(Model.)

J. H. NORTHROP.

SELF THREADING LOOM SHUTTLE.

No. 568,319. Patented Sept. 22, 1896.

Fig. 1.

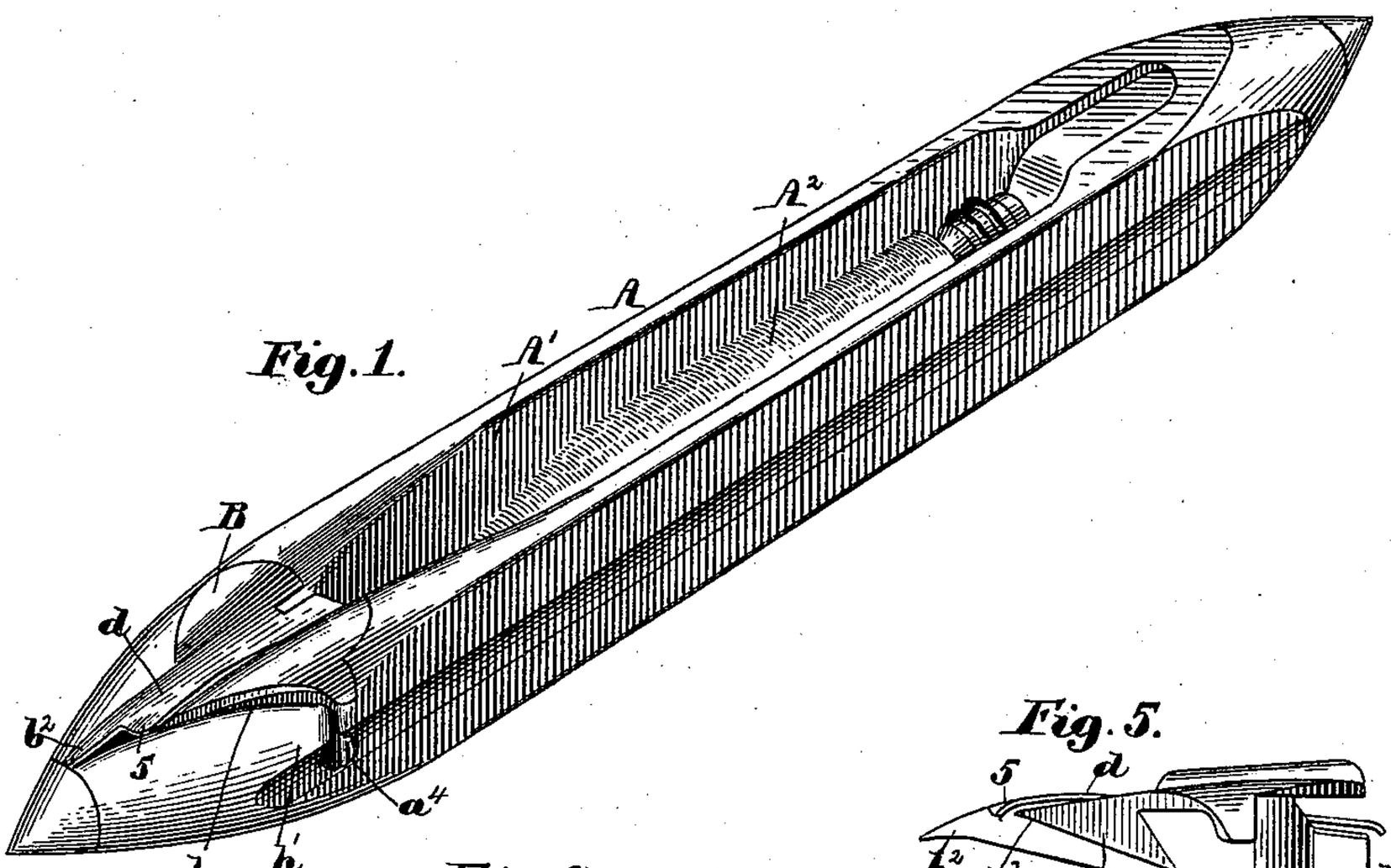


Fig. 2.

