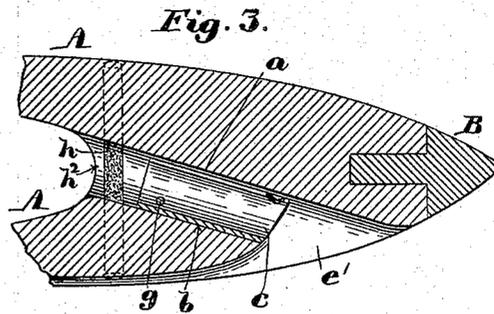
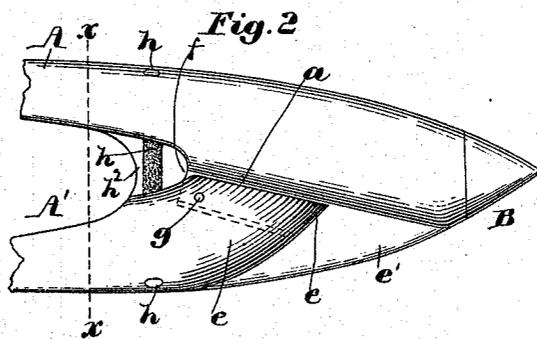
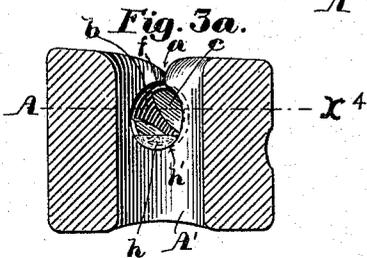
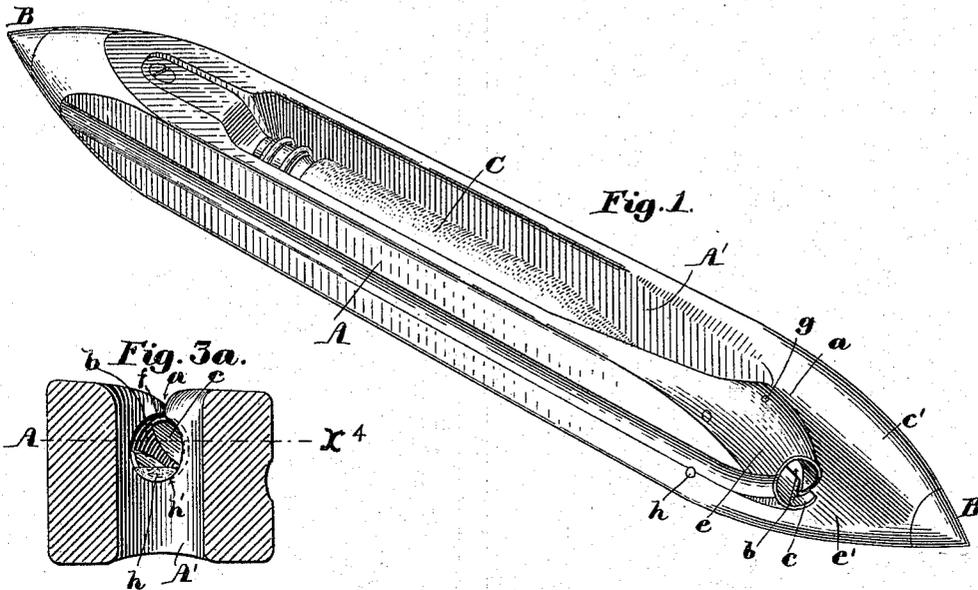


(Model.)

J. H. NORTHROP.  
SELF THREADING LOOM SHUTTLE.

No. 568,206.

Patented Sept. 22, 1896.



Witnesses:  
Walter E. Lombard,  
A. C. Harmon.

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

# UNITED STATES PATENT OFFICE.

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

## SELF-THREADING LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 568,206, dated September 22, 1896.

Application filed January 11, 1896. Serial No. 575,115. (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 the construction of a novel self-threading shuttle, or a shuttle for use in a loom wherein the filling is supplied automatically to the shuttle, the filling threading itself automatically into the delivery-eye of the shuttle.

Figure 1, in perspective, shows a shuttle embodying my present invention; Fig. 2, an enlarged top view of the delivery end of the shuttle; Fig. 3, a longitudinal section of part of the shuttle in the line  $x^a$ , Fig. 3<sup>a</sup>; Fig. 3<sup>a</sup>, a section in the line  $x$ , Fig. 2.

The shuttle-body A, which may be of any usual shape, has usual tips B and a bobbin-receiving space A' extended uniformly through it from its upper to its under side for the passage through it of the bobbin C, all as provided for in looms of the construction shown in my Patent No. 529,942, dated November 27, 1894.

