Jan. 14, 1958 W. W. HEWITT 2,819,855

CREEL FOR TWISTING AND SIMILAR MACHINES

Filed June 15, 1956 2 Sheets-Sheet 1

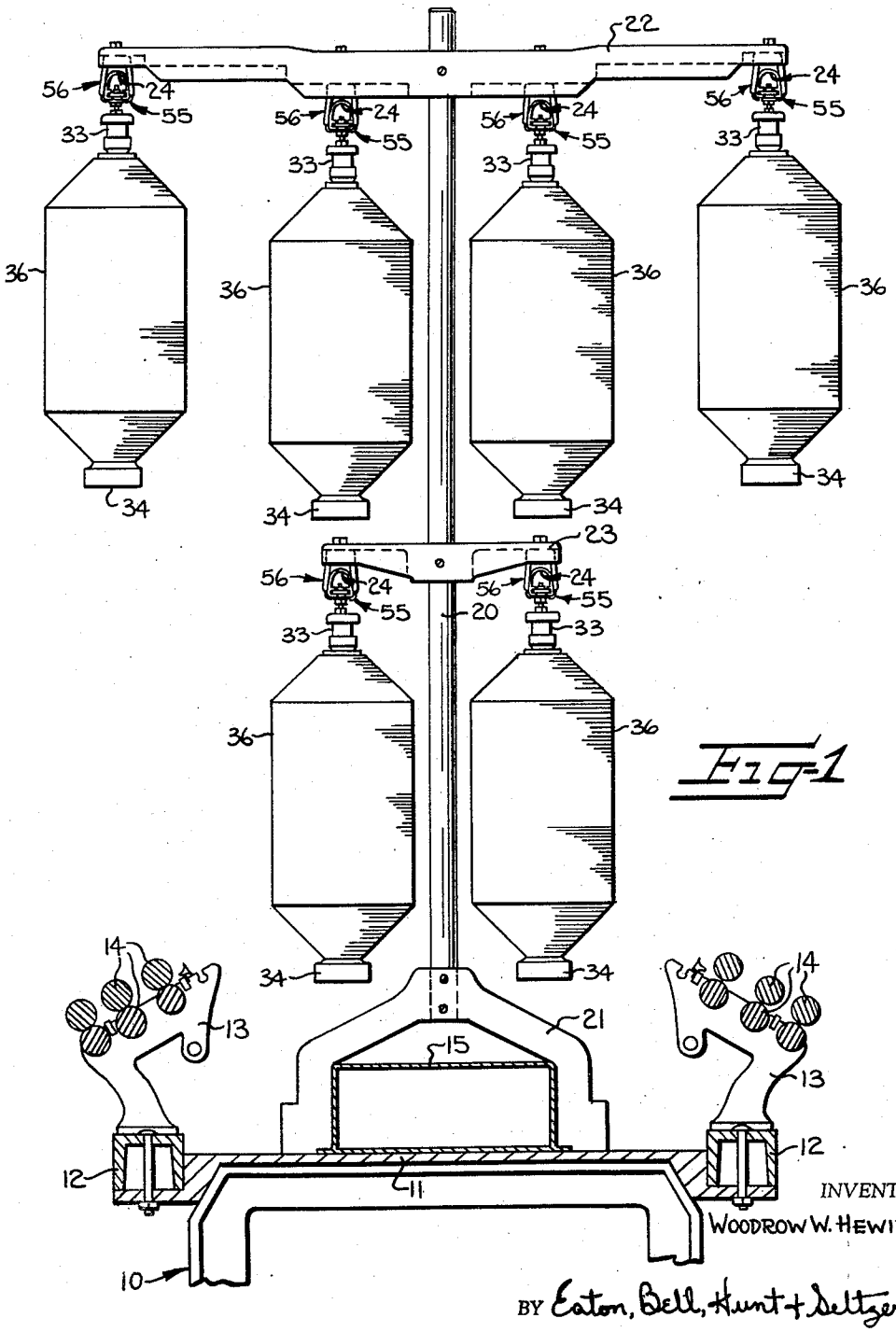


FIG-1

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CREEL FOR TWISTING AND SIMILAR MACHINES

