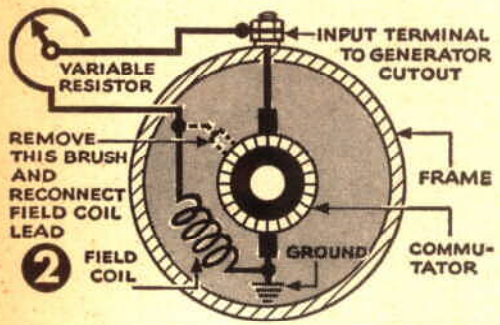


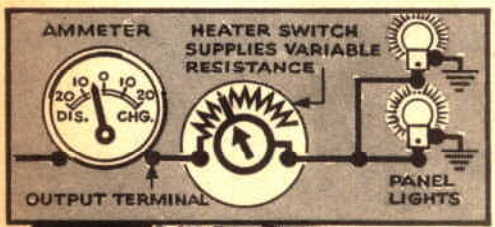
1. Watch Your Cap!

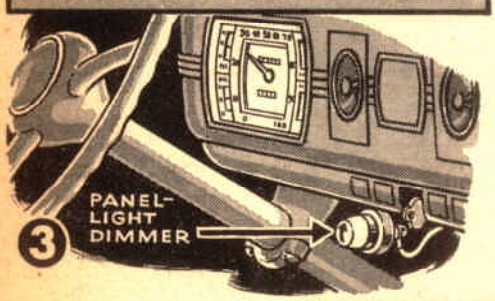
Doc Kennedy drove into the Model Garage a couple of weeks ago and yelled for Stan Hicks to fill up his tank. Next day Doc turned up again, and accused Stan of forgetting to put the cap on the tank. Perhaps Stan did. Anyway, it was lost beyond doubt. W. Van Sandt, Long Branch, N. J., thinks grease monkeys like Stan would be less likely to overlook the cap if it were painted bright yellow for contrast. A good idea for the oil filler cap, too.



2. Vary the Voltage by Hand.

When extra electrical accessories are installed, a problem always arises if the car lacks an automatic voltage control. If the generator is set to carry the extra load, it's apt to overcharge the battery when the load is off. As a solution, K. C. Anderson, Ames, Iowa, installed a manually operated field resistor rated at 100 watts, 5 ohms. The resistor was placed on the dash, and generator output can now be varied while driving.





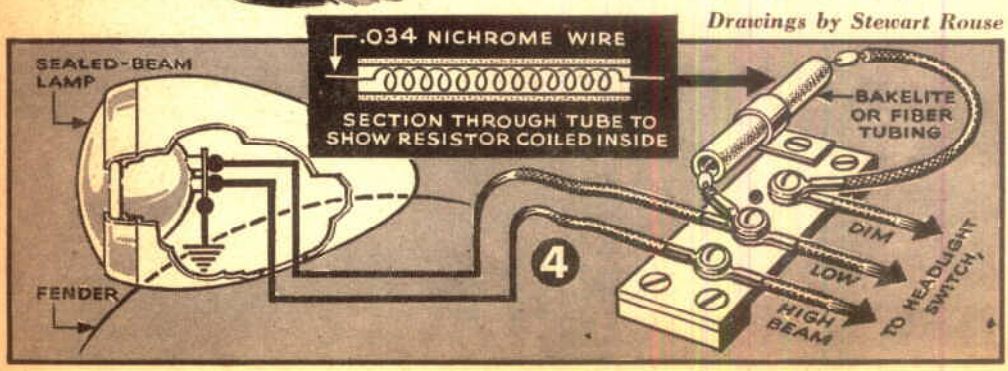
3. Less Light on the Dash.

If your car doesn't have a dash-light dimmer, a variable resistance switch from an old car heater will let you adjust the brilliance of the instrument-panel lights. J. R. Sisley, Seattle, makes the suggestion.

4. Parking Lamp Improvised.

While installing several sealed-beam adapters, Henry J. Stauf, of Woodside, N. Y., found that the low beam could be dimmed for use as a parking lamp by placing a 1-ohm

Drawings by Stewart Rouse



Model Garage

resistor across the dim and low beam connections from the light switch. He used .034″ Nichrome ⓣ wire to make resistors.

