

1

2

3,248,037

BULK CARRIER AND CONNECTOR

Daniel Simkins, Van Wert, Ohio, assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Original application Nov. 16, 1959, Ser. No. 853,416. Divided and this application Dec. 10, 1964, Ser. No. 427,997

2 Claims. (Cl. 229—15)

This is a division of application Serial No. 853,416, filed November 16, 1959, now abandoned.

The invention relates in general to new and useful improvements in corrugated boxes and the like, and more particularly seeks to provide a compartmented corrugated box which is suitable for holding large quantities of free flowing solids and the like, and a filling device for simultaneous filling of each of the compartments of the box.

A corrugated box may be readily reinforced against endwise collapsing by placing upright reinforcing therein. However, when a large corrugated box is filled with a free flowing solid, the outward pressure of the solids on the walls of the box results in the bowing of the walls notwithstanding the existence of internal reinforcement which would normally prevent endwise collapsing.

In view of the foregoing, it is an object of the invention to provide a corrugated compartment bulk box for free flowing solids and the like, the box, due to its novel construction, having a relatively great strength of the type which will increase the stacking strength of the box and minimize the outward bowing of the side walls now experienced with other styles of corrugated bulk boxes currently in use, and a filling device for simultaneous filling of each compartment of the box.

Another object of the invention is to provide a large corrugated box to function as a bulk carrier, the corrugated box being formed in sections whereby not only is the strength of the box greatly increased, but also the individual compartments are provided so that, if desired, more than one type of bulk material may be stored within the box, and/or each individual compartment may be detached from the main body and handled as a separate unit.

Still another object of the invention is to provide a novel bulk carrier in the form of a corrugated box which includes a base having an upstanding peripheral flange, a plurality of nested sleeves seated within the base and projecting upwardly thereabove, and a cover overlying the sleeves, the cover having a peripheral flange depending therefrom and being telescoped over the upper ends of the sleeves, the base and the cover forming both the ends of the sleeves and retaining the sleeves against separation, the individual sleeves being capable of preventing their side walls from bowing due to the outward pressure of the bulk material contained therein.

A further object of the invention is to provide a corrugated box for free flowing solids, the corrugated box being provided with a plurality of compartments which are disposed adjacent a common center, and there being provided a filling device which may be seated on the upper ends of the individual compartments and which filling device will simultaneously direct streams of free flowing solids into the individual compartments so that the entire box may be filled at one time through the use of the filling device.

A still further object of the invention is to provide a corrugated box particularly adapted to function as a bulk carrier for free flowing solids and the like, the corrugated box being generally of the size of a conventional pallet and having feet on the underside thereof which are spaced apart suitable distances to receive the tines of a fork

lift truck, the corrugated box also being compartmented so that it may contain a large quantity of free flowing solids and at the same time have sufficient strength to eliminate the bowing of the side walls thereof.

With the above, and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims, and the several views illustrated in the accompanying drawings:

In the drawings:

FIGURE 1 is a perspective view of the bulk carrier of this invention, and shows the general details thereof.

FIGURE 2 is an enlarged perspective view of the bulk carrier of FIGURE 1, with the cover removed therefrom and the filling device in position for filling the compartments of the bulk carrier.

FIGURE 3 is an enlarged bottom perspective view of the filling device of FIGURE 2, and shows the specific details of the construction thereof for mounting upon the sleeves of the bulk carrier.

FIGURE 4 is an enlarged plan view of the bulk carrier as it appears in FIGURE 1, and shows the specific relationship of the filling device with respect to the individual sleeves.

FIGURE 5 is an enlarged vertical sectional view, taken substantially upon the plane indicated by the section line 5—5 of FIGURE 1, and shows the specific internal construction of the bulk carrier, there also being shown the details of a strap which may be used for holding together the individual sleeves intermediate their ends.

FIGURE 6 is an enlarged exploded perspective view of the various components of the bulk carrier and shows the various details thereof.

The general details of the embodiment of the invention disclosed herein are generally illustrated in FIGURE 1, the bulk carrier being generally referred to by the numeral 10. The bulk carrier 10 is formed of a base, generally referred to by the numeral 11, a plurality of upstanding sleeves or tubes 12 seated within the base and projecting thereabove, and a cover, generally referred to by the numeral 13. It is to be noted that the bulk carrier 10 is generally rectangular or square in outline, which shape is the preferred shape for shipment and storage purposes. However, if desired, the outline of the bulk carrier 10 and the individual components thereof may be of other configurations.

