Nov. 19, 1935. E. S. GOMES 2,021,234

FIBERBOARD SHIPPING CONTAINER

Filed Sept. 19, 1933 2 Sheets-Sheet 1

Fig. 1

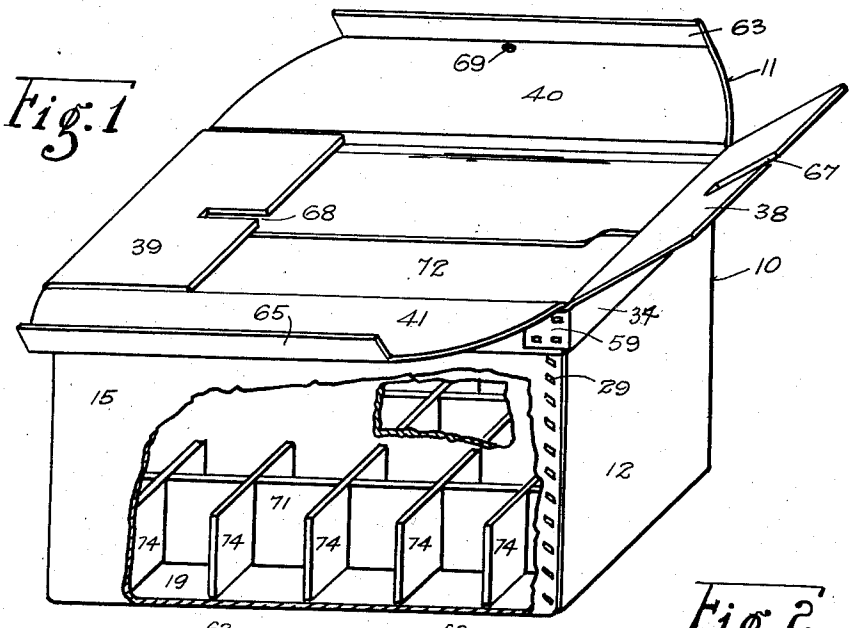


Fig. 2

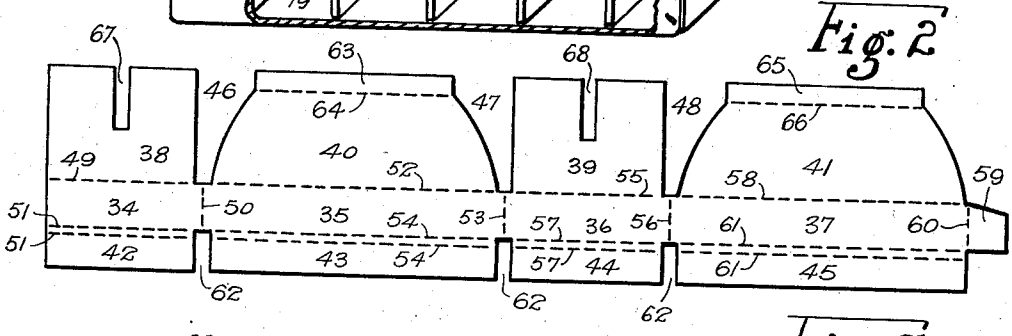


Fig. 3

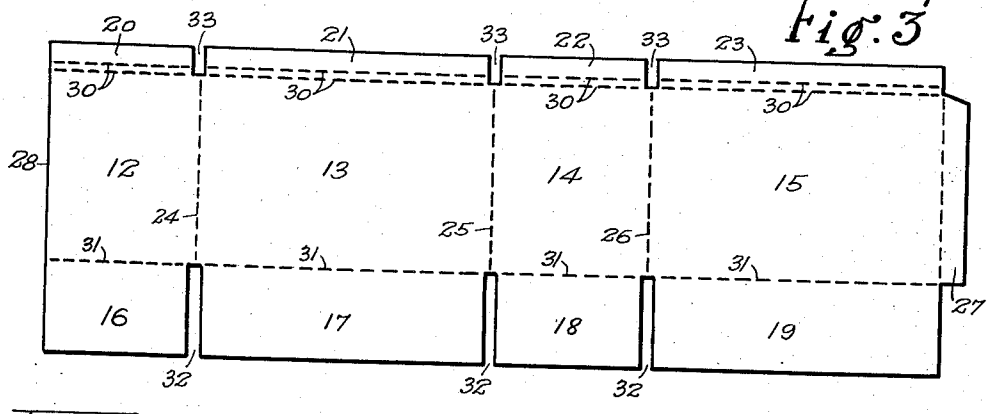
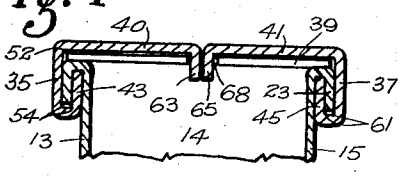