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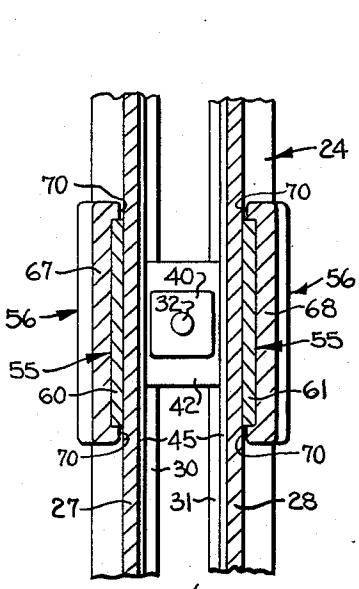


Fig-5

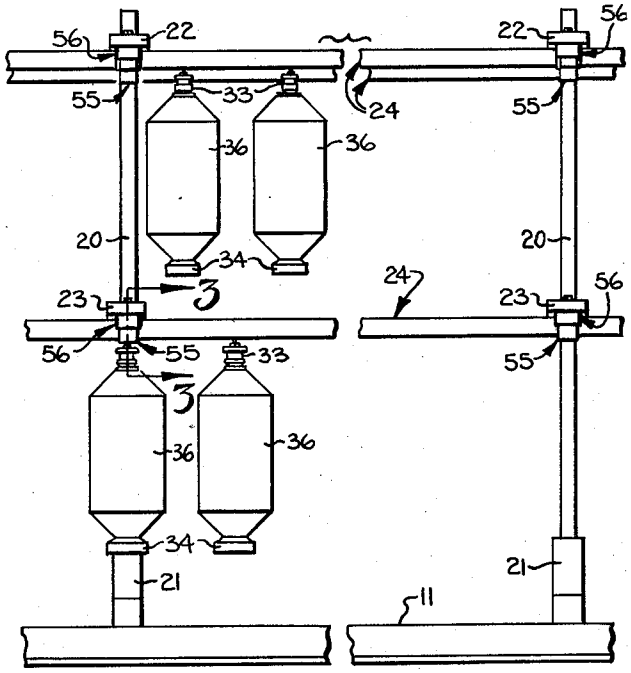


Fig-2

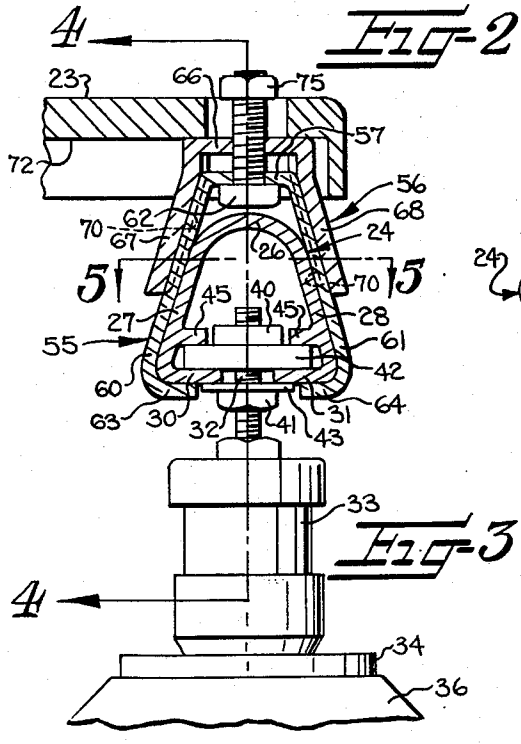


Fig-3

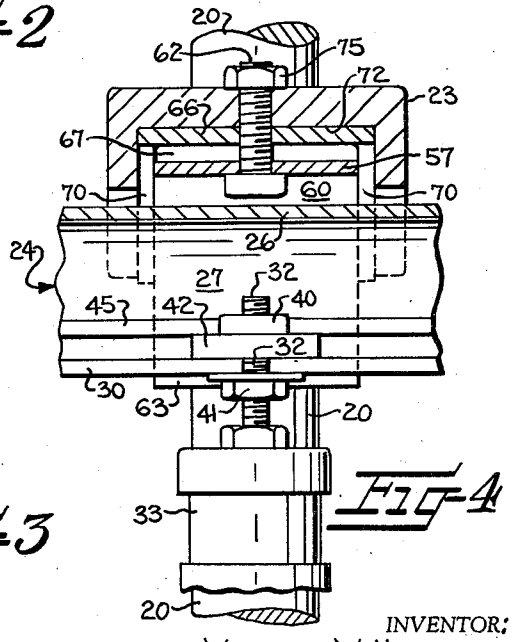


Fig-4

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CREEL FOR TWISTING AND SIMILAR MACHINES

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7 Claims. (Cl. 242—131)

This invention relates to textile machinery such as twisting and spinning machines and the like which machines shall be hereinafter generically referred to as twisting machines. The present invention is particularly concerned with improvements in the creel of such machines.

There are many different types of bobbin creels currently in use and the present invention is particularly concerned with creels of the type which are positioned above the drafting rolls and comprise a plurality of spaced upright brackets or posts, each of which supports one or more lateral arms. Spindle supporting rails extend longitudinally of the machine and are suitably secured to the lateral arms and each of the rails has a plurality of spindles adjustably secured thereto and depending therefrom, which spindles receive and support the upper ends of creel bobbins from whence yarn or roving is withdrawn in its course to the drafting rolls.

It is the primary object of this invention to provide simple and effective means for attaching the spindle supporting rails of a creel of the character described to the lateral arms.

It is another object of this invention to provide mounting means of the character described wherein the spindle supporting rails are formed with tapered or upwardly and inwardly converging opposite side surfaces and wherein the improved mounting means comprises a plurality of mounting units, there being one of the mounting units provided for attaching the rails to each of said lateral arms. Each of the mounting units comprises a primary inverted U-shaped bracket whose legs straddle and engage opposed tapered side surfaces of the corresponding rail, the lower ends of said legs being