June 23, 1936. F. MOSSBERG 2,045,283

WARP BEAM

Filed Aug. 29, 1933

Fig. 1.

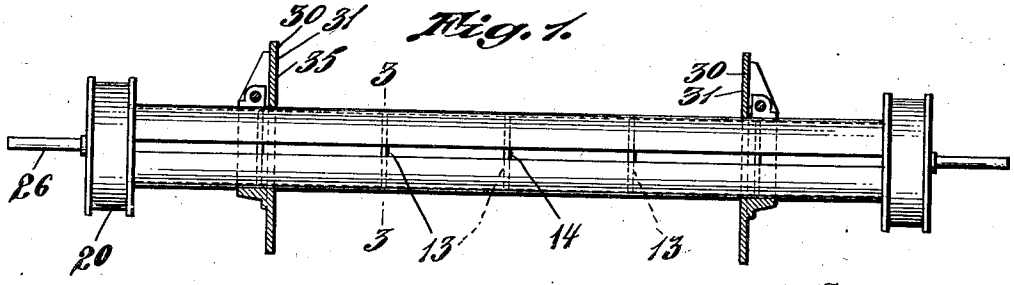


Fig. 2.

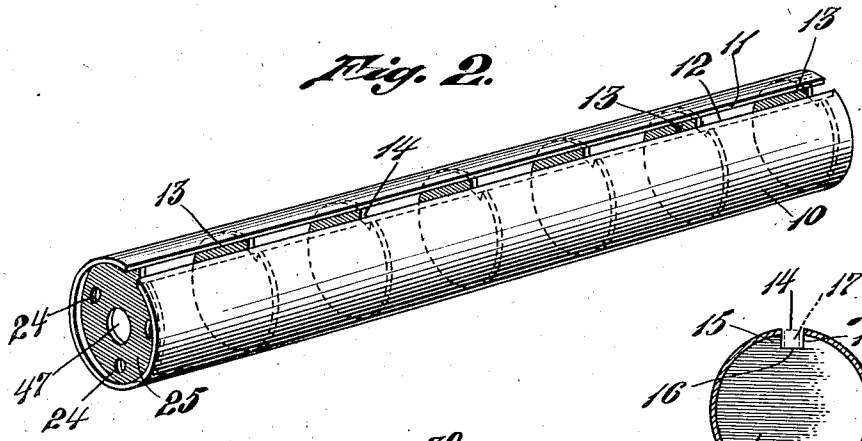


Fig. 3.

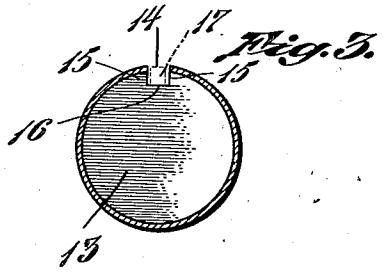


Fig. 4.

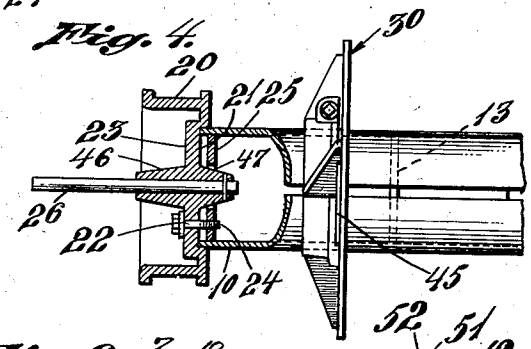


Fig. 5.

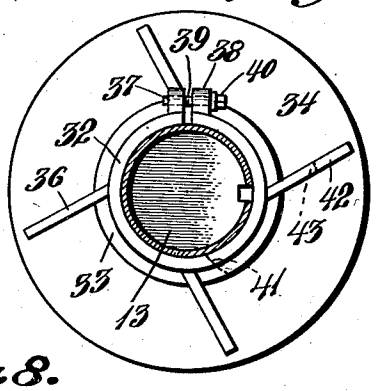


Fig. 6.

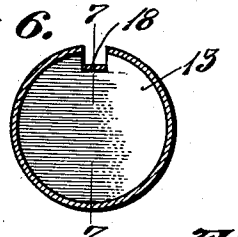


Fig. 8.

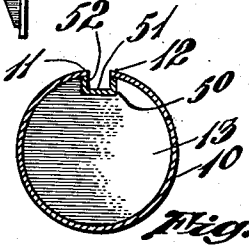
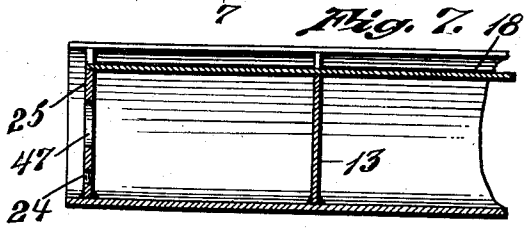


Fig. 7.



