(No Model.)

C. F. WICKWIRE.

MACHINE FOR WINDING BOBBINS.

No. 390,932. Patented Oct. 9, 1888.

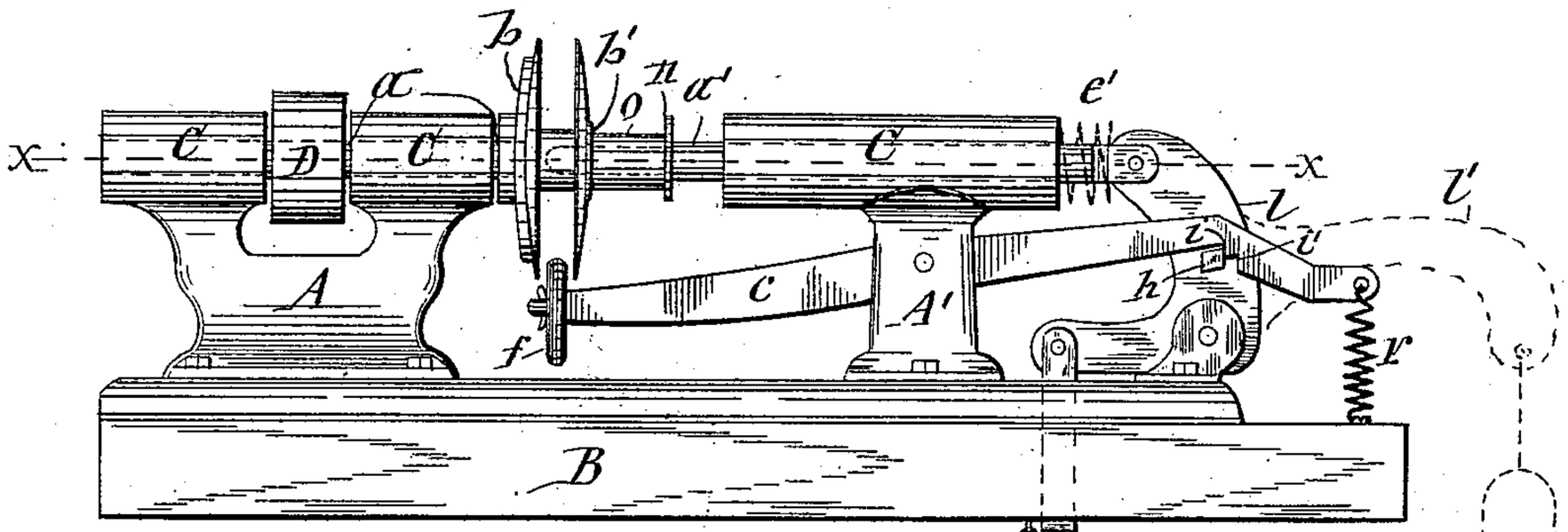

Fig. 1

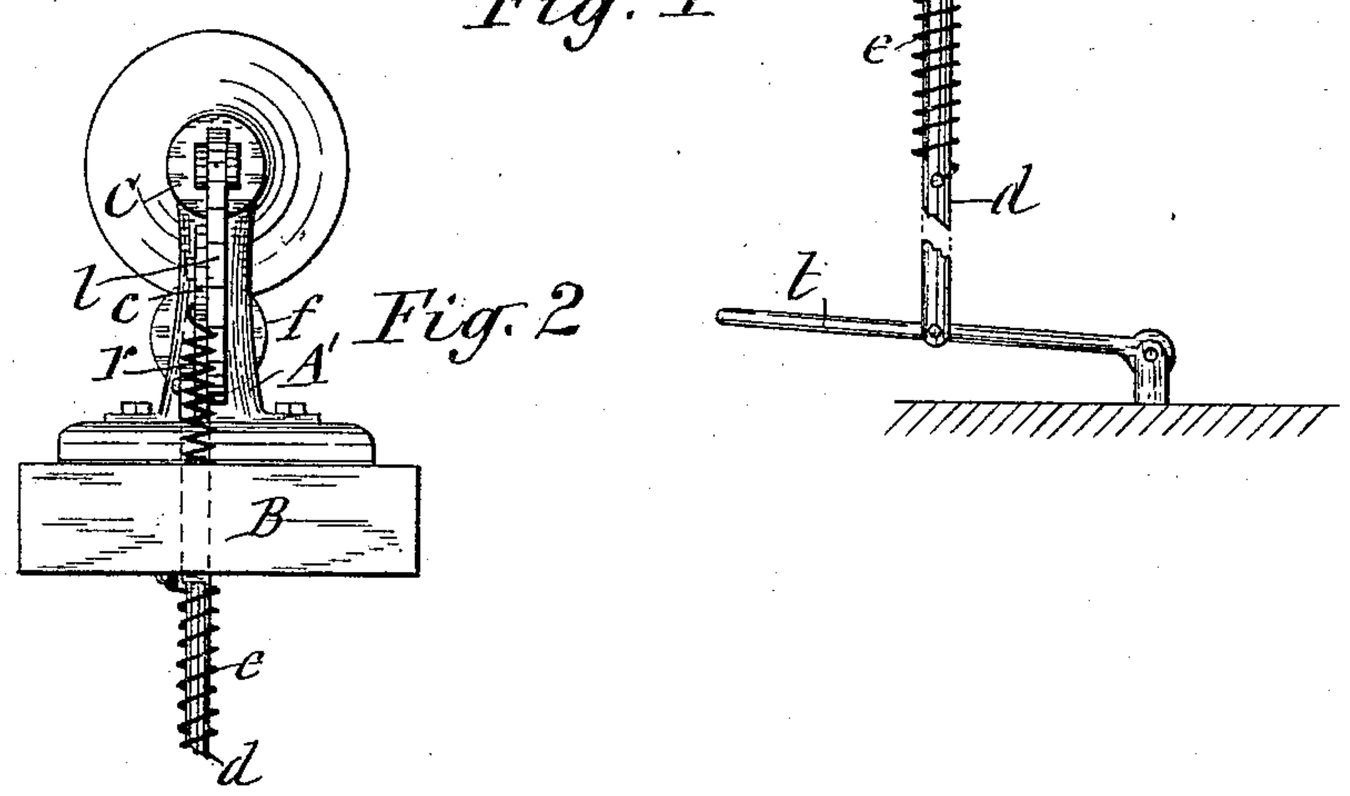

Fig. 2

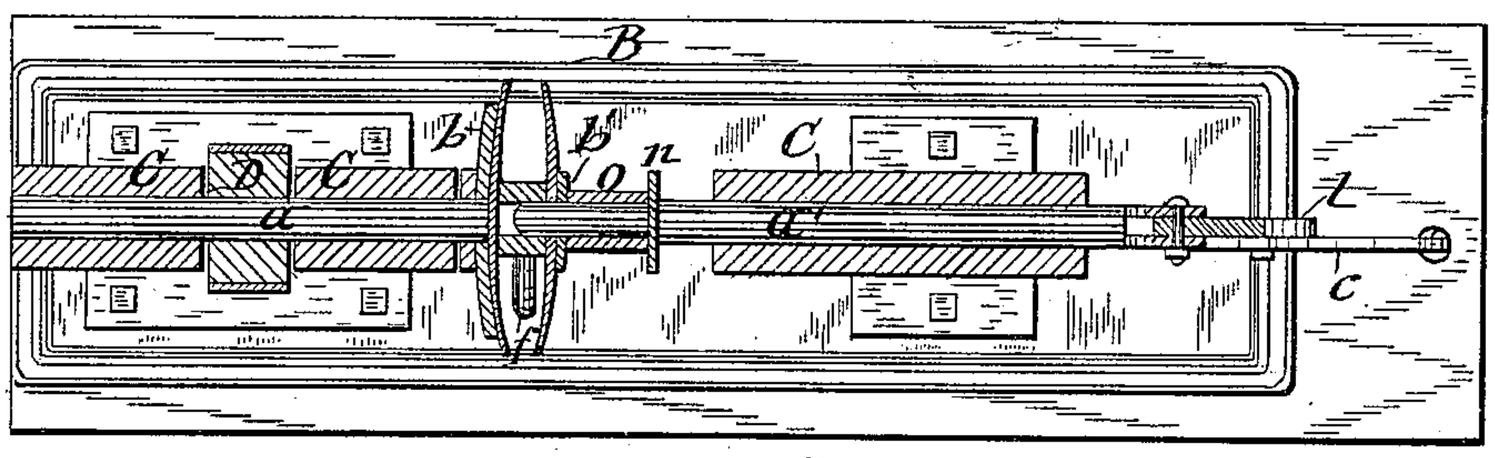

Fig. 3

WITNESSES:

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UNITED STATES PATENT OFFICE.

CHESTER F. WICKWIRE, OF CORTLAND, NEW YORK, ASSIGNOR TO WICKWIRE BROTHERS, OF SAME PLACE.

MACHINE FOR WINDING BOBBINS.

SPECIFICATION forming part of Letters Patent No. 390,932, dated October 9, 1888.

Application filed June 4, 1888. Serial No. 275,956. (No model.)

To all whom it may concern:

Be it known that I, CHESTER F. WICKWIRE, of Cortland, in the county of Cortland, in the State of New York, have invented new and useful Improvements in Machines for Winding Bobbins, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of bobbin-winders in which the bobbin is held between disks or other suitable holders connected to the adjacent ends of the live-spindle and dead-spindle, which latter is arranged movable longitudinally to allow the bobbin to be introduced and removed from between the holders.

The object of my present invention is to provide simple and effective means of automatically moving the dead-spindle from the live-spindle, and thus release the bobbin when filled with thread or wire to the desired degree; and to that end my invention consists, essentially, in