Oct. 15, 1968 R. J. DWYER, JR 3,405,797

ROLL PACKAGE

Filed June 20, 1967 2 Sheets-Sheet 1

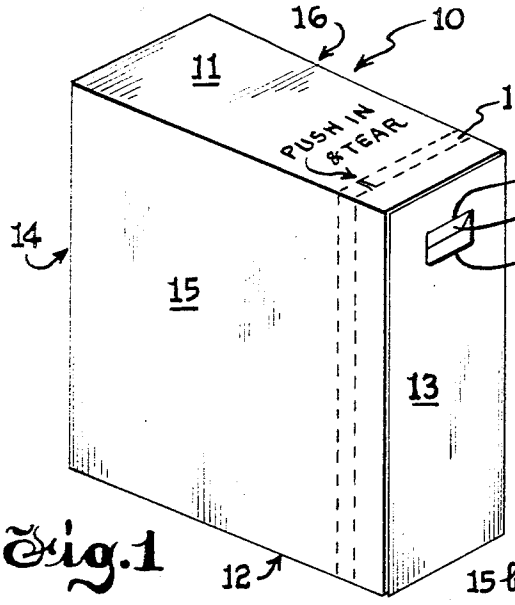

Fig. 1

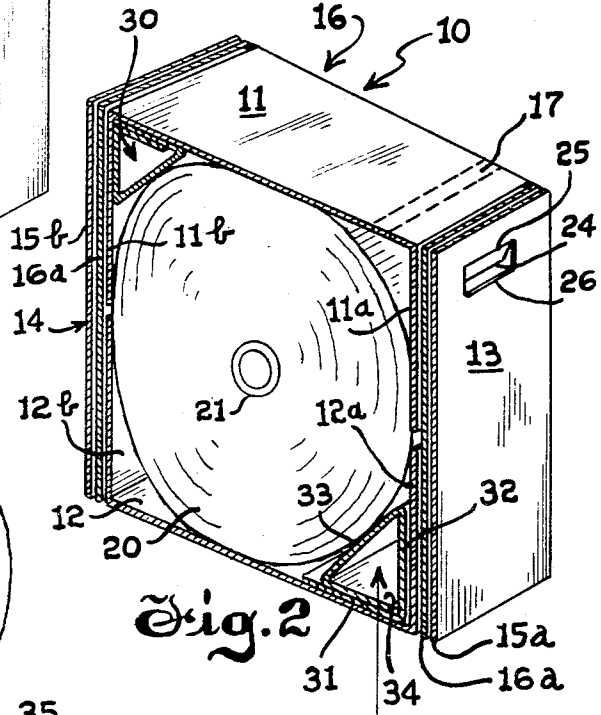

Fig. 2

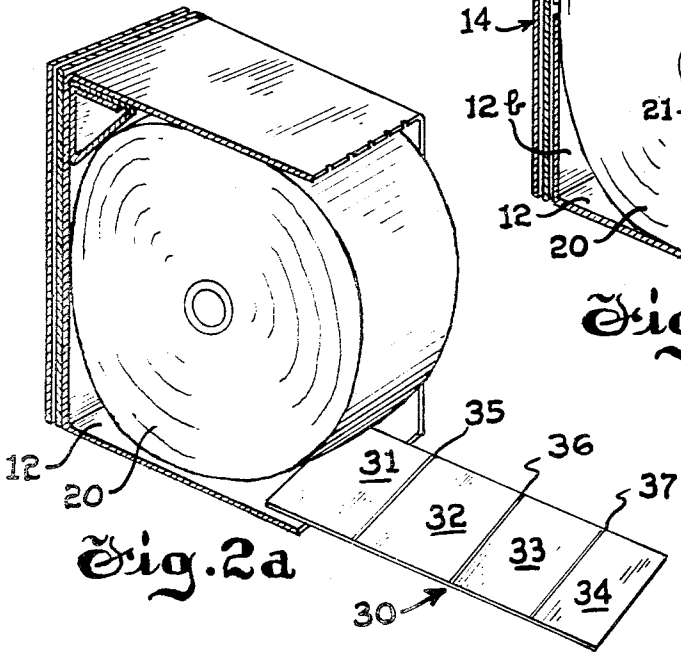

Fig. 2a

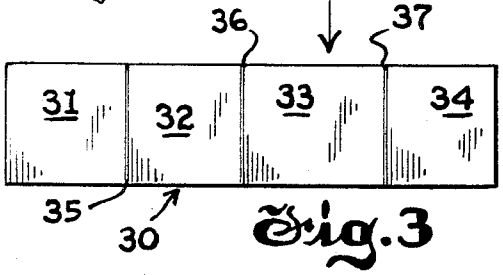

Fig. 3

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ROLL PACKAGE

Filed June 20 1967 2 Sheets-Sheet 2

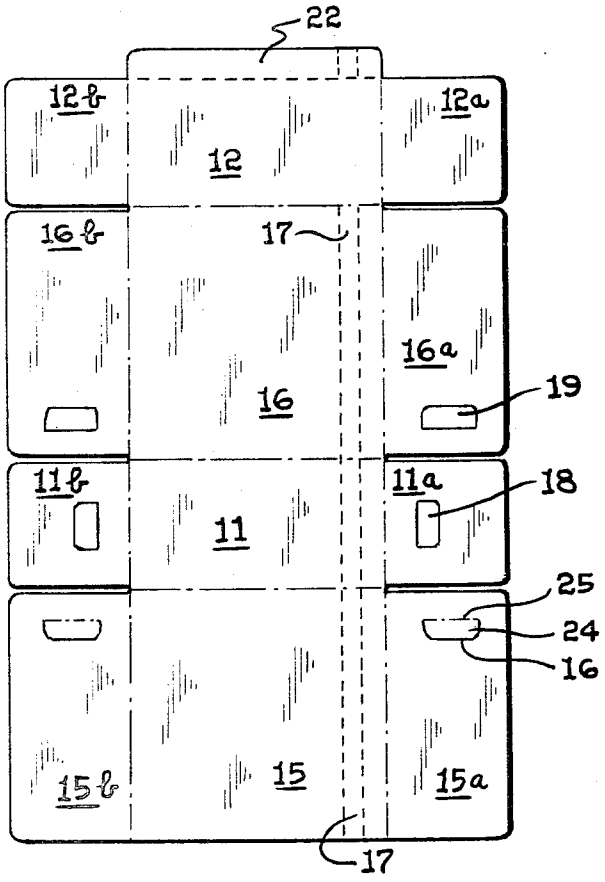

Fig. 4

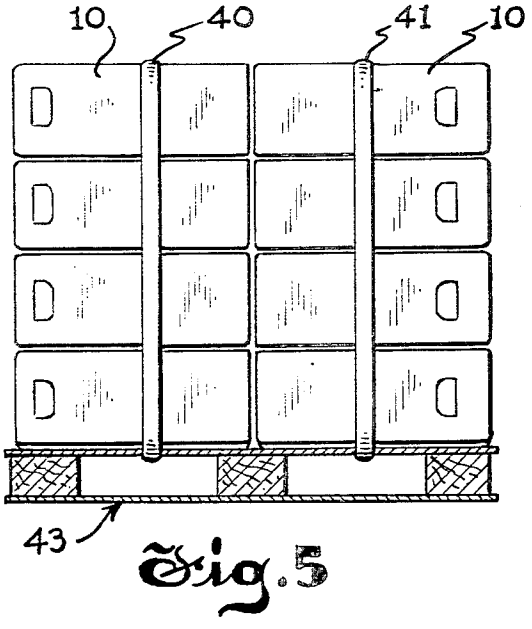

Fig. 5

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3,405,797

ROLL PACKAGE

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4 Claims. (Cl. 206—52)

ABSTRACT OF THE DISCLOSURE

An improved package for shipping and handling a roll of paper of the type suitable for use with modified office-size printing and copying machines. The package consists of a paper roll contained in a snug-fitting rectangular shipping container of corrugated board. The two end walls of the container consists of three thicknesses of board for improved structural strength. Partially die-cut openings are provided near the top end of each of these end walls to serve as hand-grips. Triangular wedges of folded corrugated board are disposed in two opposing corners of the container to block the roll in position and add further structural strength. A circumferential tear strip disposed adjacent one of the reinforced ends provides means for easy opening.

Background of the invention

In a recent development, office-size printing machines have been modified to use paper supplied in bulk rolls rather than pre-cut sheets. These rolls are about two feet in diameter and are from about 8½" to 11" wide. They weigh in the neighborhood of 100 to 150 pounds each. Some difficulty has been encountered in developing a package suitable for protecting the roll from damage during shipment and at the same time providing a package which is convenient to ship and easy to handle.

