Nov. 11, 1941. T. HARRIS 2,262,101

YARN PACKAGE CORE

Filed March 27, 1939

Fig. 1.

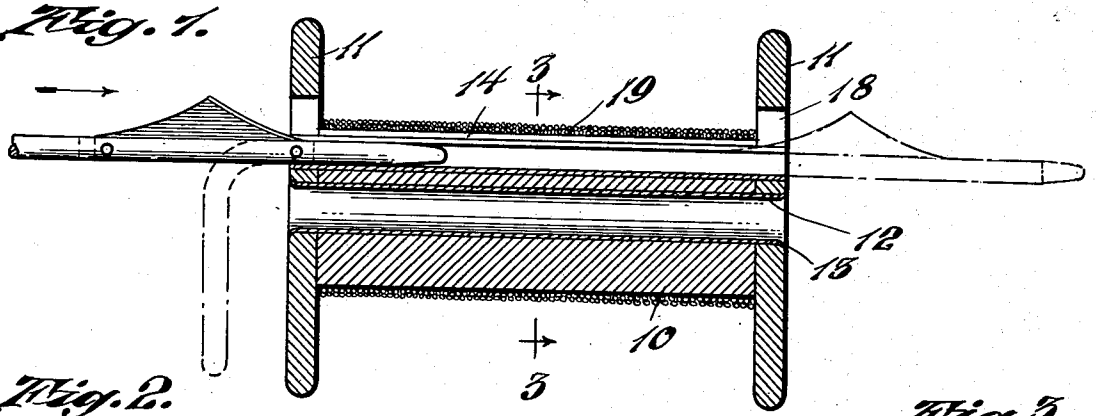


Fig. 2.

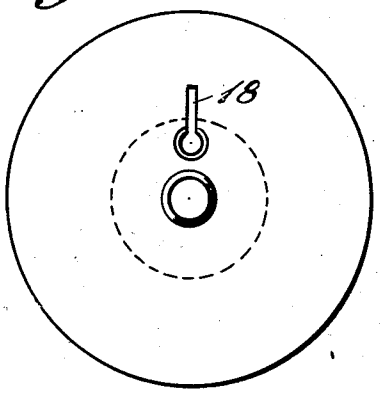


Fig. 3.

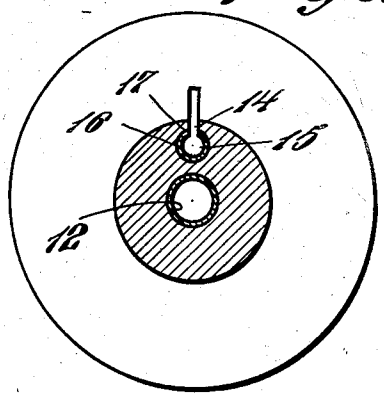


Fig. 4.

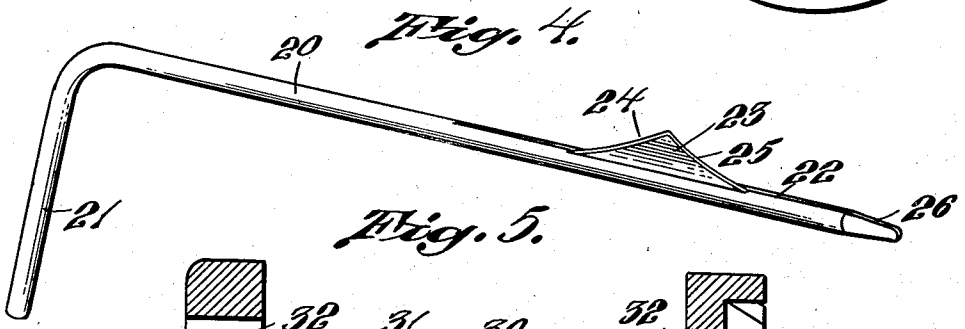


Fig. 5.

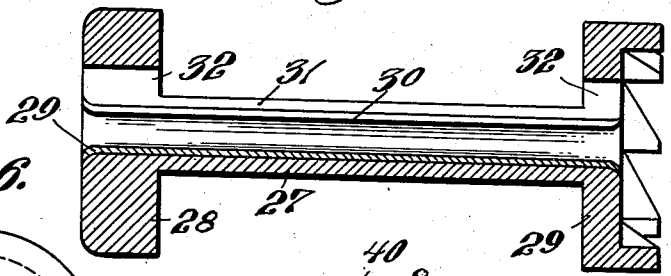
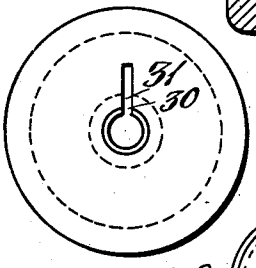


Fig. 6.



