

(No Model.)

J. P. & H. KELLY.

TENSION REGULATING DEVICE FOR LOOM SHUTTLES.

No. 417,827.

Patented Dec. 24, 1889.

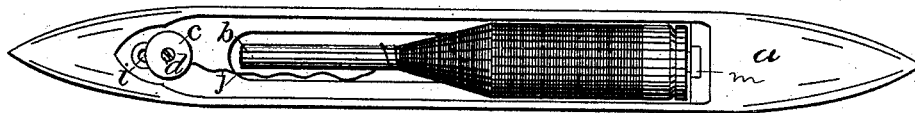


Fig. 1.

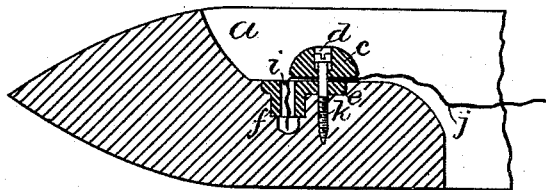


Fig. 2.

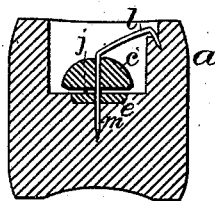


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN P. KELLY, OF SACO, AND HAROLD KELLY, OF BIDDEFORD, MAINE.

TENSION-REGULATING DEVICE FOR LOOM-SHUTTLES.

SPECIFICATION forming part of Letters Patent No. 417,827, dated December 24, 1889.

Application filed September 2, 1889: Serial No. 322,687. (No model.)

To all whom it may concern:

Be it known that we, JOHN P. KELLY, of Saco, and HAROLD KELLY, of Biddeford, in the county of York and State of Maine, have
5 invented certain new and useful Improvements in Tension-Regulating Devices for Loom-Shuttles; and we do hereby declare that the following is a full, clear, and exact
10 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.

15 Our invention relates to improvements in tension-regulating devices for shuttles, and is especially designed to render such devices self-threading and to prevent the uneven wear of the bottom of the weight by the thread and
20 the collecting of waste around and beneath the weight.

It also consists in providing a suitable base for said weight to rest upon.

In the drawings herewith accompanying
25 and making a part of this application, Figure 1 is a plan of a shuttle fitted with our improved tension-regulating device. Fig. 2 is a longitudinal section of a part of Fig. 1. Fig. 3 is a cross-section showing a different method
30 of attaching the weight to the shuttle.

The same letters refer to like parts in all the figures.

In the said drawings, *a* represents the shuttle-body, *b* the bobbin on the spindle, and *i*
35 the eye of the shuttle. Between the said eye and the end of the spindle is placed a tension-weight *c*. This weight *c* has more or less nearly the shape of a hemisphere, and is provided with a central bore *d*. The bottom of
40 the weight has its outer edge beveled to allow the thread to be drawn underneath it. The weight may be attached to the shuttle-body in various ways, two of which are shown in Figs. 2 and 3, respectively. In Fig. 2 the bore at
45 the bottom is of less diameter than at the top, and a screw having a head adapted to enter the top of the weight passes through the said weight and into the body of the shuttle. Made thus, the tension will thread itself which-
50 ever way the spindle is wound. With some grades of thread there is found to be a tendency for several coils of thread to leave the spindle

at the same time, and when this occurs one of the loose coils will loop around the weight and the thread be broken. It is therefore better
55 sometimes to attach the weight in the manner shown in Fig. 3, the post *m* passing through the central bore and having an arm *l* extending to the side of the shuttle, so as to prevent any loose coils of thread from getting around
60 the tension.

When the thread passes between the weight and the wood of the shuttle-body, it soon wears a channel in the wood, so that the weight soon
65 fails to rest upon the thread with sufficient force to give the necessary tension. To prevent this, we place beneath the weight a base of some very hard substance, as *e*, having a hole therein, through which the attaching
70 screw or post may pass. Said base is sunk into the wood so that its top will be even with the bottom of the shuttle. It is customary to insert a tube *f* in the eye of the shuttle, said tube being made of porcelain or other hard
75 substance. The base may be made independently of the tube, or the tube may be made from a single piece of material and combined, as shown in Fig. 2.

The tension-weight is free to move up and down upon the screw or post, as the case may
80 be. It may be made of any suitable material, its shape and method of attachment permitting it to be made of glass or porcelain, as well as of metal.

The advantages of our improved tension
85 are that it is self-threading and self-cleaning, and at the same time simple, durable, and cheap. Its operation is as follows:

When the thread is drawn through the eye of the shuttle, it descends over the curved
90 side of the weight to the beveled edge, and is thence drawn under the weight, the said weight resting on the thread to give the necessary tension. The thread as it passes between the opposing surfaces of the weight and
95 the base *e* is cleaned of more or less lint and foreign substances, thereby improving the quality of the cloth, and yet not choking the weight, the latter being free to move on its screw or post and being open on all sides.
100 The revolution of the weight caused by the thread passing under it helps to clear the weight of accumulating lint, and also causes the bottom of the weight to be worn smooth

and uniform, instead of in a channel, as would be the case if the weight were fixed.

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

1. The combination, with a shuttle-body, of a tension-weight having more or less nearly the form of a hemisphere and a flat base, the outer edge of which is beveled, as and for the purposes set forth.

2. The combination, with a shuttle-body, of a tension-weight having more or less nearly the form of a hemisphere, its under outer edge beveled, and a central bore and an attaching-post, as and for the purposes set forth.

3. The combination, with a shuttle-body, of a tension-weight having more or less nearly the form of a hemisphere, its under outer edge beveled, and a central bore and an attaching-post, one end of which extends down into or through said bore and the other to

the wall of the shuttle-body, as and for the purposes set forth.

4. The combination, with a shuttle-body, of a tension-weight having more or less nearly the form of a hemisphere, and a flat base, the outer edge of which is beveled, and a flat seat for said base to rest upon, as and for the purposes set forth.

5. The combination, with a shuttle-body having a tension-weight, substantially as set forth, of a base-plate and eye-tube combined, as and for the purposes set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

JOHN P. KELLY.
HAROLD KELLY.

Witnesses:

MELVILLE H. KELLY,
CHAS. C. HODSDON.