Dec. 13, 1966 J. P. FISCHER 3,291,364

PALLET CONTAINER

Filed July 2, 1964 2 Sheets-Sheet 1

Fig. 1

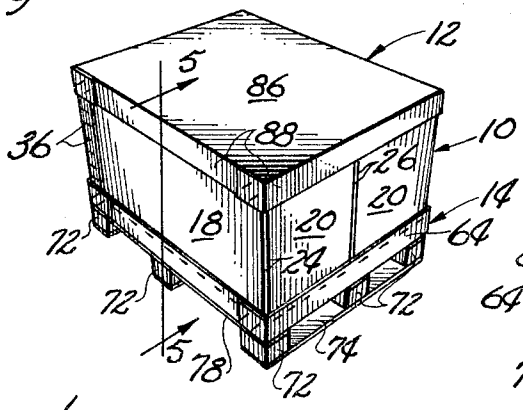


Fig. 4

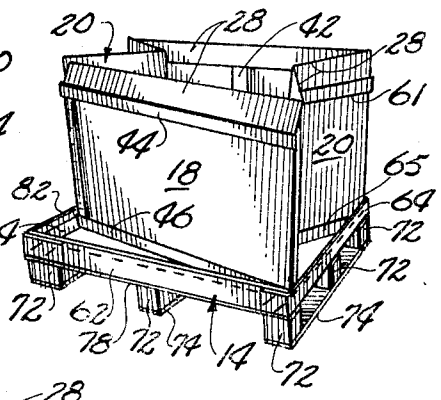


Fig. 2

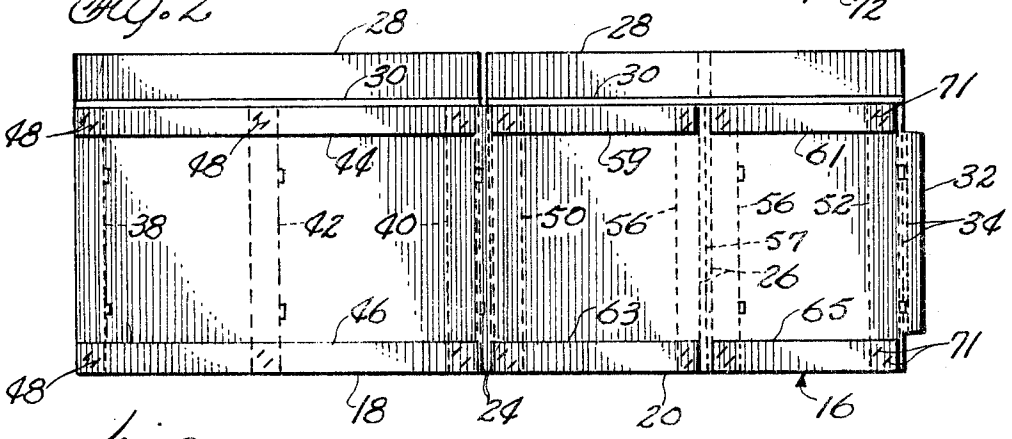
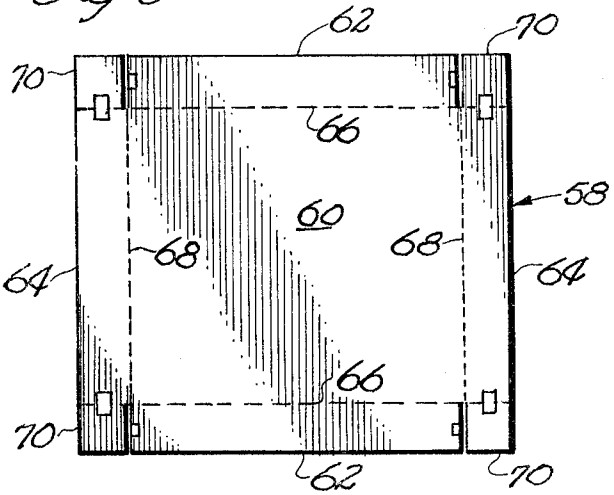


Fig. 3



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PALLET CONTAINER

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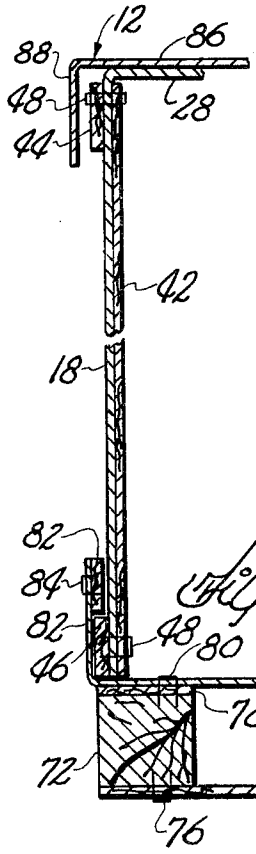


