S. BROADWIN.

LUBRICATING ATTACHMENT FOR WINDING MACHINES.

APPLICATION FILED JUNE 1, 1908.

954,374. Patented Apr. 5, 1910.

Fig. 1.

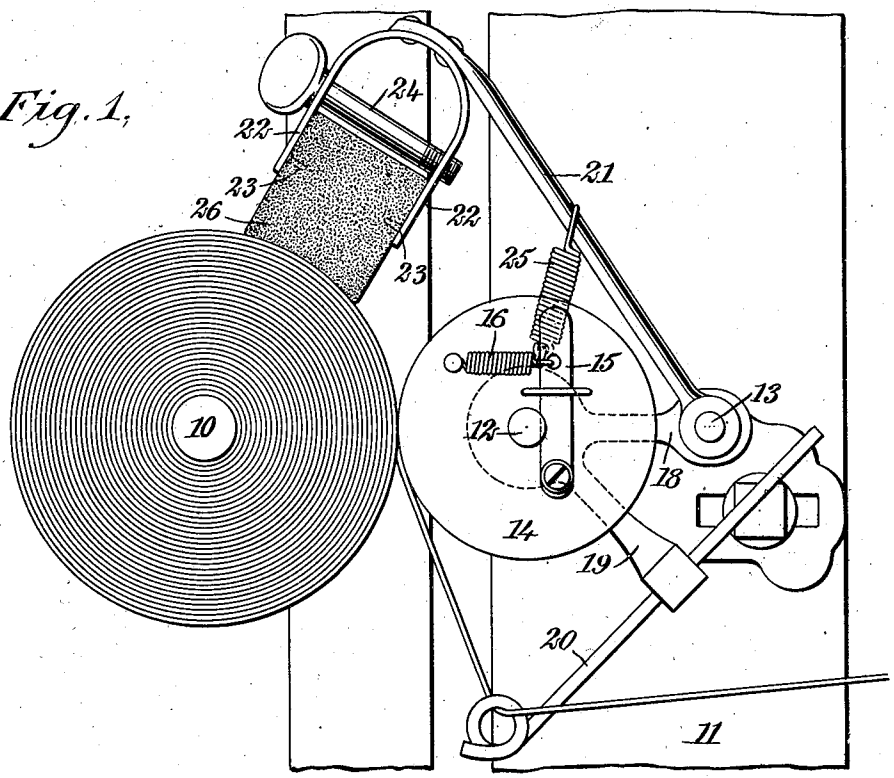
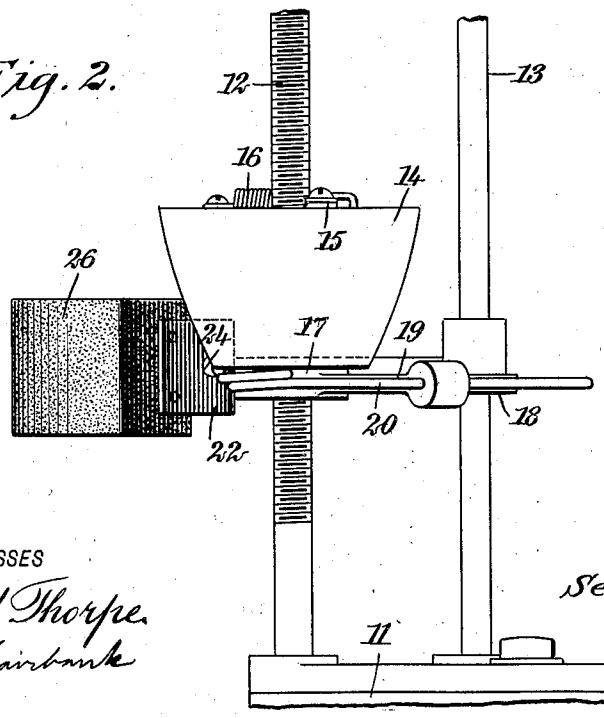


Fig. 2.



WITNESSES

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LUBRICATING ATTACHMENT FOR WINDING-MACHINES.

954,374. Specification of Letters Patent. Patented Apr. 5, 1910.

Application filed June 1, 1908. Serial No. 435,974.

To all whom it may concern:

Be it known that I, SELIG BROADWIN, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Lubricating Attachment for Winding-Machines, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in applying a lubricant, as, for instance, paraffin, wax, or other similar material, to yarn, thread, or the like, as the latter is being wound onto a spool, bobbin, or spindle.

Various different mechanisms have been designed and employed for lubricating a single strand of yarn or thread while in a winding machine, as, for instance, while passing from a skein to a bobbin. The applying of the lubricant to a single thread or strand presents certain difficulties, in that if sufficient pressure be applied to the thread to lubricate it to the desired extent, the thread is often broken, or if there is a knot or enlargement in the thread, the thread will break when said knot or enlargement comes in contact with the lubricant.

