May 28, 1968 W. C. BECKER ET AL 3,385,429

PACKAGE CONSTRUCTION AND PARTS THEREFOR OR THE LIKE

Filed Jan. 20, 1966 5 Sheets-Sheet 1

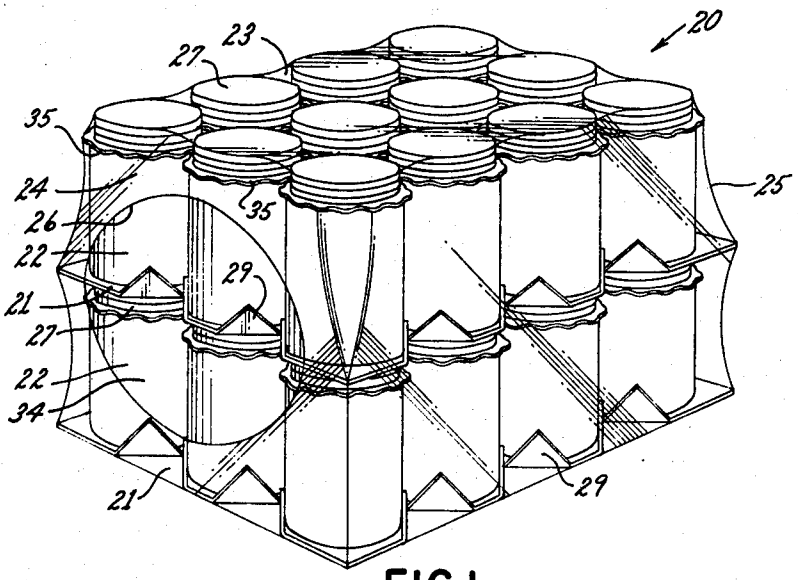


FIG.1

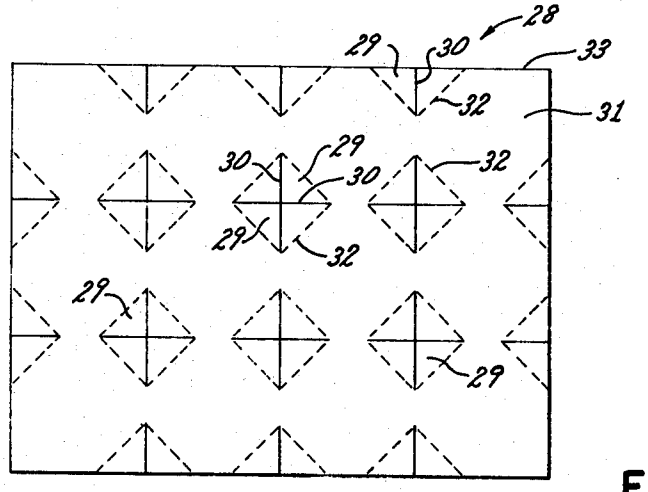


FIG.2

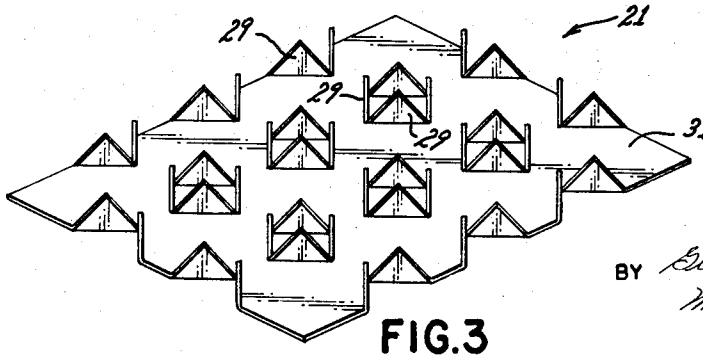
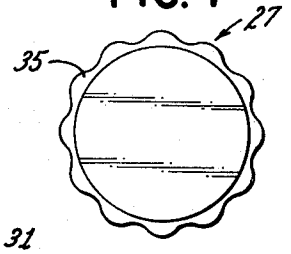