provided with inturned portions which engage the lower surfaces of the rail. A secondary inverted substantially U-shaped bracket mates with and fits against the outer surfaces of the primary bracket and a common bolt extends through flattened upper portions of the primary and secondary brackets and also extends through the corresponding lateral arm of the creel. As the bolt is tightened, the primary bracket is drawn upwardly tightly against the inner surfaces of the legs of the secondary bracket so as to tend to force the legs of the primary bracket inwardly to thereby clampingly engage the rail. Thus, it is apparent that the bolt need only be slightly loosened to facilitate adjusting the rail longitudinally of its axis and relative to the corresponding mounting unit.

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

Figure 1 is a vertical sectional view through the upper portion of a twisting machine, omitting the drafting rolls and showing the improved creel mounted thereon;

Figure 2 is an elevation on a reduced scale, looking at the right-hand side of Figure 1, but showing only medial portions of the creel and omitting the roll stands;

Figure 3 is an enlarged fragmentary vertical sectional view taken substantially along the line 3—3 in Figure 2;

Figure 4 is a vertical sectional view taken substantially along the line 4—4 in Figure 3 and showing the corresponding spindle track of rail in longitudinal section;

Figure 5 is a fragmentary sectional plan view taken substantially along the line 5—5 in Figure 3.

Referring more specifically to the drawings, the numeral 10 generally designates the frame of a twisting or similar machine which includes a platform 11 whose side portions extend beyond the frame 10 and support conventional roll stand beams 12 on each of which a plurality of roll stands 13 are mounted. These roll stands carry the usual drafting rolls indicated at 14. The machine may be equipped with a conventional clearer system which includes a substantially rectangular suction duct 15 which extends longitudinally of the machine and is centrally positioned upon the platform 11.

