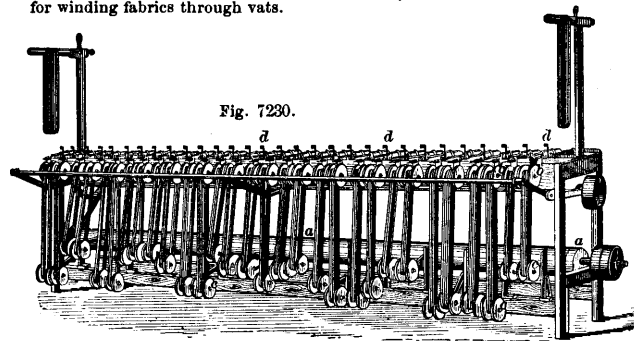


Wind'ing-ma-chine'. A reel, swift, warping-machine, or similar contrivance. See BALLING-MACHINE; REEL; WINDER; etc.

Fig. 7230 is a machine designed to wind direct from the hank or skein to the shuttle-bobbin. It has 30 spindles, rotated by bands which reach from the spindle-whirls to the long drum *a*, which is common to the whole set. The skeins are laid around two spools *b c*, the lower of which is dependent and keeps the skein distended. The thread of the skeins passes upward to wire eyes *d d*, which are traversed back and forth over the bobbins so as to build up the thread symmetrically upon them. See also WINCING-MACHINE; WASHING-MACHINE, for machines for winding fabrics through vats.



Shuttle Bobbin-Winder.