Fig. 4



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Fig. 5

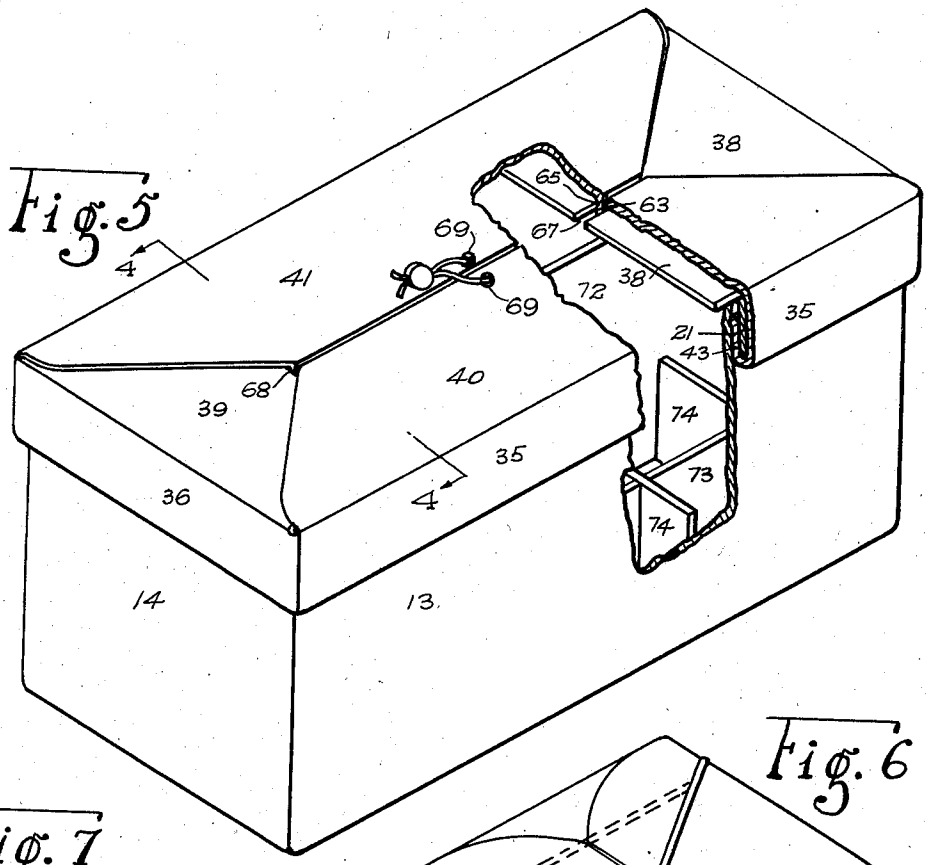


Fig. 6

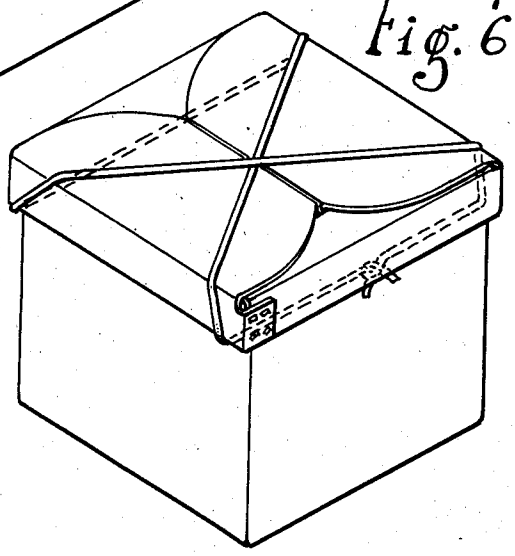


Fig. 7

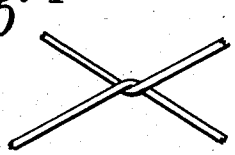
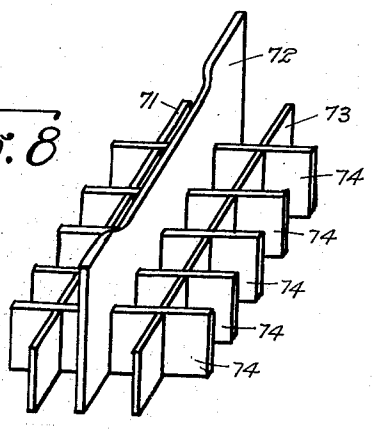


Fig. 8



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2,021,234

FIBERBOARD SHIPPING CONTAINER

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Application September 19, 1933, Serial No. 690,099

7 Claims. (Cl. 229—45)

This invention relates to a box preferably made of fiberboard and suitable for use as a shipping container for the shipment of bottled goods or other goods of fragile or perishable nature as well as a general utility box for many kinds of merchandise.

The principal object of this invention is to provide a fiberboard shipping container or box suitable for shipping merchandise of the class above referred to and which can be used as a reshipping container and which can be easily opened and closed with the least possible wear and tear of the box.

Another object of this invention is to provide a fiberboard shipping container composed of two separate parts, namely, a body and a lid, which parts are constructed in such a manner that they can be interlocked, one with another, to form a compact unit or single box with top closing flaps, without the use of additional fastening means other than the interlocking features of the units themselves.

Another object of this invention resides in the formation of closing flaps with locking flanges thereon wherein said closing flaps are of shorter dimension at their juncture with said flanges than said flaps are at their juncture with the container walls, thus developing a closing flap and locking flange construction which will operate successfully with certain styles of containers having walls built up to an unusual thickness.

A still further object of the invention lies in the formation of the closing flaps of the lid whereby the flanges of the outside closing flaps extend through the notches in the ends of the inside closing flaps to securely hold the top closing flaps in closed position.

