Nov. 19, 1940. A. D. DAVIS 2,221,910

COVERING CLEARER ROLLS

Filed May 5, 1938 2 Sheets-Sheet 1

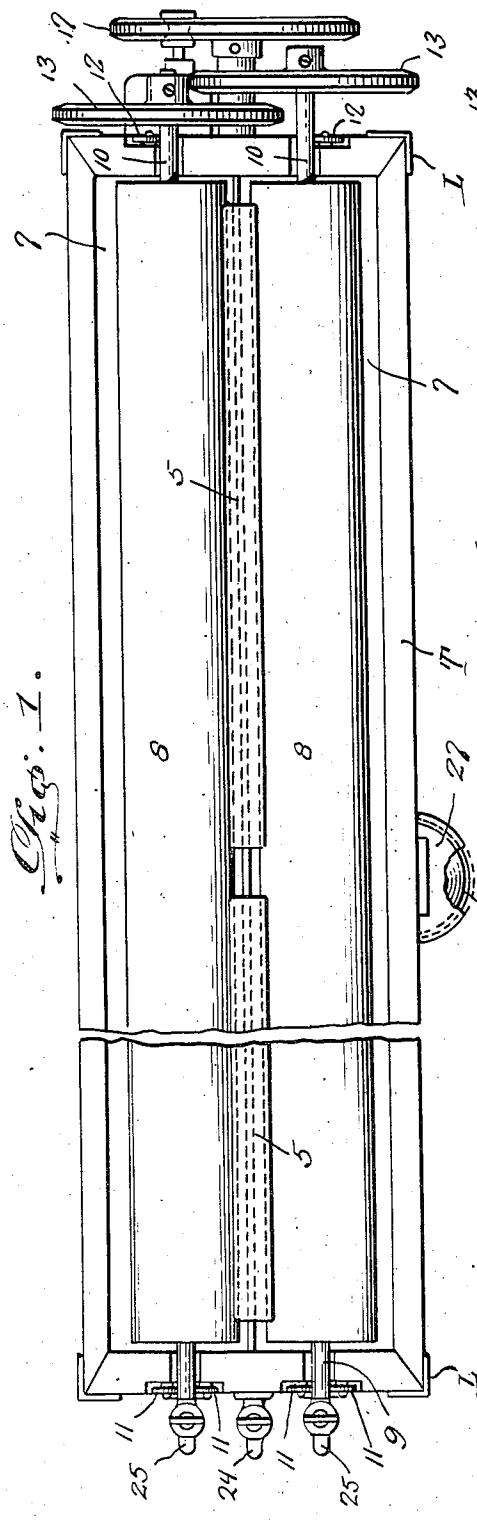


Fig. 1.

