

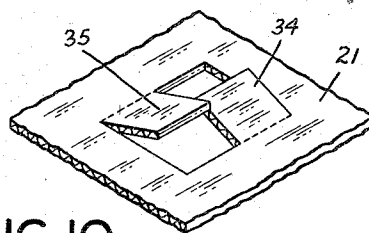
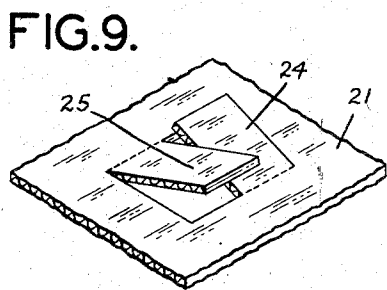
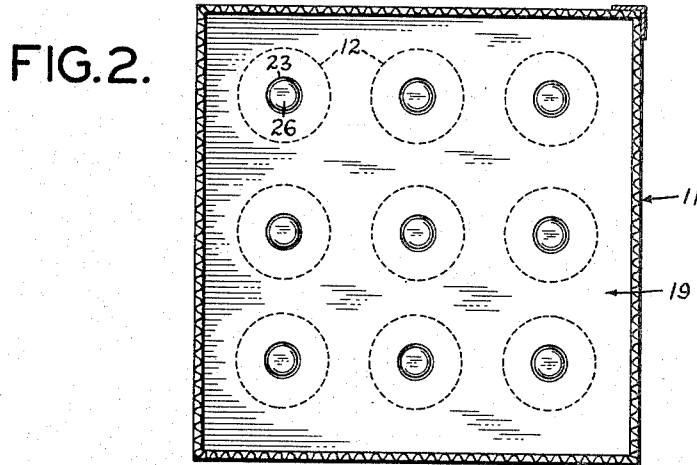
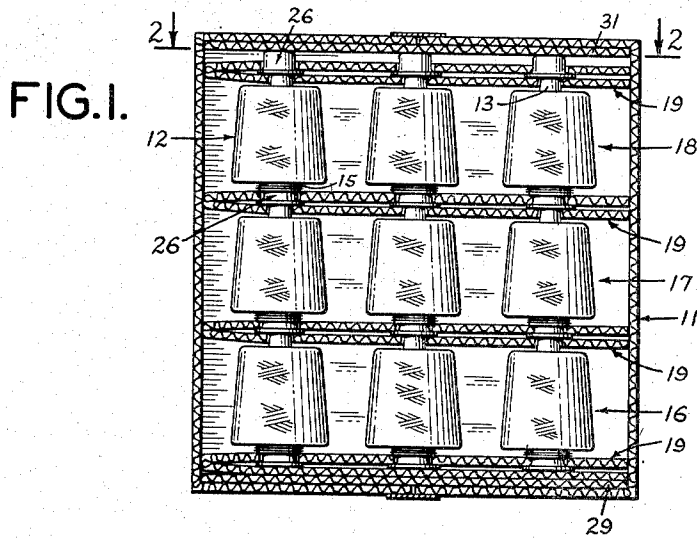
Jan. 18, 1955

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MULTILAYER YARN PACKAGE

2,699,866

Filed May 13, 1950

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

FIG.3.

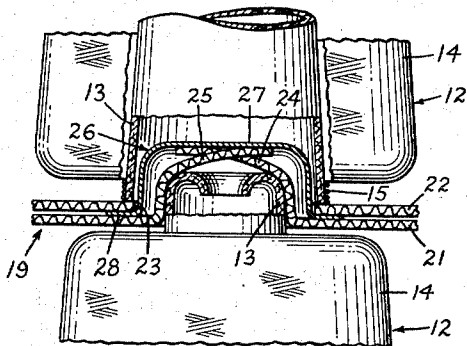


FIG.4.

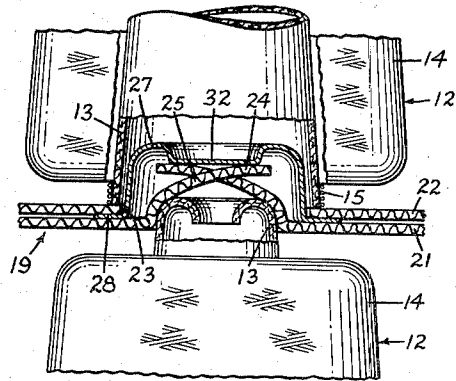


FIG.5.

