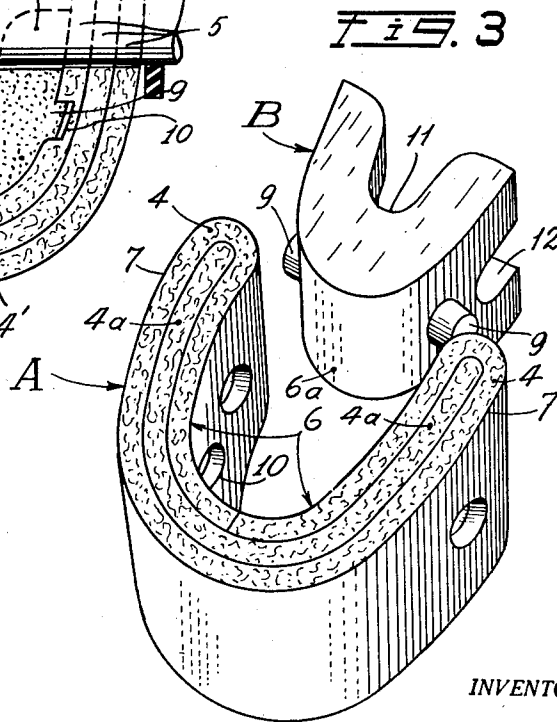
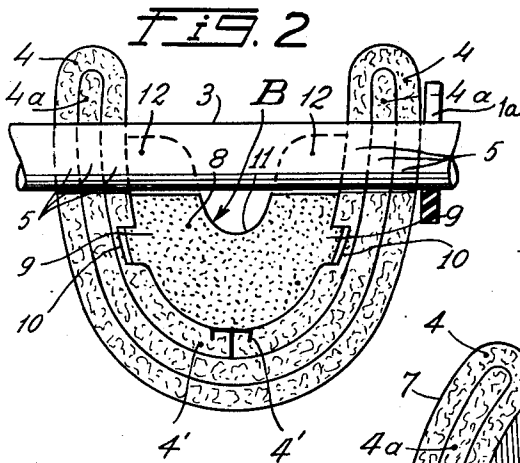
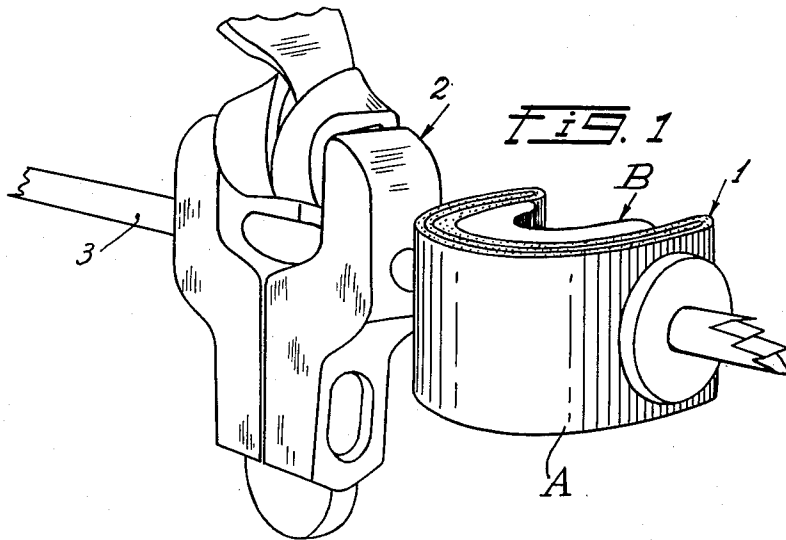


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BUFFER DEVICE, ESPECIALLY ADAPTED FOR ABSORBING
THE BLOWS OF THE PICKERS IN TEXTILE LOOMS
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BUFFER DEVICE ESPECIALLY ADAPTED FOR ABSORBING THE BLOWS OF THE PICKERS IN TEXTILE LOOMS

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The present invention relates to buffers or checks in textile looms serving to absorb the forces exerted by, and imparted to reciprocating buffers in picker units when the picker is catching and throwing the shuttle, which forces prove to be highly detrimental to the pickers and their frame work unless absorbed entirely or in part. More specifically, the present invention relates to buffers which are not only suited to greatly absorb said forces, but which at the same time are apt to receive the periodic knock by the picker without deterioration. U- or horse shoe-shaped buffers, heretofore, have been made of laminated or solid leather straps; however the material of buffers of that kind had to catch the impulse when catching the shuttle, likewise when throwing it. As practical experience has taught, pickers of that structure lose their material strength pre-maturely, especially their original resiliency which first of all is required to make the buffer useful.

