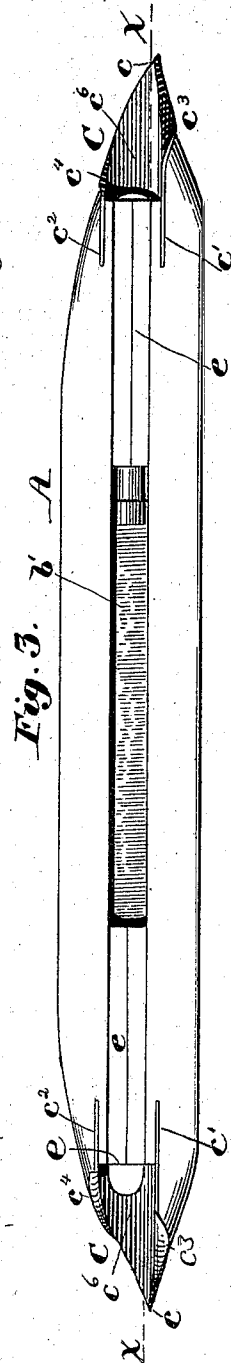
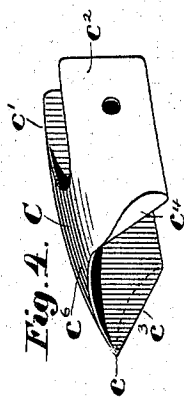
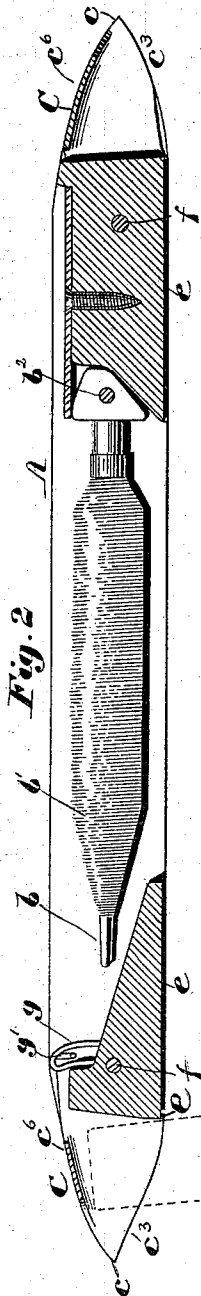
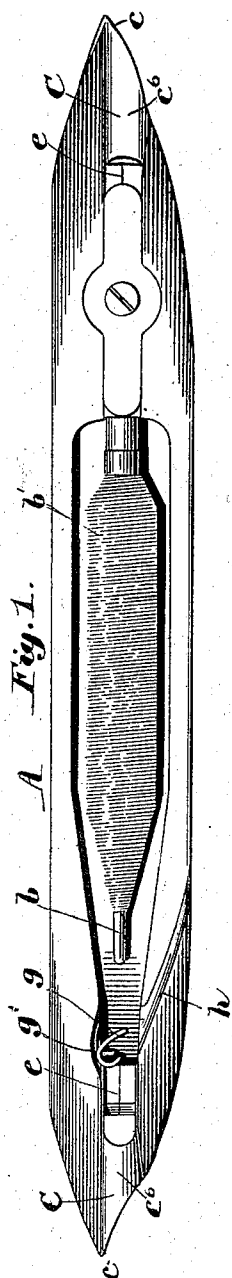


(No Model.)

J. RAILTON.  
SHUTTLE.

No. 574,112.

Patented Dec. 29, 1896.



Witnesses:

Walter E. Lombard  
Thomas J. Drummond.

Inventor:  
James Railton,

by Crosby & Gregory, Attys.

# UNITED STATES PATENT OFFICE.

JAMES RAILTON, OF NEW BEDFORD, MASSACHUSETTS, ASSIGNOR TO THE NORTHROP LOOM COMPANY, OF SACO, MAINE, AND HOPEDALE, MASSACHUSETTS.

## SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 574,112, dated December 29, 1896.

Application filed August 6, 1896. Serial No. 601,837. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES RAILTON, of New Bedford, county of Bristol, State of Massachusetts, have invented an Improvement in 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 novel shuttle which may be thrown across the lay by the action of a plain picker-stick or a stick which is not provided with a picker.

As shuttles are now commonly made the body of the shuttle at its opposite ends is provided with cone-shaped points or tips which, to throw the shuttles, are struck by a picker composed of leather, rawhide, or some material either wood or iron. These pickers attached to and carried by the picker-sticks, they usually having a vibratory or rocking motion, become indented in use, and when so indented tend to throw the shuttle in a wrong direction, and, further, the pickers have frequently to be renewed.

My improved shuttle is provided near each end with a pointed guard having a recess in which is exposed a blunt or flat-ended non-metallic buffer which is adapted to be struck by the edge of the picker-stick or equivalent device, said stick or device entering said recess when actuating and when checking the shuttle.

