March 31, 1942. F. W. HOLLINGSWORTH, JR 2,278,265

TAPE SELVAGE HARNESS

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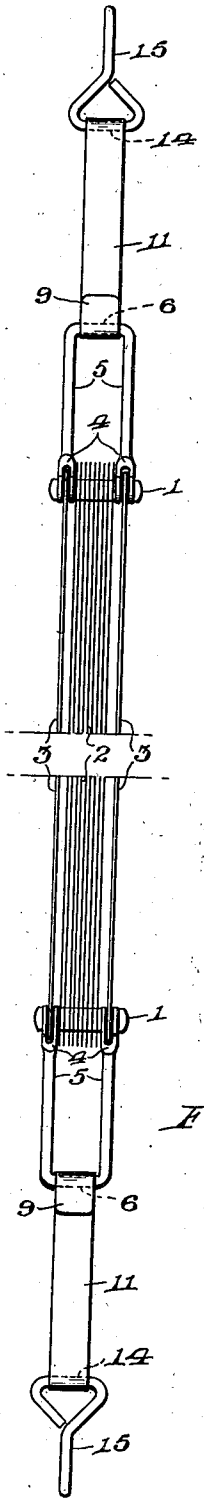


Fig. 1.

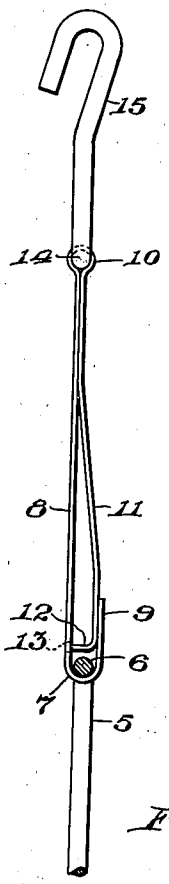


Fig. 2.

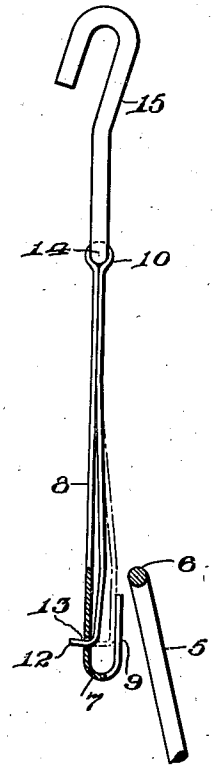


Fig. 3.

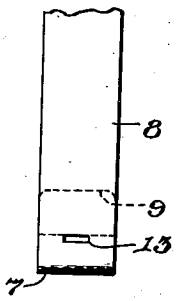


Fig. 4.

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TAPE SELVAGE HARNESS

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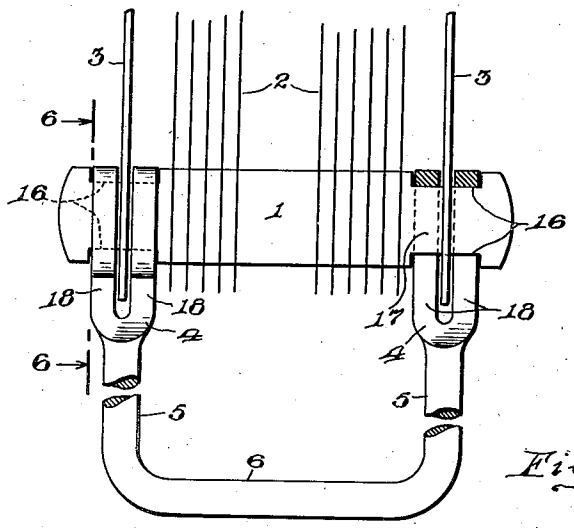


Fig. 5.

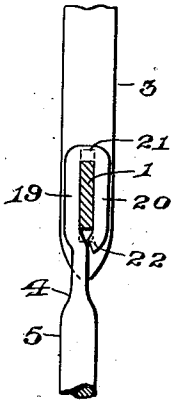


Fig. 6.

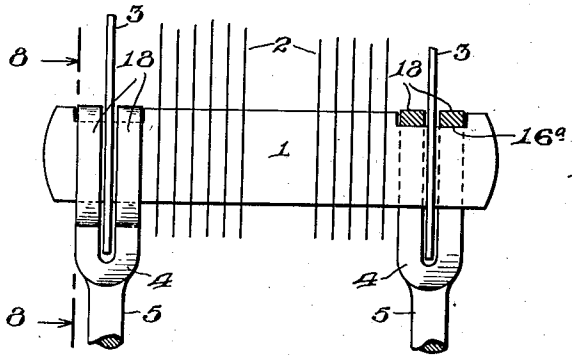


Fig. 7.

