J. V. CUNNIFF & C. RAFFERTY.

LOOM SHUTTLE.

APPLICATION FILED OCT. 28, 1908.

939,892. Patented Nov. 9, 1909.

Fig. 1.

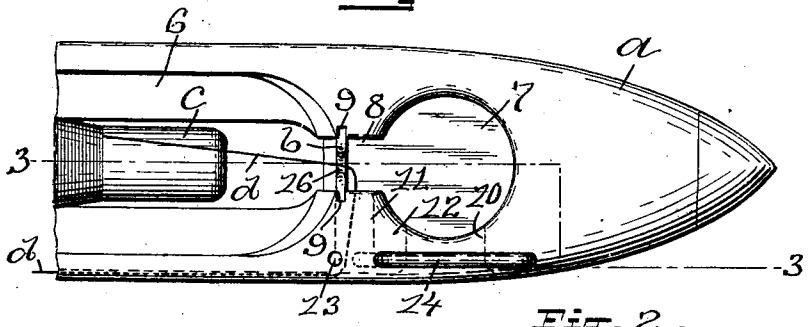


Fig. 2.

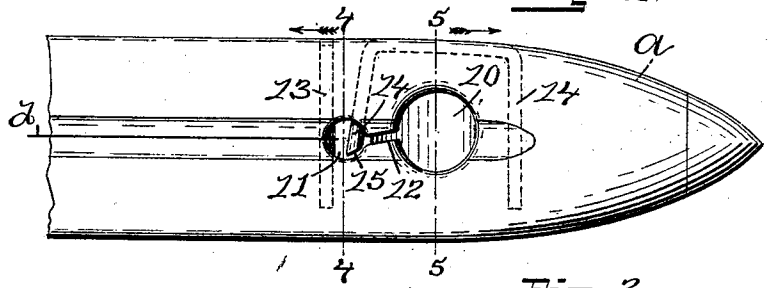


Fig. 3.

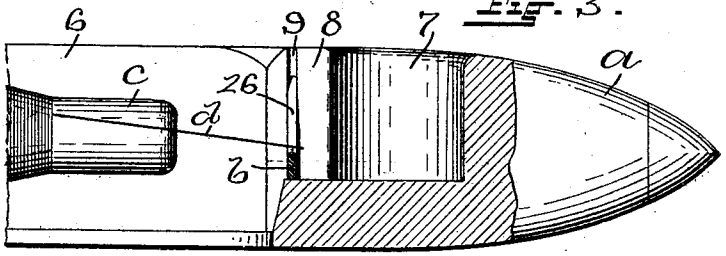


Fig. 4.

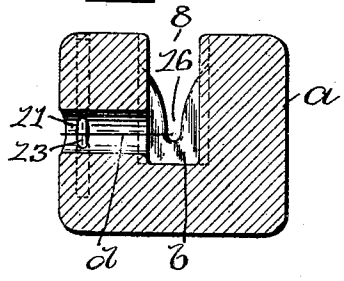
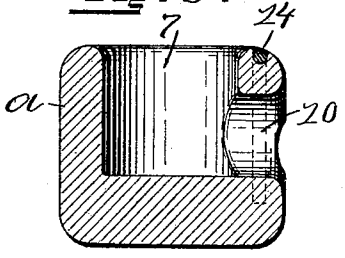


Fig. 5.



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LOOM-SHUTTLE.

939,892. Specification of Letters Patent. Patented Nov. 9, 1909.

Application filed October 28, 1908. Serial No. 459,928.

To all whom it may concern:

Be it known that we, JOHN V. CUNNIFF and CHARLES RAFFERTY, citizens 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.

Hand threading loom shuttles as heretofore constructed usually have one or more slits in the shuttle body which connect with the threading mechanism and delivery eye and extend out through the side and top of the shuttle body, thereby materially weakening the shuttle body, also the edges of the slits are liable to catch on the warp threads in the loom and the slits are soon clogged up with lint or fine fiber, thereby interfering with or preventing the threading of the shuttle.

The object of our invention is to improve the construction of a hand threading loom shuttle, whereby the usual slits in the shuttle body are eliminated and a strouger and more durable hand threading shuttle provided than has heretofore been done.

A further object of our invention is to simplify the operation of threading a loom shuttle by hand.

A still further object of our invention is to reduce the cost of manufacturing hand threading loom shuttles.

Our invention consists in the peculiar and novel construction of a hand threading loom shuttle having details of construction, as will be more fully set forth hereinafter and claimed.

Figure 1 is a top plan view of the delivery end of a loom shuttle constructed with our improved hand threading mechanism. Fig. 2 is a side view looking at the delivery eye side of the shuttle. Fig. 3 is a longitudinal sectional view through the delivery end of the shuttle taken on line 3 3 of Fig. 1. Fig. 4 is a transverse sectional view taken on line 4 4 of Fig. 2 through the delivery eye, and Fig. 5 is a transverse sectional view taken on line 5 5 of Fig. 2 through the threading cavity and opening in the shuttle body.

