Jan. 7, 1936. L. E. LA BOMBARD 2,027,344

METHOD OF FORMING SLIP COVERS FOR CONTAINERS

Filed Sept. 5, 1934

Fig-2-

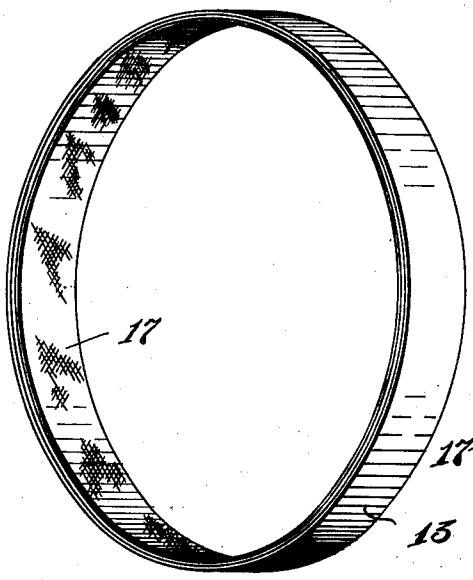


Fig-1-

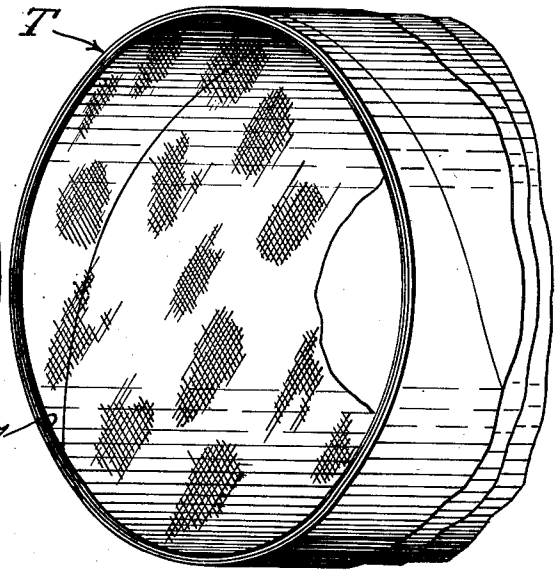


Fig-3-

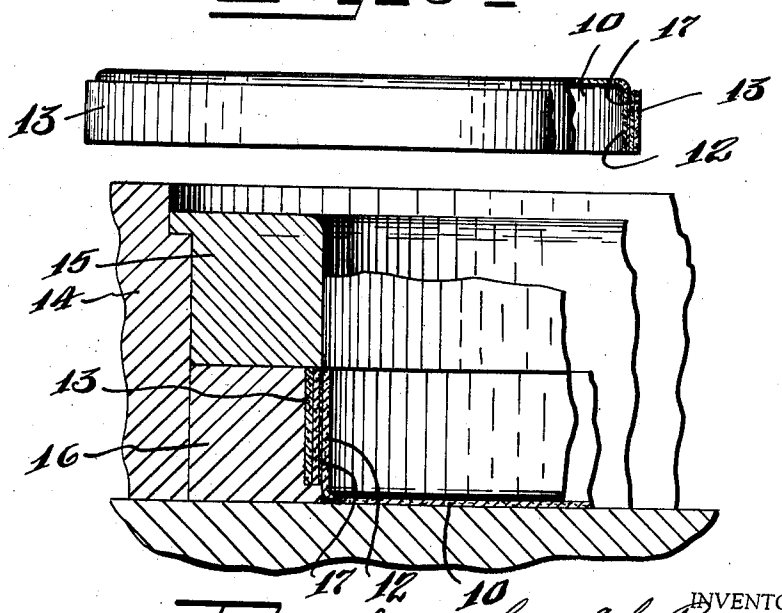


Fig-4-

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METHOD OF FORMING SLIP COVERS FOR CONTAINERS

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4 Claims. (Cl. 93—55)

This invention relates generally to slip covers for containers formed of fibrous material, such as paper and the like, and more particularly to that form of slip cover comprising a cup shaped body member having an annular flange which is reinforced by a stiff, continuous, unsplit band which is suitably secured to the flange of the body of the cover.