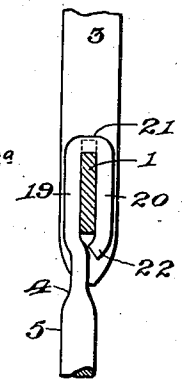


Fig. 8.

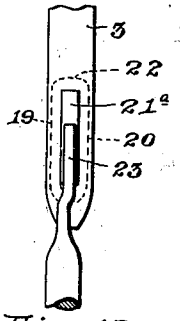


Fig. 12.

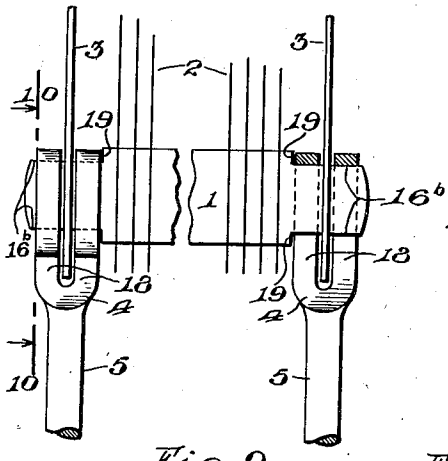


Fig. 9.

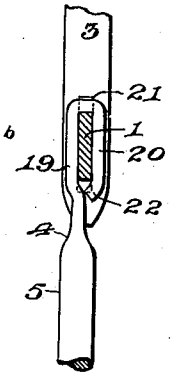


Fig. 10.

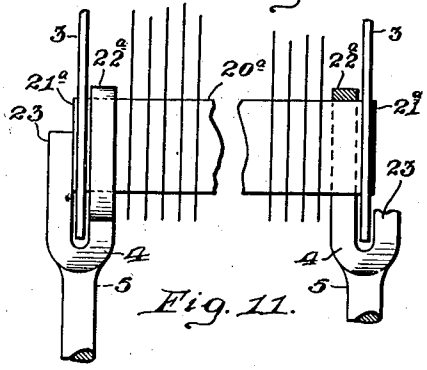


Fig. 11.

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2,278,265

TAPE SELVAGE HARNESS

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Application July 5, 1940, Serial No. 344,086

9 Claims. (Cl. 139—91)

The object of the invention is to provide improvements in tape selvage harnesses, and especially in the heddle bars and associated elements which operatively support the selvage heddles within a loom. Broadly the provision of a separate tape selvage harness makes it possible to draw-in the two or more sets of selvage warp ends at the same time that the warp ends are drawn in the weaving harness, usually in a separate so-called draw-in room, after which the several individual harnesses are placed in a loom as a unit.

Another and more specific object is to provide various types of heddle bars, supporting means therefor, and connections between the said bars and said supporting means, which simultaneously function to operatively position laterally arranged preferably stiffer protective side rods in spaced relation with respect to the intervening heddles, and independently of shoulders or other irregularities upon said bars.

A further object is to provide the combination of a heddle bar having one or more notches, a side rod and a supporting member for said bar, said member comprising a bifurcated looped element surrounding and preferably flattened against the opposite sides of said bar, said bifurcation providing spaced fingers, and the side rod being positioned between the said fingers, while the notching of said bar serves to prevent longitudinal displacement of said bar with respect to said supporting element.

Still another object is to provide an improved form of snap hook for operatively connecting the heddle bar-supporting element to the elevating straps of a loom, which consists in a laterally extending ear or lug carried by a resiliently positioned retaining tongue, and operative to normally prevent the bar-supporting bail from shifting longitudinally with respect to said hook, while said ear or lug is automatically removed from the path of said bail, when and as said tongue is shifted to permit removal of said bail from within said hook.

