Dec. 12, 1967 B. FISH 3,357,628

PALLET CONTAINER FOR FRONT LOADING

Filed July 30, 1965 2 Sheets-Sheet 1

FIG. 1

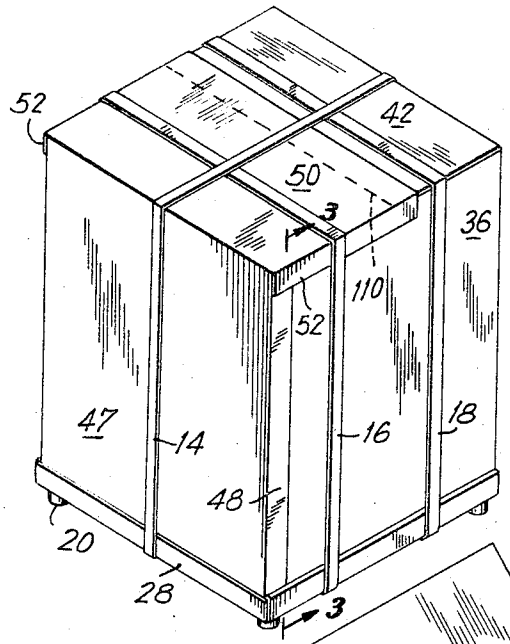


FIG. 2

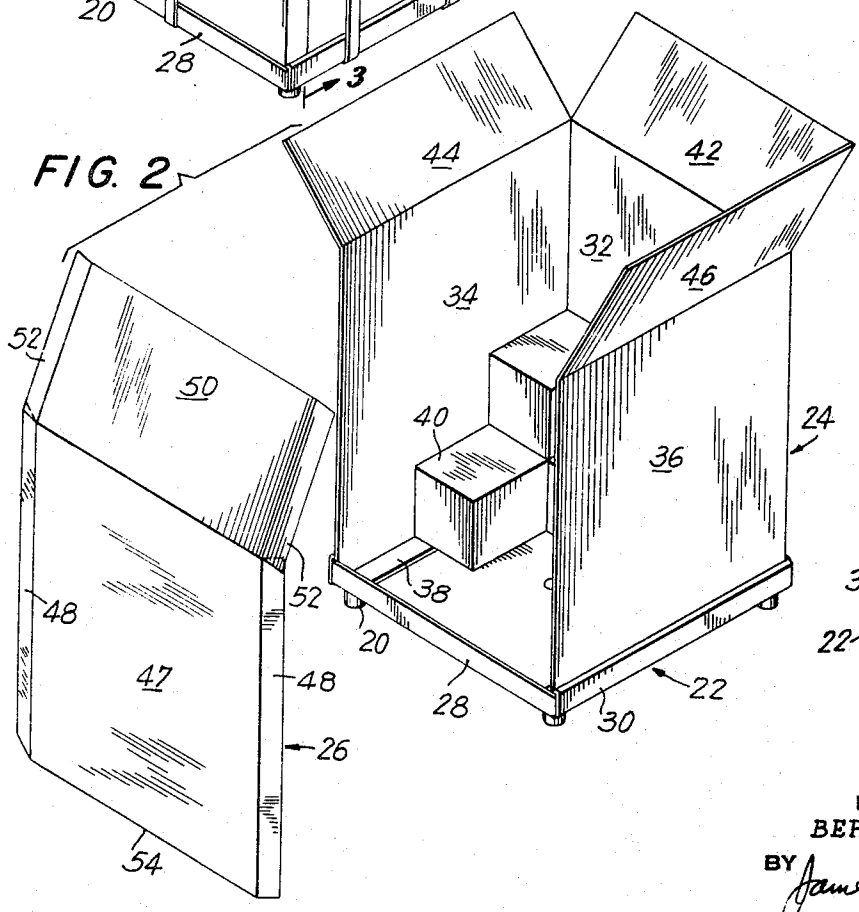
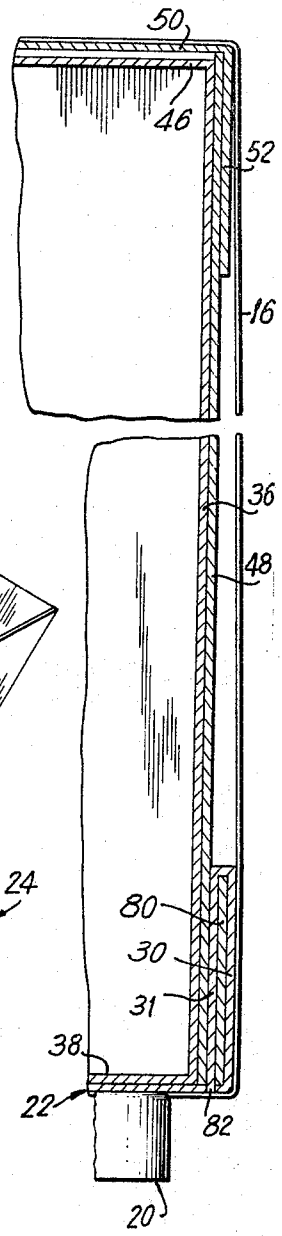


