# 1:20.3 scale, steam-powered drum winch

Plan set #83

by Ted Stinson | Wiscasset, Maine

The model that can be built from these drawings is a steam-powered drum winch. It is a single-drum type, used extensively as a hoisting engine. The model is made of composite materials, so it will be necessary to seal and finish the engine carefully so that the finished winch looks like it is made of metal.

## Construction

Begin by making the base for the engine and winch. Use a piece of ⅛" x 2¼" x 6" plywood. Temporarily glue the pattern to the wood and cut out the parts with a fine-tooth fretsaw. When done, sand the edges smooth and glue the parts together as shown on the drawing. Seal this with two coats of clear lacquer, sanding lightly between coats. Paint this as you like (red or green would be typical).

Make two flywheels. Cut two ¼"-wide pieces from a piece of 1½" OD plastic pipe, available in most plumbing departments. Cut the spoke section from 1/32" plywood. Glue this in place, along with a short piece of ⅛" ID pipe. Seal and paint this much.

Now make the steam-cylinder assembly. When finished, seal and paint.

Finally, make the drum from a 1¼"-long piece of ¾"-diameter dowel. Cut the end pieces from 1/32" ply. Glue these in place, then drill a ⅛"-diameter hole through the center of the drum. Fit and glue a ⅛"-diameter x 2⅜" rod in the drum. Fit and glue one of the flywheels to the drum. Now make a second rod with crank at one end and a flywheel at the other. Refer to the drawing for the details.

Locate and glue the rods on the base as per the drawing. The black strap that connects the two rods can be made from a 3/16"-wide strip of black vinyl tape wrapped around the flywheel and the ⅛" ID spacer for several layers.

With the drum and winch finished, you can now make the boiler. Use a 2⅞"-long piece of 1¾"-diameter dowel as the base. Sand this part very smooth and seal it with clear lacquer. Cut out the drill pattern and tape it to the boiler. Use the drill pattern to drill 3/64"-diameter pilot holes for the escutcheon pins. Glue the pins in place.

Now add the various details shown on the drawing. The door is made from heavy cardstock and the gauge from a large-diameter grommet. The conical section at the top can be turned from a 1"-diameter dowel. With the boiler assembled, it can be painted gloss black.

The boiler and winch can now be assembled to complete the model.

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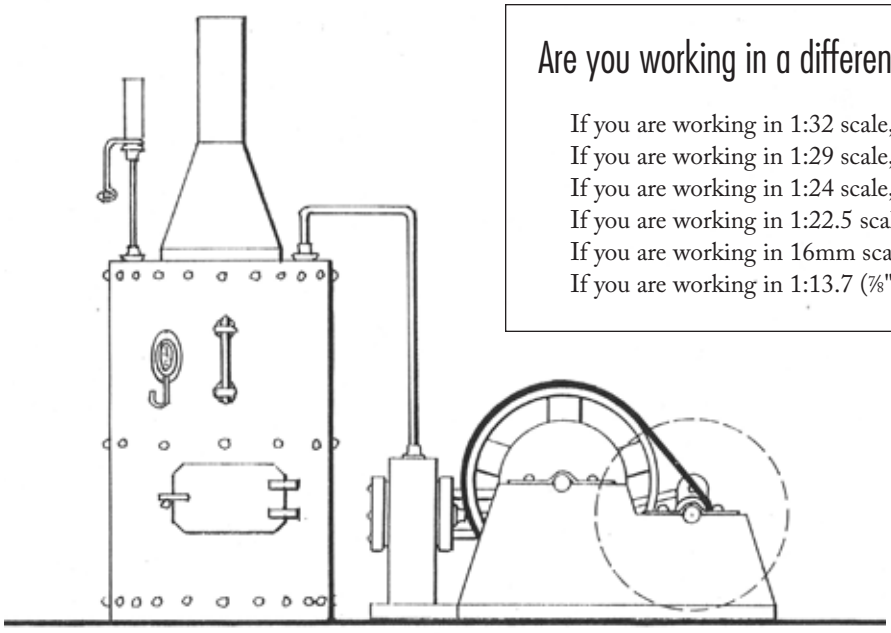
This is an online supplement to the October 2007 issue of *Garden Railways* magazine. To purchase previously published paper plans, see the list of those available at *www.sidestreet.info*

