April 27, 1965 J. T. ATKINSON, JR 3,180,552

CONTAINER OPENER

Filed June 13, 1963

Fig. 1.

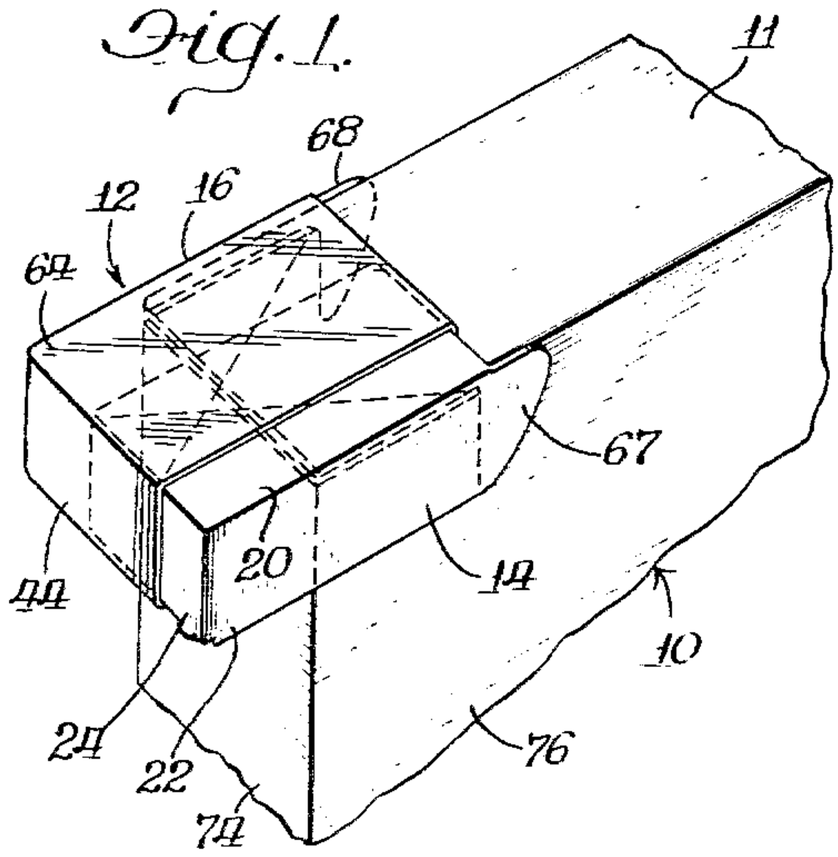
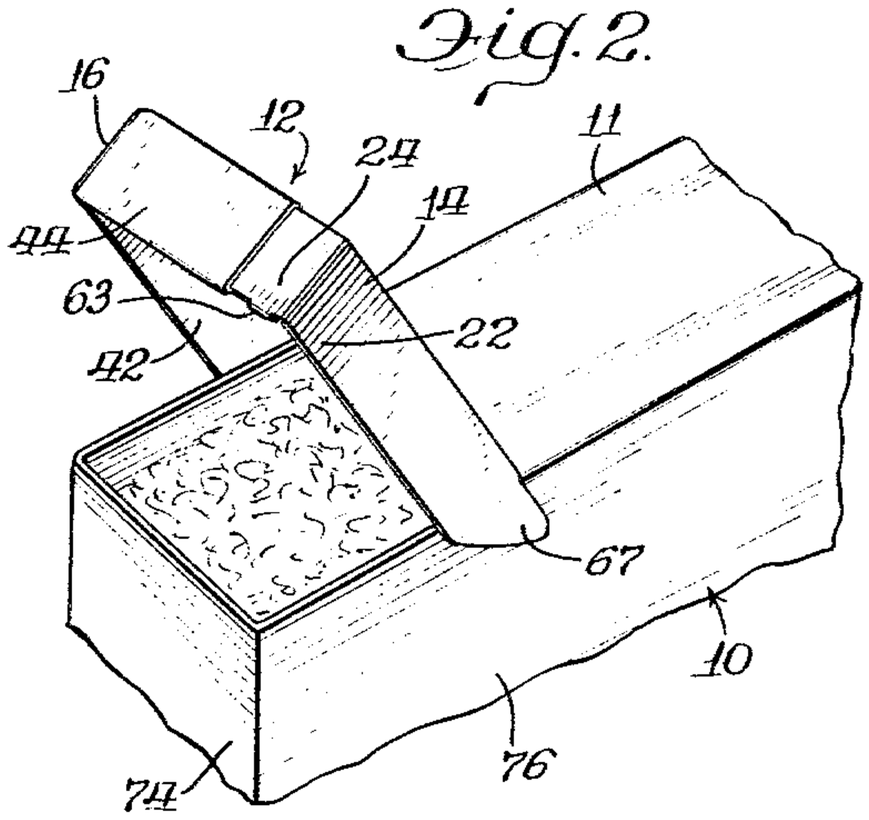


Fig. 2.



