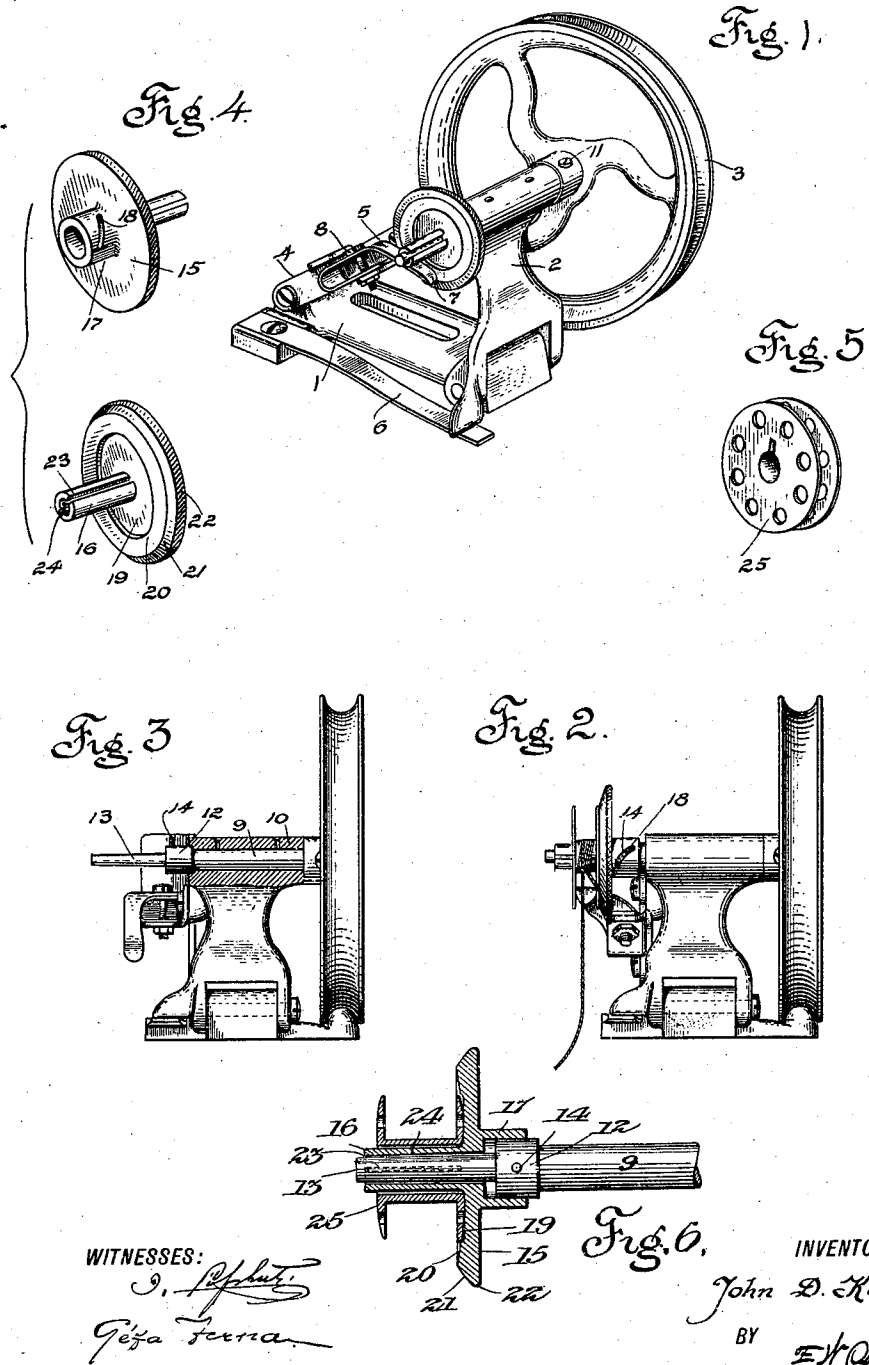


J. D. KARLE.
BOBBIN WINDER FOR SEWING MACHINES.
APPLICATION FILED MAR. 18, 1910.

1,014,483.

Patented Jan. 9, 1912.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JOHN D. KARLE, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY, A CORPORATION OF NEW JERSEY.