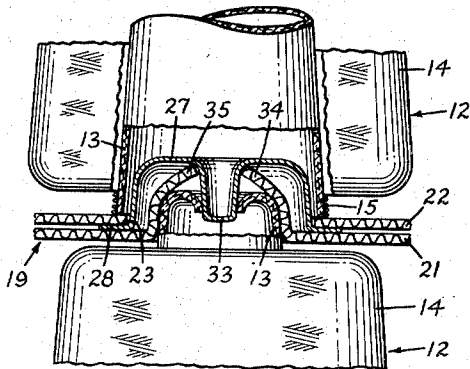


FIG.6.

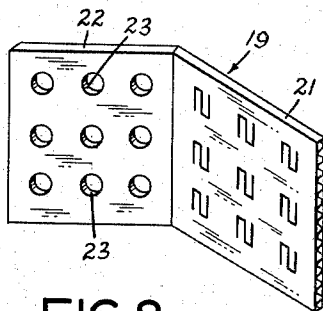
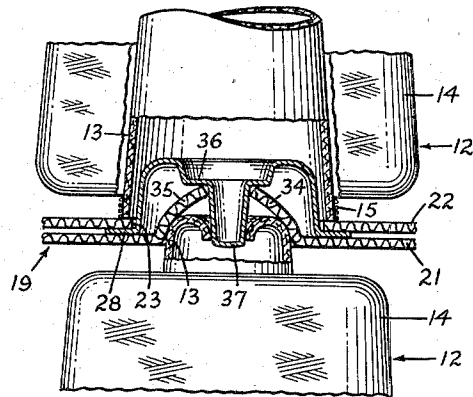
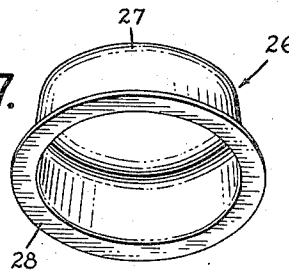


FIG.8.

FIG.7.



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MULTILAYER YARN PACKAGE

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7 Claims. (Cl. 206—65)

This invention relates to cartons and relates more particularly to cartons for the storing and shipping of packages of yarn.

An important object of this invention is to provide a carton for the storing and shipping of packages of yarn which will be simple and inexpensive in construction and efficient in use.

A further object of this invention is the provision of a carton for the storing and shipping of packages of yarn which will engage and cushion said packages so as to avoid relative movement thereof and damage to the yarn wound thereon.

Other objects of this invention will be apparent from the following detailed description and claims.

The bulk of the yarn produced in the textile industry is wound into packages such as bobbins, cones, cheeses, pirns and the like, which packages may be provided with a transfer tail to assist in the continuous operation of the equipment in which said packages are employed. During the storing and shipping of these yarn packages they must be supported so as to prevent them from rubbing against each other or against the carton in which they are contained, since such rubbing would damage at least the outer layers of yarn on said packages as well as the yarn forming the transfer tails.

According to the present invention, there is provided a carton which will engage the packages of yarn so as to hold them against relative movement and prevent them from rubbing against each other or against the carton in which they are contained, and which will also cushion said packages so as to prevent the transmittal of damaging shocks thereto. The carton of this invention includes a plurality of inserts for supporting the packages of yarn, each of which inserts is provided with fittings that project from one side thereof. The fittings enter into and engage the ends of the packages of yarn positioned to one side of said insert, while the ends of the packages of yarn positioned to the other side of said insert enter into and are engaged by said fittings. The inserts also include resilient means such as flaps interposed between the ends of the packages of yarn and the fittings so as to cushion said packages against the transmittal of damaging shocks thereto.

Preferred embodiments of this invention are shown in the accompanying drawings wherein

Fig. 1 is a cross-sectional view of a carton showing the arrangement of the packages of yarn therein,

Fig. 2 is a cross-sectional view taken on the line 2—2 in Fig. 1 in the direction of the arrows,

Fig. 3 is a detail view, on an enlarged scale, showing the manner in which the packages of yarn are supported,

Figs. 4, 5 and 6 are detail views, on an enlarged scale, showing modifications in the manner in which the packages of yarn are supported,

Fig. 7 is a perspective view, on an enlarged scale, showing the fitting that engages the packages of yarn,

Fig. 8 is a perspective view, on a reduced scale, showing the die-cut pad from which the inserts that support the packages of yarn are formed,

Fig. 9 is a detail view, on an enlarged scale, of a portion of the die-cut pad shown in Fig. 8, and

Fig. 10 is a detail view, on an enlarged scale, of a portion of a modified die-cut pad that is used in connection with the supporting means shown in Figs. 5 and 6.

