July 18, 1967 M. L. BROWN 3,331,503

PLASTIC FILM ENCASED PACKAGE CONSTRUCTIONS

Original Filed May 11, 1964 3 Sheets-Sheet 1

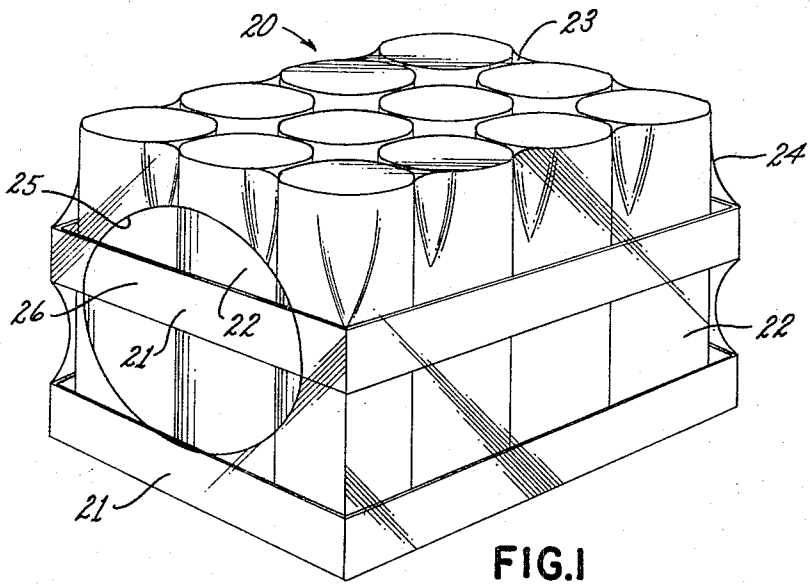

FIG.1

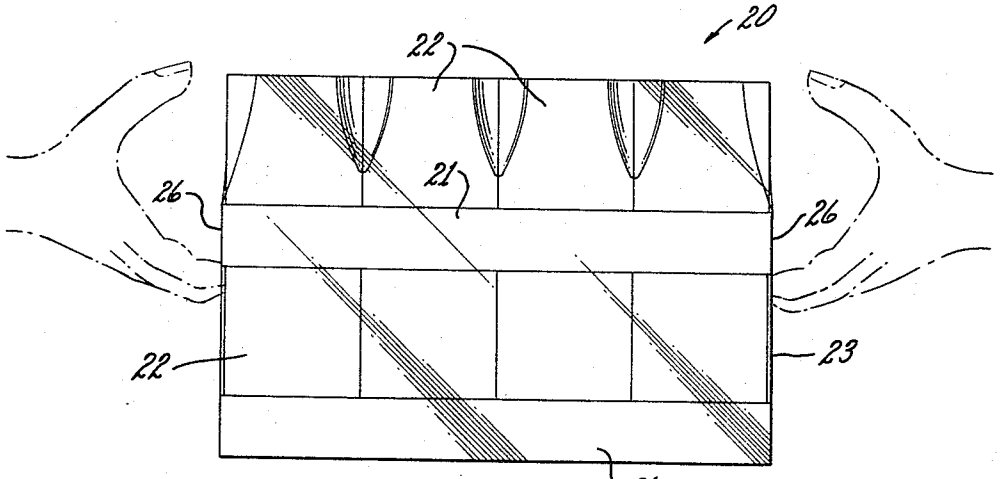

FIG.2

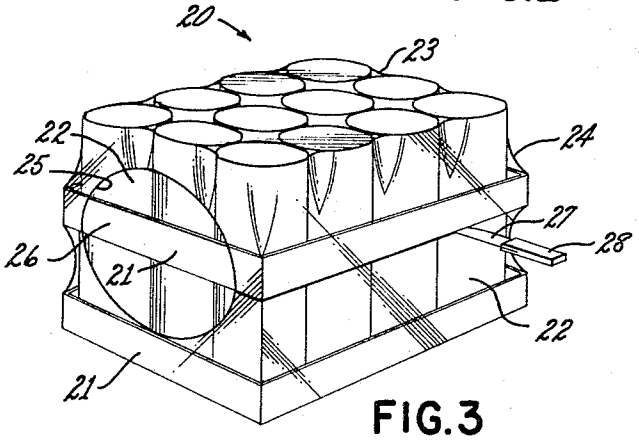

FIG.3

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PLASTIC FILM ENCASED PACKAGE CONSTRUCTIONS

