

No. 671,633.

Patented Apr. 9, 1901.

E. H. RYON.  
LOOM SHUTTLE.

(Application filed Jan. 5, 1900.)

(No Model.)

Fig. 1.

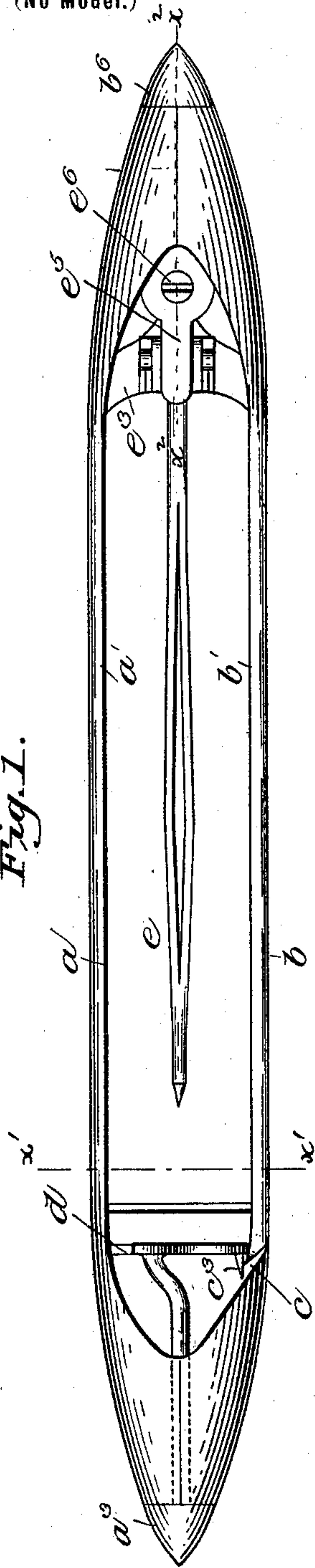


Fig. 3.

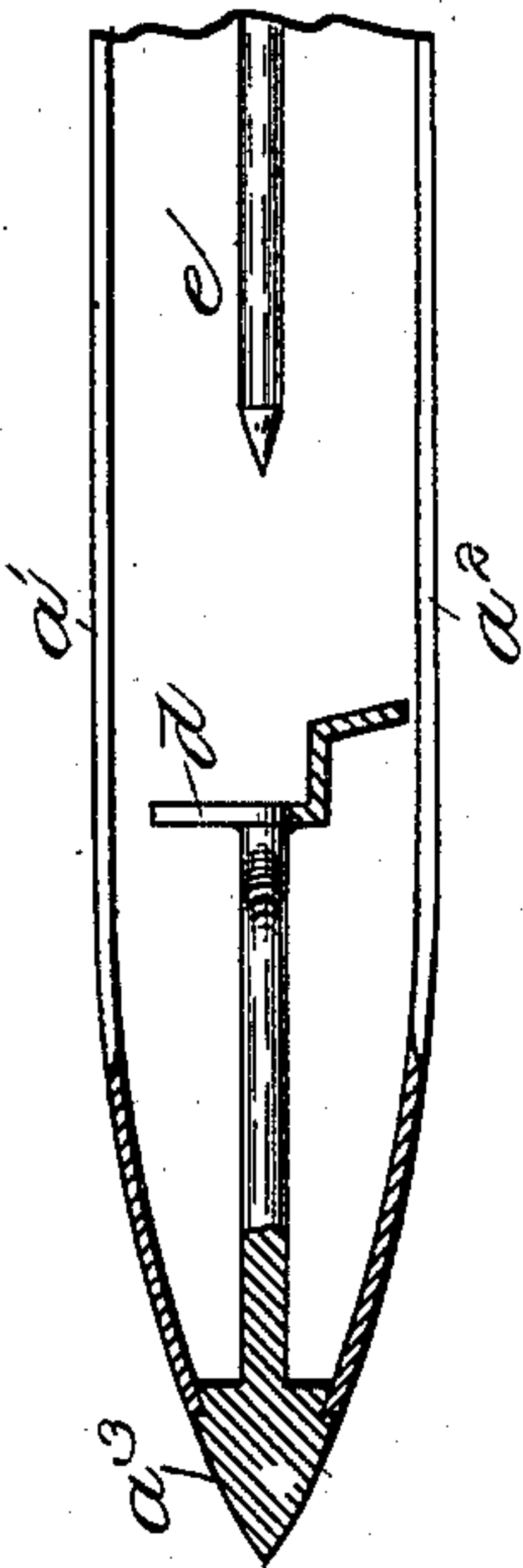


Fig. 2.

