

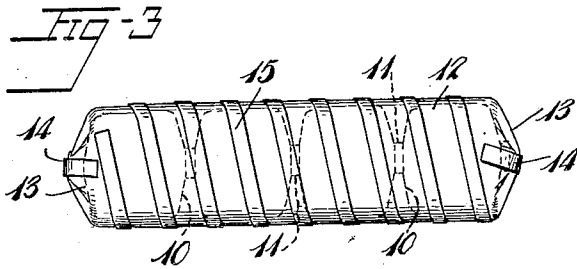
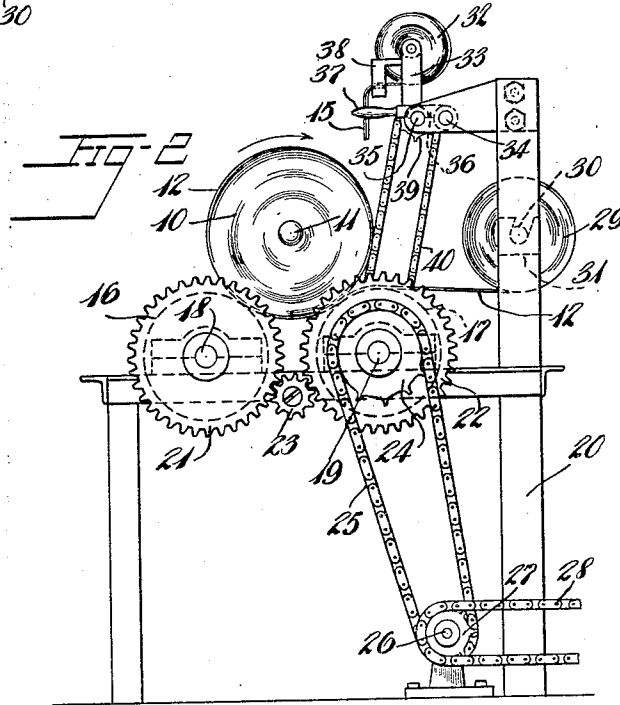
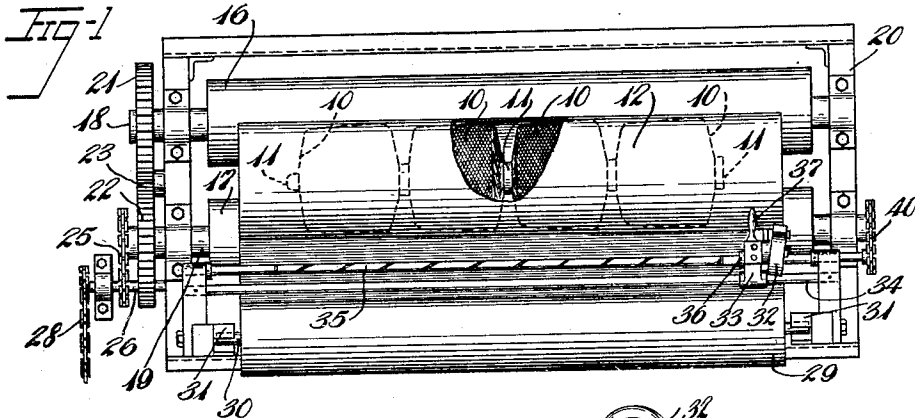
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PACKAGE AND METHOD OF MAKING THE SAME

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UNITED STATES PATENT OFFICE

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PACKAGE AND METHOD OF MAKING THE SAME

Application filed November 5, 1929. Serial No. 405,050.

This invention relates to packages and to methods of making the same, and more especially it relates to packages for cones of strand material such as cord, rope, or the like.

Heretofore it has been common practice to enclose cones of creel cord, such as is used in the manufacture of pneumatic tire casings, in burlap bags, with several cones in each bag. The bags require to be manually sewed around the cones, and do not prevent relative movement of the several cones, which causes chafing and damage to the outer layers of cord. Moreover, the cones when thus packed absorb moisture during shipment and require treatment before they can be used.

The chief objects of this invention are to provide a package susceptible of quick and easy application to the articles; which will protect the articles against moisture; which will not be cumbersome for manual handling; which will prevent relative movement of the articles with relation to each other and to the package; which will have sufficient rigidity to resist bending or buckling; and to provide a simple and economical method for producing a package having such advantages.

Of the accompanying drawing:

Fig. 1 is a plan view of apparatus adapted for the practice of our improved method, and the work therein, a part of the latter being broken away.

Fig. 2 is a side elevation of the apparatus shown in Fig. 1 as viewed from the left thereof.

Fig. 3 is a side elevation of our improved package.

Referring to the drawing, we show our improved package applied to four cones of cord, which provides convenient size for shipment and manual handling. As will be seen in the drawing, each cone, designated 10, comprises a slightly tapered structure wound upon a hollow tapered cop 11, and a plurality of cones are assembled in axial alignment with the small end of one cop inserted in the large end of the adjacent cop, the cops thus serving as dowel means for holding the cones in axial alignment. The

arrangement provides economy of space and longitudinal rigidity in the assembled structure.

The package comprises a plurality of convolutions of substantially moisture-proof paper 12 which is wrapped about the assembled cones of cord and bridges the peripheral spaces incident to the shape of the cones, the marginal portions of the wrapping being folded over the respective ends of the assembled cones as shown at 13, 13, Fig. 3, and held in place by one or more strips of adhesive tape 14, 14. The paper wrapper 12 is wrapped tightly about the cones and bound thereon by a plurality of convolutions of adhesive tape 15 disposed helically upon the surface of the package from end to end thereof.

