Jan. 1, 1952 J. A. O'REILLY 2,580,586

PAPER BOX

Filed June 13, 1949 3 Sheets-Sheet 1

Fig. 1

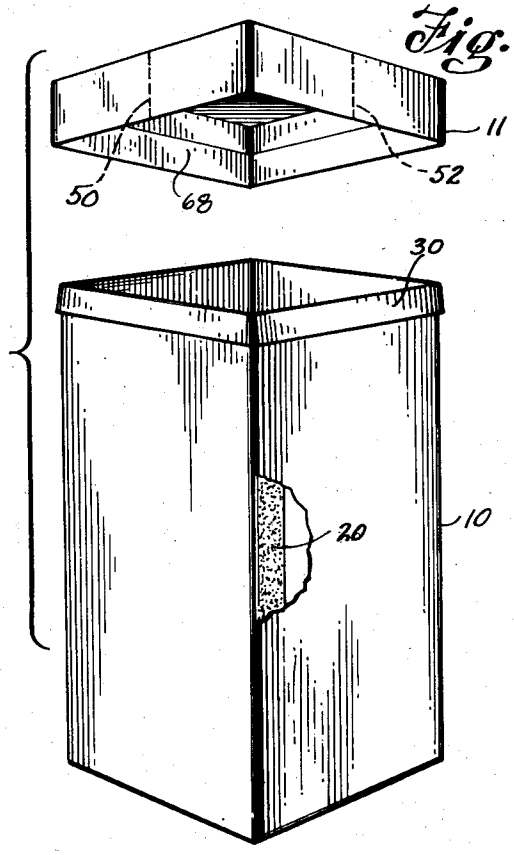


Fig. 2

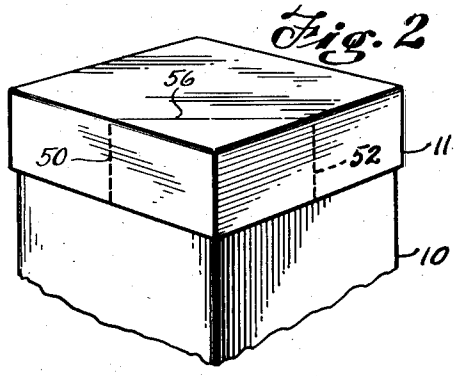
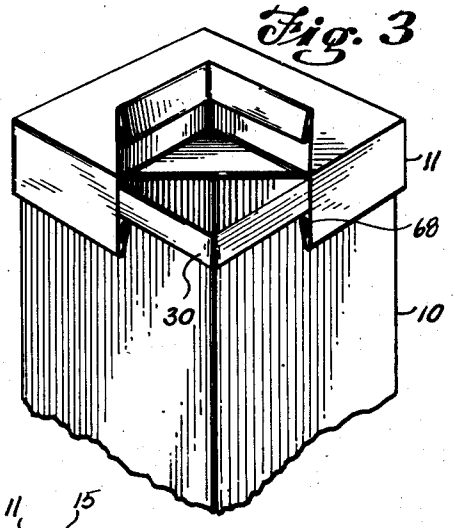


Fig. 3



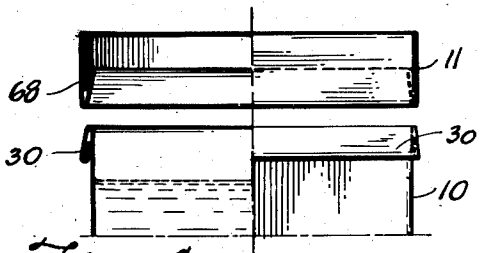


Fig. 4

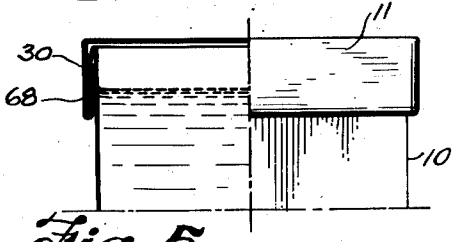


Fig. 5

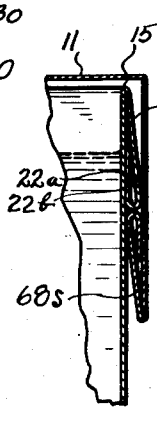


Fig 3a

INVENTOR.
JOSEPH A. O'REILLY
BY
Cook & Rothman
ATTORNEYS

Jan. 1, 1952 J. A. O'REILLY 2,580,586

PAPER BOX.

