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54 **Cardboard container.**

57 A cardboard container, comprising a lid assembled with a sleeve (10), the lid having a polygonal main panel provided with tabs preperpendicularly extending from the periphery of the main panel, and the sleeve having a polygonal closure provided with flaps (11) extending inwards from the upper edge of the closure, each tab having protrusions and being inserted into a slot (13) formed in the corresponding flap of the sleeve. The slot is provided with an enlarged central opening (13a) leaving a relatively narrow opening (14) at each end of the slot to enable the protrusions of the tab to engage the side edge of the narrow end openings of the slot from underneath the flap, so as to firmly secure the lid with the sleeve.

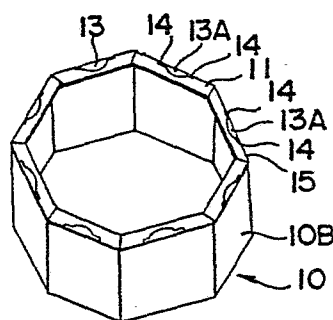


FIG. 2

TITLE OF THE INVENTION

Cardboard Container

BACKGROUND OF THE INVENTION

This invention relates to a cardboard container,

5. particularly a cardboard container of polygonal shape having a substantial height.

A paper container of polygonal shape, which comprises a lid, a sleeve and a base respectively formed from a paper blank is proposed in U. S. Patent No.

10. 3,877,631, granted to the same inventor. The lid consists of a polygonal main blank having side flaps along the periphery of the main blank, the side flaps being interconnected side by side to form into a continuous wall around the main blank. The sleeve is
15. formed from an elongated paper blank which is folded into a polygonal closure. The base is formed from a paper blank which is folded into a tray-like shape having a bottom plate and a wall closure on the bottom plate. To use the container according to this patent
20. the object to be contained is first placed on the base, then the sleeve is placed to enclose the object, and finally the lid is placed on top of the sleeve.

In the aforesaid arrangement a separate bonding material such as an adhesive tape or the like is needed if one wishes to secure the lid onto the sleeve so as to simplify the handling process. Furthermore, the formation

5. of the side flaps of the lid requires an extra area of the paper blank from which the lid is fabricated, and the process for forming such side flaps is complicated.

The present invention therefore proposes an improved lid and sleeve construction.

10. The main object of this invention is to provide a cardboard container comprising a lid and sleeve which are secured together without the need of a separate bonding material.

It is another object of this invention to provide

15. a cardboard container comprising a lid having a main panel provided with tabs extending prependiculary from the side edges of the main panel, and a sleeve provided with flaps having slots with enlarged openings and extending inwardly from the upper edges of the sleeve, the tabs having

20. protrusions and being inserted into the slots of the flaps with the protrusions of the tabs interlocking with the flaps so as to secure the lid with the sleeve.

BRIEF DESCRIPTION OF THE INVENTION

This invention provides a cardboard container

25. comprising a lid having a polygonal main panel with tabs extending prependiculary from the side edges of the main

- panel, and a sleeve having the same polygonal shape with flaps extending from and folded inwardly along the upper edge of the sleeve; each flap having a slot along the fold edge, and the lid being placed on top of the sleeve,
5. with each tab of the lid being inserted into each slot of the corresponding flap of the sleeve. Each tab is provided with protrusions extending along the side edge of the main panel of the lid so that the protrusions engage with the flaps from underneath to lock the tab
10. with the flap. In a preferred embodiment the slot of the flap has an enlarged central opening and relatively narrow end openings to facilitate the insertion and also to enable the interlocking engagement of the protrusions of the tabs with the flaps.

15. BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an oblique, perspective view of the lid of a first embodiment of the cardboard container of this invention.

- Fig. 2 is an oblique, perspective view of the sleeve of the first embodiment of the cardboard container of this invention.
- 20.

Fig. 3 is a plan view of the blank from which the sleeve of Fig. 2 is fabricated.

- Fig. 4 is a fragmentary schematic view of the tab and flap employed in the cardboard container of this invention.
- 25.

Fig. 5 is an oblique, perspective view of the lid of a second embodiment of the cardboard container of this invention.

Fig. 6 is an oblique, perspective view of the sleeve of the second embodiment of the cardboard container of this invention.

Fig. 7 is an oblique, perspective view of the lid and sleeve of a third embodiment of the cardboard container of this invention.

