Oct. 10, 1967 A. J. OSBORN 3,346,136

KNOCKDOWN CONTAINER

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Fig 1.

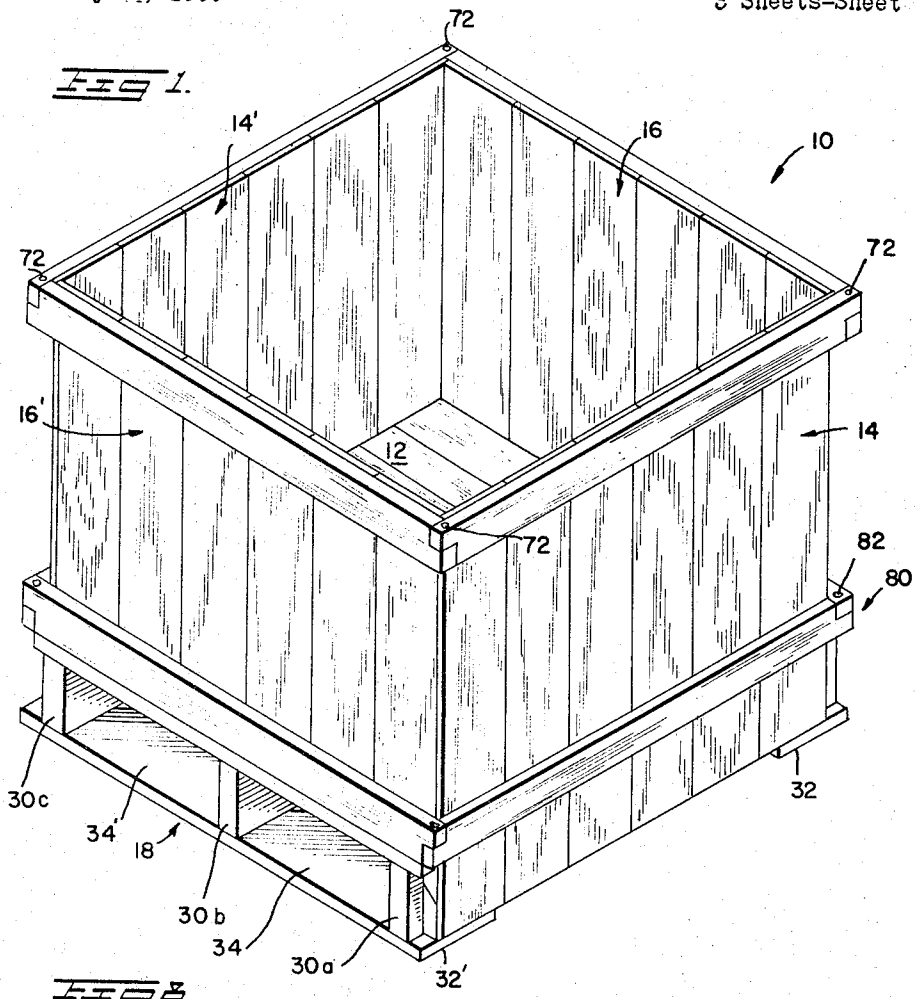


Fig 2

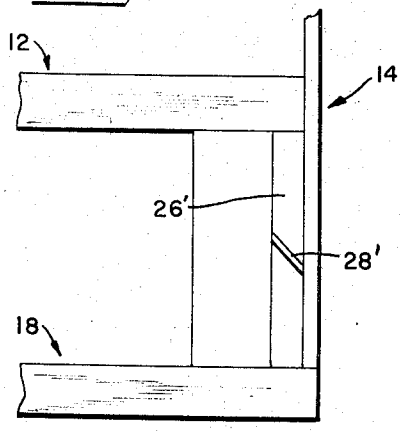
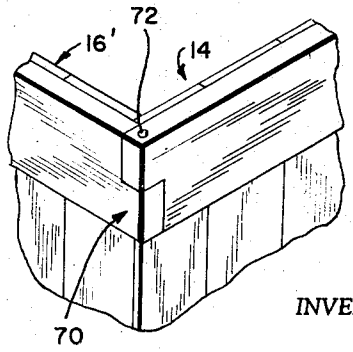


Fig 3.



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Fig 2.

