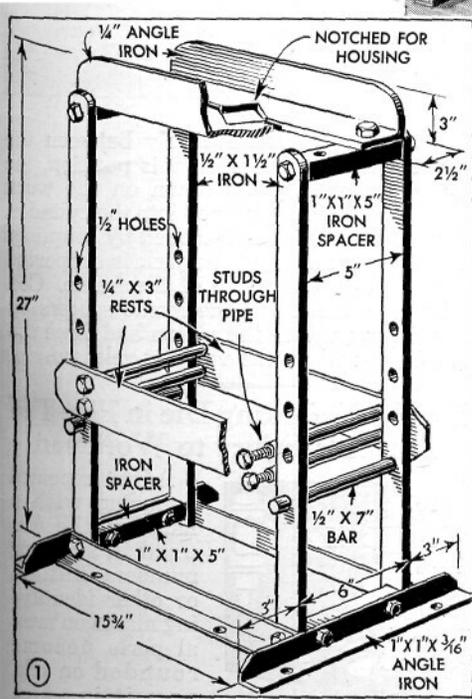
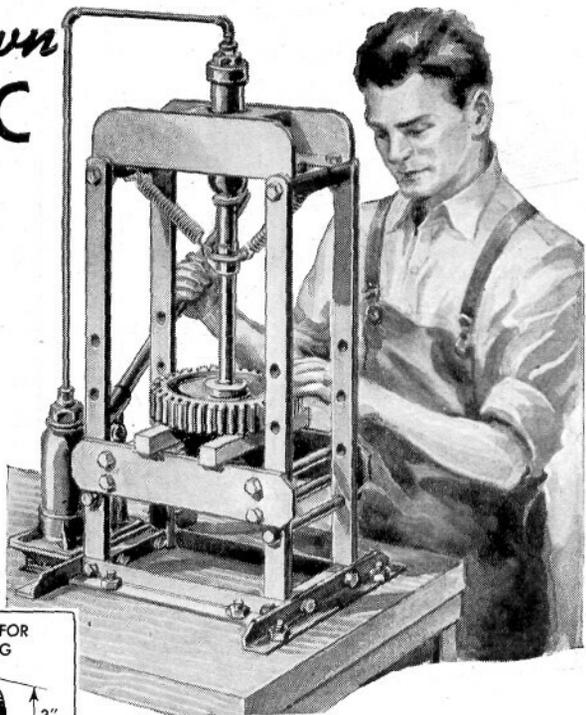


Make Your Own HYDRAULIC PRESS

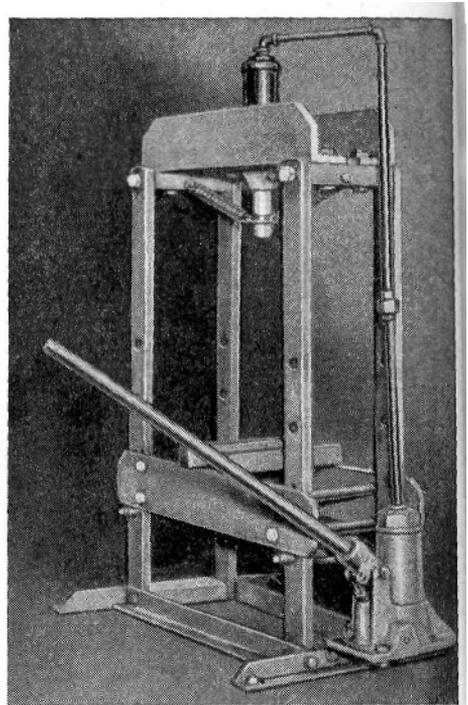
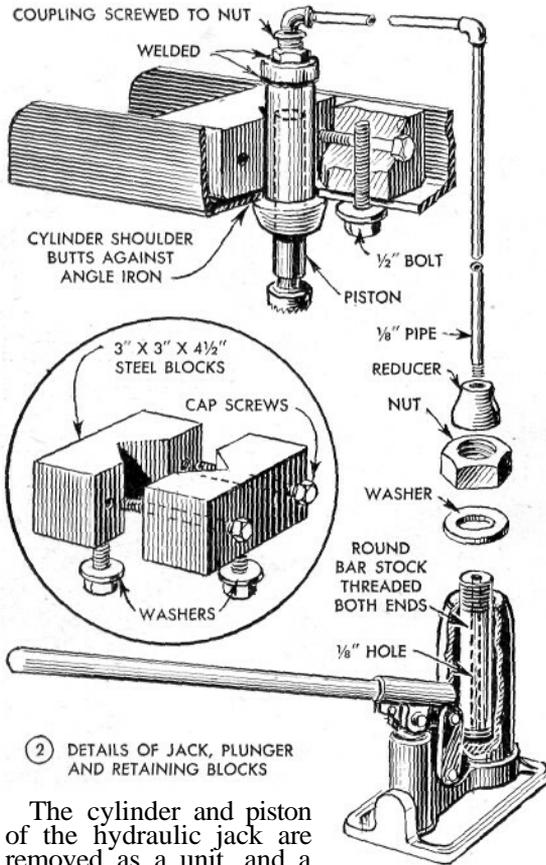
By E. S. Harris

