April 7, 1953 E. N. BURNETT 2,634,041

CONTAINER CONSTRUCTION

Filed Feb. 20, 1951 2 SHEETS—SHEET 1

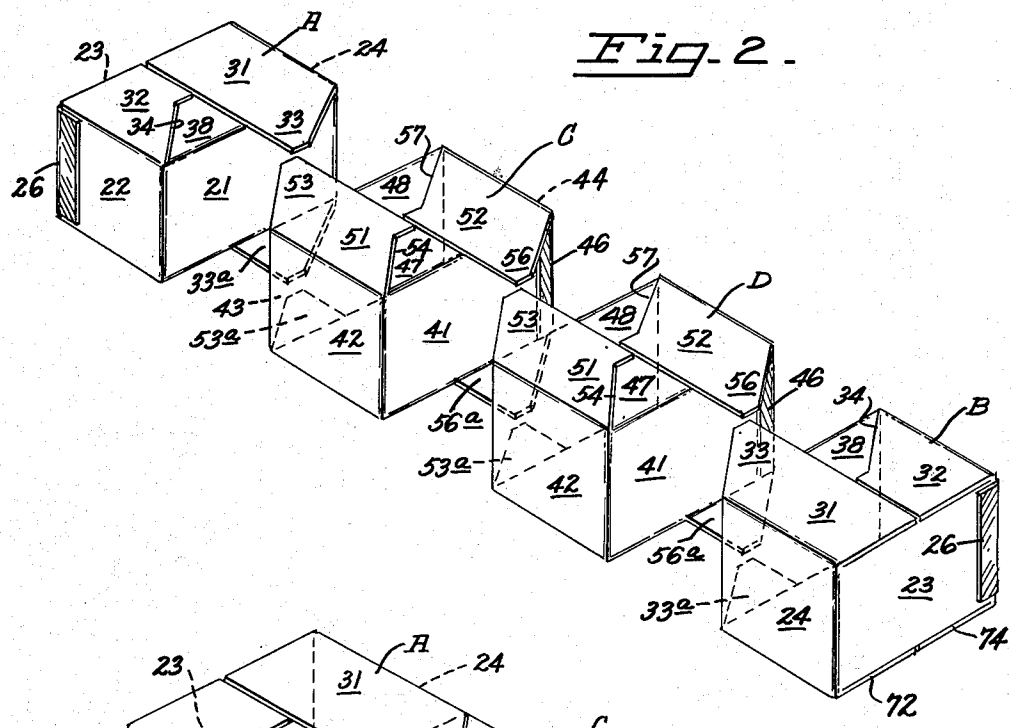


Fig. 2.

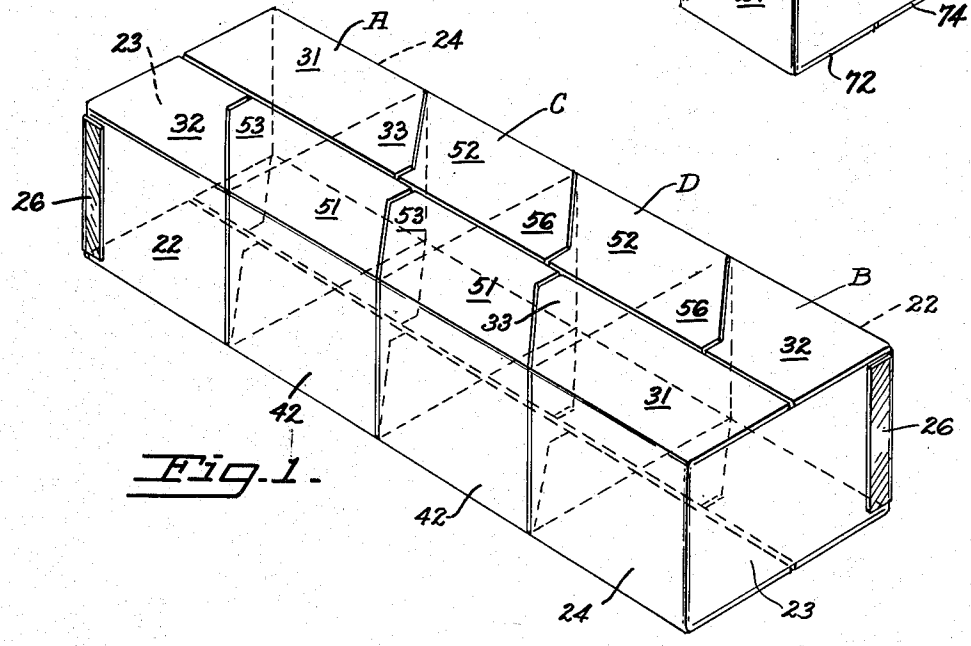


Fig. 1.

