PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 5: (11) International Publication Number: WO 91/14634 A1 B65D 65/00, 75/00 (43) International Publication Date: 3 October 1991 (03.10.91)

(81) Designated States: AT (European patent), AU, BE (European patent), BR, CA, CH (European patent), DE (European patent), DK (European patent), ES (European patent), FR (European patent), GB (Euro (21) International Application Number: PCT/US91/01383 (22) International Filing Date: 1 March 1991 (01.03.91) GR (European patent), IT (European patent), JP, KR, LU (European patent), NL (European patent), SE (Eu-(30) Priority data:

502,152 29 March 1990 (29.03.90) US ropean patent).

(71) Applicant: S.C. JOHNSON & SON, INC. [US/US]; Patent Section, M.S. 077, 1525 Howe Street, Racine, WI 53403-5011 (US).

(72) Inventor: RICCHIO, Danny, T.; 1111 Indiana Street, Racine, WI 53405 (US).

(74) Agents: SANDER, Dorothy, L. et al.; Patent Section M.S. 077, S.C. Johnson & Son, Inc., 1525 Howe Street, Racine, WI 53403-5011 (US).

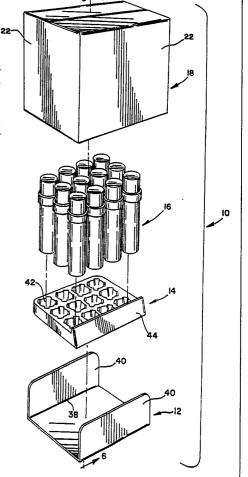
Published

With international search report.

(54) Title: SIMPLIFIED CONTAINER ASSEMBLY

(57) Abstract

A two-part container assembly (10) made up of a cover (18) and a filler insert (12), both of which are assembled from precut unitary blanks. The filler insert (12) has a section base (36) and two end flap forming sections (40). Articles to be packaged are placed upon the bottom of the filler insert (12), optionally first into a separate tray (14). Then the cover (18) is placed over the filler insert (12) and the assembly (10) inverted and then fastened together. A method of forming and assembling is also disclosed.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	P.C	c •		
		ES	Spain	MG	Madagascar
AU	Australia	FI	Finland	ML	Mali
BB	Barbados	FR	France	MN	Mongolia
BE	Belgium	GA	Gabon	MR	Mauritania
BF	Burkina Faso	GB	United Kingdom	MW	Malawi
BG	Bulgaria	GN	Guinea	NL	Netherlands
BJ	Benin	GR	Greece	NO	Norway
BR	Brazil	HU	Hungary	PL	Poland
CA	Canada	IT	Italy	RO	Romania
CF	Central African Republic	JP	Japan	SD	Sudan
CG	Congo	KP	Democratic People's Republic	SE	Sweden
CH	Switzerland		of Korea	SN	Senegal
Ci	Côte d'Ivoire	KR	Republic of Korea	SU	Soviet Union
CM	Cameroon	LI	Liechtenstein	TD	Chad
CS	Czechoslovakia	LK	Sri Lanka	TG	Togo
DE	Germany	LU	Luxembourg	US	United States of America
DK	Denmark	MC	Monaco	US	United States of America

Simplified Container Assembly <u>Technical</u> Field

This invention relates to the field of containers for

the shipping and storage of articles and more particularly to
a simplified two-part container assembly having a top cover
and a bottom filler insert. After the article or articles to
be contained are placed on the filler insert, the cover is
placed over the insert and the assembly inverted and then

sealed with tape. A display or holding to hold the articles
tray may be placed upon the filler insert, and the article or
articles placed in the tray before assembly and sealing of
the container.

Background Art

- Since many articles are packaged and shipped in containers, most often containers made of corrugated material, there are many known configurations and methods for assembling such containers. Most such container assemblies are intended to be used for the shipping and storage of manufactured products (although various types of containers for fruits and vegetables are also known). Many such containers form a display tray for the products, or as well as being useable for shipping and storage. Thus important considerations are economy of material use, ease of assembly and filling, and compactness.
- U.S. Pat. No. 3,767,109 to Paige, "Box Cover and Combination Cover and Box", claims, inter alia, a box cover for use with a box having a bottom wall, two opposed side walls, two opposed end walls, and two flaps wherein one flap extends inwardly over each of the end walls. The cover has two hingedly attached end portions which are adapted to be received between the box flaps and the side walls adjacent thereto.
- U.S. Pat. No. 3,955,671 to Ockey, "Shipping and Display 35 Carton", claims a carton for shipping and displaying comprising an open top carton member and a second carton member configured to fit over the open top of the first carton in telescopic relation wherein one of the cartons has a tab means and the other carton has a slot means.

over them and secured.

