July 1, 1924. 1,499,699

H. SCHWEITER

APPARATUS FOR THE COATING OF THREAD WITH LIQUID

Filed March 7, 1922

Fig. 1.

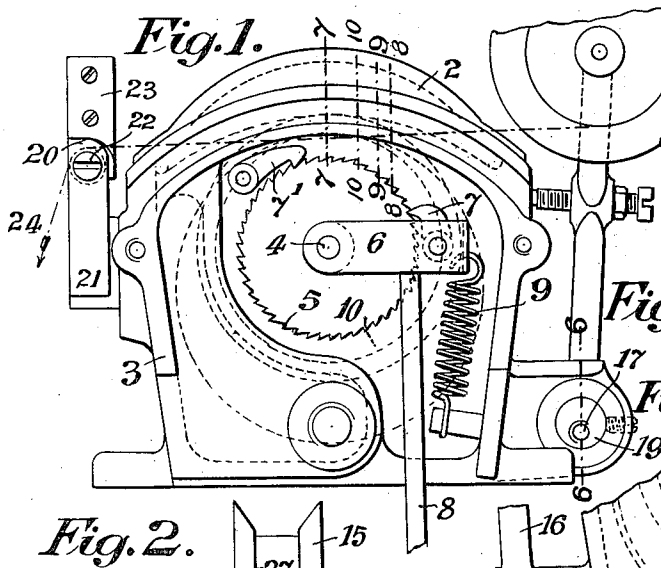


Fig. 7.



Fig. 8.

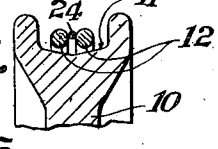


Fig. 5.

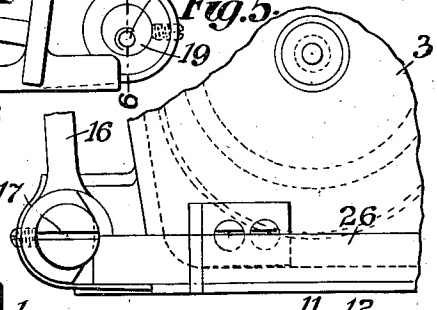


Fig. 2.

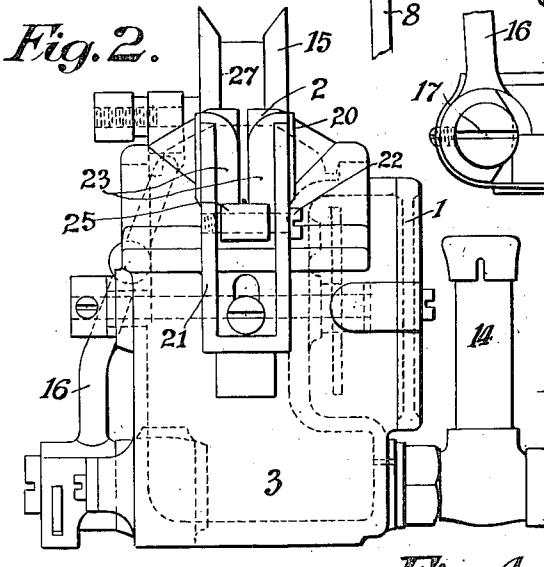


Fig. 9.

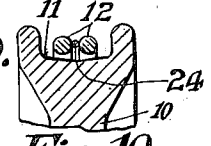


Fig. 10.

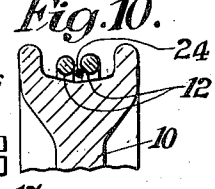


Fig. 6.

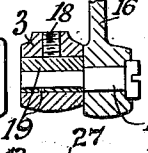


Fig. 3.

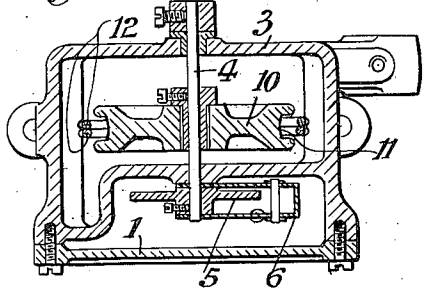
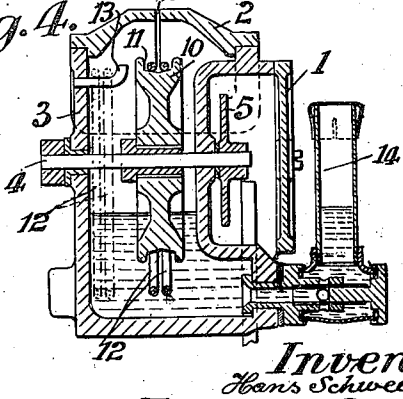


Fig. 4.



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Patented July 1, 1924. 1,499,699

UNITED STATES PATENT OFFICE.

HANS SCHWEITER, OF HORGEN, ZURICH, SWITZERLAND.

APPARATUS FOR THE COATING OF THREAD WITH LIQUID.

Application filed March 7, 1922. Serial No. 541,835.

To all whom it may concern:

Be it known that I, HANS SCHWEITER, a Swiss citizen, residing at Horgen, in the Canton of Zurich, Switzerland, have invented a new and useful Improvement in Apparatus for the Coating of Thread with Liquid, of which the following is a specification.

This invention relates to improvements in apparatus employed in connection with winding and similar textile machinery for coating textile threads with liquid such as paraffin and the like. The main object of the said invention is to provide a novel construction of apparatus which is capable of uniformly coating without damage textile threads, including silk threads, of all diameters down to the finest and most delicate thread.