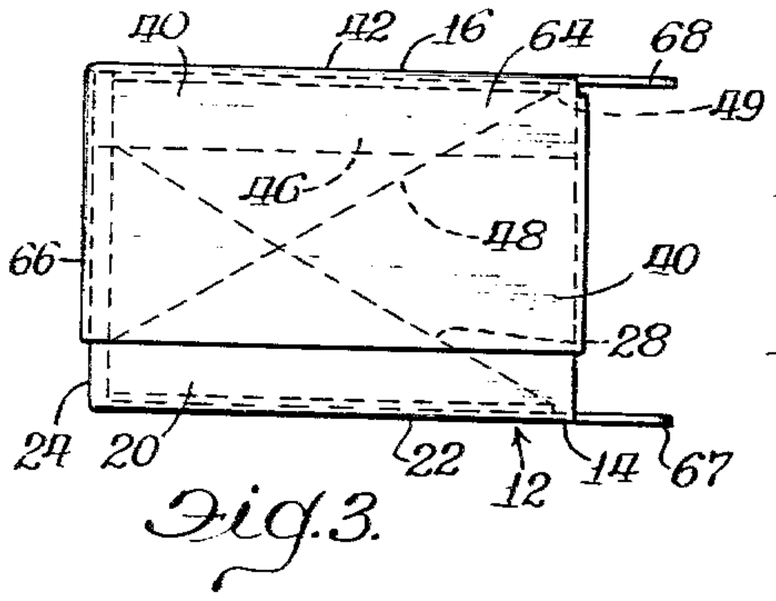


Fig. 3.

Fig. 4.

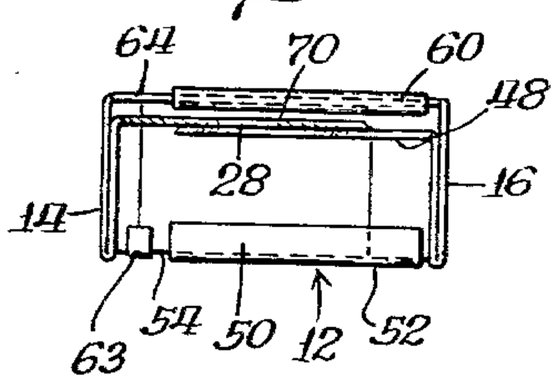
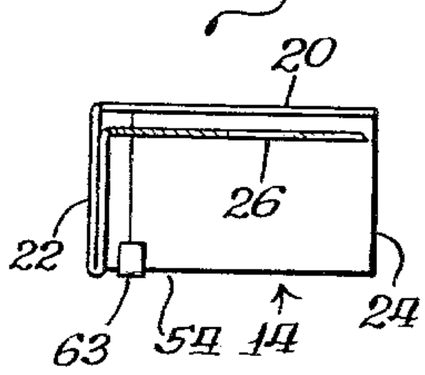


Fig. 5.