With the objects thus briefly stated, the invention comprises further details of construction and operation, which are hereinafter fully brought out in the following description, when read in conjunction with the accompanying drawings, in which Fig. 1 is a front elevational view of a selvage harness unit comprising one embodiment of the invention; Fig. 2 is an enlarged fragmentary side elevational view of the upper part of the same; Fig. 3 is a view similar to Fig. 2, except that the resilient tongue of the snap hook has been depressed to permit the release of the bail from said hook; Fig. 4 is a fragmentary rear elevational view of the lower portion only of said hook; Fig. 5 is a fragmentary front elevational view of one of the heddle bars, in this case the lower, together with its adjacent bail shown partly in section, a pair of side rods operatively positioned upon said rod by said bail and a series of intervening heddles; Fig. 6 is a section on the line 6—6 of Fig. 5; Fig. 7 is a view similar to Fig. 5, except that it shows a modified form of the device; Fig. 8 is a section on the line 8—8 of Fig. 7; Fig. 9 is a view similar to Figs. 5 and 7, but showing another modification of the device; Fig. 10 is a section on line 10—10 of Fig. 9; Fig. 11 is a view similar to Figs. 5, 7 and 9, but of a still further modification; and Fig. 12 is a left side elevation of the same.

Referring to the drawings, an improved selvage harness is shown as comprising a pair of heddle bars 1, supported by and between the central portions of which bars are a series of heddles 2, upon the opposite sides and spaced from which are relatively stiffer side rods 3 also engaging and under tension between the bars 1. Each of said heddle bars is also engaged by the bifurcated end portions 4 of the spaced arms 5 of the bail, which latter also comprises a transversely extending central arm-connecting portion 6. This central portion 6 of the said bail normally extends through the hooked end portion 7 of a snap hook, which also comprises a preferably straight shank 8 terminating at one end in the reversely bent hook 9 and at its other end merging through a looped portion 10 into a resiliently positioned tongue 11, which tongue terminates in an angularly disposed lug 12. In the outer position of said tongue, its free end portion abuts closely against the inner surface of the hook end 9, while the lug 12 operates to prevent the central portion 6 of said bail from becoming accidentally released from the snap hook as a whole. However, in order to release said bail from said hook, the tongue 11 is depressed towards the shank 8, thereby simultaneously shifting the lug 12 into and through an aperture 13 in said shank, as shown in Fig. 3, thereby permitting the free removal of said bail from said hook and the insertion into said hook of another such bail when desired. Extending through the loop 10 of said snap hook is the transversely extending portion 14 of any suitably shaped hook 15 or the like, by which the harness as a unit is detachably connected to and between the usual elevating straps (not shown).

Referring to Figs. 5 and 6, one of said heddle bars is here enlarged in order to show that adjacent to each of its opposite ends it is provided with oppositely positioned, inwardly directed, preferably rectangular notches 16, forming an intervening reduced portion 17. The bail 5—5 is shown as being provided with the flattened, bifurcated portions 4 hereinbefore referred to, and providing in each instance a pair of spaced fingers 18, which are preferably looped around the reduced portion 17 of the bar 1, so that the opposite sides 19 and 20 of each finger lie closely adjacent to the opposite sides of said heddle bar, while the intervening curved portion 21 and the free end 22 of each of said fingers are positioned closely within the notches 16. This construction provides a substantially rigid relationship between the bail and the adjacent heddle bar in each instance, while the spaced pairs of looped fingers of the bail operatively position the side rods 3 in spaced relation entirely independently of and free from engagement with the intervening heddles 2.

Referring to Figs. 7 and 8, a similar construction is shown except that in this case the heddle bar 1 is provided adjacent to its opposite ends with only a single notch 16*a* upon what might be termed the inner edge of the bar, that is, upon that edge of the bar which is engaged by the curved portions 21 of the bail fingers, such a construction giving practically the same results as that form of the device illustrated by Figs. 5 and 6, except that the heddle bars are not interchangeable edge for edge, and therefore potentially require greater care in assembling the selvage harness unit as a whole.

Referring to Figs. 9 and 10, a similar construction is shown except that in this case the heddle bar is provided with reduced end portions 16*b* terminating inwardly in oppositely directed shoulders 19*a*. Also in this case, if the bail is formed of a resilient metal, the heddle bar may be released therefrom by expanding or angularly separating the arms 5 of said bail, so as to thereby release at least one pair of looped fingers from the adjacent end of the bar, after which the opposite end of the said bar can be readily withdrawn from the other pair of looped fingers, and either or both of the side rods withdrawn and replaced if desired, as well as the heddles surrounding the intermediate portion of said bar. Thereafter the bar is replaced between and with its ends extending through the bail ends in the opposite direction to its method of removal therefrom, as just explained.

