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DROP WIRE BAR SUPPORT

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Fig. 1.

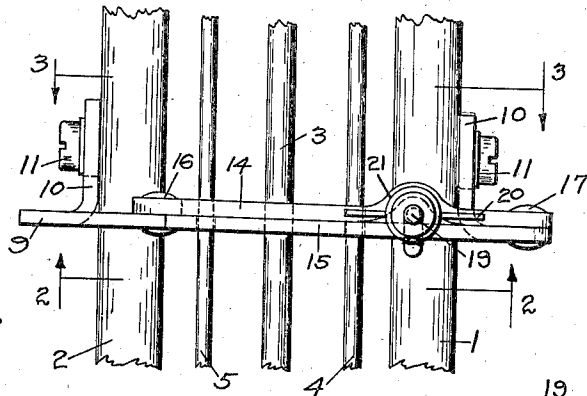


Fig. 2.

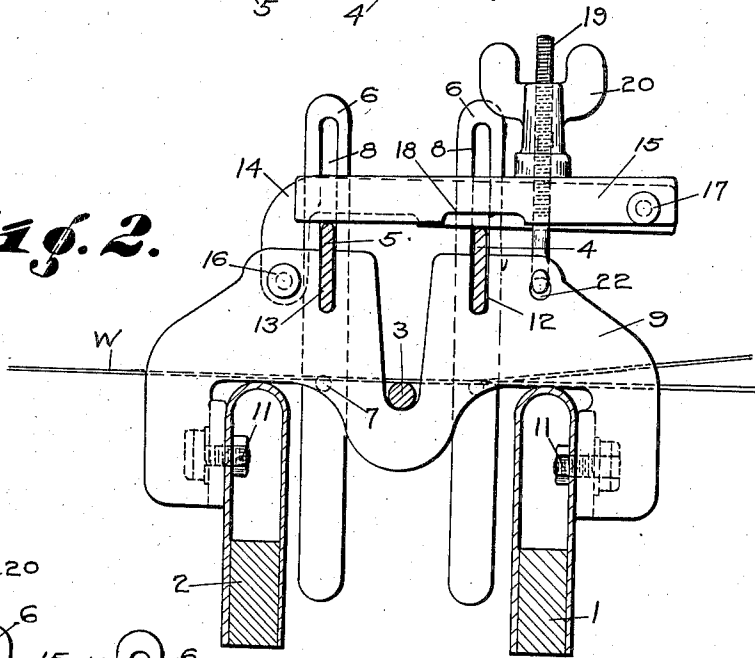
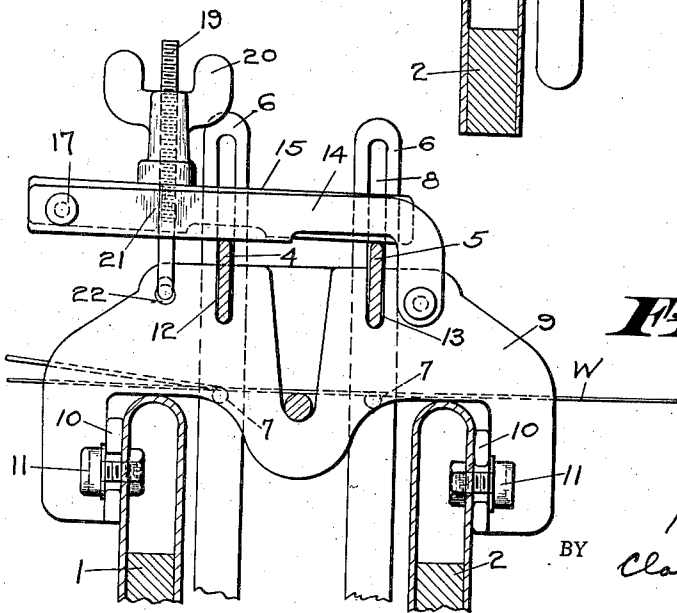


Fig. 3.



