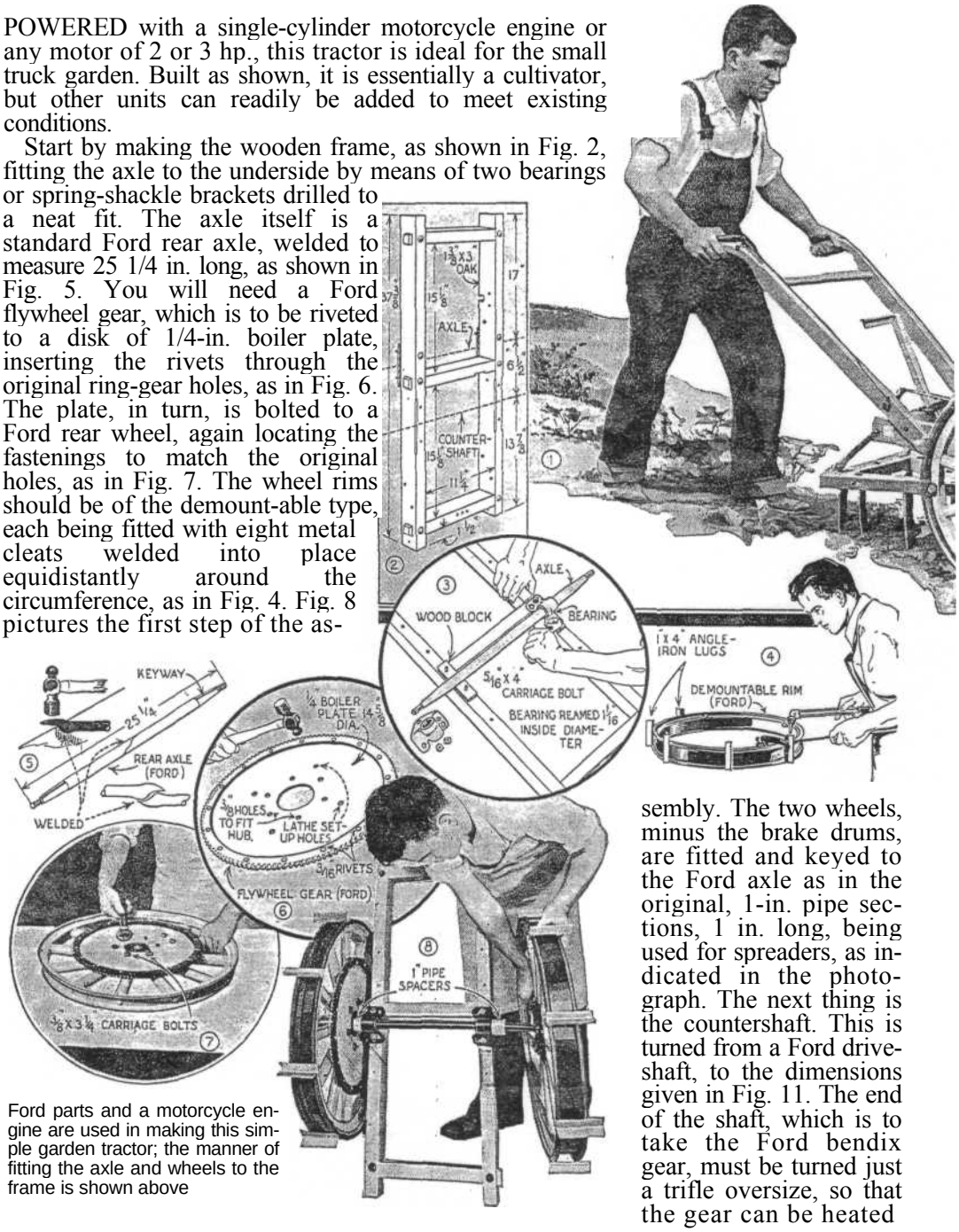
BUILD THIS SIMPLE-

POWERED with a single-cylinder motorcycle engine or any motor of 2 or 3 hp., this tractor is ideal for the small truck garden. Built as shown, it is essentially a cultivator, but other units can readily be added to meet existing conditions.

