

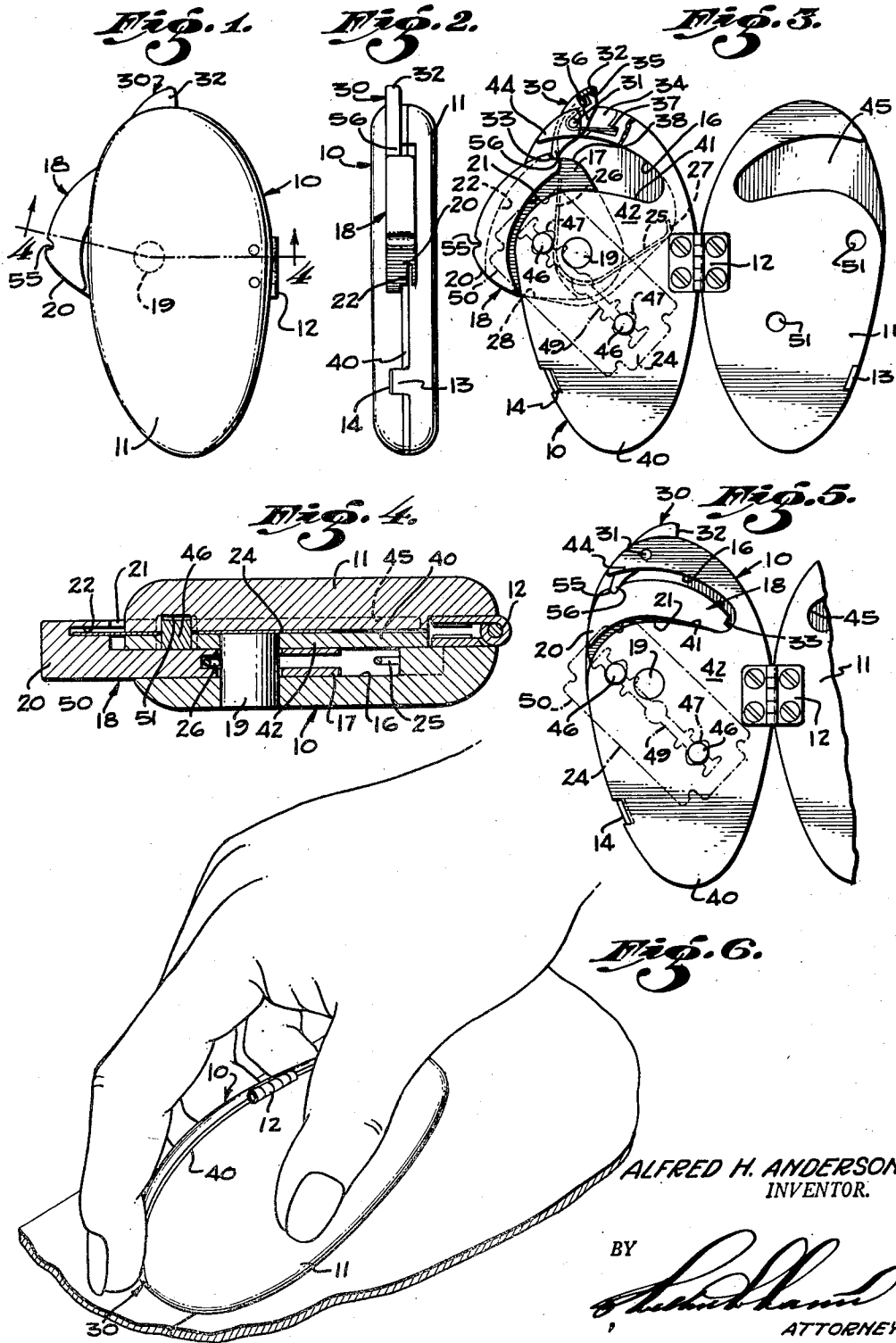
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CARTON CUTTER HAVING A RETRACTABLE GUARD

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CARTON CUTTER HAVING A RETRACTABLE GUARD

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This invention relates generally to cutting tools and relates more particularly to carton openers and the like.

It is an object of the invention to provide a cutting tool for cutting open packed articles without damaging the contents.

Another object of the invention is to provide a device of this character adapted for cutting open cardboard or corrugated paper cartons and the like.

