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METHOD AND APPARATUS FOR HANDLING TACKY STRIP MATERIAL

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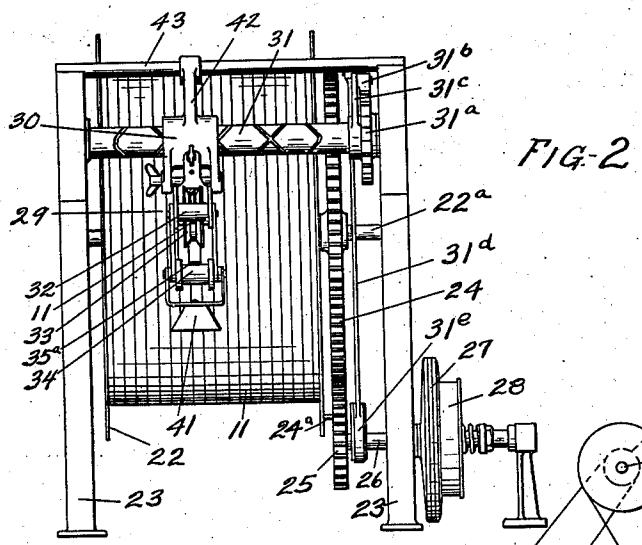


FIG-2

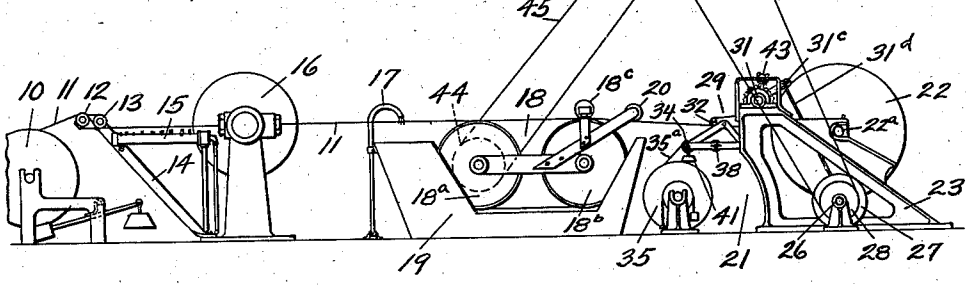


FIG-1

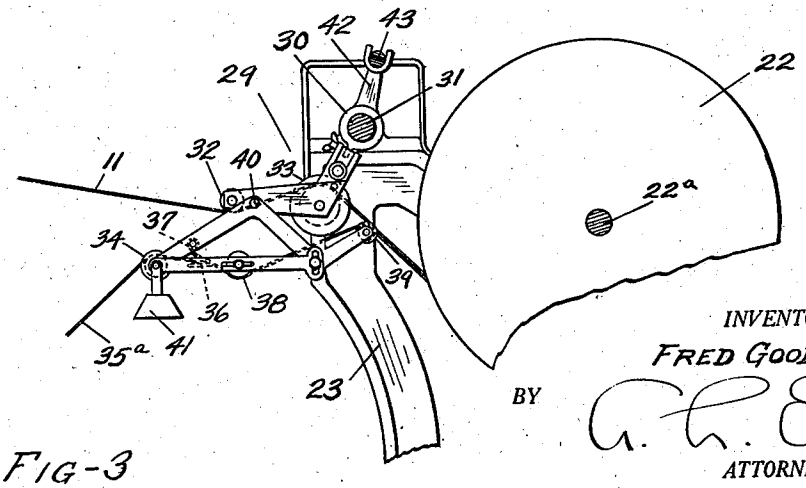


FIG-3

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METHOD AND APPARATUS FOR HANDLING TACKY STRIP MATERIAL.

Application filed April 3, 1926. Serial No. 99,492.

This invention relates to apparatus for handling tacky strip material such as rubberized tape or the like.

The general object of the invention is to provide improved apparatus for handling tacky strip material such as rubberized wire or fabric tape.

In one particular the invention contemplates novel method and apparatus for reeling a continuous strip of tacky material.

The foregoing and other objects are obtained by the construction and method disclosed in the accompanying drawings and described below. It is to be understood that the invention is not limited to the particular embodiment thereof as shown and described.

Of the accompanying drawings:

Figure 1 is a more or less diagrammatic side elevation of a wire tape insulating apparatus embodying and adapted to carry out the invention;

Figure 2 is a front end elevation of the reeling device employed therein; and

Figure 3 is a detail side elevation thereof.

Referring to the drawings, 10 represents a reel of wire tape such as is used in constructing tire beads. The tape to be insulated is drawn from reel 10, as indicated at 11, and passes over a roller 12 and under a roller 13 on a bracket 14 and then over a heater, such as a gas heater 15, into a die expressing or "tubing" machine 16 in which it is insulated with plastic rubber, as will be understood.