Start by making the wooden frame, as shown in Fig. 2, fitting the axle to the underside by means of two bearings or spring-shackle brackets drilled to a neat fit. The axle itself is a standard Ford rear axle, welded to measure 25 1/4 in. long, as shown in Fig. 5. You will need a Ford flywheel gear, which is to be riveted to a disk of 1/4-in. boiler plate, inserting the rivets through the original ring-gear holes, as in Fig. 6. The plate, in turn, is bolted to a Ford rear wheel, again locating the fastenings to match the original holes, as in Fig. 7. The wheel rims should be of the demount-able type, each being fitted with eight metal cleats welded into place equidistantly around the circumference, as in Fig. 4. Fig. 8 pictures the first step of the assembly. The two wheels, minus the brake drums, are fitted and keyed to the Ford axle as in the original, 1-in. pipe sections, 1 in. long, being used for spreaders, as indicated in the photograph. The next thing is the countershaft. This is turned from a Ford driveshaft, to the dimensions given in Fig. 11. The end of the shaft, which is to take the Ford bendix gear, must be turned just a trifle oversize, so that the gear can be heated

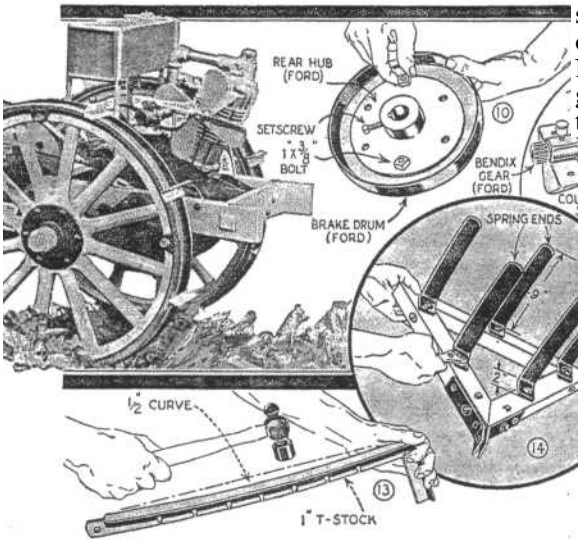


Ford parts and a motorcycle engine are used in making this simple garden tractor; the manner of fitting the axle and wheels to the frame is shown above

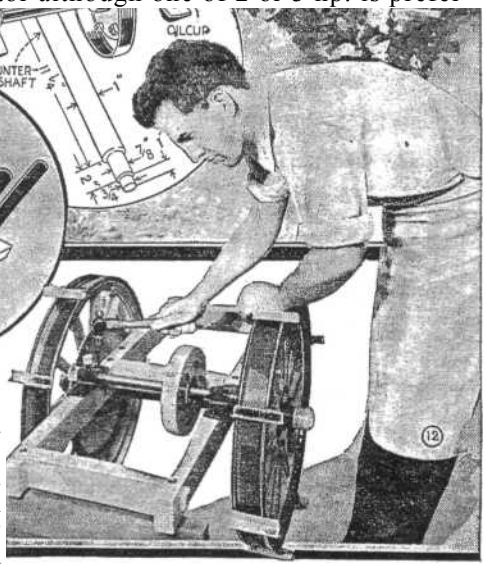
GARDEN TRACTOR

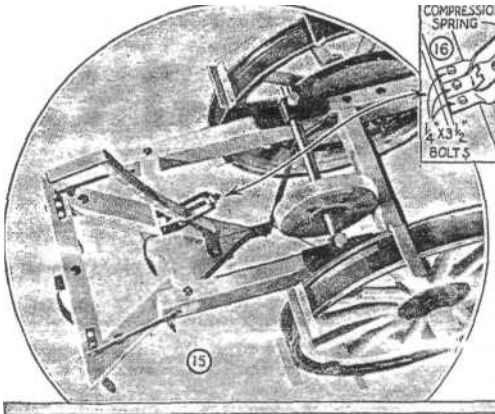
By
SAM BROWN

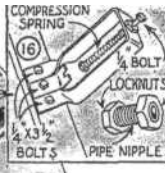
and shrunk on. Because of the greater speed of the countershaft, it is advisable to fit grease cups on the bearings. A suitable size can be obtained from the Ford driveshaft and tapped into place. The countershaft pulley is made up according to Fig. 10, using a Ford rear hub and a Ford brake drum. Bore the hub so that it will fit tightly over the countershaft and tap for a setscrew in order to make everything solid. Fig. 12 shows the completed countershaft being bolted to the frame. This must be done carefully, so that the bendix gear will mesh perfectly with the ring gear on the wheel. Test before going further by pushing the partly finished tractor backward and forward across the floor.