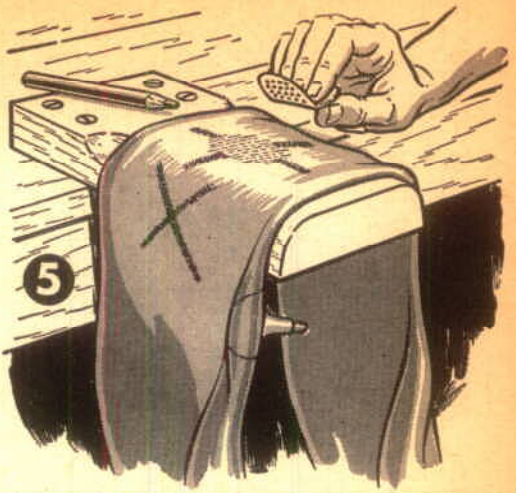
5. X Marks the Puncture. In a tire shop where he once worked, writes Fred C. Daley, of Oklahoma City, an indelible pencil was used to mark tube punctures, two lines being crossed at the pinhole. Then, after the tube was buffed for patching, the ends of the lines pointed toward the pinhole.

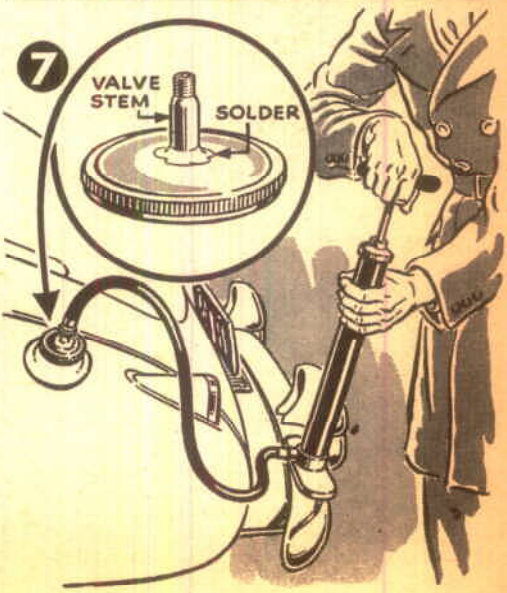
6. Aluminum Dresses Up Car. One reader has replaced scuffed and broken inside panels with sheet-aluminum ones, using sheet-metal screws. A little buffing gives a chromelike appearance.

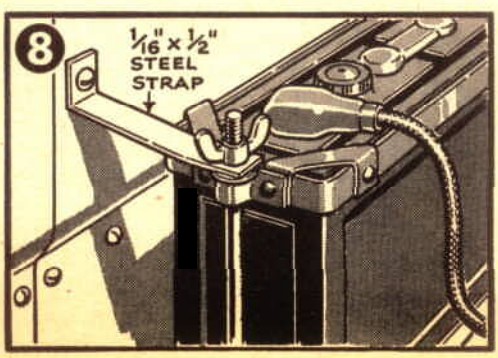
7. Emergency Fuel Pump. If you believe in preparing for trouble before it occurs, here's an idea. Should your fuel pump go bad, a spare gas-tank cap with an inner-tube valve soldered to a hole drilled in its center will enable you to pump enough gas to the carburetor to reach a repair shop. Just a few strokes are enough for several miles, according to H. W. Mills, of Albion, Ill., who has found the idea practical.

8. Bracket Steadies Battery. Vibration, the enemy of any car battery, can be lessened in under-hood installations by bolting a strap-iron bracket to the fender apron and the battery hold-down bolt. The idea comes from Glenn A. Wagner, of Delmar, N. Y.

Gus Wilson







Curing Auto Door Ailments

By Frank McCarty

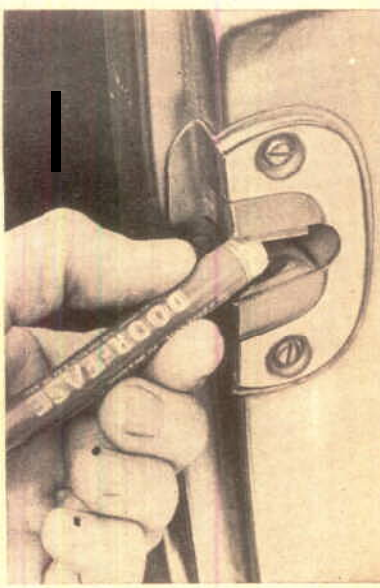
CAR doors are usually the first things to give trouble when a body begins to wear. They have to be slammed to stay shut. Hinges become sprung. Window glass will not raise and lower easily or far enough. Rattles distract the driver, and latches that hold doors insecurely invite injury to passengers or passers-by. Balky locks cause delays and expose one to weather.

