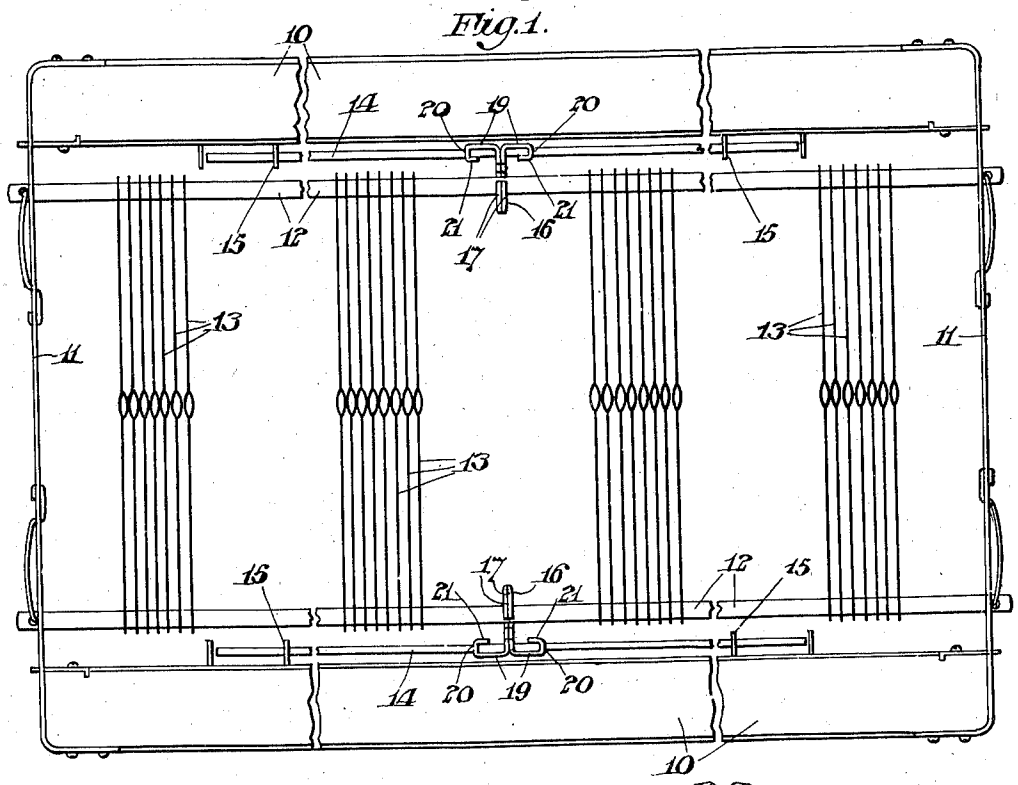
July 2, 1940. J. J. KAUFMANN 2,206,844

HEDDLE FRAME

Filed Aug. 1, 1938

Fig. 1.



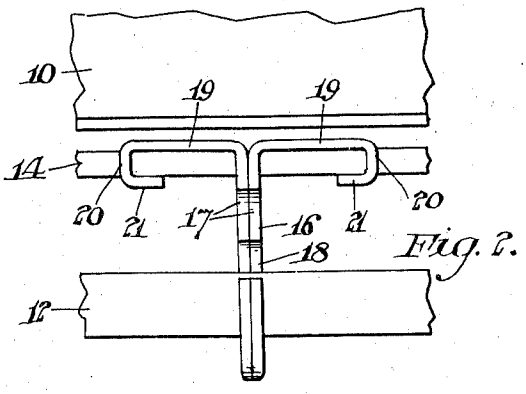


Fig. 2.

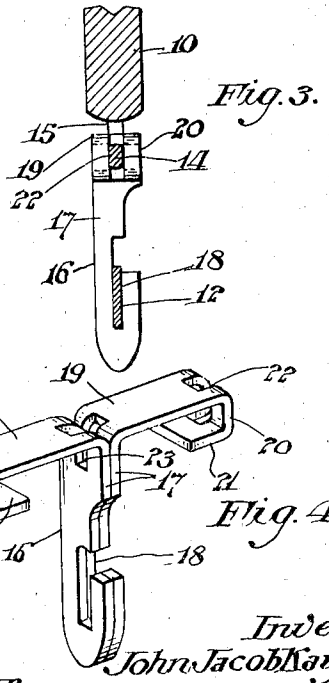


Fig. 3.