FIG. 3



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PALLET CONTAINER FOR FRONT LOADING

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FIG. 4

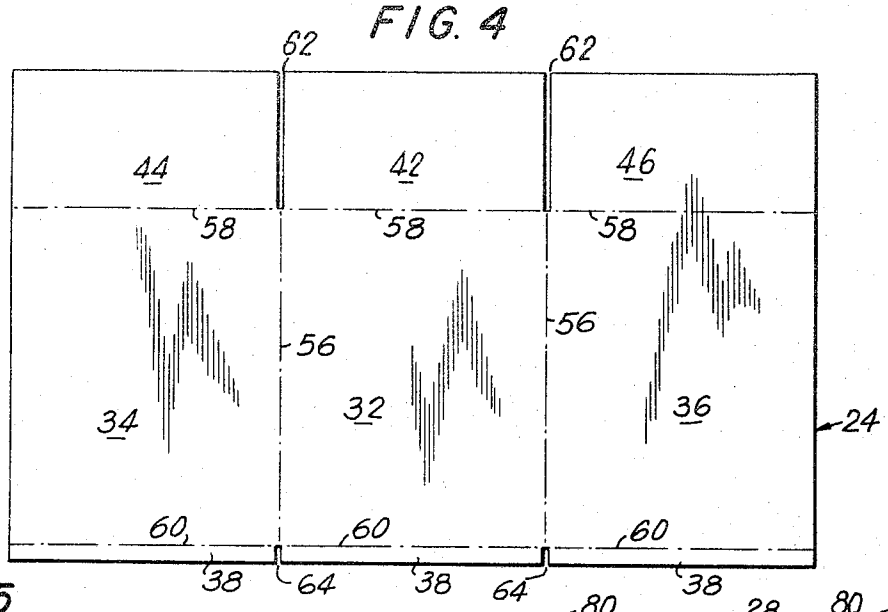
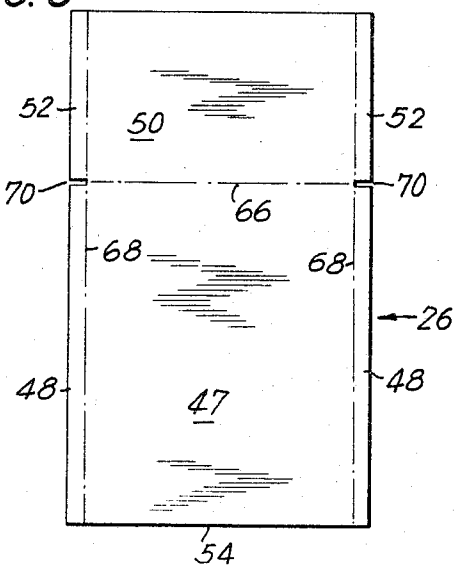


