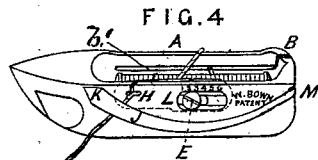
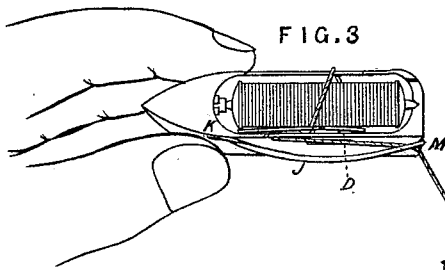
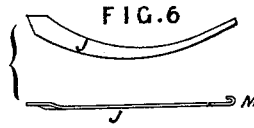
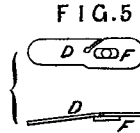
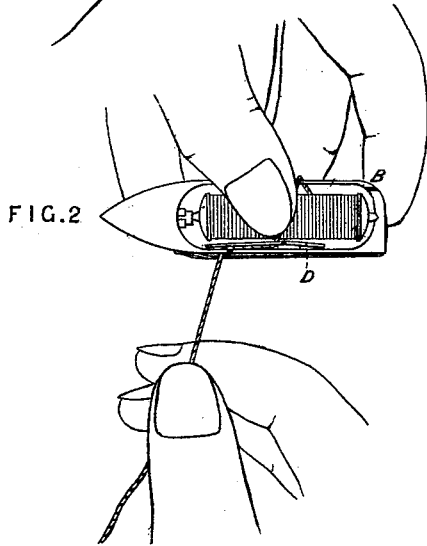
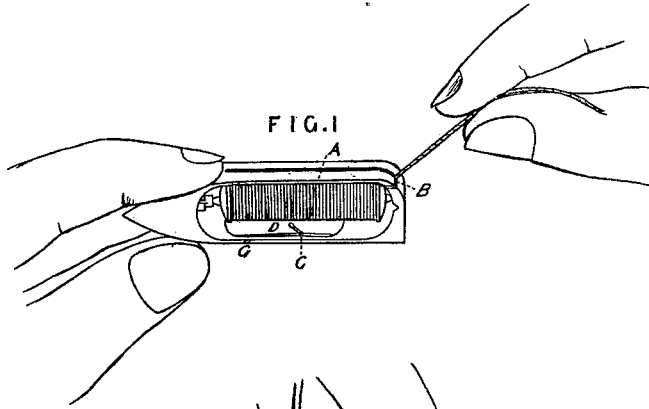


W. BOWN.

SEWING-MACHINE SHUTTLE.

No. 189,423.

Patented April 10, 1877.



Witnesses
Thomas Sanders.
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UNITED STATES PATENT OFFICE.

WILLIAM BOWN, OF BIRMINGHAM, ENGLAND.

IMPROVEMENT IN SEWING-MACHINE SHUTTLES.

Specification forming part of Letters Patent No. **189,423**, dated April 10, 1877; application filed January 9, 1877.

To all whom it may concern:

Be it known that I, WILLIAM BOWN, of Birmingham, England, manufacturer, have invented certain Improvements in Sewing-Machine Shuttles, of which the following is a specification:

The object of this invention is to provide ready means to avoid the inconvenience and tedious process of threading the end of the shuttle-thread through holes or eyes in the shuttle, as well as to avoid screwing and unscrewing when the tension requires to be altered, and to obtain the desired amount of tension on the thread.

To effect this I provide a solid bar with a free end, (cut out from, and forming part of, the shell of the shuttle,) under which I lay the thread as it comes from the bobbin or reel; and I then draw it over to the other side of the shuttle, and lay it in the notch or slit of a sliding pressure-spring fitted inside or outside the shuttle-shell, and secured thereto by a screw or pin, the shank of which passes through a slot in the side of the shuttle. This pressure-spring overlies a slot, entered by a saw-cut made in the edge of the shuttle-shell. The thread is now passed along between the back of the pressure-spring and inside the shell, and enters the slot in the edge of the shuttle, through the saw-cut, and passes thence out of the shuttle, to be looped under the free end of a spring secured to and passing along the outside of the shuttle, which will now be ready to be placed in the machine for work. The tension on the thread is increased or diminished, in proportion as the length of the friction-surface is increased or diminished, by the sliding backward or forward of the pressure-spring, which presses the thread against the side of the shuttle, an index being placed on the outside of the shuttle to indicate the different degrees of tension to be obtained, according to the nature of the work in hand.

