Jan. 5, 1960 D. L. RICHTER 2,919,826

CONTAINER

Filed Sept. 22, 1954 5 Sheets-Sheet 1

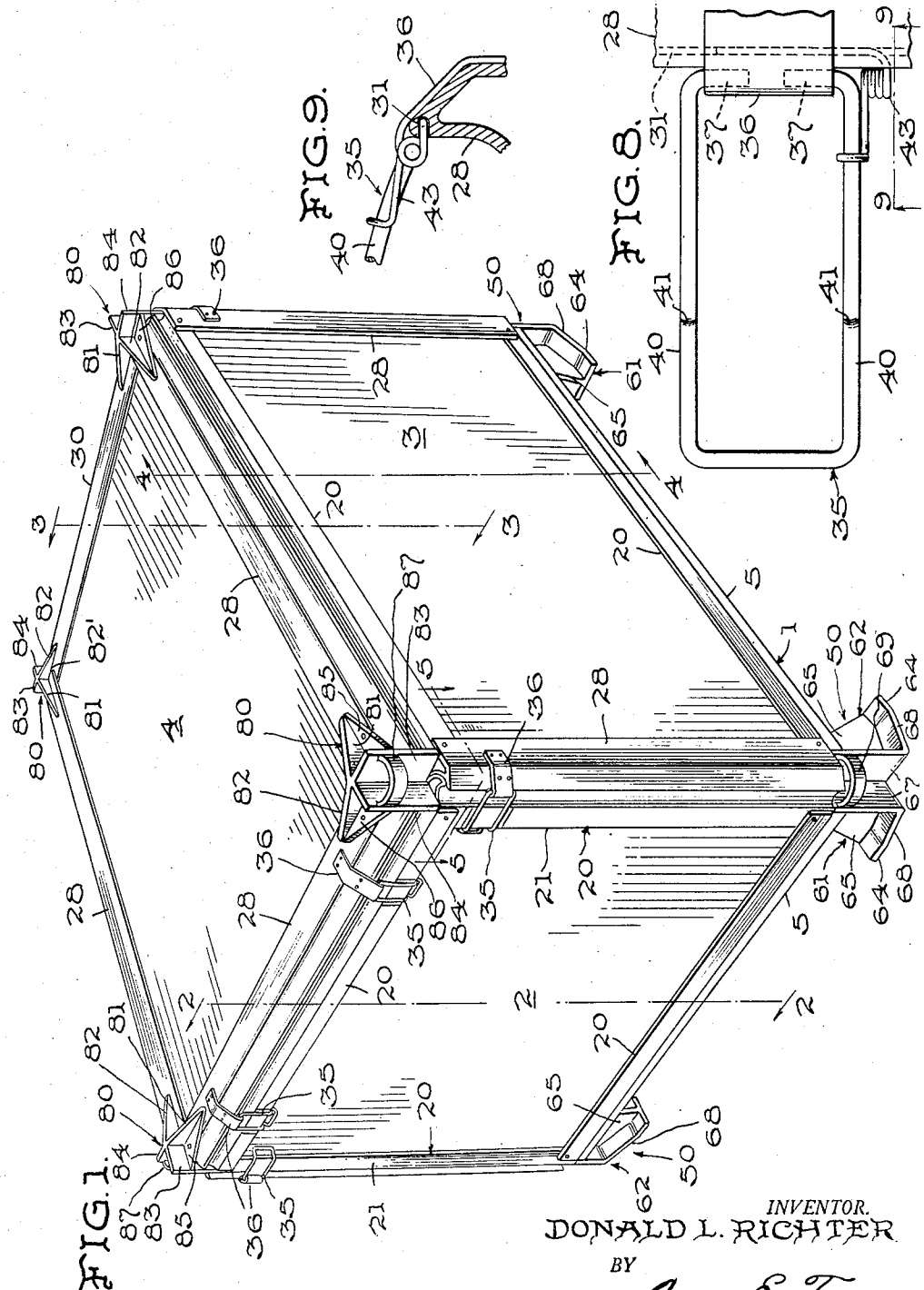


FIG. 1.

FIG. 9.

FIG. 8.

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CONTAINER

Filed Sept. 22, 1954 5 Sheets-Sheet 2

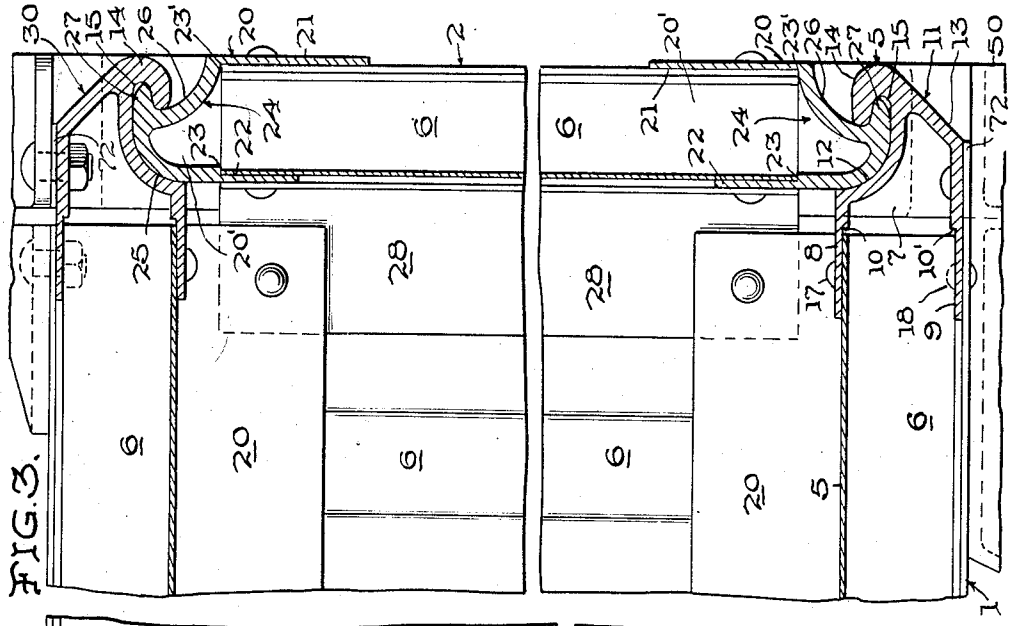


FIG. 3.