Fig. 8 is an exploded, oblique perspective view of an example of a complete set of the cardboard container of this invention.

Fig. 9 is a fragmentary schematic view of a modified tab to cooperate with a modified slot.

15. DETAILED DESCRIPTION OF THE INVENTION

Figs. 1 and 2 respectively show the lid and sleeve of a first embodiment of the cardboard container of this invention. Lid 20 is cut and formed from a cardboard blank, not shown, to comprise a polygonal main panel 20A, shown in Fig. 1, as an octangon having a plurality of straight side edges 23, each side edge 23 having a tab 21 extending therefrom and being perpendicular to the main panel 20A. Each tab 21 is provided with two protrusions 24 at the two opposite ends of tab 21, each protrusion 24 extending along side edge 23 to form an opening 22 between

side edge 23 and protrusion 24, the opening 22 being capable of accomodating therein the thickness of flap 11 of sleeve 10 to be described below. Thus a neck portion 23A of length L2 is formed as shown in Fig. 4.

5. Tab 21 may be formed into a crescent shape in order to facilitate its insertion into slot 13 formed in flap 11, also described below.

Sleeve 10, as shown in Fig. 2, is cut and formed from cardboard blank 10A as shown in Fig. 3. Sleeve 10

10. consists of a polygonal enclosure, which may be an octangon which corresponds with the shape of lid 20, having a plurality of side panels 10B, each side panel 10B having a flap 11 extending from upper edge 15 of side panel 10B and folded inwards flush with upper edge 15.
15. Each flap 11 is provided with a slot 13 along upper edge 15 of side panel 10B to correspond with tab 21 of lid 20. Slot 13 preferrably has an enlarged central opening 13A of length L1 with an arcuated edge 13B, to leave a relatively narrow, straight opening 14 at each
20. end of slot 13. The length L1 of enlarged central opening 13A is substantially equal to or slightly greater than length L2 of neck 23A of tab 21. Sleeve 10 is fabricated from blank 10A as shown in Fig. 3, which is a rectangular strip of cardboard divided into a
25. plurality of sections 10C with fold lines 16, each

section 10C being equivalent to a side panel 10B of sleeve 10. Flap 11 with slot 13 is provided at the upper edge of each section 10C. One end of blank 10A is provided with a tongue 12 having a tip 12A to be inserted into a slot 17 formed at the opposite end so as to connect together the two opposite ends when blank 10A is folded into a polygonal enclosure, or sleeve 10, as shown in Fig. 2. In assembling lid 20 with sleeve 10, lid 20 is placed on the top side of sleeve 10 with tabe 21 of lid 20 inserted into slots 13 of flaps 11 of sleeve 10. Though tabs 21 always tend to deform slightly when lid 20 is cut from the cardboard blank, the enlarged central opening 13A of flaps 11 enables easy insertion of tabs 21 into slots 13. As soon as tabs 21 are inserted into slots 13, the slightly deformed tabs 21, particularly protrusions 24, tend to spring back, thus causing protrusions 24 to engage with the side edges of the narrow ends of slot 13 from underneath flap 11, so as to interlock tabs 21 with flaps 11 thus firmly securing lid 20 to sleeve 10 without the need of a separate bonding material.

Figs. 5 and 6 respectively show the lid and sleeve of a second embodiment of the cardboard container of this invention, wherein tabs 21 are provided on every other side edge 23 of lid 20, and flaps 11 are provided on every other upper edge 15 of sleeve 10 in the same manner as lid 20.

Fig. 7 shows a third embodiment of the cardboard container of this invention. This embodiment proposes a rectangular lid 20R having two opposite sides respectively provided with two tabs 21 to cooperate with a rectangular sleeve 10R having two opposite flaps 11 respectively

5. provided with two slots 13, tabs 21 and slots 13 being of the same configuration as those of previous embodiments.

Lid 20 and sleeve 10 may be used in combination with a tray or base of any type. Fig. 8 shows one example

10. in which the base 10 proposed by U.S. Patent No. 3,877,631 is conveniently used.

The tab and slot may be modified as shown in Fig. 9, wherein modified tab 21X has a protrusion 24X at one side and modified slot 13X has one enlarged opening

15. 13XC and one narrow opening 14X. Protrusion 24X engages from underneath with the side edge of narrow opening 14X as modified tab 24X is inserted into the modified slot 13X.

