





# UNITED STATES PATENT OFFICE.

EPPA H. RYON, OF WALTHAM, MASSACHUSETTS, ASSIGNOR OF ONE-HALF  
TO ALFRED M. GOODALE, OF SAME PLACE.

## SELF-THREADING SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 639,441, dated December 19, 1899.

Application filed July 23, 1898. Serial No. 686,676. (No model.)

*To all whom it may concern:*

Be it known that I, EPPA H. RYON, of Waltham, county of Middlesex, State of Massachusetts, have invented an Improvement in Self-Threading 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 production of a shuttle having a novel-shaped self-threading eye, said eye being easily applicable to usual shuttles.

Figure 1 represents a portion of the upper side of a shuttle provided with one of my novel eyes. Fig. 2 shows a face view of the eye. Fig. 3 is a right-hand side view of the eye, Fig. 2. Fig. 4 is a rear and right-hand end view of the eye, Figs. 2 and 3; and Fig. 5 is a left-hand view of the eye, Fig. 2.

The shuttle-body A, its tip A', and bobbin B are and may be all as usual. The side wall of the shuttle is cut out for a short distance to leave a space with a substantially V-shaped edge  $a$ , the opposite side of the space being shown as provided with a notch or groove, as at  $a'$ , and the top of the shuttle is provided with a rather deep groove  $a^2$ .

The eye is composed of a metallic block consisting of a base  $b$  to receive a screw  $b^1$ , said base having a thread-guiding portion  $b^2$ , through which is made a thread-passage  $b^3$ , presenting at one side a slot  $b^4$ , one side of said passage and one edge of said slot being formed by a depending lip  $b^5$ , down under which the thread must pass to enter said passage inside the shuttle-body, to be led from said passage out from the face  $c$  of the eye under the end of a pointed finger  $c'$ , crossing a slot or space  $c^2$ , leading from the top of the eye into said passage. The lip  $b^5$  faces the abutment  $d$  of the shuttle-body, and the upper part  $d'$  of said lip is extended backwardly from the slot  $c^2$  into the body of the shuttle, its extreme end being provided with a hook  $d^2$ , which forms a continuation of the edge  $c^3$  of the said lip. The eye has a notched part  $e$ , which embraces the edge  $a$  of the slot or space in the shuttle-body, and it also has a projection  $e'$  to enter the notch  $a'$ , and the upper part  $d'$  of the lip is rounded, beveled, or inclined, as at  $d^4$ , to afford ready entrance

of the thread into the slot  $c^2$  and below the finger  $c'$ .

To insert the thread into the eye and take it therefrom at the side of the shuttle, the operator takes hold of the end of the thread and stretches it straight from the bobbin through the slot  $a^2$  until the thread descends in said slot below the hook  $d^2$ , when by a movement of the hand transversely of the shuttle the thread caught below the said hook is led into the space between the top  $d'$  and the abutment  $d$  of the shuttle and is drawn down the inclined edge below the lower edge of the lip  $b^5$  into the passage  $b^4$ , it during such movement being drawn past and below the finger  $c'$  and emerging from the passage  $b^3$  at the face of the eye.

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

1. The combination with a shuttle, of a self-threading eye composed of metal and presenting a slot  $c^2$  leading into a thread-delivery passage  $b^3$ , said eye having a finger crossing said slot at the face of the eye and having a top  $d'$  provided with a hooked end  $d^2$  and a lip  $b^5$  forming one edge of a side slot  $b^4$  communicating with said passage  $b^3$ , substantially as described.

2. The combination with a shuttle, of a self-threading eye composed of metal and presenting a slot  $c^2$  leading into a thread-delivery passage  $b^3$ , said eye having a finger crossing said slot at the face of the eye and having a top  $d'$  provided with a hooked end  $d^2$  and a lip  $b^5$  forming one edge of a side slot  $b^4$  communicating with said passage  $b^3$ , said lip having an inclined edge  $c^3$ , substantially as described.

3. A shuttle-body having a slot shaped to present a V-shaped side wall and a grooved side wall, combined with a thread-guiding eye composed of metal a part of which is notched externally to embrace said V-shaped side wall, another part having a projection to enter the notch at the opposite side wall, and a slot  $c^2$  in said guiding-eye leading into a thread-delivery passage  $b^3$ , said eye having a finger crossing said slot at the face of the eye and having a backwardly-extended top  $d'$  provided with a hooked end  $d^2$  and a lip  $b^5$  forming one edge of the slot  $b^4$  communicating

with said passage  $b^3$ , substantially as described.

4. A shuttle-body having a slot shaped to present a V-shaped side wall and an opposed  
5 side wall having a groove, combined with an independent detachable thread-guiding eye presenting externally a notch to embrace said V-shaped side wall, and a projection to enter the notch of the opposite side wall, and a base  
10 having a hole for the passage of a screw to confine the threading-eye to the shuttle-body,

said eye having a delivery-passage  $b^3$  intersected by a suitable threading-slot, substantially as described.

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

EPPA H. RYON.

Witnesses:

GEO. W. GREGORY,  
MARGARET A. DUNN.