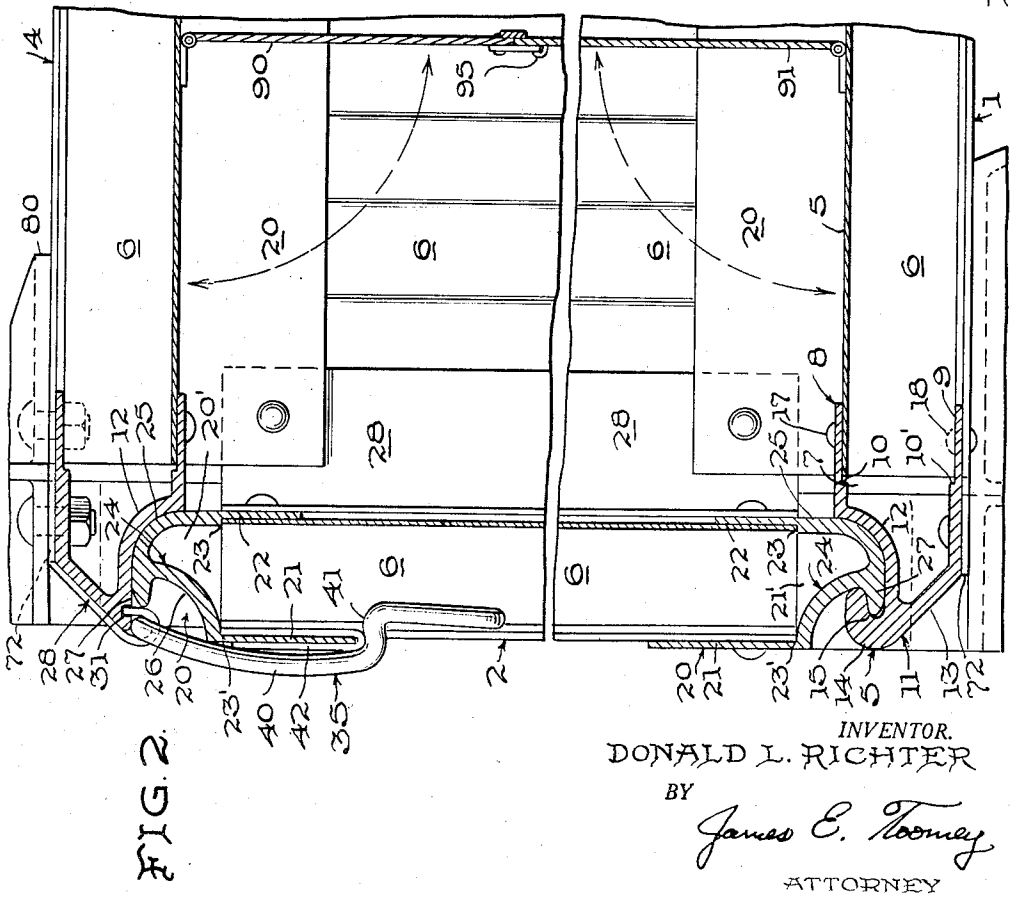


FIG. 2.

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CONTAINER

Filed Sept. 22, 1954 5 Sheets-Sheet 3

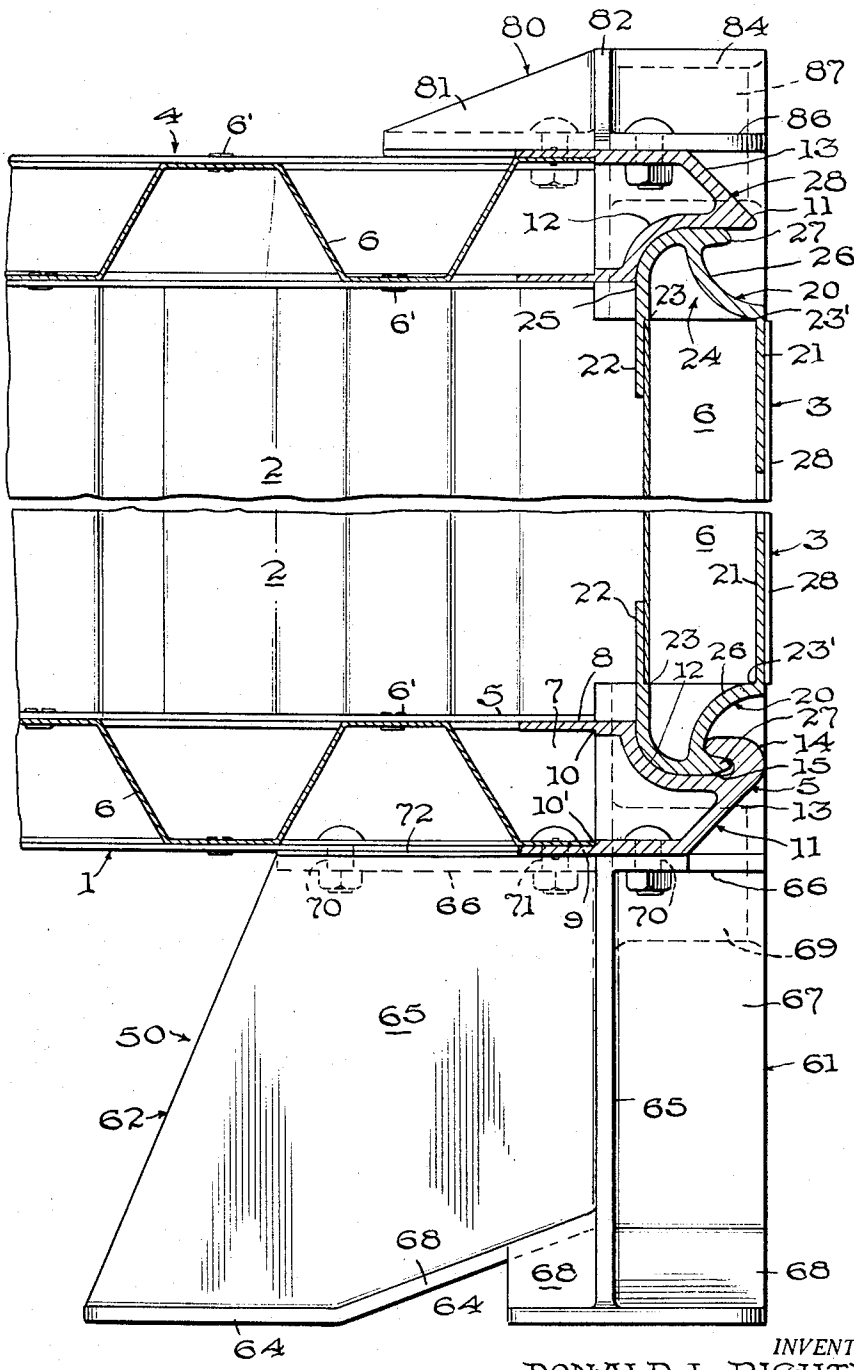


FIG. 4.

