Sept. 18, 1951 H. C. REESER 2,568,204

CONTAINER

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Fig. 1.

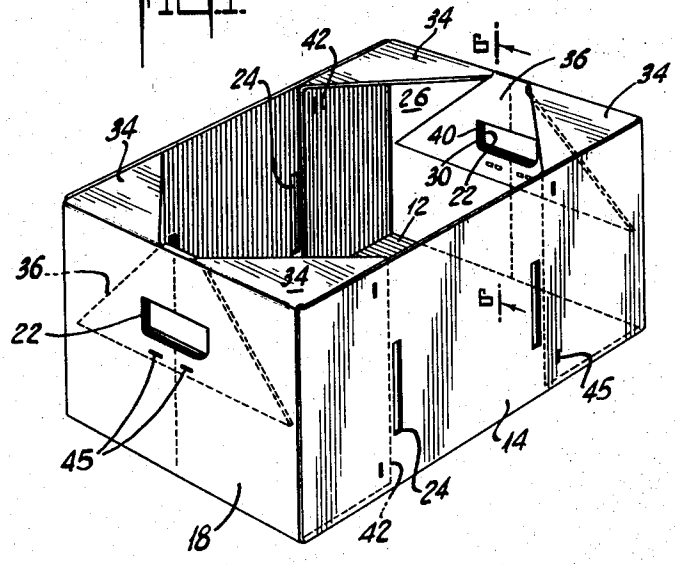
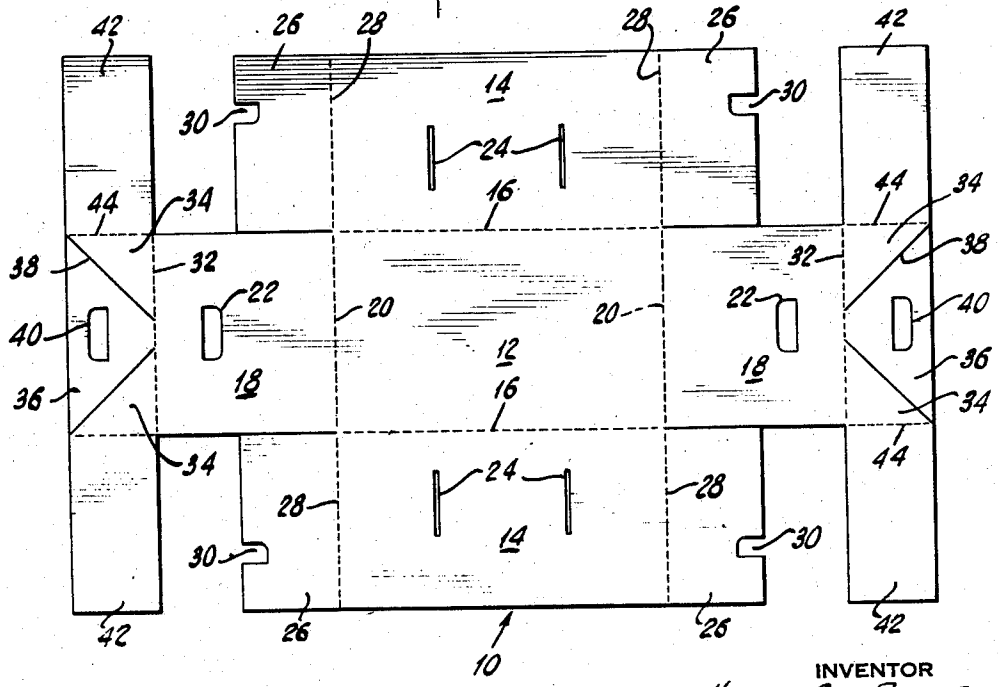


Fig. 2.



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Fig. 3.

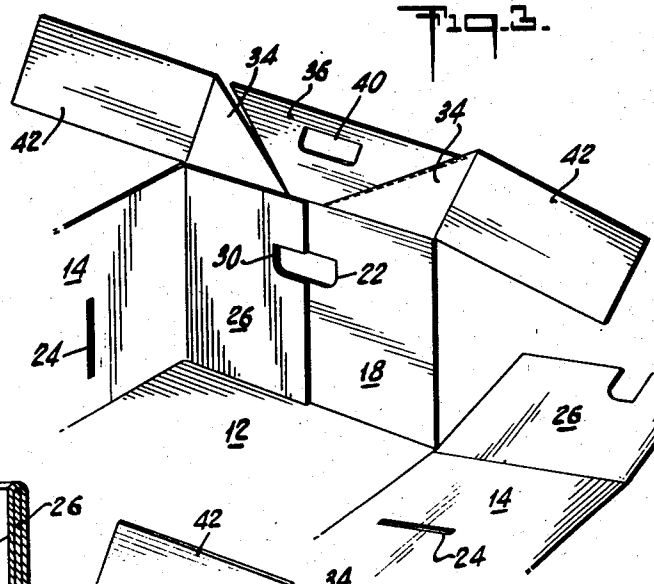


Fig. 6.