The aim as explained before, led to the making of buffers which were made of rubber as a highly springy material. However, since it was unavoidable to fasten such buffers to the picker shaft or to the picker respectively, a rubbing against the picker shaft has been caused and thereby a quick heating-up which soon rendered the rubber slack and consequently unfit for the purpose sought.

To meet this short-coming buffers have been tried, to restrict deterioration, having an outer shoe of rubber supported by an internal layer of leather. However, structures of that sort would not suffice because the rubber had to receive the whole impact of the knocks and at the same time to absorb it, a stress which the rubber-material could not stand after comparatively short run, especially because the friction as described in the paragraph above, could not be eliminated in a structure of this kind.

It is an object of the present invention to provide U-shaped or horse shoe bumpers or buffers suitable to receive the impacts caused by the weaving process without deterioration, and suitable, at the same time, to preserve their original resiliency.

It is another object of the invention to create a buffer having an external constituent of some resiliency and high strength of material which would be capable of resisting the impacts caused by the picker or the shuttle respectively without deterioration because it is always supported by an internal constituent of very high resiliency and preferably of larger volume or mass to transmit the kinetic energy of the impacts from said external constituent to the knock-absorbing internal one thus using the external constituent as a transient member.

It is another object of this invention to provide a bumper or buffer in which an external constituent acts as a carrier of the internal highly springy constituent so that the latter should have no contact whatever with the reciprocating picker shaft thus avoiding any friction between said internal member and said picker shaft.

It is a further object of this invention to shape the internal constituent in a way so as to enable it to follow up the external member in its movements or deviations when bending under the impacts, the length of the side portions of both of the constituents being substantially alike, but the internal constituent preserving distance from the picker shaft.

It is finally an object of this invention to carry said internal constituent by means of projections opposite to cavities in the external constituent suitable to receive

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said projections on the internal constituent, preferably integral with the latter.

Other objects of this invention will be apparent from the disclosures in the progressing specification and the accompanying drawing in which I show a preferred embodiment with the goal of clarification and illustrative purposes and in which

Fig. 1 is a perspective view of the picker assembly including the inventive buffer,

Fig. 2 is a central horizontal section of the buffer, also showing the relative location of the picker shaft, and

Fig. 3 is showing the buffer with the internal constituent in detached position.

Following now the drawing, 1 refers to the assembled buffer as such, 2 indicates the picker, both of the picker 2 and the buffer 1 being mounted on the picker shaft 3.

Buffer 1 comprises an external constituent A of high-strength material but somewhat resilient, and an internal one B of ample resiliency and rather soft material, the latter being carried by the former thus avoiding any contact with picker rod 3.

In the illustration shown, external constituent A comprises a plurality of U-shaped laminae (4, 4a) and is preferably made of leather, said laminae being preferably glued together. As shown in the drawing, outer lamination 4 may be bent back around inner lamination 4a thus embracing same completely, so that its ends 4' may be clamped together, as shown by Fig. 2 of the drawing.

Two opposite holes 5 are provided in the lateral portions 7 of constituent A by means of which buffer 1 is mounted on picker rod 3 by means of a shield 1a, said rod passing through said holes. Said external constituent A is embracing the other or internal constituent B, preferably of rubber or some other highly resilient material. Constituent B consists of a main block 8, and its projections 9 fitting into seats 10, preferably cavities provided at the inner walls of external constituent A, when the buffer is assembled to secure a snug fit between said two constituents. Said projections 9 are preferably made integral with main block 8 and arranged to enter the lateral portions of member A, while they themselves are connected to side portions 6a of member B. Portion 11 of constituent B is made with sufficient radius to follow deviations of portions 7 of member A. Slots 12 in both of the side portions 6a of the internal member B near their ends allow the free and loose passage of shaft 3 across the buffer 1 without touching member B. After assembling, portion B should fit snugly into portion A along all the inner length of the latter or approximately so.

