E. W. MULLIKIN.

Sewing-Machine Shuttle.

No. 222,930. Patented Dec. 23, 1879.

Fig. 1.

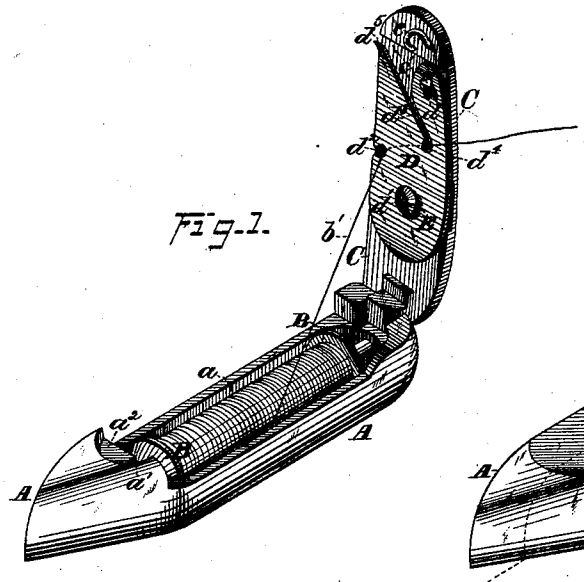


Fig. 2.

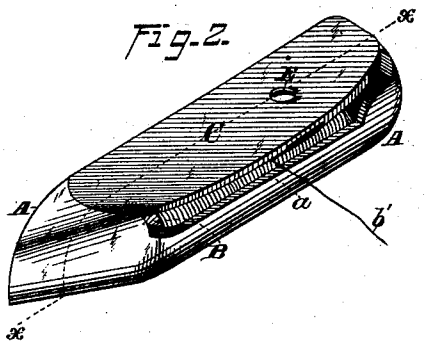


Fig. 3.

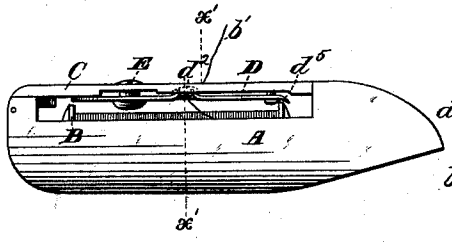


Fig. 4.

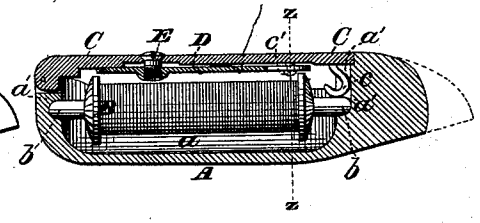


Fig. 5.

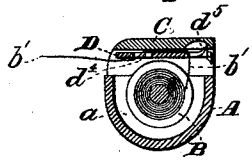


Fig. 6.

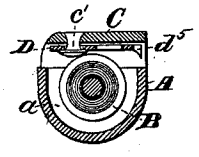
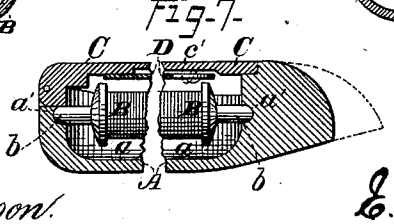


Fig. 7.



WITNESSES:

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INVENTOR.

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Prindle and Laylin Attys

UNITED STATES PATENT OFFICE.

EDWARD W. MULLIKIN, OF SPRINGFIELD, OHIO, ASSIGNOR TO THE ST. JOHN SEWING MACHINE COMPANY, OF SAME PLACE.

IMPROVEMENT IN SEWING-MACHINE SHUTTLES.

Specification forming part of Letters Patent No. **222,930**, dated December 23, 1879; application filed May 9, 1879.

To all whom it may concern:

Be it known that I, EDWARD W. MULLIKIN, of Springfield, in the county of Clark, and in the State of Ohio, have invented certain new and useful Improvements in Sewing-Machine Shuttles; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the rear side of my shuttle, the lid being opened. Fig. 2 is a like view of the same, said lid being closed. Fig. 3 is an elevation of the front side of said shuttle. Fig. 4 is a longitudinal section upon line *x x* of Fig. 2. Figs. 5 and 6 are cross-sections upon lines *x' x'* and *z z*, respectively, of Figs. 3 and 4; and Fig. 7 is a central longitudinal section of said shuttle, and shows a modification in the means employed for securing the bobbin in place.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to increase the efficiency and ease of operation of a shuttle; to which end it consists, principally, in a sewing-machine shuttle in which are combined the following elements, viz: a case having a recessed interior open at its upper side, a bobbin arranged within said recess and having its pivots contained within bearings at the ends of the same, a lid or cover hinged at one end to or upon said case, and arranged to inclose the upper open side of said recess and to confine therein said bobbin, and a tension-spring secured upon the lower face of said hinged cover, substantially as and for the purpose hereinafter specified.