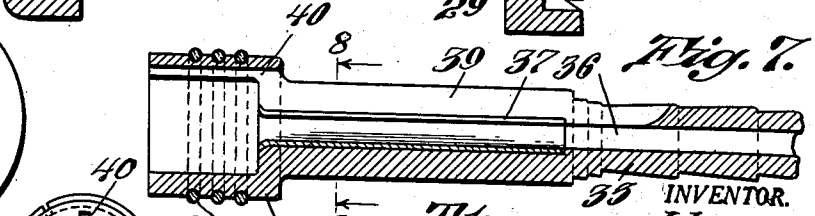


Fig. 7.

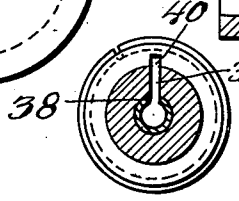


Fig. 8.

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2,262,101

YARN PACKAGE CORE

Thomas Harris, Warwick, R. I.

Application March 27, 1939, Serial No. 264,306

7 Claims. (Cl. 242—118)

This invention relates to a yarn package, more particularly to the core upon which the yarn is packaged and has for one of its objects to provide means by which the remnants of yarn which is wound about the core may be easily removed from the core.

Another object of the invention is to provide a core upon which yarn is packaged or assembled which is provided with a means for removing the last remnants of yarn from the core without injuring the core.

Another object of the invention is to remove the unused yarn wound upon a spool, bobbin or the like, quickly and easily and without injury to the bobbin which is usually of wood or some fibre material.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawing:

Fig. 1 is a sectional view illustrating a spool equipped with my invention and showing the yarn cutting means in its initial position relative to the spool, the cutting means being shown in dotted lines in its position after having passed thru the yarn on the spool.

Fig. 2 is an end view of the spool.

Fig. 3 is a sectional view on line 3—3 of Fig. 1.

Fig. 4 is a perspective view of the severing implement.

Fig. 5 is a sectional view of a braider spool and a modification as regards the showing in Figs. 1 to 3.

Fig. 6 is an end view of the spool shown in Fig. 5.

Fig. 7 is a sectional view of a further modification and showing a loom bobbin for insertion in a shuttle also equipped with my invention.

Fig. 8 is a sectional view on line 8—8 of Fig. 7.

Spools, bobbins and the like upon which yarn is packaged by winding are usually formed of wood or fibre and the unused yarn which remains upon these spools or bobbins as the last remnants when the majority of the package has been withdrawn, is of an amount usually insufficient to make practical the drawing off of this last remnant for use, consequently various means are employed for stripping, cutting or tearing off this unused yarn which is waste so far as further textile operations are concerned and which usually is accumulated as cotton waste.

The last unused remnants of yarn are removed from a loom bobbin or similar type core by causing a pair of gripping jaws to grasp the yarn by moving toward each other and then moving axially of the core to pull the yarn from the core or in the case of spools or sometimes the above mentioned loom bobbins the operator may by using a knife force the knife through the yarn against the wooden or non-metallic core and then draw the knife axially of the core to cut thru the remnants of the yarn, thereby incidentally cutting into the core so as to cause an abrasion of its surface.

All of these methods destroy or injure the smooth desired finished surface of the core or flange of the spool or bobbin upon which the yarn is packaged which is undesirable and by the provision of the invention which I have made this abrasion or injury of the core is eliminated.

I provide a slot in the surface upon which the yarn is wound and beneath the surface a guide whereby I may insert a knife which will project thru the slot and cut the yarn which is assembled upon the core from the inside outwardly. This operation may be performed very simply and quickly and serves to completely sever the remnants of yarn on the core, permitting it to fall from the core as waste without injury of the core, and the following is a more detailed description of the present embodiment of this invention, illustrating the preferred means by which these advantageous results may be accomplished.

With references to the drawing, 10 designates the barrel of a spool usually formed of wood, altho this may be formed of fibre or any other suitable material if desired. Heads 11 are positioned at the end of the barrel. A metal tube 12 extends centrally thru the barrel and thru the heads and is flared outwardly as at 13 to hold the heads in position against the ends of the barrel. A slot 14 is formed in the barrel extending lengthwise or axially of the barrel which connects with a hole 15 a'so extending axially of the barrel and located inwardly from the outer surface of the barrel. A metal tube 16 forms a lining or bushing for this hole and is slotted as at 17 to register with the slot 14 in the barrel. The heads 11 are cut out in a shape corresponding to the opening 15 and slot 14, this slot being continued as at 18. Such opening registers with the slot 14 and opening 15 in the barrel. Slot 18 extends radia'ly out-

wardly from the center of the head to permit passage of the severing implement.

Yarn 19 is wound upon the surface of the barrel and over the slot which in no way interferes with the assembling of the yarn on the spool. The yarn initially fills the spool to substantially the full diameter of the heads 11. When unreeled, usually some feeler device will stop the operation of the machine just prior to the running out of the yarn 19 and there will remain on the spool an unused remnant of yarn 19 such as shown in Fig. 1. The amount of this yarn is sufficient so that its removal is difficult but by use of a spool such as above described for assembling the yarn on I may insert a severing instrument which I have shown in Fig. 4 for the purpose of cutting and removing this yarn from the spool.

