Feb. 25, 1936. A. J. WEISS 2,031,806

KNOCK-DOWN POLYGONAL WEBBED END CLOSING CONTAINER

Filed April 24, 1934 2 Sheets-Sheet 1

Fig. 1.

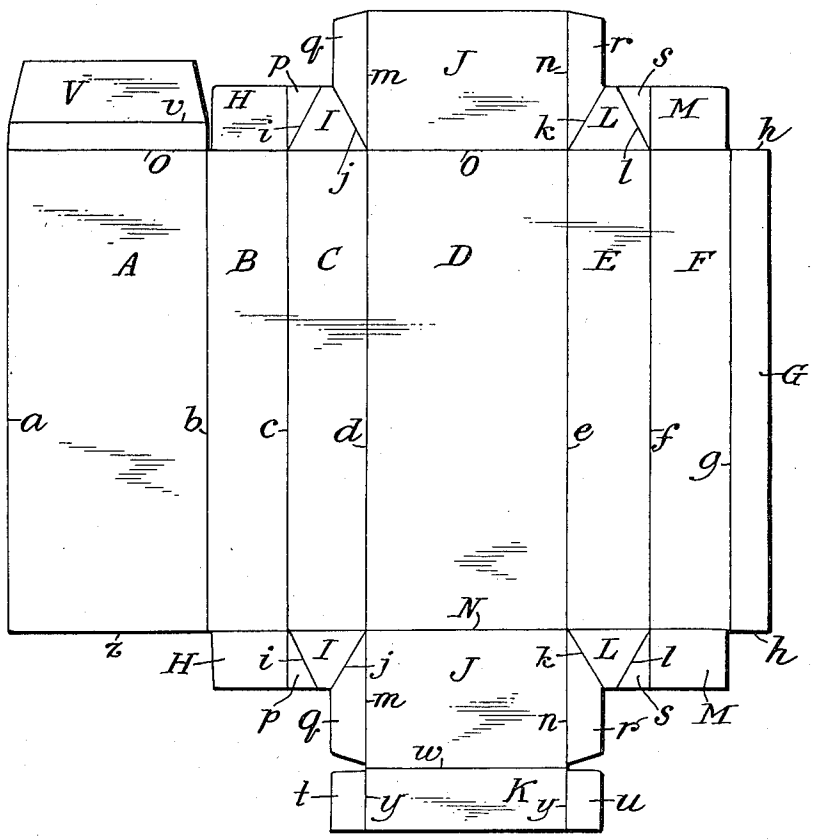


Fig. 2.

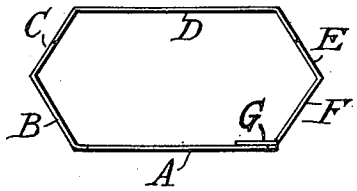


Fig. 3.

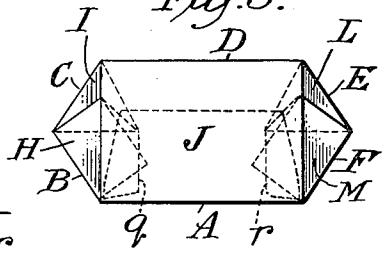
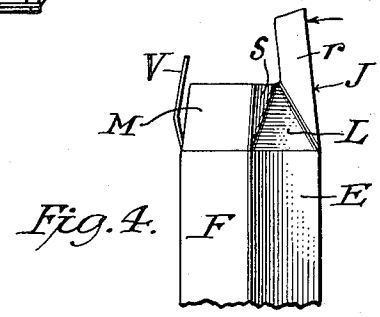


Fig. 4.



INVENTOR,
Arthur J. Weiss,
BY
Harold D. Penney
ATTORNEY.

Feb. 25, 1936. A. J. WEISS 2,031,806

KNOCK-DOWN POLYGONAL WEBBED END CLOSING CONTAINER

Filed April 24, 1934 2 Sheets-Sheet 2

Fig. 5.

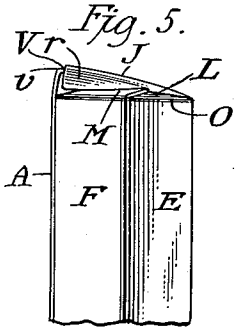


Fig. 6.

