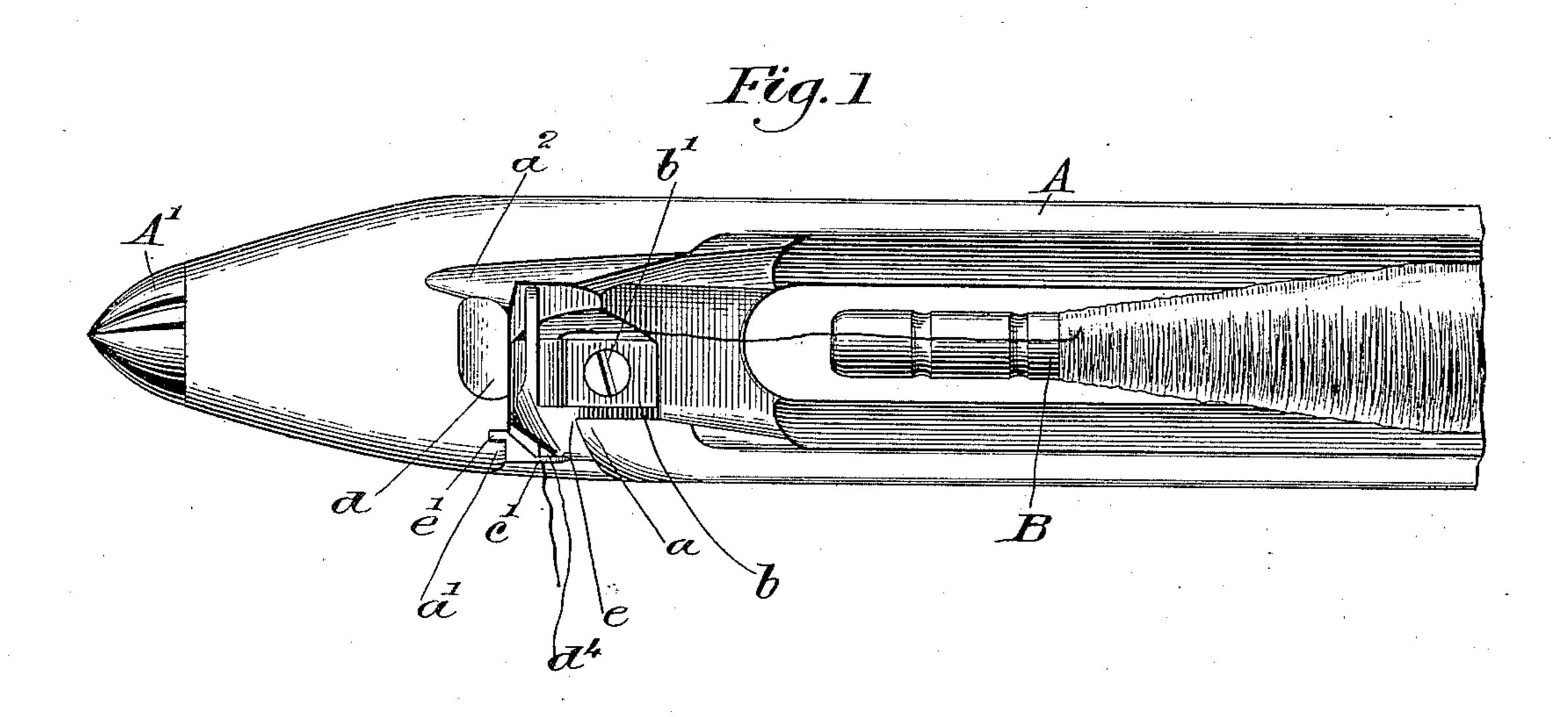
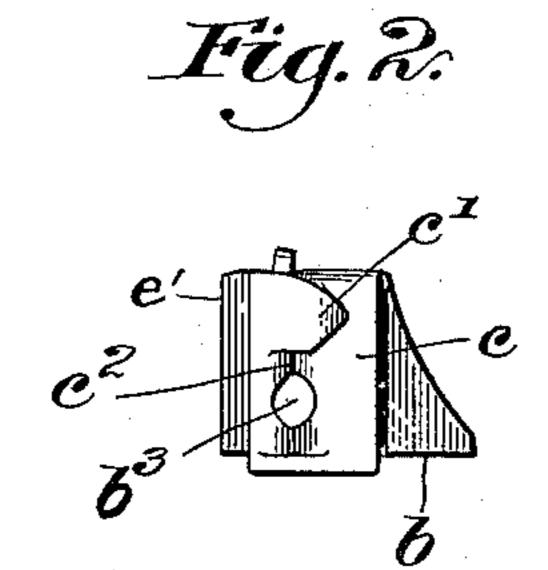
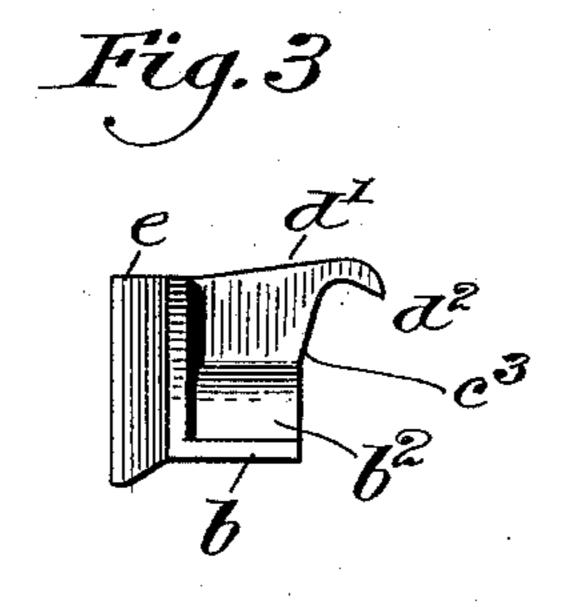
## E. H. RYON. SELF THREADING SHUTTLE.