FIG.3

FIG.4



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PACKAGE CONSTRUCTION AND PARTS THEREFOR OR THE LIKE

Filed Jan. 20, 1966 5 Sheets-Sheet 2

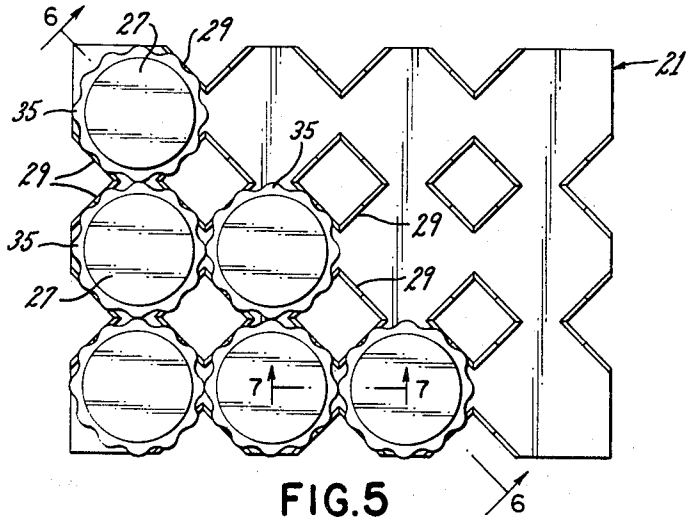


FIG.5

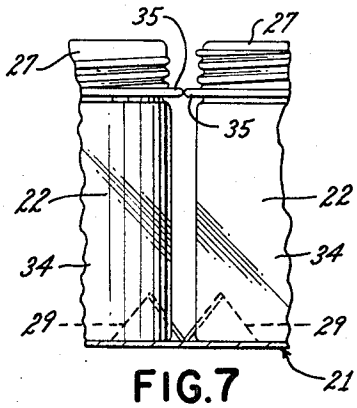


FIG.7

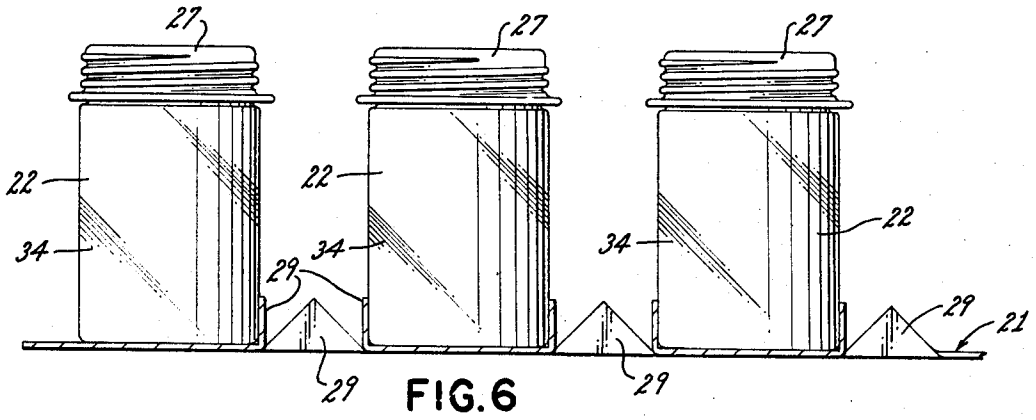


FIG.6

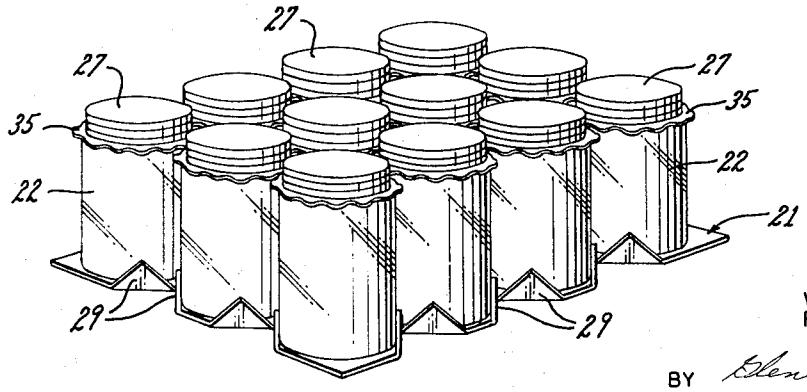


FIG.8

