OPENING DEVICE FOR FABRIC TUBING

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Application August 11, 1937, Serial No. 158,586

2 Claims. (Cl. 26—55)

This invention relates to a device for spreading fabric tubing before the fabric enters the drying apparatus.

As is well known a fabric after being knitted into tubular form is subjected to various operations in liquids and during these operations the fabric is twisted and tangled and it is necessary to take the twist and tangle out of the fabric before the fabric enters the drying apparatus and it is the object of my invention to do this with the minimum of labor and time and without injuring the fabric, even when the fabric is rayon cloth.

Another object of the invention is to provide rollers for spreading the fabric and taking the twist out of the same, some of the rollers being carried by arms which move downwardly to increase the spread of the rollers, under the action of gravity, so that the rollers automatically adjust themselves to different widths of the fabric.

This invention also consists in certain other features of construction and in the combination and arrangement of several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is an elevation showing the device supported by a pair of rails in which the device can slide.

Figure 2 is a section on the line 2—2 of Figure 1.

Figure 3 is an elevation of the device.

Figure 4 is a section on the line 4—4 of Figure 3.

Figure 5 is a section on the line 5—5 of Figure 2.

Figure 6 is a top plan view of the lower supporting member for the roller carrying arms and the second pair of rollers.

Figure 7 is a top plan view of one of the supporting rollers and its supporting bracket.

Figure 8 is an end view of Figure 7.

In these drawings the numeral 1 indicates a pair of channel iron rails which extend horizontally in front of the drying apparatus for the fabric and each rail slidingly supports a bracket 2 which has a base part of channel shape with the free edges of its flanges turned inwardly to provide the hooks 3 which engage the edges of the flanges of the rail, as shown in Figure 2 so that the bracket can slide on the rail. Each bracket has a pair of ears, the ears of the two brackets extending inwardly toward each other and each pair of ears supports the pinile 4 for a flanged roller 5.

A frame A is composed of the two end pieces 6, the connecting rods or bolts 7 and the spacers 8, support a vertical rod 9 by having the bolts or rods 7 passed through holes in the upper end of the rod 9 with the spacers 8 holding the rod 9 at the centers of the bolts 7. Said frame A also rotatably supports the four smooth rollers 10, each roller being arranged and projecting from a corner of the frame and said rollers extend between the end pieces of the frame and these rollers and the ends of the end pieces are so arranged and formed that the four rollers will contact the two rollers 5 in such a manner as to support the frame by the rollers 5 as shown more particularly in Figure 2 and the rollers 6 extend inwardly between each vertical pair of rollers 10 and into recesses formed in the end pieces of the frame as clearly shown in Figure 2.

A block or supporting member 11 has a hole 12 in its center through which the lower end of the rod 9 passes, with the block suitably fastened to the rod so that it will not rotate on the rod. Protrusions 13 extend from opposite sides of the block and form supports for the smooth rollers 14 and two pairs of arms 15 extend in opposite direction from the ends of the block, the inner ends of these arms being pivoted to the raised part 11' at the top of the block. A narrow roller 16 is rotatably supported at the outer end of each pair of arms and a pair of links 17 connect intermediate parts of each pair of arms with a collar 18 slidably arranged on the rod 9 between the limiting stops 19 on said rod. A bolt 20 passes through the lower end of each pair of links 17 and through each pair of arms 15 and a spacer 21 is arranged on each bolt and extends between the arms of each pair.

One end of the tubular fabric F is placed over the rollers 14 and 16 and the fabric is pulled up over the frame A and its rollers 10, portions of the fabric passing between said rollers 10 and the large rollers 5. The fabric is then passed over the guide roller 22 arranged above the rails 1 and carried to the drying apparatus, the fabric passing over a driven roller which acts to pull the fabric over the device and to the drying apparatus. As will be seen the rollers 14 and 16 act to open and spread the tubular fabric and as the arms 15, which carry the rollers 16, are free to move upwardly and downwardly the
rollers 16 will automatically adjust themselves to different widths of fabric, as shown in dotted lines in Figure 1. The device is supported by the two large rollers 6 and these rollers 5 and the rollers 16 permit the fabric to pass them without danger of tearing or pulling the fabric and as all the rollers are of wood or similar material there are no metal parts to contact the fabric so that the device can be used with delicate fabric such as rayon cloth which is damaged if it comes in contact with the metal. As before stated the entire device can be adjusted on the rails by simply sliding the brackets 2 on said rails and said rails are adapted to support a number of the devices so that a plurality of the tubular fabric can be operated upon by the devices supported on the one pair of rails.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A device of the class described comprising a pair of supporting rollers, brackets to which the supporting rollers are connected, a pair of rails on which the brackets are slidably arranged, a frame, rollers carried thereby and engaging the supporting rollers, whereby the frame is supported by and between said supporting rollers, a rod depending from the frame, a member connected to the lower end of the rod, arms pivoted to opposite ends of the member, and tending to swing downwardly under the action of gravity, rollers at the outer ends of the arms and a pair of rollers carried at the sides of the member.

2. A device of the class described comprising a supporting member having spaced prongs at opposite sides thereof, a roller carried by each pair of prongs, arms pivoted to opposite ends of the member, a roller carried by the outer end of each arm, an upright having its lower end connected with the supporting member, a collar slidably arranged on the upright and links connecting the collar with the arms and supporting means for the upper end of the upright, said supporting means including a frame connected with the upper end of the upright, a roller at each corner of the frame, a pair of supporting rollers extending between the rollers of the frame, brackets to which the supporting rollers are connected, and a pair of rails on which the brackets are slidably arranged.

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