The creel comprises a plurality of longitudinally spaced posts or standards 20, the lower end of each of which is fixed in an inverted substantially U-shaped creel bracket 21 whose legs straddle the duct 15 and are suitably secured to the platform 11. Each standard or post 20 has one or more lateral arms thereon, there being two such lateral arms shown on each of the posts 20 in Figures 1 and 2, the upper arm being indicated at 22 and the lower arm being indicated at 23. The creel arms 22, 23 may be of varying lengths and in the present instance, the upper arm 22 is shown as being substantially longer than the lower arm 23.

Each of the upper and lower arms has a plurality of longitudinally extending spindle supporting rails or tracks 24 adjustably attached thereto, there being four such tracks 24 shown suspended from the upper bars or arms 22 and two such tracks 24 suspended from the lower arms or bars 23 in the present instance. Each of the spindle or bobbin supporting tracks 24 is of substantially inverted V-shaped cross-sectional configuration as best shown in Figure 3, and comprises a curved or arcuate upper portion 26 which blends into downwardly diverging side wall portions or legs 27, 28. The lower edges of the longitudinally extending side wall portions 27, 28 have inwardly projecting flanges 30, 31 formed integral therewith whose proximal edges are spaced sufficiently apart from each other to permit a screw 32 to extend therebetween. The screws 32 are connected at their lower ends to suitable spindles 33 which may be of conventional or other construction and to which are attached the upper ends of tubular bobbins 34 having packages of yarn 36 thereon.

The threaded shafts or screws 32 to which the spindles 33 are attached are each adjustably secured to the corresponding track 24 by means of upper and lower nuts 40, 41 which engage the respective upper and lower surfaces of respective washers or collars 42, 43. The upper washer 42 is preferably substantially thicker than the lower washer 43 and the proximal surfaces of the washers 42, 43 are clamped against the respective upper and lower surfaces of the longitudinally extending flanges 30, 31 of the corresponding track 24 by the nuts 40, 41. In order to permit relative movement between the threaded shaft 32 or nut 41 and the nut 40, the downwardly diverging walls 27, 28 of the tracks 24 are provided with inwardly projecting ribs 45 which extend throughout the length of the tracks 24 and are spaced apart from each other a distance slightly greater than the distance across the flats of the corresponding nuts 40.

As heretofore stated, the present invention resides in novel means for attaching corresponding tracks or rails 24 to the corresponding lateral arms 22, 23 and the improved mounting units are particularly devised for use with extruded track of the character described.

Each of the mounting units comprises an inverted substantially U-shaped primary track supporting bracket broadly designated at 55 and a secondary inverted sub-

stantially U-shaped bracket 56, the lower or primary bracket 55 preferably being made of a relatively flexible material such as sheet steel while the bracket 56 is preferably made from a relatively rigid or unbendable material such as a heavier gauge steel or cast iron.

The primary bracket 55 is relatively short with respect to the axis of the corresponding track 24 and comprises a flat or horizontal upper portion 57 from opposite sides of which depend downwardly diverging side portions or legs 60, 61. The proximal surfaces of the legs 60, 61 engage the outer surfaces of the downwardly diverging side portions 27, 28 of the corresponding track 24 and, in order to provide space between the curved upper portion of the track and the lower surface of the flat upper portion 57 for a screw 62, the legs 60, 61 are of substantially greater length than the height of the side wall portions 27, 28 of the track 24. The lower ends of the legs 60, 61 of each primary bracket 55 are also provided with inwardly projecting flanges 63, 64 thereon which serve as supports by extending inwardly beneath the respective flanges 30, 31 of the track 24.

