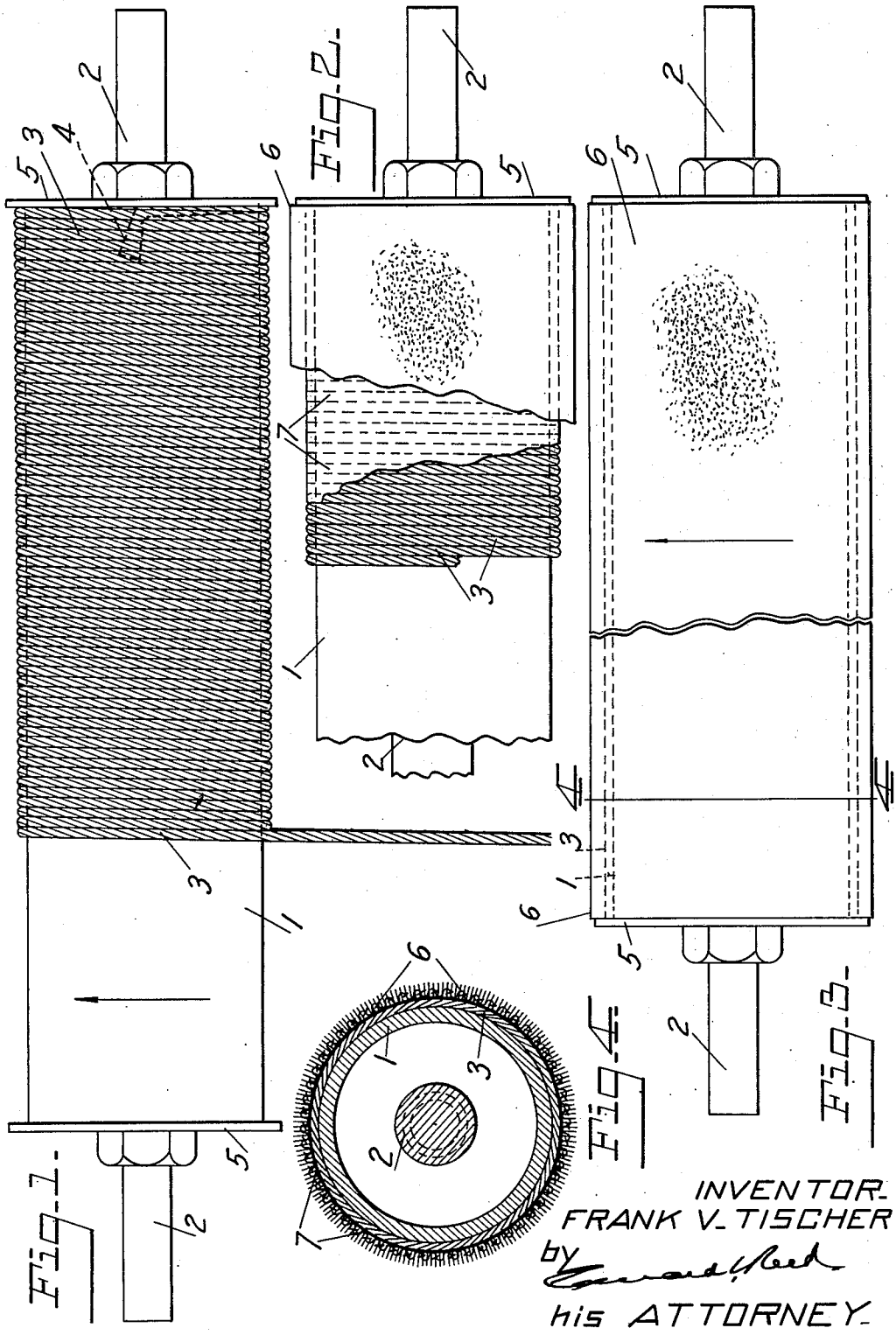
March 28, 1939. F. V. TISCHER 2,152,612

COVERED ROLLER

Filed Nov. 23, 1936



INVENTOR.
FRANK V. TISCHER
by Edward Reed
his ATTORNEY.

Patented Mar. 28, 1939 2,152,612

UNITED STATES PATENT OFFICE

2,152,612

COVERED ROLLER

Frank V. Tischer, Dayton, Ohio; Anna M. Tischer, executrix of Frank V. Tischer, deceased, assignor to Anna M. Tischer

Application November 23, 1936, Serial No. 112,307

5 Claims. (Cl. 91—67.8)

This invention relates to a covered roller and to the method of producing the same.

The present roller is designed primarily for use in applying liquid glue to a veneer or the like but is not limited to such use.

A glue applying machine usually comprises one or more rollers each operating in liquid glue and provided with a covering of fabric, such as carpet, for distributing the glue on the veneer or other part to be glued. The fabric covering is secured about the metal roller in such a manner that it will initially fit snugly about the same and will not slip thereon but the moisture and heat of the liquid glue in which the roller operates soften and expand the fabric and so loosen the same that the action of the rotating roller will stretch the fabric to such an extent that it will slip on the roller and eventually break loose therefrom. Further, thin veneers are frequently twisted or warped and when such a veneer is passed between rollers having relatively hard unyielding surfaces, such as the ordinary fabric coverings, the veneer is liable to be broken and rendered unfit for use.

One object of the invention is to provide a covered roller having a flexible cover so secured thereto that it will not slip thereon when the roller is operated in the presence of moisture.

A further object of the invention is to provide means for so securing a textile cover to a metal roller that the cover will be maintained taut and prevented from slipping when the roller is operated in the presence of moisture.

