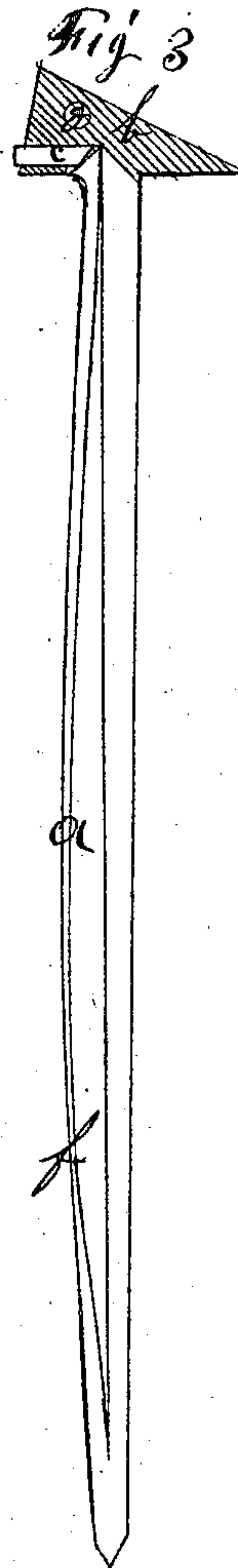
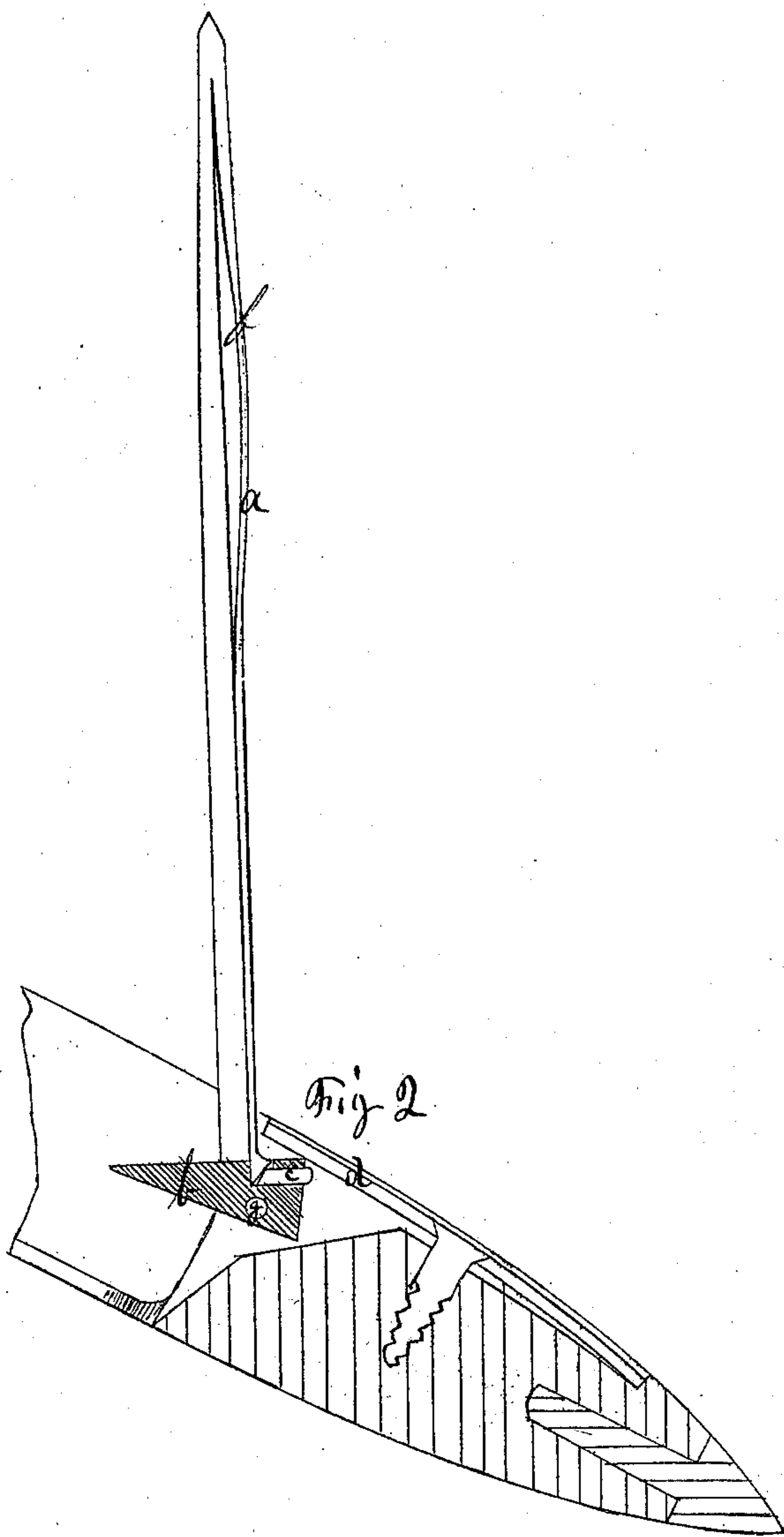
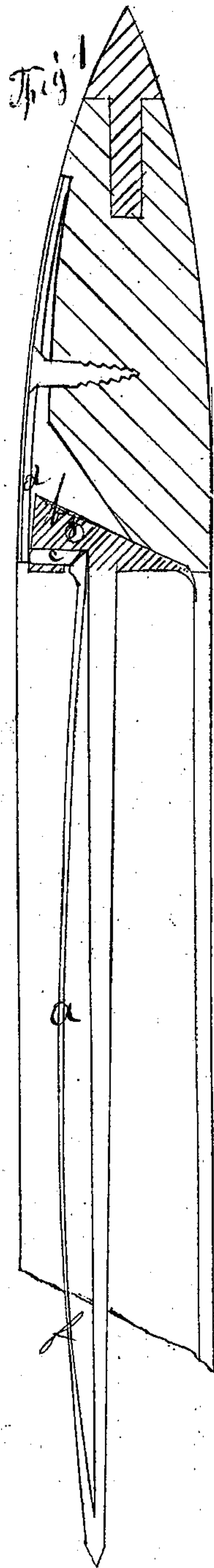


