

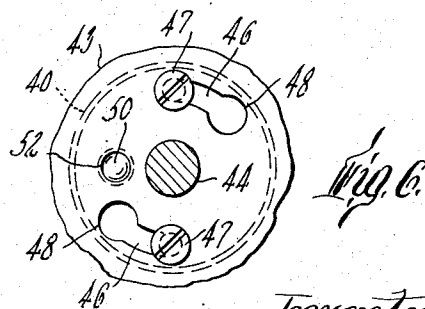
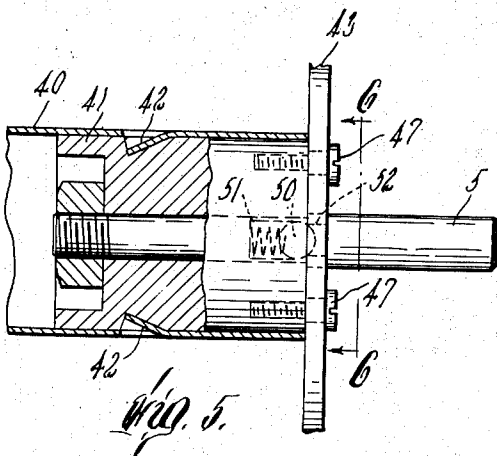
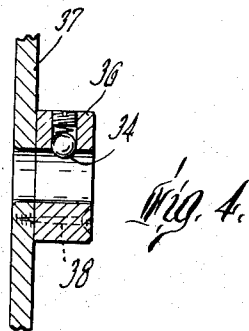
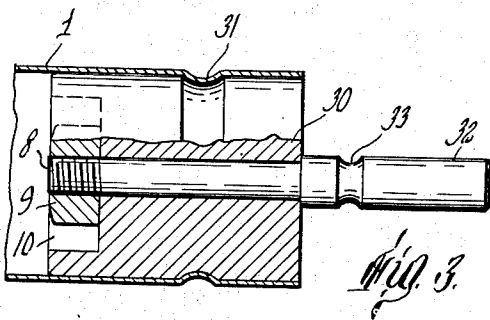
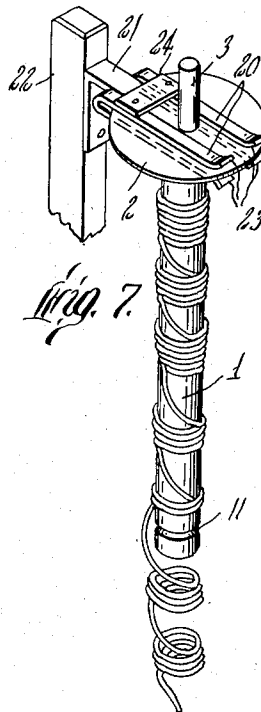
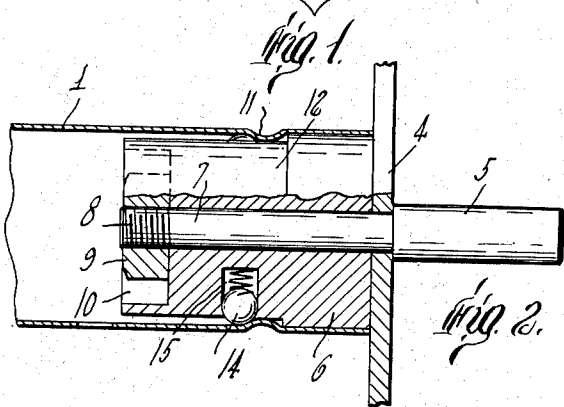
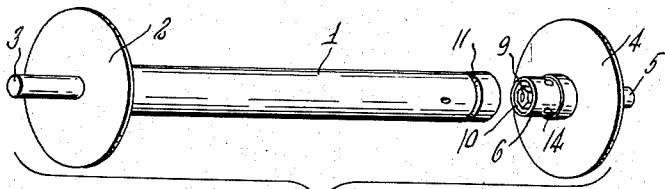
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METHOD OF STRIPPING TEXTILE FIBERS FROM SPOOLS

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METHOD OF STRIPPING TEXTILE FIBERS
FROM SPOOLSAndrew J. Pike, Canton, Mass., assignor to
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During the processing of textile fibers, it is common practice to employ spools upon which waste fibers accumulate and from which this waste must be removed. The present practice is to remove such waste by the use of a knife which is drawn along the length of the spool and splits the waste, which is then pulled off of the spool by hand. This operation requires considerable time and labor and results in damage to the spool. Accidents result from the use of the knife and from splinters cut from the spool during the cutting operation, the barrel of the spools being commonly made of wood.

