

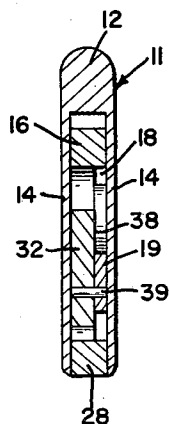
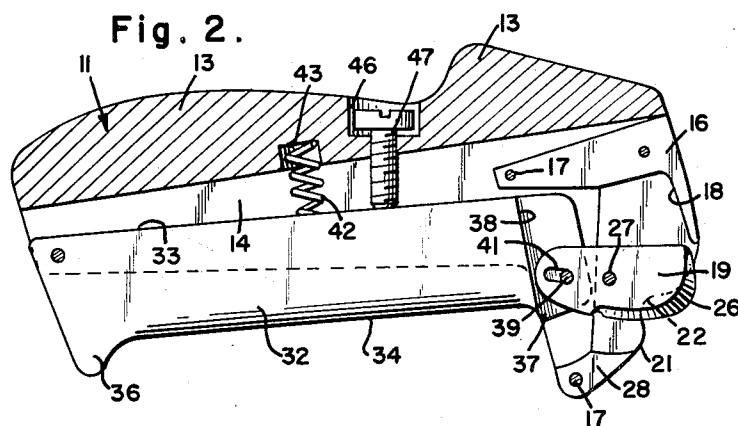
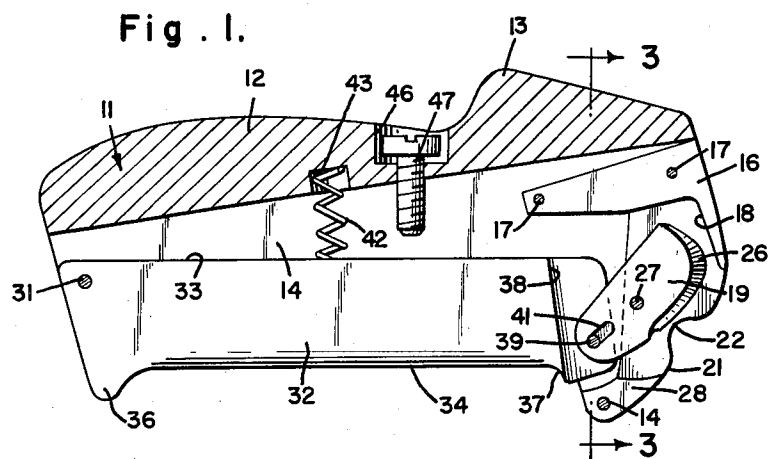
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CARTON OPENING TOOL

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CARTON OPENING TOOL
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This invention relates to a new and improved carton-opening tool. More particularly the invention relates to a tool having a casing and a blade pivoted within the casing and moved by means of a handgrip so that the cutting edge of the blade projects when the handgrip is grasped by the fingers of the user.

A particular feature and advantage of the present invention is the fact that when pressure is applied to the handgrip the blade is thereby immediately extended to cutting position and held in such position so long as finger pressure is applied to the grip. Thus, no special action or adjustment is required to move the blade other than the normal grasping of the fingers against the handgrip.

A still further advantage of the invention is the fact that as soon as pressure on the handgrip is released, the blade is automatically retracted and held by spring action in retracted position. This feature of the invention is of particular importance in that it makes it impossible unintentionally to leave the blade extended. Thus, when the user is finished opening a carton he may safely put the tool in his pocket without danger.

Thus, a principal object of the present invention is to provide a tool of the character described wherein safety in use and storage is of prime consideration.

Unintentional cutting of objects is eliminated and injury to the person of the user or a bystander is likewise eliminated.

A still further feature of the invention is the provision of means for adjusting the amount of projection of the blade. It will be understood that the thickness of cartons varies. At the same time it is highly important that the cutting blade not project too far for fear that the contents of the carton will be injured or the cutting blade injured. The present invention provides a rapid, simple adjustment screw which determines the extent of projection of the blade.

Still another feature of the invention is the simplicity of its operation and the facility with which cartons may be opened.

Other objects of the present invention will become apparent upon reading the following specification and referring to the accompanying drawings in which similar characters of reference represent corresponding parts in each of the several views.

In the drawings:

FIG. 1 is a vertical midsectional view showing the blade in retracted position.

FIG. 2 is a view similar to FIG. 1 showing the blade in extended position.

FIG. 3 is a transverse sectional view taken substantially along the line 3-3 of FIG. 1.