In the production of my improved shuttle I bore the hole through the inner end of the bobbin-space A' diagonally through the wood to the outer side of the shuttle, and at the top side of the shuttle I form a slot which intersects said bore, the slot being of such shape that the shuttle-thread will be automatically drawn into it as the shuttle is being moved, it having just been supplied with a bobbin through the shed.

The automatic threading-slot referred to terminates back of the tip of the shuttle. In the bore I place a guide-eye  $c$  of metal, it having along one side an open slot at  $c'$ , the slot of the eye being in communication with the threading-slot.

The threading-slot has its entrance at the top of the shuttle flared or rounded at the end of the bobbin-space to afford ready entrance for the shuttle-thread as the shuttle just supplied with filling is thrown through

the shed, the shuttle-thread entering the said metal eye and being delivered from its front end at the front side of the shuttle.

The wood of the shuttle-body between the slot  $a$  and the front side of the shuttle is preferably cut off at what would be its pointed end, leaving a blunted end  $e$  and a pocket  $e'$  in front of it in which the thread may play back and forth as the shuttle is moved through the shed.

The slot or open space in the metallic eye commences, say, at its inner end, well up on its side, (see Fig. 3<sup>a</sup>.) and is inclined downwardly and forwardly, and by giving the open space this shape it is possible to let a portion of the eye extend, as shown at  $f$ , partially across the slot  $a$ , so that the filling contacting with the said eye at the bottom of the slot slips over the edge of the eye and between said edge and one wall of the slot  $a$  and enters freely into the eye, the outer end of the slotted eye extending some distance down along the side wall of said slot and forming a lip to prevent the escape of the filling from the eye after once having been properly threaded therein.

The delivery-eye  $c$  is shown as held in place by a pin  $g$ . The outer upper end of the slotted part of the eye (see Fig. 1) is shown as pointed to enter past the opposite edge of the eye, the filling in entering the eye passing under said point. This point prevents the escape of the filling from the open slotted side of the eye. The point enters an enlarged notch in the opposite side of the eye.

To constitute a tension device, I have made a hole through the shuttle-body from its front to its rear side and have drawn into said hole a piece of felt  $h$ , the said felt lying in the little pocket  $h^2$ , cut into the body of the shuttle from its top side just at the end of the bobbin or filling-passage made through the shuttle from top to bottom, the inclined cut  $a$ , before referred to, commencing at the end of said pocket.

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

1. In an automatic self-threading shuttle, a shuttle-body having a diagonal bore ex-

tended from one end of the bobbin-space to the outer side of the wall of said shuttle-body, near its tip, a threading-slot extended from the end of the bobbin-space diagonally to the outer side of the shuttle-body near its point, and intersecting said bore, said slot being enlarged at its mouth for the easy entrance of the shuttle-thread therein when the shuttle is in motion in a loom, a part of the body of the shuttle at one side of said slot being cut away to leave a blunted horn-like end; combined with an open slotted metallic eye located within said diagonal bore, the slot of said eye intersecting the said threading-slot, substantially as described.

2. In an automatic self-threading shuttle, a shuttle-body having a diagonal bore intersected by an automatic threading-slot, the said slot being cut in said body from at or near the central line of the bobbin-receiving space to and through the front side of the shuttle-body near the shuttle-tip and having its mouth enlarged; combined with an open slotted eye located in said bore and open at its side to communicate with said slots, the said eye having at its outer or delivery end a point or end to enter the central space of the eye below the wall of the slot of the eye, substantially as described.

3. In an automatic self-threading shuttle, a shuttle-body having a diagonal bore intersected by an automatic threading-slot cut therein at or near the central line of the bobbin-receiving space to and through the front side of the shuttle near its tip, the mouth of said slot being enlarged; combined with an open slotted eye in said bore and having at its outer eye a point or end to enter the central space of the eye, said eye also having a

notch to be entered by said point, substantially as described.

4. A shuttle-body having a diagonal bore and an automatic threading-slot extended from substantially the longitudinal center line of the bobbin-space diagonally toward the front wall of the shuttle and intersecting said bore, combined with a metallic eye having a spiral slot and located in said bore with its slot in communication with said diagonal threading-slot, the inner end of said eye being carried across the inner end of said diagonal threading-slot to receive the thread upon it and then let the thread slip therefrom into the eye, substantially as described.

5. A shuttle-body having a diagonal bore and an automatic threading-slot extended from substantially the longitudinal center line of the bobbin-space diagonally toward the front wall of the shuttle and intersecting said bore, combined with a metallic eye located in said bore and having a spiral slot, said slot communicating with said diagonal threading-slot, the inner end of said eye being carried across the inner end of said diagonal threading-slot to receive the thread upon it and then let the thread slip therefrom into the eye, a portion of the delivery end of said open eye being intumed below the edge of the slit in the said eye to prevent the escape of the thread laterally from said eye, 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.