This severing instrument consists of a rod 20 bent as at 21 to provide a handle. Upon the shank portion 20 in a suitable slot 22 I have fixedly mounted a knife 23 having sharpened edges 24 and 25. This knife 23 will be of substantially razor blade thickness and will possess extremely sharp edges. The end of the shank 20 is reduced as at 26 for the easy insertion into the opening 15 while the knife blade will be so positioned that it will extend into and thru slots 17, 14 and 18 so that by merely pressing upon the handle the knife will pass lengthwise of the spool and will cut thru all of the unused yarn which remains as a remnant thereon. This yarn will then fall from the spool as waste and the surface of the spool on which the yarn is wound will be uninjured and cleared. If, by chance, any of the yarns are not severed by the leading edge 25 of the implement as it passes thru the slot, the rear edge 24 will sever these yarns upon withdrawal of the implement thru the spool in its desired manner.

In the spool shown in Fig. 5 for the braider carrier, the barrel is designated 27 with heads 28 and 29 at either end which are integral with or all one piece with the barrel. The bushing 29 extends centrally thru the barrel and heads which is slotted as at 30 to register with the slot 31 in the barrel. The slot 31 extends thru the heads as at 32, thus similarly permitting the insertion of a severing instrument such as shown in Fig. 4 thru the center portion of the spool for severing any unused remnant of yarn which may remain thereon.

In Fig. 7 and Fig. 8 a loom bobbin 33 is illustrated as being provided for the usual enlarged gripped end 34 with aligning rings 35 thereon and this bobbin is provided with a central bore 36 which is lined with a bushing 37. This bushing is slotted as at 38 while the bobbin core is also slotted as at 39, this slot extending into the enlarged portion as at 40 so that a severing instrument may be inserted in the bore 36 for the distance that the conically wound yarn remnant may occur and be guided thru the slot 38, 39 and 40 so as to sever the yarn which may be assembled thereon.

The operations involving winding yarn on the core, whether they be spools, bobbins, or the like, are sometimes run at a very high number of revolutions per minute and balance of the core is necessary. In Fig. 1 there has been considerable removal of non-metallic or wooden material in the making of the hole 15 and slot 14 and in order to compensate for this removal the weight of the lining or bushing 16 will be made equal to the amount of the removed stock so as to maintain the spool in perfect dynamic balance where high rotation is desired. In case of such spools as shown in Fig. 5, a means of dynamic balancing may be provided such as, for instance, adding weight to the spool where stock has been removed or by grooving or cutting stock from the spool on the opposite side of the slot for this purpose and this same will be true in Fig. 7 for the shuttle bobbin for purpose of winding the yarn upon this bobbin at a rapid rate. It will, of course, be clear that when the bobbin is in use in a shuttle that no balance is needed as the bobbin is then not rotating.

The foregoing description is directed solely toward the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being defined and limited only by the terms of the appended claims.

I claim:

1. A core for a yarn package about which yarn may be wound comprising a cylindrical body part having an enlarged end portion, a slot extending through said enlarged portion inwardly of the periphery thereof and into the body part and opening into the outer surface thereof and through which slot a severing instrument may be passed.

2. A core for a yarn package about which yarn may be wound comprising a cylindrical body part having an enlarged end portion, a slot extending through said enlarged portion inwardly of the periphery thereof and into the body part and opening into the outer surface thereof and through which slot a severing instrument may be passed, and the side walls of said slot serving to guide the said instrument through said slot.

3. A core for a yarn package about which yarn may be wound comprising a cylindrical body part having an enlarged end portion, a slot extending through said enlarged portion inwardly of the periphery thereof and into the body part and opening into the outer surface of the body part and through which slot a cutter may be passed, said slot being enlarged radially inwardly for guiding an instrument carrying the cutter projecting through said slot.

4. A core for a yarn package provided with a body portion about which yarn may be wound and flange portions, one at each end of the body with a slot extending the entire length of said core and opening into the peripheral surface of the body portion and extending through said flange portions inwardly of the peripheral surface of the flange portions and through which a severing instrument may be passed.

5. A core for a yarn package about which yarn may be wound, comprising a body portion having an enlarged end portion, a hole located eccentric to the axis of the core extending through said enlarged end portion and into said body portion and inwardly from the periphery of both portions, a slot of less width than said hole connecting said hole to the outer surface of the body portion, said hole and slot being of a size to accommodate a severing instrument for passage therethrough.

6. A core for a yarn package about which yarn may be wound, comprising a body portion having an enlarged end portion, a hole located eccentric to the axis of the core extending through said enlarged end portion and into said body portion, a slot in said body portion opening in the outer

surface thereof and into said hole and extending in the same straight line through the said enlarged end portion, through which slot a severing instrument may be passed, the side wall of said slot serving to guide said instrument through said slot, and a lining in said hole having a slot registering with said slot, said lining being of a weight to maintain the core in substantially dynamic balance.

7. A core for a yarn package comprising a body part having an enlarged end part with a slot in one straight line and parallel to the axis of the core through both parts, said slot in the body part opening into its outer surface whereby a severing instrument may be passed through said slot to cut the yarn from the inner surface outwardly.

THOMAS HARRIS.