

Feb. 22, 1966

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CONTAINERS

3,236,435

Filed Oct. 28, 1963

4 Sheets-Sheet 1

FIG. 1

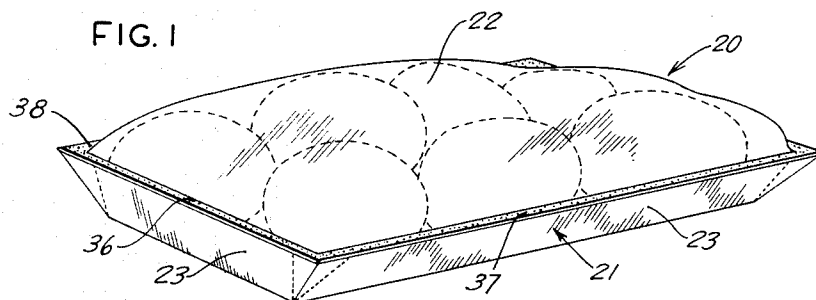


FIG. 2

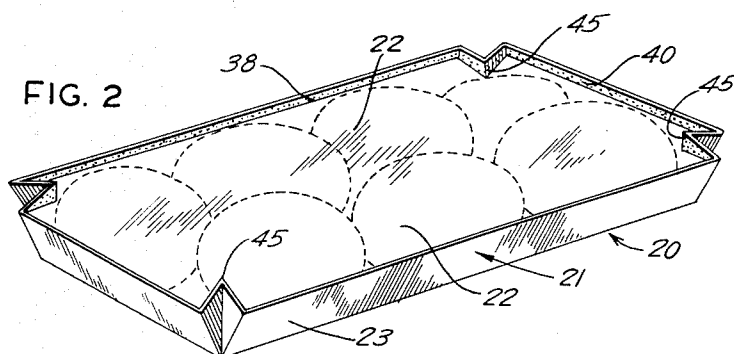


FIG. 3

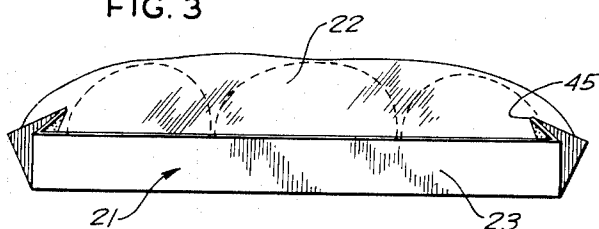
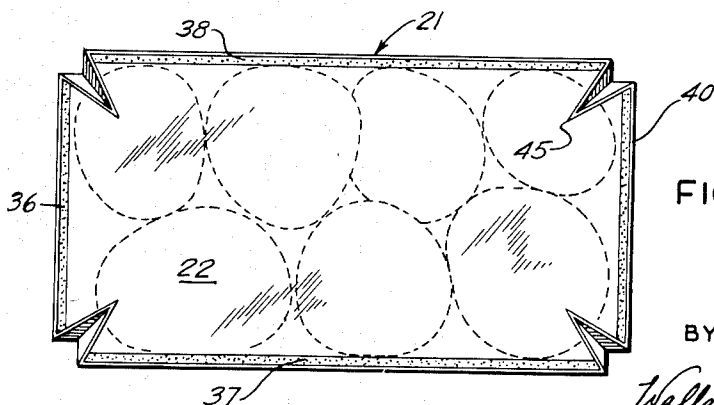


