

[54] **YARN GUIDE**

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[22] Filed: **Nov. 24, 1971**

[21] Appl. No.: **201,832**

[52] U.S. Cl. **57/90, 57/34 HS, 57/106, 226/89, 226/171, 226/176, 242/157 C, 242/157 R**

[51] Int. Cl. **D02g 1/02, B65h 51/14, B65h 57/06**

[58] Field of Search **57/106, 107, 90, 57/34 HS, 157 TS; 242/157 C, 157 R; 226/89, 91, 171, 176**

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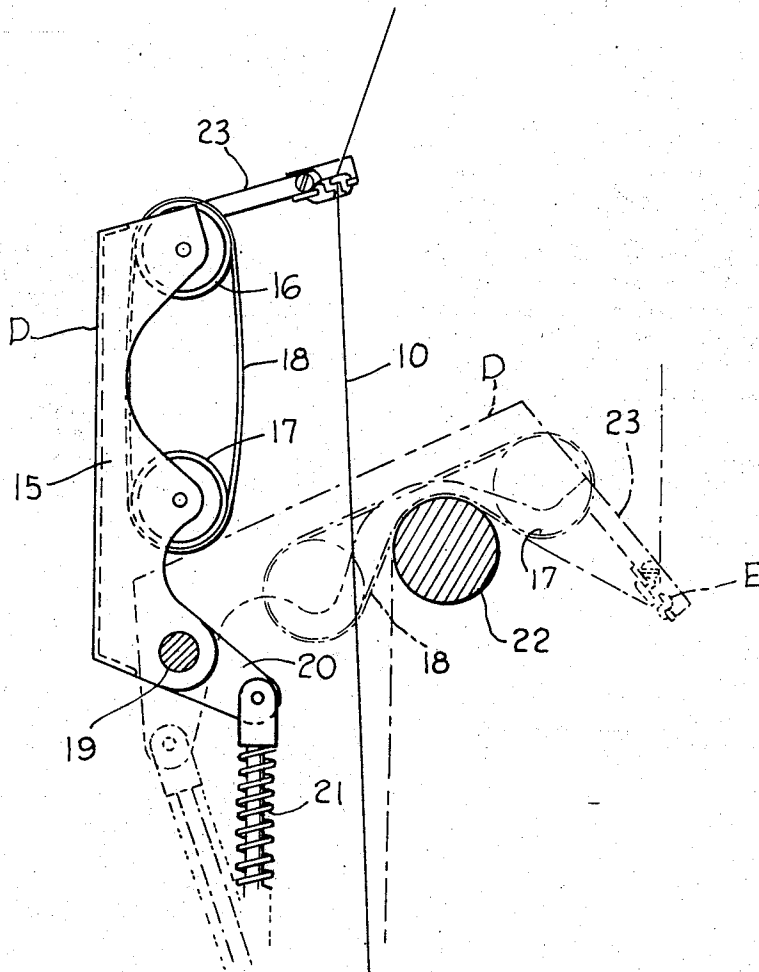
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[57] **ABSTRACT**

A guide for use on texturizing machines having a yarn supply package, a yarn take-up package, and yarn texturizing apparatus disposed therebetween. A yarn driving device is positioned adjacent the texturizing apparatus for feeding the yarn from the supply package to the texturizing apparatus. A yarn guide including vertically opposed overlapping inwardly extending yarn guiding surfaces is carried by the yarn driving device for positioning the yarn away from a driving roll during the stringing up of the yarn. When the driving device is placed in an operating position the yarn guide properly positions the yarn for the texturizing apparatus.

