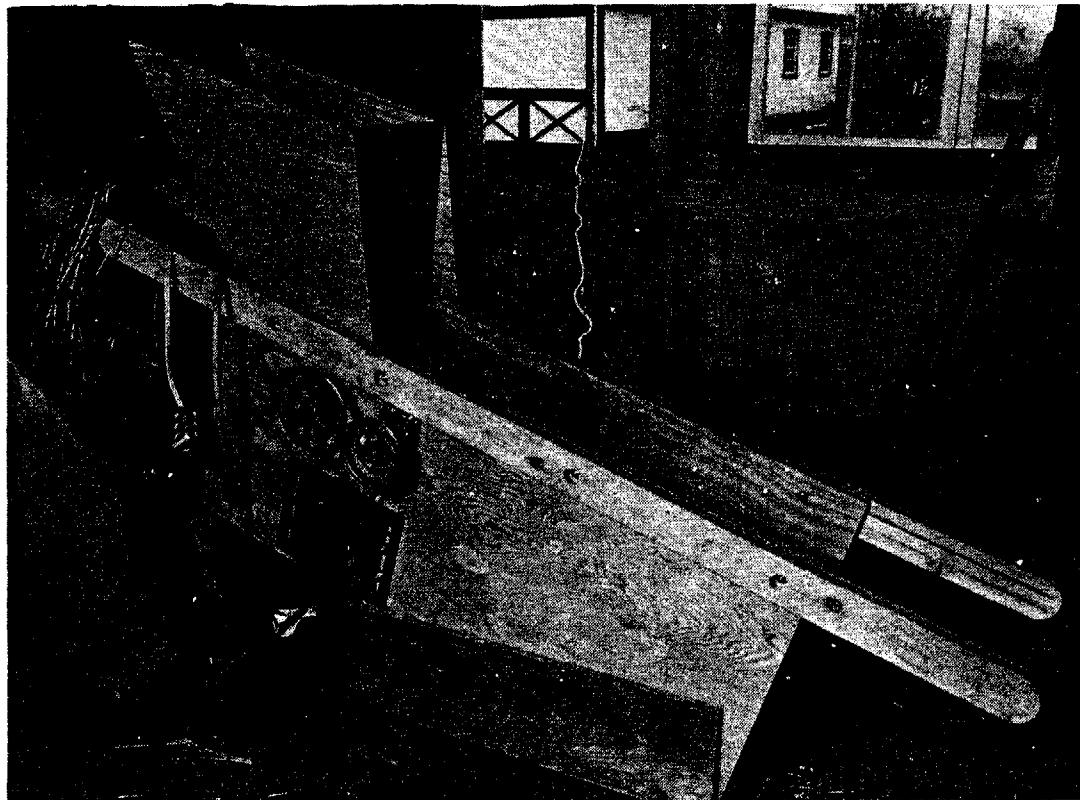
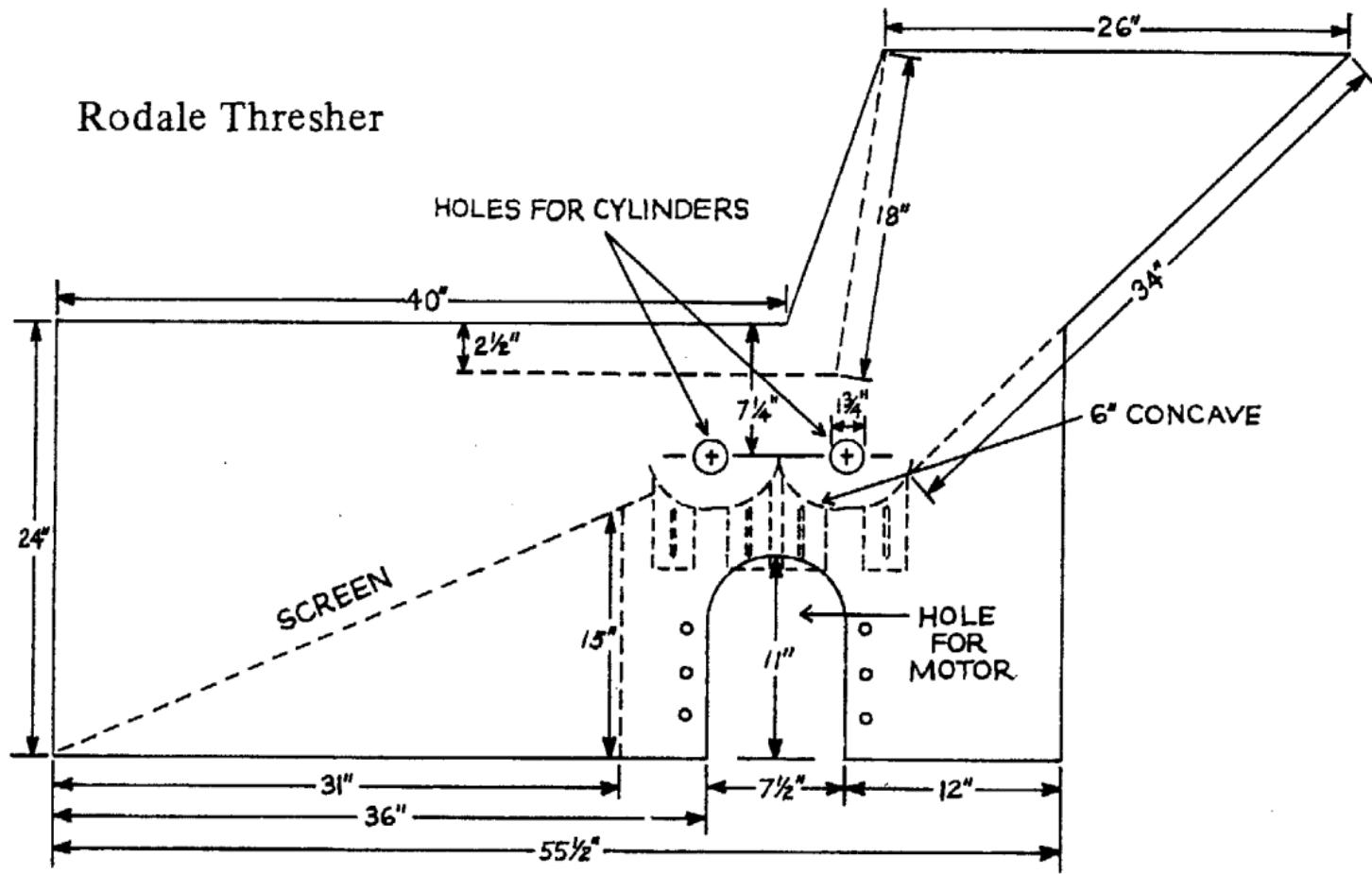


