

UNITED STATES PATENT OFFICE.

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SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 671,632, dated April 9, 1901.

Application filed January 5, 1900. Serial No. 482. (No model.)

To all whom it may concern:

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

10 This invention has for its object the production of a novel shuttle for use in looms, my said shuttle being composed of sheet metal molded into shape and presenting a self-threading slot.

15 Figure 1 is a top or plan view representing a shuttle embodying my invention, it containing filling wound on a bobbin. Fig. 2 is a side elevation of the shuttle, showing its thread-delivery. Fig. 3 is a partial longitudinal section of the delivery end of said shuttle. Fig. 4 shows the opposite part of the shuttle from that represented in Fig. 3; Fig. 5, a partial section on the dotted line x^2 , Fig. 2; Fig. 6, a section on the dotted line x' , Fig. 25 1; and Fig. 7, a detail showing the wall of the shuttle about its delivery-eye broken out.

The shuttle-body is composed of two halves a b , divided top and bottom on the line 2 3 and shaped substantially as represented, the shuttle being open at top and bottom alike, said halves having like wings a^x b^x , the edges of the plates being suitably brazed together where they meet.

30 One end of the shuttle-body contains a tip c , having connected with it a brace c' , the shape of which is represented in Fig. 1, two arms of said brace being riveted or otherwise secured to the walls of the shuttle-body, the inner end of said brace having bolted or secured to it two like spring-jaws d , having suitable grooves to receive and hold wings or projections d' , surrounding the base end of the filling-carrier d^2 , represented as a bobbin, but which may be of any other usual or suitable construction. The wing a^x of the body a at one side of the slot 2 is curled or bent inwardly at a' (see Figs. 1 and 2) to form one side wall of an open self-threading slot for the admission of the filling on its way into the delivery-eye 3, made in the half b . The half b is slitted at b' from its edge next the half a , leaving a portion of the metal, which

is bent downwardly and otherwise shaped to present a horn b^2 , the end of the horn crossing the slit between a and b , the point of the horn occupying a position (see Figs. 1 and 6, dotted lines) under the edge of the part a' . The slot b' is inclined downwardly toward and meets the delivery-eye 4.

The end of the shuttle containing the delivery-eye is terminated by a tip e , with which is suitably joined a brace e' , represented as a fork connected near its inner broader end by a bridge-piece e^2 , having a slotted thread-guide e^3 , the inner ends of the legs of the fork being connected, as represented, by rivets e^4 to the parts a and b . As seen in Fig. 6 and in dotted lines in Figs. 2 and 7, the bridge-piece e^2 extends clear up to the wings a^x b^x , and its upper edge is curved to conform to the inturned wings, whereby said bridge-piece forms a support for the wings. One of the legs of the fork e' —viz., that one lying just behind the delivery-eye 4 in the half b —is provided, as shown, with a bayonet-slot to form a prong 5 with a beveled top, and said prong is made to extend across the slot b' . (See Fig. 2.) After making the slot b' the metal of the part b along the edges left by the cut is inturned, the lip formed at the left-hand side of the slot (see Fig. 1) being shown in the section Fig. 5.

By reason of the braces the metal of the shuttle-body may be made quite thin, enabling a light-weight shuttle to be produced and yet be very durable.

The side walls of the body of the shuttle are shaped in a drop-press.

The shuttle shown may be supplied automatically with filling, as provided for in the so-called "Northrop" loom. The filling led into the threading-slot between the inturned wall a' and the horn b^2 rides over said horn as the shuttle is thrown to the right, viewing Fig. 1, and owing to the fact that the tip of the filling-carrier occupies a position in a horizontal plane below the point b^3 of the horn the thread passes the end of and gets below the point of the horn, and as the shuttle is next thrown to the left the thread then under the horn and also in the slit 2 between the horn and the tip e is acted upon by the inclined edge 7 of the horn and is made to descend in the slot b' and meet the inclined

top of the prong 5, crossing said slot, and passing the end of said prong the filling enters the eye 4, where it is retained, and in the further movement of the shuttle the filling is delivered from said eye, the prong 5 preventing the rising of the filling in said slot.

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

1. A loom-shuttle composed of a metallic body, tips terminating the body, and braces interposed between the inner sides of the body and connected therewith near the tips and fixed to said tips.

2. The combination with the shell-like shuttle-body, a tip to finish one end of said body, and a brace interposed between the inner side walls of said body and fixed thereto, said brace being an extension of a fork fixed to the inner end of said brace and acting to receive and hold a filling-carrier in operative position.

3. A shuttle having its side walls composed of a plurality of pieces of metal, the edges of which meet at the top of the shuttle in substantially the longitudinal center line of the shuttle-body, one of said edges being slitted to the delivery-eye of said shuttle to form a horn, said horn and the edge of the opposite side wall of the shuttle being incurved to define a self-threading slot, the tip of the horn being made to assume a position underlying and crossing the self-threading slot.

4. A metallic shuttle composed of side walls having projecting wings a^x , b^x , having their meeting edges incurved to present a slot with a rounded entrance, one of said wings having

integral therewith a horn crossing the space between said wings and occupying a position under the edge of the opposed wing.

5. A metallic shuttle composed of side walls having projecting wings a^x , b^x , having their meeting edges incurved to present a slot with a rounded entrance, one of said wings having integral therewith a horn the edges of which are curved to present faces over which the filling may be drawn without cutting the same, the extremity of said horn occupying a position under the edges of the opposed wing.

6. A shuttle composed of sheet-metal sides and wings curved inwardly to form a self-threading slot and cut to form a horn and present a slot leading to the delivery-eye of the shuttle, combined with a brace presenting a slotted bridge, the upper edge of the bridge sustaining the incurved ends of the wing, said wings leading the thread into the slot of the bridge.

7. A metallic shuttle having two side members, one of which has a delivery-eye and self-threading slot leading to said delivery-eye, the wall of the said member adjacent said slot being bent inward to form a horn, the tip of which is made to assume a position underlying and crossing the self-threading slot.

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

EPPA H. RYON.

Witnesses:

JOHN C. EDWARDS,
MARGARET A. DUNN.