Aug. 6, 1935. O. D. BURTON 2,010,581

MEANS FOR SECURING WARPS

Filed Feb. 7, 1934 2 Sheets-Sheet 1

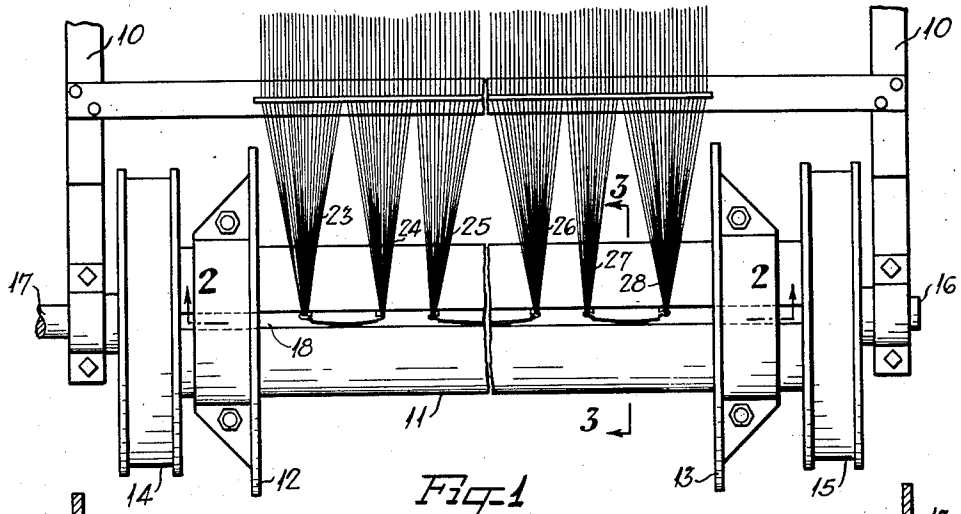


Fig-1

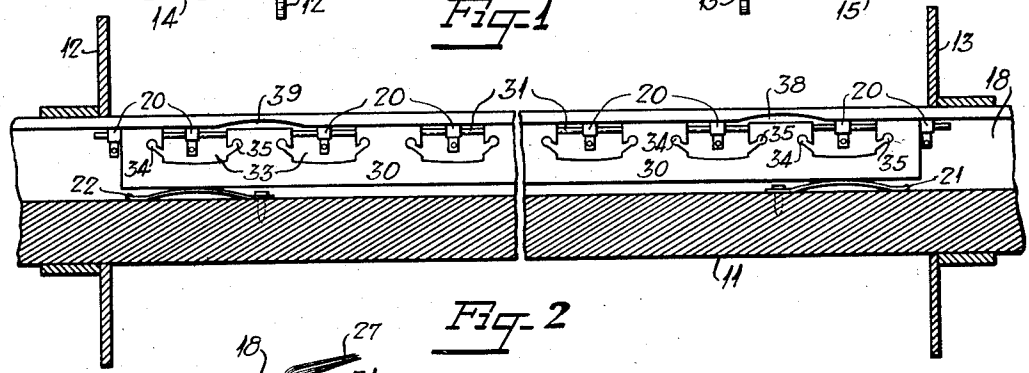


Fig-2

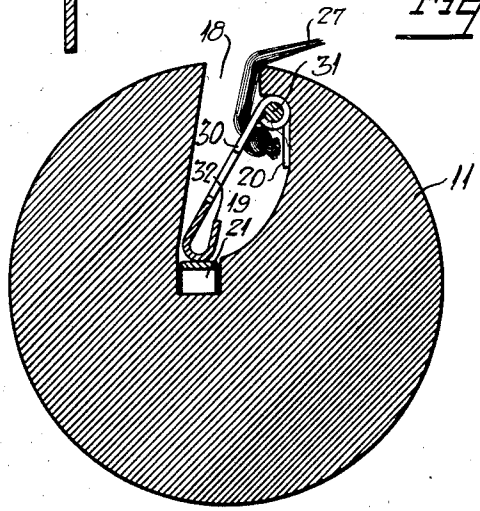


Fig-3

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MEANS FOR SECURING WARPS

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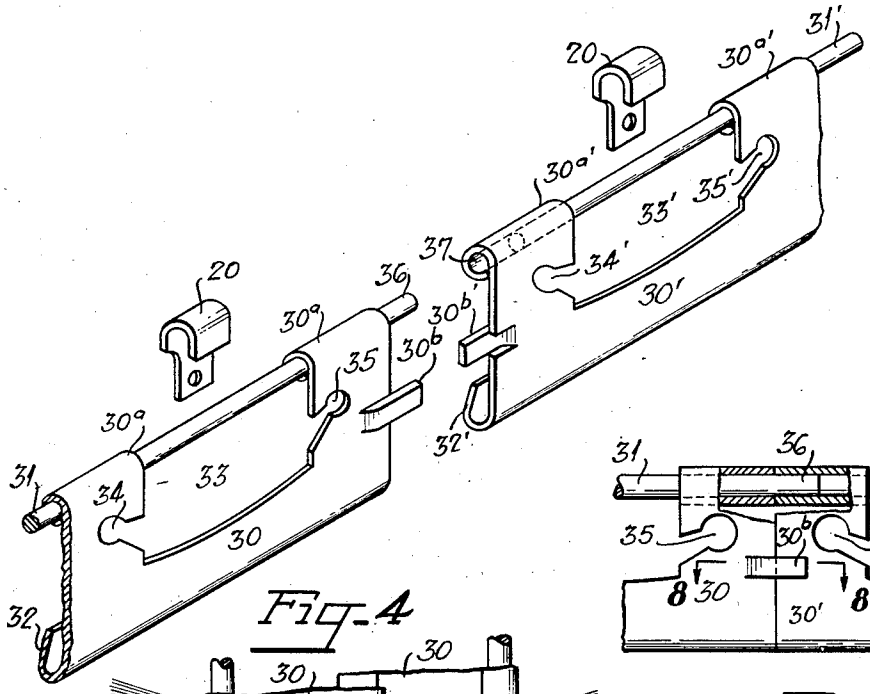


Fig. 4

Fig. 5

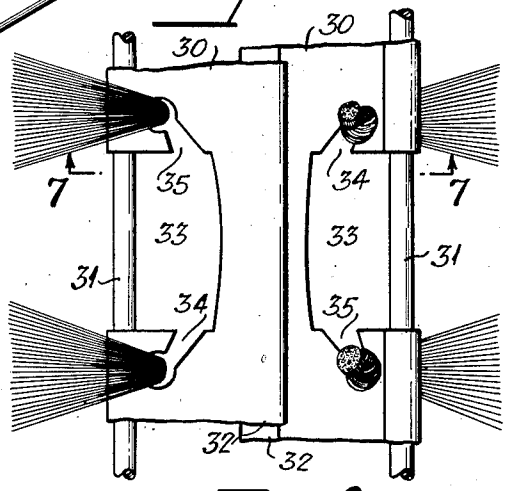


Fig. 6

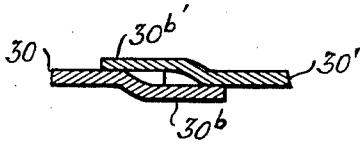


Fig. 8

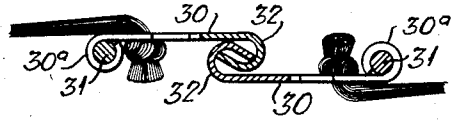


Fig. 7

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UNITED STATES PATENT OFFICE

2,010,581

MEANS FOR SECURING WARPS

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Application February 7, 1934, Serial No. 710,101

5 Claims. (Cl. 242—126)

This invention relates to means readily and quickly attachable to the ends of warps disposed on a roll and having means for easily and quickly attaching the same to a warp beam, take up beam, take up roll in sizing machines, slashers and the like, as well as dyeing beams and the like, it being susceptible of use in any type of beam for the handling of warps.