FIG. 5



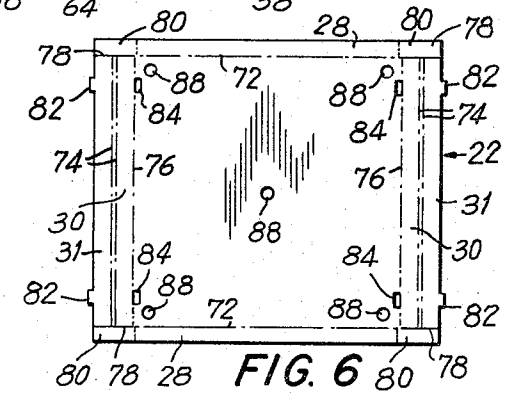


FIG. 6

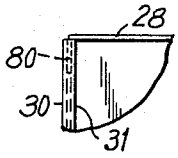


FIG. 7

FIG. 8

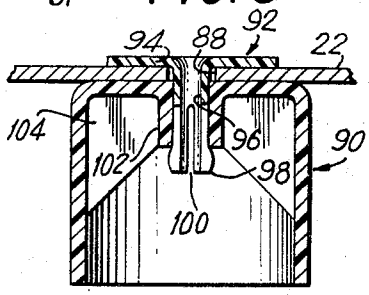
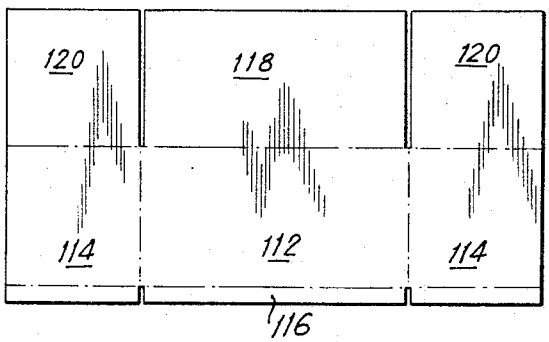


FIG. 9



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3,357,628

PALLET CONTAINER FOR FRONT LOADING

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Filed July 30, 1965, Ser. No. 476,041
7 Claims. (Cl. 229—23)

ABSTRACT OF THE DISCLOSURE

The invention is a pallet type shipping container of large size for unit loading with and shipment of many cartons of ordinary size. It is designed for easy assembly at the place of loading, and affords easy loading with both the front and top open. The container comprises three flat, generally rectangular sheets of corrugated paper board which are bent to form respectively a bottom, a body, and a separable front closure. The bottom has upstanding peripheral flanges on all four edges, with special tabs, tongues, and slots to lock the same in upright position. The body has a back panel and two side panels dimensioned to fit in the bottom, and these panels have anchoring flanges at their lower edges, and top flaps on their upper edges. The front closure has a front panel, and flanges at the side edges, and a top flap, but is devoid of flanges at its bottom edge, and thereby is readily insertable downwardly into the bottom even after the container has been fully loaded with heavy cartons, e.g. liquor cartons. The bottom has hollow cup-shaped pallet feet which are secured beneath the bottom. The container requires no glue or fasteners other than tapes which are tightened around the container after it has been filled.

This invention relates to containers, and more particularly to a pallet container of large size and especially intended to facilitate front loading.

Unit loading, or the shipment of smaller parcels and cartons in a large palleted container, has proved convenient and economical. R.E.A. Express (formerly the Railway Express Agency) offers a substantially lower rate for such shipment, and supplies the large containers to shippers free of cost, in order to encourage such unit loading. It has already been suggested to use expendable containers made of corrugated paper board, with pallet feet at the bottom. The primary object of the present invention is to generally improve such containers.

More specific objects are to provide a container which is easy to manufacture, there being no complicated shapes to make, and which is economical in the use of material, it consisting of three relatively simple rectangular sheets.

In accordance with a further feature and object, the containers are supplied to the shipper in knocked-down form, with the sheets flat, and therefore easily shipped and stored. No factory assembly of parts is required, the assembly operation being readily performed by the shipper at the loading point. The container parts overlap in such a way that the container when taped is very strong.

Another object is to facilitate loading the container with the smaller cartons, which in some cases, for example cartons of liquor, may be quite heavy, and to this end the present container is so designed that it may be front loaded. The top also is open during loading for maximum convenience in loading.

