United States Patent

Ross, Jr. et al.

[15] **3,675,810**

[45] **July 11, 1972**

[54] RECEPTACLE FOR WASTE MATERIAL

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[73] Assignee: **said Thorvald S. Ross, Jr., by said Dante V. Consalvo**

[22] Filed: **March 19, 1970**

[21] Appl. No.: **20,974**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 813,477, April 4, 1969, abandoned.

[52] **U.S. Cl.** ..... **220/17**, 220/1 T, 220/29, 220/65, 220/85, 312/1

[51] **Int. Cl.** **B65d 25/00**

[58] **Field of Search** ..... 220/17, 65, 1 T, 29, 20.5, 220/44 C, 44 E, 85; 206/63. 5, 19.5 C, 19.5 D; 312/1

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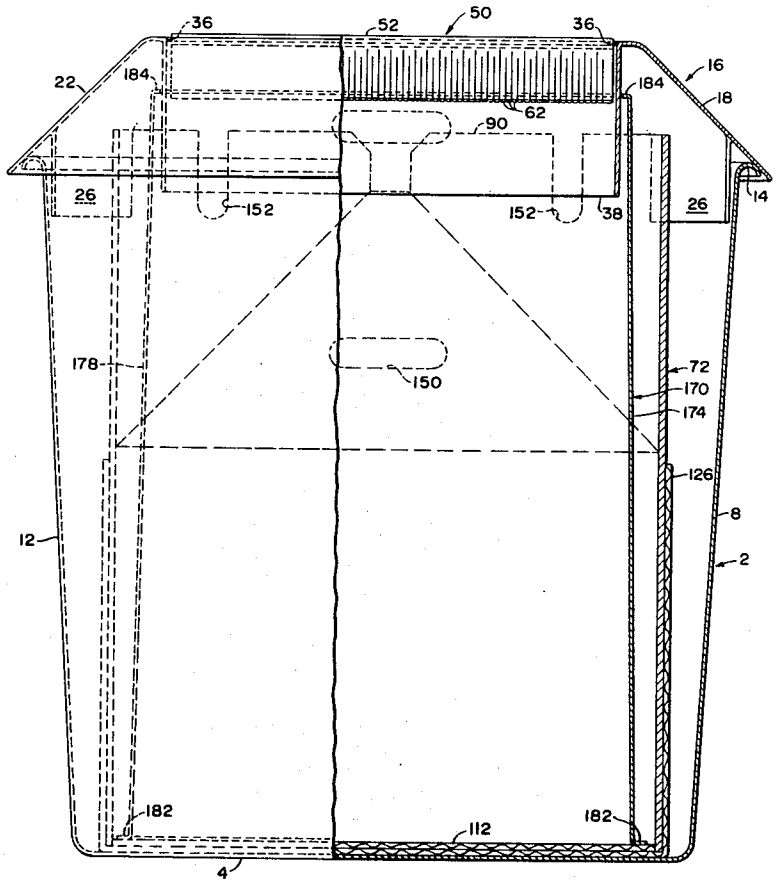
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Assistant Examiner—James R. Garrett
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[57] **ABSTRACT**

The invention is a combined holder-container system and the container thereof, for the compaction, storage, segregation, and eventual disposal of compacted trash. It comprises an outer holder, an inner removable and disposable container, a removable protective inner shield or liner, and an apertured cover adapted to prevent unwanted egress of glass shards, etc.

7 Claims, 28 Drawing Figures



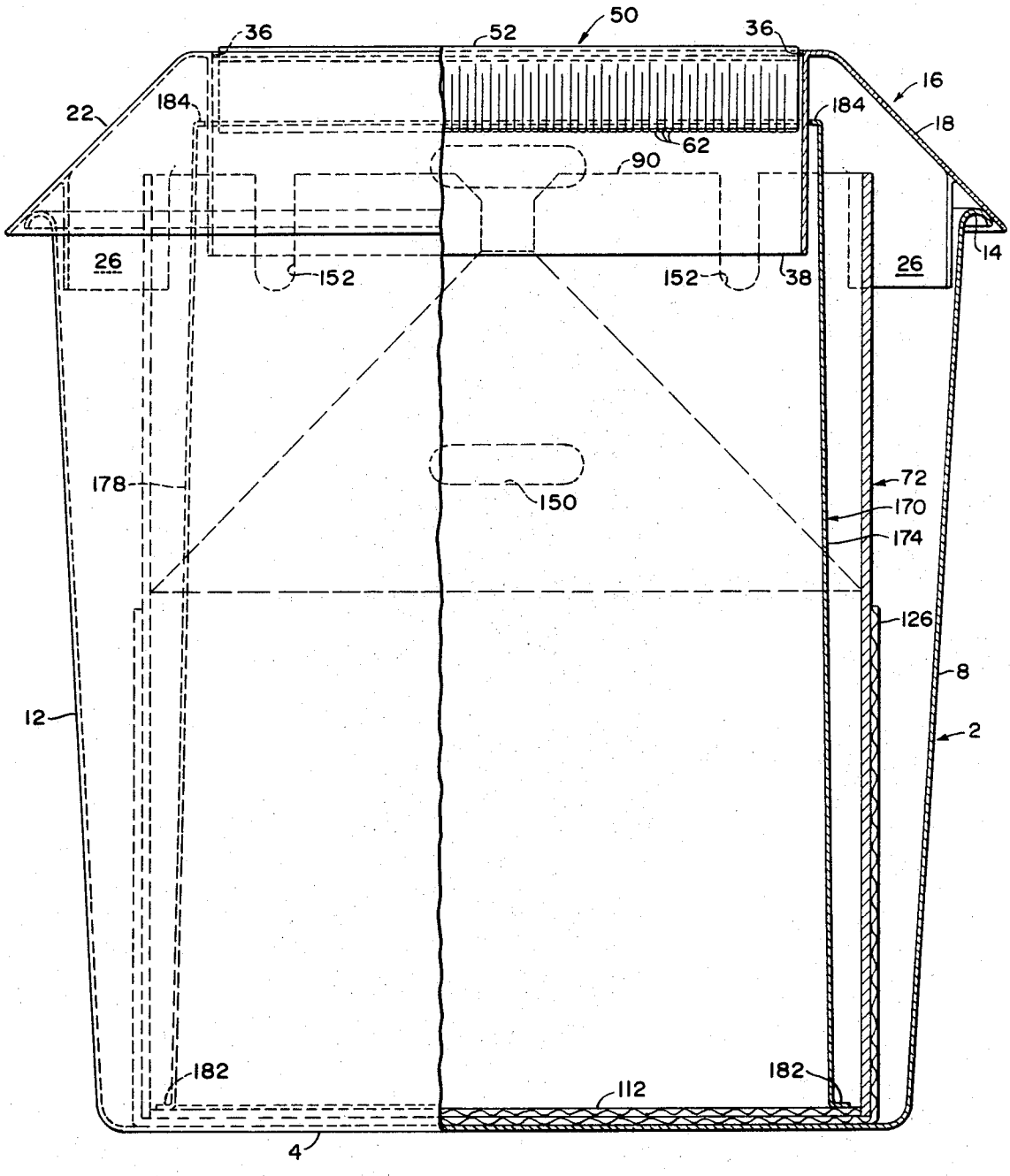


FIG. 1

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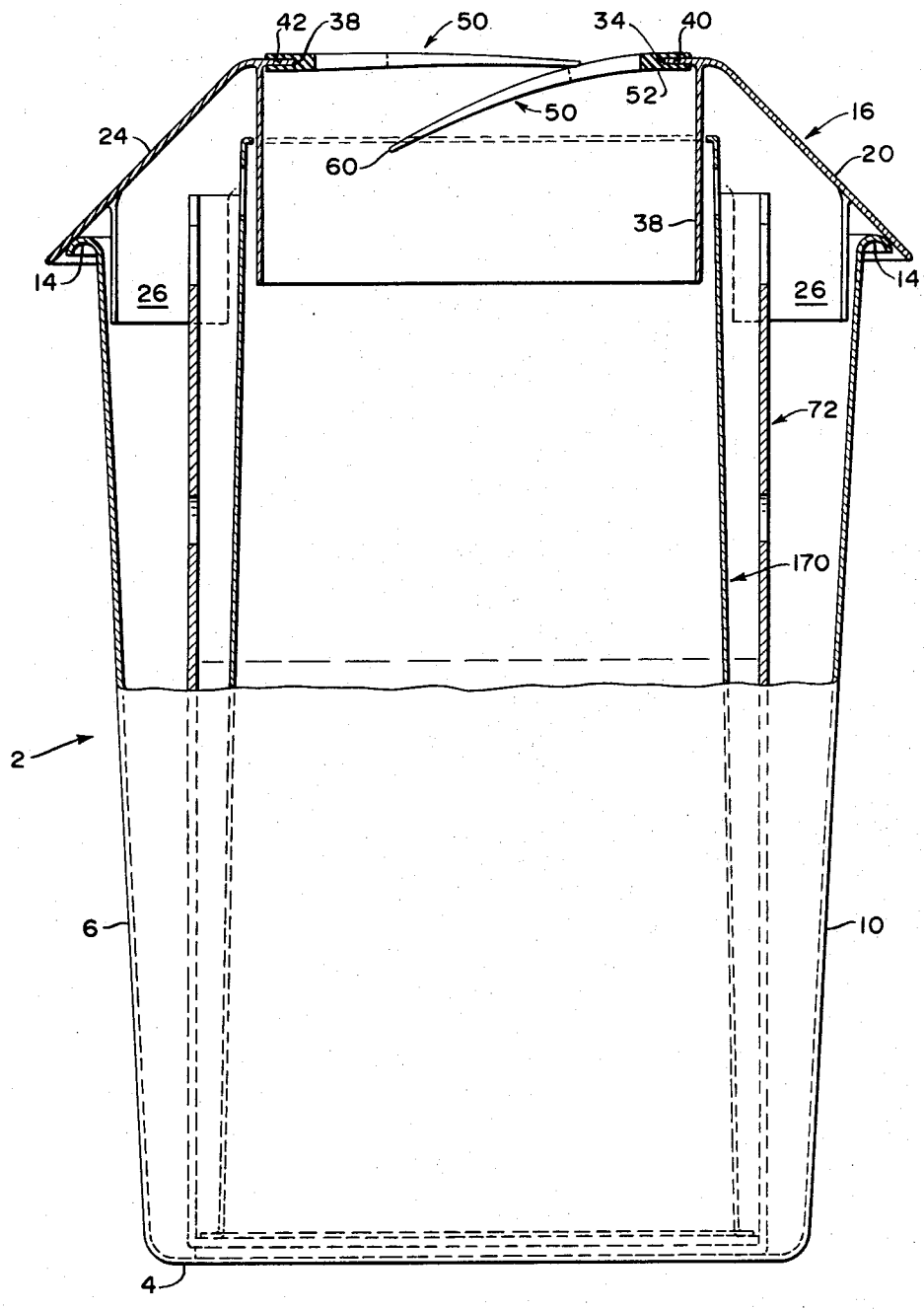


