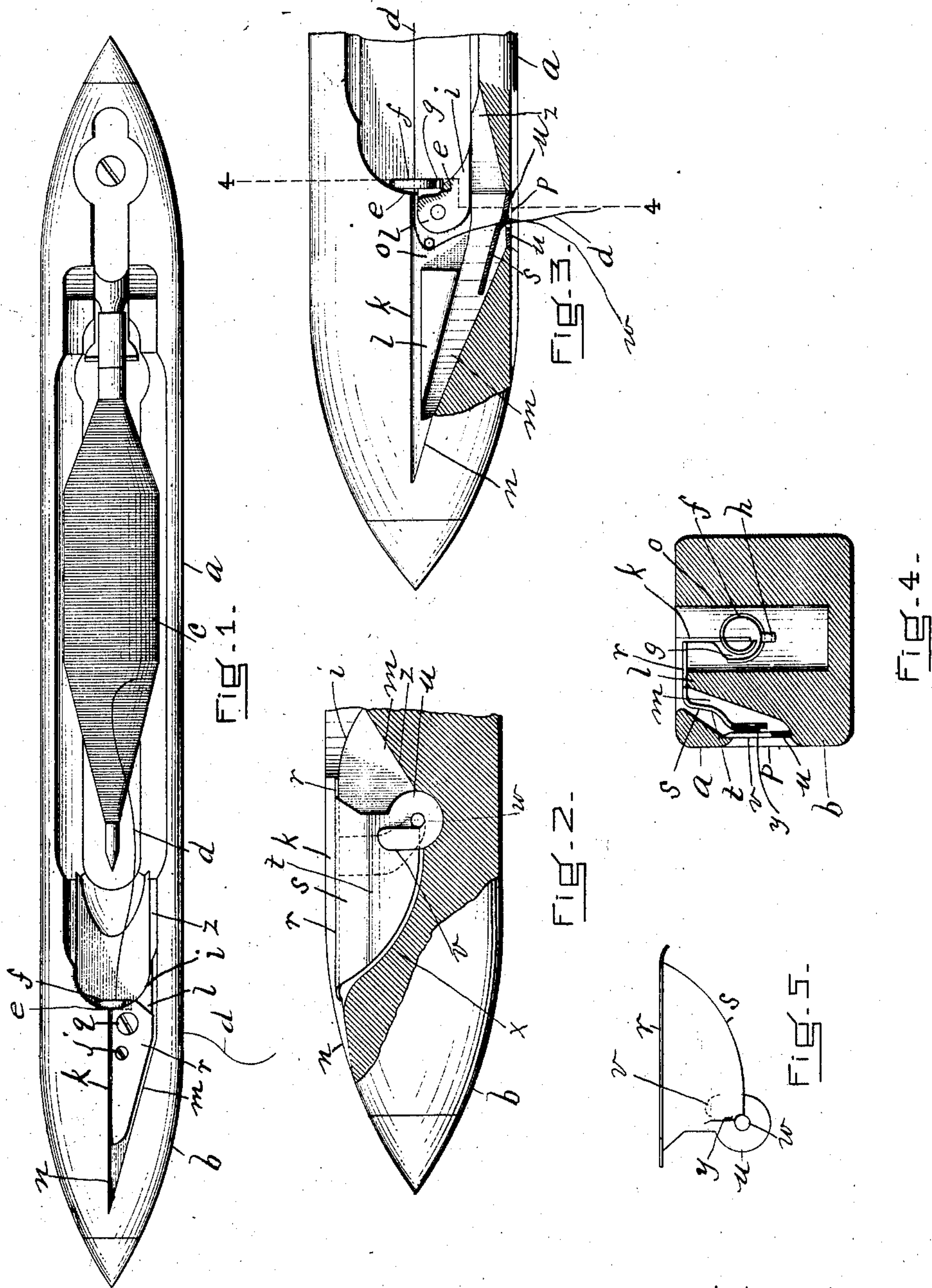


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SHUTTLE FOR LOOMS.  
APPLICATION FILED JAN. 27, 1909.

928,077.

Patented July 13, 1909.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

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## SHUTTLE FOR LOOMS.

No. 928,077.

Specification of Letters Patent.

Patented July 13, 1909.

Application filed January 27, 1909. Serial No. 474,360.

*To all whom it may concern:*

Be it known that I, ISAAC SNOW, a citizen of the United States, residing in Lawrence, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Shuttles for Looms, of which the following is a specification.