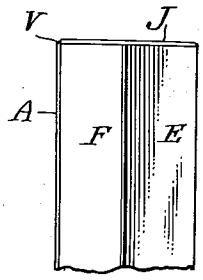


Fig. 7.

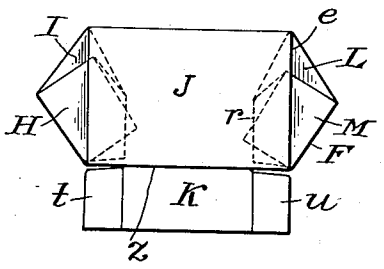


Fig. 10.

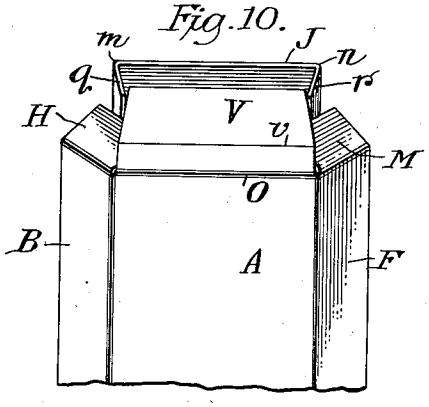


Fig. 8.

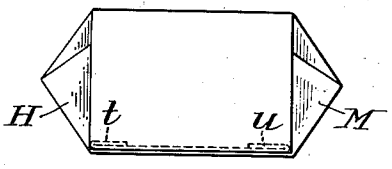


Fig. 11.

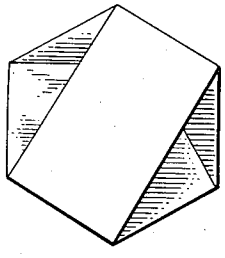


Fig. 9.

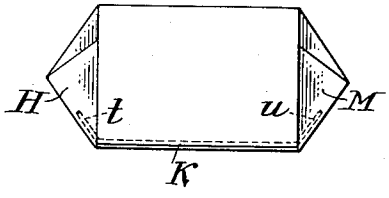


Fig. 12.



INVENTOR,
Arthur J. Weiss,
BY
Harold D. Penney, ATTORNEY.

Patented Feb. 25, 1936 2,031,806

UNITED STATES PATENT OFFICE

2,031,806

KNOCK-DOWN POLYGONAL WEBBED END-CLOSING CONTAINER

Arthur J. Weiss, St. Albans, N. Y., assignor to Robert Gair Company, Inc., New York, N. Y., a corporation of Delaware

Application April 24, 1934, Serial No. 722,114

23 Claims. (Cl. 229—37)

The present invention relates to an improvement in knock down containers, which are machine made of paper board, shipped flat in bundles to the distributor, and erected, filled and sealed by the distributor.

The present device is a variant of the polygonal carton or container shown in the pending U. S. application, Serial No. 695,073, filed Oct. 25th, 1933 in the name of Harry Rossi, and has features of structure and advantages not contemplated in the said Rossi structure.

One of the features of the present structure is in the provision in a container having wide front and rear walls and relatively narrow side walls, of a series of interconnected end closing flaps and webs, to close the container ends, these all being located on the opposite ends of the body forming panels, and adapted, upon manual manipulation of some of the end flaps to move to closing position to cause all of the other end flaps and webs to automatically move to end closing position.

A further feature is in the provision of an added positive end locking tuck flap on one of the container ends, whereby when the end flaps are closed, the lock flap automatically locks the closed end to form a container bottom and compels destruction thereof to open same.

The foregoing and other features will be apprehended as the herein description proceeds and it is obvious that modifications may be made in the present structure, without departing from the spirit thereof or the scope of the appended claims.

In the drawings,

Fig. 1 is a layout of the container blank showing the various end flap outlines and score lines;

Fig. 2 is an open, plan or end view of the blank of Fig. 1, showing the general contour of the present form of container;

Fig. 3 is an end view of the openable and reclosable top end of the container, with end flaps in closing position;

Fig. 4 is a fragmentary, side view of the top end of the container showing the top end flaps about to be closed;

Fig. 5 is a view similar to Fig. 4, showing the top end closing flaps nearly closed;

Fig. 6 is a view similar to Figs. 4 and 5, showing the top end flaps entirely closed;

Fig. 7 is a bottom view of the container showing the bottom closing flaps closed with the botton tucking lock flap inoperative and bent away from its adjacent wall;

Fig. 8 is a bottom view, in plan, showing the tucking lock flap in entered position, unlocked;

Fig. 9 is a view like Fig. 8, showing the flap lock in end closing and locking engagement;

Fig. 10 is a fragmentary perspective view of the reclosable top flap closure, partly closed;

Fig. 11 is an end view in plan showing the top end closure as applied to a hexagonal container with symmetrical body forming sides as in the above noted pending application; and

Fig. 12 is an end view of the container partly collapsed on its score lines *c—f*.

