

F. O. TUCKER.

Improvement in Loom Shuttles.

No. 118,405.

Fig. 1.

Patented Aug. 22, 1871.

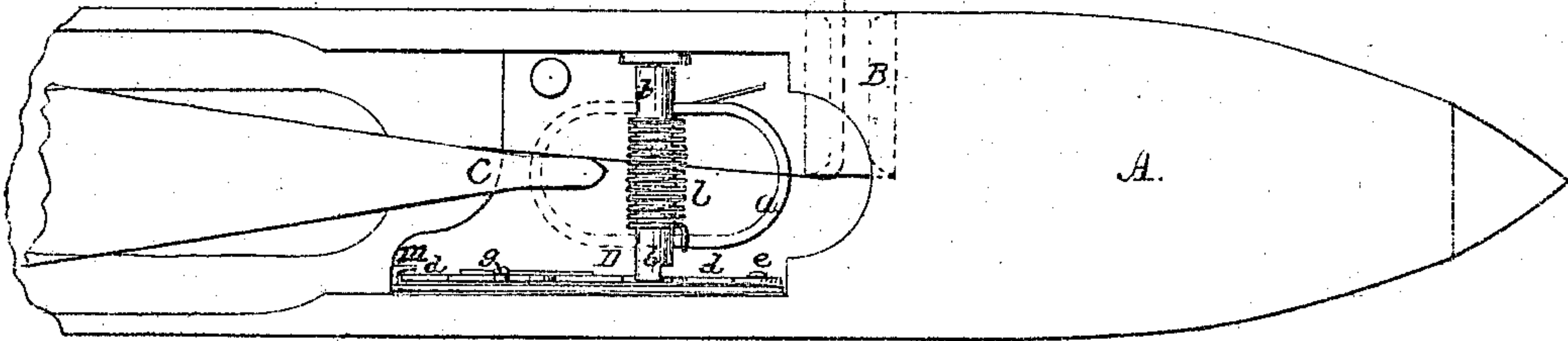
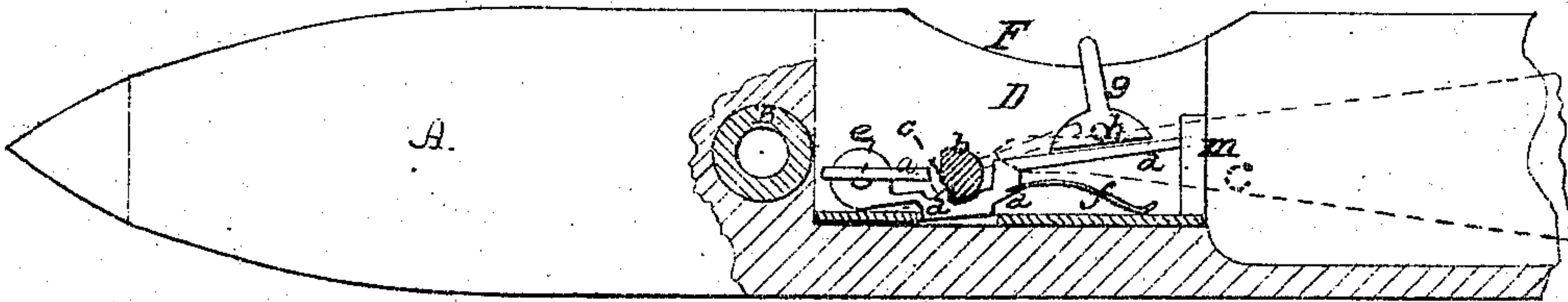


Fig. 2.



WITNESSES
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IMPROVEMENT IN LOOM-SHUTTLES.

Specification forming part of Letters Patent No. 118,405, dated August 22, 1871.

To all whom it may concern:

Be it known that I, FREDERIC O. TUCKER, of Stonington, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Loom-Shuttles; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of the same.