1 Claim, 4 Drawing Figures



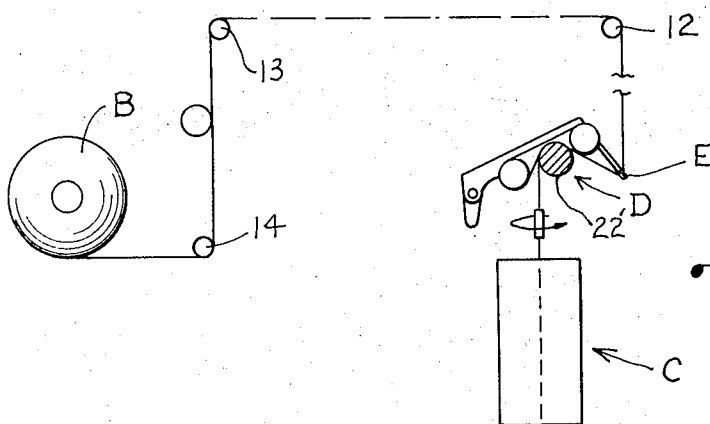


Fig. 1.

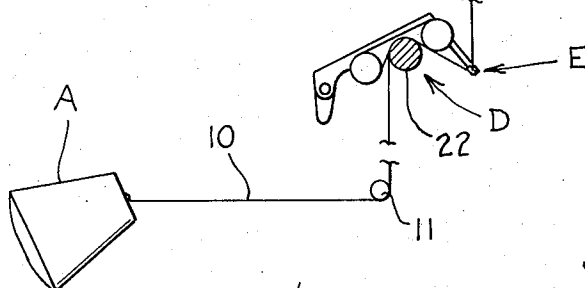


Fig. 3.

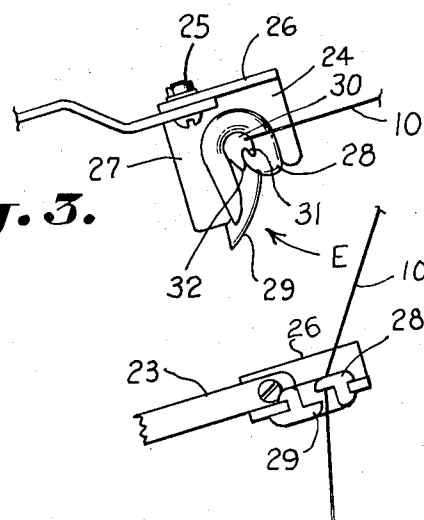


Fig. 3A.

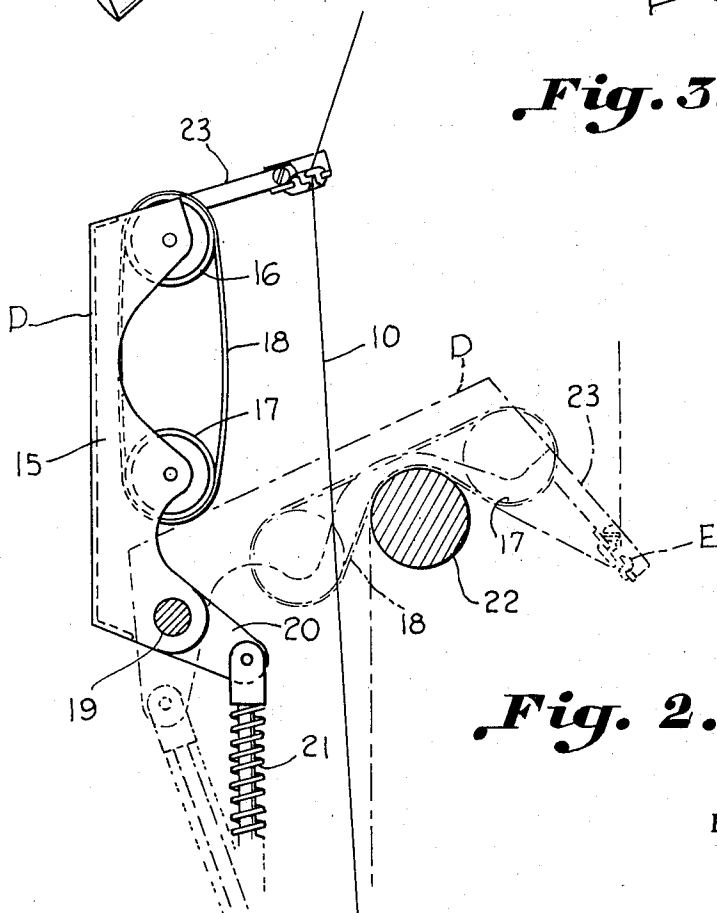


Fig. 2.