Another object of this invention is to provide a fiberboard shipping container with closing flaps connected with the side and end walls thereof wherein the formation of the closing flaps is an unbroken, continuous extension of the side and end walls of the container to a point well beyond the score or crease line which separates the side and end walls from the closing flaps of the container, thus maintaining the natural and full advantage of a continuous, unbroken, right-angular formation of the top closing flaps with the side and end walls of the container.

Another object of this invention is to provide a fiberboard container composed of two separate parts, namely a body and a lid, which parts are constructed in such a manner that the locking flaps of the top may be slipped between the locking flaps of the body and the body walls, and the locking flaps of the body may be slipped between the locking flaps of the top and the top walls, thus allowing heavy and/or stiff materials to be used to form a compact unit or a single box wherein the locking flaps of the body are held securely interlocked with the locking flaps of the top by the closing of the closing flaps of the top and the top is held down tightly upon the top edge of the body by the interlocking of the top locking flaps with the body locking flaps.

The invention consists in a shipping container composed of a rectangular body having flaps at its open end, of a lid having flaps adapted to interlock with the flaps at one end of said body and of closing flaps upon said lid, and means of holding said closing flaps in closed position.

A preferred form of the invention is set forth in the accompanying drawings and following description, but it is to be understood that such embodiment is presented, merely for the purpose of illustration and is not to be accorded any interpretation which might be calculated to limit the invention short of its true and most comprehensive scope in the art.