U.S. Pat. No. 4,784,271 to Wosaba, II, et al., "Tear Strip Openable Shipping/Display Container with Butt Joint discloses a container, formable from a single blank, that has a circumferential tear strip. When the tear strip is pulled off, the assembled container separates into a base and a top.

U.S. Pat. No. 4,471,870 to Uhlig, "Package for Holding a Plurality of Discrete Container Assemblies", discloses a two-part container assembly having a tray member with an encircling rim and a unitary cover shroud having a handle

means. A plurality of containers interconnected by a carrier, rest in the tray and the top cover shroud is placed

Summary Disclosure of the Invention

The present invention is a simplified two-part container 15 assembly for the shipping and storage of articles comprising a filler insert and a cover. Both the filler insert and the cover are formed from unitary precut blanks having fold lines thereupon, the blanks being preferably formed of corrugated material. The filler insert has a base and two upstanding 20 flaps. The assembled cover has the general shape of an openended box. A tray, designed to hold a plurality of articles and to be placed upon the base of the filler insert may be utilized. The container assembly, once the articles to be contained have been placed onto the filler insert and the 25 cover placed over the filler insert in such a way that the flaps of the filler insert project upwardly within the cover, may be secured by taping or other fastening means. height of the cover and the height of the articles to be contained are correlated so that minimal free head space 30 exists within the container assembly. The method of assembling, filling, and sealing the container assembly is also disclosed.

The present invention thus offers a simplified, compact container assembly. The cover and filler insert are

35 assembled from a minimum of material. The compact fit between the articles contained and the dimensions of the container means that no waste space exists inside the container assembly and thus more articles can be stored or shipped within a given volume of space on a shelf or in a

transport vehicle than would be the case with less space efficient containers. The simplicity of the container assembly, having a minimum of fold lines and areas needing attachment, also means that the labor required to assemble, fill, and seal the containers is minimized.

When the tray is to be removed from the carton, it is only necessary to cut the tape between each end of the filler insert and the side walls of the cover. Due to the structure of the cover side walls and the upwardly extending ends of the filler insert, neither the tray nor the contained articles will be subject to being cut. Thereafter, the cover is simply lifted upward and the tray and articles therein are ready to be displayed.

Brief Description of the Drawings

Figure 1 is an exploded perspective view of the container assembly, showing the filler insert, the tray, an array of articles to be inserted into the tray, and the cover.

Figure 2 is a plan view of the blank from which the 20 cover of the container assembly is assembled.

Figure 3 is a plan view of the blank from which the filler insert of the container assembly is assembled.

Figure 4 is a perspective view of the cover of the container in a partially assembled position.

Figure 5 is a perspective view of the cover in a second partially assembled position in which the configuration shown in Figure 4 has been opened out.

Figure 6 is a side sectional view of the assembled container, taken along line 6-6 indicated on Figure 1, 30 showing the manner in which the parts shown in Figure 1 are fitted together.

Best Mode for Carrying Out the Invention

Figure 1 shows an exploded perspective view of the container assembly, generally indicated as 10. Container assembly 10 comprises filler insert 12, tray 14, articles 16 for shipment and storage within container assembly 10 and cover 18. Cover 18 and filler insert 12 are preferably formed from corrugated material. Cover 18 is assembled from cover blank 20 which is shown in Figure 2. Cover blank 18

has four sidewall forming sections 22. Each side forming section 22 integrally formed therewith and extending upwardly along one edge thereof, a top forming flap 24. Each top forming flap 24 is separated from its adjoining sidewall forming section 22 by top forming flap fold line 26 and separated from its adjacent top forming flap 24 by top flap slot 28 (which is, in the manufacture of cover blank 20, formed by half-slotting the cover blank).

Integrally formed with but separated from by attachment 10 flap fold line 30 is attachment flap 32, which extends outwardly from one end sidewall forming section 22.

