Winder. (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. 7220 is a machine for winding from a beam on to upright bobbins a on spindles rotated by gearing within the box b. Two rollers c d are used, one for holding up the cap, 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 bank is extended upon a light, six-sided reel called a swill, a number of which are arranged side by side upon an axis on either side of the frame. The bobbins, one for each swill, are similarly arranged above, and the filaments being attached to the bobbins these are set in motion, causing the swills 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; c is the bobbin in process of being wound; e 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;