

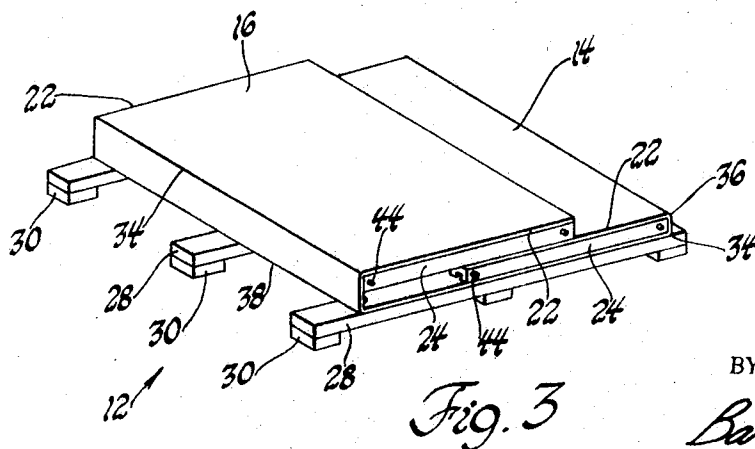
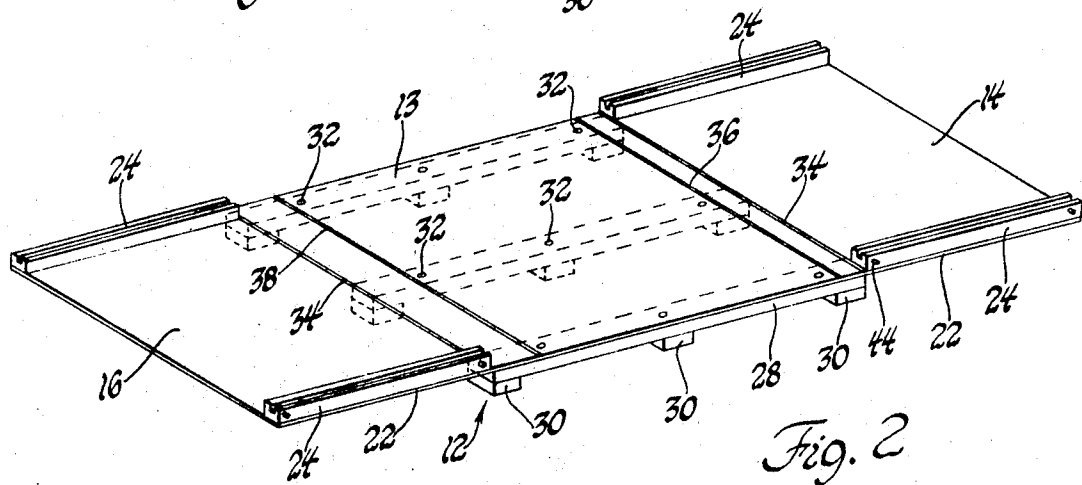
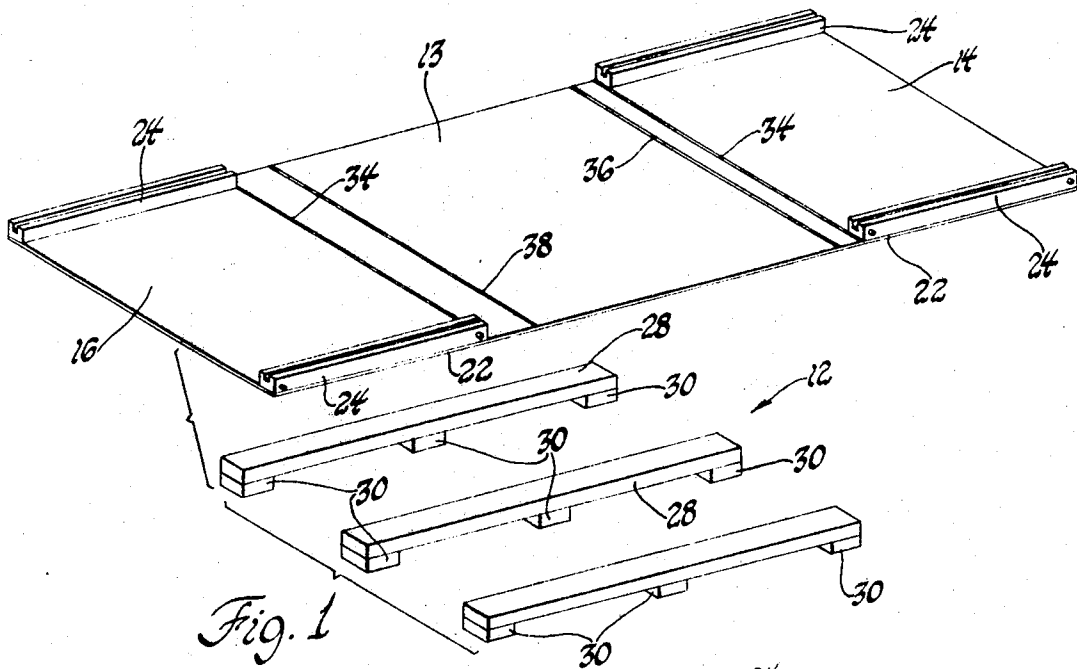
May 26, 1970