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PACKAGE CONSTRUCTION AND PARTS THEREFOR OR THE LIKE

Filed Jan. 20, 1966 5 Sheets-Sheet 3

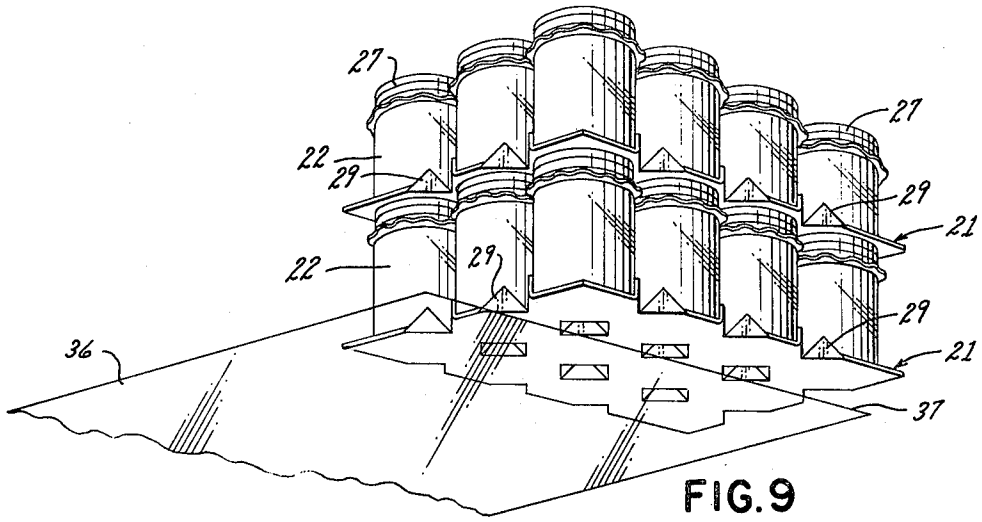


FIG.9

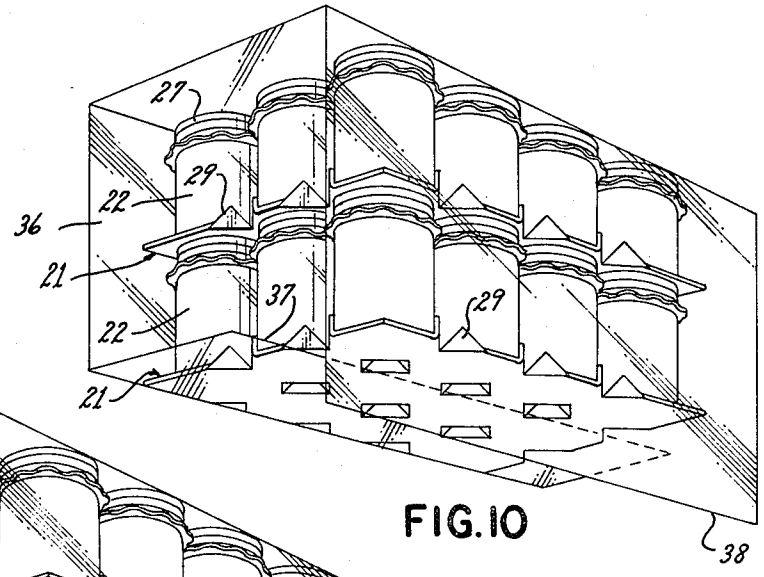


FIG.10

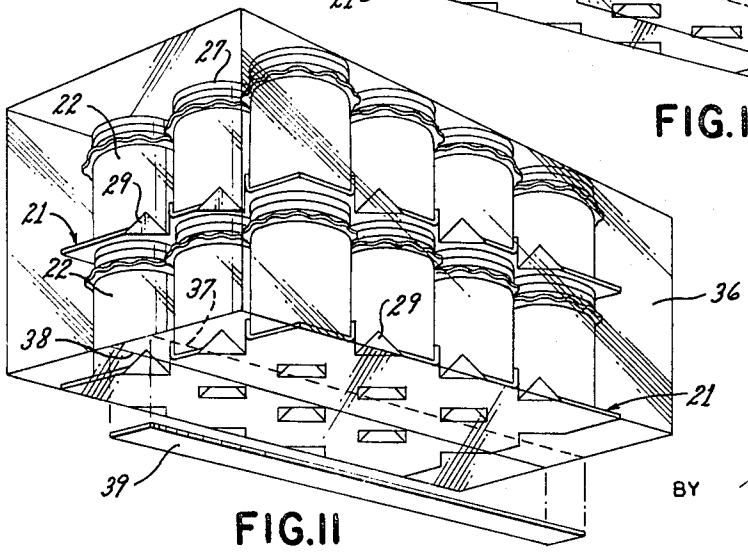


FIG.11

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PACKAGE CONSTRUCTION AND PARTS THEREFOR OR THE LIKE

