Jan. 23, 1962 V. A. AHLBOR ET AL 3,018,031

BOXES

Filed Nov. 3, 1958 2 Sheets-Sheet 1

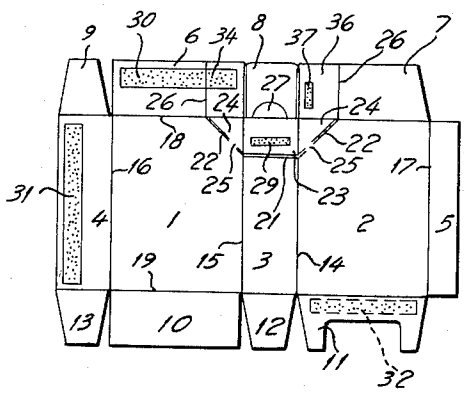


Fig. 1

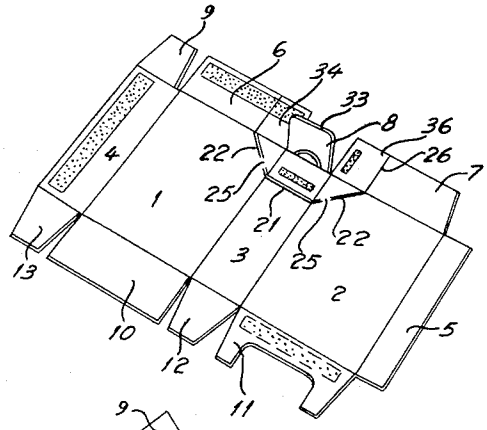


Fig. 2

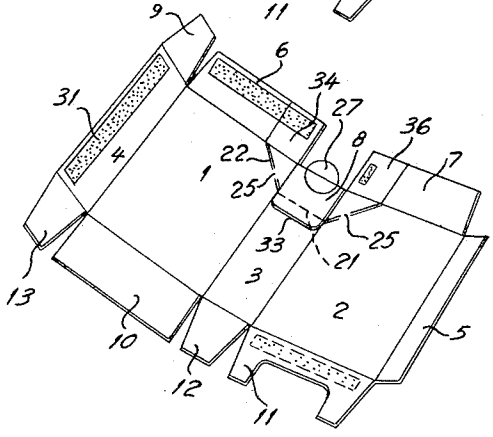


Fig. 3

Valter A. AHLBOR
Hans O. NEUMANN
INVENTORS

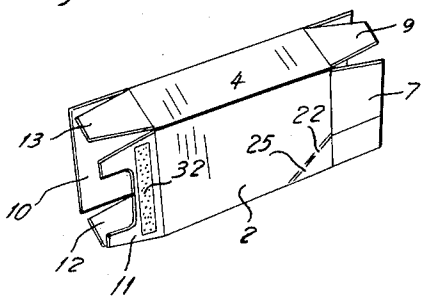
By:
Wenderoth, Lind & Ponack
Attys

Jan. 23, 1962 V. A. AHLBOR ET AL 3,018,031

BOXES

Filed Nov. 3, 1958 2 Sheets-Sheet 2

Fig. 4



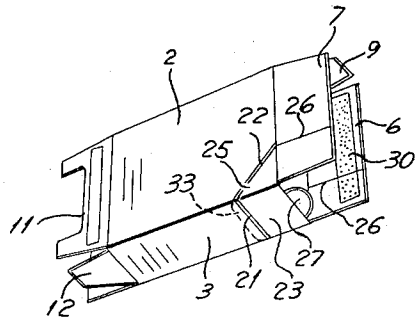


Fig. 5

Fig. 6

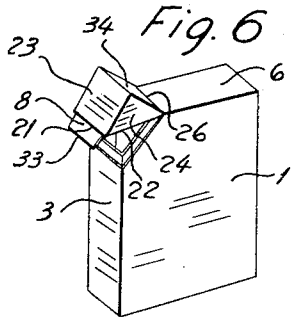
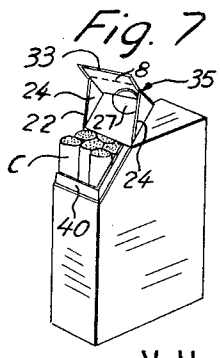


