Dec. 11, 1962 R. C. JACKSON 3,067,565

SPINNING AND TWISTING APPARATUS

Filed March 11, 1960 3 Sheets-Sheet 1

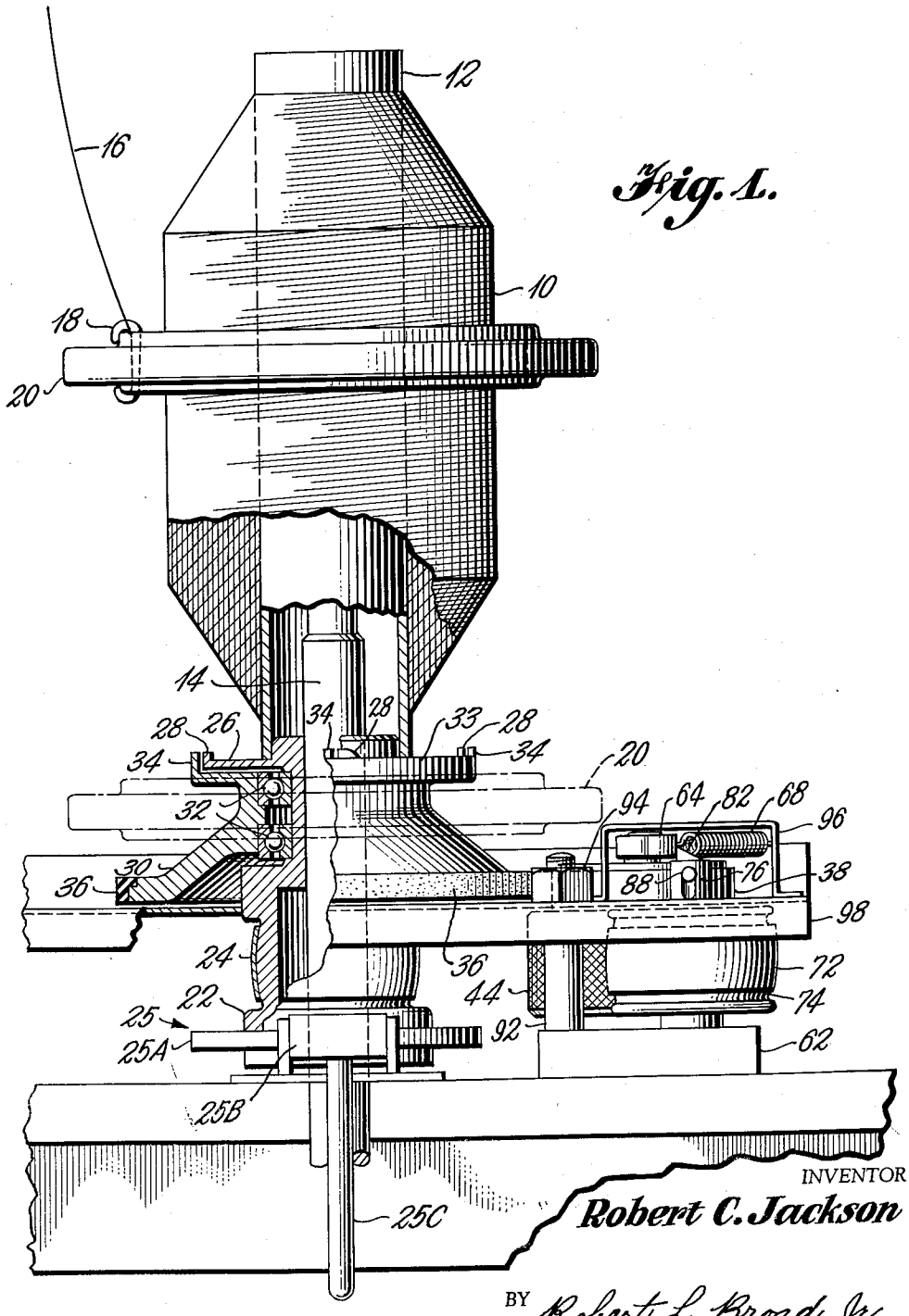

Fig. 1.