Figure 3 shows filler insert forming blank 34. Filler insert forming blank 34 has a filler base section 36 and, integrally formed therewith but separated therefrom along opposite edges of filler base section 36 by filler flap fold lines 38, a pair of filler flap forming sections 40.

Figure 4 shows a perspective view of cover 18 in a partially assembled position. Attachment flap 32 has been overlapped with and fastened to, preferably with gluing means 20 (although other fastening means such as stapling or taping are possible) one edge of the sidewall forming section 22 located at the opposite end of cover blank 20 from attachment flap. This half-assembled configuration is the one in which a manufacturer of the cover and filler inserts of the 25 container assembly would most conveniently ship the cover to a packager for use. The filler insert would most conveniently be shipped in the flat form shown in Figure 3.

Figure 5 shows cover 18 in a second partially assembled position. In this position, the fastened cover forming blank configuration shown in Figure 4 has been set upright and opened out. To complete assembly of cover 18, top forming flaps 24 are bent downward and inward along top forming flap fold line 26, two oppositely located ones at a time.

The outer, exposed pair of top forming flaps 24 are then 35 cleaned by any conventional fastening means, such as taping or gluing.

Filler insert 12 is formed from filler insert forming blank 34 by bending filler flap forming sections 40 upwardly along filler flap fold lines 38, as can be seen in Figure 1. Tray 14 is shown in Figure 1. Tray 14 is formed somewhat like an open ended box structure with one or more tray recesses 42 located on the top surface of the box structure into which articles or products to be shipped and stored can be placed. An array of such articles is depicted as 16 in Figure 1. Obviously, the number of tray recesses 42 within tray 14 will vary with the number of articles to be accommodated. Tray 14 is preferably made of thermoformed plastic and preferably has, running along one side, an enlarged flat display or label accepting area 44.

Figure 6 shows, in side sectional view, assembled container assembly 10 showing tray 14 and filler insert 12 fitted into and within cover 18. Tray 14 rests upon filler base section 36 of filler insert 12 and filler flap forming sections 40 extend upwardly within cover 18. Articles 16 sit within tray recesses 42 in tray 14.

The method of assembly of container assembly 10 shown in Figure 6 is indicated in Figure 1. The final assembly step, not shown, is for the assembler to invert container

20 assembly 10 with its contents and fasten cover 18 to filler base section 36 of filler insert 12 with any conventional fastening means, preferably taping means.

For such inversion to be successfully accomplished, articles 16 and the height of cover 18 must be coordinated so 25 as to minimize open head space within assembled container assembly 10.

Other modifications of the container assembly of the present invention will become apparent to those skilled in the art from an examination of the above patent Specification and drawings. Therefore, other variations of the present invention may be made which fall within the scope of the following claims even though such variations were not specifically discussed above.

Industrial Applicability

The simplified container assembly of the present invention can be used for the shipment and storage of products of many kinds. The only limitations are that the products must fit securely and closely against the top of the

cover of the container so that inversion is possible without product damage.

However, this relative size limitation presents one of the major advantages of the container assembly: it becomes an extremely compact and space efficient container. It is more compact than a standard shipper carton, thereby allowing more cartons to be loaded per pallet.

The other major advantages of the present invention are the minimization of material usage and simplicity and 10 efficiency of assembly.

The advantages noted above, size, economy and efficiency, all combine to produce a shipping and storage container that (using the display/storage trays as well as the cover and filler insert) has proved to produce a significant savings when utilized in a production line for the packaging of an array of products.

What I claim:

1. A separable two-part container assembly adapted for the shipment and storage of articles characterized by:

a filler insert having a substantially rectangular base section having four base section outer edges and extending upwardly from and hingedly connected by fold lines to two oppositely located edges of the base section, two filler flaps,

and a cover having a substantially rectangular top

10 section having four top section outer edges and extending
downwardly from and hingedly connected by fold lines to each
top section outer edge; and

a sidewall section, having four sidewall sections, each sidewall section having two sidewall side edges and a

sidewall bottom edge, each sidewall section being joined to the adjoining sidewall section along said sidewall edges, the four sidewall sections thus defining an opening at one end of the cover,

the filler insert being sized so that it fits within the opening of the cover formed by the four sidewall sections when the cover is placed over the filler insert with the filler insert flaps extending upwardly within the cover,

the filler insert and the cover being joined by taping means, the taping means joining the base section outer edges of the filler insert to the sidewall bottom edge of the cover.