Fig. 7



Valter A. AHLBOR
Hans O. NEUMANN
INVENTORS

By:
Wenderoth, Lind & Ponack
Attys

United States Patent Office 3,018,031 Patented Jan. 23, 1962

3,018,031
BOXES

Valter A. Ahlbor and Hans O. Neumann, Bromma, Sweden, assignors to Arenco Aktiebolag, Stockholm, Sweden, a Swedish joint-stock company

Filed Nov. 3, 1958, Ser. No. 771,280
Claims priority, application Sweden Nov. 25, 1957
4 Claims. (Cl. 229—44)

The present invention relates to rectangular boxes for cigarettes or other commodities. More particularly the invention relates to rectangular boxes of the kind having two opposite relatively narrow side walls, two opposite relatively wide side walls, a bottom wall, a top wall and a lid hinged to said top wall and having side walls and a front wall.

It is a main object of the invention to provide a box of the type referred to which is satisfactorily rigid when open and when closed and nevertheless, on being opened, enabling easy removal of its contents, e.g. relatively delicate cigarettes.

Accordingly, the side walls of the hinged lid of the box consist each of a triangular section of a separate one of the wide box side walls and diverge from opposite ends of a transverse hinge line on said top wall towards the front wall of the lid and an end flap, folded over the inner face of the front wall of the lid extends downwardly from the upper front edge of said front lid wall beyond the bottom edge of said front lid wall so that it forms a resilient tongue adapted, when reclosing the opened lid, to be introduced into the box inside one of said narrow side walls. In a box of the type referred to having a top end consisting of inwardly folded top closure flaps projecting from the box walls, one of said top closure flaps may, according to the invention, consist of a tongue partly cut out of said folded overflap. Conveniently the triangular side walls of the lids are connected with the body of the box by fragile elements of the box material.

A specific embodiment of the invention will be described, by way of example, with reference to the accompanying drawings, in which:

FIGURE 1 shows a sheet cardboard blank from which the improved box is constructed;

FIGURES 2 and 3 are perspective views illustrating consecutive steps when prefolding the box blank to form the box with the lid construction according to the invention;

FIGURES 4 and 5 are perspective views showing opposite sides of the sheet blank obtained by continued folding to form a hollow open-ended blank; and

FIGURES 6 and 7 are perspective views illustrating the finished box filled with cigarettes and having its lid opened partially and completely, respectively.

Like reference characters indicate like parts and elements throughout the views.

Referring to FIGURE 1 of the drawings, the sheet cardboard blank is divided by incisions and folding lines into flaps and wall sections for forming the box and its lid. In the embodiment as illustrated the sheet blank has two relatively wide wall sections 1 and 2, one relatively narrow wall section 3, two side flaps 4 and 5, four top end flaps 6, 7, 8, 9 and four bottom end flaps 10, 11, 12, 13. All the end flaps 6 through 13 are separated laterally by incisions. When forming the box, the wall sections 1, 2, 3 and the side flaps 4, 5 are first folded along lines 14, 15, 16, 17 (as shown in FIGURES 4 and 5) to form a hollow open ended blank the end flaps of which will then be folded along lines 18 and 19 to form the top and bottom of the box.

The narrow wall section 3 is divided by an incision 21 to provide a section 23 adapted to form part of the

front wall of the lid of the box. Oblique incisions 22 are provided in the wall sections 1 and 2 to define triangular corner sections 24 adapted to form the side walls of the lid. The incisions 22 do not extend continuously between the folding lines 14, 15 and 18 so that the triangular sections 24 are connected to the sections 1 and 2 by fragile elements 25 of the cardboard material. From the ends of the incisions 22 on the folding line 18, folding lines 26 in the flaps 6 and 7 extend transversely of line 18 and define sections 34 and 36. A semicircular tongue 27 is cut in the end flap 8.