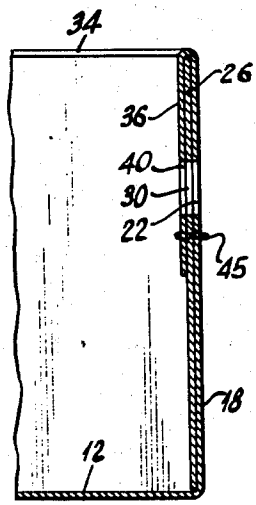


Fig. 4.

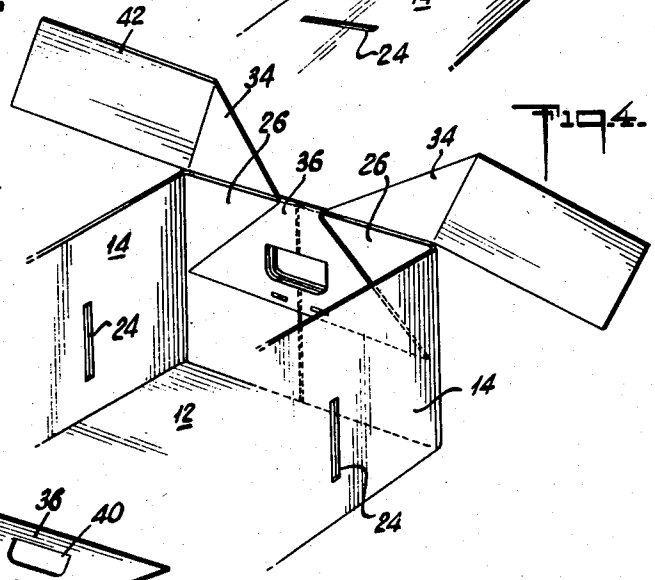
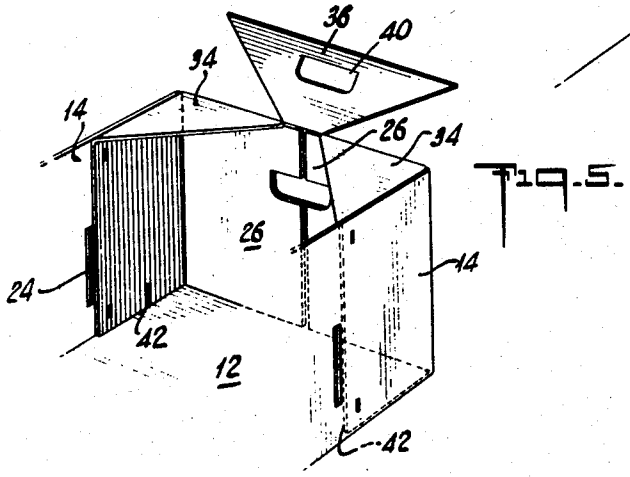


Fig. 5.



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Fig. 7.

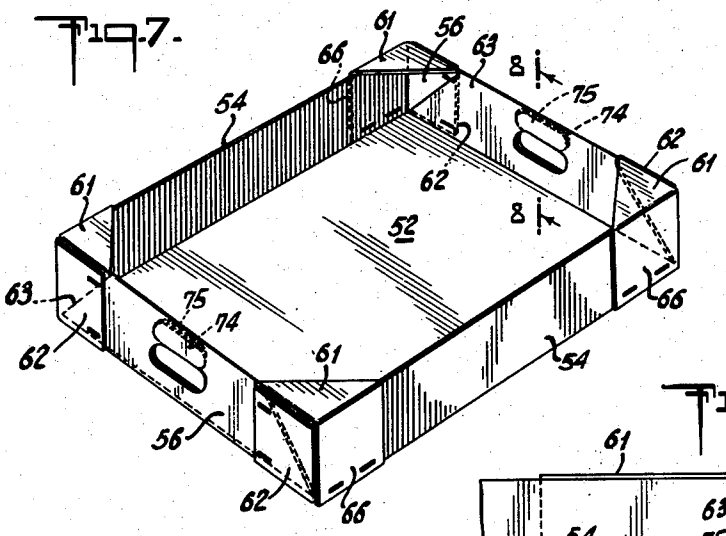


Fig. 8.

