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2,936,941

CARTONS

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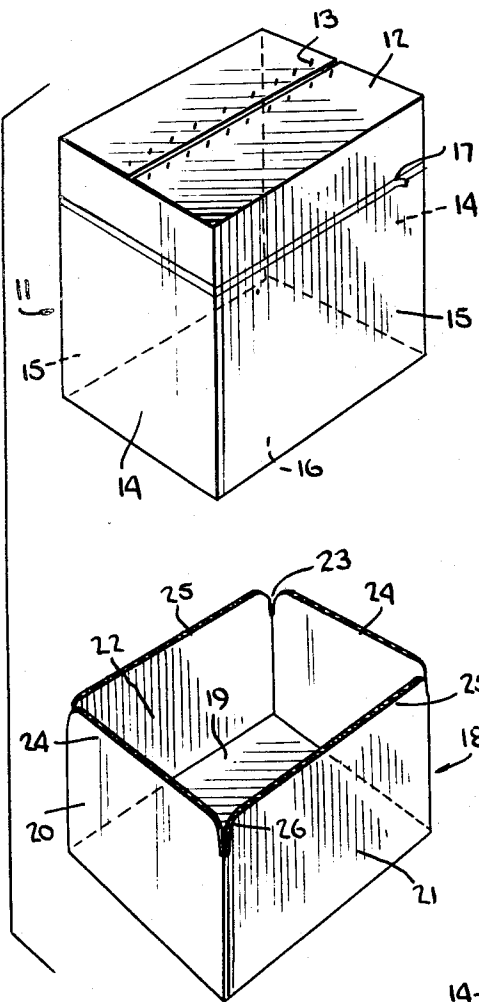


Fig. 1.

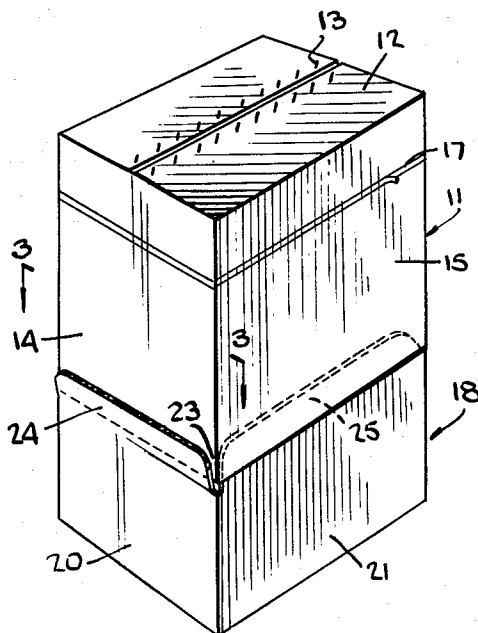


Fig. 2.

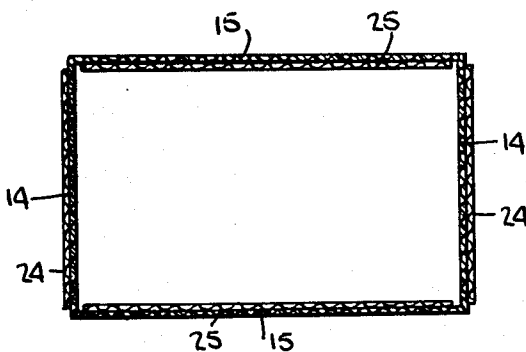


Fig. 3.

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2,936,941

CARTONS

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7 Claims. (Cl. 229—23)

This invention relates to a novel carton and more particularly relates to cartons suitable for the safe packing and storing of cones and other yarn packages.

In conventional cartons the height of the carton is fixed. In filling such a carton, unless the objects placed in the carton are exactly equal in height to the interior of the carton, there will be some free space within the carton. This free space within the carton increases the volume taken up by the carton during shipping or storage and, in addition, unless a space filling material is introduced into the carton the packed material is free to move about with possible damage resulting therefrom. With conventional cartons having telescopic top and bottom members there is the added shortcoming that when closed the rim of the wall of the inner members abuts the end of the outer member and if an external compressive force is applied, as during stacking or banding with wire, the wall of the inner member may buckle or may dig into the end of the outer member with damage to both members.

It is accordingly an object of this invention to provide a carton which can be reduced in size sufficient just to accommodate the contents with no wasted vertical space.