FIG. 4

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4 Sheets-Sheet 2

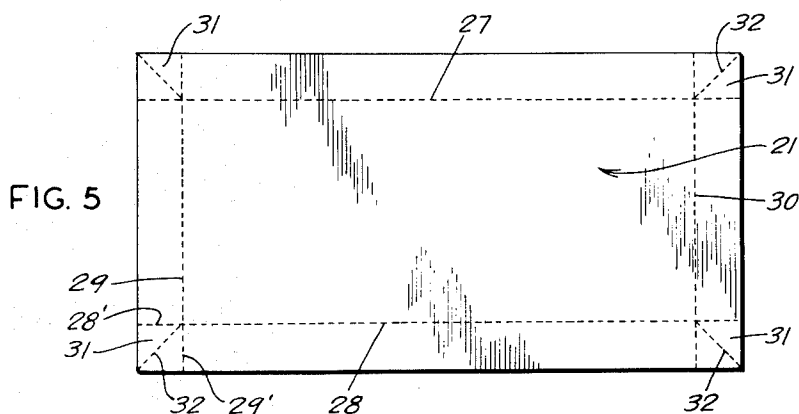


FIG. 5

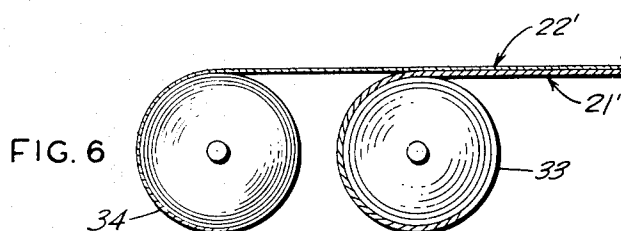


FIG. 6

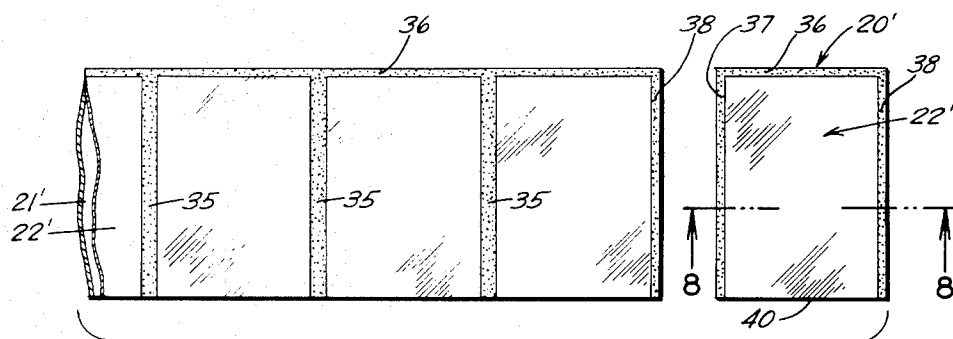


FIG. 7

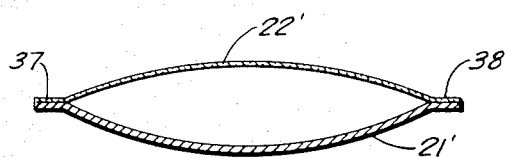


FIG. 8

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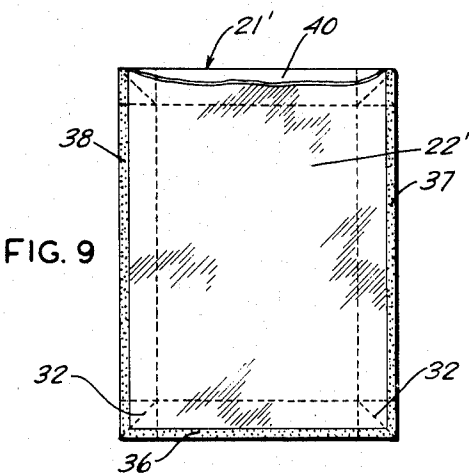
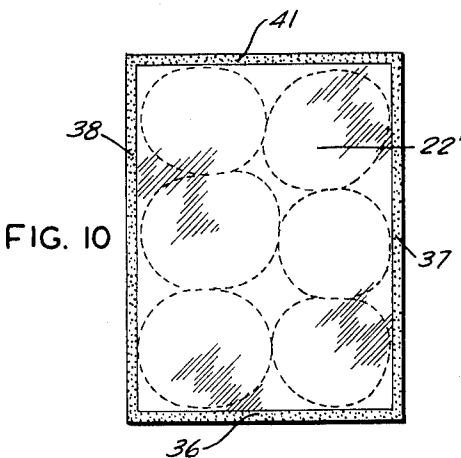
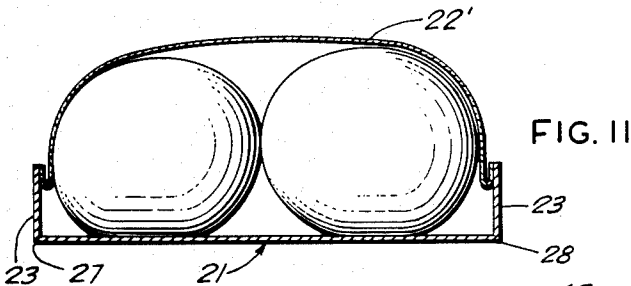
