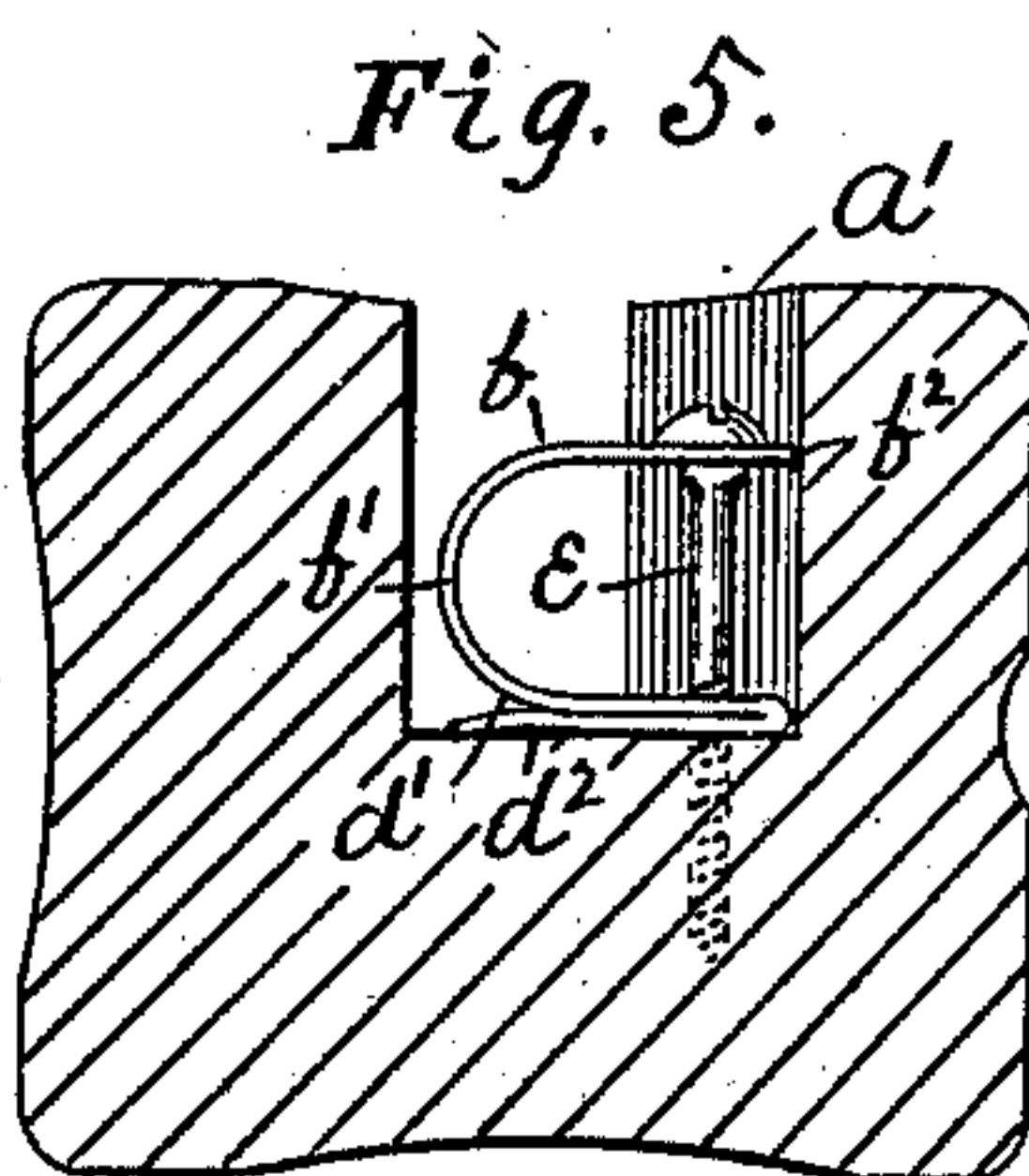
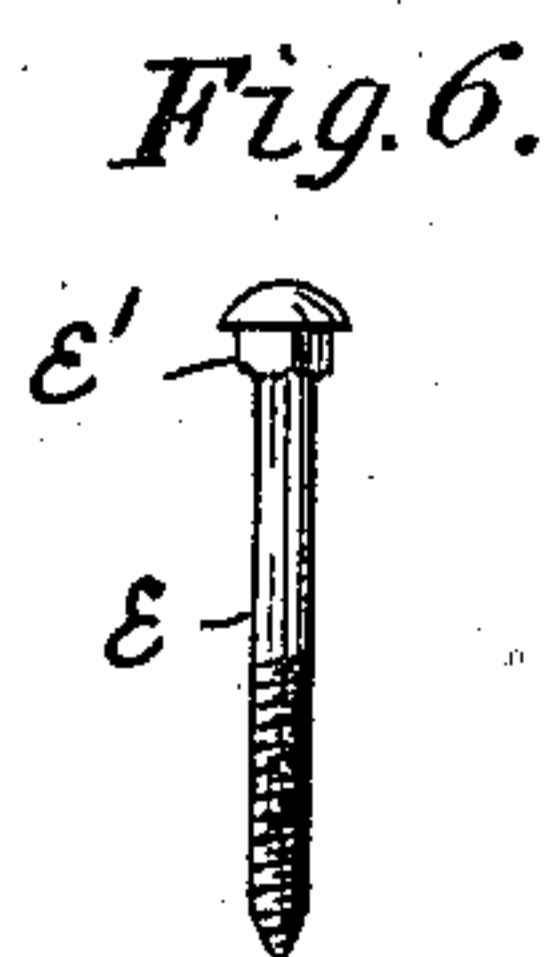
