Welcome To Our Homemade Power Section

Windmill Power Plant for the Amateur's Workshop

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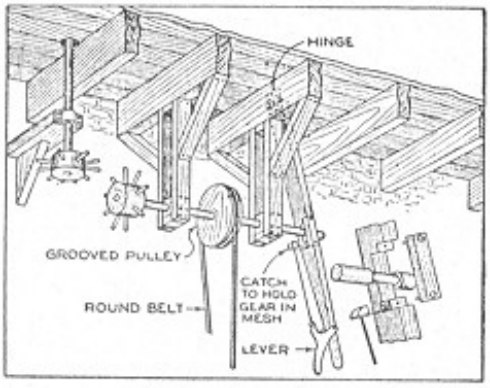
COMPARATIVELY few amateur mechanics have their shops equipped with any device for operating light machinery by power, and many others have forgone the pleasure of such machines and tools on account of their lack of power. This article describes and illustrates a windmill that will deliver sufficient power to drive light lathes and similar machines. All parts of the mill are of such simple construction that little or no difficulty should be encountered in its making.

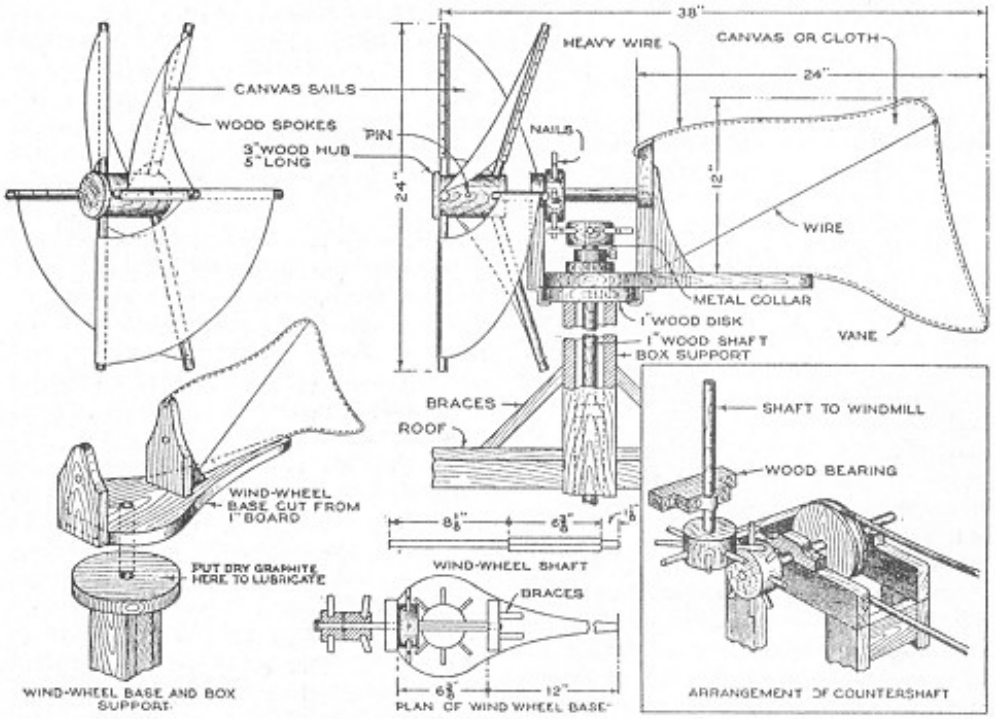


A Simple Gear Shifter for Starting or Stopping the Machinery Driven by the Windmill Power Plant

The wind wheel proper is simplicity itself, consisting of a wooden cylinder into which eight wooden spokes are driven. The canvas sails are attached to the spokes in the manner indicated, and given a coat of varnish. A hole is bored through the wooden cylinder to take the rounded end of the shaft, a pin serving to hold the two together.

One-inch boards are used for the wind-wheel base and its box support, as indicated, the vertical pieces of the base being drilled to accommodate the wind-wheel shaft. A simple gear, having a square hole through its center, is secured to the square end of the shaft; this gear consists of a wooden disk of suitable size in the circumference of which headless nails, evenly spaced, are inserted.

The vane, which holds the wheel to the wind, is made by sewing canvas over a stiff-wire frame, and varnishing the same as the canvas sails. The wind-wheel base rests and revolves on a wooden disk nailed to the top of the box support, plenty of dry graphite being used between the two surfaces to lubricate them.



Constructional Details of the Windmill Power Plant: Such a Plant Is Capable of Operating Light Lathes and Similar Machinery. Besides, It can be Used for Operating Such Things as Churns and Ice-Cream Freezers on the Farm, Where Its Assistance Is Particularly Desirable

The vertical shaft has mounted at its upper end a gear similar to that on the wind-wheel shaft, with which it meshes, as indicated in the drawing. A metal collar and setscrew serve to keep the two gears in mesh. The power of the windmill is transmitted to the machinery, underneath, by another set of gears in the manner shown in the insert.

For starting and stopping the machinery, a simple gear shifter is provided, as shown in the smaller drawing. A wide groove is cut in the shaft over which the gear-shifting lever is fitted, as indicated. To hold the gears in mesh while the machinery is in operation, a catch which engages the bottom of the shaft hanger is made, simple means being provided for releasing the catch so that the gear shifter can be moved.

Of course, the operation of such a power plant is dependent entirely on the wind, but if there is any wind blowing, no matter from what direction, the windmill will operate. Such an apparatus can be arranged to drive such small machinery as churns and ice-cream freezers, and the speed can be regulated by varying the size of the driving and driven pulleys. The gears, however, for ease in construction, should all be of the same size.

[Back] [Home] [Up] [Next]