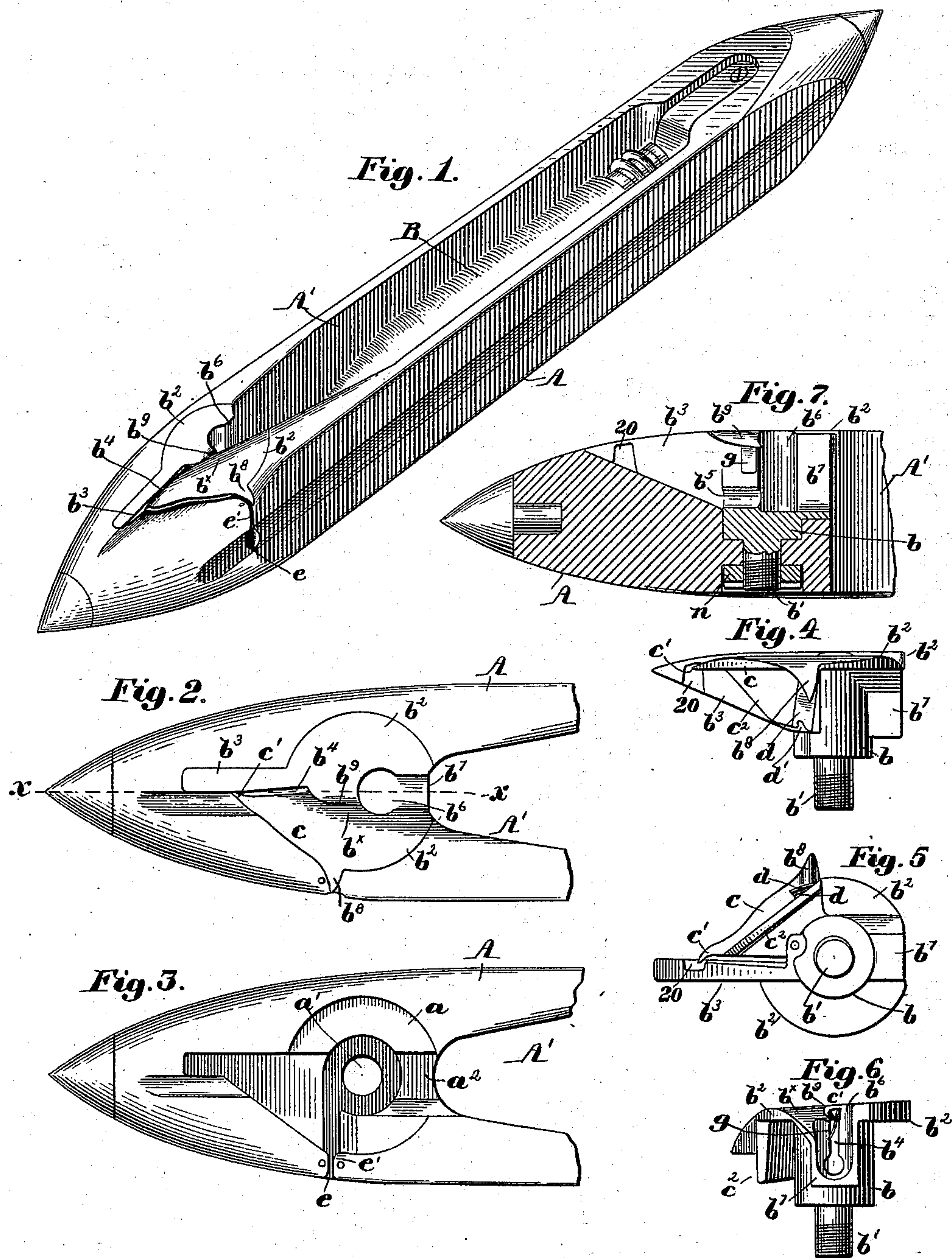


(No Model.)

C. E. NUTTING.  
SELF THREADING LOOM SHUTTLE.

No. 560,746.

Patented May 26, 1896.



***Witnesses:***

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Atty.



# UNITED STATES PATENT OFFICE.

CHARLES E. NUTTING, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO  
GEO. DRAPER & SONS, OF SAME PLACE.

## SELF-THREADING LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 560,746, dated May 26, 1896.

Application filed January 17, 1896. Serial No. 575,878. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. NUTTING, of Hopedale, county of Worcester, and 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 and numerals on the drawings representing like parts.

This invention relates to loom-shuttles, and has for its object the production of self-threading devices therefor whereby the shuttle is automatically threaded as it is thrown through the shed from one to the other side. In the shuttle to be hereinafter described I have provided a flexible guard cooperating with the threading device having a passage which receives the thread from the filling-carrier or bobbin to readily admit the thread to the passage, but preventing it from thereafter flying out, and I have also arranged a guard within and above the delivery-eye of the shuttle to prevent the thread from getting out of said eye after being once led thereinto.

Figure 1 is a perspective view of a loom-shuttle embodying my invention, a filling-carrier being shown therein. Fig. 2 is a top or plan view of the delivery end of the shuttle with the self-threading devices in position. Fig. 3 is a similar view of the shuttle end with the threading devices removed. Fig. 4 is a side elevation of the block forming the threading devices detached. Fig. 5 is an under side view thereof. Fig. 6 is an inner end elevation of said block; and Fig. 7 is a longitudinal sectional view of the delivery end of the shuttle with a part of the block in elevation, taken on the line  $x\ x$ , Fig. 2.