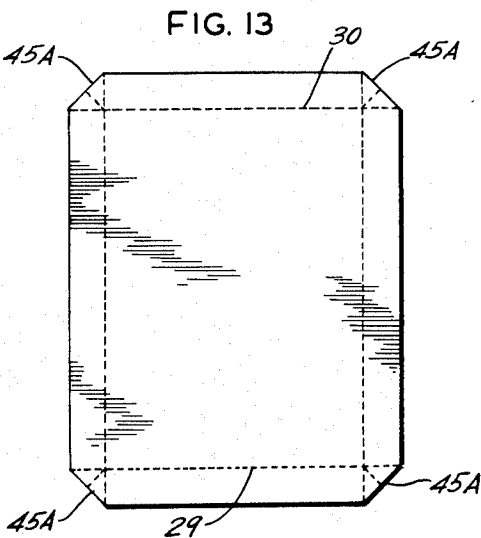
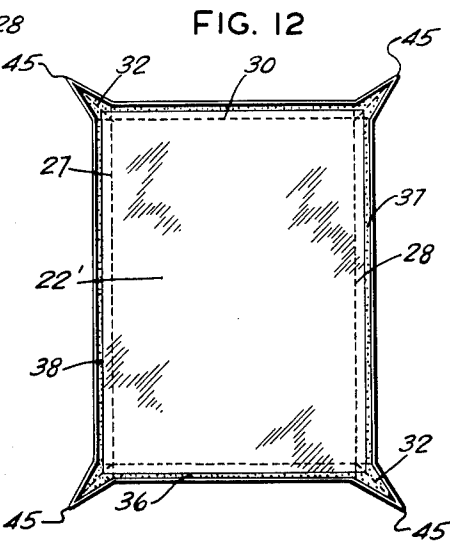
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4 Sheets-Sheet 3



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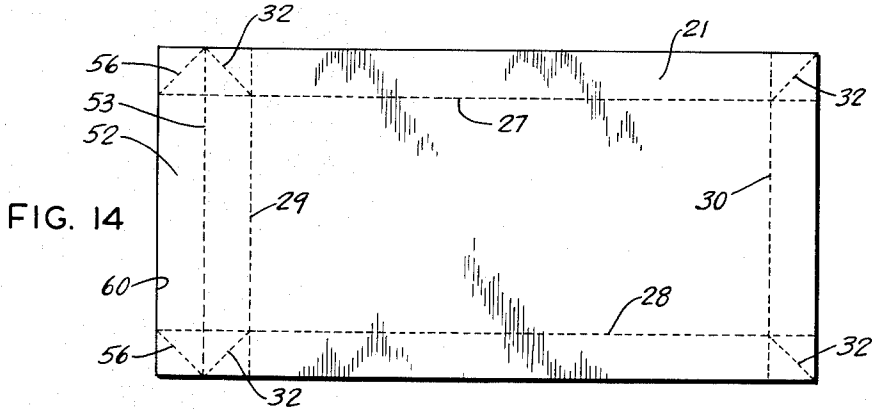
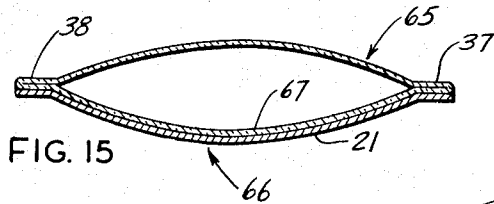
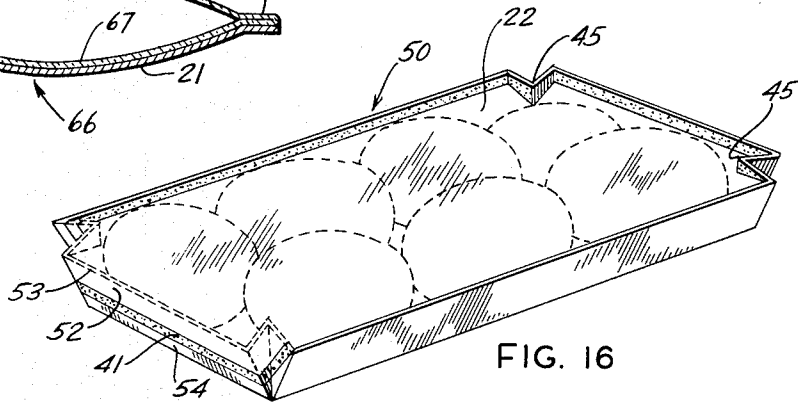
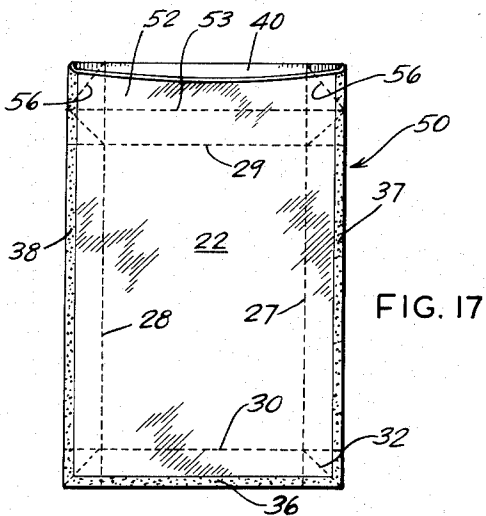
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4 Sheets-Sheet 4



