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W. E. CAMPBELL

TEXTILE MACHINE ATTACHMENT FOR WAXING YARNS AND THREADS

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Fig. 2

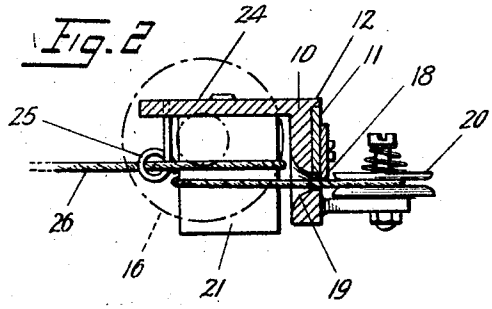
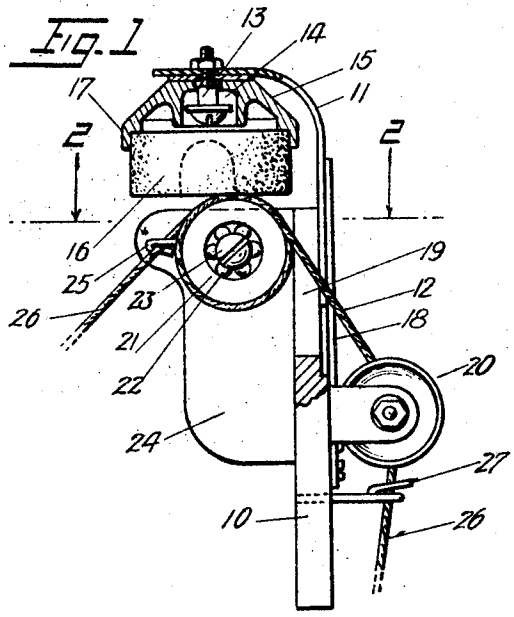


Fig. 1



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TEXTILE MACHINE ATTACHMENT FOR WAXING YARNS AND THREADS.

Application filed August 22, 1922. Serial No. 583,509.

To all whom it may concern:

Be it known that I, WILLIAM EDWIN CAMPBELL, subject of the King of Great Britain and Ireland, residing at Ashfield, near Sydney, New South Wales, Australia, have invented certain new and useful Improvements in Textile Machine Attachments for Waxing Yarns and Threads, of which the following is a specification.

This invention relates to a waxing attachment for textile machinery, in particular textile machinery in which yarns or threads are wound from a hank or cop onto a bobbin. Its object is to provide a means for automatically waxing yarns or threads to lubricate them uniformly but without applying a harmful excess of wax to them, in order thereby to facilitate their working in knitting machines and in other textile machines.

Where yarns or threads are drawn over a pad of wax to apply lubricant to them, irregular and unsatisfactory results are obtained, as when the wax block is scored and furrowed the quantity of wax taken by the yarn or thread is insufficient, rubbing contact between the thread and the wax being then accidental and more or less lost. The application of wax in this way is also inefficient as the yarn or thread is waxed along one side of it only. Inconvenience and loss in time and material results from the consequent necessity for frequently changing the wax blocks or rolls and remoulding the worn rejects.

In the attachment in which the present invention consists, the yarn or thread is drawn across the flat face of a disc of wax which is mounted for rotation on a spindle or axle the centre of which is located to one side of the course of the yarn or thread so that as the yarn or thread is drawn in contact with it under pressure sufficient to ensure light rubbing contact, rotational movement is applied to the wax disc and it is caused to rub the yarn or thread helically and thus effect a distributed application of wax to it, whilst the wear on the wax block will be distributed and it will wear evenly to a disc stump.

The attachment comprises a bracket adapted to be mounted vertically on a machine, a carrier arranged to slide freely in vertically disposed bearing guides in said bracket, a claw on said carrier carrying a vertical spindle or axle, an inverted cup mounted for rotation on said spindle or axle, said cup adapted to carry a cylindrical block of wax, a metal roller mounted for free rotation in the carrier below the wax block, a quirl forward of said roller for guiding the yarn or thread, a knot breaker rearward of said roller in the course of the yarn or thread, and a tension device with guide quirl behind said knot breaker.

In the accompanying drawings,—

Fig. 1 is a side elevational view of the attachment, and

Fig. 2 is an horizontal section on the plane 2—2, Fig. 1.