Fig. 5

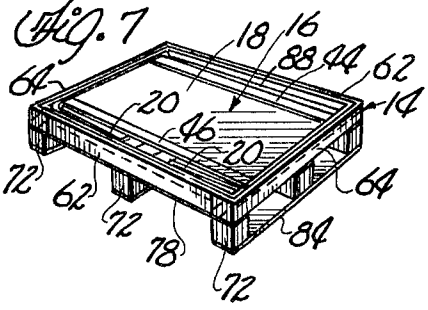


Fig. 7

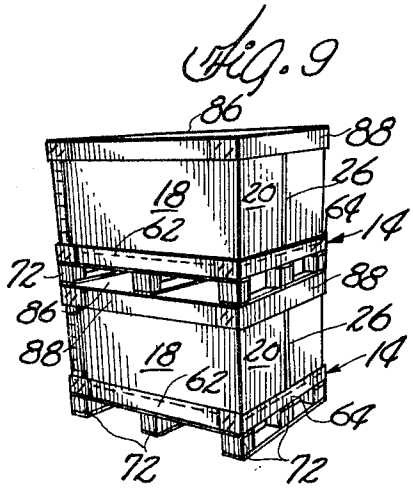


Fig. 9

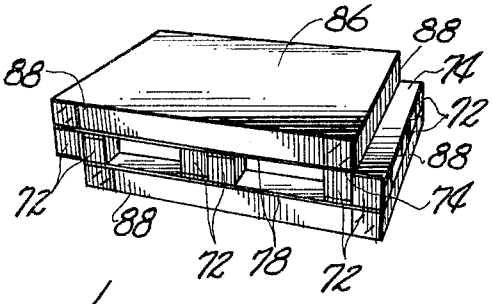


Fig. 8

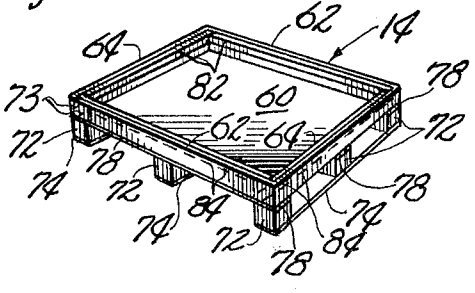


Fig. 6

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PALLET CONTAINER

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Filed July 2, 1964, Ser. No. 379,852
5 Claims. (Cl. 229—6)

This invention relates to pallet containers, and more particularly to pallet containers of the type which can be readily assembled and stacked vertically when filled with contents and readily knocked down when empty.

In the transportation and storage of certain goods it is desirable to be able to readily move the load. To accomplish this, containers have been provided with underlying pallets for spacing the contents-supporting deck of the container from the ground to enable the tines of a fork-lift truck to enter below the deck for raising, transporting and lowering the container. One of the disadvantages of known containers is that they have not always been sufficiently sturdy in construction to support the loads contained therein during transportation and storage. Another disadvantage of containers of this type is that when they have been emptied, they have required an uneconomical amount of space during storage or reshipment back to the site of refilling. Heretofore, such disadvantages have only been overcome by container constructions which are unduly heavy and expensive.

Consequently, it is an object of this invention to provide a pallet container which is light in weight and at the same time sufficiently strong for its intended use.

It is a further object of this invention to provide a pallet container which has sufficient vertical strength when filled to enable two or more such containers to be stacked vertically on top of each other.

It is a further object of this invention to provide a pallet container which may be quickly and easily assembled for use and which may when empty be readily knocked down and returned to the site of refilling.

It is a still further object of this invention to provide a pallet container, the parts of which, when assembled and filled, will be interlocked in such a manner as to prevent accidental collapse of the container, to eliminate the need for additional fastening devices or strapping and to provide for positive attachment on a reusable basis.