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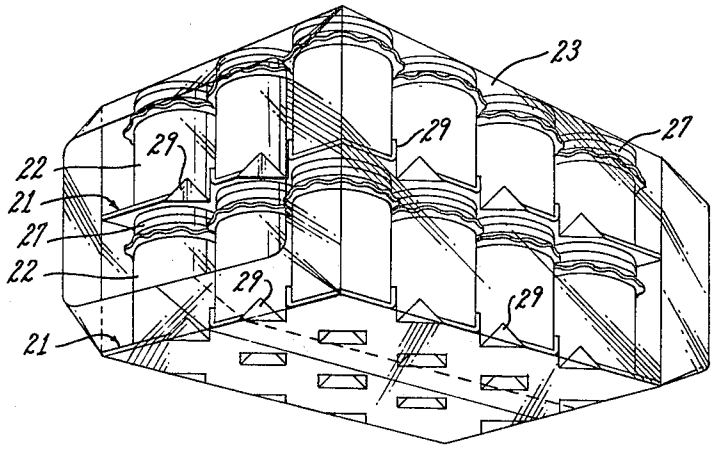


FIG.12

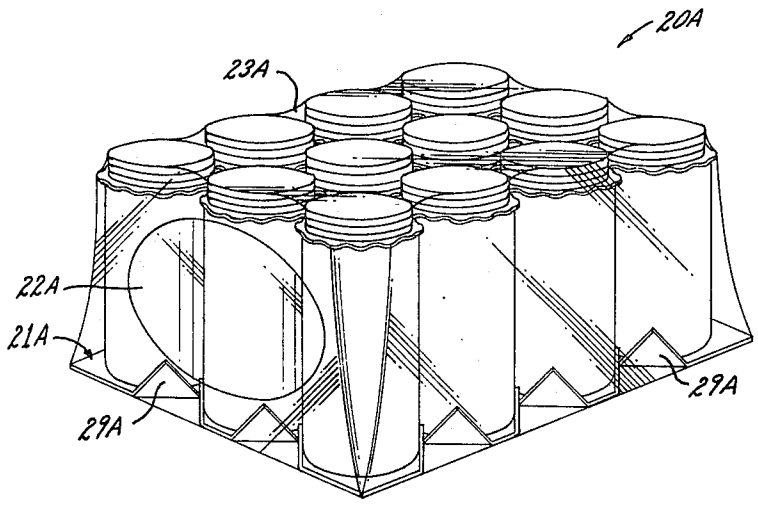


FIG.13

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PACKAGE CONSTRUCTION AND PARTS THEREFOR OR THE LIKE

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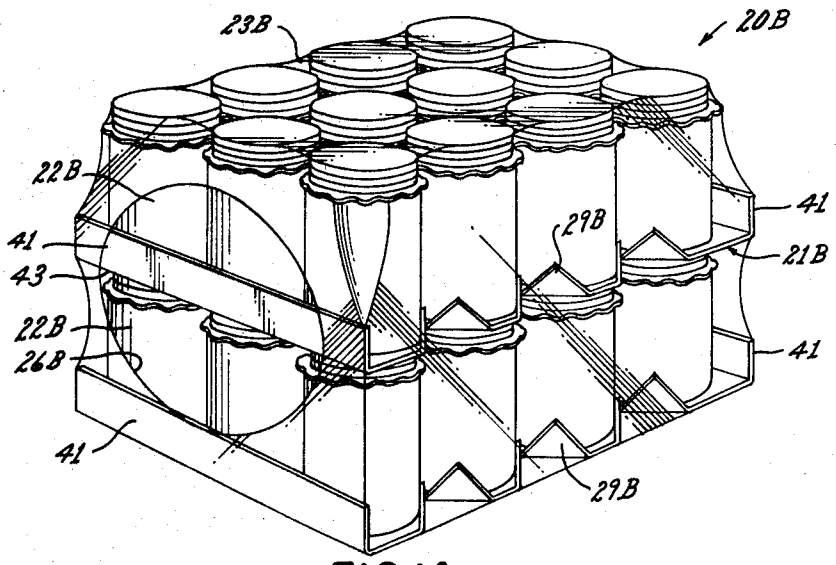