H. J. CARROLL
SHIPPING CONTAINER

3,514,030

Filed Nov. 19, 1968

2 Sheets-Sheet 1



INVENTOR
Hazen J. Carroll
BY
Bernard McElroy Rising
ATTORNEYS

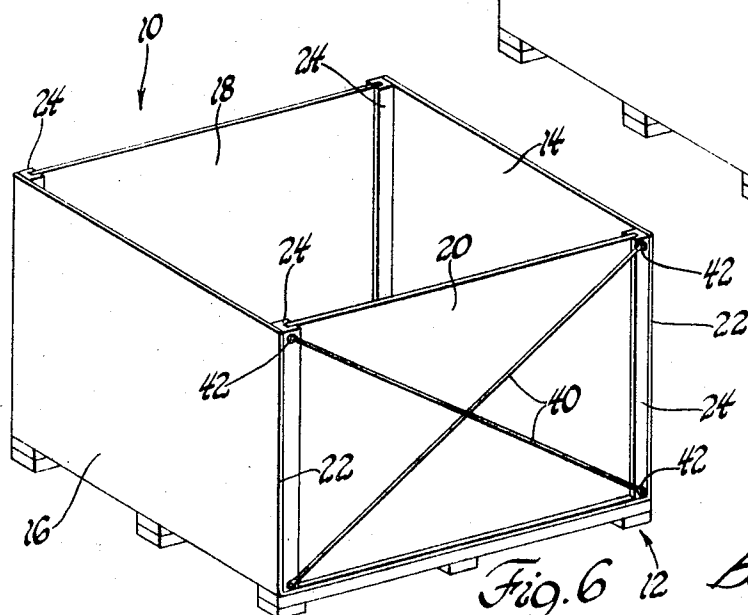
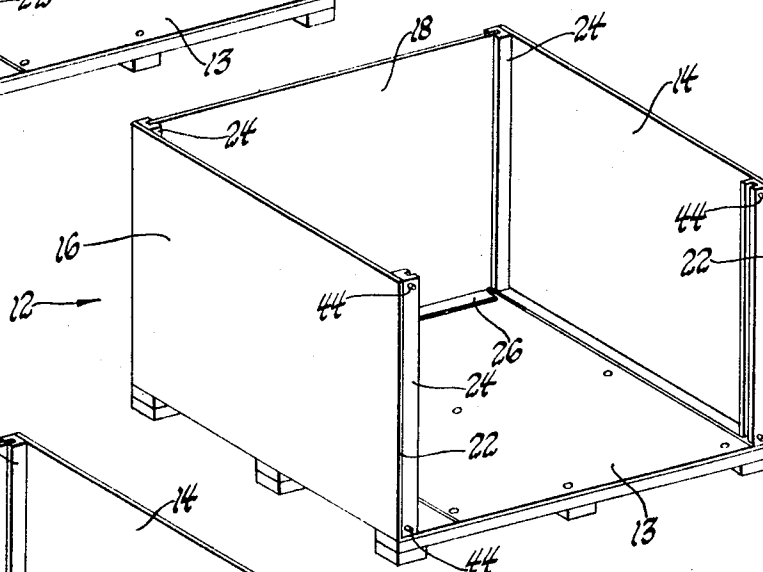
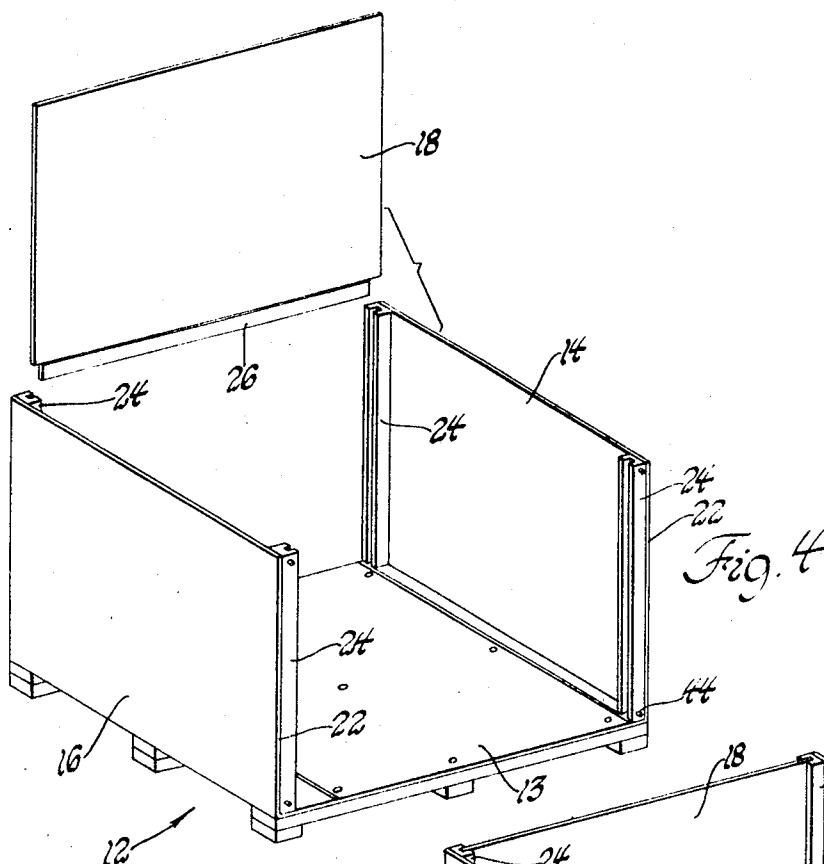
May 26, 1970

