

Aug. 10, 1965

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3,199,543

BACK BOX LEATHER LATCH FOR LOOMS

Filed Oct. 2, 1963

2 Sheets-Sheet 1

Fig. 1

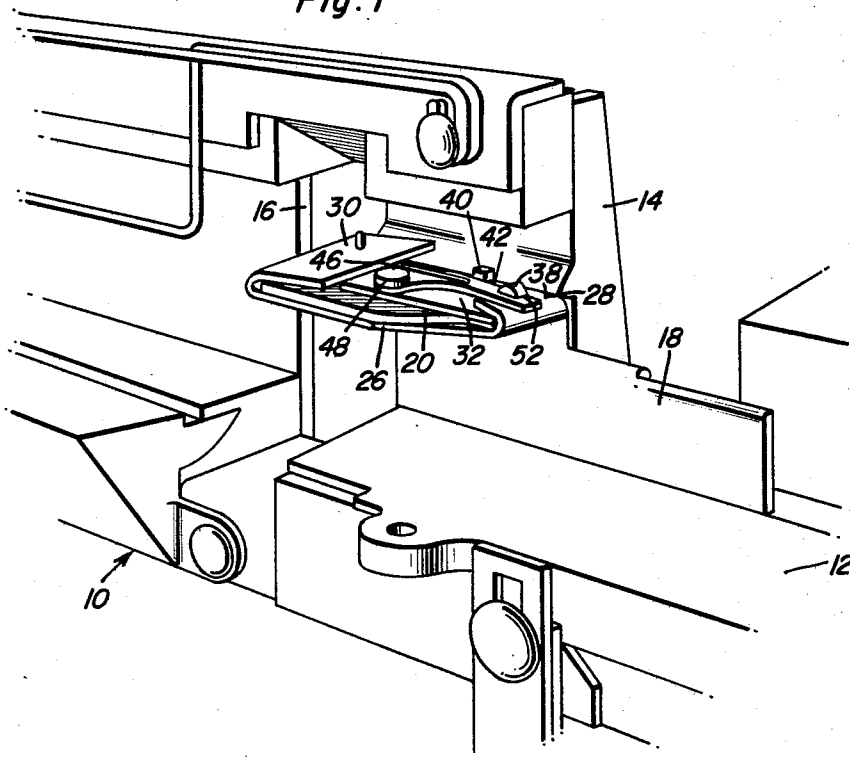
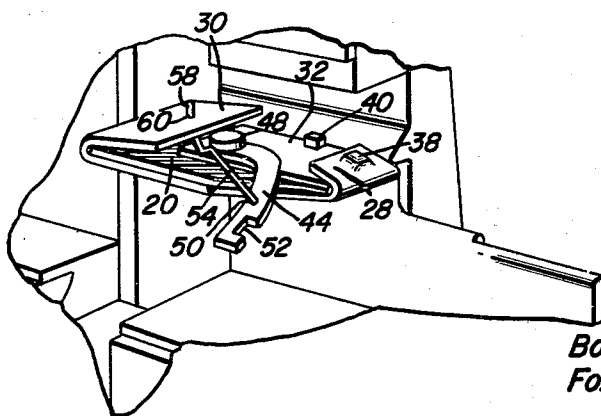