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SPINNING AND TWISTING APPARATUS

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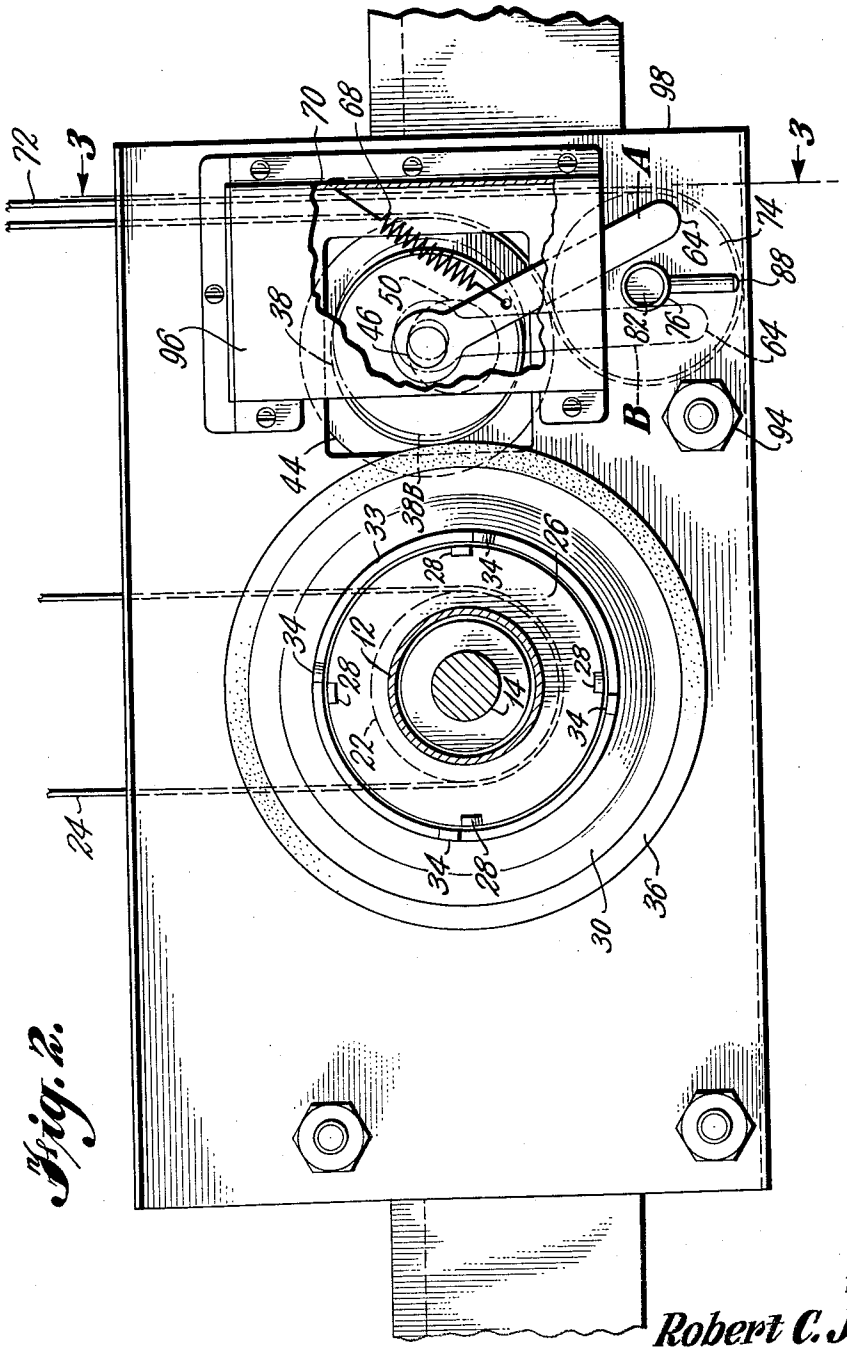

Fig. 2.

