June 13, 1939. H. BLATT 2,162,053

CARTON OPENER

Filed May 21, 1938

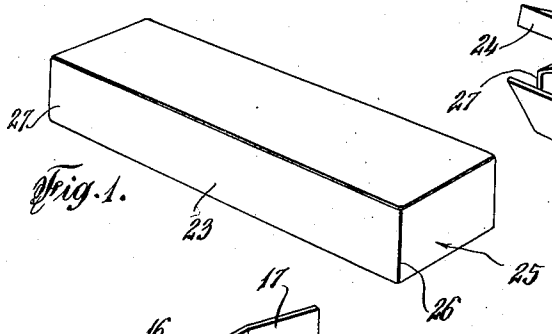


Fig. 1.

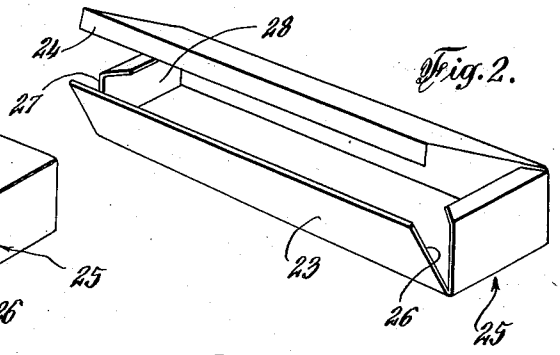


Fig. 2.

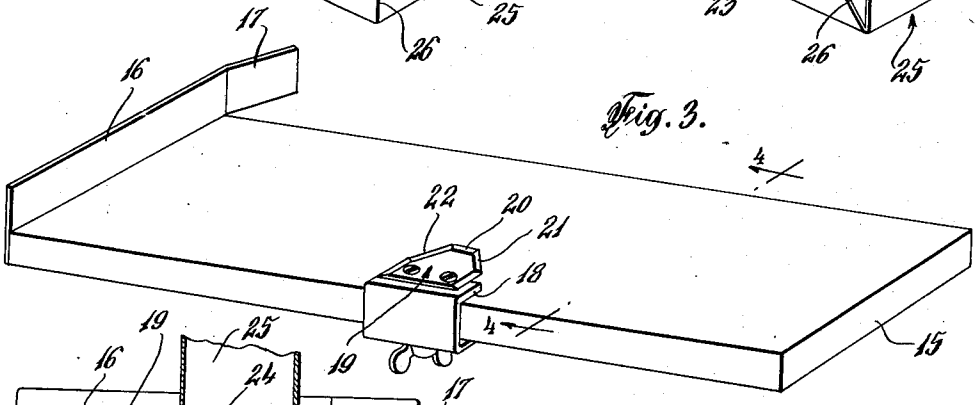


Fig. 3.

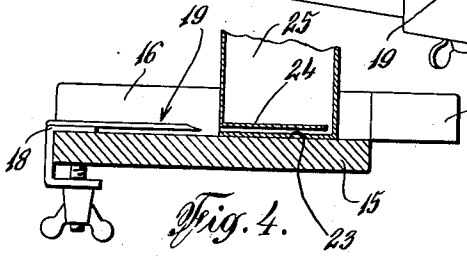


Fig. 4.

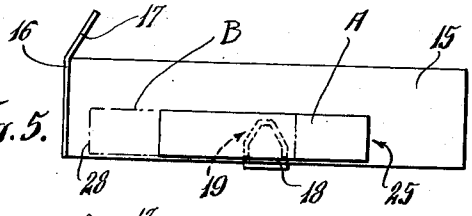


Fig. 5.

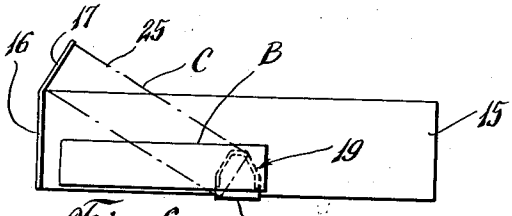


Fig. 6.