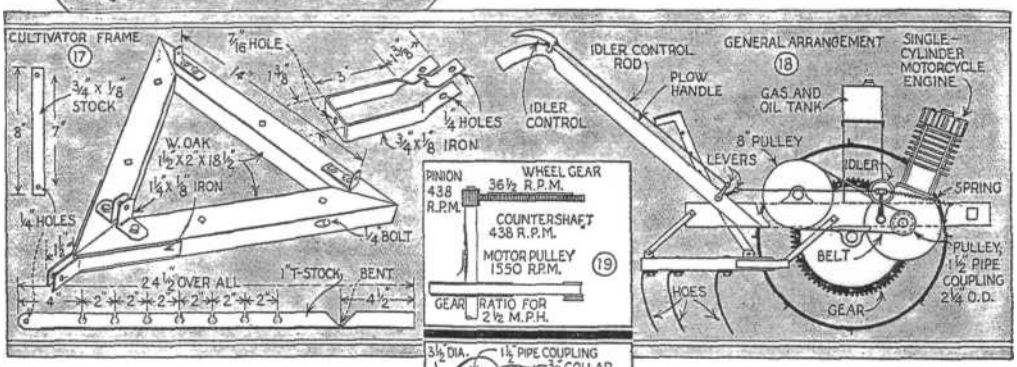
The cultivator selected is a five-tooth arrangement, intended principally for work between rows. The general details of the construction are given in Figs. 15, 16 and 17. The control arms, which regulate the depth of the cut, must be slightly curved, as in Fig. 13, in order to slide freely. The teeth are simply spring ends, cut to fit and turned over at right angles to allow bolting, as in Fig. 14. In fastening, locate the holes forward so that each hoe will have a tendency to drag straight back when the tractor is in use. One important point here: You will notice that the cultivator is supported by two strap-iron arms at the rear and by a V-shaped hanger at the front. Be sure that these are parallel, as can be seen in Fig. 18. Otherwise, either the front or rear steels will dig in at various depths. Now we come to the motor. You can get fairly good results from a 3/4-hp. motor although one of 2 or 3 hp. is prefer-

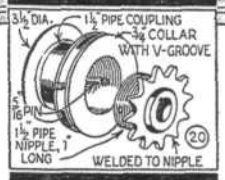


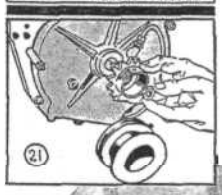




motor is mounted. Various engines will differ here, but in any case the metal support brackets should offer no difficulties. As there is no clutch on this tractor, it is evident that control must be through an idler pulley, which, when released, will let the motor run without transferring the energy to the ■wheels. This part of the unit is made from a Ford fan pulley, as shown in Fig. 24, and the mounting is by means of the original Ford fan bracket, as shown in Fig. 25. The control rod runs back to an L-shaped lever,

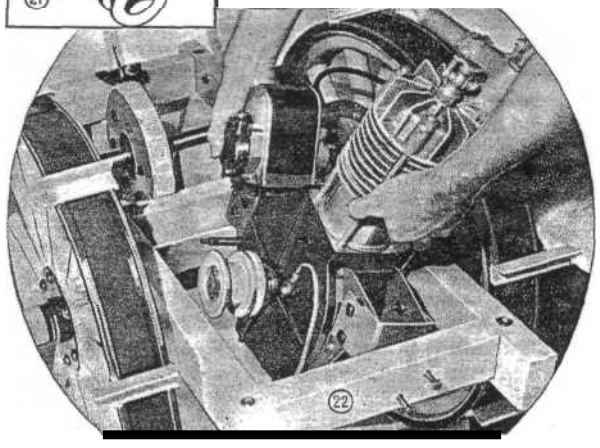




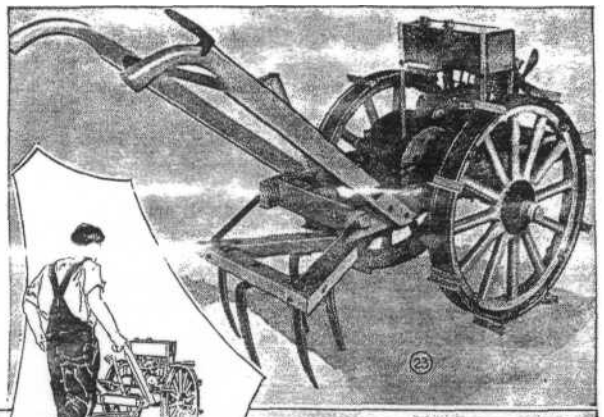


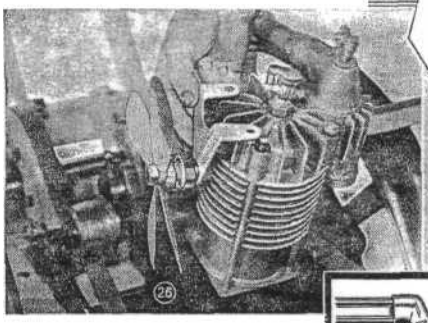
able. The motor shown here is a single-cylinder motorcycle engine, capable of developing 3 hp. and a peak speed of about 3,500 r.p.m. Thus, running at half speed, this outfit would develop a good tractor speed of 2 1/2 miles per hour, the gearing being as shown in Fig. 19, and based on a 2 1/4-in. pulley at the motor end. Inasmuch as a motorcycle engine will be the choice of the average builder, a detail on how the pulley is adapt-ed is given in Figs. 20 and 21. The original sprocket is removed and a 1-in. length of 1 1/2-in. pipe nip-ple is brazed into place. This is turned into a length of 1 1/2-in. pipe coupling, which, with the flanges shown in Fig. 20, make the actual pulley. The V-groove on the heavier flange makes the take-off to the air-circulating fan. In mounting the completed pulley, the original shaft key and nut are used as before, as shown in Fig. 21. Fig. 22 details how the