The tool which is the object of the present invention has a casing 11 having a shape conveniently to fit inside the palm of the user. Thus, casing 11 has a back 12 curved to fit against the palm of the user and having a hump 13 at the front which extends upwardly into the space between the thumb and fingers of the hand. The tool is thin, having projecting sides 14 extending downwardly beyond the back 12, there being a space between the sides 14 to receive other parts of the tool. The space between the sides 14 is substantially straight and unobstructed. At the forward end of this space there is located a nose 16 of irregular shape held between the

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sides 14 by a plurality of screws or rivets 17. Along one face of the nose 16 is an irregularly shaped groove 18 to receive and permit pivotal movement of blade 19. Nose 16 has a slanted working edge 21 in which is formed a notch 22 for purpose which hereinafter appears.

Blade 19 has a sharpened cutting edge 26 facing generally forwardly and being arcuate in shape. The blade 19 is pivoted by means of pivots 27 to nose 16, as well as to sides 14. An abutment 28 on the bottom of nose 16 limits projection of blade 19.

Mounted between sides 14 by means of transverse pivot 31 is handgrip 32 which has its upper edge 33 received between sides 14 and has its bottom or finger engaging edge 34 extending below but generally parallel to the bottom edges of sides 14. A projection 36 at the end of edge 34 nearest pivot 31 and a similar projection 37 at the opposite end locates the tool within the fingers of the user. At its forward end, grip 32 is relieved as indicated by reference numeral 38 and at this portion is a pivot 39 which extends into slot 41 in blade 19. Spring 42 is located in a recess 43 in the lower surface of back 12 and bears against the upper edge 33 of grip 32, thereby biasing the tool to the position as shown in Fig. 1 with the blade 19 retracted. A counterbore 46 is formed in the top surface of back 12 and receives the head of an adjustment screw 47 threaded into back 12 and having its lower edge projecting into the space between the sides 14. When the fingers of the user grip grip 32, adjustment screw 47 limits the upward pivotal movement of grip 32. Turning of screw 47 determines the amount of projection of blade 19.

In use, when the fingers are not gripping grip 32, spring 42 forces the grip 32 downwardly and pivots the blade to the retracted position shown in FIG. 1. When the grip 32 is grasped by the fingers, it pivots upwardly about pivot 31 to the position shown in FIG. 2, the adjustment screw 47 limiting the upward movement. Such movement of grip 32 is transmitted by means of pin 39 and slot 41 to the blade 19 causing it to pivot in a clockwise direction (as viewed in FIGS. 1 and 2) and its cutting edge 26 projects outwardly beyond the working edge 21 of nose 16. This projected position is shown in FIG. 2. With the blade in extended position and by reason of the relationship of the groove 31 relative to the pivot 27, the blade is held in extended position so that pressure against the cutting edge 26 of blade 19 does not force the blade back into the casing. The tool is then drawn along the line at which the carton is to be cut, notch 22 facilitating the cutting movement. As soon as the user releases his grasp on the handgrip 32, spring 42 causes the blade to retract. Hence, the blade cannot injure the person, clothing of the user or other objects by being left unintentionally projected.

What is claimed is:

1. A retractable blade tool comprising a handle formed with a hollow, a blade, means mounting said blade on handle for movement between a retracted position within said hollow and an extended position partially projecting outside said handle, a finger grip movably mounted on said handle, and means articulately connecting said grip and blade whereby on movement of said grip said blade is moved between retracted and extended positions.

2. A tool according to claim 1, which further comprises adjustment means for adjusting the amplitude of movement of said finger grip relative to said handle and thereby the maximum amplitude of projection of said blade in extended position.

3. A tool according to claim 2, which further comprises a spring in said handle biasing said grip in a direction to retract said blade.

4. A retractable blade tool comprising a handle formed with a downwardly opening recess, a finger grip, means

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pivotally mounting said grip to a first end of said handle partially within said recess, a blade, means pivotally mounting said blade at the end of said handle opposite said first end for movement between a retracted position within said recess and an extended position partially projecting outside said recess, and means connecting said grip and blade.

5. A tool according to claim 4, which further comprises a spring interposed between said handle and grip biasing said blade toward retracted position.

6. A tool according to claim 4, which further comprises an adjustment screw threaded into said handle and interposed in the path of movement of said grip adjustably limiting the maximum amplitude of projection of said blade.

7. A retractable blade tool comprising a handle formed with a downwardly opening recess, a finger grip, means pivotally mounting said grip to a first end of said handle partially within said recess, a nose fitting in said recess

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at the end of said handle opposite said first end, a blade, means pivotally mounting said blade on said nose for movement between a retracted position within the confines of said nose and an extended position partially projecting outside said recess, and means articulately connecting said grip and blade whereby upon inward movement of said grip relative to said handle said blade is moved toward extended position.

8. A tool according to claim 7, in which the outer edge of said nose is slanted downwardly-inwardly toward said first end adjacent the point of projection of said blade to guide said blade and tool for cutting movement along the surface of a carton or the like.

9. A tool according to claim 8, in which said edge is formed with a notch adjacent said point of projection of said blade.

No references cited.