The upper or secondary brackets 56 each comprises a flat upper portion 66 and downwardly diverging rigid legs 67, 68 which engage the upper portions of the outer surfaces of the legs 60, 61 of the primary bracket 55. In order to prevent excessive endwise movement of the primary bracket 55 relative to the upper or secondary bracket 56, the secondary bracket 56 is preferably provided with axially spaced shoulders or ribs 70 on opposite ends thereof between which the legs 60, 61 of the corresponding primary bracket 55 loosely fit.

It will be noted that the lower surfaces of the lateral bars or arms 22, 23 are each provided with longitudinally extending grooves 72 therein for loosely receiving the upper portions of the corresponding secondary or upper bracket 56 of the improved mounting unit. The screw 62 associated with each of the mounting units extends upwardly through and loosely penetrates the flat portions 57, 66 of the respective mounting brackets 55, 56 and also loosely penetrates the corresponding lateral arm 22, 23 as the case may be, and has a nut 75 threaded onto the upper end thereof.

When the tracks 24 are initially mounted in the improved mounting units or are to be axially adjusted, the nut 75 is loosened to permit movement of the tracks 24 relative to the primary brackets 55. The tracks 24 may be readily fixed against movement relative to the mounting units by merely tightening the nuts 75 to draw the primary brackets upwardly relative to their corresponding upper brackets 56 and to cause the upper brackets 56 to bear against the lower surface of their corresponding arms. As the primary brackets 55 are drawn upwardly by the screws 62 relative to their respective upper brackets 56, the tapered proximal surfaces of the relatively rigid legs 67, 68 of the upper brackets 56 tend to cause the relatively flexible legs 60, 61 of the primary brackets 55 to move inwardly to clampingly engage the corresponding track 24 to thereby clampingly secure the tracks 24 to the improved mounting units and to the lateral arms.

It is thus seen that there is provided a novel mounting for attaching the tracks of a creel to the lateral arms of the creel, which mounting may be economically constructed and easily operated to quickly release or clamp the tracks merely by manipulation of the corresponding nuts 75.

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 defined in the claims.

I claim:

1. In a twisting machine having a creel including lateral arms and longitudinal tracks for the support of spindles having bobbins mounted thereon, means for adjustably and releasably connecting the tracks to the lateral arms comprising a first bracket having a web and legs depending in diverging relation from the web, said first bracket being disposed astraddle one of said tracks with the web extending laterally across the top of the track and the legs extending about the sides of the track, a second bracket also having a web and a pair of diverging legs extending from the web, the web of said second bracket being disposed beneath and bearing against the lower surface of at least one of said lateral arms, said first bracket being disposed within the confines of said second bracket, means spacing the webs of said brackets apart, and screw means extending through the webs of both brackets and said lateral arm whereby said first bracket may be moved vertically relative to said second bracket to selectively clamp and disengage the track between the legs of the first bracket.

2. In a twisting machine having a creel including laterally extending supporting arms and longitudinally extending tracks for the support of a plurality of spindles having bobbins mounted thereon, means for adjustably and releasably connecting the tracks to the lateral arms comprising first and second brackets for each of said arms, each of said brackets including a web and a pair of legs extending from opposed edges of the respective web, the legs on said first bracket depending from its web in diverging relation to each other and the legs on the second bracket depending from its web in parallel relation to each other for a distance approximately equal to the width of said web and then diverging downwardly, the legs on the first bracket being of greater length than the legs on the second bracket and being relatively more flexible than said last-named legs, the legs on the first bracket being disposed astraddle one of said tracks with the web of the first bracket extending laterally across the top of the track, said first bracket also being disposed within the confines of the second bracket with the outer surface of the legs on the first bracket bearing against the inner surface of the legs on the second bracket, means carried by the first bracket for limiting endwise movement of the first bracket relative to the second bracket, and screw means extending through the webs of both brackets and said lateral arm whereby said first bracket may be moved vertically relative to said second bracket to selectively move the first bracket into and out of clamping engagement with said track.

