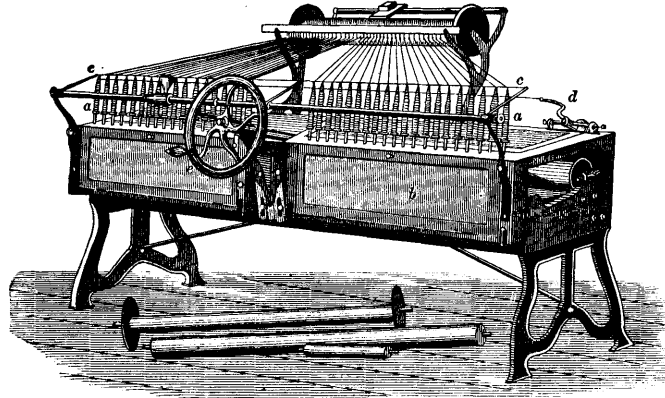


Fig. 7222.



Bobbin - Winder.

Wind'er. (Fiber.) 1. A machine for winding yarn on spools. There are various forms for filling spools or bobbins from skeins, balls, cops, reels, or beams: the bobbin horizontal or inclined.

Fig. 7222 is a machine for winding from a beam on to upright bobbins *a* on skewers rotated by gearing within the box *b*. Two fallers *c d* are used, one for building up the cop, the other for tension. In the figure the machine is shown as hand-driven by the wheel *e* in the rear.

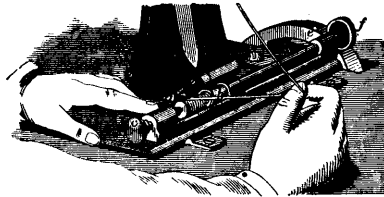
2. An apparatus for winding silk on to bobbins.

Each hank is extended upon a light, six-sided reel called a *swift*, a number of which are arranged side by side upon an axis on either side of the frame. The bobbins, one for each swift, are similarly arranged above, and the filaments being attached to the bobbins these are set in motion, causing the swifts to turn around and deliver the silk. The fibers pass through guides to which a traversing motion is imparted so that the silk is laid evenly on the bobbins.

3. A machine for winding bobbins for sewing-machine shuttles.

In Fig. 7223 is shown the thread passing off from the spool of thread on the machine; *b* is the bobbin-winder; *a* is the bobbin in process of being wound; *c* is the head on the adjustable spindle-center that holds the bobbin, and is pulled out by this head in order to get the bobbin between it and the spindle;

Fig. 7223.



Bobbin - Winder.

d is the point of the bobbin which should be oiled when it is being wound; *e* is the balance or fly wheel on the machine; and *f* is the bobbin-winder wheel.