To accomplish the foregoing general objects, and other more specific objects which will hereinafter appear, my invention resides in the shipping container elements and their relation one to another, as are hereinafter more particularly described in the following specification. The specification is accompanied by a drawing in which:

FIG. 1 is a perspective view showing a closed shipping container embodying features of the invention;

FIG. 2 is a perspective view showing how the container may be front loaded, the separate front panel being added later to complete the loaded container;

FIG. 3 is a fragmentary section drawn to larger scale and taken approximately on the line 3—3 of FIG. 1;

FIG. 4 shows the flat, generally rectangular blank from which the body is formed;

FIG. 5 shows the flat, generally rectangular blank from which the front is formed;

FIG. 6 shows the flat, generally rectangular blank from which the bottom is formed;

FIG. 7 is a fragmentary plan view showing one corner of the bottom after erection of the flanges;

FIG. 8 is a section through one form of pallet foot which may be used; and

FIG. 9 shows a flat generally rectangular blank for the body of a modified container in which the top flaps are differently proportioned.

Referring to the drawing and more particularly to FIG. 1, the illustrated pallet container is of large size. In terms of R.E.A. dimensions it may have a combined length and width of say 96 inches, or 108 inches, with a height from the floor of up to 60 inches. As is customary in this work the container is completed by tapes or bands **14**, **16** and **18**, secured tightly therearound. It will be understood that a greater number of tapes may be used, depending largely on the size of the container and on the weight of the goods being shipped. Any of the known or standard methods of taping may be employed, using tapes made of metal, fiber or plastic, and secured at their ends in any known fashion, as by means of metal clamps or clips, applied by any of the usual tensioning devices.

The tapes are readily passed beneath the bottom of the container because of the pallet feet **20**. For smaller containers four pallet feet are adequate, these being located near the corners. For larger containers a fifth foot is added, this being located at the center of the bottom of the container.

Referring now to FIG. 2, the container comprises a bottom **22**, a body **24**, and a separable front closure **26**, all made of corrugated paper board. The bottom has upstanding peripheral flanges **28** and **30**, with means locking the same in upright position. The body **24** comprises a back panel **32**, and two side panels **34** and **36**, and is dimensioned to fit in the bottom **22**. The panels have anchor flanges at the lower edges resting on the bottom, and a part of one such flange is visible at **38**. I call these anchor flanges because when the first objects such as the cartons **40** are loaded into the container they rest on the anchor flanges, and so serve to hold the body **24** more securely in the bottom **22** during the rest of the loading operation. The panels **32**, **34** and **36** have top flaps **42**, **44** and **46**.

The front closure **26** has a front panel **47** with front flanges **48** at the side edges of the front panel, and has a top flap **50**, preferably with top flanges **52** at the side edges of the top flap **50**. It is important to note that the front closure has no flange at its bottom edge **54**, and therefore is readily insertable within the flange **28** of the bottom and after the container has been fully loaded.

The pallet feet **20** preferably are secured to the bottom **22** before adding the body **24**. The four top flaps **42**, **44**, **46** and **50** overlap to form the container top. The tapes are added after the container has been loaded.

The container is shipped and stored by the user in knocked-down form, and except for the pallet feet, comprises essentially three flat generally rectangular sheets of corrugated paper board, which are illustrated in FIGS. 4, 5 and 6 of the drawing. It will be seen that in each case the sheet is essentially a simple rectangle, so that it may be made with minimum waste of material.

Referring first to FIG. 4, the body sheet **24** has a length equal to the length of the container plus twice the width of the container. It happens that in the illustrated container the length and width are equal, and therefore the back panel **32** and the side panels **34** and **36** are equal in horizontal dimension. The sheet **24** has a width (the vertical dimension as viewed in FIG. 4) equal to the height of the container plus a top flap plus the width of an anchor flange **38**. The sheet **24** is scored by score lines **56** to define the side panels **34** and **36**, with the back panel **32** therebetween. It has score lines **58** to define the top flaps, and score lines **60** to define the anchor flanges. It is severed or notched at **62** between the top flaps, and at **64** between the anchor flanges.

