

May 17, 1938.

M. R. HAUPT

2,117,956

PICKER STICK BUFFER

Filed Jan. 29, 1936

Fig. 1.

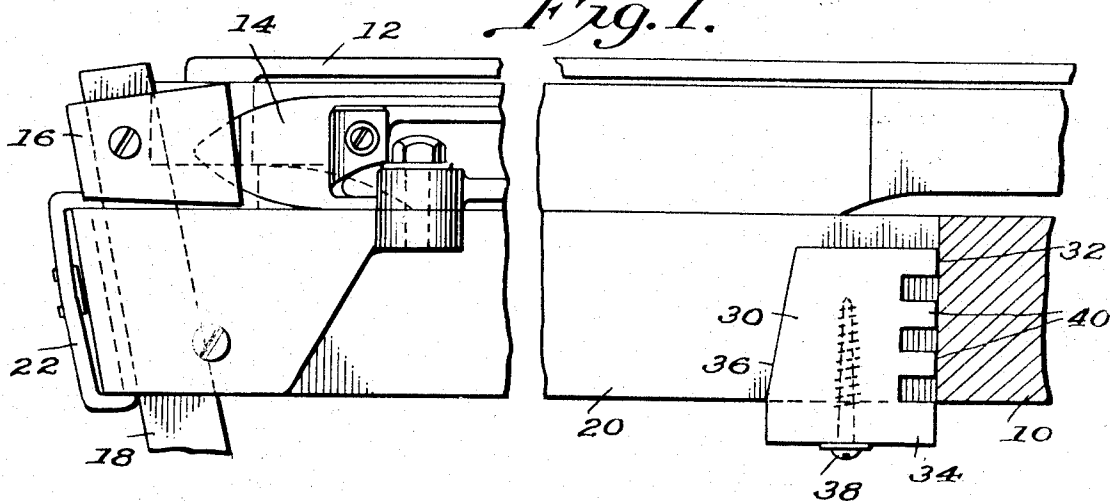


Fig. 2.

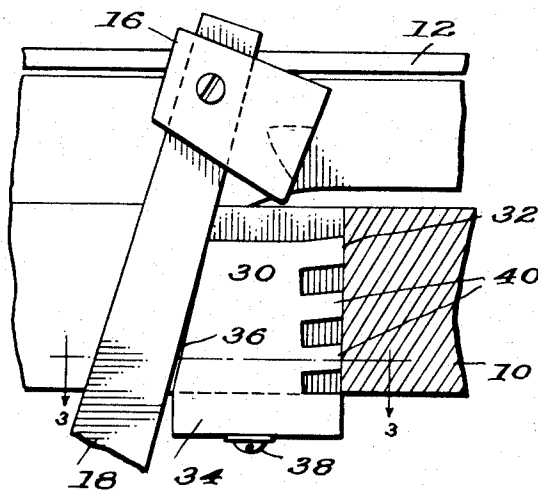


Fig. 3.

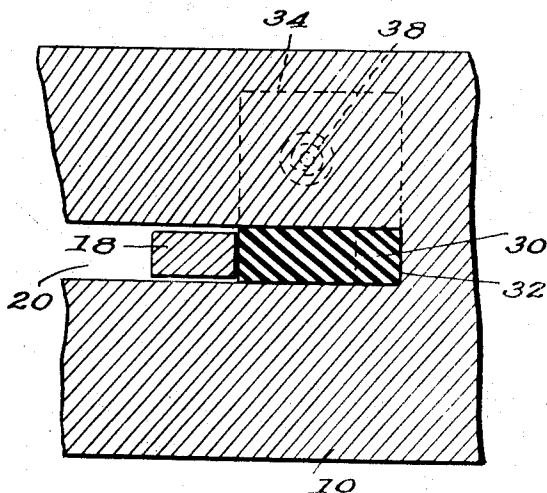
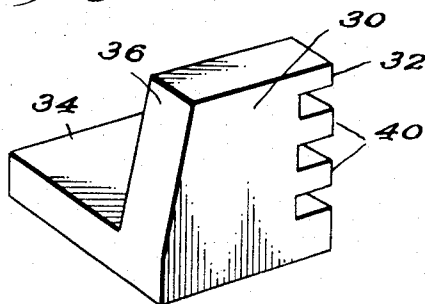


Fig. 4.