The present inventive buffer obviates all the drawbacks experienced from former structures such as described at the beginning. For, whenever a blow occurs the picker will strike against the external body of leather showing high strength of material, thus offering strong resistance against the initial momentum, rather transmitting the blow to the resilient rubber block of, preferably, larger volume which arrangement adds to the resiliency and tenacity of the external constituent. The former simultaneously contributes to absorb the impact experienced by the picker. The use of rubber, for instance does not cause any heating since there is no friction. The inner block B is held in its exact position due to the snug fit of the projections from member B in the seats 10 in member A, to their closely predetermined relative positions and also due to the resilient materials used all through.

The inventive buffer brings forth a sub-division of the forth-coming impulses, since the rubber is undertaking absorption of the shocks by means of its high resiliency and a rather considerable mass of it while the initial shock goes to the harder and less resilient external constituent which is of sufficient stiffness to prevent said member B from contacting the picker, thus avoiding damage and friction.

Having now described and illustrated one form of my invention I wish it to be understood that my invention is not to be limited to the specific form or arrangement of parts herein described and shown, or more specifically covered by my claims.

What I now claim and wish to protect by Letters Patent is:

1. Shock absorbing buffer in textile looms comprising a U or horse shoe-shaped external constituent of a resilient but knock-resisting material, such as leather, and an internal U or horse shoe-shaped constituent of highly resilient soft material, the former constituent embracing the latter, said external constituent consisting of an outer and an inner lamination, said outer lamination being bent back completely enclosing said inner lamination, the end of said former lamination being clamped together, opposite holes in both of the side portions of said external constituent to receive a picker shaft, cavities opening to the inner walls of same, projections from the outer side walls of said internal constituent, slots in the end-portions of both of the side walls of same, said cavities being located to receive said projections, said slots being shaped as to permit loose passage of a rod brought through said holes.

2. A textile-picker buffer comprising in combination a U or horse shoe-shaped external constituent of a resilient but knock-resisting material such as leather, and an internal U or horse shoe-shaped constituent of a highly resilient soft material, the former constituent embracing the latter, said external constituent consisting of an outer and an inner lamination, said outer lamination being bent back completely enclosing said inner lamination, the ends of said former lamination being clamped together, opposite holes in both of the side portions of said external constituent to receive a picker rod, cavities opening to the inner walls of same, projections from the outer side walls of said internal constituent, slots in both of the end portions of said side walls of same, said cavities being arranged to receive said projections, said slots being shaped as to permit loose passage of said rod brought through said holes.

3. Shock absorbing buffer in textile looms comprising a U or horse shoe-shaped external constituent of a knock resisting though resilient material and a U or horse shoe-shaped internal constituent of highly resilient material, the former embracing snugly the latter, said external constituent consisting of an outer and an inner

lamination, said outer lamination being bent back thus completely enclosing said inner lamination, the ends of said bent back outer lamination being clamped together, means for fastening said external constituent to a picker rod, cavities opening to the innerwalls of said constituent projections from the outer side walls of said internal constituent, said cavities being adapted to snugly receive said projections, and provisions in said internal constituent for loose passage of a picker rod therethrough.

4. Shock absorbing buffer in textile looms comprising a U or horse shoe-shaped external constituent of knock-resisting material, still bending under impulses, and an internal U or horse shoe-shaped constituent of high resiliency, the former snugly embracing the latter, said external constituent consisting of an outer and an inner lamination, said outer lamination being bent back along the inner sides of the inner lamination completely enclosing same, the ends of the bent-back outer lamination being clamped together, opposite holes in both sides of said external constituent to receive a picker rod, means at the inner side walls of said external constituent and means at the outer side walls of said internal constituent said means being adapted to mesh for carrying said internal member by said outside member fastened to the picker rod, slots in the terminals of both of the side walls of said internal constituent, said slots being shaped such as to permit loose passage of rod when the internal member moves under the impacts of the picker.

References Cited in the file of this patent

UNITED STATES PATENTS

1,975,024	Shah	Sept. 25, 1934
2,023,187	Willingham	Dec. 3, 1935
2,111,489	Haupt	Mar. 15, 1938
2,532,543	Dodenhoff	Dec. 5, 1950

FOREIGN PATENTS

106,528	Switzerland	Sept. 29, 1923
378,648	Great Britain	Aug. 18, 1932
406,115	Great Britain	Feb. 22, 1934