Filed June 13, 1949 3 Sheets-Sheet 2

Fig. 6.

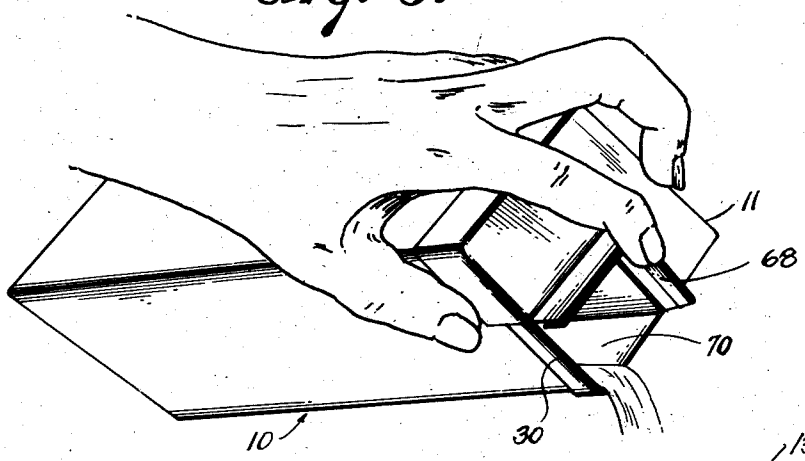


Fig. 7

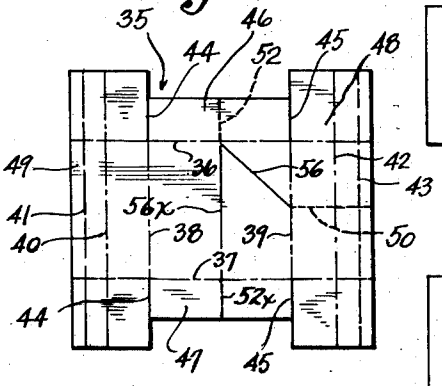


Fig. 9.

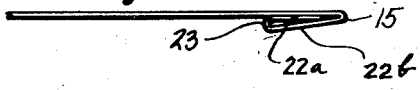
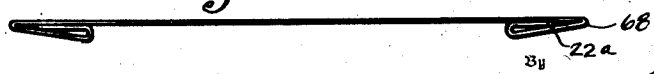


Fig. 10



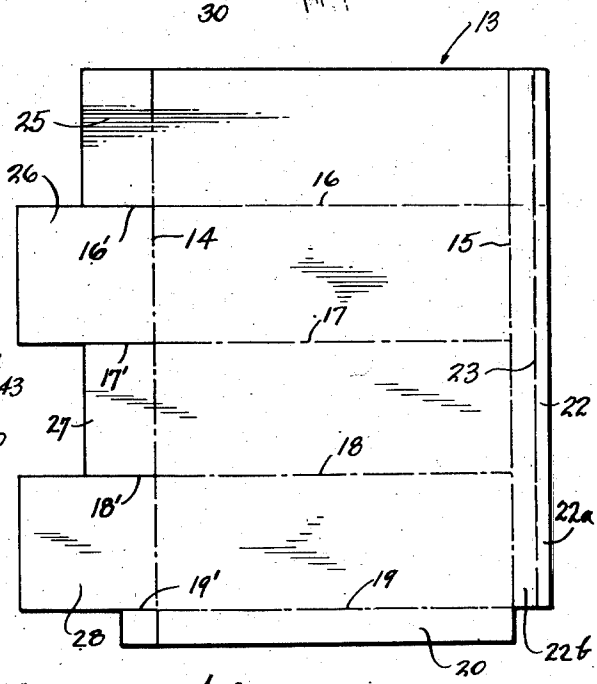


Fig. 8.