FIG.14

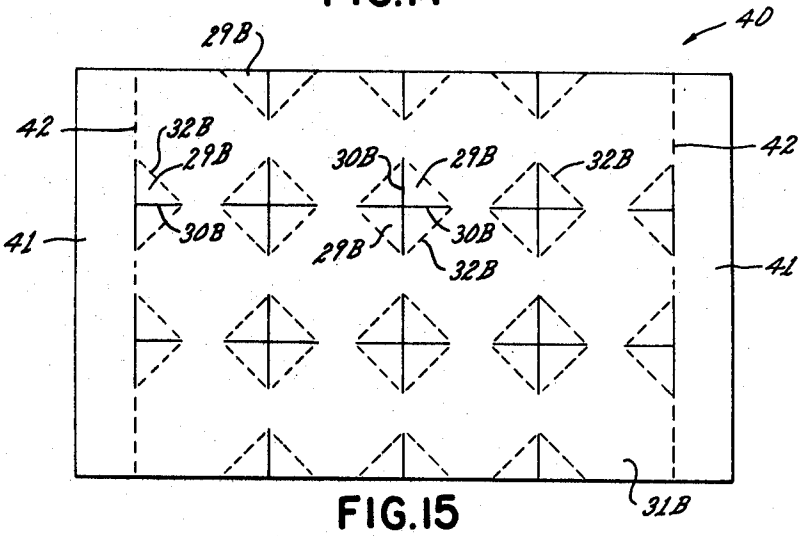


FIG.15

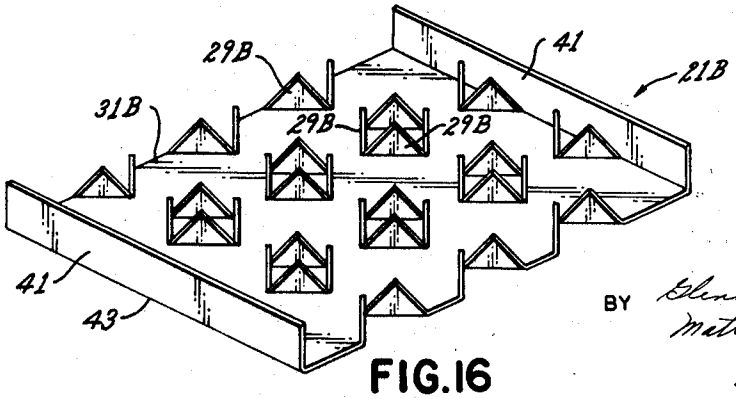


FIG.16

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United States Patent Office 3,385,429 Patented May 28, 1968

3,385,429

PACKAGE CONSTRUCTION AND PARTS THEREFOR OR THE LIKE

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Filed Jan. 20, 1966, Ser. No. 521,914
11 Claims. (Cl. 206—65)

ABSTRACT OF THE DISCLOSURE

This disclosure relates to a package construction having a plurality of product containing containers disposed on a tray-like member with the tray-like member having flaps carved therefrom and bent upwardly to separate the bottom ends of the containers from each other, the top of the containers having closure caps provided with outwardly directed flanges that abut adjacent flanges of adjacent containers to separate the containers at the top ends thereof. The arranged containers and tray-like members are subsequently disposed in a heat shrinkable tubular film-like member which when heat shrunk tightly compacts the product containers and tray member together to form a rigid package construction.

This invention relates to improved package constructions or the like as well as to improved spacer or tray means for such package constructions or the like.

Package constructions have been formed wherein a plurality of product means, such as cylindrical containers or the like are arranged in aligned rows and are carried by tray-like means. The product filled tray-like means is subsequently encased in a heat shrinkable tubular film-like member whereby when the tubular member is subsequently heat shrunk around the product filled t ray means, the heat shrunk tubular member tightly compacting the product means and tray means together to provide a rigid package construction not only for shipping and storing purposes, but also for merchandising purposes because of the attractive appearance of the completed package construction.

Such prior known package constructions are fully disclosed and claimed in the copending patent application, Ser. No. 366,424, filed May 11, 1964 and now abandoned, wherein further objects, uses and advantages of such package constructions are fully set forth.

Accordingly, it is a feature of this invention to provide an improved package construction of the aforementioned type wherein the tray means of this invention individually spaces the product means received therein so that even though the heat shrunk tubular member compacts the product means and tray means together to provide a rigid package construction, each product means is separated from adjacent product means to prevent damage to the individual product containers or the like, a feature particularly desirable when the product means includes glass or fragile containers.

Accordingly, it is an object of this invention to provide an improved package construction having one or more of the novel features set forth above or hereinafter shown or described.

Another object of this invention is to provide an improved part for such a package construction or the like.