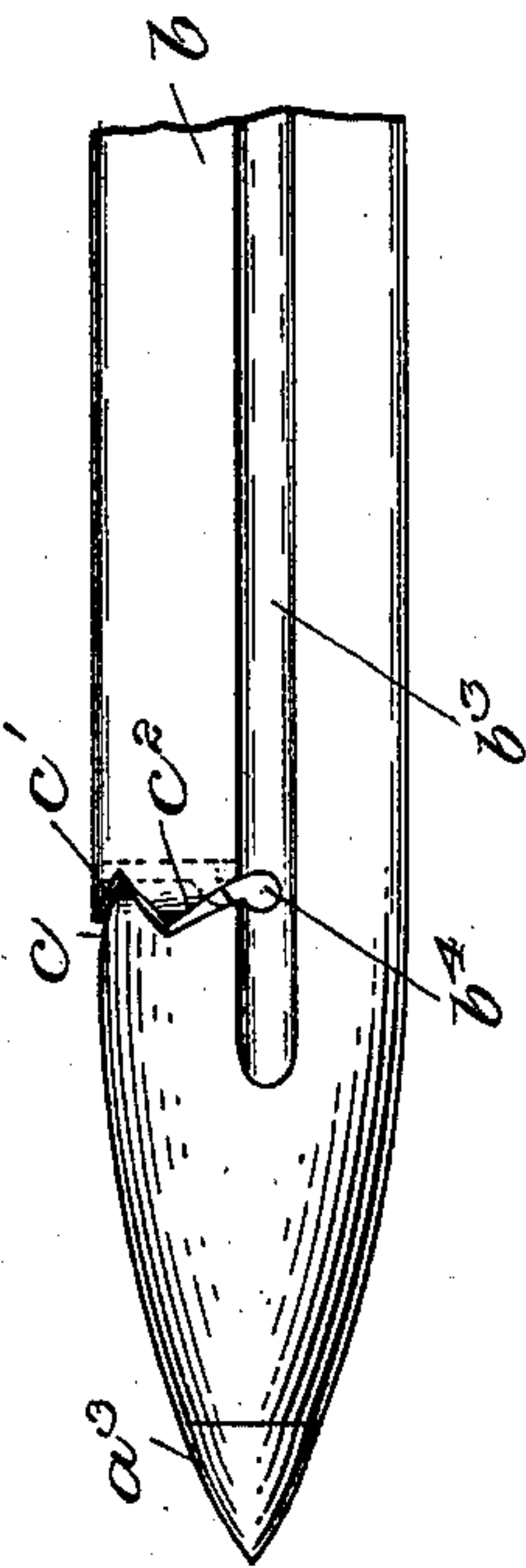


Fig. 5.

