(No Model.) 2 Sheets—Sheet 1.

H. W. HADLEY & W. L. GROUT.

SHUTTLE FOR SEWING MACHINES.

No. 345,682. Patented July 20, 1886.

Fig. 1.

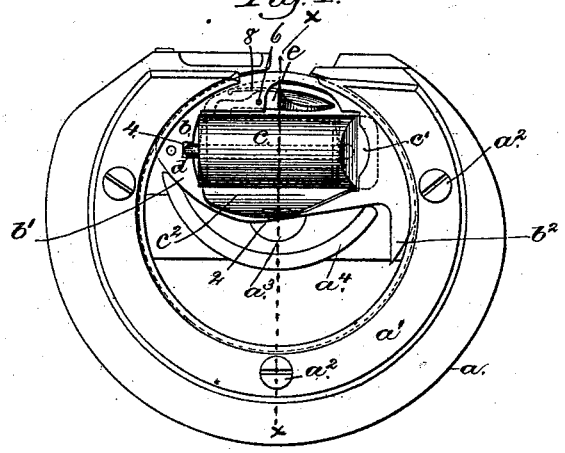


Fig. 2.

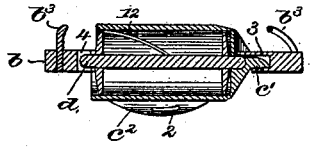


Fig. 3.

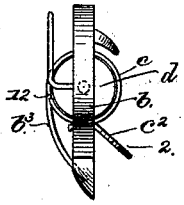


Fig. 4.

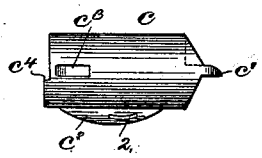


Fig. 5.

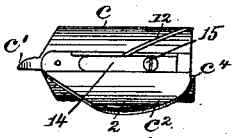
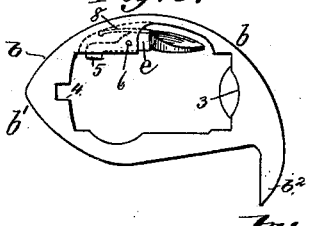


Fig. 6.



Witnesses.
John F. C. Priest
Arthur Zipperlen

Inventors.
Horace W. Hadley,
William L. Grout,
by Crosby & Gregory Attys.

(No Model.) 2 Sheets—Sheet 2.

H. W. HADLEY & W. L. GROUT.

SHUTTLE FOR SEWING MACHINES.

No. 345,682. Patented July 20, 1886.

Fig. 7.

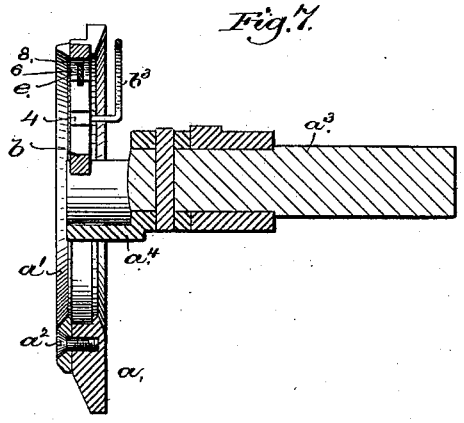
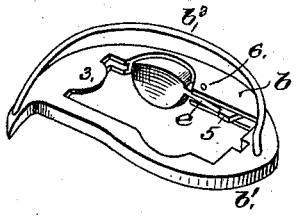


Fig. 8.



Witnesses.
John F. C. Printzell
Fred L. Emery.

Inventors.
Horace W. Hadley
William L. Grout.
by Crosby & Gregory attys.

UNITED STATES PATENT OFFICE.

HORACE WEBSTER HADLEY AND WILLIAM L. GROUT, OF ORANGE, MASS.

SHUTTLE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 345,682, dated July 20, 1886.

Application filed September 7, 1885. Serial No. 176,344. (No model.)

To all whom it may concern:

Be it known that we, HORACE WEBSTER HADLEY and WILLIAM L. GROUT, both of Orange, county of Franklin and State of Massachusetts, have invented an Improvement in Shuttles for Sewing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to that class of shuttles which is supported by a shuttle-carrier and is oscillated in a circular race.

The improved shuttle to be herein described and claimed is composed of an elongated or elliptical shell and an elongated bobbin-case of peculiar shape, the latter being held in place in the shell by a peculiar latch.