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1

3,236,435 CONTAINERS

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Filed Oct. 28, 1963, Ser. No. 319,285
3 Claims. (Cl. 229—31)

This application is a continuation-in-part of application Serial No. 221,795, filed September 6, 1962, now abandoned.

This invention relates to containers, and in particular to a container for packaging food items or the like for display at the point of sale.

The primary object of the present invention is to afford a package or container which after being filled can be shaped as a tray of neat and attractive appearance with a transparent film overlap or cover sheet which not only retains the packaged items but also displays the same for inspection. Another object of the present invention is to enable the foregoing to be accomplished, and the container easily filled, by associating a rectangular backing or support sheet for the goods (scored in a novel way as disclosed to enable a tray to be easily erected therefrom) and an overlap sheet bonded thereto neatly along parallel edges, resulting in a container characterized by two bonded or integrated sheets presenting at least one open end for receiving the goods.

In the disclosure below, the tray portion of the package is made from paperboard. It can readily be seen, however, that it could be heavyweight paper, board, plastic, or foil material. Thus, the primary requirement of the tray portion is that it have a degree of flexibility, and that it be capable of being scored, perforated or otherwise creased for easy folding, and hence a wide variety of materials can be used.

The cover in the example cited below is polyethylene film. Again, any film capable of being bonded or otherwise sealed permanently to the tray portion material would be suitable, such as polypropylene, "Mylar," nylon film and many others, and preferably the film is of readily heat bondable thermoplastic material.

The material from which the tray portion is made may be treated to accept the adherence of the film portion, as by coating or laminating on one or both sides with polyethylene or equivalent thermoplastic film material capable of being heat bonded to the heat bondable cover sheet.

A further object of the invention is the facilitating of the filling of the tray by providing an extension at the filling end of the container, which extension affords, after the container is filled to the capacity of the tray to be erected, an additional sealing area for sealing the overlap without interference from the goods in the tray portion. Specifically, and as a further object of the invention, the tray portion has an extension at the filling end of the container which extension is scored, perforated or otherwise creased for folding to a position against one of the sides of the tray after the tray is erected. Also, in accordance with a still further object of the invention, the tray portion is so scored to form corners capable of being inwardly tucked incidental to erecting the tray. The filling extension on the tray portion is also scored to facilitate the inward tucking of corners of the extension.