A kit for the steam-powered drum winch (#288) is available from Northeast Narrow Gauge for $45 + $6 s&h. Order from Northeast Narrow Gauge, PO Box 191, Wiscasset ME 04578. Web site: *www.nemodel.com*

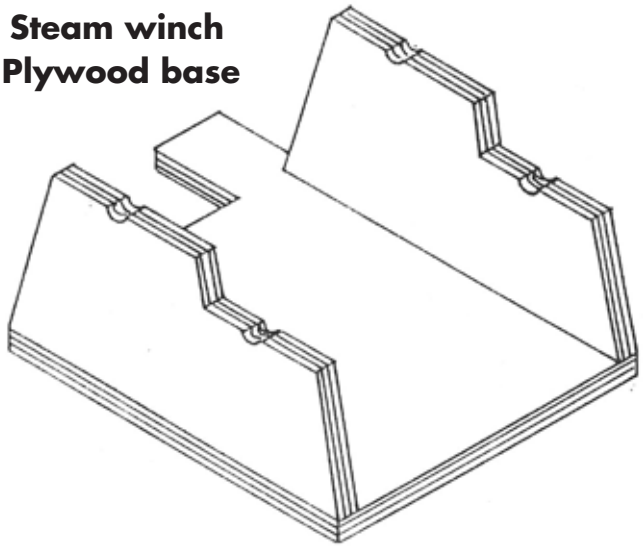




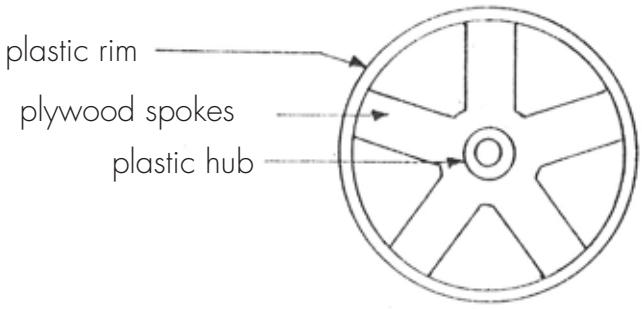
## Are you working in a different scale?

If you are working in 1:32 scale, reduce these drawings to 63%.
If you are working in 1:29 scale, reduce these drawings to 70%.
If you are working in 1:24 scale, reduce these drawings to 88%.
If you are working in 1:22.5 scale, reduce these drawings to 90%.
If you are working in 16mm scale, enlarge these drawings to 107%.
If you are working in 1:13.7 (⅞") scale, enlarge these drawings to 148%.

**Steam winch**
**Plywood base**

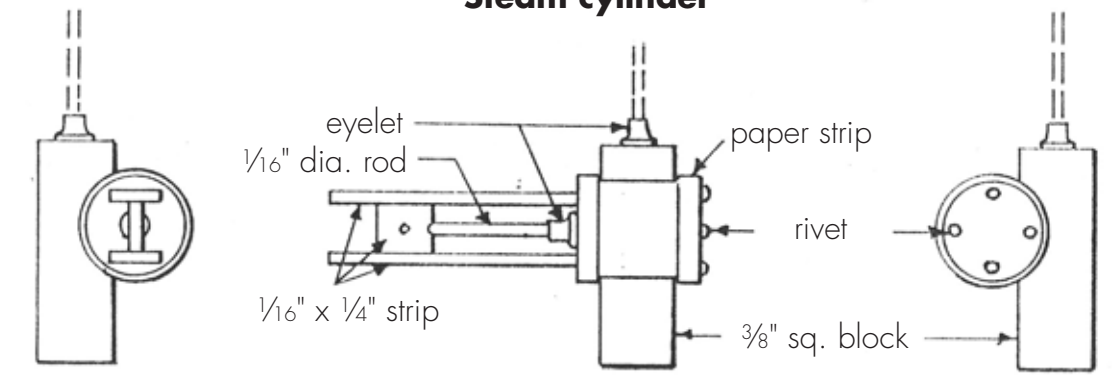


**Flywheel**
Make 2




Plywood spokes are recessed to bottom of rim. The plastic hub rests on top of the spokes.

