May 30, 1933. S. BORLETTI 1,912,250

BOBBIN WINDING DEVICE

Filed May 6, 1929

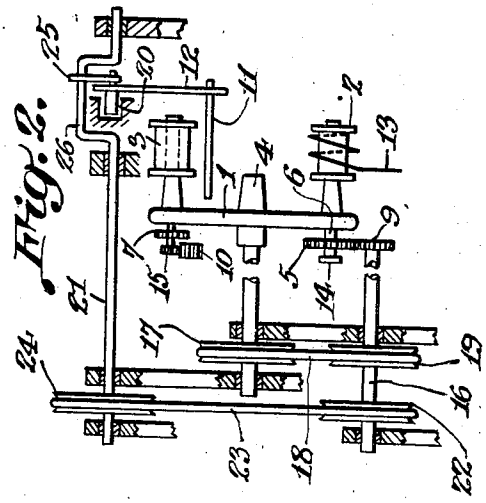


Fig. 2.

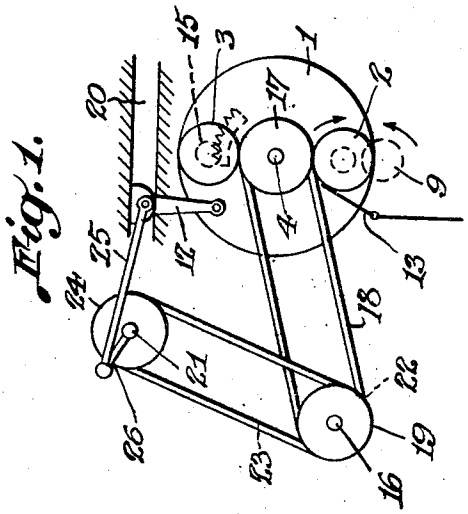


Fig. 1.

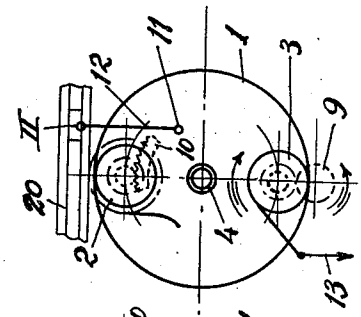


Fig. 6.

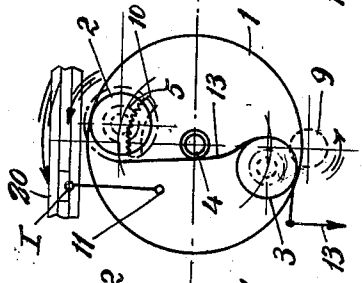


Fig. 5.

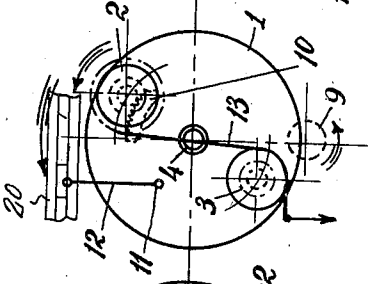


Fig. 4.

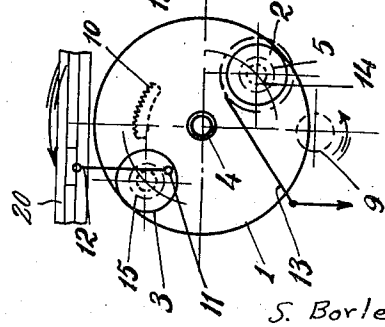


Fig. 3.

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By: Marks & Clerk
ATTYS.

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UNITED STATES PATENT OFFICE

SENATORE BORLETTI, OF MILAN, ITALY

BOBBIN WINDING DEVICE

Application filed May 6, 1929. Serial No. 360,942.

It is well known that in the common practice of spinning artificial silk every time when a full bobbin is to be substituted by a new one on the spinning frame, the operator is obliged to cut by hand from the full bobbin the thread to be wound, in order to transfer it on the new bobbin; this operation causes a loss of time and subjects the thread to different tensions causing irregularities, often of considerable importance, in the number of the thread. As an example reference is made to Patent No. 1,659,483 of February 14, 1928 to G. Dennagemma.

The said inconvenience is avoided by the present invention which refers to a device intended to produce the automatic transfer of the thread or filament from a full bobbin to a new one and the detachment of the thread from the bobbin first mentioned on spinning frames for artificial silk.

