March 23, 1943. E. E. TALBOT 2,314,669

SHUTTLE

Filed Oct. 16, 1941

Fig. 1.

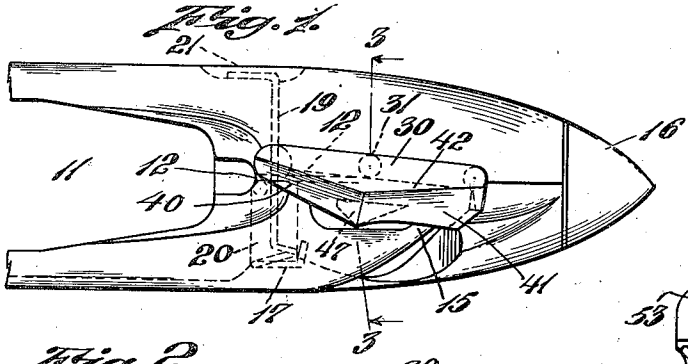


Fig. 2.

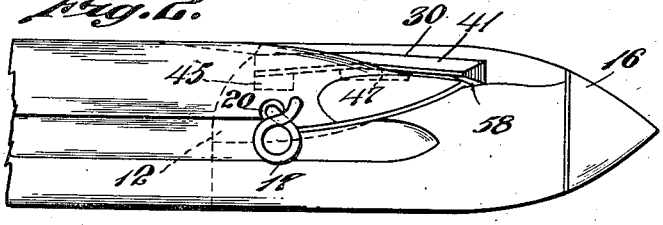


Fig. 3.

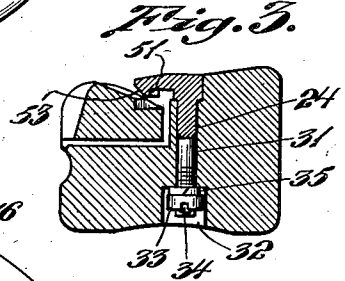


Fig. 4

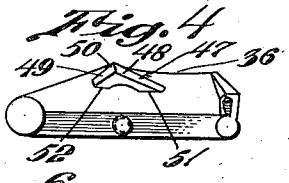


Fig. 5.

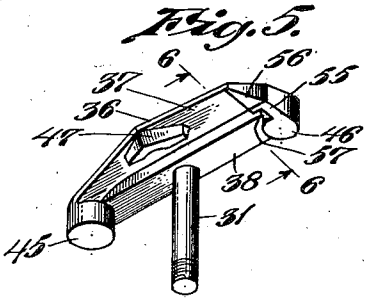


Fig. 6.



Fig. 8.

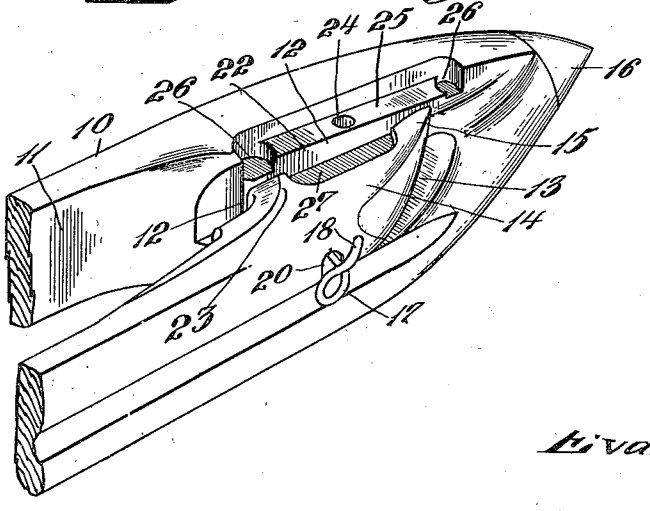
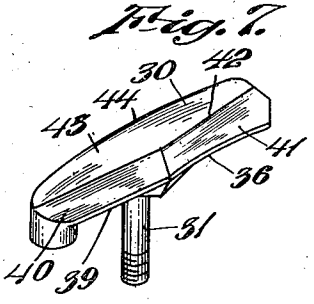


Fig. 7.



INVENTOR
Livariste E. Talbot
BY Parlow & Parlow
ATTORNEYS

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UNITED STATES PATENT OFFICE

2,314,669

SHUTTLE

Evariste E. Talbot, Fall River, Mass.

Application October 16, 1941, Serial No. 415,244

5 Claims. (Cl. 139—223)

This invention relates to a shuttle of the automatic threading type designed primarily for use in automatic weft replenishing looms and is an improvement on the construction of loom shuttle shown in Patent No. 2,220,812 of which I am one of the joint inventors and patentees.