Another object of the invention is to provide a novel carton which is constructed so as to minimize damage to its contents as well as to its component parts.

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

According to the present invention there is provided a carton comprising a pair of members each having a wall element extending from a closed end or base and defining a space having an open end. One of the wall elements is provided with a plurality of slots extending from its respective opening toward but terminating before its closed end, the slots defining tongues in the one member. In closing the carton the two members are telescoped at their open ends, some of the tongues of the one member extending exteriorly of the other member and other tongues interiorly thereof so that telescopic displacement of the members toward each other is limited by the depth of the slots.

In a preferred embodiment, the members have rectangular ends and side walls, the slots in the one member extending along the line of joinder between adjacent walls. Some or all of the tongues may have rounded edges to facilitate assembly. A tear tape can also be provided to facilitate opening after sealing of the packed carton.

The carton is preferably formed of a resilient material such as flat or corrugated cardboard so that even when the open ends of the members are identical in periphery they can be telescoped through slight bending of the tongues. Such material also readily lends itself to sealing by stapling or banding with wire.

While the novel cartons are useful in packing of many materials, they are especially suited for packing yarn packages such as cones, bobbins, and the like.

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The invention will now be described more fully with reference to the accompanying drawing wherein:

Fig. 1 is an exploded perspective view of the carton of this invention;

Fig. 2 is a perspective view of the assembled carton; and

Fig. 3 is a section taken along line 3—3 of Fig. 2.

Referring now more particularly to the drawing, in Fig. 1 there is shown a top member 11 having a rectangular end 12 closed in conventional manner, as by staples 13. Two pairs of opposite rectangular walls 14, 15 are connected with respective sides of the closed end 12, defining an open end 16. A tear tape 17, to facilitate opening after sealing, runs about walls 14, 15.

A bottom member 18 has a closed end 19 and two pairs of opposite walls 20, 21 defining an open end 22. The lines of joinder between adjacent walls are slotted as at 23 for a part of the distance from open end 22 to closed end 19, defining pairs of opposite tongues 24, 25. The upper corners of the tongues are rounded off as at 26 to facilitate assembly.

After filling the bottom member 18 with the goods and continuing stacking the goods until the desired height is reached, the members 11, 18 are assembled as shown in Fig. 2. Tongues 25 on the wide sides 21 of bottom member 18 are resiliently bent toward each other and tongues 24 are bent away from each other. Side walls 15 of top member 11 are slipped over tongues 25, the telescopic engagement being facilitated by rounded corners 26, while the side walls 14 are slipped inside tongues 24. The telescopic displacement will be limited either by the goods within the carton or by the depth of slots 23. Because of this depth minor variations in the height of the goods can be accommodated without waste of space. The overlapping between the tongues 24, 25 of the bottom member 18 and the walls 14, 15 of the top member 11 serves as a reinforcement and also permits sealing by staples (not shown) driven through both. Conventional band sealing with wire (not shown) can also be used.

Because the walls of one member do not extend to the closed end of the other member, there is no possibility of buckling of the walls or damage to the ends. With known cartons having at least a three-piece construction, viz., spaced top and bottom cover members extending toward each other about a liner, when raising one carton with a fork truck there is the possibility that the bottom cover member of the carton being raised might hit the top cover member of an adjacent carton which is not being raised and thereby damage both cartons. This cannot occur with the present construction.

Because of the division of the height of the carton into two portions, the bottom member can be loaded or unloaded readily from above when the total height is such that a unitary carton could not be so handled. For example, a carton in accordance with the present invention might have a top member 35½ inches high and a bottom member 23½ inches high with slots 6 inches deep, giving a minimum assembled height of 53 inches. While an operator could readily bend over for access to the very bottom of the 23½ inch bottom member, he could not reach down into a carton where the access opening was 53 inches high.

The novel carton is conveniently used in conjunction with an open ended liner having a plurality of flaps, such as is described in copending U.S. patent application Serial No. 533,633 filed by Alvin B. Storey on September 12, 1955. The liner comprises a plurality of walls successively joined to each other to form a tubular structure open at its top and bottom. At least two, and preferably all, of the lines of joinder between adjacent walls of the liner are slotted downwardly along a portion of their height to

form one or more flaps which can be folded down to afford access to the interior, i.e. with a liner 53 inches high an operator could not reach down into the liner for loading and unloading, but by bending down a flap loading and unloading are facilitated. The height of the liner will obviously be no more than the minimum assembled height of the carton so as not to interfere with telescoping. The liner is completely enclosed when the carton is packed and assembled and becomes exposed only when the members forming the carton are telescopically disengaged from each other.