In the preferred embodiment of the bulk carrier 10, all of the components thereof will be formed of cardboard material. However, it is to be understood that other materials may be used, if desired. The individual components of the bulk carrier 10 may be secured together by various types of conventional fastening means, including stapling, gluing, etc.

The base 11 is folded from a flat blank, and includes a bottom wall 14 which has extending along the edges thereof flaps 15 and 16. The flaps 16 differ from the flaps 15 in that they are provided with extension flaps 17. Also, the flaps 16 are provided with diagonal fold lines 18 at their corners to facilitate the folding of the assembled base 11 to a relatively flat state for storage and shipment, if so desired.

In the assembled form of the base 11, the flaps 15 and 16 are connected together by extending the flap extensions 17 into overlapping relation with respect to the flaps 15 and suitably securing them to the flaps 15, as by staples 19 illustrated in FIGURES 1 and 2.

Each of the sleeves 12 is folded from an elongated blank so as to have four sides. The free edges of the blank from which the sleeves 12 are formed are suitably connected together by, for example, an elongated cloth tape 20. Also, if desired, the upper and lower edges of

the sleeves 12 may be reinforced by cloth tape (not shown).

The cover 13 is of the same construction as the base 11, and is formed from a blank so as to provide a top wall 21 having a plurality of flaps extending thereabout. These flaps include a pair of flaps 22 disposed along opposite edges, and a second pair of flaps 23 disposed along the other of the opposite edges. The flaps 23 differ from the flaps 22 in that they are provided with flap extensions 24. In the assembled form of the cover 13, the flaps 22 and 23 are disposed in depending relation to provide a depending peripheral flange. The flaps 22 and 23 are secured together by the flap extensions 24, which flap extensions overlap the flaps 22 and are secured thereto by suitable means, such as by staples 25, as is best shown in FIGURE 1. Also, the flaps 23 are provided with diagonal fold lines 26 which permit the folding of the assembled cover 13 to a relatively flat state for storage and shipment, when desired.

Depending upon the particular requirements of the bulk carrier 10, the individual sleeves 12 and the base 11 and the cover 13 may remain as individual components which are releasably secured together, or the elements may be secured together to form a complete container which cannot be easily broken down into individual components.

In the form of the invention illustrated in FIGURES 1 and 2, the sleeves 12 are rigidly secured to the base 11, and the cover 13 is rigidly secured to the sleeves 12. The sleeves 12 may be rigidly secured to each other by such fastening means as adhesive, staples or tape. The relative proportions of the sleeves 12 are such that they will nest together having corners disposed along a common center line and will snugly fit within the flanges of the base 11 and the cover 13. The lower parts of the sleeves 12 are secured to the flaps 15 and 16 of the base 11 by staples 27, and to the flaps 22 and 23 of the cover 13 by staples 28.

Under certain conditions, it will be desired to form the bulk carrier 10 so that it is reusable and can be knocked down for shipment. In such event, the individual sleeves 12 will not be rigidly secured to each other, but may be secured together by a strap, such as the strap 29 illustrated in FIGURE 5. The strap 29 will extend about the sleeves 12 and may be removed therefrom so that the sleeves may be disassembled. Also, the base 11 and the cover 13 will not be rigidly secured to the sleeves 12. If desired, suitable strapping may be used for retaining the cover and base in clamping relation with respect to the ends of the sleeves.

The size of the bulk carrier 10 may vary as is desired. However, it is contemplated to form the bulk carrier 10 of the same size as a conventional pallet so that it may be readily handled by a fork lift truck. To this end, the base 11 may be provided with a plurality of feet 30. The feet 30, in the preferred embodiment, will be nine in number and will be secured to the underside of the bottom wall 14 about the periphery of the base 11 in the arrangement illustrated in FIGURE 2. In addition, there will be one of the feet 30 at the center of the base 11. The spacing of the feet 30 will be such that the tines of a fork lift truck fork may fit therebetween and engage the underside of the bottom wall 14.

It will be readily apparent that the presently proposed bulk carrier 10 is actually four boxes formed in one for ease of handling and ease of construction, as well as simplicity of construction and minimum costs. Because of the construction and since the pressures exerted on the side walls of the individual sleeves 12 will bear against only relatively short side walls, as opposed to long side walls in containers of equal size, the problem of the side walls bulging is minimized. Further, the construction of the sleeves 12 and the manner in which they are assembled, prevent endwise collapsing of the bulk carrier 10 so that a number of the bulk carriers 10 may be stacked one upon the other. The feet 30 will be of a

size to properly transmit the loads from one bulk carrier to another. Also, it will be apparent that the feet 30 are arranged so that the pressures exerted thereby on a next lower bulk carrier will be taken properly by the sleeves.