The front closure sheet **26** has a length (the vertical dimension as viewed in FIG. 5) equal to the height of the container or front panel **47** plus the top flap **50**. It has a width (horizontal dimension in FIG. 5) equal to the length of the container, plus two flanges **48**. The sheet is scored at **66** between the front panel **47** and the top flap **50**, and it is scored on lines **68** to define the front flanges **48** and the top flanges **52**. It is notched at **70** between the flanges **48** and the flanges **52**.

The bottom sheet **22** (FIG. 6) has a length (horizontal dimension in FIG. 6) equal to the length of the container plus two double flanges **30**, **31**, and it has a width (vertical dimension in FIG. 6) equal to the width of the container plus the two single flanges **28**. The sheet is scored on lines **72** to define the flanges **28**. It is scored on closely adjacent parallel lines **74** to define the middle or top fold of the double flanges, and it is scored on lines **76** to define the bottom fold of the outer flange **30**. The blank is severed at **78** at the ends of the double flanges, to form locking tabs **80** which extend horizontally from the ends of the flanges **28**.

The free edges of the double flanges have tongues **82**, and the bottom has mating slots **84** to receive the tongues in order to hold the double flanges in erect position. The tabs **80** act as locking tabs where are received within the double flanges so that the flanges **28** also are held erect.

This will be seen from examination of FIG. 3 in which flange **30** has been turned upward; flange **31** has been reversely turned downward; tongue **82** has been received in its mating slot; and locking tab **80** is held within the double flange **30**, **31**. FIG. 7 also shows how locking tab **80** is an extension of flange **28**, and is received between the walls **30** and **31** of the double flange.

FIG. 3 also shows how when the container is completed the front flange **48** is outside the side panel **36**, and the top flange **52** comes outside both, these parts being held by the taut tape **16** therearound.

The bottom is provided with pallet feet, and in one particular form these are mounted through holes indicated at **88** in FIG. 6. In some cases there are four holes for four feet, but if the container is large a fifth hole may be provided at the center as shown in FIG. 6. The knock-down container kit preferably includes the pallet feet, and one of these is shown in FIG. 8. It comprises an inverted, generally cylindrical cup **90** designed to be disposed beneath the bottom **22** of the container, and it further comprises a fastener **92** designed to pass through the aforesaid hole **88** and to be received in the cup **90** with a snap fit. More specifically, the fastener **92** comprises a flat circular head **94** of large area, and a tubular shank **96** the lower end of which is enlarged at **98**, and longitudinally slit at **100** to make the same resiliently compressible. In the present case there are four such slits in quarrature. The cup **90** and fastener **92** may be made of any suitable material, and in the illustrated case they are molded out of a plastics material.

The cup **90** is molded integrally with a socket portion **102**, and with radially disposed reinforce webs **104**. It will be understood that the resilient shank **96** is received in the main body with a snap fit, thus anchoring the parts **90** and **92** together and to the bottom **22**.

The top flaps are dimensioned to provide at least some overlap and this may be seen by reference to FIG. 1 in which flap **50** overlaps flap **42**, as is indicated by the location of the dotted line **110**. For some purposes a greater overlap may be wanted, and this is readily provided by appropriately dimensioning the body blank and/or the front closure blank. FIG. 9 shows the body blank for a container having a length about twice its width, so that the back panel **112** is much larger horizontally than the side panels **114**. The anchor flanges are shown at **116**. The top flap **118** and the side flaps **120** have been relatively increased in vertical dimension as viewed in FIG. 9. The dimensioning is such that in this case the side flaps **120** come substantially in edge to edge or abutting relation when folded down from the side panels, and the back flap **118** extends over substantially all of the container when folded down over the side flaps **120**. If the front flap forming a part of the front closure, not shown, is made equally large, the front and back flaps will fully overlap, but of course the front flap may be reduced to only partially overlap. In general, the flaps may be proportioned to fit the needs or wishes of the purchaser in respect to the degree of overlap. It is not essential that flap **118** have the same height as flaps **120**.

The flanges of the bottom have a width of three to four inches, the four inch width being used for larger containers. The front flanges **48** and the top flanges **52** similarly have a width of three to four inches, the larger width being used for larger containers. The anchor flanges also have a width of three to four inches, which is found adequate, but this width could be increased, if desired.