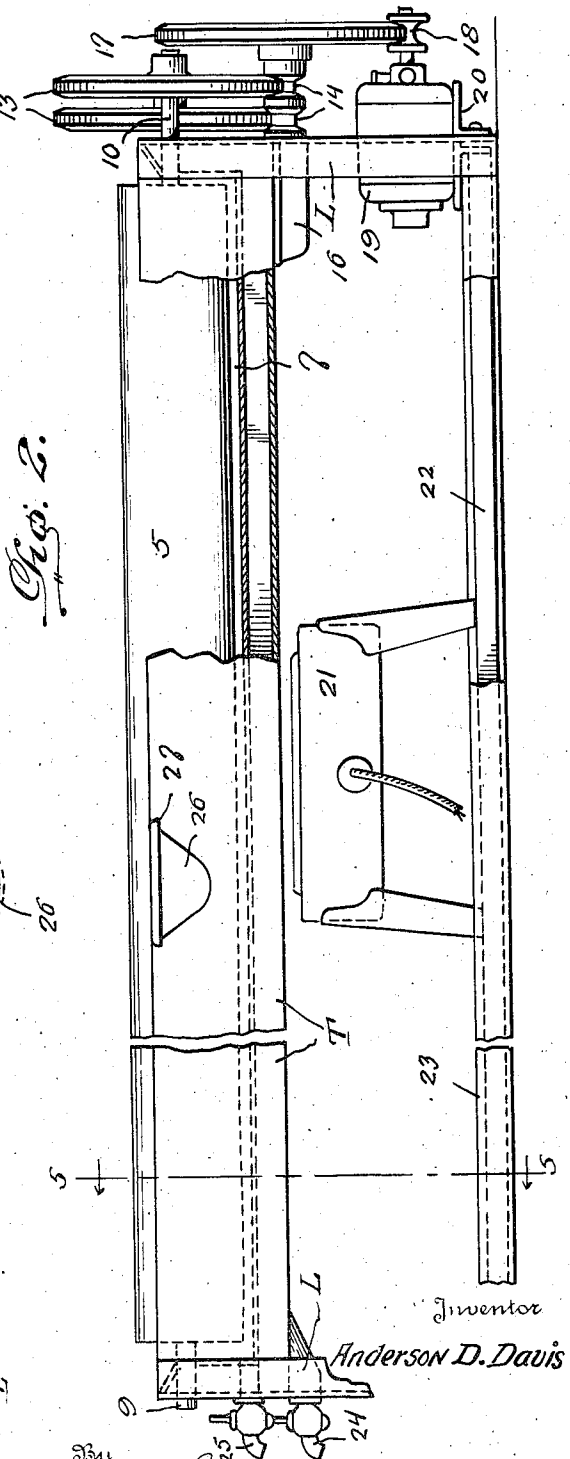


Fig. 2.

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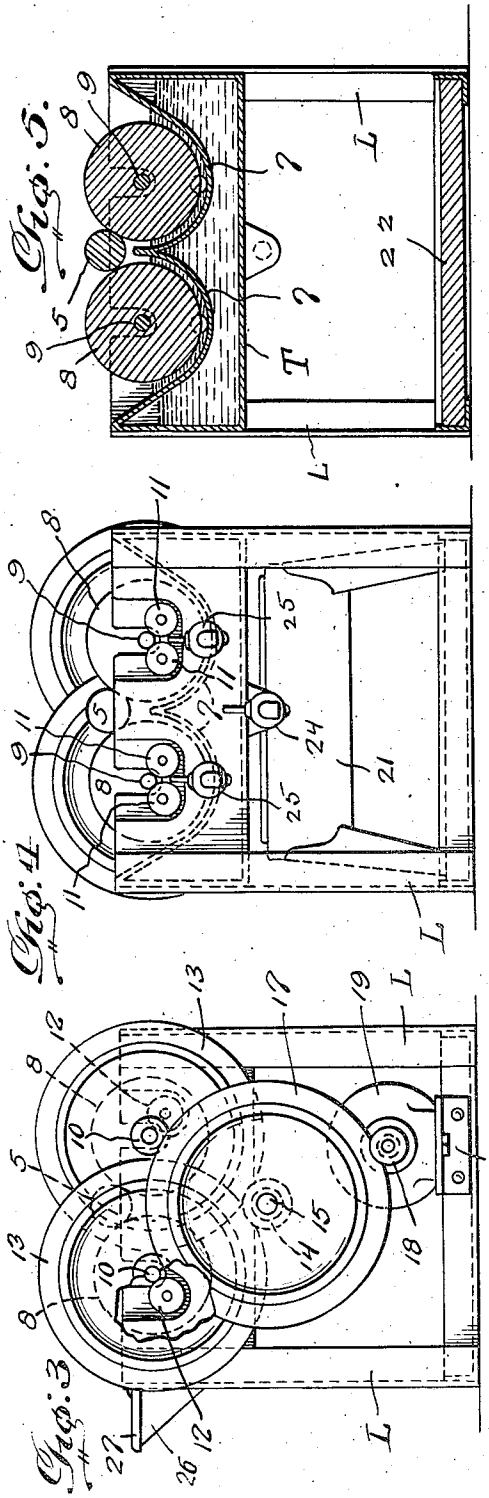


Fig. 5.

Fig. 4.

Fig. 3.

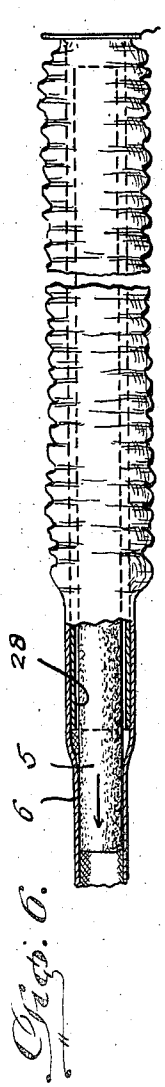


Fig. 6.