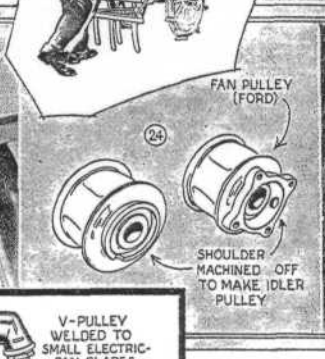
made from automobile gas-control fittings, and then up the plow handle to another lever taken from an automobile emergency brake. In use, a spring holds the idler clear, motive power being obtained by depressing the control lever so that the idler is forced

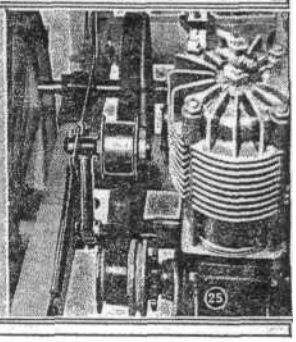


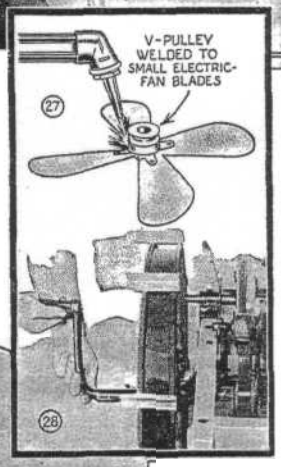
against the belt. Notice, in Fig. 27, that the circulating fan is simply a small electric fan coupled with a small V-pulley. The whole unit is held with a suitable bracket from No. 16-gauge metal stock clamped to the top of the cylinder, as in Fig. 26. Starting is done by inserting the crank between the spokes of the wneei to engage the pin inside the motor pulley, as shown in Fig. 28. The gas and oil supply is carried in a small tank mounted with flat-iron stock, as



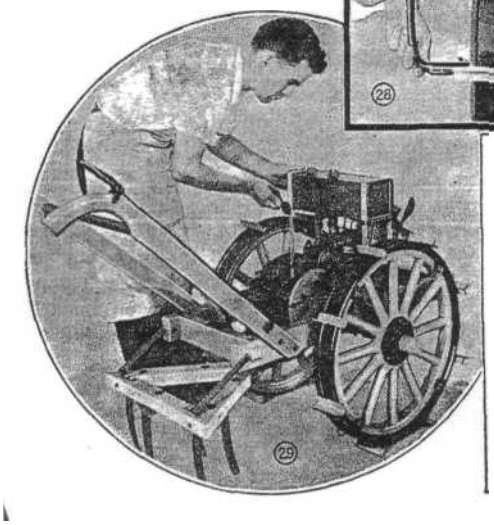








shown **in** Fig. **29. This** can be made from galvanized stock to fit, or any small tank can be adapted for the purpose. Don't forget the paint. Of course, it doesn't make the thing run any better,



but it does stamp your work as well done.

In constructing this garden tractor, it **is** advisable to follow the instructions in all details, using the various parts that have been recommended. Where these are not available, other similar parts may have to be substituted and, in this case, it may be necessary to deviate from the exact mounting arrangement shown.

MATERIAL LIST

1. 10 ft., 1 3/8 by 3-in. Wh. Oak, for frame
2. One Axle (Ford rear)
3. Four Spring-Shackle Brackets
4. Two Wheels (Ford rear)
5. 7 ft., 1-in. Angle Iron
6. 1/4-*in.* Boiler Plate, 15 En.
7. Ring Gear (Ford)
8. One Roar Hub (Ford)
9. One 8-in. Brake Drum (Ford)
10. One Driveshaft (Ford)
11. Three Spring Leaves (1 1/2ln, wide)
12. Strap Stock for Cultivator
13. 25 in.. 1-in.T-Stock
14. 11/2-in. Pipe Coupling
16. 1/8-in. Pipe Nipple
17. Two 1/8 in. Locknuts
18. 5ft.,11/2by2-in.,Oak
19. One Fan Pulley (Ford) with Bracket
20. Small Electric Fan
21. Small V-Pulley
22. Two Gas Control Levers (from any car)
23. 5ft.,3/16-in.Rod
24. Emergency Brake Handle (from any car)
25. Two Plow Handles
26. One Bendix Gear (Ford)
27. Motor, Motor Mount, Fastenings and Small Items to Complete Assembly