BOBBIN-WINDER FOR SEWING-MACHINES.

1,014,483.

Specification of Letters Patent.

Patented Jan. 9, 1912.

Application filed March 18, 1910. Serial No. 550,200.

To all whom it may concern:

Be it known that I, JOHN D. KARLE, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Bobbin-Winders for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in bobbin winders for sewing machines, and has for its object to provide improved means for securing the bobbin upon the bobbin-holding sleeve.

The present invention is intended as an improvement on the device represented by U. S. Patent No. 809,911, Jan. 9, 1906, Eames and Finch, and deals mainly with the elements carried by the belt or band pulley; accordingly, only such reference will be made to the parts corresponding in construction to those employed in the device of the above referred to patent as is deemed essential for an understanding of the application of the invention.

For many years bobbins of the character herein referred to have been in commercial use in connection with different classes of sewing machines of a given manufacture, and also in connection with sewing machines made by different manufacturers; and as is natural under such circumstances, there is a substantial variation in the diameter of the openings through the central hubs of the various bobbins, and to provide a single design of winder which will have a substantially universal application is a further object of the invention.

Referring to the accompanying drawings illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a perspective view of the improved winder with the parts adjusted into position for bringing the automatically actuated tripping element in the path of rotation of and underlying the bobbin thread, as shown in Fig. 2. Fig. 2 is a front end elevation of Fig. 1, except that it includes the bobbin and bobbin holder mount-

ed upon the belt pulley shaft. Fig. 3 is a view similar to Fig. 2 showing the tripping element adjusted to its normal or inoperative position, the bobbin and bobbin holder being omitted and the bearing in the upper end of the standard being shown in section to better illustrate the construction of the belt pulley shaft. Fig. 4 is a perspective view of the opposite sides of the bobbin holder. Fig. 5 is a perspective view of the bobbin. Fig. 6 is a view in central section of a bobbin and the bobbin-holder, together with full line views of the bobbin-holder spindle and a part of the belt-pulley shaft.

The base 1 and hinged standard 2, comprising the bobbin winder frame, pulley 3, toggle levers 4 and 5, spring 6, tripping finger 7 and adjusting screw 8 are in construction and operation the same as those employed in U. S. Patent No. 809,911 previously referred to.

The belt-pulley shaft 9 is mounted in a bearing 10 formed in the standard 2 and secured to said pulley by a set screw 11, a shoulder 12 in connection with the hub of the pulley 3 acting to hold said shaft against movement in the direction of its length, said shaft carrying a bobbin-holder spindle 13 inclined from the shoulder 12 toward its outer or free end.

14 represents a pin carried by the shoulder 12.

The bobbin holder comprises a disk 15, flexible sleeve 16 and hub or cam portion 17, the latter of which is countersunk to receive the shoulder 12 and provided with a cam slot 18 which coacts with the pin 14 for a purpose later to be explained. The disk 15 is preferably provided with a countersunk central portion 19, beveled portion 20, reversed beveled portion 21 and knurled portion 22, and the sleeve 16 is rendered expansible for securing the bobbin by being divided by the diametrical slot 23. The disk 15 and integrally formed sleeve 16 are provided with a central tapered opening which, in the present instance, is formed at an angle slightly greater than that given the spindle 13, so that the initial action of

the latter will be first directed upon the free end of the sleeve 16.

The operation of the device is as follows:—When the bobbin holder is turned upon the shoulder 12 to position the pin 14 at the upper end of the cam slot 18, the flexible elements comprising the sleeve 16 occupy their normal or retracted positions, thus permitting the thread receiving element or bobbin to be secured upon the sleeve 16 as shown in Fig. 2, after which the bobbin holder is given a reverse movement which causes the pin 14 to act on the lower wall of the cam slot 18 and force the holder toward the band wheel, the bobbin-holder spindle 13 acting upon the sleeve 16 to expand the flexible elements comprising the latter sufficiently to secure the bobbin against accidental displacement. The release of the bobbin is accomplished by turning the bobbin holder as first pointed out. Prior to the winding operation, the end of the bobbin thread is passed between the disk 15 and bobbin 25, as shown in Fig. 2, and as the winder is put into action the operator holds the free end of the thread extending out from between the bobbin and disk, thus causing it to be severed at the point where it leaves the bobbin.