In accordance with the present invention all need for cutting to remove the waste is eliminated, one object of the present invention being to provide for easy removal and replacement of one of the heads of the spool, the removal of this head permitting the waste to be stripped or slid off lengthwise of the spool. Not only does this eliminate all necessity for cutting the waste with its attendant damage to the spool and liability of serious accident, but it also makes possible the testing of roving yarn on any part of the spool at any time in order to discover deficiencies or faulty operation of the textile machine.

Means are preferably provided for supporting the spool in substantially upright position by a permanently fixed head on the spool, this facilitating the removal and replacement of the removable head by holding the spool barrel in fixed position. It also facilitates the stripping of the waste by gravity from the spool barrel.

For a complete understanding of this invention, reference may be had to the accompanying drawings in which

Figure 1 is a perspective view of a spool made in accordance with this invention, the removable head being shown detached from the barrel.

Figure 2 is a fragmentary central longitudinal sectional view to a larger scale through the detachable head and the cooperating portion of the spool barrel to which it is removably held.

Figure 3 is a view similar to a portion of Figure 2, but showing a modified construction of spool barrel.

Figure 4 is a fragmentary central longitudinal sectional view of a removable head for cooperation with the spool barrel of Figure 3.

Figure 5 is a view somewhat similar to Figure 2, but showing a further modification.

Figure 6 is a sectional view on line 6—6 of Figure 5.

Figure 7 is a perspective view showing the spool of Figures 1 and 2 supported for removal of the waste therefrom or for testing roving yarn there-

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on, the lower head having been detached from the spool barrel.

Referring first to Figures 1 and 2, at 1 is indicated the barrel of a spool having a head 2 in the form of a disk permanently attached to one end. Concentric with the barrel and this head is a trunnion 3 by which this spool may be supported when in use. At the other end of the barrel there may be attached a removable head 4 which is also formed as a disk and may also be provided with a coaxial trunnion 5. As shown in these figures, the removable head 4 is provided with a central boss 6 which may be pushed into the interior of the barrel 1 as shown in Figure 2. The trunnion 5 may have a reduced diameter inner end portion 7 threaded on its extremity 8 for the reception of a securing nut 9 which is seated in a recess 10 in the inner end of the boss 6. This secures the head 4, the boss 6 and the trunnion 5 assembled. As shown the barrel may be made as a metal tube.

The head 4 with the parts carried thereby may be removably secured in assembled relation with the barrel, and for this purpose the barrel may be provided with an annular depression 11, the inner end of the boss being of reduced diameter as at 12 to pass freely within the depression 11, and means, such as one or more spring pressed ball latches 14, seated in recesses 15 in the boss 6 may be employed to snap in inwardly of the annular recess 11 and removably hold the head 4 in assembled relation. By exerting outward axial pressure on the head 4, this head may be withdrawn from assembled relation, the latches 14 being wedged back sufficiently against their springs by the engagement of the portion 11 therewith, and conversely the removable head may be returned to assembled relation by merely pushing it into place with sufficient force to retract the ball latches until they pass inwardly of the portion 11.

In use, means such as are shown in Figure 7 are preferably provided for holding the spool in elevated position by engaging the permanent head 2. This means comprises a pair of vertically spaced holding portions 20 which are supported from a bracket 21 secured to any suitable support such as a wall or the post 22. The holding elements 20 comprise pairs of laterally spaced arms which are spaced sufficiently to permit the trunnion 3 to extend therebetween on the upper face of the fixed head 2 and for the barrel 1 to extend therebetween below the permanent head 2. As shown, these holding arms are formed as loop elements having their free ends deflected away from each other as at 23 so as to form

guides facilitating the entrance of the head 2 into position therebetween. These elements may be secured in spaced relation by means such as cross braces, one of which is shown at 24.

