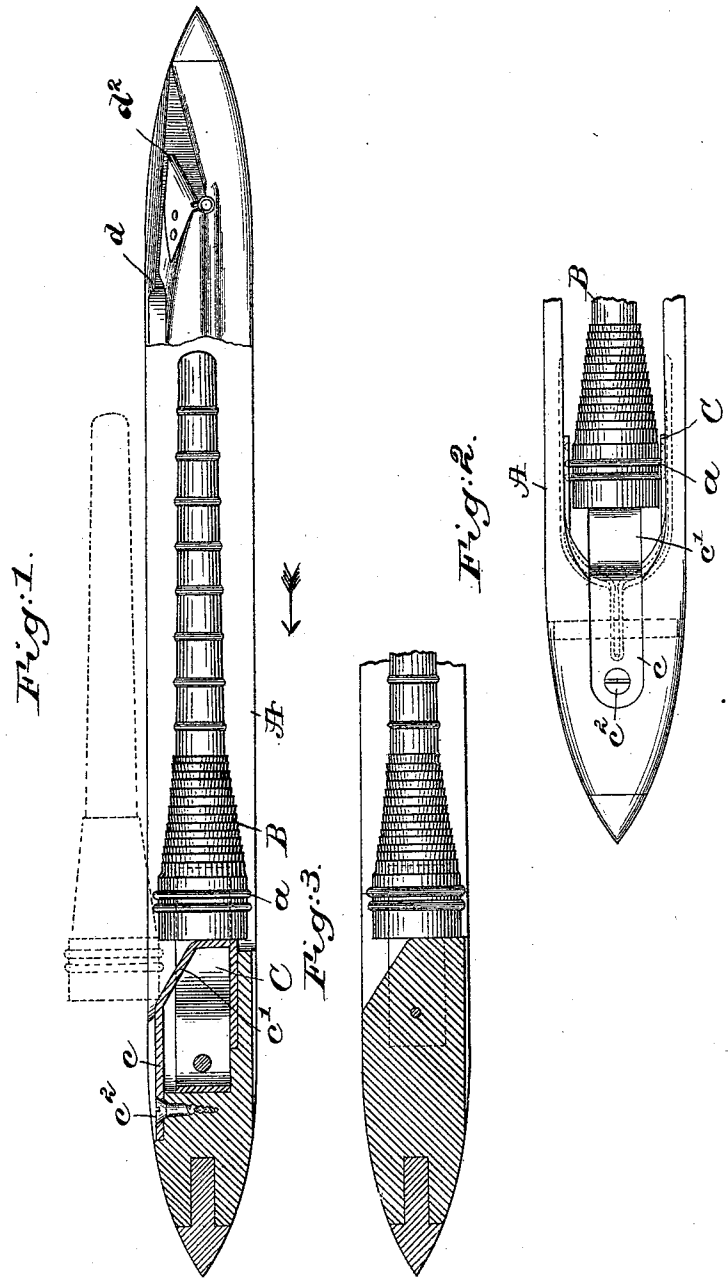


(No Model.)

G. O. DRAPER.
SHUTTLE FOR LOOMS.

No. 538,507.

Patented Apr. 30, 1895.



Witnesses.

Louis W. Howell
Fred S. Greenleaf

Inventor.

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UNITED STATES PATENT OFFICE.

GEORGE OTIS DRAPER, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR, BY
MESNE ASSIGNMENTS, TO THE NORTHROP LOOM COMPANY, OF SAME
PLACE.

SHUTTLE FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 538,507, dated April 30, 1895.

Application filed August 27, 1892. Serial No. 444,256. (No model.)

To all whom it may concern:

Be it known that I, GEORGE OTIS DRAPER, of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Shuttles for Looms, 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 to provide an improved shuttle for use in that class of looms wherein bobbins are automatically put into a shuttle while in a shuttle-box of the loom and the loom in motion.