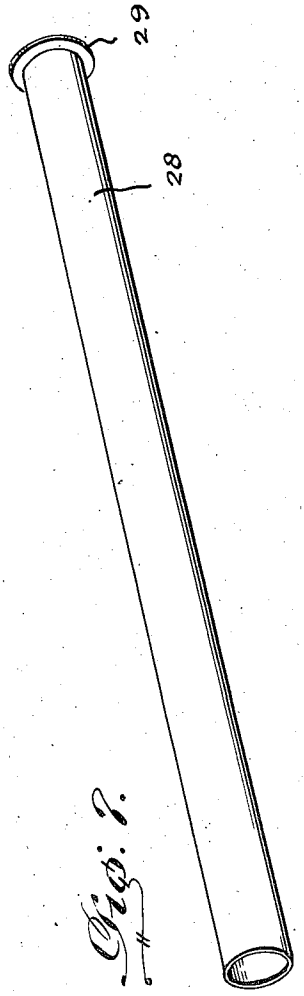


Fig. 7.

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UNITED STATES PATENT OFFICE

2,221,910

COVERING CLEARER ROLL

Anderson D. Davis, Gastonia, N. C.

Application May 5, 1938, Serial No. 206,302

1 Claim. (Cl. 91—51)

This invention relates to the art of covering clearer rolls such as are employed in spinning and roving machines for preventing broken-down ends and waste from winding onto and interfering with the proper working of the drawing rolls.

More particularly, the present invention has reference to an improved method of and apparatus for use in covering clearer rolls of the type disclosed in my copending U. S. application for patent upon Clearer roll, Serial Number 193,792, filed March 3, 1938, wherein the roll proper has a covering applied thereto consisting of seamless elastic tubing of textile material made of a normal size to closely fit over and hug the roll proper, and wherein the covering is secured on the roll proper by means of glue with which the roll proper is coated preparatory to application of the covering thereon.

The primary object of the present invention is to provide an apparatus and method by means of which the covering operation may be expeditiously and conveniently carried out.

A further object of the present invention is to provide for convenient application of the covering to a plurality of successive clearer rolls proper with a minimum of direct handling of the rolls after being coated with glue, and without the necessity of turning the covering wrong side out as disclosed in my aforesaid co-pending application.

Other objects and features of the present invention will become apparent from the following description when considered in connection with the accompanying drawings, in which:

Figure 1 is a top plan view, partly broken away, of an improved machine for coating the clearer rolls proper with glue and forming part of the present invention.

Figure 2 is a side view of the machine shown in Figure 1, partly broken away and in longitudinal section.

Figure 3 is an end elevation looking toward the left of Figure 1.

Figure 4 is an end elevation looking toward the right of Figure 1.

Figure 5 is a transverse section on line 5—5 of Figure 2.

Figure 6 is a view partly in elevation and partly broken away and in section, showing a quantity of the tubular covering stored upon a carrier tube forming part of the present invention, and illustrating the method of applying the tubular covering to the roll proper after the latter has been coated with glue; and

Figure 7 is an enlarged perspective view of the carrier tube for the tubular covering and which is illustrated in Figure 6.

The present invention relates to the art of applying to ordinary wooden or other clearer rolls 5 a covering consisting of a length of seamless elastic tubing 6 of textile material made by knitting, weaving or braiding so as to have a normal size to closely fit over and hug the roll proper 5.

In covering rolls of this kind, it is necessary to initially coat them with glue so that the covering subsequently applied will be adhesively secured thereon. For the purpose of coating the rolls with glue, I provide a machine of the construction shown in Figures 1 to 5 inclusive. This machine consists of a tank T provided with corner supporting legs L and adapted to be substantially filled with hot water. Arranged longitudinally within the upper portion of the tank T are twin troughs 7 adapted to receive the glue so that the latter will be maintained in the required soft or fluid state by the heat of the water in the tank T. Arranged longitudinally of and within each trough 7 is a glue applying roller 8, and the rollers 8 are arranged in adjacent relation so that the space therebetween is less than the diameter of the clearer rolls 5 to be coated. The machine may be of such length as to permit simultaneous coating of a plurality of the rolls 5 when laid in end to end relation upon the rollers 8 at their adjacent upper portions as shown clearly in Figures 1 and 5. The glue applying rollers 8 have end shafts 9 and 10 journaled in suitable bearings at the ends of the tank T which preferably include anti-friction rollers 11 and 12, respectively.