The method of assembly will be evident from the foregoing description. Referring to FIG. 6, the flanges **28** are turned upward; the tabs **80** are turned toward one another, and the double flanges are turned upward and reversely downward around the tabs **80** until the tongues **82** are snapped into the slots **84**. The pallet feet are applied through the holes **88**, with a snap engagement.

Referring to FIG. 4, the anchor flanges **38** are turned upward; the side panels **34** and **36** are folded on lines **56**; and the folded sheet is then slid downward into the flanged bottom. The container is loaded, as indicated in FIG. 2, and the loading operation is facilitated because both the front and the top are open. It is not necessary to raise each carton over the top and then downward. The cartons are simply passed through the open front of the container, and the open top makes it easy to see and handle the cartons as they are placed in the container.

Referring to FIG. 5, the flanges **48** are folded, and the front closure then is slid downward inside the flanged bottom, with the flanges **48** outside the side panels **34** and **36**. The side flaps **44** and **46** are then turned down; the back flap **42** is turned down over the side flaps; the front flap **50** is turned down over the back flap **42**; and the top flanges **52** are folded downward around the front flanges **48** and the side panels **34** and **36**. The tapes are then applied in any desired manner, using appropriate tools to tighten and fasten the same.

Any dimensions given above must be considered approximate rather than exact, because in practice the dimensions preferably are adjusted slightly to allow for the thicknesses of the corrugated paper board.

It is believed that the construction and method of assembly and use of my improved shippping container, as well as the advantages thereof, will be apparent from the foregoing detailed description. The new container involves no complicated shapes. The three sheets are essentially rectangular, and are economical in the use of material, as well as simple to manufacture. No assembly of parts is required to be done by the container manufacturer. The sheets are stacked and shipped in flat condition, with minimum shipping cost and space requirement. The container may be made in any desired dimension, including the standardized dimensions recom-

mended by R.E.A. Express. The readily detachable front closure is of great assistance in unloading the container at its destination, as well as when loading it at the point of origin. The container is inexpensive and may be discarded after being unloaded.

It will be understood that while I have shown and described the invention in a preferred form, changes may be made without departing from the scope of the invention as sought to be defined in the following claims. In the claims the terms "length" and "width" are used in a relative sense, and refer to two relatively transverse dimensions, rather than to require that one be greater than the other.

I claim:

1. A pallet-type front-loading shipping container of relatively large size for unit loading with and shipment of many cartons of ordinary size, said container comprising a bottom, a body and a separable front closure all made of corrugated paper board and designed for easy assembly and loading at the place of loading, said bottom having upstanding peripheral flanges on all four edges with means locking the same in upright position, said body having a back panel and two side panels dimensioned to fit in the bottom, said side and back panels having top flaps at their upper edges and anchor flanges at their lower edges, said front closure having a front panel, front flanges at the side edges of the front panel, and a top flap, said front closure being devoid of a flange at its bottom edge and thereby being insertable downwardly inside the flanges of the bottom after the container has been fully loaded while the front and top are still open, the top flaps of the container overlapping to form the container top, pallet feet secured beneath the bottom, and said container being completed and the parts thereof being held together by tapes secured therearound without need for glue or other fasteners other than the tapes.

2. A knocked-down front-loading shipping container of relatively large size for unit loading with and shipment of many cartons of ordinary size, said container comprising three flat generally rectangular sheets of corrugated paper board for respectively forming a bottom, a body, and a separable front closure, said sheets being designed for easy assembly and loading at the place of loading, said bottom sheet having a length equal to the length of the container plus flanges and having a width equal to the width of the container plus flanges, said sheet being scored to define said flanges and having means to hold all four flanges in erect position, said body sheet having a length equal to the length plus twice the width of the container and having a width equal to the height of the container plus a top closure flap plus an anchor flange, said sheet being scored to define two side panels with a back panel therebetween, and to define the top flaps and anchor flanges, said sheet being notched between the adjacent edges of the top flaps and between the adjacent ends of the anchor flanges, said front closure sheet having a length equal to the height of the container plus a top closure flap, and having a width equal to the length of the container plus two flanges, said sheet being scored between the front panel and its top flap and also to define front flanges and top flanges, said sheet being notched between the adjacent ends of the front flanges and the top flanges, said front closure sheet being devoid of a flange at its bottom edge and thereby being insertable downwardly inside the flanges of the bottom after the container has been loaded, said container requiring no glue or fasteners other than tapes tightened around the container after it has been filled.

