

[54] YARN TAKE-UP

[75] Inventor: Alton L. Lenderman, Spartanburg, S.C.

[73] Assignee: Deering Milliken Research Corporation, Spartanburg, S.C.

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Primary Examiner—Stanley N. Gilreath
Attorney, Agent, or Firm—Earle R. Marden; H. William Petry

Related U.S. Application Data

[63] Continuation of Ser. No. 239,874, March 31, 1972.

[52] U.S. Cl. 242/18 DD, 242/18 PW, 242/19

[51] Int. Cl. B65h 54/02, B65h 54/42

[58] Field of Search 242/18 DD, 18 R, 18 PW, 242/19

[57] ABSTRACT

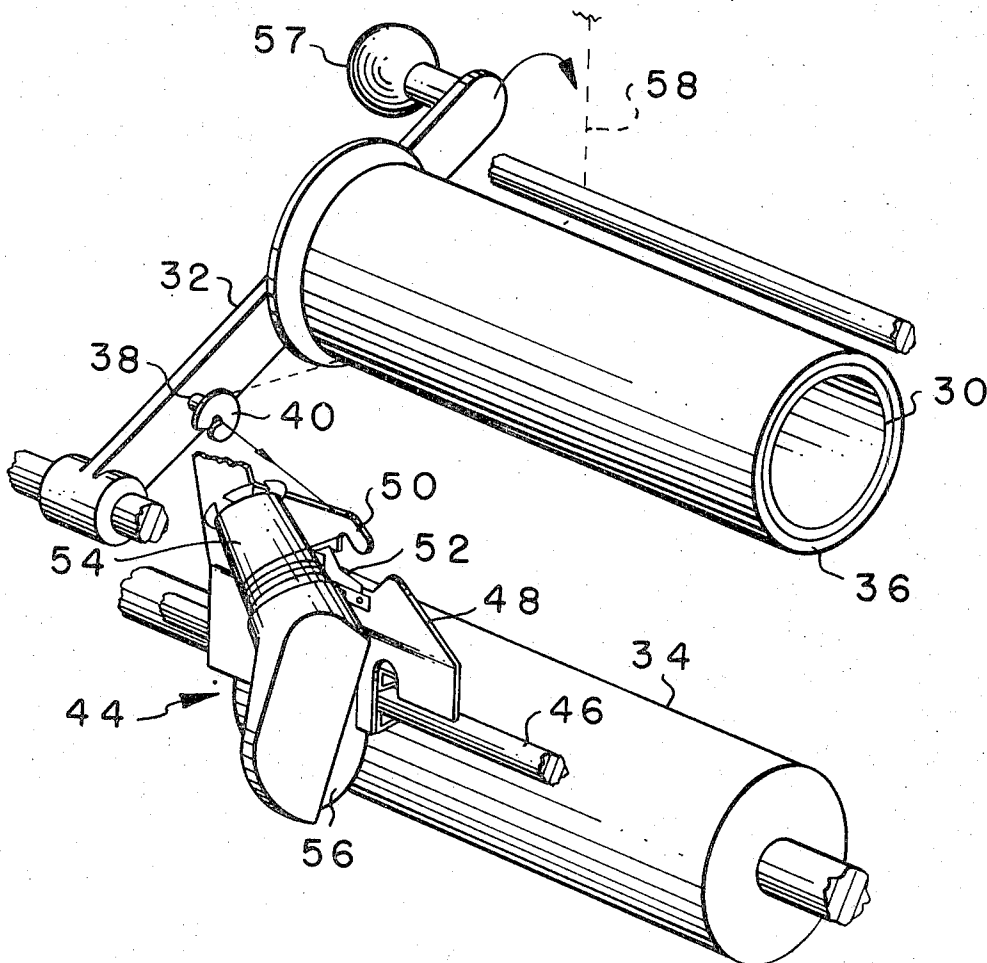
Yarn take-up apparatus, especially for false twist equipment, which provides a notched yarn guide to aid in holding the yarn transfer tail while the completed yarn package is being doffed from the machine.