H. H. WHEELER & O. H. REED.
SHUTTLE SPINDLE.

No. 97,256.

Patented Nov. 23, 1869.



Witnesses
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United States Patent Office.

HENRY H. WHEELER AND OLIVER H. REED, OF LOWELL, MASSACHUSETTS.

Letters Patent No. 97,256, dated November 23, 1869.

IMPROVEMENT IN SHUTTLE-SPINDLE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, HENRY H. WHEELER and OLIVER H. REED, both of Lowell, in the county of Middlesex, and State of Massachusetts, have invented certain new and useful Improvements in "Shuttle-Spindles," of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figures 1 and 2 represent each a sectional elevation of a portion of a common loom-shuttle, with our improvements applied thereto.

Figure 3, a sectional elevation of a detached spindle.

This invention relates to that kind of shuttle-spindles which have slender springs arranged on the upper sides, and which springs are pushed outward and caused to bow upward or press against the yarn and hold the cop on the spindle.

This invention has for its object, not only to simplify the process of actuating the spring, but to simplify and cheapen the mechanism by which the spring is actuated or forced outward.

We apply the spring *a* to the point of the spindle, and its rear end in an aperture in the forward side of the head in the usual way, but the rear end of the spring is enlarged and bevelled or mitred on its upper side, as shown, and this bevelled enlargement works freely in the aperture.

In the upper side of the spindle-head *b*, and near the forward side of it, we form a second aperture, at or nearly at a right angle with, and opening into that first named.

In the last-named or vertical aperture formed in the upper side of the spindle-head, we insert an actuating-pin, *c*, the lower or inner end of which is bevelled, or mitred to fit, or nearly fit the bevelled end of the spring.

The upper end of the pin *c* rises a little above the top of the spindle-head, and convenient for being pressed downward to force the spring outward.

When this spindle is applied to the shuttle, the top end of the pin *c* comes directly under the forward or inner end of the top spring-plate *d*, and this presses the pin downward and actuates the spring and throws it up in the form of a bow, all as clearly shown in

fig. 1, or as near this form as the cop of yarn will admit.

When the cop is placed on the spindle, the latter is thrown upward to a position shown in fig. 2, and this carries the top of the spindle-head, and the top end of the pin over and backward to beneath the top plate, liberates the pin from the pressing action of the plate-spring, and allows the spring *a* to throw the pin upward, and the spring to resume its form and position on the top of the spindle; the cop is then pushed on to the spindle, and the latter thrown downward to the position shown in fig. 1. This brings the top end of the pin under the end of the top spring *d*, and actuates the pin, and the spring *a* forces the latter outward and holds the cop on the spindle.

The actuating-pin *c* should be applied forward of the pivot *g*, on which the spindle swings, otherwise the pressure of the top plate-spring would throw the point of the spindle upward, and bring the cop partly above the top of the shuttle, and prevent the latter passing through the web.

When nearly all the yarn has run off from the spindle, the rear portion of the spring *a* is liable to rise, and allow the few remaining yards to slip off and become waste.

To obviate this, we sometimes form the spring thinner and weaker, at about the point *f*. This allows the forward portion of the spring to rise first, and this rise at *f* retains the yarn until all of it runs off through the eye of the shuttle and is woven into the web, which is an object of some importance.

We do not claim a spring applied to the point of the shuttle-spindle, with its rear end passing into the head, as this is an old device; but

What we do claim, and desire to secure by Letters Patent, is—

The actuating-pin *c*, constructed as described, with a bevelled lower end, and applied to the head *b*, forward of the pivot *g*, in combination with the spring *a*, provided with the bevelled end, and with the top plate *d*, in the manner and for the purpose set forth.

HENRY H. WHEELER.
OLIVER H. REED.

Witnesses:

JOHN E. CROME,
J. S. WHITNEY.