The bracket 10 is formed with a bottom end shaped for mounting in a hole or seating in a fixed part of the textile machine in connection with which the attachment is used. The carrier 11 is freely slidable in the vertical guide groove 12 in the back of the bracket 10. The top end of the carrier 11 is bent forwardly at right angles and supports a spindle or axle 13, preferably fitted with a ball race 14 to form an anti-friction mounting for the rotatable cup 15. 16 is a cylindrical block of wax the edges of which are embraced by the circular lip 17 of the cup 15. 18 is a steel blade, which functions as a knot breaker adjustably mounted in relation to the flared slot 19 in the bracket 10. 20 is an adjustable thread tensioning device of conventional type located directly behind the slot 19. 21 is a cylindrical beam roller mounted for free rotation on a ball race 22 carried on a horizontal spindle or axle 23 fixed in an offset plate 24 on the bracket 10. 25 and 27 are guide quirls, and 26 is a yarn or thread in course of movement through the attachment. It is to be noted that the yarn or thread is wound twice over and once under the beam roller 21 (about one-and-a half turns), in order to bring the thread twice into rubbing contact with the bottom face of the wax block 16, and that the run of the yarn or thread is located to one side of the centre of the wax block and not across the centre of it.

In operation, the yarn or thread 26 is drawn forwardly, up through the quirl 27 and tensioner 20, past the knot breaker 18, through the slot 19 and around the roller 21. The wax block 16 rides freely on the yarn or thread above the beam roller 21, being held in rubbing contact therewith by gravity. The wax block 16 is caused to

rotate by the frictional contact of the yarn or thread with it, and this rotational movement results in a helical rubbing on of wax onto the yarn or thread so that an effective serving is ensured. When worn to a disc, the wax is removed, the carrier 11 is raised up in its slide 12, and a refill placed by pressing it into the embrace of the cup rim 17.

The wax cylinder is formed with a central concavity as shown in dotted lines in order to avoid formation of a stem as wear takes place.

What I claim as my invention and desire to secure by Letters Patent is:—

1. A yarn and thread waxing machine, comprising an horizontally mounted beam roller, means for guiding yarn or thread to and from said roller, a rotatable cup mounted for rotation about a vertical axis above said roller and adapted to carry a block of wax, and a carrier for supporting said roller slidably mounted in vertical guides.

2. A yarn and thread waxing machine according to claim 1, characterised in that the wax cup is located in tangential relation to the line in which yarn or thread is directed on the beam roller by its guides.

3. A yarn and thread waxing machine comprising in combination a support, a beam roller carried thereby, a wax holder mounted on the support and disposed above the roller and adapted to carry a block of wax, and means for guiding a helical turn of thread around the roller whereby the block is adapted to engage the thread at spaced intervals.

4. A yarn and thread waxing machine comprising in combination, a support, a horizontally disposed beam roller carried thereby, means for guiding yarn or thread to and from said roller, a vertically movable carrier having a portion thereof overhanging the roller, an inverted cup shaped member rotatable within said carrier and adapted to carry a block of wax, said block being adapted to engage yarn passing across the uppermost portion of said roller, and said block being normally urged by gravity into engagement with the yarn passing over the roller.

5. A yarn and thread waxing machine, comprising a bracket, a carrier freely slidable in vertical guides therein, an inverted cup mounted for free rotation on a vertical axis in said carrier, said cup adapted to detachably hold a block of wax, a beam roller mounted for free rotation below said cup on a horizontal axis out of alignment with the cup axis, yarn or thread guides forwardly and rearwardly of said beam roller arranged to lead the yarn or thread over said roller tangentially to the axis of said cup, and a tensioning device and knot breaker intermediate the roller and the rearward guide.

6. A yarn and thread waxing machine comprising in combination a rotatable holder adapted to carry a block of wax, a cylindrical roller having the axis thereof extending transversely to the axis of the holder, said holder being so positioned with reference to the roller that the face of the wax adjacent the holder lies in a plane substantially tangent to the roller, means for guiding a helical turn of thread on said roller whereby the thread engages the wax at spaced intervals and means for operating the roller.

7. A yarn and thread waxing machine comprising in combination, a roller, a device rotatable about an axis transverse to the axis of the roller and adapted to carry a wax block having a face extending parallel with the most adjacent line of the roller, and so spaced with reference thereto that a thread passing over the roller will engage the wax, and means for so guiding the yarn that it may be wound helically on said roller while passing beneath the wax.

In testimony whereof I affix my signature,

WILLIAM EDWIN CAMPBELL.