July 20, 1948. J. E. MOE 2,445,745

SWEEPSTICK

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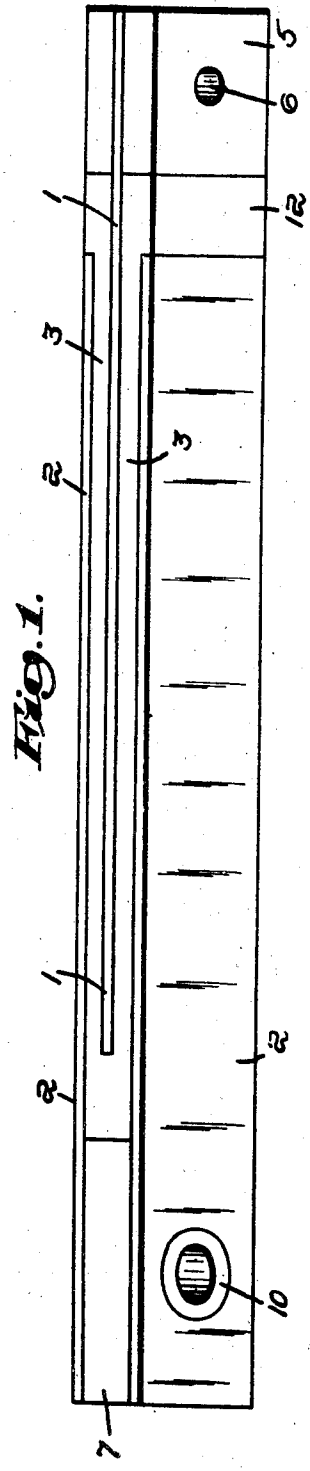


Fig. 1.

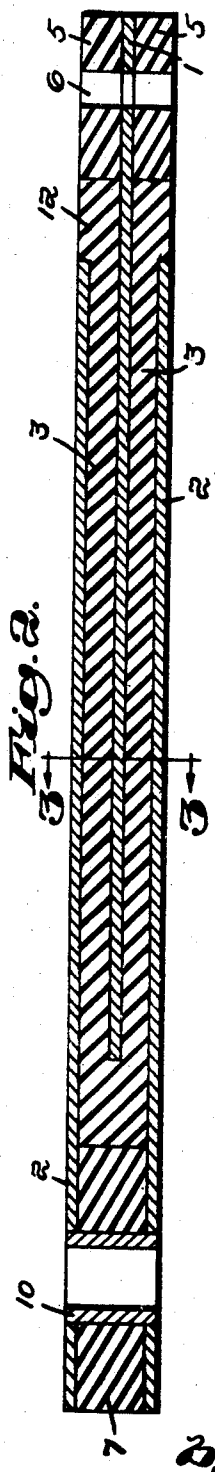


Fig. 2.

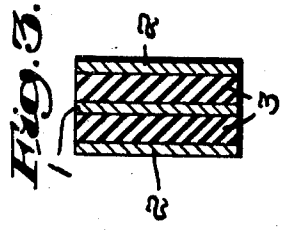


Fig. 3.

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SWEEPSTICK

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3 Claims. (Cl. 139—151)

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My present invention is a new and improved sweepstick for use in looms, and includes a novel construction and also a method of manufacturing the same.

A sweepstick is the power-transmitting link between the picker stick and the power-actuating mechanism therefor, the sweepstick being connected to a lug strap or the like by a pivotal connection which allows for the oscillating or swinging action of the picker stick and the horizontal reciprocating action of the sweepstick.

Heretofore such sweepsticks have been made of metal, wood, or textile material, but in my present invention I have devised a novel combination of a yielding, resilient, shock-absorbing element, in combination with a plurality of relatively non-yielding elements wherein the strains and stresses are transmitted thru the sweepstick from a relatively non-yielding element thru the resilient element to another non-yielding element, or elements. Thus, in my improved construction, wherein strains and stresses are transmitted lengthwise of the sweepstick thru pivotal connections, bolts, or fastenings at opposite ends, I provide relatively non-yielding portions at each end to receive the fastening bolts, positioning the same in overlapped relation throughout the greater portion of their length and uniting them by bonding, vulcanizing, or otherwise, to resilient layers lengthwise of the overlapped portion.

Hence the strains from opposite ends are transmitted both thru the non-resilient elements and the resilient bonding elements, thereby producing a predetermined yielding, resilient, shock-absorbing, and wear-resisting action, greatly increasing the life and efficiency of such a sweepstick, as well as giving a substantially predetermined power impulse and, hence, "whip" or spring to the lug strap and picker stick with which the sweepstick is associated as the power link.