It is an object of this invention to provide a warp beam having a longitudinally disposed cavity therein having means therein for releasably engaging and holding a member which member is adapted to be secured to bands of warps to quickly secure the ends of warps on a roll to another beam for processing the warp as well as for take-up beams on looms when the warp is employed in a loom for the weaving of cloth.

It is a further object of this invention to provide means quickly securable to the end of warps disposed on a warp roll, said means being in sections so that the desired length can be secured by adding sections thereto to suit different lengths of the warp beam or the different widths of the warps on the warp beam.

Some of the objects of the invention having been stated, further objects will appear as the description proceeds, when taken in connection with the accompanying drawings, in which:—

Figure 1 is a top plan view of a warp beam made in accordance with my invention and showing the means securable to the warp beams and to the ends of the warp;

Figure 2 is an enlarged longitudinal sectional detail taken along the line 2—2 in Figure 1;

Figure 3 is an enlarged transverse sectional view taken along the line 3—3 in Figure 1;

Figure 4 is an isometric view of a portion of the means securable to the warp and also securable to the beam and showing an extension which may be secured to the main member;

Figure 5 is an elevation with parts broken away showing means for connecting sections of the structure as shown in Figure 4 together;

Figure 6 is a plan view showing the use of a pair of the devices secured to the ends of adjacent warps for securing warps of two rolls together;

Figure 7 is a cross-sectional view taken along the line 7—7 in Figure 6;

Figure 8 is a sectional view taken along the line 8—8 in Figure 5.

Referring more specifically to the drawings, numeral 10 indicates a suitable frame on a warp processing machine, loom or the like in which a warp roll is adapted to be mounted. The warp roll can assume various forms such as a hollow beam, a solid beam, a beam with adjustable heads, a beam with fixed heads and the like, all types of beams being adaptable for use for my invention. Reference character 11 indicates a beam which has adjustable ends or heads 12 and 13 thereon, but as previously stated, the invention is not limited to a beam having an adjustable end or head but is adaptable to any type of beam.

The beam is also shown as having pulleys 14 and 15 secured to the ends around which there is usually wound a rope or the like having weights attached thereto for applying friction to the beam when the same is employed as a let-off beam. It is evident that in case the beam should be a take-up beam that such an end structure would not be present on the beam.

The beam has suitable spindles 16 and 17 extending therefrom and adapted to be mounted on a suitable framework such as 10 or any other framework which forms a part of the machine with which the beam is adapted to be associated.

The beam 11 has a longitudinally disposed slot 18 therein having one side portion cut away forming a cavity 19. In the top of this cavity there is adapted to be secured a number of hooks 20 and in the bottom of the slot a plurality of leaf springs 21 and 22 are mounted.

In order to detachably connect the bands 23, 24, 25, 26, 27 and 28 of a warp to a beam, I have provided an elongated member made of any suitable material such as sheet metal and indicated by reference character 30. This member is rolled around a suitable rod 31 at its upper edge and has a hooked portion 32 at its lower edge. The elongated member 30 has a plurality of cut-away portions 33 having notches 34 and 35 disposed in each side, so that the bands 23 to 28 inclusive, can be passed through the holes 33 and a knot tied therein which will prevent the knot from passing through the notches 34 and 35 and thus hold the bands 23 to 28 inclusive in the fixture 30. If desired, a band can be passed through the holes 33 and tied around rod 31 in lieu of passing them into the notches 34 and 35 and tying a knot therein, or adjacent bands can be passed through adjacent holes 33 and their ends tied together.

When the bands 23 to 28 inclusive have been secured to member 30, the member 30 is inserted into slot 18 with the hooked portion 32 being presented to slot 18 first and pressure is applied to the upper edge of member 30 to force springs 21 and 22 downwardly until the rod 31, or the rolled portion of 30a disposed around 31, passes beneath the hooks 20 and the warp will have the ends thereof attached to the beam.