As indicated in Figs. 2 and 11, the container may be made up in two forms, one a completely symmetrically sided hexagonal form as in Fig. 11, and the other in a six sided form, transversely having two wide, opposed side walls A—D joined at their edges by opposed triangular side walls C—B and E—F, as in Fig. 2. The container of Fig. 11 may contain round bottles, for instance, and the container of Fig. 2 may contain flat bottles, such as, for instance, pint whiskey bottles of standard type.

Further there is shown herein two end closing flap closures both identical in the main elements thereof but one form preferably forming a closable and openable top end closure known as a reclosable cover, and the other forming, preferably, a closable and lockable bottom end closure known as a locked cover, which after locking in closed position will sustain the contained load without dropping it through the bottom, when the container is lifted.

It is intended that the present container be closed, locked at the bottom against opening and closed at the top, to be opened and reclosed at will, preferably without the use of glue, for sealing, though the ends may be glue sealed if desired.

As will hereinafter appear, the end closures are easily operated and each of them make a tight closure proof against inadvertent opening, when closed, and, incidentally, because of the plural overlapping folds in the end closures they form a shock absorbing cushion for the bottle ends.

The blank layout of the present improvement is shown in Fig. 1, and it comprises the main body forming panels A—B—C—D—E and F, with the body glue lap G, attached to panel F, all of these panels and lap being defined from one another by parallel body score lines *b—c—d—e—f* and *g*.

Each of the body panels are of the same height as viewed in Fig. 1, being bounded by traversing common, top and bottom score lines, generally de-

noted by N for the bottom score line and O for the top score line. The blank as shown in Fig. 1 has its reclosable top flap elements shown at the upper end thereof, with the bottom forming flap and locking elements thereof shown at the lower end of the blank.

The top end forming elements, comprise flaps and webs, the flaps being indicated by V—H—I—J—L—M and the connecting webs being indicated by *p—q—r—s*, the said latter webs being connected between flaps I—J—L and M, and being defined by angular score lines *i—j—k—l* so that flaps I and L are triangular with the base of the triangle formed by the common score line O. The webs *q* and *r* from their triangular score lines *j* and *k* extend upwardly along both edges of main flap J and are defined therefrom by score lines *m* and *n*, main flap J is defined from main panel D by common score line O. Flaps M and H are defined from triangular webs *s* and *p* by vertical score lines *c* and *f*.

Glue lap G terminates at its upper and lower edges *h—h* at the common score lines N and O.

Main body panel A has its lower edge *z* terminated at the score line N and at its upper opposite edge is provided with a tuckable locking flap V defined from A by common score line O, and having a second spaced away score line *v* traversing its width.

The bottom forming closure elements, Fig. 1, comprise main flaps H—I—J—L—M, and the flap connecting webs are indicated by *p—q—r—s*, the connecting webs being defined from their associate flaps by score lines *i—j—k—l*, so that, as in the arrangement of the upper end closing flaps, the flaps I—J and L are triangular and are defined from their triangular webs by angular score lines *i—j—k* and *l*. All of the bottom end forming flaps and webs are defined from the body panels by common score line N.

Main end closing flap J has a tuck lock flap K on its outer end, which is defined from flap J by a score line *w* and this tuck lock flap, on each of its opposite ends, has scored therefrom, as at *y—y*, a latch tab *t* and *u*, respectively.

Both upper and lower main flaps J have their triangular webs *q* and *r* extended on their opposite edges, said webs being scored from flaps J by score lines *m* and *n*, which are actually extensions of body score lines *d* and *e*.