Inventor
JOSEPH A. O'REILLY

By Cook & Robinson
Attorney

Jan. 1, 1952 J. A. O'REILLY 2,580,586

PAPER BOX

Filed June 13, 1949 3 Sheets-Sheet 3

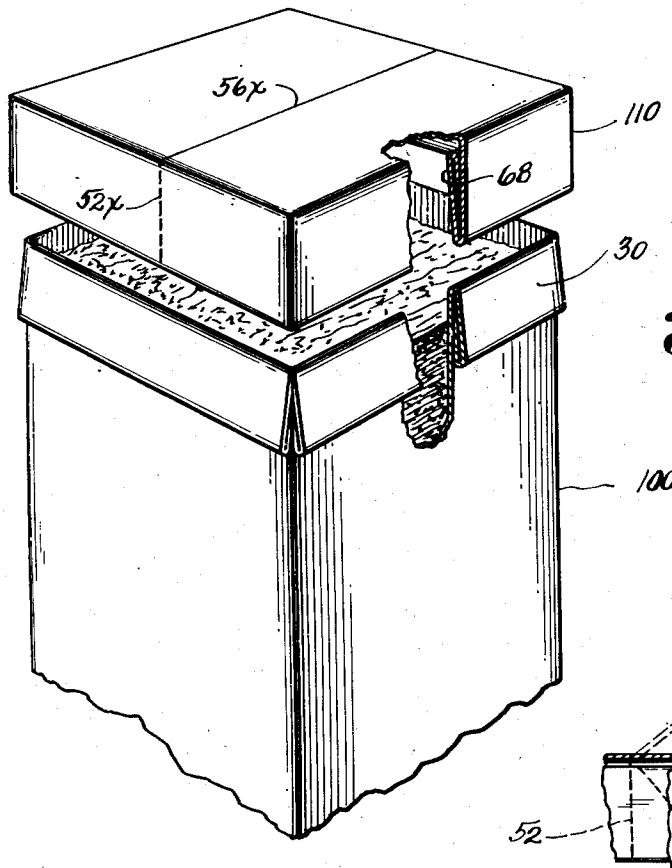


Fig. 11

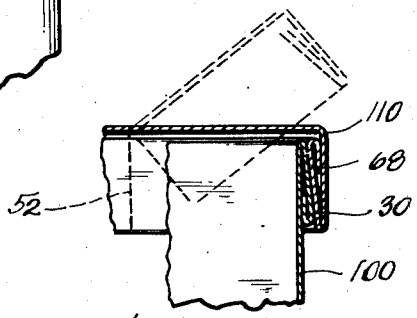


Fig. 13

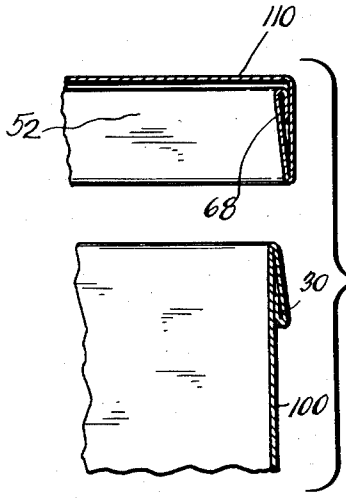


Fig. 12

Inventor
JOSEPH A. O'REILLY
By
Cook & Robinson
Attorney

Patented Jan. 1, 1952 2,580,586

UNITED STATES PATENT OFFICE

2,580,586

PAPER BOX

Joseph A. O'Reilly, Bellingham, Wash.

Application June 13, 1949, Serial No. 98,744

4 Claims. (Cl. 229—7)

1

This invention relates to paper cartons of a kind suitable for the packaging of various materials of granular or of liquid character; that is, it contemplates the packaging of materials that may be poured from the container through an opening provided for that purpose. More particularly, the invention has reference to the provision of a substantially rigid paper container that is intended to be mechanically handled and filled, and which has an outside slip-fit cover or cap that may be mechanically applied thereto after being filled.

The principal objects of the present invention are:

First, to provide a container of the type above stated, wherein parts in the nature of collars are provided externally on the body portion and internally on the flange of the cover or cap that will automatically abut or engage incident to the application of the cover to the body, thus to hold the cover in place and against displacement in the ordinary and normal handling of the container.

Second, to provide the container body with an outside slip-fit cover that has its apron or flange portion formed with lines of perforations at spaced locations and its top formed with a scored line joining the lines of perforations, thus to permit that part of the cover that is so defined to be partially detached by breaking the material along the lines of perforation, and then to be folded back on the scored line to provide an opening for pouring contents from the container, and which partially detached part of the cover may be pressed back into place to cover the opening.

Third, to provide a container embodying the improvements above mentioned, which may be made in square or rectangular form, and wherein the opening is located at a corner of the container to best adapt the device for pouring, especially where liquids are being handled. Furthermore, a container wherein the cap apron at all times covers the rim of the body as a sanitary feature.

Still further objects and advantages of the invention reside in the details of construction and combination of parts, and mode of use of the container, as will hereinafter be fully described.

