Jan. 7, 1936. J. J. KAUFMANN 2,026,787

LOOM HARNESS

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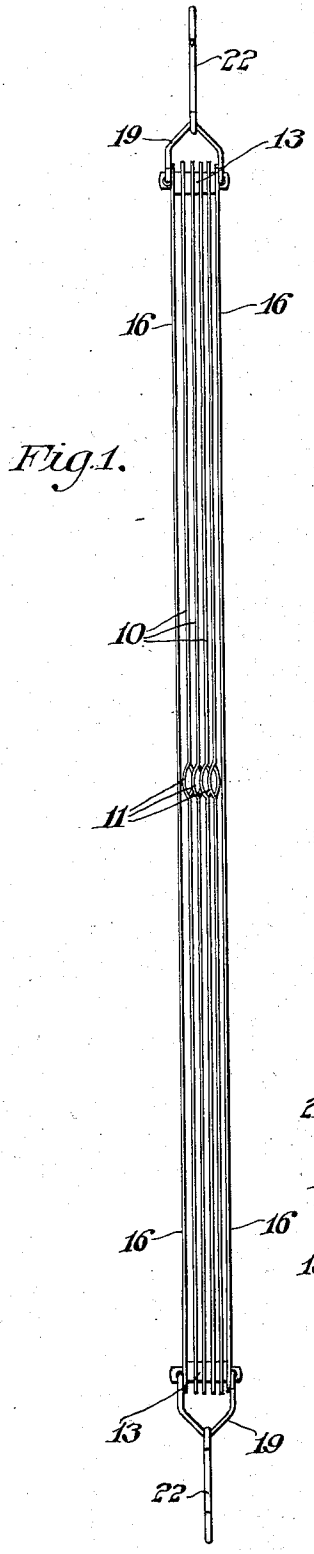


Fig. 1.

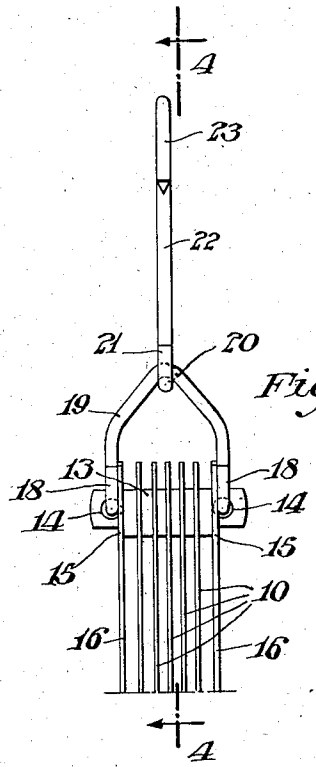


Fig. 2.

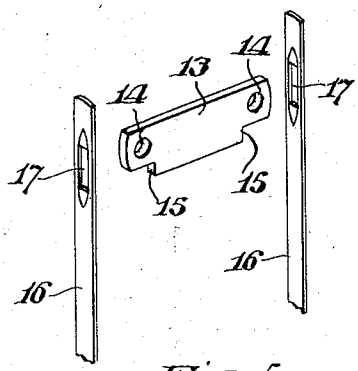


Fig. 5.

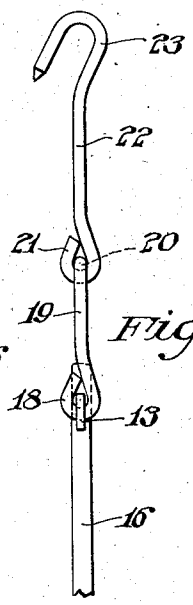


Fig. 3.

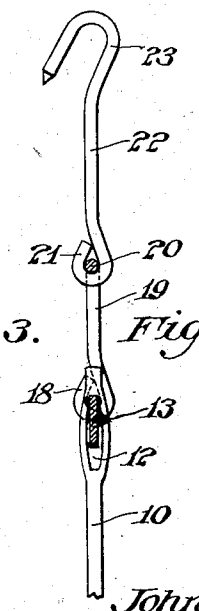


Fig. 4.

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LOOM HARNESS

John Jacob Kaufmann, Elkins Park, Pa., assignor to Steel Heddle Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania

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10 Claims. (Cl. 139—91)

My invention relates to loom harness, and it relates more particularly to improved means for mounting in a loom, groups of heddles for controlling the warp ends of the selvage, although it will of course be understood that the harness may be used for other purposes, such for instance as weaving stripes in a fabric, in which the warp ends thereof are manipulated independently of the ends controlled by the main harness frames.

Heretofore, in the mounting of small groups of heddles in a loom for the purposes aforesaid, the arrangement most commonly used comprised the provision of relatively short supporting bars upon which the heddles were mounted, which in turn were connected to the actuating straps by means of unitary hook members. One of the principal difficulties encountered with this arrangement was that the relatively short supporting bars, upon which the heddles were mounted, would become tilted from their proper horizontal positions, causing the heddles to be crowded toward one side, and thus causing inequalities in the weave.

The principal object of my present invention is to provide loom harness for controlling relatively small groups of heddles for selvage work and the like, which will be simple, durable and efficient, which will be inexpensive in construction, and in which the heddle supporting bars will at all times be maintained horizontal, so that the heddles mounted thereon will be properly supported and improper crowding of the warp thereby prevented.

The nature and characteristic features of my 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 a front elevational view of a heddle supporting device embodying the main features of my present invention;

Fig. 2 is an enlarged fragmentary elevational view of the upper portion of the structure shown in Fig. 1;

Fig. 3 is a side elevational view of the portion of the structure shown in Fig. 2;

Fig. 4 is a vertical section taken approximately on the line 4—4 of Fig. 2; and

Fig. 5 is a perspective view illustrating, in detached relationship, certain of the parts of the structure.