On one of the faces of the sheet blank the section 23 has an adhesive surface 29, the end flap 6 has an adhesive surface 30, the side flap 4 has an adhesive surface 31 and the section 36 of the top end flap 7 has an adhesive surface 37. On the opposite face of the sheet blank the bottom end flap 11 has an adhesive surface 32.

When a box is to be made of the sheet blank shown in FIGURE 1 the end flap 8 is first folded as shown in FIGURE 2 and thereafter it is folded over upon the wall section 23 (FIGURE 3) so that it will be bonded by means of the adhesive surface 29 to the section 23 with its free end 33 projecting beyond the incision 21. The semicircular tongue 27 remains in alignment with the wall section 3, i.e. it will not be folded over upon the wall section 23. Thereafter the blank is folded along its longitudinal folding lines 14 to 17 and the side flaps 4 and 5 are interconnected by the adhesive surface 31 so that a hollow blank will be produced as shown in FIGURES 4 and 5.

In the blank as shown in FIGURES 4 and 5 the top end flap 9 and the tongue 27 will first be folded inwardly. Thereafter the top end flap 7 is folded down and the top end flap 6 is folded down upon the flap 7 and attached thereto by means of the adhesive surface 30. In this folding step, the end flap section 36 will be applied to the tongue 27 and attached thereto by the adhesive surface 37. The flap section 34 is applied to the flap section 36 and adhesively secured thereto by part of the adhesive surface 30. Thereby the tongue 27 and the top flap sections 34 and 36 form the upper wall of a lid 35 (FIGURES 6 and 7) having the side walls 24, the front wall 23 and the bottom edges 21 and 22 and being hinged to the top end of the box by a crease, consisting of the coincident folding lines 26 in the top end flaps 6 and 7.

After thus having been closed the top end of the box has a pilferproof lid 35 attached to the side walls 1 by the fragile connections 25. A portion of cigarettes C enclosed by a lining 40 is introduced into the box through its open bottom end whereafter said bottom end is closed by folding the flaps 10 to 13 in conventional manner whereby the flap 10 will form the outermost closure member applied and adhesively attached to the flap 11.

When the lid 35 is opened, the seal formed by fragile connections 25 will be broken. Thereafter cigarettes can easily be removed through the wide opening as shown in FIGURE 7. Thus, the box will, due to its special lid construction, be rigid and resistant to damage and careless handling and yet its opening will be wide enough to enable manual removal of compressed cigarettes from the box without damaging them. After the removal of a cigarette the lid can be reclosed releasably by introducing the tongue 8 inside the narrow front wall of the box which will then constitute a rigid and closed unit which will not open accidentally when being kept in a coat pocket for example.

We claim:

1. A carton formed from a single blank of sheet material and including a lid as an integral part thereof, consisting essentially of a substantially rectangular blank scored to provide front, rear and side panels, one of said side panels being between said front and rear panels,

a glue flap for retaining said panels in generally tubular form, bottom end flaps extending from one free edge of said front, rear and side panels, and top end flaps extending equal distances from the other free edge of said front and rear panels and from the other of said side panels, a top end flap on said one side panel extending from said panel no further than the top end flaps on the other panels, said one side panel having a transverse slit therethrough, said slit being spaced from said other free edge of said one side panel a distance less than the dimension of the top end flap on said one side panel in the direction of its extension from said one side panel, the corners of said front and rear panels adjacent said one side panel having diagonal slits therein between the ends of the slit in said one side panel and said other free edges of said front and rear panels, and said top end flaps extending from said front and rear panels being hinged thereacross extending from the ends of said diagonal slits, the bottom end flaps being folded and closing one end of said carton, the top end flap extending from said one side panel being folded down against said side panel and being adhered thereto between said transverse slit and said other free edge, and said other top end flaps being folded over and adhered to each other and closing the top end of said carton.