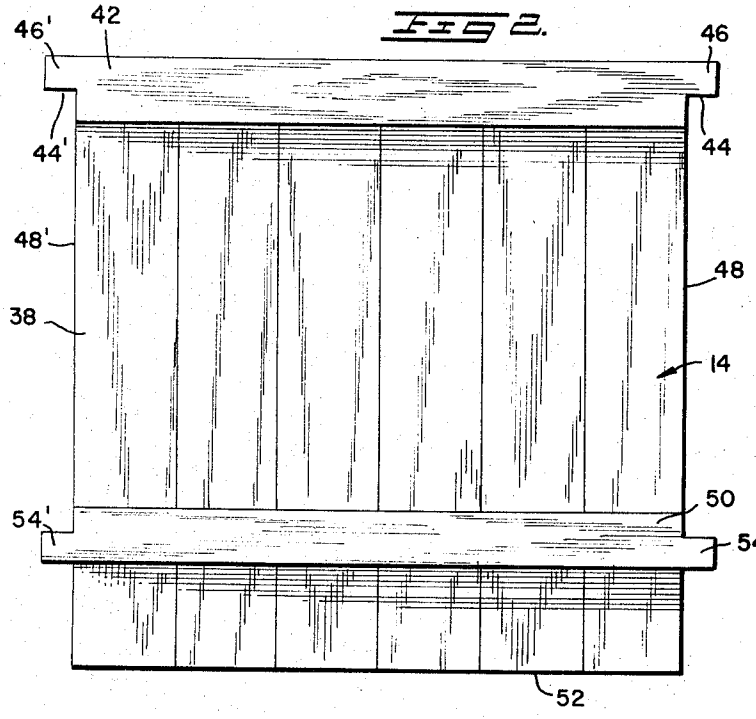


Fig 3.

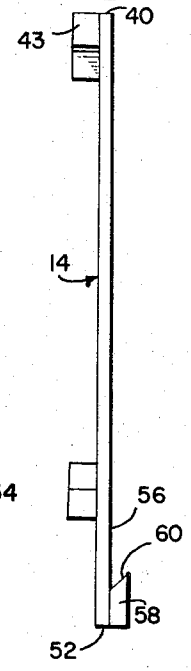


Fig 4.

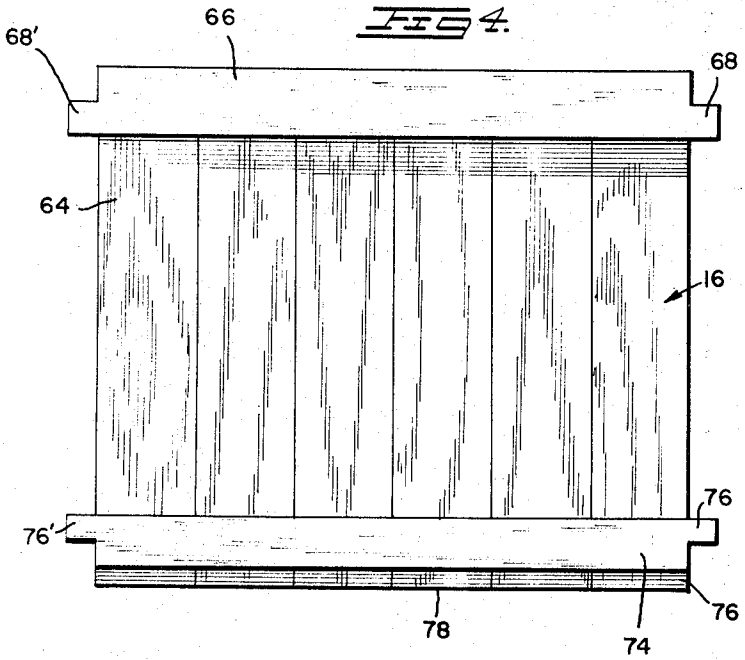
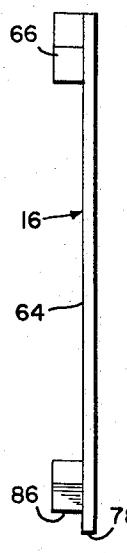


Fig 5.



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FIG 6.