FOR fitting bushings into connecting rods, forcing gears on shafts, removing axles from small wheels and similar work in the garage, service station or shop, a hydraulic press like the one illustrated will do the job quickly and efficiently. It consists of a hydraulic auto jack, some pipe and pipe fittings and a frame made from odds and ends of scrap iron usual-



ly available at garages and machine shops.

Four pieces of angle iron forming the base are bolted to the workbench, and the uprights are attached with $\frac{1}{2}$ -in. bolts. Four spacers, shown in Fig. 1, are drilled and tapped for $\frac{1}{2}$ -in. bolts which hold them to the uprights. The top of the press is made from two lengths of angle iron which are bolted to the spacers. A notch is cut in each piece of angle iron through which the jack will be inserted later, and two steel retaining blocks, similarly notched as shown in the circular detail of Fig. 2, are drilled and tapped for two $\frac{1}{2}$ -in. bolts on each side and on the underside to receive a similar bolt extending through the slot where the pieces of angle iron butt together. The adjustable rests are supported at any one of four positions by bars placed through $\frac{1}{2}$ -in. holes spaced at 3-in. intervals in the uprights, and are held together tightly by four studs running through sections of iron pipe.



The cylinder and piston of the hydraulic jack are removed as a unit, and a piece of round bar stock of the same diameter and length as the cylinder is substituted. A hole is drilled through it lengthwise for the passage of fluid, and the ends are threaded, one end to screw into the base of the jack housing, the other to take a nut and pipe reducer into which the feed pipe is to be fitted. After the bar is screwed into the housing, a washer is placed over it and the nut turned down tightly to prevent loss of fluid. It may be necessary to put a gasket under the washer as a seal. Instead of using a reducer, the feed pipe can be threaded and fitted into a counter-bored, tapped hole in the bar.

Next, make a housing for the cylinder and piston. This is made from a length of 1 3/4-in. iron pipe about half as long as the cylinder, welded to a metal base which is threaded like the jack housing to receive the cylinder, and is drilled for the passage of fluid. A nut is welded to the base and a feed-pipe coupling screwed into it. The cylinder and piston in the substitute housing are mounted on the frame as shown in the upper detail of Fig. 2, with the end of the housing resting on the angle iron and the cylinder shoulder butting up against the underside of the angle iron. The hous-

ing is clamped securely between the retaining blocks. In this position, the piston will press down on the work when fluid is pumped into the cylinder. The feed pipe is attached by couplings and elbows, and the jack is supported by a brace at the side of the frame. Coil springs, attached to the frame spacers by eye bolts, pull up the piston and force the fluid back when the valve is released.