Original Filed May 11, 1964 3 Sheets-Sheet 2

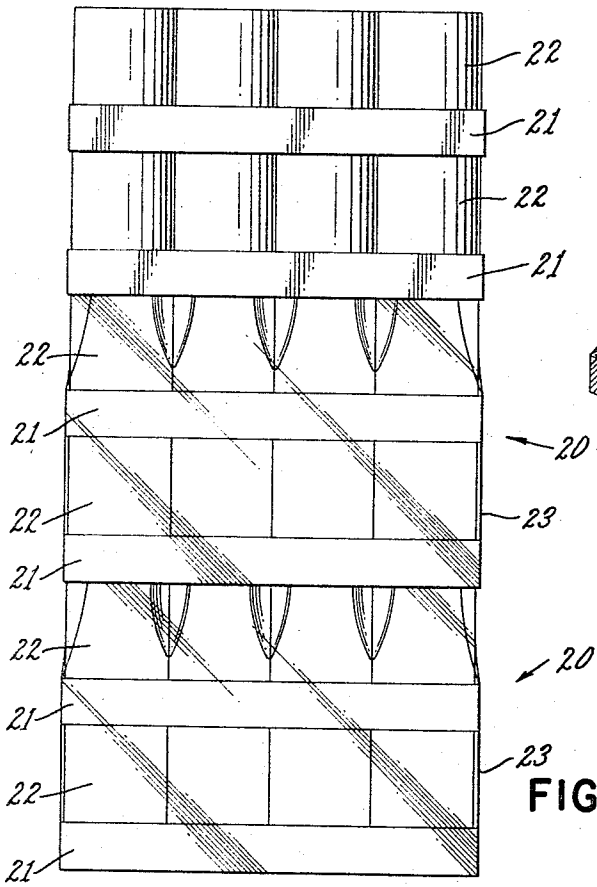

FIG.4

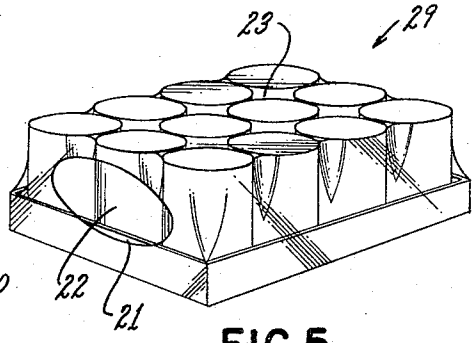

FIG.5

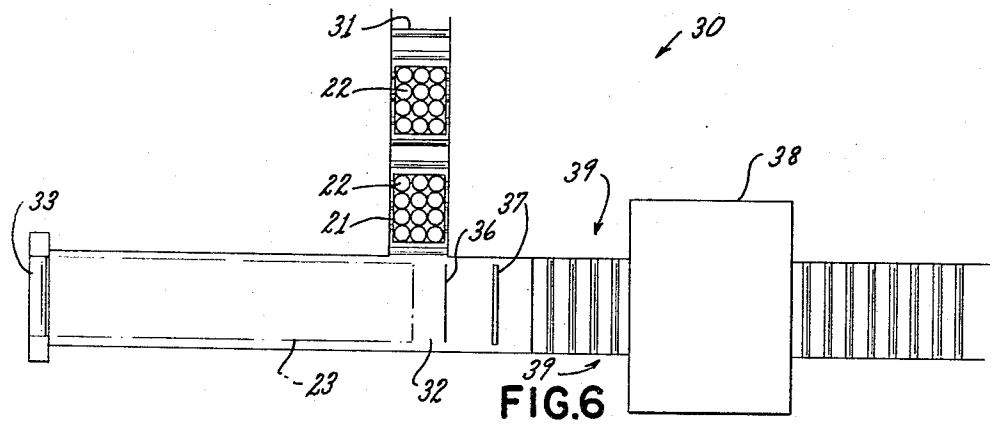

FIG.6

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PLASTIC FILM ENCASED PACKAGE CONSTRUCTIONS