30 Claims:—

1. In a rotary bobbin-carrier for sewing machine bobbin-winders, a shaft mounted in a suitable bearing formed in the bobbin-winder frame and carrying a tapered bobbin-holder spindle, a bobbin-holder comprising a disk provided at one side with a hollow hub and at its opposite side with a flexible bobbin-holding sleeve, into which said bobbin-holder spindle projects, and means including coacting rotary cam members on said hub and shaft whereby relative rotation of said members will draw the sleeve upon the spindle to secure the bobbin upon the holder.

45 2. In a rotary bobbin-carrier for sewing machine bobbin-winders, a shaft mounted in a suitable bearing formed in the bobbin-winder frame and provided with a cam-pin and a bobbin-holder spindle, and a bobbin-holder comprising a disk carrying at one side a hollow hub provided with a cam-slot and at its opposite side flexible bobbin-holding members between which the bobbin-holder spindle projects, said pin and slot coacting to adjust said bobbin-holder longitudinally in opposite directions upon said shaft.

60 3. In a rotary bobbin-carrier for sewing machine bobbin-winders, a shaft mounted in a suitable bearing formed in the bobbin-winder frame and provided with a bobbin-holder spindle and a shoulder, a cam pin carried by said shoulder, a bobbin-holder comprising a disk provided at one side with

a hollow hub having a cam slot and at its opposite side with a flexible bobbin-holding sleeve into which the bobbin-holder spindle projects, said pin and slot coacting to adjust said bobbin-holder longitudinally in opposite directions upon said bobbin-holder spindle.

4. In a rotary bobbin-carrier for sewing machine bobbin-winders, a shaft mounted in a suitable bearing formed in the bobbin-winder frame, a tapered bobbin-holder spindle and a bobbin-holder carried by said shaft, said bobbin-holder comprising a disk, a hub and a flexible bobbin-holding member, and means carried by said shaft and acting upon the hub of said bobbin-holder to cause said bobbin-holder spindle to expand said flexible member for the purpose specified.

5. In a rotary bobbin-carrier for sewing machine bobbin-winders, a shaft mounted in a suitable bearing formed in the bobbin-winder frame, a cam pin and a bobbin-holder carried by said shaft, the latter comprising a disk, a cup-shaped hub and flexible bobbin-holding members, a hub provided with a cam-slot coacting with said pin to adjust said bobbin-holder longitudinally on said shaft, and means including a bobbin-holder spindle having an inclined surface for expanding said flexible members for the purpose specified.

6. In a rotary bobbin-carrier for sewing machine bobbin-winders, a shaft mounted in a suitable bearing formed in the bobbin-winder frame, a cam pin carried by said shaft, a bobbin-holder mounted on said shaft and comprising a knurled disk concaved at one side toward its axis and carrying a cup-shaped hub and flexible bobbin-holding members, a hub provided with a cam-section coacting with said pin to adjust said bobbin-holder longitudinally on said shaft, and means including a bobbin-holder spindle having an inclined surface for expanding said flexible members for the purpose specified.

7. In a rotary bobbin-carrier for sewing machine bobbin-winders, a shaft mounted in a suitable bearing formed in the bobbin-winder frame, a tapered bobbin-holder mounted upon said shaft and provided with a flexible bobbin-holding sleeve, means carried by said shaft for giving the said bobbin-holder movements upon and in the direction of the length of said shaft, and means carried by the latter to cause said flexible sleeve to be expanded to hold said bobbin-holder against accidental movement.

8. In a rotary bobbin-carrier for sewing machine bobbin-winders, a shaft mounted in suitable bearings formed in the bobbin-winder frame and provided with a bobbin-holder spindle, a shoulder and a cam pin,

and a bobbin-holder comprising a disk provided at one side with a cup-shaped hub having a cam slot for coacting with said pin and at its opposite side with a divided
5 bobbin-holding sleeve into which the bobbin-holder spindle projects, a portion of one side of said disk being concaved toward its axis and having a knurled periphery.

In testimony whereof, I have signed my name to this specification, in the presence 10 of two subscribing witnesses.

JOHN D. KARLE.

Witnesses:

ABBIE M. DONIHUE,
ALEX. LAUBSCHER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."