

J. LACROIX.
LOOM SHUTTLE.

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933,376.

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Fig. 1.

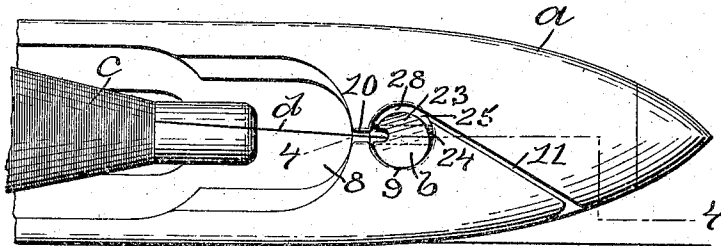


Fig. 2.

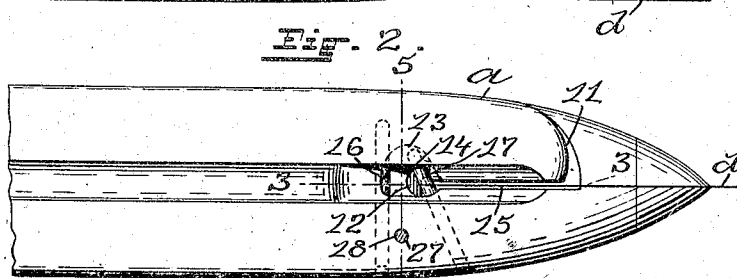


Fig. 3.

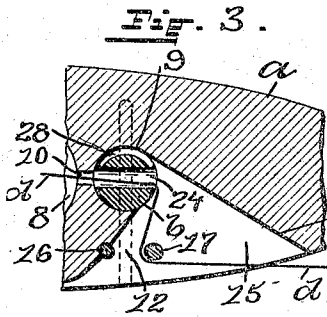


Fig. 4.

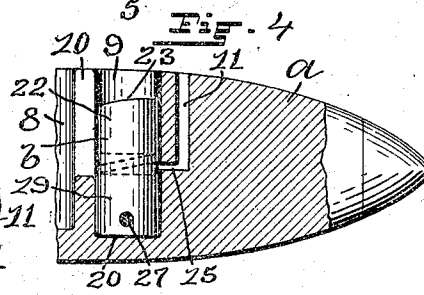


Fig. 5.

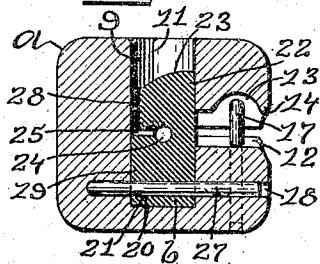


Fig. 6.

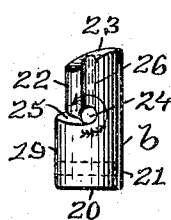
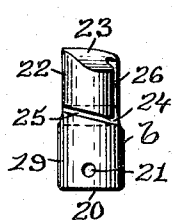


Fig. 7.



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LOOM-SHUTTLE.

933,376.

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To all whom it may concern:

Be it known that I, JOSEPH LACROIX, a citizen of the United States, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Loom-Shuttles, of which the following is a specification.

This invention has reference to an improvement in shuttles and more particularly to an improvement in hand threading loom shuttles.

The object of my invention is to improve the construction of a hand threading loom shuttle, whereby the shuttle is provided with a mechanical threading device adapted to facilitate the threading of the shuttle by hand without suction.

Further objects of my invention are to prevent improper threading of the shuttle, to lock the thread in the threading member, to prevent the return of the thread from the delivery eye, to simplify and strengthen the construction of the threading device and the adjacent portions of the shuttle body, and to reduce the cost of manufacturing hand threading loom shuttles.

My invention consists in the peculiar and novel construction of a mechanical hand threading device for loom shuttles and the adjacent portions of the shuttle body, as will be more fully set forth hereinafter and claimed.

Figure 1 is a top plan view of the thread delivery end of a loom shuttle body provided with my improved hand threading device. Fig. 2 is a side view of the delivery end of the shuttle looking at the delivery eye side of the shuttle body. Fig. 3 is a detail horizontal sectional view through the shuttle body and the threading member taken on line 3 3 of Fig. 2. Fig. 4 is a detail vertical sectional view taken on line 4 4 of Fig. 1 through the shuttle body. Fig. 5 is a transverse sectional view taken on line 5 5 of Fig. 2 through the shuttle body and threading member. Fig. 6 is a side view of the threading member removed from the shuttle and looking at the entrance side of the member, and Fig. 7 is a side view similar to Fig. 6 looking at the slit side of the threading member.

In the drawings, *a* indicates the delivery eye end of a loom shuttle body, *b* the hand threading member, *c* the nose end of a bobbin and *d* the thread leading from the bob-

bin through the threading device and out through the delivery eye of the shuttle.