A further object of the invention is increasing the strength and durability of the erected tray by affording a bottom lining of the film material over the bottom of the tray portion to make a double ply bottom. Preferably, a tube of film material is sealed along the edges to the tray portion and the goods are inserted between the plies of film material. The ply of film on the tray

2

portion complements the tray portion in that the film resists the creasing or buckling of the paperboard.

In a further embodiment of the present invention, and according to an object thereof, the tray is adapted to tightly confine the goods within the tray and to provide a neater appearance by having the overlap sheet formed of a material shrinkable about the goods to tightly embrace the goods within the package. Specifically, the overlap sheet is a heat shrinkable film of material; and after the goods are placed in the package and sealed therein, the film is subjected to sufficient heat to shrink it tightly about the goods in the tray.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the accompanying drawings which, by way of illustration, show preferred embodiments of the present invention and the principles thereof and what is now considered to be the best mode contemplated for applying these principles. Other embodiments of the invention embodying the same or equivalent principles may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

In the drawings:

FIGS. 1 and 2 are perspective views of a filled package constructed under and in accordance with the present invention;

FIG. 3 is an end elevation of the package shown in FIGS. 1 and 2;

FIG. 4 is a top plan view of the package shown in FIGS. 1 and 2;

FIG. 5 is a plan view of the rectangular base or support sheet of the tray showing the scoring pattern for each container;

FIG. 6 is a view illustrating how the webs from which the sheets for the package are obtained can be juxtaposed;

FIG. 7 is a view illustrating the manner in which the webs are heat sealed and the container obtained therefrom;

FIG. 8 is a sectional view on the line 8—8 of FIG. 7;

FIG. 9 is plan view of the container in its flat or unfilled state, being on an enlarged scale in comparison to FIG. 7 incidental to showing more detail;

FIG. 10 is a plan view of the package before erection and after sealing in the contents;

FIG. 11 is a sectional view showing the partly erected package;

FIG. 12 is a plan view of the partly folded package just before bending the corners;

FIG. 13 is a view of a modified construction;

FIG. 14 is a plan view of the rectangular base or support sheet of the tray showing the scoring pattern for the container and filling extension according to another embodiment of the invention;

FIG. 15 is a sectional view illustrating a double-ply backing for a tray according to another embodiment of the invention;

FIG. 16 is a perspective view of a film package constructed under and in accordance with the embodiment of FIG. 14; and

FIG. 17 is a plan view of the container in its flat or unfilled state, according to the embodiment shown in FIG. 14.

The package 20 illustrated in FIGS. 1 and 2 of the drawing includes, in accordance with the present invention, a tray-like paperboard backing or support 21 having bonded thereto in a manner described hereinafter a cover sheet or transparent overlap 22. The support or tray 21 is scored or creased to enable the sides 23 thereof to be erected from a flat, rectangular condition (see FIG. 5) to the box-shaped tray condition shown in FIG. 1, producing

a psychologically pleasing display which is of particular utility in connection with attractively merchandising food products such as tomatoes, chops, hamburger and the like.

In accordance with the present invention, the backing sheet 21 is originally flat in the form furnished to the merchandiser, and the polyethylene film is bonded thereto, as by a heat seal, leaving at least one end of the resultant package open to enable the goods to be inserted therein. After the package is filled, the open end is heat-sealed and the corners of the backing are then tucked in and the sides folded to produce the tray appearance shown in FIGS. 1 and 2.

The paperboard or equivalent material is originally obtained from a continuous roll, and is preferably coated or laminated with polyethylene on one or both sides to facilitate heat bonding as will be explained. While in roll form or continuous length, the backing material is repeatedly scored for folding with the pattern of scoring repeated as indicated in FIG. 5.

Referring to FIG. 5 the score pattern is indicated by the dotted lines on the flat backing 21. Parallel score lines 27-28 and 29-30 are afforded parallel to and inward of the corresponding peripheral edges of the rectangular sheet 21, defining what will be the sides 23 of the tray.

These score lines intersect at the corners of the sheet as denoted, for example, by the score lines 28' and 29', defining corner tabs 31. The corner tabs are scored diagonally at 32.