One of the objects of this invention is to provide a shuttle having a plate carrying a guard, which guard will permit quicker threading of the shuttle and will be more effective in preventing unthreading of the shuttle as the threading occurs.

Another object of the invention is to provide a more positive threading of the shuttle.

Another object of the invention is to provide an arrangement to prevent unthreading of the shuttle by means of a simple recess in a part carried by the guard plate.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawing:

Fig. 1 is a top plan view of the forward end of a shuttle equipped with my invention.

Fig. 2 is a side elevation of the forward end.

Fig. 3 is a section on line 3—3 of Fig. 1.

Fig. 4 is a bottom plan view of guard plate.

Fig. 5 is a perspective view looking on the under side of guard plate.

Fig. 6 is a section on line 6—6 of Fig. 5.

Fig. 7 is a perspective view of the guard plate looking from top side thereof.

Fig. 8 is a perspective view of the forward end of the shuttle with the guard plate omitted and showing grooves and recesses formed in the shuttle.

In the use of the invention as shown in prior Patent No. 2,220,812 above referred to I find frequently that the yarn does not quickly enter into the threading groove by reason of the guard carried on the under side of the plate and in order to cause this yarn to enter more quickly I have changed the shape of this guard on the under side of the plate to taper the same to form a small point flaring from the edge, something after the shape of a wedge, by which arrangement the thread will enter beneath the plate much more quickly. Further, I have found that by notching a rib in the forward end of the plate the yarn is trapped and will therefore not become unthreaded as quickly as if there were no such notch provided similar to the case of the prior patent referred to.

With reference to the drawing in detail, 10 designates generally a shuttle formed of wood, or any suitable material with a bobbin chamber 11 with a threading groove 12 extending forwardly from this bobbin chamber which threading groove communicates with a lateral slot 13 beneath the portion 14 of the shuttle forming a tip 15 which may be referred to as a "nose piece" although this "nose piece" is distinct from the nose 16 at the forward end of the shuttle. A delivery eye 17 is provided at the lower outer end of the slot 13 and consists of a coiled wire of hardened material one end 18 of which extends into the nose piece portion 14 and the other end portion 19 of which extends laterally across the shuttle through opening 20 with its end bent into a recess 21 on the opposite outer side wall of the shuttle. This portion 19 is spaced from the opening 20 through the shuttle so that when yarn extends under the nose 15 and is moved down the slot 13 beneath portion 14 it will slide up and over the wire portion 19 of this wire guard and into the loop 17 to become threaded in a known manner.

As seen in Fig. 8 the side walls 22 and 23 of slot 12 are recessed, there being a recess 27 in wall 23 and a recess 25 in wall 22 with a hole 24 extending therefrom through the shuttle. The recess designated generally 25 is also provided with deeper portions 26 at the opposite ends thereof.

The guard plate as shown in perspective in Fig. 5 and Fig. 7 consists of a plate 30 having an integral post 31 extending downwardly from the under side thereof. This post 31 extends through the hole 24 terminating in a recess 32 in the bottom wall of the shuttle which recess receives a nut 33 threaded on to the post 31. Slots 34 in the nut receive a spanner wrench, while a lock washer 35 is positioned between the nut and the bottom of the recess 32 for obtaining tension on the nut 33.

This opening 24 is located on one side of the slot and the plate extends from this side wall 12 across and in overlapping relation with opposite side wall of the slot. This overlapping edge 36 of the plate is entirely free and is cut away as at 37 so as to be thinner than the more sturdy portion 38 of the plate. This free edge 36 of the plate is also tapered as at 39 (see Fig. 1) and is beveled as at 40 and 41 (see Fig. 7) from a mid portion 42 while it is beveled as at 43 toward the opposite secured edge 44 of the plate. In order to prevent the plate from movement about the post 31 enlarged portions 45 and 46 (see Fig. 5) at either end of the plate fit into the recesses 26 in opposite ends of recess 25 as seen in Fig. 8.

The thin free edge portion of the plate extends clear of and overlaps the stock of the shuttle beneath it so that a thread may be drawn beneath it. On the under side of this overlapping portion there extends downwardly a guard designated generally **47** which is generally in the form of a V as can be seen in the bottom plan view in Fig. 4. This V has arms **48** and **49** which flare from each other from the point **50** which point is located adjacent to or at the free edge **36** of the plate. These arms terminate in abutments **51** and **52** which may be spaced as illustrated or may be of one continuous length and which are substantially straight downwardly or parallel to the post **31** as illustrated in Fig. 3 and form a surface or surfaces to catch the thread should it tend to move out from beneath the plate. The arms **48** and **49** are also inclined as at **53** (Fig. 3) as they progress from the plate downwardly.