The delivery eye end of the shuttle body *a* is constructed to have the throat 8, a circular cavity 9 extending centrally from the top of the shuttle body adjacent the throat 8 downward to a point below the center line of the shuttle and adjacent the bottom of the shuttle body, an off-center slit 10 extending from the top of the shuttle body downward to a point below the center line of the shuttle and longitudinally from the throat 8 into the circular cavity 9, a slit 11 extending from the top of the shuttle body downward to the center line of the shuttle and at an angle from the back of the circular cavity 9 toward the point of the shuttle and out through the delivery eye side of the shuttle body, a central transverse hole 12 forming the delivery eye of the shuttle and extending inward from the delivery eye side of the shuttle body to the circular cavity 9, a small recess 13 extending upward in the shuttle body from the outer end of the hole 12 and forming the downwardly-extending lip 14 on the delivery eye side of the shuttle body, a horizontal slit 15 extending from the slit 11 to the hole 12 and from the circular recess 9 outward through the delivery eye side of the shuttle body, a metal pin 16 driven vertically upward from the bottom of the shuttle body and intersecting the left side of the transverse hole 12, a metal pin 17 driven upward from the bottom of the shuttle body on a line with and at an angle toward the pin 16 and in a position to intersect the right side of the transverse hole 12 and for the upper end of the pin to extend above the lip 14 and enter the recess 13, and a small transverse hole 18 extending inward from the delivery eye side of the shuttle body centrally through the circular cavity 9 adjacent the bottom of the cavity, otherwise the shuttle body may have the construction of any of the well-known forms of loom shuttles.

The hand threading member *b* is in the form of a solid cylindrical metal plug shorter than the depth of the cavity 9 in the shuttle body *a* and having a cylindrical lower portion 19 adapted to have a driven fit in the cavity 9 in the shuttle body, a flat lower end 20 and a transverse hole 21 corresponding to the transverse hole 18 in the shuttle body *a* and a smaller eccentric cylindrical upper portion 22 having a convex beveled upper

end 23, a transverse hole 24 at the intersection of the portions 19 and 22 and at right angles to the hole 21, a slit 25 extending from the side through into the hole 24 and at an angle from the bottom of the entrance end of the hole to the top at the egress end of the hole, and a semi-circular groove 26 extending vertically from the entrance end of the hole 24 to the beveled upper end 23, as shown in Figs. 6 and 7.

The hand threading member *b* is driven downward into the cavity 9 in the shuttle body *a* in a position to bring the entrance end of the hole 24 on a line with the slit 10 in the shuttle body, with the slit 25 in the threading member toward the back of the shuttle body and with the beveled top 23 a predetermined distance below the top of the shuttle, and secured by driving a pin 27 through the transverse hole 18 in the shuttle body and the transverse hole 21 in the thread member, as shown in Fig. 5. The back edge of the slit 10 in the shuttle body now extends slightly beyond the back edge of the vertical groove 26 in the threading member *b* and toward the delivery eye side of the shuttle, as shown in Figs. 1 and 3. The eccentric upper portion 22 of the threading member on the slit side, with the rear wall of the recess 9, forms a thin semi-circular opening 28 which extends from the top of the threading member downward to the horizontal slit 15 and connects the slit 10 with the slit 11, and the front portion of the threading member bears its entire length on the wall of the cavity 9 adjacent the delivery eye side of the shuttle body, thereby reinforcing and strengthening the weakened portion of the shuttle body formed by the recess 9, the slits 10 and 11, the hole 12 and the slit 15.

In the operation of threading the shuttle the thread *d* is pulled from the bobbin *c* through the slit 10 over the beveled top 23 of the threading member *b* into the slit 11, down through the slit 11 into and back through the slit 15 to the inclined pin 17, where it rides up over the end of the pin through the cavity 13 and into and out through the hole 12 which forms the delivery eye of the shuttle. As the thread is pulled out of the hole 12 the downward pull of the thread will cause the thread to slide down over the beveled end 23 of the threading member *b*, through the semi-circular opening 28 and slit 25 into the transverse hole 24 in the threading member *b*. These movements which are explained at length in detail, are easily and quickly performed in

one continuous movement of the hand, without depressing the thread into the throat of the shuttle. The thread now extends through the throat 8, the slit 10, the transverse hole 24 in the threading member and out through the hole 12, as shown in Fig. 3, the friction of the thread on the threading member *b* and the pins 16 and 17 giving the required tension on the thread. By the pin 17 inclining toward the pin 16 and the lip 14 on the shuttle body extending below the end of the pin, the thread is prevented from working back from the delivery eye of the shuttle, and the slit 10 being off-center toward the delivery eye side of the shuttle, the position of the slit 25 in the threading member and the direction in which the thread unwinds from the bobbin, as indicated by the arrow in Fig. 6, prevent the thread from working out of the threading member after the shuttle is threaded.

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

A loom shuttle, comprising in combination with the delivery end having a longitudinal throat-cavity, a longitudinal passage forming a continuation of said throat, a cylindrical cavity extended from the top to a point below the axis of said bobbin, a transverse delivery eye extending from said cylindrical cavity to the delivery side of said bobbin, a vertical slot extending from a point in said cylindrical cavity opposite said longitudinal passage diagonally toward the delivery side, a horizontal slot intersecting said vertical slot and said delivery eye, and an upwardly extending cavity formed in said horizontal slot adjacent said delivery eye, a pin extending upwardly into said cavity and inclined toward said eye, a block having a cylindrical base seated in said cavity and having a transverse passage whose ends register respectively with said longitudinal passage and the intersection of said vertical and horizontal slots, a slot formed from said transverse passage to a crescent shaped passage formed between said block and said cylindrical cavity and an inclined surface formed on said block for directing a thread into said crescent shaped passage.

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

JOSEPH LACROIX.

Witnesses:

ADA E. HAGERTY,
J. A. MILLER.