The blank is glued on the front face of the glue lap G, as viewed in Fig. 1, and then bent backwardly on its score lines *c* and *f*, and the glue lap is attached to the inside face of body panel A, at or near its edge *a*. As thus described, the container is flat, as partially shown in Fig. 12 but unlike Fig. 12, has none of its score lines, other than score lines *c* and *f* broken, and as so folded may be piled in bundles for shipment to user or distributor.

When the distributor sets the container up for use he first bends the scored blank on the score lines *b—d—e* and *g* until the container body is in the form shown in the end view in Fig. 2. The score lines of the end closing flaps and connecting webs may then be operated to close the container.

To close the upper reclosable end, the erected container blank is arranged so that body panel A faces the operator as in Fig. 10, flaps H and M also face the operator, and these are simultaneously pinched towards their attached diagonal webs *p* and *s* respectively on score lines *c* and *f*, until these flaps and webs contact, then the flaps are bent rearwardly on score line O, bending webs *p* and *s* inwardly on their respective score lines *i* and *b*.

Continued downward and inward pressure on flaps H and M pull flaps I and *l* inwardly and downwardly, this in turn bending webs *q* and *r* on their score lines *j*, *k*, *l*, *m* and *n*, which action draws main top flap *j* towards operator, about as shown in Figs. 4 and 10. Near the final closure of the main top flap J, the two side webs *q* and *r* have been folded under J, and, with J, form an open spout end, into which the end of friction tuck flap V, by bending inwardly on its secondary score line *v* is introduced, as in Fig. 5, and then J is pushed down all the way to closing position as in Fig. 6, and friction tuck flap V finally pushed in all the way, finally bending on its score line O. Thus, flap V is frictionally caught inside main flap J and its two coacting locking webs *p—r*, which, when the top end is closed firmly grasp and hold the friction tuck flap V between them, as indicated in dotted lines, Fig. 3.

The same sequence of action is followed in closing the lower, bottom forming elements except that the main lower cover flap J is fully closed down, covering, as in the top closure, all of the coacting elements, but leaving the lock flap K and its two resilient latches *t* and *u* outstanding as in Fig. 7. With the main lower flap J nearly closed there is left an opening along the lower edge *z* of body panel A, between flaps H and M, and the latches *t* and *u* are bent under all the way until they contact with the under face of lock flap *k*, and then flap *k* with the bent over latches are tucked through the opening at edge *z* and downwardly into the container interior. Upon the final entry of the lock flap *k* into the container as in Fig. 8, the latches *t* and *u* being there shown dotted, the latches spring outwardly into the positions shown in Fig. 9, their edges adjacent the score line *w* engaging the under faces of flaps H and M thereby locking main lower flap J thereto.

After the bottom is closed and locked as described the contents may be placed therein, and the upper reclosable end closed.

While the present carton is shown as being in the form of a modified hexagonal cross-sectional contour as in Fig. 2, having two wide body panels and four narrow body panels, the blank may also be proportioned to form a polygonal hex shaped container having all of its body forming panels of the same width, thus to form a true hexagonal container as in Fig. 11, without any change in the end closing elements except as to modifications in dimensions of the various body panel widths.

However the preferred form of container is that shown in all figures except Fig. 11, the preferred container comprising major body forming panels A and D and flaps, and the minor body forming panels B, C, E and F, as and their flaps, by this latter arrangement of the panels the container is easily adapted to receive bottles of flat, rectangular and out of round shapes.

It is herein to be noted that the reclosable closure as in Figs. 2 and 3, for instance may be used on either or both ends of the container, or the tuck lock structure of Figs. 7, 8 and 9 may also be used on either or both ends of the container or both used as shown and described herein.

Having thus described the invention what is claimed is:

1. A container having major body forming panels opposed to each other forming relatively wide front and rear walls, minor body forming panels

scored and angularly disposed from said major panels and each other and located opposite one another to form relatively narrow, bent side walls and a plurality of connected end closing flaps and webs on all said panels one of said flaps including an interlocking member to lock the ends of the container and being adapted to close the ends of said container when infolded and interlocked.

2. A six panelled container having two major body forming panels opposed to each other forming relatively wide front and rear walls, two pairs of minor body forming panels scored and angularly disposed from said major panels and each other and located opposite one another to form relatively narrow, bent side walls and a plurality of connected end closing flaps and webs on all said panels all of said webs being angularly scored from their associate flaps and adapted with said flaps, to close the ends of said container when infolded and interlocked.