After scoring a web of paperboard continuously according to the pattern described in connection with FIG. 5, the web is re-rolled (33, FIG. 6) and in a continuous roll another roll 34 of film material, in this example polyethylene, is run onto the top of scored paper roll in face-to-face position. A side elevation of this step is shown in FIG. 6 where the web of scored paperboard is identified by reference character 21', and 22' represents a length from roll 34 of film. The coated side of the paperboard is opposite the film 22', ready for heat sealing.

Thus, as shown in FIG. 7, the superimposed webs 21' and 22' are joined by spaced transverse cross seals, made by any conventional heat sealing apparatus, which seals the film to the paperboard, at repeated intervals 35. At the same time, a continuous heat seal line 36 is completed parallel to the path of travel of the webs, along the outer edges thereof, which bonds the film to the paperboard continuously along one edge.

After the heat seals are completed, the webs are severed by splitting the heat seals 35, resulting in bags or containers 20' of pouch type, sealed along three edges 36, 37 and 38 and open at one end 40, as particularly evident in FIGS. 8 and 9.

The container 20' is now ready to be filled, and after filling the open end 40 can easily be closed by heat sealing at 41 the free end of the cover sheet to the free end of the backing, FIG. 10.

FIG. 10 illustrates the state of the container plan view, after the open end has been filled, and before folding.

The score or fold lines, it will be appreciated, may be folded either manually or mechanically prior to filling, but in most instances this will occur after filling, as in the present example. Moreover, with certain materials or articles, the folding will occur by nature of the filling. That is, when the product raises the film 22 from contact with the paperboard, a stress is placed on the paperboard to the extent that score lines will partially or completely fold or become erect.

In erecting the tray, the liner or support 21 is folded upwardly along the fold lines 27-28 and 29-30, producing the sides 23 of the container, FIGS. 1 and 11. The corners are then pressed in at the points 45, FIG. 12, along the fold lines 32. This produces the dog ears or reverse folds at the corners of the completed package 20, FIG. 2.

If desired, the sharp points 45 can be eliminated simply

by diagonally die-cutting at 45A the corners of the tray or backing portion of the container in the manner shown in FIG. 13.

For the purpose of facilitating the filling of a package such as the package 20 and for the purpose of facilitating the sealing of such a package without interference from the goods therein, a tab or an extension 52, FIG. 14, is provided on the paperboard backing or support 21. The extension 52 is that portion of the support 21 extending leftwardly of the score line 53 in FIG. 14. The score line 53 is parallel to the score line 29 and constitutes a crease line for the extension 52. Thus, when a tray 50 having an extension 52 is erected and is in the form shown in FIG. 16, the score line 53 defines the upper edge of a closing end wall 54 of the tray against which wall is folded in a dependent manner the extension 52.

In the embodiment shown in FIGS. 1-13 inclusive, the heat seal 41 for closing the package was within the interior of the tray and considerable difficulty was experienced in making the heat seal 41 within the container, due to a number of factors such as the limited amount of film and backing material for heat sealing, the respective orientations of these materials, and interference from the close proximity of the package goods. In the embodiment of FIG. 14, the package can be completely filled and the overlapping cover sheet 22 and extension 52 provide additional material at the filling openings to facilitate sealing in a conventional heat sealing apparatus without interference from the goods. After the package is closed by the heat seal 41, the tray 50 is erected in the same manner as the tray 20 and then the extension 52 is folded downwardly into engagement with the upstanding end wall 54 at the filling end of the tray 50. As hereinbefore described, when erecting the tray, the corners are tucked in at the points 45. Likewise, it is desirable to tuck in the corner portions of the extension 52 and to this end, the extension 52 is provided with diagonal scores 56 which meet the score lines 32 at the score line 53. The score lines 54 also intersect the parallel score lines 27 and 28 at an outer edge 60 of the tab extension 52. As best seen in FIG. 16, the score lines 56 permit the corners of the extension 52 to be tucked inwardly and against the corners formed in the tray.

