April 1, 1952 S. COHN ET AL 2,590,938

APPARATUS FOR HANDLING TUBULAR TEXTILE FABRICS

Filed Nov. 3, 1950

FIG. 1

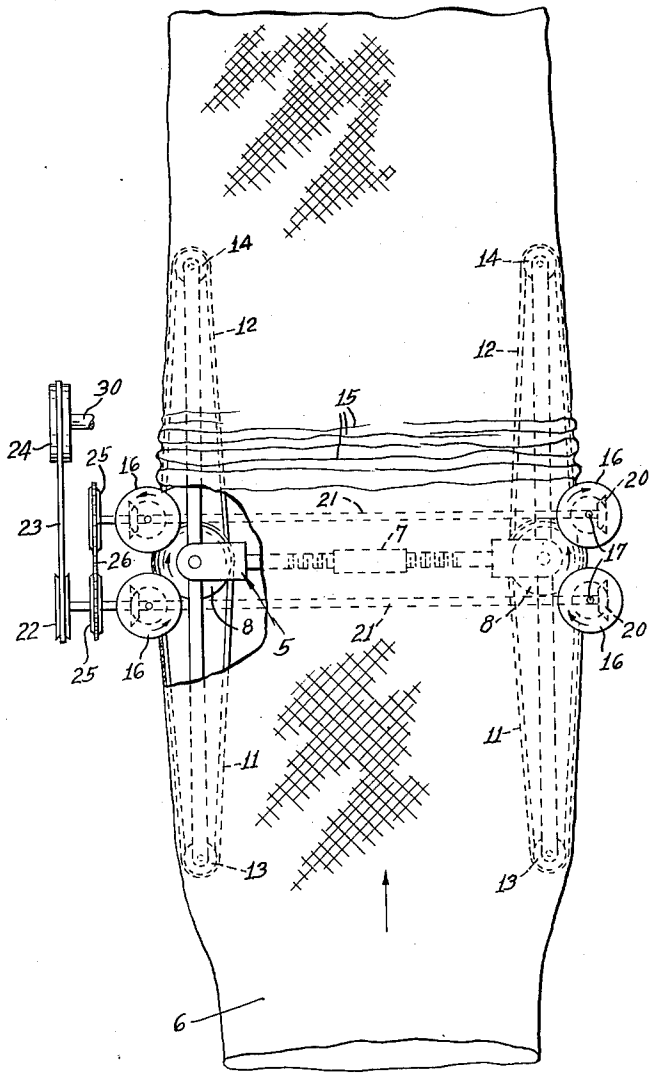
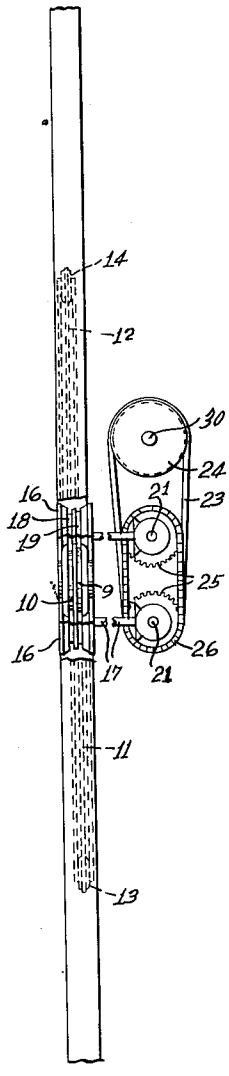


FIG. 2



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Patented Apr. 1, 1952 2,590,938

UNITED STATES PATENT OFFICE

2,590,938

APPARATUS FOR HANDLING TUBULAR TEXTILE FABRICS

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Application November 3, 1950, Serial No. 193,932

3 Claims. (Cl. 26—55)

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This invention relates to the treatment of tubular textile fabric and particularly to improved mechanism for advancing the tubular fabric in preparation for further treatment thereof such as steaming or the like.

In such operations it is desirable to spread the fabric and at the same time to propel it positively so that it may be withdrawn from source of supply, usually in rope form or roughly spread in a pile or on a roll. In numerous cases it is also desirable to relax the fabric, that is, to eliminate longitudinal tension thereon during the further treatment. Propellers for the purpose have been devised heretofore, and the present invention is intended to effect improvements facilitating the operation and adjustment of the propeller.

It is the object of the invention to provide a propeller for tubular textile fabric which will advance the forward and rearward portions thereof at differential speeds so that tension may be relaxed in the forward portion.

