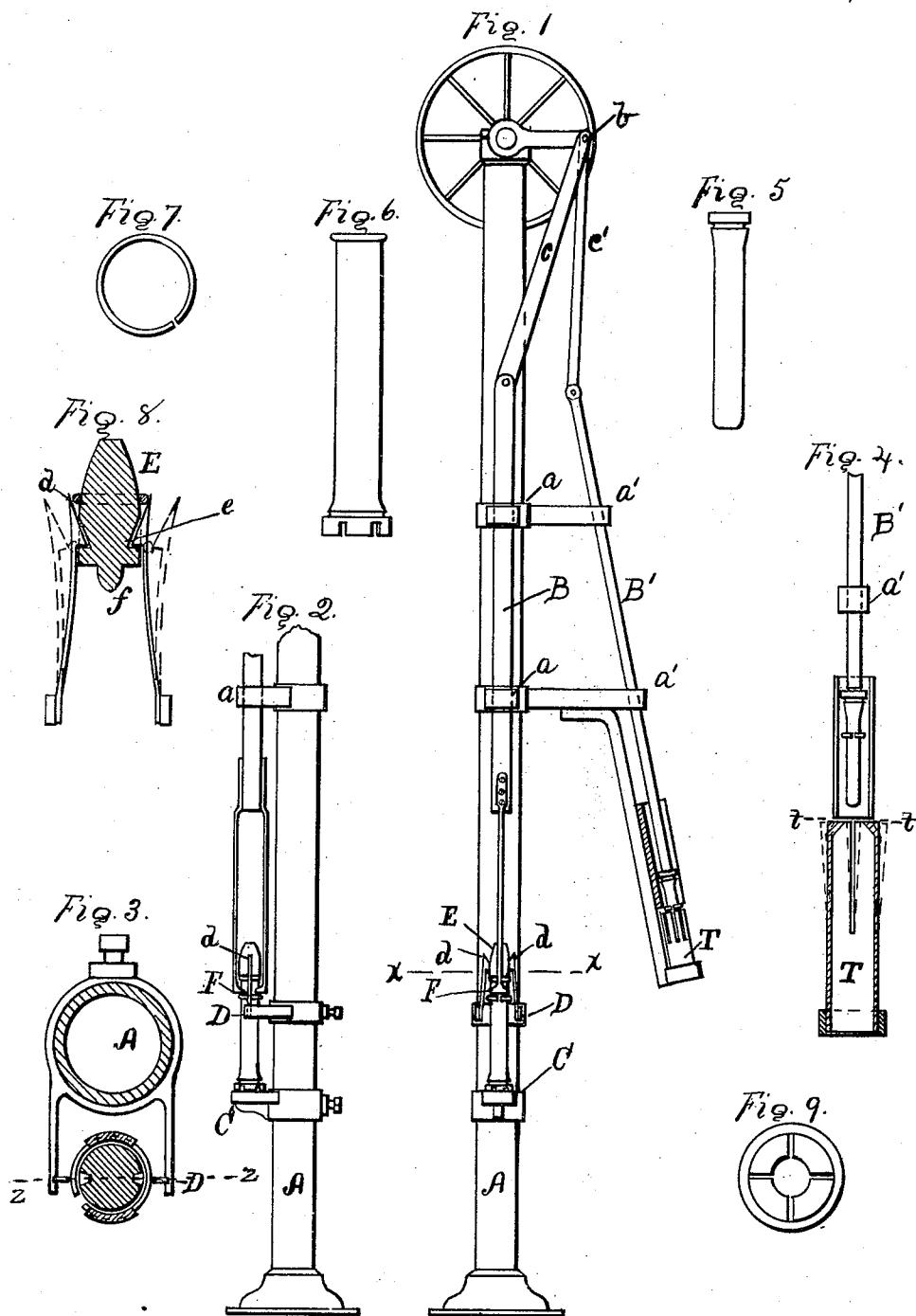


(No Model.)

L. C. BALDWIN.
MACHINE FOR PUTTING RINGS UPON BOBBINS.

No. 464,650.

Patented Dec. 8, 1891.



Witnesses.

J. C. Littlefield
M. E. Littlefield.

Inventor.

Luther C. Baldwin

UNITED STATES PATENT OFFICE.

LUTHER CHASE BALDWIN, OF MANCHESTER, NEW HAMPSHIRE.

MACHINE FOR PUTTING RINGS UPON BOBBINS.

SPECIFICATION forming part of Letters Patent No. 464,650, dated December 8, 1891.

Application filed September 5, 1887. Renewed August 17, 1891. Serial No. 402,924. (No model.)

To all whom it may concern:

Be it known that I, LUTHER CHASE BALDWIN, of Manchester, in the county of Hillsborough and State of New Hampshire, have invented a new and useful Improvement in Machines for Putting Rings upon Bobbins, of which the following is a specification.