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2,117,956

PICKER-STICK BUFFER

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Application January 29, 1936, Serial No. 61,415

5 Claims. (Cl. 139—166)

This invention relates to textile looms and more particularly to means for cushioning the motion of the picker-stick at the end of its shuttle actuating stroke.

It is an object of the invention to provide a unitary picker-stick buffer which is made of molded rubber of such hardness as to insure its long life in constant use, and withal, a buffer of this character which is sufficiently resilient and elastic to cushion the movement of the picker-stick at the termination of its picking movement in a manner that insures against breakage of the same and against loss of the picker because of sudden snap action of the picker-stick.

Other objects of the invention, more or less broad than those stated above, together with the advantage inherent, will appear in the following detail description of the elements constituting the invention; and the scope of the protection contemplated will appear from the claims.

In the accompanying drawings which are to be taken as part of this specification and in which is shown a merely preferred form of embodiment of the invention for purpose of illustration only, Figure 1 is a front elevational view of a lay with parts broken away to show underlying structure;

Figure 2 is a detail sectional view showing the picker-stick in contact with the buffer;

Figure 3 is a sectional view on line 3—3 of Figure 2; and

Figure 4 is a perspective view of the buffer forming the subject matter of this invention.

The lay or beam 10 which extends across the front of a loom has any suitable shuttle box 12 attached thereto. And, as in the usual construction, the shuttle box 12 is adapted to receive a shuttle 14, the nose of which is adapted to contact a recess in the picker 16 which is attached to the picker-stick 18. The picker-stick 18 is pivoted at its lower end (not shown) and extends upwardly through a slot 20 in the lay in which it is adapted to oscillate from its pivot for the purpose of throwing the shuttle through the sheds formed by the separation of alternate warp threads.

In the operation of a typical loom, the picker-stick 18 carrying the picker 16 rests against a picker cushion 22 at the outer end of the slot 20, just prior to the picking stroke. With the parts in this position and with the nose of the shuttle 14 resting in the recess of the picker 16, the picker-stick is given a violent movement

toward the inner end of the slot to throw or pick the shuttle 14 through the shed. If the picker-stick is stopped suddenly at the end of its stroke, it is apt to break, or the picker is apt to be thrown from the end of the picker-stick by the whip-like action thereof. Buffers have been used at the inner end of the lay slot for overcoming the momentum of the picker stick at the end of its picking motion, but the known devices have suffered from the serious objections that their frequent replacement has been found necessary due to rapid loss of the necessary resilient characteristics. Furthermore, these prior devices have been of comparatively complicated structure which has rendered their use a heavy expense. Resort has, therefore, commonly been had to devices which have been a compromise between quality and cost.

It is a primary object of this invention to produce a picker-stick buffer which combines the highest standards of efficiency with low cost of production. It is, therefore, the purpose of this invention to construct a picker-stick buffer of a single piece of molded rubber which is sufficiently hard and rigid to wear indefinitely and to impart to such rubber buffer the required degree of elasticity. To this end the buffer comprises a body portion 30 which is preferably greater in thickness than the width of the picker-stick and, in fact, may be limited in thickness only by the width of the lay slot 20. The body 30 has a lay contacting face portion 32 which is disposed at substantially a right angle to the plane of the base portion 34. The picker-stick contacting face 36 of the body 30 is disposed in a rearwardly inclining plane with respect to the plane of the lay contacting face 32. The plane of the face 36 is substantially parallel to the inner face of the picker-stick 18 in its buffer contacting position so that contact therebetween is effected along a relatively long surface.

In locating the buffer, it will be evident, the body portion 30 is placed into the lay slot 20 from below so that the base portion 34 is in contact with the bottom of the lay at one side of the slot 20. The buffer is moved to the inner end of the slot 20 so that the face 32 of the body portion 30 contacts the lay at the inner end of the slot. When this position has been attained the buffer is secured to the lay by any means such as a screw 38 which passes through the base portion 34 of the buffer and into the lay 10.

Ordinarily, rubber which is sufficiently resistant to wear is not sufficiently elastic to provide the necessary cushioning effect, and to the end that

the durability of relatively hard rubber may be utilized, in accord with this invention, buffers of such material have imparted thereto additional elasticity. One way of adding elasticity to a rubber buffer is illustrated in the drawings wherein the lay contacting face 32 is shown as a series of projections or teeth 40, formed by cutting away portions of the body along this face.