Most supply rolls of the type involved are presently packaged in conventionally designed corrugated containers having the usual nonoverlapping flaps to seal the ends. No additional provisions are made to protect the roll from damage or to serve as a handling aid. Because these conventional containers have a nonreinforced construction, the package is usually shipped with the roll standing in upright position to minimize damage. In spite of such precautions, damage still occurs when such conventional packages are used, not only because no provisions are made to reinforce the package but also because package size makes it awkward to handle.

The improved package of this invention protects the roll by providing a corrugated outer container of reinforced construction. The container also provides integral hand-grip means to facilitate handling, and has an easy-opening arrangement conveniently coordinated with the reinforced ends and handling grips.

Summary of the invention

The improved package of this invention comprises the combination of an outer rectangular container of corrugated board having two end walls constructed of three thicknesses of corrugated board, and a paper roll of a size suitable for office printing machines snugly fitted therein. The roll is blocked in nonshifting position within the container by two triangular wedges made of folded corrugated board and disposed in opposing corners of the container. The reinforced end walls are provided with partially cut openings arranged near one end to provide integral hand grips into which the fingers may be inserted when it is desired to carry the package to its point of use. A tear strip is provided in the two side walls and the top wall adjacent one of the reinforced end walls to provide convenient opening means.

It is the principal object of this invention to provide an improved reinforced package for paper rolls designed to minimize the possibility of the roll being damaged during shipment.

Another object is to provide a shipping package for paper rolls having integral hand-gripping means in two of the walls to facilitate handling.

A further object is to provide a roll-containing package which has reinforced end walls of sufficient strength to permit side-stacking without collapse.

Other objects and advantages will become apparent to those skilled in the art from the following detailed specification and attached drawings.

Brief description of the drawings

FIGURE 1 is a perspective exterior view of a container embodying features of the invention.

FIGURE 2 is a view similar to FIG. 1 but with one side wall cut away to show the interior construction of the container with a roll of paper disposed therein and with triangular blocking elements in opposing corners thereof.

FIGURE 2*a* is the same cut-away view as FIG. 2, but shows the package after it has been opened, with the front end wall also removed, and the lower blocking element opened out to facilitate removal of the roll.

FIGURE 3 is a plan view of one of the triangular blocking elements before it has been folded into its wedge shape.

FIGURE 4 is a plan view of a suitable blank from which a container as illustrated in other views may be formed.

FIGURE 5 is a side view of a stacked arrangement of the improved packages strapped in place on a shipping pallet ready for shipment.

Description of the preferred embodiment

The improved package, as shown in the drawings, comprises a rectangular container **10** of corrugated paperboard having disposed therein a roll of paper **20** wound on a central core **21**. Container **10** is comprised of a top wall **11**, a bottom wall **12**, a front end wall **13**, a rear end wall **14**, and two side walls **15** and **16**. As will be seen by reference to the drawings, top wall **11**, bottom wall **12** and side walls **15** and **16** of the container each comprise a single thickness of double wall corrugated board. Front end wall **13** and rear end wall **14** of the container each comprise three thicknesses of double-wall corrugated board. The three thicknesses of corrugated board in the front end wall **13** are secured to each other by adhesive or other suitable means and are comprised of inner flaps **11***a* and **12***a* (which are front extensions of top and bottom wall panels **11** and **12** respectively), central flap **16***a* (which is a front extension of side wall **16**), and outer flap **15***a* (which is a front extension of side wall **15**). The three thicknesses of rear end wall **14** are similarly joined to each other and are made up of inner flaps **11***b* and **12***b* (which are rear extensions of top and bottom wall panels **11** and **12** respectively), central flap **16***b* (which is a rear extension of side wall **16**), and outer flap **15***b* (which is a rear extension of side wall **15**). Near the top center of front end wall **13** there is provided a partially cut out section **24**, which provides an integral hand-receiving opening forming a grip for use in carrying the container. A similar arrangement is provided in rear end wall **14**, not shown. Section **24** is substantially rectangular in shape and is defined by lines completely cut through at the ends and bottom **26** and by a top fold line **25** which may be prescored. In the assembled container, section **24** is coextensive with the die-cut apertures **18** and **19** in flaps **11***a* and **16***a* respectively from which the cut-out paperboard sections have been removed, so that

section **24** may easily be pushed inwardly along line **25** to form a convenient hand gripping means.