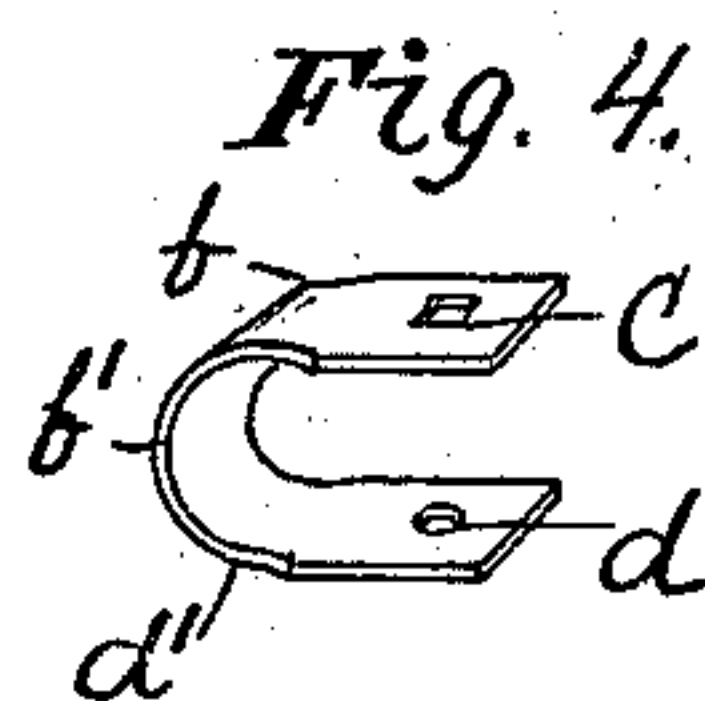
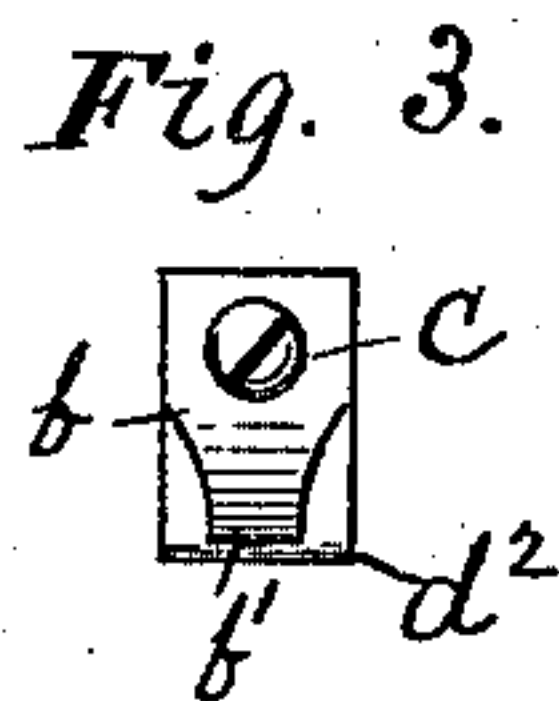
