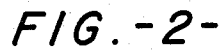


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 PLURALITY OF EMPTY BOBBINS
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APPARATUS FOR SIMULTANEOUSLY DONNING
A PLURALITY OF EMPTY BOBBINS

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4 Claims. (Cl. 198—24)

This invention relates generally to textile handling apparatus and particularly to apparatus to simultaneously don on pegs a large number of bobbins conveyed thereto.

It is an object of the invention to provide an inexpensive efficient bobbin handling apparatus to place a large number of bobbins on pegs for the purpose of transporting such bobbins to a spinning frame.

Other objects and advantages of this invention will be readily apparent as the specification proceeds to describe the invention with reference to the accompanying drawings in which:

FIGURE 1 is a plan view of an apparatus according to the present invention and

FIGURE 2 is a front view of the apparatus shown in FIGURE 1.

In the drawing, indicated at 1, 1 are conveyors arranged in two rows and having a large number of cleats 2 secured thereto at predetermined intervals to receive empty bobbins one in each space defined therebetween, said conveyors moving in the direction of arrow for conveying the empty bobbins. Indicated at 4, 4 are elongated retainer plates mounted slightly above the outer edges of the conveyors and having a large number of pegs 5 secured thereto with the same pitch as the empty bobbins on the conveyors. Indicated at 6, 6 are elongated pusher plates opposed to the retainer plates at the inner edges of the conveyors and having projecting pieces 7, 7 at the opposed ends thereof for obliquely connecting links 8, 8', the center point 9 of each link being pivoted to the machine frame. Indicated at 10 is a rack rod crossing one of the links 8 and having a pin 11 thereon pivotally fitted in an elongated opening 12 in the link. A pinion 15 secured to a shaft 14 for a handle 13 meshes with the rack bar so that the operation of the handle will cause the pusher plates 6, 6 to be moved to make wider the distance therebetween thereby simultaneously pushing out all the empty bobbins on the conveyors. Indicated at 16, 17 are two support plates located inside the retainer plates and pusher plates to extend along the lateral edges of the conveyors the upper edges of said support plates being shaped to provide V-shaped irregular edges 17 having their valleys shaped to have the same pitch as the pegs 5. The guide plates are secured at their opposed ends to lifting rods 18, 18 and normally stay slightly below the conveyors 1, the same being adapted to be raised to the position of the pegs 5 at a suitable time.

With the present invention thus arranged, when the conveyors 1 carrying the empty bobbin 2 are stopped at the predetermined position by means of a limit switch (not shown), the support plates 16 are caused to be raised to the position of the pegs 5 thereby simultaneously lifting up all the empty bobbins, supporting the latter at the valleys. Since the valleys are made to have the same pitch as the pegs 5, the empty bobbins 3 as lifted up by the support plates can be positively aligned with the axes of the pegs 5. Thereupon, the handle 13 is rotated to widen the distance between the pusher plates 6, 6, thereby pushing out the empty bobbins, whereupon the latter are simultaneously donned on the pegs 5.

Where a large number of empty bobbins are conveyed one in each space between adjacent cleats, there have been irregularities in the distance between empty bobbins due to the expansion and contraction of the conveyors themselves and differences in the distance between adjacent cleats. Under the condition as it is, the empty bobbins cannot be brought into coincidence with the pitches on the pegs secured to the conveyors, so that it is difficult to effect the simultaneous donning of all the empty bobbins on the pegs. However, according to the present utility model, since the support plates extending along the opposed lateral edges of the conveyors are provided with irregular edges having the same pitch as the pegs and the empty bobbins can be lifted up as received in the valleys of the irregular edges, it is possible to allow the pitch of the empty bobbins to coincide with that of the pegs enabling the numerous bobbins to be simultaneously donned on the pegs. Thus, it is extremely effective for use as an automatic bobbin exchanging machine.

While the apparatus disclosed and described herein constitutes the preferred form of the invention, yet it will be understood that the apparatus is capable of alteration without departing from the spirit of the invention, and that all modifications that fall within the scope of the appended claims are intended to be included herein.

That which is claimed is:

1. An apparatus for donning empty bobbins comprising: a bobbin conveyor, a plurality of cleats on said conveyor spaced from one another to form pockets between adjacent cleats, plate means mounted adjacent one lateral edge of said conveyor, pegs mounted on said plate means and extending toward said conveyor, pusher plate means mounted adjacent the other lateral edge of said conveyor, bobbins in said pockets, bobbin guide means, having notches thereon to receive and center the bobbins in substantial alignment with the pegs, straddling said conveyor and mounted for vertical movement between said pegs and said conveyor to guide said bobbins from said conveyor to said pegs, and means operably associated with said pusher plates to push said plate means against said bobbins to seat said bobbins on said pegs.

2. The structure of claim 1 wherein said guide means are located below said bobbins in inactive position and means are provided to lift said guide means into active position against said bobbins when it is desired to push said bobbins onto said pegs.

3. The structure of claim 2 wherein said bobbins are longer than the width of said pegs whereby said bobbins project outwardly beyond the lateral end of said conveyor.

4. The structure of claim 1 wherein a second conveyor, plate means, pusher plate means are located adjacent the first named corresponding members, said first and second pusher plate means being located near the first and second conveyors and being actuated simultaneously.

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