P. FERRARI.

LOOM SHUTTLE.

APPLICATION FILED JAN. 12, 1915.

1,151,517. Patented Aug. 24, 1915.

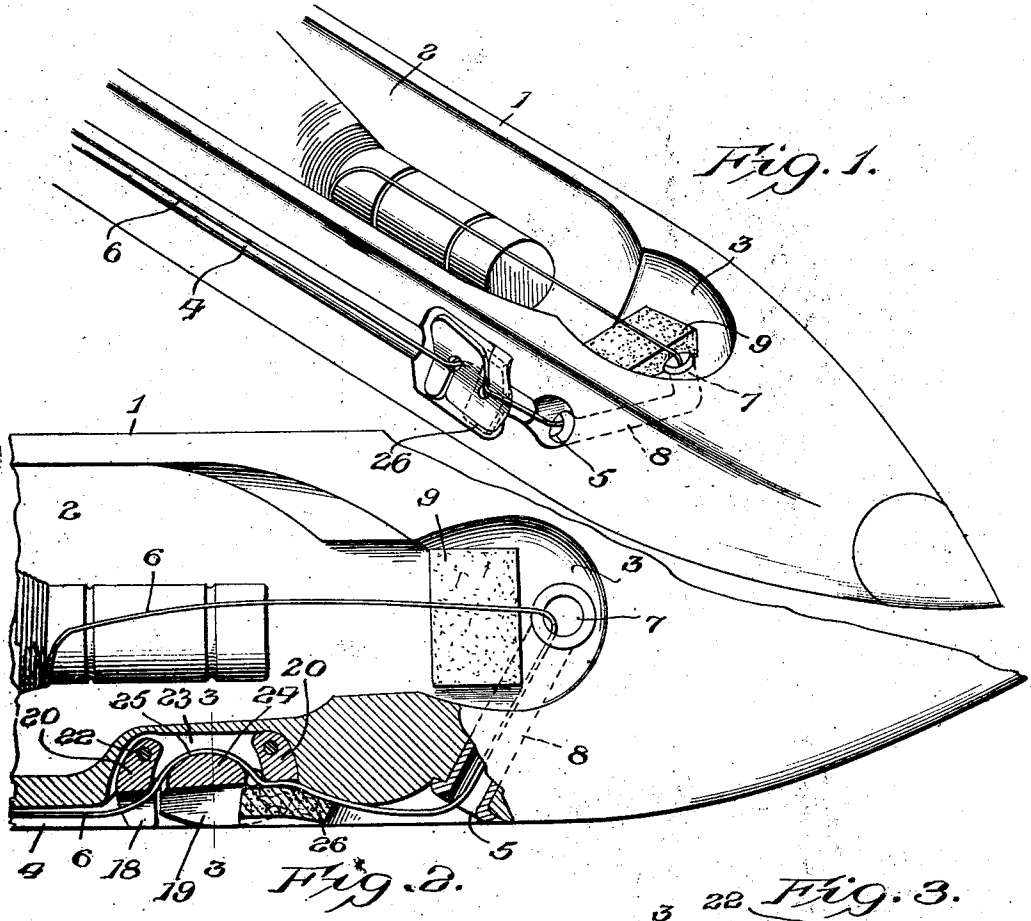


Fig. 1.

Fig. 2.

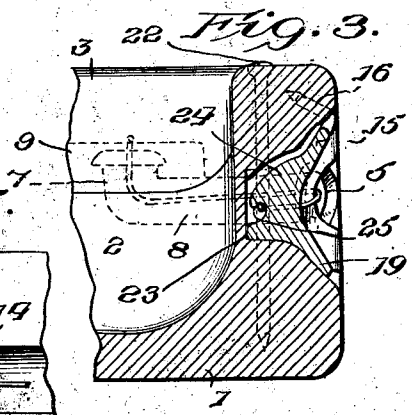


Fig. 3.