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DROP WIRE BAR SUPPORT

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4 Claims. (Cl. 139—369)

The present invention pertains to warp stop motions for looms, and more particularly relates to supporting devices for the drop wire bars of such stop motions.

Warp stop motions of the type to which my invention applies commonly include a pair of drop wire bars, so-called, upon which drop wires are threaded. The drop wire bars are located in slots in a supporting bracket and are intended to be firmly clamped in such slots so as to be held against accidental displacement or lateral vibration. Prior drop wire bar supporting devices have failed to perform this intended function satisfactorily because they have been so constructed that slight variations in manufacture of the parts would result in the device holding only one of the bars and leaving the other bar loose.

A principal object of the present invention is to provide a support for drop wire bars which support shall comprise a bracket having slots for receiving drop wire bars as aforesaid, and clamping means comprising one clamping member movably mounted on the bracket for engagement with one drop wire bar, a second member movably mounted on the first clamping member for engagement with the other bar and suitable means arranged to engage one clamping member and thereby force both members against their respective drop wire bars, whereby both such bars are firmly held against movement in the slots.

The foregoing and other objects of the invention are accomplished in the construction illustrated on the accompanying drawing, of which:

Fig. 1 is a plan view of part of a warp stop motion having the preferred embodiment of my invention applied thereto;

Fig. 2 is a view in cross-section taken approximately on line 2—2 of Fig. 1; and

Fig. 3 is a view in cross-section taken approximately on line 3—3 of Fig. 1.

The warp stop motion shown on the drawing includes the said preferred embodiment of my improved supporting means but is otherwise of an old and well-known construction. This old construction includes front and rear frame members 1 and 2, respectively, which extend widthwise of the loom and are adapted to be fixed with the loom frame (not shown). Other usual members include a rod 3 which extends widthwise of the loom beneath the warp sheet W for supporting the latter, and front and rear drop wire bars 4 and 5 which also extend widthwise of the loom but are located above the warp sheet. Drop

wires 6 of any suitable usual form are threaded upon the drop wire bars 4 and 5.

In the normal operation of the warp stop motion, the individual warp threads each pass through an aperture 7 in a drop wire whereby each thread holds one drop wire up in the position shown on the drawing. When any warp thread breaks, the drop wire 6 supported thereby will fall into engagement with any usual means, not shown, for effecting the stopping of the loom. The function of the drop wire bars 4 and 5 is merely to hold the drop wires 6 erect during normal operation of the loom and to support the drop wires after they have fallen upon breakage of warp threads. In effecting this purpose, the drop wire bars must pass through slots 8 in the drop wires and accordingly must be rather thin.

Thin drop wire bars such as bars 4 and 5 must be supported, intermediate their ends, against lateral bending or vibration and it is for this purpose that my improved supporting means is provided. The preferred form of said means includes a bracket 9 which may be formed from a piece of sheet metal. The bracket 9 is positioned substantially in a vertical plane parallel to the warp threads, except that lugs 10 on the bracket are bent laterally to fit against the frame members 1 and 2. The lugs 10 may be fixed to such frame members by bolts 11 as shown. A pair of slots 12 and 13 are provided in the upper edge of the bracket 9 for receiving the drop wire bars 4 and 5, respectively. The bars project out of the slots and appreciably above the upper edge of the bracket.

The preferred form of my improved means for clamping the drop wire bars 4 and 5 in the slots 12 and 13 includes two separate clamping members 14 and 15. The member 14 is movably mounted on the bracket 9 and is adapted to engage only one of the drop wire bars. The second member 15, is movably mounted on the first member, 14, and is adapted to engage only the other of the drop wire bars. To this end, the member 14 consists of an arm which is pivoted to the bracket 9 and the member 15 consists of an arm which is pivoted to the free end of the arm 14.