Referring now to the drawings, the reference numeral 11 designates generally the protective cover of a carton

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which may be formed from corrugated board, cardboard or other suitable material and in which is contained a plurality of yarn packages, such as cones 12 comprising tubular supports 13 of conical shape having thereon yarn windings 14 and transfer tails 15. The cones 12 are arranged in superposed layers 16, 17 and 18, each of which layers is supported on an insert, indicated generally by the reference numeral 19.

The inserts 19 comprise a lower member 21 and an upper member 22 of substantially identical size and shape superposed thereon, which members 21 and 22 may be formed from corrugated board, cardboard or other suitable material and which members may be integral one with the other or may be formed from a number of separate pieces that are fastened together in any suitable manner. The upper member 22 is provided with a plurality of regularly disposed apertures 23 extending therethrough and the lower member 21 is slit to provide regularly disposed pairs of flaps 24 and 25 that are integral with said lower layer and extend therefrom in opposite directions as shown in Fig. 9. The pairs of flaps 24 and 25 are arranged so that they will be aligned with the apertures 23 when the members 21 and 22 are superposed to form the inserts 19.

Fittings, indicated generally by reference numeral 26, and comprising a cup-shaped portion 27 having an annular flange 28 extending from the rim thereof are positioned in the apertures 23 with the cup-shaped portion 27 projecting through said apertures and with the flange 28 interposed between the lower member 21 and the upper member 22 to hold said fittings securely in place. The cup-shaped portions 27 of the fittings 26 are of such diameter as to enter into and engage the bases of the supports 13, whereas the tops of the supports 13 enter into and are engaged by said cup-shaped portions thereby to hold the cones 12 against relative movement. The fittings 26 may be formed from metal, paper, plastic or any other suitable material and may be molded, stamped or otherwise shaped to the desired pattern.

In packing the carton of this invention, the cones 12 are positioned on the inserts 19 with the bases of the supports 13 of the cones fitting over the cup-shaped portions 27 of the fittings 26. Then, this insert 19 with the cones 12 thereon is placed on a liner 29 in the protective cover 11, forming the layer indicated generally by reference numeral 16. A second insert 19 with cones 12 thereon is then placed in the protective cover 11 to form the layer indicated generally by the reference numeral 17. When the layer 17 is put in position, the pairs of flaps 24 and 25 permit the tops of the supports 13 of the cones in the layer 16 to penetrate the lower member 21 and project into the cup-shaped portions 27 of the fittings 26 thereby to hold the cones 12 against relative movement. In addition, the pairs of flaps 24 and 25, which lie between the tops of the tubes 13 and the cup-shaped portions 27 of the fittings 26, act as a cushion to prevent the transmittal of damaging shocks to the cones 12 during the handling and shipping of the carton. The layer 18 is formed and superposed on the layer 17 in a similar manner. On top of the layer 18, there is placed an insert 19, with the tops of the supports 13 projecting into the cup-shaped portions 27 of the fittings 26 in said insert to hold the cones 12 against relative movement. If desired, the fittings 26 may be omitted from the topmost insert 19, in which case the tops of the supports 13 will project through the lower member 21 and be held against relative movement by the pairs of flaps 24 and 25. A liner 31 is placed on top of said insert 19 and the carton is closed and sealed in a manner well understood in the art. Instead of placing the cones 12 on the inserts 19 before said inserts are positioned in the cover 11, the cones 12 may be positioned on the inserts 19 after the inserts are positioned in said cover.

Fig. 4 shows a modified form of this invention in which the base of the cup-shaped portion 27 of the fitting 26 is dished downwardly, toward the open portion of the fitting, at 32. The dished portion 32 limits the extent to which the top of the support 13 can project into the fitting 26 thereby to increase the spacing between the top of the yarn winding 14 and the lower member 21 on the

insert 19. In this way, the possibility that the yarn winding 14 will rub against the underside of the insert 19 with subsequent damage to the yarn when the top of the support 13 projects from the yarn winding 14 to only a limited extent is eliminated.

Figs. 5 and 10 show another modified form of this invention in which the cup-shaped portion 27 of the fitting 26 is provided with a downwardly extending nipple 33 that is positioned centrally of said fitting. The nipple 33 projects, toward the open portion of the fitting, into the top of the support 13 thereby to hold the cone 12 firmly against relative movement. To provide adequate clearance for the nipple 33 to enter the top of the support 13, the lower member 21 of the insert 19 is provided with a pair of flaps 34 and 35 that are somewhat shorter than the pair of flaps 24 and 25 as shown in Fig. 10.