Fig. 4.

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HEDDLE FRAME

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3 Claims. (Cl. 139—92)

This invention relates to heddle frames for looms, and it relates more particularly to improved means for supporting the heddle bars intermediate the ends thereof.

Heretofore, various means have been employed to support the heddle bars of loom harness frames, intermediate their ends, to prevent their displacement or distortion when subjected to the stresses and strains incident to the operation of the loom. The most common form of such devices comprises the so-called "hook" members which are fixedly mounted in the top and bottom rails of the heddle frames at various places along the length thereof.

However, in the use of fixedly located hook members, the heddles are not permitted the requisite freedom of movement upon the heddle rods, which frequently results in warp streaks and in other defects in the weave. Recourse has therefore been had to the so-called "slide hooks" comprising supporting members slidably mounted on additional or auxiliary rods carried by the top and bottom rails of the frame. Various forms of such slide hooks have been devised, none of which, however, have proved entirely satisfactory.

One of the principal difficulties encountered in the use of slide hooks to support the heddle bars has been their tendency to cock and bind on their supporting rods and on the heddle bars, in which event they are more apt to cause defects in the weave than the permanently fixed but properly located hooks.

The principal object of the present invention is to provide a novel form of slide hook which is so mounted and supported on the auxiliary rod that there will be no tendency to bind and to cause the slide member to be held in fixed position.

A further object of the invention is to provide a form of slide hook for loom heddle frames which will have the aforesaid advantages, but which may also be used in connection with the other parts of the loom harness frames at present in common use.

A further object of the invention is to provide a slide hook having the aforesaid advantages, in the use of which wear of the supporting rod, as well as of the heddle bars, will be reduced to a minimum.

A further object of the invention is to provide a form of slide hook having the advantages above set forth, and which may be inexpensively made.

Further objects and advantages of the invention will be apparent to those skilled in the art.

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

Figure 1 is an elevational view of a heddle frame having mounted therein, heddle bar supporting devices embodying the main features of the present invention;

Fig. 2 is an enlarged fragmentary detail view, in front elevation, of a preferred form of slide hook as illustrated in Fig. 1, together with certain of the associated parts of the heddle frame;

Fig. 3 is a side elevation of a portion of the structure shown in Fig. 2, the rail, heddle bar, and auxiliary supporting rod, being shown in section; and

Fig. 4 is a perspective view of one of the slide hooks detached.

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

Referring to the drawing, the heddle frame there shown consists of the top and bottom rails or shafts 10 connected at their ends by means of the side strips 11. Extending from end to end of the heddle frame and arranged near the top and bottom thereof in the usual manner, are the heddle bars 12 upon which the heddles 13 are mounted.

The heddle frame is also provided with auxiliary supporting rods 14, each of said rods being preferably of non-circular cross section. The rods 14 are supported in the frame by means of screw eyes 15, which are mounted in the top and bottom rails 10 at the desired locations along the inner edges thereof.

Upon the rods 14 are mounted the slidable supporting members 16 comprising the principal novel part of the present invention. While in Figure 1 of the drawing, there is shown but a single one of the slidable members 16 on each of the rods 14, it should, however, be understood that in actual practice a plurality of such slidable members is mounted on each of said rods, the number employed depending in each instance upon the conditions, such as the length of the frame and the amount of strain imparted by the warp when the shedding takes place.

The preferred form of slidable supporting

member 16 is shown in Figs. 1 to 4 of the drawing. As there shown, the same is preferably made by punching and forming from a strip of metal, and it has a vertically extending portion 17 of double thickness, the two parts being secured to each other by spot welding, brazing, or other permanent fastening means. These vertically extending portions 17 are suitably recessed in any preferred manner as, for example, at 18, for the reception of the heddle bar 12, whereby said heddle bar, when seated in said recess 18, will be held against distortion or displacement in the frame.

