J. BEAVER & J. M. TALLMAN.

Shuttle for Sewing-Machines.

No. 164,417. Patented June 15, 1875.

Fig. 1

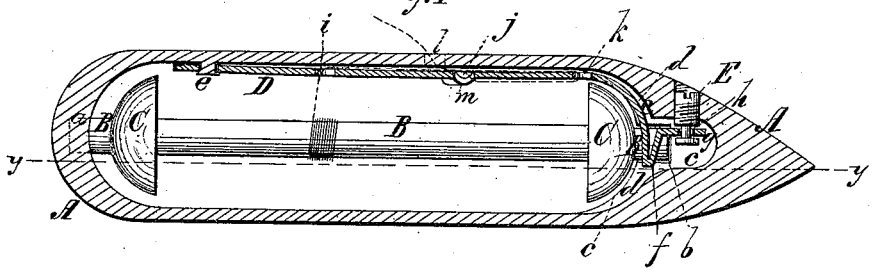

Fig. 2

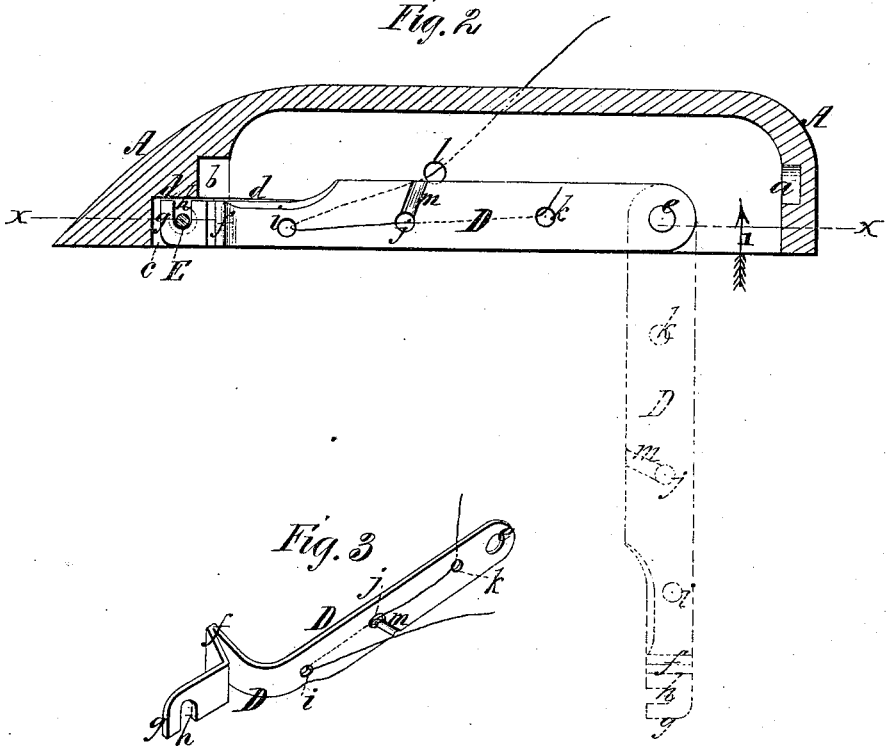

Fig. 3

Witnesses.
F. N. Campbell.
F. W. Freund.

Inventor:
John Beaver
and
J. M. Tallman
by
Mason, Fenwick and Lawrence

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

JOHN BEAVER AND JEDEDIAH M. TALLMAN, OF ILION, NEW YORK.

IMPROVEMENT IN SHUTTLES FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **164,417**, dated June 15, 1875; application filed April 17, 1875.

To all whom it may concern:

Be it known that we, JOHN BEAVER and JEDEDIAH M. TALLMAN, of Ilion, county of Herkimer and State of New York, have invented a new and useful Improvement in Shuttles for Sewing-Machines; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a vertical section of the improved shuttle in the line *x x* of Fig. 2, and looking in the direction of the arrow 1 of said figure. In this view the bobbin is in its place. Fig. 2 is a horizontal section of the shuttle in the line *y y* of Fig. 1. The bobbin is removed in this view, and the spring which produces the tension and holds the bobbin in place is shown in two positions, one by full black lines and the other by dotted lines. Fig. 3 is a perspective view of the bobbin-holding and tension spring.

