H. W. HAKES.

HARNESS FRAME FOR LOOMS.

APPLICATION FILED JAN. 28, 1905.

968,847. Patented Aug. 30, 1910.

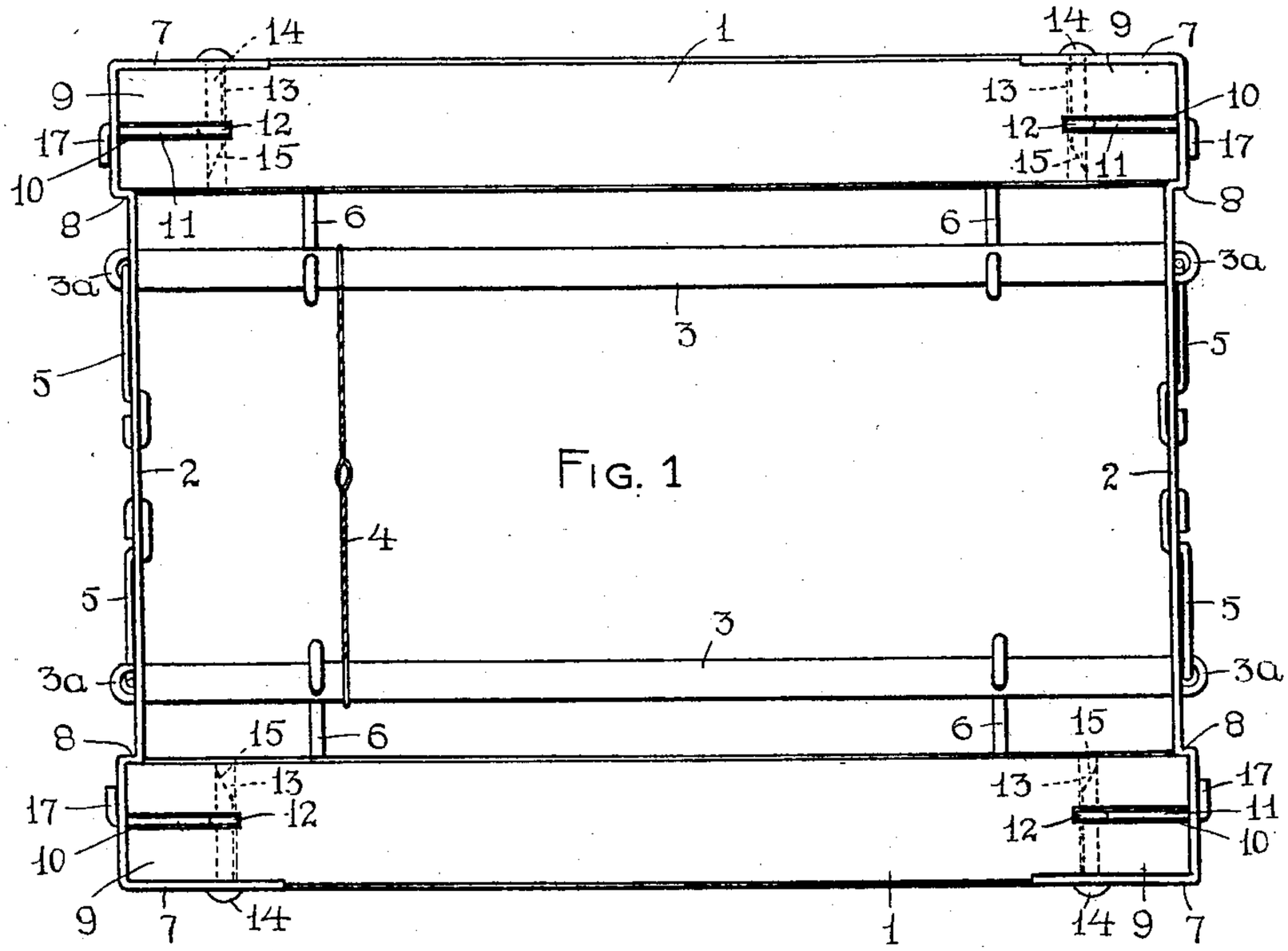

FIG. 1

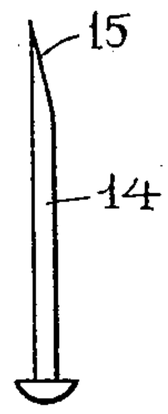

FIG. 3

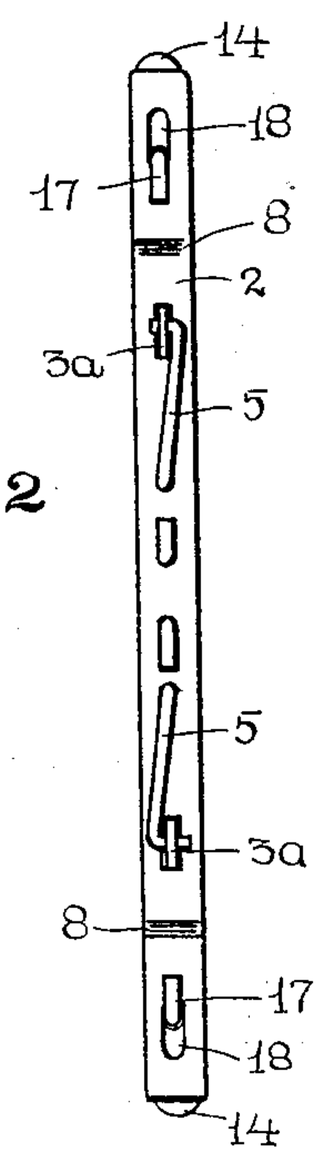

FIG 2

FIG. 4

WITNESSES

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HARNESS-FRAME FOR LOOMS.