Not only can the mechanism, shown comprising plate 30 and associated parts, be used for securing the ends of the warp to a beam but a pair of the same can be used for securing the trailing end of a take-up roll to the leading end of a new warp roll whereby successive warp rolls can be passed through processing machinery. Figures 6 and 7 show how these members 30 can be used as the members 30 have the rod edge secured to adjacent warp ends of a pair of warp rolls and the lower hooked portions 32 of the two members 30 will be hooked together as shown in Figures 6 and 7 to join the two ends of the warp on two warp rolls together.

Cavities 38 and 39 are cut in the sidewall of slot 18 so pressure may be applied to member 30 to remove the same from hooks 20.

The member 30 has a laterally disposed extension 30b on one end thereof which is adapted to fit against one side of member 30', and member 30' has extending therefrom and laterally disposed an extension 30b' which is adapted to fit against one side of member 30, as shown in Figure 8. These extensions prevent turning movement of extension 30' with relation to member 30. These are shown in Figures 5 and 8.

In case of a textile plant having all of its machinery provided with rolls of the same length, then of course the members 30 will probably be made of a suitable length to fit the warp rolls. In case it should be desired to have different length of warp rolls in the same industrial establishment, I have provided means whereby it will not be necessary to purchase a member 30 for each length of warp roll. It will be noted that in Figure 4 that one end of rod 31 projects beyond the end of member 30 as at 36, the portion 36 being adapted to fit into cavity 37 in the end of a proximate extension section, the extension section and its parts bear like reference characters with the prime notation added. Therefore, if an establishment should have a plurality of 36 inch beams and a plurality of 44 inch beams then the main portion 30 would be made to suit the 36 inch beams and a plurality of extensions would be provided of approximately 8 inches length so that in case it should be desired to form a unit for use of a 44 inch beam then the extension could be quickly attached to the main portion and thus by one or more extensions any desired lengths of member 30 and extensions could be provided to fit the lengths of various beams in the establishment.

In the drawings and specification there has been set forth a preferred embodiment of the invention, and although specific terms are employed, they are used in a generic and descriptive sense only, and not for purposes of limitation, the scope of the invention being set forth in the appended claims.

I claim:

1. Means for securing warp ends to a warp beam comprising a member having perforations provided with restricted portions adapted to receive bunches of warp ends knotted together and to confine the ends, a beam having a longitudinally extending groove therein, one of the sidewalls of said groove having a cavity extending therealong and into which cavity one edge of said member is adapted to fit, and tension means disposed in the groove for forcing said edge of said member into said cavity and confining the member and the warp ends in said groove against any tension which may be applied to the warp.

2. A warp beam for sizing machines, slashers, looms, warpers, beamers and the like, having a longitudinally extending groove therein, hooks secured to one of the sidewalls of the groove, resilient means in the bottom of the groove, a member removably mounted in said groove and having means for receiving a plurality of bunches of ends of a warp and adapted to be received in the hooks in the groove and to be resiliently and releasably held in the hooks by the resilient means.

3. Means for holding the ends in a warp beam comprising an elongated member having holes therethrough in which the ends may be secured in bunches, said elongated member having one edge thereof bent to form a hook for engaging a similar member similarly attached to another set of warp ends whereby the ends of two warps on two warp beams may be releasably connected together.

4. Means for holding the knotted ends of warp disposed on a warp beam comprising a member whose length is approximately that of the width of the warp on the beam, one edge of the member having openings provided with a restricted portion for releasably holding the knotted ends of the warp, the other edge of said member having a hooked portion to engage a similar member attached to another warp whereby the ends of the two warps may be secured together.

5. Means for holding the ends of warp disposed on a beam comprising a sheet-like member formed of a plurality of releasably connected sections whereby the length of the member can be made to conform to the width of the warp on a beam, said sheet-like member having means along one edge for releasably holding the ends of a warp, and its other edge having a hooked portion to engage a hooked portion on a similar member for securing the warps on two beams together.

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