Aug. 17, 1948. D. MARINSKY ET AL 2,447,351

BOBBIN WAXING MACHINE

Filed May 12, 1945

Fig. 1.

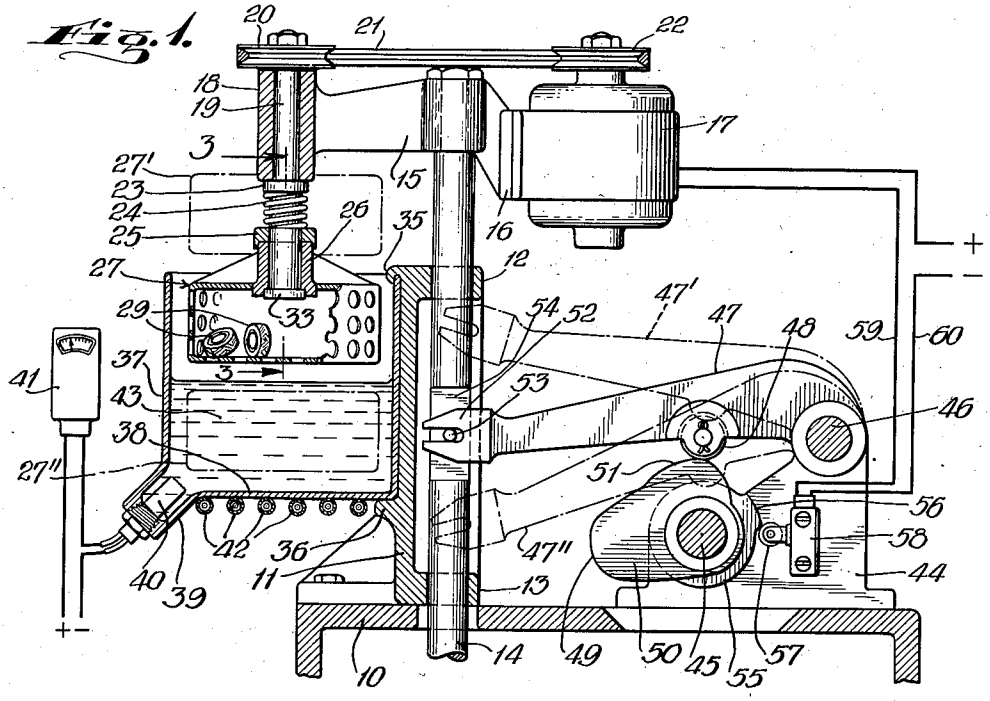


Fig. 2.

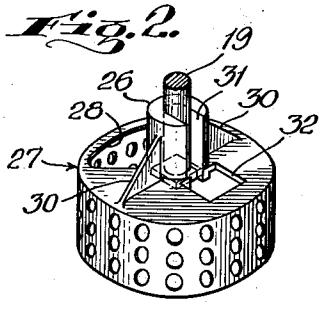
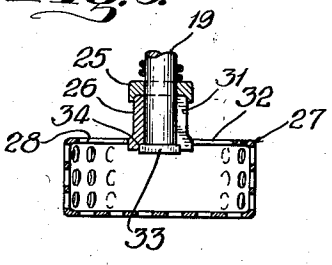


Fig. 3.



INVENTORS
DAVIS MARINSKY
LOUIS H. MORIN
BY
ATTORNEY

Patented Aug. 17, 1948 2,447,351

UNITED STATES PATENT OFFICE

2,447,351

BOBBIN WAXING MACHINE

Davis Marinsky and Louis H. Morin, Bronx, N. Y.; Louis H. Morin executor of estate of said Davis Marinsky, deceased

Application May 12, 1945, Serial No. 593,518

8 Claims. (Cl. 91—42)

1

This invention relates to machines for waxing bobbins and similar strand wound bodies, particularly wherein the strands are cross-wound. More particularly, the invention deals with a machine which is so constructed that fixed standards in the waxing of bobbins may be maintained in all bobbins of a particular type and kind processed in the machine, this result being accomplished by maintaining a predetermined temperature in the wax bath by accurately timing the immersion period of the bobbins and also in accurately controlling the time period of spinning for removal or displacement of excess wax.