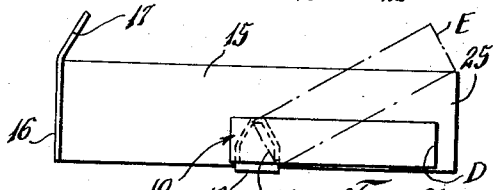


Fig. 7.

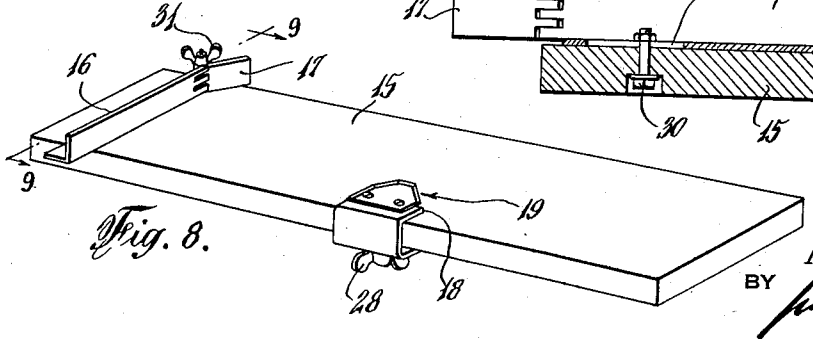


Fig. 8.

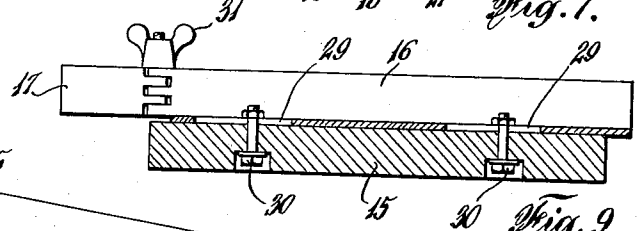


Fig. 9.

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CARTON OPENER

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Application May 21, 1938, Serial No. 209,156

3 Claims. (Cl. 30—2)

My present invention relates to carton openers, and more particularly to the table-mounted type for opening small cartons having a flap depending at the forward edge of the top member, which flap is pasted to the inner face of the front wall of the carton, as is common in the packing of packages of cigarettes.

The principal object of this invention is to provide a novel and improved device of the character set forth, for slitting the side edges of the front wall of the carton described, as well as freeing the flap aforesaid, from the inner face of the said front wall.

A further object is to provide a novel and improved carton opener of the class described whereby the cutting blade remains in proper association with the carton during the entire opening operation.

Another object of the present invention is to provide a carton cutter of novel and improved construction adaptable for cartons of different sizes.

Another object is to provide a device of the type mentioned, which is simple in construction, cheap to manufacture, easy to use and efficient in the accomplishment of the purpose for which it is designed.

In the accompanying drawing forming part of this application, similar characters of reference indicate corresponding parts in all the views.

Fig. 1 is a perspective view of the type of carton adapted to be rapidly opened with the present device.

Fig. 2 shows in perspective, the carton in the condition it is, after having been slitted open with the device which is the subject matter of this application.

Fig. 3 shows one construction of a device embodying the teachings of this invention.

Fig. 4 is a section taken at line 4—4 in Fig. 3.

Fig. 5 diagrammatically shows the carton in position at the commencement of the opening operation.

Fig. 6 diagrammatically shows the carton moved to one of its remote positions, at which time about half of the pasted joint is undone and one of the side edges of the front wall has been slit open.

Fig. 7 is a similar view showing the carton at finish position, at which time the remainder of the pasted joint is opened and the other side edge of the front wall has been slit.

Fig. 8 shows another embodiment of my present invention.

Fig. 9 is a section taken at line 9—9 in Fig. 8.

