

(No Model.)

S. W. WARDWELL, Jr.
SHUTTLE FOR SEWING MACHINES.

No. 563,824.

Patented July 14, 1896.

Fig. 1.

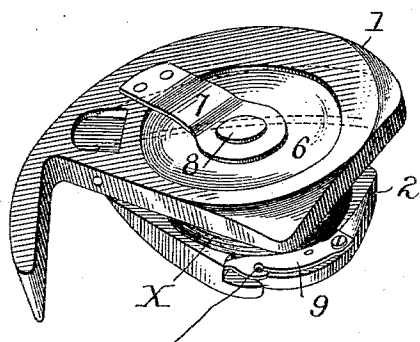


Fig. 2.

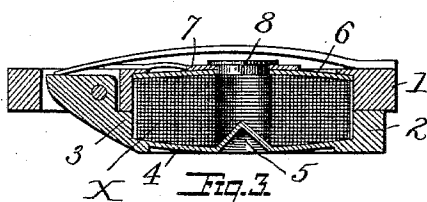


Fig. 3.

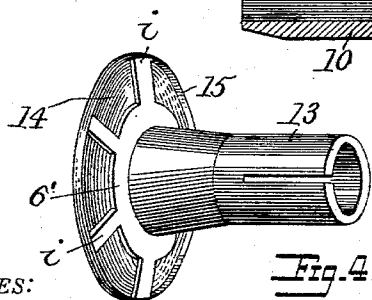
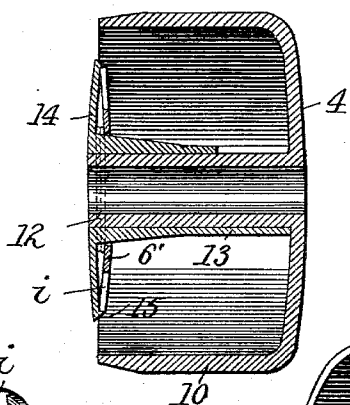


Fig. 4.

WITNESSES:

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SHUTTLE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 563,824, dated July 14, 1896.

Application filed April 3, 1891. Serial No. 387,470. (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, Suffolk county, Massachusetts, have invented certain new and useful Improvements in Shuttles for Sewing-Machines, of which the following is a specification.

It has been customary in supplying the shuttles of sewing-machines with thread sold in the market in the form of cops to apply to each cop metallic disks serving the purpose of bobbin-heads. Thus in some instances one or two disks are applied to each cop, each of said disks having a short stud which is pressed into the cop-tube so that the disk is held at the side of the bobbin. The use of this arrangement is objectionable from the fact that coils of thread on the cop are liable to be carried away from the periphery to one side and pinched between the side of the disk and the cop, while the draft of the thread in such case is across the side of the cop, the result being the frequent breakage of the thread. A further objection is that as the diameter of the cop decreases the edges of the disk are brought in frictional contact with the side of the opening in the shuttle, causing a frictional resistance, which increases in proportion as the diameter of the cop diminishes with a resulting variation in the seam. To overcome these objections, I construct the shuttle as fully set forth hereinafter, and as illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view illustrating my improvement as embodied in a "Singer" machine shuttle, shown as open. Fig. 2 is a transverse section of Fig. 1. Fig. 3 is an enlarged section illustrating my improvement in connection with a "Wheeler & Wilson" bobbin-case; Fig. 4, a perspective view showing the two parts of the bobbin-case shown in Fig. 3 disconnected from each other.

In the construction shown in Figs. 1 and 2 the shuttle-case consists of two parts 1 2, pivoted together, and each constructed so that when together in the position shown in Fig. 2 they inclose a chamber for receiving the cop X. This chamber is formed partly in the section 2 by the rim 3 and the wall 4, which has an inwardly-projecting cone 5 for center-

ing the cop, and partly in the section 1, which has a circular recess within which is supported a circular disk 6, which forms the movable and rotatable wall of the recess and is pressed toward the wall 4 by means of a spring 7. In the construction shown the spring 7 is a flat spring secured to the section 1, with an opening receiving the shank of a headed stud 8 on the disk 6, so that the disk can move freely. The two sections are swung apart, as shown in Fig. 1, to receive the cop the end of the thread being drawn beneath a spring-tongue 9, after which the sections are brought together to the positions shown in Fig. 2. It will be seen that when the cop is inclosed in the shuttle it will be pressed lightly against the opposite wall 4 of the chamber in the shuttle by the pressure upon the disk 6 at the opposite side, and that when the thread is drawn off should any of the threads overlap or slip down between the side of the cop and the rotating disk they will pass readily without undue friction and without breaking, and as the cop rotates will soon resume their position tangential to its periphery.

In the construction shown in Figs. 3 and 4, which is that of the bobbin-case of the Wheeler & Wilson machine, there is a stationary back wall 4 to the chamber inclosed by the periphery 10, and a stud 12, receiving a split spring-sleeve 13, upon the removable wall 14 of the bobbin-case. The wall 14 is provided with an inturned peripheral flange 15, and upon the sleeve 13 rests a disk 6', which is preferably cut away to form arms 2, and is slightly convex and set with its concave side toward the inner face of the wall 14, so that its periphery is within the flange 15. The disk corresponds to the movable wall 6 in Figs. 1 and 2.

When the cop is to be inserted, the wall 14, with its sleeve 13, and the disk 6', supported thereby, are pulled outward, the cop is placed upon the sleeve 13, and the parts are restored to the position shown in Fig. 3, when the cop will be pressed against the stationary wall 4, and between the latter and the yielding disk 6', the elasticity of which causes it to bear with a light pressure against the side of the cop, pressing the latter against the wall 4. It

will be seen that the flange 15, overlapping the periphery of the disk 6', will prevent the thread from slipping over said periphery into the space between the disks 6' and 14.

5 Without limiting myself to the precise construction and arrangement of parts shown and described, I claim—

1. The combination with a sewing-machine shuttle, of a sectional cop-holder located with-
10 in the chamber of the shuttle and adapted to receive and embrace the sides of a cop of thread, said holder comprising a disk movably arranged in said chamber and adapted to bear against one side of the cop, and means
15 cooperating with said disk to constantly and yieldingly force it into the chamber and against the side of the cop.

2. The combination with a sewing-machine shuttle, of a sectional cop-holder located with-
20 in the chamber of the shuttle and adapted to receive and embrace the sides of a cop of thread, said holder comprising a disk movably arranged in said chamber and adapted to bear against one side of the cop, means

cooperating with said disk to constantly and
25 yieldingly force it into the chamber and against the side of the cop, and means for centering the holder within the chamber, substantially as described.

3. A sewing-machine shuttle comprising a
30 chamber adapted to receive a cop-holder and formed in one of its sides with a circular recess, a movable and rotatable wall supported in said recess and having an outer projecting shank, and a spring constantly and yieldingly
35 forcing the movable wall against the side of the cop, said spring being fastened at one end to the shuttle and having an opening receiving the shank on the wall, substantially as described.

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

SIMON W. WARDWELL, JR.

Witnesses:

M. G. LARY,

THOS. F. DOLAN.