[56] References Cited

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1 Claim, 7 Drawing Figures



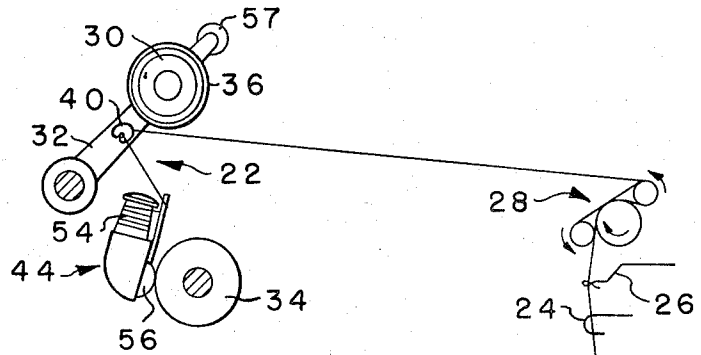


FIG.-1-

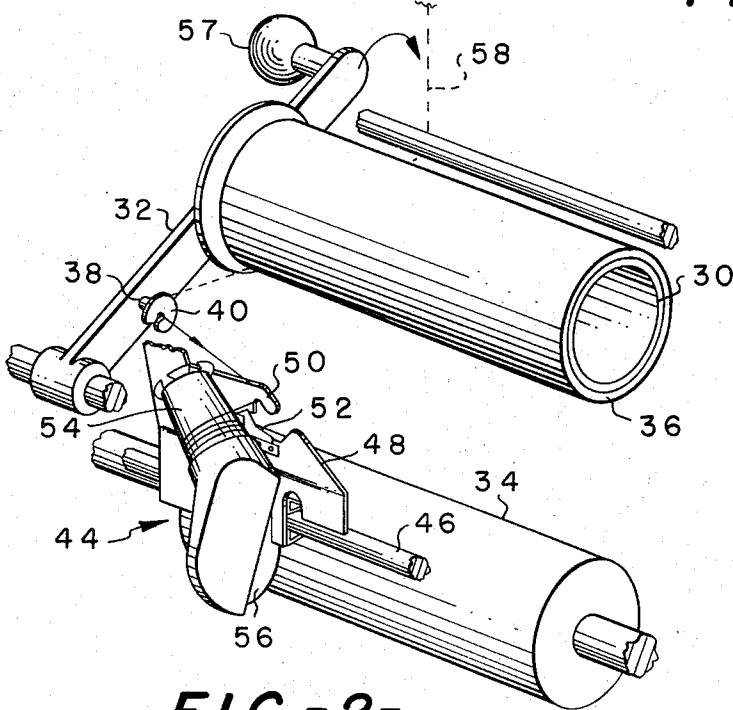


FIG.-2-

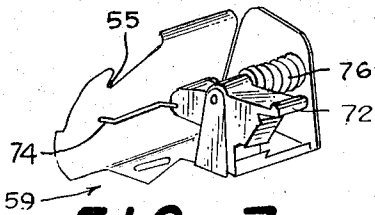
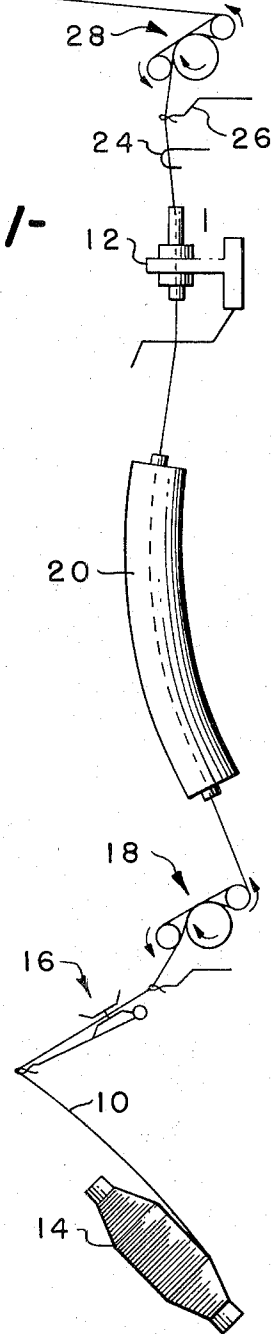


