

Nov. 10, 1953

T. ROVAS
GUIDE FOR WARP BEAMS

2,658,699

Filed July 3, 1951

2 Sheets-Sheet 1

Fig. 1

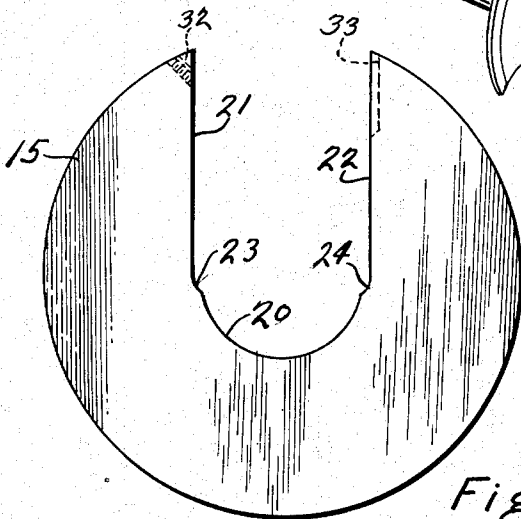
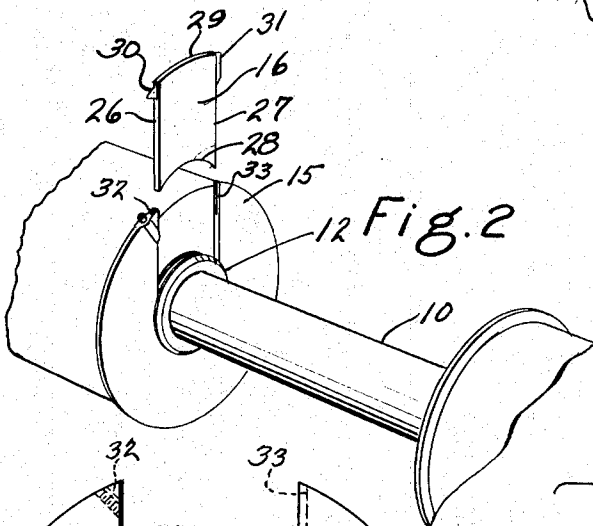
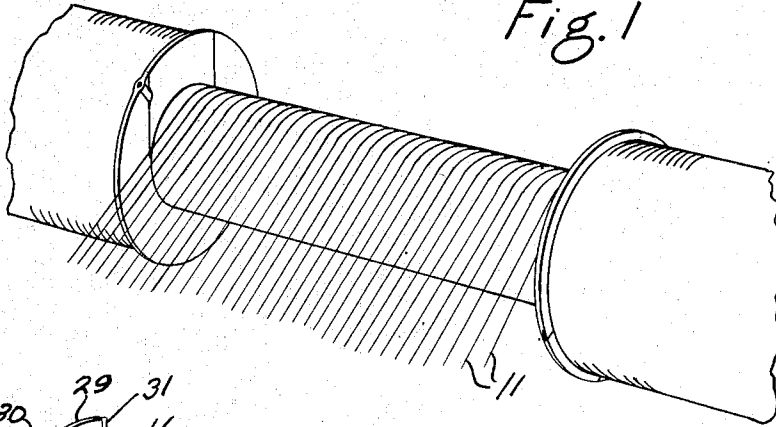
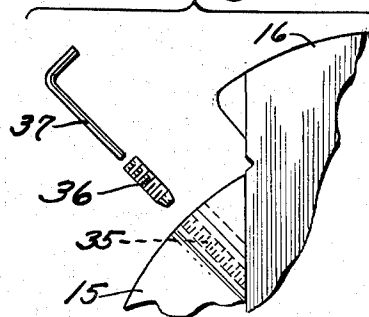


Fig. 4



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Fig. 3 Bates, Peare & Bean
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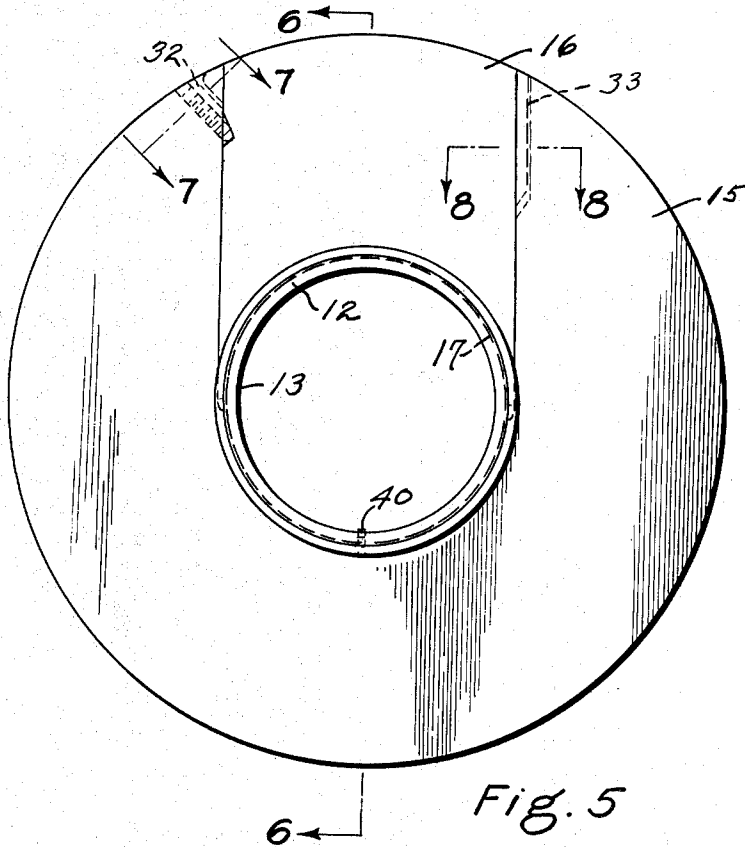


