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2,814,864

COMBINATION CARTON OPENER AND CUTTING TOOL

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2 Sheets-Sheet 1

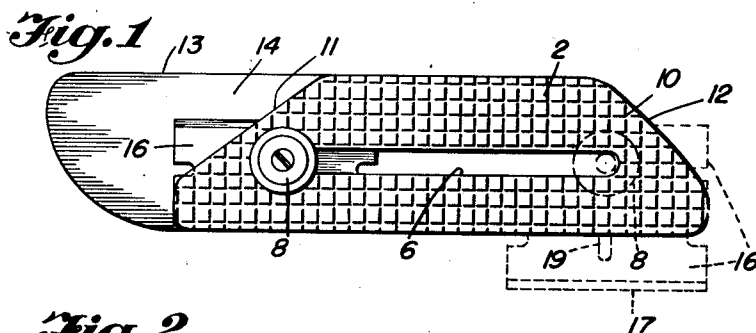


**Fig. 2**

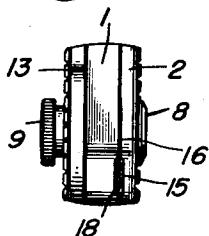


**Fig. 3**

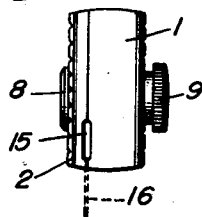


**Fig. 4**

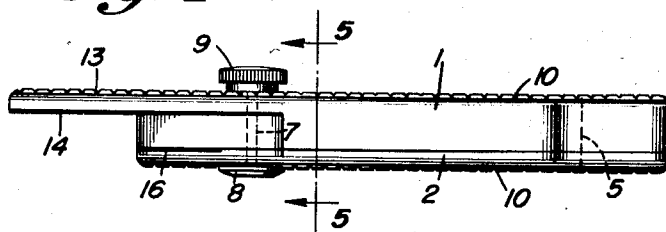
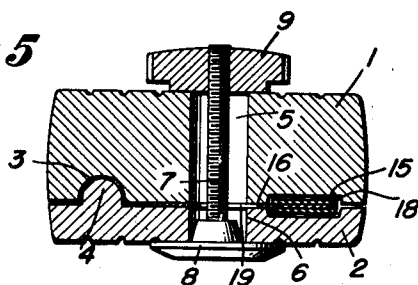