FIG. 2

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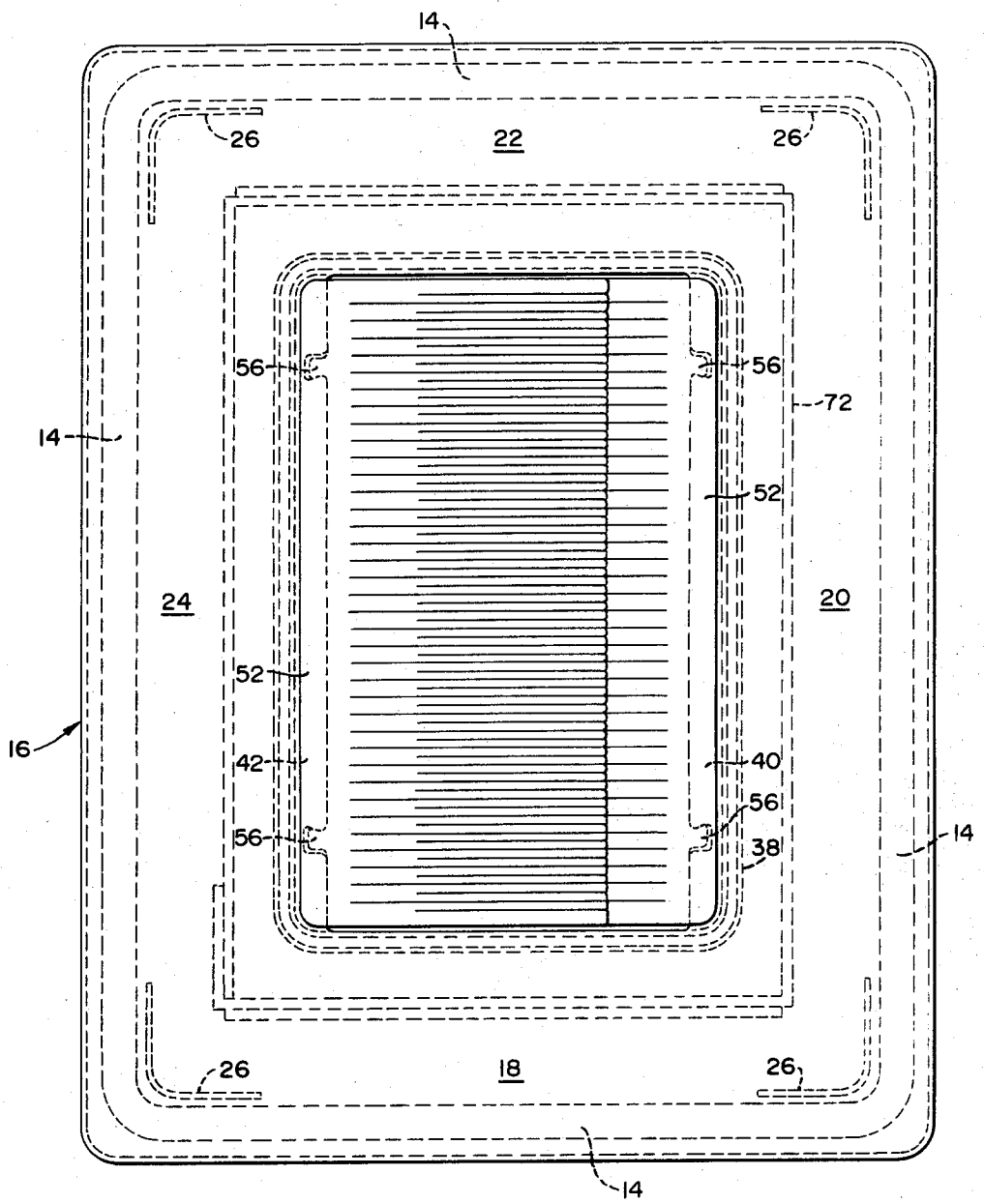


FIG. 3

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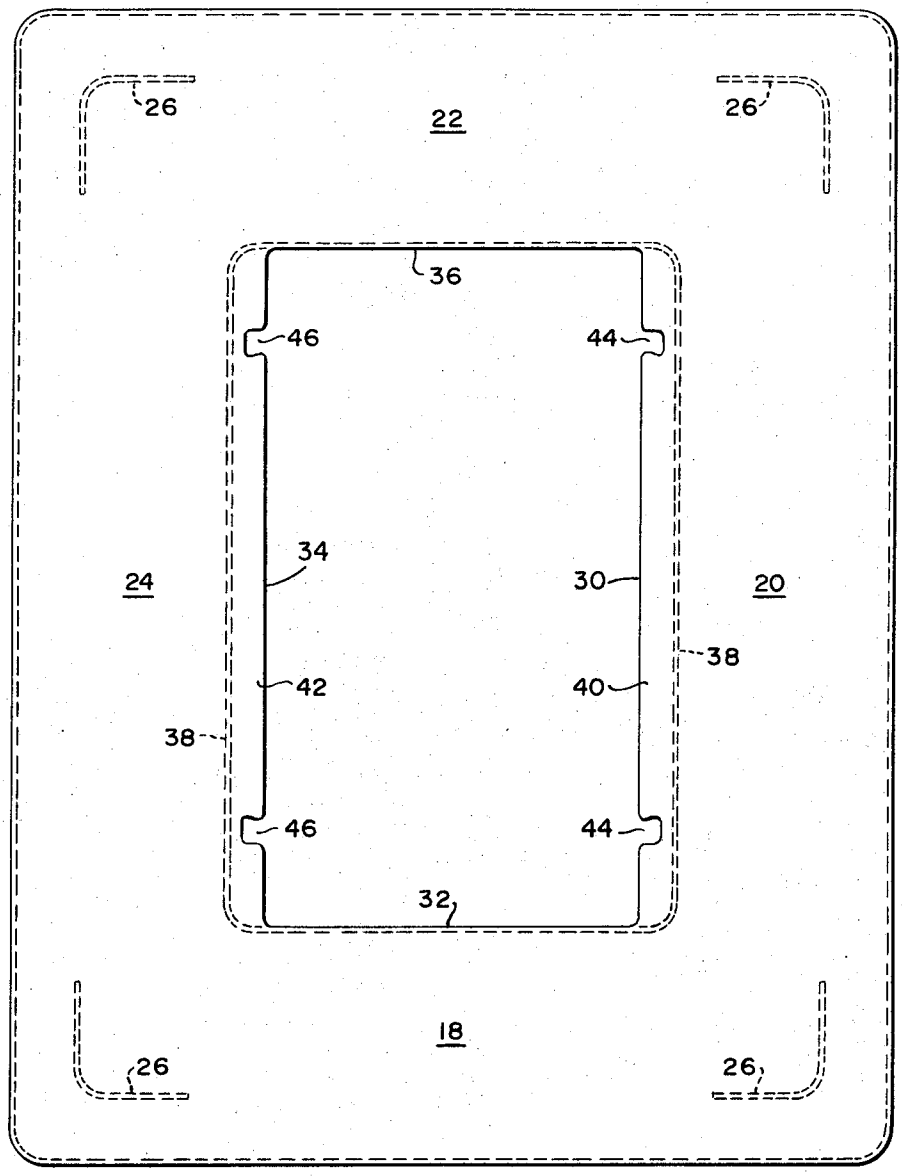


FIG. 4

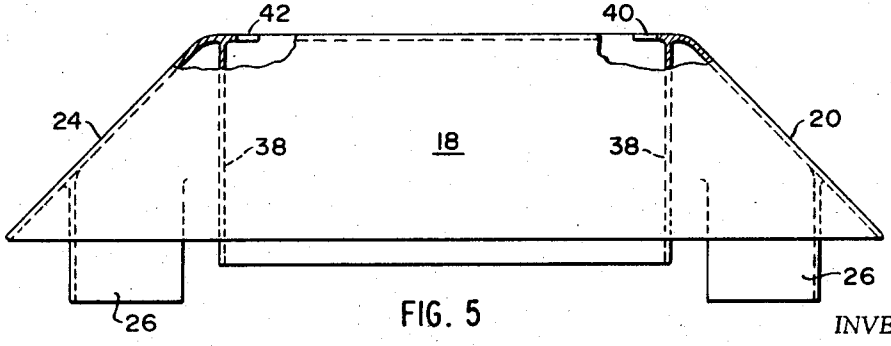


FIG. 5

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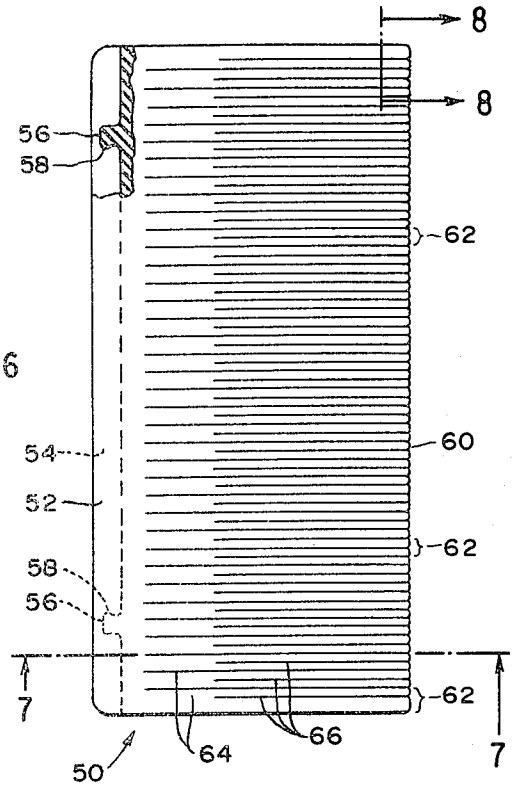