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2 SHEETS—SHEET 2

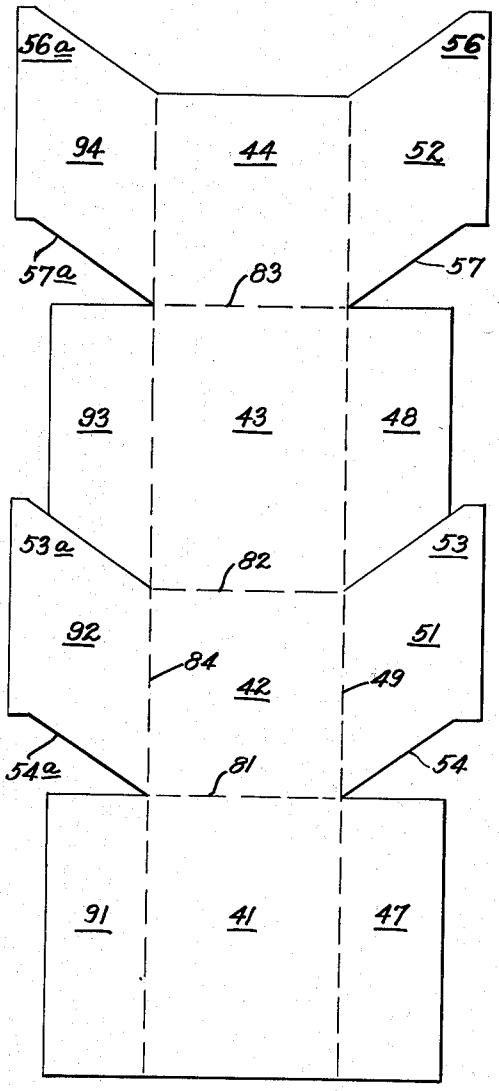


Fig. 3.

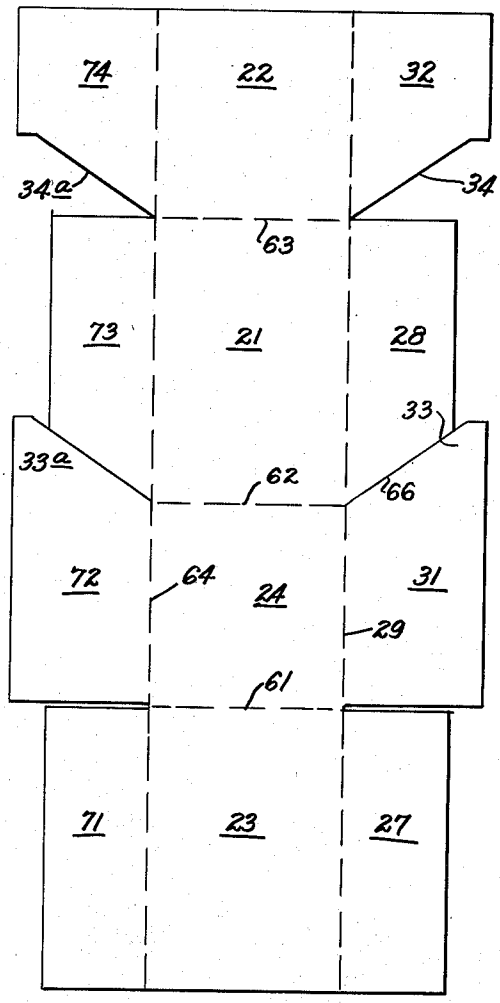


Fig. 4.

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CONTAINER CONSTRUCTION

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Application February 20, 1951, Serial No. 211,871

7 Claims. (Cl. 229—23)

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This invention relates to new and useful improvements in container construction, and more particularly, to a container construction formed of three or more box units assembled in line and each unit provided with mutually interlocking parts to permit the individual box units to be locked together to form a unitary box construction. Each individual box unit is formed from an integral blank of material, such as corrugated cardboard or the like. Reference is made to my copending patent application Ser. No. 141,150, filed January 28, 1950, on Container Construction, wherein is shown a container construction comprising a pair of closed identically formed box units each provided with mutually interlocking parts to permit the two individual box units to be locked together to form a unitary box construction.

