(No Model.)

G. H. WILLEY.

MACHINE FOR WINDING BOBBINS FOR SEWING MACHINES.

No. 377,542. Patented Feb. 7, 1888.

Fig. 1.

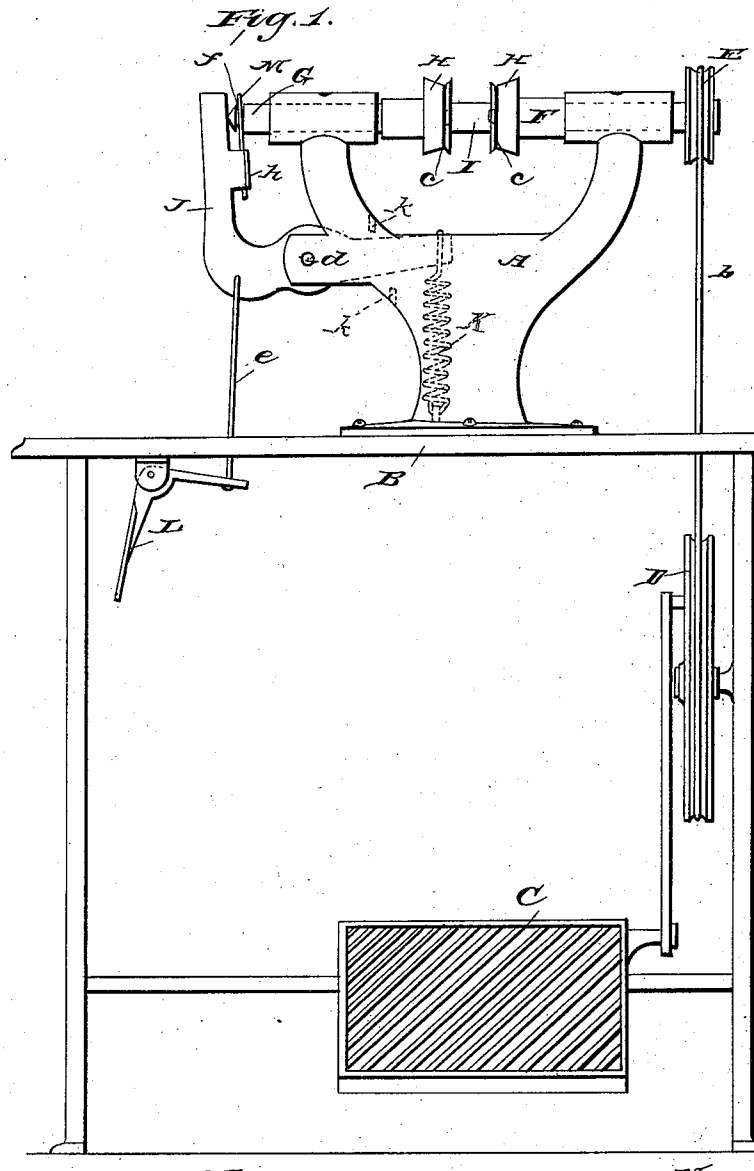


Fig. 3.

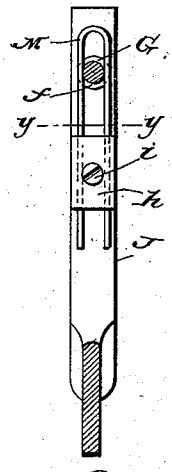


Fig. 4.

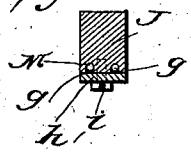
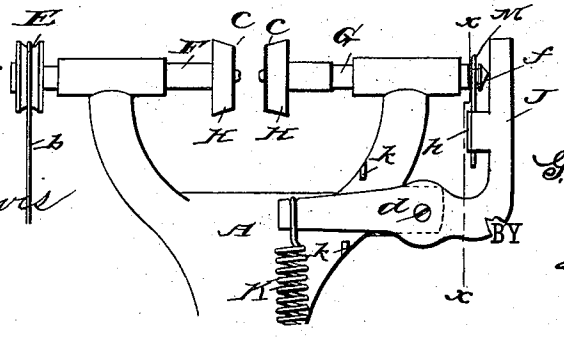


Fig. 2.



WITNESSES:

N. R. Davis

A. Badgurick

INVENTOR:

G. H. Willey

BY Munn & Co

ATTORNEYS.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

GEORGE HENRY WILLEY, OF ABINGTON, MASSACHUSETTS.

MACHINE FOR WINDING BOBBINS FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 377,542, dated February 7, 1888.

Application filed August 10, 1887. Serial No. 246,584. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HENRY WILLEY, of Abington, in the county of Plymouth and State of Massachusetts, have invented a new and useful Improvement in Machines for Winding Bobbins for Sewing-Machines, of which the following is a full, clear, and exact description.

