

[54] **WARP-TYING FRAMES COMBINED WITH A CARRIAGE**

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[51] **Int. Cl.²**..... **D03J 1/16**

[58] **Field of Search**..... 28/44, 49

[56] **References Cited**

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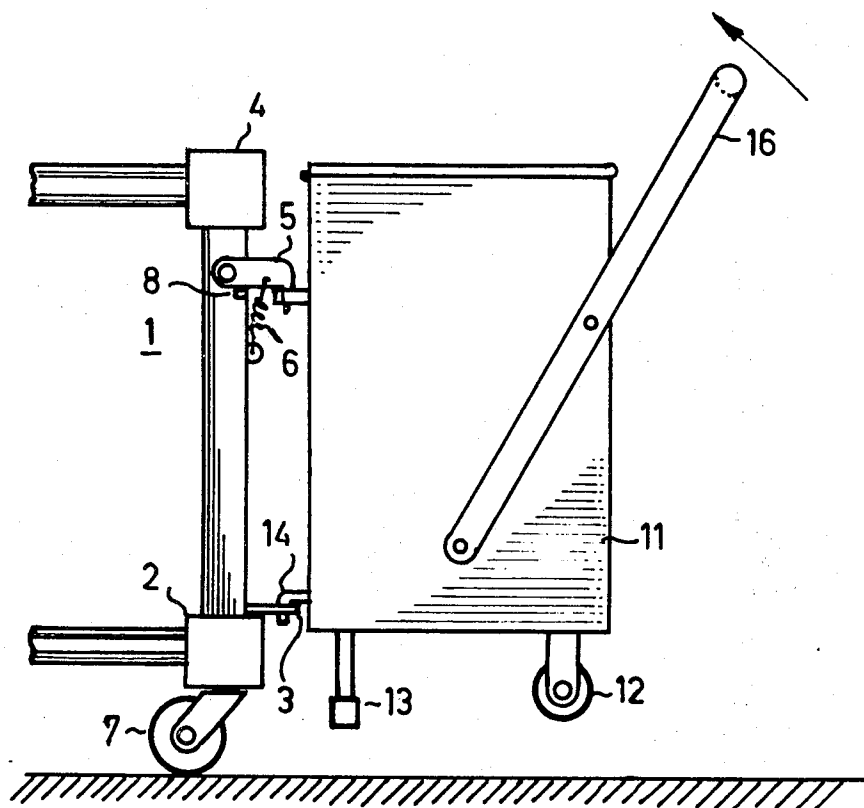
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[57]

ABSTRACT

A warp-tying frame arrangement which includes a detachable carriage selectively connectable with the frame. The carriage is provided with wheels which are mounted thereon and adapted to be withdrawn from the floor during the interconnection of the frame and of the carriage.

8 Claims, 2 Drawing Figures



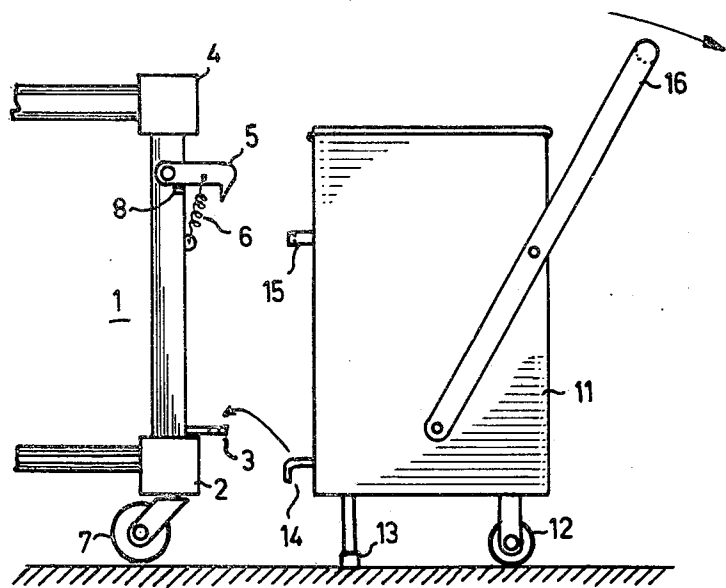


Fig. 1

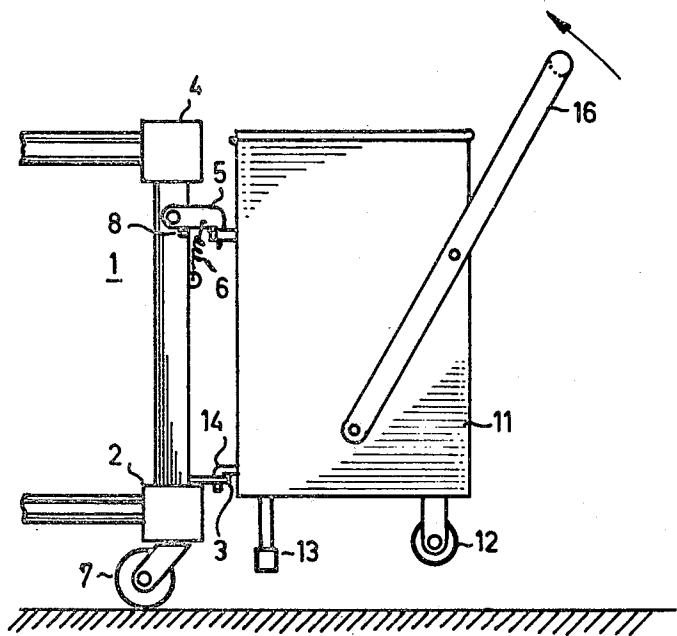


Fig. 2

WARP-TYING FRAMES COMBINED WITH A CARRIAGE

The present invention relates to a warp-tying frame and carriage adapted to be connected thereto.