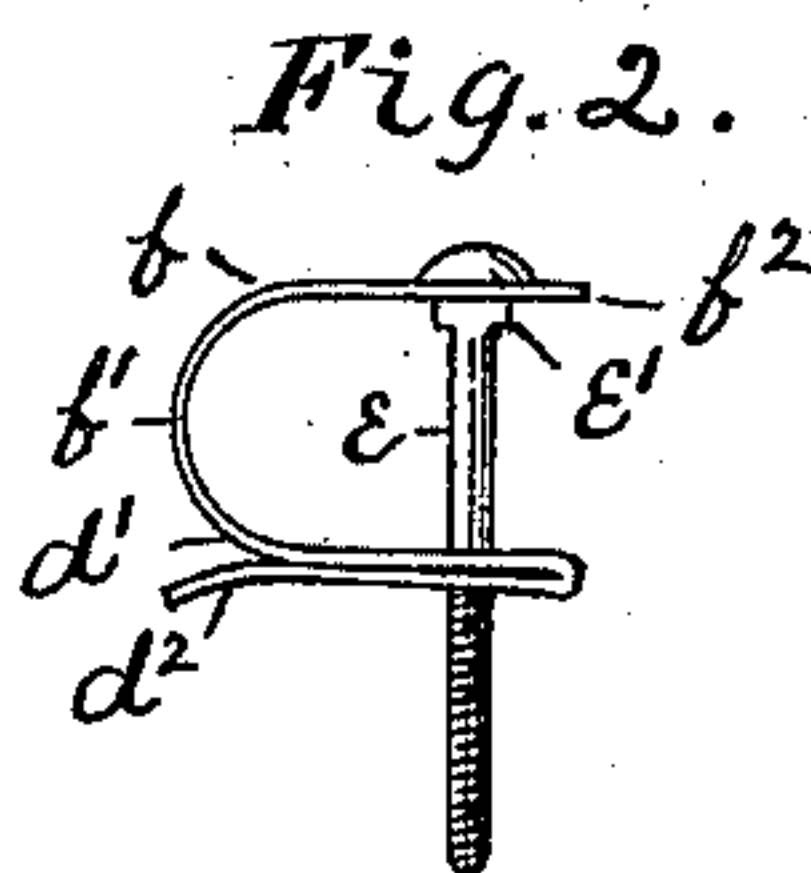
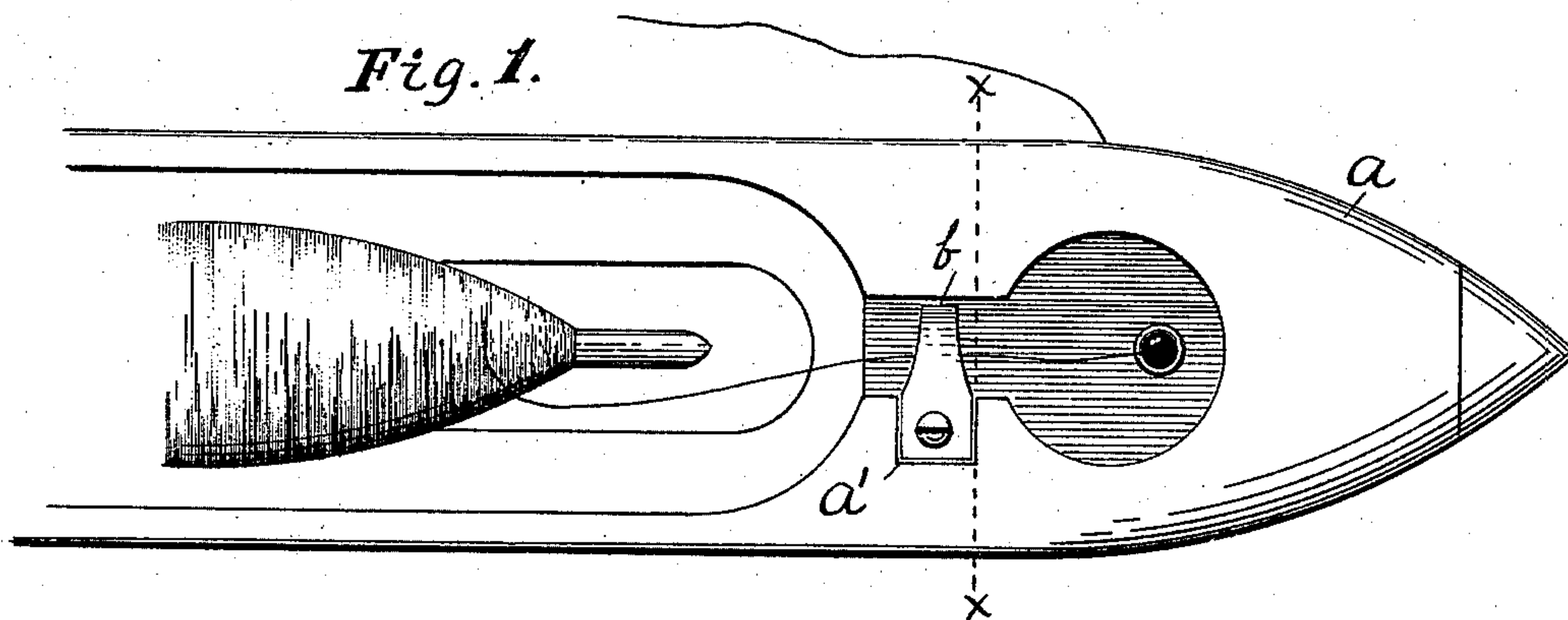


