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W. E. NEILSON, JR ET AL

2,386,877

BOX OPENER AND DISPENSER

Filed July 27, 1943

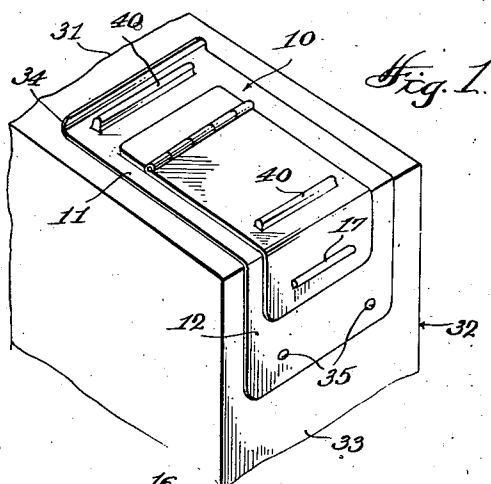


Fig. 1.

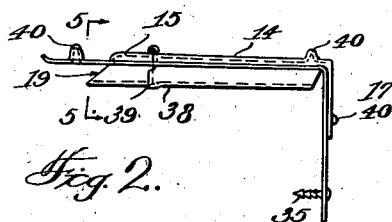


Fig. 2.

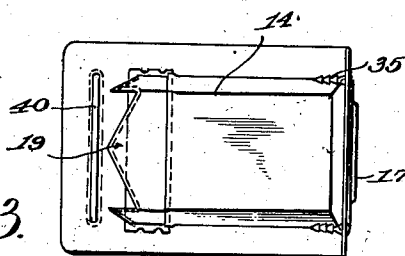


Fig. 3.

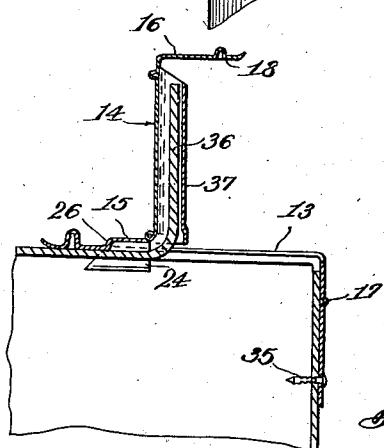


Fig. 4.

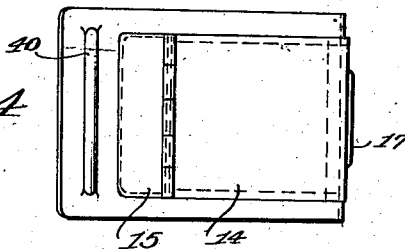


Fig. 5.

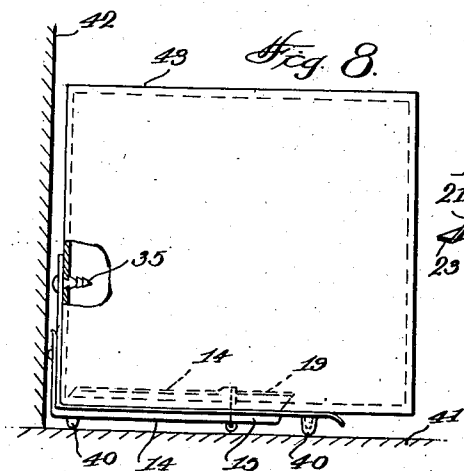


Fig. 6.

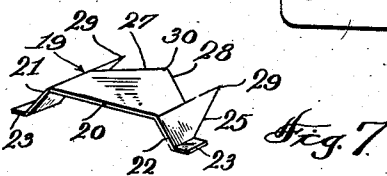


Fig. 7.

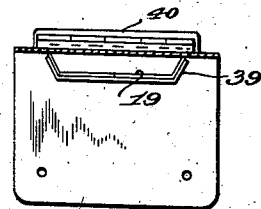


Fig. 8.

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BOX OPENER AND DISPENSER

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Application July 27, 1943, Serial No. 496,342

4 Claims. (Cl. 229-7)

Our invention relates to new and useful improvements in devices for opening cardboard containers.

