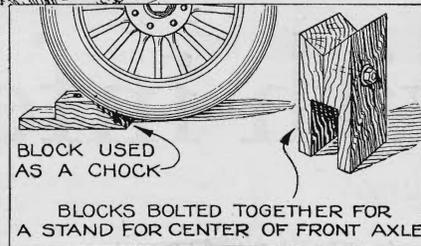


Helpful Ideas for the Car Owner

IF ALL roads were level and smooth, the problem of jacking up a front or back wheel to change tires would always be simple. Unfortunately, however, there are many times when the normal safe place for a tire change, off the paved portion of the road, presents unexpected difficulties. There may be a deep rut exactly where the jack should be placed, or the road may slope in such a way that the car is likely to roll off the jack. A pair of wood blocks shaped as shown in Fig. 1 will prove useful in such emergencies. One will serve as a chock for the car on a hill. Two, four, six, or even eight inches can be added to the height of the jack to reach up from a hollow depending on how the blocks are piled. The two blocks bolted together will support the front axle with both wheels off the ground when adjusting, greasing, and so on. For a large car or truck the blocks should measure approximately eight by twelve inches, with the thickness four inches at one end and two inches at the other.



Fig. 1. Jacking up a car on uneven or rutted ground is easy if you have these blocks to put the jack on and chock the car. At right are shown the blocks ready to use if both wheels are to be jacked at one time.



through the glass and fit a short screw and nut so that the end of the screw will project just enough to act as a retaining pin. While this arrangement necessitates reaching outside the windshield in closed cars, it is ideal, because of its neat appearance, on sport roadsters.

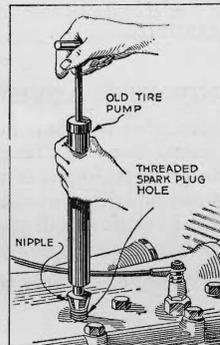
Pump Tests Loose Bearings

THE shell from a discarded spark plug, a brass nipple, and an old tire pump can be made up into a connecting rod and wrist pin bearing tester as shown in Fig. 4. The nipple should be screwed or soldered into the spark plug shell and into the end of the pump. The plunger of the pump should be removed and fitted with an extra washer in reversed position so that it will be air-tight when moved in either direction.

To use the device, remove the spark plug from one cylinder and turn the crank shaft till the piston is at the top of



Fig. 3 above; spring keeps auto jack from working out to full length in tool kit. Fig. 4, right, shows homemade device for testing of bearings.



POPULAR SCIENCE MONTHLY awards each month a prize of \$10, in addition to regular space rates, for the best idea sent in for motorists. This month's prize goes to Charles H. Willey, West Concord, N. H., for his suggestion for handy jack blocks for use in changing tires (shown in Figure 1, top of page).

the compression stroke. Screw in test device and work the pump handle up and down. If the exhaust valves leak, a hissing sound can be heard from the exhaust pipe. A leaky inlet valve will produce a hissing at the carburetor air intake, and if either the wrist pin or connecting rod bearings are loose there will be a slight knock each time the direction of motion of the pump plunger is reversed. The noise produced by a loose bearing will be much more distinct if the test is made while the motor is hot after a trip. A cold motor may not give any loose bearing noise because of the congealed oil.

Simple Test for Leaks

LEAKS in the cooling system are sometimes only apparent when the engine is operating, and the circulating water is hot. Such leaks are difficult to find and

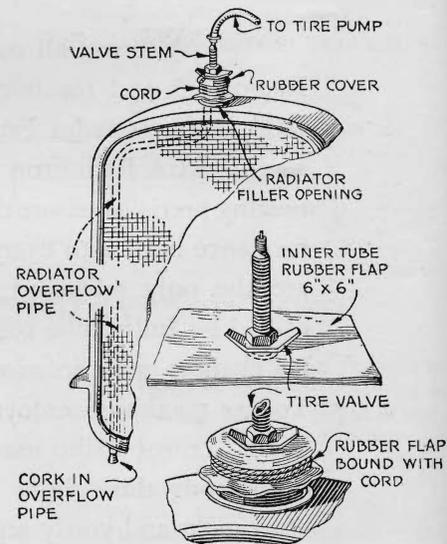


Fig. 5. Leaks in the cooling system are easily found when pressure is applied as shown here.

repair. The smallest leak, however, can be detected at once by applying air pressure to the cooling system. This may be done by using part of an old inner tube and a piece of cork. Use the cork to plug the overflow pipe and cut a circle of rubber from the inner tube with the valve at the center. Remove the filler cap and bind the section of the inner tube over the opening as shown in Fig. 5. Pressure is then applied with a tire pump. Only a few strokes are required. Be very careful not to apply too much pressure to avoid damaging the radiator. The radiator of an automobile is not designed to withstand pressure. Too much may open up a seam or bulge out the side of the upper or lower water tanks.

WINDSHIELD WIPER

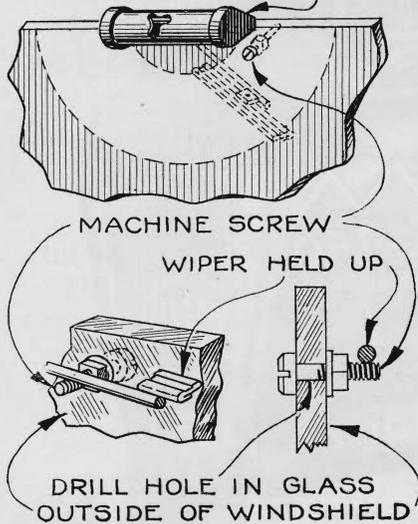


Fig. 2. This suggests a practical way of keeping the windshield wiper out of the line of vision.

Spring Holds Jack

THE ratchet type auto jack always seems to work out to its full length in the tool kit, causing a delay while it is racked back to its telescoped position. Figure 3 shows a way to overcome this trouble. A light spring is attached at one end to the head of the jack and at the other end to the toe.

Wiper Arm Holder

MANY types of windshield wipers cause trouble when not in use by slipping down into the line of vision. A simple and positive wiper holder is shown in Fig. 2. Drill a one-eighth-inch hole