In the drawings:

Fig. 1 is an isometric view of my improved container made in accordance with my invention showing the top partly opened and a portion of the container broken away to show partitions;

Fig. 2 is a plan or blank of the top of the container;

Fig. 3 is a plan or blank of the body of the container;

Fig. 4 is a fragmentary vertical section taken on a plane corresponding to line 4—4 of Fig. 5;

Fig. 5 is an isometric view of my improved container partly broken away and illustrating the top of the container in closed position; and showing sealing means attached.

Fig. 6 is an isometric view of my improved container showing a modified construction for sealing the top in closed position;

Fig. 7 illustrates a modified construction of the sealing means shown in Fig. 6;

Fig. 8 is an isometric view showing one type of partition suitable for use in my improved container.

In the embodiment of my invention as illustrated and which shows a preferred construction I provide a shipping container comprising generally stated a body 10 and top 11.

In explaining the construction of the container, the description of the body 10 will be given first. Referring to Fig. 3 the body 10 is shown in blank form and comprises four sections desig-

nated 12, 13, 14 and 15 respectively which will be hereinafter referred to as "body walls". The size of the container to be produced will, of course, determine the relative width and length of the body walls. As shown in this figure, the body walls are substantially rectangular in shape and provided at the bottom end with body closing flaps 16, 17, 18 and 19 respectively and at the opposite end with relatively narrow body flaps 20, 21, 22 and 23 respectively. Crease lines 24, 25 and 26 are preferably heavily scored to divide, so to speak, the body walls 12, 13, 14 and 15, so that the body 10, when bent upon these score lines, is substantially rectangular in shape, as shown in Fig. 1. Body wall 15 is connected to body wall 12 in any suitable manner common to those skilled in the industry as, for example, by extension 27 carried by body wall 15 overlapping body wall 12 and secured by staples 29, as clearly shown in Fig. 1.

The body 10 is further provided (at its end regarded as the top of the container) with crease or score lines 30—30 to divide, so to speak, the body walls 12—13—14 and 15 from the body flaps 20, 21, 22 and 23 respectively. The body 10 is still further provided (at its end regarded as the bottom of the container) with score lines 31 to divide the body walls 12—13—14 and 15 from the body bottom closing flaps 16, 17, 18 and 19 respectively. The body closing flaps 16, 17, 18 and 19 are separated by cuts 32, and the body flaps 20, 21, 22 and 23 are separted by cuts 33, as clearly shown in Fig. 3.

Referring next to the construction shown for the top 11 and to Fig. 2, the top walls 34, 35, 36 and 37 are provided with inner top closing flaps 38 and 39 and outer top closing flaps 40 and 41 respectively, and with locking flaps 42, 43, 44 and 45 respectively. As shown in Fig. 2 the inner top closing flap 38 is separated from the outer top closing flap 40 by a cut 46, the outer top closing flap 40 is separated from the inner top closing flap 39 by a cut 47 and the inner top closing flap 39 is separated from the outer top closing flap 41 by a cut 48. The top wall 34 is divided, so to speak, from the inner top closing flap 38 by a score line 49, from the top wall 35 by a score line 50 and from the locking flap 42 by score lines 51—51. The top wall 35 is divided, so to speak, from the outer top closing flap 40 by a score line 52, from the top wall 36 by a score line 53, and from the top locking flap 43 by score lines 54—54. The top wall 36 is divided, so to speak, from the inner top closing flap 39 by a score line 55, from the top wall 37 by a score line 56, and from the top locking flap 44 by score lines 57—57. The top wall 37 is divided from the outer top closing flap 41 by a score line 58, from extension 59 by a score line 60, and from the top locking flap 45 by score lines 61—61.

The top locking flaps 42, 43, 44 and 45 are separated by cuts 62 which extend inwardly to the score lines 51, 54, 57 and 61 as shown in Fig. 2. The outer top closing flap 40 is provided with a locking flange 63 which is divided from said flap by a score line 64, and the outer top closing flap 41 is provided with a locking flange 65 which is divided from said flap by a score line 66.

The inner top closing flaps 38 and 39 are provided with notches 67 and 68 respectively, which notches receive the locking flanges 63 and 65 as will be later explained. Top wall 37 is connected to top wall 34 in any suitable manner common to those skilled in the art as, for example, by an extension 59 carried by top wall 37, the extension being attached to top wall 34 by staples 70, as clearly shown in Figs. 1 and 6.

