Sept. 2, 1969 J. R. BRANDON 3,464,456

FRONT BOX PLATE FOR LOOMS

Filed Feb. 15, 1967

FIG. 1

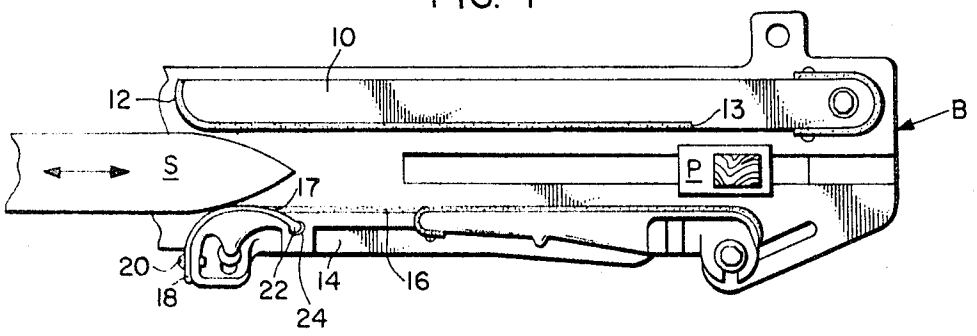
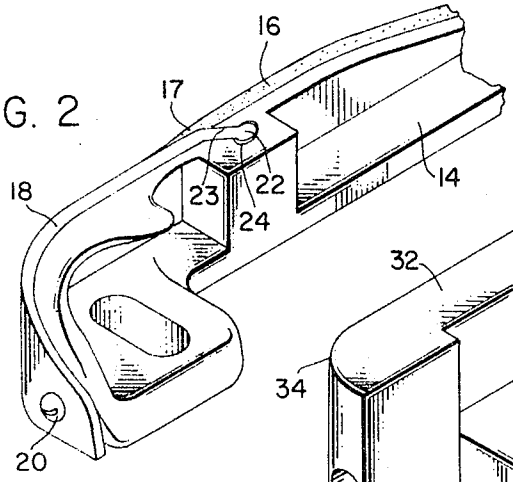


FIG. 2



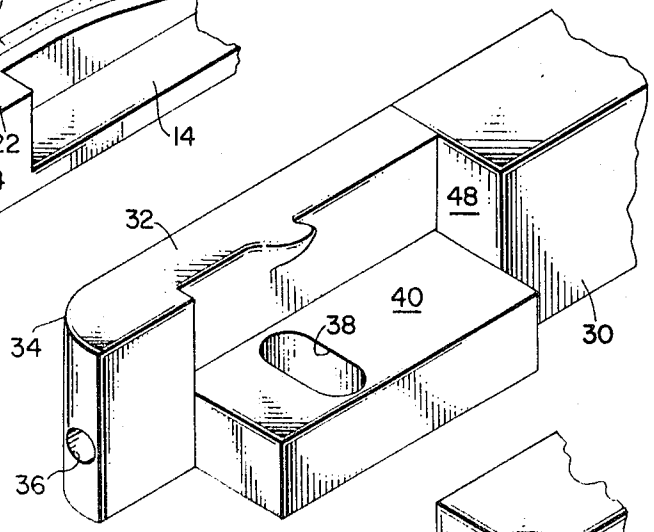


FIG. 3

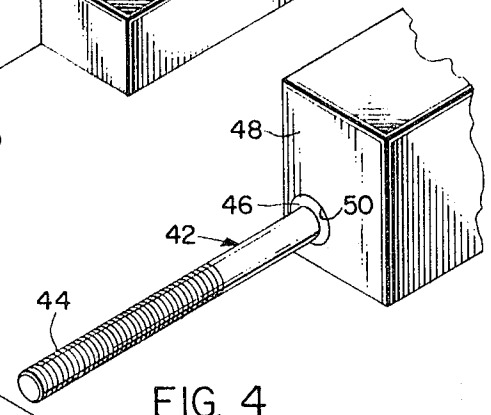
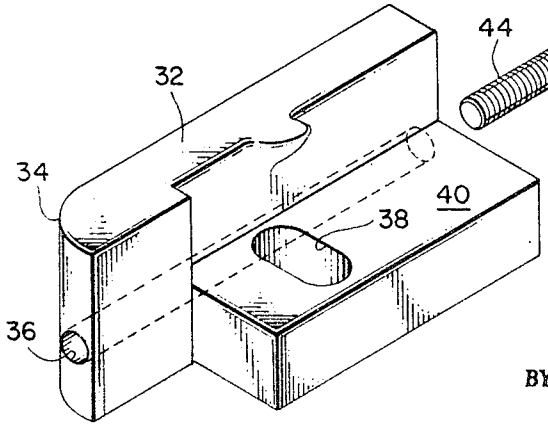


