March 15, 1938.

H. R. HAUPT

2,111,489

BUFFER CHECK FOR LOOM PICKERS

Filed Sept. 16, 1936

2 Sheets-Sheet 1

Fig. 1.

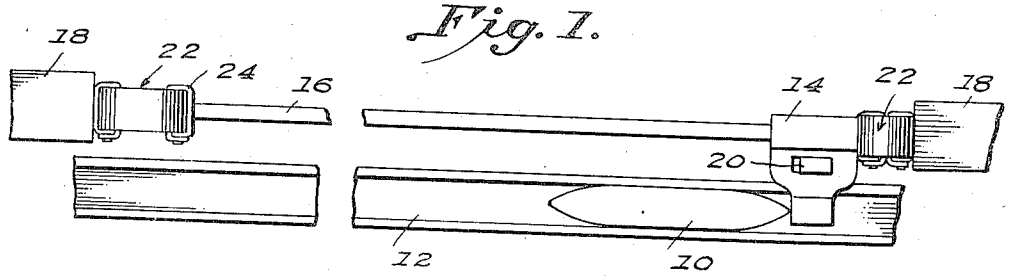


Fig. 2.

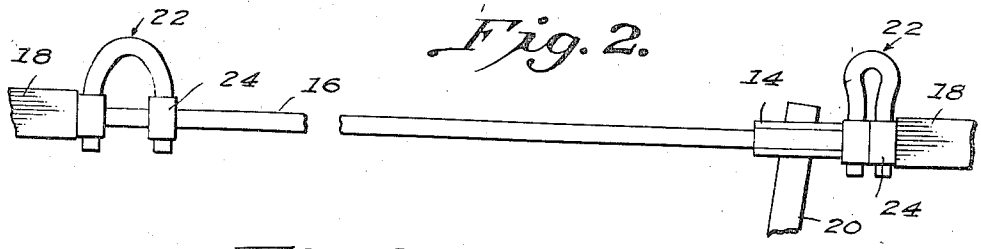


Fig. 3.

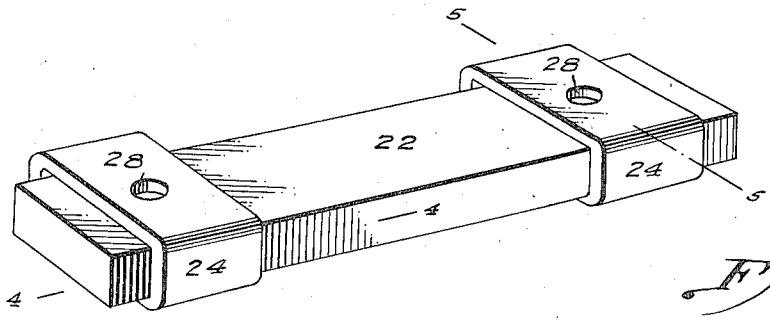


Fig. 5.

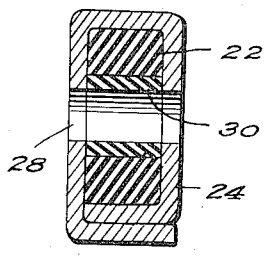
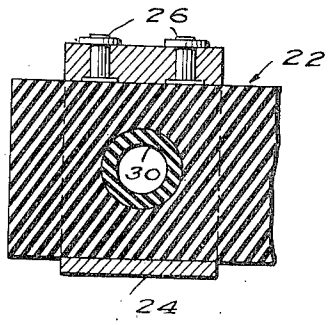


Fig. 4.



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Fig. 6.

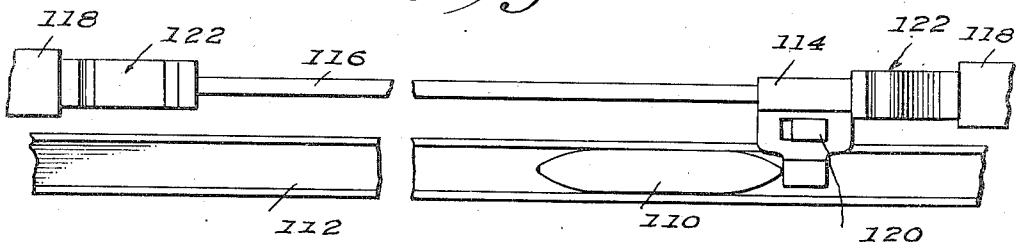


Fig. 7.