Still another object of the invention is to provide a device of this character having safety features both when using and when not using.

The blade guards of former devices of which I am aware are manually movable to and from the protective position. It has been found that, due to wear, such guards may be accidentally moved from the protective position relative to the blade so that there is danger of injury. This is particularly true should the guard accidentally move to a position where the blade is exposed when the device is in a pocket and the user puts his hand in the pocket to remove the device therefrom.

It is, therefore, a further object of the invention to provide a cutting tool for opening cartons and the like which has a guard that will automatically return to the protective position at which position the guard is releasably locked or latched.

A still further object of the invention is to provide a device of this character for a guard latch or lock that is readily releasable so that the blade of the device may be readily exposed for cutting.

Another object of the invention is to provide a device of this character wherein the guard may be latched in a retracted position whereat the blade is exposed for use.

Still another object of the invention is to provide a device of this character wherein the blade may be readily replaced and wherein a razor blade may be used.

A further object of the invention is to provide a device of this character that is simple in construction.

A still further object of the invention is to provide a device of this character that is relatively inexpensive to manufacture.

Other objects and advantages of the invention will be brought out in the following part of the specification.

Referring to the drawings, which are for illustrative purposes only:

Fig. 1 is a side view of the device with the guard in the blade protecting position;

Fig. 2 is an edge view of the same as seen from the front or cutting edge;

Fig. 3 is a view of the device in the open position;

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Fig. 4 is a sectional view taken on line 4—4 of Fig. 1;

Fig. 5 is a view of the device in the open position showing the guard in the retracted position; and

Fig. 6 is a perspective view of the device in use.

Referring more particularly to the drawings, the device is shown as comprising an elongated oval body 10 and a cover 11 which is hinged at 12 to said body, the hinge 12 being at one side. The body and the cover are shown as being formed of plastic although the parts may be of any other suitable material. A resilient clip 13 is provided on the cover and is adapted to engage a boss 14 for releasably securing the cover in the closed position. It is to be understood, of course, that any other suitable means may be employed for securing the cover to the body so that said cover may be readily removed when it is desired to replace a blade.

The body is provided with a recess 16 in which the portion 17 of a guard, indicated generally at 18, is disposed, said guard being shown as formed of plastic material although it may be of any other suitable material. The body 17 has an opening for reception of a pivot pin 19 which extends from the bottom of the recess 16 and on which the guard 18 pivots. The body of the guard has a portion which normally projects outwardly of the edge of the device opposite the hinge 12 and the projecting portion of said guard is of greater thickness than the body 17, as indicated at 20. The part 20 extends along the free edge of the body 17 and has an arcuately-shaped inner edge or side 21 which is provided with an arcuately-shaped groove 22 which is relatively narrow and is adapted to receive the exposed end portion of a blade 24 when the guard is in the protective position.

The guard is urged outwardly to the protective position by a spring 25 which is shown as a piece of spring wire or the like having one end 26 embedded in the guard and having the opposite end reacting against a wall of the recess 16, as indicated at 27. The guard is limited in its spring-urged movement by engagement of one side with a peripheral wall portion 28 of the recess and when in this limited position the guard will fully protect the exposed portion of the blade 24 as best indicated in Figs. 1, 2 and 3.

Adjacent the upper end of the device, as shown in Figs. 1, 2, 3, 5 and 6, is a latch shown as a lever 30 pivoted at 31 intermediate the ends thereof. The outer end 32 of the latch 30 extends beyond the adjacent peripheral edge of the device and the inner end is disposed to engage a shoulder 33 of the guard 18 when the guard is in the protective position. The latch 30 is received in a suitable recess 34 in the body 10 and

is provided with a groove 35 in the under side for reception of one end of a wire spring 36, the opposite end of said spring being received in an extension 37 of the recess 34. The spring is tensioned so as to urge the latch 30 to the latching position, as best shown in Fig. 3. The latch is limited in its spring-urged movement by engagement with a shoulder 38 of the guard.