A further object of the invention is to provide a glue applying roller with a flexible cover which will be so cushioned that it will not break warped or twisted veneers to which the glue is being applied.

Other objects of the invention may appear as the device is described in detail.

In the accompanying drawing, Fig. 1 is a side elevation of a roller showing an elongate textile element partially wound thereon; Fig. 2 is a side elevation of a roller, partly broken away, showing the cover wrapped about the wound element; Fig. 3 is a side elevation of a completed covered roller, partly broken away; and Fig. 4 is a section taken on the line 4—4 of Fig. 3.

In the drawing I have illustrated the invention as applied to a conventional roller 1 which is rigidly secured to a rotatable shaft 2 but it will be understood that the invention may be applied to rollers of various kinds.

In order that a flexible cover may be applied to such a roller in a manner which will prevent it from slipping thereon when operated in the presence of moisture the roller is provided with an inner layer of material which is interposed between the roller and the covering and is adapted to swell when subjected to moisture, this layer being preferably formed by winding an elongate textile element 3 about the roller. In applying the textile element to the roller one end of the element is fastened to the roller, as by turning the same inwardly adjacent to one end of the roller, as shown at 4 in Fig. 1, and the element then wound about the roller and across the inturned end of the element, thus securing this end of the element firmly to the roller. The elongate element is then wound about the roller for the full length thereof, or for the full ength of that portion of the roller to which the cover is to be applied, and when the winding is completed the second end of the elongate element is attached to the roller, as by tucking the end thereof under the adjacent windings and drawing the latter taut. The elongate element is wound about the roller in such a direction that the rotation of the roller in its normal operation will tend to tighten the element about the same and thus hold the elongate element against rotation with relation to the roller. The wound element is held against movement lengthwise of the roller by flanges 5 secured to the roller at the ends thereof. The layer of textile material provided by the wound element is then coated with glue 7 which is permitted to dry. After the glue is thoroughly dry a flexible covering 6, preferably of textile material, is wrapped about the glue coated surface of the wound element and is secured snugly about the same, preferably by stitching the adjacent edges of the cover so as to form a tubular cover fitting tightly about the inner layer of material. This tubular cover is also held against movement lengthwise of the roller by contact with the flanges 5. The cover may be of any suitable material but I prefer to employ a woven fabric and a thick carpet is well adapted for this purpose and is applied to the roller with the pile outermost. After the cover has been secured in place moisture is applied to the cover and to the inner layer, preferably by immersing the roller in lukewarm water, so that the glue is softened and adheres to the cover, thus firmly uniting the same with the inner layer, when the glue has dried.

When such a roller is operated in the presence of moisture, as when it is rotated in a bath of liquid glue, the moisture will penetrate the cover, the glue and the inner layer of textile and all three elements will swell. The inner textile layer, which is preferably from one-eighth inch to one-quarter

inch in thickness, will swell sufficiently to compensate for the swelling of the cover and will thus maintain the cover taut and in firm engagement with the inner layer so that the cover can have no movement thereon. Inasmuch as the wound textile element constituting the inner layer is held firmly against movement with relation to the roller and the cover fits tightly about the wound element it will be obvious that even when the glue has softened the cover will not slip on the roller and will not be stretched in the operation of the roller to such an extent as to interfere with its proper operation.

The textile inner layer is at all times more or less yieldable and is particularly yieldable when is has been saturated with moisture and thus constitutes a cushion on which the cover is supported and thereby permits the flexible cover to yield and accommodate itself to inequalities in the surface on which it operates. Thus a warped or twisted veneer may be passed between cooperating rollers without being broken or so injured as to render it unfit for use.

While I have illustrated one embodiment of my invention and have described the method of producing the same I wish it to be understood that I do not desire to be limited to the details thereof as various modifications may occur to a person skilled in the art.

Having now fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. The method of applying a textile cover to a metal roller which comprises wrapping a textile element about said roller, coating the surface of said element with glue, drying the glue, wrapping the textile cover about the glue coated element and subjecting said element and said cover to moisture to cause the glue to join them one to the other.

2. The method of applying a textile cover to a metal roller which comprises wrapping an elongate textile element about said roller, fastening the ends of said element, coating the surface of said element with glue, drying the glue, wrapping a textile cover about the glue coated surface of said element and stitching the edges of said cover to retain the same thereon and then subjecting said element and said cover to moisture and heat to soften the glue and thus secure said cover to said element.

3. The method of applying a textile cover to a metal roller which comprises winding an elongate textile element about said roller in such a direction that it will be maintained tight thereon by the rotation of said roller, fastening the ends of said element, coating said wound element with an adhesive, wrapping a textile covering about said coated element, and connecting the adjacent edges of said cover to retain the same on said element.

4. A covered roller adapted to operate in a liquid bath and comprising a body, an elongate textile element wound spirally about said body in such a direction that the rotation of said roller will tend to draw said textile element tightly about said body, and a tubular textile cover fitting snugly about said textile element, said textile element connecting said cover with said body and maintaining the same taut when the roller is operated in the presence of moisture.

5. A covered roller adapted to operate in a liquid bath and comprising a body, an elongate flexible element wrapped about said body, and a tubular cover of flexible material mounted snugly about said flexible element and connected thereby with said body, said flexible element and said cover being formed of material which will expand in the presence of moisture and said flexible element being wound spirally about said body in such a direction that the rotation of said roller will tend to draw said element tightly about said body and to prevent it from slipping thereon when expanded, thus maintaining said cover taut and holding the same against movement with relation to said body when said roller is operated in the presence of moisture.

FRANK V. TISCHER.