In carrying out my present invention, I provide one or more lengthwise extending strips of metal, wood, plastic, or the like which are relatively rigid and constitute strengthening or reinforcing members, to which the end bolts are attached, and which members are arranged in overlapped or interlocked relation substantially throughout the greater portion of their length but spaced slightly from each other, and with the resilient shock-absorbing element filling such spaces and being bonded or welded to the relatively rigid strips. The resilient spacing and bonding element may be of rubber, synthetic plastic, or other resilient and yielding shock-absorbing material which can be advantageously bonded, vulcanized, or secured directly to the surface of the adjacent portions of the reinforcing members. Thus, the reinforcing or rigid members carrying the fastenings at each end of the sweepstick and the intermediate resilient elements cooperate to insure wear-resistance at the fastenings, and resilience intermediate the fastenings.

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Any suitable method of uniting the rigid elements and the yielding elements can be employed. Preferably I assemble the reinforcing rigid elements in proper lengthwise position for the full length of the sweepstick to be built, with said members overlapping throughout the greater portion of their respective lengths and spaced from each other; and thereupon fill the spaces with plastic material which is then cured, bonded, vulcanized, or otherwise treated to effect the bonding action between the rigid and resilient elements.

Referring to the drawings illustrating a preferred embodiment of my present invention:

Fig. 1 is a lengthwise view in perspective illustrating my improved sweepstick construction made by my novel method;

Fig. 2 is a lengthwise cross-sectional view, and

Fig. 3 is a cross-sectional view on the line 3—3 of Fig. 2.

As shown in the drawings, a sweepstick of suitable or desired length comprises relatively rigid strips or members, preferably of metal, aluminum, or other alloy.

As herein shown, it has an intermediate metal strip 1 extending lengthwise of the sweepstick and a pair of cooperating strips 2—2 of similar material, which strips overlap or interlock throughout substantially the greater portion of their length, being spaced from each other, and with the spacing filled with resilient material 3 bonded throughout the contacting surfaces of the strips 1 and 2. The intermediate reinforcing strip 1 is so assembled as to project at one end, or to the right viewed in Figs. 1 and 2, beyond the ends of the overlapping side strips 2, to which is attached a fiber plug or other wear-resisting material having a bolt-receiving recess 6 extending therethru and thru the center of the metal strip 1, thus giving a reinforced fastening construction at this end of the sweepstick.

At the opposite end, a corresponding plug element 7 is fitted between the members 2—2 and, preferably, is provided with a metal bushing or bearing 10 which extends both thru the plug 7 and strips 2 and 1, thus affording a pivot-receiving fastening to be attached to the lug strap at this end of the sweepstick.

Thus the power impulses transmitted thru the sweepstick from the fastening at one end thru the opening 6, which is connected with the power-actuating mechanism of the loom and thru the pivot pin uniting the other end of the sweepstick thru the bushing 10 to the lug strap, will be conducted from the intermediate relatively rigid element 1 thru the yielding element 3 to the correspondingly non-yielding elements 2—2, as will be readily appreciated on reference to the construction shown in the drawings.

Furthermore, by my novel arrangement of yielding and non-yielding elements, the yielding element is partially enclosed and protected throughout the principal length of the sweepstick between the hardened or fiber plug elements 5 and 7, with a portion only of the yielding element 3 extending as shown at 12 at the ends of the strips 2, thus allowing for the give-and-take between opposite ends of the sweepstick during the loom operations.

Thus the end bolts are rigidly secured, respectively, and the wear, strains, and stresses transmitted therethru to the rigid elements, while the rigid elements are united by the resilient element, thereby provide the desired yielding action, increasing the wear-resistance of the entire pickerstick and afford a shock-absorbing, power-transmitting intermediate element between the opposite ends of the sweepstick.

It will thus be seen that I have devised a combination of metal, wood, or other unyielding and relatively inflexible elements to be assembled in lengthwise overlapping relationship for a considerable portion of their respective lengths, which inflexible elements are spaced apart and are united by a resilient or yielding compound, such as rubber, synthetic plastic, or other suitable material, thereby giving a lengthwise yielding capacity for the completed lug strap with the metallic bearing for the bolts, or fastenings, at the opposite ends.

I claim:

1. A sweepstick of the kind described, comprising a pair of relatively inflexible longitudinally extending elements, an intermediate inflexible element spaced between said pairs, in combination with a resilient element bonded to said inflexible elements substantially throughout their length, whereby a lengthwise resilient action is produced.

2. In a sweepstick of the kind described, having a plurality of lengthwise overlapping relatively inflexible strips bonded together by a resilient element, one of said strips extending beyond the others at one end and having fastening means therein, other selected strips extending beyond said first-mentioned strip and having fastening means in its extended end portion, whereby a lengthwise yielding resilient action is provided.

3. A sweepstick of the kind described, comprising a pair of outer parallel relatively inflexible strips, an intermediate inner relatively inflexible strip in non-contacting parallel position with the outer pair of strips, and overlapping throughout the greater extent of the length of each, in combination with a resilient element uniting said strips in spaced overlapping position, and means for fastening the sweepstick through said outer pair of strips at one end and thru the inner strip at the opposite end.

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