In the drawing, the numeral 15 designates a table member along a side edge of which, is mounted a stop member 16 terminating in a cam 17 for carton movement guiding. At the forward edge of the table member is mounted a spacer 18, atop of which is secured a blade 19, having at its free end, the horizontal cutting edge 20, intermediate the cutting edges 21 and 22 which diverge towards the front end of the table member. The height of the spacer 18 is such that the blade 19 will enter between the front wall 23 and the flap 24 of the carton 25, when the latter is slid on its front wall so as to engage the blade 19.

It is found that it is extremely easier and much speedier, that is, it requires less force and less time to slit said cartons open as required, when the operator slides the carton in an arcual path, rather than along a straight line to slit the edges 26 and 27. In fact, it is found difficult to slit edges 26 and 27 open, by a straight line movement of the carton 25, while it requires but little effort when the carton is moved in a curved path to effect such slitting.

In operation therefore, a carton 25 laid with its front wall 23 on the table member 15, is first slid against the blade 19 so that the latter enters between said wall and the flap 24, thereby breaking the mucilage seal between said carton components at about the middle region between the edges 26 and 27, as illustrated in Fig. 5 by carton position A. Then, the carton 25 is slid always in contact with spacer member 18, in a direction towards the stop member 16, to position B and finally with an arcual movement along the cam guide 17, until side wall 28 of the carton is up against said cam guide to position C, whereupon the carton is in such position that its edge 26 is completely slit, and it is evident that by this time a portion of the mucilage seal is also undone. It is to be noted that the blade 19 is still in position between the front wall 23 and the flap 24 of the carton. Now, still maintaining the carton 25 against the spacer member 18, the carton is slid in the opposite direction to position D, and then in an arcual path, to position E, whereupon the edge 27 is slit open.

To adapt the contrivance so that it may be adjusted for the slitting open of cartons of different sizes, it is required that the distance between the blade 19 and the cam guide 17 need be adjustable, and that the angle between the cam guide 17 and stop member 16 need be adjustable, and that the position of the vertex of the angle made by the latter components need be moveable. Therefore, in the modified embodiment shown in Fig. 8, the

position of the blade **19** may be changed, for the spacer member **18** is slidable along the front edge of the table member **15** and is provided with screw **28** so that it may be stationed in any particular position. Also, stop member **16** may be slid along the side edge of the table member **15**, and maintained in any desired position, for which, I have provided the slots **29** and maintaining bolts **30**. Also, in said embodiment the stop member **16** and cam guide **17**, are hinged and maintainable in any designed angular relationship by means of nut **31**. It is to be noted that the dimensions of the carton **25** to be slit, will determine the relative positions of the various components of this device.

This invention is capable of numerous forms and various applications without departing from the essential features herein disclosed. It is therefore intended and desired that the specific embodiments herein shown, be deemed illustrative and not restrictive and that the patent shall cover whatever features of patentable novelty exist herein; reference being had to the following claims, rather than to the specific description herein, to indicate the scope of this invention.

I claim:

1. In a device for opening a carton which has a flap depending from the forward edge of its top wall pasted to the inner surface of its front wall, the combination with a table member, of a blade fixedly mounted at one end to lie over the table member in a plane parallel therewith; the space between the table member and blade being substantially equal to the thickness of the material of the carton, whereby the latter may be moved so that the blade shall enter between the front wall and said flap of the carton; the blade having a pair of cutting edges which diverge towards its secured end, a stop member and a cam member, both fixedly mounted on the table member; the distance between the stop member and the furthest point from it along the remote cutting edge of the blade, being more than the length of the carton, and the position of the cam member being such that when the side wall of the carton is in surface contact with the cam member, the blade shall have slit a side edge of the front wall of the carton.

2. In a device as in claim 1 wherein the blade, the stop member, and the cam member are relatively moveable, including means to fix their relative position on the table member.

3. In a device as in claim 1 wherein the blade is moveable along a path substantially parallel to the front edge of the table member, and wherein the stop member is movable along a path substantially perpendicular to the front edge of the table member, and wherein the cam member is angularly moveable with respect to the stop member, including means to fix the relative position of said components on the table member.

HARRY BLATT.