Original Filed May 11, 1964 3 Sheets-Sheet 3

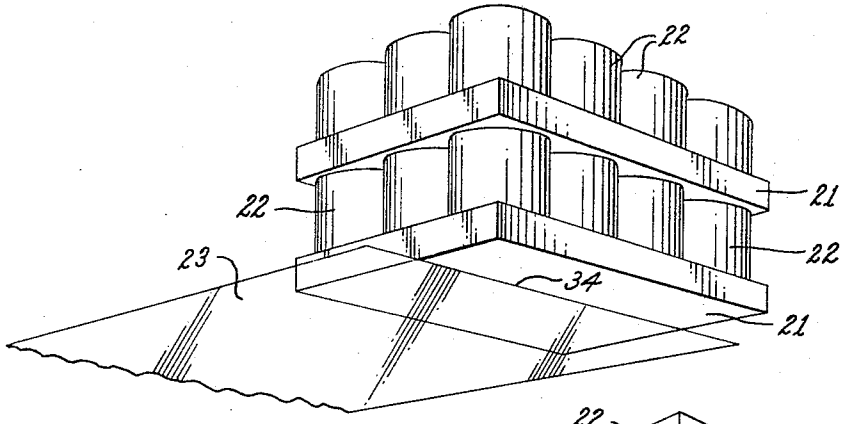

FIG.7

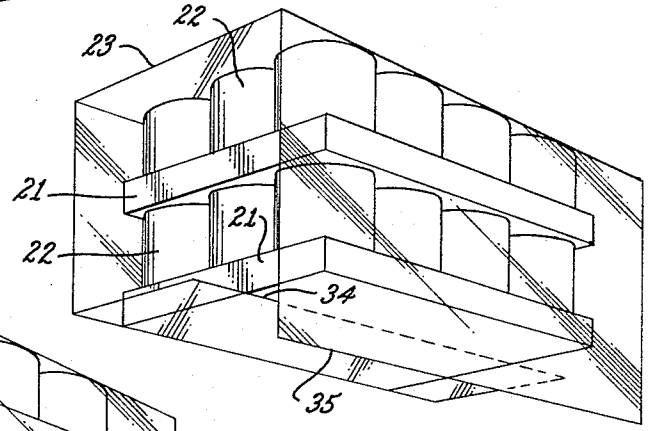

FIG.8

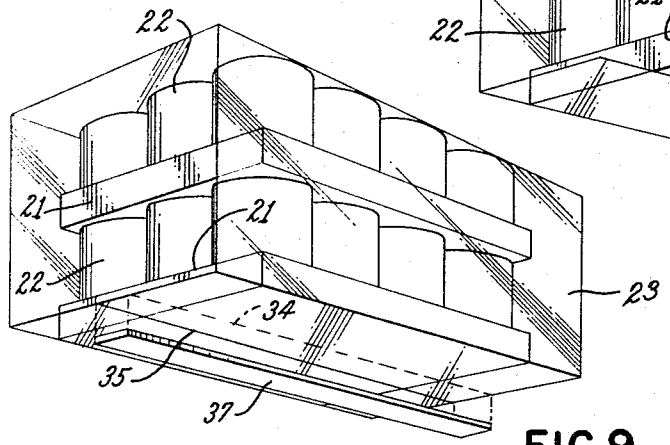

FIG.9

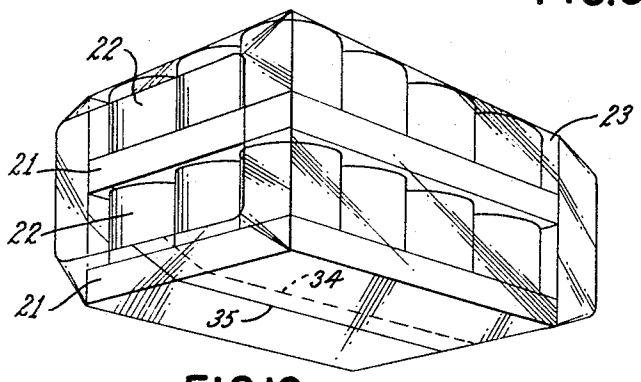

FIG.10

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United States Patent Office 3,331,503 Patented July 18, 1967