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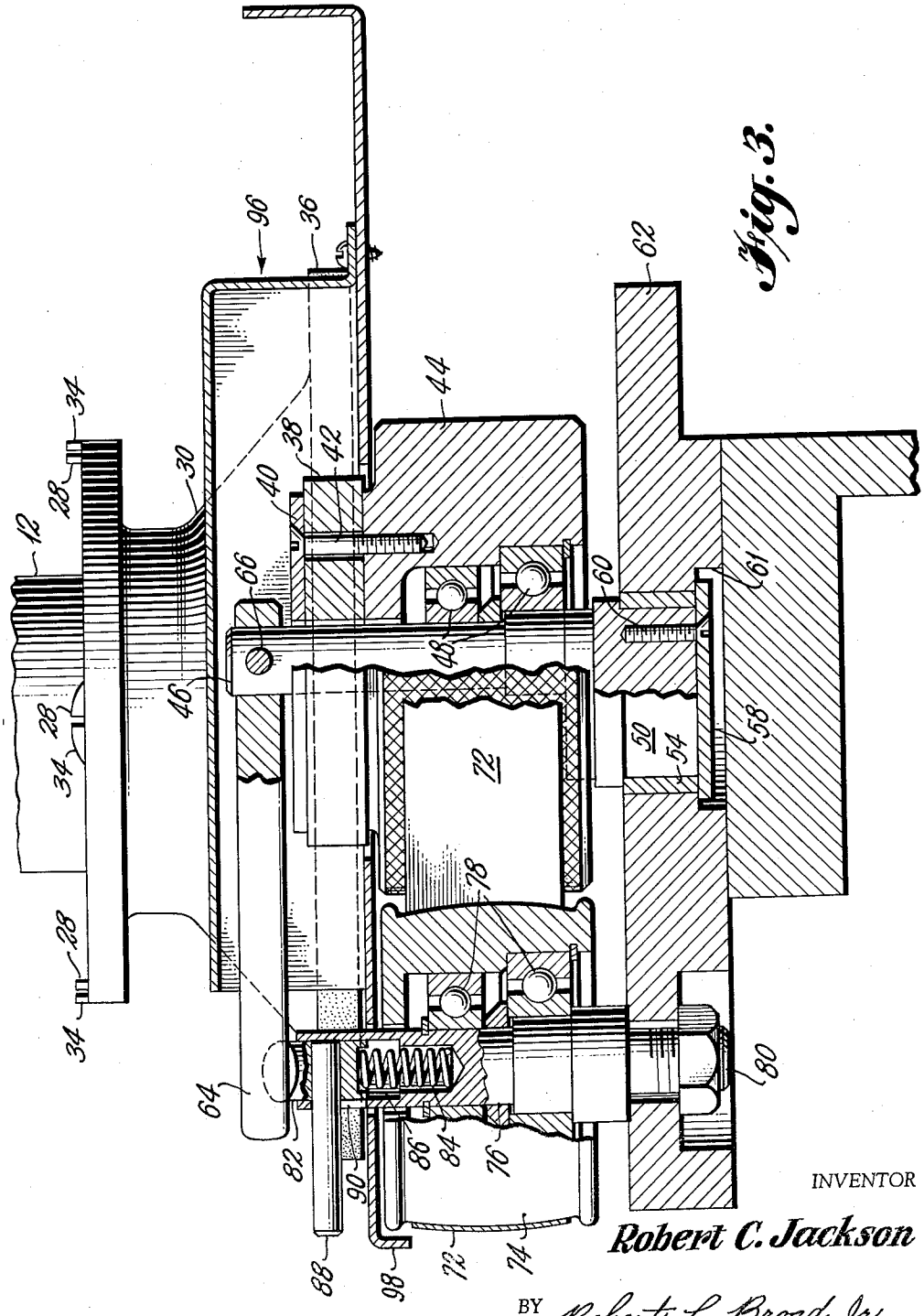

Fig. 3.

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3,067,565
Patented Dec. 11, 1962

3,067,565

SPINNING AND TWISTING APPARATUS

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Filed Mar. 11, 1960, Ser. No. 14,303
20 Claims. (Cl. 57—54)

This invention relates to spinning and twisting apparatus and more particularly to apparatus for transferring yarn from a full bobbin to an empty bobbin without interrupting the yarn delivery.

In present day winding and twisting operations wherein filamentary material is being wound upon a bobbin, the replacement of a full bobbin by an empty bobbin has been a time-consuming operation which necessitates the halting of yarn delivery from a feed bobbin, halting the rotation of the full bobbin and cutting of the yarn end by hand so as to be able to remove the full bobbin.

After replacement of the full bobbin by an empty bobbin, the operator must then string up the yarn by hand and start the yarn winding on the empty bobbin. The string-up involves guiding the yarn over various guides, rollers and draw pins before passing the same about the empty bobbin.

Particularly, in that operation known as draw twisting, wherein a bobbin is mounted on a vertical, rotating spindle and a ring, supported on a rail and carrying a traveler, is reciprocated to traverse the yarn along the length of the bobbin, the time required for doffing is considerable. It is necessary to depress the ring to a point out of the area of the bobbin, stop the rotating bobbin, replace it with an empty bobbin, carry out a string-up by hand and then start the yarn winding again on the empty bobbin. The string-up is time-consuming, and the yarn delivery must be halted during the doffing operation.

In actual plant operation, a plurality of bobbins are simultaneously driven by a single drive means and the rings surrounding the bobbins are carried by a single unitary rail. In view of this, it will be apparent that it is necessary to halt an entire line of drawtwisters while the yarn is cut, the empty bobbin replaced, the string-up carried out, and the yarn properly started for winding again on the bobbins.

The present invention is directed to an apparatus for spinning or twisting wherein means are provided for transferring yarn from a full bobbin to an empty bobbin without necessitating the stopping of yarn delivery or requiring a time-consuming hand string-up. These means include an independently rotatable spool to which the yarn may be delivered during the doffing of the full bobbin and from which the yarn may be again fed to the empty bobbin, while the thread line leading from the spool to the full bobbin and the empty bobbin is automatically broken at the proper point in the operation.