(No Model.)

S. M. HAMBLIN.  
TENSION DEVICE FOR LOOM SHUTTLES.

No. 550,611.

Patented Dec. 3, 1895.



Witnesses  
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# UNITED STATES PATENT OFFICE.

STEPHEN M. HAMBLIN, OF NEW BEDFORD, ASSIGNOR OF ONE-HALF TO  
EDWIN S. DAMON, OF PLYMOUTH, MASSACHUSETTS.

## TENSION DEVICE FOR LOOM-SHUTTLES.

SPECIFICATION forming part of Letters Patent No. 550,611, dated December 3, 1895.

Application filed March 11, 1895. Serial No. 541,274. (No model.)

*To all whom it may concern:*

Be it known that I, STEPHEN M. HAMBLIN, a citizen of the United States, residing at New Bedford, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Tension Devices for Loom-Shuttles, of which the following is a specification.

The accompanying drawings illustrate my invention, in which—

Figure 1 is a top view of a portion of a loom-shuttle, showing my improved tension device properly adjusted therein. Fig. 2 is a side view of the tension device as it appears when removed from the shuttle. Fig. 3 is a top view of the same. Fig. 4 is view in perspective of the device with the regulating and retaining screw removed and showing a slight modification in its construction. Fig. 5 is a view in cross-section through the dotted line  $xx$  of Fig. 1. Fig. 6 is a view of the screw by means of which the tension device is retained in the shuttle and the tension regulated.

Similar letters refer to similar parts in the several views.

The letter  $a$  indicates a portion of a shuttle-body having the recess  $a'$  made in one side of the throat thereof, in which recess is secured the tension device  $b$ , consisting of a piece of spring sheet metal bent into a semicircle, with the ends elongated parallel to each other, having one end provided with the square hole  $c$ , and the other end with the round hole  $d$ , and a screw  $e$ , adapted to pass through the hole  $d$ , having a square shoulder under its head adapted to fit in the square hole  $c$ .

In Figs. 2 and 5 the spring  $b$  is shown as having its lower end bent upon itself and extending to a point in line with the portion of the circle  $b'$ , where it is slightly bent downward, as at  $d^2$ .

When the tension device is constructed as shown in Fig. 2, the thread runs between the parts  $d'$  and  $d^2$ ; but when it is constructed as shown in Fig. 4 the thread runs between the part  $d'$  and the bottom of the throat of the shuttle, and when greater tension on the thread is desired the end  $b^2$  of the spring  $b$

is pressed downward until the square hole  $c$  therein is free from the square shoulder  $e$  and the screw is advanced to a sufficient degree. To lessen the degree of tension, the screw is retracted.

The ends of the spring  $b$  are preferably made square, so that when the device is adjusted, as shown, the said ends will bear against the side of the recess and prevent the device from turning from side to side and getting out of its proper position.

It will be observed that when the square shoulder of the screw is in the square hole in the spring  $b$  the screw is prevented from turning and working out, and thus a uniform tension is maintained on the thread.

It will also be observed that the operation of threading the shuttle is the same either with or without the tension device and that the thread will draw under the tension device of its own motion.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In combination with a loom shuttle, a tension device, consisting of a semicircular spring, having one end provided with a square hole, and the other with a round hole; and a screw, having a short square shoulder under its head, and adapted to pass through said holes and secure said spring in the shuttle, substantially as shown and described.

2. A tension device for a loom shuttle, consisting of a piece of spring metal bent into a semicircular shape, having one of its ends bent outward and back upon itself, and extending tangentially to a point in line with the sweep of the circle, and having its single end provided with a square hole, and its doubled end with a round hole; and a screw, having a short square shoulder under its head, and adapted to pass through said holes, and secure said spring in the shuttle, substantially as shown and described.

STEPHEN M. HAMBLIN.

Witnesses:

HENRY W. MASON,  
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