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WARP BEAM

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Application August 29, 1933, Serial No. 687,292

9 Claims. (Cl. 242—124)

This invention relates to a warp beam and has for one of its objects the simplification of the construction of a warp beam and the provision of an opening extending substantially the entire length of the beam for securing the warps in position thereon by a batten or rod.

Another object of the invention is the spacing apart of the longitudinally-extending edges of the beam and the provision of supporting disks which are shaped to cooperate with the spaced edges for the reception of a fastening rod or bar for locking the warps in position.

Another object of the invention is the utilizing of the end supporting disk for mounting a friction drum or pulley in position at the end of the beam.

Another object of the invention is the provision of an adjustable head with a disk and supporting hub extending from the outer surface of the disk and with outwardly-extending supporting ribs, the same being so formulated that the hub may be contracted about the barrel of the beam for holding it in the desired adjusted position.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawing:

Fig. 1 is an elevational view with the heads of my improved beam in section.

Fig. 2 is a perspective view of the barrel of the beam illustrating the supporting disks as spaced along the beam.

Fig. 3 is a section on line 3—3 of Fig. 1 with the heads and friction pulleys omitted.

Fig. 4 is an elevation partly in section illustrating the manner of mounting one of the friction pulleys on the end of the beam.

Fig. 5 is a sectional view thru the barrel and showing the outer surface of one of the heads.

Fig. 6 is a sectional view thru the barrel showing a modified construction and illustrating a strip forming the bottom wall and extending along the bottom of the notches in the supporting disks.

Fig. 7 is a sectional view on line 7—7 of Fig. 6.

Fig. 8 is a sectional view of a further modified construction.

In the formation of warp beams, it is sometimes desirable to simplify the structure; and in order that this may be accomplished I have formed a construction in which the edges of the barrel of the beam are spaced and the beam supported by disks which are notched so that a batten when inserted between these spaced edges may be received in the notches of the disk and by reason of its width will bind a set of warp threads against one of the edges of the barrel to hold the warps secured thereto for winding them upon the beam, and I have utilized the end supporting disk for mounting a friction pulley and have also provided a head having a hub with supporting ribs, which hub even when so supported by ribs may be contracted upon the beam to secure the head in adjusted position; and the following is a detailed description of the present embodiment of this invention illustrating the preferred means by which these advantageous results may be accomplished:—

With reference to the drawing, I have shown the beam as composed of a barrel 10 which is rolled up from sheet stock with its edges 11 and 12 spaced a certain desired distance, as illustrated in Fig. 2. This barrel is supported in this position by means of disks 13 spaced at suitable distances along the body and welded to the inner surface of the barrel. Each disk is provided with a notch 14 which will have its opposite sides 15 substantially parallel and parallel to a perpendicular to a tangent to the outer surface of the cylindrical barrel at the center of the recess 14. This notch is provided with a bottom 16 at right angles to the sides and the notch is of a width and depth sufficient to receive a batten or rod 17 which is of such a size relative to the spaced edges 11 and 12 as to bind the warps inserted into the space against one of the edges 11 or 12 and securely hold a sheet of warps in position along the barrel. The notch 14, of course, in the disk limits the amount of insertion of the rod and thus prevents it from extending inwardly beyond the edges 11 or 12 that the gripping action may be lost at points between the disks.

In some instances, I may, however, provide a bottom wall 18 in the form of a strip or ribbon extending from one disk to another and located in the notches thereof against the bottom 16 to provide a bottom wall for the opening or recess between the edges 11 and 12 for limiting the insertion of the rod and also providing a surface against which the warps may be bound, which structure I have illustrated in Figs. 6 and 7.

A friction pulley 20 is mounted upon each end of the beam and is provided with a recess 21 of a size to fit the barrel 10 to center it with respect to the barrel and this friction pulley is secured in this position by means of bolts 22 extending thru a web portion 23 of the friction drum and into the tapped openings 24 in the end disk 25,

which securely binds the pulley in position on the end of the warp beam. Each of these pulleys is provided with a trunnion or spindle **26** supported in a hub **46** extending thru an opening **47** in the end disk **25** for suitably mounting the beam for rotation in any convenient bearings.