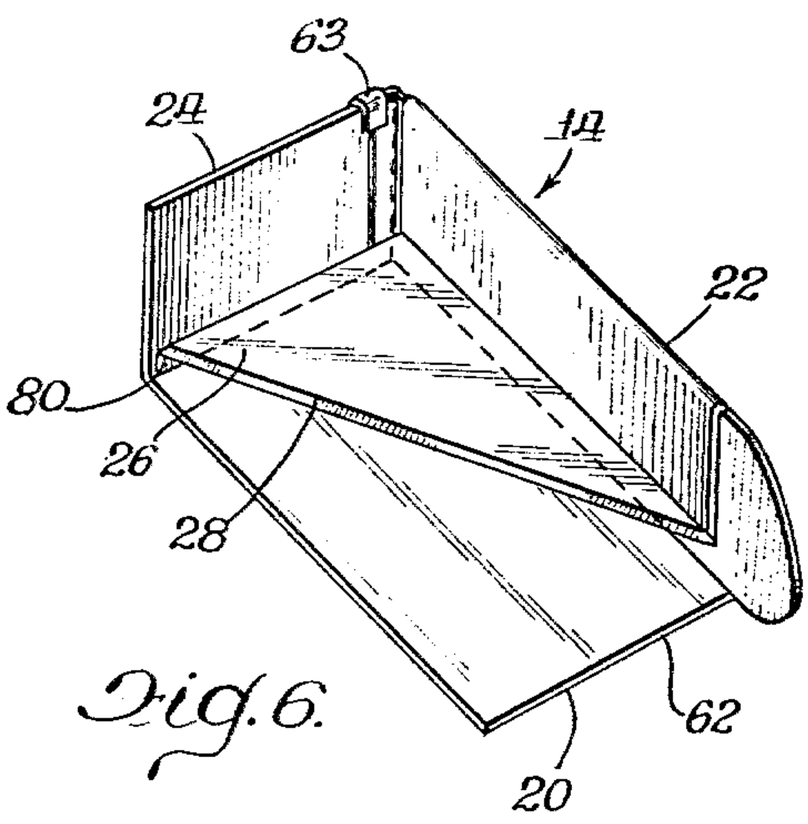


Fig. 6.

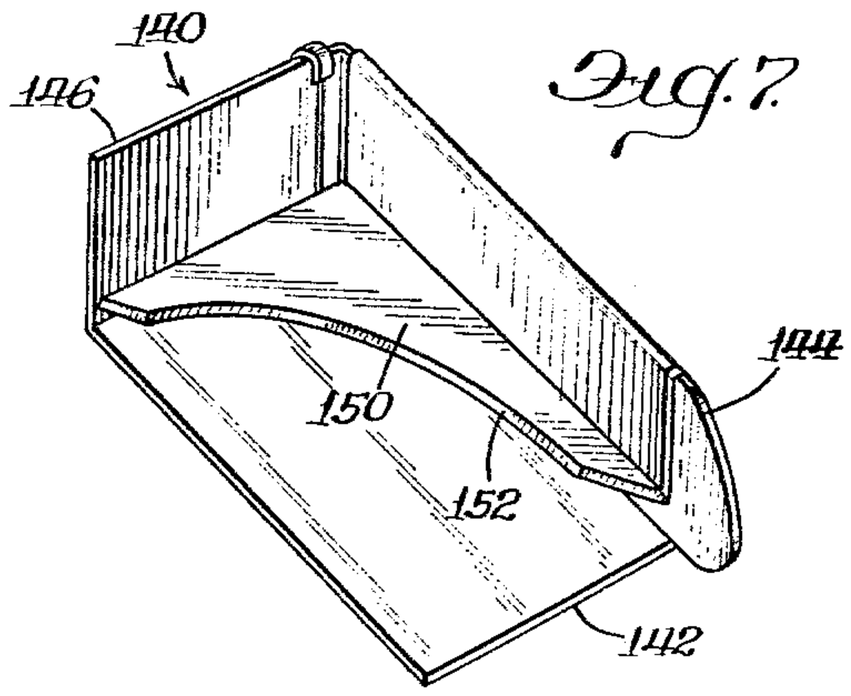


Fig. 7.

Inventor:
Jerome T. Atkinson, Jr.
By: Stone, Mierman,
Burmeister + Zummer
Attys.

United States Patent Office

3,180,552

Patented Apr. 27, 1965

3,180,552

CONTAINER OPENER

Jerome T. Atkinson, Jr., 1523 Elmwood Ave., Wilmette, Ill.

Filed June 13, 1963, Ser. No. 287,600
3 Claims. (Cl. 229—7)

This invention relates to openers for containers and more particularly to openers for boxes of cardboard or the like.

At the present time, boxes containing items such as soap powders, detergents, and cereal are provided with various forms of self-opening tops. These tops includes lines of perforations, opening tabs, pour spouts and many other additions to or treatments of the boxes to facilitate opening. Some of these openers, particularly for items which might become stale or spoiled by contact with air or moisture employ means for maintaining the box top in a closed condition once the factory closure on the box has been opened. The continuing activity by the box manufacturers to find newer and better box openers and top covers points clearly to the conclusion that the expedients now used are less than wholly successful. For example, with soap powders and detergents, the top opening must be sufficiently large to pour large quantities of the powder into washing machines and the like. To pour the quantities involved at a sufficiently rapid rate, the top must be cut back at least one third to one half of its length. The slit back portion should close the opening to inhibit the entrance of moisture into the open box and its contents. The opener should be safe to the user and should not present exposed sharp edges. This combination of features, the present inherent opening aids do not possess.