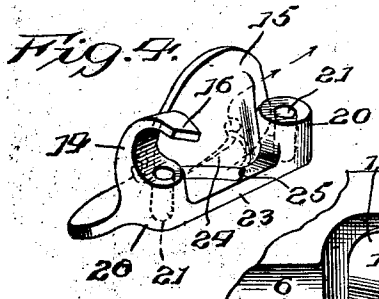


Fig. 4.

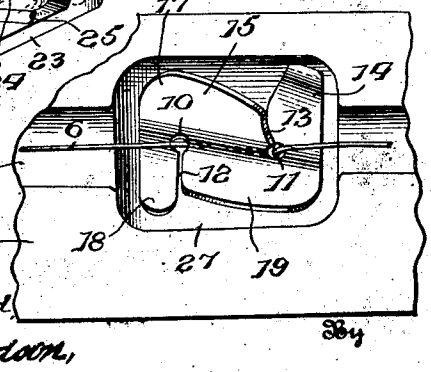


Fig. 5.

Witnesses

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LOOM-SHUTTLE.

1,151,517. Specification of Letters Patent. Patented Aug. 24, 1915.

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To all whom it may concern:

Be it known that I, PASQUINO FERRARI, a subject of the King of Italy, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Loom-Shuttles, of which the following is a specification.

The invention relates to loom or weavers' shuttles being intended chiefly for shuttles containing a bobbin upon which a thread of wool is wound, the purpose being to preserve a proper tension upon such thread, whereby it is caused to feed uniformly, thereby resulting in the formation of a smooth cloth which is free from knots or uneven places.

A further purpose of the invention is the provision of a thread tensioning device embodying a plurality of eyes and thread engaging elements, said device being of peculiar form to admit of the quick threading thereof without requiring the use of a hook or the resorting to suction for drawing the thread through the eyes.

The invention also has for its object to provide a device which may be readily applied to any make of loom shuttle and which when in position may be positively secured so as to prevent casual displacement or movement of the device which would impair its efficiency.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly claimed.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the invention as claimed may be resorted to when desired.

Referring to the drawings, Figure 1 is a perspective view of an end portion of a loom shuttle provided with a thread tensioning device embodying the invention. Fig. 2 is a top plan view of the threading end of the shuttle on a larger scale, parts being broken away to show more clearly the relation of the component elements. Fig. 3 is a sectional detail on the line 3—3 of Fig. 2. Fig. 4 is a perspective view of the device. Fig. 5 is a side view of a portion of the shuttle showing the device in elevation.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The shuttle 1 may be of any form, such as used in looms for weaving and is provided with the bobbin recess 2 and threading recess 3. The usual thread groove 4 extends along one side of the shuttle body and communicates at its front end with the eye 5 through which the thread 6 passes. The eye 5 constitutes the delivery end of a thread passage comprising a vertical portion 7 and a laterally inclined portion 8. The vertical portion 7 of the thread passage extends through the bottom of the threading recess 3. The portion 8 of the thread passage extends transversely and obliquely, as illustrated most clearly in Fig. 2. A tensioning element 9 is located upon the bottom of the threading recess 3 and consists of a piece of felt, textile or like material which will offer a resistance to the passage of the thread thereover when under tension.

The tensioning device is disposed upon the side of the shuttle provided with the thread groove 4 and is fitted within a suitable recess formed in the side portion of the shuttle in such a manner as to prevent projecting parts which would have a tendency to interfere with the operation of the shuttle. A tensioning device is preferably constructed of metal, although any suitable material may be employed, and such device may be cast or constructed in any manner found most advantageous. In its general formation the device comprises a face portion and a back, the face portion embodying oppositely inclined wings. Eyes 10 and 11 are formed in the device in position to aline with the thread groove 4 and with the median line from which the wings comprising the face portion of the device incline. Slits 12 and 13 extend from the eyes 10 and 11 in opposite directions and constitute passages for the thread when threading the shuttle. The upper wing of the device comprises a tongue 14 and a part 15, the tongue 14 projecting and terminating in a spur 16 which is adapted to be driven into the shuttle so as to assist materially in holding the device in place. The upper edge of the part 15 in-