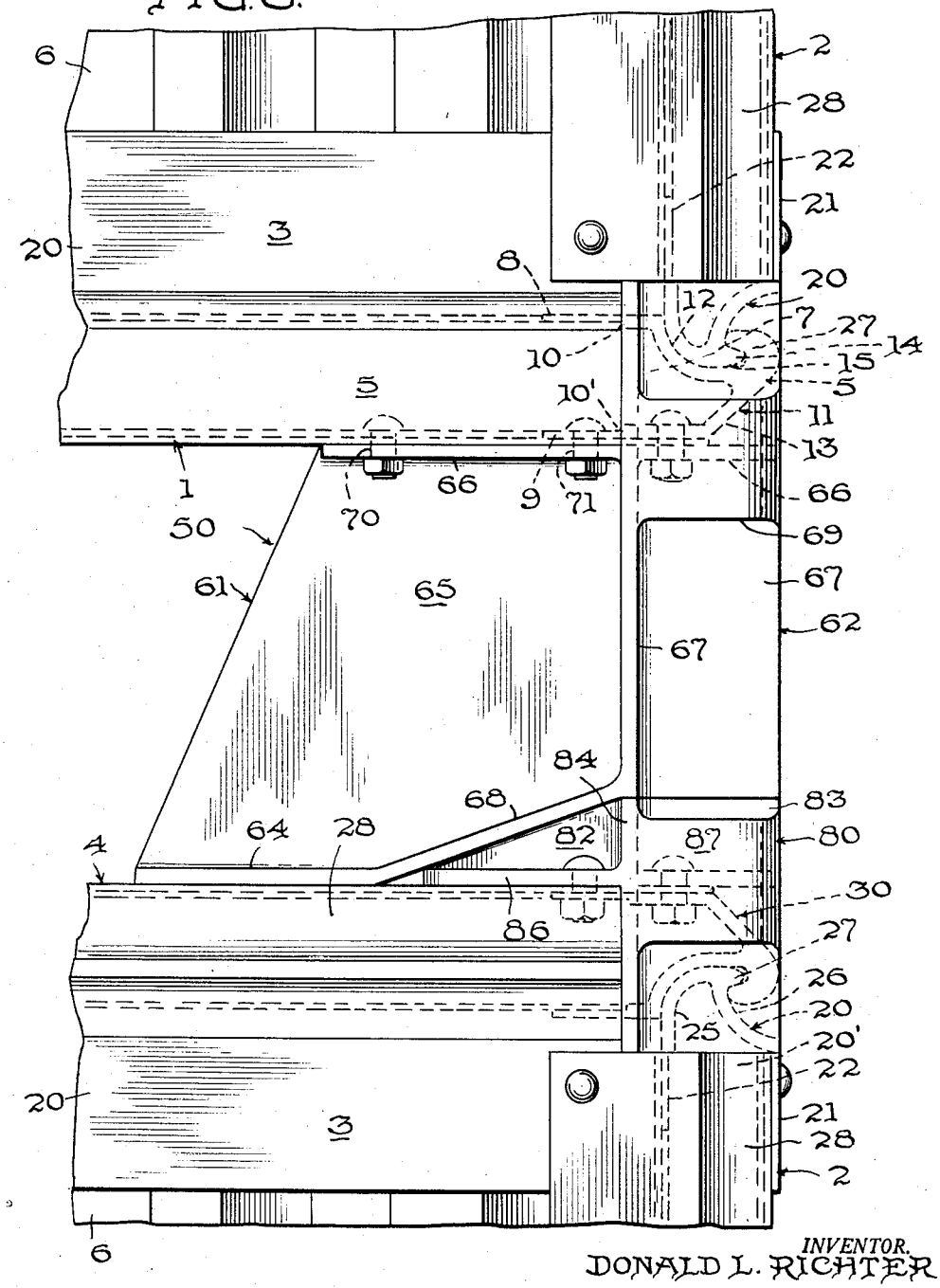
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Filed Sept. 22, 1954 5 Sheets-Sheet 4

FIG. 6.



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Filed Sept. 22, 1954 5 Sheets-Sheet 5

FIG. 5.