In the patent art, many patents have shown various forms of externally applicable box openers, but these in themselves do not provide many of the necessary features such as alignment, adjustability, safety and ease of opening and re-closure.

It is therefore an object of the invention to provide an improved box top opener which is readily alignable on a box top of any size for cutting open the box top.

It is a further object of the invention to provide an adjustable box top opener which can be used as a box top closure once the box has been opened.

It is a still further object of the invention to provide a novel and safe box top slitter usable successively on many boxes in which the cutting edge is recessed to protect the hands of the user.

These and other objects, features and advantages of the invention will become apparent from the detailed description of a presently preferred embodiment of the invention, read in connection with the accompanying drawings in which:

FIGURE 1 is a perspective view of an opener embodying the principles of the present invention fitted on a box with the box top partially cut through;

FIGURE 2 is a view as FIGURE 1 with the top fully cut and opened to allow dispensing of the box contents;

FIGURE 3 is a top plan view of an opener embodying the invention;

FIGURE 4 is a front elevational view of the opener of FIGURE 2;

FIGURE 5 is a front elevational view of the inner member of the opener of FIGURES 1–3 shown in the position it assumes in FIGURE 4;

FIGURE 6 is a front perspective view of the member shown in FIGURE 5, the member shown in the inverted position; and

FIGURE 7 is a perspective view of an inner member of an opener utilizing a variant in blade shape.

Viewing the drawings in detail, in FIGURES 1 and 2, there is shown a partially cut through cardboard box **10**, of the type used for powdered soap or detergent. The box top **11** of box **10** has affixed to it a container opener **12** embodying the present invention. The opener **12** as shown in FIGURES 1–3 is assembled using two members, an inner member **14** and an outer member **16**. The inner member **14** is shown in detail in FIGURES 4–6. Both members are fabricated of sheet metal such as sheet steel folded to form the shape shown, and are slide fittted together to complete the assembly of an opener **12**.

Member **14** includes a top guide face **20**, a left side wall **22**, a rear wall **24** and a cutting surface **26**. The front or cutting edge **28** of the cutting surface **26** is diagonally configured and aligned below the top guide face **20** and spaced therefrom by a distance greater than the multiple fold thicknesses of an ordinary cardboard box top. This diagonal cutting edge **28** is wholly under the extent of the top face **20** and may be fabricated as a folded continuation of the side wall **22**. The edge **28** is sharpened to a cutting keenness necessary to cut through cardboard.

The other (outer) member **16** also has a top guide face **40**, a side wall **42**, a rear wall **44**, and a cutting surface **46** spaced below and recessed below the top surface **40**. As with the inner member **14**, member **16** is fabricated with a diagonal edge **48** with its leading edge **49** adjacent its connection to the side wall **42**. This cutting edge **48** is also sharpened to cutting keenness and is wholly below the area of top face **40** and within side wall **42**. The shape of the member **16** is a mirror image of member **14** except that member **16** has inwardly turned flanges, one flange **50** at the bottom edge **52** of the rear wall **44**. Flange **50** is designed to receive the bottom edge **54** of the rear wall **26** of member **14**. A second flange **60** in the form of an inturned flap below the upper face **40** to slidingly maintain the front edge **62** of the inner member guide face **20**. To effect the slide fit of inner member **14** within outer member **16**, outer member **16**, of necessity, must be slightly larger in size than the inner member **14** in width and length. The difference in size between members is on the order of the thickness of the members, which as mentioned is sheet material. The inner member **14** slides within the flanges or flaps until the rear wall flange **50** contacts the inturned tab **63** inward of rear wall **24** to constitute the smallest width of opener **12**.

The two members are assembled into the unitary top opener **12** by sliding the left member **14** into the flanges **50** and **60** of right member **16** to cooperatively form a combined top guide surface **64** with the side surfaces **22** and **42** normal to the top surface **64** and the combined rear wall **66**, normal to the top surface and the side walls. The side walls at the front ends include extensions **67** and **68** used to guide the opener **12** onto the box **10** to be opened. With the opener **12** assembled, the cutting edges **28** and **48** combine to extend across the entire opening between the side walls in substantially a horizontal cutting plane **70** with both edges closely adjacent one another to complete a single cut across the box **10** being opened. The slide action assembly of the opener **12** with the edges **52** and **62** of one rear wall and top wall of member **14** sliding into the flanges **50** and **60** on the other member **16**, provides an adjustable distance between the side walls allowing use of the opener on various size boxes.