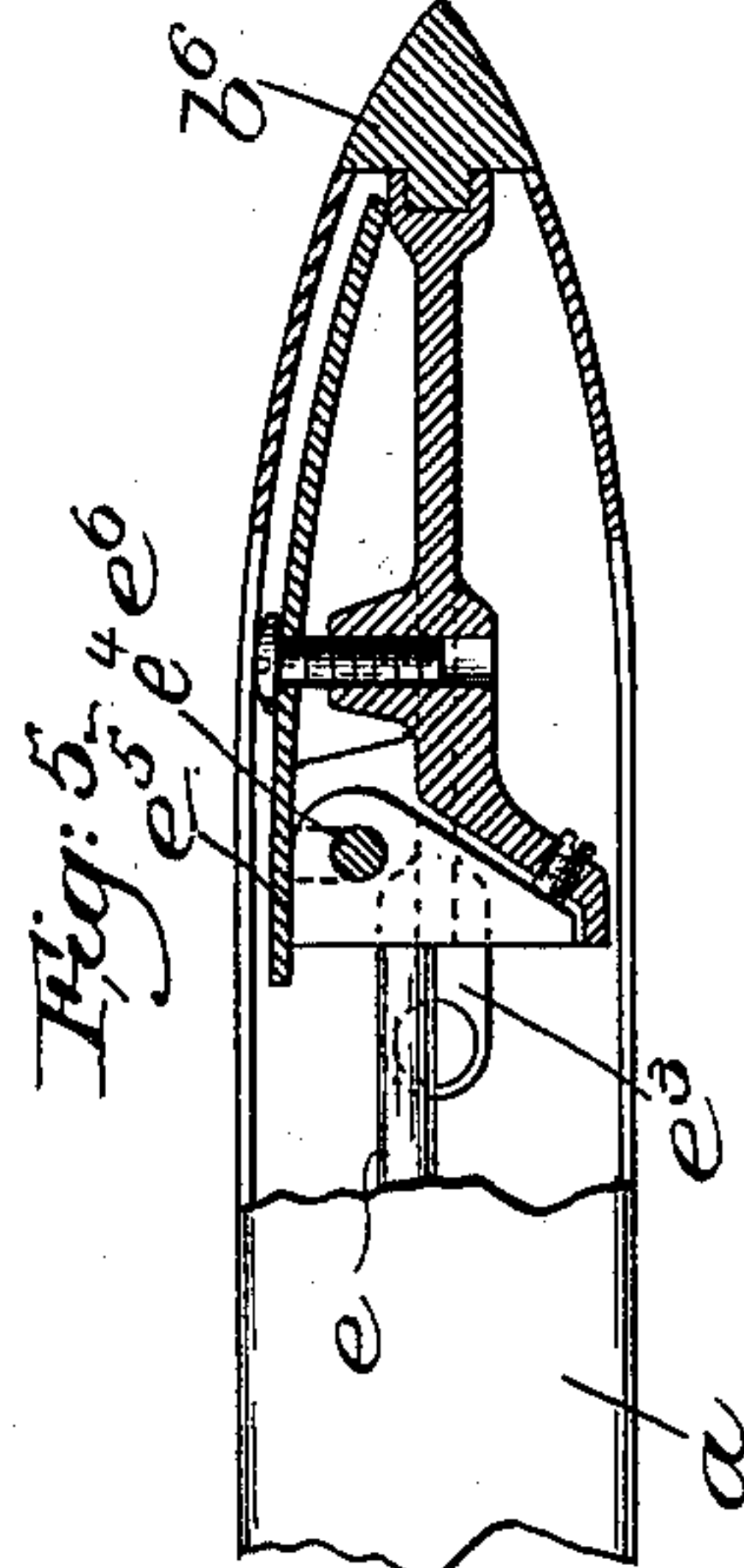
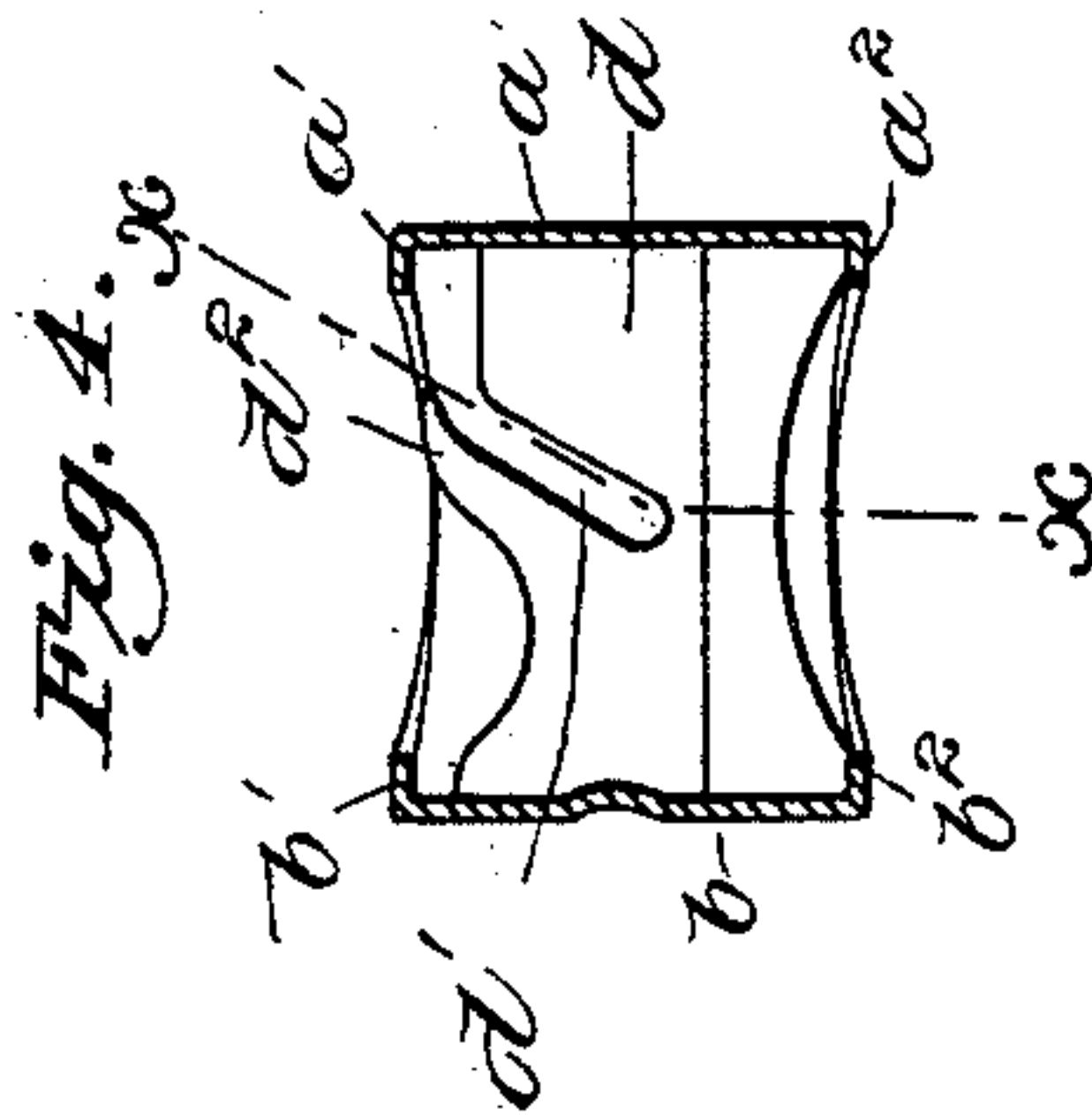