At one end of each of the vertical portions 17 of the supporting member 16, the metal is bent to provide a horizontally extending portion 19 which extends along and engages the edge of the rod 14 on the side thereof which is disposed toward the inner edge of the rail to which said rod is secured. At the end of each of the horizontally extending portions 19, the strip is bent over vertically, as at 20, and then horizontally, as at 21, the horizontal portion comprising a lip which bears against the other edge of the rod. The vertically extending portions 20 at the ends of the supporting member 16 are apertured as at 22, and likewise the upper part of each of the vertically extending portions 17 is apertured as at 23 to permit the mounting of the device on rod 14.

By the foregoing arrangement, the supporting member is provided with extended bearing surfaces which engage one edge of the rod, and with inturned lips also having bearing surfaces of substantial area which engage the other edge of said rod. There is thus assured complete freedom of movement of the supporting member 16 on the auxiliary rod, so that whenever the heddles tend to crowd against the same, the proper accommodation will automatically be made and the formation of warp streaks and other defects in the cloth, by reason of such crowding of the heddles against the supporting hook member, will be eliminated.

Likewise, the extended bearing surfaces provided on the side of the supporting device which is subjected to the greatest amount of wear, will tend to reduce the wear to a minimum, and a longer life of the supporting member, as well as of the auxiliary rod and the heddle bars, will be obtained.

I claim:

1. In a heddle frame for looms comprising top and bottom rails, heddle bars upon which the heddles are mounted, auxiliary supporting rods carried by the top and bottom rails adjacent the inner edges thereof, and slidable members mounted on the auxiliary supporting rods for supporting the heddle bars intermediate their ends; said slidable members each comprising two parts shaped and disposed symmetrically with respect to each other, each of said parts having a vertically extending portion permanently united to the corresponding vertically extending portion of the other part, said united portions having a recess within which the heddle bar is positioned, each of said parts also having a horizontal portion extending laterally from the vertical portion and bearing against one edge of the auxiliary supporting rod, an end portion extending from the laterally extending portion, and an inturned horizontal portion extending from said end portion and bearing against the other edge of the auxiliary supporting rod.

2. In a heddle frame for looms comprising top and bottom rails, heddle bars upon which the heddles are mounted, auxiliary supporting rods carried by the top and bottom rails adjacent the inner edges thereof, and slidable members mounted on the auxiliary supporting rods for supporting the heddle bars intermediate their ends; said slidable members each comprising two parts shaped and disposed symmetrically with respect to each other, each of said parts having a vertically extending portion permanently united to the corresponding vertically extending portion of the other part, said united portions having a recess within which the heddle bar is positioned, each of said parts also having a horizontal portion extending laterally from the vertical portion and bearing against one edge of the auxiliary supporting rod, an end portion extending from the laterally extending portion, and an inturned horizontal portion extending from said end portion and bearing against the other edge of the auxiliary supporting rod, and the end portion of each part having an aperture through which the auxiliary supporting rod extends.

3. In a heddle frame for looms comprising top and bottom rails, heddle bars upon which the heddles are mounted, auxiliary supporting rods carried by the top and bottom rails adjacent the inner edges thereof, and slidable members mounted on the auxiliary supporting rods for supporting the heddle bars intermediate their ends; said slidable members each comprising two parts shaped and disposed symmetrically with respect to each other, each of said parts comprising a unitary flat metallic strip bent and formed to provide a vertically extending portion, a horizontal portion extending laterally from the vertical portion and bearing against one edge of the auxiliary supporting rod, an end portion extending from the laterally extending portion, and a horizontal portion extending from said end portion and bearing against the other edge of the auxiliary supporting rod, the end portion of each part having an aperture through which the auxiliary supporting rod extends, the vertically extending portion of each part being permanently united to the corresponding vertically extending portion of the other part, and the heddle bar being carried by said vertically extending portions.

JOHN JACOB KAUFMANN.