- 2. A two-part container assembly according to Claim 1 further comprising:
- a tray adapted to accept and hold the articles to be

 30 shipped and stored in the container assembly, the tray being adapted to sit upon and not extend beyond the base section of the filler insert so that the tray section, when sitting on the base section of the filler insert is located between the filler flaps.
- 35 3. A container assembly according to Claim 1 wherein the filler insert and the cover are both formed from corrugated material.
 - 4. A container assembly according to Claim 2 wherein the tray is formed of thermoformed plastic and has a first

5

plurality of individual recessed areas therein to accept and hold a second like plurality of articles.

A separable two-part container assembly adapted for the shipment and storage of articles characterized by:

a filler insert having a substantially rectangular base section having four base section outer edges and extending upwardly from and hingedly connected by fold lines to two oppositely located edges of the base section, two filler flaps, and a cover having a substantially rectangular top 10 section having four top section outer edges and extending downwardly from and hingedly connected by fold lines to each top section outer edge;

a sidewall section, each sidewall section having two sidewall side edges and a sidewall bottom edge, each sidewall 15 section being joined to the adjoining sidewall section along said sidewall edges, the four sidewalls thus defining an opening at one end of the cover section the substantially rectangular base section being sized so that it fits within the opening of the formed cover section by the four sidewall 20 sections when the cave section is placed over the filler insert with the filler insert flaps extending upwardly within the cover section,

the filler insert and the cover being joined by taping means, the taping means joining the base section outer edges 25 of the filler insert to the sidewall bottom edge of the cover, and

- a tray adapted to accept and hold the articles to be shipped and stored in the container assembly, the tray being adapted to sit upon and not extend beyond the base section of 30 the filler insert so that the tray section, when sitting on the base section of the filler insert is located between the filler flaps.
- A container assembly according to Claim 5 wherein the filler insert and the cover are both formed from corrugated 35 material.
 - 7. A container assembly according to Claim 6 wherein the tray is formed of thermoformed plastic and has a first plurality of individual recessed areas therein to accept and hold a second like plurality of articles.

- 8. A container assembly according to Claim 6 wherein the tray has integrally formed therewith and coextensive with one edge thereof, a label accepting area extending above the base of the tray.
- 5 9. A separable two-part container assembly adapted for the shipment and storage of articles characterized by:
- a filler insert having a substantially rectangular base section having four base section outer edges and extending upwardly from and hingedly connected by fold lines to two oppositely located edges of the base section, two filler flaps, and
- a cover having a substantially rectangular top section having four top section outer edges and extending downwardly from and hingedly connected by fold lines to each top section outer edge, a sidewall section, each sidewall section having two sidewall side edges and a sidewall bottom edge, each sidewall section being joined to the adjoining sidewall section along said sidewall edges, the four sidewalls thus defining an opening at one end of the cover the substantially rectangular base section being sized so that it fits within the opening of the formed cover section by the four sidewall sections when the cave section is placed over the filler insert with the filler insert flaps extending upwardly within the cover,
- the filler insert and the cover being joined by taping means, the taping means joining the base section outer edges of the filler insert to the sidewall bottom edge of the cover, and
- a tray adapted to accept and hold the articles to be

 shipped and stored in the container assembly, the tray being adapted to sit upon and not extend beyond the base section of the filler insert so that the tray section, when sitting on the base section of the filler insert is located between the filler flaps, the filler insert and the cover both being

 formed from corrugated material, and the tray being formed of thermoformed plastic and has a first plurality of individual recessed areas therein to accept and hold a second like plurality of articles.

- 10. A container assembly according to Claim 9 wherein the tray is formed of thermoformed plastic and has a first plurality of individual recessed areas therein to accept and hold a second like plurality of articles.
- 5 11. A container assembly according to Claim 9 wherein the tray has integrally formed therewith and coextensive with one edge thereof, a label accepting area extending above the base of the tray.
- 12. A method of assembling a separable two-part container 10 assembly adapted for the shipment and storage of articles characterized by:

providing a corrugated filler insert blank and a corrugated cover blank,

the corrugated filler insert forming blank having a

15 substantially rectangular base forming section having four
base section outer edges, the base forming section having,
each integrally formed therewith but separated therefrom by a
filler insert forming a fold line located along two opposed
base forming section outer edges, two outwardly extending
20 filler insert flaps,

the corrugated cover forming blank having a substantially the form of an elongated rectangle, the elongated rectangle being divided by two sidewall forming fold lines into four essentially rectangular sidewall