The shuttle-body A, having the longitudinal opening A' therein for the filling-carrier or bobbin B, has its delivery end cut away or recessed to form a seat  $a$ , Fig. 3, for a portion of the block, to be described, supporting or forming the threading devices, and an open thread-delivery eye  $e$  is made in the side of the shuttle-body. (Herein shown as on the left-hand side.) The threading device is herein shown as supported on or formed by a block comprising a central and substantially cylindrical body  $b$ , having a threaded shank  $b'$ , adapted to enter a counterbored hole  $a'$  in

the shuttle-body and secured in place by a suitable nut  $n$ . (See Fig. 7.) A laterally-extended nearly circular flange or head  $b^2$  on the body  $b$  rests in the seat  $a$  flush with the upper surface of the shuttle-body, said flange and body being prolonged forwardly to present a wall  $b^3$ , forming one side of a thread-receiving passage  $b^4$ , extended through the front wall of the body  $b$ , (see Figs. 6 and 7,) preferably enlarged at its lower end, as at  $b^5$ . Back of the slot  $b^4$  the body  $b$  is made open at  $b^6$  and rearwardly extended at  $b^7$  to fit into the correspondingly-recessed part  $a^2$  of the shuttle-body, forming a wide mouth for the thread-receiving passage in front of and adjacent the tip of the filling-carrier B. At the side nearest the delivery-eye  $e$  the head  $b^2$  is extended outwardly and downwardly to form a spur  $b^8$ , the front edge of which forms a continuation of the outer side of a horn  $c$ , the beak  $c'$  thereof extending into a depression 20 in the wall  $b^3$ . The horn  $c$  has a depending fin  $c^2$  extending from a point back of the beak  $c'$  rearwardly to and inside of the spur  $b^8$ , acting with the horn to guide the thread from the receiving-passage  $b^4$  to the delivery-eye  $e$ . Preferably the inner part of the horn and the portion of the head  $b^2$  at the rear thereof will be inclined, as at  $b^x$ , toward the entrance of the thread-receiving passage to facilitate entrance of the thread thereto.

Attached to the spur  $b^8$  is a depending lip  $d$ , which, when the block is in place, stands inside of the entrance  $e'$  of the delivery-eye and above the latter, said lip forming a guard to prevent removal of the thread from the delivery-eye. A notch  $d'$  in the lower end of the guard holds the thread in case it should accidentally be drawn up toward the entrance  $e'$  of the delivery-eye.

The head  $b^2$  in front of the mouth  $b^6$  of the thread-receiving passage overhangs the slot  $b^4$  at  $b^9$  and is downturned toward the inclined part  $b^x$  of the horn, covering the slot thereat, so that the thread after passing below said overhang  $b^9$  will not readily fly out of the slot  $b^4$  before it is guided to the eye.

In order to absolutely prevent the thread from flying out of the thread-receiving passage under any circumstances, I attach a light flexible guard  $g$  to the wall of the slot



$b^4$  under the overhang  $b^9$ , the free end of the guard depending and being held yieldingly against the opposite wall of the slot. When the thread enters the slot  $b^4$ , the tension thereon draws it down past the spring-guard  $g$ , and the latter will effectually prevent flying out of the thread thereafter, as the guard extends transversely across and closes the receiving-passage above the thread.

The threading operation will be obvious from the foregoing description and the drawings, the thread as it unwinds off of the end of the filling-carrier B being drawn into the receiving-passage under the overhang  $b^9$  and then past the guard  $g$ . When the thread slips around under the beak  $c'$  of the horn, it is thereafter guided by the fin  $c^2$  and the outer side of the horn  $c$  to the entrance  $e'$  of the delivery-eye  $e$ , and then the thread passes into the eye between the guard  $d$  and the inner side of the shuttle-wall.

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

1. In a self-threading shuttle, a threading device provided with a thread-receiving passage, a spring secured to one wall thereof and having its free end depending and extended across the passage at its rear end, to admit the thread to the passage and thereafter prevent its removal, a horn the beak of which crosses the forward part of the passage, an open delivery-eye, and means to guide the thread thereto from said passage, substantially as described.

2. In a self-threading shuttle, a threading device provided with a thread-receiving passage, an open delivery-eye, a horn to guide the thread thereto from said passage, and a guard on the horn extended down adjacent the inner side of and above the eye and across its entrance, to prevent removal of the thread from said eye, substantially as described.

3. In a self-threading shuttle, a threading device provided with a passage to receive the thread, a flexible guard to permit entry of the thread thereto, and to prevent its removal, an open thread-delivery eye, a downturned guard therefor extended within and above said delivery-eye, and means to guide the thread from the receiving-passage to the delivery-eye, substantially as described.

4. In a self-threading shuttle, a metallic block having a longitudinal thread-receiving passage, a flexible downwardly-inclined guard crossing said passage, to prevent removal of the thread, a horn on said block to guide the thread from the passage to the delivery-eye, the shuttle having an open thread-delivery eye, and a downturned lip having a notched end, extended within and above the delivery-eye, to prevent removal of the thread therefrom, substantially as described.

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

CHARLES E. NUTTING.

Witnesses:

GEO. OTIS DRAPER,  
C. N. NICHOLS.