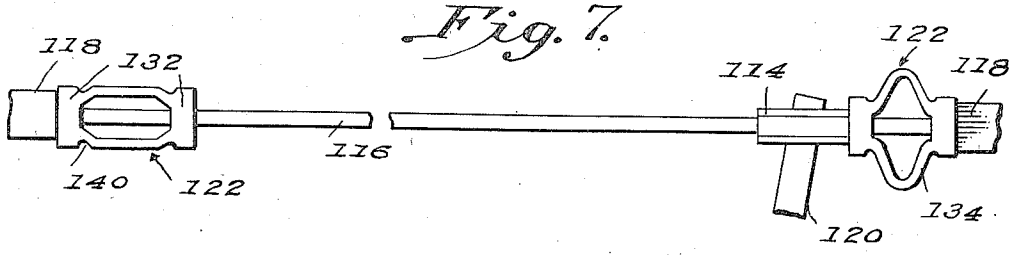


Fig. 8.

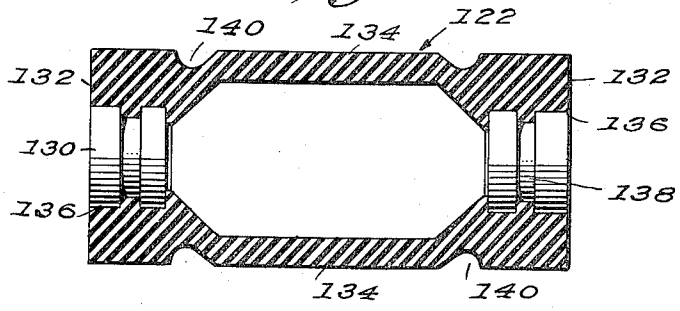
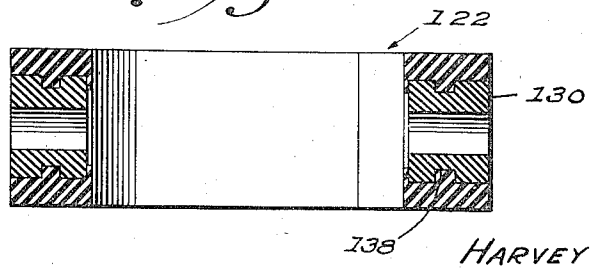


Fig. 9.



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Patented Mar. 15, 1938 2,111,489

UNITED STATES PATENT OFFICE

2,111,489

BUFFER CHECK FOR LOOM PICKERS

Harvey R. Haupt, Reading, Pa.

Application September 16, 1936, Serial No. 101,128

3 Claims. (Cl. 139—166)

This invention relates to new and useful improvements in buffer-checks for loom pickers, of which the following is a full, clear, and exact description.

In the usual construction of a loom the shuttle is thrown back and forth through the shed formed by the separation of warp threads for the purpose of laying the weft thread during its course of travel. The shuttle is arrested at each end of its path by contact with a device called the picker which slides on a rod or on a plurality of rods parallel to the shuttle box.

The picker, which is actuated by a picker stick to also actuate the shuttle, affords a yielding resistance to the shuttle and reduces to some extent the force of the blow of the shuttle impact.

Checks or springs of various forms and materials have been used as buffers for the picker to further minimize the shuttle shock, but owing to the rapid and numerous stresses to which they are subjected, difficulty has been experienced in finding both form and material possessing marked characteristics of elasticity and durability. Buffers of metal, leather, rubber, and combinations of such materials have been used without completely satisfactory results.

It is therefore the object of my invention to provide a buffer-check for loom pickers which possesses the characteristics of maximum durability and elasticity. More particularly, it is a further object of the invention to condition a relatively soft rubber buffer-check so that its inherent elasticity may be utilized to the greatest advantage.