The nature of our invention consists, first, in the shuttle-case, with its bobbin-chamber extended at its front end beyond the bobbin-head, so as to form a shallow recess for the curved part of the combined latch and tension spring to enter, and thus be out of contact with the bobbin-head. This construction allows the bobbin to be made of the desired length without coming in contact with the spring during its revolutions, and prevents the bobbin-spindle being cramped by being borne against by the spring. It consists, second, in the tension-spring, which has its loose curved end extended laterally in a V or bow shape directly across the center of the bobbin-spindle, and then terminated in an extended end, which is parallel with the axis of the shuttle-case and fitted over or against the adjusting-screw. This construction prevents the bobbin-spool from getting out of its bearing or center, and enables one spring to answer the twofold purpose of producing tension and holding the bobbin in a true position. It consists, third, in a tension-spring constructed with the usual passages for fine thread, and with a depression or channel in its bearing side leading from one of said passages to the upper edge of the spring. By this construction the one tension-spring answers for very fine and very coarse threads, the channel or depression admitting coarse thread between itself and the side of the shuttle-case without requiring the spring to be forced against the bobbin-head or washer, although the bobbin-heads are made no smaller than those of shuttles which are adapted for only using very fine or medium threads. It consists, fourth, in an adjusting-screw having a neck and collar on its inner end, in combination with the spring and shuttle case, whereby the spring can be both forced away and drawn up to the shuttle-case, as occasion requires.

To enable others skilled in the art to make and use my invention, I will proceed to describe it.

A is the shuttle-case. This has a full round bearing, *a*, and a half-round bearing, *b*, for the spindle B of the bobbin C to fit and turn in; and above the upper plane of the bearing *b* the chamber of the bobbin-case is extended so as to form a shallow recess, *c*, and a shoulder, *d*, as shown. D is the tension-spring, and E the adjusting-screw. The spring D is pivoted to the shuttle-case on the inside, as indicated at *e*, and bears snugly against said case when in action. This spring, near the terminus of its loose end, is bent in form of a quadrant, and is just as broad as the depth of the recess *c*, and said bent portion enters the recess, and is thereby isolated from the head of the bobbin. The shoulder *d* prevents the spring being pressed inward far enough to cramp the bobbin-spindle, when the shuttle is in use. Just at the end of the curved part of the spring a V-shaped form is given to the spring, as indicated at *f*; and this V-part extends across the spindle of the bobbin, and holds it securely in the half-round bearing *b*. From the V-shaped part of the spring there is a straight extended part, *g*, which has a notch, *h*, cut in its upper edge. This straight part extends over the adjusting-screw E, and receives within its notch *h* the neck of said screw, as shown. The adjusting-screw is fitted in the upper side of the point of the shuttle-case, and can be adjusted from the outside of this case, as is evident from Fig. 1 of the drawings. The screw will force the spring from, or draw it to, the side of the shuttle-case, as

occasion may require, accordingly as it is turned. The tension-spring has three thread-holes, *i j k*, through it; and at the middle hole a depression or channel, *m*, is made in the spring extending from said hole to the upper edge of the spring. This channel permits coarse thread to be used without forcing the spring out so far as to interfere with the revolution of the bobbin. A thread-hole, *l*, is formed in the side of the shuttle, through which the thread, if it be fine, is carried to the sewing-machine after being manipulated as follows, viz: Carried between the spring and bobbin-case through the hole *k*, thence through the hole *j*, thence through the hole *i*, and thence through the hole *l* to the sewing-machine. By turning out the screw the tension upon the thread is increased, and turning it in it is decreased.

The channel *m* might be formed in the side of the shuttle-case, but it is best in the spring, as it is more readily formed by swaging, and costs less.

We are aware of the patents of Knox, No. 148,072, dated March 3, 1874, and of Hackensmith, No. 125,956, dated April 23, 1872; and therefore do not claim a bobbin with a hinged spring arranged inside of it, and bearing with tension force against the wall of the shuttle; nor do we claim a spring of the kind adjusted by a screw; but

What we claim is—

1. The shuttle-case having its point provided with the extended shallow recess *c* and shoulder *d*, in combination with the combined latch-tension spring D, provided with the parts *f* and *g*, as and for the purpose described.

2. The tension-spring D, constructed with the part *f*, adapted to extend across the bobbin-spindle, and the part *g*, adapted to be pressed or engaged by a screw, substantially as and for the purpose described.

3. The tension-spring, provided with suitable threading-eyes for fine thread, and with the coarse-thread channel *m*, which extends from the thread-hole *j* to the edge of the spring, substantially as and for the purpose described.

JOHN BEAVER.
JEDEDIAH M. TALLMAN.

Witnesses:
J. B. PELTON,
J. J. PELTON.