My improved shuttle is adapted for use in the class of looms shown in United States Patent No. 454,810. In this class of looms, it will be remembered that the bobbin is inserted by a pusher while the shuttle is in the box and the loom running at a fast speed, and sometimes owing to rebound of shuttle, wear of the picker, or error in timing, the shuttle fails to get into exactly the proper position with relation to the bobbin delivering hopper and pusher, and at such times the bobbin fails to be properly inserted. I have discovered by experiment that this trouble may be obviated by providing the shuttle at one end of the bobbin-receiving chamber therein with an incline or bridge leading down to and preferably between the bobbin holding jaws.

Figure 1, in longitudinal section, shows a shuttle embodying my invention, the bobbin being in elevation. Fig. 2 is a partial top view of the shuttle, and Fig. 3 is a modification.

The shuttle body A, having a self-threading slot d and a horn d^2 under which the thread passes on its way into said slot; the bobbin B provided with metallic rings a ; and the bobbin-holding jaws C are and may be all substantially as in United States Patent No. 454,807.

I have combined with the shuttle and its bobbin-holding jaws an incline or bridge, shown in Figs. 1 and 2 as a metal plate c inclined at c' from the outer side of the shuttle into the shuttle-chamber between the arms of the bobbin-holding jaws, so that the head of the bobbin, it being acted upon by a pusher as provided for in United States Patent No.

454,810, in case the shuttle is a little out of position in the shuttle-box, will strike against said incline, as shown by dotted lines in Fig. 1, and thereafter during the further movement of the pusher, it acting against the bobbin or the yarn thereon near each end, will be made to move longitudinally with relation to the shuttle until the head of the bobbin and its rings or projections shall come in proper position with relation to and so as to enter the shuttle chamber between the arms or jaws of the bobbin-holder, where the bobbin will be held until ejected through the bottom of the shuttle, as provided for in United States Patent No. 454,810. The incline or bridge in Figs. 1 and 2 is shown as held in place by a screw c^2 , and the inner end of the piece of metal c is represented as extended backwardly under the holder, thus not only fixing the plate in place, but also serving to hold up and form a bed or support for the holder.

While for durability and ease of operation I prefer to make the incline as a separate piece, yet my invention would be included in a shuttle made as in Fig. 3, wherein the bridge or incline is made as an integral part of the shuttle body or its wood, but the embodiment of my invention shown in Fig. 1, is preferable, and the more desirable, and economical.

The bobbin filled with yarn having been pushed into position in the holder, the shuttle is thrown by the picker through the shed in the warp, and as the outer or free end of the weft or bobbin thread is held fast on a pin or projection at the loom side, it results that at the end of the first shot of the shuttle in the direction of the arrow thereon Fig. 1, the weft is laid in the slot d below the point of the horn d^2 , and this done, the shuttle thread on the backward travel of the shuttle is led automatically into the eye thus effecting the automatic threading of the shuttle.

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

1. A shuttle body having a chamber for the reception of a bobbin, and provided with an incline leading into said chamber at one end thereof, combined with bobbin-holding jaws lying in said chamber at opposite sides of said incline, to operate, substantially as described.

2. A self-threading shuttle body having a bobbin-receiving opening at one side thereof, and an opening at another side for the discharge of a bobbin, and provided at one end
5 of said bobbin-receiving opening with an incline or bridge, combined with bobbin-holding jaws located at opposite sides of said incline or bridge and adapted to receive between them the head of a bobbin which has traveled
10 down said incline or bridge and into position in the shuttle body between said jaws, substantially as described.

3. A shuttle body having a chamber for the reception of a bobbin, and jaw-like bobbin-
15 holder located therein, combined with a metallic bridge located at that side of the shuttle into which the bobbin is to be fed and in-

clined inwardly, said bridge having its inner end bent backwardly, as described, under the holder, substantially as and for the purpose 20 set forth.

4. A self-threading shuttle, body provided with a bobbin-holding jaws, and with an incline or bridge in the rear of the acting faces of said jaws, to operate, substantially as de- 25 scribed.

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

GEORGE OTIS DRAPER.

Witnesses:

GEO. W. GREGORY,
EMMA J. BENNETT.