Side walls **15** and **16**, and top wall **11** are provided with a weakened area or a continuous tear strip **17** in close proximity to the front end of the carton, which when stripped off will permit manual removal of front end wall **13** for access to the roll. It is not necessary for the tear strip to extend through bottom wall **12** for reasons later explained, but the tear strip may extend therethrough as an optional arrangement.

Triangular blocking wedges **30** are formed from an elongated piece of corrugated board comprising panels **31**, **32**, **33** and **34** suitably folded along fold lines **35**, **36** and **37**. These triangular wedges are disposed in two opposing corners of the container, as shown in FIG. 2, and press against the curved roll surface to more securely hold the roll **20** in place. In forming the wedges, the surface of panel **34** may be secured to the surface of panel **31**, or the mated surfaces of the folded panels may remain unattached.

In one method of assembling the package, the container is first folded into a rectangular tube on the transverse fold or score lines shown, with flap **22** being adhesively secured, or stapled, to the bottom of panel **15**. Flaps **12***b* and **11***b* are then folded inwardly. Flap **16***b* is then folded over flaps **12***b* and **11***b* and adhesively or otherwise secured thereto. Flap **15***b* is then folded over flap **16***b* and also secured thereto. Other sequences also may be used for assembling the container to arrive at its set-up condition.

After the container is set-up, triangular blocking wedge **30** may then be inserted in its proper position inside the container and adhesively or otherwise secured to the upper corner at the juncture of panel **11** and extension flap **11***b*. Paper roll **20**, wound on central core **21**, may then be rolled into the container from the open front end. After the roll is in place, another triangular blocking insert **30** is placed under the roll at the juncture of wall **12** and flap **12***a*. Flaps **12***a* and **12***b* are then folded inwardly, followed by flaps **16***a* and **15***a*, all secured to each other by suitable means. The package is then ready for shipment.

The lower triangular blocking wedge may or may not be secured to wall **12**. If it is attached thereto, then panel **34** of the wedge should not be attached to panel **31**. Not attaching the latter two panels together enables the insert to be unfolded to its original flat configuration after the package is opened, as shown in FIG. 2*a*, whereby the roll may be easily rolled into or out of the open container.

Also, in the modification where tear strip **17** extends through the bottom wall, as well as the other three walls of the container, the lower triangular blocking insert optionally may not be attached to wall **12**. If the tear strip does not extend through the bottom wall, then only panel **31** of the triangular insert may be attached so that the insert can be unfolded as shown in FIG. 2*a*, to facilitate manipulation of the roll when the container is opened.

The triple-reinforced end walls of the container provide the package with exceptional strength parallel to the roll axis. This construction permits several packages to be stacked on one another with the rolls disposed on their sides for convenience in palletizing and shipping. The reinforced ends, assisted by additional structural support offered by the triangular wedges, insure against collapse of the container under the weight of the other stacked packages and prevent potential damage to the roll from crushing. One example of a suitable palletizing arrangement is shown in FIG. 5. In that arrangement, a number of individual packages **10** are stacked on their sides in two tiers of four each on a conventional type pallet **43**. The stacks are strapped in place by the usual steel or plastic strapping **41**, and the palletized arrangement may be handled as a unit for warehousing and shipping.

While preferred embodiments of the invention have been shown and described herein, it will be appreciated that the details may be more or less modified without departing from the principles and scope of the invention as defined in the appended claims.

What is claimed is:

1. An improved package for paper rolls comprising the combination of a rectangular corrugated paperboard container and a roll of paper snugly disposed therein; said container having a top wall, a bottom wall, two side walls, a front end wall and a rear end wall; said front end wall and said rear end wall each being comprised of three thicknesses of corrugated board secured to each other; the inner thickness of each of said end walls comprising a pair of juxtaposed flaps which are extensions of said top wall and said bottom wall respectively; the central thickness of each of said end walls comprising a single flap which is an extension of one of said side walls; and the outer thickness of each of said end walls comprising a single flap which is an extension of the other of said side walls; each of said end walls having an integral hand grip arrangement partially cut into it near the top center thereof; and said container having a manually removable tear strip extending up one side wall, over said top wall and down the other side wall and spaced from said front end wall.

2. The package of claim **1** in which triangular shaped blocking wedges of folded corrugated board are disposed in opposing corners of said container in contact with said roll.

3. The package of claim **2** in which said blocking wedges are secured to said container.

4. The package of claim **2** in which at least one of said blocking wedges is secured to said container in a manner which permits unfolding of said wedge when said package is opened.

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MARTHA L. RICE, *Primary Examiner.*