

(No Model.)

C. H. THURSTON.
SEWING MACHINE SHUTTLE.

No. 246,839.

Patented Sept. 6, 1881.

Fig:1.

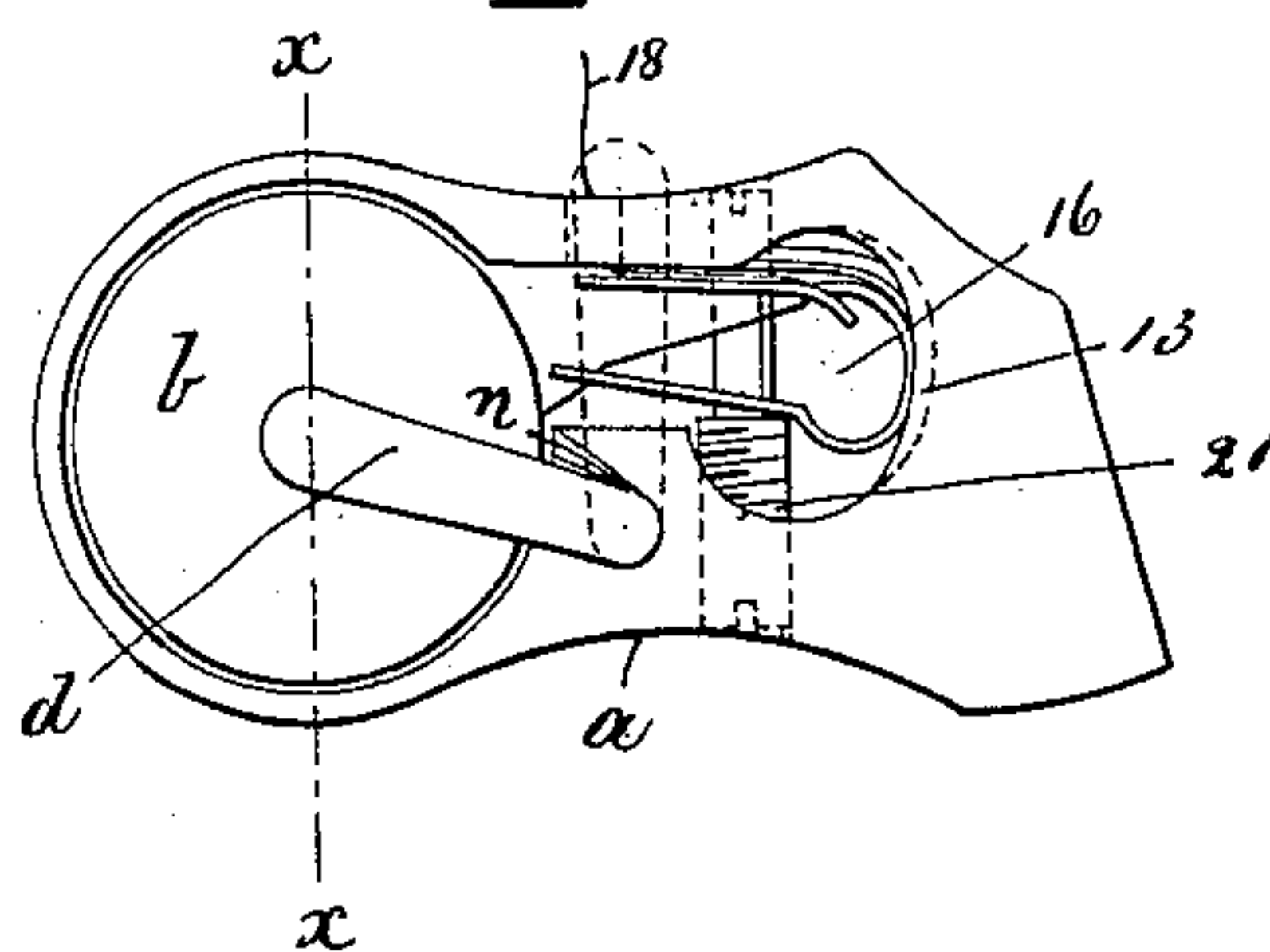


Fig:2.

