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YARN WINDING SPOOL

Filed Oct. 14, 1925

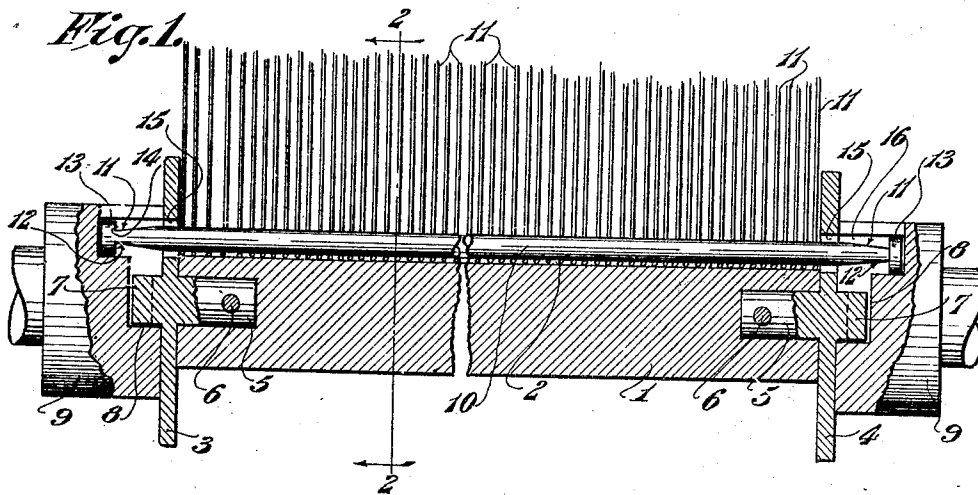
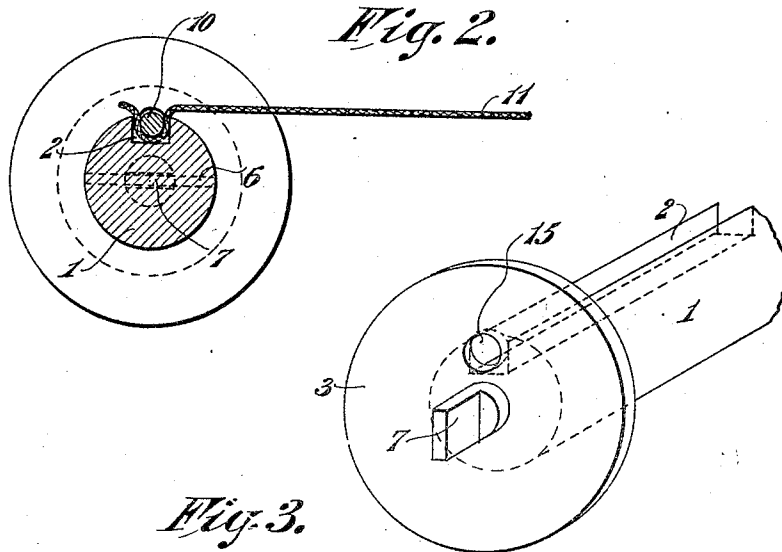


Fig. 3.

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ROBERT ASHMEAD AND JOSEPH COLLINS, OF INDIAN ORCHARD, MASSACHUSETTS, ASSIGNORS TO HODGES CARPET COMPANY, OF INDIAN ORCHARD, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

YARN-WINDING SPOOL.

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To all whom it may concern:

Be it known that we, ROBERT ASHMEAD and JOSEPH COLLINS, citizens of the United States, residing at Indian Orchard, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Yarn-Winding Spools, of which the following is a specification.

This invention relates to improvements in spools on which strands of yarn are wound that are to be used in weaving rugs. More particularly the invention has for an object reliable means for temporarily clamping or securing the inner ends of these strands while they are being wound onto the spool. The securing means is so constructed and arranged that it may readily be removed after the spool has been filled with the strands of yarn which are wound thereon in the usual manner.

A further object is to provide means which cooperate with the yarn holding means for driving the spool by applying rotative movement directly to the two ends of the yarn holding means.

Heretofore, it has been a common practice to directly apply the driving power only to the ends of the yarn winding spool with the result that these spools are often broken due to the twisting or torque stresses which are imparted to the spool when only the ends are utilized for driving the spool. On account of the excessive breakage of the spools and the cost of replacing them the present improvement has been developed. It has also been a common practice to apply the driving only to end of the spool.