Figure 1 is an end view of the apparatus.

Figure 2 is a left side view,

Figure 3 is a plan section, and

Figure 4, a vertical section thereof,

Figure 5 is a detached back view of the apparatus, and

Figure 6 a section on line 6—6 of Figure 1.

Figures 7–10 are sections on lines 7—7, 8—8, 9—9, 10—10 respectively of Figure 1.

An apparatus constructed in accordance with this invention, comprises a casing 3 having in front a cover 1 and at the top an arched lid 2 both of which are closable and serve for the reception of liquid, for instance, melted paraffin. The shaft 4 carries a ratchet wheel 5 and loosely mounted thereon is a U-like lever 6 provided with a feed pawl 7. A rod 8 with adjustable throw and actuated by an eccentric imparts to the lever 6 its feed motion whilst a spring 9 always returns the pawl 7 to its original position.

On the shaft 4 is also secured a disc 10 with side flanges and groove 11 having inclined sides. The bottom portion of the disc 10 dips into the liquid. Two coating rings 12 of larger diameter than the disc 10 hang loosely on the disc 10 by bearing on the iinclined surfaces forming the bottom of the groove 11. The rings 12 also dip into liquid and are lightly forced towards each other by the inclined nature of said bottom. When the disc 10 is rotated the frictional contact between the disc 10 and the rings 12 causes the rings 12 to rotate at substantially the same peripheral speed as the disc 10, but owing to the rings being of larger diameter the rotations per minute of the rings 12 are less than those of the disc 10. In case the rings 12 are not used when coating fine thread they are suspended by a hook 13 secured to the casing and the disc 10 only serves for the coating of the thread. 14 is the liquid level gauge pipe, and 15 is a thread guide roller which can be adjusted in height on the carrier 16. The carrier is located on a screw bolt 17, Figure 6, which is turnably screwed in an eccentric position into a bushing 19 which is rotatably mounted in the casing 3 and adjustable therein by means of a set-screw 18. By turning the bushing by means of the bolt 17 the carrier can be adjusted in height.

At the delivery end of the apparatus is a vertically adjustable thread clearer. This clearer has a bracket 21 which is screwed to the casing and has two spring jaws rendered relatively adjustable by a screw 22. Each jaw carries a stripper 23 between which passes the thread 24. By means of the screw 22 the width of the aperture formed by the strippers 23 can be regulated. The thread runs loosely over the roller 25 located on the screw 22. By raising or lowering the guide roller 15 and the thread guide 20 the degree of contact of the thread with the disc 10 can be regulated. 26 is an ordinary stop rod which when the thread breaks is moved by the resultant outward swing of the carrier 16.

When using only the disc 10 for coating thread the level of the liquid in the supply vessel must be such that the disc enters the liquid and takes up the necessary quantity for coating the thread (Figure 7) the liquid taken up accumulating at the lower point of the groove 11. If however the rings 12 are used for coating the liquid may be kept at such a low level that only the rings are in contact with the liquid and not the disc as the rings 12 are capable of supplying the required amount of liquid to the disc 10. The thread passes between the rings 12 which carry liquid upwards and deliver it at first to the lower side of the thread (Figure 8) then to the middle (Figure 9) and lastly to the top of the thread (Figure 10). This action results from the thread travelling in a substantially straight line between the upper parts of the rotating circular rings. Each point of the thread during its straight passage assumes

different positions relative to the rings 12 and gradually passes from outside the outer circumference of the rings across the thickness of the rings to a point level with the inner circumference of the rings and from thence again across the thickness of the rings to outside the outer circumference thereof, all in a chord-like manner. The coating given by the rings is thus greater and more uniform than that without. The lid 2 has a longitudinal slot 27 for the passage of the thread into the apparatus. After the thread touches the disc 10 and has again passed between the rings 12 it then passes the thread clearer 20 which strips off any foreign matter. The coating of the thread takes place rapidly and uniformly. In lieu of driving the disc 10 by a ratchet feed gear it may be driven by any other gear, for instance such as a worm wheel or toothed gear.

I claim:—

1. In an apparatus employed in connection with winding and similar textile machinery for coating textile threads with liquid, a positively rotated disc in combination with coating rings resting on and rotated by the surface of said disc and adapted to receive the thread between them.

2. In an apparatus employed in connection with winding and similar textile machinery for coating textile thread with liquid a positively rotated disc, a peripheral groove in the said disc having a slanting bottom which is deepest at the middle and is composed of two inclined surfaces; two rigid coating rings of larger diameter than the disc and adapted to be supported and rotated by the disc; and guide means for guiding the thread between the rings and onto the bottom of the said groove, the said bottom being adapted to retain the rings in contact with the thread at each side thereof and to gather liquid at its deepest part.

3. In an apparatus employed in connection with winding and similar textile machinery for coating textile thread with liquid a positively rotated coating disc, a groove in the disc, two coating rings in the groove; and a vertically adjustable thread guide adapted to regulate the contact of the thread with the said disc.

4. In an apparatus employed in connection with winding and similar textile machinery for coating textile thread with liquid, a rotatable coating disc; two rings resting on and rotated by the disc; a thread clearer; and an adjustable thread guide; the thread clearer and thread guide being adapted to regulate the contact of the thread with the said disc.

Signed at Zurich, in the Canton of Zurich, Switzerland, this 17 day of February, 1922.

HANS SCHWEITER.

Witnesses:

HEINRICH GRAF-HUCKLER,

PAUL HORLATHER.