Fig. 2



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2 Sheets-Sheet 2

Fig. 3

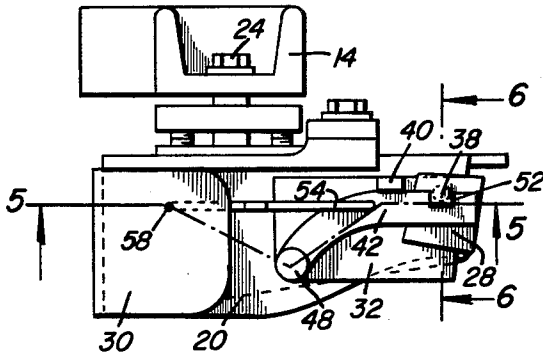


Fig. 4

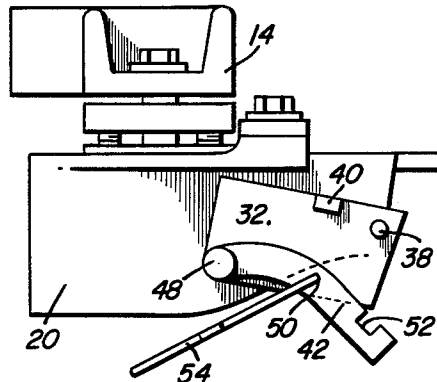


Fig. 5

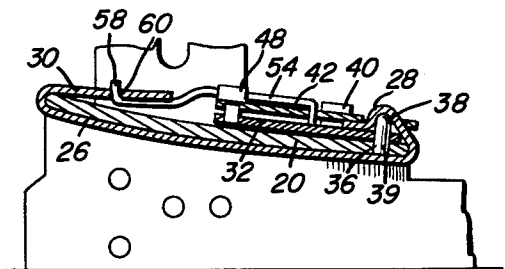


Fig. 6

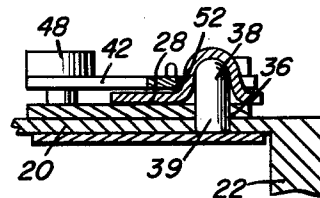
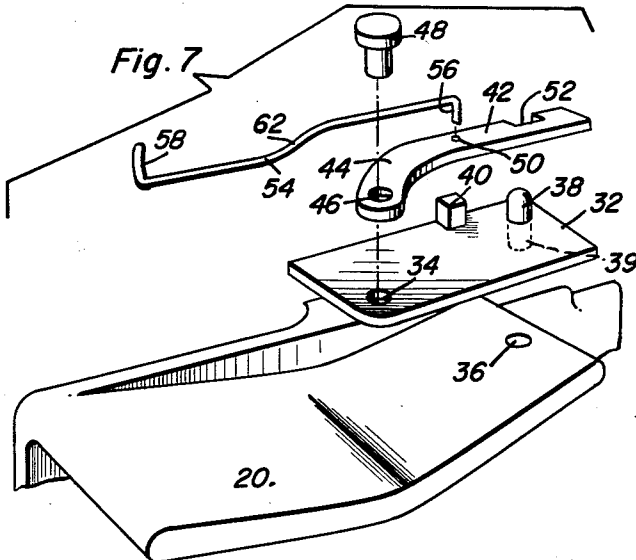


Fig. 7



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1

2

3,199,543

BACK BOX LEATHER LATCH FOR LOOMS

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11 Claims. (Cl. 139-183)

This invention comprises a novel and useful back box leather latch for looms and more particularly pertains to a shuttle stop means for a loom box having greatly improved properties.

In conventional types of loom shuttle boxes it is customary to provide a horizontally extending back box plate positioned above the floor of the box at the rear end thereof and which is covered by a leather member and which frictionally engages the top of a shuttle to retain the latter when the shuttle is in the inner or rear end of the box. However, it has heretofore been extremely difficult to replace the worn leather coverings, commonly known as back box leathers, this operation resulting in a considerable loss of the time for the loom during the replacement operation as well as involving considerable labor and therefore expense.

It is therefore the primary object of this invention to provide a construction whereby a back box leather may be readily mounted upon a shuttle back box plate in a manner which will greatly facilitate the time required and the ease of installation of a new back box leather and which will further properly stretch and tension the replacement leather as the latter is applied to and mounted upon the back box plate.

A further object of the invention is to simplify the manner in which a back box leather is secured to a back box plate in a shuttle box.

A still further object of the invention is to provide a back box leather mounting means including a latch which shall have an improved action both in securing the leather to the back box plate and in tensioning the leather during its application to the back box plate.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a fragmentary perspective view of a portion of a loom showing some of the shuttle box structure and particularly indicating the back box plate and the back box leather latch in accordance with this invention, the device being shown in the latched position with the leather fully installed;

FIGURE 2 is a fragmentary perspective view of the arrangement of FIGURE 1 but showing the position of the device during the initial stages of installation of the leather;

FIGURE 3 is a fragmentary top plan view of the arrangement of FIGURE 1;

FIGURE 4 is a view similar to FIGURE 3 but of the position of the parts as shown in FIGURE 2;

FIGURE 5 is a view in vertical longitudinal section taken substantially upon the plane indicated by section line 5-5 of FIGURE 3;

FIGURE 6 is a vertical transverse sectional view taken substantially upon a plane indicated by section line 6-6 of FIGURE 3; and

FIGURE 7 is an exploded perspective view of the components of this invention, the back box leather being omitted therefrom.