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YARN GUIDE

This invention relates to a guide, and more particularly to a yarn guide for use on a texturizing machine for aiding in threading up the machine, as well as positioning the yarn during running.

Heretofore, guides in the form of pulleys have been utilized in combination with yarn driving devices on texturizing machines for properly positioning the yarn when in a running position. However, in stringing up the yarn the operator first had to lift the yarn driving apparatus out of engagement with a driving roll and position the yarn behind the pulley, which acted as a guide roll, so as to prevent the yarn from engaging the drive roll if slack was created in the yarn during string up. After the string-up operation was completed the operator then was compelled to get down from an elevated catwalk, kneel down, and flip the yarn from back of the guide toward the driven roll, then get back up on the elevated catwalk and kick the yarn driving device into running position, hoping that the yarn would properly engage the pulley while she was manipulating the yarn as the speed of the spindle was brought to full speed.

The guiding apparatus constructed in accordance with the present invention frees the operator for further manipulation of the yarn after string-up while the spindle is being brought to full speed and also minimizes the possibility of the yarn becoming entangled on the guide arm.

Accordingly, it is an important object of the present invention to provide a guide means for use on a yarn driving device which positions the yarn on a texturizing machine out of the path of a driving roll during string-up and properly positions the yarn relative to the texturizing apparatus when in running position.

Another important object of the present invention is to provide a guide means for a texturizing machine which is relatively easy to thread up and completely encircles the yarn after thread up for restricting lateral movement of the yarn.

Another important object of the present invention is to provide a yarn guide for a texturizing machine through which the yarn passes smoothly with a minimum possibility of hanging-up thereon.

The construction designed to carry out the invention will be hereinafter described, together with other features thereof.

The invention will be more readily understood from a reading of the following specification, and by reference to the accompanying drawing forming a part thereof, wherein an example of the invention is shown and wherein:

FIG. 1 is a schematic representation of a single strand manipulating operation on a conventional false twist machine provided with a guide means constructed in accordance with the present invention,

FIG. 2 is an enlarged side elevational view of a driving apparatus having a guide means constructed in accordance with the present invention mounted thereon,

FIG. 3 is a plan view of a yarn guide constructed in accordance with the present invention mounted on the end of a guide arm forming part of the yarn driving apparatus, and

FIG. 3A is a side elevational view illustrating the yarn guide of FIG. 3 constructed in accordance with the present invention.

The drawing illustrates a guide for use on texturizing machines having a yarn supply package A, a take-up package B, and a yarn texturizing apparatus C disposed therebetween. A yarn driving device D is positioned adjacent the texturizing apparatus C for feeding the yarn from the supply package to the texturizing apparatus C. The yarn driving device includes a supporting frame member, a pair of spaced rolls carried by the supporting frame member, a continuous apron extending around the space rolls, and a power driven drive roll engaging the apron between the pair of space rolls for driving the apron around the space rolls. A guide arm extends outwardly from the supporting frame member. A yarn guide E is carried by the guide arm and includes vertically opposed inwardly extending yarn guiding surfaces. The yarn guiding surfaces overlap each other defining an eyelet through which the yarn passes as the yarn is drawn from the supply package after passing between the apron and the power driven roll.

Referring in detail to FIG. 1, the yarn 10 is shown schematically being pulled off of the supply package A by the yarn driving device D and passes around a roll 11 through eyelet E into a texturizing apparatus C which puts a crimp in the yarn. The yarn is then fed through another driving apparatus D around suitable guide rolls shown schematically as 12 through 14, respectively, and then taken up on the take-up roll B.

The texturizing apparatus C may be any suitable conventional texturizing apparatus used on a texturizing machine, such as the well-known ARCT texturizing machine. Such is usually provided for placing a crimp, which is sometime referred to as a false twist, into the yarn to provide elasticity thereto.