3. A six panelled container having two major body forming panels opposed to each other forming relatively wide front and rear walls, two pairs of minor body forming panels scored from said major panels and each other and located opposite one another to form relatively narrow, side walls, said minor panels being disposed at an angle to said major panels and to each other, and a plurality of connected end closing flaps and webs including interlocking members on all said panels, said flaps being scored from said panels and each other and adapted to close the ends of said container when infolded and interlocked.

4. A six panelled container having two major body forming panels opposed to each other forming relatively wide front and rear walls, two pairs of minor body forming panels scored from said major panels and each other and located opposite one another to form relatively narrow, angularly disposed side walls and a plurality of connected and scored end closing flaps and webs on all said panels, one of said flaps including an interlocking member to lock the ends of the container and being adapted to close the ends of said container when said flaps are infolded and interlocked.

5. A blank for a polygonal paper-board container comprising two major body forming panels, four minor body forming panels and a glue lap, all of said panels and glue lap being defined from each other by parallel score lines, one of said major body forming panels being provided at its ends with major end closing flaps, minor end closing flaps and webs on the ends of the minor body forming panels, some of said flaps being defined from their adjacent webs by a continuation of said parallel score lines, others of said flaps being defined from their webs by diagonal score lines, all of said flaps and webs being defined from the said body forming panels by common score lines and a friction tucking flap on one end of the other said major body forming panel.

6. A blank for a polygonal paper-board container comprising two major body forming panels, four minor body forming panels and a glue lap, all of said panels and glue lap being defined from each other by parallel score lines, one of said major body forming panels being provided at its ends with major and closing flaps, minor end closing flaps and webs on the ends of the minor body forming panels, some of said flaps being defined from their adjacent webs by a continuation of said parallel score lines, others of said flaps being defined from their webs by diagonal score lines, all of said flaps and webs being defined from the said body forming panels by common score lines, and a locking tuck flap carried by one of said major end closing flaps and defined therefrom by a transverse score line.

7. A blank for a polygonal paper-board container comprising two major body forming panels, four minor body forming panels and a glue lap, all of said panels and glue lap being defined from each other by parallel score lines, one of said major body forming panels being provided at its ends with major end closing flaps, minor end closing flaps and webs on the ends of the minor body forming panels, some of said flaps being defined from their adjacent webs by a continuation of said parallel score lines, others of said flaps being defined from their webs by diagonal score lines, all of said flaps and webs being defined from the said body forming panels by common score lines, a locking tuck flap scored from the end of one of said major end closing flaps, and lock latches located on opposite sides of said locking tuck flap and defined therefrom by score lines.

8. A blank for a polygonal paper-board container comprising two major body forming panels, four minor body forming panels and a glue lap, all of said panels and glue lap being defined from each other by parallel score lines, one of said major body forming panels being provided at its ends with major end closing flaps, minor end closing flaps and webs on the ends of the minor body forming panels, all of said flaps and webs being defined from each other by score lines and being defined from the said body forming panels by common score lines, and a friction tucking flap on one end of the other said major body forming panel said flap being traversed by a score line.

9. A blank for a polygonal paper-board container comprising two major body forming panels, four minor body forming panels and a glue lap, all of said panels and glue lap being defined from each other by parallel score lines, one of said major body forming panels being provided at its ends with major end closing flaps, minor end closing flaps and webs on the ends of the minor body forming panels, all of said flaps and webs being defined from each other by score lines and being defined from the said body forming panels by common aligned score lines, and a friction tucking flap on one end of said major body forming panel.

10. A blank for a polygonal paper-board container comprising major body forming panels, minor body forming panels and a glue lap, all of said panels and glue lap being defined from each other by parallel score lines, one of said major body forming panels being provided at its ends with major end closing flaps, and minor end closing flaps and webs on the ends of the minor body forming panels, all of said flaps and webs being defined from each other by score lines and being defined from the said body forming panels by common aligned score lines.

11. A blank for a polygonal paper-board container comprising two major body forming panels, four minor body forming panels and a glue lap, all said panels and glue lap being defined from each other by parallel score lines, one of said major body forming panels being provided at its ends with major end closing flaps, minor end closing flaps and webs on the ends of said minor body forming panels, some of said flaps being defined from

their adjacent webs by a continuation of said parallel score lines, others of said flaps being defined from their webs by diagonal score lines, all of said flaps and webs being connected and defined from the said major body forming panels by common aligned score lines, a friction tucking flap on one end of the other of said major body forming panels, said flap being traversed by a score line, a locking tuck flap scored from the end of one of said major end closing flaps and lock latches located on and scored from the opposite sides of said locking tuck flap.

