Aug. 15, 1933. I. ANDREWS. 1,922,922

HEDDLE FRAME CONSTRUCTION

Filed Jan. 26, 1932 2 Sheets-Sheet 1

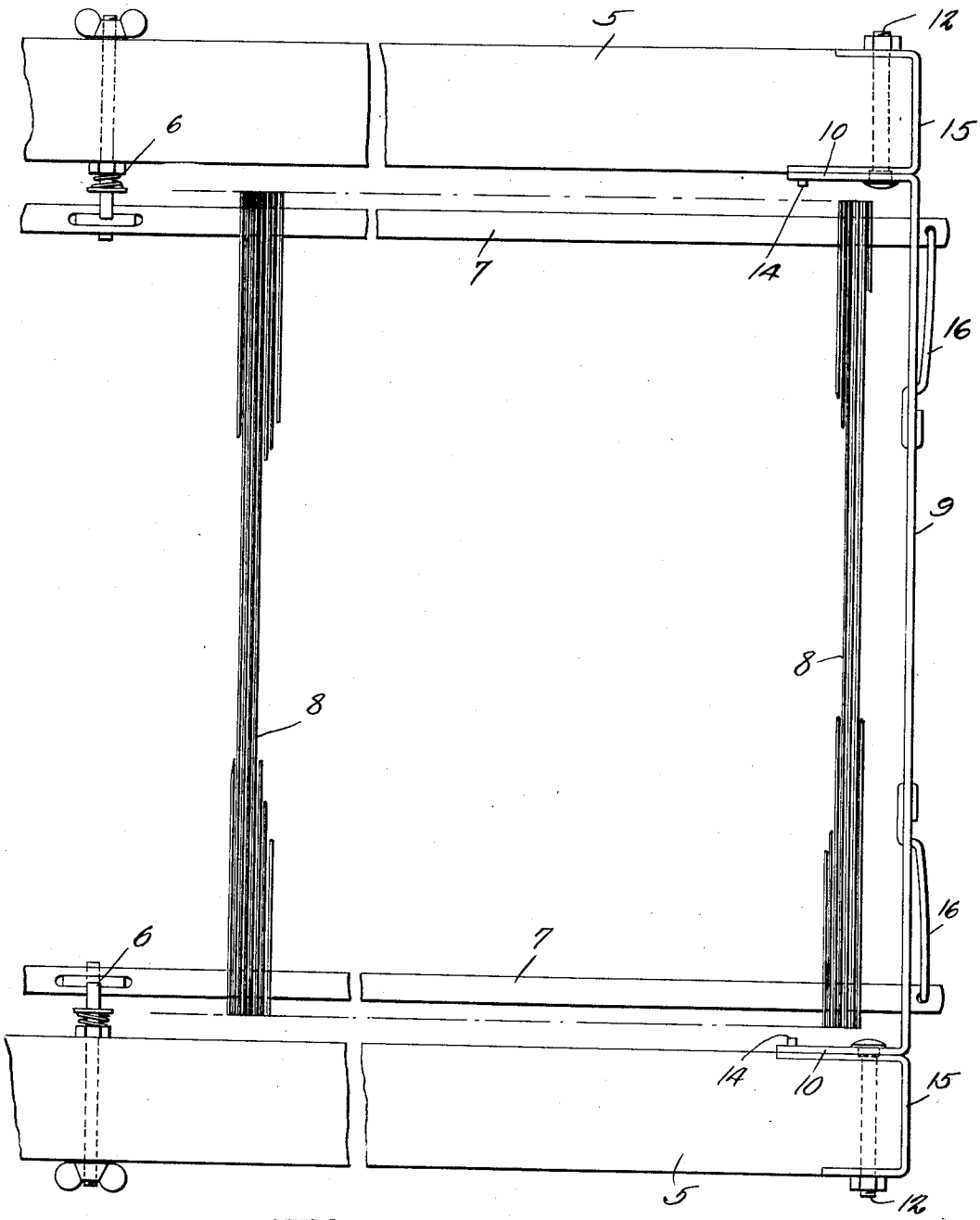

Fig. 1.