- forming, each sidewall forming having, integrally formed therewith but separated therefrom by, a top forming flap fold line located along a top outer edge of the sidewall forming, an outwardly extending top forming flap, the cover forming blank further having, integrally formed therewith but
- 30 separated therefrom by an attachment flap fold line located along one side edge of the cover forming blank, an attachment flap,

folding the two filler insert flaps upwardly along the two filler insert forming flap fold lines,

folding the cover forming blank along the sidewall forming fold line so that the attachment flap located along one side edge of the cover forming blank overlaps a second side edge of the cover forming blank,

ŧ

fastening by adhesive means the attachment flap to and over the second side edge of the cover forming blank,

opening out the fastened cover forming blank into the configuration of an essentially rectangular shaped box open 5 at top and bottom ends,

folding first one oppositely located pair and then a second oppositely located pair of the four top forming flaps inwardly and downwardly along each top forming flap fold line to form a top section for a cover formed from the cover forming blank,

fastening the upper pair of top forming flaps to each other with taping means to secure the top section of the cover,

placing the articles to be shipped and stored onto the 15 base section of the filler insert and between the filler flaps of the filler insert

fitting the cover over the filler insert and the articles situated upon the filler insert in such a way that the filler insert flaps extend upwardly within the cover,

inverting the assembled cover and filler insert container assembly, and

fastening the exposed base section of the filler insert to two or more sidewalls of the cover, thus forming and securing the fully enclosed substantially rectangular two25 part container assembly.

15. A method of assembling a separable two-part container assembly adapted for the shipment and storage of articles characterized by:

providing a corrugated filler insert blank and a 30 corrugated cover blank,

the corrugated filler insert blank having a substantially rectangular base forming section having four base section outer edges, the base forming section having, each integrally formed therewith but separated therefrom by a filler insert forming a fold line located along two opposed base forming section outer edges, two outwardly extending filler insert flaps,

the corrugated cover forming blank having a substantially the form of an elongated rectangle, the

elongated rectangle being divided by three sidewall forming fold lines into form essentially rectangular sidewall forming section, each sidewall forming having, integrally formed therewith but separated therefrom by, a top forming flap fold line located along a top outer edge of the sidewall forming, an outwardly extending top forming flap, the cover forming blank further having, integrally formed therewith but separated therefrom by an attachment flap fold line located along one side edge of the cover forming blank, an attachment flap,

folding the two filler insert flaps upwardly along the two filler insert forming flap fold lines,

folding the cover forming blank along the sidewall forming fold line so that the attachment flap located along one side edge of the cover forming blank overlaps a second side edge of the cover forming blank,

fastening by adhesive means the attachment flap to and over the second side edge of the cover forming blank,

opening out the fastened cover forming blank into the configuration of an essentially rectangular shaped box open at top and bottom ends,

folding first once oppositely located pair and then a second oppositely located pair of the four top forming flaps inwardly and downwardly along each top forming flap fold line to form a top section for a cover formed from the cover forming blank,

fastening the upper pair of top forming flaps to each other with taping means to secure the top section of the cover,

providing a tray adapted to accept and hold the articles to be shipped in stored in the container assembly,