The positive feed yarn driving device D includes a supporting elongated frame member 15 which is provided for journalling a pair of spaced rolls 16 and 17 therein. The space rolls have an endless apron 18 extending therearound. The lower end of the yarn driving device is pivotally secured on a pivot 19 to the frame of the texturizing machine, and has integral with the bottom thereof a downwardly extending leg 20. A spring biased positioning link 21 is pivotally connected to the leg 20. The positioning link 21 is provided for holding the driving apparatus in either the running position, shown in phantom lines in FIG. 2, or the thread-up position shown in full lines. The spring-biased linkage 21 in combination with the leg 20 produces an over center type of operation on the yarn driving device for holding such in either the running position or the vertical string-up position.

Extending the length of the texturizing machine is a power driven drive roll 22 which engages the apron 18 when it is in the running position. The yarn 10 is threaded between the apron 18 and the power driven roll 22 so that such pulls the yarn from the supply package A. The yarn guide arm 23 extends outwardly from the top of the supporting frame 15 and has an angle bracket 24 bolted by means of a bolt and nut 25 on the outer end thereof. The bracket 24 has a flange 26 through which the bolt 25 extends. The flange 26 is integral with a laterally extending main body portion 27 that has an opening therein for receiving a yarn guide E.

The yarn guide E includes a pair of vertically opposed guiding surfaces 28 and 29, respectively. The yarn guiding surfaces 28 and 29 overlap each other for defining an eyelet 30 through which the yarn 10 passes.

Positioned adjacent the inner end of the yarn guiding surfaces 28 and 29 are hook-shaped portions 31 and 32 for facilitating in trapping the yarn in the eyelet 30. The eyelet, in one particular embodiment is constructed of ceramic material having a low coefficient of friction and high wearability so that the yarn can run thereacross without undue wear.

In threading the eyelet the operator merely pulls the yarn across the lower arcuate shaped end of surface 29 through the slot between the upper yarn guiding surface 28 and the lower yarn guiding surface 29 into the eyelet 30. Once in the eyelet such remains there until the yarn either breaks or is removed by the operator.

When the operator is stringing up the texturizing machine he merely raises the yarn driving mechanism out of engagement with the driving roll 22 to the vertical position shown in FIG. 2. After he has threaded the yarn through the texturizing apparatus C and the upper yarn driving apparatus D to the take-up package B the yarn driving apparatus are lowered to the phantom position shown in FIG. 2 for positively driving the yarn for removing the yarn from the supply package A and feeding such to the take-up package B.

It is noted from reviewing FIG. 1 that the yarn guide E of the lower driving apparatus D is in alignment with the driving roll 22' of the upper yarn driving apparatus so as to maintain the yarn on a substantially vertical axis as such passes through the texturizing apparatus. It is also, noted from viewing FIG. 2 that when the yarn driving device is in the raised string-up position illustrated in FIG. 2, the yarn is held away from the driving

roll 22 minimizing the possibility of lap-ups around the driving roll 22.

While a preferred embodiment of the invention has been described using specific terms, such description is for illustrative purposes only, and it is to be understood that changes and variations may be made without departing from the spirit of scope of the following claim.

What is claimed is:

1. A guide for use on a texturizing machine having a yarn supply package, a take-up package, a yarn texturizing apparatus disposed between said supply and take-up packages, a yarn driving device positioned adjacent said texturizing apparatus for feeding said yarn from said supply package to said texturizing apparatus, said yarn driving apparatus comprising: a pivoted supporting frame member movable from a running position to a yarn string up position, a pair of spaced rolls carried by said supporting frame member, a continuous apron extending around said spaced rolls, a power driven drive roll engaging said apron between said pair of spaced rolls for driving said apron around said spaced rolls, a guide arm extending outwardly from said supporting frame member, a yarn guide carried by said guide arm for maintaining the yarn in proper alignment during a yarn string up operation, and said yarn guide including vertically opposed inwardly extending yarn guiding surfaces overlapping each other defining an eyelet through which said yarn passes as said yarn is drawn from said supply package after passing between said apron and said power driven roll.

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