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CORE ASSEMBLY WITH POSITIONING PAD

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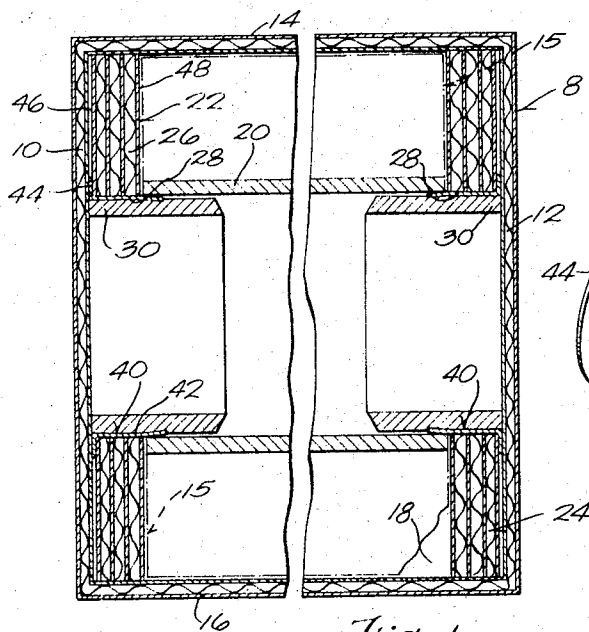


Fig. 1

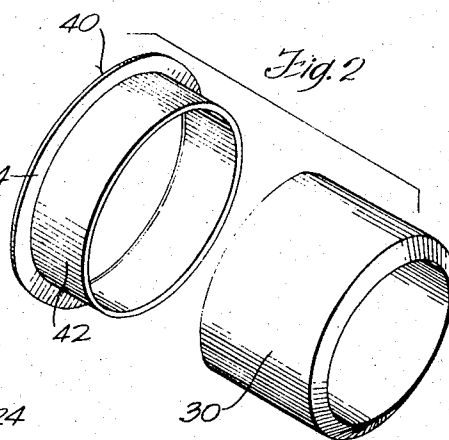


Fig. 2

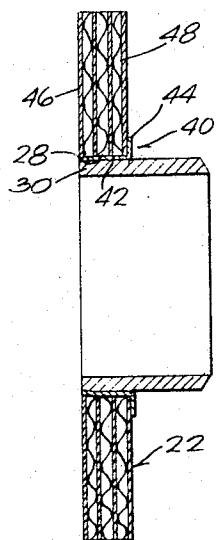


Fig. 3

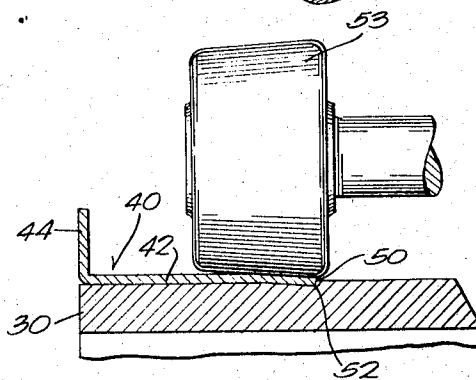


Fig. 4

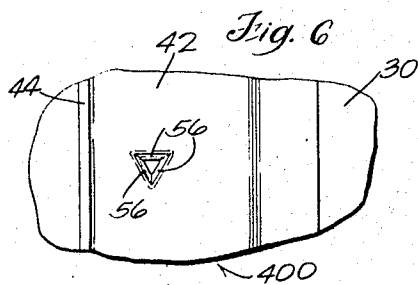


Fig. 6

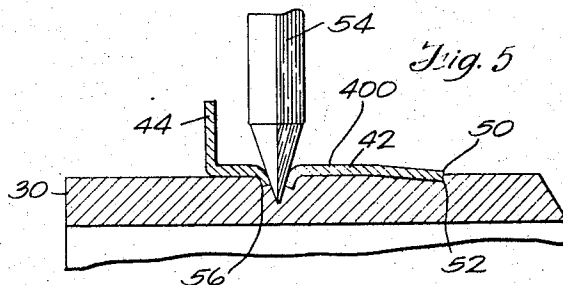


Fig. 5

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CORE ASSEMBLY WITH POSITIONING PAD
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8 Claims

ABSTRACT OF THE DISCLOSURE

A core upon which goods are wound in a roll is centered in a shipping container by protective pads fitted into the ends of the container and abutted by the ends of the roll core. For adequately supporting the roll core, sleeve assemblies are mounted on the pads and comprise metal fittings on paper board extension sleeves which terminate substantially flush with the external faces of the pads and have flanges engaged with an external or internal face of the pad.