FIG. 6

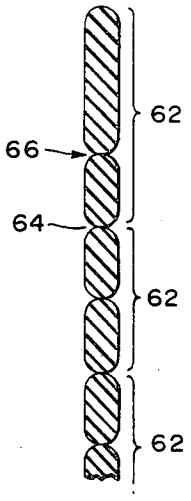
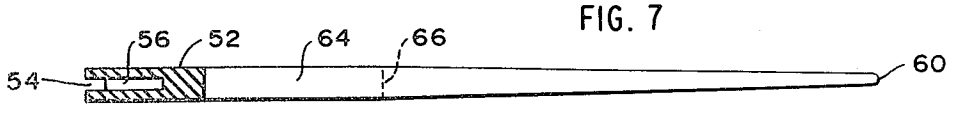


FIG. 8

FIG. 7



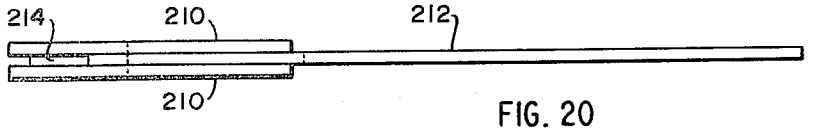


FIG. 20

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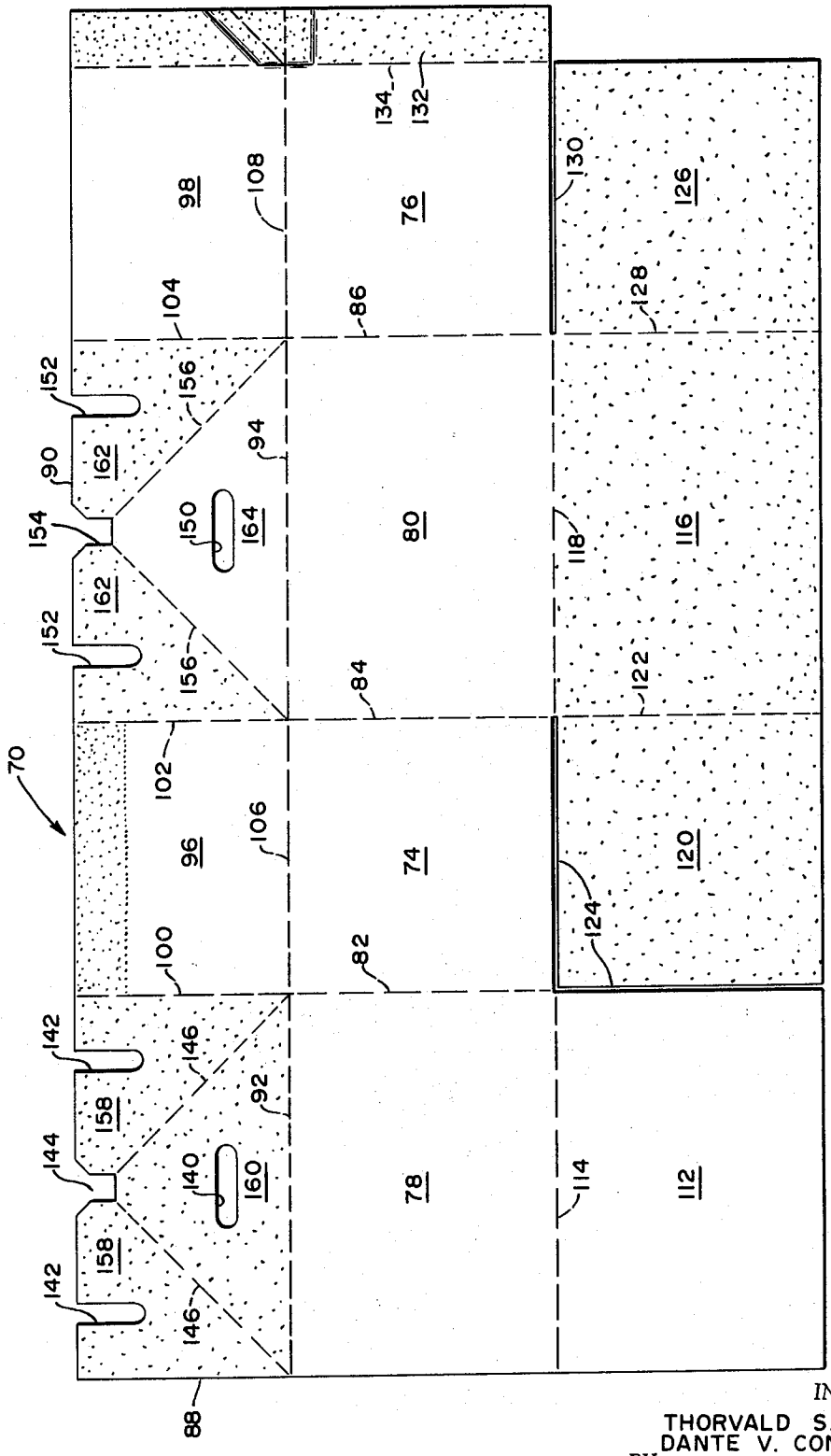
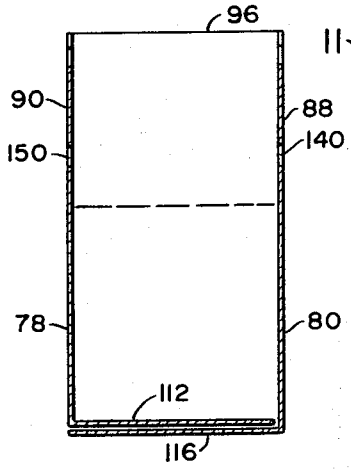