**Fig. 5**



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*Fig. 6*

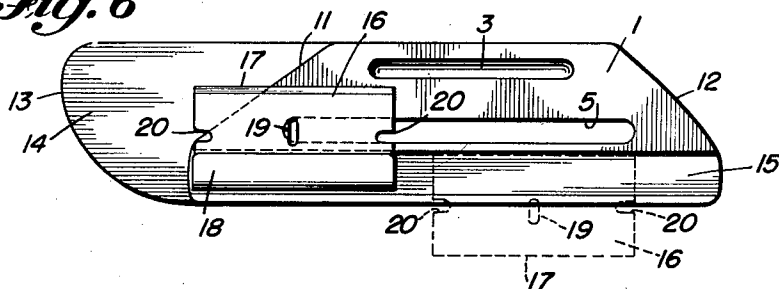


*Fig. 7*

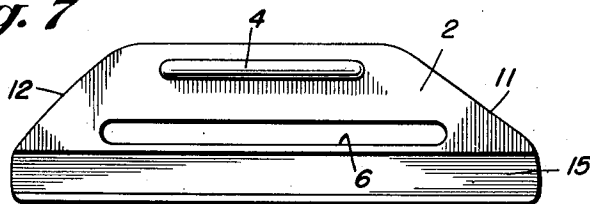


*Fig. 8*

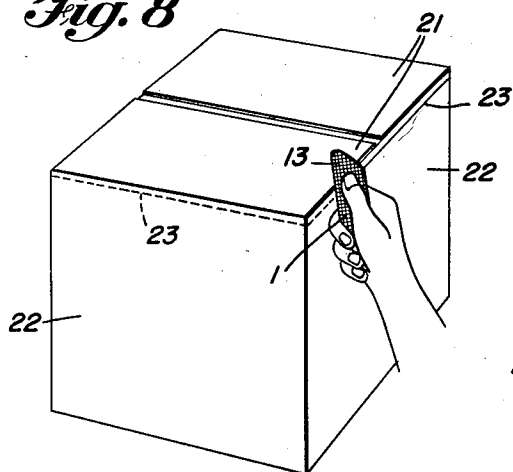


*Fig. 9*

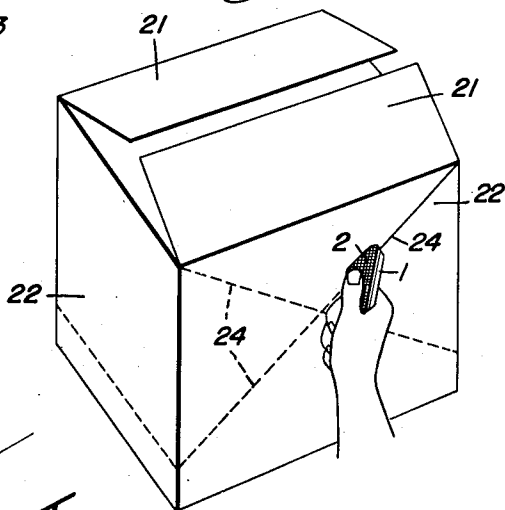
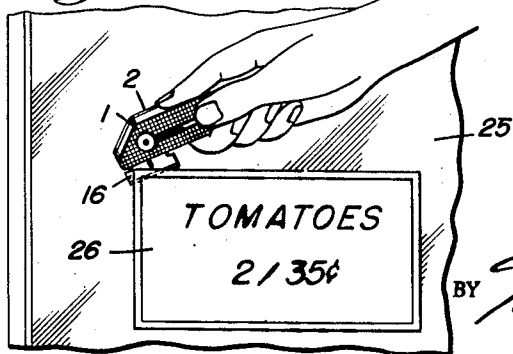


*Fig. 10*



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## COMBINATION CARTON OPENER AND CUTTING TOOL

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3 Claims. (Cl. 30—2)

This invention relates to a new and useful cutting and scraping implement and more particularly to a combination carton opener and cutting knife which may be quickly converted to a scraping tool.

It is a common practice to package material and goods for shipment, storage and display in paper, cardboard or fiberboard containers, which require a knife to open. The use of an ordinary knife or tool for this purpose is frequently impractical as when the material is powdered, granulated or the like and a jagged uneven cut along the top of the container will permit the contents to spill. Often it is desirable to remove, by regular cuts, the front or side walls of a carton or symmetrical portions thereof, in order to display the cans or bottles packaged therein.

One of the principal objects of the invention is to provide a cutting tool small enough to be carried in a pocket with safety, which tool will enable a store or warehouse attendant to make straight cuts to quickly open or sever cartons, and which may be readily converted into a scraping tool for removing signs from windows and labels from boxes.

Another object of the invention lies in the provision of a cutting and scraping tool having a hand grip which safely houses a blade entirely within its confines while not in use and which blade is extensible to cutting positions at both ends of the grip and also movable to a scraping position at one side of said grip.

A further object of the invention lies in the provision of a cutting and scraping tool having an extensible and retractable blade reinforced and thickened at one side, whose thickened portion slidably seats in a groove inside the grip, which groove guides the blade to its extended cutting positions and prevents turning of the blade while cutting or scraping.

Still another object of the invention lies in the provision of a cutting and scraping tool having an extensible, retractable and replaceable blade so constructed as to permit the use of a conventional single edge razor blade having a reinforced and thickened edge opposite the cutting edge.

A still further object of the invention lies in the provision of a cutting implement of the type described wherein the hand grip is constructed of two mating parts for housing and concealing the blade, the grip parts being readily separable for removing the blade for replacement when dull, and for insertion of the blade in an inverted position so that the cutting edge will extend from a side of the grip for use as a scraping edge.

Yet a further object of the invention lies in the provision of a cutting and scraping implement of the character described which is of simple but durable construction involving only a few parts so that the cost of manufacture will be relatively small.