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Aug. 15, 1933. I. ANDREWS 1,922,922

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Filed Jan. 26, 1932 2 Sheets-Sheet 2

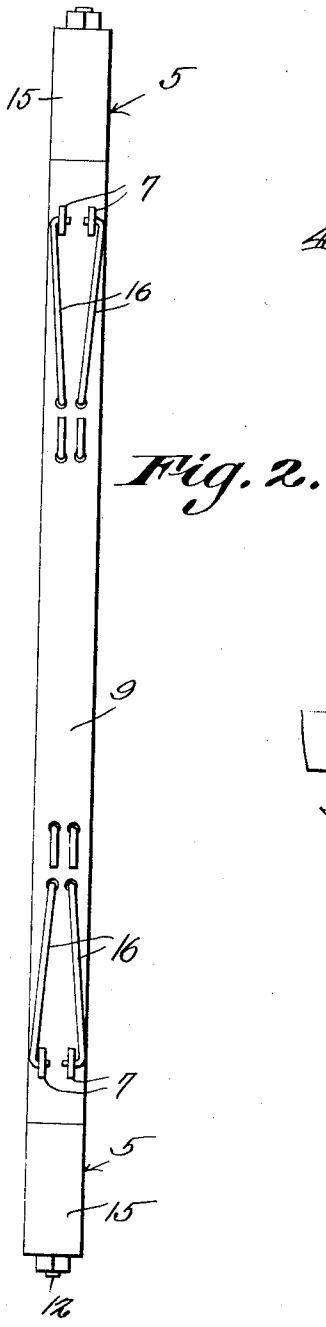

Fig. 2.

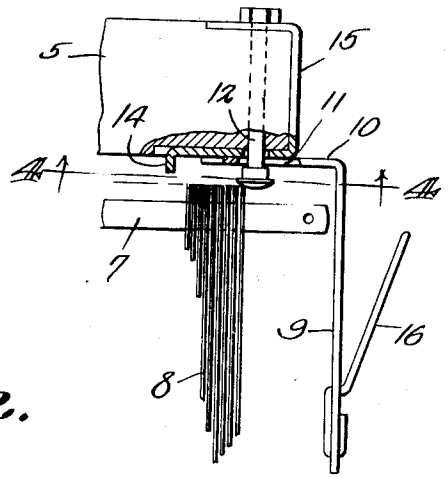

Fig. 3.

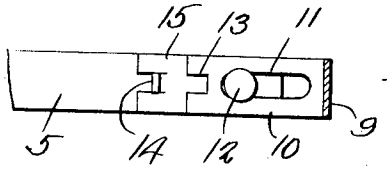

Fig. 4.

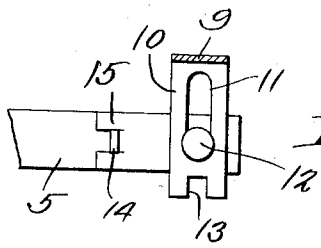

Fig. 5.

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UNITED STATES PATENT OFFICE

1,922,922

HEDDLE FRAME CONSTRUCTION

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Application January 26, 1932. Serial No. 588,975

10 Claims. (Cl. 139—92)

The present invention relates to heddle frames, and aims to provide a heddle frame so constructed that excess heddles may be readily removed or additional heddles added, with the warp ends intact, when it is desired to vary the construction of the goods being woven.

An important object of the invention is to provide a heddle frame of this character wherein the end bars thereof may be swung laterally and the heddles removed or replaced, the end bars being so constructed that the frame will be held against collapsing while the heddles are being changed.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawings:

Figure 1 is a fragmental elevational view of a heddle frame constructed in accordance with the invention.

Figure 2 is an end elevational view thereof.

Figure 3 is a fragmental elevational view illustrating the end bar of the heddle released to be moved laterally for the removal of the heddles.

Figure 4 is a sectional view taken approximately on line 4—4 of Figure 3.

Figure 5 is a fragmental view illustrating the position of the end bar when it has been moved laterally.

Referring to the drawings in detail, the reference character 5 designates the upper and lower bars of the heddle frame, which are supplied with the usual heddle bar securing members 6, to which the heddle bars 7 are connected. The heddle bars 7 are disposed in parallel spaced relation with the bars 5 of the heddle bar frame, the heddle bars 7 supporting the steel heddles 8, in the usual and well known manner.