3,331,503

PLASTIC FILM ENCASED PACKAGE CONSTRUCTIONS

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Continuation of application Ser. No. 366,424, May 11, 1964. This application Aug. 2, 1966, Ser. No. 573,749

12 Claims. (Cl. 206—65)

ABSTRACT OF THE DISCLOSURE

This disclosure relates to a package construction means having an open ended receptacle means filled with product means, such as product container means or the like, disposed in a heat shrunk film-like tubular member whereby such heat shrunk film-like tubular member tightly compacts the product means and receptacle means together so that the resulting package construction means can be readily shipped and stored without requiring a conventional outer surrounding corrugated cardboard container, the receptacle means at the bottom of such package construction means providing support at the bottom four corners of the heat shrunk tubular film-like member and fully protecting the product means from impact at such four corners.

This application is a continuation of its copending parent patent application, Ser. No. 366,424, filed May 11, 1964, now abandoned.

This invention relates to an improved package construction as well as to an improved method for making such a package construction or the like.

It is well known that many products are shipped to various retail outlets in rectangular corrugated cardboard containers or the like whereby the retailer must open such containers to remove the product means for placement on merchandising shelves and the like.

For example, all canned, bottled and individually packaged grocery items and the like are normally shipped in such rectangular corrugated cardboard containers whereby a time consuming operation is required to remove the product means from the containers and place the same on the merchandising shelves thereof for display purposes and the like.

However, according to the teachings of this invention, an improved package construction for such product means or the like is provided wherein the product means are packaged in a transparent film-like material in a neat and attractive manner so that the entire package construction can be utilized for display purposes without requiring removal of the individual product means therefrom.

Further, the improved package construction of this invention requires less storage and shipping space than the prior known rectangular corrugated cardboard containers or the like as the improved package constructions of this invention are lighter in weight.

In addition, the package constructions of this invention can be easily handled in a unique and novel manner hereinafter described.

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

Another object of this invention is to provide an improved method for making 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 of one embodiment of the improved package construction of this invention.

FIGURE 2 is a side view of the package construction illustrated in FIGURE 1 and illustrates the manner of lifting the same or the like.

FIGURE 3 is a view similar to FIGURE 1 and illustrates one method for opening the package construction of this invention.

FIGURE 4 is a side view illustrating the package construction of this invention in a display arrangement or the like.

FIGURE 5 is a view similar to FIGURE 1 and illustrates another embodiment of the package construction of this invention.

FIGURE 6 is a top view illustrating one method of this invention for forming the package constructions of FIGURES 1 and 5 or the like.

FIGURES 7–10 are respectively perspective views illustrating the various steps in the operation of forming the package construction of this invention by the method illustrated in FIGURE 6.

While the various features of this invention are hereinafter described and illustrated as being particularly adaptable for packaging canned food products and the like, it is to be understood that the various features of this invention can be utilized to package any desirable type of product means or the like.

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, the improved package construction of this invention is generally indicated by the reference numeral **20** and comprises a plurality of open ended relatively shallow and rectangular receptacles **21** filled with product means, such as a plurality of metallic cans **22**, and being surrounded by a tubular transparent film-like member **23** that has been heat shrunk in a manner hereinafter described to tightly compact the receptacle means **21** and product means **22** together to form the unique package construction **20**.

The heat shrunk tubular member **23** has been shrunk in such a manner that the same tightly compacts the product means **22** and receptacles **21** together so that there is no shifting therebetween whereby a substantially integral package construction is provided.