Other objects and advantages of the invention will be apparent as it is better understood by reference to the following specification and the accompanying drawing, in which

Fig. 1 is a plan view of mechanism embodying the invention; and

Fig. 2 is a side elevation thereof illustrating particularly the means for adjusting the relative speeds of travel of the two portions of the fabric.

Referring to the drawing, 5 indicates a frame which is adapted to be inserted within the tubular fabric 6 and supported in the manner hereinafter described to advance the fabric. The frame 5 consists of opposite sections of similar construction connected by an adjustable member 7 so that the frame may be contracted or expanded to meet the requirements with respect to the spreading of the fabric 6. The adjustable member 7 may be of the nature of a turnbuckle or similar device which will readily expand or contract the frame for the purpose indicated.

The frame 5 on each side of the mechanism carries pulleys 8 which, as shown in Fig. 2, have two grooves 9 and 10 to receive belts 11 and 12. Pulleys 13 and 14 at the ends of the frame also support the belts 11 and 12 which engage the inner surface of the fabric and cause it to advance as the pulleys 8 are driven.

In order that the belts 12 may be driven at a slightly lower speed than that of the belts 11, the pitch of the grooves 9 and 10 on the pulleys

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8 is different. The groove 10 is deeper than the groove 9 so that the peripheral speed of the pulleys 8 imparted to the belts 12 is somewhat less than the peripheral speed imparted to the belts 11, which engage the grooves 9. Consequently, when the pulleys 8 are driven, the rearward portion of the fabric 6 will be advanced at a predetermined rate by the belts 11 until it engages the belts 12. Since the motion of the belts 12 is slower, the fabric will not advance so rapidly, and will be relieved of longitudinal tension, as indicated by the riffles 15 in the fabric. Interchangeable pulleys 8 may be employed to impart to the fabric 6 the desired rate of travel in both the rearward and forward portions.

To drive the rollers 8 and consequently the fabric 6, a pair of rollers 16 is mounted on vertical shafts 17 at each side of the frame. The rollers 16 are provided with double grooves 18 and 19. The rollers 16 engage the pulleys 8 and the belts 11 and 12 thereon through the fabric 6 and cause the pulleys 8 to rotate in the desired direction to drive the belts 11 and 12. The vertical shafts 17 may be driven in any suitable manner, preferably through bevel gears 20 connected to shafts 21 which are driven at equal speeds by the sprockets 25 through the chain 26. One of shafts 21 carries the pulley 22 which is in turn driven through a belt 23 from a variable speed pulley 24 on the main driving shaft 30 of the machine. The latter may be driven by an electric motor or other prime mover.

The mechanism as described affords a convenient and practical means for advancing tubular fabric so that the rearward and forward portions thereof travel at differential speeds. The rollers 16, in addition to the driving function, support the frame 5 within the fabric 6. These rollers are adjustable transversely so as to conform to adjustment of the frame 5 for different widths of fabric.

Various changes may be made in the structure as described without departing from the invention or sacrificing the advantages thereof.

We claim:

1. In an apparatus for advancing tubular textile fabric, a frame, pulleys centrally disposed in the frame each having a pair of belt receiving grooves of different pitch, pulleys at opposite ends of the frames and belts connecting the centrally disposed pulleys to the pulleys at the ends of the frame, the belts at the centrally disposed pulleys being disposed in different grooves, and pairs of supporting and driving rollers engaging the centrally disposed pulleys through

fabric stretched on the frame whereby the forward and rearward portions of the fabric are advanced at differential speeds.

2. In an apparatus for advancing tubular textile fabric, a laterally expansible frame, pulleys centrally disposed in the frame each having a pair of belt receiving grooves of different pitch, pulleys at opposite ends of the frames and belts connecting the centrally disposed pulleys to the pulleys at the ends of the frame, the belts at the centrally disposed pulleys being disposed in different grooves, and pairs of supporting and driving rollers engaging the centrally disposed pulleys through fabric stretched on the frame whereby the forward and rearward portions of the fabric are advanced at differential speeds.

3. In an apparatus for advancing tubular textile fabric, a frame, interchangeable pulleys centrally disposed in the frame each having a pair of belt receiving grooves of different pitch, pulleys at opposite ends of the frames and belts connecting the centrally disposed pulleys to the pulleys at the ends of the frame, the belts at the centrally disposed pulleys being disposed in different grooves, and pairs of supporting and driving rollers engaging the centrally disposed pulleys through fabric stretched on the frame whereby the forward and rearward portions of the fabric are advanced at differential speeds.

No references cited.

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