Preventive maintenance on doors, as on other parts of a car, saves hours of bother. It consists simply of regular lubrication. However, when something does go wrong, correct it without delay. How the most frequently needed repairs are made is shown in the photos on this and the facing page.

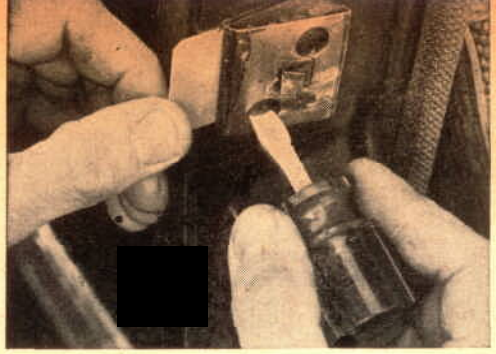
Stiff lock action or the danger of its freezing in winter can be prevented by a squirt or two of powdered graphite from a spray-type dispenser.

Door handles of this type are removed by loosening one setscrew in the edge of the door. Once out, the handle can be disassembled and the lock barrel removed if it should require adjustment, repair, or replacement.

Separate lock units located under the handle are also held in place by one setscrew. When a lock barrel of this type is being replaced, a wire is inserted through the setscrew hole to help guide the square shank into the lock. Be sure to turn the setscrew down flush when it is put back.

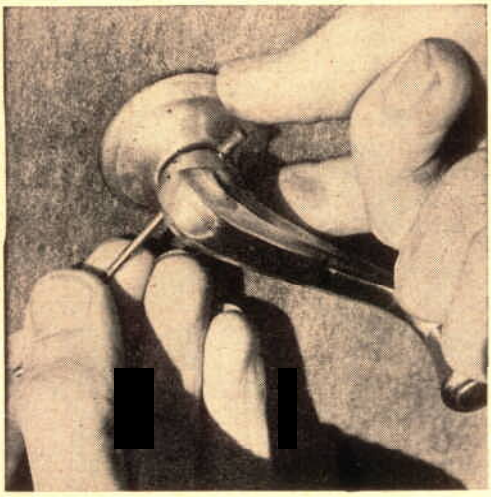


Jamb strikes require lubrication with stainless graphite, which may be had in the convenient pencil shape. The strike shown has rubber insets that can be replaced by removing the two screws.

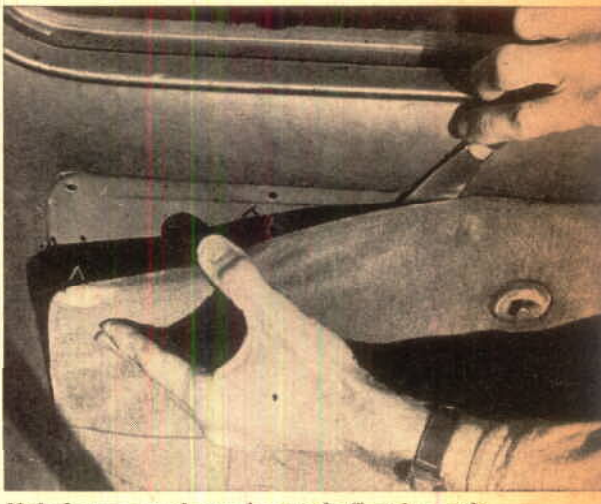


Worn-down latches are adjusted quickly with a metal shim set in behind the strike. Loosening the screws will permit inserting the shim.

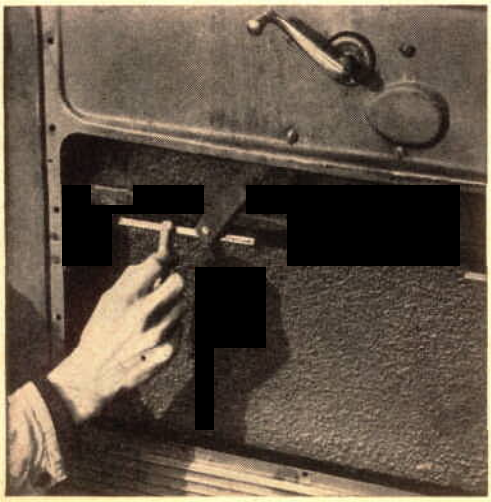
Concealed hinges are oiled from the inside of the open door. Close examination will usually disclose an oil hole in the hinge.