From the machine 16 the insulated tape 11 passes under a cooling water spray device 17 and passes onto a drier indicated at 18, the spray device 17 and drier 18 being over a drainage pan 19. The drier 18 comprises spaced, grooved rollers 18^a and 18^b about which the strip 11 is wound in several courses, roller 18^b having riding thereon a retaining roller 18^c under which the strip 11 passes. From the drier 18, the stock 11 passes under a roller 20 into the reeling device, indicated generally at 21.

The device 21 comprises a reeling drum 22 removably journaled on a shaft 22^a, which is removably mounted in any suitable way in brackets 23, 23 and adapted to be driven by a gear 24 having a pin 24^a thereon for engaging a socket in drum 22 and meshed with a pinion 25 on a drive shaft 26 journaled in one bracket 23. Shaft 26 is adapted to be driven by means of a pulley 28 through a suitable friction clutch 27 adapted to slip when material 11 exerts tension on reel 22 so that the reel will rotate more slowly as the stock builds up thereon.

Arranged to guide the strip material on the drum 22 is a level wind attachment 29 comprising a bracket 30 riding on the usual level wind cam shaft 31, shaft 31 being intermittently rotated by a ratchet 31^a operated by a pawl 31^b on an arm 31^c pivoted on shaft 31 and operated by a connecting rod 31^d and eccentric 31^e, the latter being on shaft 26. Bracket 30 has a roller 32 thereon under which stock 11 passes and a grooved roller 33 thereon over which it passes. Bracket 30 also pivotally carries a liner strip guiding device including a grooved roller 34 over which a narrow liner strip 35^a drawn from a reel 35 is passed, a plate 36 over which the liner 35 is passed, a spring clip 37 for pressing against the liner 35 on plate 36 to tension it, a roller 38 under which the liner strip passes, and finally a roller 39 for guiding the liner 35 into contact with the under side of strip 11 to be reeled on the drum therewith.

The liner guiding device is pivoted on bracket 30 at 40 and has a weight 41 on its forward end for urging roller 39 against the under side of strip 11.

Bracket 30 is held in position throughout its movement back and forth transversely of drum 22 by means of an arm 42 slidably engaging a rod 43 mounted to extend across the top of brackets 23.

Drawing of the strip through the various treating devices set forth above is accomplished by driving one roller, such as 18^a of drier 18, by means of a pulley 44 and belt 45, the latter being trained over a pulley 46 on an overhead drive shaft 47. Driving of the reeling device may be accomplished by a belt 48 trained over pulley 28 and over a pulley 49 on shaft 47.

In operation the tape is continuously drawn through the various treating devices by driven drum 18^a and through the level wind mechanism by drum 22. The winding drum 22 also draws the narrow liner 35 through the level wind device, the liner 35 being wound onto the drum beneath the convolutions of tape 11 to prevent adhering of the convolutions to the drum or the layer of convolutions to each other.

Since the drum is large and the tape narrow, the level wind shaft 31 is operated intermittently and thus closely spaces the convolutions of material on the drum.

Modifications of the invention may be resorted to without departing from the spirit thereof or the scope of the appended claims.

What is claimed is:

1. The combination with apparatus for making or treating tacky strip material and a reel for receiving the material therefrom, of a level winding mechanism adapted to guide said strip material and a strip of liner into superposed relation onto said reel, said mechanism comprising a unit movable to and fro transversely of the reel and including a series of strip guiding rollers, a series of liner guiding rollers, and means urging a liner guiding roller against the strip as it passes to the reel.

2. The combination with apparatus for making or treating tacky strip material and a reel for receiving the material therefrom, of a level winding mechanism adapted to guide said strip material and a strip of liner into superposed relation onto said reel, said mechanism comprising a unit movable to and fro transversely of the reel and including means for guiding the strip material, means for guiding the liner, and means for urging the liner against the strip as it passes to the reel.

3. The combination with apparatus for making or treating tacky strip material and a reel for receiving the material therefrom, of a level winding mechanism adapted to guide said strip material and a strip of liner into superposed relation onto said reel, said mechanism comprising a unit movable to and fro transversely of the reel.

4. In a level wind mechanism for guiding two strips of material in superposed relation onto a reel, a guiding device for one strip comprising a series of rollers, a guiding device for the other strip also including a series of rollers, said second guiding device being pivoted on the first guiding device, and means for urging the end of the second guiding device against the strip issuing from the first guiding device.

5. In a level wind mechanism for guiding two strips of material in superposed relation onto a reel, a guiding device for one strip, a guiding device for the other strip, said second guiding device being pivoted on the first guiding device, and means for urging the end of the second guiding device against the strip issuing from the first guiding device.

6. In a level wind mechanism for guiding two strips in superposed relation onto a reel, a guide for one strip, a guide for the second strip, and means for pressing the strips together.

7. That method of winding narrow tacky strip material onto a long drum comprising superposing said material with a strip of liner and winding the superposed strips onto the drum in convolutions distributed longitudinally along the drum.

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