The said device consists of the following parts:

(*a*) A revolving disc or the like on which are mounted two or more rotatable spindles supporting the bobbins successively employed, the said disc being turned as soon as the bobbin has been filled through a certain angle, to put a new bobbin in the place of the first one, the said new bobbin encountering and withdrawing during its displacement the thread or filament and the axis of each bobbin being provided behind the disc of a toothed wheel engaging a driving wheel carried by the machine, when the bobbin is in its working position.

(*b*) A toothed segment fixed on the machine, with which a toothed wheel solid with the spindle supporting the filled bobbin is brought into engagement, during the rotation of the revolving disc and having the object to cause the bobbin to make a few turns in the opposite direction, in order to unroll some thread from it and to avoid thereby the tearing off of the thread passing on the new bobbin.

(*c*) A thread or filament cutting member carried by a slidable support, in the form of a small frame or the like, which after the displacement of the two bobbins is pushed forwards to cut the thread transferred on the empty bobbin, and then returned to its original position.

The device so formed maintains the tension of the thread constant during its transfer from one to another bobbin and acting automatically when both the turning movement of the revolving disc and the displacement of the filament cutting member are automatically produced, at a suitable time, the mechanism for driving the cutting member being disposed in such a manner as to impart to the support carrying the same a reciprocating movement depending on the turning movement of the revolving disc carrying the rotatable spindles.

The object of the invention will be easily understood with reference to the attached drawing, showing by way of example, one of the possible embodiments of the said device, when on the revolving disc only two bobbins are mounted.

In the said drawing:

Fig. 1 is a diagrammatic front view and part section of the device in the position taken during the winding of the thread on a bobbin.

Fig. 2 is a similar side view of the device in the same position.

Figs. 3, 4, 5 and 6 represent diagrammatically the front view of the device in various stages of the passage of the thread from a filled bobbin already parted from the machine to an empty bobbin beginning its work.

According to the drawing, reference character —1— is a revolving disc on which the revoluble spindles 6 and 8 supporting the bobbins —2— and —3— are mounted in such a manner as to be displaced at 180° from each other, the said disc turning

around its axis —4—; —5— is the toothed wheel mounted on the spindle —6—; —7— is the toothed wheel mounted on the spindle —8—; —9— is the driving toothed wheel mounted on the spinning machine; —10— is a toothed segment mounted on a fixed frame of the machine and having the object to turn somewhat the filled bobbin in opposite direction to disc —1—, when a suitable toothed wheel —14— and —15— respectively solid with the spindle supporting the bobbin engages during the movement of the disc —1— the said segment. —11— is the thread or filament cutting member, carried by a slidable support —12— movable on a guide rail —20— of the fixed frame of the machine; —13— is the thread or filament being wound on the bobbin.

In Figs. 1 and 2, 16 is an intermediate shaft which receives its movement from the shaft 4 through the transmission formed by the pulley 17, the belt 18 and the pulley 19, said intermediate shaft 16 driving in turn the shaft 21 through the transmission formed by the pulley 22, the belt 23 and the pulley 24; 25 is a connecting rod mounted upon the cranked portion 26 of the shaft 21, said connecting rod 25 imparting a reciprocating movement to the slidable support 12.

The device above described operates as follows: After the bobbin —2— has been filled, the disc —1— is turned by means similar to what is shown for instance in Patent No. 1,659,483 mentioned above to transfer the bobbin —2— to the place of bobbin —3— and vice-versa, and the filament cutting member —11— is transferred from position —I— Fig. 5 to position —II—, causing the breaking of the thread —13— (Fig. 6).

It is to be understood that the details of construction of the device may vary from those described and illustrated without departing from the spirit of the invention.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

A device for commutating the winding bobbin on a spinning frame for artificial silk, comprising a revolving member, a number of spindles rotatably mounted on said member, each spindle being designed to support a bobbin, a pair of toothed pinions rigidly secured on each of said spindles, a toothed driving wheel mounted upon the fixed frame of the machine and adapted to engage respectively with one of the toothed pinions in each pair when in juxtaposition with said driving wheel, a toothed segment secured upon said fixed frame and adapted to engage with the other of the pinions in the second pair, these respective engagements of one pinion of one pair with said driving wheel and the other pinion of the other pair with said segment adapted to take place simultaneously, a thread cutter carried by a slidable support, a guide rail for said slidable support, said guide rail being secured upon said fixed frame and the cutter being adapted to traverse the path of a thread when said member revolves for changing the bobbins.

In testimony whereof I affix my signature.

SENATORE BORLETTI.