Slip covers of the form comprehended by this invention are of the type shown in Patent No. 1,760,029, issued May 27, 1930, to Wright et al. This form of slip cover is particularly advantageous for cylindrical fibrous containers. In the slip cover of the Wright et al. patent, the cylindrical band and the flange of the body member of the cover were held together by reason of the press fit between the flange and the band, and in some instances the two parts were held together by glue, or adhesive, the adhesive being spread upon the complemental surface of one part in semi-liquid form, and then the two parts being pressed together. This method of securing the body of the cover and the band by means of adhesive is entirely impractical, due to the fact that the engagement of the parts, and the relative movement thereof, scrapes the liquid adhesive off from the part on which it was previously spread, with the result that the joinder of the band and the flange of the body is insecure and the glue, which is wiped or scraped off, becomes smeared over the cover and the forming tools, with the result that the cover is rendered unsightly and the forming tools must be cleaned after every two or three covers have been assembled, which obviously renders the assemblage of the covers impractical from a production standpoint.

This invention has as a particular object, a practical method of forming, or assembling, slip covers of the type referred to. That is, a method by which the reinforcing bands are secured to the bodies of the covers, with the joint between the same being of maximum strength, and the fabrication of the cover being effected without accumulating any surplus adhesive on either the cover, or the assembling tools.

The method consists generally of applying adhesive to either the inside of the reinforcing band, or the outside of the flange of the body; permitting the adhesive to dry and permeate the fibrous structure of the part to which it has been applied; moistening one of the parts and while moist, pressing the parts together. The surface of the adhesive, which has been placed on one of the parts and allowed to dry, may be moistened, or the complemental surface of the other part on which no adhesive has been placed, may be moistened.

In describing this invention, reference is had to the accompanying drawing in which like characters designate corresponding parts in all the views.

Figure 1 is a fragmentary elevation of a tube from which the bands are formed.

Figure 2 is an isometric view of one of the bands.

Figure 3 is a fragmentary edge view of the completed slip cover.

Figure 4 is a fragmentary, sectional view of the portion of the tool for applying the band to the cylindrical flange of the disk.

As containers are usually cylindrical and the slip cover therefor circular, the bodies of the slip covers are disks with annular cylindrical flanges, and the reinforcing bands cylindrical, although the invention is pertinent to a slip cover of any shape having an upstanding or depending marginal circumferential flange and a reinforcing band of like shape.

The invention, as here shown, includes a disk 10 having a cylindrical marginal flange 12. The disk 10 and flange 12 constitute the body of the cover.

13 designates the reinforcing band which, as here shown, is made of a plurality of layers of fibrous material. These bands are usually cross sections cut from a tube T wound of multi-layer formation. As a general rule, the tube T is spirally wound, although insofar as this invention is concerned, the respective layers making up the tube may be wound cylindrically and overlap.

As previously stated, the ring 13 is preferably secured to the outer face of the flange 12. To efficiently assemble the body and band cover, the parts are usually assembled at the same time the body of the cover is formed. This is accomplished by apparatus such as shown in Figure 4.

14 designates a die having a recess of suitable diameter whereby in cooperation with a movable punch, a blank disk is severed from a strip fed over the die 14, and the blank is then drawn through the die 15, which operation forms the flange 12 on the disk 10. The band 13 is inserted in a holder 16 which may be slidably mounted under the die 15 so that the band 13 may be located in alinement with the opening in the die 15. Upon further downward movement of the presser foot of the punch, the body member of the cap is forced downwardly through the band 13. Previous to this operation, either the inside of the band 13 or the flange 12 has

received a coat of adhesive which has been permitted to dry and in so doing permeate the fibers of the part to which the adhesive has been applied. Just before the body member is forced through the band 13, the surface of the adhesive is moistened. Inasmuch as the adhesive has been previously allowed to dry and permeate the fibrous structure, the moistened surface acts as a lubricant to minimize the friction between the body and the band, but at the same time does not permit the adhesive to be scraped off from the part on which it has been spread. After the body has been pressed into the band 13, the holder 16 is removed from under the die 15, and the completed cover removed, a new band 13 inserted in the holder 16, and the holder slipped back under the die 15 for the succeeding operation. Instead of moistening the surface of the adhesive, the same effect may be obtained by moistening the complemental surface of the part to which no adhesive has been applied.