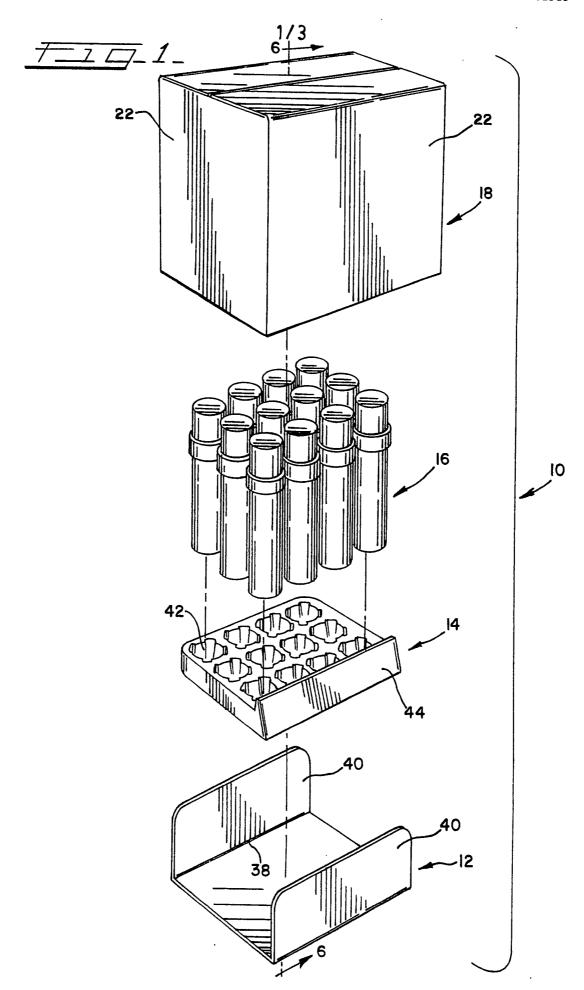
placing the articles to be shipped and stored onto the base section of the filler insert and between the filler flaps of the filler insert

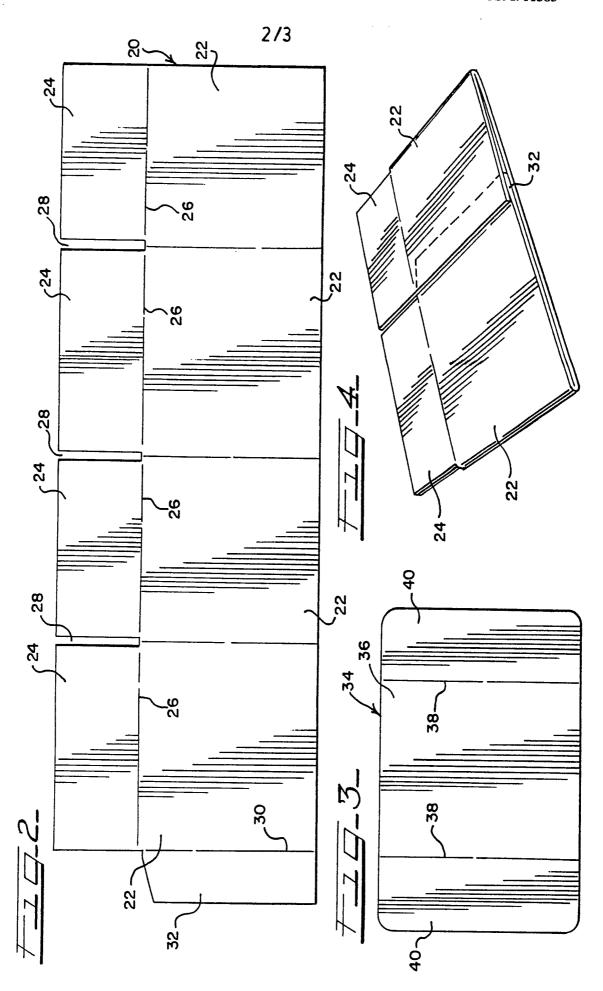
placing the articles to be shipped and stored into the tray upon the base section of the filler insert and between the filler flaps of the filler insert

fitting the cover over the filler insert and the articles situated upon the filler insert in such a way that the filler insert flaps extend upwardly within the cover,