The pivot 16 for arm 14 is located at one side of the bracket 9, i. e., to one side of the bars 4 and 5 rather than between the latter, and engages one end of the arm 14. This arm extends from pivot 16 upwardly and then lengthwise of the warp threads across and over or above the slots 12 and 13. The arm 14 preferably extends across both of said slots but is so shaped that it will not touch one of the drop wire bars (prefer-

ably bar 5) but will engage the top of the other bar. The arm 14 extends an appreciable distance past the drop wire bars and its extended end is free.

8 The pivot 17 for the arm 15 is located in the free end of the arm 14, and the arm 15 extends from this pivot in a direction generally toward the pivot 16. The particular arm 15 shown extends over both slots 12 and 13 but is cut out at 10 18 on its lower edge, so that it will not touch the bar 4. The arm 15 accordingly engages the top of bar 5 only. Since each of the clamping members or arms is freely movable and each engages only one of the drop wire bars, engage- 15 ment of each such member with its respective drop wire bar is assured in spite of manufacturing variations in the size, shape and location of the various parts involved.

The present invention further provides means 20 engaging one of the clamping members, such as members 14 and 15, and constructed and arranged to force both of such members into clamping engagement with their respective drop wire bars. Said means preferably consists of a screw 25 device such as that shown on the drawing. More specifically, the screw device shown consists of a threaded rod 19 having a nut 20 screwed thereon. The arm 14 is bowed at 21 to provide an opening between the arms. The rod 19 extends vertically 30 through this opening. The lower end of the rod is pivoted in an aperture 22 in the bracket 9. The arrangement is such that the nut 20 engages the upper edge of arm 15 and does not touch the arm 14. Thus, when the nut is tightened it exerts downward force on the arm 15. The rod 19 35 and nut 20 are located at the opposite side of the bars 4 and 5 from pivot 16, between the bars and pivot 17. The said downward force, even though applied directly only to arm 15, will act on arm 40 14 through arm 15 and the pivot 17. The nut 20 is manually releasable to permit removal or insertion of the drop wire bars.

The supporting means as thus described is much more satisfactory than prior supporting devices 45 because it firmly holds both drop wire bars (which prior rigid devices would not do) and because it exerts a firmer grip on the bars and is more substantial than prior spring clamps devised for the same purpose. These advantages are achieved 50 while retaining the simplicity and ease of operation of the single screw device for clamping or releasing the drop wire bars.

Having fully disclosed the preferred embodiment of my invention, I claim:

1. A drop wire bar support comprising a bracket having a pair of slots in its upper edge for receiving the drop wire bars of a loom, a clamping member supported by said bracket and adapted to engage the top of one of said drop wire bars only, a second clamping member movably mounted on the first said member and adapted to engage the top of the other drop wire bar only, and means engaging one of said members for forcing both of said members into clamping engagement with their respective drop wire bars.

2. A drop wire bar support comprising a bracket having a pair of slots in its upper edge for receiving the drop wire bars of a loom, a clamping member pivoted to said bracket and adapted to engage the top of one of said drop wire bars only, a second clamping member pivotally mounted on the first said member and adapted to engage the top of the other drop wire bar only, and means engaging the said second member for forcing both of said members into clamping engagement with their respective drop wire bars.

3. A drop wire bar support comprising a bracket 25 having a pair of slots in its upper edge for receiving the drop wire bars of a loom, a clamping member comprising an arm pivoted at one end to one side of said bracket, said arm extending over said slots and being arranged to engage only one 30 of said bars, a second arm pivoted to the first said arm and arranged to engage only the other of said bars, and a screw device engaging said second arm only and arranged to force both of said arms into clamping engagement with their 35 respective drop wire bars.

4. A drop wire bar support comprising a bracket having a pair of slots in its upper edge for receiving the drop wire bars of a loom, a clamping arm having one end pivoted to said bracket and 40 its other end free, said arm extending over both of said slots and arranged to engage only one of said bars, a second arm pivoted to the free end of the first said arm, said second arm extending from its pivot toward the pivot of the first said 45 arm and arranged to engage only the other of said bars, and a device exerting downward pressure on said second arm at a point between said bars and the pivot of said second arm to thereby force both said arms against their respective drop wire 50 bars.

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