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2,550,346

DEVICE FOR OPENING PAPER CARTONS

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FIG. 1

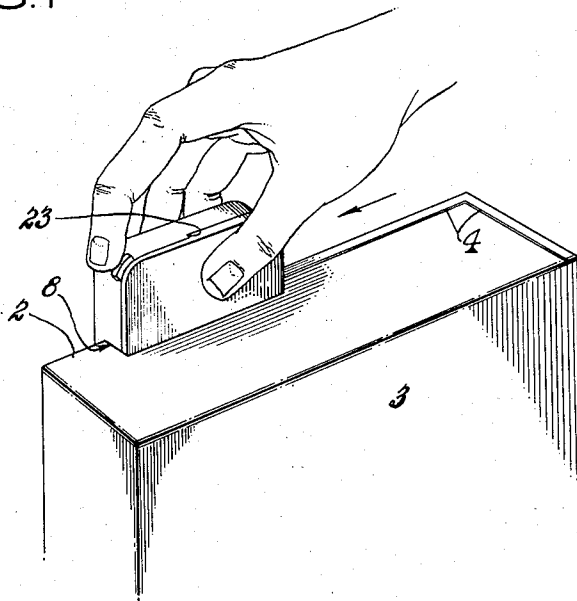


FIG. 2

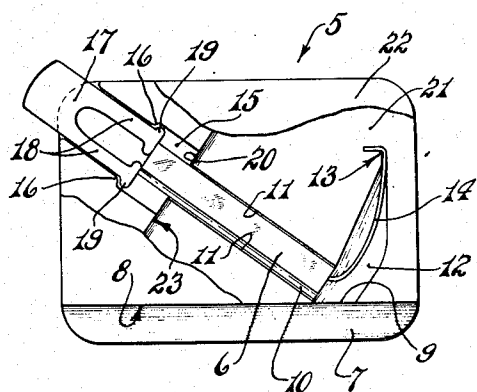
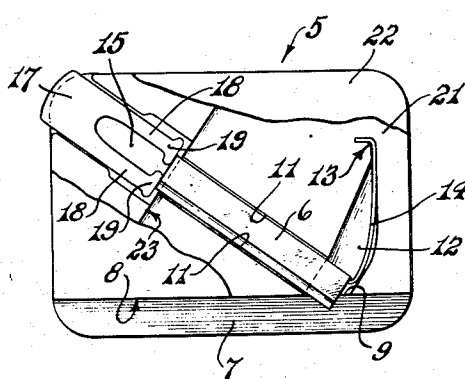


FIG. 3



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DEVICE FOR OPENING PAPER CARTONS

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2 Claims. (Cl. 30—2)

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This invention relates to an improved device for cutting paper board cartons, boxes, and the like by making an incision along a marginal edge or edges of such a carton.

It is an object of the invention to provide an instrument which is automatically rendered safe when not being used and is quickly and easily convertible to a condition of utility.

Another object of the invention is to provide a cutting instrument of simple and sturdy construction with a minimum of parts, for economy in manufacture and a long useful life.

These and other objects and advantages of the invention will be understood from the following description in connection with the accompanying drawings, in which:

Fig. 1 is a perspective view showing the new cutter device as used to open a carton;

Fig. 2 is a view with the casing of the device broken away to show the relationship of parts in normal condition; and

Fig. 3 is a view similar to Fig. 2 to show operative position of the parts.

As shown by Fig. 1, the new device is adapted to be positioned upon a corner edge portion 2 of a generally rectangular paper board carton 3 or the like, and then to be drawn along said edge to make a cut or incision, such as is indicated at 4, in a wall margin of the carton immediately adjacent and parallel to the carton edge. The instrument may be drawn along three adjacent edges to provide a hinged cover for the carton, or it may be used to cut four adjacent edges if a hinged cover is not desired for the carton.

The cutting device includes a substantially rectangular frame 5 with a cutting knife blade 6 held slidably therein. A flanged extension 7 is provided along one edge of the frame 5. The inner surface of the extension 7 forms, with the adjacent frame edge 8, a pair of right-angled surfaces for slidable engagement with a pair of adjoining carton walls along the carton edge. A slotted opening 9 is positioned near one end of the frame edge 8 and communicating with this opening is an elongated recess in the body of the frame 5. The recess is defined by a pair of parallel longitudinal walls 11 disposed diagonally across the body of frame 5.

The knife blade 6 is slidably held in the recess by the recess walls 11, with the lower end of a cutting edge 10 lying adjacent the frame edge 8. The blade 6 is adapted to have the lower corner slidably reciprocated through the slotted opening 9.

A recessed cavity 12 is provided in the frame

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adjacent the slotted opening 9 to intersect the lower end of the diagonal recess formed by shallow walls 11. The upper end of cavity 12 is reduced to an angular slit as at 13. In the slit a curved leaf spring 14 is anchored. The spring is arched in the cavity 12 and is yieldingly pressed against the lower end edge of the knife blade 6.