FIG. 4



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FRONT BOX PLATE FOR LOOMS

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U.S. Cl. 139—183 4 Claims

ABSTRACT OF THE DISCLOSURE

This invention concerns the use of a separable wear-resistant nosepiece in the area along the inside surface of the front box plate where the conventional leather lining was subject to deterioration from the impact of the shuttle.

BACKGROUND OF THE INVENTION

Means for arresting the flight of the shuttle across the lay of a weaving loom are usually attached to the inside surfaces of the front box plate and binder, and are so arranged to box the rapidly moving shuttle at each side of the loom. This causes considerable abuse to the lining of the inner or entrance level of the front box plate.

Various attempts have been made to reduce the deterioration of the conventional leather lining, such as treating it with a wax coating as described by the patent to Brooksbank, No. 3,273,604. The Butler Patent No. 3,258,036 discloses the use of a resilient layer between the leather covering and the inside surface of the front box plate.

However, these attempts are still not completely satisfactory in that they require a complete relining of the front box plate when the lining in the entrance area becomes unusuable. In Patent No. 2,494,913, the front box plate is divided into two parts. While this eliminates the need for relining the segment of the plate which receives the least wear, it is objectionable in that additional problems of alinement are presented as well as requiring additional inventory of parts.

SUMMARY

The device of my invention overcomes these disadvantages by providing a separate wear-resistant nosepiece or lining at the entrance or inner end of the front box plate. The invention is particularly advantageous in that existing front box plates may be modified to receive the nosepiece or lining. Alternatively, a front box plate equipped with the separable nosepiece or lining of the invention is readily interchanged with existing equipment. High molecular weight polyethylene or any other suitable wear-resistant material has been found to be a satisfactory material from which to make the shuttle checking member in that it is virtually impervious to the wear and abuse suffered by the shuttle impact.

It is, therefore, an object of this invention to provide a separable nosepiece or lining which may be attached to existing front box plates with only slight modifications thereto.

It is another object of this invention to modify existing front box plates by replacing a portion of the leather lining adjacent the entrance to the shuttle box with a wear-resistant strip such as high molecular weight polyethylene.

Still another object of this invention is to provide an effective means for reducing deterioration of the inside lining of the front box plate and to eliminate the need for replacing the entire lining when the area adjacent the entrance to the front box plate becomes unusuable.

Some of the objects of the invention having been

stated, other objects will appear as the description proceeds, when taken in conjunction with the accompanying drawings, in which—

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a plan view of a shuttle box showing one embodiment of my invention;

FIGURE 2 is a perspective view of the entrance or inner end portion of the front box plate removed from the shuttle box of FIGURE 1;

FIGURE 3 is a perspective view of the inner end portion of a front box plate showing another form of the invention; and

FIGURE 4 is an exploded perspective view of the form of the invention shown in FIGURE 3.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now more particularly to the drawings, FIGURE 1 shows the shuttle box B with a shuttle S entering the entrance or inner end thereof and about to engage the inner end of the front box plate **14**. The shuttle box B comprises a rear plate or binder **10** and a front box plate **14**, each of said plates **10** and **14** having its inner or front end slightly outwardly turned to receive the shuttle S as it returns from the other side of the loom. A leather lining **12** extends from the inner end of the binder **10**, along the inside surface to a point **13** whereby the entire length of the fully boxed shuttle will be engaged by said leather lining. The front box plate **14** also has a leather lining **16** suitably adhered to the inside wall thereof and extending from the outer or rear end of said plate along the length of the inside surface to point **17**. From point **17** throughout the remainder of the inner surface, the leather is trimmed away according to the invention and replaced by the lining or nosepiece **18**, suitably secured at its front end by a screw or rivet **20** to the corresponding end of front box plate **14**.