Apparatus suitable for carrying out our improved method of making packages comprises a pair of spaced apart rolls 16, 17, having respective shafts 18, 19, suitably journaled upon a framework 20, said rolls being adapted between them to support an assembly of cord cones and to rotate the same. The shafts 18, 19, are provided at one end with respective gears 21, 22, meshed with an intermediate idler gear 23, and the shaft 19 also is provided with a sprocket 24 connected by a sprocket chain 25 with a sprocket (not shown) on a counter shaft 26, and the latter is driven by a sprocket 27 and chain 28 from a suitable source of power (not shown).

The wrapping paper 12 is provided in a supply roll 29 which is mounted on a rotatable shaft 30 journaled at its ends in respective brackets 31, 31, mounted upon the framework 20.

The adhesive tape 15 is provided in a supply roll 32 which is rotatably-mounted upon a bracket 33, with its axis at a suitable angle with relation to the rolls 16, 17, to give off the tape as a helical winding upon the work, and said bracket is slidably mounted upon a rod 34 which is secured on the framework 20 and disposed parallel to the rolls 16, 17, at an elevated position with relation thereto. A shaft 35 formed with a screw thread of relatively steep pitch is journaled in the framework 20 adjacent and parallel to the rod 34, and the

bracket 33 is provided with a half-nut 36 adapted to engage the thread on the shaft 35 whereby the bracket 33 is fed longitudinally of the machine when said shaft is rotated. Said bracket is provided with a handle 37 by which it is raised to disengage the half nut from the screw to permit the bracket to be moved back to point of starting after each tape-wrapping operation. A moistening device 38 through which the tape 15 passes is mounted upon the bracket 33 and serves to moisten the adhesive with which one side of the tape is coated. One end of the shaft 35 is provided with a sprocket 39 connected by a sprocket chain 40 with a sprocket (not shown) on the shaft 19, whereby the shaft 39 is driven when the other moving parts of the machine are in motion.

In the operation of the apparatus, the free end of the sheet of wrapping paper 12 is drawn across the rolls 16, 17, and a plurality of cord cones 10, assembled as shown, are positioned midway upon the sheet with relation to the lateral margins thereof, the cones and sheet resting against the rolls 16, 17, in the space between the same. The apparatus is then set in motion to rotate the rolls 16, 17, and thereby peripherally drive the cord-cone assembly with the result that the wrapper 12 is withdrawn from its supply roll 29 and wrapped about the cone assembly as the latter rotates on its own axis, the leading margin of the sheet being secured to the cones by an adhesive or held by hand so that it is overlain and bound down by the second convolution of the paper. When the desired number of convolutions of wrapper are on the cones, the machine is stopped and the wrapper on the cones severed from the supply roll 29. The lateral marginal portions of the wrapper are then manually folded over the respective ends of the cone assembly and secured in place by one or more short strips of adhesive tape 14, which for convenience may be torn from the end of the tape 15.

The carriage 33 is then moved to the starting position at the proper end of the shaft 35, the free end of the tape 15 is adhered to the wrapper 12 on the cone assembly, at the end thereof, and the apparatus again is set in motion. Rotation of the cone assembly draws the tape 15 from the supply roll 32, through the moistening device 38, and onto the cone assembly, the lateral feed of the carriage 33 being such as to position the tape thereon in helical convolutions. When the carriage 33 reaches the end of its course of travel the machine is stopped, the tape 15 severed, and the package removed, after which the operation may be repeated as described.

By applying the wrapper tightly to the cones a rigid package is provided, which will not buckle or permit the cones to move therein, and whereby the other objects set forth

in the foregoing statement of objects are attained.

Modifications may be resorted to within the scope of the appended claims, as we do not limit our claims wholly to the specific construction or exact procedure described.

We claim:

1. In combination with a plurality of frusto-conical articles assembled in end-to-end relation, a wrapper therefor comprising a longitudinally extending stiffening member bridging the peripheral spans incidental to the shape of the articles, and a helical winding thereon.
2. A wrapped package comprising a plurality of frusto-conical articles assembled in end-to-end relation, dowel means interposed between the articles and a wound wrapper thereon closed at its ends.
3. In combination with a plurality of frusto-conical articles assembled in end-to-end relation, a package therefor comprising a wound tubular wrapper bridging the peripheral spans incidental to the shape of the article and having its end portions folded inward to provide closures, a binder strip adhesively applied to said end portions to secure the folds thereof, and a binder strip helically wound upon and adhesively secured to the wrapper.
4. In combination with a plurality of frusto-conical articles assembled in end-to-end relation, dowel means for holding them in axial alignment, means for bridging the peripheral spans incidental to the shape of the articles, and a winding upon said bridging means.
5. The method of packaging a plurality of frusto-conical articles which comprises assembling them in end-to-end relation, applying means to bridge the peripheral spaces incidental to the shape of the assembled articles, winding sheet material upon the articles and bridging means, and securing the said sheet material against unwinding.
6. The method of packaging a plurality of frusto-conical articles which comprises assembling the articles in end-to-end relation and so interfitting them as to produce a dowel effect therebetween, applying a wrapper to the articles thus assembled, and securing the wrapper against unwrapping.
7. The method of packaging a plurality of frusto-conical articles which comprises assembling the articles in end-to-end relation and so interfitting the articles as to produce a dowel effect therebetween, applying bridging means to span the peripheral gaps incidental to the shape of the assembled articles, and then winding a binder upon said bridging means.

In witness whereof we have hereunto set our hands this 29th day of October, 1929.

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