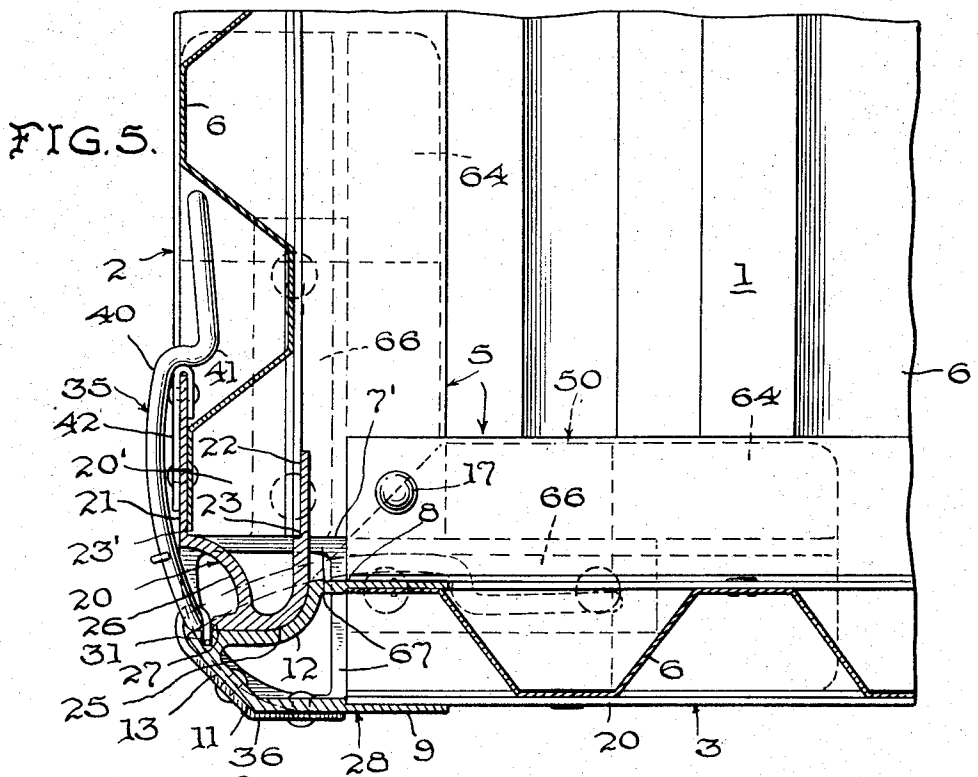
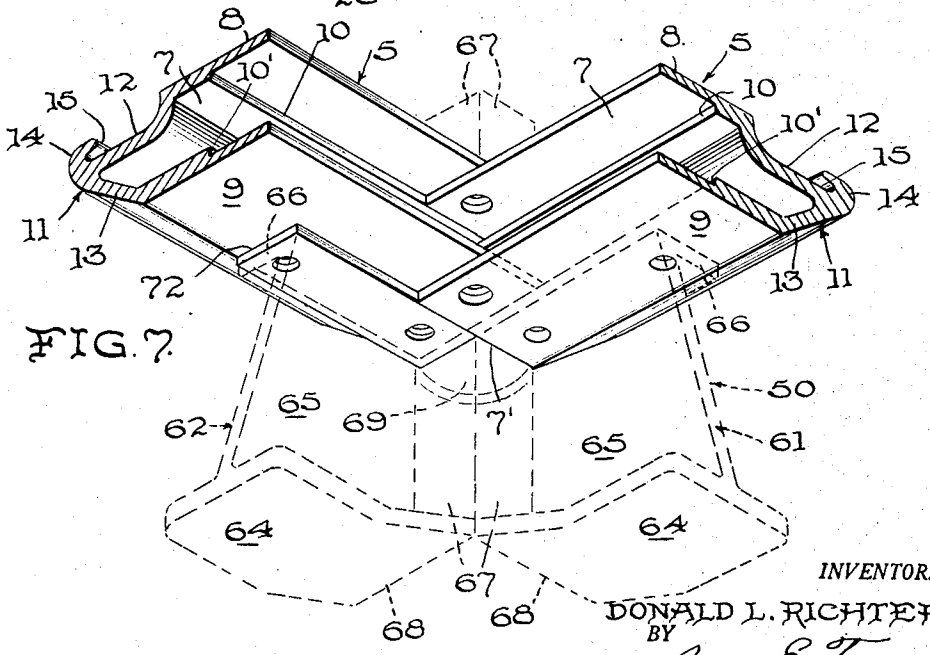


FIG. 7.



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United States Patent Office 2,919,826
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2,919,826

CONTAINER

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Application September 22, 1954, Serial No. 457,639

15 Claims. (Cl. 220—1.5)

This invention relates to shipping containers. More particularly, it is concerned with providing a novel knockdown shipping container of extremely rugged construction wherein novel means are provided for easily and quickly locking together the various elements making up the container and for stacking the containers one upon the other.

Various shipping containers of the collapsible or knockdown type have been proposed in the past. These containers, however, have not been completely satisfactory for various reasons. One of the principal reasons for this situation is the fact that these containers had to be made of strong and extremely heavy weight materials, such as steel, so that the containers would be capable of withstanding the abuse to which they are subjected. When heavy weight construction materials are used, the weight of the container itself is also increased. This in turn leads to difficulty in handling and a reduction in the payload which can be safely carried when the containers are transported by truck, railway cars, aeroplanes, etc.

In addition, even though the containers proposed in the past have been made in such a manner that they can be knocked down and disassembled for return shipment while occupying a minimum amount of shipping space, their construction did not lend itself to ease of assembling and dismantling. This factor tends to add to shipping costs because of the time and labor involved in packing and unpacking the goods carried by the containers. Ordinarily, the containers were so constructed that special tools were needed in order to assemble or disassemble the various elements of the container. Furthermore, it was not usually possible in the case of these containers to remove only the top or either of two sides of the container to gain access to the interior of the container without disturbing the other parts of the container. This in turn added to the difficulties in loading and unloading the same, and required a large amount of work space during such operations. When the containers were stacked one upon the other, it was virtually impossible to gain access to the lowermost container. Finally, these containers did not lend themselves to easy stacking, and handing of the same by a fork lift truck or the like was usually a very awkward and clumsy operation.

Accordingly, it is a primary object of this invention to provide a novel knockdown container which, because of its construction and the particular arrangement of its respective parts, is very rugged even when made of plastics or lightweight metals such as aluminum, magnesium, and the various alloys thereof.

It is a further object of this invention to provide a novel knockdown container which can be easily assembled or dismantled in a minimum amount of space, and without the need of any special tools.

It is a further object of this invention to provide a novel knockdown container, the top of which, or either one of two sides individually, or any pair combination of top and sides can be removed without disturbing or dismantling the rest of the container body, thereby providing easy access to the interior of the container.

It is another object of this invention to provide a novel knockdown container wherein the sides, ends, bottom and top thereof are provided with novel cam hinge means whereby they may be quickly drawn together in a releasably, but securely locked condition when the container is being assembled.

It is another object of this invention to provide a novel knockdown container provided with novel stacking means which not only enable the container to be easily stacked with similar containers, but also serve as restraining means for the sides and ends of the container.

It is another object of this invention to provide a novel collapsible container wherein one or two sides of the container can be removed or installed without disturbing other similar containers stacked on top of, or under it.

It is another object of this invention to provide a novel collapsible container which can be easily and conveniently handled by a fork lift truck or other hoisting and lifting apparatus.

It is another object of this invention to provide a novel knockdown container having means whereby the container may be conveniently lashed to the deck or floor of a moving vehicle or aeroplane and/or to a similar container during stacking of the same.

It is a further object of this invention to provide a novel knockdown container having eyelet means associated therewith, whereby the container may be readily affixed to the shroud lines of a parachute in the event the container is to be dropped by parachute from a moving aeroplane.

It is a further object of this invention to provide a novel collapsible container, the interior of which can be compartmentalized quickly and conveniently.

These and other objects of the instant invention are accomplished by providing a novel knockdown cargo container having a bottom, top, side and end members. Novel cam hinge means are employed for releasably securing the bottom edges of the end and side members to the outer peripheral portions of the bottom member. Novel means are provided along the vertical edges of the side and end members for removably nesting adjacent vertical edges of the several end and side members within each other. Novel cam hinge means are also provided along one marginal edge of the top member so that the top member can releasably engage the upper edge of one of the end members. Upstanding novel cleat elements are secured to the top member at the four corners thereof. Novel lower cleat element are dependingly attached to the bottom member and these lower cleat members are in vertical alignment with the upstanding cleat members and are engageable therewith when one container is stacked upon another.