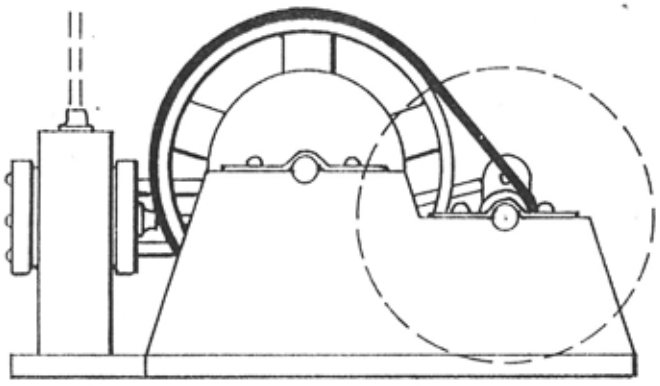
**Steam cylinder**



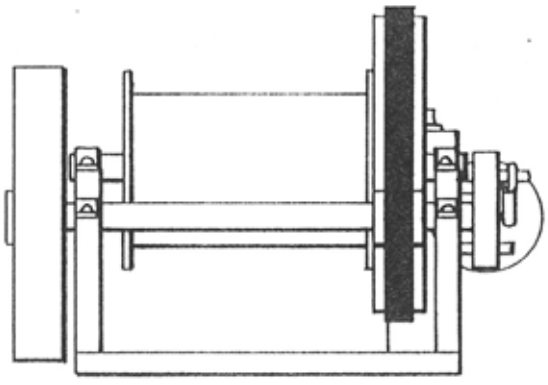

front view

side view

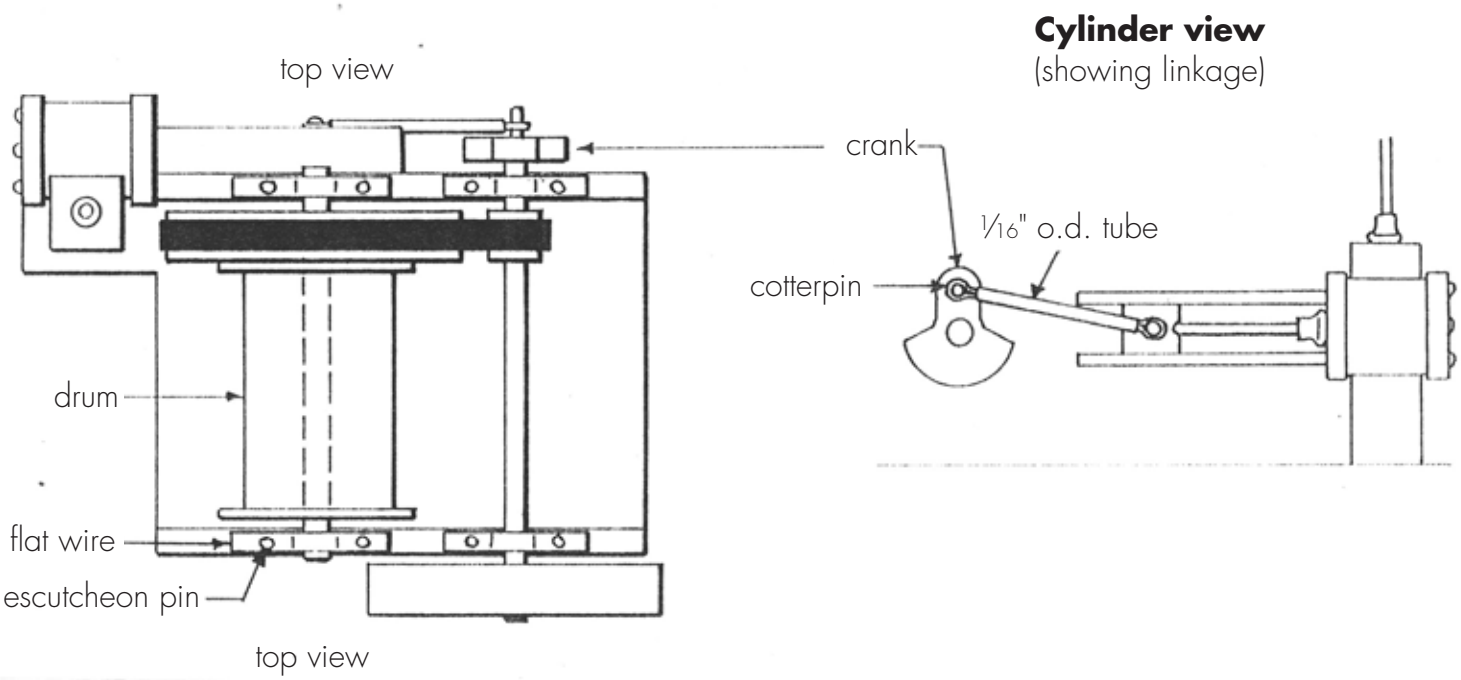
rear view



