

Nov. 27, 1923.

1,475,597

J. C. RINGE

BOBBIN WINDING ATTACHMENT FOR SEWING MACHINES

Filed Sept. 19, 1921

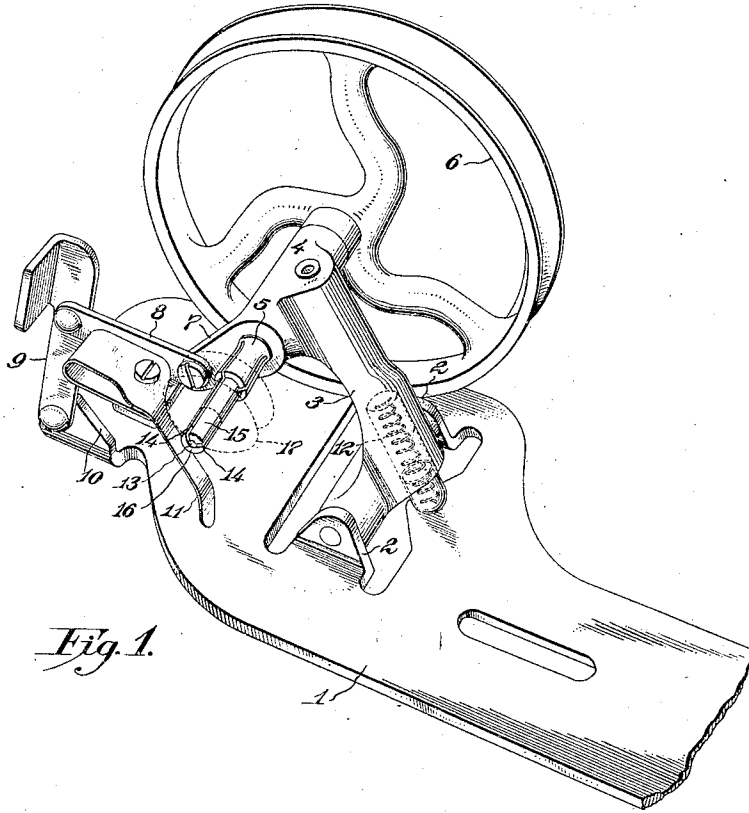


Fig. 1.

Fig. 2.

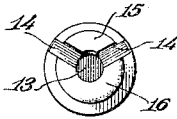
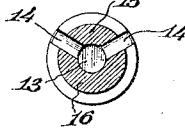


Fig. 3.

WITNESSES:

Godfrey Picina
W. V. Stewart

INVENTOR

John C. Ringe

BY

E. W. Osborn

ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN C. RINGE, OF STRATFORD, CONNECTICUT, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY, OF ELIZABETH, NEW JERSEY, A CORPORATION OF NEW JERSEY.

BOBBIN-WINDING ATTACHMENT FOR SEWING MACHINES.

Application filed September 19, 1921. Serial No. 501,733.

To all whom it may concern:

Be it known that I, JOHN C. RINGE, a citizen of the United States, residing at Stratford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Bobbin-Winding Attachments 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 and more particularly in bobbin-holding spindles for bobbin-winding attachments for use in connection with sewing machines.

The object of the present invention is to improve bobbin-holding spindles of the type disclosed in the prior patent to Eames & Finch, No. 809,911, dated January 9, 1906, and which are split centrally to afford a frictional grip upon bobbins. It has been customary for an operator to at intervals insert a screw-driver or similar implement between the split spindle sections to spread the latter to provide the desired frictional grip on bobbins placed thereupon, with the result that the free end of the spindle was frequently forced off-center with relation to the spindle journal-bearing. Consequently, when the spindle was rotated during the bobbin-winding operation, the bobbin traversed an eccentric path, causing the throw-out device to act prematurely and thereby stopping the winding operation before the bobbin was properly filled. It is the aim of this invention to entirely obviate this possibility in the simplest possible manner, without the aid of separate springs or holding devices of any character.

