J. J. GRAFF.

SEWING-MACHINE SHUTTLE.

No. 178,431. Patented June 6, 1876.

Fig. 1.

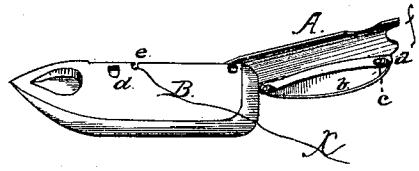


Fig. 2.

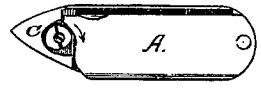
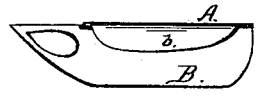


Fig. 3.



Witnesses:

Edward C. Osborn

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Atty

UNITED STATES PATENT OFFICE.

JOSEPH J. GRAFF, OF SAN FRANCISCO, CAL., ASSIGNOR OF ONE-HALF HIS RIGHT TO ORLA H. JEWELL AND ANDREW SHOWERS, OF SAME PLACE.

IMPROVEMENT IN SEWING-MACHINE SHUTTLES.

Specification forming part of Letters Patent No. **178,431**, dated June 6, 1876; application filed February 24, 1876.

To all whom it may concern:

Be it known that I, JOSEPH J. GRAFF, of San Francisco, State of California, have invented an Improved Shuttle for Sewing-Machines, of which the following is a specification:

My invention relates to an improvement in sewing-machine shuttles—to that part known as the tension or thread-controlling device; and it consists in the combination or arrangement, with the shuttle, of a pivoted plate or shield, that is provided with a spring within one side, so placed as to press against the side or upper part of the shuttle with more or less force as the side of the plate is brought against the shuttle, the thread being drawn out between the spring and the shuttle-face, in the manner as will more fully appear hereinafter.

Figure 1 of the accompanying drawing shows a perspective view of a shuttle with the tension plate or shield opened. Fig. 2 is a top view of the face of the shuttle with the shield closed. Fig. 3 is a view of the shuttle, taken from the lower side of Fig. 2.

The shuttle B has the plate A pivoted to its face at the heel, so that it will turn freely over the opening that contains the bobbin. The plate A has a shield, *b*, formed by bending down one side of the plate that lies against the side of the shuttle, and upon the inside of this shield is secured the tension-spring *a*. This spring is fixed at one end to the side of the shield *b*, and is held in place by the pin *c*, projecting from the shield, a slot in the end of the spring *a* allowing it to play as the pressure of the plate against the shuttle is changed. The two pins on the inner side of the shield *b* fit into holes in the face of the shuttle, the pin *c* entering the hole *d* when the plate is closed. The end of the tension-plate A is made with a lip, *f*, that bears against the side of an eccentric button, C, upon the face of the shuttle near the point, so that as the eccentric is turned the shield *b* is pressed against the side of the shuttle with more or less force.

The bobbin-thread passes out through a notch in the edge of the shuttle, (shown at *e*, Fig. 1,) and as it draws out from between the side of the shuttle and the spring *a* a friction or tension upon the thread is produced.

From the foregoing description, and from an examination of Figs. 1 and 2 of the drawing, it will be seen that the pressure of the shield *b* against the side of the shuttle is increased as the eccentric C is turned in the direction of the arrow, Fig. 2, and the thread *x*, Fig. 1, is caught between the face of the spring *a* and the side of the shuttle, and also that this tension is increased or diminished at will.

The pins on the inner face of the shield or ledge *b* of the plate A keep the thread from catching into the edge of the spring, or between the plate and the edge of the shuttle, as shown in Fig. 1.

My invention, as thus constructed, keeps the bobbin-thread from becoming soiled, as the opening of the shuttle is covered and protected by the plate, and an adjustable tension is provided, that is uniform in its action, whether the bobbin be full or nearly run out of thread, and that is capable of being regulated in a very delicate manner.

The construction of the shuttle is also rendered more simple and less expensive, as no tension-holes, slots, or bars are required.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a sewing-machine shuttle, of the pivoted tension-plate A, with its ledge or shield *b*, having a tension-spring, *a*, and the eccentric button C on the face of the shuttle, the whole arranged, combined, and operating as and for the purpose described and shown.

2. The combination, with the tension-plate A, its ledge *b*, and spring *a*, of the projecting pins on the inner face of the ledge, that engage in holes in the side of the shuttle, in the manner and for the purpose described and shown.

In witness whereof I have hereunto set my hand and seal this 12th day of February, 1876.

J. J. GRAFF. [L. S.]

Witnesses:
C. W. M. SMITH,
PHILIP MAHLER.