clines toward the slit 13, thereby forming a protuberant portion 17 which is adapted to readily engage the thread when placing the same in position. The upper portion 15 is spaced from the shuttle a short distance to provide a passage for the thread. The tongue 14 fits close against the shuttle. The lower wing of the face portion of the tensioning device comprises a beak 18 and a part 19. The lower edge of the part 19 inclines toward the slit 12 so as to direct the thread into the slit 12. The inclined edges of the parts 15 and 19 constitute directing edges to guide the thread into the respective slits or passages 13 and 12. The part 19 fits close against the shuttle whereas the beak 18 is spaced from the shuttle a short distance to admit of the thread passing in the rear thereof. Projections 20 are formed upon the rear side of the device and are spaced apart longitudinally. These projections 20 have openings 21 formed vertically therein to receive pins or fastenings 22 by means of which the device is made secure when placed in position. A web 23 extending rearward from the face portion of the device connects the lower ends of the projections 20. A tapered projection 24 is formed upon the rear of the part 15 of the upper wing and is disposed between the projections 20. The lower end of the tapered projection 24 approaches close to the web 23 and overhangs such web. The lower end of the projection 24 is made rounding and overhangs a reduced portion 25 which is narrow and is disposed between the eyes 10 and 11 and is curved rearwardly, as indicated most clearly in Fig. 2, so as to deflect the thread between the eyes 10 and 11. The overhanging portion of the projection 24 is undercut, as indicated most clearly in Fig. 3, thereby retaining the thread in proper position. The projections 20 and the web 23 fit snugly within the side recess formed in the shuttle to receive the tensioning device. As indicated most clearly in Fig. 2 the wall of the shuttle adjacent the threading recess 3 is thickened and such thickened portion is recessed in its outer side to receive the tensioning device, the latter being retained in place by means of the pins 22 and the spur 16.

A shuttle provided with a tensioning device embodying the invention when properly threaded has the thread passing in front of the tongue 14 thence through the eye 11 back of the part 15 around the longitudinally curved portion 25 of the projection 24 and beneath the overhanging portion of such projection, thence out through the eye 10 and over the end in front of the beak 18, as indicated most clearly in Fig. 2. The thread is deflected around the rearwardly curved portion 25 of the part 24 and is thereby subjected to tension. The thread 6 is passed through the eye of the shuttle in any well known manner and is passed in front of the tongue 14 and in the rear of the part 15 and is drawn downward through the passage 13 into the eye 11 after which the thread is drawn upward through the passage 12 into the eye 10 thence in front of the beak 18. The taper of the projection 24 is such as to insure the ready passage of the thread thereover when drawn downward and when the thread reaches the reduced part 25 is retained in place by the overhanging portion of the part 24 and more particularly by the undercut edge of such overhanging part.

A piece of felt 26 is located opposite the tongue 14 and at the juncture of the recess receiving the tensioning device and the thread groove 4. This piece of felt 26 serves to keep the thread clean and to remove any beards or projecting parts. While it is preferred to use felt in providing the part 26 it is to be understood that textile or other like material may be advantageously employed.

It will be understood from the foregoing taken in connection with the accompanying drawing that the invention provides in effect a plurality of threading eyes for a loom or weaver's shuttle since in addition to the usual eye 5 the device provides other eyes 10 and 11. These supplemental eyes 10 and 11 are adapted to be quickly threaded, it being necessary only to pass the thread back of the part 15 and up in front of the beak 18, such movement causing the thread to pass through the passages 13 and 12 into the eyes 11 and 10. It is also noted that the recess 27 provided for receiving the tensioning device is of such shape as to accommodate the various parts of the device and yet prevent any portion of the device projecting so as to interfere with the movements of the shuttle when in operation.

Having thus described the invention what is claimed as new is:—

1. A loom shuttle provided with the usual threading eye and side thread groove, a tensioning device disposed in line with the thread groove near the eye and located in a recess formed in the shuttle and comprising a plurality of eyes and passages leading from such eyes in opposite directions through the edges of the device.

