(No Model.)

M. MERCIER.

TENSION REGULATING DEVICE FOR LOOM SHUTTLES.

No. 405,673. Patented June 18, 1889.

FIG. 1.

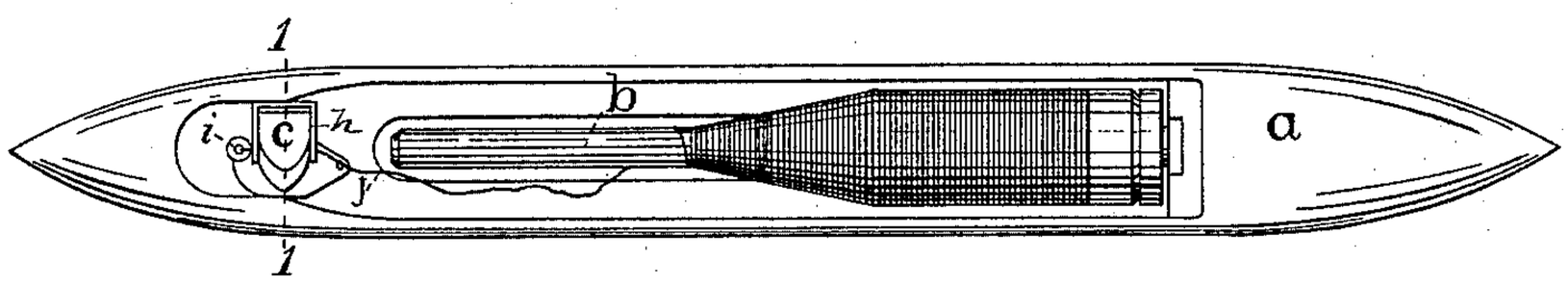


FIG. 2.

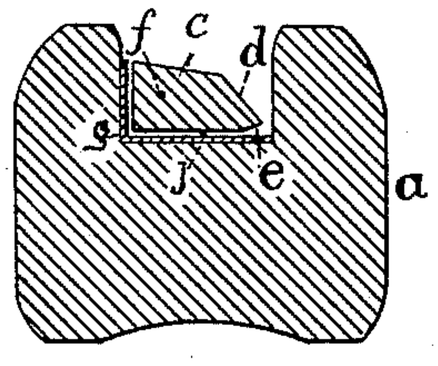
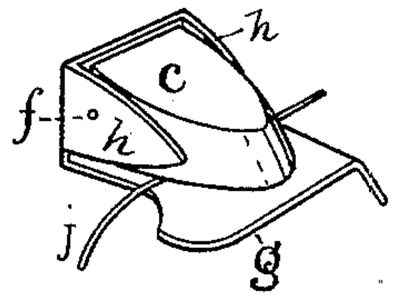


FIG. 3.



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UNITED STATES PATENT OFFICE.

MATHIAS MERCIER, OF BIDDEFORD, MAINE, ASSIGNOR TO HAROLD KELLY, OF SAME PLACE, AND JOHN P. KELLY, OF SACO, MAINE.

TENSION-REGULATING DEVICE FOR LOOM-SHUTTLES.

SPECIFICATION forming part of Letters Patent No. 405,673, dated June 18, 1889.

Application filed January 12, 1889. Serial No. 296,150. (No model.)

To all whom it may concern:

Be it known that I, MATHIAS MERCIER, of Biddeford, in the county of York and State of Maine, have invented certain new and useful Improvements in Tension-Regulating Devices for Loom-Shuttles; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to tension-weights for shuttles, and is designed to secure a uniform and perfect tension, and one which may be automatically threaded.

It consists of a weight having one free end, under which the thread is drawn before it passes out through the eye of the shuttle-body, and having the free end beveled.

Referring to the accompanying drawings, Figure 1 is a top plan showing my said invention in place in a shuttle; Fig. 2, a cross-section of Fig. 1 on line 1 1, on a larger scale; and Fig. 3, a view of my improved tension device removed from the shuttle.

The same letters refer to like parts.

My invention may be thus described:

In a shuttle *a*, having a spindle *b* and eye *i*, made and arranged in any of the usual ways, I place a weight *c*, under which the thread *j* from the spindle is drawn before it passes through the eye. The tension-weight *c* may be made in a variety of different forms, and may be attached to the shuttle-body by a pivot or clasp; but it must have one free end, which does not extend quite to the side of the shuttle, as shown in Fig. 2. Inasmuch as wood wears rapidly, a metal plate may be set directly under the weight, or the weight may be arranged in a case having bottom *g* and ears *h*, between which said bottom *g* and weight the thread passes, as shown in Fig. 3.

In order that the tension-weight may thread itself automatically, I make the free end of the weight slope downward, as shown at *d*; from the top and upward from the bottom for a short distance, as seen at *e* in Fig. 2. The friction of the thread between the weight *c* and the bottom of the shuttle or the plate *g* gives the tension, which is regulated by using a lighter or heavier weight, as required. The tension-weight threads itself automatically as follows: The thread from the spindle is placed over the end of the eye *i*, of course passing directly over the tension-weight. It is then sucked through the eye of the shuttle, and as it is drawn taut it will descend over the inclined face *d* of the weight, over the end, be drawn under the inclined bottom *e*, and thence under the weight to the position shown in Fig. 1.

Having thus described my invention and its use, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination, with a shuttle-body, of a tension-weight pivoted at one end within the shuttle-body, and having its free end beveled, substantially as set forth.

2. The combination, with a shuttle-body, of a tension-weight having one end free and beveled and the other loosely held in a case, and said case attached to the shuttle-body, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

MATHIAS MERCIER.

Witnesses:
M. H. KELLY,
CHAS. C. HODSDON.