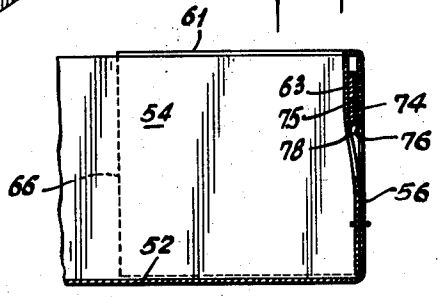
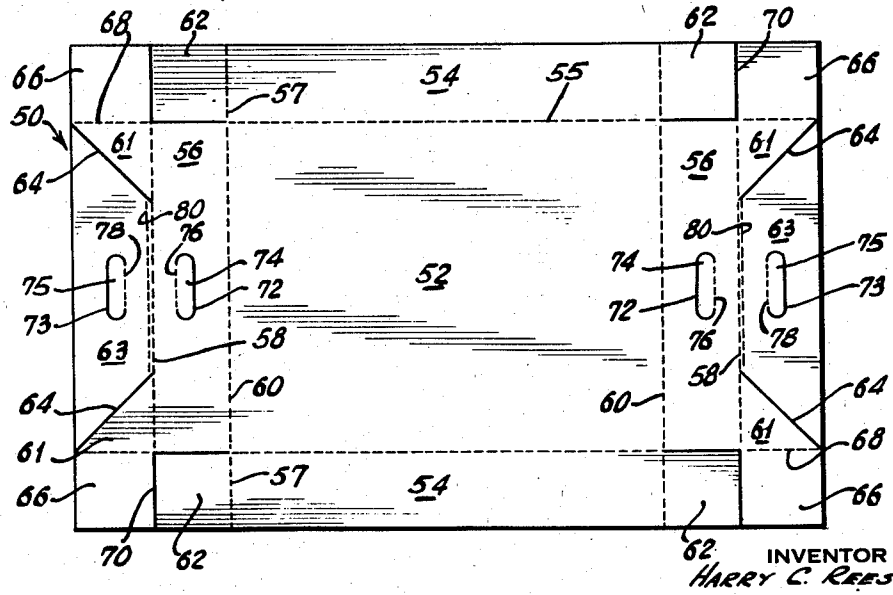


Fig. 9.



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UNITED STATES PATENT OFFICE

2,568,204

CONTAINER

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Application January 19, 1949, Serial No. 71,571

4 Claims. (Cl. 229—34)

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This invention relates to shipping containers or trays and is particularly concerned with containers made from a single blank of corrugated or solid fiberboard, boxboard, or similar strong, lightweight foldable sheet material.

Containers made from foldable sheet material and employed for the transportation of fruits, vegetables and the like are commonly provided with covers which impart rigidity to the containers and serve to support superposed units when the containers are stacked, as in a truck or freight car.

In many cases, however, covers are objectionable because not only do they add to the cost of the container but they also tend to interfere with proper ventilation of the contents. In the shipment of many types of perishable commodities it is essential to insure adequate ventilation. It is, therefore, desirable to employ a shipping container which does not require a cover and yet which has sufficient strength to protect the contents and to support compression loading of superposed units when stacked.

It is the object of this invention to provide a coverless shipping container which may be formed from a single sheet of flat, lightweight, foldable sheet material and which is so constructed that it will support compression loading of superposed units.

According to the invention I provide a coverless shipping container having end wall extensions which are adapted, in the assembled container, to reinforce the container and impart dimensional stability thereto and to provide load-bearing surfaces adapted to support superposed containers in stacked relationship.

Other objects of the invention, including specific features and advantages, will be apparent from the following description and from the accompanying drawings in which,

Fig. 1 is a view in perspective of a set-up container embodying features of my invention,

Fig. 2 is a plan view of a flat blank from which the container shown in Fig. 1 may be fabricated,

Fig. 3 is a perspective view showing a partly assembled container,

Fig. 4 is a perspective view showing further details of the end assembly of my container,

Fig. 5 is a perspective view of the end of one form of my container almost completely assembled,

Fig. 6 is a sectional view approximately along the line 6—6 of Fig. 1,

Fig. 7 is a perspective view of another embodiment of my invention,

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Fig. 8 is a sectional view along the line 8—8 of Fig. 7, and,

Fig. 9 is a plan view of a flat blank from which the container shown in Fig. 7 may be assembled.