The novel features that are considered characteristic of the invention are set forth with particularity in the appended claims. The invention itself, however, both as to its organization and its method of operation, together with additional objects and advantages thereof, will best be

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understood from the following description of a specific embodiment when read in connection with the accompanying drawings wherein like reference characters indicate like parts through the several figures and in which:

5 Fig. 1 is a side elevation of a cutting and scraping implement according to the invention with the blade extended to one cutting position and showing, in dotted lines, protruding portions of the blade extended in the other cutting position and in scraping position;

10 Fig. 2 is an elevational view of one end of the implement;

Fig. 3 is an elevational view of the opposite end of the implement to that shown in Fig. 2;

15 Fig. 4 is a top plan view of the cutting and scraping implement;

Fig. 5 is an enlarged section taken on line 5—5 of Fig. 4 and looking in the direction of the arrows;

Fig. 6 is an elevational view of one portion of the hand grip looking at the inside face and showing a blade positioned in a cutting position, the blade also being shown in dotted outline in a scraping position;

Fig. 7 is an elevational view of the second portion of the hand grip looking at the inside face;

25 Fig. 8 is a perspective view of a carton showing the implement being applied to evenly cut and remove the top portion of the carton;

Fig. 9 is a perspective view of a carton showing the implement being applied to make diagonal cuts in the front face of the carton, and

30 Fig. 10 is an elevational view of a portion of a window-pane illustrating the application of the implement to scrape a sign from the pane.

The combination cutting and scraping tool illustrated herein comprises a pair of complementary hand grip parts 1 and 2 of generally trapezoidal shape. The inner face of grip part 1 is provided with an elongated recess 3 which receives a mating ridge-like projection 4 on grip part 2 so as to properly position the grip parts with respect to each other when assembled. The grip parts are provided with aligned slots 5 and 6 which are parallel to the parallel edges of the grip parts and pass entirely through each respective part. Disposed in the aligned slots 5 and 6, and passing completely through the grip, is a screw 7 having a flattened round head 8 fixed thereto at one end and a knurled nut 9 at the other. The screw 7 and nut 9 serve to clamp and retain the grip parts in assembled relation. The outer faces of grip parts 1 and 2 are cast, machined or otherwise formed with small projections, ridges and grooves or otherwise roughened as indicated at 10 to facilitate grasping in the hand of an operator and to lessen the possibility of the tool slipping while in use.

Each grip part 1 and 2 is provided at one end with an angled face 11 which coincides and falls in the same plane when the parts are joined or clamped together. Faces 11 serve to slide along the surface being cut and regulate the depth of cut dependent upon the distance to which the blade of the tool is extended. Similar faces 12 on each of parts 1 and 2 at the opposite end of the grip perform a similar function when the cutting edge is extended from the other end of the tool. Formed on grip portion 1 is a lip 13 protruding beyond face 11. The inner face 14 of lip 13 is adapted to slide along a face of a carton and guide the tool so as to insure a parallel and straight cut.

65 Formed in the inner face of each grip part 1 and 2 is an elongated groove 15 which, in the assembled grip, combines to form a slot which extends completely from one end 11 to the opposite end 12 of the hand grip. Slot 15 is adapted to partially retain and guide the blade 16. The blade is provided with a cutting edge 17 at one side and a thickened portion or reinforcing channel 18

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at the opposite side. Preferably, the blade is constructed like, or may be, a conventional single edge razor blade, the reinforcing channel 18 of which is slideably seated in the grip slot 15 for movement longitudinally of the grip. Such movement is imparted by screw 7 which passes through a central opening 19 in blade 16. Should it be desired to extend the blade 16 further beyond the grip edges 11 or 12, screw 17 may be removed from slot 19 and reinserted in one of the two blade slots 20. In all instances of use of the tool for cutting purposes, screw 7 being fixed in relation to the grip parts 1 and 2 by tightening of nut 9, prevents the blade 16 from being forced longitudinally of the grip; the blade 16 is prevented from turning with respect to the grip by coaction of the thickened portion 18 of the blade with the walls of the slot 15.

Normally, the blade 16 is positioned entirely within the confines of the grip between faces 11 and 12 so that the instrument may be carried in the hands or in clothing with perfect safety.

When it is desired to cut and remove the top of a carton as illustrated in Fig. 8, the nut 9 is loosened so that the assembled grip parts 1 and 2 are separated a few thousandths of an inch. With the grip held in the palm of one hand, the user then grasps head 8 and nut 9 between the thumb and forefinger, pushing them toward lip 13 until the blade 16 extends beyond face 11 a distance equal to the desired depth of cut. Nut 9 is then tightened, clamping all of the parts firmly. The face 14 of guide lip 13 is laid flat against the upper surface 21 of the carton at one corner thereof and the instrument drawn along the carton edges, guided by lip 13, to cut a straight line through the carton side walls 22 in the manner indicated at 23. It will be apparent that vertical cuts may be made, as well as horizontal ones, by guiding lip 13 against one of the carton side walls 22.