In weaving mills, which use a single warp-tying frame and displace the same towards the place the warp is to be tied together, the problem arises that the carriage containing the warp-tying machine itself as well as the required operational tools has to be displaced also towards the place the warp is to be tied together. Consequently, the operator must cover the distance twice between the former and new operating place. Once he has to shift the warp-tying frame, and then it is necessary to shift the carriage to the new location of the warp-tying frame. A simultaneous displacement of the warp-tying frame and the carriage, each guided by the hand of the operator, is impossible due to the size of the frame and the relatively small aisles which exist between weaving machines.

It is an object of the present invention to provide an improved warp-tying frame arrangement which avoids the aforementioned shortcomings and the disadvantages encountered in the prior art.

A further object of the present invention resides in providing an arrangement which permits a very simple connection between the warp-tying frame and the carriage.

Several advantages are attained by the present invention by providing means at the frame as well as at the carriage, by which means the carriage is connectable with the frames so that its wheels are withdrawn from the floor during interconnection of the frame and the carriage.

These and other objects, features, and advantages of the present invention will become more obvious from the following description when taken in connection with the accompanying drawing which shows, for the purposes of illustration only, one embodiment of a warp-tying frame arrangement in accordance with the present invention, and wherein:

FIG. 1 is a side view of a portion of a warp-tying frame and carriage arrangement according to the present invention with the frame and carriage being disconnected;

FIG. 2 is a view similar to FIG. 1 illustrating the frame and carriage according to the present invention in their connected position.

Referring now to the drawing wherein like reference numerals are used throughout the various views to designate like parts, the warp-tying frame 1 of conventional construction, is provided at its base bar 2 with plates 3 having bores. The plates 3 are arranged symmetrically with respect to the vertical support of the frame 1. A ratchet or pawl-like member 5 is pivoted on the vertical support below the upper bar 4 with a spring 6 drawing or biasing the member 5 in a clockwise direction. A stop 8 is provided on a vertical support for limiting the movement of each of the ratchet or pawl-like members 5.

As shown in FIG. 1, the carriage 11 normally stands on a floor or other supporting surface on wheels and support members 13. By moving the handle 16 downward in the direction of the arrow in FIG. 1, the carriage 11 stands on the wheels 12 only and can readily be displaced thereon.

To connect the frame 1, or its connection means 3, 5, respectively, a hook 14 is provided on the carriage 11 and co-operates with the bores in the plates 3, and a traverse member 15 which can be engaged with the ratchet or pawl-like member 5. The traverse member 15 may extend the width of the carriage 11 or can be provided on the carriage 11 in the area of a respective hook 14. The hooks 14 are mounted on the carriage at a predetermined height with respect to the plates 3 so that the hooks 14 can be raised and inserted into the bores in the plates 3 by tilting of the carriage 11. After the carriage 11 has been tilted it is then lifted in the direction of the warp-tying frame 1 by means of handle 16 as shown in FIG. 2 whereby the ratchet or pawl-like member 5 engages traverse member 15.

As can be seen from FIG. 2 once the ratchet or pawl-like members engage the traverse member 15, the wheels 12 are well as the supports 13 of the carriage 11 are withdrawn from the floor or supporting surface. Consequently, the warp-tying frame can be displaced together with the carriage 11 on the wheel 7 of the warp-tying frame 1, so that the carriage 11 arrives at the next operational point at the same time as the warp-tying frame 1.

While I have shown and described only one embodiment in accordance with the present invention, it is understood that the same is not limited thereto but is susceptible of numerous changes and modifications as known to a person skilled in the art, and I therefore do not wish to be limited to the details shown and described herein but intend to cover all such changes and modifications as are encompassed by the scope of the appended claims.

I claim:

1. A warp-tying arrangement comprising: a warp-tying frame means including at least one base bar and at least one vertical support member; a carriage means; means for movably supporting said carriage means on a support surface; and means for selectively mounting said carriage means on said frame means with said means for movably supporting said carriage means withdrawn from the support surface.
2. An arrangement according to claim 1, wherein said means for selectively mounting includes at least one plate member disposed on said base bar and a carriage mounting member disposed on said carriage means and mountable on said plate member.
3. An arrangement according to claim 2, wherein said at least one plate member includes at least one aperture, and said carriage mounting member is disposed in said at least one aperture.
4. An arrangement according to claim 3, wherein said carriage mounting member is a hook.
5. An arrangement according to claim 3, wherein said mounting means further includes at least one pivotally mounted connecting member disposed on said at least one vertical support member, and a further carriage mounting member disposed on said carriage means and co-operable with said pivotally mounted connecting member.
6. An arrangement according to claim 5, wherein said pivotally mounted mounting member is a ratchet member, and means are provided for biasing said ratchet member into engagement with said further carriage mounting member.

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7. An arrangement according to claim 6, wherein said further carriage mounting member includes at least one traverse member disposed on said carriage means, said ratchet member including a protruding portion engageable with said traverse member.

8. An arrangement according to claim 1, wherein said connecting means includes at least one pivotally mounted connecting member disposed on said at least

one vertical support member, at least one plate member disposed on said base bar, a first carriage mounting member disposed on said carriage means and co-operable with said plate member, and a second carriage mounting member disposed on said carriage means and selectively engageable with said pivotally mounted connecting member.

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