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

Referring to the drawing, in the particular embodiment of my invention therein shown, 10 are the heddles, which may be of any preferred type but which are shown as made of a thin flat strip of metal or wire in which a central warp eye 11 of the ordinary type is provided. Each of the heddles 10 is also provided at its ends with mortises 12, for mounting the same on the heddle supporting bars.

The heddle supporting bars consist of relatively short members 13, punched and formed from metallic strips, and provided with perforations 14 near the ends thereof for a purpose to be presently explained. The end portions of the heddle supporting bars are reduced in width, thereby providing shoulders 15 for a purpose to be presently explained.

One heddle supporting bar is provided at the top, and another at the bottom of the structure, and connecting said bars are side members 16, also made of thin flat strips of metal or wire preferably somewhat stiffer and heavier, however, than the wire from which the heddles 10 are formed. Near each end of each of the side members 16 there is provided a slot 17 complemental to the reduced end portion of the bar 13, upon which it is mounted. The arrangement is such that when the side members 16 are mounted with the slots 17 thereof engaging the reduced end portions of the bars 13, the inner faces of said side members 16 adjacent the slots 17 will abut against the shoulders 15 of said bars.

The side members 16 are maintained on the bars by means of the looped end portions 18 of a bail member 19, which extend through the apertures 14 in the reduced end portions of the bars 13, and when so mounted serve to hold the side members 16 in proper position against the shoulders 15 of the bars 13, so that skewing of said bars will be prevented when the various parts are assembled.

The central portion of the bail member 19 is V-shaped, terminating in a central apex 20, at which point said bail member is engaged by the looped end portion 21 of a hook member 22. The other end of the hook member 22 is shaped in the usual hook formation, as at 23, for engagement in the apertures provided in the actuating strap (not shown).

It will be noted that the portion of the hook member 22 which engages the actuating strap comprises a single piece of wire, so that the apertures in the actuating strap may be made as small

as possible, instead of being abnormally large with respect to the width of the strap, as they are when hook members of the present type are used, which are made in unitary form with a double thickness of wire at the point where the strap is engaged.

Furthermore, the provision of the bail member 19 and the hook member 22 in looped engagement therewith, permits the maintenance of the supporting bars 13 and side members 16 in proper relationship, as any tendency toward distortion will be eliminated by the free pivotal connection between the hook member and the bail member.

I claim:

1. In a loom harness for supporting small groups of heddles, heddle supporting bars at the top and bottom thereof, a one piece bail member at the top and another one piece bail member at the bottom, each of said bail members having end portions engaging the end portions of the respective supporting bars and means in free pivotal engagement with the bail members for connecting said bail members to the actuating straps.

2. In a loom harness for supporting small groups of heddles, heddle supporting bars at the top and bottom thereof, bail members having looped end portions extending through apertures in the end portions of the supporting bars, and means in free pivotal engagement with the bail members for connecting the said bail members to the actuating straps.

3. In a loom harness for supporting small groups of heddles, heddle supporting bars at the top and bottom thereof, bail members having looped end portions extending through apertures in the end portions of the supporting bars, and hook members in looped free pivotal engagement with the bail members.

4. In a loom harness for supporting small groups of heddles, heddle supporting bars at the top and bottom thereof, side members having their end portions in engagement with the end portions of said supporting bars, and bail members having looped end portions extending through apertures in the end portions of the supporting bars and serving to hold the side members in fixed relationship with respect to the supporting bars.

5. In a loom harness for supporting small groups of heddles, heddle supporting bars at the top and bottom thereof, side members having their end portions in engagement with the end portions of said supporting bars, bail members having looped end portions extending through apertures in the end portions of the supporting bars and serving to hold the side members in fixed relationship with respect to the supporting bars, and hook members in looped engagement with the bail members.

6. In a loom harness for supporting small groups of heddles, heddle supporting bars at the top and bottom thereof, side members having their end portions in engagement with the end portions of said supporting bars, said supporting bars having shoulders against which the end portions of the side members abut, and means for holding the side members in fixed relationship with respect to the supporting bars.

7. In a loom harness for supporting small groups of heddles, heddle supporting bars at the top and bottom thereof, side members comprising thin flat metallic strips having their end portions in slotted engagement with the end portions of said supporting bars, said supporting bars having shoulders against which the end portions of the side members abut, and bail members having end portions engaging the end portions of the supporting bars and serving to hold the side members in fixed relationship with respect to the supporting bars.

8. In a loom harness for supporting small groups of heddles, heddle supporting bars at the top and bottom thereof, side members comprising thin flat metallic strips having their end portions in slotted engagement with the end portions of said supporting bars, said supporting bars having shoulders against which the end portions of the side members abut, bail members having end portions engaging the end portions of the supporting bars and serving to hold the side members in fixed relationship with respect to the supporting bars, and hook members in looped engagement with the bail members.

9. In a loom harness for supporting small groups of heddles, heddle supporting bars at the top and bottom thereof, side members comprising thin flat metallic strips having their end portions in slotted engagement with the end portions of said supporting bars, said supporting bars having shoulders against which the end portions of the side members abut, and bail members having looped end portions extending through apertures in the end portions of the supporting bars and serving to hold the side members in fixed relationship with respect to the supporting bars.

10. In a loom harness for supporting small groups of heddles, heddle supporting bars at the top and bottom thereof, side members comprising thin flat metallic strips having their end portions in slotted engagement with the end portions of said supporting bars, said supporting bars having shoulders against which the end portions of the side members abut, bail members having looped end portions extending through apertures in the end portions of the supporting bars and serving to hold the side members in fixed relationship with respect to the supporting bars, and hook members in looped engagement with the bail members.

JOHN JACOB KAUFMANN.