3. In a creel for a textile machine having elongated substantially horizontally disposed tracks provided with downwardly diverging opposite side surfaces thereon and also having lateral arms for supporting the tracks, improved means for attaching the tracks to said arms comprising a primary inverted substantially U-shaped bracket for each of said lateral arms, each of said primary brackets including a flat web portion and diverging legs extending from two opposite edges of the web portion, the legs of said primary brackets engaging the diverging side surfaces of said tracks and having in-turned lower portions thereon upon which said tracks rest, a secondary inverted substantially U-shaped bracket having a flat web and rigid legs on opposite sides thereof for engaging the outer surfaces of the legs of the corresponding primary brackets, a screw having a head engaging the lower surface of the flat portion of the primary bracket and extending upwardly through the flat portions of both brackets and also extending upwardly through the corresponding lateral arm, a nut threaded on the upper end of said screw whereby tightening of said nut draws the secondary bracket against the lower surface of the corresponding arm and draws the primary bracket upwardly between the legs of the secondary bracket whereby tending to move the legs of the primary bracket inwardly to clampingly engage the track.

4. In a creel for a textile machine having elongated substantially horizontally disposed tracks provided with downwardly diverging opposite side surfaces thereon and

also having lateral arms for supporting the tracks, improved means for attaching the tracks to said arms comprising first and second inverted substantially U-shaped brackets for each of said lateral arms, said first and second brackets each including a flat web portion and a pair of legs diverging from the web portion, the legs of said first brackets being engageable with the diverging side surfaces of said tracks and the legs of said second bracket at least partially overlying and being engageable with the outer surfaces of the legs of the first brackets, a screw extending through both webs and the corresponding lateral arm and having a head engaging the lower surface of the web of the first bracket, and a nut threaded on the upper end of said screw whereby tightening of said nut draws the second bracket against the lower surface of the corresponding arm and draws the first bracket upwardly between the legs of the second bracket thereby tending to move the legs of the first bracket inwardly to clampingly engage the track.

5. In a creel for a textile machine having a plurality of longitudinally extending bobbin supporting tracks and a plurality of laterally extending arms from which said tracks are suspended, means for adjustably and releasably connecting the tracks to the lateral arms comprising a pair of inner and outer inverted substantially U-shaped brackets for each of said lateral arms, said brackets each having a web portion and a pair of legs extending in diverging relation to each other from opposed edges of the web, the brackets in each pair of brackets being arranged in nesting relation with the webs spaced apart and the legs of the outer bracket at least partially overlying the legs of the inner bracket, the legs of the inner bracket in each pair being disposed astraddle one of said tracks, and means for moving the inner bracket relative to the outer bracket to vary the space between said webs whereby the legs of the inner bracket may be selectively wedged between the diverging legs of the outer bracket to cause the legs of the inner bracket to clampingly engage the track.

6. A structure according to claim 5 wherein said outer brackets are provided with opposed ribs depending from the webs and disposed between the legs, said ribs extending beyond the webs of the inner brackets and serving to limit endwise movement of the inner brackets relative to the outer brackets.

7. Means for attaching an adjustable member to a fixed member comprising a first U-shaped bracket and a second U-shaped bracket arranged in nesting relation with the first bracket disposed within the second bracket, said second bracket being formed of rigid material and including a web and a pair of legs, the legs on the second bracket depending from opposed edges of the web in parallel relation to each other and then diverging outwardly, said first bracket being formed of relatively flexible material and including a web and a pair of legs extending from opposed edges of the web in diverging relation to each other and in engagement with the inner surfaces of the legs on the second bracket, said first and second brackets being disposed astraddle said adjustable member with the legs on the first bracket extending about the proximate surfaces of the adjustable member, means carried by the second bracket for limiting endwise movement of the first bracket relative to the second bracket, and screw means extending through the webs of both brackets and through said fixed member whereby the web of the second bracket may be drawn up to bear against the fixed member and the first bracket may be drawn up toward the web of the second bracket to move the flexible legs on the first bracket into clamping engagement with the adjustable member.

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