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PATENTED DEC. 11, 1906.

J. E. LEMYRE.
SHUTTLE FOR COTTON LOOMS.
APPLICATION FILED DEC. 6, 1905.

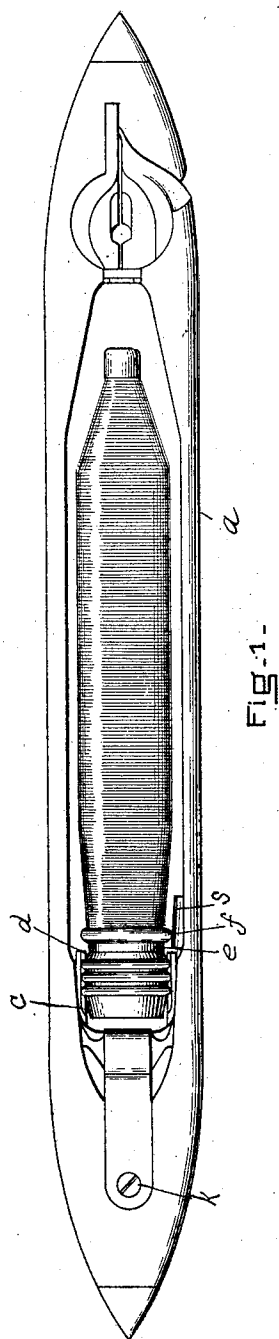


Fig. 1-

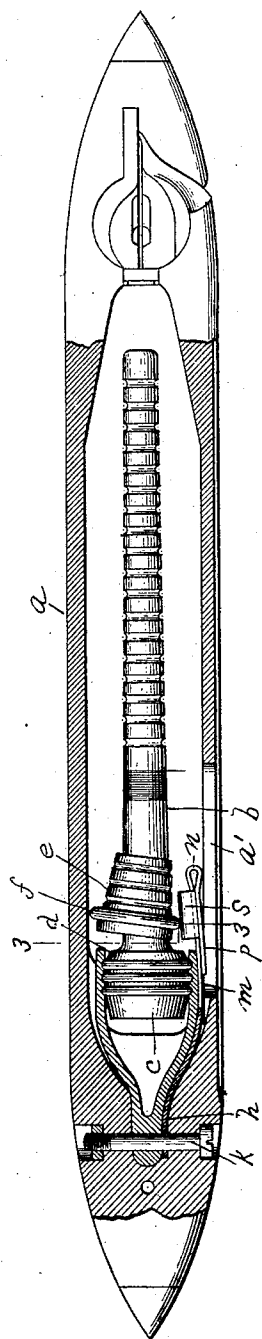


Fig. 2--

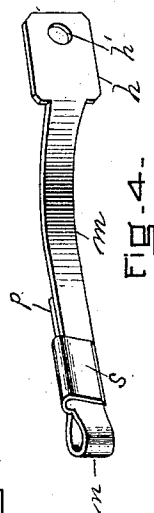


Fig. 4--

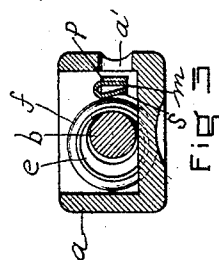


Fig. 3

WITNESSES

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UNITED STATES PATENT OFFICE.

JOSEPH E. LEMYRE, OF MANCHESTER, NEW HAMPSHIRE.

SHUTTLE FOR COTTON-LOOMS.

No. 838,123.

Specification of Letters Patent.

Patented Dec. 11, 1906.

Application filed December 6, 1905. Serial No. 290,558.

To all whom it may concern:

Be it known that I, JOSEPH E. LEMYRE, a citizen of the United States, residing in Manchester, in the county of Hillsboro and State of New Hampshire, have invented a new and useful Improvement in Shuttles for Cotton-Looms, of which the following is a specification.