While the cardboard container of this invention has been described with reference to the preferred

20. embodiment illustrated in the drawings, it is to be understood that the construction and arrangement of the cardboard container of this invention may be otherwise modified without departing from the scope of this invention as defined in the appended claims.

I Claim:

1. A cardboard container, comprising:
 - a lid member having a main panel provided with a plurality of straight side edges and tabs
 5. extending from said side edges, each one of said tabs being generally perpendicular to said panel and having a protrusion extending along said side edge; said lid member being assembled with
 10. a sleeve member having flaps extending inwards from the upper edge of said sleeve, said flaps having slots along said upper edge of said sleeve to correspond with said tabs of said lid, each of said slots having an
 15. enlarged opening and a relatively narrow opening;
- with said tabs inserted into said slots of
- said flaps and with said protrusions of said
20. tabs engaged with side edges of said narrow openings of said slots from underneath said flaps.

2. A cardboard container as recited in claim 1, wherein said each tab is provided with a protrusion extending from each of two opposite ends of said each tab to form a neck which connects said tab with said
5. main panel of said lid; and said each slot comprises an enlarged central opening and two narrow openings at the opposite ends of said enlarged central opening to correspond with said protrusions of said tab, said enlarged central opening being substantially longer
10. than said neck of said tab.

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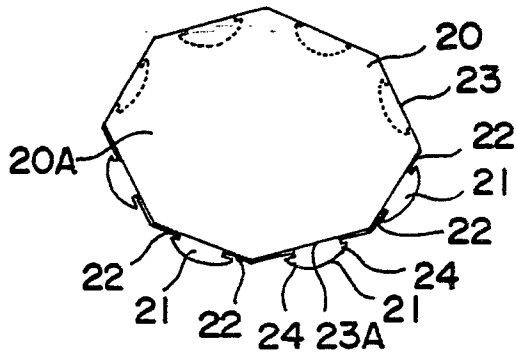