The foregoing and other objects are achieved by this invention which provides a container comprising a bottom section, a body section, and a cover, said bottom section including a horizontal deck and retaining walls extending upwardly from the periphery of said deck, means attached to said horizontal deck for maintaining said bottom section vertically spaced from the ground, said body section having foldable side walls and being receivable when in fully folded condition between said retaining walls, cooperating means on said retaining walls and side walls for interlocking said bottom and body sections when said body section is in expanded condition for storage of contents in said container, and said cover section being telescopically positionable both over said side walls when said body section is in said expanded condition and over said retaining walls when said body section in fully folded condition is positioned in said bottom section.

The structure and objects of this invention may be more thoroughly understood by those skilled in the art of packaging upon reading the following specification in conjunction with the accompanying drawings wherein:

FIGURE 1 is a perspective view of an assembled container made according to the invention;

FIG. 2 is a plan view (showing the outside surface) of one-half of the body section of the container prior to folding and assembly thereof;

FIG. 3 is a plan view of a blank for forming the bottom section of the container;

FIG. 4 is a perspective view of the bottom and body sections of the container, the body section being shown in position just prior to interlocking engagement with the bottom section;

FIG. 5 is a partial vertical sectional view taken along lines 5—5 of FIG. 1;

FIG. 6 is a perspective view of the bottom section of the container;

FIG. 7 is a perspective view showing the body section of the container in collapsed condition inside the bottom section thereof;

FIGURE 8 is a perspective view of two containers of the invention in knocked-down condition and stacked for reshipment; and

FIG. 9 is a perspective view of two assembled containers of the invention stacked for storage.

Referring to FIG. 1, there is shown a fully assembled container of the invention comprising a body section 10, a cover 12, and a bottom section 14. The body section 10 is formed from two identical blanks, one of which, 16, is shown in FIG. 2. Each body section portion 16 consists of a non-foldable side panel 18 and a foldable side panel 20, side panels 18 and 20 being adjoined in the area of the vertical closely-spaced crease lines 24. The foldable side panels 20 are provided with a pair of closley-spaced centrally disposed foldable crease lines 26 whereby the side panels 20 may be folded as shown in FIGS. 4 and 7. The free ends of the foldable side panels 20 are provided with end flaps 32 which are foldable inwardly at a pair of closely-spaced crease lines 34 whereby the two identical body section portions 16 may be joined together, such as by staples 36 (FIG. 1), to form the complete body section. As seen in FIGS. 2 and 5, the side panels 18 and 20 of the body section are provided with top flaps 28 which are foldable inwardly along the crease lines 30 to provide support for the cover 12 of the container when fully assembled.

The pair of blanks 16 for forming the body section of the container may be a fibrous or other suitable material but is preferably corrugated to provide additional strength. In order to provide still further strength and rigidity, particularly when the container is filled and stacked for storage, wooden reinforcing strips are attached as by stapling to the side walls of the body section, as best seen in FIGS. 2 and 5. Vertical strips 38 and 40 are attached to the non-foldable side panels 18 at each end thereof and extend substantially the full height of the side panels 18 on the interior side thereof. A third vertical strip 42 is also attached to the interior of each side panel 18 in the center thereof. Upper and lower horizontal reinforcing strips 44 and 46, which extend substantially the full length of each side panel 18 are provided on the exterior of each nonfoldable side panel 18 along the top and bottom edges thereof, respectively. The vertical reinforcing strips 38, 40 and 42 and the horizontal reinforcing strips 44 and 46 are secured to each side panel 18 by staples 48 which extend through the side panel and both the vertical and horizontal reinforcing strips in the areas where the reinforcing strips are superimposed with the side panel 18 interposed therebetween.

Each foldable side panel 20 of the body section is similarly strengthened by reinforcing strips similarly attached thereto. Vertical reinforcing strips 50 and 52 are disposed at each end of the side panel 20 on the interior side thereof, the strip 50 being spaced apart from the vertical strip 40 on the side panel 18 a distance slightly greater than the space between the crease lines 24. The

central portion of each foldable side panel **20** is reinforced on the interior side thereof by a pair of vertical reinforcing strips **56** which abut each other along their length on a line **57** disposed between the pair of crease lines **26** when the foldable side panel **20** is in unfolded condition. A pair of upper reinforcing strips **59** and **61**, positioned in spaced apart end-to-end relationship and extending from the crease lines **26** in opposite directions along the upper edge of each foldable side panel **20**, are also provided on the exterior thereof. Similarly, a pair of lower reinforcing strips **63** and **65**, also positioned in end-to-end abutting relationship and extending from line **57** in opposite directions, are provided along the lower edge of each foldable side panel **20** on the exterior thereof. The vertical reinforcing strips **50**, **52** and **56** and the horizontal reinforcing strips **59**, **61**, **63** and **65** are secured to each foldable side panel **20** by staples **71** which extend through the side panel and both the vertical and horizontal strips in the areas where the reinforcing strips are superimposed with this side panel interposed therebetween.