Means is provided for simultaneously rotating the glue-applying rollers 8 in the same direction, such means preferably consisting of large friction wheels 13 carried by the shafts 10 of the rollers 8 and bearing upon small friction wheels 14 carried by a shaft 15 journaled in a bearing 16 on the bottom of the tank 5 at one end of the latter, the shaft 15 also carrying a large friction wheel 17 engaging a small friction wheel 18 secured on the armature shaft of a small electric motor 19 mounted beneath the adjacent end of tank T as at 20. The weight of the rollers 8 and the parts carried thereby set up sufficient friction between the large friction wheels 13 and the small friction wheels 14 to insure an efficient drive for said rollers 8, the latter being partially supported by the small friction wheels 14 and the anti-friction wheels 12 at this end of the machine.

In order to keep the water in the tank T at

the proper temperature to insure maintenance of the glue in the troughs 7 in the proper fluid or melted state, a suitable electric or other heater 21 is arranged beneath said tank T and supported upon a platform 22 carried by a frame 23 connecting the lower ends of the legs L. A suitable faucet 24 is provided at one end of the tank T to facilitate draining of the water therefrom, and similar faucets 25 are provided at the same end of the machine to facilitate draining of the glue from the troughs 7 if found necessary. The tank T may be provided at one side with a suitable spout 26 to facilitate replenishing the supply of water in the tank T from time to time when found necessary, said spout having a hinged gravity-closed lid 27 which will permit free escape of steam from the tank T in case the water therein should be overheated.

In operation, the rolls 5 to be coated are laid upon the coating rollers 8 at the point where they adjoin, as shown in Figures 1 and 5. The motor 19 is then placed in operation so as to rotate the rollers 8 in the melted glue contained in the lower portions of the troughs 7. In this way, the rollers 8 become coated with the glue and transfer the same onto the peripheries of the rolls 5 while the latter are being rotated through frictional contact with the rollers 8. Thus, a uniform coating of glue is applied to the rolls 5.

The present invention also includes a metal tube 28 provided at one end with an external annular flange 29, and the tube 28 is of an internal size slightly greater than the external diameter of the rolls 5 to be covered. The seamless elastic tubing 6 is adapted to be stretched and fed onto the tube 28 with one end of the elastic tubing abutting the flange 29. The elastic tubing is bunched on the tubing 28 so that sufficient elastic tubing is contained thereon to cover a plurality of the rolls 5, as illustrated somewhat diagrammatically in Figure 6. Naturally, when the tubing 6 is placed on the tube 28, it is stretched so that application of the covering to the rolls 5 may be conveniently accomplished. The coated rolls 5 are inserted in the tube 28 through the flanged end thereof, and as the end of each roll 5 protrudes at the unflanged end of the carrier tube 28, such end and the adjacent end of the covering or tubing 6 is grasped by contact with such tubing 6 and pulled outwardly through the tube 28. As the roll 5 is withdrawn, the tubing 6 is pulled off of the carrier tube 28 and allowed to contract into snug engagement with the roll 5. Sufficient tubing 6 is allowed to project beyond the ends of the roll 5 to facilitate finishing at the ends as disclosed in my above-mentioned application, whereupon the tubing 6 is cut off ready for the next operation of covering the succeeding roll 5. Naturally, when the glue hardens, the covering is firmly secured on the periphery of the roll 5 in an unwrinkled condition, and the covering operation has been accomplished with a minimum handling of the roll proper 5 after being coated with glue.

From the foregoing description, it is believed that the nature and advantages of the present invention will be readily understood and appreciated by those skilled in the art.

What I claim as new is:

A portable apparatus for coating clearer rolls with glue preparatory to application of a covering thereon, comprising a rectangular water tank having a filler spout and provided with corner supporting legs, twin glue-containing troughs arranged within the upper portion of said tank, glue-applying rolls arranged in said troughs and disposed in adjacent relation with the space therebetween less than the diameter of the clearer rolls to be coated, a rectangular frame connecting said legs beneath said tank and carrying a platform, heating means for said tank arranged on said platform, driving means at one end of said tank for simultaneously rotating said glue-applying rolls in the same direction, said driving means including a motor arranged on one end of said platform and geared to the adjacent ends of said glue-applying rolls, and drain faucets for said tank and said troughs at the ends thereof remote from said driving means.

ANDERSON D. DAVIS.