Further, the opposed ends **24** of the transparent tubular member **23** overlaps the opposed ends of the substantially rectangular arrangement of product means **22** and receptacles **21** to hold the same together and provide opposed openings or access means **25** which expose the opposed ends **26** of one of the receptacles **21**.

In this manner, it is relatively easy to lift and handle the package construction **20** of this invention by merely having the handler insert his hands respectively in the opposed openings **25** of the package construction **20** and grasp against the bottom of the opposed receptacle **21** in the manner illustrated in FIGURE 2 to lift and carry the package construction **20** without requiring removal of the transparent film-like member **23**.

When it is desired to open the package construction **20** of this invention, the film-like member **23** can be readily cut and removed from the product means **22** and receptacles **21**. For example, it can be seen in FIGURE 3 that the blade **27** of a knife **28** can be inserted below one of the receptacles **21** in the region of the opening **25** thereof and slit the film-like member **23** to the other opposed opening **25** therein so that the film-

like member 23 can readily be unwrapped from the product means 22 and receptacles 21.

It has been found that such package constructions 20 of this invention are readily adapted for twenty-four cans 22 or the like wherein the entire package construction 20 weighs approximately 25 to 30 pounds. However, it must be understood that the number of cans 22 and the weight thereof can vary as desired.

Such package constructions 20 of this invention readily permit the handlers and the like to view the labels on the cans 22 without requiring further labeling of the outside surfaces of the package construction 20. However, if desired, the side walls of the shallow receptacles 21 could be labeled or the like as the same will be readily viewable through the transparent covering 23.

It has been found that the transparent film-like member 23 is so tightly drawn against the product means 22 in the manner illustrated in FIGURE 1 that the same lends an overall attractive appearance to the product means 22 not provided when the same are not covered by the film-like member 23.

Therefore, it has been found that attractive displays can be formed from a package means 20 of this invention by arranging the same in stacked relation in the manner illustrated in FIGURE 4 whereby only the top one or two package constructions 20 need have the overwrap 23 thereof removed in the manner illustrated in FIGURE 4 for merchandising of the product means 22, the remaining or lower package constructions 20 providing an attractive display which can be subsequently opened when needed.

Therefore, it can be seen that the package constructions 20 of this invention readily permits the same to be handled in the same way as the conventional rectangular corrugated cardboard containers without requiring time consuming removal of the product means 22 therefrom to provide attractive displays for merchandising purposes and the like.

Further, when the individual package constructions 20 are opened, each receptacle 21 provides a tray for the product means 22, so that the product means 22 can be readily placed on shelves or the like while remaining in the respective tray 21.

While the package construction 20 of this invention has been previously described as having two filled receptacle means 21, it is to be understood that the package construction 20 of this invention could be formed from one or more filled receptacles 21 as desired.

For example, reference is made to FIGURE 5 wherein another package construction of this invention is generally indicated by the reference numeral 29 and comprises a single receptacle 21 filled with product means 22 and overwrapped by the heat shrunk transparent film-like material 23 of this invention.

While the package constructions 20 and 29 of this invention can be formed of any suitable material and in any suitable manner, the embodiments thereof illustrated in the drawings are formed by utilizing conventional corrugated cardboard receptacles 21 and a transparent polyvinylchloride heat shrinkable film-like material 23 having a thickness of approximately 1 to 1½ mils. However, it is to be understood that the materials forming the film-like material 23 and receptacles 21 of this invention can be other than those specified.

For example, almost any type of receptacle 21 can be utilized and the film-like material 23 of this invention can be polyethylene, polypropylene, and the like wherein the same has the heat shrinking or resilient characteristic to tightly compact the product means 22 and receptacles 21 together.

However, it has been found that when the film-like material 23 is formed of polyvinylchloride, the same has a relatively good impact resistance and when punctured, will not split and tear.

For example, the film-like material 23 can be formed of two webs of oriented polyvinylchloride fused together to provide a lamination suitable for the features of this invention.