In the manufacture of bobbins it is necessary to strengthen some kinds at the ends where they are very weak; and the object of this invention is to provide mechanical means for putting elastic rings upon bobbins easily and expeditiously.

The machine which I have invented and shall hereinafter describe is adapted to put flexible rings upon all kinds of bobbins, some of which are made small enough at one end to allow the ring to pass easily onto the bobbin, and the conical part which serves to spread the ring before it passes to the retaining-groove, as hereinafter described, may be a part of the bobbin, while in other kinds of bobbins it is necessary to have a separate conical piece, which will temporarily expand the ring while it is passed onto the bobbin.

The machine is made in two sections, which may be used singly or both at the same time. One section is adapted to put rings on bobbins which are simple in form, and the other section is more especially designed for use in cases where the separate cone is needed.

The device consists of a suitable rest upon which to place the bobbin in readiness to receive the ring, an expansive ring-driver moving lengthwise of the bobbin for forcing the ring over the bobbin and into the groove around said bobbin, and a conical piece over which the ring may be forced for the purpose of temporarily enlarging and guiding said ring, so that it will easily slip onto the bobbin.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a front view of the entire machine. Fig. 2 is a side view of that part of the machine which is adapted to put rings on bobbins which require a separate conical piece to enlarge and guide said rings onto the bobbin. Fig. 3 is a transverse section on the line xx of Fig. 1, showing the rings passing the springs which suspend the conical piece E. Fig. 4 is a side view and partial section of

that part of the machine designed for putting rings upon the more simple forms of bobbins when said ring passes easily onto the barrel of the bobbin, a part of which forms the cone over which the ring is forced into the groove made to receive it. Fig. 5 shows a simple form of bobbin, and Fig. 6 a more irregular form. Fig. 7 is a view of a ring. Fig. 8 is a vertical section on the line zz in Fig. 3, showing the ring placed upon the cone ready to be forced onto the bobbin. Fig. 9 is a top view on the line tt in Fig. 4.

In the drawings, A is a standard to which are attached the guides aa and $a'a'$ for guiding the reciprocating rods B and B'. Said rods are moved in the direction of their length by means of the crank b and the connecting-rods c and c' . To the standard A are also attached the bobbin-rest C and the device D for holding the conical piece E, over which the ring is forced by the downward motion of the ring-driver F, the arms of which are made flexible, so as to easily pass over any irregularities of surface. The spring-catches $d d$ serve to hold the conical piece E in place while removing one bobbin and substituting another therefor, the upper ends of said springs being so formed as to enter slots or notches cut in opposite sides of said conical piece, as shown at e , Fig. 8. The projection f enters the bore of the bobbin and keeps it in the center of the conical piece while the ring passes therefrom to the bobbin.

A bobbin is placed upon the rest C under the conical piece E, the projection f entering the bore of the bobbin. Then a ring is placed upon the conical piece during the upward motion of the ring-driver, the descent of which forces the ring against the spring-catches $d d$, which easily move outward and allow the ring to pass downward onto the bobbin. The stroke of the ring-driver is just long enough to force the ring to the retaining-groove, in which it firmly fixes itself and adds materially to the lasting qualities of the bobbin.

In the case of the more simple form of bobbin shown in Fig. 5 the ring easily passes over the smaller end of the bobbin without the use of the separate conical piece, and the gradual enlargement of the other end serves to hold the ring in position in the groove. In this

class of bobbins it is only necessary to drop a ring onto the bobbin and then invert said bobbin over the end of the flexible tube T and in line with the reciprocating rod B' during the upward stroke of said rod, which, when it descends, forces the bobbin through the tube, while the ring engages the end of said tube, by which it is held back and compelled to seat itself in the retaining-groove around the bottom of the bobbin. When the ring fixes itself in the groove, it is near enough to the plane of the surface of the bobbin so that it will pass through the tube T with the bobbin and out at its lower end, and the upward stroke of the rod B' brings the machine into position to receive another bobbin.

The tube T is made flexible by being cut one or more times across its diameter a part of its length, as shown in Figs. 1 and 4. All parts of the machine are made adjustable.

Having thus described my invention, what I claim is—

1. In combination, a plunger, means for receiving the bobbin, and a driver to engage with a flexible ring and force the same into place upon the bobbin, said driver being flexible to accommodate itself to the differences in diameter of the bobbin, substantially as described.

2. In combination, the bobbin-holder, a plunger, a conical piece located at the end of the bobbin, holding means therefor, and means for forcing the ring over the conical piece into place upon the bobbin, substantially as described.

LUTHER CHASE BALDWIN.

Witnesses:

JAMES F. BALDWIN,

J. C. LITTLEFIELD.