It is one object of this invention to provide a novel and improved apparatus for transferring a yarn from a full bobbin to an empty bobbin.

It is another object of this invention to provide an apparatus for spinning or twisting including means for transferring yarn from a full bobbin to an empty bobbin without interruption of the yarn delivery.

It is a further object of this invention to provide such an apparatus wherein yarn being wound on a bobbin may be transferred to a spool for winding until the full bobbin has been replaced by an empty bobbin whereupon the yarn may be quickly and automatically started winding on said empty bobbin without interruption of the yarn delivery.

It is further an object of this invention to provide such an apparatus for spinning and twisting wherein means are included to automatically cut yarn leading from the spool to the bobbin.

It is a further object of this invention to provide such an apparatus wherein the yarn transfer from a full bobbin to an empty bobbin can be accomplished so rapidly as to greatly minimize wasting of yarn.

It is a further object of this invention to provide an apparatus for spinning or twisting which includes means to transfer yarn from a full bobbin to an empty bobbin by winding the yarn on a transfer spool which may be independently driven while the doffing operation is carried out.

It is further an object of this invention to provide a yarn transfer apparatus including a transfer spool which may be mounted on a bobbin spindle to rotate with said spindle during a regular winding operation, but which may be separately rotated at a different speed from said spindle during the doffing of said bobbin.

Other objects and features of the invention will become apparent when the following detailed description is read in conjunction with the appended drawings, in which:

FIGURE 1 is an elevational view shown partially in section of the yarn transfer apparatus in association with parts of a drawtwisting machine showing a bobbin and substantially full yarn package;

FIGURE 2 is a plan view of the apparatus showing the mechanism for driving a transfer spool which takes up the yarn during the doffing operation; and

FIGURE 3 is an enlarged sectional view taken on line 3—3 of FIGURE 2 showing in greater detail the transfer spool driving mechanism.

Referring now in detail to the drawings, reference numeral 10 denotes a yarn package which is wound on a bobbin 12 in a well-known manner. The bobbin 12 is rotated by a spindle 14 and is secured to the spindle by friction chucks (not shown) of a conventional type.

Reference numeral 16 denotes a thread line descending from the usual bobbin, feed rolls, balloon guide and the like (not shown) through a ring traveler 18 mounted in the conventional manner on a ring 20 which encircles the bobbin and yarn package in a well-known manner. In drawtwisting apparatus of the type shown, the thread line 16 is fed through the ring traveler 18 and onto the rapidly rotating bobbin 12 in such a manner that the frictional drag of, and tension in, the thread line against the traveler causes the traveler to rapidly move around the ring 20, thus following the movement of the rotating bobbin. The ring 20, which is supported on a rail (not shown) of a well-known type, continually reciprocates within a path along the vertical axis of the bobbin 12 to wind a package of yarn of the desired shape thereon. When a full package has been wound, the ring 20 is then depressed in a well-known manner to a level below the bottom edge of the bobbin as indicated in the dotted line shown in FIGURE 1.

The spindle 14 is rigidly mounted within a whorl 22 which is rotated by a drive belt 24 (note FIGURES 1 and 2) from a power source (not shown). Reference numeral 25 indicates a conventional brake which may be

applied by the operator to stop the rotation of the spindle 14. This brake includes brake shoes 25A, a linkage element 25B, and a lever 25C which is depressed by the operator to halt the spindle, the brake shoes 25A gripping a part of the whorl 22.

Extending from the upper portion of the whorl 22 is a cutter disc 26 carrying cutter spurs 28. The function of this disc and spurs is to cooperate in cutting the threadline.

Reference numeral 30 indicates a transfer spool which is frictionally mounted above the whorl 22 by bearings 32 so as to be rotatable with the whorl and the spindle 14. The frictional mounting referred to is the supporting of the transfer spool 30 by the bearings 32, which are conventional ball bearings. Because of the friction present in the bearings 32, the speed of rotation of the transfer spool 30 will gradually increase until the transfer spool is rotating with the bobbin, even though there is no rigid connection between the whorl and the transfer spool. At the upper portion of the transfer spool 30 there is an extending cylindrical flange 33 carrying cutter spurs 34 which cooperate with the spurs 28 on the disc 26 to cut the yarn in a manner which will be hereinafter described in the description of the operation of the apparatus. The lower end of the transfer spool 30 is provided with a friction ring or flange 36 which is made of hard rubber, plastic or similar material to permit rotating of the spool by frictional contact with a drive wheel.