The object of my invention is to apply the lubricant to the thread after it is wound on the bobbin or the like, the lubricant preferably being in solid form and held against the sides of the several windings on the bobbin as the latter rotates.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures, and in which—

Figure 1 is a top plan view of one form of mechanism constructed in accordance with my invention, and Fig. 2 is a side elevation of the parts shown in Fig. 1, the spindle or bobbin being removed.

My invention is applicable for use in any type of winding machine, and the lubricant may be held against the material while wound on a bobbin, spindle, spool, or any other rotatable member; the material to be lubricated may be yarn, or thread of cotton, wool, or any other material.

In the accompanying drawings, I have shown a portion of a common type of machine for winding yarn from skeins to the bottle bobbin used on knitting machines. The bobbin 10 is mounted for rotation and is adapted to receive yarn thereon. Adjacent the bobbin, there is mounted a base or platform 11, vertically movable under the action of a cam or any other suitable mechanism, and upon this platform is mounted a yarn guide and the controlling means therefor. In this type of machine, the platform 11 carries two uprights 12 and 13, the former of which is threaded and the latter of which is smooth. Mounted on the threaded upright 12 is a cone 14 having a thin bar 15 pivoted upon the upper side thereof and held resiliently in engagement with the upright 12 under the action of a suitable spring 16. The edge of the bar 15 engages in the threads of the upright 12, so that as the cone is rotated in one direction, the cone moves upward, while by moving the bar 15 backward against the action of the spring 16, the cone may be dropped to the bottom. At the lower end of the cone and rotatable in respect thereto, is a collar 17, having two arms 18 and 19. The arm 18 terminates in a sleeve encircling the upright 13 and serves to prevent the rotation of the arm 18 about the upright 12, and the arm 19 carries a yarn guide 20 adjustable in respect thereto. The entire mechanism mounted on the base 11 is moved up and down, so that the guide 20 is moved longitudinally of the bobbin. When the yarn has accumulated on the lower end of the bobbin to such an extent that it contacts with the cone, the latter is rotated to travel up the upright 12 and raise the guide. All of this mechanism is old and the details thereof constitute no portion of my invention.

In connection with this winding mechanism, I employ an attachment for applying a lubricant, preferably paraffin, to the yarn as it is wound upon the bobbin. In the specific form shown, this attachment comprises an arm 21 mounted to swing on the upright 13 and disposed above the arm 18, so as to be moved upward when the cone 14 is rotated to raise the arms 18 and 19. At the outer end of the arm 21 is a suitable holder for gripping a block of solid lubricant. This holder is illustrated as comprising two oppositely-disposed spring jaws 22, each having teeth or projections 23 thereon and adapted to be drawn toward each other by a screw bolt 24. The arm 21 is drawn toward the upright 12 by a spring 25, said spring serving to hold the solid lubricant 26 resiliently against the surface of the wind-

ings on the bobbin. As the guide 20 moves up and down lengthwise of the bobbin, the lubricating attachment is also moved up and down and the entire outer surface of each layer of yarn on the bobbin is thoroughly and effectively coated with the lubricant. The lubricant may be held against the bobbin with any desired amount of pressure, and it will not tend to break the yarn or be interfered with by the passage of a knot, enlargement or other obstruction in the yarn. By holding the lubricant against the yarn on the bobbin, the yarn passes it several times before being covered by a second layer of yarn. The lubricant serves to hold the yarn in place on the bobbin, and serves to a certain extent to guide or direct it. When a single strand of yarn is drawn past the lubricant, a difference in the speed of winding at the beginning and the end of the bobbin, makes a difference in the degree of lubrication, but the lubrication is uniform when the lubricant is held against the bobbin as in my construction.

Various changes may be made in the construction and details of the lubricating attachment, and it may be applied to various different types of machines.

In the following claims, the term "yarn" is used to cover any and all forms of threads or strands, irrespective of the material, and the term "bobbin" is used to designate any type of rotary member upon which any type of yarn is to be wound.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a winding machine, the combination of a rotatable member upon which the yarn is to be wound, and means movable longitudinally of the rotatable member for resiliently holding a lubricant against the wound yarn on said member, said means including a U-shaped bar of spring metal, the terminal portions of which form spring jaws for engaging with opposite sides of the lubricant and a clamping bolt extending through both of said jaws at a distance from the end thereof for moving them relatively to each other.

2. In a winding machine, the combination of a rotatable member upon which the yarn is to be wound, a guide movable longitudinally of said member for directing the yarn thereto, and means movable longitudinally of the rotatable member and with said guide for holding a lubricant against said yarn after it is wound on said member, said holding means including two spring-pressed jaws having inwardly-directed teeth and a clamping bolt for drawing said jaws together.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SELIG BROADWIN.

Witnesses:
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