FIG. 9

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FIG. 11



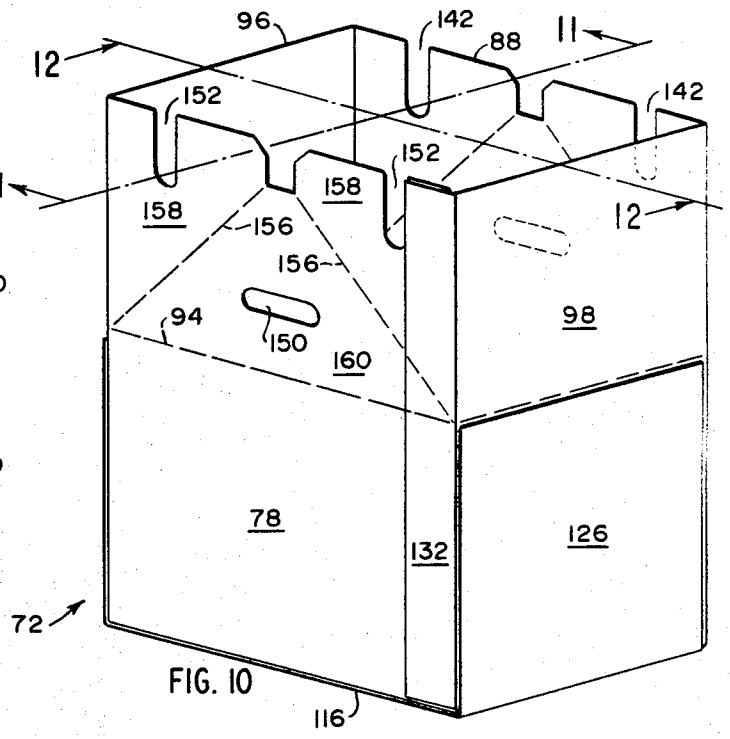


FIG. 10

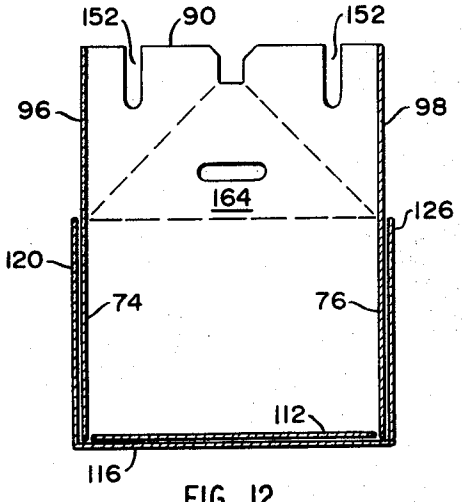


FIG. 12

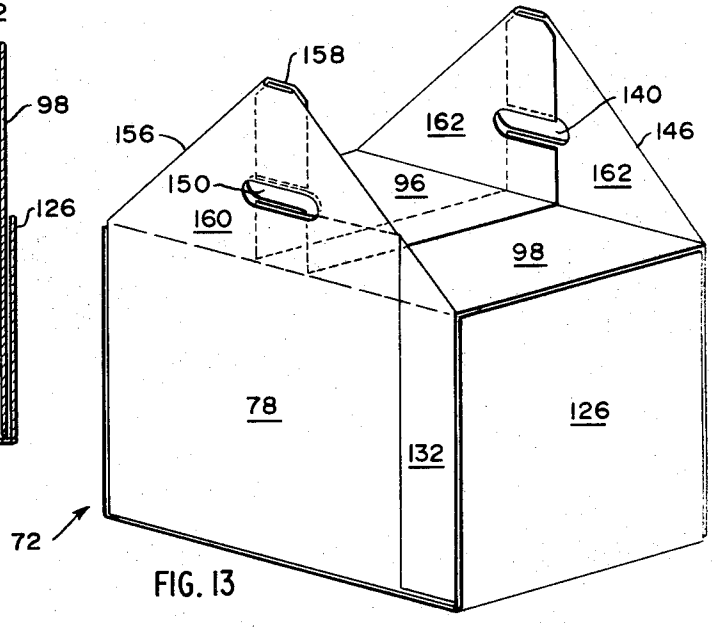
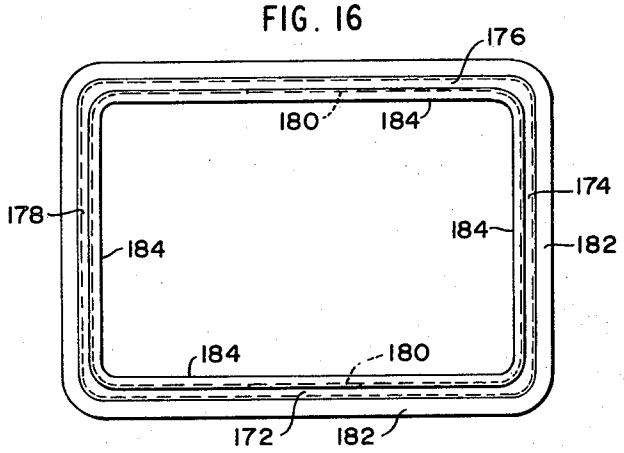


FIG. 13

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FIG. 16



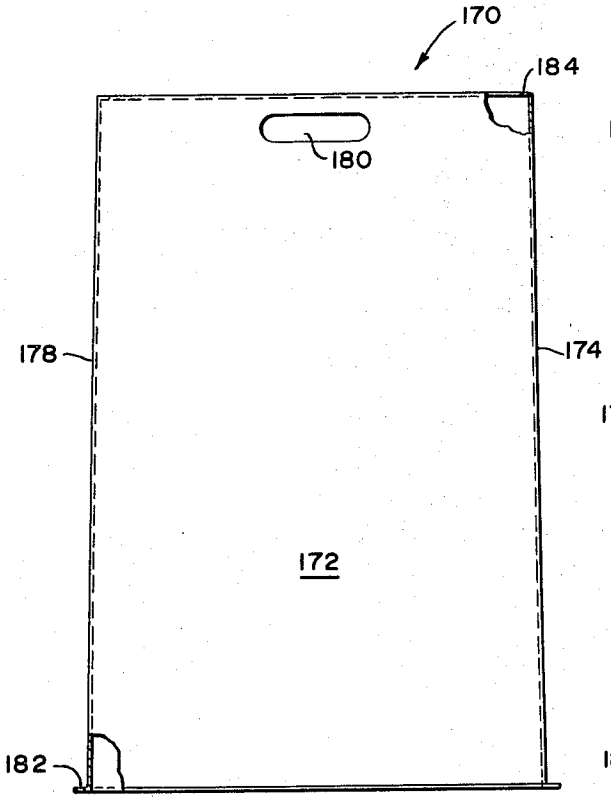


FIG. 14

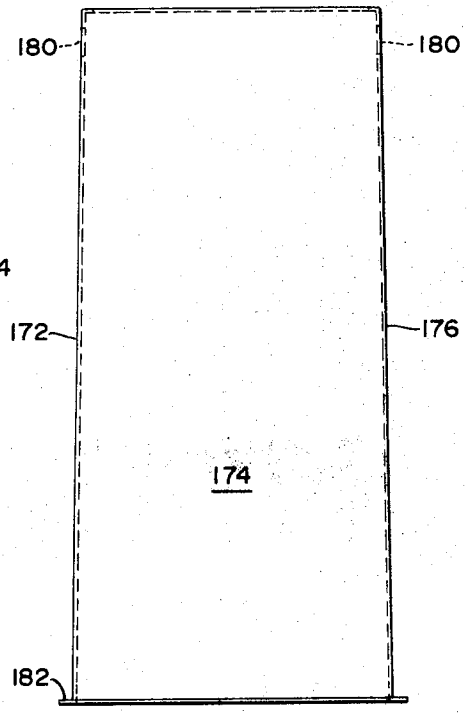
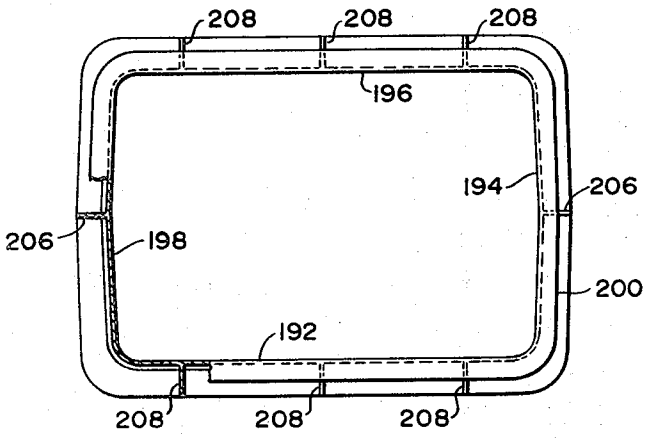