In the embodiment of the invention shown, means are disclosed to rotate the transfer spool 30 independently of the movement of the spindle 14 and the whorl 22. These means include a drive disc or wheel 38 (more clearly shown in FIGURE 3) which is secured by means of a plate 40 and screws 42 to a drive roll 44. The drive disc 38 and the drive roll 44 are mounted on bearings 48 for rotation about an eccentric shaft 46. Reference numeral 50 indicates a wide base portion of the eccentric shaft 46, which base portion is mounted for angular movement within a bushing 54. Reference numeral 58 indicates a plate which is secured to the base portion 50 of the shaft 46 by screws 60. The plate 58 is positioned in a cylindrical recess 61 in a bottom plate 62 in such a manner that vertical displacement of the shaft 46 is prevented.

Reference numeral 64 indicates a lever which is affixed to the shaft 46 by means of a pin 66. As shown in FIGURE 2 of the drawing, the lever 64 is movable from position A, wherein the drive disc 38 is held in contact with the friction ring 36 on the transfer spool 30, to position B (shown in dotted lines) wherein the eccentric movement of the shaft 46 takes the drive disc 38 out of contact with the friction ring 36. The dotted line position of the drive disc 38 is indicated by reference numeral 38B, which is the position taken when the lever 64 is in position B. Reference numeral 68 indicates a tension spring which extends between the lever 64 and the machine frame, indicated by reference numeral 70, to maintain the lever in position A for maintaining a driving engagement of the drive disc 38 with the friction ring 36.

Means for rotating the drive roll 44 include a drive belt 72 (driven by power means not shown) which passes around an idler roll 74 and frictionally engages the roughened surface of the drive roll 44 (note FIGURE 2). The idler roll 74 is mounted on bearings 78 for free rotation about a shaft 76. The shaft 76 is rigidly attached to the bottom plate 62 by means of a jam nut 80 (FIGURE 3).

Means for locking the lever 64 in position B so as to hold the drive disc 38 out of engagement with friction ring 36 are also provided. These means include a stop pin 82 which is mounted for vertical movement against a compression spring 84 located within a bore 86 in the shaft 76. Reference numeral 88 indicates a lever arm attached to the pin 82 to permit the operator to manually depress the pin 82 by downward pressure on the lever arm. Reference numeral 90 indicates a slot in the shaft 76, the confines of which slot limit the downward movement of the lever arm 88.

It will be noted that the top of the pin 82 is beveled so that, as the lever 64 is manually moved from position A to position B, the lever will ride across the top of the pin and depress the same. Once having crossed the pin 82, the lever 64 is prevented from movement back to position A by contact with the raised end of the beveled top of the pin 82. Release of the lever 64 from position B is effected by manually depressing the lever arm 88 to permit the spring 68 to pull the lever back to position A.

The drive rolls and belts are covered by a plate 98 which is secured to spacer rods 92 (FIGURE 1) by nuts 94. A cover plate assembly 96 attached to the plate 98 covers the spring 68 and part of the lever 64. These features protect the operator.

Turning now to the operation of the embodiment of the invention disclosed, attention is again directed to FIGURE 1 of the drawings wherein a substantially full bobbin is shown in position ready for replacement by an empty bobbin. When the bobbin 12 is full, the operator depresses the ring 20 mounted on a ring rail (not shown) to the point indicated by the dotted line showing of the ring 20 (FIGURE 1), that is to the area surrounding the narrower portion of the transfer spool 30. The yarn will now be wound onto the spool 30. Up to this point of the operation, the transfer spool 30 has been rotating at the same speed as the bobbin 12 by virtue of its frictional mounting on the whorl 22 through the bearings 32. The drive disc 38 has been held disengaged from the friction ring 36 of the transfer spool by the locking of the lever 64 in position B by the pin 82.

After a few wraps of yarn have been made about the transfer spool 30, the operator depresses the lever 88 and the pin 82, whereupon the lever 64 is pulled by the spring 68 from position B to position A. The eccentric shaft 46 is thereby shifted to the left, and the drive disc 38 is thus brought into contact with the friction ring 36 of the transfer spool (note FIGURE 2).

The rotational speed of the drive disc 38 is maintained such that the spool 30 will rotate at a different speed than bobbin 12 so that a drag is created on the threadline leading from the bobbin 12 to the transfer spool 30. Assuming that the drive disc 38 is rotated at a substantially slower rate than the bobbin 12 (as is the preferred case), then contact of the disc 38 with the ring 36 will brake the speed of the spool 30 and thereby cause the spool to travel at a slower rate than the bobbin 12. Therefore, the threadline leading from the yarn package to the transfer spool will be broken by the pull thereon. The operator then stops the movement of the traveler 18 by hand and permits the yarn to continue winding on the slowly rotating transfer spool 30. The operator then applies the brake 25 to stop the spindle 14, and replaces the full bobbin 12 with an empty bobbin.