Referring to the drawings, and particularly to Fig. 2, there is shown a substantially rectangular flat blank, designated generally by the numeral 10, which has been cut and scored to permit fabrication of a container embodying features of the present invention. This blank may be formed from a single flat sheet of corrugated fiberboard, solid fiberboard, boxboard or other similar foldable material which is lightweight, yet possesses adequate flexibility and strength for the purposes of the invention.

As shown in Fig. 2, the blank 10 has been scored to define a central substantially rectangular panel 12 which serves as the bottom of the container. Side panels 14 extend outwardly from opposite sides of bottom panel 12 and are flexibly joined thereto along score lines 16. Similarly, end panels 18 extend outwardly from opposite ends of bottom panel 12 along score lines 20. Portions of end panels 18 are cut out to define hand-holes 22. Portions of side panels 14 may also be cut out to provide ventilating openings, which in the embodiment illustrated take the form of vertical slots 24. End flaps 26 extend outwardly from opposite lateral ends of side panels 14 and are flexibly joined thereto along score lines 28. As will be apparent from Fig. 1, when the blank 10 is assembled the end edges of the end flaps 26 lie in abutting relationship against the end panels 18. The end flaps 26 are provided with cut-outs 30 which are so positioned that when the blank is assembled the cut-outs 30 will coincide with hand holes 22 in end panels 18.

Flexibly joined along score line 32 to the outer edge of each of the end panels 18 are triangular extensions 34 and an interposed substantially trapezoidal flap 33, separated from the extensions 34 by cuts 38. Flaps 36 are provided with cut-outs 40, adapted to coincide with hand holes 22 when the blank is assembled as shown in Fig. 1. A bracing flap 42 extends outwardly from the side of each extension 34 and is flexibly connected therewith along score line 44.

It is a feature of the invention that the container may be shipped to the potential user as a flat blank, thereby requiring a minimum of shipping space, and the blank may be quickly and easily assembled when required, either by hand or by suitable machinery.

To assemble the flat blank, the side panels 14 and the end panels 18 are bent upwardly at

right angles to bottom panel 12 along score lines 16 and 20, respectively. The end flaps 26 are then bent inwardly on score lines 28 in overlapping relationship to end panels 18. It will be observed that the edges of the end flaps 26 abut and thus provide the container with ends having a double thickness. Trapezoidal flap 36 is bent inwardly along score line 32 in overlapping relationship to end flaps 26 and secured thereto, as by staples 45, which also serve simultaneously to secure end flaps 26 to end panels 18. The flaps 42 are bent inwardly at right angles to triangular extensions 34 and extensions 34 are then bent downwardly at right angles to end panels 18 so that flaps 42 overlie side panels 14 and may be secured thereto by staples 45. Thus, as will be seen from Fig. 1 in the assembled container the triangular extensions 34 reinforce the container and give it increased dimensional stability and at the same time provide it with load-bearing surfaces upon which superposed units may be supported without danger of injury to the contents of the container. In Fig. 1, the flaps 42 and the end flaps 26 are shown lying against the inner surfaces of side panels 14 and end panels 18 respectively. If desired, however, these overlapping portions may be disposed against the outer surface of the panels although the former method of assembly has the advantage of giving a somewhat neater appearance to the container.

Further, the sequence of steps in assembling the container is, of course, subject to variation. Referring to Fig. 5, for example, the bracing flaps 42 may be secured to the side panels 14 before the trapezoidal flap 36 is placed in overlapping position.

The dimensions of my container may be varied to a considerable extent depending upon the use to which the container is to be put. For example, the height may be substantially reduced and the length and width substantially increased. Thus, referring to Fig. 7, there is illustrated an embodiment of my invention eminently suited for the transportation of relatively bulky lightweight commodities, such as loaves of bread.