The present improvement comprises a bobbin-holding spindle, the free end of which is slit longitudinally to provide sections of unequal cross-sectional area whereby one section will yield so much more readily than the other section that in the act of spreading the spindle sections there is no tendency to force the larger section off-center. In its preferred embodiment the free end of the spindle is provided with a central aperture and with two slits each of which extends from the periphery of the spindle to said central aperture. These slits are so located that the separated spindle sections form in effect acute and re-entrant angled sectors which are not readily broken,

but of which the acute angled sector is of such small cross-sectional area with respect to the other section that it will yield in the act of spreading the sections without forcing the re-entrant angled sector-section off-center.

In the accompanying drawings, Fig. 1 is a perspective view of a portion of a bobbin-winding attachment for sewing machines and embodying the present improvement. Fig. 2 is a cross-sectional view of the bobbin-holding spindle when the sections thereof are compressed by the application of a bobbin thereto. Fig. 3 is an end view of the spindle when free of a bobbin.

Referring to the drawings, the present improvement, in its preferred form, is shown as embodied in the bobbin-winding attachment disclosed in the prior U. S. Patent to J. D. Karle, No. 1,290,225, dated January 7, 1919. This attachment consists of a base 1 provided with upstanding ears, as 2, upon which is fulcrumed a standard or frame 3. The frame 3 has a transverse bearing boss 4 in which is journaled a bobbin-holding spindle 5 carrying at one end a driving pulley 6. Extending laterally from the boss 4 is an arm 7 pivotally connected by means of toggle-links 8 and 9 with another ear 10 on the base 1. The link 8 carries in the usual manner a trip-finger 11 adapted to contact with the thread wound upon a bobbin to trip the toggle-links when the bobbin is full, thereby permitting a coiled spring 12 to rock the frame 3 into inoperative position, which position is illustrated in Fig. 1 of the drawings.

Referring now more particularly to the present improvement in this attachment, the spindle 5 at its free end opposite to that carrying the pulley 6, is provided with a central aperture 13 and with slits, as 14, extending longitudinally of the spindle. The slits 14 extend from the periphery of the spindle to the central aperture and divide the spindle end into sections of substantially an acute angled sector 15 and a re-entrant angled sector 16. The cross-sectional area of the sector 16 is greater to a substantial degree than the like area of the sector 15 and in an effort to spread the spindle-sections by insertion therebetween of some implement, the greater rigidity of the sector 16 will compel a yielding action of the sector 15 only. Consequently, when a

bobbin 17 is applied to the spindle, it is the sector 15 which exerts the yielding frictional grip thereupon, and during rotation of the spindle the bobbin will rotate about a stationary axis, instead of a traveling axis as was frequently the case heretofore.

Having thus set forth the nature of the invention, what I claim herein is—

1. In a bobbin-winder, a rotatable longitudinally slit bobbin-holding spindle comprising relatively yielding and non-yielding sections integral with the body of the spindle for frictionally securing a bobbin for rotation therewith.

2. In a bobbin-winder, a rotatable longitudinally slit bobbin-holding spindle comprising relatively yielding and non-yielding sections integral with the body of the spindle and of substantially unequal cross-sectional area for frictionally securing a bobbin for rotation therewith.

3. In a bobbin-winder, a rotatable bobbin-holding spindle slit longitudinally thereof to form relatively yielding and non-yielding sections integral with the body of the spindle, said sections comprising sub-

stantially acute-angled and re-entrant angled sectors.

4. In a bobbin-winder, a rotatable bobbin-holding spindle provided with a central aperture and with divided sections of unequal cross-sectional area, said sections being formed by slits provided in the body of the spindle extending from said aperture to the periphery of the spindle and acting to frictionally secure a bobbin upon the spindle for rotation therewith.

5. In a bobbin-winder, a base provided with a yieldingly restrained frame into which is journaled for rotation a spindle adapted to receive a thread-bobbin, and automatically controlled means for arresting the rotation of the spindle, said spindle comprising integrally formed relatively yielding and non-yielding members separated by slots permitting the adjustment of the one member in opposition to the rigidity of the other member.

In testimony whereof I have signed my name to this specification.

JOHN C. RINGE.