Fig. 4.



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# UNITED STATES PATENT OFFICE.

EPPA H. RYON, OF WALTHAM, MASSACHUSETTS.

## LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 671,633, dated April 9, 1901.

Application filed January 5, 1900. Serial No. 483. (No model.)

*To all whom it may concern:*

Be it known that I, EPPA H. RYON, a citizen of the United States, and a resident of Waltham, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Loom-Shuttles, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention has for its object the production of a novel shuttle for use in a loom, the shuttle being composed, preferably, of two pieces of sheet metal shaped each to form one half or side of the shuttle-body. The inner

15 walls of the shuttle-body are separated near the shuttle-tips by braces, the outer ends of which sustain the side walls of the shuttle-body, the braces being preferably connected with and forming an operative part of the

20 shuttle-tips, one of said braces having a threading-slot leading into a thread-leading eye, the other brace receiving the pivot on which turns the spindle-head, said brace also serving to sustain the spring which coöperates with the spindle-head to return it into

25 operative position and permit the spindle to be moved into its inoperative position. One side wall of the shuttle-body is provided with an irregular threading-slot cut to meet the usual

30 delivery-eye of the shuttle and presenting a crossing prong to prevent backward movement of said shuttle-thread from the receiving end of the said threading-slot.

Figure 1, in top or plan view, represents a shuttle embodying my invention. Fig. 2 is a partial side elevation of the shuttle to show its thread-delivery eye. Fig. 3 is a partial longitudinal section of the shuttle in the line  $x$ , Fig. 4. Fig. 4 is a section in the line  $x'$ , Fig. 1. Fig. 5 is a partial section in the line  $x^2$ , Fig. 1.

The shuttle-body is composed of two walls  $a$   $b$ , of sheet metal, presenting flanges  $a'$   $a^2$  and  $b'$   $b^2$ , the wall  $b$  having also preferably a groove  $b^3$ , in which is made the delivery-eye  $b^4$ , the opposite ends of each wall being shaped to present a rounded or tapered portion forming part of the points for the shuttle, the points being completed by suitable tips  $a^3$   $b^6$ , the walls being suitably brazed together where they meet. The side wall  $b$  is provided with a threading-slot  $c$ , which is represented as cut irregularly to present, pref-

erably, one or more tapering horns  $c'$   $c^2$ , each entering a suitable recess in the opposite side wall of the slot, the points of the horns being downturned and rounded to enable the thread led into the slot  $c$  to be drawn readily into said slot and pass below the points of the horn.