This invention relates to shuttles provided with threading-devices making a part thereof, and consists in a construction by means of which the thread is guided to the thread-hole or eye without the employment of a slot or slit in the wall of the shuttle connecting with said eye, guarded from unthreading, looping up, "floating", breaking, and getting out of place, kept down on its way through the passage leading to the eye, and the necessity for blowing the thread in order to place it into and through the eye is obviated.

The nature of the invention is fully described in detail below, and illustrated in the accompanying drawings, in which:—

Figure 1 is a plan view of a shuttle embodying my invention, the thread being in position and extending through the wall thereof. Fig. 2 is an enlarged detail, partly in longitudinal vertical section and partly in elevation of the head of the shuttle, showing the location and shape of my improved plate. Fig. 3 is an enlarged view partly in plan and partly in horizontal section of the same. Fig. 4 is a vertical section taken on line 4—4, Fig. 3. Fig. 5 is a rear elevation of the plate removed.

Similar letters of reference indicate corresponding parts.

*a* represents the front wall and *b* the head of a shuttle embodying and provided with my invention, *c* is the bobbin sustained by a suitable spindle and *d* the thread extending from said bobbin, the position of said thread while it is passing from the bobbin to and through the eye being illustrated in Figs. 1 and 3.

Secured in a slight recess *e* in the inner end of the head *b* is an open ring or coil *f*, the passage *g* in said ring or coil being illustrated in Figs. 3 and 4. This ring may be secured in any desired manner, the means illustrated consisting of an integral spike *h* which is driven horizontally into said end at the recessed portion *e*. Connecting with this recess is a deep vertical passage *k* longitudinal with the shuttle, which extends be-

tween the head of the shuttle and the vertical wall *l* substantially V-shaped in vertical section (Fig. 4) and tapering toward its outer end, said wall being integral with the head of the shuttle and extending up therefrom, and connecting with the wall *a* of the shuttle by the neck portion *i*. This wall *l* separates the longitudinal rear passage *k* from a vertical passage *m* which extends in front of said wall, and the passages *k* and *m* have inclined bottoms which extend upward to and meet at a tapered groove *n* longitudinal with the shuttle and extending from the converging passages toward the extreme end of the shuttle—said tapered groove also having an inclined bottom (Figs. 2 and 3). The two passages *l* and *m* are connected by a horizontal cross passage *o*, open at its upper end, and the passage *m* is furthermore connected by a horizontal hole *p* with the outside of the shuttle, said hole extending through the front wall *a* and opening into said passage *m*. It will be noticed by reference to Figs. 2 and 3 that the bottom portion *q* of the passage *m* inclines or curves downward and rearward to the hole *p*, and from the other or rear side of said hole its bottom *r* inclines upward and connects with the interior of the shuttle.

Screwed at *q* to the upper end of the wall *l* and at *j* to the bottom of the cross passage *o* is a plate which comprises the horizontal tapered top *r* which rests on the top of the partition wall *l*, a side wall *s* extending down centrally at a general angle in the passage *m* and provided with a horizontal groove *t* on its outer surface formed by bending said portion *s* inward, and an extension at its lower end which consists of a tongue *u* whose outer edge is circular and whose inner edge is concentric with the outer edge, the extreme end of said tongue being formed up into a vertical guide *v* preferably beveled at its upper end, see Figs. 2 and 4—Fig. 4 showing the bevel. This tongue thus produces a thread-hole or eye *w* and when the plate is in position the tongue portion with its central eye is in or next the hole *p*, or, more strictly speaking, is at the point where said hole joins the passage *m*. Just opposite the inner edge of the extension or guide-portion *v* of the tongue the portion *s* of the plate is formed into a distinct shoulder *y*, as illustrated particularly in Figs. 4 and 5.



To thread the shuttle, the thread is first drawn through the open ring or coil *f* and then along the passage *k* between the walls thereof and the adjacent edge of the top *r* and beyond said edge along the connecting groove *n*. It is then drawn back under the left outer end or tip of said portion *r* and into the passage *m* between the outer wall of said passage and the side wall *s* of the plate and along the groove *t* on the outer surface of said side wall *s*, the pull being of course inward or toward the bobbin. As the pull on the thread is continued it is drawn or falls down into the cross passage *o* and behind the beveled upper end of the guide *v*, and is drawn down between the tongue *u* and the portion *s* and under the shoulder *y* into and through the thread-hole or eye *w* and thence along and across the outer side of the tongue *u* up the inclined bottom *z* of the inner end of the passage *m* into the shuttle. The portion of the thread which is thus brought into sight through the hole *p* on the outer surface of the tongue *u* is then grasped without difficulty and without any necessity of blowing, and as much of the thread as desired may be drawn out through the eye *w*. Thus the thread is effectually guided and guarded from unthreading, prevented from looping up or "floating," and kept down on its way through the passages leading to the eye, and is grasped without any necessity for blowing it into an accessible position.