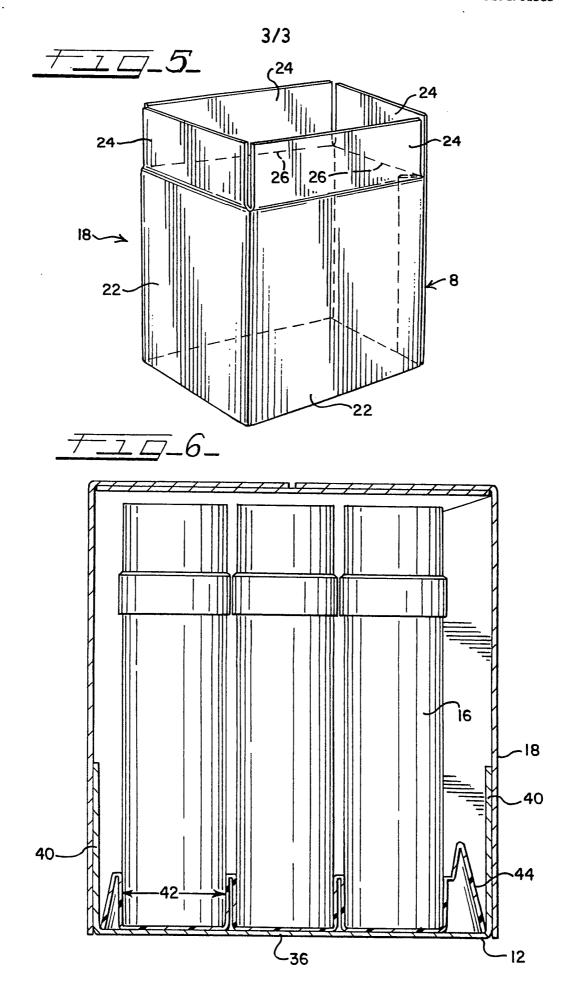
inverting the assembled cover and filler insert 5 container assembly, and

fastening the exposed base section of the filler insert to two or more sidewalls of the cover, thus forming and securing the fully enclosed substantially rectangular two-part container assembly.





۵



INTERNATIONAL SEARCH REPORT

International Application No PCT/US91/01383

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) 3							
Accordin	IPC(5) B65D 65/00 B65D 75/00						
US CL 206/427							
[S SEARCHED						
	Minimum Documentation Searched 4						
Classification System Classification Symbols							
US CL 206/203,206/427,206/433,206/443,206/386,206/600 206/821,206/320,206/598,229/125.19							
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁵							
III. DOC	IMENTS CONSIDERED TO BE RELEVANT 14						
Category *	Citation of Document, 16 with indication, where appropriate, of the relevant passages 17	Relevant to Claim No. 18					
<u>X,P</u> Y,P	US, A, 4,927,026 (GOSSLER ET AL.) 22 MAY 1990 (SEE FIGURES 1 AND 5)	1 2-11					
Y	US, A, 3,661,318 (MILLER ET AL.) 09 MAY 1972 (SEE FIG. 1, #40)	1					
Y	US, A, 4,567,981 (HEADON) 02 FEBRUARY 1986 (SEE FIG. 3)	2-11					
Α	US, A, 4,471,870 (UHLIG) 18 SEPTEMBER 1984						
A	US, A, 4,762,226 (GATTON) 09 AUGUST 1988						
A	US, A, 4,667,823 (WOLFE, JR. ET AL) 26 MAY 1987						
A	US, A, 4,615,443 (DEFFNER ET AL.) 07 OCTOBER 1986.						
A	US, A, 4,331,234 (GILBERT) 25 MAY 1982						
		!					
· Cassia		1					
*Special categories of cited documents: 15 "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international eligible document but published on or after the international eligible document but published on or after the international eligible document but published on or after the international eligible document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention eligible date and not in conflict with the application but cited to understand the principle or theory underlying the invention.							
filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "X" document of particular relevance; the claimed invencing involve an inventive step "Y" document of particular relevance; the claimed invencing invention of the particular relevance; the particular relevance invention of the particular relevance i							
"O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filling date but							
later	than the priority date claimed "&" document member of the same p	atent family					
	FICATION Actual Completion of the Leave to 10						
Date of the Actual Completion of the International Search ² Date of Mailing of this International Search Report ²							
02 APRIL 1991 UI MAY 1991							
International Searching Authority 1 Signature of Authorized Officer 20							
ISA/US DAVID T FIDET							

III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)						
Category *	Citation of Document, 16 with indication, where appropriate, of the relevant passages 17	Relevant to Claim No 18				
A	US, A, 4,085,846 (WILLIAMS) 25 APRIL 1978					
A	US, A, 3,974,658 (STARRETT) 17 AUGUST 1976					
A	US, A, 3,949,876 (BRIDGES ET AL.) 13 APRIL 1976					
A	US, A, 2,902,199 (BRETON) 01 SEPTEMBER 1959					
A	US, A, 2,894,671 (NICHOLLS) 14 JULY 1959					
A	US, A, 1,367,069 (MACKINNON) 01 FEBRUARY 1921					
		·				
	,					
]						
	· · · · · · · · · · · · · · · · · · ·					