Referring to Figs. 11 and 12, the modification here shown comprises a heddle bar 20*a* having square-cut ends 21*a*, the side rods 3 surrounding said bar closely adjacent to said end and being maintained in operative position by the spaced fingers of the bifurcated portions 4 of said bail. However, in this case the inner finger 22*a* of each pair is sufficiently long to encircle the bar 20*a* closely within the position of the adjacent rod 3, while the opposite or outer finger 23 of each pair is cut off much shorter than the other, and made to extend centrally of the plane of the bar 20*a*, in order to thereby abut directly against the opposite ends of said bar, as shown. In this form of the device, as in the form illustrated by Figs. 9 and 10, the side rods 3 and the intervening heddles 2 may be separated from and replaced with respect to the supporting bar 20*a* by angularly separating the resilient arms 5, as hereinbefore described.

In the operation of this device, the several parts are in each instance assembled as shown, after which a highly efficient harness unit is provided. As a matter of fact, it is relatively rare that replacement of side bars of heddles is required, or the number of heddles changed in a given harness unit, but for those installations for which a mill desires a unit in which the side bars and heddles can be removed and replaced at will, those modifications shown in Figs. 9 to 12 are provided.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent of the United States is:

1. In a selvage harness, the combination of a heddle bar with a suspending means having a bifurcated portion providing integral, fixedly spaced fingers which encircle a portion of said bar, and a side rod engaging said bar between the spaced fingers of said bifurcated portion.

2. In a selvage harness, the combination of a heddle bar with a suspending means providing spaced arms having bifurcated terminal portions, each of which provides a plurality of spaced fingers which surround said bar, side rods also surrounding said bar between the fingers of each arm, and heddles carried by said bar between said arms and independently of said side rods.

3. In a selvage harness, the combination of a heddle bar with a suspending bail providing spaced arms having bifurcated portions, each of which provides a pair of spaced fingers which closely surround said bar to prevent any substantial angular movement between said bar and said bail, a side rod engaging said bar between each pair of fingers, and a plurality of heddles carried by said bar between said bifurcated portions and independently of said side bars.

4. In a selvage harness, the combination of a heddle bar with a suspending bail providing spaced arms having bifurcated portions, said bar being provided with spaced notches and the bifurcated portions of said bail providing spaced fingers which surround said bar within said notches, a side rod engaging said bar between each pair of said fingers, and a plurality of heddles carried by said bar between said bifurcated portions and independently of said side bars.

5. In a selvage harness, the combination of a heddle bar with a suspending bail providing spaced arms having bifurcated portions, said bar being provided with spaced pairs of oppositely positioned notches and the bifurcated portions of said bail providing spaced fingers which surround said bar within the notches of each pair, a side rod engaging said bar between each pair of said fingers, and a plurality of heddles carried by said bar between said bifurcated portions and independently of said side bars.

6. In a selvage harness, the combination of a heddle bar with a suspending bail providing spaced arms having bifurcated portions, said bar being provided with spaced portions of reduced width and the bifurcated portions of said bail providing spaced fingers which surround said reduced portions, a side rod engaging said bar between each pair of said fingers, and a plurality of heddles carried by said bar between said bifurcated portions and independently of said side bars.

7. In a selvage harness, the combination of a heddle bar with a suspending bail providing spaced resilient arms which are adapted to yieldingly separate, each arm being bifurcated to pro-

vide a pair of spaced fingers which are looped around a portion of said bar, said bar having reduced end portions adapted to receive said loops, a side rod positioned between the fingers of each pair and surrounding said bar, and a plurality of heddles carried by said bar between said arms independently of said side rods, and replaceable upon first sliding at least one of said looped pairs of fingers from the adjacent reduced portion of said rod.

8. In a selvage harness, the combination of a heddle bar having reduced end portions terminating inwardly in shoulders, with a suspending bail providing spaced resilient arms which are adapted to yieldingly separate, each arm being bifurcated to provide a pair of spaced fingers which are looped around a reduced end portion of said bar and bear yieldingly against the adjacent shoulders, a side rod positioned between the fingers of each pair of fingers and also surrounding said bar, and a plurality of heddles carried by said bar between said arms and independently of said side rods, said side rods and heddles being replaceable after first sliding one or both of the bifurcated portions of said bail from said bar.

9. In a selvage harness, the combination of a heddle bar with a suspending bail providing spaced resilient arms which are adapted to yieldingly separate, each arm being bifurcated to provide a pair of spaced fingers, one of which is looped around a portion of said bar adjacent to its end and the other finger terminating in alignment with and against the end of said bar, a side rod surrounding said bar between said fingers, and a plurality of heddles carried by said bar between said arms and independently of said side rods, said side rods and heddles being replaceable after first sliding one or both of the bifurcated portions of said bail from said bar.

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