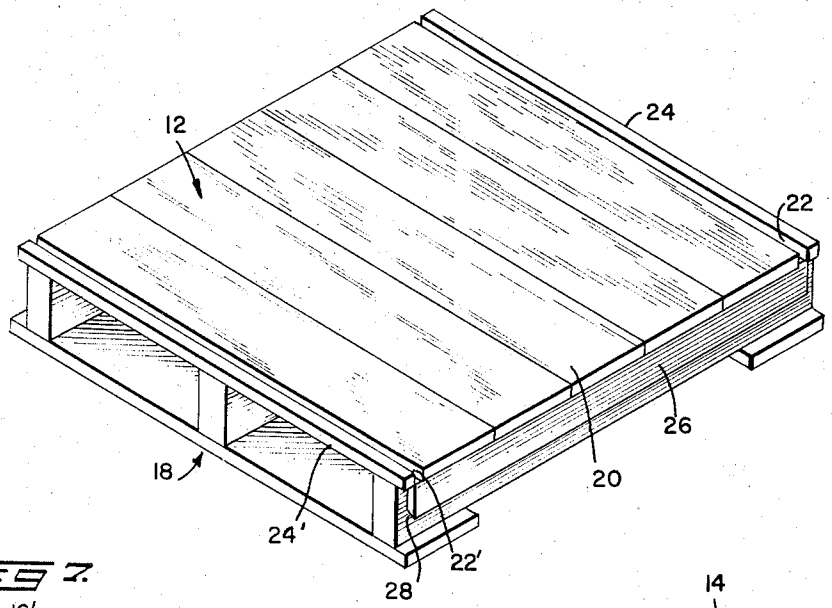
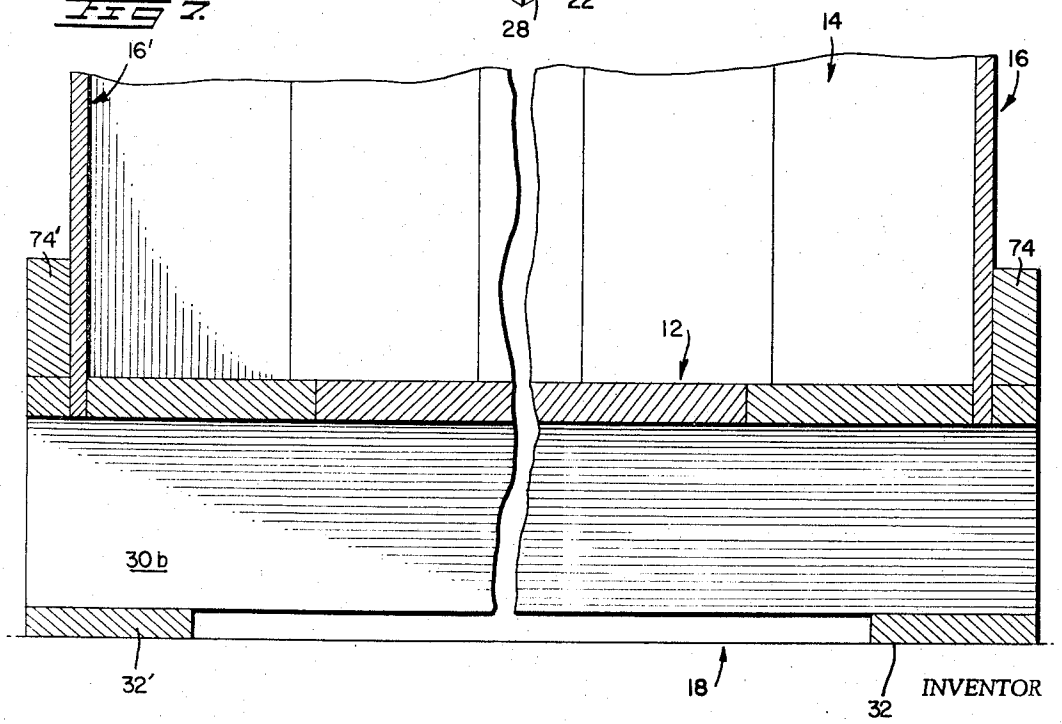


FIG 7.



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3,346,136

KNOCKDOWN CONTAINER

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Filed July 21, 1966, Ser. No. 566,919
3 Claims. (Cl. 217—12)

This invention relates to an improved knock down reuseable container.

It is a principal object of the present invention to provide a container, crate, enclosure and the like having particular reference to a knock down structure which may be manufactured as a plurality of units or parts for assembly into a rigid container.

Another object is to provide a container which may be transported and stored in a knock down form for assembly when the container is to be used without the use of tools in a relatively simple manner.

A further object of the present invention is to provide such a knock down container wherein each of the sides is separate from the bottom whereby various heights and types of side panels and bottoms may be assembled to provide different sizes and kinds of structures as the circumstances may require.

It is a further object of the present invention to provide such a structure including a compartmented bottom whereby the container whether knock down or assembled may be readily moved and transported using conventional forklift type transporting means.