The bottom section **14** of the container, FIGS. 3 and 6, is preferably also formed from a blank **58** of corrugated fibrous material. The blank **58** comprises a bottom panel or deck **60** having opposed pairs of side panels **62** and **64** extending therefrom along the crease lines **66** and **68**, respectively. The side panels **64** are each provided with a pair of end flaps **70** by means of which the side panels **64** may be secured, as by staples **73**, to the side panels **62** when the blank **58** is folded to the position shown in FIG. 6. It should be noted that the inside dimensions of the bottom section are sufficient to permit the body section when completely folded or knocked down to be received in the bottom section for reshipment to the site of refilling.

According to an alternative construction designed to provide increased corner strength of the bottom section **14**, each of the side panels **62** and **64** may be provided with a pair of triangular end flaps (not shown), in lieu of the end flaps **70**, by means of which the respective side panels may be secured to each other, as by staples, when the blank is folded to the position shown in FIG. 6.

The bottom section **14** of the container is supported in spaced relationship above the ground by means of a pallet construction comprising nine wooden spacer blocks **72** which are arranged in three rows having three spacer blocks each, one block being positioned at each corner of the bottom panel, another being positioned midway of each side of the bottom panel, and one (not shown) being located in the center of the bottom panel. The spacer blocks **72** are maintained in horizontal spaced-apart relationship by means of three wooden stringers **74** extending transversely of the bottom panel **60** and secured to the bottoms of the spacer blocks **72** by means of staples **76**, as shown in FIG. 5. The spacer blocks **72** are further maintained in horizontal spaced-apart relationship by means of three longitudinally extending stringers **78** which are secured by means of staples **80** which extend through the bottom panel **60**, the stringers **78** and into the spacer blocks **72**.

As shown in FIGS. 5 and 6, the side panels **62** and **64** of the bottom section **14** have four horizontal wooden strips **82** secured longitudinally by means of staples **84** along the upper edges of these side panels, the strips **82** being spaced above the bottom panel **60** a distance slightly greater than the width of the strips **46** secured to the side panels **18** and **20** of the body section **16**. The relative dimensions of the bottom panel **60** of the bottom section **14** and the corresponding dimensions of the side panels **18** and **20** of the body section are such that when the body section is fully expanded or unfolded the strips **46**, **63** and **65** on the side walls of the body section will underlie the strips **82** of the side panels **62** of the bottom section **14** to interlock the body section and bottom section, thereby preventing accidental disassembly thereof when the container is fully assembled and filled with contents. Such interlocking arrangement also eliminates the need for additional fastening devices or strapping and provides for positive attachment on a reusable basis.

The cover **12** of the container may also be formed from a fibrous corrugated blank (not shown) similar to the blank **58** for forming the bottom section of the container. However, the cover **12** need not be provided with any reinforcing strips. As shown in FIGS. 5 and 8, the width and length of the top panel **86** of the cover **12** are slightly larger than the respective dimensions of the bottom panel **60** of the bottom section **14** so that the downwardly extending side panels **88** of the cover **12** may be telescoped downwardly over the upper reinforcing strips **44**, **59** and **61** on the body section when the body section is fully unfolded and also downwardly over the side panels **62** and **64** of the bottom section **14** after the container has been emptied and the body section fully collapsed and received in the bottom section **14** (FIGS. 7 and 8) for reshipment to the site of refilling.

It will be noted that the several vertically disposed reinforcing strips **38**, **40**, **42**, **50**, **52** and **56** attached to the body section **16** are each positioned directly above one of the spacer blocks **72** so as to provide the container with greater vertical strength and to permit the stacking of the containers, particularly when loaded, as shown in FIG. 9, without bulging the side walls of the container or crushing the lower containers in the stack.

It will thus be seen that a pallet container has been provided for shipping and storage of material which is both light in weight, sufficiently strong for its intended use and economical in its cost. The container provided by the invention is seen to be quickly and easily assembled for use and may when empty be readily knocked down for reshipment to the site of refilling. There has also been provided in such a container, means for interlocking certain parts thereof to prevent accidental disassembly of the container.

While a particular embodiment of this invention is shown herein, it will be understood, of course, that the invention is not to be limited thereto, since many modifications may be made, and it is therefore contemplated by the appended claims to cover any such modifications as to fall within the true spirit and scope of this invention.