Usually it has been found more expedient to apply the adhesive to the inner surface of the band 13 and after it has been allowed to dry, the adhesive is moistened just previous to the insertion of the band 13 into the holder 16, or just previous to the assembling operation of the body and the band.

In order to facilitate the application of the adhesive to the inner surface of the band, and to obtain a smooth, uniform coat of adhesive, I prefer to use a gummed strip of material for the inner layer of the tube T. This gummed strip 17 is so wound into the tube T at the time the tube is formed that the gummed, or adhesive, side of the inner strip is toward the axis of the tube. Therefore, the tube T and accordingly, the bands 3 are of multi-layer formation with the inner layer being provided on the inner side with a smooth, even and uniform coat of adhesive. The tube T may be formed of two or more layers of fibrous, or paper material and subsequently, adhesive may be applied to the bore of the tube. However, I have found that a more smooth and uniform coat of adhesive may be obtained by employing a gummed strip for the inner layer of the tube. This is perhaps due to the fact that the adhesive can best be applied to paper in the sheet form previous to the sheet being wound into the tube.

In either case, in carrying out this invention it is important that the adhesive on the inside of the tube and the bands 3 be applied in a smooth, uniform, even coat, and be allowed to dry so that the adhesive permeates the wall of the tube.

In production, the dies 14, 15, and holders 16, are mounted in a turret arrangement which is automatically indexed around to bring successive dies under a suitable punch for blanking out, drawing and pressing the bodies into the bands 13. Usually, the adhesive on the inner surface of the bands 13 is moistened just previous to the forming operation. However, in some instances, it has been found preferable to moisten the body. This produces the same effect as moistening the adhesive on the inner side of the band, and also aids in the drawing operation of the flange 12.

Heretofore, slip covers formed with a reinforcing band have been found very desirable for certain uses, but due to the fact that the adhesive would roll up, or become displaced from the inner surface of the band as the flanged disk was forced therethrough, an ineffective joinder resulted. Also the major portion of the adhesive was rolled downwardly and smeared around the top of the slip cover which resulted in an unattractive cover and slowed up the manufacture to such an extent that slip covers of this type have been considered impractical.

Paper containers, and like articles, are sold at an abnormally low figure and accordingly, the structure of such articles becomes impractical unless it is such that the production thereof runs into a considerable volume. By reason of incorporating the previously gummed strip into the fabrication of the tube and bands, the adhesive does not become displaced in the fabrication of the slip cover, and slip covers of this type can be made quickly and economically and firmly held together without requiring frequent shutting down of automatic forming machines, and removing excess adhesive.

What I claim is:

1. A method of forming slip covers for fibrous containers, said slip covers comprising a cup shaped body member and a reinforcing band member consisting of applying a smooth, even and uniform coat of adhesive to the inner surface of the band; permitting the adhesive to dry; moistening one of said members, and while said member is moist, inserting the body member into the band member.

2. A method of forming slip covers for fibrous containers, said slip cover comprising a cup shaped body member and a reinforcing band member, consisting of applying a smooth, even and uniform coat of adhesive to the inner surface of a fibrous tube and permitting the adhesive to dry, cutting the tube into narrow bands; moistening one of said members and while said member is moist, forcing the body member into the band with the flange of said member in contact with the inside of the band.

3. A method of forming slip covers for fibrous containers, the slip cover comprising a cup shaped body member and a reinforcing band member consisting of applying a smooth, uniform coat of adhesive to a strip of paper, or like material; permitting the adhesive to dry, winding a multi-layer fibrous tube with the inner layer consisting of said coated strip and with the adhesive toward the axis of the tube; cutting said tube into narrow bands; moistening the inner surface of said band and while moist forcing the body member into said band.

4. A method of forming slip covers for fibrous containers, the slip cover including a cup shaped body member consisting of a flat fibrous disk having an upstanding annular flange, and a reinforcing band, consisting in applying a smooth, even, uniform coat of adhesive to a strip of paper, or like material; permitting the adhesive to dry; winding a multi-layer fibrous tube with the inner layer consisting of said coated strip, and with the adhesive toward the axis of the tube; severing the tube into bands, securing the band to the flange of the body member by moistening one of said members and while moist pressing the body into the band.

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