No Model.)

H. & J. W. COLLINS.

BOBBIN SUPPORTING SPINDLE AND BOLSTER THEREFOR FOR WINDING MACHINES.

No. 345,030. Patented July 6, 1886.

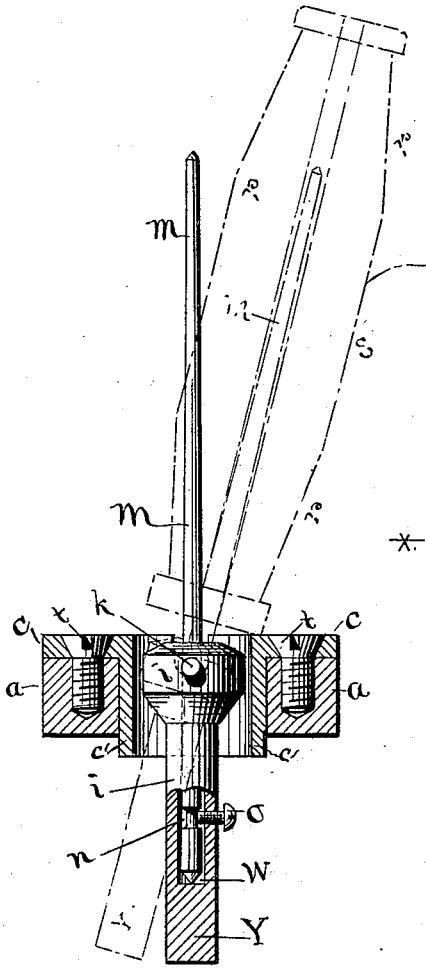

FIG. 1.

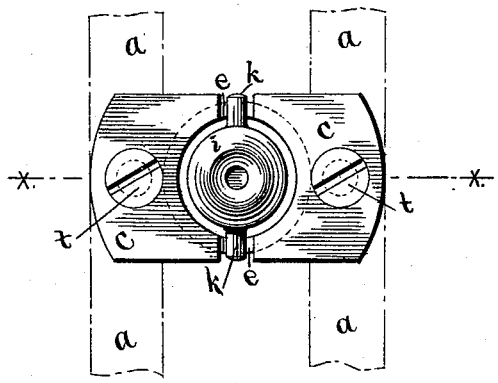

FIG. 2.

WITNESSES.

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UNITED STATES PATENT OFFICE.

HENRY COLLINS AND JOSEPH W. COLLINS, OF PAWTUCKET, RHODE ISLAND.

BOBBIN-SUPPORTING SPINDLE AND BOLSTER THEREFOR FOR WINDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 345,030, dated July 6, 1886.

Application filed December 21, 1885. Serial No. 186,271. (No model.)

To all whom it may concern:

Be it known that we, HENRY COLLINS and JOSEPH W. COLLINS, citizens of the United States, residing at Pawtucket, in the county of Providence and State of Rhode Island, have invented a new and useful Bobbin-Supporting Spindle and Bolster therefor for Winding-Machines, of which the following is a specification.

Our invention relates to bobbin-carrying spindles and their supports; and it has for its object to produce an oscillating bolster which shall be simple in construction, inexpensive in manufacture, and one which can be readily and easily placed in and removed from operative position.

The invention consists in a weighted bolster having an enlarged upper end, from which pivotal arms project, and a plate having a tubular depending portion, and formed with open sockets in its upper side for the reception of the pivotal arms on the bolster, the whole combined and arranged as hereinafter described.

The accompanying drawings are hereby made part of this specification, similar letters of reference thereon indicating corresponding parts.

Figure 1 is a perspective view of our oscillating bolster and spindle in upright position, showing the plate and bolster-rail in section on the line *x x* of Fig. 2, and exhibiting an outline of the spindle carrying a filled bobbin, and inclined on the pivotal arms of the bolster by the tension of the yarn winding off from the bobbin. Fig. 2 is a top view of the bolster-plate, and of the bolster resting in the tubular extension of said plate on its pivotal arms, the bolster-rails being shown in outline.

a a are the bolster-rails.

c is the bolster-plate, having a tubular extension, *c'*.

e e are sockets in the bolster-plate, for the reception of pivotal arms on the bolster.

i i show the oscillating bolster with its pivotal arms *k k* projecting from its enlarged upper end.

m is the spindle, having in its lower end the groove *n*, into which the end of the screw *o* extends, as seen in Fig. 1.

r r show in outline a filled bobbin on the inclined spindle, and *s s* indicate the yarn or thread unwinding therefrom.

t t are screws which firmly secure the bolster-plate to the rails.

Our improved device is intended to replace the support for the supply-bobbin in machines of the class shown in Patent No. 236,767, dated January 18, 1881.

In the application of our invention to such machinery, the thread or yarn seen at *s s* in Fig. 1 is passed through the stop-motion device and regulated to that degree of tension that will incline the spindle, as seen in outline in Fig. 1. Upon the breaking of the thread or yarn the tension is gone, and the bobbin is automatically brought to a vertical position by the weight of the heavy end of the bolster seen at *y*. As a part of this operation, it is essential that the bolster carrying the spindle and bobbin should be so made as to easily swing forward and backward in the manner shown and stated. This has been done heretofore by flattening the lower end of the spindle and so fastening it in the step of the bolster as to give the spindle play or spring for the purposes described; but we accomplish this by properly adjusting the weight of each end of the bolster, and providing its upper end with the pivotal arms *k k*, which are rested in the sockets *e e* in the bolster-plate *c*. In the old way the spindle is necessarily "dead," and the bobbin revolves around it. Ours is a "live-spindle" turning with the bobbin and within the bolster. Therefore we adapt the chamber *w* in the bolster to and make it a step for the suitable support of the revolving spindle end.

In order that there may be no fluctuation of the spindle in the bolster, we have grooved the spindle end, as seen at *n* in Fig. 1, making shoulders, between which the end of the screw *o* is extended, leaving the spindle free for its circular motion, but holding it firmly against moving in any other direction or way.

If a dead-spindle be preferred to a live one, the end can be fitted to the step in the bolster in any of the well-known ways without in any wise affecting the "oscillating" feature of the bolster above described.

We are aware that bobbin-carrying spindles have heretofore been pivoted to an arm extending downwardly from the bolster-rail, and provided below the pivotal point with a counter-weight for carrying the bobbin backward

when the tension on the latter diminishes; also, that the spindle has been inserted in a tubular bearing-piece, which latter was pivoted at its lower end to an arm projecting downward from the rail, and also that said tubular piece, pivoted as above stated, has been provided with a laterally-extending arm carrying a counter-weight for a purpose similar to that of the counter-weight above mentioned. We therefore make no claim to either of these constructions.

By inserting the spindle in a bolster and pivoting the bolster at its upper end in the rail-plate we dispense with the necessity for a counter-weight attachment, for as nearly the whole length of the bolster is below its pivots, and its extreme lower end is solid, the bobbin will be carried to a vertical position by gravity of the bolster as soon as tension on the bobbin is diminished, and in forming the rail-plate with a tubular extension we have provided a durable and proper chamber in which to receive the pivoted end of the bolster.

What we claim as new, and desire to secure by Letters Patent, is—

The combination, with the plate *c*, having the tubular depending portions *c'*, and formed with open sockets *e* in its upper side, as described, of the weighted bolster *y*, having an enlarged upper end, and provided at said end with pivotal arms *k*, projecting therefrom, and spindle *m*, substantially as described.

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Witnesses:
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