Jan. 28, 1936. R. ETZKORN 2,029,226

APPARATUS FOR THE MANUFACTURE OF ARTIFICIAL SILK

Filed March 15, 1932

Fig. 1.

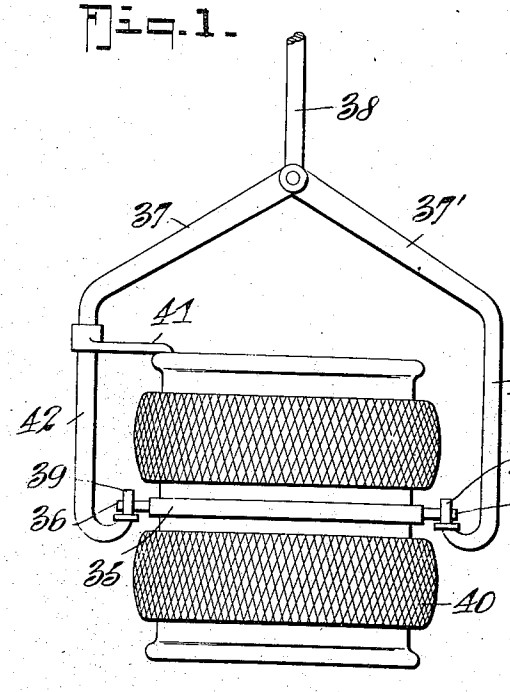
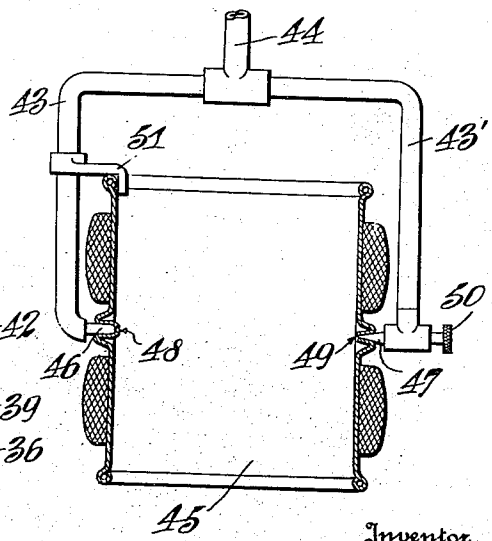


Fig. 2.



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APPARATUS FOR THE MANUFACTURE OF ARTIFICIAL SILK

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9 Claims. (Cl. 242—130)

My present invention relates to an improved method of and apparatus for the respooling of artificial thread and the like.

In the manufacture of artificial silk and the like by the spool spinning method, a suitable cellulosic solution is spun into a coagulating bath or other hardening medium and collected on spools. The thread is then subjected to several wet treatments, including washing, and then dried. Thereafter the thread is respooled onto a suitable take-up roller such as a twisting spool. Since spools of large diameter, preferably of a diameter of more than 200 mm., are now being used. To insure a neat and clean winding, the respooling speed may be increased to about 500 to 1,000 meters a minute.

It is accordingly an object of my present invention to provide a new apparatus for the rewinding of artificial thread from spools of large diameter to a suitable take-up means.

A further object of my present invention is to provide suitable means for holding spools of thread during the respooling operation.

A still further object of my present invention is to provide suitable constructions for holding spools having a plurality of yarn bodies wound thereon, during the respooling operation, which will permit either the semi-automatic reversal of the spool after the doffing of one of the yarn bodies or the ready removal of the spool so that it may be replaced ready for the doffing of the second yarn body.

These and other objects of my present invention will become more apparent from a study of the following description and by reference to the annexed drawing in which:

Fig. 1 is a side elevation of one form of the invention, and

Fig. 2 is a part sectional and part side elevational view of a modified form of the invention.

