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A. J. KIENY ETAL

3,349,809

LOOM HARNESS

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FIG. 1

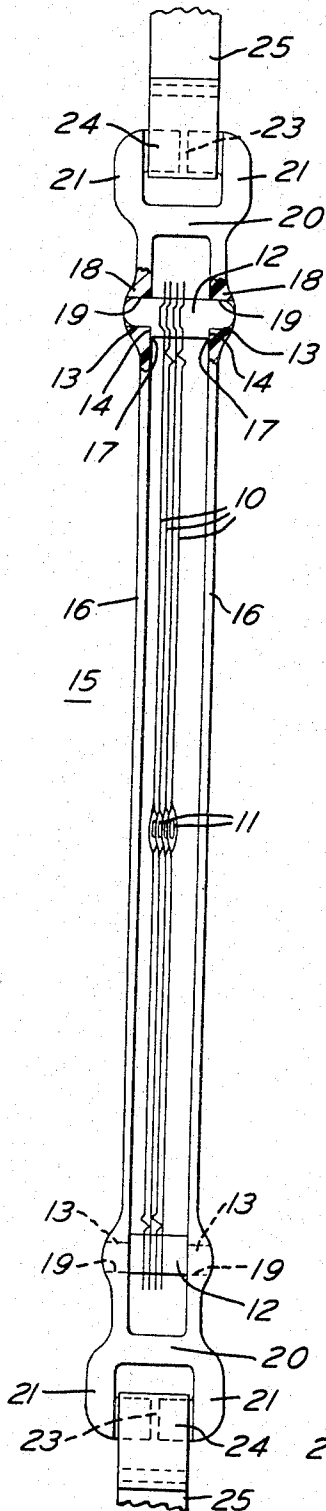


FIG. 2

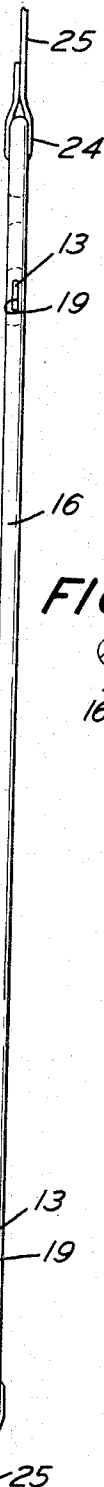


FIG. 3

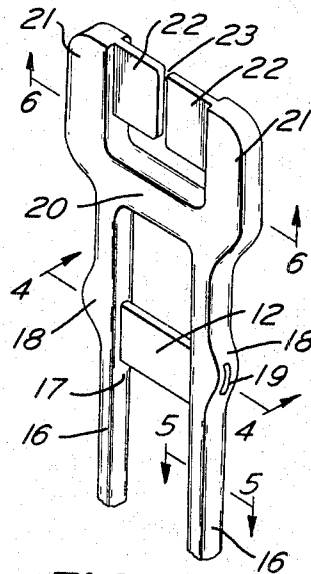


FIG. 5



FIG. 6

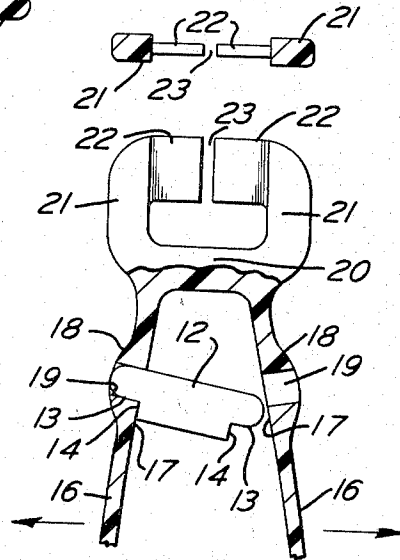


FIG. 4

INVENTORS.
ALBERT J. KIENY
CHARLES F. KRAMER
FRANK H. KAUFMANN

BY

G. T. Wobensmith

ATTORNEY

1

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LOOM HARNESS

Albert J. Kieny and Charles F. Kramer, Philadelphia, and Frank H. Kaufmann, Huntingdon Valley, Pa., assignors to Steel Heddle Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania

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2 Claims. (Cl. 139—91)

ABSTRACT OF THE DISCLOSURE

A selvage frame made of one piece and having side frame portions carrying heddle supporting rods, the side frame portions being resiliently bendable for access to an end of the heddle supporting rod, the frame having strap receiving ends for ready attachment of a harness strap, the frame being of a low friction plastic material to avoid abrasion of metal harness frames and scarring of wooden harness frames.

This invention relates to loom harness and more particularly to improved structure for mounting a small group of heddles to form a selvage or for weaving stripes in a fabric.

Various forms of selvage frames have heretofore been proposed. In the prior U. S. patent to J. J. Kaufmann, No. 2,287,687, there is disclosed a selvage frame which proved quite satisfactory with other harness frames having top and bottom rails of wood. Upon the introduction of harness frames having metal top and bottom rails there is a tendency of the selvage frame to abrade the metal rails of the other frames. This was reduced in part by eliminating the metallic connector and substituting a strap of woven textile material directly attached to the bail member. Abrasion was not however eliminated by the use of such a strap.

It has been proposed to provide a selvage heddle frame of spring wire, or of flexible sheet metal as in the U.S. patent to Wilmarth, No. 686,569. The construction was not properly balanced in its stress application, was not adapted for easy application of a harness strap, would be abrasive in its action on other harness frames, had hooked portions which could catch during shedding, and had other shortcomings.

It is the principal object of the present invention to provide a selvage harness which eliminates abrasion of other harness in the loom, which can be readily inserted and removed, and with respect to which the heddles can be inserted or removed as desired.

It is a further object of the present invention to provide a selvage harness which is capable of use for other purposes and which is light in weight and free from likelihood of abrading metal harness frames or scarring wooden harness frames.

It is a further object of the present invention to provide a harness frame for small groups of heddles which is adapted for quick and easy attachment or detachment of an actuating strap and which avoids the necessity for attachment by metal buckles.

It is a further object of the present invention to provide a harness frame for small groups of heddles having heddle supporting rods with respect to which the sides of the frame are swingable to add or subtract heddles.

It is a further object of the present invention to provide a harness frame for small groups of heddles carried on heddle bars, the sides of which are movable for the insertion or removal of heddles and in which the tension at the ends tends to lock the rods in place.

2

Other objects and advantageous features of the invention will be apparent from the description and claims.

The nature and characteristic features of the invention will be more readily understood from the following description taken in connection with the accompanying drawings forming part thereof, in which:

FIGURE 1 is a front elevational view of a selvage harness embodying the main features of the present invention;

FIG. 2 is a side elevational view of the harness of FIG. 1;

FIG. 3 is an enlarged perspective view of the upper end of the frame with the actuating strap and heddles omitted;

FIG. 4 is a fragmentary front elevational view of the top end of the frame, illustrating the spreading of the side members for insertion or removal of heddles;

FIG. 5 is a horizontal sectional view taken approximately on the line 5—5 of FIG. 3; and

FIG. 6 is a horizontal sectional view taken approximately on the line 6—6 of FIG. 3.

It should, of course, be understood that the description and drawings herein are illustrative merely, and that various modifications and changes can be made in the structure disclosed without departing from the spirit of the invention.

Like numerals refer to like parts throughout the several views.

Referring to the drawings, in the particular embodiment of the invention there shown, the heddles 10 may be of any preferred type but preferably are of well-known type of thin flat stripes of metal or wire with central warp eyes 11. The heddles 10 are mounted on the heddle supporting bars 12 in the ordinary manner.

The heddle supporting bars 12 are short and preferably are punched from a metallic strip. The end portions of each heddle supporting bar 12 are reduced in width as at 13 to provide vertical shoulders 14.