The cone-shaped points or lips commonly used keep wearing the hole in the picker deeper and deeper, and as the hole grows deeper the incoming shuttles enter farther into the box, and in an automatic loom, wherein the more accurate the position of the shuttle in the box where it is to be supplied with a bobbin or filling-carrier the more certain the operation, it becomes essential to stop the shuttle, if possible, always in the same position, and the blunt or flat buffer enables the shuttle to be stopped accurately in the same position, and so, also, by the use of said blunt or flat portion and the recessed ends of the shuttle to receive the stick, and dispensing with the usual picker extended from the edge

of the stick, it is possible to increase the effective length of the shuttle-box for about one and one-half inches, which is a great desideratum.

Figure 1 shows in top view a shuttle embodying my invention; Fig. 2, a longitudinal section and piece of a picker-stick; Fig. 3, an under side view, and Fig. 4 shows the pointed guard detached.

The shuttle-body A, preferably of wood, may be of any usual or suitable shape, according to the particular kind of bobbin it is to contain or the particular class of loom in which it is to be used.

I have herein shown the shuttle provided with a spindle *b*, carrying a cop *b'*, the spindle being pivoted in the shuttle at *b''*, a spring *b'''* acting on the spindle-head; but instead of supporting the cop as shown I may use any other usual or suitable cop-carrying means employed in shuttles.

Both ends of the body of the shuttle are provided with pointed guards *c*, bent or shaped to leave recesses which receive and expose blunt or flat ended non-metallic buffers or surfaces *e* to be struck by the stick *d*, and as these parts are substantially alike I need to herein specifically describe but one of them.

The pointed guard at the left-hand end of the shuttle shown in the drawings is represented as composed of a U-shaped piece of metal C, shaped at its outer end to leave a point *c* depressed below the top line of the shuttle, as best shown in Fig. 2, said point being also located a little to one side of the path in which the picker-stick or other usual shuttle-actuator *d* works in throwing the shuttle, as represented in Figs. 1 and 3 by the line *x*, which indicates one side of the line of movement of the said stick.

The guard shown has two substantially parallel arms *c'* *c''*, separated to form a recess of sufficient width to receive and expose one end of a suitable blunt or flat non-metallic buffer *e*, composed, preferably, of two pieces of leather, the said arms when put in place in the shuttle preferably entering the wood thereof, as best shown in Fig. 3, the buffer being held in the body of the shuttle between

the said arms, the guard or holder and buffer being fixed in the body by a suitable rod, bolt, or screw *f*.

The front ends of the arms terminate with inclined faces  $c^3 c^4$ , having shoulders to abut against the slotted ends of the shuttle-body, the end  $c^3$  being located nearer the point  $c$  than the end  $c^4$  to thus leave a better entrance-space for the picker-stick to work.

The arms  $c^1 c^2$  are connected across the top side of the shuttle by a narrow curved neck  $c^6$ .

The shuttle shown has a wire loop or leg *g*, the upper end of which is bent over slightly toward the inner walls of the shuttle, leaving a space for the shuttle-thread to pass down onto and below a pin *g'*, extending inwardly from the inner side of said wall, and thereafter the shuttle-thread may be easily led back into the diagonal slit *h*, having at its lower end a delivery-eye, to be delivered in suitable manner from the front side of the shuttle.

The buffers may be renewed when desired.

A shuttle having a pointed guard provided with a recess to receive a buffer presenting a blunt or flat part to be struck at a point within the length of the shuttle between its ends may enter the usual shuttle-box farther than the usual shuttle actuated by a stick having a picker to strike the conical point.

The guard is shown as composed of one U-shaped piece of metal, but making it of two pieces or by varying its shape and preserving the recess for the buffer back of the point of the shuttle would not depart from my invention, and by the term "U shape" I mean to include any similar device or chamber having a slot adapted to receive a buffer.

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

1. A loom-shuttle composed of a body, and pointed U-shaped guards applied to its ends, said guards having each an inclosed recess, and blunt non-metallic buffers located in said recess back of the points of said guards and

adapted to receive the blow which is to drive the shuttle through the shed, substantially as described.

2. A loom-shuttle composed of a body, and U-shaped guards applied thereto at the ends of said body, said guards being provided each with points and inclined ends located at different distances from said point, combined with non-metallic buffers located in said shuttle-body and having their ends exposed within said guards and adapted to receive the blow of the picker stick or actuator, substantially as described.

3. A shuttle having a blunt non-metallic buffer to receive the blow of a flat stick or actuator, and provided at its end with an overlapping pointed guard chambered to allow the passage of the stick or actuator through it when striking the buffer, substantially as described.

4. A shuttle-body, and a U-shaped chambered guard presenting arms and an intermediate connecting-neck, combined with a non-metallic buffer located in the shuttle-body between said arms, and presenting a substantially blunt or flat surface to receive the blow which is to send the shuttle through the shed, substantially as described.

5. A shuttle-body having a blunt end, and a buffer-receiving notch or opening, and a pointed U-shaped guard having arms to enter the body, and shoulders to rest against the ends of said body, the neck of said guard being at the upper side of the said shuttle, combined with a buffer placed in said notch or opening, and having one of its ends exposed in one of said guards, substantially as described.

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

JAMES RAILTON.

Witnesses:

JOHN C. PARKER,  
GEORGE S. MOTTROM.