The instant invention provides a container construction useful in the shipment of certain types of goods, particularly goods contained in relatively small cans or bottles, such as baby foods, medicines and the like. Such products may be packed in the individual box units, and the individual units interlocked together so that a plurality of separate box units may be shipped and handled together. When the box units, joined together as hereinafter set forth, are received by a consignee, the interlocking members may be severed in order to permit separation of the individual units. Thereupon, each box unit becomes a separate container which may be further transported or stored separate from other units of the assembly.

For example, a plurality of units of baby food or the like may be packed and interlocked together in accordance with the teachings of the instant invention. The assembled unit may be shipped to a particular retailer. When the retailer desires to place a part of the shipment upon the shelves of the store, he may sever the first unit on either end by cutting the interlocking members. Thereupon, the severed unit may be opened and the contents placed on display in the usual manner. However, the remaining units remain intact and may be maintained in their original condition during prolonged storage. Later, the retailer may desire to open the next unit in line, and, thereupon, he may sever that unit from the remaining unit or units. The remaining units again are retained in original condition during storage.

Another important feature of the invention is the fact that the exposed surfaces of the container construction are smooth and level for rapid handling. The units are brought tight and securely together so that they do not separate upon handling.

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The numerous other objects and advantages of a multiple container made up of individual box units are set forth in my said copending application, Ser. No. 141,150, filed January 28, 1950, for Container Construction, to which reference has been made. It should be emphasized, however, that the instant improvement, which is the subject of this application, augments the advantages of the previous application in that a greater number of units may be transported together.

The instant invention comprises two end units and one or more middle units. Each end unit is constructed substantially identical with the units described in my said application. Each middle unit is of different construction, as hereinafter set forth in detail.

The number of middle units employed in the completed box may be varied at the discretion of the shipper in that any reasonable number of middle units may be added together. End units are formed from one style blank and middle units from another style blank, but in all other respects the units may be filled, closed, and handled in the same manner.

Other objects of the present invention will become apparent upon reading the following specification and referring to the accompanying drawings in which similar characters of reference represent corresponding parts in each of the several views.

In the drawings:

Fig. 1 is a perspective view of four box units assembled in line to form a unitary box construction.

Fig. 2 is an exploded view of the structure of Fig. 1, partially reduced in dimensions.

Fig. 3 is a plan of a blank for the formation of a middle unit.

Fig. 4 is a plan of a blank for the formation of an end unit.

As shown in Fig. 1, the instant invention relates to a completed box made of a plurality of box units. Said box units may be three or more in number and, when assembled, are disposed in a straight line. The end units are designated A and B, and the two middle units, shown in Figs. 1 and 2, as C and D.

Each end unit A and B comprises side panels 21, 22, 23, and 24, the meeting edges of panels 22 and 23 being caused to abut and being joined together by a strip of adhesive tape 26 or by any convenient means. The top of the box is closed by transversely extending inner top flaps 27 and

28 which are formed integrally with panels 23 and 21, respectively, and are folded downwardly along score line 29 so as to meet approximately at the middle of the top of the box, and by overlying outer top flaps 31 and 32, said top outer flaps being formed integrally with panels 24 and 22, respectively, and folded downwardly on said longitudinal score line 29 so that they meet approximately at the center of the top of the box. It will be understood that the bottom of the box is similarly constructed.

Turning now to the construction of flap 31, it will be seen that flap 31 is formed with a protruding tongue 33 which extends out beyond the outline of panel 21. A niche or recess 34 is cut into outer top flap 32, said niche being complementary in shape to the projecting tongue 33. It will be observed that the said construction of end units A and B resembles the construction of units F and G illustrated in my said application, Ser. No. 141,150, filed January 28, 1950.

Each of the middle units C and D is likewise identically formed but somewhat different in construction from units A and B. Unit C is formed with side panels 41, 42, 43, and 44. At the common meeting edge of panels 41 and 44, said panels are joined together by a strip of adhesive tape 46 or the like. The top of unit C is closed by inner top flaps 47 and 48, which are formed integrally as extensions of side panels 41 and 43, respectively, and folded downwardly along longitudinal score line 49 so as to meet approximately at the center of the top of the box, and by outer top flaps 51 and 52, which are formed integrally and, as extensions of side panels 42 and 44, respectively, are likewise folded downwardly along longitudinal score line 49 to meet approximately at the center of the top of the box, overlying the inner top flaps 47 and 48. Outer top flap 51 is formed with a first integral projecting tongue 53 which extends out over the outline of side panel 43 and is also formed at the opposite edge with niche or recess 54 complementary in shape to the protruding tongue 53. On the other hand, outer top flap 52 is formed with a protruding tongue 56 which extends out beyond the outline of side panel 41, or, in other words, in a direction opposite to that in which tongue 53 projects. Outer top flap 52 also has a niche or recess 57 complementary in shape to tongue 56 at the opposite side. It will be understood that the bottom of unit C is constructed similar to the top.