This invention relates to machines for winding thread on the bobbins of the Wheeler & Wilson, the Singer, and other sewing-machines in shoe-shops and elsewhere; and it consists in certain novel constructions and combinations of parts, substantially as hereinafter described, and pointed out in the claims, the whole constituting a machine which is very simple, and easily and quickly operated for winding one bobbin at a time, and possessing certain special advantages, as hereinafter set forth.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a front elevation of a bobbin-winder embodying my invention. Fig. 2 is a rear elevation of the same in part. Fig. 3 is a vertical section, on a larger scale, upon the line *x x* in Fig. 2, showing certain details only; and Fig. 4 is a horizontal section upon the line *y y* in Fig. 3.

A is the body or frame of the machine, which may be secured upon a bench or table, B, for operation by means of a treadle, C, which sets in motion, through a pitman and crank or wrist-pin connection, as shown in Fig. 1, a driving-pulley, D, that through an endless band, *b*, and second pulley E rotates the one spindle or mandrel, F, of the winder. The band *b* may either be a straight or crossed one, according to the direction it is required to run the winder.

In the same axial line as the spindle F is another shaft or spindle, G, which is not only capable of rotation, but also, unlike the spindle F, of being moved longitudinally toward or from the spindle F. Upon the inner ends of these spindles F and G, which have their bearings upon the frame A at suitable distances apart, are secured circular heads or disks H H, that serve to hold the bobbin I between them while winding, a rubber facing, *c*, upon each disk H serving to keep the bobbin from slipping and from falling out while winding. Pressure is applied to the outer end of the spindle G to keep the bobbin in position while winding. This is done mainly by a bell-crank lever, J, pivoted to the main frame at *d* and controlled in part by a spring, K, that operates to keep the spindle G pressed forward.

L is a bell-crank lever beneath the bench or table top, arranged in such lateral relation to the treadle C that the operator while sitting can press with his left knee on said lever while the foot of his other leg is applied to working the treadle, thus leaving his hands free for putting the bobbin in and out and for feeding or controlling the thread to the bobbin. The one arm of this lever L is connected by a rod or wire, *e*, with the bell-crank J, and when the operator presses his knee to the left against said lever L the outer upright arm of the bell-crank J is moved in the same direction against the tension of the spring K. This movement causes the spindle G to be slid back for the purpose of putting in the bobbin or taking it out, the sliding of spindle G being effected by a bent wire shifter, M, made to straddle a grooved portion, *f*, of the spindle G and connected with the bell-crank J by fitting it down within or through grooves *g g* in a projection on the face of the upper arm of the bell-crank or lever J, the legs of said shifter M being held, with freedom to slide longitudinally, if desired, within the grooves *g g* by a face-plate, *h*, secured by a screw, *i*. This makes a very simple shifter attachment that may be readily taken out or replaced when necessary.

The bell-crank lever J has its movement restricted in either direction by means of stops *k k* or otherwise.

The bobbin I being in position in the machine, the operator presses the thread onto or over it while he works the treadle with his one foot to wind the thread onto the bobbin, his left knee then being inoperative against the lever L.

The bobbin holders or disks H H are somewhat smaller on their faces than the heads of the bobbin to facilitate the taking of the bobbin from the winder by the finger and thumb after the thread has been wound on it. Said holders or disks H H, too, are of conical form on their peripheries, converging toward one another. The object of this is, in case the op-

erator should fill the bobbin too full of thread, some of the thread would be wound on the disk or disks H H, which, by reason of their beveled exterior, would cause the thread to lie close to the bobbin, so that when taking the bobbin out of the machine the thread would slide toward the center and come out all straight. Were the bobbin-holders H H beveled in a reverse direction, or were they simply flat thin disks, the thread would wind upon the spindles on either side in case the bobbin got too full.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the frame or body A, of the rotatable spindle F, provided with a disk-like bobbin-holder on its inner end, the rotatable and longitudinally-sliding spindle G, having a corresponding bobbin-holder on its inner end, the lever J, connected with said spindle G, a spring applied to said lever operating to force up or inward said spindle G, the lever L, connected with the lever J and adapted to be controlled by the knee of the operator, and the treadle C, with connected devices for rotating the spindle F, essentially as described.

2. The combination, with the rotating and longitudinally-sliding spindle G, of the lever J, and the spindle-shifter M, fitted to slide within or through grooves in said lever and to straddle and engage with said spindle, and the removable face-plate *h*, essentially as shown and described.

GEORGE HENRY WILLEY.

Witnesses:

ALBION CONANT,

LEVI GILBERT PERKINS.