But in order that I may be fully understood as to the nature of my improvements I will describe the same in connection with the drawings hereunto annexed, reference being made to the figures and letters marked thereon.

Figures 1, 2, and 3 represent a shuttle made in accordance with my invention, and illustrating the different positions and modes of hold-

ing the shuttle during the processes of passing the thread or cotton through its various stages to completion, ready to be placed in the sewing-machine; and Fig. 4 is a perspective view of a shuttle in this condition.

In all these views the bobbin or reel is shown as held or retained in the shuttle by the ordinary method now commonly adopted, which needs no description.

A is the solid bar, having a free end, B, and in Fig. 1 I have represented the shuttle held in position, and the thread being passed direct from the bobbin, through the free end, into the open slot *b'*, extending the length of the bobbin, as shown. This constitutes the first operation. The thread is then drawn to the other side of the shuttle and through the notch or slit C in the sliding pressure-spring D. (Shown detached in front and edge views at Fig. 5.) This spring is secured, by preference, to the inside of the shuttle by the screw E, Fig. 4, the spring being strengthened, as at F, Fig. 5, for that purpose, and also to form a guide to slide in the slot L. The thread is now passed along between the pressure-spring D and side of the shuttle, and through the saw-cut G, into the slot H, (see Figs. 2 and 4,) and at this stage I have shown the shuttle held in position at Fig. 2. The thread has now to be taken along the outside of the shuttle and looped over the free end M of the spring J, secured to the shuttle at K, and Fig. 3 illustrates the shuttle held in the desired position during this part of the process. The spring J is shown detached in side and edge views at Fig. 6. To complete the operation the thread must be passed along the spring J, the shuttle being now ready for the machine, as shown at Fig. 4.

Fig. 7 represents an end view of the shuttle, showing the direction of the slot forming the free end of the solid bar A, (shown at Fig. 1,) and also the recess in the end of the shuttle for the loop M of the spring J, Fig. 6, to lie in.

To increase the tension on the thread it is simply necessary to slide the pressure-spring D, by means of the screw-head E, from left to right along the slot L, the pressure on the thread being increased in proportion to the distance the spring is advanced. This will be seen by reference to Figs. 2 and 3, the end of

the pressure-spring being in contact with the side of the shuttle; hence it follows that the nearer the point of contact approaches the thread lying between the pressure-spring and the inside of the shuttle the pressure on the thread, and consequent tension of the same, will be increased, and vice versa. For the purpose of indicating the amount of tension on the thread I have placed an index along the edge of the slot L, as will be seen by reference to Fig. 4.

From this description it will be clear that by my improvements I entirely avoid the threading through holes or eyes formed in the sides of ordinary shuttles, which is a tedious and slow process, whereas the passing of the thread through the slots and recesses of my improved shuttle, as described, can be rapidly and easily performed. And, again, by my improvements, the regulation of the tension on the thread is readily accomplished, entirely dispensing with the screwing and unscrewing of the pin, as in the ordinary way.

It will be observed that the slot *b'*, terminating, as it does, in a fissure extending from such slot in a line about at right angles thereto to the edge of the shuttle or case, and a little beyond the rounded edge of the heel of the shuttle, affords a spring-flap open, or free to open, at one end, and at the other end integral with the case, thereby dispensing with any supplemental wire, or soldering of any wire, for this purpose within the shuttle, or thereby

occupying any of the limited space inside the shuttle needed for the bobbin and its thread, and avoiding any need of cutting away any portion of the toe of the shuttle to receive the end of such auxiliary wire, or any breaking or loosening of the solder.

I disclaim a shuttle or shuttle-case having an elongated closed slot at its side, and a wire within the shuttle, soldered near its heel, and extending to and resting at its end in a cavity cut in the toe; but

I claim—

1. The shuttle or shell having the open-ended slit *b'* made therein, extending lengthwise of the shuttle, and terminating at its end in an open cut, extending transversely from such slit to the edge of the face of the shuttle, and thereby forming a spring-flap having its free end rounded to coincide with, and forming part of, the rounded heel of the shuttle.

2. In combination, the sliding presser plate or spring D within the shuttle, its adjusting-screw, the slot L in the shuttle, and a fixed visible device on the outside of the shuttle, serving to indicate readily to the eye the degree of tension imparted to the thread by the presser or tension spring, as shown and described.

WILLIAM BOWN.

Witnesses:

THOMAS SANDERS,
W. B. TEALE.