Referring now to the drawing in which like numerals of reference indicate like parts, semi-automatic spool holding means are shown which hold the spool pivotally, allowing one yarn body to be placed in the unwinding position while holding another yarn body in readiness to be swung into position on the completion of the unwinding of the first. By the term semi-automatic is meant the release of the spool by the latching member 41 in Figure 1 and the latching member 51 in Figure 2. These latching members are only released after the yarn has been drawn off the lower end of the spool. It is therefore readily seen that by releasing the spool the heavier end, i. e., the upper portion still carrying yarn, will automatically pivot downwardly in position. Secured to the central portion of the spool is a ring 35 provided with oppositely positioned bearing members 36. The tongs 37, 37', pivotally secured to the rod or shaft 38, are provided at their ends with upstanding members 39 in which are journalled the bearing members 36. To prevent the rotation of the spool as the yarn body 40 is unwound, I have provided a latching member 41 slidably mounted on the vertical section 42 of tong 37 and which engages the upper rim of the spool. Thus, after the yarn body 40 has been unwound all that is necessary, to swing the upper yarn body 42 into winding position is to slide the latch out of locking position and the spool will pivot by gravity about the horizontal axis of the spool.

In Figure 2 the spool holding means comprises a pair of brackets 43, 43' rigidly secured to the shaft or rod 44 and together form means for suspending the spool 45 therebetween. The ends of the brackets are provided with inwardly extending pintles 46, 47 which engage in oppositely disposed openings 48, 49 formed in the spool. To insure the easy removal of the spool from the holding means the pintle 47 is slidably mounted in a bearing formed in the lower end of the bracket 43' and is provided with a knob 50 whereby the pintle may be removed from engagement with the opening 49. A latch 51 is slidably mounted on the bracket 47 and engages the spool to prevent the same from tipping. The operation of the device is identical to the operation of the construction shown in Figure 1.

From the above description it will be appreciated that I have provided suitable constructions for holding or suspending the spool during the respooling operation, which will avoid breakage of the thread during the doffing operation.

Although I have described several embodiments of my invention it is obvious that each embodiment is susceptible of many minor changes without departing from the spirit of my invention. I, therefore, wish it to be understood that my invention is to be limited only by the scope of the appended claims.

What I desire to claim is:

1. A support for a spool having a ring secured thereto and carrying oppositely disposed lugs, comprising a shaft, a pair of levers pivotally secured thereto, the outer ends of said levers being provided with bearing surfaces for said lugs, whereby said spool may be pivoted about its horizontal axis.

2. A support for a spool having a ring secured thereto carrying oppositely disposed lugs, com-

prising, a shaft, a pair of levers pivotally secured thereto, the outer ends of said levers being provided with bearing surfaces for said lugs whereby said spool may be pivoted about its horizontal axis, and means slidably secured to one of said levers for engaging said spool to hold the same stationary in operative position.

3. A support for a spool having a ring secured thereto carrying oppositely disposed lugs and having wound thereon a plurality of yarn bodies, comprising a shaft, a pair of levers pivotally secured thereto, the outer ends of said levers being provided with bearing surfaces for said lugs, whereby when the lowermost one of said yarn bodies has been unwound the spool may be pivoted about its horizontal axis to swing another of said yarn bodies into operative position.

4. A support for a spool having a ring secured thereto carrying oppositely disposed lugs and having wound thereon a plurality of yarn bodies, comprising a shaft, a pair of levers pivotally secured thereto, the outer ends of said levers being provided with bearing surfaces for said lugs, whereby when the lowermost of one of said yarn bodies has been unwound the spool may be pivoted about its horizontal axis to swing another of said yarn bodies into operative position and means slidably secured to one of said levers for engaging said spool to hold the same in operative position.

5. A support for a spool comprising a shaft, spool suspending means secured thereto for engaging said spool, and means slidably secured to said spool suspending means to hold said spool stationary in operative position.

6. A support for a spool comprising a shaft, a bracket having inwardly projecting lugs rigidly secured thereto, said spool being provided with centrally located oppositely disposed openings into which said lugs extend, one of said lugs being movable whereby the spool may be removed from said bracket.

7. A support for a spool comprising a shaft, a bracket having inwardly projecting lugs rigidly secured thereto, said spool being provided with centrally located oppositely disposed openings into which said lugs extend, one of said lugs being movable whereby the spool may be removed from said bracket, and means slidably secured to said bracket and engaging with said spool to hold the same stationary in operative position.

8. In a device for use in the manufacture of yarns of artificial origin, comprising, in combination, a supporting means, a spool pivotally supported thereby intermediate its ends whereby the position of said spool may be reversed, said spool having a plurality of yarn bodies wound thereon.

9. In a device for use in the manufacture of yarns of artificial origin, comprising, in combination, a supporting means, a spool pivotally supported thereby intermediate its ends whereby the position of said spool may be reversed, said spool having two yarn bodies wound thereon.

RUDOLF ETZKORN.