One method for forming the package constructions 20 and 29 of this invention is generally indicated by the reference numeral 30 in FIGURE 6 wherein filled and stacked receptacles 21 are fed down a conveying line 31 to a work table 32. The work table 32 includes a free wheeling supply roll 33 of the sheet material 23 which can be manually or automatically cut into flat blanks which can be subsequently wrapped around the filled and stacked receptacles 22.

For example, it can be seen in FIGURE 7 that a plurality of stacked and filled receptacles 21 are moved onto the platform 32 so that the bottom receptacle 21 overlaps the front edge 34 of a sheet of film-like material 23. With the filled and stacked receptacles 21 in the position illustrated in FIGURE 7, the other end 35 of the sheet material 33 is wrapped around the filled and stacked receptacles 21 in the manner illustrated in FIGURE 8 so that the free end 35 of the sheet of material 23 can be disposed in a slot means 36 formed in the work table 32.

Thereafter, the filled and stacked receptacles 21 are moved to the right in FIGURE 6 whereby the end 35 of the sheet of material 23 is brought in overlapping relation over the other end 34 thereof in the manner illustrated in FIGURE 9 and is heat sealed thereto by a heat sealing bar 37 disposed flush with the table 32 in the manner illustrated in FIGURE 6.

Thus, it can be seen that the sheet of material 23 is now formed in a tubular form around the filled and stacked receptacles 21 in the manner illustrated in FIGURE 9 whereby the opposed ends of the tubular film-like material 23 extend beyond the opposed ends of the receptacles 21.

Before the combination illustrated in FIGURE 9 is moved to the right on the work table 32 into a heating chamber 38, the opposed ends of the tubular film-like member 23 are pre-shrunk to substantially the position illustrated in FIGURE 10 by operators or automatic means disposed in the region of the reference numerals 39 in FIGURE 6 whereby the opposed ends of the film-like material 23 are partially shrunk around the opposed ends of the filled and stacked receptacles 21.

Thereafter, the combination illustrated in FIGURE 10 is moved into the heating chamber 38 in FIGURE 6 to have the film-like material 23 heat shrunk to form the package construction as illustrated in FIGURE 1 before the same leaves the heating chamber 38 for subsequent handling thereof.

Therefore, it can be seen that the package constructions 20 of this invention can be readily formed by having the film-like material 23 disposed in coiled form and be subsequently wrapped around the filled and stacked receptacles 21 in the manner illustrated in FIGURE 9.

However, it is to be understood that the film-like material 23 of this invention could be formed in tubular form without having any longitudinal seams thereof so that the filled and stacked receptacles 21 could be inserted therein without requiring a longitudinal seaming operation as illustrated in FIGURE 9. For example, the film-like material 23 could be formed by an extrusion process where the same is formed in a continuous tubular length.

The finished package constructions 20 and 29 of this invention readily adapt themselves to be palletised for subsequent handling thereof in the same manner as the conventional surrounding rectangular corrugated cardboard containers.

While the package construction 20 of this invention has many advantages over the conventional rectangular corrugated cardboard shipping container normally utilized in the field, only some of the advantages will now be described.

In just weight savings alone, it has been found that a savings of approximately $6 has been provided by the

package constructions **20** of this invention per carload of package constructions **20** over the conventional cardboard containers. For example, it has been found that the weight differential between the package constructions **20** of this invention and the corrugated cardboard containers is approximately 0.7 pound per case whereby the weight savings per carload of package constructions **20** is approximately 2,289 pounds over the conventional cardboard containers for like product means.

Further, it has been found that when cans and the like are shipped in the conventional cardboard containers, the same have chime ride marks on the labels thereof during shipment whereby the cans are unattractive for display purposes. However, the film-like material **23** of this invention locks the cans **22** and receptacles **21** together in such a manner that no chime riding is permitted.

The attractiveness of the package construction **20** of this invention has the advantage of being a new type of package construction which will help the canning industry to sell their products. Further, the supermarkets and the like throughout the country need to reduce their handling costs in displaying merchandise whereby with the package construction **20** of this invention, the film-like material **23** can be readily removed by slitting and be rolled in a ball to be thrown away thereby eliminating the unfolding and flattening of the conventional cardboard containers.