In accomplishing these and other objects of the invention, I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawings, wherein:

Fig. 1 is a perspective view of a container embodying the improvements of the present invention, the cap or cover member being shown lifted from the open end of the container body.

2

Fig. 2 is a perspective view of the upper end portion of the container body with cover in place thereon.

Fig. 3 is a similar view showing the corner portion of the cover member as partially detached and folded back against the top portion to provide an opening for pouring contents from the container.

Fig. 3*a* is an enlarged sectional detail of portions of cover and body, showing the cover as applied.

Fig. 4 is a partial side view and partial cross-sectional view of the upper end portion of the body of the container and cover as lifted from the body.

Fig. 5 is a similar view showing the cover applied to the body.

Fig. 6 is a perspective view illustrating the manner of opening the container and pouring material therefrom.

Fig. 7 is a plan view of the paper blank as provided for the making of the cover member.

Fig. 8 is a plan view of the paper blank as provided for the making of the container body.

Fig. 9 illustrates the folding of the collar portion on the body forming blank.

Fig. 10 illustrates the folding of the collar portions on the cover forming blank.

Fig. 11 is a perspective view of a container having a closure or cover of an alternative form, the latter being shown as lifted from the body, and parts being broken out for better illustration of details.

Fig. 12 is a view showing, in vertical sectional view, portions of the cover and body portion of the container of Fig. 11 in separated relationship.

Fig. 13 is a detail showing the cover as applied to the container and indicating in dotted lines the breaking and folding back of a part of the cover for its removal.

Referring more in detail to the drawings:

Considered in its entirety, the present container comprises the container body which is designated in its entirety in Fig. 1 by reference numeral 10, and a cover member which is designated in its entirety by numeral 11. Each of these parts is formed from light-weight cardboard, or a similar or suitable material, which may vary in thickness or weight as may be desired or required. In the event that the container is made of paper and is to be filled with a liquid, or wet substance, it is desirable that a coating of paraffin, wax or other

moisture resisting material be applied to one or both surfaces of the parts after being formed, thus to prevent penetration or seepage of the liquid.

The parts 10 and 11 might be made in various ways to attain the present objects. However, it is preferred that each part be made from a single cardboard blank that is cut, scored and folded to give it the desired size, shape and structural features necessary to accomplish the objects of the invention. In the present instance the body portion is formed from a blank that is cut to the form illustrated in Fig. 8. The cover likewise is made from a blank that is cut and scored as shown in Fig. 7. First describing the body blank and the manner of forming the container body therefrom:

The body blank, designated in its entirety by numeral 13, is approximately rectangular in form, and is scored longitudinally along parallel lines 14 and 15 to define the height of the side walls of the container. Also, the blank is transversely scored along the parallel lines 16, 17, 18 and 19, to set off the four side wall-forming panels and a short end flap 20 at one end of the blank. At the outside of the line of scoring 15 that defines the upper edge of the side wall portions, the blank has a longitudinal flap or flange 22 that is formed with a scored line 23, parallel with scored line, and somewhat nearer to the edge of the blank than to the line 15, thus to divide the flange 22 into two longitudinal sections, designated in Fig. 8 by numerals 22*a* and 22*b*, and wherein it is shown that section 22*b* is made wider than section 22*a* for a purpose presently apparent.

At the outside of the line of scoring 14, the blank is cut through as at 16', 17', 18' and 19', in alignment with the lines of scoring 16, 17, 18 and 19, respectively, thus with the line of scoring 14 to define the end flaps 25, 26, 27 and 28. Flaps 25 and 27 are half the length of flaps 26 and 28, and these latter are equal in length to the distance across the bottom of the container body.

To form the container body from this blank 13, the flange 22 is first folded outwardly and back upon itself along the line of scoring 23. Then again, it is folded back on itself in the same direction along the scored line 15. The line of scoring 23 is rather lightly applied, while the line 15 is sharply formed. Thus, in the bending of the blank, a rather rounded bend is formed when the blank is folded along line 23 and a sharp, abrupt bend is formed when bent along line 15, this being best shown in Fig. 3*a*.

By folding the blank as above described, the top edge portion of the blank is formed with a triple layer fold as shown in Fig. 9. With the collar portion thus formed, the blank is then bent at right angles along the scored lines 16, 17, 18 and 19 to cause it to assume a rectangular form, with the end flap 20 overlapped with the inside surface of the opposite end of the blank and secured adhesively or otherwise thereto as indicated in Fig. 1. The short end flaps 25 and 27 at the lower ends of the side walls are then folded toward each other, then the two flaps 26 and 28 are folded into overlapped relationship across flaps 25 and 27 and all are adhesively joined in the usual manner, thus to close and seal the lower end of the container.