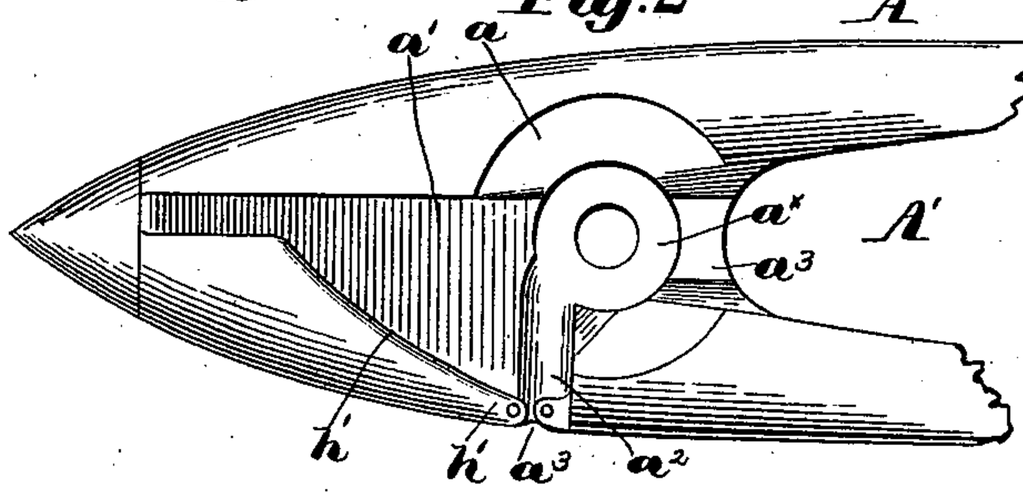


Fig. 3.

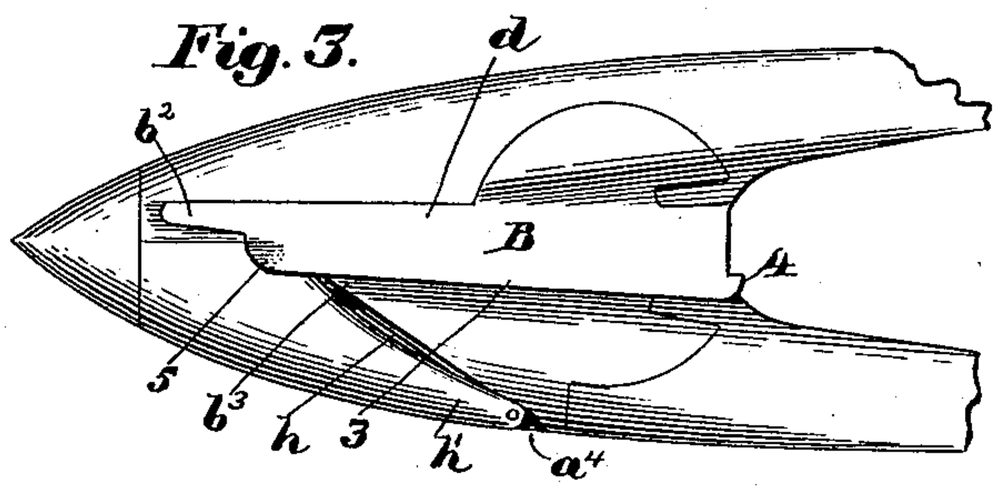


Fig. 4.

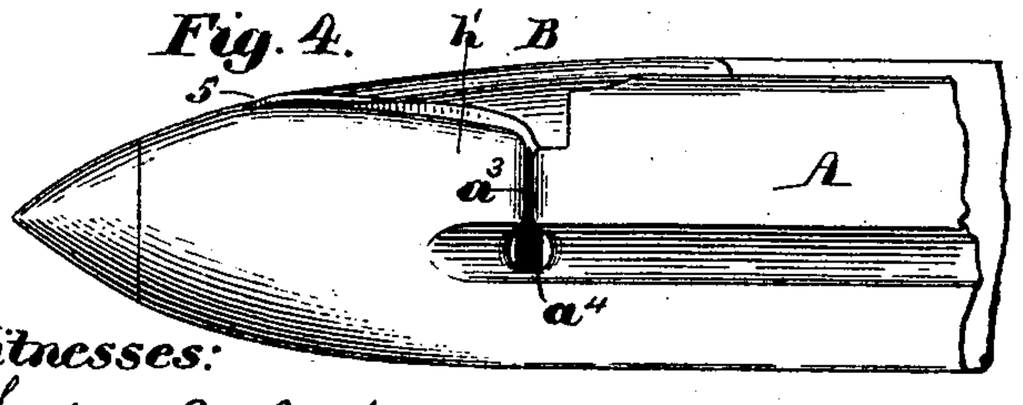


Fig. 5.