In the conventional drawtwisting operation, a balloon guide (not shown), which is located above the top of the bobbin 12 and from which the threadline 16 passes to the traveler 18, is shifted out of the area of the bobbin before the bobbin is removed. After placement of an empty bobbin on the spindle 14, the operator then releases the traveler 18 on the ring 20, repositions the balloon guide (not shown) to its operating position above the bobbin, and elevates the ring 20 to its operating position for reciprocation along the new bobbin. Simultaneously with the above steps, the operator releases the brake 25 so that the spindle 14 again starts rotating.

The threadline which is now ascending from the transfer spool 30 to the bobbin falls across the spool flange 33, since the ring 20 is now moving upward, and is sheared by the cooperating cutting spurs 28 and 34 which whirl about each other in a scissors-like fashion, where-

upon the yarn continues to wind on the new bobbin free of its connection with the transfer spool 30.

The operator then grasps the lever 64 and pulls it across the pin 82 to lock the lever in position B, thereby disengaging the drive disc 38 from the friction ring 36 so that the transfer spool 30 is again free to rotate with the spindle 14.

The above doffing operation is so rapid that relatively little yarn accumulates on the transfer spool for each individual doffing. Therefore, a full day's operation with many doffings taking place may be completed before it is necessary to remove accumulated yarn from the transfer spool 30. The removal may be accomplished simply by cutting the yarn away when desired.

In the above description no specific means has been described for depressing the ring 20 from its normal position adjacent to the bobbin 12 to its position adjacent to the transfer spool 30, since these means form no part of the present invention, and moreover, constitute well-known devices in the art. Moreover, this step may be done manually by the operator.

Obviously, many modifications and variations of the present invention are possible in the light of the above teachings, and many other embodiments of the invention may be contemplated without departing from the spirit and scope of the invention.

What is claimed is:

1. A device for winding yarn onto a bobbin, comprising a base, a rotating spindle on the base for supporting and rotating a bobbin, traversing means adjacent to the bobbin for directing the yarn onto the bobbin, a transfer spool rotatably mounted at a fixed position on the spindle, said traversing means being movable out of the area of the bobbin and into the area of the transfer spool to direct the yarn onto the transfer spool, means on the base for engaging and rotating the transfer spool at a speed different from the speed of the spindle, said engaging and rotating means being releasable to permit free rotation of the transfer spool, and means on the spindle and the transfer spool for cutting yarn leading from the bobbin to said transfer spool.

2. A device for winding yarn onto a bobbin, comprising a base, a rotating spindle on the base for supporting and rotating a bobbin at a predetermined speed, yarn guiding and traversing means for directing the yarn onto the bobbin, a transfer spool rotatably mounted on the spindle in such a manner as to normally rotate with the spindle, said guiding and traversing means being movable to direct the yarn onto the transfer spool, means on the base for engaging and rotating the transfer spool at a speed less than said predetermined speed to break yarn extending from the bobbin to the transfer spool, means for braking the spindle to stop the bobbin, and means carried by the spindle and the transfer spool for cutting yarn extending from the transfer spool to the bobbin.

3. In a spinning or twisting apparatus having a bobbin mounted on a driven spindle for rotation therewith and guide means to feed yarn to said bobbin for winding a yarn package thereon, means for transferring yarn from a full bobbin to an empty bobbin without interruption of the yarn delivery comprising a base for supporting the spindle, a transfer spool rotatably mounted on the spindle, said guide means being movable to alter the feed of the yarn from said bobbin to said transfer spool, means on the base for rotating the spool at a different speed than said spindle so that the yarn leading from said bobbin to said transfer spool is broken and the full bobbin may be replaced by an empty bobbin, means on the base for disengaging said different-speed rotating means from said transfer spool, said guide means being movable to reverse the feed of the yarn back to the bobbin, and means on the transfer spool for cutting the length of yarn extending from said spool to said bobbin.

4. In a spinning or twisting apparatus having a bobbin mounted on a driven spindle for rotation therewith and traversing guide means to feed yarn along the length of said bobbin for winding thereon, means to transfer yarn from a full bobbin to an empty bobbin without interruption of the yarn delivery comprising a base, a transfer spool mounted coaxially with said spindle, said guide means being movable to alter the feed of the yarn from the bobbin to the spool, means on the base for rotating the spool at a different speed than said spindle so that the yarn leading from said bobbin to said spool is broken, means on the base for disengaging said different-speed rotating means from said spool, said guide means being movable to reverse the feed of said yarn back to the bobbin, and means on the spool for cutting the length of yarn extending from said spool to said bobbin.