My invention is based on the discovery that the failure of prior buffers, particularly those of considerable cross sectional dimensions necessitated by the use of rubber and to a lesser degree leather, arises from two causes. In the first place, a high coefficient of friction is inherent in such relatively soft flexible materials. In the second place, and to a greater extent, prior failures have been caused by the oblique position of the rod aperture in the buffer with respect to the axis of the rod upon which the buffer is supported. This condition becomes particularly evident in view of the fact that buffers are usually made of a strip of material having holes at each end which are brought into registration by bending the strip into a general U-shape so that the supporting rod may pass through the holes. Under such constructions the buffer is under a tension which continuously urges diagonally opposite edges of the rod aperture at each end of the buffer into tight contact with its supporting rod. This condition increases the friction between the buffer and the rod, creates an excess of vibration during its operation, results in faulty operation, and reduces the useful life of the buffer to a minimum.

These are the specific objections which I have overcome through my invention which I shall now describe in conjunction with the accompanying drawings, in which:

Fig. 1 is a top plan view of the shuttle and shuttle box of a loom with a picker and rod, and having a buffer-check made in accordance with the teaching of my invention;

Fig. 2 is a front elevation of the same with the shuttle box removed;

Fig. 3 is a perspective view of my buffer-check prior to its application to a loom;

Fig. 4 is a cross-sectional view of one end of the buffer-check, taken on line 4—4 of Fig. 3;

Fig. 5 is a cross-sectional view taken on line 5—5 of Fig. 3;

Fig. 6 is a top plan view similar to that of Fig. 1, but showing a modified form of my buffer-check applied to a loom;

Fig. 7 is a front elevation of the modified form of my invention and corresponds in general to Fig. 2;

Fig. 8 is a cross-sectional view taken on a longitudinal vertical plane through my modified form of the invention; and

Fig. 9 is a cross-sectional view of the modification, taken on a longitudinal horizontal plane therethrough.

In the drawings, which I have used only for the purpose of teaching the principle of my invention in two characteristic embodiments, and in the following description, the same reference characters will be used to designate like parts with the exception that, for convenience in consideration, in the modified form 100 will be added to the characters of the first form of the invention.

Referring particularly to Fig. 1, the shuttle 10, shuttle box 12 in which the shuttle is reciprocated, picker 14, picker-rod 16 on which the picker is slidingly mounted, frame 18, for the picker-rod and the picker-stick 20 entering a slot in the picker and having means (not shown) for moving the picker and having means (not shown) for moving the stick and through it the picker in a manner to throw the shuttle to the opposite picker, are all old and well known. My invention relates to the buffer-check, shown at 22 (in Fig. 1), and at 122 (in Fig. 6), one of which is located at each end of the shuttle box.

Referring particularly to Figs. 1 to 5 inclusive of the drawings in which I have illustrated the principles of my invention in a simple embodiment, it will be noted that the buffer-check consists of a body portion 22 constructed of elastic material such as leather, but preferably of rubber of relatively soft character. It has been found that a relatively soft rubber for this purpose is admirable because of its elasticity and its wearing qualities, although heretofore such relatively soft materials have not been conditioned

for use as buffer-checks. The elastic body member 22 is sufficiently long to permit the same to be bent upon itself into a U-shape to provide a striking portion for the picker and a support portion which normally rests against the support 18 joined by an intermediate flexible body portion. About each end of the body 22 is placed a band of rigid material of substantial width 24. This material may be stiff raw-hide or metal. The ends of the band may be overlapped as particularly shown in Fig. 5, and are conveniently fixed in this relation by means of rivets 26. After the bands 24 have been affixed to the elastic body member 22, a hole 28 is drilled through the band 24 and through the body 22. These holes are positioned midway between the edges of the body member and the axes thereof are perpendicular to the horizontal longitudinal plane of the body portion.

In a more highly developed form of the invention, and one particularly recommended for use with relatively soft resilient body members, the mode of construction is somewhat changed in that the holes 28 are first provided through the body member and hard-wear resisting bushings 30, having a length equal to the thickness of the body member 22, are inserted into these apertures. Thereafter the bands 24 are placed about the ends of the body member as hereinbefore described either first having holes 28 provided therein to register with the bushing aperture, or being adapted to have these holes drilled therethrough after the bands have been placed in position.