FIG. 15

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FIG. 19



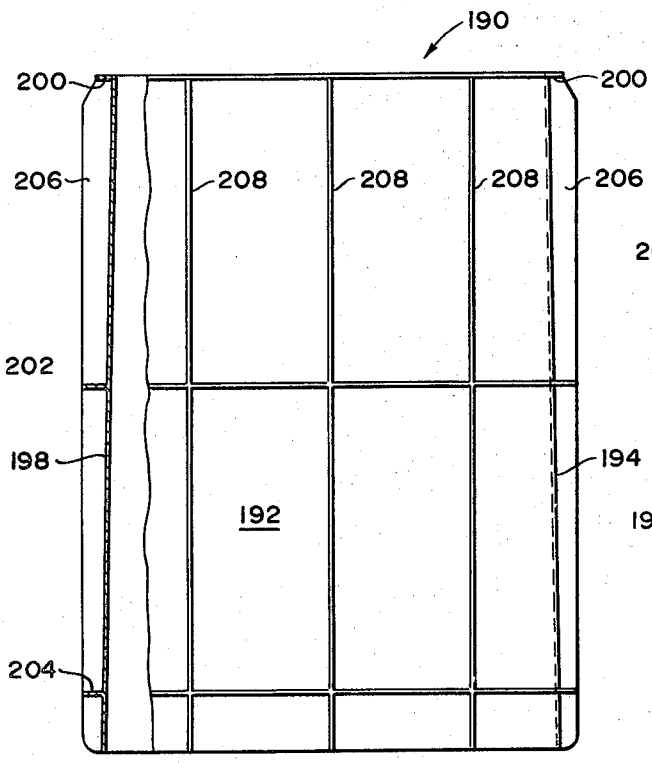


FIG. 17

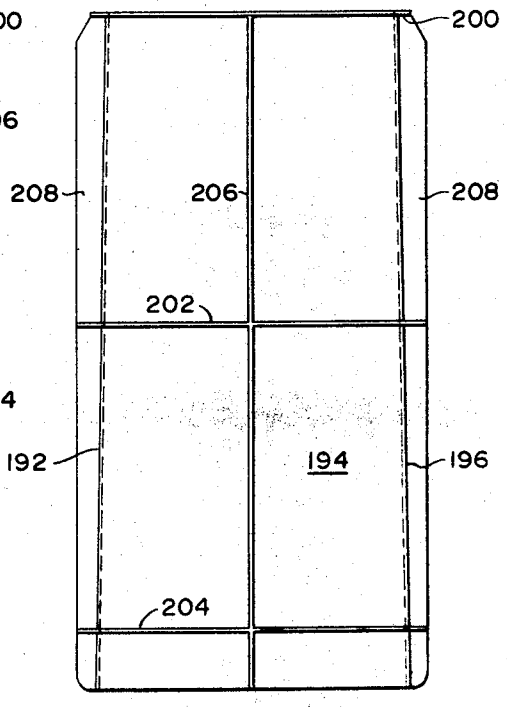


FIG. 18

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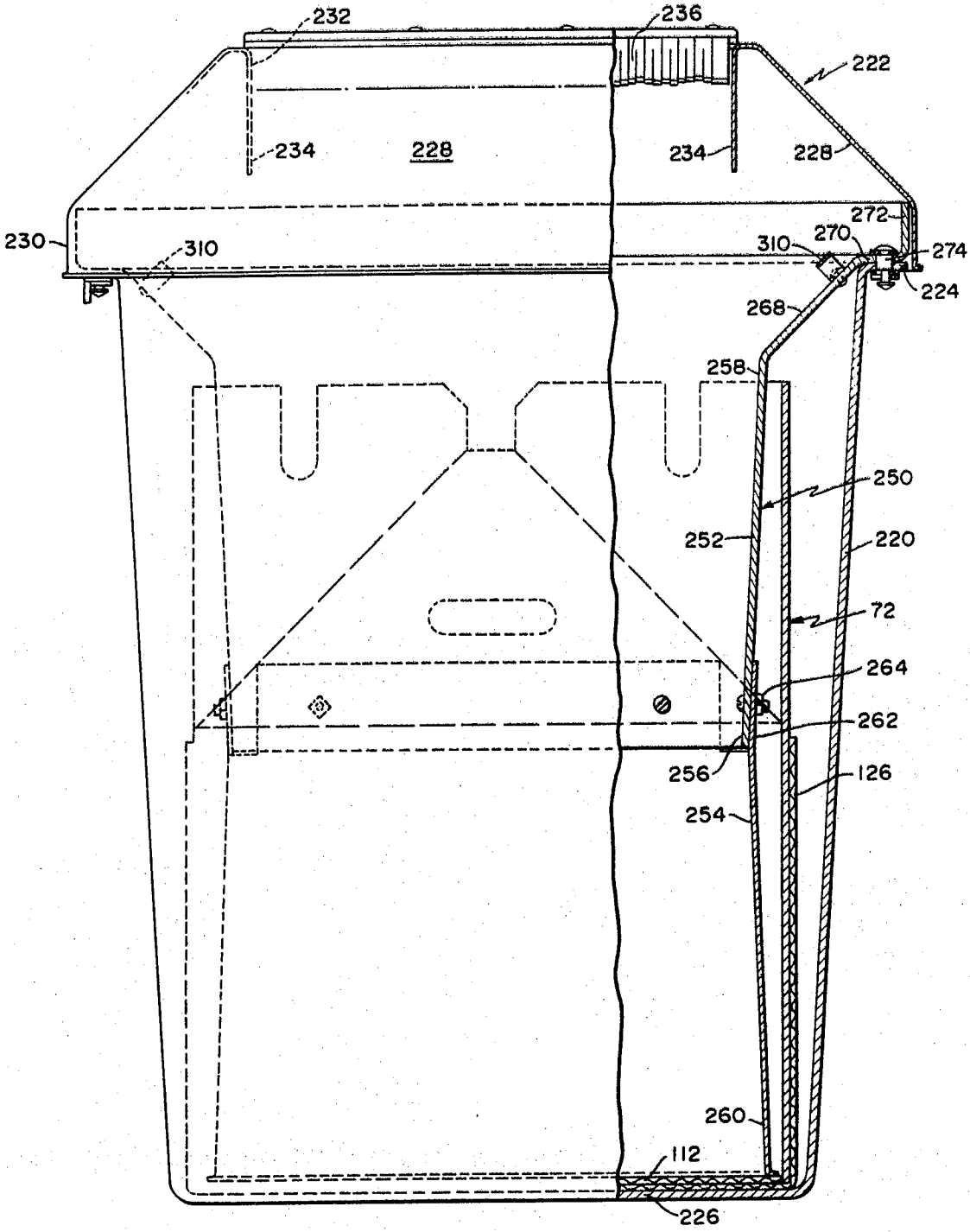


FIG. 21

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FIG. 24

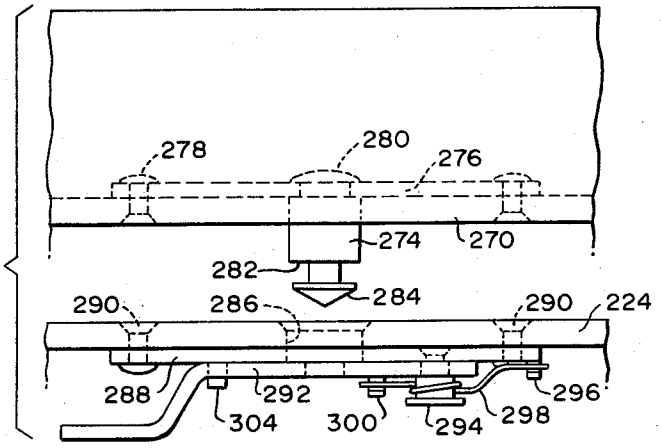


FIG. 25

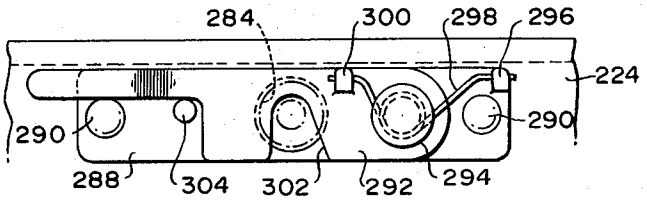
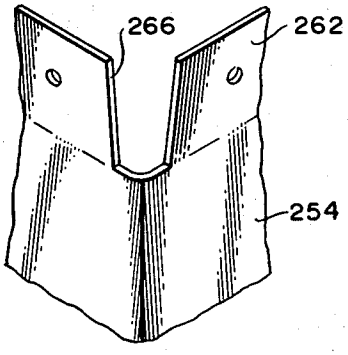


FIG. 22



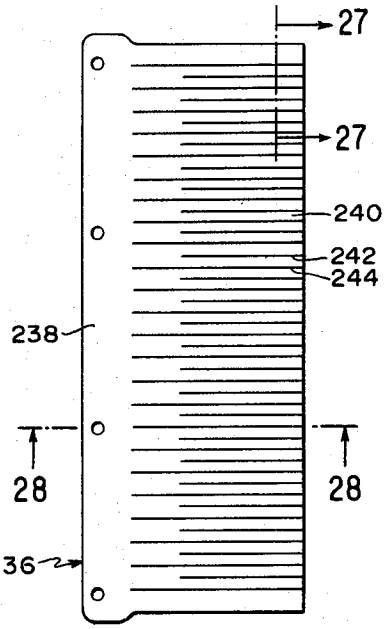


FIG. 26

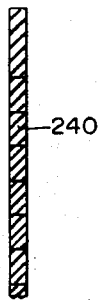


FIG. 27

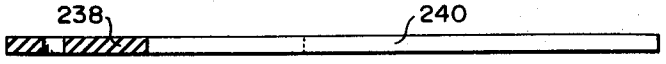


FIG. 28

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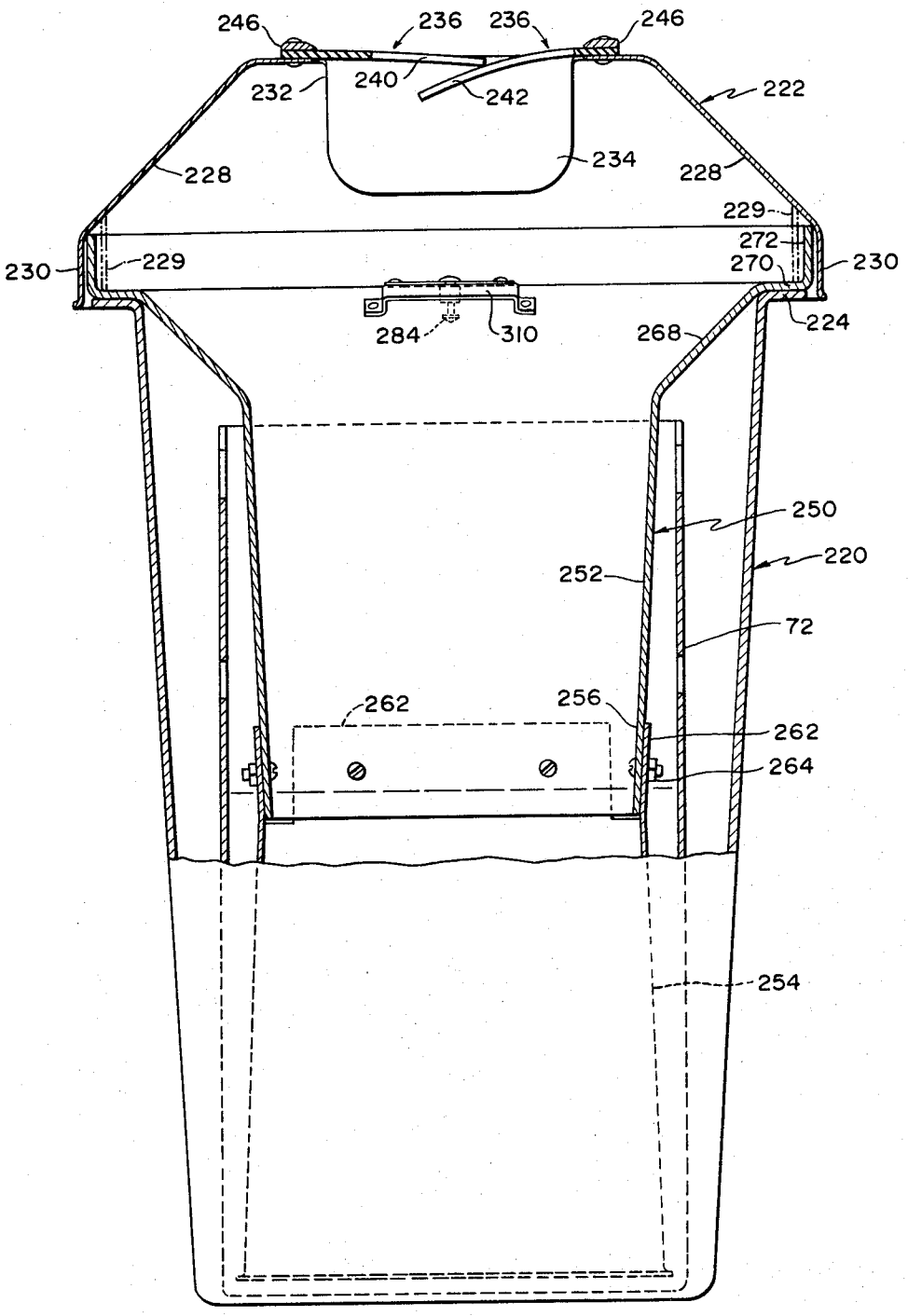


FIG. 23

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RECEPTACLE FOR WASTE MATERIAL

This application is a continuation-in-part of U.S. patent application, Ser. No. 813,477, now abandoned, filed Apr. 4, 1969.

BACKGROUND OF THE INVENTION

In today's times, trash disposal is already a world-wide problem and threatens to become more so. Part of this problem is in the space occupied by empty containers such as cardboard boxes, tin cans and bottles. The space so occupied by the average household creates problems in the home itself, particularly crowded apartment houses and residential areas, as well as in the carting of such waste to municipal dumps and in the burying of the waste.