To improve the esthetics of the tray, and at the same time to provide a package wherein the material is more readily contained against shifting or moving within the package, the overlap sheet 22 of film material can be a heat shrinkable film which, when subjected to heat, shrinks about the goods tightly encasing the goods against the backing 21. Preferably, the heat shrinkable material is selected from the materials which are commercially available on the market, such as "Resinite" made by Bordon Corporation, "Saran" and shrinkable polyethylene. The preferred material, "Resinite" is one which is heat shrinkable so that after the tray 21 is filled with the goods, the subjecting of the goods and package 20 to an elevated temperature causes the film to shrink and to enclose tightly and to encase the goods against the tray. When packaging goods which would be damaged by heat, other suitable film materials could be selected which are shrinkable when subjected to an operation employing an agent other than heat to cause the shrinking of the material to enclose the goods.

For the purpose of providing a more durable and stronger package, a web 65 (FIG. 15) of film is disposed with one of the plies 67 against the backing or tray 22 so that when the web is heat sealed along its outer edges 36, 37 and 38, FIG. 17, to the backing 22 in the manner that the heat seals 36, 37 and 38 are formed in the tray shown in FIG. 9, the bottom of the tray is formed with a double ply bottom portion 66, FIG. 15. The additional bottom ply 67 of film provides additional elasticity and strength not realized by the paperboard alone. Advantageously, the lower film 67 constitutes a pliant and somewhat stretchable panel which tends to assume a

5

concave-convex bend, rather than permitting the paperboard backing or the like 21 to buckle or crease. It should be apparent that the web or tube of film material can either be of the shrinkable or non-shrinkable type, and can be employed equally as well for a package lacking an extension or having an extension 52. In any event, the reinforcing ply of the web 65 provides additional strength to the tray.

From the foregoing, it will be seen that under the present invention a neat and attractive traylike container is made possible and is composed of two sheets sealed along four edges, one sheet being a transparent cover and the other being a tray base of paperboard or the like scored or weakened, to be erected in a novel manner to form the traylike container. Additionally, it will be seen that the container can be provided with an extension that not only facilitates the loading of the container, but also facilitates the sealing of the container without interference from the goods in the container. Additionally, the extension can be folded downwardly against the side of the erected tray, and the corners of the tray and extension are formed in a novel manner so as to make neat corners on the tray.

Finally, it will be seen that a double ply tube or web of film can be employed to form a tray with a double ply backing composed of one layer of film and another layer of paperboard or the like. Furthermore, the film of material can be heat shrinkable so as to tightly encase the goods in the tray, thereby improving the esthetic appearance of the goods and preventing the goods from shifting or moving within the tray.

Hence, while preferred embodiments of the invention have been described and illustrated, it is to be understood that they are capable of variation and modification and I therefore do not wish to be limited to the precise details set forth, but desire to avail myself of such changes and alterations as fall within the purview of the following claims.

I claim:

1. A container comprising a generally rectangular backing sheet for supporting goods in the container, and a transparent overlap sheet of film material capable of being bonded to the backing sheet, said sheets being

6

bonded to one another along three sides at the peripheral edge portions, and affording a filling opening at the fourth side, said backing sheet being scored parallel to and inward of all of the sides thereof including the fourth side thereof to enable a tray to be erected therefrom, said backing sheet having diagonal score lines at all of the corner portions thereof enabling the corners to be inwardly tucked incidental to erecting the tray, another score line on said backing sheet being parallel to the score line at the fourth side, an extension on said backing sheet extending outwardly from said other score line, said sheet of film material being generally co-extensive with said backing sheet and having a portion extending outwardly from said other score line and constituting therewith a filling opening, said extension adapted to be bonded to said film to close said filling opening, and diagonal score lines extending from said first mentioned diagonal score lines diagonally to points inwardly of the fourth side of said backing sheet so as to enable the corners on the extensions to be tucked inwardly within said first mentioned corners.

2. The container of claim 1 wherein said film material is characterized by loosely engaging the goods while the goods are placed in the package and by being shrinkable in size to tightly embrace the goods upon being subjected to a shrinking operation.

3. The container of claim 1 including a reinforcing sheet of heat bondable film material serving as a reinforced backing for said backing sheet, said reinforcing sheet being heat sealed along the edges thereof to said backing sheet.

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