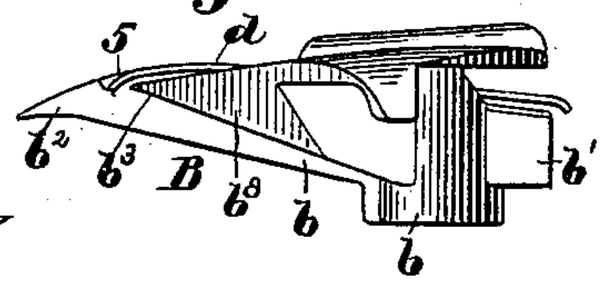


Fig. 6.

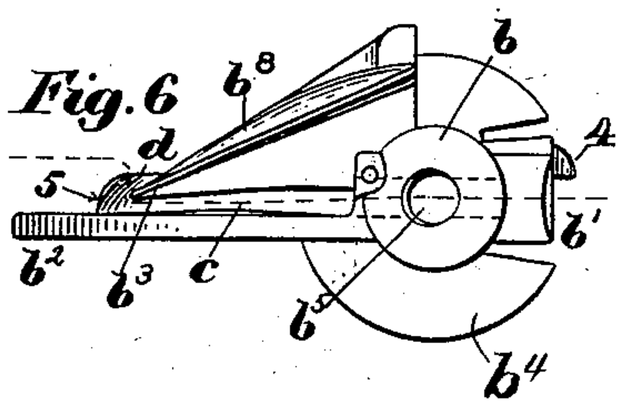


Fig. 7.

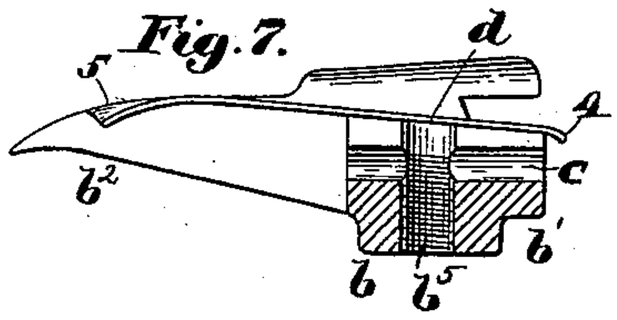
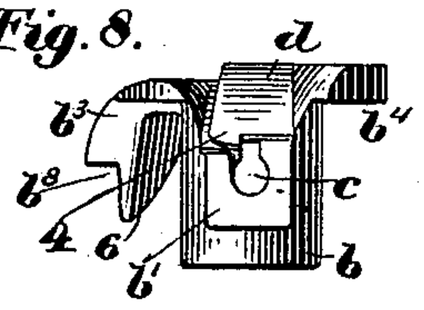


Fig. 8.



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A.C. Harrison,

Inventor:
James H. Northrop,
by Crosby Gregory.
Att'ys.

UNITED STATES PATENT OFFICE.

JAMES H. NORTHROP, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO GEO. DRAPER & SONS, OF SAME PLACE.

SELF-THREADING LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 568,319, dated September 22, 1896.

Application filed January 11, 1896. Serial No. 575,117. (Model.)

To all whom it may concern:

Be it known that I, JAMES H. NORTHROP, of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Self-Threading Loom-Shuttles, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to provide a novel self-threading shuttle, or a shuttle to be used in a loom wherein the filling is supplied to the shuttle without stopping the loom.

In shuttles of the self-threading class difficulty is at times experienced in keeping the filling-thread properly confined when it is once in position, for in use the thread in coming off from the end of the bobbin or other carrier on which it is wound is given a rotary motion about said end in unwinding, and, as a result thereof, unless the open passage through which the said thread came on its entrance into the delivery-eye is properly guarded the said thread will reënter said passage and escape or be broken.

The object of this invention is, more particularly, to provide a suitable guard for said open passage to prevent the thread reëntering the same after once having been properly threaded into the delivery-eye. To accomplish this object, I have combined with the body of a shuttle having an open delivery-eye and a thread-director having a horn a guard to overlap and cover the point of the said horn, as will be described. The said guard also overlaps and covers the receiving end of the thread-slot in said director.