Other objects, uses and advantages of this invention are apparent from a reading of this description which proceeds with reference to the accompanying drawings forming a part thereof and wherein:

FIGURE 1 is a perspective view illustrating one embodiment of the improved package construction of this invention.

FIGURE 2 is a plan view of a blank of this invention for forming the tray means of the package construction of FIGURE 1.

FIGURE 3 is a perspective view illustrating a tray means of this invention formed from the blank of FIGURE 2.

FIGURE 4 is a top view of one of the product means utilized in the package construction of FIGURE 1.

FIGURE 5 is a top view illustrating the tray means of FIGURE 3 being partially filled with product means.

FIGURE 6 is an enlarged, fragmentary, cross-sectional view taken on line 6—6 of FIGURE 5.

FIGURE 7 is an enlarged, fragmentary, cross-sectional view taken on line 7—7 of FIGURE 5.

FIGURE 8 is a perspective view illustrating a product filled tray means of this invention.

FIGURES 9–12 are respectively perspective views illustrating various steps in the method of forming the package construction of FIGURE 1.

FIGURE 13 is a view similar to FIGURE 1 and illustrates another package construction of this invention.

FIGURE 14 is a view similar to FIGURE 1 and illustrates another package construction of this invention utilizing the tray means of FIGURE 16.

FIGURE 15 is a view similar to FIGURE 2 and illustrates another blank of this invention for forming another tray means.

FIGURE 16 is a perspective view illustrating the means formed from the blank of FIGURE 15.

While the various features of this invention are hereinafter described and illustrated as being particularly adaptable for packaging product filled glass containers or the like, it is to be understood that the various features of this invention can be utilized singly or in any combination thereof to provide package constructions for other devices as desired.

Therefore, this invention is not to be limited to only the embodiments illustrated in the drawings, because the drawings are merely utilized to illustrate one of the wide variety of uses of this invention.

Referring now to FIGURE 1, one embodiment of the improved package construction of this invention is generally indicated by the reference numeral **20** and comprises a plurality of tray means **21** of this invention being filled with product means **22** and being disposed in stacked relation to be encased in and tightly compacted together by a heat shrunk tubular film-like member **23** having opposed ends **24** and **25** overlapping the opposed ends of the product filled tray means **21** and defining substantially circular openings **26** at the opposed ends of the package construction **20**, the heat shrunk tubular member **23** being transparent as illustrated in FIGURE 1 for product identification purposes and other reasons as set forth in the aforementioned copending patent application.

While the heat shrunk tubular member **23** can comprise any suitable heat shrinkable material, the embodiment thereof illustrated in the drawings comprises polyvinylchloride formed in sheet form from one or more layers thereof in a manner hereinafter described and more fully disclosed in the aforementioned copending patent application.

The tray means **21** of this invention can comprise cardboard plastic or the like and the product means **22** can comprise glass containers having improved closures **27** of this invention at the upper ends thereof for a purpose hereinafter described.

As previously stated, the tray means **21** of this invention are each so constructed and arranged that the same individually spaces each product means **22** from the adjacent means **22** being received thereon to prevent breakage and the like even though the heat shrunk tubular

member 23 tightly compacts the product means and tray means 21 together to form a rigid package construction 20.

The tray means 21 of this invention can each be formed from a blank 28 illustrated in FIGURE 2. The blank 28 in FIGURE 2 is formed from a flat rectangular sheet of cardboard or the like and has a plurality of substantially triangular flap means 29 formed therein by die cuts 30, each flap means 29 having the base thereof hingedly interconnected to the remaining flap portion 31 of the blank 28 by a score or fold line 32. As illustrated in FIGURE 2, the flap means 29 formed inboard of the peripheral edge 33 of the blank 28 are formed in groups of four by means of X-shaped die cuts 30 while the flap means 29 adjacent the peripheral edge 33 of the blank 28 are formed in pairs by single die cuts 30.

After the blank 28 has been cut and scored in the manner illustrated in FIGURE 2, the flap means 29 can be bent upwardly at right angles to the remaining flat portion 31 thereof in the manner illustrated in FIGURE 3 to form the completed tray means 21 of this invention for the product spacing purpose previously described.

As previously stated, each product means comprises a glass body 34 having the upper open end thereof closed by a metal screw cover member 27 or the like, the cover member 27 being fully illustrated in FIGURE 4 and having an outwardly directed annular flange 35 being fluted in the pattern illustrated in FIGURE 4 for easy finger gripping purposes for unscrewing the cover member from a particular container 22.