968,847. Specification of Letters Patent. **Patented Aug. 30, 1910.**

Application filed January 28, 1905. Serial No. 242,992.

To all whom it may concern:

Be it known that I, HUDSON W. HAKES, a citizen of the United States, residing at Millbury, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Harness-Frames for Looms, of which the following is a specification accompanied by drawings forming a part of the same, in which—

Figure 1 represents a harness frame embodying my invention. Fig. 2 is an end view of the same. Fig. 3 is a detached view of the bolt for attaching the metal ends to the wooden sides, and Fig. 4 is a detached view of the wire rod with eye also used to accomplish such attachment.

Similar reference letters and figures refer to similar parts in the different views.

My invention relates to that class of harness frames having wooden sides and preferably metal ends and comprising a new and improved method of fastening the metal ends to the wooden sides. In addition to the increased ease and security of attachment, I also produce by my method a harness frame of increased strength and resistance to accidental blows and hard usage.

Referring to the accompanying drawings 1 denotes the wooden sides of the harness frame and 2 the metal ends. Inserted in slits in the metal ends 2 are heddle bars 3 for supporting heddles in the usual manner, one of which is shown at 4, Fig. 1. The heddle bars 3 are secured in the manner common to harness frames of this class by elastic hooked fasteners 5 and brace hooks 6. The metal ends 2 of the harness frame are bent at right angles at each end 7 to overlap the ends of the wooden sides 1 and at a proper distance from the right angled bends 7 I give an additional bend or offset 8 to the ends 2, thereby inclosing the end of the wooden side 1 and affording a support and increased resistance to chance pressure or downward blows upon said sides which would otherwise tend to compress the harness frame. The bends or offsets 8 in each of the metal ends 2 causes the intervening portion of the end to be recessed with the amount of the recess slightly greater than the length of the projecting ends 3^a of the heddle bars so the frame can be supported on its end without contact of the ends 3^a.

The method of attachment of the metal ends to the wooden sides is as follows:—Approximately in the center of each end 9 of the wooden sides 1 is a longitudinal slit 10 of the proper width to admit a wire 11 with an eye 12. A transverse hole 13, shown by dotted lines in Fig. 1, passes through the end of the slit 10 into which is inserted a wire nail 14 having a beveled end 15 which as it passes through the eye 12 draws the wire 11 into the slit 10 and brings the bent end 17 of the wire into close contact with the metal end and the metal end into contact with the end of the wooden side, thereby securely clamping the frame together.

The strength and rigidity of a harness frame made according to my invention is greatly increased and also the facility of attachment of the metal ends to the wooden sides. The offsets 8 support the wooden sides 1 and remove the strain from the nails 14, and the recesses which are formed by said offsets protect the ends of the heddle bars 3. The slit 10 and transverse hole 13 being automatically gaged when made, the assembling of the frame is readily accomplished by the insertion and fastening of the bent wire 11 and nail 14. In order to facilitate the insertion of the wire 11 after the eye 12 has been formed and its end 17 bent at right angles, I form a slot 18 in the metal end long enough to receive the eye 12 when by turning the wire 11 one quarter turn the eye 12 is brought into alinement with the slit 10.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In a harness frame for looms, the combination with wooden sides having a longitudinal slit in each end and a transverse hole intersecting said slit and a frame end, of an eye wire inserted in said slit and engaging the frame end, and means for retaining said eye wire in said slit.

2. In a harness frame for looms, the combination with metal ends, of wooden sides provided with a longitudinal slit in each end and a transverse hole intersecting said slit, an eye wire inserted in said slit and bent to engage said metal end, and means for retaining said bent wire in said slit.

3. In a harness frame for looms, the combination with metal ends, of wooden sides provided with a longitudinal slit in each end and a transverse hole intersecting said slit, a beveled nail passing through said hole and a wire with an eye engaged by said nail, and having a bent end engaging said metal end.

4. In a harness frame for looms, the combination with a pair of wooden sides, of a pair of metal ends attached to the ends of said wooden sides, said metal ends being bent at right angles to overlap the outer edges of said sides and having bends or offsets overlapping the inner edges of said sides, whereby the ends of said sides are inclosed on the opposite edges by said metal ends.

HUDSON W. HAKES.

Witnesses:
PENELOPE COMBERBACH,
RUFUS B. FOWLER.