I claim:

1. A container comprising a bottom section and a body section, said bottom section including a horizontal deck and retaining walls extending upwardly from the periphery of said deck, adjacent pairs of said retaining walls being secured together at their ends in perpendicular relationship, means attached to said horizontal deck for maintaining said bottom section vertically spaced from the ground, said body section having a pair of foldable walls and a pair of non-foldable walls and being receivable when in fully folded condition between said retaining walls, and cooperating means on said retaining walls and side walls for interlocking said bottom and body sections when said body section is in expanded condition for storage of contents in said container, said cooperating means including a first set of horizontal strips secured to said walls of said body section along the bottom edges thereof and a second set of horizontal strips secured to said retaining walls at a distance above said deck slightly greater than the width of said first set of horizontal strips.

2. A container comprising a bottom section, a body section, and a cover, said bottom section including a horizontal deck and retaining walls extending upwardly from the periphery of said deck, adjacent pairs of said retaining walls being secured together at their ends in perpendicular relationship, said body section having a pair of foldable walls and a pair of non-foldable walls and being receivable when in fully folded condition between said retaining walls, cooperating means on said retaining walls and side walls for interlocking said bot-

tom and body sections when said body section is in expanded condition for storage of contents in said container, said cooperating means including a first set of horizontal strips secured to said walls of said body section along the bottom edges thereof and a second set of horizontal strips secured to said retaining walls at a distance above said deck slightly greater than the width of said first set of horizontal strips, and said cover section being telescopically positionable both over said side walls when said body section is in said expanded condition and over said retaining walls when said body section in fully folded condition is positioned in said bottom section.

3. A container comprising a bottom section, a body section, and a cover, said bottom section including a horizontal deck and retaining walls extending upwardly from the periphery of said deck, adjacent pairs of said retaining walls being secured together at their ends in perpendicular relationship, means attached to said horizontal deck for maintaining said bottom section vertically spaced from the ground, said body section having a pair of foldable walls and a pair of non-foldable walls and being receivable when in fully folded condition between said retaining walls, cooperating means on said retaining walls and side walls for interlocking said bottom and body sections when said body section is in expanded condition for storage of contents in said container, said cooperating means including a first set of horizontal strips secured to said walls of said body section along the bottom edges thereof and a second set of horizontal strips secured to said retaining walls at a distance above said deck slightly greater than the width of said first set of horizontal strips, and said cover section being telescopically positionable both over said side walls when said body section is in said expanded condition and over said retaining walls when said body section in fully folded condition is positioned in said bottom section.

4. A container comprising a bottom section, a body section, and a cover, said bottom section including a horizontal deck and retaining walls extending upwardly from the periphery of said deck, means including a plurality of spacer blocks attached to said horizontal deck for maintaining said bottom section vertically spaced from the ground, said body section having a pair of foldable walls and a pair of non-foldable walls and being receivable when in fully folded condition between said retaining walls, said walls of said body section having a plurality of vertical reinforcing strips secured thereto,

each of said reinforcing strips extending upwardly from directly above one of said spacer blocks when the container is fully assembled, cooperating means on said retaining walls and side walls for interlocking said bottom and body sections when said body section is in expanded condition for storage of contents in said container, said cooperating means including a first set of horizontal strips secured to said walls of said body section along the bottom edges thereof and a second set of horizontal strips secured to said retaining walls at a distance above said deck slightly greater than the width of said first set of horizontal strips, and said cover section being telescopically positionable both over said side walls when said body section is in said expanded condition and over said retaining walls when said body section in fully folded condition is positioned in said bottom section.

5. A container comprising a bottom section and a body section, said bottom section including a horizontal deck and retaining walls extending upwardly from the periphery of said deck, means including a plurality of spacer blocks attached to said horizontal deck for maintaining said bottom section vertically spaced from the ground, said body section having a pair of foldable walls and a pair of non-foldable walls and being receivable when in fully folded condition between said retaining walls, said walls of said body section having a plurality of vertical reinforcing strips secured thereto, each of said reinforcing strips extending upwardly from directly above one of said spacer blocks when the container is fully assembled, and cooperating means on said retaining walls and side walls for interlocking said bottom and body sections when said body section is in expanded condition for storage of contents in said container, said cooperating means including a first set of horizontal strips secured to said walls of said body section along the bottom edges thereof and a second set of horizontal strips secured to said retaining walls at a distance above said deck slightly greater than the width of said first set of horizontal strips.

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