Further, the product means **22** of this invention are kept clean until the housewife or the like selects the product from the shelf because the same can be arranged in display manner similar to FIGURE 4.

In addition, the transparent film-like material **23** is a natural eye catcher to give visual impact on the shelf and in corner displays and the like.

Another feature provided by the package constructions of this invention is that the same can be used in displays without removing the film-like material **23** so that any unsold product will not have to be recased for shipment back to the product manufacturer.

Another disadvantage of the conventional corrugated cardboard container is that the same is slippery and difficult to pick up by handlers whereas the exposed top tray or receptacle **21** of this invention is readily exposed to provide handle means for a lifting point for the workers.

Therefore, it can be seen that the improved package construction **20** of this invention has many advantages over the prior known package constructions and none of the disadvantages thereof.

Accordingly, this invention not only provides an improved package construction, but also this invention provides an improved method for making the same 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, open ended receptacle means filled with product means, said receptacle means including a substantially flat rectangular bottom wall having the four corners thereof disposed outboard of all of said product means to fully protect said product means from impact at said four corners, and a heat shrunk tubular film-like member receiving said filled receptacle means to hold said receptacle means and said product means tightly together, said film-like member overlapping the opposed ends of said filled receptacle means whereby said bottom wall means of said receptacle means provides support at the bottom four corners of said heat shrunk tubular film-like member.

2. A combination as set forth in claim **1** wherein said overlapping portions of said film-like tubular member provide opposed openings at the opposed ends of said product filled receptacle means.

3. A combination as set forth in claim **1** wherein said receptacle means includes continuous side wall means extending upwardly from the peripheral edge means of said bottom wall means.

4. A combination as set forth in claim **3** wherein said product means extend above the top edge of said side wall means.

5. A combination as set forth in claim **4** wherein said receptacle means includes at least two receptacles each being filled with said product means and being disposed in stacked relation inside said tubular film-like member.

6. In combination, a plurality of product supporting means having a plurality of product means arranged thereon to be carried thereby, said product carrying supporting means being disposed in stacked relation, and a heat shrunk tubular film-like member receiving said stacked and product carrying supporting means and overlapping the opposed ends of said stack to hold said supporting means and product means together whereby the lower supporting means provides support at the bottom four corners of said heat shrunk tubular member, said tubular film-like member providing openings at said opposed ends whereby the exposed ends of one of said supporting means can be grasped for lifting said entire combination.

7. In combination, a plurality of receptacles having the open ends thereof receiving a plurality of containers arranged in rows therein, said filled receptacles being placed in stacked relation, and a heat shrunk transparent tubular film-like member receiving said stacked and filled receptacles and overlapping the opposed ends of said stack to hold said receptacles and containers together, whereby the lower receptacle provides support at the bottom four corners of said heat shrunk tubular member, said tubular film-like member providing openings at said opposed ends whereby the exposed ends of one of said receptacles can be grasped for lifting said combination.

8. A combination as set forth in claim **7** wherein said tubular film-like member is provided by a flat blank having opposed edges thereof heat sealed together to form said tube.

9. A combination as set forth in claim **7** wherein said tubular film-like member has no longitudinal seam.

10. A combination as set forth in claim **7** wherein said film-like member comprises polyvinylchloride.

11. A combination as set forth in claim **10** wherein said film-like member comprises two sheets of said polyvinylchloride superimposed on each other and laminated together.

12. In combination, a plurality of opened ended receptacles respectively having a plurality of containers arranged in rows therein with each container extending above the top edge of its respective receptacle, said filled receptacles being placed in stacked relation to form a substantially rectangular arrangement, and a heat shrunk transparent tubular film-like member receiving said rectangular arrangement to hold said receptacles and containers together, said film-like member overlapping the opposed ends of said rectangular arrangement and providing access means thereto at said opposed ends whereby the lower receptacle provides support at the bottom four corners of said heat shrunk tubular member.

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