H. J. CARROLL
SHIPPING CONTAINER

3,514,030

Filed Nov. 19, 1968

2 Sheets-Sheet 2



INVENTOR
Hazen J. Carroll
BY

Bernard, McElmurray & Rising
ATTORNEYS

1

3,514,030

SHIPPING CONTAINER

Hazen J. Carroll, Farmington, Mich., assignor to Carroll Container Corporation, Detroit, Mich., a corporation of Michigan

Filed Nov. 19, 1968, Ser. No. 776,907

Int. Cl. B65d 19/00, 13/00

U.S. Cl. 229—23

6 Claims

ABSTRACT OF THE DISCLOSURE

A collapsible shipping container comprising a wooden pallet, a single sheet of corrugated cardboard material defining a base secured to the pallet and a pair of end walls pivotable relative to the base between a collapsed position, where the walls are at least partially in overlapping relationship with one another and parallel to the base, and a container position, where the walls are in an upright position extending upwardly from the base. A post with a slot therein extends along each lateral edge of each end wall and a pair of independent side walls are disposed in the slots of oppositely facing posts in the container position to form a container.

The instant invention relates to a collapsible, palletized container.

Containers of this type include a box-like container secured to or disposed upon a pallet of the type which is moved about by a forklift truck or the like. Various embodiments of these containers are well known in the prior art.

One such container includes a pallet which is divided into two halves and wherein each half of the pallet may be swung to a position where they are parallel with one another. Thereafter, these pallet halves may be moved longitudinally of one another whereby the walls of the container, when viewed in cross section, form a collapsing parallelogram with the walls finally moved to the position where they are completely collapsed. Such a container, when collapsed, must be stored in an area which is larger than the base or pallet of the container. Also, the container has an unusual shape when collapsed, thus requiring unusual storage facilities.