FIG.-7-

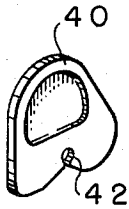


FIG.-5-

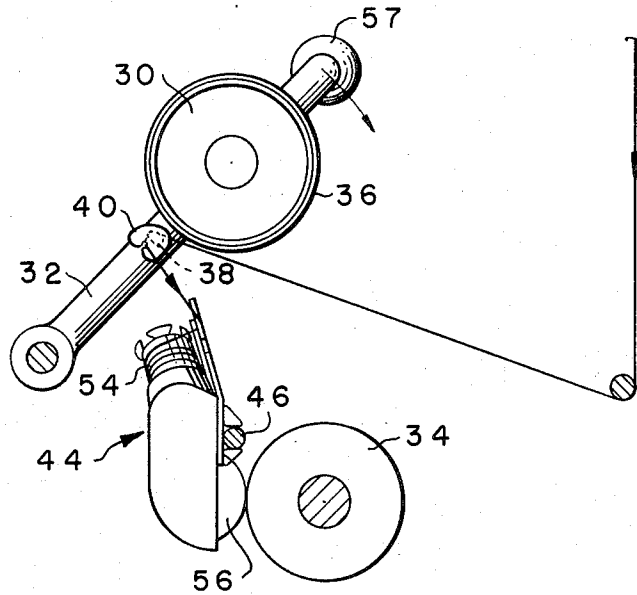


FIG.-3-

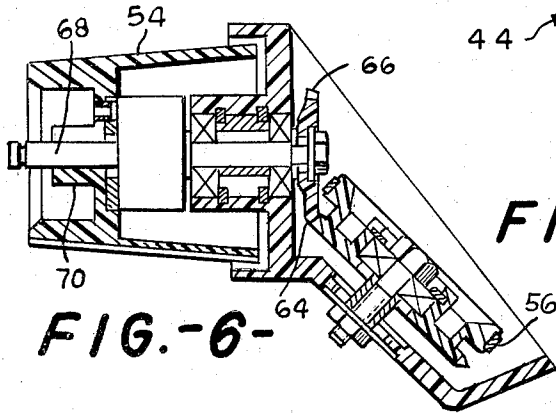


FIG.-6-

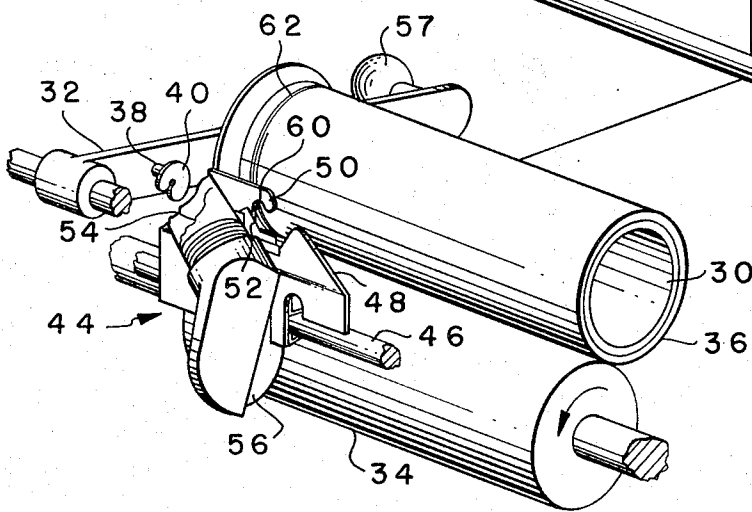
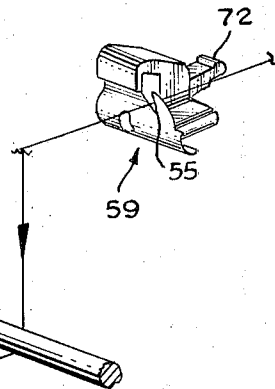


FIG.-4-

YARN TAKE-UP

This is a continuation of application Ser. No. 239,874, filed Mar. 31, 1972.

In yarn take-up apparatus it is desired to hold the end of yarn being supplied thereto while doffing the completed package and to readily start the winding of a new package. This is especially true when winding a lively yarn, such as false twist yarn, since it is very difficult and time consuming to locate and piece up the broken end of yarn to start a new package.

Therefore, it is an object of this invention to provide a yarn take-up apparatus which efficiently retains the transfer tail while doffing a completed yarn package.