In general, the present invention comprises a knock down, reusable container comprising a bottom wall and two pairs of side walls, said bottom wall including parallel, longitudinal grooves extending the length of a pair of opposite edges of the bottom wall and spaced inwardly from their respective edges, the other pair of side edges each having a depending skirt member secured thereto, the bottom edge of each skirt member being beveled inwardly and upwardly, each wall of said one pair of said side walls including a planar panel and a cross strip secured adjacent the top and bottom edge of the panel, each bottom edge cross strip being spaced inwardly of its panel to provide a portion of said panel adapted to be received in the corresponding longitudinal groove in the bottom wall, each wall of said other pair of said walls including a planar panel and a cross strip secured adjacent the top and bottom edge thereof, and a further cross strip secured on the inner face of each of said other pair of side wall panels adjacent the bottom edge thereof, the upper edge of each further cross strip being beveled downwardly and outwardly and complementary to the bevel on each of the bottom wall skirts, each of the side wall cross strips joining at adjacent edges in an overlap configuration and removable pin means through each of the lap joints formed by said cross strips.

The invention will be more particularly described in reference to the accompanying drawings wherein;

FIGURE 1 is a perspective view of a container embodying the features of the present invention;

FIGURE 2 is an elevational view of one of the pair of side walls of the box illustrated in FIGURE 1;

FIGURE 3 is an end view of the wall shown in FIGURE 2;

FIGURE 4 is an elevational view of one of the other of the pair of side walls;

FIGURE 5 is an end view of the side wall illustrated in FIGURE 4;

FIGURE 6 is a perspective view of the bottom wall means of the container illustrated in FIGURE 1;

FIGURE 7 is an enlarged fragmentary sectional view through the lower portion of the container illustrated in FIGURE 1;

FIGURE 8 is an enlarged detailed view of the side walls illustrated in FIGURES 2 and 3 assembled to the bottom wall means; and

FIGURE 9 is an enlarged fragmentary detailed view of the lap joint and interconnecting means for the side walls of the container illustrated in FIGURE 1.

Referring to the drawings, **10** generally designates a container constructed in accordance with the present invention. The container **10** includes a bottom wall means **12**, a pair of side walls **14** and **14'** and a further pair of side walls **16** and **16'**. The preferred container also includes structures depending from the bottom wall means **12** and generally designated **18** adapted to support the bottom wall means **12** in spaced relationship from the ground to provide a space receptive of the forks of a conventional forklift type transport vehicle.

The bottom wall means **12** includes a planar panel portion **20** which panel portion **20** is provided with a pair of longitudinally extending parallel grooves **22** and **22'** adjacent one pair of opposed side edges of the bottom wall means **12**. The grooves **22** and **22'** are spaced just inwardly of edges **24** and **24'** of the bottom panel which corresponds to the edges which are parallel with side walls **16** and **16'**. The bottom wall means also includes a pair of depending skirt members **26** and **26'** which skirt members are each provided with a beveled lower edge **28**. The bevels **28** slope upwardly and inwardly as illustrated in the drawings and in particular in FIGURE 8 thereof.

In the preferred form of construction the undersurface of the bottom wall means **12** has secured thereto three depending structural members generally designated **30***a*, **30***b*, and **30***c*. The structural members **30***a*, *b*, and *c* have a length greater than the length of the depending cross or skirt members **26** and **26'** and the lower surfaces of the structural members **30***a*, *b*, and *c* are interconnected by other cross members **32** and **32'**. The spaces **34** and **34'** formed by the cross members **32**, **32'**, the structural members **30***a*, *b*, and *c* and the undersurface of the bottom wall member **12** are adapted to receive the times of a conventional furcated forklift vehicle whereby the container **10** may be lifted and transported to the desired location.

Referring particularly to FIGURES 2 and 3 each of the first pair of side walls **14** and **14'** are identical in function and configuration and therefore only side wall **14** will be described herein. Sidewall **14** includes a planar panel portion **38**. The panel portion **38** may, like the bottom portion, be constructed of a plurality of boards as indicated in the drawings.

Along the top edge **40** of the panel **38** is secured a cross member **42**. The cross member **42** is provided with cut out portions **44** and **44'** adjacent the extended ends thereof to provide ear portions **46** and **46'** which extend beyond the lateral edges **48** and **48'** of the panel **38**. A similar cross member **50** is secured to the same face of the panel **38** at a distance upwardly from the bottom edge **52** of the panel **38**.

The cross member **50** like cross member **42** is shaped to provide a pair of wing portions **54** and **54'** which extend beyond the edges **48** and **48'** respectively of the side panel **38**. The inner surface **56** of the panel **38** has secured thereto a further cross member **58** which cross member is mounted parallel to the bottom edge **52** of the panel **38** and the top edge of the cross member **58** is beveled as at **60**. The bevel **60**, slopes downwardly and outwardly when the panel is in its assembled position. The bevels **60** are also complementary to the bevels **28** and **28'** on the skirts **26** and **26'** of the base or bottom assembly **12**.