In addition, the annular flanges 35 of the cover members 27 of the containers 22 are utilized for spacing purposes in a manner now to be described.

As illustrated in FIGURES 5–8, the product filled containers 22 are adapted to be placed on a tray means 21 in such a manner that each body member 34 is dispensed between at least three upwardly directed flaps 29 so as to positively hold the particular body member 34 in spaced relation relative to adjacent body members 34 on the same tray means 21. In addition, the annular flanges 35 on the product means 22 are so constructed and arranged that the same hold the upper ends of the product means 22 in spaced relation in the manner fully illustrated in FIGURES 5 and 7 and act as bumper means therebetween.

However, it is to be understood that the closure means 27 for the container bodies 34 can be formed in any other desired configuration because the flap means 29 are sufficient to provide the spacing feature for each tray means 21 without further spacing means at the upper ends of the product means 22.

In any event, it can be seen that each product filled tray means 21 has the individual product containers 22 held in spaced relation from adjacent containers 22 by the flap means 29 so that shocks and the like cannot be transmitted from one container body 34 to another container body 34 in a manner to cause damage thereof during shipping, storing and the like of the package constructions 20 of this invention.

After the tray means 21 have been filled with the product means 22 in the manner previously described and have been disposed in stacked relation, a sheet of the aforementioned heat shrinkable material 36 is adapted to be wrapped around the product filled and stacked tray means 21 in the manner illustrated in FIGURES 9, 10 and 11 whereby the adjacent ends or edges 37 and 38 of the sheet 36 are adapted to be disposed in overlapping relation at the bottom of the lower tray means 21 and be heat sealed together by suitable heat sealing die means 39, FIGURE 11.

Subsequently, the opposed ends of the resulting tubular member 23 of FIGURE 11 are preshrunk into the condition illustrated in FIGURE 12 so as to partially overlap the opposed ends of the product filled and stacked tray means 21.

Thereafter, the partially completed package construction of FIGURE 12 is passed through a heating chamber or the like whereby the tubular member 23 is completely heat shrunk into the final condition illustrated in FIGURE 1 to tightly compact the product means 22 and tray means 21 together to form a rigid package construction in the manner fully set forth in the aforementioned copending patent application.

However, it can be seen that the tray means 21 of this invention hold the product means 22 in spaced relation relative to each other because of the integral flap means 29 so that any shock being transmitted to the completed package construction 20 will not cause an impacted container 22 to damage adjacent containers 22.

Thus, it can be seen that the package construction 20 of this invention has all of the advantages of the package constructions disclosed and claimed in the aforementioned copending patent application while having the added advantages of permitting the same to package fragile product means or the like in an economical manner by utilizing integral spacing means 29 of the tray means 21 of this invention.

While the package construction 20 of thhis invention has been previously described as having a plurality of product filled tray means 21 disposed in stacked relation, it is to be understood that the tray means 21 of this invention can be utilized separately.

For example, reference is now made to FIGURE 13 wherein another package construction of this invention is generally indicated by the reference numeral 20A and parts thereof identical to the package construction 20 previously described are indicated by like reference numerals followed by the reference letter A.

As illustrated in FIGURE 13, the package construction 20A comprises a single tray means 21A filled with product means 22A, the product means 22A being identical to the product means 22 previously described or being taller as illustrated. In any event, the product filled tray means 21A is encased in the previously described heat shrunk tubular film-like member 23A to tightly compact the product means 22A and tray means 21A together to form a rigid package construction 20A having all of the advantages previously set forth and as further disclosed in the aforementioned copending patent application.

In particular, it can be seen that the flap means 29A of the tray means 21A space the product means 21A from each other in the manner previously described.

When the merchandiser receives the package constructions 20 or 20A, the merchandiser can dispose the package constructions 20 or 20A in stacked display condition or can remove the film-like members 23 or 23A in a simple manner and utilize the resulting product filled tray means 21 or 21A in the manner illustrated in FIGURE 8 on merchandising counters whereby the flap means 29 or 29A still maintain the product means 22 or 22A in spaced relation to prevent damage thereof during merchandising of the product 22 or 22A.

Another package construction of this invention is generally indicated by the reference numeral 20B in FIGURE 14 and parts thereof similar to the package construction 20 are indicated by like reference numerals in FIGURES 14–16 followed by the reference letter B.