My improved fiberboard shipping container can be used for shipping many kinds of merchandise, but when bottle goods such as ginger-ale, or beer, is to be shipped partitions may be inserted within the container. The partition used for illustration purposes in Fig. 8 accommodates two dozen bottles, and is composed of three longitudinal members 71, 72 and 73 and five transverse members 74. The style, size and construction of the partitions will vary depending upon the class of merchandise to be shipped and I wish to be clearly understood that the type, or size, or style, of partitions has no material effect upon my improved container, and that my container can be used with or without partitions.

In the present instance, the body closing flaps 16, 17, 18 and 19 form the bottom of the container. In practice such a container may be assembled by opening the body 10, with the bottom flaps 16, 17, 18 and 19, in closed position and the locking flaps 20, 21, 22 and 23, of said body in an upright position, the top 11, is then opened up with the closing flaps 38, 39, 40 and 41, of said top, in closed position, the locking flaps 42, 43, 44 and 45, of said top may then be bent inwardly against the top walls 34, 35, 36 and 37, respectively into a locking position, said top is then placed over the open end of said body, said closing flaps of said top are allowed to open and said top is slipped part way down on said body, then said locking flaps of said body may be bent outwardly and downwardly where said closing flaps of said top will assist in maintaining said locking flaps of said body in a locking position, said top is then slipped up on said body until said locking flaps of said top lie between said body locking flaps and said body walls and said body locking flaps lie between said top locking flaps and said top walls and said top locking flaps will extend to substantially the juncture of said body locking flaps and said body walls and said locking flaps of said body will extend to substantially the juncture of said top locking flaps and said top walls, said top closing flaps may then be closed whereby said top is held securely interlocked with said body and said top closing flaps will be securely held down upon the top edge of said body.

After the top 11 has been placed over the open end of the body 10 and the locking flaps of the top engaged with the body flaps the inner top closing flaps 38 and 39 are folded inwardly, as shown in Figs. 1 and 5. Then the outer closing flaps 40 and 41 are folded inwardly over the inner closing flaps 38 and 39 and the locking flanges 63—65 are inserted through notches 67—68 in said inner top closing flaps 38—39. As shown in Fig. 5 the outer top closing flaps 40 and 41 are provided with holes or openings 69—69 through which a wire, cord or other suitable means is passed and the ends united to form a sealed package.

It is commonly known in shipping certain kinds of bottled goods, as for example, beer, that it is highly desirable as, for example, a matter of economy to return the empty bottles for re-use. For the same reason it is highly desirable to use the lightest weight shipping container possible and a shipping container which can be used over again and again and a container which can be easily opened and easily closed and handled with the least possible wear and tear of the box.

Various fiberboard containers have been designed for the purposes specified, but to the best of my knowledge either the end panels of the

containers have been materially weakened by separating spaces between a plurality of flaps upon the top of certain of the end panels of the box or a plurality of locking flaps have been devised upon the ends of certain of the top end flaps which retard the quick closing of the box and this latter type of closure requires slots in the side top closing flaps which weaken said side top flaps.

In my United States Patent No. 1,926,941, I show the same interlocking structure to hold the top upon the container body but without closing flaps for the top of the box. While I had developed the combination claimed in my previous application in combination with closing flaps as claimed in the present application, at the time of my previous application I had not developed a means of holding the closing flaps of the top in closed position without the use of adhesive tape, or glue, or staples, all of which are objectionable in a box to be used over again and again as the container is almost certain to be mutilated by the removal of such closing means. As my object was to develop a box that could be used over again and again and thus distribute the cost of the package over a number of trips, it was highly desirable to find a means of closing the top flaps and holding them in closed position whereby the top closing flaps could be opened or closed without in any way destroying the box and of finding a closing means that would not weaken the rigid structure of the container made with closing flaps upon the top.