Easy-to-use, convenient, relatively low cost, and fool-proof means are therefore greatly needed to answer these problems.

At many municipal dumps, heavy industrial type compactors are in use. Obviously, these are not suitable for home use. Many towns and cities have trash collecting trucks which attempt to compact the trash as it is collected. These trucks are expensive and the labor associated with their use is also expensive to say nothing of the cost of maintenance.

With the rapid decrease of available free land for public dumps, due to the need for land for dwellings and industry, the burial of uncompacted trash is an inefficient use of the land available. Burning is not an answer, because of air pollution.

Therefore, trash which is fully compacted at the home will answer many of the above problems, provided the means for compaction, and storage pending pick-up by dump trucks, are easy to use, long lasting, and relatively efficient. Operation of the dump trucks will be facilitated, with lessened costs, and more efficient use of land for burial will be obtained.

OBJECTS OF THE INVENTION

It is the general purpose and object of this invention, therefore, to provide a composite means for holding trash during compaction, a disposable part of this means being a container removable for holding the compacted trash while awaiting pickup and during transport to the dump.

Another object of the invention is the provision of holder of the above class in which cover means are provided for the insertion of compacting means, the cover being provided with means to prevent the escape of flying glass, etc.

Still another object of the invention is the provision of an inner shield means for preventing the disruption of the disposable container during trash compaction, the shield being readily removable.

A further object of the invention is the provision of a disposable container for trash, or for other articles or materials, which is made from one piece of flexible material in such manner as to provide reinforced handholes at the top, and reinforced sides and bottoms.

Yet another object of the invention is the provision of a container of the above class which is made from a blank by folding and gluing operations, the gluing being done by self-sticking adhesives already present on predetermined surfaces of the blank.

Other objects, purposes and advantages of the invention will be in part obvious from the description which follows, and in part pointed out specifically.

In the accompanying drawings in which are illustrated several embodiments of the invention and embodiment of inventive features thereof:

FIG. 1 is a front elevation, in section, of one embodiment of this invention;

FIG. 2 is a side elevation, partly in section, of the FIG. 1 embodiment;

FIG. 3 is a top plan view of the cover for the FIG. 1 embodiment;

FIG. 4 is a top plan view of a portion of the FIG. 3 cover;

FIG. 5 is an end elevation, partly in section, of the FIG. 4 portion;

FIG. 6 is a plan view, partly in section, of a flexible finger element for the FIG. 3 cover;

FIG. 7 is a sectional end view, taken in the direction of sight lines 7—7 on FIG. 6;

FIG. 8 is a sectional view, enlarged, of a portion of the FIG. 6 element, taken in the direction of sight lines 8—8 on FIG. 6;

FIG. 9 is a plan view showing one face of a box blank from which is to be folded the FIG. 10 disposable container of this invention;

FIG. 10 is an illustration of the container of this invention folded up from the FIG. 9 blank, and ready for insertion in the outer holder shown in FIGS. 1 and 2;

FIG. 11 is a sectional elevation taken in the direction of sight lines 11-11 on FIG. 10;

FIG. 12 is a sectional elevation taken in the direction of sight lines 12—12 on FIG. 10;

FIG. 13 is an illustration of the container of FIG. 10 shown with the container as loaded with trash (not shown) and top portions folded downwardly to close the container and to provide reinforced hand-holes for lifting;

FIGS. 14, 15 and 16 are, respectively, the side elevation, end elevation, and top plan view of a liner used in this invention;

FIGS. 17, 18, and 19 are, respectively, side elevation, end elevation, and top plan view of the liner of a second embodiment of this invention;

FIG. 20 is an end view of a further embodiment of an element of the invention;

FIG. 21 is a front elevation, partly in section, of another embodiment of the invention;

FIG. 22 is a corner portion of one unit of a two piece inner liner of this FIG. 21 embodiment;

FIG. 23 is a side elevation, partly in section, of the FIG. 21 embodiment;

FIG. 24 is an exploded view of a latch mechanism used in the FIG. 21 embodiment to hold an inner shield to the outer holder of the FIG. 21 embodiment;

FIG. 25 is a bottom view showing in greater detail the latch mechanism of FIG. 24;

FIG. 26 is a flexible finger element for the cover of the FIG. 1 embodiment;

FIG. 27 is an end view, in section, of a portion of the FIG. 26 flexible finger element taken in the direction of sight lines 27—27 thereon; and

FIG. 28 is an end elevation, partly in section, of the FIG. 26 flexible element, taken in the direction of sight lines 28—28 thereon.

Throughout the drawings, similar reference characters indicate corresponding parts. Also, throughout the drawings, dimensions of certain of the parts as shown in the drawings may have been modified and/or exaggerated for the purpose of clarity of illustration.

Referring now to FIGS. 1, 2, and 3, there are shown several views of a first embodiment of this invention. It comprises an outer holder indicated generally by numeral 2 having a rectangular cross-section, a bottom 4, front and end walls 6, 8, 10, and 12 and a turned-over lip 14 around the top perimeter. For convenience, although not necessary, the holder 2 should be tapered from top to bottom, as shown, to facilitate nesting holders in storage in warehouses, stores, etc. prior to sale. Holder 2 is made of a strong durable material such as plastic or metal, high density polyethylene being an example of a moldable synthetic resin that is preferable to use, or the holder can be of aluminum or sheet steel.

Fitted over the top of the holder is a cover 16, shaped as a truncated hollow tetrahedron, having the slanting sides 18, 20, 22 and 24. Dependent the inside of each of the four corners formed between the sides 18–24 is a short L-shaped section 26 of four sections 26 being so positioned as to nest within the corners formed by the walls 6–12, thus assisting in retaining cover 16 in place. Cover 16 may be made of high density polyethylene, the same as holder 2, in which case the sections 26 will be molded as integral parts thereof. If cover 16 is metal, then sections 26 may be fastened thereto by welding or riveting in conventional manner.

Referring to FIGS. 3, 4, and 5, cover 16 is provided with a rectangular aperture defined by edges 30, 32, 34, and 36. A skirt 38 depends from the top of cover 16, and two of the upper edges of the skirt sides are fastened to the cover adjacent the edges 32 and 36, while the other two upper edges of the skirt are attached to the cover back from the opposed edges 30 and 34, thus leaving short lips 40 and 42 as shown. (See FIGS. 1 and 2) The skirt may conveniently be molded as an integral part of cover 16 if the latter is molded, or may be metal (if cover 16 is metal) and attached thereto by riveting or welding. Skirt 38 is long enough so that when the cover 16 is in place on holder 2, the lower rim of the skirt extends below the lip 14.

Each of lips 40 and 42 has notches 44 and 46 therein, respectively, whose purpose is to aid in holding protective cover fingers in place, as will now be described. These notches are shaped with mouths narrower than their interiors.

Referring to FIGS. 6, 7, and 8 (and to FIG. 3 for assembly) with cover 16), there is shown one of a pair of finger guards. Guard 50 as shown is a single piece fabricated construction, made from translucent polyurethane. It has an edge rib 52 provided with a lengthwise channel 54. Channel 54 is interrupted by filled in portions or dividers 56 at two places, these filled-in portions or dividers being shaped with their facing edges 58 slanted toward each other as shown. Dividers 56 are spaced apart slightly less than the separation of notches 44 on the one lip 40 and notches 46 on the other lip 42. When the edge rib 52 (i.e., the channel 54) is slid over the lip 40 or 42, the guard 50 is stretched slightly to align the respective notches and dividers. The dividers will then enter the notches, and the slanting sides of the dividers will retain them in the shaped notches.

Each of the guards tapers, as shown in FIG. 7, from edge rib 52 to the other edge 60. The guards are slit to provide a plurality of adjacent pairs of fingers 62, each pair being separated by long slits 64 extending from rib 52 to edge 60, and each pair being divided into its two fingers by shorter slits 66. In this manner, a predetermined curvature of the fingers is obtained with the fingers being most flexible toward edge 60 of the guard, and stiffening quickly but continuously and flexibly toward rib 52. (See FIG. 2)

It will be noted that the guards are duplicates, two being used, and that when in place on cover 16, the fingers overlap. When, therefore, a ram is inserted into the holder and container to crush cans, boxes, and bottles placed therein, the ram can be moved freely in and around the aperture in the cover 16, with the fingers 62 folding flexibly around the ram and overlapping at other places, to prevent any flying glass or other particles from escaping through the cover.

Referring now to FIGS. 9–13, there is first shown the box blank 70 for making the folded box or container 72 of FIG. 10. Blank 70 is formed of corrugated board and comprises the two end walls 74 and 76 joined integrally to the front and back walls 78 and 80, the board being creased or scored at the joints to provide fold lines 82, 84, and 86. At the upper edges of the front and back walls 78 and 80 are respectively attached the flaps 88 and 90, each of these integral with their respectively attached walls. Fold creases or scorings 92 and 94 are provided as shown. Integrally joined to the flaps 88 and 90 are the end portions 96 and 98, portion 96 being connected integrally with end wall 74 and portion 98 being connected to end wall 76. Fold lines (creases or scorings) 100, 102, 104, 106, and 108 are provided.

Integrally attached to front wall 78 is inner bottom 112, via fold crease or score 114. Integrally attached to back wall 80 is outer bottom 116, a fold crease or score 118 being provided. Attached integrally to one edge of outer bottom 116 is an end wall reinforcing flap 120, a suitable fold crease or score 122 being provided. The reinforcing end 120 is cut loose from inner bottom 112 and end wall 74 by means of slits 124. Integrally attached to the outer edge of outer bottom 116 is another end wall reinforcing flap 126. Fold crease or score 128 is provided where shown, and end piece 126 is cut loose from end wall 76 by slit 130.

A gluing flap 132 is integrally attached to end portion 98 and end wall 76. A fold crease or score 134 is provided where shown.