Turning now to Fig. 1, it will be seen that tongue 53 of unit C extends into and is received by recess 34 of unit A and that tongue 33 of unit A extends into and is received by the complementary recess or niche 57 in flap 52 of unit C.

Unit D is identical in construction with unit C, and its protruding tongue 56 is received in niche or recess 34 in flap 32 of unit B, and the corresponding tongue 33 of flap 31 of unit B is received in niche 54 of flap 51 of unit D.

Similarly, tongue 56 of unit C is received in niche 57 of unit D and tongue 53 of unit D is received in niche 54 of unit C.

Since glue is applied to the undersurfaces of all the outer flaps, said outer top flaps are held, upon setting of the adhesive, against the inner flaps, which they overlie, and the tongues 33, 52, and 56 are held against the exposed inner flaps, 38, 47 and 48, said exposure of the inner flaps being occasioned by the cutting out of niches 34, 54 and 57. Thus, the projecting tongues, fitting into the recesses of the adjacent box units, securely hold the adjacent units together. However, as is apparent, if a knife or other cutting tool is used to cut between the box units and through the extending tongues, the adjacent units may be readily severed. After severing, the individual units are complete containers for their contents.

Turning now to Fig. 4 which illustrates the blank of which units A and B are constructed, it will be apparent that side panels 23, 24, 21 and 22, are disposed in consecutive order longitudinally of the blank. Transverse score lines 61, 62, and 63 divide the various side panels as illustrated. Longitudinal score lines 29 and 64 define the longitudinal edges of the panels, and extending beyond each edge of each side panel is an end flap divided from its adjacent side panel by score line 29 or 64 so that said top end flap or bottom end flap may be folded downwardly therealong. Thus, in Fig. 4, the top flaps are in order: inner top flap 27 which is rectangular and connected to side panel 23; outer top flap 31 which is connected to side panel 24 and which is provided with a projecting tongue 31 extending beyond the extension of transverse line 62 in the direction opposite that of end flap 27. Said tongue 33 is formed by line 66 which commences at the intersection of lines 62 and 29 and is disposed at an angle of about 35 degrees with respect to the extension of line 62 and continues until its distance above the extension of line 62 is approximately one-half the length of panel 22 and then projects outwardly until it intersects the outer margin of flap 31. The shape of tongue 33 is thus that of a truncated right triangle. The next flap 28 is generally rectangular in shape except that at the corner thereof adjacent tongue 33, it is cut away in diagonal line 66 in order to provide stock for the formation of tongue 33. The next flap 32 in order is cut away at its edge adjacent flap 23 in a shape exactly complementary to the projecting tongue 33 of flap 31 to form niche 34.

The bottom flaps 71, 72, 73 and 74 are formed similarly to flaps 27, 31, 28 and 32, respectively, as best shown in Fig. 4.

It will thus be seen that by folding the blank shown in Fig. 4 in the manner which has been described, the outer edges of panels 22 and 33 are brought together and held together by adhesive tape 26. Thereupon, flaps 71, 73, 72 and 74 are folded along line 64 to form the bottom of the box, and flaps 27, 28, 31, and 32 are folded downwardly along longitudinal score line 29 to form the top of the box, as has also been described. Tongue 33 projects outwardly at the top of the box and tongue 33*a* also projects outwardly at the bottom of the box. Niches or recesses 34 and 34*a* are formed by reason of the cutting away of panels 32 and 74.

The blank from which the middle unit C is formed is illustrated in Fig. 3. It will be seen that in consecutive order said middle unit is formed of side panels 41, 42, 43, and 44 which are separated from one another by transverse score lines 81, 82 and 83. The edges of said side panels are defined by longitudinally extending score lines 84 and 49 which separate the side panels from the adjacent end flaps which are folded down along said longitudinal score lines.

The end flaps for the formation of the top of the box, proceeding from bottom to top as shown in Fig. 3, are rectangular inner end flap 47, which is connected to side panel 41, and outer top flap 51, which is cut away as indicated by reference numeral 54 in a shape complementary to the projecting tongue 53 of flap 51 shown in Fig. 4 at the edge adjacent flap 47 and which further

is provided with projecting tongue 53 in the opposite edge of identical shape with tongue 33 of flap 31 of the blank shown in Fig. 4. The next flap 48 in order is generally rectangular in shape except that it is cut away at the edge of adjacent flap 51 in order to provide the stock for the projecting tongue 53 of flap 51. The final flap 52 in order is identical in construction with flap 57, being provided with tongue 56 and niche 57.