It will be obvious from the drawings, Figs. 2, 3 and 5, that the dimensions of the inside length and width of the container are much less than the dimensions of the closing flaps **40** and **41**, at their juncture with the respective side wall portions **35** and **37**, of the top and the flanges **63** and **65** are shorter at their juncture with the respective top flaps **40** and **41**, than said top flaps are at their juncture with the respective side wall portions **35** and **37**, in my improved construction shown; thus it is possible to close the top flaps **40** and **41**, with their respective flanges **63** and **65** extending downwardly into the container when certain of the container walls are materially thickened to reinforce the top and walls of the container and the top flaps **40** and **41** may be held in closed position by the pressure of said flanges against each other and/or against certain other portions of the container.

Some of the advantages of my improved fiberboard shipping containers are—

1. The end closing flaps are a continuous extension of the material in the end walls to a point well beyond the top score line of the container and only a notch is cut in the open end of each of said end closing flaps, thus retaining the full strength of the unbroken, right-angular structure of the end walls and each of said end closing flaps across the full width of each end wall.

2. The heavy reinforced rim around the top edge of the box in connection with closing flaps and locking flanges afford a rigid reinforcement for the top of the box and afford an easy means of handling the box as well as offering ventilating space around the body of the container.

3. Closing flaps upon the top of the box in connection with interlocking features which hold the top in interlocked position with the body of the container.

4. Improved means for holding the top flaps securely in closed position; said means may be applied to many types of regular slotted cartons.

5. Improved and simplified means for quickly closing or opening the top flaps of the box with the least possible wear upon the moving parts.

6. Improved and simplified means for sealing the top closing flaps, through openings in the side top closing flaps, with wire and/or other suitable material.

7. The stiff and rigid top flaps are maintained at continuous right-angles with the side and end walls of the top when the box is closed in combination with closing features of the locking flanges of the side top flaps through the notches in the end top flaps.

In the present drawings I have illustrated side top closing flaps meeting in the center of the container with the corners of the side top flaps cut away as a preferred construction, but all corners of the top closing flaps may be right-angular in shape or various shapes may be used without in any way affecting the locking features of the top closing flaps.

In the present drawings I have also illustrated inner top closing flaps **38** and **39**, with notches **67** and **68** respectively in the outer edge thereof as a preferred construction, but it will be understood that with the construction of my improved outer closing flaps **40** and **41**, and locking flanges **63** and **65** shown herein, that said notches are not necessary to the successful operation of said improved outer closing flaps, as said inner closing flaps may be cut short without notches in the outer edges thereof and said improved outer closing flaps and locking flanges, as shown herein, will continue to operate.

The container or shipping carton, forming the subject-matter of the present invention, has been devised with a view to meeting the above mentioned requirements and these have been met, partly by reason of the peculiar construction of the blanks forming the body and top from which the container is made and partly by reason of the particular way in which the blanks are folded and otherwise constructed.

Having thus shown and described one particular embodiment of my invention, it is to be understood that various changes and modifications can be made without departing from the scope or spirit thereof as defined in the claims.

What I claim as new and desire to secure by Letters Patent is:

1. A container or carton of the type comprising a body composed of a bottom, body walls, an open end and a foldable locking flap extending from each body wall at the open end of the container, a top for said body composed of top walls joined to one another, a foldable locking flap at the bottom of each top wall, and a closing flap carried by each top wall, said body and said top being of such dimension that when said top is assembled on the open end of said body, the side walls of the top overlie the said body flaps, and the locking flaps of the top wall fit between said body flaps and body walls, and the said body flaps fit between the locking flaps of the top and the top walls in such a manner that the edge of said body flaps extend to the juncture of said top locking flaps and said top walls and the edge of said top locking flaps extend to the juncture of said body flaps and body walls to securely hold said top down upon the top edge of said body, the closing flaps of the top walls being adapted to bend inwardly over the open end of the container to form a closure for said open end and to securely hold the locking flaps of the top in interlocked relation with the said body flaps.