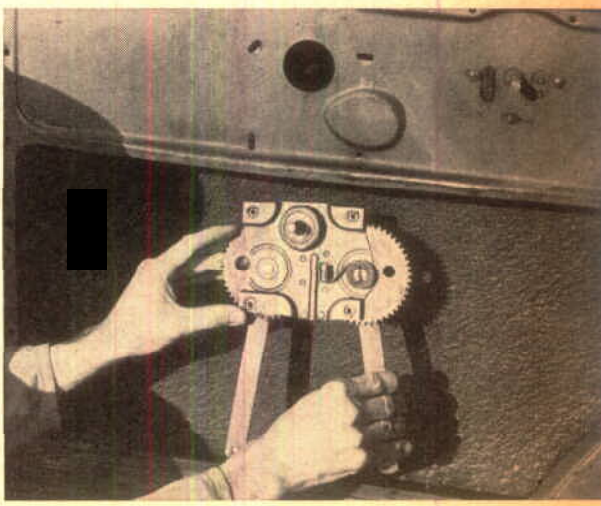
Inside handles are removed by depressing the escutcheon ring and pushing out a pin or clip. The handle is then slipped off the shaft.



Upholstery panels can be pried off with a wide putty knife. Press the blade against the spring clips or nails to avoid ripping the material.

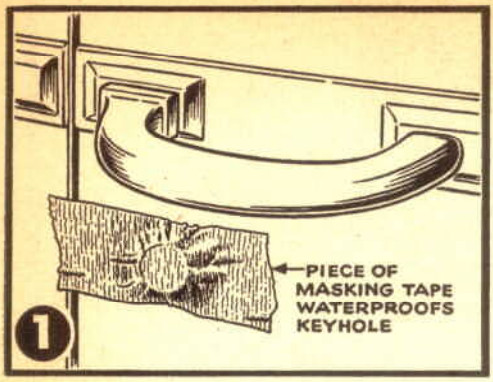


Lifting mechanism is revealed with removal of the door panel. Scrape dirt and grease off the rails and relubricate with a graphite pencil.

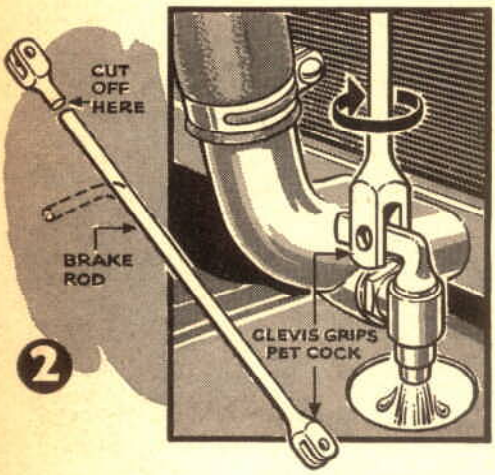


Removal of the mechanism is possible after lowering and taking out the glass. The spring on the gear at right acts as a counterbalance.

Hints from the



1. Avoid Freeze-ups. A roll of masking tape has been a valuable item this winter in the Model Garage. Before a car is washed, pieces of tape are placed over the door and trunk locks. Even though some of the cars were taken out at once into below-zero weather, there hasn't been one complaint of frozen locks.