There is a sheet of material 40 secured to the inner face of the body 10 and said sheet 40 is provided with an arc-shaped notch 41 which receives the thickened or flanged portion 20 of the guard when the guard is moved in the retracted direction. A portion 42 of the sheet 40 covers a portion of the recess 16 and there is an opening in said sheet portion 42 which receives the adjacent end portion of the pivot 19. There is also an end portion 44 of the sheet 40 which covers the recess in which the latch 30 is disposed. Inasmuch as the portion 20 of the guard extends beyond the plane of the free surface of the sheet 40, a recess 45 is provided in the cover to correspond with the recess 41 and provide adequate space for the retraction of the guard when the cover is closed. The plate 40 is shown as being of plastic material and is attached to the body portion 10 by any suitable adhesive, the sheet 40 being considered a part of the body as distinguished from the cover.

It is to be understood, of course, that the part 40 may be of other material than plastic.

Means is provided for holding the blade in operative position and in the arrangement shown, said means includes a pair of diagonally spaced pins 46 adapted to be received in enlarged portions 47 of a razor blade 24 having a central longitudinal opening 49 of which the enlarged portions 47 form a part.

It is to be understood that other types of blades may be used but the type shown is well-suited to use in the present device. When the blade is in operative position, as shown in the drawings, a corner portion 50 extends beyond the edge of the device at which the guard is positioned. When the guard is in the protective position the corner portion 50 of the blade is covered, said portion being received in the slot or groove 22 in the guard. If desired, the pins 46 may extend upwardly of the adjacent surface somewhat a greater distance than the thickness of the blade and recesses 51 are provided in the inner side of the cover to receive the free end portions of said pins and permit the blade to be clamped between the cover and body.

When using the device, it is held in the hand in the manner shown in Fig. 6. The forefinger depresses the projected end 32 of the latch 30 and, thereby, releases the guard so that the blade portion 50 may be pressed into the cardboard of the carton being opened. As the blade penetrates the cardboard, or the like, the guard is pressed inwardly by the pressure on the adjacent surface of the cardboard. When the cutting operation has been completed, the guard will automatically be moved to the protective position and, upon release of the latch, said latch will move to the locking or latching position, best shown in Fig. 3.

When the device is used, as above pointed out, the guard generally will not be fully retracted and, inasmuch as there are some uses to which the device may be put, it would make it more convenient to have the blade exposed and the guard latched in the retracted position; hence, the device may be provided with means for se-

curing the guard in the fully retracted position as shown in Fig. 5. This means comprises a notch 55 in the outer edge of the guard, which notch is engageable by the end portion 56 of the latch. To release the guard from the fully retracted position, it is only necessary to depress the outer end 32 of said latch and the guard will be immediately moved to the protective position by a spring 25.

I claim:

1. In a cutting tool: a body member; a cover member adapted to be secured to the body member; a blade operably mounted between said body member and cover member and having a sharpened portion projecting outwardly of said members; a movable guard operatively mounted in one of said members, said guard having a portion adapted to extend outwardly of the adjacent edge of the body end cover and being provided with a slot in which the projecting portion of the blade is received when the guard is in the extended position; a yielding means urging said guard to the extended protective position, said guard being movable inwardly of the body and cover to a retracted position whereat the extended blade portion is uncovered; and releasable latch means for latching the guard in the extended position and also for latching the guard in the retracted position.

2. In a cutting tool: a body member; a pair of pins extending from the inner face of the body portion and arranged diagonally with respect to the longitudinal axis of said body, said pins being so spaced as to receive a perforated blade thereon and hold same in a position whereat a sharpened corner of said blade projects outwardly of the body, said blade being removable from said pins; a cover removably attached to the body; a guard pivoted within one of said members and being provided with a portion adapted to receive the projecting portion of the blade when said guard is in one position; yielding means urging said guard to said position, said guard being movable to a retracted position whereat the projecting portion of the blade is exposed; and a releasable latch means for securing the guard in the protective position.

3. In a cutting tool: a body member; a cover member; a blade secured to one of said members, said blade having a sharpened portion projecting outwardly of said members; a pivoted guard having a recessed portion movable to a position whereat the projecting portion of the cutting edge of the blade is covered; yielding means urging said guard to said position, said guard being movable to a position whereat the extended portion of the blade is exposed; and latch means adjacent the guard and adapted to latch same in the protective position, said latch means having a part extending outwardly of said members so as to be readily engageable with a finger of the user to release the guard when the device is put to use.

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