With a construction such as described, the buffer is adapted to have a slight body movement which augments the elasticity of the rubber to provide the necessary cushioning action. This action can best be understood by comparing Figures 1 and 2. In Figure 1 the buffer is shown located at the inner end of the lay slot 20 and the picker-stick 18 is shown at the outer end of the lay slot prior to the picking stroke. With no pressure applied to the body 30, the teeth or projections 40 along the face 32 extend from the body 30 in a horizontal plane. When the picker-stick is actuated to the inner end of the lay slot 20 its force will be checked by the buffer body 30 as shown in Figure 2. Since the wall 36 of the body 30 is inclined in the plane of the picker-stick and the force from the picker-stick acts through the body of the buffer in a direction perpendicular to the plane of the face 36, a component of such force will act at an angle to the face 32 with the tendency to move the body 30 downwardly. Contact of the face 32 with the lay, however, serves to resist such downward movement with the result that the teeth 40 are distorted out of their original plane to permit the body 30 to move. This action is illustrated in Figure 2 wherein the picker-stick 18 is in contact with the buffer face 36 and the force has acted to distort the teeth or projections 40 to a plane inclined upwardly from their normal horizontal position.

The principle of weakening a portion of the buffer to permit distortion may manifest itself in other forms and it is, therefore, expected that the practice of the invention be not limited except as limitations may be imposed thereon by the scope of the subjoined claims.

I claim:

1. A unitary molded rubber picker-stick buffer for looms comprising a base portion adapted to be secured to the underside of a lay, a body portion extending substantially perpendicularly from said base portion and adapted to lie in the path of a picker-stick within a lay slot, said body portion comprising an inner substantially vertical face adapted to contact a lay portion, a picker-stick contacting face inclined rearwardly with respect to said first mentioned face and in a plane substantially parallel to the plane of a picker-stick in its buffer contacting position, and means passing through said base portion for attaching said buffer to a lay.

2. A unitary molded rubber picker-stick buffer for looms comprising a base portion adapted to be secured to the underside of a lay, a body portion extending substantially perpendicularly from

said base portion and adapted to lie in the path of a picker-stick within a lay slot, said body portion comprising an inner substantially vertical face adapted to contact a lay portion, a picker-stick contacting face inclined rearwardly with respect to said first mentioned face in a plane substantially parallel to the plane of a picker-stick in its buffer contacting position, a weakened zone substantially parallel to said inner face whereby the elasticity of said picker-stick contacting face is augmented, and means passing through said base portion for attaching said buffer to a lay.

3. A unitary molded rubber picker-stick buffer for looms comprising a base portion adapted to be secured to the underside of a lay, a body portion extending substantially perpendicularly from said base portion and adapted to lie in the path of a picker-stick within a lay slot, said body portion comprising an inner substantially vertical face adapted to contact a lay portion, a picker-stick contacting face inclined rearwardly with respect to said first mentioned face in a plane substantially parallel to the plane of a picker-stick in its buffer contacting position, a weakened zone disposed along said inner face whereby the elasticity of said picker-stick contacting face is augmented, and means passing through said base portion for attaching said buffer to a lay.

4. A unitary molded rubber picker-stick buffer for looms comprising a base portion adapted to be secured to a lay, a body portion extending substantially perpendicularly from said base portion and adapted to lie in the path of a picker-stick within a lay slot, said body portion comprising an inner substantially vertical face adapted to contact a lay portion, a picker-stick contacting face inclined rearwardly with respect to said first mentioned face in a plane substantially parallel to the plane of a picker-stick in its buffer contacting position, and a plurality of cut-out portions within said body disposed in a zone substantially parallel to said inner face comprising an area of greater elasticity than the remainder of said body portion whereby the elasticity of said picker-stick contacting face is augmented.

5. A unitary molded rubber picker-stick buffer for looms comprising a base portion adapted to be secured to a lay, a body portion extending substantially perpendicularly from said base portion and adapted to lie in the path of a picker-stick within a lay slot, said body portion comprising an inner substantially vertical face adapted to contact a lay portion, a picker-stick contacting face inclined rearwardly with respect to said first mentioned face in a plane substantially parallel to the plane of a picker-stick in its buffer contacting position, and a plurality of cut-out portions along the inner face of said body portion comprising a zone of greater elasticity than the remainder of said body portion whereby the elasticity of said picker-stick contacting face is augmented.

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