Flap 88 is provided with a slot 140 to act as a hand or finger hole, and the upper edge is provided with slots 142. A central notch 144 is provided, and two fold creases or scores 146 are provided extending diagonally across the portion 88 from its lower corners to meet notch 144.

In similar manner, upper portion 90 is provided with handhole slot 150, edge slots 152, central notch 154 and fold creases or scores 156 from the lower corners to the central notch.

Notches 142 and 152 are so dimensionsed as to be the same size as the hand holes 140 and 150. They are positioned on their respective edges so that when the end portions 96 and 98 are bent inwardly and downwardly along fold lines 100, 102, 106, and 104, 134 and 108 to close the container, (see FIG. 13) notches 142 align with slot 140 to form a three-layered hand-hole slot; and similarly notches 152 align with slot 150. At this point, the triangular portions 158 of portion 88 will be flush with the remainder portion 160, and triangular portions 162 will be flush with remainder portion 164. This construction gives greatly added strength to the portions 158–160 and 162–164 for lifting a filled container.

For gluing purposes, it is preferred that the requisite surfaces be coated either with a pressure sensitive adhesive, covered with a strippable protective paper which can be pulled off at the time of assembly. Or, and this is the more suitable structure, the so-called self-sealing adhesives can be used, (often called cohesives) which dry to a non-tacky condition so as to be dry to the touch, and yet two surfaces each coated with such an adhesive will bond to each other. The particular surface adhesive is not a part of this invention, and selection of the proper kind is within the skill of the art.

If the cohesive type is used, then the following surfaces of the blank of FIG. 9 will be coated. (Assume that as viewed in FIG. 9 the viewed surface of the drawing is hereinafter called the front surface of any portion, and the back of the drawing sheet is called the back surface.)

The following front surfaces will be coated: 120, 116, 126, flap 132, portions 88 and 90, and the top edge portion of cover portion 96, (where it overlaps cover portion 98 to seal the container).

The back surfaces which will be coated are: 76, 74, 112, (those edge parts of wall 78 and portion 88 which the flap 132 will overlie) and the top edge of cover portion 98 which will underlie the edge of cover 96.

Thus, the following advantages will be noted with respect to the container 72: For strength, it has a double bottom and double end walls. When used, it is first in its fully opened position shown in FIG. 10, but when filled to the level of fold lines 92, 94, 106, and 108, the cover portions 96 and 98 can be folded inwardly and downwardly, their edges overlapping for sealing; while at the same time the triangular portions 158 and 162 join, respectively portions 160 and 164 to provide added strength to these portions and reinforce the hand holes. Furthermore, individual sealed containers can be stacked one on top of each other merely by bending the portions 160 and 164 outwardly, or inwardly to lie one on top of each other.

Referring now to FIGS. 14, 15, and 16, a removable and reusable shield, or liner 170 is shown. This comprises a rectangular, hollow tube molded of a strong, tough synthetic plastic such as Noryl, the trade name of a polyphenylene oxide, or Lexan, the trade name of a polycarbonate, both of these materials being available from General Electric Company. It has a shape similar to that of the container 72, but it is smaller so that it will fit therein. The liner 170 comprises the four walls 172, 174, 176, and 178 and is open at both ends. It has a hand hold 180 at the top. It is to be noted that the liner or shield tapers from top to bottom, being larger at the bottom than the top. The taper found suitable is about 1°–3° to the vertical to facilitate nesting liners in storage warehouses, stores, etc.

A flange 182 projects outwardly from the bottom edge of the liner, the outside dimensions of this flange being such as to

fit nicely within container **72**. The flange thus spaces the bottom of the liner in the container. An inwardly extending lip **184** is provided at the top edge of the liner, so dimensioned that the skirt **38** will fit nicely down past the lip edges (see FIG. 1). Thus, the lip serves (together with skirt **38** and cover **16**) to space the liner centrally at the top of the open container.

Instead of the liner **170**, a second embodiment **190** thereof (and therefore a second embodiment of the invention) is shown. Again, it is a tapered, rectangularly shaped, molded tube, having the walls **192**, **194**, **196**, and **198**. The tube is tapered, as shown, being larger at the bottom than at the top. A lip **200** extends outwardly to facilitate lifting the liner and/or withdrawing it from a filled container. It also reinforces the top of the liner. (See FIGS. **17**, **18** and **19**.)

In this embodiment, the liner is also reinforced laterally and longitudinally by a plurality of circumferential ribs **202** and **204**, and a plurality of vertical ribs **206** and **208**, ribs **206** being on the end walls, and ribs **208** being on the front and back walls. These several ribs also serve to space the liner inside the container. The dimensions of the top of the liner are such that skirt **38** fits nicely down inside its top. As in the other liner, approximately at 1°–3° taper to the vertical has been found to work satisfactorily.

Referring to FIG. **20**, another form or embodiment of the guard **50** is shown. In this instance the guard comprises a main sheet portion **212** which is slit to provide fingers just the same as the fingers **62** are provided in FIG. **6**. The back edge portion of sheet **212** is solid, and to the top and bottom surfaces of it are fastened, by means of a suitable adhesive, the top and bottom reinforcing layers **210**. Layers **210** extend beyond the rear edge of sheet **212** in order to provide a channel similar to the channel **54** of FIG. **6** and for the same purpose. Two dividers **214**, similar to dividers **56**, are provided on the back edge of sheet **212** to enter notches **44**, as in the case of the FIG. **6** form of guard.

To use the system, a container **72** is placed in the holder **2**, the liner **170** is placed in the container, and then the cover **16** is placed over both, sections **26** fitting down into the holder to guide and centralize the cover in position, and skirt **38** fitting into the liner as described above. As thus assembled, it will be noted that the upright portions **88**, **90**, **96**, and **98** of the container extend well up into the cover, so that the aperture of the cover overlies the open top of the container. Also, the skirt **38** fits down into the top of the container.

When thus assembled, a can or bottle to be crushed is put into the container, passing readily through the flexible fingers **62**. A ram is then thrust into the enclosure and the can or bottle is crushed by repeated blows. Successively, other waste cans, tins, bottles, boxes, etc. may be crushed or compacted.

As this continues, it will be noted that the lateral resultant of forces occurred in compaction are exerted against the liner **170** and not against the sides of the container **72**. This prevents these forces from rupturing the walls of the container, and thus is able to resist compacting forces.

When the container is filled with compacted trash up to the above specified horizontal fold lines, or even some distance above, the liner **170** is withdrawn. The "negative" draft given to the walls facilitate this withdrawal. Upon withdrawal, the compacted trash can now spread sideways, thus lowering the level of the top of the trash down to, at least, the fold lines of the top closure portions.

The container is withdrawn, and the top is sealed as shown in FIG. **13**. The sealed container is now stored to await collection by a dump truck.

Referring now to FIGS. **21–28**, there is shown yet another embodiment of the invention.

As before, a holder comprising a base **220**, and a cover **222** are provided each of which will now be described. The base **220** is made, preferably, of high density polyethylene or other strong, tough, synthetic plastic, but it could be made of a metal such as steel or stainless steel. The base has at its top the outwardly turned lip or flange **224** which, as will be described below, serves the function of providing a seat for an inside liner as well as strengthening the top portion of the base. As before, the base has a bottom **226**. Preferably, the base has a slight taper as shown.

The lid **222** is, as before, a four-sided, open-ended shell having the downwardly tapering sides **228** from which depend a skirt **230** adapted, as shown and as will be described below, to fit over (full lines in FIG. **23**) or within (dotted lines **229** in FIG. **23**) a skirt upturned at the end of an inner liner. The cover is provided at the top with an opening **232** from which depend the two interior shields **234**, one at each end of the opening. Mounted across the upper lips forming the opening **232** are the pair of flexible finger structures **236** each of which is constructed the same, and as shown in FIGS. **26–28**, comprises a comb-like structure having a back **238** and a plurality of closely adjacent but separate fingers **240**. The material of the finger structures **236** is flexible, tough, elastomerlike material such as Neoprene or the equivalent, or can be made of a flexible plasticized synthetic resin if desired. The cuts in structure are, as in the previous embodiments, so made that one cut **242** is shorter than its adjacent cut **244** so that both a sufficient degree of flexibility of the fingers will be provided and also to reduce the tendency of adjacent fingers to cross over each other. The finger structures are attached to the rim conventionally, by providing a metal clamp strip **246** lying over the back portions of each finger assembly, and then through suitable holes in the strips **246**, the back portions of the finger structures and the lip **235** of the cover, rivets are inserted and headed over to fasten the finger elements so that the fingers thereof overlap. As before, by this means and in conjunction with the shields **234**, entrance into the inside of the outer holder is provided through the flexible fingers **240**, and these fingers are sufficiently flexible to close around the shaft of the instrument used to compact rubbish within the interior of the holder. At the same time, chips are prevented from flying outside of the container.

The entire cover **222** is made of a strong material such as Lexan previously described, or its equivalent. At least a portion of the cover **222** needs to be at least translucent, and preferably transparent, in order to see the interior of the receptacle to facilitate compacting rubbish and trash therein.

As in the previous embodiments, an inner container **72** is provided, made and put together as is the inner container **72** shown in FIGS. **10–13** from the blank shown in FIG. **9**. Since the container for this embodiment is the same as that previously shown, no further description will be given at this point.

However, the liner of this embodiment is different from the liner previously shown. The liner of this embodiment (FIGS. **21** and **22**), indicated generally by numeral **250**, is a two-piece assembly having an upper piece **252** and a lower piece **254**. While a mold could be made for molding this two-piece assembly as a one-piece unit, nevertheless, such a mold would be relatively expensive and for this reason the preferred embodiment shown and described is presented.