5. In a spinning or twisting apparatus having a bobbin mounted on a driven spindle for rotation therewith and guide means to feed yarn along the length of said bobbin for winding thereon, means for transferring yarn from a full bobbin to an empty bobbin with a continuous yarn delivery, comprising a base, a transfer spool mounted on said spindle for rotation therewith, means for altering the feed of said yarn from said bobbin to said spool, means on the base for independently rotating said spool at a different speed than said spindle so that the yarn leading from said bobbin to said spool is broken and the full bobbin may be replaced by an empty bobbin, means on the base for disengaging said spool from said independent spool rotating means so that the spool again rotates with said spindle, said feed altering means being movable to reverse the feed of said yarn back to said bobbin, and means on the spool for cutting the length of yarn extending from said spool to said bobbin.

6. In a spinning or twisting apparatus having a bobbin mounted on a driven spindle for rotation therewith and traversing guide means for feeding yarn along the length of said bobbin for winding thereon, means to transfer the yarn from a full bobbin to an empty bobbin with a continuous yarn delivery, comprising a base, a transfer spool mounted on said spindle for rotation therewith, means for altering the feed of said yarn from said bobbin to said spool, means on the base for driving said spool by frictional engagement therewith, means on the base for moving said drive means into engagement with said spool to rotate said spool at a different speed than said spindle so that the yarn leading from said bobbin to said spool is broken, means on the base for halting the rotation of said spindle so that the full bobbin may be replaced by an empty bobbin, said feed altering means being movable to reverse the feed of said yarn back to said bobbin, and means on the transfer spool for cutting the length of yarn extending from said spool to said bobbin.

7. In a spinning or twisting apparatus having a bobbin mounted on a driven spindle for rotation therewith and traversing guide means to feed yarn along the length of said bobbin for winding thereon, means to transfer yarn from a full bobbin to an empty bobbin with a continuous yarn delivery, comprising a base, a transfer spool mounted on said spindle for rotation therewith, means for altering the feed of said yarn from said bobbin to said spool, a drive wheel mounted on the base adjacent to said spool, means on the base for moving said drive wheel into engagement with the spool to rotate said spool at a different speed than said spindle so that the yarn leading from said bobbin to said spool is broken, means on the base for halting the rotation of said spindle so that the full bobbin may be replaced by an empty bobbin, and means on the transfer spool for cutting the length of yarn extending from said spool to said bobbin.

8. The apparatus of claim 7 wherein said drive wheel is mounted on an eccentric shaft adjacent said spool, and said engaging means includes means to shift said shaft eccentrically.

9. A device for winding yarn onto a bobbin, comprising a base, a rotating spindle mounted on the base for supporting and rotating a bobbin at a predetermined speed, a transfer spool rotatably mounted on the spindle in such a manner that said spool normally rotates at said predetermined speed, a traversing member for directing yarn onto the bobbin, said traversing member being movable to traverse the yarn along the rotating bobbin to form a yarn package and to then direct the yarn onto the transfer spool, an eccentric shaft rotatably mounted on the base, a rotating drive wheel mounted on the eccentric shaft, a spring secured to the eccentric shaft for urging said shaft to move the rotating drive wheel into engagement with the transfer spool, said drive wheel being rotated at such a speed that the transfer spool is driven at a speed less than said predetermined speed so that the yarn leading from the yarn package to the transfer spool is broken under tension, a spring-loaded stop pin mounted on the base for normally holding the eccentric shaft in such a position that the drive wheel is clear of the transfer spool, means on the spring-loaded stop pin for releasing the eccentric shaft from said stop pin, a brake mounted on the base for stopping the spindle to permit a full bobbin to be replaced by an empty bobbin, a plurality of first cutters carried by the spindle, and a plurality of second cutters carried by the transfer spool for cooperating with the first cutters for severing the yarn leading from the transfer spool to the empty bobbin.

10. A device for winding yarn onto a bobbin, comprising a base, a rotating spindle mounted on the base for supporting and rotating a bobbin at a predetermined speed, a transfer spool rotatably mounted on the spindle at a point beyond one end of the bobbin, said transfer spool being fixed against longitudinal movement, means for traversing the yarn onto the bobbin, said traversing means being movable out of the area of the bobbin and into the area of the transfer spool to shift the yarn feed from a full bobbin to the transfer spool, means carried by the spindle and the transfer spool for severing yarn leading from the bobbin to the transfer spool, and releasable driving means on the base for controlling the rotation of the transfer spool.

11. A device for winding yarn onto a bobbin, comprising a base, a spindle rotatably mounted on the base for supporting and rotating a bobbin, a transfer spool rotatably mounted on the spindle at a point beyond one end of the bobbin, traversing means for directing the yarn onto the bobbin, said traversing means being movable to direct the yarn onto the transfer spool, means carried by the spindle and the transfer spool for severing the yarn leading from the bobbin to the transfer spool, and means for braking the spindle.