The novel features of the invention will be best understood from the following description, when taken together with the accompanying drawing, in which certain embodiments of the invention are disclosed and, in which, the separate parts are designated by suitable reference characters in each of the views and in which:

Fig. 1 is a diagrammatic sectional view through a machine made according to our invention, illustrating the parts in the spinning position of the bobbin carrier in full lines and diagrammatically illustrating in dot and dash lines other positions in said carrier.

Fig. 2 is a perspective view of the carrier illustrating part of the support therefor with parts of the support removed; and

Fig. 3 is a partial section on the line 3—3 of Fig. 1 showing the carrier and part of the support therefor.

In Fig. 1 of the drawing, 10 represents part of a table or frame of a machine, upon which is arranged an upstanding support and guide plate 11, having vertically spaced bearings 12 and 13 for a reciprocating rod 14. The rod 14 carries at its upper end a bracket 15, to one extension 16 of which is secured a high-speed electric motor 17 of the standard brake type, that is to say, a motor having means for quickly stopping the rotation thereof. The bracket 15 has another extension terminating in a vertically arranged bearing 18, in which is disposed a shaft 19. The upper end of the shaft 19 carries a V-pulley 20, around which passes a belt 21 which also passes around a pulley 22 on the shaft of the motor 17.

The shaft 19 beneath the bearing 18 has a collar 23 against which seats a coil spring 24. The spring 24 operates a cup-shaped cap 25 slidably engaging the shaft and adapted to engage the upper end of the hub portion 26 of a basket or carrier 27.

The basket or carrier 27 is shown in detail in

2

Figs. 2 and 3 and comprises an openwork or perforated cylindrical body, the top wall of which has a large opening 28 facilitating the insertion and removal of bobbins or other strand wound bodies or members 29, two of which are diagrammatically illustrated in Fig. 2 of the drawing. In this connection, it will be understood that a large number of these bodies are arranged in the basket 27 in the processing thereof.

The hub portion 26 of the basket 27 is reinforced by opposed upstanding webs 30 and, at right angles to the webs, the hub portion has a longitudinal slot 31 which facilitates insertion of the shaft 19 into the hub, as will clearly appear from a consideration of Fig. 2 of the drawing.

The upper wall of the basket 27, in alinement with the slot 31, is provided with a rectangular opening 32 sufficiently large to freely receive a square end or head 33 on the shaft 19. The hub 26 has a square recess 34 in the lower surface thereof, in which the square end 33 of the shaft is adapted to closely fit to key the basket 27 upon the shaft 19. The spring-pressed collar 25 serves to support the basket in coupled and keyed relation with the shaft 19, as is clearly illustrated in Figs. 1 and 3 of the drawing. It will be apparent, however, that, by pushing upwardly on the collar 25, the hub 26 may be moved upwardly to disengage the head 33 from the socket 34 permitting detachment of the basket 27. In assembling the basket, the same operation takes place, that is, the collar 25 is raised permitting attachment of the basket in coupling engagement with the head 33.

The supporting frame 11 has at its upper end a downwardly extending hook portion 35, below which and in alinement with which is a shelf portion 36. The hook and shelf are so spaced as to receive and detachably support a tank 37 therewith in the manner clearly illustrated in Fig. 1.

It will appear that by placing one upper edge of the tank beneath the hook 35 with the tank in a tilted position, the tank may be then moved into position with the bottom wall 38 thereof resting upon the shelf 36. The lower portion of the tank spaced with respect to the shelf 36 has a downwardly directed extension 39, in which is disposed a bulb 40 of a temperature control instrument 41, which instrument is in circuit with electric heating elements 42 in any suitable manner and, as in other devices of this type and

kind for controlling the heating elements in maintaining a predetermined temperature of the melted wax 43 arranged in the lower portion of the tank 37. The level of the melted wax 43 is maintained in the tank at a point which will insure complete submersion of the basket 27 when moved into its lowered position, this level being under the control of the operator and being governed by insertion of additional wax or paraffin in the tank 37.