FIGURE 2 more specifically shows the nosepiece **18** which preferably comprises a strip of high molecular weight polyethylene but may also comprise some other suitable wear-resistant material. The plastic strip **18** is generally curved in shape to conform to the wall of front box plate **14** from point **17** to beyond the screw **20**. An enlarged portion or bead **22** is formed along the edge of the plastic strip **18** opposite screw **20** and is of such size as to be receivable within a vertical passageway **24** which extends through the front box plate **14**. A slot **23** provides communication between passageway **24** and the inner surface of front box plate **14**, slot **23** and passageway **24** providing means for receiving and retaining said opposite end of the plastic strip **18**.

To replace a worn or damaged shuttle checking device, screw **20** is removed and plastic strip **18** is slid vertically from slot **23** and passageway **24**. A new plastic strip is then seated within slot **23** and screw **20** is replaced to secure the new plastic nosepiece.

FIGURES 3 and 4 show an alternate embodiment of the nosepiece or lining, whereby the complete inner portion of the conventional leather-lined metallic front box plate is replaced. According to the invention, the inner end portion of a conventional metallic front box plate is cut away and replaced by a plastic block **32** formed of high molecular weight polyethylene having approximately the same exterior dimensions as the metallic front plate portion replaced. At the shuttle impact point **34** the plastic block **32** is rounded to provide a means for guiding the shuttle S into the shuttle box B.

The plastic block **32** has a longitudinal passageway **36** extending throughout its length and includes a horizontally extending protuberance **40** having a transversely elongated slot **38** formed therein providing a means for

mounting the front box plate to the lay end plate. The elongated slot **38** also provides a means for adjusting the front box plate transversely with respect to the shuttle lay.

The plastic block **32** is fixed to the metallic portion **30** of the front box plate by a threaded stud or shaft **42** fixed to and extending axially beyond the metallic portion **30**. The shaft **42** may include an enlarged portion, not shown, defined by a shoulder **46** and threadably received within a bore **50**. The smaller portion of stud **42** is received in passageway **36** and is threaded at **44** to secure the plastic block **32**. The diameter of stud **42** is slightly larger than the diameter of passageway **36**, so that the plastic block **32** is internally threaded as the block **32** is screwed onto stud **42**. The threads **44** are cut into the stud **42** in an opposite direction from the threads on the enlarged portion of shaft **42**, so that when the plastic block **32** is being secured to the metallic portion **50**, stud **42** will not be loosened from the metallic body **30** of the front box plate. That is, one end of stud **42** is provided with "right-hand threads," while the other end has "left-hand threads." Also, the exposed portion of stud **42** is preferably of less length than the corresponding dimension of the plastic block so it will not extend beyond passageway **36**.

Although the drawings and description are descriptive of the right-hand front box plate, it should be understood that this invention is equally suitable for use on left-hand front box plates.

Although preferred embodiments of the invention have been described using specific terms, such description is for illustrative purposes only, and it is to be understood that changes and variations may be made without departing from the spirit or scope of the following claims.

I claim:

1. In a shutttle box for a loom, said shuttle box comprising a front box plate and binder having out-turned faces at one end thereof to receive a shuttle, said front box plate having a front and rear end and further comprising:

(a) a covering on the inside face of said front box plate suitably secured to the face thereof and extending from the rear end of said front box plate toward the other end of said plate and covering a portion of the entire length thereof;

(b) wear-resistant means suitably attached to said front box plate throughout the remainder of said entire length at the front end thereof, said means being so positioned as to receive the impact of the shuttle as it returns from the opposite end of the shuttle lay, and

(c) said wear-resistant means including an enlarged portion at the end nearest said covering, said front box plate including an opening in said inside face adjacent said wear-resistant piece through which said enlarged portion is received.

2. The front box plate according to claim **1**, wherein said wear-resistant means comprises a strip of wear-resistant material covering substantially the entire interior surface of the front box plate at said front end and being suitably secured thereto.

3. The front box plate according to claim **2**, wherein said opening in the front box plate comprises a vertical slot in the wall adjacent the interior of the shuttle box, said strip of wear-resistant material having a hole through one end thereof through which a screw is inserted to secure said one end to said front end of the front box plate, and the enlarged portion at the end of said strip nearest said covering comprises an enlarged bead extending the width of said strip, said bead being inserted into said slot to attach said other end of the strip to said front box plate.

4. The front box plate according to claim **2**, wherein said wear-resistant means is formed of high molecular weight polyethylene.

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