Referring to Fig. 9, the blank from which this form of my container may be fabricated is designated generally by the numeral 50 and is cut and scored as indicated to define a relatively large substantially rectangular bottom panel 52 having side panels 54 and end panels 56 flexibly connected thereto along score lines 55 and 60, respectively. Side flaps 62 are flexibly joined to the lateral edges of side panels 54 along score lines 57. Flexibly joined along score lines 58 to the outer edges of each of the end panels 56 are triangular extensions 61 and an interposed substantially trapezoidal flap 63, separated from the extensions 61 by cuts 64. A flap 66 extends outwardly along score line 68 from the side of each extension 61 and is separated from the adjacent side flap 62 by cut 70. While complementary cut-outs to serve as handholes may be made in end panels 56 and trapezoidal flaps 63, corresponding to the cut-outs 22 and 40 in the embodiment shown in Fig. 2, I prefer to form only partial cut-outs as by cuts 72 and 73 in end panels 56 and trapezoidal flaps 63, respectively. Cuts 72 and 73 leave flaps 74 and 75 flexibly connected along score lines 76 and 78 to end panels 56 and trapezoidal flaps 63, respectively. When the blank is assembled, these flaps 72 and 74 may be folded inwardly against each other, as shown in Fig. 8 and provide an added thickness

which makes the openings more comfortable for the hand of the person carrying the container. A score line 80 parallel to score line 58 may be provided on trapezoidal flap 63 to facilitate folding flap 63 upon end panel 56, as shown in Fig. 8.

Assembly of the blank 50 may be effected substantially as described above in connection with the blank 10. In Fig. 7 the side flaps 62 and the corner flaps 66 are shown secured to the outer surfaces of end panels 56 and side panels 54, respectively. If desired, however, the flaps may be secured to the inner surfaces of the respective panels.

It will be apparent that various changes may be made without departing from the scope of the invention, as defined in the appended claims, and it is intended, therefore, that all matter contained in the foregoing description and in the drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A coverless, load-bearing shipping container comprising a substantially rectangular bottom portion, side walls and end walls flexibly connected thereto, end flaps formed at each of said side walls and adapted to overlie and be secured to said end walls, a trapezoidal flap flexibly connected to said end walls centrally of the upper edge thereof, and adapted to be secured in overlapping relationship to said end walls, and corner flaps extending from the upper edges of said end walls adjacent the ends thereof, said corner flaps comprising a triangular portion adapted to extend across the corner of the container and a depending portion adapted to overlie and be secured to said side walls, whereby to provide load-bearing surfaces adapted to support superposed container units in stacked relationship.

2. A coverless, load-bearing shipping container formed from a single blank of flexible light weight material, said container comprising a substantially rectangular bottom portion, side walls and end walls flexibly connected thereto, end flaps formed at each end of said side walls and adapted to overlie and be secured to said end wall, a trapezoidal flap flexibly connected to said end walls centrally of the upper edge thereof and adapted to be secured in overlapping relationship to said end walls, and corner flaps extending from the upper edges of said end walls adjacent the ends thereof, said corner flaps comprising a triangular portion adapted to extend across the corner of the container and a depending portion adapted to overlie and be secured to said side walls, whereby to provide load-bearing surfaces adapted to support superposed container units in stacked relationship.

3. A coverless, load-bearing shipping container formed from a single blank of flexible lightweight material, said container comprising a substantially rectangular bottom portion, side walls and end walls flexibly connected thereto, end flaps formed at each end of said side walls and adapted to overlie and be secured to said end walls, a trapezoidal flap flexibly connected to said end walls centrally of the upper edge thereof and adapted to be secured in overlapping relationship to said end walls, said end walls and said trapezoidal flaps being provided with registering hand holes, said end flaps being provided with recesses in the outer edge thereof adapted to coincide with the said hand holes when the end flaps are placed in abutting relationship, and corner flaps extending from the upper edges of said end walls adjacent the ends thereof, said

corner flaps comprising a triangular portion adapted to extend across the corner of the container and a depending portion adapted to overlie and be secured to said side walls, whereby to provide load-bearing surfaces adapted to support superposed container units in stacked relationship.

4. A coverless, load-bearing shipping container formed from a single blank of flexible lightweight material, said container comprising a substantially rectangular bottom portion, side walls and end walls flexibly connected thereto, end flaps formed at each end of said side walls and adapted to overlie and be secured to said end walls, a trapezoidal flap flexibly connected to said end walls centrally of the upper edge thereof and adapted to be secured in overlapping relationship to said end walls, said end walls and said trapezoidal flaps being provided with registering partial cut-outs defining a hand hole and a flap integral with the upper edge of said hand hole, and corner flaps extending from the upper edges

of said end walls adjacent the ends thereof said corner flaps comprising a triangular portion adapted to extend across the corner of the container and a depending portion adapted to overlie and be secured to said side walls, whereby to provide load-bearing surfaces adapted to support superposed container units in stacked relationship.

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