12. A device for winding yarn onto a bobbin, comprising a base, means on the base for supporting and rotating a bobbin at a fixed first position, a transfer spool mounted on the base at a second fixed postion in coaxial relationship with the bobbin, traversing means for directing the yarn onto the bobbin, said traversing means being movable from the location of the bobbin to the location of the transfer spool to shift the yarn feed from the bobbin to the transfer spool, cooperating means carried by the transfer spool and the bobbin supporting means for severing a yarn extending from the bobbin to the transfer spool, and releasable driving means on the base for causing the transfer spool to rotate at a speed less than the speed of rotation of the bobbin.

13. A device for winding a yarn onto a bobbin, comprising a base, a spindle rotatably mounted on the base for supporting a bobbin, means for driving the spindle, a transfer spool rotatably mounted on the spindle at a point beyond one end of the bobbin, traversing means for directing the yarn onto the bobbin, said traversing means being movable to direct the yarn onto the transfer spool, means on the base for driving the transfer spool,

a plurality of spurs carried by the spindle, a plurality of spurs carried by the transfer spool for cooperating with the spurs on the spindle to sever the yarn extending from the bobbin to the transfer spool, and means for braking the spindle.

14. A device for winding yarn onto a bobbin, comprising a base, a rotating spindle mounted on the base for supporting and rotating a bobbin, a transfer spool freely mounted on the spindle at one end of the bobbin, means for traversing the yarn onto the bobbin, said traversing means being movable out of the area of the bobbin and into the area of the transfer spool to shift the yarn feed from the bobbin to the spool, and a drive mechanism mounted on the base for movement into and out of engagement with the transfer spool for driving said spool when said mechanism is in said engagement.

15. A device for winding a yarn onto a bobbin, comprising a base, a rotating spindle mounted on the base for supporting and rotating a bobbin, a transfer spool freely mounted on the spindle at one end of the bobbin, means for traversing the yarn onto the bobbin, said traversing means being movable to shift the yarn feed from the bobbin to the spool, a rotating roll movably mounted on the base, and means on the base for moving the rotating roll into engagement with the transfer spool for driving said spool.

16. A device for winding a yarn onto a bobbin, comprising a base, a rotating spindle mounted on the base for supporting and rotating a bobbin, a transfer spool mounted at one end of the bobbin, said transfer spool being frictionally coupled to the spindle in such a manner that said spool acquires substantially the speed of said spindle after a time interval, means for traversing the yarn onto the bobbin, said traversing means being movable to shift the yarn feed from the bobbin to the transfer spool, and means on the base for braking said spindle.

17. A device for winding a yarn onto a bobbin, comprising a base, a rotating spindle mounted on the base for supporting and rotating a bobbin, a transfer spool freely mounted on the spindle at one end of the bobbin, means for traversing the yarn onto the bobbin, said traversing means being movable to shift the yarn feed from the bobbin to the spool, a drive wheel movably mounted on the base for movement into and out of engagement with the transfer spool for driving said spool at a predetermined speed when said wheel is in said engagement, and means on the base for holding the drive wheel in a position out of engagement with said transfer spool.

18. A device for winding a yarn onto a bobbin, comprising a base, means on the base for supporting and rotating a bobbin, auxiliary takeup means mounted for free rotation at one end of the bobbin, means for traversing the yarn onto the bobbin, said traversing means being movable to shift the yarn feed from the bobbin to the auxiliary takeup means, and drive means movably mounted on the base for movement into and out of driving relationship with the auxiliary takeup means.

19. A device for winding yarn onto a bobbin, comprising a base, means on the base for supporting and rotating a bobbin, auxiliary takeup means mounted for free rotation at one end of the bobbin, means for traversing the yarn onto the bobbin, said traversing means being movable to shift the yarn feed from the bobbin to the auxiliary takeup means, a drive wheel mounted on the base for movement into and out of driving engagement with the auxiliary takeup means, means on the base for urging the drive wheel toward said engagement, and releasable means on the base for holding the drive wheel out of said engagement.

20. A device for winding a yarn onto a bobbin, comprising a base, a rotating spindle mounted on the base for supporting and rotating a bobbin, an auxiliary takeup spool rotatably mounted on the spindle at one end of

the bobbin, said spool being mounted for free rotation on the spindle in such a manner that friction inherent in the mounting of the spool causes said spool to acquire a normal rotative speed which is substantially the rotative speed of the bobbin, means for traversing the yarn onto the bobbin, said traversing means being movable to shift the yarn feed from the bobbin to the spool, and means movably mounted on the base for movement into and out of engagement with the spool to decrease the speed of said spool to a value below said normal rotative speed.

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