Referring particularly to FIGURES 4 and 5 of the drawings the other wall portions **16** and **16'** are identical

in construction and therefore only wall portion **16** will be specifically described herein.

The wall portion **16** includes a planar panel **64** which like panel **38** may be constructed of a plurality of boards. The width of the boards forming the panel **64** is so selected that the lower portion **66** thereof will be snugly received in the cooperating grooves **22** and **22'** formed in the bottom wall panel **12**. Like wall **14** wall **16** is provided with an upper cross member **66** which cross member is shaped to provide a pair of ears **68** and **68'** which ears cooperate with ears **46** and **46'** of the other pair of side walls **14** or **14'** to provide a lap joint which lap joint is generally designated **70** in FIGURE 9 of the drawings. It will also be noted particularly in FIGURE 9 that each ear portion **46** and **46'**, **68** and **68'** is bored to receive retaining pin means generally designated **72**.

Panel **64** like panel **38** is also provided with a lower cross member **74** which cross member is spaced upwardly a distance indicated at **76** from the bottom edge **78** of the panel. The cross member **74** is also provided with ear portions **76** and **76'** which correspond to ear portions **54** and **54'** of the cross member **50** of wall portions **14** and **14'** described with reference to FIGURES 2 and 3 of the drawings. The ear portions **76** and **76'**, **54** and **54'** cooperate to provide lap joints generally designated **80** in FIGURE 1 of the drawings. Each of these ear portions is also bored to receive retaining pins **82** as to be more fully described hereinafter.

The spacing between the lower edge of the cross member **74** and the lower edge **78** of the panel **64** is such that when the side walls are in their assembled position the lower surface **86** of each of the cross members **74** rests on the upper surface of the bottom panel **12** as more clearly shown in FIGURE 7 of the drawing.

In assembling the improved container the base or bottom wall portion **12** is positioned as illustrated, for example, in FIGURE 6. Then side walls **14** and **14'** are placed adjacent the corresponding side edges of the bottom panel means **12** and the beveled edges **60** and **60'** of side walls **14** and **14'** are slid into cooperative engagement with the beveled portion **28** and **28'** of skirts **26** and **26'** carried by the bottom portion. After these panels are slid into cooperative engagement the other side walls **16** and **16'** are assembled with the lower edge of each of the wall means in engagement with the corresponding grooves **22** and **22'** in the bottom wall. With these panels in position pins **72** and **82** are inserted in the lap joints **70** and **80** to interlock the entire structure.

It will be particularly noted that the length of side walls **16** and **16'** is such that when these walls are inserted on the bottom wall **12** the lateral side edges overlap the side edges of side walls **14** and **14'** to thereby "lock" side walls **14** and **14'** from side ways movement.

To disassemble the container the reverse procedure is followed.

From the foregoing description of a preferred form of the present invention it will be seen that the present container fully accomplishes the aim and objects hereinabove set forth. It will also be appreciated by those skilled in the art that various modifications may be made in the form and type of construction without departing from the scope of the appended claims.

I claim:

1. A knock down, reuseable, container comprising a bottom wall and two pairs of side walls, said bottom wall including parallel longitudinal grooves extending the length of a pair of opposed edges of the bottom wall and spaced inwardly from their respective side edges, the other pair of side edges of the bottom wall each having a depending skirt member secured thereto, the bottom edge of each skirt member being beveled inwardly and upwardly, each side wall of one pair of side walls including a planar panel, the thickness of said panels being selected to snugly fit into the longitudinal grooves in said bottom wall, and a cross strip secured adjacent the top and bottom edges of said planar panel, the bottom edge strip of each of said one pair of side walls being spaced inwardly of its panel to provide a portion of said panel adapted to be received in the corresponding longitudinal grooves in the bottom wall, each side wall of the other pair of side walls including a planar panel and a cross strip secured adjacent to the top and bottom edges of the panel, and a further cross strip secured on the inner face of the panel adjacent the bottom edge of each panel, the upper edge of each of said further cross strips being beveled downwardly and outwardly and complementary to the bevel on the corresponding bottom wall skirt, each of said side walls cross strips joining at adjacent edges of the container in a lapping configuration and removable pin means through each of the cross strip lap joints.

2. The invention defined in claim **1** wherein said container is constructed of wood.

3. The invention defined in claim **1** including structural members secured to the undersurface of the bottom wall and runners interconnecting the structural members to provide forklift receiving spaces between the ground and the undersurface of the bottom wall.

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RAPHAEL H. SCHWARTZ, *Primary Examiner.*