This invention relates to shuttles having bobbins of the style provided with a filling change, and more specifically to bobbins which are provided with a cone on the spindle, which receives the blows of the feeler and is held in position by the thread until but little thread is left on the spindle, when said cone falls or yields and allows the bobbin to be thrown off, bobbins provided with cones being illustrated in Letters Patent of the United States dated June 14, 1904, and numbered 762,422, and dated May 2, 1905, and numbered 788,806. It is found in bobbins constructed in accordance with the two said Letters Patent that after the cone is dropped or falls the movement of the shuttle is apt to throw the cone quickly back on its seat into its original position.

The object of this invention is to obviate this difficulty by providing means whereby when the thread on the bobbin has been sufficiently reduced the feeler instead of striking the cone directly strikes a spring which acts on the cone in such a manner that the cone not only falls off the head, but is held in such a position on the spindle with relation to the head that after it has been thrown off or drops it cannot return to or jump back upon its seat.

The nature of the invention is fully described below and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a shuttle and bobbin embodying my invention, the spindle being full and the bobbin in a full condition. Fig. 2 is a horizontal section of the same with the thread nearly unwound and the cone knocked off the head of the spindle. Fig. 3 is a section taken on line 3 3, Fig. 2. Fig. 4 is a view of the spring removed.

Similar letters of reference indicate corresponding parts.

a represents a shuttle constructed in the ordinary manner.

b is the spindle, and *c* the head thereof, provided with the annular shoulder *d*.

e represents a hollow cone provided with the annular rib *f*, said cone being of suitable

size to overlap the shoulder *d*. This cone is substantially as illustrated in the two patents above referred to, and when the spindle is loaded the thread extends around it, as shown in Fig. 1, until the main portion of the cone is covered up to the rib *f*. Instead of leaving this rib exposed to the direct blows of the feeler I interpose between the rib on the cone and the wall of the shuttle a spring which consists of a plate *h*, provided with a hole *h'*, through which said plate is secured to the shuttle by means of the screw *k*, and the spring portion *m*, integral with the plate *h* and extending forward horizontally therefrom (conforming in shape to the wall of the shuttle at that point) until it reaches and extends along for a considerable portion of the length of the slot *a'*, where it bends back upon itself at *n* outward into the fold *p*. From the upper edge of the portion *m* opposite said fold an integral lip extends, which bends inward and downward into a fold *s*. This spring is held with the fold *s* next and preferably in contact with the rib *f*, as shown in Fig. 1. As long as there is any thread left on the cone *e* the parts will remain in the position indicated in Fig. 1; but when the thread is removed therefrom the cone slips off the head and is forced into the position indicated in Figs. 2 and 3 by the spring, which directly receives the blows of the feeler. The spring not only forces the cone into the position indicated in Figs. 2 and 3, but holds it in such position, so that its larger end is not opposite or in line with the shoulder *d*, from which it dropped. Hence the movements of the shuttle cannot serve to throw it back on said shoulder, as would be the case if it were not held at an angle with the spindle, for when it is not thus held it is apt to be thrown by the movements of the shuttle with its larger edge opposite the shoulder, which constituted its seat, and then be thrown onto said shoulder.

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

1. In a shuttle of the character described, the spindle provided with a suitable head; a cone on and around the spindle near the head and adapted to be held rigidly by the thread until said thread is nearly or quite unwound therefrom; and a spring secured to the shuttle and extending between the cone and the slot in the side of the shuttle, and in the path of the feeler, said spring forcing the cone

when the thread is nearly or quite unwound therefrom into a position on the spindle in which the larger end of the cone is non-coincident with and not opposite to the shoulder
5 on the head of the spindle on which it was seated and retaining said cone in such position.

2. In a shuttle of the character described, the spindle provided with a suitable head; a
10 cone on and around the spindle near the head and adapted to be held rigidly by the thread until said thread is nearly or quite unwound therefrom; and a spring secured at one end to the shuttle and extending between said
15 cone and the slot in the side of the shuttle, and in the path of the feeler, said spring be-

ing provided with a lip or fold which extends to the cone, said spring forcing the cone when the thread is nearly or quite unwound therefrom into a position on the spindle in
20 which the larger end of the cone is non-coincident with and not opposite to the shoulder on the head of the spindle on which it was seated, and retaining said cone in such position.
25

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH E. LEMYRE

Witnesses:

J. A. BOIVIN,
A. P. BISSON.