(No Model.)

R. WHITEHILL.

SEWING MACHINE SHUTTLE.

No. 279,625. Patented June 19, 1883.

Fig. 1.

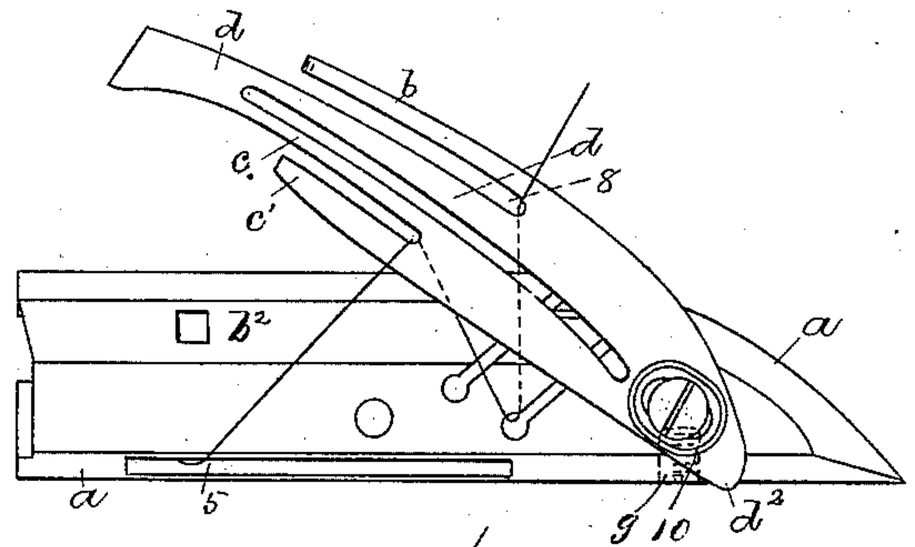


Fig. 2.

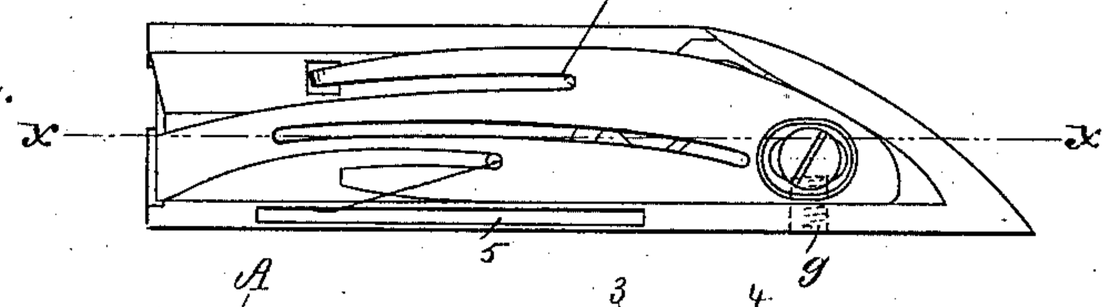


Fig. 3.

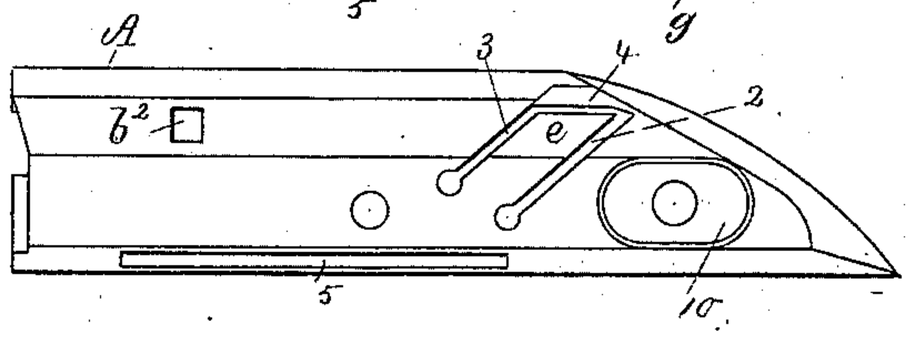


Fig. 4.

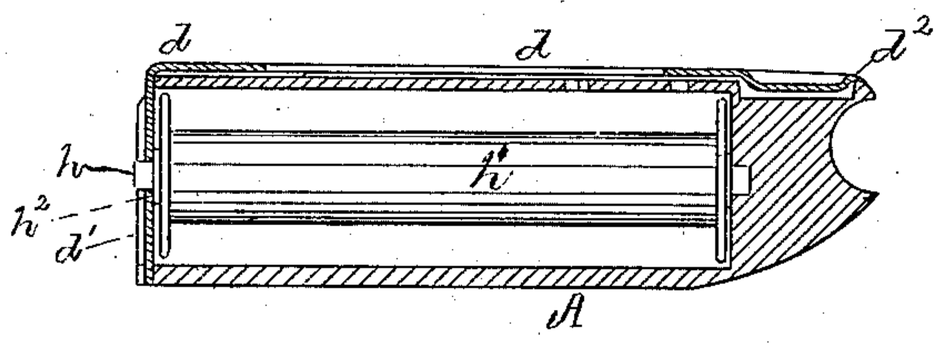


Fig. 5.

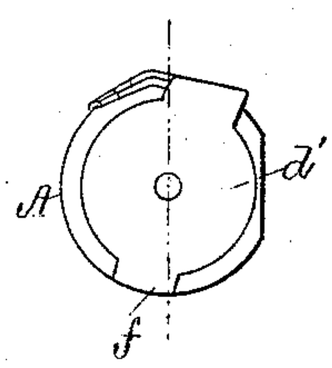


Fig. 6.