In an advantageous embodiment of the invention it is also contemplated that suitable means may be provided for dividing the interior of the container into a plurality of compartments. In addition, the cleat elements located on the top and bottom members of the container may be provided with suitable eyelets or the like.

These eyelets advantageously serve as a means whereby one container may be secured to another or lashed down to a deck or floor of a moving vehicle or aeroplane. They also provide a medium for attaching the container to a suitable hoisting apparatus or to the shroud lines of a parachute when the container is to be dropped by parachute from a moving aeroplane.

Other objects and advantages of the instant invention will become more apparent by reference to the following

detailed description when taken in conjunction with the appended drawings, wherein:

Figure 1 is an elevational perspective view of the novel knockdown container of the instant invention;

Figure 2 is a broken sectional view through the front end of the container shown in Figure 1 when taken along lines 2—2 thereof, and with parts broken away;

Figure 3 is a broken sectional view through the back end of the container shown in Figure 1 when taken along lines 3—3 thereof, and with parts broken away;

Figure 4 is a broken sectional view taken through one side of the container shown in Figure 1 when taken along lines 4—4 thereof;

Figure 5 is a vertical sectional view taken through a corner of the container shown in Figure 1 when taken along lines 5—5 thereof;

Figure 6 is a fragmentary view of the corner portions of two nested containers and discloses the manner in which one container may be conveniently stacked upon another by use of the novel cleat means of the instant invention;

Figure 7 is a perspective view of the end portions of two of the frame members used to make up the bottom panel of the container and shows the arrangement for connecting the frame members together, and with a bottom cleat (shown in dotted line) being attached thereto;

Figure 8 is an elevational view of one of the retaining clips used to secure the sides, ends and top of the knockdown container together and indicates how it is attached to a panel section of the container; and

Figure 9 is a sectional view of a portion of the clip and panel section shown in Figure 8, when taken along lines 9—9 thereof.

By further reference to the drawings wherein the same reference numerals have been applied to identical parts, the novel knockdown container of the instant invention is generally comprised of a bottom panel section or member 1; a pair of end panel sections or members 2; a pair of side panel sections or members 3; and a top panel section or member 4. In the preferred embodiment of the invention, each panel section is generally comprised of a frame made up of four aluminum extrusions, to be more fully described hereinafter, suitably tied together, and a corrugated sheet also of aluminum mounted within the extrusions.

More particularly, the bottom panel section 1 is comprised of four framing members 5, each of which is of similar configuration in cross-section. When framing members 5, which may be advantageously made in the form of extrusions, are secured together at their ends, they form a suitable framework for a corrugated sheet 6, which together with the frame members 5, completes the bottom panel section 1. Each of the extruded frame members 5 is so formed that it is provided with an inwardly directed open channel portion 7 defined by inside and outside flanges 8 and 9, respectively.

The inside portions of flanges 8 and 9 are also advantageously provided with shoulder portions 10 and 10', the functions of which will be described hereinafter.

As indicated particularly in Figs. 4 and 7, flanges 8 and 9 are joined by an integral web portion 11. Web portion 11 includes the converging inside curved wall 12 and angular outside wall 13. Web 11 is further provided with an inwardly turned J-shaped hooked portion 14. J-shaped portion 14 is separated from wall 12 by a recess or cam groove 15.

As particularly indicated in Figs. 5 and 7, the several frame members 5 making up the frame for the bottom panel section 1 are secured together in the following manner. The one extremity of one frame member 5 is partially overlapped with the adjacent extremity of another frame member 5 in such a way that an angular recess 7' is provided at the point where the outer peripheries of the two members would ordinarily intersect.

Thus, as indicated in Figs. 5 and 7, the flange 9 of one frame member 5 is partially overlapped by the flange 9 of the adjacent frame member, while the flange 8 of the first mentioned panel member is partially overlapped by the flange 8 of the adjacent panel member.

The two adjacent frame members 5 are slid together in overlapping engagement until the flange 9 of one frame member abuts the shoulder 10' of the adjacent frame member, and the flange 8 on the second mentioned frame member abuts the shoulder portion 10 on the adjacent frame member. Thereafter, the top or inside flange 8 at the ends of adjacent frame members 5 are secured together through the medium of a bolt or rivet 17 and the bottom or outside flanges 9 are secured together by a bolt or rivet 18.

After the several frame members making up the bottom section are secured together in the manner described above, the margins of the corrugated sheet 6 are then disposed within the open channels 7 of the several frame members and stapled by staples 6', or otherwise secured to the flanges 8 and 9 of the several frame members as indicated particularly in Figure 4.

Each end panel section 2 is comprised of four similarly shaped frames 20 which may advantageously be made in the form of aluminum extrusions. Each of the frames 20 in turn is comprised of a channel 20' defined by a long outside flange 21 and a short inside flange 22. Inside flange 22 is further provided with a shoulder portion 23 and outside flange 21 with a shoulder portion 23'. Flanges 21 and 22 in turn are joined together by a suitable web portion 24 formed integrally therewith. Web portion 24 includes the curved inside wall element 25 and curved outside wall element 26. Web 24 is also provided with a lip portion 27. In making up a suitable framework consisting of the frame members 20 for each of the end panel sections 2, it is contemplated that frame members 20 be secured together generally in the same fashion as the frame members 5 for the bottom panel section 1. Thus, the individual frame members 20 adjacent their ends would be partially overlapped and slid together in such a fashion that the flange 22 on one frame member would overlap and be slid along the flange 22 on an adjacent frame member until the flange 22 of the one member engages the shoulder portion 23 on the flange 22 of the adjacent frame member, and flange 21 on the second frame member 20 engages the shoulder portion 23' on the first frame member 20. Thereafter, the frame members would be secured together by suitable bolts thrust through the flanges 21 and 22 at their points of overlap. After the several frame members 20 have been secured together in the manner indicated, the outer margins of a corrugated sheet 6, preferably of aluminum, is disposed within the channels 20' of the several frame members 20 and secured to the flanged portions 22 and 21 of the several frame members 20 by means of staples or any other suitable fastening means well known in the art.

Each of the side panel sections 3, as particularly indicated in Figs. 4 and 5, is comprised of a top and bottom frame member 20, previously described, connected together by two spaced vertical frame members 28. As indicated particularly in Fig. 5, frame members 28 are identical to frame members 5 except that they lack the J-shaped element 14 on the web portion 11. When the adjacent ends of frame members 28 and 20, as indicated in Figs. 2 and 3, are secured together in a partially overlapped condition, a corrugated sheet 6 is disposed within the channel openings 7 and 20' of the frame members 28 and 20, respectively, and secured to the inside and outside flanges of the several members in the same manner as corrugated sheets 6 for the end and bottom panel sections.