Because the bulk carrier 10 is divided into at least four compartments, it will be apparent that, when desired, the individual bulk carrier 10 may carry more than one kind of material. For example, three of the sleeves 12 may be filled with one material, and the fourth sleeve filled with another. On the other hand, when it is desired to fill all of the sleeves 12 and the compartments formed thereby with the same type of bulk material, the filling of the bulk carrier 10 may be simplified through the use of a filling device, generally referred to by the numeral 31.

The filling device 31 includes a generally cylindrical body 32 which is open at the upper end thereof and which is provided with a bottom wall 33. The bottom wall 33 is provided with a centrally located, relatively large dispensing opening 34. The bottom wall 33 is also provided with radiating slots 35 whose positions correspond to the positions of the walls of the sleeves 12. The slots 35 have extensions 36 which extend up into the body 32.

When the filling device 31 is utilized, it is located on the bulk carrier 10 after the cover 13 has been removed. It is centrally located with respect to the sleeves 12 and the upper edges of the sleeves 12 extend into the slots 35 and the slot extensions 36. The bottom wall 33 of the filling device 31 is disposed below the upper edges of the sleeves 12. The size of the filling device 31 is such that the bulk material may be directed thereinto from a spout or other type of dispensing unit without waste. The filling device 31, when centered on the sleeves 12, will simultaneously dispense the bulk material into the sleeves 12 in equal quantities. After the filling of the sleeves 12 has been completed, it is merely necessary to pull the filling device 31 off of the sleeves 12, after which the cover 13 may be positioned on the sleeves 12 to complete the bulk carrier 10.

From the foregoing, it will be seen that novel and advantageous provision has been made for carrying out the desired end. However, attention is again directed to the fact that variations may be made in the example embodiment disclosed herein without departing from the spirit and scope of the invention, as defined in the appended claims.

I claim:

1. A multiple compartment container comprising a base having an upstanding peripheral flange, a plurality of compartment defining members seated on said base within said peripheral flange, said compartment defining members having abutting vertical faces and corners meeting along a common vertical line, and a filler disposed generally along said line for simultaneously filling all of said compartment defining members, said filler including a body having slots in a lower portion thereof for receiving upper edge portions of said compartment defining members, a bottom wall on said body, said bottom wall having slots therein aligned with said slots in said body, said bottom wall having a dispensing opening joined to said slots in said body by said slots in said bottom wall, said dispensing opening opening within and in communication with all of said compartment defining members, said dispensing opening being divided into segments by said compartment defining members.

2. The combination of a multiple compartment container and connecting means therefor, said container comprising a rectangular base having an upstanding peripheral wall integrally connected thereto, a plurality of upstanding individual compartment defining rectangular cross-sectional tubular members having open upper and lower ends with said lower ends being seated on said base with lower portions of said tubular members being snugly engaged by said upstanding peripheral wall, each of said tubular members having an upstanding corner

5

disposed along a vertical center line of said base, each of said tubular members having a seam along said center line, each seam being defined by abutting free edges of the respective tubular member and an external connecting strip secured to adjacent free edge portions of the respective tubular member, all of said connecting strips being in face-to-face abutting engagement with others of said connecting strips whereby said seams are reinforced by the pressure contact between said tubular members, said connecting means connecting together upper ends of said tubular members for preventing separation thereof, said connecting means comprising a body having slots in a lower portion thereof and receiving upper portions of said tubular members, and a bottom wall on said body, said bottom wall having slots therein in alignment with said slots in said body and having a central dispensing opening which is divided into segments by said tubu-

5

10

15

6

lar members, said central dispensing opening joined to said slots in said body by said slots in said bottom wall.

References Cited by the Examiner

UNITED STATES PATENTS

1,656,307	1/1928	Walter	-----	229—32
2,172,896	9/1939	Walker	-----	229—15
2,371,241	3/1945	Jaffa	-----	220—86
2,665,806	1/1954	Budd	-----	229—14
2,673,022	3/1954	Prossen	-----	229—15
2,734,676	2/1956	Lawrence	-----	229—14
2,762,551	9/1956	Fallert	-----	206—60
2,968,397	1/1961	Cantrell	-----	229—15

FOREIGN PATENTS

464,060	4/1937	Great Britain.
---------	--------	----------------

GEORGE O. RALSTON, *Primary Examiner.*