the combination, with the live-spindle or driving-spindle, of the longitudinal movable dead-spindle drawn normally from the live-spindle, bobbin-holders on the adjacent ends of said spindles, and a tripping-latch holding the dead-spindle toward the live-spindle and provided with a bearing between the bobbin-holders to receive the pressure of the thread or wire wound upon the bobbin, and thereby trip said latch to release the dead-spindle, all as hereinafter more fully described, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a side elevation of a bobbin-winder embodying my improvements. Fig. 2 is an end elevation of the same; and Fig. 3 is a horizontal longitudinal section on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

A and A′ represent two pedestals carrying bearings C C axially in line with each other. On the pedestal A is journaled the live-spindle or driving-spindle *a*, and in the bearing C of the other pedestal, A′, is arranged longitudinally movable the dead-spindle *a′*, the live-spindle *a* having secured to it the pulley D, by which to receive rotary motion from a drive-belt running on said pulley.

To the adjacent ends of the aforesaid spindles are connected the bobbin-holders *b b′*, which usually consist of concave disks adapted to hold the bobbin by frictional contact with the sides thereof. The bobbin-holder *b* is rigidly attached to the live-spindle *a* and the bobbin holder *b′* is pivoted to the dead-spindle *a′*. The bobbin is secured between the aforesaid holders by sliding the dead-spindle *a′* away from the live-spindle, then introducing the bobbin between the holders *b b′*, with the sides of the former in the same planes with those of the holders, and then pushing the dead-spindle *a′* toward the live spindle, so as to press the bobbin against the face of the holder *b* on the live-spindle and hold the bobbin by frictional contact of the two holders.

The movement of the dead-spindle is usually effected by means of a bell-crank lever, *l*, pivoted to the base B, on which the pedestals A A′ are erected, one arm of said lever being connected to the rear end or heel of the dead-spindle and the other arm having connected to it a pendent pitman, *d*, the lower end of which is connected to a treadle or foot-lever, *t*, and by means of a suitable spring, *e*, connected at one end to the base B and at the opposite end to the pitman *d* and lifting said pitman, the lever *l* is swung on its pivot, so as to normally hold the dead-spindle retracted from the live-spindle, and by depressing the treadle *t* the aforesaid lever is caused to push the dead-spindle toward the live-spindle. The end bearing of the dead-spindle on the holder *b′*, I cushion by means of a rubber sleeve, *o*, surrounding the spindle between the aforesaid holder and a collar, *n*, rigidly attached to the spindle.