side view



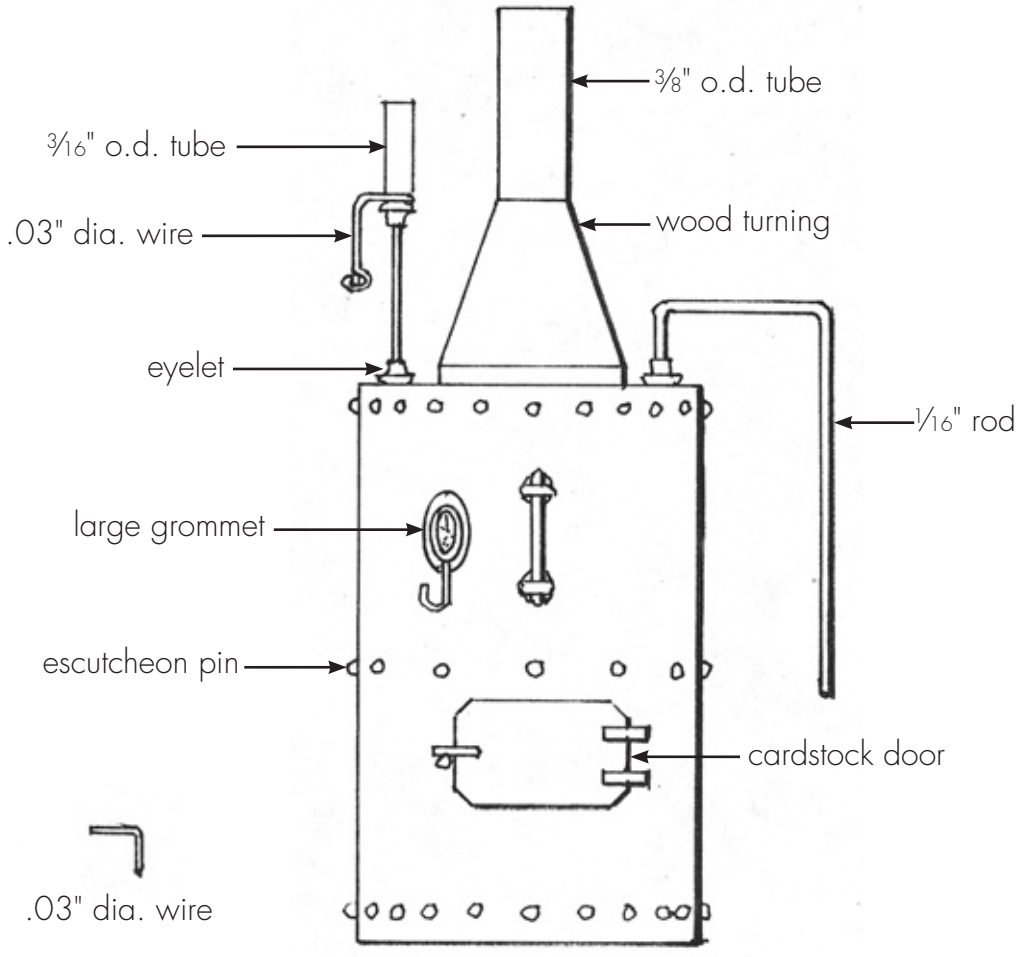
front view

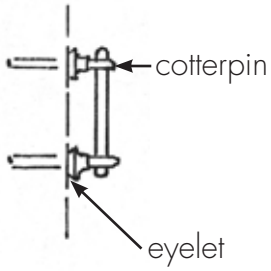



**Cylinder view**
(showing linkage)




**Boiler**



**Drill pattern**