On the table or frame 10 is arranged a supporting bracket 44 for a cam shaft 45 and pivot 46 for an operating lever 47. The cam shaft is actuated through the medium of a standard one revolution clutch, not shown, so that in each operation of the machine, the shaft 45 will complete one revolution and then come to a stop, the stopping position being a position when a roller 48 on the lever 47 is upon the high point of the surface 49 of a cam 50, in which position the basket 27 will be in the raised position shown in dot and dash lines at 27' in Fig. 1 of the drawing and the lever 47 will be in the raised position indicated in dot and dash lines at 47'.

The cam 50 has another cam surface 51 operating upon the roller 48 to maintain the basket 27 in the spinning position shown in sectional lines in Fig. 1 of the drawing, that is to say, with the basket disposed in the top of the tank 37 and above the melted wax or paraffin therein. At this time, it will be well to point out that the lever 47 has a forked end 52 engaging a pin 53 on a flattened portion 54 of the reciprocating rod 14, as the rod 14 moves upwardly and downwardly, the basket is carried thereby, as well as the motor 17.

Arranged in the shaft 45 is another cam 55 having a raised surface 56 operatively engaging the roller 57 of a micro-switch 58 in circuit with the motor 17 and a source of electric supply through wires 59 and 60.

In other words, the micro-switch 58 is actuated to complete the circuit to the motor 17 when the basket 27 is in the full line position shown in Fig. 1 and the motor will continue to operate until the roller 57 drops from the surface 56, at which time the motor 17 is instantaneously stopped and the basket 27 is then moved into the raised position, indicated at 27'. When in this position, the machine stops facilitating the removal of the basket with the processed bobbins 29 therein and the insertion of another basket in which bobbins to be processed have been placed. Thereupon, the machine is again placed in operation by the operator and the basket 27 will then be moved from the position shown in 27' to the extreme lowered and submerged position shown at 27'' in Fig. 1 of the drawing, in which position the lever 47 assumes the position indicated in dot and dash lines at 47''. From the submerged position, the basket 27 is then moved into its raised position shown in full lines and the above cycle of operation described is then repeated. At the end of each cycle, the one basket is removed and a new basket substituted.

It will be understood that the speed at which the shaft 45 is rotated will in one respect control the processing of bobbins or other wound strand bodies, particularly when the strand bodies may have different characteristics requiring longer or shorter period of submersion and spinning or rotation. In some instances, it may be necessary to increase or decrease the time period of submersion, in which event the cam surface 49 would be modified. On the other hand, the period of spinning or rotation may be increased or decreased, in which event the cam surface 51 would be modified. In other words, different types of cams would have to be used in the machines. However, in standard products, where many machines are employed, different machines may have different characteristics to suit the differences in the products being processed as and when such different characteristics prevail. When all products processed in a plant have the same characteristics, then all machines would be operated on the same basis and under the same controls in order to maintain a standard result in the waxed bobbins.

By providing the quick detachment of the tank 37, this tank may be quickly removed for cleaning and repair without disturbing any of the other mechanism of the machine.

Having fully described our invention, what we claim as new and desire to secure by Letters Patent is:

1. A machine of the class described comprising a frame, means supporting a tank in the frame, a reciprocating rod supported in the frame at one side of said tank, a shaft carried by the rod and disposed axially over the tank, means supported on the rod for intermittently rotating said shaft, a workpiece carrier, means on the carrier and said shaft for detachably coupling and keying the carrier to the shaft, and automatically actuated means for operating said rod to move said carrier into three different positions with respect to said tank and for maintaining the carrier for a predetermined period of time in at least two of said positions.

2. A machine of the class described comprising a frame, means supporting a tank in the frame, a reciprocating rod supported in the frame at one side of said tank, a shaft carried by the rod and disposed axially over the tank, means supported on the rod for intermittently rotating said shaft, a workpiece carrier, means on the carrier and said shaft for detachably coupling and keying the carrier to the shaft, automatically actuated means for operating said rod to move said carrier into three different positions with respect to said tank and for maintaining the carrier for a predetermined period of time in at least two of said positions, and means in operative engagement with said last named means and the means for rotating said shaft for rotating the carrier in one of said two positions.