This entire guard member **47** is located in recess **27** and is spaced from the side walls of this recess so that a thread may pass downwardly along the inclined surfaces **53** and lodge back of the surfaces **51** or **52** so that the yarn in ballooning cannot move from beneath the plate once it has been threaded in under the same.

A rib **55** extends laterally across the forward edge of the plate and is tapered as at **56** towards the entrance edge **36** of the plate while the notch **57** is provided in this rib in substantially the path of draw of the yarn on the first pick of the shuttle and which notch provides opposite edges to catch the yarn should it tend to move laterally from beneath the plate and to retard any tendency of the yarn at this location to move from beneath the plate by reason of ballooning.

This rib is located in spaced relation to the surface of the shuttle beneath the same as at **58** so as to provide room for the yarn to move beneath the plate and beneath rib **55** along tapered surface **56** in moving to its threaded position.

In operation yarn as drawn on the first pick of shuttle will extend across the top of the plate and then by reason of ballooning will have an easy access beneath the plate in a path to lodge back of the projecting guard **47**. The yarn will also enter beneath rib **55**, but should ballooning occur after the yarn is in this position it cannot move from beneath the plate because of its engagement with surfaces **51** and **52** and the edges of notches **57**. The yarn will enter much more quickly by the shaping of the guard **47** than were the guard shaped as in the patent referred to and will be more positively held beneath the plate.

I claim:

1. A loom shuttle provided with a bobbin chamber and a threading groove extending forwardly from the chamber, a metal plate supported at one side of the groove and extending laterally across said groove from one wall thereof into overlying relation with the other wall thereof, a rib at the forward end portion of said plate tapered by being reduced in thickness toward the overlying free edge of the plate and provided with a notch therein to catch a laterally moving thread.

2. A loom shuttle provided with a bobbin chamber and a threading groove extending forwardly from the chamber with a recess in the wall thereof, a metal plate supported at one side of the groove and extending laterally across said groove from one wall thereof into overlying relation with the other wall thereof, a guard on the underside of said plate located in said recess and projecting downwardly from said plate, said guard presenting an abrupt inner thread-catching abutment surface and outer surfaces flaring apart as they proceed inwardly from the marginal edge of the plate, and a rib at the forward end portion of said plate provided with a notch therein to catch a laterally moving thread.

3. A loom shuttle provided with a bobbin chamber and a threading groove extending forwardly from the chamber with a recess in the wall thereof, a metal plate supported at one side of the groove and extending laterally across said groove from one wall thereof into overlying relation with the other wall thereof, a guard on the underside of said plate located in said recess and projecting downwardly from said plate, said guard presenting an abrupt inner thread-catching abutment surface and outer surfaces flaring apart as they proceed inwardly from the marginal edge of the plate, a rib at the forward end portion of said plate tapered by being reduced in thickness toward the overlying free edge of the plate and provided with a notch therein to catch a laterally moving thread.

4. A loom shuttle provided with a bobbin chamber and a threading groove extending forwardly from the chamber with a recess in the wall thereof, a metal plate supported at one side of the groove and extending laterally across said groove from one wall thereof into overlying relation with the other wall thereof, a guard depending from said plate adjacent its marginal edge and extending into said recess, said guard presenting an abrupt inner thread-catching abutment surface and outward thread guiding surfaces intersecting each other in a plane passing centrally in a lateral direction through said guard and flaring apart as they proceed inwardly from the said edge, said surfaces also being tapered inwardly as they progress downwardly from the plate.

5. A loom shuttle provided with a bobbin chamber and a threading groove extending forwardly from the chamber with a recess in the wall thereof, a metal plate supported at one side of the groove and extending laterally across said groove from one wall thereof into overlying relation with the other wall thereof, a V-shaped guard on the underside of said plate and located in said recess with the apex of the V forming a line positioned within the confine of said plate and adjacent the free overlying marginal edge of the plate and slanting a substantial distance inwardly from said edge and providing flaring thread guiding surfaces tapered inwardly as they progress downwardly, and with the top surface of said plate having a portion for the entire length thereof beveled toward the said free overlying edge and extending from either end of the plate at an angle to each other and intersecting in a plane passing substantially through the apex of said V-shaped guard.

EVARISTE E. TALBOT.