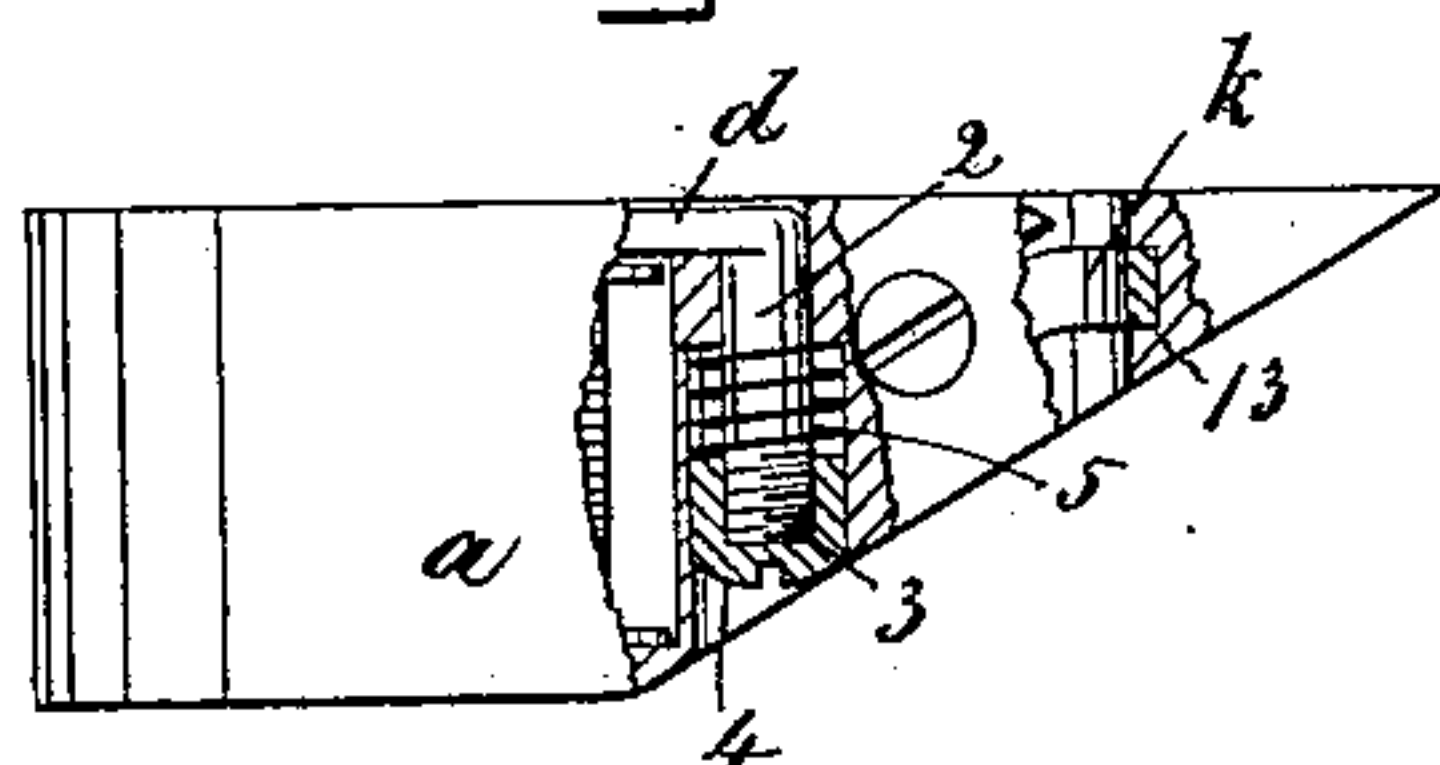


Fig:3.