The top panel section 4 of the collapsible container of the instant invention is constructed in the following manner. The back end thereof, as indicated particularly in

Fig. 3, is provided with a frame member 30 similar in construction to the frame member 5 previously described.

The frame member for the front end of the top 4 consists of a frame member 28 previously described. Front end frame element 28 of the top panel section 4 as is the case for vertical frame members 28 of the side panel sections 3 is also provided with an elongated recessed portion 31 in the web portion 11. As particularly indicated in Fig. 4, frame members 28 are also used as the side frame members for the top panel section 4. When these several frame members 30 and 28 have been secured together in the same manner as the frame sections 5 described below for the bottom panel section 1, a suitable framework will be provided within which a corrugated sheet 6 may be inserted in the manner previously described in connection with the assemblage of the bottom, end and side panel sections.

In order to assemble the container, all that is necessary is to insert the lip portion 27 on the lowermost channel member 20 of each of the side panel sections 3 within the recess 15 provided by the J-shaped portion 14 in the channel frame member 5 of the bottom panel section. Thereafter, by pivoting the side panel sections 3 inwardly, the lip 27 will cam hinge and be removably, but securely, seated within the recesses 15 of the bottom frame members 5. The end panel sections 2 in turn are cam hinged to the bottom panel section in a similar fashion. It is also to be noted that each recess 15 is of such a configuration that a small amount of open space will exist therein at all times to allow for proper pivoting and freedom of movement of lip 27 therein.

As the ends and side panel sections are assembled, it will be noted by reference to Fig. 5, that the vertical edges of the adjacent side and end panel sections will advantageously nest one within the other. This occurs, for example, as the curved inner wall 25 of the frame member 20 on an end panel section 2 abuts the curved wall portion 12 on the frame member 28 of the adjacent side panel section 3.

For the purposes of removably locking the side panel sections to the end panel sections, it is contemplated that several suitable retaining clips 35 be employed. Only four such clips are needed, although more may be employed if desired. Each of these clips is pivotally anchored by a strap 36 to a vertical frame member 28 for the side panel sections 3. One end of the strap is anchored to the frame member 28 and the other end is first looped over the free ends 37 of the clip 35 and then anchored within the recess or slot 31 in the frame member 28.

Retaining clip 35 may advantageously be rectangular in form with the free ends 37 thereof, as indicated in Fig. 8, being inserted in the looped portion of the strap 36. The elongated side elements 40 of this clip member are advantageously provided with an offset portion 41 and when the retaining clip is pivoted inwardly, offset portion 41 will pass over and frictionally engage the outside flange 21 on one of the vertical frame members 20 for the end panel sections and securely anchor a side panel section 3 to the adjacent end panel section 2. If desired, a suitable wear plate 42, as indicated in Fig. 5, may be secured about the outside flange 21 of the frame member 20 at its point of contact with the clip 35.

It will also be noted by referring to Fig. 5 that the offset portion 41 and upper part of the retaining clip 35 will advantageously nest and recede within one of the valleys in the corrugated sheet 6 for an end panel section so that it will not project outwardly where it might come into contact with some external object to become loosened and allow disengagement of the side and end panel sections. When in a knocked down condition, the retaining clip 35 may also be advantageously recessed within one of the corrugations on a side panel section 3. If desired, a suitable detent spring member 43 may also be secured to a retaining clip 35 and a frame member 28 for the purpose of holding the clip 35 in a locked position.

After the retaining clips at the four corners of the collapsible container have been placed in locking position, the top panel section 4 may then be secured to the container. In order to secure the top panel section 4 to the ends and side panel sections, it is only necessary, as indicated in Fig. 3, to cam hinge the lip 27 on the top frame section 20 for the back end panel section 2 within the recessed portion 15 on the web 11 of the rear frame element 30 of the top panel section 4. Thereafter, by pivoting the top panel section or lid 4 downwardly or inwardly, the container top panel section will be set in place.

It will be noted that when the top panel section is in place, the curved inner wall portions 12 of the front end and side frame members 28 of top panel section 4 will about and freely nest with the curved inner walls 25 on the top horizontal frame members 20 of the front end panel section 2 and the side panel sections 3.

In order to securely lock the top panel section 4 in place, one or more retaining clips and straps 35 and 36, both of which have been previously described, may be employed.

The side and end members 2 cam engage and support the peripheral edge of the bottom member 1, performing as a supporting beam along this bottom member edge between the bottom corner cleats to be described more fully hereinafter.

In an advantageous embodiment of the invention, it is also contemplated that suitable means be provided for stacking or nesting the containers one upon the other. For this purpose, it is contemplated that suitable bottom cleats 50 be secured in a depending fashion to the bottom panel section 1 at the four corners thereof.

These bottom cleats, which may be made in the form of an aluminum casting, are each roughly X-shaped in cross-section. They are provided with angularly disposed and intersecting legs 61 and 62. The inner portions of legs 61 and 62 are each provided with a base portion 64 and an upright wall 65 centered thereon, with the wall 65 in turn being provided with an overhanging and outwardly projecting lip portion 66. The outer portions of legs 61 and 62 are provided with a wall 67 located at right angles to the several walls 65. Walls 67 are joined to the base portion 64 by means of an upwardly and outwardly tapered base surface portion 68. A suitable eyelet 69 is also advantageously provided and this eyelet is adapted to bridge the two walls 67 adjacent the upper portions thereof. The overhanging lip portions 66 on each of the legs 61 and 62 are provided with suitable apertures 70 and 71, which apertures are adapted to register with similar apertures in two angularly disposed and locked frame sections 5 for the bottom panel section 1 as indicated in Fig. 7. When these apertures have been placed in registry and suitable bolt or rivet members inserted therethrough, the bottom cleat will be secured to the bottom panel section 1.

Due to the particularly overlapping relationship described above of each of the individual frame sections 5 for the bottom panel section 1 adjacent the four corners of the container, it will usually be necessary to insert or lodge a shim member 72 between the flange 9 on one of the frame sections 5 for the bottom panel section 2 and the overhanging lip 66 on one of the feet, such as foot 62, of the bottom cleat member in order to obtain a proper flush fit between a bottom cleat and the bottom panel section 2.