Fig. 5

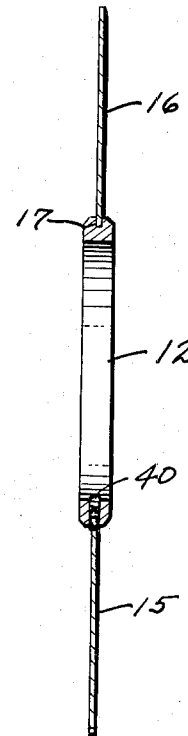


Fig. 6

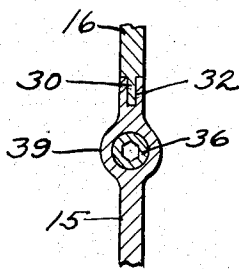


Fig. 7

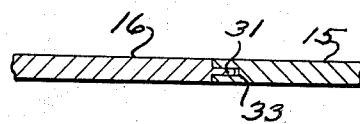


Fig. 8

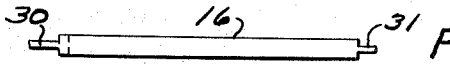


Fig. 10

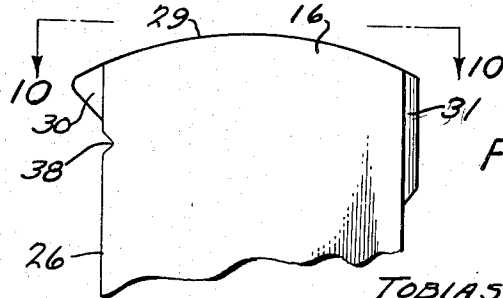


Fig. 9

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UNITED STATES PATENT OFFICE

2,658,699

GUIDE FOR WARP BEAMS

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Application July 3, 1951, Serial No. 235,048

4 Claims. (Cl. 242—124)

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This invention relates to knitting machines and particularly to devices for facilitating the winding of yarn or thread onto a warp beam.

One of the difficulties encountered in the winding of yarn onto a beam or in "warping a beam" as it is called in the trade, has been to hold the adjacent rolls of strands on the beam securely with the end portions of adjacent sections disposed in close proximity to each other. Such procedure is important in preparing a beam for knitting certain articles, such as sweaters, where it is desirable to weave the fabric in web form in such manner that one longitudinal half has the pattern reversed with respect to the other half, so that when the finished web is folded longitudinally the patterns will be superimposed upon each other. This is for the purpose of enabling identical panels to be cut simultaneously.

In my copending application Ser. No. 83,137, filed March 24, 1949, now Patent No. 2,578,018, I have shown a form of warp beam collar which is suitable for accomplishing the foregoing problem, and the present invention constitutes an improvement of such collar construction, so as to minimize the overall thickness of the assembled collar and to eliminate any overhanging projections which might interfere with the winding of the beam.

Briefly, the present invention includes a thimble which is adapted to be adjustably fastened to the beam, together with two coating plate sections which are detachably connected to the thimble and are adapted to be locked into place by a locking device which presents no projecting portions that would be apt to interfere with the winding of the yarn onto the beam.

Referring to the drawings, Fig. 1 is a perspective view of a beam having collars thereon made in accordance with the present invention; Fig. 2 is a perspective view illustrating portions of the collar in position for assembly; Fig. 3 is a side view of one of the plate sections; Fig. 4 is an exploded side view illustrating the locking means for the plate section; Fig. 5 is a side view of an assembled collar; Figs. 6, 7 and 8 are sections taken on correspondingly numbered lines as Fig. 5; Fig. 9 is a side view of a part of one of the plate sections and Fig. 10 is a top plan view of the section shown in Fig. 9 and taken in the direction indicated by the line 10—10 in Fig. 9.

In the drawings, 10 indicates a warp beam onto which strands 11 are to be wound. Collars embodying the present invention embrace the beam at spaced intervals to limit the extent, axially of the beam, for placement of the yarn

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and each of such collars includes a thimble 12 which has a central aperture 13 of a size sufficient to permit the thimble to be slid over the beam before the yarn is wound thereon.

The collar assembly includes a U-shaped plate section 15 and coating plate 16 which when assembled provide an annular disc, as shown in Fig. 5, upon the thimble. To accomplish this, the thimble has a peripheral groove 17 into which portions of the respective plates engage and are firmly held whenever the plates are locked together.

