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UNITIZING TRAYS

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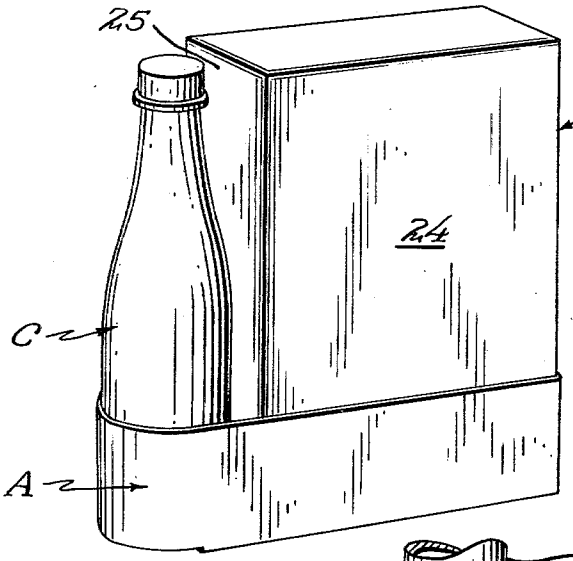


FIG. 1

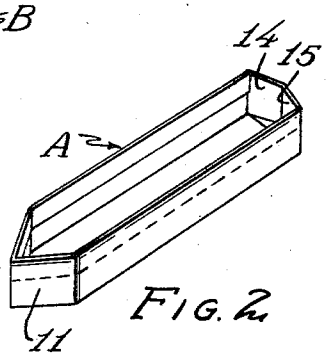


FIG. 2

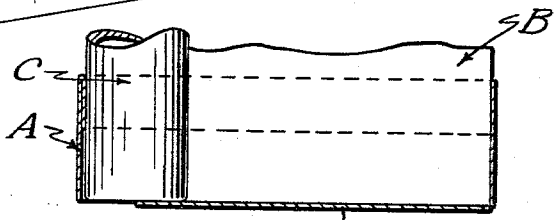


FIG. 3

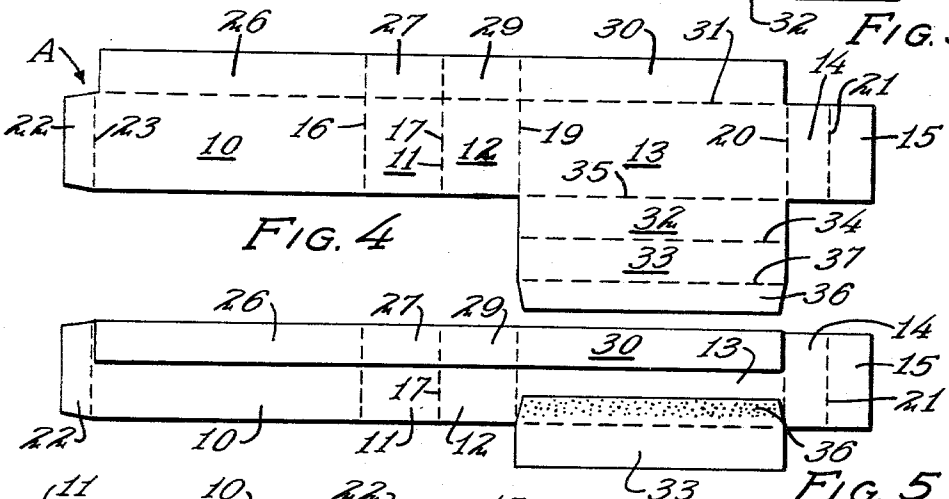


FIG. 4

FIG. 5

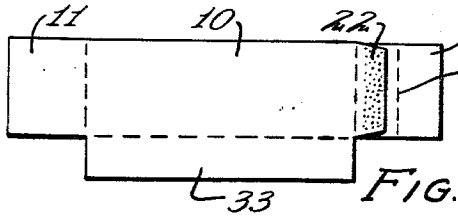


FIG. 6

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UNITIZING TRAYS

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This invention relates to an improvement in unitizing trays and deals particularly with a simple and effective means of connecting two objects such as a rectangular carton and a cylindrical can or bottle.