Figure 1, in perspective, shows a shuttle containing one form of my present invention; Fig. 2, an enlarged view of part of the delivery end of the shuttle with the thread-director removed. Fig. 3 shows the thread-director in place. Fig. 4 is a front side elevation of the parts shown in Fig. 3. Fig. 5 shows the thread-director removed from the shuttle-body; Fig. 6, an under side view of the director; Fig. 7, a section in the line x, Fig. 6; and Fig. 8, a view of that end of the director at which the thread first enters.

The shuttle-body A has an opening A′ from its upper through its under side for the passage of the bobbin or other carrier A^2 containing the filling-thread. This body has a chamber $a\ a'\ a^\times\ a^2\ a^3$ cut into its upper side at its delivery end substantially of the shape shown in Fig. 2, the front wall of the body being provided with a slot a^3, leading to an open delivery-eye a^4. In this chamber I place a thread-director B, (shown separately in Figs. 5 to 8,) said director having a hub b, provided with a heel b', a point b^2, a horn b^3, and preferably with a lip or flange b^4 to rest in the curved part a of the chamber, the hub b entering the part $a^\times$, and the point and horn the part a', and the heel b' the part a^3, said director being held in place in said chamber by a suitable screw inserted into the underside of the shuttle and entering a threaded hole b^5 of the director.

The hub b of the director is slotted at c in the direction of the length of the shuttle, the said slot being prolonged between the contiguous sides of the point and the horn (see Fig. 6) to thus leave a substantially longitudinal slot c, the end of the horn terminating short of the end of the point b^2. To the upper side of this director at one side of said slot I solder or otherwise attach one side of a guard d, the said guard overlapping said slot c and covering the same to a point beyond the end of the horn, a free open space existing between one edge 3 of said guard d and the said director from the top of the heel to the end of the horn, the said space permitting the thread free entrance under the edge 3 into the slot c.

The end of the guard d beyond the free end of the horn b^3 is curved somewhat downwardly (see Fig. 5) to deflect the thread below the extremity of the horn, and the end of the guard nearest the bobbin is provided with a backwardly-extended and downturned lip 4, the said lip having one beveled and one square edge.

As the shuttle just provided with a bobbin or filling-carrier is thrown from the shuttle-box into the shed, with the outer end of the filling yet held outside the shed, the said thread strikes the beveled side of the lip 4 and passes immediately under the edge of the

guard and enters the slot *c*, and as the thread enters the outer end of said slot and follows along the under side of the guard the down-turned part 5 of the guard causes the thread to pass below the point of the horn b^3, and as the shuttle is thrown back into the shuttle-box the thread, having gotten below the point of the horn, is acted upon by the inclined bottom 6 and the inclined outer side of the horn, the said inclined outer side forming the inner side of the slot *h*, leading from the slot *c* into the delivery-eye a^4, the inner side wall *h'* of the shuttle forming the outer wall of said slot, the said inclined bottom and side feeding the thread down into the delivery-eye.

The lip 4 acts as a guard to prevent the escape of the thread uncoiling too rapidly from the tip of the bobbin, or when thrown forward by the impact of blows against the point of the shuttle.

For cheapness of construction I prefer to make the guard from a separate piece of sheet metal soldered along one edge to the portion of the director constituting the point, the edge of the guard overhanging the self-threading slot and the inner side edge of the horn to a point beyond the end of the horn.

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

1. A shuttle-body, having an open thread-delivery eye and a thread-director provided with a substantially longitudinal slot and a horn, combined with a guard covering said slot and extended beyond the end of the horn, and having a lip extended beyond the heel of the director, substantially as described.

2. A shuttle-body having an open delivery-eye at its side, and a thread-director composed of a point, a horn located near but having its end terminated short of said point and having a substantially longitudinal slot, said horn having its outer side and its under side inclined, combined with a guard covering said slot and covering the extremity of the horn, substantially as described.

3. A self-threading shuttle having a longitudinal threading-slot, combined with a guard covering said slot, and provided with a lip to catch the filling and retain it whenever said filling is thrown forward in the process of weaving, substantially as described.

4. A shuttle-body having an open-slotted thread-delivery eye, combined with a slotted thread-director composed of a horn the outer side edge of which forms the inner side wall of the slot leading into the thread-delivery eye, and a point extended toward the tip of the shuttle for a greater distance than the extremity of the horn, the said point and horn being separated by a substantially longitudinal slot, and an overlapping projection from the side of the point alongside of the slot covering the horn, substantially as described.

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

JAMES H. NORTHROP.

Witnesses:

GEO. OTIS DRAPER,

C. N. NICHOLS.