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

FIG. 1 is a schematic representation of a false twist string-up arrangement with the new and improved yarn take-up;

FIG. 2 is a perspective view of the yarn take-up when the package has been doffed and a new bobbin has been placed on the spindle;

FIG. 3 is a side sectional view of the apparatus shown in FIG. 2;

FIG. 4 is a perspective view of the yarn take-up apparatus when a new package is being started;

FIG. 5 is a perspective view of a yarn guide member used on the apparatus described above.

FIG. 6 is a cross-sectional view of a conventional yarn transfer member used in conjunction with the invention; and

FIG. 7 is a perspective view of a conventional yarn clamp with the top removed for clarity.

Looking now to FIG. 1 a typical arrangement to produce false twist yarn is shown. Yarn 10 to be treated is delivered to the false twist spindle 12 from a yarn supply bobbin 14 through the tension disc 16, delivery rolls 18 and heating chamber 20. From the spindle 12 the yarn 10 is supplied to the take-up apparatus 22 through the yarn guide 24, traverse guide 26 and the delivery rolls 28. At the take-up apparatus 22 the yarn is wound into a conventional false twist yarn package (not shown).

The take-up apparatus consists of a take-up roll 30 which is rotably supported on a pivotally mounted lever arm 32 and is driven by surface drive roll 34 to wind yarn 10 on yarn tube 36. Mounted on a peg 38 is an adaptor 40 with a notch 42 therein for reasons hereinafter explained. In the form of the invention disclosed, a yarn transfer member 44 is removably mounted on a bar 46 to hold the yarn end while the full yarn tube is being doffed. The yarn transfer member 44 basically consists of a plate 48, which has a hook portion 50 and a knife edge 52, and a yarn transfer roll 54 which is driven by roll 56 connected thereto and driven by contact with roll 34 when placed in operative position on the bar 46. The roll 56 is fixed to a gear 64 which drives a gear 66 connected to the end of stub shaft 68.

The yarn transfer roll 54 is then driven thereby since the collar 70 integral with the interior of roll 54 is press fitted onto the shaft 68 and is rotated thereby.

OPERATION

When a wound package is ready to be doffed the yarn transfer member 44 is placed into position on the rod 46 against the drive roll 34 at the desired spindle. The handle 57 is grasped and the lever arm 32 is pivoted up to the position shown in FIGS. 2 and 3. At the same time yarn is broken from the package and delivered and wound on the transfer roll 54, the completed package has been doffed and replaced with a new empty tube or core 36. The yarn is then placed in the notch 42 in the adaptor 40 and under the hook portion 50 to move the yarn to the dotted line position 58 shown in FIG. 2 and is held there in the notch 55 of clamp 59. Then the handle 57 is grasped and the lever arm 32 is pivoted forward to the position shown in FIG. 4. As the lever arm 32 pivots down to place the bobbin 36 in contact with the drive roll, the yarn slides down in the notch 60 where it is cut by the knife blade 52. When it is cut the yarn will wrap on the tube 36 at 62 until the lever 72 is depressed to pivot the wire 74 upward against the bias of torsion spring 76 to contact and raise the yarn out of the notch 55 to allow it to slip over the edge 78 of the clamp 59 to slide down to a position where the normal traverse mechanism takes over to build a new yarn package.

As disclosed, the peg 38 and adaptor 40 are separate elements but obviously these two elements could be made in one piece and/or be molded to lever arm 32. As can readily be seen the adaptor provides a convenient method to hold the yarn in the desired position until it is desired to start a new package.

Although I have described in detail the preferred embodiment of my invention, it is contemplated that many changes may be made without departing from the scope or spirit of my invention and I desire to be limited only by the claims.

That which is claimed is:

1. A yarn winding arrangement comprising: a drive roll, a pivotally mounted lever arm, a take-up roll rotatably mounted on said lever arm, said lever arm being pivoted to move said take-up roll into and out of engagement with said drive roll, a yarn transfer mechanism having a severing means and being operably associated with and driven by said drive roll to take up yarn when a completed yarn package is moved out of engagement with said drive roll and is being doffed from said take-up roll and means connected to said lever arm to hold yarn in a predetermined position when the yarn is being taken up by said yarn transfer mechanism and when the take-up roll is being pivoted into operative position adjacent said drive roll, said means having a notch therein to hold and guide yarn from the yarn supply until it is severed by said yarn transfer mechanism.

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