Referring first to FIGURE 1, there is shown a portion of the loom indicated generally by the numeral 10 which includes the loom lay 12 carried by the swords one of which is shown at 14 there being provided at the op-

posite ends of the lay shuttle boxes a portion of one of which is indicated by the numeral 16. The shuttle box includes a back wall 18 and upon this back wall and the swords 14 there is mounted in the rear end of the shuttle box the horizontally extending back box plate 20. All of the structure mentioned is conventional except for the construction of the stop plate 20. The latter, as shown in FIGURE 6 is preferably of L-shaped configuration having a vertically extending side portion 22 which is adapted to be secured to the loom sword 14 as by fastening bolts 24. The back box plate 20 is disposed in generally a horizontal position and paralleled above the loom lay 12 at the end of the reed lay, FIGURE 1. It is so positioned as to deflect the shuttle downward into the shuttle box to be frictionally stopped. In order to prevent damage to the end of the shuttle, it is customary to apply a strip of a cushioning and protective material about the plate 20 and particularly on the underside thereof. This strip is usually of leather and is commonly known as the back box leather of the shuttle box.

Heretofore, it has been customary for the back box leather to have its midportion engaged on the underside of the back box plate 20 with its two ends folded upwardly and over the ends of the back box plate and being secured thereto as by a pair of screws. In the present invention, however, the back box leather indicated by the numeral 26 has its midportion applied to the underside of the back box plate in a usual manner but has its upturned ends 28 and 30 mounted upon and secured to the back box plate in an improved manner.

For this purpose, there is provided a base or mounting plate 32, see FIGURE 7 in particular, which has an aperture 34. The mounting plate 32 comprises an adapter member from which rises a pair of projections as at 38 and 40. The projection 38 comprises a pin and is disposed at the outer end of the mounting plate and preferably is provided with a hemispherical or rounded upper extremity. Its lower extremity 39 extends below the plate 32 and is seated in the aperture 36 of the back box plate 20. The projection 40 on the other hand is disposed between the projection 38 and the aperture 34 and may be square in cross-section as shown in FIGURE 7. There is provided a latch member in the form of a lever 42 having a curving extremity 44 at one end provided with an aperture or eye as at 46 by means of which a single fastener such as a pin or brad 48 may be inserted through the eye 46 and be secured in the aperture 34, to pivotally secure the two members 32 and 42 together. Intermediate its ends, the lever 42 is adapted to abut against the projection 40 which thus constitutes a stop pin or stop member preventing further swinging movement of the lever past its latching position, as shown in FIGURES 1 and 3. An aperture or bore 50, see FIGURES 2 and 7 in particular is located intermediate the lever ends and a recess or notch 52 is provided in the side of the lever adjacent its end which is adapted to engage upon the projection 38 and the leather end 28 disposed thereabout whereby to firmly secure this end of the leather to its anchorage. A link or connecting member 54 in the form of a rod or wire is provided having oppositely turned laterally projecting terminal portions as at 56 and 58. The portion 56 is adapted to be pivotally mounted in the bore 50 of the latch member 42, while the portion 58 is adapted to be engaged in an aperture 60 formed in the end portion 30 of the box leather 26. Intermediate its ends the link is provided with an angulated portion as at 62 whose function will be best apparent from a consideration of FIGURE 5.

It is to be noted that the latch leather by virtue of the particular construction above enumerated has an over-center connection with the link 54 as will be seen by a comparison of FIGURE 3 with FIGURES 2 and 4.