Adjustable heads designated generally **30** are mounted on the barrel, each of which consists of a flat disk **31** to which there is welded a hub comprising a band or collar **32** having a flange **33** extending outwardly therefrom, which hub and flange are welded to the outer surface **34** of the disk **31**, while leaving the inner surface **35** perfectly smooth and clear for engagement with the warps. In order to better support this hub and also stiffen the disk **31** against warping or being distorted from shape, I provide ribs **36** extending outwardly such as illustrated in Fig. 5. Each of these ribs is welded to the hub and flange and also to the outer surface **34** of the disk. This hub **32** is provided with a threaded nut **37** at one end and an inner threaded ear **38** at the other end while a bolt **39** extends thru the ear **38** and is in threaded engagement with the ear **37** to draw these ears together, turning of the bolt being accomplished by the polygonal head of the bolt.

In order, however, that the hub and flange may be contracted, I have provided a slot **45** extending from the opening between the ears **37** and **38** to the point **41** to space the hub and flange from the outer face **34** of the disk and I have carried this slot into the rib **42** outwardly as far as the dotted line **43** in order to permit this inner portion of the rib to flex with reference to the disk thus upon contraction by the bolt **39** that portion of the hub between the dotted line **41** and the ear **37** will flex and the rib **42** will also flex to permit contraction of the warp for binding the head in position along the warp beam after the proper adjustment between the heads has been obtained.

In Fig. 8, I have illustrated a still further modified construction of barrel and recess. A full channel **50** is positioned in the notches in the disks with its bottom wall **51** resting on the bottom **16** of the notches and with its side walls **52** positioned beneath the edges **11** and **12** of the barrel. This channel may thus be held in without welding throughout its length or by welding only at its ends.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being defined and limited only by the terms of the appended claims.

I claim:

1. In a warp beam, a tubular barrel having longitudinally extending spaced edges unconnected at points along the length of the barrel, disks within said barrel supporting the same at spaced points and having notches at said spaced edges for the reception of a warp fastening rod member.

2. In a warp beam, a tubular barrel having longitudinally spaced edges unconnected at points along the length of the barrel, a plurality of disks within said barrel spaced at intervals therealong supporting the same at spaced points and each having right angular notches at said spaced edges for the reception of a warp fastening rod member.

3. In a warp beam, a tubular barrel having longitudinally extending spaced edges unconnected at points along the length of the barrel, a plurality of supporting disks within said barrel spaced at intervals therealong and each having notches at said spaced edges for the reception of a warp fastening rod member, and a separate flat strip of material in said notches and extending from one disk to another and resting on the bottom of each notch and forming a bottom against which the warps may be bound by the fastening member.

4. In a warp beam, a barrel member, a head member comprising a disk and a hub in the form of a band embracing said barrel member and adjustable therealong, flexible ribs secured to said hub and extending outwardly therefrom and secured to the outer surface of said disk, said hub and a portion of one of said ribs being free and spaced from said disk to permit of flexing and a radial contraction of said hub.

5. In a warp beam, a barrel member, a head member comprising a disk and a hub in the form of a continuous band embracing said barrel member and adjustable therealong, a flange secured to said hub and said disk, reinforcing ribs secured to said hub and flange and extending outwardly at an angle to the radius and secured to the surface of said disk, a portion of said hub and flange and a portion of one of said ribs being free and spaced from said disk to permit of flexing and a radial contraction of said hub.

6. In a warp beam, a barrel member, a head member comprising a disk and a hub in the form of a continuous band embracing said barrel and adjustable therealong, reinforcing ribs secured to said hub and extending outwardly adjacent the outer edge thereof at an angle to a radius and secured to the surface of said disk, said hub and a portion of one of said ribs being free from said disk to permit of flexing and a contraction of said hub, ears on said hub, and a bolt extending thru said ears and threaded in one of them for drawing said ears together and radially contracting said hub.

7. In a warp beam, a tubular barrel having longitudinally extending spaced edges, a plurality of supporting disks within said barrel spaced at intervals therealong and having notches at said spaced edges, and a channel member having right angular walls within said barrel and located in said notches and held therein by said barrel for the reception of a warp fastening rod member.

8. In a warp beam, a tubular barrel having longitudinally extending spaced edges, a plurality of supporting disks within said barrel spaced at intervals therealong and having notches at said spaced edges, and a channel member within said barrel and located in said notches and with its edges abutting the inner surface of said barrel so of itself to hold the same in position for the reception of a warp fastening rod member.

9. In a warp beam, a barrel member, an adjustable head member comprising a disk and a hub in the form of a one piece band embracing said barrel member, reinforcing flexible ribs secured to said hub and extending outwardly adjacent the outer edge thereof and secured to the said disk, a portion of said hub and one of said ribs being capable of yielding with reference to said disk to permit of a contraction of said hub, ears on said hub, and a bolt extending thru said ears for drawing said ears together and contracting said hub.

FRANK MOSSBERG.