3. A knocked-down front-loading shipping container of relatively large size for unit loading with and shipment of many cartons of ordinary size, said container comprising three flat generally rectangular sheets of corrugated paper board for respectively forming a bottom, a body, and a separable front closure, said sheets being

designed for easy assembly and loading at the place of loading, said bottom sheet having a length equal to the length of the container plus two double flanges and having a width equal to the width of the container plus two flanges, said sheet being scored to define said flanges and double flanges and being cut at the ends of the double flanges to form locking tabs at the ends of the single flanges adapted to be received within the double flanges, the free edges of said double flanges having very short tongues and the bottom having slots to receive said tongues to hold all four flanges in erect position, said body sheet having a length equal to the length plus twice the width of the container, and having a width equal to the height of the container plus a top closure flap, said sheet being scored to define two side panels with a back panel therebetween, and to define the top closure flaps, said sheet being notched between the adjacent edges of the top flaps, said front closure sheet having a length equal to the height of the container plus a top closure flap and having a width equal to the length of the container plus two flanges, said sheet being scored between the front panel and its top closure flap and also to define front flanges, said front closure sheet being devoid of a flange at its bottom edge, and thereby being insertable downwardly inside the flanges of the bottom after the container has been loaded, said container requiring no glue or fasteners other than tapes tightened around the container after it has been filled.

4. A knocked-down pallet-type front loading shipping container of relatively large size for unit loading with and shipment of many cartons of ordinary size, said container comprising three flat generally rectangular sheets of corrugated paper board for respectively forming a bottom, a body, and a separable front closure, said sheets being designed for easy assembly and loading at the place of loading, said bottom sheet having a length equal to the length of the container plus two double flanges, and having a width equal to the width of the container plus two flanges, said sheet being scored to define said flanges and double flanges and being cut at the ends of the double flanges to form locking tabs at the ends of the single flanges adapted to be received within the double flanges, the free edges of said double flanges having very short tongues and the bottom having slots to receive said tongues to hold all four flanges in erect position, said bottom having holes to receive pallet feet which are to be secured beneath the said bottom, said body sheet having a length equal to the length plus twice the width of the container, and having a width equal to the height of the container plus a top closure flap plus an anchor flange, said sheet being scored to define two side panels with a back panel therebetween, and to define the top closure flaps and anchor flanges, said sheet being notched between the adjacent edges of the top closure flaps and between the adjacent ends of the anchor flanges, said front closure sheet having a length equal to the height of the container plus a top closure flap, and having a width equal to the length of the container plus two flanges, said sheet being scored between the front panel and its top closure flap and also to define front flanges and top flanges, said sheet being notched between the adjacent ends of the front flanges and the top flanges, said front closure sheet being devoid of a flange at its bottom edge and thereby being insertable downwardly inside the flanges of the bottom after the container has been loaded, said container requiring no glue or fasteners other than tapes tightened around the container after it has been filled.

5. A large container for unit loading as defined in claim 3 in which two of the four flanges on the bottom are double flanges, and in which there are locking tabs at the ends of the single flanges which tabs are bent and received within the double flanges, and in which the free edges of the double flanges have very short tongues

and the bottom has slots to receive said tongues in order to hold the flanges in an erect position.

6. A large container for unit loading as defined in claim 5 in which two of the four flanges on the bottom are double flanges, and in which there are locking tabs at the ends of the single flanges which tabs are bent and received within the double flanges, and in which the free edges of the double flanges have very short tongues and the bottom has slots to receive said tongues in order to hold the flanges in an erect position.

7. A large container for unit loading as defined in claim 4 in which there also are hollow cup-shaped pallet feet, and means to secure the same beneath the bottom of the container.

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