It is to be understood that the foregoing detailed description is merely given 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. The combination, for forming a carton for packing materials, of top and bottom members each having a wall element, a closed end and an open end, the open ends of said members corresponding to each other in periphery, said bottom member being shorter than said top member, the wall portion of only said bottom member being provided with a plurality of slots extending from its open end toward but terminating before its closed end, said slots defining a plurality of tongues therebetween, whereby said members can be joined at their open ends into a closed carton with said tongues of said bottom member telescopically overlapping a portion of the wall element of the top member, some of said tongues being positioned exteriorly of portions of the wall element of the top member and other of said tongues being positioned interiorly of other portions of the wall element of the top member, said slots limiting telescopic displacement of said members relative to each other, and an open ended liner conforming to the interiors of said members and provided with a plurality of vertical slots defining at least one flap which can be bent down to afford access to its interior.

2. The combination set forth in claim 1, wherein at least some of said tongues are rounded adjacent their respective open end to facilitate joinder of said members.

3. The combination set forth in claim 1, including a tear strip embodied in one of said wall elements remote from the overlapping area.

4. The combination, for forming a carton for packing materials, of top and bottom members each having a plurality of substantially rectangular walls extending perpendicularly from the sides of a polygonal closed end and joined to define a polygonal open end, the open ends of said members corresponding to each other in periphery, said bottom member being shorter than said top member, the lines of joinder between adjacent walls of only said bottom member being slotted from the open end toward but terminating before the closed end, the slots defining a plurality of tongues therebetween, whereby said members can be joined at their open ends into a closed carton with said tongues of said bottom member telescopically overlapping a portion of the wall element of the top member, some of said tongues being positioned exteriorly of portions of the wall element of the top member and other of said tongues being positioned interiorly of other portions of the wall element of the top member, said slots limiting telescopic displacement of said members relative to each other, and an open ended liner conforming to the interiors of said members and provided with slots ex-

tending downwardly along a portion of the lines of joinder between adjacent walls to define at least one flap which can be bent down to afford access to the interior of the liner.

5. The combination, for forming a carton for packing materials, of top and bottom members each having four substantially rectangular walls extending perpendicularly from the sides of a rectangular closed end and joined to define a rectangular open end, the open ends of said members corresponding to each other in periphery, said bottom member being shorter than said top member, the lines of joinder between adjacent walls of only said bottom member being slotted from the open end toward but terminating before the closed end, the slots defining a plurality of tongues therebetween, whereby said members can be joined at their open ends into a closed carton with said tongues of said bottom member telescopically overlapping a portion of the wall element of the top member, some of said tongues being positioned exteriorly of portions of the wall element of the top member and other of said tongues being positioned interiorly of other portions of the wall element of the top member, said slots limiting telescopic displacement of said members relative to each other, and an open ended rectangular liner conforming to the interiors of said members and provided with slots extending downwardly along a portion of at least three of the lines of joinder between adjacent walls to define at least two flaps which can be bent down to afford access to the interior of the liner from two adjacent sides.

6. The carton set forth in claim 5, wherein the tongues on the wide walls are rounded adjacent their respective open end to facilitate joinder of said members.

7. A carton for packing materials comprising top and bottom resilient members each having four substantially rectangular walls extending perpendicularly from the sides of a rectangular closed end and joined to define a rectangular open end, one pair of opposite walls being relatively wide and the other pair being relatively narrow, the open ends of said members corresponding to each other in periphery, said bottom member being shorter than said top member, the lines of joinder between adjacent walls of only said bottom member being slotted from the open end toward but terminating before the closed end, the slots defining a plurality of tongues therebetween, said tongues of said bottom member telescopically overlapping a respective wall of the top member, the tongues on the narrow walls being positioned exteriorly of the respective walls of the top member and the tongues on the wide walls being positioned interiorly of the respective walls of the top member, said slots limiting telescopic displacement of said members relative to each other, and an open ended rectangular liner conforming to the interiors of said members and provided with slots extending downwardly along a portion of at least three of the lines of joinder between adjacent walls to define at least two flaps which can be bent down to afford access to the interior of the liner from two adjacent sides.

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