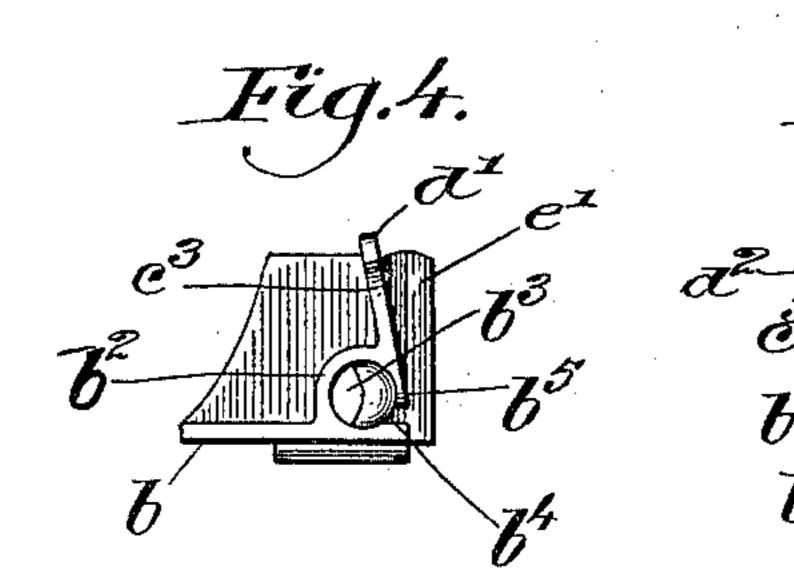
(Application filed July 23, 1898.)

(No Model.)









Witnesses: alestarion. Louis Melowell!

Eppa H. Ryon.

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Attless.

## 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 5 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 proto duction of a shuttle having a novel-shaped self-threading eye, said eye being easily ap-

plicable to usual shuttles.

Figure 1 represents a portion of the upper side of a shuttle provided with one of my 15 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 25 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', 30 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 35 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 40 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 45  $d^2$ , 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 50 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 op- 55 erator 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 60 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 move- 65 ment 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 70

Patent, is—

1. The combination with a shuttle, of a selfthreading eye composed of metal and presenting a slot  $c^2$  leading into a thread-delivery passage  $b^3$ , said eye having a finger crossing 75 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 selfthreading 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 85 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 90 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 e' 95 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 100 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 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 to 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.