2. A carton formed from a single blank of sheet material and including a lid as an integral part thereof, consisting essentially of a substantially rectangular blank scored to provide front, rear and side panels, one of said side panels being between said front and rear panels, a glue flap for retaining said panels in generally tubular form, bottom end flaps extending from one free edge of said front and rear panels and from the other of said side panels, a top end flap on said one side panel extending from said panel no further than the top end flaps on the other panels, and top end flaps extending equal distances from the other free edge of said front, rear and side panels, said one side panel having a transverse slit therethrough, said slit being spaced from said other free edge of said one side panel a distance less than the dimension of the top end flap on said one side panel in the direction of its extension from said one side panel, the corners of said front and rear panels adjacent said one side panel having diagonal slits therein between the ends of the slit in said one side panel and said other free edges of said front and rear panels, said top end flap on said one side panel having a curved slit therein extending between two points on said other free edge of said side panel, and said top end flaps extending from said front and rear panels being hinged thereacross extending from the ends of said diagonal slits, the bottom end flaps being folded and closing one end of said carton, the top end flap extending from said one side panel being folded down against said side panel and being adhered thereto between said transverse slit and said other free edge, and said other top end flaps being folded over and adhered to each other and to the portion of said top end flap within said curved slit and closing the top end of said carton.

3. A blank for a carton formed from a single blank of sheet material and including a lid as an integral part thereof, said blank being substantially rectangular and scored to provide front, rear and side panels, one of said side panels being between said front and rear panels, a glue flap for retaining said panels in generally tubular form, bottom end flaps extending equal distances from one free edge of said front and rear panels and from the other of said side panels, a top end flap on said one side panel extending from said panel no further than the top end flaps on the other panels, and top end flaps extending equal distances from the other free edge of said front, rear and side panels, said one side panel having a transverse slit therethrough, said slit being spaced from said other free edge of said one side panel a distance less than the dimension of the top end flap on said one side panel in the direction of its extension from said one side panel, the corners of said front and rear panels adjacent said one side panel having diagonal slits therein between the ends of the slit in said one side panel and said other free edges of said front and rear panels, and said top end flaps extending from said front and rear panels being hinged thereacross extending from the ends of said diagonal slits.

4. A carton formed from a single blank of sheet material and including a lid as an integral part thereof, consisting essentially of a substantially rectangular blank scored to provide front, rear and side panels, one of said side panels being between said front and rear panels, a glue flap for retaining said panels in generally tubular form, bottom end flaps extending from one free edge of said front, rear and side panels, and top end flaps extending equal distances from the other free edges of three of said panels, the fourth of said panels having a top end flap thereon extending no further than the top end flaps on said front and rear panels and said one side panel, said fourth panel having a transverse slit therethrough, said slit being spaced from said other free edge of said fourth panel a distance less than the dimension of the top end flap on said fourth panel in the direction of its extension from said fourth panel, the corners of said panels adjacent said fourth panel having diagonal slits therein between the ends of the slit in said fourth panel and the said other free edges of the said adjacent panels, the bottom end flaps being folded and closing the one end of said carton, said top end flap extending from said fourth panel being folded down against said fourth panel and being adhered thereto between said transverse slit and said other free edge, the said other top end flaps being folded over and adhered to each other and closing the top end of said carton, said other top end flaps being hinged to permit the lifting of the lid formed by said folded over top end flaps and the portions of said panels between said slits and the other free edges of said panels.

References Cited in the file of this patent

UNITED STATES PATENTS

2,003,925	Daller	June 4, 1935
2,011,438	Daller	Aug. 13, 1935
2,348,377	Goodyear	May 9, 1944
2,361,597	Buttery	Oct. 31, 1944
2,421,141	Carr	May 27, 1947
2,848,153	Geiger	Aug. 19, 1958
2,881,970	Hovland	Apr. 14, 1959

FOREIGN PATENTS

1,146,476	France	Nov. 12, 1957