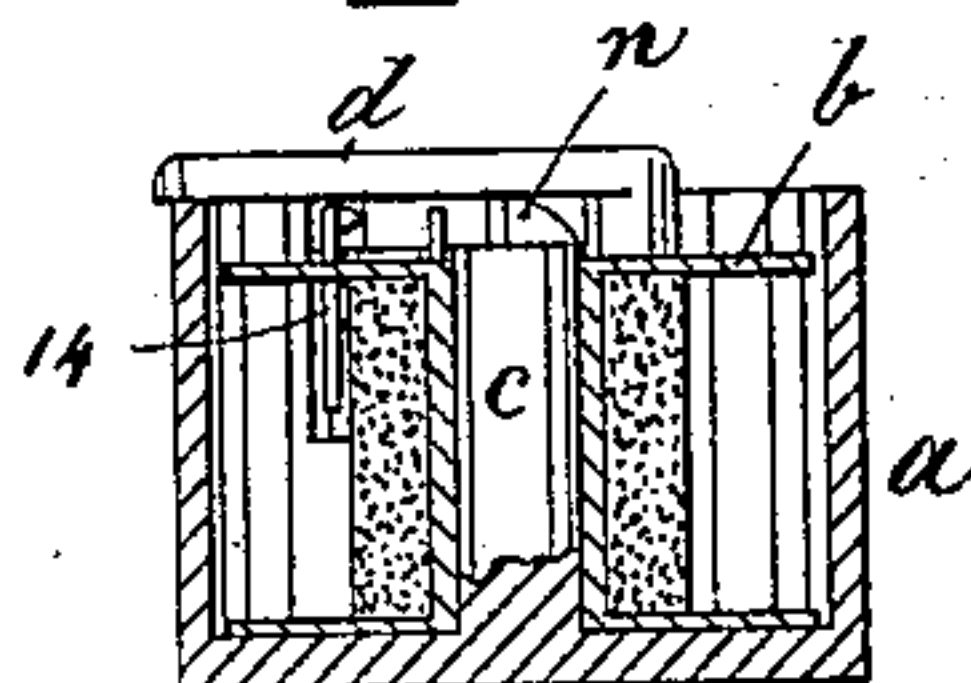
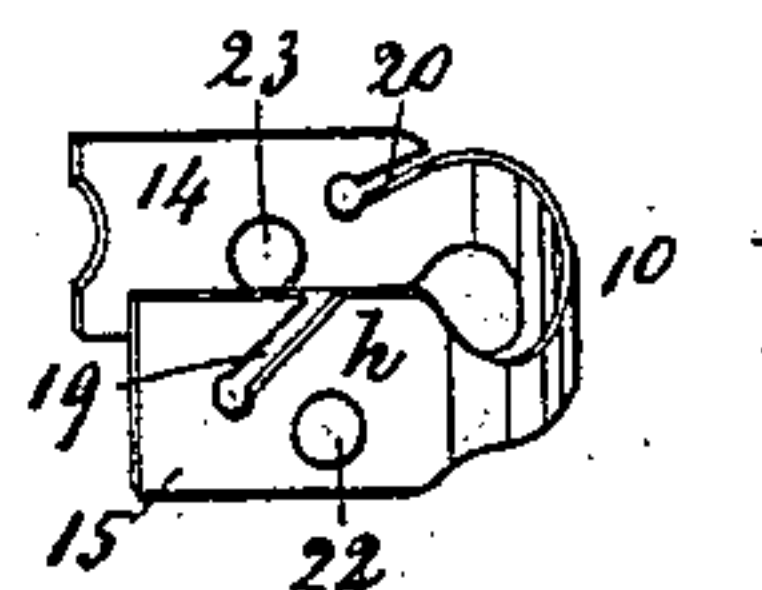


Fig:4.



Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES H. THURSTON, OF MARLBOROUGH, NEW HAMPSHIRE.

SEWING-MACHINE SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 246,839, dated September 6, 1881.

Application filed November 5, 1880. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. THURSTON, of Marlborough, county of Cheshire, State of New Hampshire, have invented a new and useful Improvement in Sewing-Machine Shuttles, of which the following description, in connection with the accompanying drawings, is a specification.

This invention in shuttles for sewing-machines relates to means for retaining the bobbin-holder in position when extended across the bobbin; also, to improvements in the construction of the tension device, and in the manner of holding it in place in the shuttle.