2. A loom shuttle having a recess in the outer wall of the side formed with the thread groove and in line therewith, and a tensioning device disposed upon the outside of the shuttle in such recess and formed with a plurality of eyes and passages leading from such eyes through opposite edges of the device.

3. In a loom shuttle, a device fitted to a side thereof and comprising a tongue and a beak disposed at diagonally opposite points and formed with eyes at the inner ends of the tongue and beak and having thread passages at the inner edges of the

tongue and beak, respectively leading to such eyes.

4. In a loom shuttle, a device applied to a side thereof and having its face portion comprising oppositely inclined wings and having a plurality of eyes in line with the juncture of such wings and formed with thread passages leading in opposite directions from the eyes, such device embodying a beak and a tongue disposed at diagonally opposite points.

5. In a loom shuttle, a device applied to a side thereof and formed with two eyes which are longitudinally spaced and in line with the thread groove of the shuttle and having thread passages extending in opposite directions from the eyes, said device having a tongue at one end and a beak at the opposite end, such tongue and beak facing in opposite directions and projecting beyond the adjacent edge portions of the device, such edge portions sloping inward to the thread passages to direct the thread therein when threading the shuttle.

6. In a loom shuttle, a device applied to a side thereof and formed with two eyes and having a tongue at one end with its extremity bent and forming a spur to enter the shuttle and having a beak at its opposite end, such device having thread passages at the inner edges of the beak and tongue leading into the eyes.

7. In a loom shuttle, a device applied to a side thereof and formed with longitudinally spaced eyes and having thread passages leading from such eyes in opposite directions, such device having a tapered projection upon its rear side intermediate the eyes and thread passages.

8. In a loom shuttle, a device applied to a side thereof and formed with longitudinally spaced eyes and having thread passages leading from such eyes in opposite directions, such device having a tapered projection upon its rear side intermediate the eyes and thread passages, such tapered projection being reduced at its lower end about in line with the eyes and having such reduced portion made rounding.

9. In a loom shuttle, a device applied to a side thereof and formed with longitudinally spaced eyes and having thread passages leading from such eyes in opposite directions, such device having a tapered projection upon its rear side intermediate the eyes and thread passages, such tapered projection being reduced at its lower end about in line with the eyes and having such reduced portion made rounding and such tapered projection having the part overhanging the reduced portion undercut.

10. In a loom shuttle, a device disposed in a recess formed in the side thereof, such device having a plurality of eyes and passages leading from such eyes in opposite directions, the device having projections upon its rear side exterior to the eyes and thread passages, said rear projections having openings, and fastenings passing through openings formed in the shuttle and through the openings in the rear projections of the device.

11. A loom shuttle having a side recess, a device disposed in such recess and formed with threading eyes and oppositely extending thread passages, said device being formed upon its rear side with apertured projections and a web connecting such projections, and fastenings passing through openings of the shuttle and openings formed in the projections of the device.

12. A device to be applied to a loom shuttle, the same consisting of a body having threading eyes and oppositely extending passages and formed upon its rear side with apertured projections exterior to the thread passages, a web connecting the lower ends of such rear projections, and formed with a tapered projection intermediate the thread passages, such tapered projection being reduced adjacent the web and having such reduced portion outwardly curved between the eyes of the device.

13. A loom shuttle having a threading eye leading from the bobbin recess through a side of the shuttle and having a plurality of eyes disposed upon the outerside of the shuttle adjacent the delivery eye, such supplemental eyes being separated by oppositely extending thread passages wholly exterior to the shuttle.

14. A loom shuttle having a delivery eye and a thread groove and provided upon its exterior in line with the thread groove and adjacent the delivery eye with a plurality of supplemental eyes spaced by oppositely extending thread passages, and a piece of material disposed upon the shuttle intermediate the delivery eye and the first eye of the series of supplemental eyes to engage the thread.

In testimony whereof I affix my signature in presence of two witnesses.

PASQUINO FERRARI. [L. S.]

Witnesses:
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