In the drawings, *a* indicates the delivery eye end of a loom shuttle body, *b* the hand threading plate, *c* the nose end of a bobbin, and *d* the thread leading from the bobbin through the threading mechanism out through the delivery eye of the shuttle.

The shuttle body *a* has the bobbin cavity 6, a comparatively large circular threading cavity 7 extending centrally from the top of the shuttle body adjacent the bobbin cavity 6 downward to a point below the center line of the shuttle, a central longitudinal opening 8 connecting the bobbin cavity 6 with the circular threading cavity 7 and extending upward from the bottom of the threading cavity 7 through the top of the shuttle body, two oppositely-disposed vertical grooves 9 9 in the side walls of the opening 8, a circular opening 10 extending centrally from the threading cavity 7 outward through the delivery eye side of the shuttle body, a round transverse hole 11 extending from the opening 8 outward through the side of the shuttle body and forming the delivery eye of the shuttle, a downwardly inclined slot 12 connecting the circular opening 10 with the round hole 11 and extending from the threading cavity 7 out through the delivery eye side of the shuttle body, a metal pin 13 driven downward from the top of the shuttle body and intersecting the left side of the transverse hole 11, and an inverted U-shaped wire 14 having a beveled end 15 driven downward into the shuttle body in a position for the beveled end 15 to enter the transverse hole 11 at the right and extend at an angle relative to the pin 13 below the slit 12 and for the wire as a whole to straddle the opening 10 and lie flush with the top of the shuttle body, as shown in Figs. 1, 2 and 5, thereby reinforcing and strengthening the shuttle body at this point, otherwise the shuttle body may have the construction of any of the well known forms of loom shuttles.

The thread plate *b* is rectangular in shape, and has a central V-shaped notch 16 which extends downward from the top of the plate approximately three-quarters the length of the plate. This thread plate is driven downward in the grooves 9 9 in the opening 8, as shown in Figs. 1, 3 and 4, in a position to bring the lower edge of the notch 16 slightly below the center line of the shuttle.

In the operation of threading the shuttle the thread *d* is pulled from the bobbin *c* through the opening 8 in the shuttle body and the V-shaped notch 16 in the thread plate and the thread gathered together or

snarled to form a bunch which is now pushed into the threading cavity 7 and out through the opening 10 in the side of the shuttle. The thread is now pulled from the opening 10 through the slot 12 and under the beveled end 15 of the wire 14 into the hole 11 or delivery eye. These movements which are explained at length in detail are easily and quickly performed in one continuous movement of the hand. The thread now extends from the bobbin through the bobbin cavity 6, the opening 8, the notch 16 in the threading plate *b* and out through the hole 11 or delivery eye, as shown in Figs. 1, 2 and 4, the friction of the threading member *b*, the pin 13, and the wire 14 on the thread giving the required tension on the thread. By the beveled end 15 of the wire 14 inclining downward toward the pin 13 in the hole 11 below the line of pull on the thread and the wire 14 inclining upward away from the wire 13, the thread is prevented from working back from the hole 11 forming the delivery eye of the shuttle.

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

1. A shuttle, comprising a body having a bobbin cavity, a threading cavity entered into said body adjacent said bobbin cavity at the delivery end thereof to a depth substantially below the axis of said shuttle, an axial passage joining said bobbin cavity and said threading cavity, a second passage connecting said threading cavity with the delivery side of the shuttle, a delivery eye extending substantially parallel to and lying adjacent to said second passage and means located between said second passage and delivery eye whereby the thread may be automatically carried into said eye but is prevented from falling back therefrom.

2. A shuttle, comprising a body having a bobbin cavity, a threading cavity entered into said body adjacent said bobbin cavity at the delivery end thereof to a depth substantially below the axis of said shuttle, an axial passage joining said bobbin cavity and said threading cavity, a second passage connecting said threading cavity with the delivery side of the shuttle, a delivery eye extending substantially parallel to and lying adjacent to said second passage, a downwardly and rearwardly inclined slot connecting said second passage and said delivery eye, an an inclined pin entering said eye near the upper wall of said slot and inclined away therefrom, whereby a thread will automatically proceed from said passage to said eye, but may not return.

3. A shuttle, comprising a body having a bobbin cavity, a threading cavity entered into said body adjacent said bobbin cavity at the delivery end thereof to a depth substantially below the axis of said shuttle, an axial passage joining said bobbin cavity and said threading cavity, a second passage connecting said threading cavity with the delivery side of the shuttle, a delivery eye extending substantially parallel to and lying adjacent to said second passage, a downwardly and rearwardly inclined slot connecting said second passage and said delivery eye, and an inclined pin entering said eye near the upper wall of said slot and inclined away therefrom, whereby a thread will automatically proceed from said passage to said eye, but may not return, said pin continuing internally of said shuttle body to substantially inclose said second passage whereby to strengthen the structure.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN V. CUNNIFF.
CHARLES RAFFERTY.

Witnesses:
ADA E. HAGERTY,
J. A. MILLER.