By the above described formation, folding and joining of the body blank, the container body is formed with an exterior collar as shown at 30 in Fig. 4. This collar gives rigidity and strength to the top edge of the container. Also, the particular manner in which the collar is formed provides a downwardly and outwardly sloping top edge for the container body, as at 30*y* in Fig. 3*a*, which has various advantages, especially in the application of the cover thereto.

The cover portion of the container is made from a single blank as designated in its entirety by numeral 35 in Fig. 7. This blank is substantially rectangular in form and is formed in one direction directly thereacross with parallel lines of scoring 36 and 37 and in the opposite direction with parallel lines of scoring 38 and 39. The area defined between these four crossed lines of scoring provides the top panel of the cover. The material at the blank at the outside of line 38 is formed with a line of scoring 40, parallel with line 38, extending from edge to edge of the blank. This line 40 is approximately midway between the line 38 and adjacent edge of the blank. The portion outside of line 40 is likewise scored from edge to edge by a line 41 which is somewhat nearer the outer edge than to the line 40.

The opposite edge portion of the blank 35, which is outside of scored line 39, likewise, is formed with parallel lines of scoring 42 and 43, in the same relationship to line 39 as lines 40 and 41 are to the line of scoring 38.

Those portions of the blank 35 that are at the outside of the lines of scoring 36 and 37 are cut along lines in coincidence with the scoring 38 and 39, as at 44 and 45. The blank, as thus cut and scored, comprises the top panel portion, opposite side flanges 46 and 47 that are between the cuts 44 and 45, and opposite side flaps or flanges 48 and 49. The flanges 46 and 47 are substantially half the width of flaps 48 and 49, as measured perpendicularly to lines 36 and 37.

It is shown also that the flap 48 is formed with a line of perforations 50, midway between lines 36 and 37, perpendicular to the line 39 and extending from this line outwardly to the edge of the blank. Also, flap 46 is formed thereacross with a line of perforations 52, midway between cuts 44 and 45. The top portion of the cover is scored diagonally along a line 56 that extends directly between the inner ends of the lines of perforations.

With the cover blank so cut and scored, the cover is formed therefrom as follows:

First, considering the blank 35 as shown flat in Fig. 7, the outer edge portions of the flaps 48 and 49 are folded downwardly and back on themselves along the lines of scoring 41 and 43, then again folded downwardly and back along the lines 40 and 42, thus forming the internal collar portions at opposite ends of the blank as shown in Fig. 10. Then the blank is bent downwardly at a right angle on lines 38 and 39. Following this, the opposite end portions of the folded flaps 48 and 49 are bent inwardly at right angles along the scored lines 36 and 37 that extend thereacross beneath the flaps 46 and 47. Then the flaps 46 and 47 are folded downwardly at right angles along lines 36 and 37 to overlap the inturned portions of the folded flanges 48 and 49, and all are adhesively joined, thus to form the cover portion as seen in Figs. 1 and 2.

It is to be understood that in the formation of this cover member, the cover flange or apron portion is made of such dimensions that the internal collar portion thereof must, in the applying of the cover, be pressed down against and over the external collar of the body. It is to be noted,

by reference to Figs. 4 and 5, that the internal collar of the cover, designated at **68**, is formed at the lower edge of the apron, and has a rather sharp lower edge **68***x* and an inwardly and upwardly sloping inside surface **68***s*, this by reason of the sharp score lines **40** and **42**, and the rather lightly formed scored lines **41** and **43**. When the cover has been pressed into place, it seats below the collar **30** on the body as in Fig. 3*a*. The fact that this relationship can be accomplished is due primarily to the inherent resiliency of the material, that permits the walls to spring inwardly or outwardly to the slight extent necessary for the applying of the cover, then to spring back to normal positions to effect the locking of the parts to retain the cover in place, as will be understood by reference to Fig. 3*a*.

When it is desired to pour the contents from the container, it is only necessary that the apron portion of the cover flange be broken along the lines of perforations **50** and **52** and the corner portion of the cover then folded back along the diagonal line of scoring **56**, as shown in Figs. 3 and 6, thus providing the pouring opening **70**. If it is desired, this corner portion may then be pressed back into place and, unless handled roughly, will retain a closed position.