During recent years the use of unitizing devices for connecting a plurality of packages or units has greatly increased. It is relatively simple to unitize a series of objects of similar size and shape. However, when it is desired to combine two containers of different types such as a carton of pancake flour and a bottle of syrup, considerably more difficulty is involved. It is a purpose of the present invention to provide a simple and effective unitizer for such objects, and one which may be easily used.

An object of the present invention lies in the provision of a tray including a centrally folded bottom panel foldably connected to a pair of side walls. Centrally folded end wall are connected to opposite ends of the side walls. One of these ends is of a length equal to one-half the circumference of the bottle or can. The side walls are of a length equal to the width of the carton plus the radius of the can or bottle. As a result, the carton being of the same thickness as the diameter of the can or bottle, the two objects may be readily connected and supported in side by side relation.

A feature of the present invention resides in the provision of a tray having one end wall substantially of equal thickness to the package and another wall of greater length which can wrap around the surface of a cylindrical object to hold the two containers unitized.

These and other objects and novel features of the present invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of the application;

FIGURE 1 is perspective view of the complete unitized package.

FIGURE 2 is a perspective view of the unitizing tray in readiness for receiving the carton and cylindrical object.

FIGURE 3 is a longitudinal sectional view through the filled unitizing tray.

FIGURE 4 is a diagrammatic view of the blank from which the unitizing tray is formed.

FIGURE 5 illustrates diagrammatically the position of the blank after the first folding operation.

FIGURE 6 is a diagrammatic view of the blank after the second folding operation.

The unitizing tray which is indicated in general by the letter A is designed to contain a generally rectangular carton such as B, and a cylindrical object such as the bottle C. While the bottle C is of tapered form, the lowered end thereof is generally cylindrical in shape.

As is best indicated in FIGURE 4 of the drawings, the tray A includes a side wall 10, an end wall panel 11, a second end wall panel 12, a side wall 13, and a second pair of end wall panels 14 and 15. These panels are connected along parallel fold lines 16, 17, 19, and 20 and 21. A glue flap 22 is hingedly connected to the side wall 10 along a fold line 23. This glue flap 22 is secured in face contact with the end wall panel 15 in the formation of the tray.

The thickness of the carton B is preferably substantially equal to the diameter of the bottle C. This simplifies the unitization of the two objects, and it is normally

practical to proportion the package to a predetermined thickness as the width of the carton, as well as the height thereof, can be varied to properly accommodate the desired quantity of product. In forming the tray, the length of the side walls 10 and 13 is preferably substantially equal to the width of the carton B as determined by the width of the side wall 24 plus the radius of the bottle C. As a result, the side wall extends across the side walls such as 24 of the package B and to the center of the bottle C. The combined width of the end wall panels 14 and 15 is substantially equal to the thickness of the carton B as indicated by the end wall 25. The combined width of the end walls 11 and 12 are substantially equal to one-half the circumference of the bottle C.

Flanges 26, 27, 29, and 30 are preferably foldably connected to the upper edges of the walls 10, 11, 12, and 13 respectively along a common line of fold 31. These flanges are of approximately one-half the height of the wall panels. First and second bottom panels 32 and 33 which are connected by a fold line 34 are foldably connected to the lower surface of one side wall such as 13 along a fold line 35. A glue flap 36 is connected to the bottom panel 33 along a fold line 37. The bottom panels 32 and 33 are of equal width and are substantially equal in width to the end wall panels 14 and 15.

In the formation of the sleeve, the flanges 26, 27, 29 and 30 are folded along the fold line 31 to overlie the various side wall panels to which they are hinged, as indicated in FIGURE 5 of the drawings. The bottom panel 33 and the glue flap 36 are folded along the fold line 34 so as to place the bottom panel 32 and 33 in superimposed relation and to position the glue flap 36 in position to overlie a portion of the side wall 13. The blank is then in the position illustrated in FIGURE 5 of the drawings.