The draft of the top portion **252** is positive (as used in this application to mean that the liner is slightly smaller in cross-section at its bottom portion **256** than it is at the upper end **258** of the upper liner). Contrary-wise, the portion **254** has a negative draft as shown. That is, the bottom end **260** of this bottom portion is larger in cross-section than the cross-section of the upper end **262**.

In this embodiment, as previously, the liner is rectangular in cross-section and the bottom end **256** and upper end **262** of the respective pieces are so sized that end **256** fits snugly down into the end **262**. When once in place, these end portions are held together securely by means of the bolts **264**. In view of the nature of the drafts, a reference to FIG. **23** will indicate that the corner portions of the upper end **262** of the bottom portion **254** of the liner are preferably relieved to make it easier to fit the respective ends together.

Referring now to FIGS. **21** and **23**, the uppermost end portion of the top piece **252** of the liner flares outwardly to form a funnel portion **268**, and the upper edge of the funnel portion

first extends outwardly to form the flat flange portion **270** and then turns upwardly to form the skirt **272**. The flare of the funnel portion **268** is sufficient to permit the assembled liner to drop down into the container **72** to come to rest approximately on the bottom thereof, at which point the flange **270** will lie against the outwardly extending flange **224** on the top of the holder base **220**. On each of opposite sides of the flange **270** is mounted a post **274** of conventional nature, the post being riveted as shown in FIG. **24** to the flange **270**. See FIGS. **23** and **24**. A reinforcing plate of steel or tough plastic **276** is preferably provided on the top of flange **270** in each instance, this plate being fastened to flange **270** by means of the rivets **278**. Post **274** is provided with a suitable shouldered structure as illustrated in FIG. **24**, so that when the end of the post is riveted over as at **280**, the post will be securely fastened to the flange **270**.

The post **274** is provided with the peripheral groove **282** and a head **284**. Provided in the flange **224** of holder base **220** is a hole **286** sized to receive the post **274** and the head **284**. A reinforcing plate **288** is fastened to the underside of the flange **224** by means of the rivets **290** in conventional manner. Pivoted to the plate **288** is the finger-latch **292**, pivoting being done by a properly shouldered stud **294**. A suitable spring retaining finger **296** projects downwardly from the plate **288** as shown, and one end of a spring **298** is held in the finger **296**. The spring takes a turn around the shank of the pivot stud or post **294**, and the other end is retained in a suitable finger **300** on the latch plate **292**. As viewed in FIG. **25**, the spring **298** biases the latch plate **292** counterclockwise about its mounting post **294**. A recess **302** is provided extending inwardly of latch **292**, this recess being sized to permit the latch to enter the groove **282** to lock the post **274** in the hole **286**. A conventional stop pin **304** is mounted to the plate **288** in order to maintain the latch plate **292** in proper position, when the latter is not engaging the post **274**.

By this means, the liner is detachably locked to the top of the outer holder. The purpose of this is to prevent the liner from rising upwardly due to the negative draft of the bottom portion **254**, when material is being compacted within the liner.

On two sides of the funnel portions of the upper part of the liner **268** are provided, if desired, a pair of handles **310**.

The operation of this last embodiment is similar to the previous one, in that to assemble the device, a container **72** is first prepared in accordance with the instructions given above, and is then inserted in the outer holder **220**. The liner **250** is assembled by fastening the portions **252, 254** together. The assembled liner is then inserted into the container **72** and comes to rest with the outer flange **270** resting against the flange **224**, as shown in FIGS. **21** and **23**. In this position, posts **274** will each have extended through its respective hole **286** as described above, and the latch plates **292** will have engaged into the recesses **282** to lock the liner **250** securely to the holder **220**. The cover **222** is then placed over the upstanding skirt **272** of the liner. (If desired, the cover **222** may be of such cross-sectional size and shape that the downwardly extending skirt **230** fits easily but not too loosely inside the upstanding skirt **272**.) It will be found that the cover is of sufficient weight and should be of a close enough fit so as to retain itself in position on the holder **220**. In this assembled position, the fingers **240** and **242** will now overlie the liner **250** and also inner container **72**, and when trash is put into the receptacle through the opening **232**, it will fall into the container. At that time, the compacting means described above may be used to flatten down and pack together the trash.

When the compacted trash has reached about the level of the reinforcing sides **126**, the cover **222** is removed, and the latch plates **292** are swung outwardly to release the latch posts **274**. The inner liner can then be withdrawn, the negative draft on the bottom portion **254** facilitating this withdrawal. Thereafter, the container **72** may be removed, carrying with it the compacted trash. The container top may then be folded down for storage first (if desired) and later disposal. Thereafter, a new container **72** is prepared and placed in the outer holder **220**. The liner **250** is placed down within the container as described above, and the catches are snapped in place. The cover **222** is then placed on top of the skirt of the liner and the device is again ready to have trash compacted therein.

As in the previous embodiments, it is the liner that makes the embodiment practical and effective. Without the liner, the outward force exerted by the trash as it is being compacted would rupture the sidewalls of the container. If the container, in an attempt to prevent this, is made a close fit against the inside walls of the outer holder **220**, it will be found that the outward force of compaction will jam the walls of the container against the walls of the holder to the extent that it will be difficult to pull the container from the holder. Thus, the liner serves the very definite function of protecting the walls of the container from rupture during compaction of the trash, and to facilitate easy removal of the container. Also, the liner is so shaped that it may be easily withdrawn (due to its negative draft) from the container when the proper level of compacted trash is reached. The instant liner is also advantageous in that because of the two drafts, it will be found possible for the store owner (or the warehouse or distributor) to stack the separate parts to occupy a minimum of space, as compared to a liner which is all one piece. The reliefs **266** at the upper corners of the bottom portion **254** of the liner, will also assist in such stacking.

It is obvious that from the above, the liner must be of a strong material, and preferably is made of a strong tough plastic such as Noryl (trademark of General Electric Company) which is a synthetic resin of the modified phenylene oxide type. Or, if desired, it could be made of steel or other strong metal. However, it will be found that there are suitable plastics on the market such as that mentioned above, which will be entirely suitable for the purpose. If desired, the top and bottom halves of the liner may be of different materials. For example, the bottom half may be of the above-mentioned Noryl material and the top half may be of a high density polyethylene or other equivalent material. The reason for thus distinguishing the two parts of the liner is that it is the bottom half which takes the force of compaction in a lateral direction, and not the top half.

It has already been mentioned that the fit of the downwardly extending skirt **230** of the top of the device should be preferably a snug fit over or within the upstanding skirt **272** of the upper end of the liner. It is pointed out that this fit is not critical.

The end shields **234** are shown as integral molded parts of the top **222**. Of course, if desired, these end shields could be made separately and attached to the top by suitable rivets, etc. The integral molded construction is, however, the preferred one.

In view of the above it will be seen that the several objects of the invention are achieved and other advantageous results attained.

It is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also, it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

As many changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings, shall be interpreted as illustrative and not in a limiting sense, and it is also intended that the appended claims shall cover all such equivalent variations as come within the true spirit and scope of the invention.

Having described the invention, what is claimed is:

1. A receptacle for articles comprising an outer holder and a removable cover therefor, the holder being adapted to receive therein a separate container and the cover being provided

with an opening overlying the holder and the container, a plurality of narrow parallel flexible fingers attached to the edges of the opening and lying closely adjacent each other, the fingers overlying the opening to flexibly close it, said fingers comprising a pair of elongated rectangular members having short sides and long sides, the fingers being made by slits extending from one long side toward the other long side, and approximately parallel to the short sides, the slits being alternately of unequal lengths, there being two of said members one each attached to opposite edges of said opening, means for locating the cover with respect to the holder so that the opening is centered thereover, and an open-ended tubular removable liner adapted to fit within the holder beneath said opening and also to fit within said container, the liner extending to the bottom of the container thereby to protect the container from rupture.

2. The receptacle of claim 1 in which at least a portion of the cover is transparent, thereby permitting a view into the receptacle interior when the cover is in place on the holder.

3. The receptacle of claim 1 in which said liner has an upper portion and a lower portion, the portions meeting at the mid-portion of the liner, the upper portion tapering inwardly from an upper portion of the liner to the mid-portion, and the bottom portion flaring outwardly from the mid-portion to the bottom end of the liner.

4. The receptacle of claim 3 in which said liner comprises two tubular members in engagement in end to end relationship at said mid-portion, and including means for holding the members together in said engagement.

5. The receptacle of claim 3 in which the upper end portion of said liner is provided with a generally radially extending flange, and a skirt extending upwardly from the outer perimeter of the flange, said holder being provided with a generally radially extending rim adapted to receive thereagainst said flange when the liner is in the holder, and means for detachably fastening said flange, and rim together to hold the liner in the holder, said cover having a downwardly extending skirt portion dependent from the periphery thereof and adapted to fit into engagement with said upwardly extending skirt to position the cover on the holder.

6. The receptacle of claim 3, in which the upper end portion of the liner flares outwardly to provide a funnel to guide material into the holder.

7. A receptacle for articles comprising an outer holder and a removable cover therefor, the holder being adapted to receive therein a separate container and the cover being provided with an opening overlying the holder and the container, a skirt extending downwardly from the cover adjacent and surrounding the periphery of the opening, a plurality of narrow, parallel, flexible fingers attached to the edges of the opening and lying closely adjacent each other, the fingers overlying the opening to flexibly close it, means for locating the cover with respect to the holder so that the opening is centered thereover, and an open-ended tubular removable liner adapted to fit within the holder beneath said opening and also to fit within said container, the liner extending to the bottom of the container thereby to protect the container from rupture, the liner being slightly tapered in shape with the top end of the liner being smaller in cross-section than the bottom end of the liner, thereby to facilitate withdrawal of the liner from the container when the latter is filled with articles, and said liner being provided with an outwardly extending flange around its bottom rim adapted to fit within the bottom of said container to locate the liner centrally with respect thereto, the top rim of the liner having an inwardly extending flange adapted to encircle said skirt to locate the top of the liner centrally with respect thereto.

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