2. A container or carton of the type comprising

a body composed of a bottom, body walls, an open end and a foldable locking flap extending from at least two of said body walls at the open end of the container, a top for said body composed of top walls joined one to another, a foldable locking flap at the bottom of at least two of said top walls and a closing flap carried by each top wall, said body and said top being of such dimensions that when said top is assembled on said body certain side walls of the top overlie the said body flaps, and the locking flaps of the top fit between certain of the body flaps and the body wall, and certain of the flaps of the body fit between the top locking flaps and certain of the top walls in such a manner that the edge of said body flaps extend to substantially the juncture of said top locking flaps and certain of said top walls and the edge of said top locking flaps extend to substantially the juncture of said body flaps and certain of said body walls to hold said top upon the open end of said body, the closing flaps of the top being adapted to bend inwardly over the open end of the container to form a closure for said open end and to securely hold the locking flaps of the top in interlocked relation with said body flaps.

3. A container or carton comprising a body composed of a bottom, body walls and an open end, a reinforcing thickening means on each of two oppositely disposed container walls, a top closing flap upon each of two other oppositely disposed container walls at said open end of said container, and a flange upon the outer edge of each said top closing flap, each of said flanges to be so arranged as to fold and extend downwardly and press against each other inside of said container when said top flaps are in closed position and to be of such dimension as to be shorter at their junctures with said top flaps than said top flaps are at their juncture with said oppositely disposed container walls, whereby said flanges may enter between said thickened walls of said container.

4. A shipping container comprising a fiberboard box composed of end walls, side walls, a bottom, a hand hold substantially at the top of each of said end walls, a foldable flap with a notch in the free edge thereof on each said end wall and a foldable flap with a flange upon the free end thereof on each said side wall at the open end of said container, said end flaps being adapted to fold inwardly and form continuous right-angular structures at the tops of said hand holds, said side flaps being adapted to fold inwardly over said end flaps and form a cover for said container, said notches being in alignment with said flanges and said flanges being adapted to fold inwardly and of such dimension as to extend through said notches into said container when said flaps are in closed position.

5. A container comprising a body composed of a bottom, oppositely disposed end walls, oppositely disposed side walls and a reinforcing thickening means on the side of each of said walls at the top of said container in combination with a slotted foldable end flap on each said end wall and a foldable flap with a flange upon the free end thereof on each said side wall at the top of the container, and a set of article-separators within said container, said end flaps being adapted to fold inwardly and at continuous right-angles with said end walls with said slots in spaced-apart relation with said end walls, said side flaps being adapted to fold inwardly over said end flaps, said slots being in alignment with said flanges and said flanges being of such dimensions as to extend through said slots and between said thickened end walls into said container when said flaps are in closed position.

6. A shipping container comprising a box composed of a bottom, right-angular side walls, a foldable flap with a slot therein on each of two oppositely disposed side walls and a foldable flap with a flange upon the free end thereof on each of two other oppositely disposed side walls at the top of said container, and an article separator within said box, the flaps upon two said oppositely disposed side walls being adapted to fold inwardly at continuous right-angles with said side walls with said slots in spaced-apart relation with said walls, the flaps upon two other oppositely disposed side walls being adapted to fold inwardly over first-mentioned flaps, said slots being in alignment with said flanges and said flanges being of such dimensions as to extend through said slots into said container when said flaps are in closed position.

7. A container or carton comprising a body composed of a bottom, body walls, an inside top closing flap with a notch in the outer edge thereof carried by each of two oppositely disposed body walls, an outside top closing flap carried by each of two other oppositely disposed carton walls, a locking flange carried by each outside closing flap, the structure of each said inside closing flap to be a continuous extension the full width of each of two said oppositely disposed body walls to a point beyond the top score line of the container where the free end portion of each said inside flap is divided by said notch, the structure of each said outside closing flap to be such that each said outside flap will be of shorter dimension at its juncture with said locking flange thereon than the dimension of each said outside flap at its juncture with each of said two other oppositely disposed carton walls, said flange on each said outside closing flap being adapted to pass through each of said notches in each of said inside closing flaps when said closing flaps are in closed position to form a continuous right-angular structure along the entire top score line of the container and to securely hold said closing flaps in closed position.

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