Rodale Press's Research and Development folks have devised a homestead-scale thresher, which has been used at the New Organic Gardening Experimental Farm to thresh crops ranging from



Rodale Thresher



soybeans to amaranth. The machine is not fully refined, so a certain amount of hand-winnowing may be necessary. But it is an inexpensive alternative to the sophisticated and expensive seed threshers and cleaners on the market. It will separate most any cereal crop into seed and straw and can be operated by only one or two people. Different pulley sizes let you alter the threshing speed as best suits each crop.

Materials:

2-4' × 8' sheets of $\frac{3}{4}$ " exterior plywood	or	2 sides (see diagram)
		1 pc. 12" × 18"
		1 pc. 12" × 34"
		1 pc. 12" × 21"
		1 pc. $11\frac{3}{4}$ " × 5"
1' length of 6" steel pipe		
$\frac{3}{16}$ " steel plates		2 pc. $5 \times 2\frac{1}{2}$ "
		1 pc. 10" × 13"
4 pillar blocks for $\frac{3}{4}$ " shaft		
14 $\frac{1}{2}$ ' length of #130 $5\frac{1}{16}$ " steel coil chain		26 sets, 3 links each, 6 $\frac{1}{2}$ " long
2-1 $\frac{1}{2}$ ' steel shafts		
misc. #10 wood screws		
$\frac{5}{16}$ " or $\frac{3}{8}$ " hex bolts and nuts		
1 $\frac{1}{2}$ horsepower motor with step sheaves		