The size of the opening might be increased or decreased by moving the lines of perforations farther from or closer to the corner which is to be uncovered.

While I have shown the container as being square in form, it might be made circular or oval, and a pouring opening provided in a like manner.

It is also proposed to provide as an alternative arrangement, a line of perforations across the cover flap **47** as at **52***x* in Fig. 7, and to extend a scored line directly across the cover panel, as at **56***x*. Then, if it should be desired to remove the cover entirely from the body, the lines of scoring **52** and **52***x* would be broken, and either half portion of the cover at opposite sides of line **56***x* folded back in the clear of the body and the cover slipped laterally from the latter.

In Figs. 11, 12 and 13, a modification of the construction above described has been shown. This structure is characterized by the fact that the collar portion that is folded within the apron or flange of the cover does not slip below the collar at the upper end of the body but engages flatly therewith in a wedge-like action; it being understood that the collars are formed like those already described, and therefore corresponding parts have been given corresponding reference numerals.

In this modification, the container body **100** is made from a blank that is cut, scored and folded as was the body shown in Figs. 1 and 3*a*. The cover **110**, however, is so formed that the internal collar **68** is closely adjacent the top panel. Thus by pressing the cover into place, the sloping outside surfaces of the collar **30** about the body, and those of the collar **68** within the cover flange, merely engage flatly in wedging contact, as in Fig. 13, and may be heat sealed through the application of paraffin, or the like, to the engaged surfaces and pressing these surfaces together along with an application of heat.

For easy removal of this cover, it is scored and perforated along lines **52**, **52***x* and **56***x*, which correspond to like lines in the cover made from the blank of Fig. 7. After breaking the lines of scoring **52** and **52***x*, the released part of the cover may be folded back as shown in dotted lines in Fig. 13.

It is to be understood that the specific size, shape or design of the container may be altered as desired or required without departing from the spirit of the invention, which resides in the interengaged flanged securing means which has been employed to obtain a desired result.

Having thus described my invention, what I claim as new therein and desire to secure by Letters Patent is:

1. A container of the character described comprising a body portion made from resilient sheet material and open at its upper end, and provided about said open upper end with an external upwardly and inwardly tapered collar which is formed by a sharp outward and downward bending of the body material along the top edge of the container and a rounded upward and inward turning of the lower edge of this downwardly bent material, and a cover for the container of external slip fit type and provided about its side walls with an internal collar that is formed by a sharp inward and upward bending of material along the lower edges of the side walls of the cover, and then an outward and downward turning of the material; said collar equipped portion of the cover being of slightly lesser internal dimensions than the corresponding external dimensions of the collar equipped portion of the body and said collar portions of body and cover being sufficiently resilient to permit the cover collar to be pressed into place over the body collar and then to cause them to automatically assume their cover holding relationship.

2. A container as recited in claim 1 wherein the said cover portion is scored from edge to edge across its top wall and has lines of perforations extending from the ends of the scored line downwardly across its side wall portions and collar to permit the easy breaking of the side walls along these lines for the back folding of the thus released portion of the cover along the line of scoring to provide a pouring opening for the container.

3. A container as recited in claim 1 wherein the body portion is of rectangular form, and the cover is shaped to fit thereto, and wherein the top wall of the cover portion is scored across one corner from edge to edge and the side wall portions of the cover are formed with lines of perforations downwardly thereacross from the ends of said line of scoring, for easy breaking of the side wall portions and collar of the cover member for the back folding of the partially released portion along the line of scoring, thus to provide a pouring opening at a corner of the container said collars of the body portion and cover having opposing edges rounded and said collar forming portion of the released cover portion being adapted to be snapped into frictional holding contact with the opposed edge of the body collar to hold the closure in closed position.

4. A rectangular container of the character described having a body portion formed from a resilient blank that is scored and folded to form an external collar about the open end of the body; said collar having a downwardly and outwardly sloping outer surface, and a cover formed from a blank that is folded to form an external slip fit; the side wall portions of the cover being formed with an internal collar with sloping inner surfaces adapted to be disposed in wedging contact with the sloping surfaces of the body collar; the slope of the engaged surfaces being such as

to maintain the cover in sealed condition by frictional contact of the surfaces.

JOSEPH A. O'REILLY.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,130,271	Hammond	Mar. 2, 1915
2,306,973	Mysels	Dec. 29, 1942
2,471,017	Wilcox	May 24, 1949
2,473,391	Roselle	June 14, 1949