12. An end closure for a paper board container having a hexagonal body including six integral panels, one of said panels having a plain end edge, said closure including a main flap which extends from the panel opposite the first panel, there being pairs of panels between the opposed panels, retaining flaps extending from two members of said pairs of panels adjoining said edge, mutually continuous flap and web members connecting the retaining flaps and said main flap, the flaps of said continuous members being extended from the other members of said pairs of panels, a lock flap engaging the first mentioned panel at said edge, said lock flap being extended from said main flap, which latter partly covers said retaining flaps and the mutually continuous members, and tabs extending from said lock flap and having edge portions engaged against the inner faces of said retaining flaps.

13. A container for a bottle, comprising one sheet of paper board including a body having opposed relatively wide panels, pairs of narrow panels disposed between the first panels and at angles thereto, the container being of modified hexagonal cross section, interengaging flaps extending from certain of the opposite ends of said panels and forming substantially flat end closures and angularly scored webs connecting the adjacent flaps on said ends.

14. A container having six panels opposed to each other and forming a body portion, and a plurality of connected end closing flaps and webs on all of said panels, all of said webs being angularly scored from their associate flaps and adapted with said flaps to close the end of said container when infolded and interlocked, a portion of the web lying above a portion of a flap when the flaps are closed.

15. A container having six panels opposed to each other and forming a body portion, a plurality of end closing flaps and associate webs on all of said panels, all of said webs being angularly scored from their associate flaps and adapted with said flaps, to close both ends of said container when infolded and a latch tab carried by at least one flap on said container for locking the flaps when in end closing position, a portion of the web lying above a portion of a flap when the flaps are closed.

16. A hexagonal container comprising a plurality of panels; end flaps on three alternate panels; two webs between adjacent flaps; said webs being scored from the flaps and scored intermediately to fold inwardly when the flaps are closed; and means for fastening one flap above the other two.

17. A hexagonal container comprising a plurality of panels; end flaps on three of said panels, one being longer than the others; two webs between adjacent flaps and adjacent to the longer flap; said webs being integral with and scored from the flaps and scored intermediately and adapted to fold inwardly, and means for fastening a portion of the longer flap to the panel lying between the panels carrying the other two flaps when the flaps are closed.

18. A container comprising a plurality of panels; end flaps on three of said panels; webs between adjacent flaps; said webs being scored from the flaps and scored intermediately to adapt them to fold inwardly under said flaps, a portion of a web lying above a flap when the flaps are closed.

19. A container comprising a plurality of panels; end flaps on three of said panels; webs between adjacent flaps; said webs being scored from the flaps and angularly scored intermediately and adapted to fold inwardly under said flaps, portions of one web lying above and below a flap when the flaps are closed.

20. A container comprising a plurality of panels; end flaps on three of said panels, one being longer than the others; two webs between adjacent flaps and adjacent to the longer flap; said webs being integral with and scored from the flaps and angularly scored intermediately and adapted to fold inwardly under said flaps, a portion of the webs adjacent to the longer flap extending to the end of the long flap lying above the other two flaps when the flaps are closed.

21. A container comprising a plurality of panels; end flaps on three alternate panels; webs between adjacent flaps; said webs being scored from the flaps and scored intermediately to fold inwardly when the flaps are closed; and means separate from all of said webs when the flaps are open, for fastening the flaps closed with one flap above the other two.

22. A container comprising a plurality of panels; end flaps on three alternate panels, the flap carrying panels being disposed at angles to each other; webs between adjacent flaps; said webs being scored from the flaps and scored intermediately to fold inwardly when the flaps are closed; and means for fastening one flap above the other two.

23. A container comprising a plurality of panels; end flaps on three alternate panels; two webs between adjacent flaps and connected to the panels the adjacent flap carrying panels by score lines extending across the top of the panels; said webs being scored from the flaps and scored intermediately to fold inwardly when the flaps are closed; and means for fastening one flap above the other two.

ARTHUR J. WEISS.