In an advantageous embodiment of the invention, it is also to be noted that when the cleat member 50 is secured to the bottom panel section 1, that the upstanding walls 67 of the feet 61 and 62, which project upwardly for a substantial distance, will be in abutting relationship with the terminal end portions of each of the frame members 5 of the bottom panel section as these wall portions

67 are inserted in the angular recess 7' at the corner of the bottom panel section. The cleat member thus not only helps to fill in the space between these two members at this point, but it also serves as an angle bracket, preventing angular displacement of adjacent frame sections 5 with respect to each other. In effect, the bottom cleat therefore rigidifies the bottom panel section 2 formed by the individual frame members 5 and provides a shear tie between the individual frame members. It will also be observed that the upper portions of walls 67 on each of the cleat members also project upwardly a sufficient distance so that one of the walls 67 will abut the lower frame section 20 on an end panel section 2, while the other abuts the lower frame section 20 on a side panel section 3. This arrangement is possible because of the manner in which adjacent frame sections 20 for an end panel section and adjacent frame sections 20 and 28 for a side panel section are partially overlapped and secured together as heretofore described. When walls 67 of cleats 50 are so located, however, they do not interfere with the normal pivotal movement or securing of the side and end panel sections 3 and 2 to the bottom panel section 1. These cleats further rigidify the container during its assembly and use by blocking the bottom panel member 1, the side panel member 3, and end panel members 2 against relative translation or displacement.

Each of the four corners of the top panel sections 4 is advantageously provided with upstanding top cleats 80. These top cleats, which may be made in the form of aluminum castings, are roughly X-shaped when viewed from above. They are provided with interior vertical walls 81 and 82, and exterior vertical walls 83 and 84. A horizontal web portion 85 connects vertical walls 81 and 83, while a horizontal web portion 86 connects vertical walls 82 and 84. A suitable eyelet 87 is employed to bridge the vertical walls 83 and 84. By particular reference to Figs. 1 and 6 of the drawings, it will also be noted that vertical walls 84 and 83 of top cleats 80 extend downwardly well below the bottom extremities of the frame members 28 and 30 for the top panel section 4.

Thus, walls 83 and 84 are in abutting relationship with the terminal end portions of the adjacent frame members 28 and 30 or 28 and 28 for the top panel section 4 at the point where they are joined and partially overlapped. They are also inserted in the gap or angular opening which occurs between the frame members due to the partial overlapping of the frame member. In addition, during assemblage of the container due to the large overhang of walls 83 and 84, these walls will also fit within the angular recesses occurring in the corners of the end and side panel sections at the points where the respective frame members 20 on the end panel sections 2 and 20 and 28 on the side panel sections 3 are partially overlapped and joined. Thus, the vertical walls 84 and 83 of a top cleat 80 serve as an anti-displacement bracket for two adjacent frame members making up the top panel section 4 as well as a displacement bracket for the end and side panel sections 2 and 3, without at the same time interfering with the normal pivot movement of either the end, side or top panel sections during assemblage or disassemblage of the container. If desired, the exposed outside sharp corners of walls 83 and 84 may be cut-away and the top and bottom exposed parts of walls 84 and 83 slightly curved. This will obviate any possibility of damage to these walls during use of the container.

The horizontal walls 85 and 86 are adapted to be secured to the individual frame sections 28 and/or 30 by means of bolts. It is to be further observed that the vertical inside walls 82 and 81 taper downwardly and inwardly. They thus provide inclined surfaces which are adapted to be engaged by the similarly inclined wall portions 68 on each of the bottom cleat members 50 when the containers are disposed one upon the other. This type of contact between the top and bottom cleat members provides for firm and rigid engagement between the two containers at all four corners of the containers. Displacement between two containers in any direction is also effectively prevented. When the containers are nested or stacked one upon the other, sufficient space will be left between them, due to the length of the bottom cleats 50, for the forks of a fork lift truck to be inserted.

It is also a noteworthy feature in the container of the instant invention that it is possible to remove individually either a side section or wall, or even two side walls simultaneously without seriously disturbing the remaining parts of the container and bringing about its collapse. This can also be done when the container stands alone or is stacked above or below another container. As a result, easy access is had to the contents of the container at all times.

If desired, suitable means may also be provided for dividing the interior of the container, when assembled, into a series of compartments. For this purpose, suitable plate members 90 and 91 may be employed. Plate 90 may be pivotally attached in a suitable fashion to the topmost panel section 4 and plate 91 may be pivotally attached to the bottom panel section 1. When these plates are pivoted inwardly they may be locked together with suitable hook means 95 as indicated particularly in Fig. 2.

From the foregoing description it will thus be obvious that a novel collapsible container having numerous noteworthy features has been provided by the instant invention. The inherent rigidity and strength afforded by the particular assemblage of the several parts thereof provides for extreme ruggedness and allows all parts thereof to be made from aluminum or other lightweight metals. The container can be assembled or dismantled in a minimum amount of time without tools of any kind. It is provided with means such as the eyelets 87 of the top cleats 80 and eyelets 69 of the bottom cleats 50 whereby the containers may be secured to hoisting hooks, parachute shroud lines, or deck lashing lines. When the containers are stacked one upon the other, ropes or wires can be run through these eyelets and the containers lashed together. Furthermore, the top and bottom cleats are located in vertical alignment with each other and do not protrude outwardly beyond the peripheral edges of the side and end panel sections where they could contact a foreign object and become damaged.

The rugged construction of the container, and particularly the corner portions thereof, enables the container to withstand admirably well the abuse and rough handling normally encountered during the life of the same. Accessibility to the contents of the container from many points without completely knocking the container down has also been provided for.

An advantageous embodiment of the invention has been hereindisclosed and described. It is obvious that various changes and modifications may be made therein without departing from the spirit and scope thereof as defined by the appended claims, wherein what is claimed is:

1. A knockdown cargo container comprising, when assembled, the combination of top, bottom, end and side panels, each of said panels also including edge reinforcing means, each of said side and end panels being pivotally interlockable with said bottom panel and nestably engageable with the edges of the others of said end and side panels with which it is in edge to edge abutting engagement, said top panel being engageable with the top edges of each of said side and end panels when said panels are in assembled relation, at least one of said side and end panels also being pivotally removable from its engagement with said top panel and its interlocked engagement with said bottom panel whereby

it can be freed from the assembled container without disassembly of said top panel from the remaining assembled side and end panels, means releaseably maintaining said panels in assembled relation, and means preventing edgewise displacement of each of said side and end panels with respect to said bottom and top panels, said means comprising a plurality of corner reinforcing elements disposed in recesses at the respective corners of said bottom and said top panels, said reinforcing elements on said bottom panel having portions projecting upwardly and said reinforcing elements on said top panel having portions projecting downwardly respectively above and below the normal corners of the side and end panels in contact therewith during assembly of said container, said portions of said reinforcing elements also being in removable and abutting engagement with the edge reinforcinng means of the side and end panels associated therewith.

