

Aug. 20, 1968

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3,397,831

REINFORCED BULK PACK CONTAINER

Filed Sept. 1, 1967

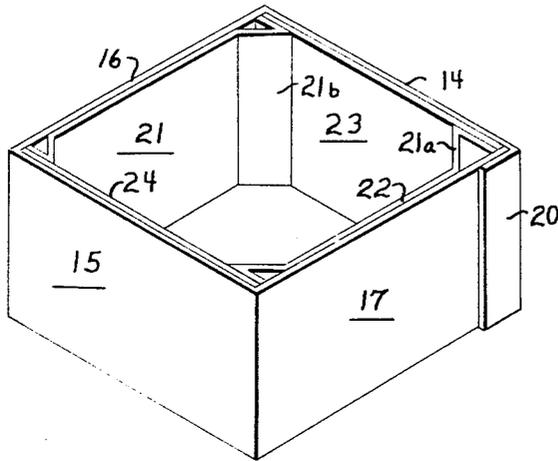


Fig. 1

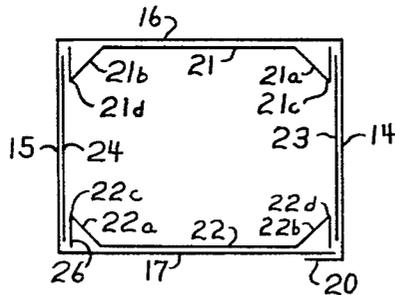


Fig. 3

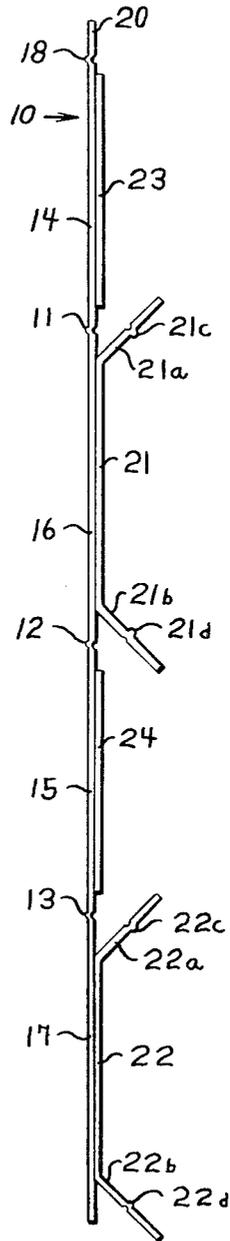


Fig. 2

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## REINFORCED BULK PACK CONTAINER

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Filed Sept. 1, 1967, Ser. No. 665,037

4 Claims. (Cl. 229-14)

### ABSTRACT OF THE DISCLOSURE

A container reinforced at all four side panels and along its corners to accommodate bulk, flowable material and which can be stored or transported in flattened condition after the reinforcing members have been put in place. The container, thus, can be conveniently set up or erected at the loading location without the necessity of then inserting or fastening the reinforcing members.

#### Background of the invention

(1) *Field of the invention.*—The invention relates to folded-blank containers, having reinforced side panels and corner areas, which can be transported or stored pre-assembled in flat, collapsed condition and erected at the point of filling or use.

(2) *Description of the prior art.*—Both the Wood patent application Ser. No. 651,840 filed July 7, 1967, and the Schwaner patent application Ser. No. 653,895 filed July 17, 1967, both assigned to the assignee of the present application, refer to the container problems involved in the shipment and storage of bulk, flowable materials. As mentioned in the latter patent application, in the packaging of bulk materials which are flowable and of considerable mass, various types of fiber, steel or wooden drums, of various configurations are utilized. These containers or drums are required to support amounts of material weighing in the order of 3000 pounds and this relatively heavy weight must be supported, with the loaded containers often stacked atop each other, for relatively long periods of time in storage or transport. Sidewall strength alone, unless the sidewalls and corner areas of the container are reinforced, usually is inadequate to resist bulging and deformation under these conditions. Reinforcement of the sidewalls and corners of the container customarily involves gluing or fastening of the reinforcing members into the container, with the container in erected condition, at the point of manufacture of the assembly. The containers, with reinforcing members in place, are difficult and bulky to store or to ship to the point of use (loading location). If the reinforcing members are not installed but are shipped separately with the collapsed or flattened containers, ease in storing or transport is achieved but gluing or fastening of the reinforcing members in the containers must be accomplished at the loading location, a generally disadvantageous situation.

#### Summary of the invention

The present invention is embodied in a container having reinforcing members assembled on the container while it is in flat condition and before the container is squared or erected; the reinforcing members, when the container is erected, forming reinforcing panels for the container side walls and integral, reinforcing corner posts at each of the container corners.