The invention, broadly considered, comprises a cylindrical member, preferably of wood, which is formed with a longitudinal groove throughout its length. In this groove is placed a rod for the purpose of clamping the inner ends of the strands of yarn to the cylindrical member. Secured to the ends of this member are disc-shaped pieces, which pieces are formed with transversely located openings that are located in alignment with the opposite ends of the groove in the cylindrical member, whereby the yarn clamping rod may be inserted in and removed from the groove. The ends of the rod are formed with cutaway or reduced portions for the purpose of forming shoulders which will engage a suitable tool or firmly retaining

the rod in a fixed position when the rod is to be removed. The removal operation consists in imparting a lengthwise pull on the spool as will be described.

Referring to the drawings:

Fig. 1 is a partial sectional plan view showing the clamping rod in place in the groove to retain the ends of the strands of yarn in place. Also, the reduced end portions of the rod and the driving means for the spool.

Fig. 2 is a transverse sectional view on the line 2—2 of Fig. 1, showing the rod in the groove and the strands of yarn under the rod and in the groove, and

Fig. 3 is a detail perspective view of one end of the disc shaped member, also showing a portion of the cylindrical shaped member and groove therein.

Referring to the drawings in detail:

1 designates the cylindrical or barrel part of the spool which is formed with the longitudinally arranged groove 2 through its length. It is preferably rectangular in cross section, as shown in Fig. 2. 3 and 4 are disks which are secured to the ends of the barrel part. These disks are each formed with a part 5 which enters a recess in each of the ends of the barrel part. Pins 6 are provided for securing the disks 3 and 4 to the ends of the barrel. Each disk is also provided with an outwardly extending projection 7 having the oppositely located flat faces or surfaces, as shown. These projections are designed to enter openings 8 in the spool driving members 9. 10 designates a rod which is circular in cross section which is designed to be placed in the groove 2. This rod is formed at each of its ends with the reduced or cut-away portions 11 and 12 which produces the head pieces 13 and shoulders 14. These reduced portions and shoulders are for the purpose of providing retaining means for holding the rod in a fixed position when the rod is to be removed by inserting it in a suitable clamping or gripping device as a special shaped slot in a fixed plate whereby when the operator grasps the barrel 1 and pulls longitudinally of the same, the rod may be removed from the groove 2.

Each disk is formed with an opening through which the ends of the rod normally extend as shown.

The ends of the strands 11 of the woolen

yarn which are to be temporarily clamped are first laid across the groove 2. The rod 10 is then placed over or on these ends and forced down into the groove 2 carrying the strands with it. The spool 1 is then ready to be rotated for winding the yarn onto the same until it is completely filled. The rod 10 is then removed in the manner as already described thus leaving the inner ends free to unwind when the spool is placed in a rug weaving machine.

The barrel part 1 is understood to be of considerable length and heretofore often breaks due to torsional stresses, but by employing the rod 10, which is placed in the groove 2 which extends the entire length of the barrel 1 and with its ends being rotatably connected to the driving members 9 it materially assists in driving the spool while the yarn is being wound thereon thus preventing breakage of the spools.

The projecting ends of the rod 10 are placed in the openings 16 of the driving members 9 whereby the spool 1 is rotated by means of the projections 7, and by means of the longitudinally extending rod 10. The torsional stresses are therefore equally distributed throughout the length of the barrel member 1.

After the spool is filled the rod is removed, thus leaving the inner ends of the yarn free to unwind without any loss due to breakage.

What we claim is:

1. A yarn winding device comprising in combination, a grooved barrel member, driving means secured to the ends of the member, and formed with openings which extend through the driving means, a yarn strand clamping rod located in the groove and having its ends extending through the openings in the driving means; said extending ends

being designed to engage the means for driving the spool, whereby torsional stresses of the barrel member are eliminated.

2. A winding spool comprising in combination, a barrel member on which the material is wound, means for rotating the member, means for clamping the inner ends of the material to be wound, the clamping means cooperating with the spool rotating means to drive the spool for exerting a uniform driving effort throughout the length of the spool, whereby torsional stresses are eliminated.

3. A winding spool comprising a barrel member which is formed with a groove throughout its length, a yarn clamping member in the groove, the clamping member having shoulder portions near its ends for removing the same, means for imparting rotative movement to the spool, and cooperating means between the rotative means and the yarn clamping member.

4. A winding spool for the purpose described, having in combination, a grooved barrel member, discs secured to the ends of the member and formed with openings in alignment with the groove in the barrel member, a clamping rod in the groove with its ends extending through the openings in the discs, and means cooperating with the discs and rod for rotating the spool.

5. A winding spool comprising a barrel member, discs secured to the ends of the member, and formed with openings there-through, clamping means for the inner ends of the material to be wound on the spool, the clamping means extending through the openings in the disc, and means cooperating with the clamping means for imparting rotative movement to the barrel member.

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