Another typical prior art container is one wherein all of the walls and the top may be completely disconnected from the base or pallet and then disposed or stacked in parallel relationship over the base or pallet.

None of the prior art containers which utilize a pallet are constructed in such a manner so that at least some of the side walls are pivotally connected to the base or pallet so as to be moved between a container position and a collapsed position where the walls are disposed in at least partially overlapping relationship with one another and parallel to the base or pallet. Such a feature is very desirable because it is frequently necessary to ship an empty container between remote points so that the container may be refilled with material and shipped. The movement of the container between the collapsed and the container position should be as simple as possible and it is desirable that the construction of the container be such that as many of the components as possible are connected together during both positions to prevent accidental loss or misplacement of any of the components.

Accordingly, it is an object and feature of this invention to provide and improved collapsible shipping container where at least a portion of the wall means is pivotally connected to the support means or pallet for movement between an upright container position and a collapsed position.

In correlation with the foregoing object and feature,

2

it is another object and feature to provide such an improved collapsible shipping container including a pair of oppositely facing end walls pivotally connected to a support means for movement between the container position and the collapsed position with a pair of independent side walls disposed in retaining means along each lateral edge of the end walls when the container is in the container position.

Other objects and attendant advantages of the present invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

FIG. 1 is an exploded perspective view of the pallet and the sheet of material forming the base and end walls of a preferred embodiment of the instant invention;

FIG. 2 is a perspective view similar to FIGURE 1 but showing the base secured to the pallet;

FIG. 3 is a perspective view showing the end walls in the collapsed position;

FIG. 4 is a perspective view disclosing the end walls in the upright container position with one side wall being inserted between oppositely facing end walls;

FIG. 5 is a perspective view similar to FIG. 4 and showing the side wall in position between the oppositely end walls; and

FIG. 6 is a perspective view showing the container in the container position with all components assembled together.

Referring now to the drawings wherein like numerals indicate like or corresponding parts throughout the several views, a collapsible shipping container constructed in accordance with the instant invention is generally shown at 10 in FIG. 6.

The shipping container includes a support means generally shown at 12 which defines a generally planar area of support and includes the base 13. There is also included wall means comprising the end walls 14 and 16 and the side walls 18 and 20. The walls extend from the support means 12 and define the container with the support means 12 when in the container position. It will be understood, that the end walls 14 and 16 and the side walls 18 and 20 are referred to as such merely for the purposes of description and not by way of limitation and it will be understood that the relationship and the relative sizes thereof may vary widely. A portion of the wall means, and more specifically, the end walls 14 and 16, are pivotally connected to the base 13 of the support means 12 for movement between an upright container position extending from the support means and a collapsed position extending in generally parallel and overlapping relationship to the base 13 of the support means 12. The upright container position is illustrated in FIG. 4 and the collapsed position is illustrated in FIG. 3.

End walls 14 and 16 have lateral edges 22 and are pivotally connected to the base 13 of the support means 12 for movement between the container position, illustrated in FIG. 4, and the collapsed position illustrated in FIG. 3. As best illustrated in FIG. 3, the end walls 14 and 16 at least partially overlap one another and are spaced one above the other in the collapsed position.

There is also included retaining means comprising a post 24 disposed along each lateral edge of each end wall so as to face the opposite end wall in the container position for receiving and retaining the side walls 18 and 20 in position between oppositely facing posts 24. Each post 24 has a slot therein which faces the post on the oppositely facing end wall. Each side wall 18 and 20 is defined by an independent sheet of material having side edges which are disposed in the slots in the posts 24 when in the container position.

3

As best illustrated in FIGS. 4 and 5, each side wall has a bottom edge with a flap 26 extending therefrom so that the flap 26 extends over the base 13 when in the container position as illustrated in FIG. 5.

The support means 12 includes a pallet comprising a plurality of spaced parallel wooden members 28 and a plurality of blocks 30 attached to the wooden members 28. The base 13 is secured to the wooden members 28 by nails 32, staples, glue, or the like.

One integral sheet of material extends over the pallet to define the base 13 and to also define the end walls 14 and 16. This sheet of material and the sheets defining the side walls 18 and 20 are preferably made of multi-layered corrugated cardboard.