I do not limit myself to any specific arrangement of the spring *e*, as it is obvious that this admits of many modifications, one of which is illustrated by dotted lines *e′* in Fig. 1 of the drawings, and consists of a spiral spring surrounding the dead-spindle *a′* between the rear end of the bearing C and lever-arm connected with said spindle; neither do I wish to be limited to the employment of the spring, inasmuch as the same result can be obtained by a weighted arm, *l′*, projecting rearward from the lever *l*, as represented by dotted lines in Fig. 1 of the drawings.

In connection with the described bobbin-winder I employ a tripping-latch, *c*, for hold-

ing the dead-spindle toward the live-spindle during the process of winding the bobbin and for automatically stopping the rotation of the bobbin when filled to the desired degree. The form of this latch is susceptible of many modifications. The preferred form shown in the annexed drawings consists of a lever, *c*, pivoted intermediate of its length to the pedestal A′ and having one of its ends provided with a roller, *f*, or other suitable bearing in a plane central between the bobbin holders *b b′*. The opposite end is provided with notches *i i′* or other suitable catches adapted to engage with a lug or projection, *h*, on the lever *l*, so as to prevent said lever from being moved by its spring or weight, as hereinbefore described. A spring, *r*, connected to the latter end of the latch *c* and to the base B, serves to hold the said latch in engagement with the lever *l*.

The operation of the described latch is as follows: In applying the bobbin to the holders *b b′* the treadle *t* is depressed to cause the lever *l* to carry the dead-spindle *a′* toward the live-spindle, and in this movement of the lever the lug *h* is carried into a position to allow the latch to fall with its catch *i* behind the said lug and thus lock the lever in its position. When the bobbin is filled to the desired degree, the thread or wire wound thereon comes in contact with the bearing *f*, and thereby depresses the latch *c* thereat and causes the opposite end thereof to rise sufficiently to throw the catch *i* out of engagement with the lug *h* and allow the lever *l* to fall back until the lug *h* collides with the second catch, *i′*, which holds the lever from further rearward movement. When the lever is in the latter position, the bobbin is sufficiently relieved from the frictional hold of the holder *b* on the live-spindle *a* to stop the rotation of the bobbin and allow it to be removed from between the two holders *b b′*.

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

1. In combination with the live-spindle, a longitudinally-movable dead-spindle, bobbin-holders on the adjacent ends of said spindles, and a tripping-latch holding the dead-spindle toward the live-spindle and provided with a bearing between the bobbin-holders to receive the pressure of the thread or wire wound upon the bobbin, and thereby trip the said latch to release the dead-spindle, as set forth.

2. In combination with the live-spindle *a*, having the bobbin-holder *b* fixed thereto, and the dead-spindle *a′*, arranged movable longitudinally and having the bobbin-holder *b′* pivoted thereto, the lever *l*, connected to the dead-spindle, a spring arranged to normally draw the dead-spindle from the live-spindle, and the latch *c*, locking the aforesaid lever in its position toward the live-spindle and provided with a bearing between the bobbin-holders to receive the pressure of the thread or wire wound upon the bobbin and become thereby actuated to release the aforesaid lever, as specified.

3. In combination with the live-spindle *a*, having the bobbin-holder *b* fixed thereto, and the dead-spindle *a′*, arranged movable longitudinally and having the bobbin-holder *b′* pivoted thereto, the lever *l*, having one arm connected with the dead-spindle, the pitman *d*, connected to the other arm of said lever, the treadle *t*, connected to said pitman, the spring *e*, lifting the pitman, and the latch *c*, pivoted intermediate of its length and provided at one end with the bearing *f* between the bobbin-holders and having its opposite end provided with a catch adapted to engage and release the lever *l*, substantially as described and shown.

In testimony whereof I have hereunto signed my name, in the presence of two witnesses, at Cortland, in the county of Cortland, in the State of New York, this 29th day of May, 1888.

CHESTER F. WICKWIRE. [L. S.]

Witnesses:
R. H. DUELL,
L. P. HOLLENBECK.