

(No Model.)

S. W. WARDWELL, Jr.
COP HOLDER FOR SEWING MACHINE SHUTTLES.

No. 550,701.

Patented Dec. 3, 1895.

Fig. 1.

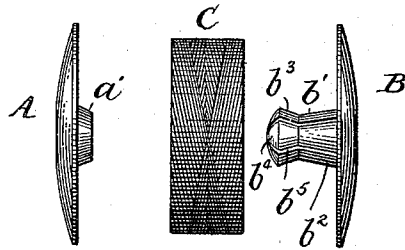


Fig. 5.

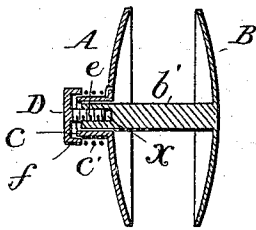


Fig. 2.

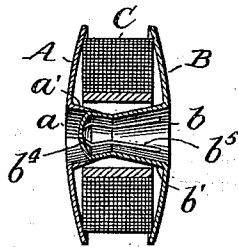


Fig. 6.

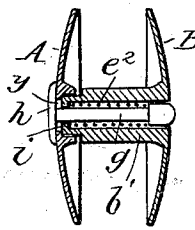


Fig. 3.

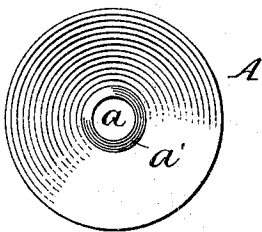


Fig. 4.

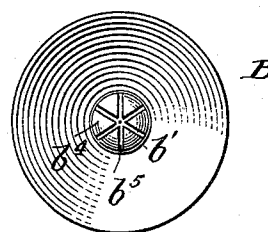
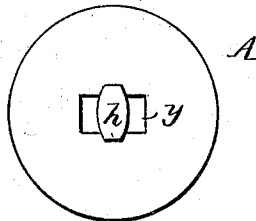


Fig. 7.



Witnesses
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UNITED STATES PATENT OFFICE.

SIMON W. WARDWELL, JR., OF BOSTON, MASSACHUSETTS.

COP-HOLDER FOR SEWING-MACHINE SHUTTLES.

SPECIFICATION forming part of Letters Patent No. 550,701, dated December 3, 1895.

Application filed October 17, 1894. Serial No. 526,196. (No model.)

To all whom it may concern:

Be it known that I, SIMON W. WARDWELL, Jr., a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Bobbins, of which the following is a specification.

My invention relates to cop-holders for sewing-machine cops; and it has for its object to improve the construction to better adapt them for holding the cop and overcome objections incident to usual constructions; and my invention consists in a cop-holder having the various features of construction and arrangement substantially as hereinafter more particularly set forth.

In the accompanying drawings, Figure 1 is a side view of the parts of the cop-holder separated with the cop such as I prefer to use between them. Fig. 2 is a vertical section through the same. Figs. 3 and 4 are respectively inside views of the cop-holder heads. Figs. 5 and 6 are views illustrating modifications, and Fig. 7 is a plan of Fig. 6.

All the figures are somewhat enlarged beyond the actual size for the purposes of clearness.

Heretofore cop-holders for sewing-machine cops have been so constructed that in consequence of the varying thickness of the cops or as a cop was reduced in diameter from the use of the thread there would be spaces between the sides of the cop and the ends of the cop-holder, and the thread would slip from the edge of the cop and get between the side of the cop and the cop-holder head and sometimes wrapped around the axle and broken. Even where the thread was not broken the constant slipping from a position tangential to the periphery of the cop to a position across the side or end of the cop resulted in variations of tension, which produced defective stitching.

The results of my invention may be secured by different constructions. Thus in Fig. 5 A B are the separable heads of the cop-holder; b' , a stem projecting from the head B and having a threaded opening x at the end, the head A having a sleeve c , around which is curled a spiral spring c' , secured at its inner end to the head. D is a cap having a threaded stem e , adapted to the threaded opening x ,

and a flange f , adapted to bear on the spring c' . The cops, as usual, have central openings, so that a cop can be put on the stem b' . The head A can then be applied and the cap D put in place and screwed down, so that the spring c' will cause the cap A to bear constantly upon the side of the cop.

In the construction shown in Figs. 6 and 7 the stem b' is hollow and incloses a spiral spring e^2 , bearing on a lip i and on a shoulder of a head n on a rod g , extending through the spring and having a cross-bar h at the other end. The head A has a slot y , adapted for the passage of the cross-bar. The cop is put upon the stem b' , the head A is applied with its slot y coinciding with the cross-bar h , and the finger is applied to the head n to push in the rod g and lift the cross-bar above the head A, after which the latter is turned to bring the slot y at right angles to the cross-bar. On removing the pressure on the head n the spring e^2 will draw in the rod g and press the cross-bar on the head A and carry the latter against the side of the cop.

My preferred construction is illustrated in Figs. 1 to 4, in which both the heads A B are preferably slightly concaved toward each other, as shown. The head A has a central orifice a , with an inwardly-projecting sleeve or bearing a' , which is tapering toward its inner extremity, and the opening a is also tapering, contracting toward the inner extremity of the sleeve. The head B is also provided with a hollow stem or projection b' , which is somewhat longer than the sleeve or bearing-piece a' , with which it co-operates in the manner hereinafter described, and the two form the axle of the cop-holder. This stem at b^2 is tapering from the outer surface of the head B toward the center of the cop-holder for a certain distance and then expands outwardly at b^3 , and the end b^4 is rounded. Thus it will be seen that the stem has an inclined plane at its outer end, adapted to engage an inclined plane upon the head A. This stem b' may be variously formed, but is preferably a cylinder split to form a series of spring-fingers. It may be integral with one of the heads or made separate and riveted to it, and although it is preferable that the stem should have two portions inclined toward each other the portion fixed to the head B need not necessarily

be inclined, but may have parallel sides, as in Figs. 5 or 6, although when inclined it furnishes a better support to center the cop. The cop is put on the stem b' and the end of the latter is pushed into the sleeve a' , as shown in Fig. 2, when the coacting inclines will draw the heads together upon the cop. The side pieces of the cop-holder can be readily separated by merely forcing them apart, the spring fingers or portions of the stem collapsing for that purpose.

It will be seen that in each of the constructions above described the heads of the cop-holder are automatically drawn toward each other upon the cop without the application of any pressure from without the cop-holder—as by springs, &c., upon the shuttle—so that the cop-holders may be used with any kind of shuttle adapted to receive them, and therefore that however the cops may vary in thickness and whatever may be the reduction in the diameter of the cop as the thread is drawn therefrom the heads will always bear upon the sides of the cop at the periphery, so that it is impossible for the thread to slip from the periphery between the cop and head at either side.

Without limiting myself to the constructions shown, what I claim is—

1. A cop-holder comprising two convex

heads separable to receive a cop, and a connection between the heads arranged to draw the heads together automatically to cause them to bear upon the edges of the cop at its periphery, substantially as described.

2. A cop holder comprising two separable heads adapted to embrace a cop and means for constantly and yieldingly drawing the heads toward each other against the cop, substantially as described.

3. A cop-holder comprising two heads having inward projections, provided with contacting inclined faces, with means for pressing one face against the other to thereby draw the heads together automatically, substantially as described.

4. A cop-holder consisting of a head, having a tapering sleeve, and a head having a stem consisting of spring fingers with a tapering bearing contacting with the tapering sleeve, to draw the side pieces toward each other, substantially as described.

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

SIMON W. WARDWELL, JR.

Witnesses:

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