The shuttle herein shown, of usual shape, has its bobbin held in the shuttle-chamber by a holder made as a vibratory finger extended partially across the head of the bobbin, the said finger projecting from a pin or shank fitted loosely in a hole in the shuttle-body, said hole being parallel with the axis of the bobbin. The wall of the shuttle at one edge of the bobbin-receiving chamber is provided with a notch or recess having an inclined or beveled side, the said notch receiving and retaining the holder when in proper position to keep the bobbin in the shuttle. The holder when in this recess is brought so far within the shuttle-body that the loop of needle-thread cannot be caught by the shuttle when passing through it, and when the bobbin is to be removed the mere turning of the holder causes it to act upon the inclined side of the recess in which it is placed, thus lifting the holder in the direction of the axis of its shank. The curved end of the bow-spring, which forms part of the tension device, enters a groove in the wall of the shuttle, which prevents that end of the spring from being turned out of the shuttle.

Figure 1 represents, in front view, a shuttle made in accordance with my invention; Fig. 2, a side elevation, partially broken out, to show the shank of the holder and the groove to receive the curved end of the bow-spring employed for producing tension; Fig. 3, a cross-section of Fig. 2 on the dotted line *xx*, Fig. 1; and Fig. 4 shows the bow-spring removed from the shuttle.

The body *a* of the shuttle is of usual shape,

and has a chamber at its side to receive the headed bobbin *b*, a pin or post, *c*, being preferably employed to serve as a center about which the bobbin may be rotated by the thread. The bobbin is held in place in the chamber of the shuttle by a holder, *d*, shown as a finger having a right-angled shank, 2, screw-threaded at 3, and extended into an opening in the shuttle-body parallel with the axis of the bobbin-receiving chamber. The shank of this holder has placed upon it a spiral spring, 5, and then a threaded nut, 4, so that by turning the said nut the force of the spring is made sufficient to keep the holder in the recess made for it and hold the bobbin in its chamber in the shuttle. The thread in its passage about the shuttle must touch only the wall of the shuttle, and the tension devices and bobbin-holder must be wholly contained within the outline of the shuttle-body, or else the loop of needle-thread will be caught and held and defeat proper sewing.

To obviate catching the needle-thread, the body of the shuttle, between the bobbin-chamber and shank 2 of the holder, is cut away or notched to form a recess at the face of the shuttle to receive the holder when in the position Figs. 1 and 2, the position it occupies when sewing, the spring 5 retaining the holder in the said notch.

When the bobbin is to be removed or a new one inserted in the shuttle, the holder is lifted by the operator and turned aside or laterally from above the bobbin, as in Fig. 3, and during such movement the holder acts against the inclined edge *n* of this recess and is lifted, the shank of the holder then moving longitudinally, its nut 4 compressing the spring 5.

The tension device placed in a recess, 16, at the face of the shuttle, is composed of a U-shaped or bow spring, *h*, having broad ends 14 15, the outer side of the end 14 having a smooth face to bear upon one side of the thread 18, led between it and the inner wall of the recess opposite the smooth face of the end 14, the said wall being also made smooth and hard.

The narrow curved end 10 is made to enter a groove, 13, (shown in section, Fig. 2, and in dotted lines, Fig. 1,) which acts to prevent that end of the spring from being turned out of the

shuttle. After leaving the bobbin the thread is led into the slots 19 20, thence between the face of the end 14 of the spring and the inner smooth wall of the shuttle, and out through a hole (shown in dotted lines, Fig. 1,) at the top of the shuttle.

The tension or pressure of the spring on the thread may be increased or decreased by the shouldered screw 21, which acts on the arm 15 of the spring. The screw 21 to be turned may be engaged by a screw-driver at either end. The spring *h* has two opposite holes, 22 and 23, to receive the screw 21, it thus serving to hold the main part of the spring in place.

I claim—

1. The shuttle-body having the beveled or inclined notch at the edge of its bobbin-chamber, combined with the axially-movable bobbin-holder *d*, provided with a shank, 2, and adapted to rest in the said notch, and with the nut 3 and spring to act upon the shank of and

keep the holder in the said notch of the shuttle-body to retain the bobbin in place, the said holder being lifted by the incline of the shuttle-body when being turned aside for the removal of the bobbin, substantially as described.

2. The shuttle-body provided with the recess 16 and the groove 13 and the U-shaped or bow spring *h*, having a portion, 10, thereof entered into the said groove, combined with the adjusting-screw extended through holes in the said spring, the screw holding the spring in the said recess, to operate substantially as shown and described.

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

CHAS. H. THURSTON.

Witnesses:

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