The bottom of the middle unit C is formed similarly to the top flaps as shown in Fig. 3 by the provision of flaps 91, 92, 93, and 94 shaped to correspond to flaps 47, 51, 48 and 52, respectively. Further tongues 53*a* and 56*a* are formed on flaps 92 and 94, respectively, and niches 54*a* and 57*a* on flaps 92 and 94, respectively.

Assembly of the middle units is accomplished by bending the blank along score lines 81, 82, and 83 until the meeting edges of panels 41 and 44 are brought together and are held securely by a strip of adhesive tape 46 or other convenient means. Thereupon, the bottom flaps 91, 93, 92, and 94 are folded downwardly along longitudinal score line 84 and the top flaps 47, 48, 51 and 52 are also folded downwardly along the longitudinal score line 49. Inner flaps 47 and 48 meet along the center of the box and are overlaid by outer flaps 51 and 52, at the top. The bottom of the box is similarly formed.

It will be understood that adhesive such as glue has been applied to the undersurfaces of flaps 51, 52, 92 and 94, and accordingly, upon their being folded downwardly, they adhere to the inner flaps 27, 28, 91 and 93 which are underneath. Tongues 53, 56, 53*a* and 56*a* are also provided with glue on their undersides and adhere to the inner flaps where exposed by cutting away of niches.

Although the present invention has been described in some detail by way of illustration and example for purposes of clarity of understanding, it is understood that certain changes and modifications may be made within the spirit of the invention and scope of the appended claims.

I claim:

1. A box adapted for interlocking with two complementary box units at either end thereof to form a unitary box construction of at least three units in line, said box unit comprising a hollow rectangular parallelepiped container, and four flaps constituting extensions of side members of said container and closing the top thereof, a first, inner top, flap of substantially rectangular shape folded downwardly from a transversely extending side edge to substantially half the width of the box, a second, outer top, flap folded downwardly from a longitudinal extending side edge to substantially half the width of the box having a first projecting tongue extending beyond the confines of said container in one direction and a first cut-out portion dimensioned and positioned to receive the projecting tongues of a complementary box unit, a third, inner top, flap folded downwardly from the other transversely extending side edge to substantially half the width of the box and adjacent said first flap of generally rectangular shape but with one corner cut away to provide stock for said first tongue and a fourth, outer top, flap folded downwardly from the other longitudinally extending side edge to substantially half the width of the box and adjacent said second flap having a second projecting tongue

extending beyond the confines of said container in a direction opposite said first tongue and a second cut-out portion dimensioned and positioned to receive the projecting tongue of a second complementary box unit.

2. A box unit as defined in claim 1 and wherein the sides of said container unit are joined along one side edge thereof, said fourth flap constituting an extension of one of the sides of said container unit joined at said side edge and said second flap constituting an extension of the side of said container opposite said last mentioned side.

3. A blank for a middle container unit of the character described comprising, four rectangular central panels, alternate panels being substantially equally-dimensioned, all of said panels having common side edges, each of said central panels having an integral flap projecting beyond each side edge, the flaps above one side edge being in consecutive order, a first flap rectangular in shape, a second flap having a first projecting tongue extending upwardly at an angle away from said first flap and also having a first cut away corner adjacent said first flap cut away in the same shape as said first tongue, a third flap generally rectangular but cut away to provide stock for said first tongue, and a fourth flap similar in construction to said second flap.

4. A blank as defined in claim 3 and wherein the four flaps along the other side of said blank are formed in the same manner as the four flaps along the first side of said blank.

5. In a plural-unit box construction of at least three container units in line, the combination of a first end container unit at one end of said box construction, a second end container unit at the opposite end of said box construction and at least one middle unit disposed between said end units, each of said units comprising a hollow, rectangular parallelepiped container and having top and bottom inner closure half flaps and top and bottom outer closure half flaps folded at right angles inwardly from and constituting extensions of sides of said units, one top outer flap of each unit having an integral projecting tongue extending beyond the confines of its unit, one top outer flap of each unit having a cut-out portion dimensioned and positioned to receive the projecting tongue of a complementary box unit, and in which in each middle unit each top outer flap has both a tongue and a cut-out portion, the tongue of one top outer flap extending in a direction opposite the tongue of the other top outer flap.

6. The combination of claim 5 in which the four bottom flaps of each unit are formed in the same manner as the four top flaps of the same unit.

7. The combination of claim 5 in which there are at least two middle units, each identical in construction and mutually interchangeable.

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