Figure 1 in front elevation represents a shuttle-race containing a shuttle embodying the invention to be herein described; Fig. 2, a longitudinal section of the shuttle; Fig. 3, a left-hand end elevation of the shuttle, viewing it from Fig. 1; Fig. 4, a top or plan view of the bobbin-case removed; Fig. 5, an under side view of Fig. 4; Fig. 6, a front elevation of the shell alone. Fig. 7 is a section of Fig. 1 on the dotted line x x, the bobbin-case being removed; and Fig. 8 is a perspective view of the shuttle-shell, the bobbin-case being removed.

The circular shuttle-race a, its cap a', held in place by screws a^2, the shaft a^3, and the carrier a^4, to receive upon it and oscillate the shuttle in the race, are of usual construction.

The elongated or elliptical shuttle consists of the shell b and bobbin-case c. The shell, shaped substantially as shown in the drawings, to form a heel, b', and a point, b^2, is provided with a guard or back plate, b^3. The shell b is provided with an elongated slot at one end, which is a pocket or notch, 3, for the reception of the lip c' of the cylindrical bobbin-case c, and with a slot at 4 for the reception of one of the journals of the spool or bobbin d, inserted in the said bobbin-case, as best shown in Figs. 1 and 2. The bobbin-case is provided with a thread-controlling bracket, c^2, having a slot, 2, preferably curved, and located substantially in line with the center of rotation of the shaft a^3 and shuttle, the said bracket being extended radially from the bobbin-case in the direction of its length. The bobbin-case is provided at one side with a slot or recess, c^3, to be engaged by the prong 5 of a latch, e, pivoted to the shell at 6, one end of the latch being extended out beyond the face of the shell, as shown, to form a thumb-piece by which to turn the said latch when it is desired to remove or replace the bobbin-case, a spring, 8, normally acting to keep the prong 5 pressed toward the center of the shell and in engagement with the notch c^3. The case also has a shoulder, c^4, which strikes against the shell and limits its position therein. The bobbin-case is slotted diagonally from its rear toward its front end, as shown at 12, Fig. 2, to enable the thread from the spool or bobbin in the case to be drawn under the tension-spring 14, attached to the case by a screw, 15, the case preferably having shoulders between which the said spring is located, the shoulders preventing the turning of the spring aside. The lip c' of the case is inserted in the pocket 3, and then the other end of the case is pushed or swung back into the opening of the shuttle-shell, and is there caught by the prong of the latch, it entering the notch c^3. Turning the bobbin-case back in this way while its lip is held in the pocket somewhat strains the parts, so that, as soon as the latch is moved to release its prong from the case, the latter starts forward and turns out from the shell, thus making it easy for the operator to remove the case and renew or change the bobbin. The guard b^3 prevents the loop of needle-thread from coming against the race-way near where the edge of the shuttle-shell bears against the said race-way, the said thread so held away from the race by the guard not being liable to be soiled by oil used between the shuttle-shell and race. The shuttle-thread after leaving the tension device is led through the slot 2 of the bracket c^2, the curved outer edge of the latter acting in spreading the loop of needle-thread.

We claim—

1. The elongated elliptical shell b, having an elongated central opening, one end of which is provided with the pocket 3, and the elongated cylindrical bobbin-case, provided at one end with the centrally-located projection c', and notched at one side, as at c^3, combined

with the latch to engage the notch of the said bobbin-case and hold it in the shell, substantially as described.

2. The shell *b*, provided with the pocket 3, and notched at 4 for the reception of one of the journals of the bobbin, and the latch and spring to turn it, combined with the bobbin-case having the projection *c'* and notch *c*^{1}, substantially as described.

3. The shell *b*, provided with the pocket 3, and notched at 4 for the reception of one of the journals of the bobbin, and the latch and spring to turn it, combined with the bobbin-case having the projection *c'* and notch *c*^{1}, and slotted at 12, and with the tension-spring, to operate substantially as described.

4. The elongated or elliptical shell *b*, shaped substantially as shown, and provided with a point, *b*^{2}, and a pocket, 3, and the bobbin-case provided with the end projection, *c'*, and shoulder *c*^{1}, and having a radially-extended bracket provided with a curved edge, and slotted at 2, combined with means, substantially as described, to hold the bobbin-case in said shell.

5. The elongated elliptical shell *b*, having an elongated central opening for the reception of the bobbin-case, and provided with a guard, *b*^{3}, at the rear side of and parallel with the pocket of the said case, combined with a raceway or guide, *a*, in which the shuttle travels, the said guard being extended over the rear side of the said raceway, and serving to keep the needle-thread away from the said raceway and from the edge of the shell, all substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

HORACE WEBSTER HADLEY.
WILLIAM L. GROUT.

Witnesses:
EDW. M. BUELL,
G. P. FIELD.