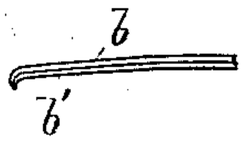
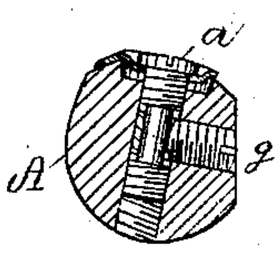


Fig. 7.



Witnesses.

A. Huntington

John F. C. Printzlau

Inventor.

Robert Whitehill

by Crosby & Gregory

atty's.

UNITED STATES PATENT OFFICE.

ROBERT WHITEHILL, OF MILWAUKEE, WISCONSIN.

SEWING-MACHINE SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 279,625, dated June 19, 1883.

Application filed October 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, ROBERT WHITEHILL, of Milwaukee, county of Milwaukee, State of Wisconsin, have invented an Improvement in Sewing-Machine Shuttles, of which the following description, in connection with the accompanying drawings, is a specification.

My invention in shuttles consists, essentially, in a combined tension-spring latch and bearing-cap made in one integral piece from sheet metal, thus reducing the diameter and weight of the shuttle to its minimum. In this my improved shuttle the shell or body is slotted and provided with a stiff, rigid prong or rest for the thread, upon which the tension-spring bears.

Figure 1 represents one of my improved shuttles in top view with the tension-spring turned aside to uncover the open heel of the shuttle; Fig. 2, a similar view with the tension-spring in operative position; Fig. 3, a top view of the shuttle shell or body with the spring removed; Fig. 4, a section of the back part of the shuttle on the dotted line *x*, Fig. 2, the tension-spring being, however, represented in working position on the shuttle-shell. The section-line *x* cuts through the concavity for the reception of the horn of the shuttle-carrier; hence the peculiar appearance of the point of the shuttle in this figure. Fig. 5 is an end view of the heel of the shuttle closed; Fig. 6, a detail showing the hooked end of the latch, and Fig. 7 a cross-section of the shuttle in the line of the tension-regulating screw.

The shuttle body or shell A, open at its heel, is of usual construction. This shell has connected with it, by a tension-adjusting screw, *a*, a plate, *d*, forming a combined tension-spring, latch, and bearing-cap, and made of spring metal incut and shaped as described. The part *b* of this piece of spring metal, having a prong, *b'*, to enter a hole, b^2, in the shuttle-shell, serves as the latch. The tension-spring is composed of the narrow strip *c* and the finger *c'*, they forming part of the main portion *d*, and the cap or bearing *d'* is connected with and forms an extension of the part *d*. The front end of part *d* is depressed to form a seat for the head of the screw *a*. The front end, d^2, of plate *d* bears on the shuttle body or shell, as in Fig. 4, which latter serves as the fulcrum to hold the plate *d*, while the screw *a* is turned to act upon the said plate and cause the tension-spring to bear with more or less force upon the thread led from the bobbin in the shell out through the slot 5, over the finger *c'*, under the spring, and about the prong *e*, formed by slotting the shell at 2 3 4, and thence the said thread passes out through the slot 8, and as the shuttle is reciprocated the shuttle-thread is made to slide over the convexed rear edge of the plate *d* in the slot 8. This slot 8 has its end terminated a sufficient distance from the prong *e* to prevent the thread from being drawn from the said prong. The bearing-cap *d'* has an ear, *f*, to enter a notch in the heel of the shuttle-shell.

The longitudinally-movable tension-adjusting screw *a* has its shank reduced near the center of its length to receive the point or end of a set-screw, *g*, to hold the adjusting-screw in place. (See Fig. 7.)

The plate *d*, with its integral parts, as described, to bear upon the thread as a spring, and to act as a latch, and to serve as a cap for the heel of the shuttle-shell, is struck up from thin sheet metal, and occupies much less space than were the tension-regulating spring attached as an independent piece to a rigid arm pivoted upon the shuttle-shell.

The slot 10 in the plate *d* for the screw *a* is shown elongated, in order that the said plate and its attached adjuncts may slide longitudinally on the shuttle-shell, and also be turned away laterally to uncover the heel of the shuttle, as in Fig. 1.

The cap *d'*, it will be noticed, is a very thin plate of metal, and it has a central hole to receive the journal *h* of the bobbin *h'*, and being of thin metal I am enabled to employ a longer bobbin, the journal *h* extending through the said cap. The journals *h* are shouldered at h^2, just outside the heads of the bobbin, to prevent the same from rubbing against the cap.

I claim—

1. The shuttle body or shell, combined with the spring-metal plate *d*, shaped as shown, to form a tension-spring, latch, and bearing-cap, as and for the purposes set forth.

2. The shuttle body or shell A, provided with the opening b^2, combined with the spring-plate *d*, its attached bearing and cap *d'*, and the latch having a prong, *b'*, to enter the said opening, substantially as shown and described.

3. The shuttle body or shell provided with the slot 5, and the spring-plate *d*, having the tension-spring, latch, and bearing and cap formed as an integral part thereof, combined with the tension-adjusting screw, to operate substantially as shown and described.

4. The shuttle body or shell and the tension-spring and plate *d*, applied thereto as shown, combined with the longitudinally-movable headed tension-regulating screw *a*, having its shank grooved as described, and entered through a hole in the said plate, and with the set-screw to act against and hold the screw *a* in place, substantially as set forth.

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

ROBERT WHITEHILL.

Witnesses:
G. W. GREGORY,
B. J. NOYES.