3

In operation, with the elements assembled as shown, the leather may be removed and another leather applied by moving the latch lever 42 pivotally about its fastener 48 to the position shown in FIGURE 2 or FIGURE 4. In this position, the hook 58 at the end of the link may be inserted or removed from the aperture 60 in the leather end 30. This may be termed the latching end of the leather, the other extremity 28 being the anchor end. The anchor end as shown in FIGURE 6 is disposed over and pressed downwardly about the anchor projections 33. With the leather assembled in the manner shown in FIGURE 2, it is merely necessary to move the latch lever 42 about its pivot 48 whereupon the link connection with the lever will effect a tightening of the leather, stretching the latter from its anchor end across the underside of the plate 20 and at its end 30. As the latch lever is moved to an over-center position from that shown in FIGURES 2 and 4 to that shown in FIGURES 1 and 3, the leather will be stretched and tightly applied to the back box plate. At the same time, the tension of the leather will retain the latch lever in its latched position and the latching notch 52 of the lever will be engaged about the projection 38 and the leather thereon, the lever will be abutting the latch stop pin 40 and the mounting plate will be retained by the pin 39 engaged in the aperture 36 under the tension of the leather.

It should be further noted that the notched end of the latch lever in the latching position thereof will overlie a portion of the anchor end 28 of the leather as shown best in FIGURE 3 thereby retaining this anchor and in secure engagement upon the anchor pin 38.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. In a loom shuttle box, a shuttle stop means comprising a horizontally extending back box plate mounted in the shuttle box for engaging upon its underside a shuttle when the latter is positioned in the inner end of the shuttle box, a shuttle box leather comprising a pliable strip covering the underside of said back box plate and having its ends folded about the ends of said back box plate and over the top surface of the latter, anchor means releasably but fixedly securing one end of said pliable strip to said back box plate top surface, tensioning latch means movably mounted upon said back box plate and engaging the other end of said pliable strip and operable to tension the latter upon the underside of said back box plate.

2. The combination of claim 1 wherein said anchor means comprises a mounting plate secured to said back box plate top surface, an anchor projection rising from said mounting plate and upon which said pliable strip is engaged.

3. The combination of claim 1 wherein said anchor means comprises a mounting plate secured to said back box plate top surface, an anchor projection rising from said mounting plate and upon which said pliable strip is engaged, said latch means being movable between latched and unlatched positions, said latch means in its

4

latched position overlying said pliable strip and retaining it upon said anchor projection.

4. The combination of claim 1 wherein said latch means is mounted upon said back box plate for movement between latched and unlatched positions, said latch means in its latched position engaging and retaining both ends of said pliable strip upon said top surface.

5. The combination of claim 4 wherein said pliable strip has an aperture at said other end thereof, said latch means including a hook engaged in said aperture.

6. The combination of claim 5 wherein said latch means comprises a lever having one end pivotally mounted, said latch means comprising a member pivoted to said lever intermediate the ends thereof, said hook being mounted upon said member.

7. The combination of claim 6 including a notch in said lever, a stop pin on said back box plate engaged by said lever and retaining the latter in said latched position.

8. The combination of claim 1 wherein said anchor means comprises a mounting plate secured to said back box plate top surface, an anchor projection rising from said mounting plate and upon which said pliable strip is engaged, said latch means being carried by said mounting plate.

9. The combination of claim 8 including a fastening means detachably securing said latch means to said mounting plate and a second fastener detachably securing the latter to said back box plate top surface.

10. The combination of claim 1 wherein said anchor means comprises a mounting plate supported by the top surface of said back box plate, said tensioning means including a latch lever mounted upon said mounting plate, a fastener comprising a pivot for said latch lever and securing the latter to said mounting plate, said mounting plate having spaced upwardly projecting stop and anchor pins, said box leather having an anchor end folded upon said anchor pin, said latch lever having a recess embracingly receiving said anchor pin and the leather anchor end folded over the latter and locking said leather anchor end to said anchor end when the side of said lever abuts said stop pin, means securing said mounting plate to said back box plate.

11. The combination of claim 10 including a tensioning link having one end pivotally secured to said latch lever in a bore therein and having its other end secured to the other end of said leather in a bore therethrough, the ends of said link moving across said fastener in an over-center relation during pivoting movement of said latch lever between its latching and releasing positions.

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