Once an opener **12** has been assembled, the opener is placed on a box **10** to be opened. The side walls **22** and **42** are adjusted by squeezing them together to a dis-

tance equal to the width of the box **10**. The side walls are positioned on the box sides with the combined top surface **64** resting on the box top. This positioning sets the cutting plane **70** spaced below the box top surface **11** to contact and cut through the box rear wall **74** and side walls **76** a short distance below the box top surface **11**. Pressure is exerted on the rear wall **66** of the opener **12** advancing the cutting plane **70** through the rear wall **74** and side walls **76** of the cardboard box in the manner shown in FIGURE 1. This cutting continues until the rear wall **66** of the opener strikes the adjacent end wall **74** of the box. This terminates the cut which comprises a single cut along both side walls **76** and the end wall **74** of the box **10** allowing a large quantity of the box contents to be poured out at one time. The size of this cut top portion is dependent on the length of the cutting edge **70** from its leading edge **49** to the trailing edge **80** adjacent the combined rear wall **66** of the opener.

Once the box top has been cut through and the contents dispensed, the opener **12** may be used as a closure for the open top. The box top **11** which has been cut remains as a flap, the free end of which is maintained between the cutting plane **70** and the top surface **64**. Thus, this flap may act as a hinge for opening and closing the opener to allow the contents to be poured in the manner shown in FIGURE 2. On closure of the opener on the box, the rear wall **66** and the side walls **22** and **42** remain closely adjacent the box sides and substantially isolate the contents of the box from the ambient atmosphere.

In FIGURE 7, there is shown an alternative shape for the cutting edge of one member of an opener otherwise similar to that shown in the earlier embodiment. Thus in FIGURE 7, the member **140** includes a top face **142**, a side wall **144**, a rear wall **146**, and a cutting blade **150**. As can be seen, cutting blade **150** has an inwardly curved cutting edge **152** spaced below the top guide face **142** and otherwise secured to the member in the manner previously described for the diagonal blade. The blade **150** or cutting surface may also be welded, riveted or otherwise secured to the side wall **144** or to both the side wall **144** and rear wall **140**. The folded approach to the securement of the cutting blade has been shown as one obvious expedient for connecting the blade to the opener. The use of an opener with a curved cutting blade is similar to that previously described and acts to produce a good cutting action.

While there has been described what is at present thought to be a preferred embodiment of the invention, it will be understood that modifications may be made therein and it is intended to cover in the appended claims all such modifications which fall within the true spirit and scope of the invention.

The invention claimed is:

1. An opener for rectangular containers comprising a transversely disposed cutting surface, a transverse guide face spaced above said cutting surface, parallel thereto and extending past said edge, a rear wall of said opener joining said guide face with spaced apart side guide walls normal to said guide face and to said rear wall to enclose a rectangular shape therein, means for adjusting the spacing between said side walls about a container to be opened, said guide face disposed to rest on a container top surface with said cutting surface spaced therebelow adjacent the rear wall of the container with the opener side walls guidingly adjacent the container side walls, said cutting surface responsive to pressure on the opener rear wall to advance through the rear and side walls of said container to form a flap extending between the cutting surface and the guide face of said opener, said opener responsive to movement of said flap about its connection to the container side walls to hingedly enclose the open top of said container.

2. An opener for rectangular containers of cardboard or the like, comprising a first member having a side wall, a rear wall, a top guide surface, and a cutting edge parallel to said guide surface disposed below and insert from the lead edge of said guide surface, a second member configured as a mirror image of said first member and sized to mate therewith to comprise the open-front, open-bottom rectangular figure of said opener, means for slideably joining said member to produce an opener of adjustable width which may be fitted on the top of containers to be opened wherein said side walls fit about the side walls of the container and the top surface of said opener fits on the top of the container to align the cutting edge along the container rear wall rearwardly of the leading edge of the top guide surface and rearward of the leading edges of the side walls of the opener.

3. An opener as claimed in claim 2, in which the cutting edge of each of the members extends diagonally from adjacent the lead edge of the side wall to a trailing edge adjacent the rear wall, and said diagonal edges extend adjacent one another in a cross-like relation comprising a cutting plane for cutting through both side walls of the container simultaneously.

References Cited by the Examiner

UNITED STATES PATENTS

2,108,431	2/38	Cornwall	229—7
2,263,353	11/41	Eidam	229—51
2,282,150	5/42	Andary	229—7
2,386,877	10/45	Neilson et al.	229—7

FRANKLIN T. GARRETT, *Primary Examiner*.