Fig. 6 shows still another modified form of this invention in which the cup-shaped portion of the fitting 26 is dished downwardly, toward the open portion of the fitting, at 36 and is provided with a downwardly projecting nipple 37 that is positioned centrally of said fitting. The dished portion 36, like the dished portion 32, limits the extent to which the top of the support 13 can project into the fitting 26 thereby to increase the spacing between the top of the yarn winding 14 and the lower member 21 of the insert 19. Similarly, the nipple 37, like the nipple 33, projects, toward the open portion of the fitting, into the top of the support 13 thereby to hold the cone 12 against relative movement.

It is to be understood that the foregoing detailed description is given merely by way of illustration and that many variations may be made therein without departing from the spirit of my invention.

Having described my invention, what I desire to secure by Letters Patent is:

1. In a carton for the storing and shipping of packages of yarn, each of said packages having a support extending therethrough, said support having larger and smaller ends, the larger end having an opening therein of larger diameter than the outer diameter of said smaller end, said packages being arranged in superposed layers, apertured insert sheets supporting said layers and having integral opposed pairs of resilient flaps extending inwardly from the edges of the apertures thereof, cup-shaped fittings mounted on said sheets, each of said fittings having a hollow portion for receiving said smaller end and a projecting portion for reception within the opening of said larger end, the construction and arrangement being such that said fittings enter into and operatively engage said larger ends and said smaller ends pass through the apertures of said insert sheets and enter into and are operatively engaged by said hollow portions, said flaps being interposed between said supports and said fittings to cushion said packages of yarn against the transmission of damaging shocks thereto.

2. A carton as set forth in claim 1 in which the bases of said cup-shaped fittings are dished towards the open portions of said fittings to limit the extent to which the ends of said supports can enter into said fittings.

3. A carton as set forth in claim 1 in which the said cup-shaped fittings have nipples projecting therefrom for entering into and engaging the ends of said supports which are received in the hollow portions of said fittings.

4. A carton as set forth in claim 3 in which the bases of said cup-shaped fittings are dished toward the open portion of said fittings to limit the extent to which the ends of said supports can enter into said fittings.

5. In a carton for the storing and shipping of packages of yarn, each of said packages having a support extending therethrough, said support having larger and smaller ends, the larger end having an opening therein of larger diameter than the outer diameter of said smaller end, said packages being arranged in superposed layers, apertured insert sheets supporting said layers and having integral resilient flaps extending inwardly from the edges of the apertures thereof, cup-shaped fittings mounted on said sheets, each of said fittings having a hollow portion

for receiving said smaller end and a projecting portion for reception within the opening of said larger end, the construction and arrangement being such that said fittings enter into and operatively engage said larger ends and said smaller ends pass through the apertures of said insert sheets and enter into and are operatively engaged by said hollow portions, said flaps being interposed between said supports and said fittings to cushion said packages of yarn against the transmission of damaging shocks thereto, said cup-shaped fittings having nipples projecting therefrom for entering into and engaging the ends of said supports which are received in the hollow portions of said fittings.

6. In a carton for the storing and shipping of packages of yarn having tubular supports of conical shape extending therethrough and arranged in superposed layers, inserts supporting said layers of packages of yarn, each of said inserts comprising a lower member having a plurality of pairs of flaps integral therewith and an upper member having a plurality of apertures extending therethrough and aligned with said flaps, and cup-shaped fittings projecting through said apertures for engaging said packages of yarn and each having a flange extending from the rim thereof and interposed between said lower member and said upper member, the construction and arrangement being such that the cup-shaped fittings enter into and engage the larger ends of the supports of the packages of yarn and the smaller ends of the supports of the packages of yarn enter into and are engaged by the cup-shaped fittings, said flaps being interposed between the smaller ends of the supports and said fittings to cushion said packages of yarn against the transmittal of damaging shocks thereto.

7. In a carton for the storing and shipping of packages of yarn having tubular supports of conical shape extending therethrough and arranged in superposed layers, inserts supporting said layers of packages of yarn, each of said inserts comprising a lower member having a plurality of flaps integral therewith and an upper member having a plurality of apertures extending therethrough and aligned with said flaps, and cup-shaped fittings projecting through said apertures for engaging said packages of yarn and each having a flange extending from the rim thereof and interposed between said lower member and said upper member, the construction and arrangement being such that the cup-shaped fittings enter into and engage the larger ends of the supports of the packages of yarn and the smaller ends of the supports of the packages of yarn enter into and are engaged by the cup-shaped fittings, said flaps being interposed between the smaller ends of the supports and said fittings to cushion said packages of yarn against the transmittal of damaging shocks thereto, each of said cup-shaped fittings being dished downwardly to limit the extent to which the supports of the packages of yarn can enter into said cup-shaped fittings, and each of said cup-shaped fittings having a nipple projecting therefrom for entering into and engaging the supports of the packages of yarn that are entered into said cup-shaped fittings.

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