2. A knockdown container as defined in claim 1, wherein said corner reinforcing elements comprise upper and lower cleats having a configuration such that the cleats on the top panel of one container will removably nest with the cleats on the bottom panel of a similarly constructed container mounted on said first-mentioned container.

3. A knockdown cargo container of the type described comprising in nestable assembled relation bottom, top, side and end panels, each of said panels having marginal reinforcing elements, the marginal reinforcing elements of any two adjacent side and end panels, when said last-mentioned side and end panels are located in nestable contiguous abutting relationship, combining to form a vertical edge of the container, cleat means fixed to the corners of said bottom and top panels, said cleat means including upwardly and downwardly projecting vertical walls respectively, each of said side and end panel reinforcing elements having their terminal ends in abutment with the said vertical walls on the cleat means associated therewith when the said panels are in assembled relationship, means releasably fastening an end panel to said bottom and top panels, whereby said last-mentioned end panel can be freely removed from said assembled container without disassembly of the remaining panels of said assembled container.

4. A knockdown container as defined in claim 3 wherein said cleat means are disposed in notched portions of said top and bottom panels, the cleat means on said top and bottom panels also having such a configuration whereby the cleat means on the top panel of one container will removably nest with the cleat means on the bottom panel of a superposed and similarly constructed container.

5. A knockdown container as defined in claim 3 wherein the panel reinforcing elements comprise extruded framing members circumscribing and fastened to the edges of each panel, said framing members acting as columns and beams for transmitting loads imposed on the side, end and top panels to the cleat means on the bottom panel of the assembled container.

6. A collapsible container comprising in assembled relation a top, bottom, end and side panels, each of said panels including reinforcing means disposed about its marginal edges, the reinforcing means along the bottom of each of said end and side panels comprising one part of a releasable cam hinging assembly, and the reinforcing means provided along the marginal edges of the bottom panel comprising the other part of said releasable cam hinging assembly whereby each of said side and end panels may be pivotally interlocked into receptacle defining relationship with said bottom panel, the top of an end panel and one edge of said top panel also including a cam hinging means similar to that provided between the bottom of said last-mentioned end panel and said bottom panel, whereby said top panel may be cam hinged into interlocked relation with respect to the said last-mentioned end panel, the remaining marginal edge reinforcing means on all of said panels being so configured as to nestably engage in edge to edge abutting relationship, whereby at least one of said end panels may be pivotally removed from the assembled container to provide access thereto without disassembly and removal of the remainder of said side and end panels and said top panel.

7. A collapsible container as defined in claim 6 wherein corner reinforcing means are provided on said top and bottom panels, said corner reinforcing means having portions which project upwardly and downwardly from the normal horizontal planes of the bottom and top panels respectively and said projecting portions also being engageable with the terminal ends of the marginal edge reinforcing means provided on adjacent and contiguous end and side panels of the assembled container.

8. A collapsible container as defined in claim 7, wherein certain of the edge reinforcing means of said side and end panels and the upper and lower projecting portions of said top and bottom panel corner reinforcing means are vertically aligned, when the container is assembled, said upper and lower projecting portions of said corner reinforcing means also lying within the corner defined by the intersecting planes of any two abutting side and end panels.

9. A collapsible container as defined in claim 7, wherein said top and bottom panel corner reinforcing means comprise stacking cleats having complementary configurations such that the cleats on the top panel will receive in interlocked relation the cleats on the bottom panel of a similarly constructed and superposed container.

10. A collapsible container as defined in claim 6 wherein releasable fastening means are provided for maintaining the top, end and side panels in assembled relation.

11. A knockdown cargo container of the type described comprising the combination of top, bottom, side and end panel members, cam hinging means releasably securing the bottom edges of said end and side panel members to the outer peripheral portions of said bottom panel member, means provided on the vertical edges of said side and end panel members for stiffening and removably nesting the vertical edges of adjacent end and side panel members one within the other, said means terminating short of the ends of the side and end panel members so as to define a recess at each corner of a side and end panel member, cam hinging means along a marginal edge of said top panel member releasably engaging the upper edge of one of said end panel members, upstanding cleat elements secured to said top panel member at the corners thereof, portions of said cleat elements extending downwardly in depending fashion below the top panel member, and lower cleat elements dependingly attached to said bottom panel member portions of which extend substantially below the bottom panel member at the corners thereof, said lower cleat elements also being in vertical alignment with said upstanding cleat elements provided on said top panel member, said lower cleat elements also having upstanding walls projecting upwardly above said bottom panel member, said upstanding walls of said lower cleat elements also being in alignment and in contact with the nested and converging stiffened vertical edges of said side and end panel members at the corners defined between abutting side and end panels and projecting into the recesses defined therebetween when said side and said end panel members are in assembled relation to prevent edgewise movement of each of said side and end panel members.

12. The combination as defined in claim 11 including fastening means releasably securing said end and side panel members and said top panel member together.

13. The combination as defined in claim 11 including means dividing the interior of said container, when assembled, into a plurality of compartments.

14. A combination as defined in claim 11 including eyelet means on said upstanding and lower cleat elements.

15. In a thin-walled container for receiving a cold-flowable material, a generally rectangular pallet having a recess extending along a side edge portion thereof, an inwardly curved upwardly extending flange forming the outer socket wall of said recess, a curved lip extending along the upper edge portion of said flange, a panel forming a wall of the container and having a lower edge portion shaped to be receivable within the recess when the panel is disposed in a substantially horizontal plane and pivotable within the recess as the panel is pivoted to a substantially vertical plane, the lower edge portion of said panel having a rounded outer surface fitting in said recess when said panel is in said vertical plane and with said lower edge portion having a generally convex rounded inner surface, means responsive to the pivotal movement of said panel for locking the panel against vertical and lateral displacement with respect to said pallet when said panel is in a vertical plane, and means associated with the recess for preventing the panel from pivoting beyond a substantially vertical plane, the inner wall of said recess constituting a flange extending upwardly from the pallet and complementing the rounded inner surface of the lower edge portion of said panel to provide a seal between the pallet and the panel, said curved lip being complemented by the lower edge portion of said panel whereby binding of the joint caused by outward loads exerted adjacent the base of the panel by the cold-flowable material within the container is substantially prevented and outward pivoting of the panel is thereby facilitated.

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