When it is desired to make irregular cuts in a carton wall, as illustrated by the diagonal cuts 24, Fig. 9, the nut 9 is loosened and the blade 16 slid in the opposite direction to extend a desired distance beyond face 12. This movement is accomplished in the same manner as described in the previous paragraph by moving parts 7 and 9 which carry screw 7 and the blade 16. The nut 9 is again tightened to clamp the blade. There being no lip similar to 13 protruding beyond grip face 12, the instrument may be moved and turned to cut in any desired direction.

When it is desired to use the tool as a scraper in the manner illustrated in Fig. 10, the nut 9 is loosened and removed from screw 7 permitting withdrawal of the latter from slot 5, 6. Grip parts 1 and 2 are then separated and the blade 16 inverted so that the cutting edge 17 extends outwardly from the longitudinal edge of the grip, as shown in dotted outline in Fig. 1. Blade part 18 is seated in slot 15. Screw 7 is then replaced in slot 5, 6 and the nut 9 tightened to clamp the parts firmly together. The tool may then be applied with scraping motions perpendicularly to the cutting edge 17 against a window 25 or other surface to remove a sign or label, such as 26, Fig. 10.

Although a certain specific embodiment of the invention has been shown and described, it is obvious that many modifications thereof are possible. The invention, therefore, is not to be restricted except insofar as is necessitated by the prior art and by the spirit of the appended claims.

What is claimed is:

1. A carton opener comprising a hand grip formed in two relatively flat parts dividing the grip longitudinally, said grip parts each having an elongated slot extending lengthwise thereof, said slots being aligned when said parts are assembled to form the grip, a cutting blade interposed between said parts and adapted to be confined within their periphery, said blade having an aperture therethrough, a releasable clamping element passing

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through said aligned slots for clamping said parts with said blade therebetween, said element normally passing through said blade aperture for sliding said blade longitudinally of said grip between a storage position in which said blade is confined within said grip and an operative position wherein at least a portion of said blade projects at either end of said grip, said grip parts having generally parallel side edges with one side longer than the other and angled faces at each end and inclined toward each other from the longer side to the shorter side to cooperate with said blade when the latter is in an adjustably projected position to limit the depth of cut of the opener, a guide lip projecting from one end of one of said grip parts and parallel with the projecting blade position at that end, one of said grip parts having an elongate recess extending lengthwise between the shorter side and said slot, the other of said grip parts having an elongate rib mating with said recess to preclude relative turning of said grip parts about said clamping element, said blade having a single cutting edge with thickening reinforcement along the edge opposite said cutting edge, and said grip parts having a groove between said slot and the longer side and extending through the opposite ends thereof and slidably receiving said reinforcement, whereby said blade may be inverted with the cutting edge thereof extending beyond said longer side edge as a scraper.

2. A carton opener comprising, a hand grip formed in two parts, a cutting blade releasably clamped between said parts and confined within their periphery, means for releasing and sliding said blade to projecting positions at each end of said hand grip, and a projecting guide lip at one end of one of said grip parts and spaced from and parallel to the projecting blade position at that end, said grip parts having body portions with generally parallel side edges with one side longer than the other and angled faces at each end and inclined toward each other from the longer side to the shorter side to cooperate with said blade when the latter is in adjustably projected positions to limit the depth of cut of the opener.

3. A carton opener comprising a hand grip formed in two relatively flat parts dividing the grip longitudinally, said grip parts each having an elongated slot extending lengthwise thereof, said slots being aligned when said parts are assembled to form the grip, a cutting blade interposed between said parts and adapted to be confined within their periphery, said blade having an aperture therethrough, a releasable clamping element passing through said aligned slots for clamping said parts with said blade therebetween, said element normally passing through said blade aperture for sliding said blade longitudinally of said grip between a storage position in which said blade is confined within said grip and an operative position wherein at least a portion of said blade projects at either end of said grip, said blade having a single cutting edge with thickening reinforcement along the edge opposite said cutting edge, and said grip parts having a groove between said slot and one side and extending through the opposite ends thereof and slidably receiving said reinforcement, whereby said blade may be inverted with the cutting edge thereof extending beyond said one side edge as a scraper.

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