3. A machine of the class described comprising a frame, means supporting a tank in the frame, a reciprocating rod supported in the frame at the side of said tank, a shaft carried by the rod and disposed axially over the tank, means supported on the rod for intermittently rotating said shaft, a workpiece carrier, means on the carrier and said shaft for detachably coupling and keying the carrier to the shaft, automatically actuated means for operating said rod to move said carrier into three different positions with respect to said tank and for maintaining the carrier for a predetermined period of time in at least two of said positions, means in operative engagement with said last named means and the means for rotating said shaft for rotating the carrier in one of said two positions, said tank being adapted to contain a fluid, means for heating the fluid in the tank, and means automatically maintaining predetermined temperature of the fluid in the tank.

4. A machine of the class described comprising a frame, means supporting a tank in the frame,

a reciprocating rod supported in the frame at one side of said tank, a shaft carried by the rod and disposed axially over the tank, means supported on the rod for intermittently rotating said shaft, a workpiece carrier, means on the carrier and said shaft for detachably coupling and keying the carrier to said shaft, automatically actuated means for operating said rod to move said carrier into three different positions with respect to said tank and for maintaining the carrier for a predetermined period of time in at least two of said positions, said last named means comprising a lever pivoted in the frame and coupled with said rod, and a one revolution cam operatively engaging said lever.

5. A machine of the class described comprising a frame, means supporting a tank in the frame, a reciprocating rod supported in the frame at the side of said tank, a shaft carried by the rod and disposed axially over the tank, means supported on the rod for intermittently rotating said shaft, a workpiece carrier, means on the carrier and said shaft for detachably coupling and keying the carrier to said shaft, automatically actuated means for operating said rod to move said carrier into three different positions with respect to said tank and for maintaining the carrier for a predetermined period of time in at least two of said positions, said last named means comprising a lever pivoted in the frame and coupled with said rod a one revolution cam operatively engaging said lever, and said cam coming to a stop at a point supporting the carrier in a third stationary position above the tank.

6. In a machine employing an intermittently rotatable shaft, with means for moving the shaft into a number of different positions longitudinally with respect to the axis of the shaft, a carrier member, means detachably coupling and keying the carrier member with respect to said shaft, said last named means comprising a slotted hub on said member providing radial coupling of the member with the shaft, a key collar on the shaft engaged by said member for retaining the member against rotation on the shaft, and a spring-pressed collar on the shaft engaging said hub to support said member in firm engagement with the key collar of the shaft.

7. In a machine employing an intermittently rotatable shaft, with means for moving the shaft into a number of different positions longitudinally with respect to the axis of the shaft, a carrier member, means detachably coupling and keying the carrier member with respect to said shaft, said last named means comprising a slotted hub on said member providing for radial coupling of the member with the shaft, a key collar on the shaft engaged by said member for retaining the member against rotation on the shaft, a spring-pressed collar on the shaft engaging said hub to support said member in firm engagement with the key collar of the shaft, said member being in the form of an openwork basket, and means providing for insertion and removal of articles with respect to said basket.

8. In machines of the class described employing a rotating and reciprocating shaft, a workpiece carrier comprising an openwork basket, a hub portion arranged centrally of one wall of the basket, said hub portion being slotted and said wall of the basket having an opening to receive the shaft, said shaft having a key end for providing quick attachment and detachment of the carrier with said shaft, and the hub portion of the carrier having a socket adapted to receive the key end of said shaft.

DAVIS MARINSKY.
LOUIS H. MORIN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
367,211	Kimball	July 26, 1887
514,882	Elliott	Feb. 13, 1894
1,199,963	Butcher	Oct. 3, 1916
1,343,887	Slocum	June 15, 1920
2,102,819	Ronci	Dec. 21, 1937
2,133,390	Kotcher et al.	Oct. 18, 1938
2,372,755	Abell	Apr. 3, 1945
2,386,079	Weiskopf	Oct. 2, 1945
2,390,498	Capita	Dec. 11, 1945