Background of invention

A core upon which rolls are wound for shipment requires plugs of considerable length to carry the core from the container pads. Prior art devices have frequently used elongated metal tubes or bulky rings to position the cores. The required tubes are too long to be drawn and other methods of fabrication are so costly that they have to be returned for re-use. In other cases, cores have been flanged by the addition of larger core sections telescopically sleeved thereon and extending materially beyond the outer face of the positioning pad. These are objectionable because the length of the container must be increased to accommodate them.

The instant invention seeks to overcome these difficulties by fabricating supporting plugs by mounting on tubes of cardboard or paperboard flanged light sheet metal locating sleeves which are inexpensive and which effectively position the core with respect to the pad without requiring excess space.

Summary of invention

The improved plug of desired length includes a positioning ring and an extension tube. The ring is a light sheet metal stamping having a peripherally continuous sleeve and integral radial flange. Its said sleeve telescopically embraces an end portion of a cardboard tube and is preferably connected therewith against axial displacement. Each plug so made is disposed in an opening in a pad which fits the respective end of the shipping container. The core on which the roll of goods is wound is then mounted on these plugs to be positioned with reference to the ends of the shipping container by the positioning ring flanges and the respective pads. The cardboard tubes provide the required length which cannot be provided economically in the sheet metal fitting.

Any desired means may be employed to locate the respective positioning ring sleeves on the tube. In preference to the use of adhesive or staples or the like, it is preferred that the connection be made by rolling the free end of the sleeve to force it into the material of the tube, or by staking the sleeve to force portions thereof into the material of the tube, both of these preferred practices being shown herein.

The sleeve portion of the sheet metal ring may project either outwardly or inwardly from the flange and the flange may be flush with the end of the tube or may be spaced therefrom by a distance approximating the thickness of the pad, it being desirable that the tube terminate substantially flush with the outer face of the pad so as to

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make it unnecessary to use containers which are unduly large and therefore expensive.

Brief description of drawings

FIG. 1 is a fragmentary view in axial section through a container equipped with core-supporting plugs engaged with a pad at each end of the container and having positioning rings attached to an extension tube and engaged with the respective pads.

FIG. 2 is a fragmentary view in perspective showing in mutually separated positions a positioning ring and an extension tube for use in the assembly of FIG. 1.

FIG. 3 is a fragmentary view in axial section showing a plug having its ring reversed in position as compared with the position shown in FIG. 1.

FIG. 4 is a greatly enlarged detail view in axial section showing how the free margin of the sleeve portion of the positioning ring may be rolled into the material of the tube.

FIG. 5 is a detail view in axial section showing the positioning ring with its flange spaced from the end of the tube by a distance substantially equal to the thickness of the pad and further showing a staking operation for fastening the ring to the tube.

FIG. 6 is a fragmentary detail view in plan showing a portion of the ring and tube as assembled by the staking operation of FIG. 5.

Description of preferred embodiment

Any conventional container is represented by the container shown at 8 in FIG. 1, this particular container being made of corrugated board and having end walls 10 and 12, top and bottom walls 14 and 16, and side walls, one of which is shown at 18.

The goods to be shipped are intended to be wound into a roll 15 on a core 20, which may be wound of cardboard or of any appropriate construction. Its length is desirably approximately equal to the interior length of the container 8, as reduced by pads 22 and 24 which support the core centrally within the container 8 and at the same time insulate the roll 15 from contact with the end walls 10 and 12. These pads may likewise be made in any desired or conventional manner. The pads illustrated are made up of three plies of corrugated board 26 laminated together and provided with a central opening at 28.