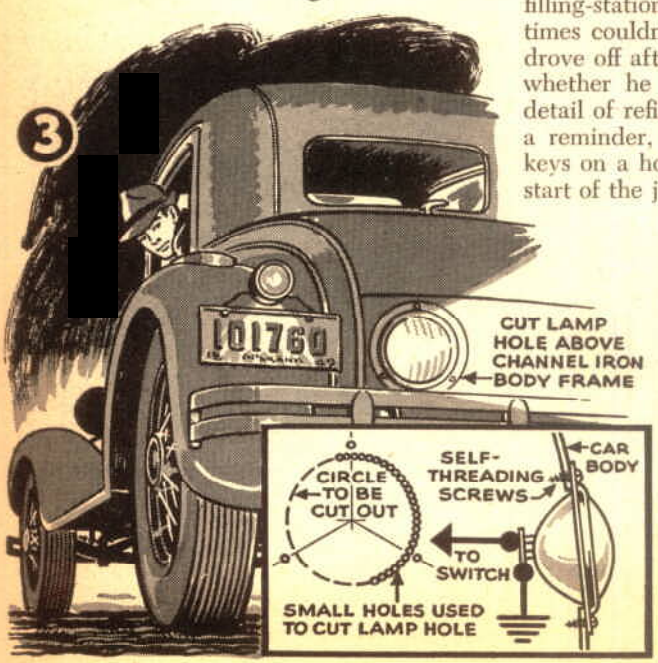


2. Tool Reaches Drain Cock. An old brake rod may be turned into a handy tool for reaching drain cocks that are difficult to get at. Simply hacksaw off one end and bend to form a handle.

3. It's a Back-up Light Now. Francis Hewens, of Boonton, N. J., reports he's using a sealed-beam headlight with one filament gone as a back-up light on a car he has. A hole slightly smaller than the rim was cut by drilling overlapping holes. One wire was run from the live filament to a switch on the dash, the other to ground.

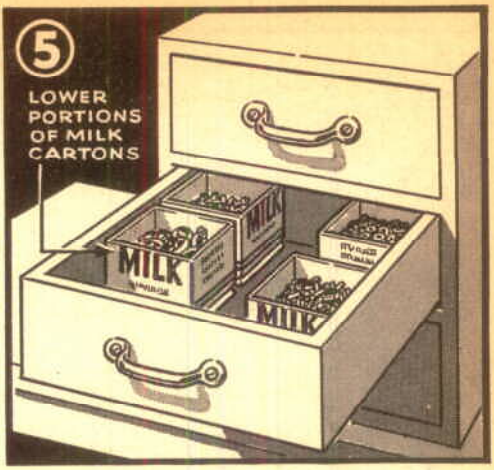
4. You Can't Forget the Oil. One filling-station attendant found that he sometimes couldn't remember, when a customer drove off after an oil change and grease job, whether he had overlooked the important detail of refilling the drained crankcase. As a reminder, he now always hangs the car keys on a hook on the filled measure at the start of the job. Simple, but effective.

Drawings by Stewart Rouse

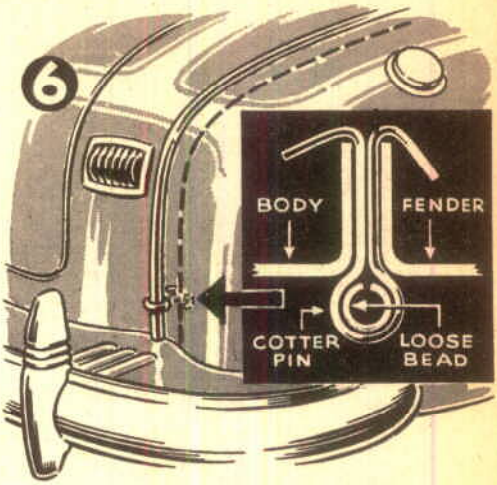


Model Garage

5. Parts Kept in Order. When J. C. Branstetter, of San Francisco, begins any extensive car repair, he always carries to the job several boxes made by cutting the tops from milk cartons. As he removes bolts and fittings, he keeps each group separate and drops a piece of paper in the container listing where the parts came from.



6. Cotter Pin Holds Bead. In some cars, a chrome bead finishes off the joint where the fenders meet the body. In time the fabric that ties it to the joint may rot, allowing the bead to spring out. One or more large cotter pins, slid over the bead, pressed into the joint, and then opened out, will keep it in place.



7. Clean the Trunk Gutter. It's a good idea to clean the gutter around your trunk compartment regularly. If dirt is allowed to accumulate, rain water may seep in even though the lid fits well.

8. Brake Drum Pulls Axle. Carl Vogel, of Chicago, points out that the brake drum may be used to pull the rear axle on Chrysler-made cars. After removing the wheel, drum, and shaft key, replace the drum and turn up the axle nut four or five turns. Then rap the drum against the nut several times and the axle will come out.