#### Brief description of the drawings

FIG. 1 is a perspective view of an erected container embodying the present invention.

FIG. 2 is an edge view of the scored container blank, in flattened condition, from which the container of FIG. 1 is erected.

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FIG. 3 is a schematic top plan view of the container of FIG. 1.

#### Description of the preferred embodiment

Referring initially to the drawings, and particularly to FIG. 2, the container is formed by a transversely scored blank indicated generally at 10. The transverse scores 11, 12 and 13 divide the container into end panels 14 and 15 and side panels 16 and 17. The container structure of FIGS. 1-3 is shown without top or bottom closure flaps since the method of closing the top and bottom of the container has no relevance to the present invention. However, it will be understood that the container could have the regular slotted flaps structure, either full or partial, or might have cap type top and bottom closures or any other conventional closure means.

The score line 18 (FIG. 2) merely defines the conventional manufacturer's joint flap 20 which, as may best be seen in FIG. 3, overlaps the adjacent side panel 17 of the container and is glued to it when the container is erected to complete the assembly.

While the scored blank is in its flattened form of FIG. 2 the reinforcing panels are added. Two of the container panels, such as panels 16 and 17, which are opposite each other when the container is erected are provided with overlying reinforcing panels 21 and 22, respectively. The reinforcing panels are placed on the inner surface of the blank and glued or otherwise ridgedly secured to the adjacent container panels. Secured by gluing, or by other suitable means, are reinforcing panels 23 and 24, these being secured to the container panels 14 and 15, respectively.

The reinforcing panels 23 and 24 are shorter in width than their adjacent container panels, however, the reinforcing panels 21 and 22 are wider than their adjacent container panels 16 and 17, as will be evident from FIG. 2. The reinforcing panels 21 and 22, along both their side margins, are free of the container panel to thereby form flaps 22a and 22b on panel 22 and, flaps 21a and 21b on panel 21.

Each of the reinforcing panel flaps may be provided with scores 21c, 21d, 22c and 22d, and these adapt the flaps for folding of their free marginal portion.

As will be particularly evident from FIG. 3, when the container is erected and the tab 20 is fastened to the adjacent container panel 17 the flaps 21a, 21b and 22a, 22b extend diagonally across the corners of the erected container. The free marginal portions of the flaps are folded inwardly, as indicated generally at 26 in FIG. 3, so that they lie in a plane generally perpendicular to the appropriate reinforcing panel, thereby providing corner posts of generally V-shaped cross-section, the post being integral with the adjacent reinforcing panels 21 and 22.

As will be evident, the container of the present invention may be stored and transported, even though the reinforcing panels are in place, in generally flat condition and upon erection of the container the reinforcing panels provide multiple ply side panels for the containers and relatively rigid corner posts at each of the container corner areas.

While the invention has been disclosed and described in some detail in the drawings and foregoing description, they are to be considered as illustrative and not restrictive in character, as other modifications may readily suggest themselves to persons skilled in this art and within the broad scope of the invention, reference being made to the appended claims.

What is claimed is:

1. A reinforced container adapted particularly for storage or transport of bulk, flowable material when erected and capable of being stored or transported in flattened condition before erection, the container being formed by

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a blank transversely scored to provide side and end panels, two of the container panels which are opposite each other when the container is erected having reinforcing panels secured centrally thereto, the reinforcing panels each being wider than their adjacent container panels and free of the container panel along both their side margins to form flaps extending diagonally across the corners of the erected containers, each of the reinforcing panel flaps having a free marginal portion folded inwardly, when the container is erected, to lie in a plane generally perpendicular to its reinforcing panel and thereby providing corner posts of generally V-shaped cross-section which are integral with the reinforcing panels.

2. A reinforced container as claimed in claim 1 in which the container panels which do not carry the flapped reinforcing panels are provided with further reinforcing panels terminating short of the margins of their adjacent container panels.

3. A reinforced container adapted particularly for storage or transport of bulk, flowable material when erected and capable of being stored or transported in flattened condition before erection, the container being formed by a blank transversely scored to provide side and end panels, two of the container panels which are opposite each other

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when the container is erected having reinforcing panels secured centrally thereto, the reinforcing panels each being wider than their adjacent container panels and free of the container panel along both their said margins to form flaps extending diagonally across the corners of the erected containers, each of the reinforcing panel flaps having a free marginal portion folded, when the container is erected, to lie in a plane generally perpendicular to its reinforcing panel and thereby providing corner posts of generally triangular cross-section which are integral with the reinforcing panels.

4. A reinforced container as claimed in claim 3 in which the container panels which do not carry the flapped reinforcing panels are provided with further reinforcing panels terminating short of the margins of their adjacent container panels.

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