The blank is then folded along the fold line 17 so that the side wall 10 will overlie the side wall 13, and the lower portion of the side wall 10 will overlie the glue flap 36. Glue has been applied to the glue flap 36 to secure this member to the side wall 10. Adhesive is applied to the glue flap 22, and the blank is folded along the fold line 21 to adhere the glue flap 22 to the panel 15. This completes the unitizing tray. FIGURE 6 shows the position of the tray just before the final folding operation along the fold line 21.

When the tray A is opened, the bottom and one end wall of the tray are of proper size to accommodate the lower end of the carton B therebetween. The carton B is moved against the end wall panels 14 and 15, and the bottle C is inserted into the other end of the tray, the end wall panels 11 and 12 flexing to encircle the periphery of the bottle. Due to the fact that the side walls and bottom walls are wider than the carton panels 24 by a distance equal to the radius of the bottle, the bottom panels extend beneath the bottle C to the center of the bottle. Thus the bottle is effectively supported and prevented from dropping through the tray when the combined package is lifted.

The flanges along the upper edge of the tray provide a finished appearance to the upper edge of the tray and also serve as an effective means of reinforcing the wall panels. By providing the flanges along the upper edges of the tray, the tray fits most tightly about the two objects at a point spaced above the bottom which holds the two objects more effectively than could otherwise be the case.

In accordance with the patent statutes, I have described the principles of construction and operation of my improvement in unitizing trays, and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that changes may be made within the scope

of the following claims without departing from the spirit of my invention.

I claim:

1. A unitizing tray for use in connecting a rectangular object and a cylindrical object, the tray including spaced side walls, a bottom wall connecting the lower edges of said side walls and of a width substantially equal to the thickness of the rectangular object, an end wall connecting an end of said side walls and being of a length substantially equal to the thickness of the rectangular object, and a second end wall forming the sole connection between the other ends of said side walls and being of substantially greater length than the first end wall.

2. A tray including a pair of side walls, a bottom panel hinged to the lower edges of said side walls and centrally folded intermediate the connections to said side walls, a pair of end walls connecting the ends of said side walls and centrally folded intermediate the lines of connection to said side walls, one of said end walls being equal in width to said bottom panel, and the other end wall being of a substantially greater width.

3. The structure of claim 2 and including flanges hinged to the upper edges of said side walls and said other end wall and folded into face contact therewith.

4. A unitizing tray for connecting a rectangular object and a cylindrical object, the thickness of the rectangular object being substantially equal to the diameter of the cylindrical object, the tray including a pair of parallel side walls of a length substantially equal to the width of the rectangular object plus the radius of the cylindrical object, a bottom panel connecting the lower edges of said side walls and being of a width substantially equal to the thickness of said rectangular object, a first end wall connecting an end of the side walls and of a width substantially equal to the thickness of the rectangular object, and a second end wall connecting the other ends of said side walls and of a length substantially equal to one-half the circumference of the cylindrical object, whereby both said objects may be engaged within said tray with said other end wall wrapped partially around said cylindrical object and said bottom panel underlying substantially one half of the area of the lower end of the cylindrical object, and with an end of the rectangular object engaging against said one end wall.

5. The structure of claim 4 and including flanges foldably connected to the upper edges of said side walls and other end wall and folded inwardly thereof.

6. A combination package including a rectangular object, a cylindrical object of substantially the same thickness, and a connecting tray, the tray including parallel side walls extending across said rectangular object and partially across said cylindrical object in side by side relation of the objects, a bottom wall connecting said side walls and underlying said rectangular object and at least a portion of said cylindrical object, an end wall connecting an end of said side walls and extending across an end of said rectangular object and being of substantially equal length to the width of the end wall, and a substantially semi-cylindrical second end wall connecting the other ends of said side walls and extending around substantially one half of the circumference of the cylindrical object.

7. The structure of claim 6 and including a flange hingedly connected to the upper edges of said side walls and second end wall and folded between these walls and said objects.

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