One heddle supporting bar 12 is provided at the upper ends of the heddles 10 and another at the lower ends of the heddles 10, the bars 12 being carried in a frame 15 as hereinafter explained.

The frame 15 is preferably made of synthetic plastic in one piece, and of a material having a low friction coefficient with respect to metal. A particularly suitable material is nylon, the plastic available under the name "Delrin," also being suitable. High molecular weight polyethylene terephthalate can be employed but is difficult to mold to the desired shape.

The frame 15 has resilient bendable normally parallel side frame body portions 16 with inner faces 17 and enlargements 18 near their upper and lower ends. The side body portions 16 at the enlargements 18 have horizontal openings 19 therethrough for the reception of the reduced portion 13, the inner faces 17 having the shoulders 14 abutting thereagainst.

The side body portions 16 have rounded edges so as not to present any sharp vertical edges, and are connected at their upper and lower ends by upper and lower end frame or body portions 20 and have vertical parallel side portions 21 spaced at a greater distance than the side body portions 16.

The side portions 21 have vertical strip portions 22 extending therefrom and toward each other with a slot 23 therebetween providing a buckle or open eye for the insertion of a bight or loop 24 of a harness strap 25. The harness strap 25 is preferably a woven strap of textile material, such as nylon.

The strip portions 22 are of lesser thickness than the end frame body portions 20 and side frame body portions 21 to accommodate the bight or loop 24 of the harness strap 25 and avoid undue thickness at this location at

3

which the space is usually restricted. Wear of the harness strap 25 is thus reduced or avoided.

In use, access to the heddle supporting bars 12 for the mounting or removal of heddles 10 is had by grasping the side frame portions 16 close to the enlargements 18 and springing the same to separated positions as indicated in FIG. 4 so that one end of the heddle supporting bar 12 is accessible for mounting or removing heddle bars 10. If desired, the heddle bar 12 can be removed from the frame 15 for this operation, or in some instances the heddle bar 12 with one end free can have heddles 10 added thereon or removed and without complete removal of the heddle bar 12. The free end or ends of the heddle bar 12 can then be reinserted into the opening or openings 19. The resilience of the side frame body portions 16 returns these portions to their normal and undistorted positions. The engagement of the ends 13 in the openings 19 and of the shoulders 14 with the faces 17 retains the heddle supporting bars 12 and the heddles 10 thereon in assembled relation.

The operation is the same at the lower end as at the upper end of the frame 11.

The harness strap 25 is mounted in position by inserting the end of the loop or bight 24 vertically through the slot 23 and then swinging the loop or bight 24 and the strap 25 to a position in longitudinal alignment with the frame 11.

The tensioning of the frame 11, in use, by the harness straps 25 also aids in locking the heddle supporting rods 12 in place.

It will thus be seen that a selvage harness has been provided with which abrasion of metal harness frame rails as well as other frame rails is avoided, and with which the other objects of the invention are attained.

We claim:

1. In a loom harness for supporting small groups of heddles, heddle supporting bars upon which said heddles are mounted, said bars having vertical shoulders inwardly of their ends,

4

a frame of one piece of synthetic plastic material of low frictional characteristics,

said frame having continuous and integral side frame portions and upper and lower end frame portions, said side frame portions having openings in which the ends of the heddle supporting bars are engaged and inner face portions with which said shoulders are in engagement,

said side frame portions being resiliently bendable and being separable at the locations of said openings for insertion and removal of said heddle supporting bars, said end frame portions having integral side portions carried thereby and extending longitudinally beyond said side frame portion, and

transversely extending strip portions between said longitudinally extending side portions and coplanar with said frame for direct harness strap engagement, and

said strip portions have a slot intermediate their ends for harness strap insertion.

2. Loom harness as defined in claim 1 in which said strip portions are of lesser thickness than the side frame portions from which they extend to accommodate the harness strap.

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40 MERVIN STEIN, *Primary Examiner*.

J. KEE CHI, *Examiner*.