R. LEAVITT.

Shuttle for Sewing-Machine.

No. 208,021. Patented Sept. 17, 1878.

Fig. 1.

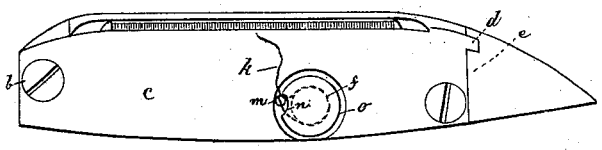
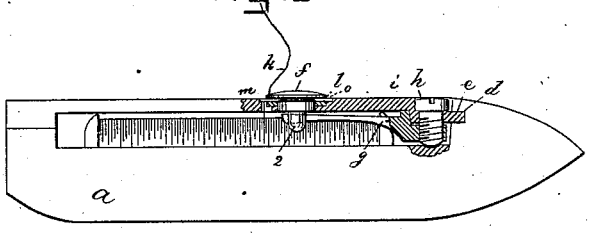


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

RUFUS LEAVITT, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN SHUTTLES FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **208,021**, dated September 17, 1878; application filed June 3, 1878.

To all whom it may concern:

Be it known that I, RUFUS LEAVITT, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Shuttles for Sewing-Machines, of which the following is a specification:

This invention relates to improvements in shuttles for sewing-machines, and has reference specially to the devices for regulating the tension of its thread.

In this my invention tension upon the shuttle-thread is produced by a button or head attached to a swinging latch, which closes the opening in the shuttle-body through which the bobbin is inserted, an adjustable spring connected with such button determining the degree of tension. This button is more readily manipulated to place the thread under tension, and the tension is more uniform, than with the usual long flat springs provided with eyes, through which the shuttle-thread is passed.

Figure 1 represents, in top view, a shuttle embodying my invention, and Fig. 2 a face view thereof.

In this instance I have selected a "Howe" shuttle to illustrate my invention; but it is obvious that shuttles of any other well-known sewing-machine could be improved in like manner.

The shell or body *a* of the shuttle is of any usual construction. To this shell is pivoted, at *b*, the latch *c*, and the opposite end of the latch is provided with a projecting tongue, *d*, to enter a correspondingly-shaped groove made in the shell, a lip, *e*, lapping over the tongue of the latch. This tongue-and-groove connection insures the retention of the free end of the latch from rising, when worn, above the top of the shuttle-body, thereby interfering with and breaking the needle-thread, and for that reason is preferable to making the end of the latch on a bevel to extend beneath a beveled or undercut portion of the shuttle-body. Upon this latch, a suitable hole being made for its reception, is placed a button, *f*, provided with a shank, 2, having an opening to receive the longer end of a spring-lever, *g*, which, by means of a screw, *h*, in its short end, is attached to the front end of the latch. This lever has a fulcrum, *i*, (see Fig. 2,) which bears against the under side of the latch, and by turning the screw or adjusting device *h* this lever may be turned about said fulcrum to cause the longer end of the lever to draw the button down upon the thread *k*, under it, with more or less force, according to the tension desired to exert upon the shuttle-thread. The adjustment of this lever, and consequently the tension upon the thread, may be accomplished by means of a screw-driver without removing the shuttle from the machine. The under side of this button or head is substantially flat; but, instead of permitting the head to pinch the thread between itself and the latch, I prefer to insert in the latch, under the head, a washer, *l*, so that in case of wear the washer may be removed and another one inserted, whereas if the washer were not used the latch would have to be renewed. Next the opening in the latch which receives the shank of the button is made a thread-leading orifice, *m*, out through which the shuttle-thread is led, and when at the outside of the latch the thread is wound or wrapped about the shank of the latter under the head *f*, emerging from under such head at the notched portion *n* thereof, which acts to prevent the thread from being removed from under the head as the shuttle is moved backward. This head is arranged with its face in a countersink or recess, *o*, below the top surface of the latch, to thereby prevent the shuttle-thread from slipping out sidewise from under the head, and also preventing the thread from getting a second wind or wrap about the button. When passing the thread about the shank of the button and under the head, the lower end of the button and longer end of the lever are pushed upward by the finger, which affords a space for the easy entrance of the thread under the head.

It is obvious that the fulcrum *i* for the lever might be upon the latch instead of upon the lever, and also that the screw *h* might be made to act between the two ends of the lever, a fulcrum being made for the lever at its end not connected with the button.

I am aware that a latch is not new; and I am also aware that a tension-disk regulated by a screw and spring, and placed at that portion of a shuttle which supports or forms a bearing for the forward end of the bobbin, has

been used in the Howe sewing-machine shuttle for many years.

The bobbin for the thread is as usual, and the shank of the button and the lever are so located at the edge of the latch that a fully-wound bobbin may be used, which is not the case where long flat springs are applied to the under side of the latch.

In this my shuttle one single screw controls the amount of tension exerted upon the shuttle-thread, and also holds the button and lever or all the tension mechanism in place; and also I have provided that the end of such screw fit into a small depression in the body of the shuttle, to retain the latch from opening. (See Fig. 2.)

I claim—

1. The combination, with the shuttle-body, of the countersunk latch, button *f*, lever *g*, and adjusting device to operate the lever and button to press the under side of its head down upon the thread below it, substantially as described.

2. In a shuttle, the latch, button *f*, lever *g*, provided with a fulcrum, *i*, and adjusting device to operate the lever, in combination with the removable washer, supported by the latch, substantially as described.

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

RUFUS LEAVITT.

Witnesses:

G. W. GREGORY,

N. E. WHITNEY.