The wall of the shuttle-body near its end containing the threading-slot is kept apart by a brace  $d$ , connected at its ends with the said walls, the upper end of the brace being slotted at  $d'$  to present a horn  $d^2$ , about which may be caught the shuttle-thread led from a bobbin (not shown) contained in a spindle  $e$ , one end of the thread being held by the hand of the operator, strain on the thread causing it to descend in the slot  $d'$ , the operator having caught the thread about the horn, leading it into the slot  $c$ , and pulling it down through said slot into the delivery-eye  $b^4$ .

The slot  $c$  is crossed between the inner end of the slot  $c$  and the eye  $b^4$  by a prong  $c^3$ , preferably carried by the brace  $d$  and extended backwardly therefrom and occupying a position a short distance from the inner wall of the part  $b$  of the shuttle.

The brace  $d$  is represented as having its shank united fixedly with the tip  $a^3$ , the lower edge of the brace having a foot bent and extended in the direction of the length of the shuttle and downwardly toward the lower side of the shuttle to thereby brace a more extended surface of the shuttle-walls.

The spindle  $e$ , represented as split to hold a suitable cop of filling, has its head  $e'$  entered in a slot  $e^2$  in a brace  $e^3$ , (see the right-hand end of Figs. 1 and 5,) said brace being connected with the inner side walls  $a$   $b$  of the shuttle-body and also with the tip  $b^6$ . The head of the spindle has a pin  $e^4$ , which enters at its end slots in said brace, said pin constituting a pivot for the spindle, and a spring  $e^5$ , connected by a screw  $e^6$  to said brace, coöperates at its inner end, as usual, with said head to keep the spindle either in its horizontal position in the shuttle or to maintain the spindle in the position necessary to enable a fresh cop to be applied thereto.

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

1. A sheet-metal shuttle composed of side walls  $a$ ,  $b$ , tips located at the ends of said side



walls, a brace interposed between the side walls near that end of the shuttle having the delivery-eye, said brace being provided with a thread-receiving slot and a horn.

5 2. A sheet-metal shuttle composed of side walls *a, b*, tips located at the ends of said side walls, a brace interposed between the side walls near that end of the shuttle having the delivery-eye, said brace being provided with  
10 a diagonal slot and a horn located at one side of said slot.

3. A sheet-metal shuttle composed of side walls *a, b*, tips located at the ends of said side walls, a brace interposed between the side  
15 walls near that end of the shuttle having the delivery-eye, said brace being provided with a thread-receiving slot and a horn, said brace being fixed to the tip at the end of the shuttle.

4. A sheet-metal shuttle composed of side  
20 walls *a, b*, one of said side walls being provided with a delivery-eye threading-slot intersecting said delivery-eye, a horn on each side of said slot, said horns being integral with the side wall of the shuttle, and forming  
25 a portion of the sides of the slot.

5. A sheet-metal shuttle composed of side walls *a, b*, one of said side walls having a thread-delivery eye, and a slot intersecting  
30 said eye from the upper edge of said wall, said slot presenting at each side a horn.

6. A sheet-metal shuttle composed of side walls *a, b*, one of said side walls having a thread-delivery eye and a slot intersecting

said eye from the upper edge of said wall, said slot presenting at one side a horn, and a  
35 notch at the opposite side of said slot in which said horn enters.

7. A sheet-metal shuttle composed of side walls *a, b*, one of said side walls having a thread-delivery and a slot intersecting said  
40 eye from the upper edge of said wall, said slot presenting at its opposite sides a horn, each horn entering a notch made at the opposite side of the slot.

8. A sheet-metal shuttle composed of side  
45 walls *a, b*, one of said side walls having a thread-delivery and a slot intersecting said eye from the upper edge of said wall, and a prong crossing said slot to prevent the thread rising in said slot from the delivery-eye. 50

9. A sheet-metal shuttle composed of side walls *a, b*, one of said side walls having a thread-delivery and a slot intersecting said  
55 eye from the upper edge of said wall, said slot presenting at one side a horn, a notch at the opposite side of said slot in which said horn enters, and a prong crossing said slot to prevent the thread rising in said slot from the delivery-eye.

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

EPPA H. RYON.

Witnesses:

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