The bars 5 of the heddle frame are held in spaced relation with each other, by means of the metallic end pieces 9, which have inwardly extended ends 10 that rest against the inner edges of the bars 5, as clearly shown by Figure 1 of the drawings.

The ends 10 are formed with elongated openings 11 that accommodate the bolts 12 that extend through the bars 5 to pivotally connect the end pieces 9 to the bars 5, the elongated openings 11 permitting of sliding movement of the end pieces 9 with respect to the bars 5.

Notches 13 are formed in the ends 10, and are designed to accommodate the lugs 14 that form a part of the fittings 15, so that when the end pieces are moved to their active positions, twisting of the end pieces will be prevented.

The end pieces 9 are also formed with openings through which the ends of the heddle bars 7 extend, the heddle bars being formed with openings to receive the members 16 that are carried by the end pieces 9, so that the heddle bars are securely held against movement, with respect to the end pieces 9.

These members 16 embody lengths of spring wire material, which are locked in position on the end pieces, the right angled ends of the members 16 being extended through openings in the heddle bars.

Should it be desired to remove or position a number of steel heddles, it is only necessary to loosen the nuts on the bolts 12 loosening the end pieces 9.

The members 16 are now moved to disengage the heddle bars 7 so that the end pieces 9 may be moved laterally to disengage the heddle bars 7. With the end pieces in this position, or in a position as shown by Figure 3 of the drawings, the end pieces are swung rearwardly to a position as shown by Figure 5 of the drawings, leaving the ends of the heddle bars free so that the heddles may be slid over the ends of the heddle bars.

Due to the construction shown and described, it will be seen that during the changing of the heddles, the end pieces hold the bars of the heddle frame in proper spaced relation with each other and prevent collapsing of the frame.

After the adjustment of the heddles has been made, the end pieces 16 are returned to their active positions and the nuts of the bolts 12 are tightened, securing the end pieces against displacement.

Having thus described the invention what is claimed is.

1. A heddle frame comprising upper and lower bars, pivoted end bars for holding the upper and lower bars in spaced relation with each other, heddle bars supported by the upper and lower bars, said end bars having openings to receive the ends of the heddle bars to removably mount the heddle bars on the end bars, and means for securing the heddle bars against movement.

2. A heddle frame comprising main bars, end bars pivotally connected with the main bars for holding the main bars in spaced relation with

each other, heddle bars supported by the end bars, and heddles mounted on the heddle bars.

3. A heddle frame comprising main bars, end bars pivotally mounted on the main bars and adapted to swing laterally, said end bars having openings, heddle bars supported by the main bars, the ends of the heddle bars extending through the openings, means carried by the end bars and engaging the heddle bars for securing the heddle bars against movement, and heddles mounted on the heddle bars.

4. In a heddle frame, main bars, end members having right angled ends, bolts extending through the right angled ends and the main bars for pivotally connecting the end bars to the main bars, heddle bars, and means for detachably connecting the heddle bars to the end bars.

5. In a heddle frame, main bars, end bars connecting the main bars for holding the main bars in spaced relation, heddle bars, the ends of the heddle bars extending through the end bars, heddles on the heddle bars, said end bars being movable laterally out of the path of travel of heddles being removed from the heddle bars, and means for securing the heddle bars against movement.

6. In a heddle frame, main bars, end bars pivotally connected with the main bars and adapted to swing laterally of the main bars, and heddle bars removably connected with the end bars.

7. In a heddle frame, main bars, and bars pivotally connected with the main bars, said end bars having openings, heddle bars, the ends of the heddle bars extending into the openings, and securing members mounted on the end bars for engaging the heddle bars to removably secure the heddle bars in position.

8. In a heddle frame, main bars, end bars pivotally connected with the main bars, means for restricting pivotal movement of the end bars with respect to the main bars, heddle bars removably connected with the end bars, and heddles mounted on the heddle bars.

9. In a heddle frame, main bars, pivoted end bars secured to the main bars for holding the main bars in spaced relation, heddle bars, heddles on the heddle bars, means for removably connecting the heddle bars to the end bars, whereby the heddles mounted on the heddle bars, may be removed.

10. In a heddle frame, main bars, end bars having right angled end portions formed with elongated openings, bolts passing through the openings and main bars to secure the end bars in position on the main bars, means for preventing pivotal movement of the end bars under normal conditions, and heddle bars removably connected with the end bars.

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