As shown by the drawings, the bias of spring 14 normally serves to force the blade 6 upwardly away from the slotted opening 9 and to project into an enlarged recess 15, which is in longitudinal alignment with the diagonal recess. The recess 15 is shouldered inwardly as at 16 to provide a pair of abutments to secure a slidable finger piece 17 in the recess. The narrowed outer end of recess 15 intersects the peripheral edge of the frame 5.

The finger piece 17 includes a pair of prongs 18 with outwardly offset portions 19 on enlargements at the extremities thereof, the portions 19 engaging the abutments at 16 to limit outward movement of the finger piece when pressed by the spring 14. The inner ends of prongs 18 engage the upper end edge of the knife blade 6 and when the finger piece is pressed inwardly against the spring to project the blade through slot 9 (Fig. 3) the movement of piece 17 is limited by an abutment 20 formed by the inner end of recess 15.

It will be noted the rectangular frame 5 is formed with two pieces, a body portion 21 in which the recessed portions are formed and a cover plate portion 22 overlying the recessed surface of portion 21. The body portion 21 is stepped as at 23 diagonally across the upper corner thereof in line with the abutment walls 20 of recess 15.

The cover member 22 has a mating stepped portion to fit in position over the face of the body and is fixed by suitable means as by plastic cementing to cover and hold the spring 14 and blade 6 in position in the frame. This interfitting relation of stepped portions facilitates the assembly of the cover 22 of the frame on the body 21 in the attachment of the two portions.

It will be readily appreciated that spring 14 normally holds the knife 6 away from opening 9, so that said knife does not protrude beyond the frame edge 8. This condition is illustrated by Fig. 2. In use, the finger piece 17 is depressed to project the lower corner of the knife blade beyond frame edge 8, for cutting action. This is shown by Fig. 3.

Preferably the knife 6 consists of a discarded razor blade. It will be understood that any generally rectangular blade may be used in the device. The example shown by the accompany-

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ing drawings has been proportioned to accommodate a blade, well-known as a "Shick injector" blade. The recess of frame 5 may, however, be formed to accommodate other types of blades as desired.

The frame and finger piece is preferably of plastic material. The prongs of finger piece 17 have sufficient resiliency so that the ends thereof can be momentarily compressed for insertion and removal through the narrowed outer walled passage of recess 15.

The device may, of course, be manipulated in any manner convenient to or desired by the user. Fig. 1 illustrates one way of handling the carton opener as by depressing the piece 17 with the index finger and pushing the opener to cut the upper surface of a carton top. It will be realized that it may be perhaps equally or more convenient to hold the device with the piece 17 placed against the thumb pad of the user's hand, with the index finger curled around the top edge of the frame 5 and the tip of the finger pressed against the frame side edge opposite the piece 17. In this case the device will be drawn along the carton edge with the extension 7 resting on the top edge of the carton so as to make the incision along the side thereof.

What is claimed is:

1. A device for opening paper cartons and the like comprising a unitary frame having along one edge a flanged extension, the inner surface thereof forming with the adjacent frame edge a pair of right angled surfaces for slidable engagement along adjoining carton walls, a slotted opening in said adjacent frame edge near one end of the same, a recess in the body of said frame, said recess communicating with said slotted opening, a knife blade in said recess adapted to be slidably reciprocated through said slotted opening, a recessed cavity in the frame adjacent the slotted opening and intersecting the recess, a spring anchored in the cavity engaging one end edge of said knife blade, said spring normally urging said knife blade away from the slotted opening and being movable in the cavity to permit extension of a corner of the blade through said open-

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ing, an enlarged recessed extension of said blade recess remote from said cavity and intersecting the peripheral edge of said frame, a finger piece reciprocably held in said recessed extension and engaged against the adjacent end edge of said blade, and means to limit the movement of said finger piece outwardly of its recessed extension, the inner end of said extension forming an abutment for limiting inward movement of said finger piece.

2. A device for opening paper cartons and the like comprising a frame having along one edge a flanged extension, the inner surface thereof forming with the adjacent frame edge a pair of right angled surfaces for slidable engagement along adjoining carton walls, a slotted opening in said adjacent frame edge near one end of the same, an elongated recess having parallel longitudinal walls disposed diagonally in the body of said frame, said recess communicating at one end with said slotted opening, a knife blade slidably held by the walls of said recess, a recessed cavity in the frame adjacent the slotted opening and intersecting the diagonal recess, a spring member anchored in the cavity engaging an end edge of said knife blade, said member normally urging said knife blade away from the slotted opening and being movable in the cavity to permit extension of a corner of the blade through said opening, an enlarged recess in longitudinal alignment with the other end of said elongated recess and intersecting the peripheral edge of said frame, a finger piece slidably mounted in said enlarged recess and provided with spaced prongs at the inner end thereof, the end extremities of said prongs being engaged against the adjacent end edge of said blade and having outwardly offset portions, said enlarged recess having inwardly shouldered portions forming an abutment engageable by said offsets to limit movement of the finger piece outwardly of said recess, the inner end of said recess forming an abutment for limiting inward movement of said finger piece.

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No references cited.