This invention relates to an improved attachment to loom-shuttles for preventing floats in weaving cloth, &c., because of an imperfect warp-shed, the presence of extraneous matter or other obstructing cause in the warp-thread. The invention consists of a device within the body of the shuttle, located between the end of its spindle and its eduction-tube, and arranged to operate from an imperfect warp-shed, the presence of extraneous matter, or other obstructing cause, and when so operated to be thrown into a position transversely to the line of weft from the shuttle-bobbin to the eduction-tube, sufficiently straining said weft-thread, so that in the further travel of the shuttle it will be broken, stopping thereby the loom through the ordinary stop-motion of the loom.

In the accompanying drawing my improvements in loom-shuttles are illustrated, Figure 1 being a plan view of the end of a shuttle at which the eduction-tube and my improved attachment are located; Fig. 2, a sectional view, longitudinally, of the portion of shuttle shown in Fig. 1.

A in the drawing represents a portion of the shuttle-body; B, the eduction-tube; and C, the bobbin-spindle; these several parts being constructed and arranged as ordinarily. D, my improved attachment, constructed and arranged as follows: *a*, the guard or weft-obstructing device of the attachment. This guard *a*, in the present instance, is made from a wire of a stirrup-shape, the ends of which are firmly secured to a common shaft, *b*, arranged to turn horizontally within the shuttle-body A, near its bottom, with the guard *a* toward the eduction-tube. The shaft *b* is notched, as shown at *c*, Fig. 2, and with said notch *c* engages a pawl, *d*, hung on a fulcrum at *e*, and extended therefrom under the shaft *b* toward the end of bobbin-spindle; *f*, a spring arranged to hold pawl *d* engaged with notch *c* of shaft *b*, and *g* a trigger turning on a fulcrum, *h*, of shuttle-body, and adapted, by turning the same, to throw off or disengage the pawl *d* from

shaft *b*. The trigger *g* projects, as shown, above the cut out portion *f* of shuttle-body. *l*, a spiral spring coiled about shaft *b*, to which, by one end, it is fixed, and by the other to the shuttle-body.

With an attachment, D, constructed and arranged in its several parts as above described, in the use of a shuttle, should there be an imperfect warp-shed or extraneous matter present, or other obstruction in the warp, the trigger *g*, through the impingement against it, or the interlock with it, or both, of the warp-thread, &c., is turned on its fulcrum *h*, operating the pawl *d* and setting free the guard *a*, which, by the spring *l*, is thrown up into and transversely of the line of travel of the weft-thread, as shown by dotted lines, Fig. 1, thereby producing a strain on the weft-thread sufficient to cause its breakage in the further travel of the shuttle, and thus, through the ordinary stop-motion, the stopping of the loom preventing formation of floats. By replacing the guard *a* the shuttle is ready for use again.

In the construction and arrangement of parts composing the attachment D the guard comes to a bearing on the spindle when actuated as described; but it is not necessary it should, provided it is otherwise limited to hold it in substantially the position stated. The guard may be made of other forms and shapes than that described, and it may be arranged to come into position from one or the other side of the shuttle in lieu of from the bottom, as described, and a connection between it and the trigger *g* or other tripping device may be made different from the precise arrangement described and shown. The arrangement and construction described, however, have been found perfectly practical and satisfactory. This trigger *g* may be made with more than one projecting end or ridge, but one appears to be sufficient.

m, a guard, located on one side of shuttle, to ward off the yarn from shuttle-bobbin and obviate its entanglement with the parts composing the attachment D.

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

1. The guard *a*, arranged within the shuttle-body, between its spindle and eduction-tube, for operation with reference to the weft-thread, in combination with the pawl *d* and the trigger *g*,

operated by the interlock of the warp-thread, arranged and operating substantially as and for the purpose specified.

2. The guard *a*, secured upon the rotating shaft *b*, carrying the coiled spring *l*, in combination with the pawl *d*, spring *f*, and trigger *g*, arranged and operating substantially as set forth.

The above specification of my invention signed
by me this 26th day of July, 1871.
F. O. TUCKER.

Witnesses:

JAMES W. BRAYTON,
E. R. COTTRELL.