As illustrated in FIGURE 14, the package construction 20B includes a plurality of tray means 21B filled with product means 22B and being held in compacted stacked relation by the previously described heat shrunk tubular film-like member 23B.

However, the tray means 21B of this invention are each formed from a blank 40 illustrated in FIGURE 15 wherein the flap means 29B are formed in the manner previously described by the aforementioned die cuts 30B and hinge or fold lines 32B. In addition a pair of side flaps 41 are formed outboard of the last rows of flaps 29B and are defined by transverse score or fold lines 42.

In this manner, the blank 40 is adapted to be erected

into the tray means 21B illustrated in FIGURE 16 by folding the flaps 29B upwardly at right angles relative to the remaining flap portion 31B thereof and by folding the side flaps 41 upwardly at right angles relative to the remaining flap portion 31B whereby the flap means 41 cooperate with the flap means 29B to permit the product means 22B to be received therein in the manner previously described and be spaced from each other for the purpose previously described.

However, it can be seen that the side flap means 41 on the upper product filled tray means 21B of the resulting package construction 20B has its lower edges 43 exposed across the openings 26B in the heat shrunk tubular member 23B.

In this manner, the handler of the package construction 20B can insert his hands in the opposed openings 26B of the package construction 20B and by lifting upwardly on the exposed edges 43 of the upper tray means 21B readily carry the package construction 20B for easily handling thereof.

Thus, it can be seen that the tray means of this invention can be readily modified for various purposes while still maintaining the feature of spacing the product means received therein from adjacent product means in order to limit damage should the resulting package construction be subjected to impacts or the like.

In addition, the tray means 21, 21A and 21B previously described extend transversely across the resulting package constructions 20, 20A and 20B to fully reinforce the opposed ends of the heat shrunk tubular members 23, 23A and 23B, the side flaps 41 of the tray means 21B adding further reinforcement to the opposed ends of the heat shrunk tubular member 23B of the package construction 20B.

Accordingly, it can be seen that not only does this invention provide an improved package construction having many unique and novel features, but also this invention provides improved parts for such a package construction or the like.

While the form of the invention now preferred has been disclosed as required by statute, other forms may be used, all coming within the scope of the claimed subject matter which follows.

What is claimed is:

1. In combination, tray means having flap means extending upwardly therefrom, a plurality of product means each having a body portion provided with a bottom at the lower end thereof and a closure cap at the upper end thereof, said product means having the bottoms thereof disposed on said tray means and having the body portion thereof separated from each other at the lower ends thereof by said flap means, each closure cap being provided with outwardly directed flange means abutting adjacent flange means of adjacent product means to space the body portions of adjacent product means from each other at the upper ends thereof, and a heat shrunk tubular member disposed around said product means and said tray means to compact said product means and said tray means together to form a rigid package construction.

2. A combination as set forth in claim 1 wherein said flap means are each carved from said tray means.

3. A combination as set forth in claim 1 wherein each flap means is substantially triangular and has one edge thereof hingedly connected to said tray means.

4. A combination as set forth in claim 1 wherein said tubular member has opposed opened ends overlapping the opposed ends of said product-filled tray means.

5. A combination as set forth in claim 1 wherein said tray means comprises a plurality of trays each having said flap means and each having said product means disposed thereon, said product-filled trays being disposed in stacked relation.

6. A combination as set forth in claim 1 wherein said tray means includes a single sheet of material having opposed ends, said opposed ends of said sheet being folded upwardly to provide side flaps extending along the opposed ends of said package construction.

7. A combination as set forth in claim 6 wherein said tubular member has opposed opened ends overlapping said opposed ends of said package construction whereby said side flaps reinforce said opposed ends of said tubular member.

8. A combination as set forth in claim 6 wherein said tray means comprises a plurality of said sheets each having said flap means and side flaps and each having said product means disposed thereon, said product-filled sheets being disposed in stacked relation.

9. A combination as set forth in claim 1 wherein said tray means comprises a plurality of trays each having said product means disposed thereon, said product means disposed thereon, said product-filled trays being disposed in stacked relation, said tubular member having opposed opened ends overlapping the opposed ends of said stacked and product-filled trays whereby one of said trays has opposed ends exposed at said opened ends of said tubular member to provide grasping means for lifting said combination.

10. A combination as set forth in claim 9 wherein said one tray has side flaps providing said grasping means.

11. A combination as set forth in claim 9 wherein each of said trays has opposed transverse side flaps reinforcing said opposed ends of said tubular member.

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