DEVICE FOR PRODUCING TUBES OR BOBBINS OF THE KIND USED IN THE TEXTILE INDUSTRY FOR RECEIVING THE YARN

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DEVICE FOR PRODUCING TUBES OR BOBBINS OF THE KIND USED IN THE TEXTILE INDUSTRY FOR RECEIVING THE YARN

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8 Claims.

This invention is particularly concerned with tubes, such as conical cross wound bobbins or cheeses, which have avelvetlike surface for working sensitive yarn, especially silk threads. Such a surface protects the material carried by the bobbin and also prevents the yarn from slipping off if properly constructed.

The customary methods of producing a velvetlike surface do not yield satisfactory results. For example, surfaces ground by special devices or roughened in a similar way often fulfill their purpose quite imperfectly. Besides, such methods are expensive, owing to the rapid wear of the tools, such as steel scrapers, brushes and the like.

The invention eliminates these defects, by covering the tubes with fine textile fibers which absolutely prevent the thread from slipping off from the tube and, simultaneously, owing to the softness of the fibers, from hitching on to the tube surface. The tubes according to the invention are therefore giving longer service than ordinary tubes and represent a considerable saving. The fibers used are preferably of a kind related to the nature of the yarn to be wound up.

By way of example, the invention is illustrated in the accompanying drawings, in which Figure 1 is a diagram of a conical cross wound bobbin; Fig. 2, a cross section of a portion of the tube on a greatly enlarged scale; and Figs. 3 and 4 are, respectively, a front and top view of the tube-making device.

Referring to the drawing, the tube a is of usual shape and construction and provided with a velvetlike covering b consisting of fine textile fibers c which are embedded in a previously applied varnish layer d so that their ends freely point outwardly, as indicated in Fig. 2. In this way an extremely soft support for the thread is provided, which prevents both slipping off and becoming hitched, i.e., which permits free travel of the thread. The textile fibers employed are preferably of a nature related to that of the yarn to be wound up.

In the device for producing the tubes a, as shown in Figs. 3 and 4, an endless conveying means e is employed which moves the tubes a to be covered from one working station to the other and finally to the delivery station.

In the construction shown the conveying means e is an endless band, though a chain or other suitable means could of course be used also. The band e passes horizontally through the device and, at both ends over the rolls f, one of which is intermittently moved by a motor g and connecting gear, not shown.

For the reception of the tubes horizontally extending pins h are arranged on the band e at a certain distance from one another, to which the tubes a are attached. In order to be able to work them on all sides the pins h are turned. The tubes a first pass to a varnishing outfit i which provides their surface with a quickly drying coat d.

At the next station the fibers c are applied by blowing, for which purpose a blower k is provided which is driven by the motor m and blows the fibers c contained in a receptacle l onto the varnish layer d. The tubes a are provided with the fibers c in the manner described are then conveyed to a device m which removes excess fibers e by brushing or in any other suitable manner. The fibers removed by brushing are drawn off by a pump n, the suction piping o of which leads to a nozzle p. When the tubes a have reached this station, the varnish d will be dry.

The finished tubes a are then moved to a delivery device by being placed with their rear ends on a slide q which is then moved away from the band e, so that the tubes a are stripped off from the pins h, e.g., by moving the slide q forward by an eccentric r or the like arranged on the shaft s.

The tubes then drop onto an incline t and then into a collector.

The pins h are driven by an endless belt v passing on both sides of the machine over the roll w and being driven by a pulley x. The belt v touches all pins h which for this purpose have a shoulder y and are thus turned.

I claim:

1. A device for producing tubes of the kind described, comprising varnishing means, means for rotating the tubes, means for applying a velvet-like covering of fibers over the circumference of the varnished tube, a conveyor for guiding the tubes past said varnishing and fiber applying means, means operative uniformly around the circumference of the tube for removing excess fibers therefrom, and a stripper for removing the tubes from said conveyor.

2. A device according to claim 1, in which the conveyor is in the form of an endless band and a plurality of pins are arranged on said band at a distance from one another to hold the tubes, the spacing of the pins and of adjacent runs of the conveyor is several times the diameter of the tubes.
3. A device according to claim 1, in which the conveyor is in the form of an endless band and a plurality of pins are arranged on and horizontally extending from said band at a distance from one another to hold the tubes, and in which means are provided for intermittently moving said band and pins.

4. A device for producing tubes of the kind described, comprising varnishing means, means for applying a velvet-like covering of fibers over the circumference of the varnished tube, a conveyor for guiding the tubes past said varnishing and fiber applying means, means for rotating the tubes about their axes during the application of varnish and fiber thereto, means operative uniformly around the circumference of the tubes for removing excess fibers therefrom, and a stripper for removing the tubes from the conveyor.

5. A device for producing tubes of the kind described, comprising varnishing means, fiber applying means, a band conveyor for guiding the tubes past said varnishing and fiber applying means, a plurality of pins extending horizontally from the band at spaced intervals and adapted to hold the tubes, means for intermittently moving said band and pins, means for rotating the tubes on said pins, means for removing excess fibers from said tubes, and a stripper for removing the tubes from said conveyor.

6. A device according to claim 1, in which the means for applying a velvet-like covering of fibers over the circumference of the varnished tube consists of a receptacle for the fibers and a blower directly connected to said receptacle for blowing the fibers onto the varnished tubes.

7. A device according to claim 1, in which the means to remove excess fibers comprises a brush.

8. A device according to claim 1, in which the means to remove excess fibers comprises a pump.

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