2-4" pulleys

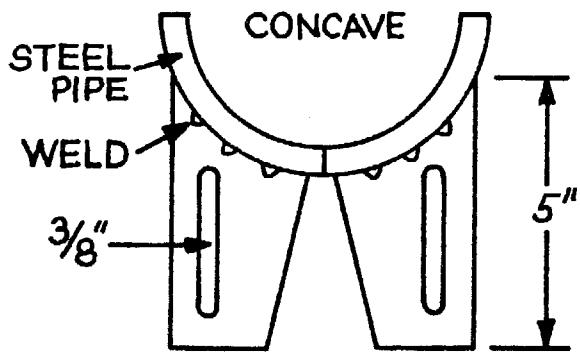
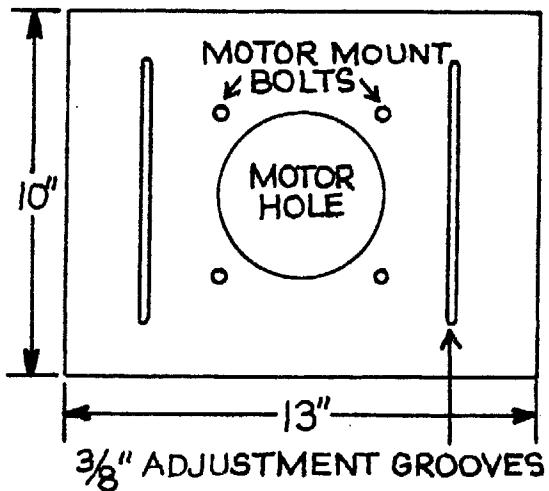
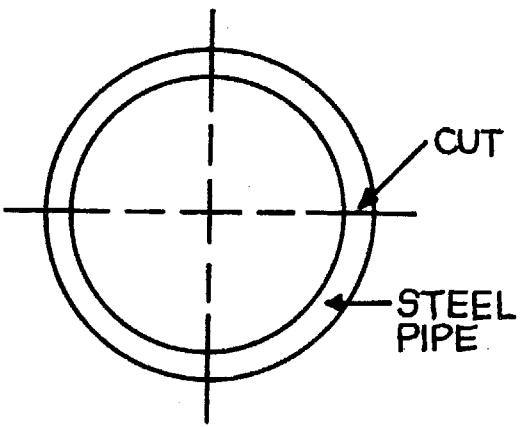
1-6" pulley

1-8" pulley

Construction: Cut all the plywood parts for the thresher body as indicated on the materials list. The sides are formed as shown, and each must have a $7\frac{1}{2}$ -inch-wide cutout for the motor and two $1\frac{3}{4}$ -inch holes for the flail shafts. Fasten the parts together with 2-inch #10 screws.

To make the flail shafts, cut the $14\frac{1}{2}$ feet of chain into 26 three-link sets. Weld the cuts shut and mount the middle chain link on the steel bars. Arrange the three-link sets so they fit snugly together at 90° angles to the link next to them. Now weld them to the shaft. Once 13 links have been fixed to each steel shaft, then secure the shafts in place with pillar blocks, bolting them to the side of the thresher.

The next job can be done with a hacksaw but if you have access to an oxyacetylene torch, use it. Divide the 1-foot-long



Small-Scale Grain Raising

6-inch steel pipe into quarters lengthwise. Then cut supporting plates from scrap steel with grooves for a sliding adjustment, as shown. Weld the steel supports to each pipe section and mount them below the cylinders so that the spinning chain links just miss the pipe basin.

The motor mounting plate will have to be adapted to your particular motor but you can use this illustration as a guide.

You may select pulley (sheave) sizes to fit your purpose. To make ours adaptable, we used a four-inch step sheave on the motor, a six-inch step sheave on one cylinder end and an eight-inch sheave on the other cylinder end. On the side opposite the motor, install two identical pulleys of any size; we used four-inch ones. Run a V-belt around them so that the shafts turn in unison.

Attach the motor to the mounting plate with four bolts. Hoist the motor into a good central position so that any change you may want to make is only a vertical one. Now bolt the mounting plate to the side of the thresher and adjust the height according to the V-belt fitting.

Operation: You'll need a screen of appropriate size for each different grain you want to thresh. Make a frame one foot wide and anywhere from three feet to five feet long to fit in right below the second concave. Beaten grain and straw will fly from the cylinders onto the screen. The smaller, heavier grain will fall, while the straw is blown on through. You may find it a help to brush the straw against the screen to help separate the seed. Two people are better than one for this job.

We found that the thresher worked better at a slow speed for larger items, like soybeans, and at fast speeds for the small items. You can be your own judge here.

Caution! Be sure to keep your hands away from the grinding chamber. If you are allergic to dust, you may want to enclose the threshing chamber better.