An important object of our invention is the provision of a device that may be easily applied to a box or carton, and which is uniquely constructed so that, during such application, it will cut a tongue or section from the top of the carton to provide an opening from which the contents thereof may be poured.

Another object of our invention is the provision of a device of the above mentioned character that includes a hinged flap to cover the opening, the flap being uniquely formed to receive the tongue or section as it is cut from the box and to hold the same in fixed association therewith so that the said section will open and close with the flap and be held unobstructedly positioned at all times.

Still another object of our invention is the provision of a device of the above mentioned character that is simple in construction, inexpensive to manufacture and efficient and efficacious in the performance of its duties.

Other objects and advantages of our invention will be apparent during the course of the following description.

In the drawing, forming a part of this specification, wherein like numerals are employed to designate like parts throughout the same,

Figure 1 is a perspective view of a device embodying our invention and showing the same operatively associated with a conventional cardboard carton,

Figure 2 is a side elevation of the device,

Figure 3 is a bottom plan view of the same,

Figure 4 is a top plan view thereof,

Figure 5 is a vertical sectional view taken on line 5-5 of Figure 2,

Figure 6 is a longitudinal sectional view of our device as it appears when applied to the carton and showing the flap in the raised position and illustrating the manner in which the flap holds the tongue or section cut from the carton in an unobstructed position,

Figure 7 is a perspective view of the cutting knife embodying a part of the invention, and

Figure 8 is a side elevation of the device illustrating the manner in which it may be applied to a cardboard container of the type wherein the cardboard forming the same is of a relatively heavy grade.

In the accompanying drawing, wherein for the purpose of illustration is shown a preferred embodiment of our invention, the numeral 10 des-

ignates a plate of sheet metal or the like. The plate is of essentially rectangular formation in plan and is bent transversely to provide right angularly disposed portions 11 and 12. The portion 11 of the plate is provided with an opening 13 at the juncture of the portions and a flap 14 is hingedly mounted to the portion 11 bordering the edge of the opening remote from the angularly disposed plate portion 12. The portion of the plate to which the flap is hinged is upwardly offset or bulged as at 15 for the purpose to be hereinafter set forth in detail. The flap is of a width slightly wider than the opening 13 which it is adapted to cover and when it is in the closed position illustrated in Figure 1 the depending apron 16 will overlap the portion 12 of the base 10. We have formed the portion 12 of the plate with a protuberance 17 and the inner surface of the apron 16 of the flap is provided with a recess 18 which receives the protuberance when the flap is moved to the closed position. The catch thus provided will normally hold the flap in the closed position but will permit the same to be easily raised by the user of the device.

A channel shaped knife element 19 is welded or otherwise fixedly secured to the bottom side of the plate portion 11 in alignment with the opening 13 and directed rearwardly of the hinged end of the flap 14. The knife element includes a flat base or bottom portion 20 having the side edges 21 and 22 bent angularly outwardly and upwardly therefrom. Each of the angularly bent portions 21 and 22 of the knife element is provided at the outer end thereof with an angularly bent lip 23 which fits into the bulged portion 15 of the plate and is welded or otherwise fixedly secured therein. The vertical rear edge 24 of the knife element is arranged at the edge of the opening 13 and the forward edges 25 of the angularly bent portions 21 and 22 abut against the shoulder 26 provided at the juncture of the offset portion 15 with the main body of the plate. As best illustrated in Figure 7, the forward edge of the base or bottom portion of the knife element is formed with forwardly convergent sharpened edges 27 and 28 and the angularly disposed portions 21 and 22 extend rectilinearly forwardly of the edges of the portion 20 so that the receding forward edges 25 thereof will provide essentially sharp points 29 laterally of the point 30 provided at the juncture of the sharpened edges 27 and 28.

In using the device the portion of the plate 10 extending forwardly of the knife element is

placed on the top 31 of a cardboard carton 32 and slid therealong to move the points 29 and 30 of the knife element into engagement with the front wall 33 of the carton. Attention is directed to the fact that the forward edge of the plate 10 is curved upwardly as at 34 to prevent this edge of the plate from embedding itself in the carton as the plate is passed thereacross. As the plate is pushed along the top of the carton the sharpened edges 25, 27 and 28 of the knife will cut through the front wall 33 of the carton and cut spaced parallel slots in the top 31 thereof. The blade is pushed along the top of the carton until the depending portion 12 thereof engages the front wall of the carton, which portion 12 is provided with notched pins 35 which penetrate the front wall and hold the plate securely but detachably affixed to the carton. As best illustrated in Figure 6, the channel shape of the knife element 19 will provide a passage in which the tongue 36 cut from the top of the carton will be received.

