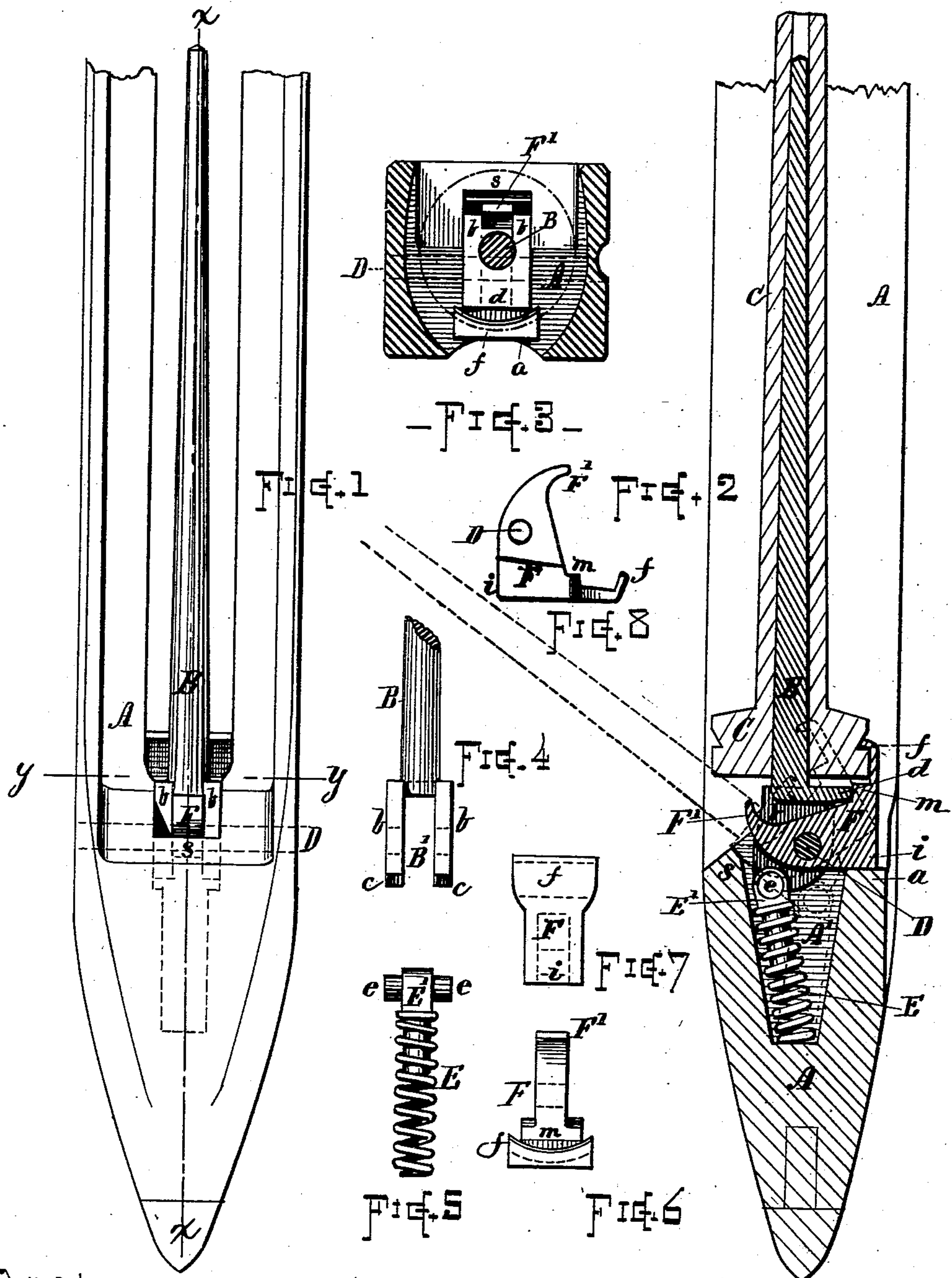


(No Model.)

J. A. BERGAN.  
Loom Shuttle.

No. 232,874.

Patented Oct. 5, 1880.



Witnesses—  
Geo. M. Rice 2<sup>d</sup>  
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Inventor  
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Att'y.



# UNITED STATES PATENT OFFICE.

JOHN A. BERGAN, OF MILLBURY, MASSACHUSETTS, ASSIGNOR OF ONE-HALF  
OF HIS RIGHT TO WILLIAM G. FARNSWORTH, OF SAME PLACE.

## LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 232,874, dated October 5, 1880.

Application filed May 22, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN A. BERGAN, of Millbury, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Loom-Shuttles; and I declare the following to be a description of my said invention sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a plan view of such parts of a loom-shuttle as are necessary to illustrate the nature of my invention. Fig. 2 is a longitudinal sectional view of the same at line *x x*, Fig. 1. Fig. 3 is a transverse section at line *y y*, Fig. 1. Fig. 4 is a top view of the spindle-head separate from other parts. Fig. 5 is a separate view of the spring and its bearing-head; and Figs. 6, 7, and 8 are front, bottom, and side views of the catch-piece for holding the bobbin upon the spindle.

My object in the present invention is to improve the construction of the spindle-action and bobbin-holding devices in loom-shuttles with reference to their more perfect operation, and to render them more durable and convenient and less liable to derangement. I attain these objects by mechanism constructed and arranged for operating in the peculiar manner shown in the accompanying drawings, and herein described and claimed.

In the drawings, A denotes the frame or body of the shuttle, made substantially in ordinary form and of the usual material. B indicates the spindle on which the yarn-bobbin C is supported. Said spindle is provided with a vertically-slotted or bifurcated head, consisting of the side plates, *b b*, connected to each other and to the spindle proper at their forward ends, and a transverse lip or flange, *d*, extends for a short distance below the sides *b*, as indicated. Holes are formed transversely through the sides *b* for the reception of the fulcrum-pin D, and the circular seats *c* for receiving the bearing-head of the spring E are formed at the upper rear extremities of said sides *b* and in relation to the fulcrum-pin D as indicated.

The spring E is arranged within a central recess, A', of the body A, as shown, and acts in the well-known manner for retaining the spindle B either in raised or depressed position.

The catch-piece F is constructed in the peculiar form indicated, (see Figs. 2, 6, and 8,) and is fulcrumed to swing upon the same pin D which retains the spindle B. The lower part of said piece F is provided with the hook or latch *f* for engaging the groove on the head of the bobbin, and with an abrupt angular heel at *i*, while its upper part is made with a forward-curved horn or flattened beak, F', which projects above the sides *b b* of the spindle-head when the parts are in position as shown in full lines, Fig. 2, and swings down between said side pieces, *b*, when the spindle B is raised, as indicated in dotted lines, Fig. 2. Said catch-piece F is also provided with a lug or offset, *m*, which engages the flange *d*, and forms a support or stop for the spindle when swung down into place. The lower part of the piece F is made the full width of the spindle-head, but its upper portion is laterally reduced so as to pass through or to occupy the opening B' between the sides *b* of the spindle-head.

The frame A is made with a square shoulder at *a*, which forms an abutment for the heel *i* of the catch-piece F, and sustains the parts at proper position when the spindle is down, while the beveled part *s* at the upper side of the frame forms a stop for the spindle when raised and forces down the horn F' for swinging off the latch *f*.

The central part of the bearing-head E' for the spring E is made of slightly greater diameter than the bearings or trunnions *e*, (see Fig. 5,) and the enlarged portion is fitted between the sides *b b*, thus retaining the parts in position laterally and preventing the side chafing of the spring and head against the frame.

When the spindle B is swung out from the shuttle-body the bobbin C is released as soon as the heel *i* of the catch F leaves the shoulder *a*, the catch being perfectly free and loose until its horn F' strikes the upper bevel, *s*, which causes the catch to be held in open position. Then when the spindle is swung down into the frame A the contact of the heel *i* with

shoulder *a* locks the latch *f* into the groove of the bobbin, the action being positive, and the single spring *E* providing all the force required. No spring is used or required for the latch *f*, and only a single pivot or fulcrum pin for the entire mechanism.

It will also be observed that unless the latch *f* is properly in the groove of the bobbin-head, or if its end rests on the head at the side of the groove, the bobbin and spindle cannot swing down into place or force the catch beyond the lower face of the frame, as with some devices in use. Consequently a carelessly-placed bobbin will be observed and corrected before it is placed in the loom and the warp damaged by a projecting catch-piece.

What I claim as of my invention, and desire to secure by Letters Patent, is—

The shuttle-body *A*, having recess *A'* and shoulders *s* and *a*, in combination with the spindle *B*, having bifurcated head *b b* and transverse flange *d*, spring *E*, bearing-head *E'*, and catch-piece *F*, adapted to enter the bifurcated end of the spindle, and provided with hook *f*, offset *m*, and curved projection *F'*, substantially as and for the purposes set forth.

Witness my hand this 15th day of May, A. D. 1880.

JOHN A. BERGAN.

Witnesses:

CHAS. H. BURLEIGH,  
SWIFT B. LYON.