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

1. In a shuttle of the character described, a shuttle-head provided with two deep passages approximately longitudinal with the shuttle and connecting at their rear ends with the interior of the shuttle, and with a hole extending from the outer of the two passages through the wall of the shuttle; and a plate comprising a horizontal portion located over the part of the shuttle-head which is between the passages, a side portion extending down into the passage which connects with said hole, and a loop-shaped tongue extending from the side portion next said hole in the wall of the shuttle and provided with an upwardly extending guide whereby the thread is conducted to the thread-hole in the tongue.

2. In a shuttle of the character described, a shuttle-head provided with two deep passages approximately longitudinal with the shuttle and connecting at their rear ends with the interior of the shuttle; and with a hole extending from the outer of the two passages through the wall of the shuttle, said shuttle-head being provided with a groove connecting with the outer ends of said passages; and a plate comprising a horizontal portion located over the part

of the shuttle-head which is between the passages, a side portion extending down into the passage which connects with said hole, and a loop-shaped tongue extending from the side portion next said hole in the wall of the shuttle and provided with an upwardly extending guide whereby the thread is conducted to the thread-hole in the tongue.

3. In a shuttle of the character described, a shuttle-head provided with two deep passages approximately longitudinal with the shuttle and connecting at their rear ends with the interior of the shuttle, and with a hole extending from the outer of the two passages through the wall of the shuttle, said shuttle-head being provided with a transverse passage connecting said two passages; and a plate comprising a horizontal portion located over the part of the shuttle-head which is between the passages, a side portion extending down into the passage which connects with said hole, and a loop-shaped tongue extending from the side portion next said hole in the wall of the shuttle and provided with an upwardly extending guide whereby the thread is conducted to the thread-hole in the tongue.

4. In a shuttle of the character described, a shuttle-head provided with two deep passages approximately longitudinal with the shuttle and connecting at their rear ends with the interior of the shuttle, and with a hole extending from the outer of the two passages through the wall of the shuttle, the passage next said hole being provided with a bottom which extends upward on an incline from the hole to the interior of the shuttle; and a plate comprising a horizontal portion located over the part of the shuttle-head which is between the passages, a side portion extending down into the passage which connects with said hole, and a loop-shaped tongue extending from the side portion next said hole in the wall of the shuttle and provided with an upwardly extending guide whereby the thread is conducted to the thread-hole in the tongue.

5. In a shuttle of the character described, a shuttle-head provided with two deep passages approximately longitudinal with the shuttle and connecting at their rear ends with the interior of the shuttle, and with a hole extending from the outer of the two passages through the wall of the shuttle; an open ring at the entrance of the rear one of the two passages adapted to receive the thread between two of its coils; and a plate comprising a horizontal portion located over the part of the shuttle-head which is between the passages, a side portion extending down into the passage which connects with said hole, and a loop-shaped tongue extending from the side portion next said hole in the wall of the shuttle and provided with an upwardly extending guide whereby the



thread is conducted to the thread-hole in the tongue.

6. In a shuttle of the character described, a shuttle-head provided with two deep passages approximately longitudinal with the shuttle and connecting at their rear ends with the interior of the shuttle, and with a hole extending from the outer of the two passages through the wall of the shuttle; and a plate comprising a horizontal portion located over the part of the shuttle-head which is between the passages, a side portion extending down into the passage which connects with said hole provided with a substantially horizontal guiding-groove on its outer surface, and a loop-shaped tongue extending from the side portion next said hole in the wall of the shuttle and provided with an upwardly extending guide whereby the thread is conducted to the thread-hole in the tongue.

7. In a shuttle of the character described, a shuttle-head provided with two deep passages approximately longitudinal with the

shuttle and connecting at their rear ends with the interior of the shuttle, and with a hole extending from the outer of the two passages through the wall of the shuttle; and a plate comprising a horizontal portion located over the part of the shuttle-head which is between the passages, a side portion extending down into the passage which connects with said hole provided with a substantially horizontal guiding-groove on its outer surface and with a shoulder below said groove, and a loop-shaped tongue extending from the side portion next said hole in the wall of the shuttle and provided with an upwardly extending guide whereby the thread is conducted to the thread-hole in the tongue.

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

ISAAC SNOW.

Witnesses:

HENRY W. WILLIAMS,  
M. A. ATWOOD.