To provide adequate support for carrying roll 15 from pads 22 and 24, plugs 25 of considerable length are required. The invention contemplates that these be fabricated by mounting a positioning ring 40 on a tube 30. Each ring comprises a sleeve portion 42 which is peripherally continuous and is integrally provided with a flange at 44. If the sleeve is located substantially flush with the end of the tube 30 as shown in FIGS. 1 and 4, the flange 44 of the ring 40 will engage the outer face 46 of the pad 22. The material used is very thin and may actually be compressed into the outer ply of the pad. In any event, it is unnecessary for the container 8 to be substantially larger than is required for the goods and the pads.

Alternatively, I may make the plug by locating the ring 400 at a point spaced from the end of the tube 30 in the manner shown in FIG. 5, the spacing being substantially equal to the thickness of the pad 22 or 24 to engage the inner face 48 of the respective pad rather than the outer face 46 thereof. In this instance, also, the material used is so light in weight as to require little or no additional space in the carton. It will be observed that in the construction in FIGS. 1 and 4 the sleeve portion 42 of the ring 40 will pass through the opening 28 in the pad 22 whereas, in the construction of FIG. 5, only the tube 30 itself will be disposed in this opening.

A further alternate arrangement is shown in FIG. 3 wherein the position of the ring on the tube 30 is reversed so that the sleeve portion enters the opening 28 of the pad 22 although the flange portion 44 engages the inner face rather than the outer face of the pad.

Two preferred means of attaching the ring to the extension tube are shown in FIGS. 4 and 5. In FIG. 4, the free margin 50 of the sleeve portion 42 of the ring is being forced into the material of the tube as shown at 52, as by swaging it with roller 53. In FIG. 5, the connection is being made by staking, using a pointed tool 54 to force tongue portions 56 of the sleeve 42 into the tube 30 the resulting interlock being shown in plan in FIG. 6.

In all constructions, it will be observed that the interior of the container has an interior length substantially equal to that of the pads plus the core 20, the core, in turn, being substantially the same in length as the roll 15 of goods wound upon the core. The length of each plug is such that it will provide adequate support for the core and the roll. This length is achieved economically by combining an inexpensive metal stamping with a length of inexpensive paper tubing.

What is claimed is:

1. A core-supporting plug comprising a peripherally continuous thin metal ring comprising an open-ended sleeve, an extension tube telescopically fitted in and embraced by the sleeve, and means permanently connecting the sleeve with the tube, said sleeve having an integral radially outwardly extending annular flange.

2. A plug according to claim 1 in further combination with a positioning pad having an aperture into which the end of the tube extends, said pad having inner and outer faces at least one of which is engaged by the flange of the ring.

3. A plug according to claim 2 in which the flange is engaged with the outer face of the respective pad.

4. A plug according to claim 2 in which the flange is engaged with the inner face of the respective pad.

5. A plug according to claim 2 in which the outer

face of the pad is substantially flush with the end of the plug tube.

6. A plug according to claim 5 in further combination with a container having an end wall substantially engaged by the end of the tube and having an interior cross section fitted to the perimeter of the pad, the pad being in immediate proximity to the respective end wall.

7. A plug according to claim 1 in which the connection of the sleeve to the tube comprises integral parts of the sleeve and tube interlockingly interengaged against relative axial displacement.

8. For shipment of a roll of goods wound on a core and comprising the combination with said roll and core of a container having side, end and top and bottom container walls, pads having aligned apertures and abutting the end walls and fitted to the other walls aforesaid, plugs including paperboard tubes disposed in respective pad apertures and each provided with peripherally continuous open-ended thin metal sleeves telescoped on the respective tubes and having outwardly extending flanges in face contact with respective pads, means permanently connecting the respective sleeves with the respective tubes on which they are telescoped, said core being telescoped onto said tubes and supported thereon and extending substantially from one pad to the other, the length of the respective tubes and the telescopic fitting thereof in the core precluding substantial displacement of respective tubes under the weight of said core.

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