There is included a pair of first folds 34, one of which is between each end wall and base 13 for pivotally connecting the end walls 14 and 16 to the base 13. There is a second fold 36 adjacent the first end wall 14 and which is parallel to the first fold 34 which connects the first end wall 14 to the base 13. The second fold 36 is spaced from that first fold 34 at least a distance which is equal to the distance that the posts 24 extend outwardly from the first end wall 14. Thus, the first end wall 14 may be folded to the collapsed position as indicated in FIG. 3. There is a third fold 38 which is adjacent the second end wall 16 and parallel to the fold 34 connecting the second end wall 16 to the base 13. The third fold 38 is spaced from the fold 34 adjacent thereto at least a distance equal to the sum of the distances the posts 24 extend outwardly from both end walls 14 and 16 plus the thickness of the first end wall 14, all of which is best illustrated in FIG. 3. Such a construction enables the end walls 14 and 16 to remain attached to the base 13 and to be folded into a very compact, collapsed position.

There is also included strengthening means comprising the wire-like members 40 coacting with the walls in the container position for maintaining the walls in the container position, as illustrated in FIG. 6. The wire-like members 40 interconnect oppositely facing posts 24 in the container position for maintaining the walls in the container position. More specifically, a pair of wire-like members are disposed in crossed relationship and interconnect each pair of oppositely facing posts as illustrated in FIG. 6. The wire-like member 40 have loops 42 at each end thereof and nails 44, hooks, screws or the like extend from the posts for receiving the loops 42.

The invention has been described in an illustrative manner and it is to be understood that the terminology which has been used is intended to be in the nature of words of description rather than of limitation.

Obviously, many modifications and variations of the present invention are possible in light of the above teachings.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A collapsible shipping container comprising; a pallet suitable for lifting the container with a fork lift truck or the like, an integral sheet of material attached to and extending over said pallet to define a base over said pallet and end walls extending from opposite extremities thereof, said end walls having lateral edges, a pair of side walls, a post secured to and extending along each lateral edge of each end wall, a first fold between each end wall and

4

said base for pivotally connecting said end walls to said base so that said end walls may be pivoted to and from a container position wherein they are opposite to one another, a second fold adjacent a first of said end walls, said second fold being parallel to the first fold connecting said first end wall to said base and spaced therefrom a distance substantially equal to the distance said posts extend from said first end wall for allowing said first end wall to be pivoted to a collapsed position overlying said base with the portion between said first and second folds thereof extending upwardly from said base and adjacent the ends of the posts secured to said first end wall, a third fold adjacent the second of said end walls, said third fold being parallel to the first fold connecting said second end wall to said base and spaced therefrom a distance substantially equal to the sum of the distances said posts extend from both of said end walls plus the thickness of said first end wall for allowing said second end wall to be pivoted to a collapsed position overlying said first end wall with the portion between the first and third folds thereof extending upwardly from said base and adjacent the ends of the posts secured to said second end wall, each of said posts having a slot therein which face the post on the oppositely facing end wall when in said container position, said side walls being defined by respectively independent sheets of material having side edges disposed in said slots when in the container position, posts strengthening means coacting with said posts in said container position for maintaining said walls in said container position.

2. A container as set forth in claim 1 wherein each side wall has a bottom edge with a flap extending therefrom so that said flap extends over said base.

3. A container as set forth in claim 2 wherein said sheet of material defining said base and said end walls and the material defining said side walls are corrugated cardboard.

4. A container as set forth in claim 3 wherein said strengthening means comprises a pair of wire-like members disposed in crossed relationship and interconnecting each pair of oppositely facing posts.

5. A container as set forth in claim 4 wherein said support means includes a pallet.

6. A container as set forth in claim 5 wherein said pallet comprises a plurality of spaced parallel wooden members to which said base is secured and a plurality of blocks attached to said wooden members.

References Cited

UNITED STATES PATENTS

945,383	1/1910	Fassnacht.
2,190,199	2/1940	Stivers.
2,361,937	11/1944	Gondert.
2,675,936	4/1954	Ridge.

FOREIGN PATENTS

240,646	10/1925	Great Britain.
414,787	8/1934	Great Britain.

60 RAPHAEL H. SCHWARTZ, Primary Examiner

U.S. Cl. X.R.

217—15