FIG. 1

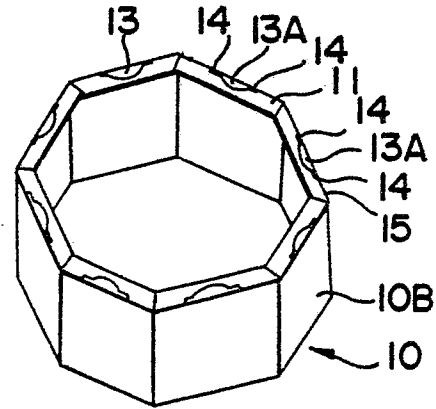


FIG. 2

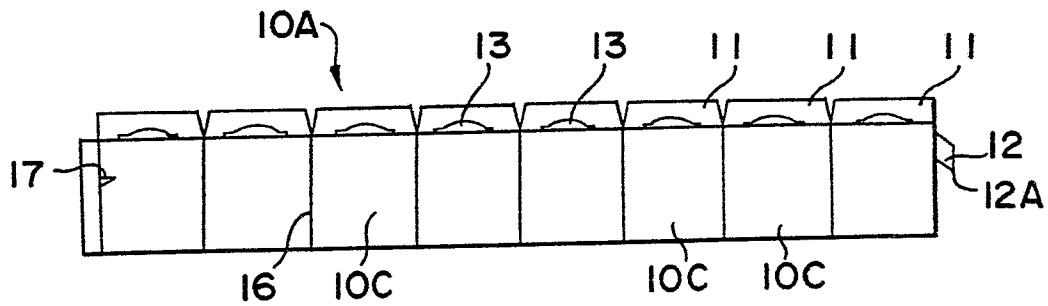


FIG. 3

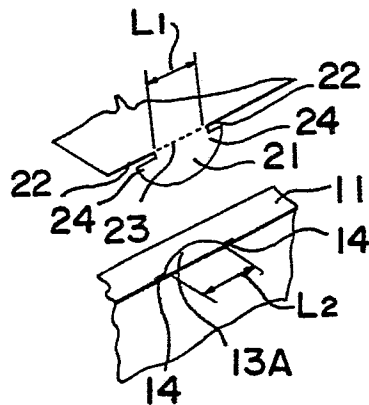


FIG. 4

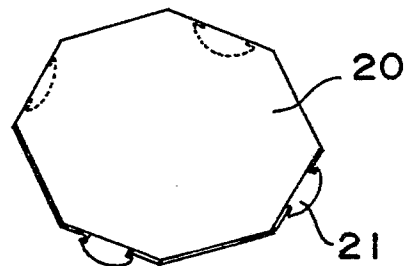


FIG. 5

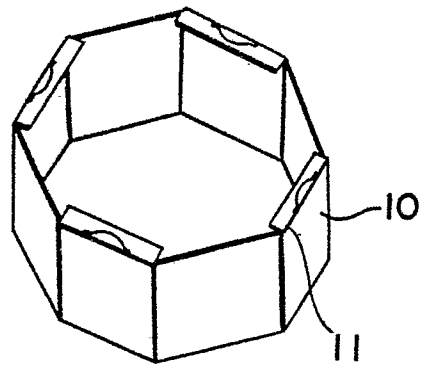


FIG. 6

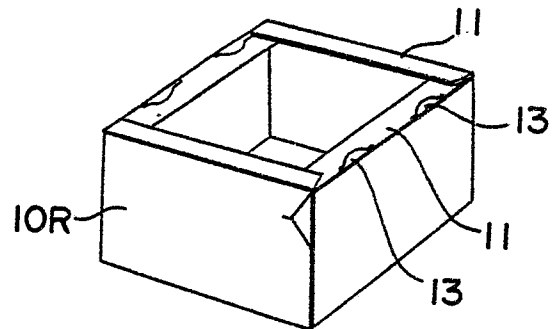
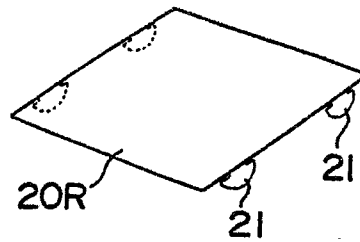


FIG. 7

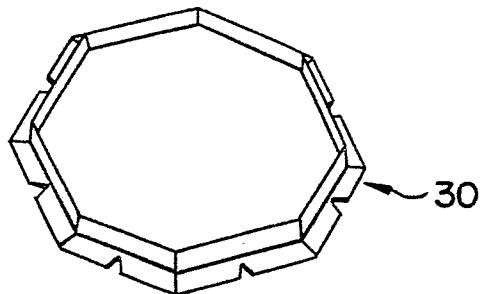
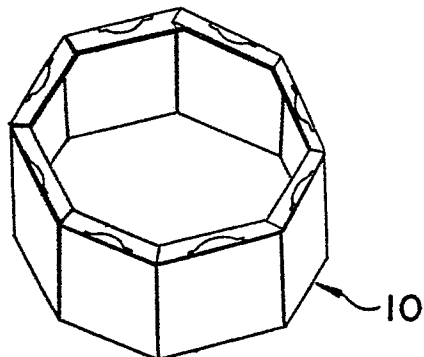
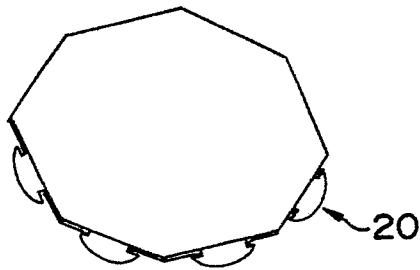


FIG. 8

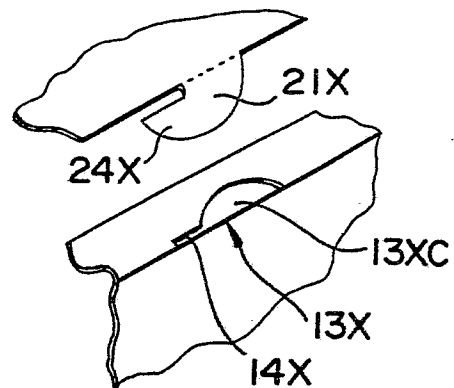


FIG. 9



European Patent
Office

EUROPEAN SEARCH REPORT

0160730
Application number

EP 84 10 5348

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
Y	GB-A-1 200 913 (HABERT) * Page 1, lines 63-97; figures 1-3 *	1,2	B 65 D 5/12
A	--- US-A-2 314 631 (RAY) * Page 1, right-hand column, line 48 - page 2, left-hand column, line 41; figures 1-5 *	1,2	
A	--- US-A-1 597 065 (DAVIS) * Page 1, lines 40-74, 88-92; figures 1-8 *	1,2	
Y	--- US-A-3 306 520 (ALLARD) * Whole document *	1,2	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
			B 65 D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 11-01-1984	Examiner VANTOMME M.A.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			