Arranged below and connected to the flap 14 is a complementary channel member 37. The member 37 is disposed in alignment with the knife 24 and the abutting end 38 thereof is formed with a longitudinally extending offset lip portion 39 which overlaps the rearward end of the knife element when the flap is in closed position to prevent the tongue 36 from becoming pinched between the knife and the channel element 37 when the flap is opened or closed. By reason of the fact that the channel member 37 is disposed in alignment with the knife the tongue 36 will be received therein as it is cut from the carton and consequently when the flap is raised in the manner illustrated in Figure 6 the portion of the tongue received within and held by the channel element 37 will be raised therewith whereby to be unobstructedly positioned when the contents of the carton are poured through the opening 13. Manifestly, when the flap is lowered to the closed position illustrated in Figure 1 of the drawing, it will close the opening and prevent the contents of the carton from being spilled.

It may thus be seen that under normal conditions the application of the device to the carton may be easily and expeditiously accomplished. It is only necessary to hold the carton with one hand and to slide the portion 11 of the plate 10 along the top of the carton in order to cut the tongue 36 from the top. As soon as the pins 35 carried by the depending portion 12 of the plate have entered the front wall of the carton the device will be fixedly attached to the carton and it is only necessary to raise the flap 14 to discharge the contents of the carton. The manner in which the flap overlays the plate 10 to close the opening 13 will assure proper closing of the opening when the flap is in the lowered position and will prevent the contents of the carton from being spilled regardless of the position of the carton.

In Figure 8 we have illustrated the manner in which the device may be applied to a carton formed of cardboard of a relatively heavy grade.

The portion 11 of the plate 10 forwardly of the hinge and the flap 14 is each provided with a rib 40 which holds the plate flap in a substantially elevated position when the device is inverted and placed on a horizontal surface 41. If the depending apron 16 of the flap is moved into abutting engagement with a vertical wall 42 the device will be securely lodged so that the carton 43 may be placed on the portion of the plate 10 extending forwardly of the knife element and pushed along the plate so that the knife will cut a tongue therefrom in the manner hereinabove described. As the carton is pushed to a position in proximity to the portion 12 of the plate 10 the notched pin 35 carried thereby will penetrate the front wall of the carton in the manner described to fixedly hold the device applied thereto.

It is to be understood that the form of our invention herewith shown and described is to be taken as a preferred example of the same and that various changes in the size, shape and arrangement of the parts may be resorted to without departing from the spirit of our invention or the scope of the appended claims.

Having thus described our invention, we claim:

1. A carton opener and dispenser, comprising a plate having an aperture, a cover closing said aperture, a channeled cutting member having horizontal and vertical cutting edges secured to the lower face of the plate, and means carried by the cover for receiving and retaining the cut out portion of the box.

2. A carton opener and dispenser, comprising a plate having an aperture, a cover closing said aperture, a channeled cutting member having horizontal and vertical cutting edges secured to the lower face of the plate, a channel member carried by the cover in a plane with the channel cutting member for receiving and retaining the cut out portion of the box.

3. A carton opener and dispenser, comprising a plate having an aperture, a cover closing said aperture, a channel cutting member carried by the lower face of the plate beyond the aperture and having horizontal and vertical inner cutting edges, a channel member carried by the lower face of the cover in a plane with the channel cutting member, and a stop carried by the plate for engaging the side wall of the box for limiting the inward movement thereof.

4. A carton opener and dispenser, comprising a plate having an aperture, a cover closing said aperture, a channel cutting member carried by the lower face of the plate beyond the aperture and having horizontal and vertical inner cutting edges, a channel member carried by the lower face of the cover in a plane with the channel cutting member, and a downwardly extending flange carried by the outer end of the plate adapted to be secured to the side of the box and limiting the inward movement of the plate on the top of the box.

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