A plate formation which has been found to be satisfactory for accomplishing the present invention is illustrated in the various figures, wherein the plate 15 has a curved portion 20 which is substantially semi-circular in form and is adapted to engage substantially one-half the peripheral portion of the groove 17, the portion 20 being adapted to fit snugly within the groove. The plate 15 has a recessed portion extending outwardly from the curved portion 20 and is defined by parallel walls 21 and 22 which are spaced apart a distance substantially equal to the outside diameter of the thimble. Such walls may be connected to the curved portion by arcuate portions 23 and 24 respectively.

The plate 16 has parallel edges 26 and 27 which fit snugly against the walls 21 and 22 and has a concave curved portion 28 at one end for snug fitting engagement with that portion of the thimble groove which is not occupied by the plate 15, and has a convexly curved edge at the opposite end 29 so as to complete a circular disc whenever the plate 16 is assembled onto the plate 15.

To assist in retaining the plates 15 and 16 in interlocking engagement, I have shown tongues 30 and 31 adjacent the outer end of the plate 15 which are adapted to engage corresponding grooves 32 and 33 respectively in the plate 16. The tongues and coating grooves are disposed within the confines of the faces of the coating plates, as shown in Figs. 7 and 8, whereby the outer surfaces of the plates are substantially coplanar at the completion of the assembly.

To lock the assembled plates together, I have shown a threaded aperture 35 (Fig. 4) which may extend inwardly from the outer peripheral portion of the plate 15 at an inclined angle to the wall 21 and which is adapted to receive a set screw 36 which may be turned therein by means of a wrench illustrated at 37. A shouldered recess 38 is positioned on the edge 26 of the plate 16 in alignment with the aperture 35, whereby the screw 36 when tightened effects a satisfactory

interlock between the two plates. If desired, the plate 15 may have a bulbous enlargement 39 as shown in Fig. 7, so as to provide adequate wall strength for the aperture 35. This enlargement occupies only a relatively small part of the plate and, being rounded, does not interfere with the placing of the strands onto the beam.

To assemble a collar made in accordance with the present invention it is only necessary to slide the thimble onto the beam and to fasten it at the desired location by means of a set screw 40. Thereupon the plate 15 is brought into engagement with the thimble and, while held in the position shown in Fig. 2, the plate 16 is slid into coacting relationship, until the curved portion 28 occupies the groove in the thimble, while the tongues 30 and 31 fit into the coacting groove 32 and 33 respectively. When the plate 16 is slid home, then the interlock is effected by tightening the screw 36. Such assembly provides a relatively thin collar which can be quickly and easily removed, and which has no objectional projection which might catch the threads or interfere with the proper positioning of them upon the beam.

I claim:

1. A spacing device for use between sections of yarn on a warp beam comprising, a thimble having an aperture adapted to receive the beam and having an annular groove in the outer portion thereof, a pair of separable plates each having a notch adapted to occupy a portion of the groove in the thimble, one of the plates having a recess therein defined by a pair of parallel walls which extend substantially tangentially to the thimble and the other of which has parallel sides which are adapted to form an interfitting engagement with the walls of the recess, and interlocking tongue and groove connections between the plates.

2. A spacing device for use between sections of yarn on a warp beam comprising, a thimble having an aperture adapted to receive the beam and having an annular groove in the outer portion thereof, two separable plate sections each having a notch adapted to occupy a portion of the groove in the thimble, one of the plates being circular, except for a recess with walls extending tangentially from the thimble, the other plate being adapted to occupy the recess and having edges to coact with the walls of the recess of the first plate to form a collar and a fastening member extending inwardly from the periphery of the one plate and adapted to extend across the wall of the

recess and to engage the other plate for holding them locked in assembled position.

3. A spacing device for use between sections of yarn on a warp beam comprising, a thimble having an aperture adapted to receive the beam and having an annular groove in the outer portion thereof, a pair of separable plates each having a notch adapted to occupy a portion of the groove in the thimble, one of the plates having a recess extending outwardly from the central portion thereof, the walls of the recess being substantially parallel and extending tangentially to the groove in the thimble, the other of said plates having parallel walls forming a snug fitting engagement with the walls of the recess and having the outer end curved to conform to the curvature of the first-mentioned plate, said plate having interfitting tongue and groove connections along the interfitting edges thereof, and means for locking said plates together.

4. A spacing device for use between sections of yarn on a warp beam comprising, a thimble having an aperture adapted to receive the beam and having an annular groove in the outer portion thereof, a pair of separable plates each having a notch adapted to occupy a portion of the groove in the thimble, one of the plates having a recess therein defined by a pair of parallel walls which extend substantially tangentially to the thimble and the other of said plates extending into the recess of said one plate and having spaced walls coacting with the corresponding spaced walls of said one plate to form a circular collar, one of the plates having an externally accessible threaded aperture within the plane of the plate and extending through one of said parallel walls, and a member extending through the aperture into engagement with the coacting spaced wall of the other plate for locking the plates together in assembled relation.

TOBIAS ROVAS.

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