It will be apparent that when the fixed head 2 of a spool is placed in the position shown in Figure 7, the spool is held elevated, whereupon the removable head 4 may be removed by merely pressing it downwardly, whereupon the fibrous waste is free to be pushed off axially of the spool barrel from its lower end, as is shown in this figure. This avoids any necessity for cutting the waste, with the attendant danger due to use of a knife, and where wooden barrels are employed, all risk from slivers resulting from the cutting of the knife into a wood barrel. Upon removal of the waste, the removable head 4 may be brought in under the barrel and then elevated so that the boss 6 telescopes within the barrel sufficiently for the parts to assume fully assembled positions where the ball latches 14 removably hold the detachable head in place on the barrel. Not only does this avoid the use of a knife in removing waste, but it also makes possible a readily practiced method of testing "cheeses" resulting from the carding process. In this process there are several ends of roving which are wound onto the spool and with a quick detachable head, the testing of this roving in the form of cheeses on any part of the spool is facilitated. Thus it may be readily determined whether or not the carding action is uniform, this facilitating improving the efficiency and quality of production in the carding process. Furthermore, by avoiding the necessity of using a knife, the life of the spools may be greatly prolonged since they can be made of a more durable light metal tube. Moreover, the speed with which the fibrous material can be removed from the spool is much greater than when cutting is resorted to, and the fibrous material removed is in better condition for subsequent processing.

In Figures 3 to 6, other constructions of removable spool heads have been illustrated. Thus in Figure 3 the end of the tubular barrel 1 is filled by a permanent plug 30 which may be secured in place therein as by rolling in an annular recess 31 in the barrel tube after the plug has been inserted. This plug carries the trunnion 32 which may be mounted in the plug 30 similarly to the trunnion 5 in Figure 2 within the boss 6. This trunnion 32, however, is provided with an annular groove 33 which may receive one or more spring pressed ball latches 34 shown in Figure 4 and carried by a collar 36 secured coaxially to the removable head 37. As shown, the collar 36 may be secured to the head 37 as by screws 38. The inner portion of the trunnion 32 is thus telescopically related to the head 37 and the collar 36 when the head is assembled on the barrel and is removably retained in position by the ball latches 34.

In Figures 5 and 6 a still further modification is shown in which the end portion of the tubular barrel 40 has secured therein a plug 41, as by ears

42 struck from the tubular barrel 40, and deflected into the material of the plug 41. This plug 41 may be provided with a trunnion which may be identical in construction with the trunnion 5 of Figure 2. The removable head 43 is provided with a central aperture 44 which may be threaded over the trunnion 5 and it may also be provided with one or more arcuate keyhole slots 46 arranged concentric to the head 43. Co-operating with these keyhole slots are the headed members, such as the screws 47, which are threaded into the plug 41 with their heads spaced sufficiently from the ends of the plugs so as to permit the head 43 to extend therebeneath. The enlarged diameter portions 48 of the keyhole slots are of sufficient diameter to receive the heads of the screws 47, whereupon by turning the head 43 in the clockwise direction as viewed in Figure 6, the narrower portions of the slots may be brought opposite to the shanks of the members 47, the screw heads then retaining the spool head in assembled relation. A spring pressed ball latch 50 seated in a socket 51 in the plug 41 engaging in a hole or recess 52 in the head 43 may be employed to releasably latch the head 43 in assembled relation with the barrel.

From the foregoing description of an embodiment of this invention, it should be evident to those skilled in the art that various further changes and modifications may be made without departing from its spirit or scope.

I claim:

1. The method of removing fibrous material accumulated on the barrel of a spool having a pair of heads, at least one of which is readily detachable from said barrel, which comprises detaching said detachable head, and while holding the spool, sliding said material along and off from said barrel away from the other of said heads while said detachable head is detached.

2. The method of removing fibrous material accumulated on the barrel of a spool having one fixed head and one head readily detachable from said barrel, which comprises holding said fixed head to thereby hold the spool stationary, detaching said detachable head, and sliding the material along said barrel and off therefrom away from said fixed head while said detachable head is detached.

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