It consists, further, in combination with the hinged cover of the shuttle, of the tension-spring, as constructed, and the means employed for adjusting the pressure of the same, substantially as and for the purpose hereinafter shown.

It consists, finally, in the shuttle as a whole, its several parts being constructed and combined to operate in the manner and for the purpose substantially as hereinafter set forth.

In the annexed drawings, A represents the case or body of my shuttle, which has the usual exterior form, and is provided with a central cavity or recess, *a*, for the reception of a bobbin, B, which recess is open at the upper side, instead of the front, as ordinarily constructed. The recess *a* has such shape and dimension as will enable it to contain the bobbin B, and at each end is provided a bearing, *a'*, for the pivots *b* of said bobbin, and one of said bearings is open to the upper side of the case A, in order that said bobbin may be placed in or removed from position.

Hinged at one end to or upon the upper side, at the heel of the case A, is a lid or cover, C, which has the necessary size and shape to enable it when closed to complete the lines of said case. The front end of said lid extends just beyond the corresponding end of the recess *a*, is formed upon a circular line, and, when closed, fits into a corresponding recess, a^2, in said casing, the upper face of said lid being flush with the face of the contiguous part of said case. A hook-shaped spring, *c*, attached to the lower side, near the outer end of the lid C, passes into and engages with the open bearing *a'*, and locks said lid in position when closed. Said spring extends to and bears lightly against the pivot *b*, contained within said bearing, and holds the same in place.

The top edges of the side walls of the case A are cut away, so as to leave between the same and the lid C a space of about one-sixteenth of an inch, through which the thread *b'* may pass outward and a view of the interior of the shuttle may be had.

Secured to or upon the lower face of the lid C is a flat spring, D, which has the general shape and size of, but is not quite as long as, said lid, and is held in place by means of a T-shaped stud, *c'*, which extends downward from said lid through an opening, *d*, at the front end of said spring, and a screw, E, that passes through said lid and has its threaded end contained within a threaded opening, *d'*, in said spring near its rear end.

The opening *d* is elongated, so as to enable it to pass over the head of the stud *c'* when the spring is turned to a position at a right angle to the length of the case, after which said spring may be turned to position and locked in place by means of the screw E.

At a point near the longitudinal center of

the recess *a*, at the front side of the shuttle, a semicircular notch, d^2, is provided within the spring D, and the corners of the latter, at each side of such notch, are turned slightly upward against the lower face of the lid C.

From the corner at the outer end and front side of the spring D a slot, d^3, extends diagonally toward the heel and rear side of the shuttle, and terminates in a small circular opening, d^4, near the longitudinal center of the recess *a*. The outer end of said slot d^3 is made flaring, and the point d^5, left at the corner of said spring, is turned slightly downward.

In preparing the shuttle for use the lid C is opened, the thread *b'* from the bobbin B is passed beneath the point d^5, and drawn downward until it has entered the notch d^2 and the opening d^4, and passes in a direct line between said points between the spring D and the lid C. The lid C is now closed downward, the end of the thread *b'* passing outward at the rear side, between the same and the case A, and the shuttle is ready for use.

The lower face of the lid C is cut away slightly at the point where the screw E is located, by which means said screw may be caused to draw the spring D upward, and cause the latter to bear with any desired pressure upon the thread *b'*, that is contained between said spring and said lid, immediately adjacent to said cut-away part, the design being to enable the tension of said thread to be increased or diminished at pleasure.

The lid C operates as a thread guide or controller, and the thread is received and delivered from fixed points, the result being perfect uniformity in the tension of said thread and great regularity in the work done with the shuttle.

In Fig. 7 is shown a modification of my shuttle, in which the open or slotted bearing *a'* is at the heel end of the case A and the shuttle is held in place by means of the hinge c^2 of the lid C, which hinge is somewhat longer than usual, and, when said lid is closed, bears lightly upon the contiguous pivot *b* of the bobbin B. In placing said bobbin within said casing the pivot *b*, at the point end, is inserted first.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. A sewing-machine shuttle in which are combined the following elements, viz: a case having a recessed interior open at its upper side, a bobbin arranged within said recess and having its pivots contained within bearings at the ends of the same, a lid or cover hinged at one end to or upon said case, and arranged to inclose the upper open side of said recess and to confine therein said bobbin, and a tension-spring secured upon the lower face of said hinged cover, substantially as and for the purpose specified.

2. In combination with the cover C, the tension-spring D, secured thereto, provided with the notch d^2, slot d^3, and opening d^4, and the adjusting-screw E, substantially as and for the purpose shown.

3. The hereinbefore-described shuttle, consisting of the case A, provided with the recess *a* and bearings *a'*, the bobbin B *b*, the hinged lid C, having the spring *c* and stud *c'*, the spring D, provided with the notch d^2, slot d^3, and opening d^4, and the set-screw E, said parts being constructed and combined in the manner and for the purpose substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of March, 1879.

EDWARD W. MULLIKIN.

Witnesses:
JNO. FOOS,
H. S. BRADLEY, JR.