A buffer-check of this type is designed to cooperate with conventional loom parts and, indeed, departs from conventional constructions but little in so far as general apperance is concerned. The buffer-check rod 16 is passed through the apertures 28 so that the buffer-check assumes the general U-shape indicated in Fig. 2. However, by virtue of the rigid bands 24, a considerable portion of the end of the buffer-check body 22 is inhibited against flexing. Therefore the axes of apertures 28 are substantially coincident and are accordingly maintained parallel or conicident to the axis of the buffer-check rod 16. Furthermore, and particularly in the use of relatively soft materials, the bushing 30 inhibits wear and acts furthermore as an anti-friction bearing surface against the rod 16. It will be noted that the band 24 not only performs the function of maintaining the axes of apertures 28 susbtantially coincident and parallel to the axis of rod 16, but at the same time fulfills the subsidiary function of maintaining the bushing 30 in position. This is accomplished by the fact that the ends of the bushings 30 define an annulus of greater radial extent than the circumference of the aperture in the band 24.

In Figs. 6 to 9, inclusive, I have shown an exemplification of the principles of my invention as embodied in a buffer-check which more radically departs from conventional lines of construction. In this form of the invention the buffer-check 122 is constructed of relatively soft but highly elastic molded rubber and assumes a substantially rectilinear form wherein there are two parallel end portions 132 and two parallel side members 134 which constitute connections for the end portions 132. Coaxial apertures 136 are provided through the end portions 132 and these apertures are lined by bushings 130, preferably of relatively smooth hard molded material such as very hard rubber or bakelite. It will be noted that the bushings 130 are recessed at 138 so that during the molding of the buffer-check 122 a portion of the plastic rubber fills the recess 138 to form a positive holding means for the bushing. With this construction the bushing is positively held in place and effectively resists any tendency the picker may have toward dislodging the same.

It will be noted that a greater degree of flexibility may be imparted to this form of the picker-check by providing grooves 140 at the juncture of the end portions 132 with the parallel side members 134. These grooves effectively guard against breakage or cracking which might be experienced in a check of this type were the body portion of the material at that point of its original thickness.

It will be evident that the buffer-check 122 is positioned for use by passing the picker-rod 116 through the apertures 136 so that one end 132 lies against the frame member 118 while the other end 136 lies in the path of the picker 114. During loom operation there will be no tendency toward axial disalignment between apertures 136 themselves or with respect to the picker-rod 116.

From the foregoing description it will appear that by the practice of my invention the axes of the buffer-check apertures and the axis of the supporting rod will always be maintained coaxially and that excessive friction, sticking, and imperfections in operation will be thereby avoided. Furthermore this invention makes possible the use of a relatively soft rubber in its manufacture, thereby securing to the user the advantages inherent in such material.

Having now disclosed the principles of my invention in connection with specific embodiments thereof for purpose of illustration only, I do not wish to be limited in the practice of my invention other than by limitations which may be imposed thereon by the subjoined claims.

What I claim is:

1. A buffer-check for loom pickers comprising a loom frame contacting face and a parallel picker contacting face, coaxial apertures in said face portions adapted to receive a picker rod, substantially parallel spaced flexible side members joining said face portions and maintaining the apertures therein axially parallel to the axis of said picker rod during the entire operative movement of said buffer check.

2. A buffer-check for loom pickers comprising a loom frame contacting face and a parallel picker contacting face, coaxial apertures in said face portions adapted to receive a picker rod, a wear resisting bushing having a peripheral groove securely fixed in said apertures by interlocking with a portion of said face portions, substantially parallel spaced flexible side members joining said face portions and maintaining the apertures therein axially parallel to the axis of said picker rod during the entire operative movement of said buffer-check.

3. A buffer-check of relatively soft flexible rubber for loom pickers comprising a loom frame contacting face and a parallel picker contacting face, coaxial apertures in said face portions adapted to receive a picker rod, a wear resisting bushing having a peripheral groove securely fixed in said apertures by interlocking with a portion of said face portions, substantially parallel spaced flexible side members joining said face portions and maintaining the apertures therein axially parallel to the axis of said picker rod during the entire operative movement of said buffer-check.

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