Nov. 1, 1949 E. C. WILLIS 2,486,900

CARTON CUTTER

Filed June 27, 1946

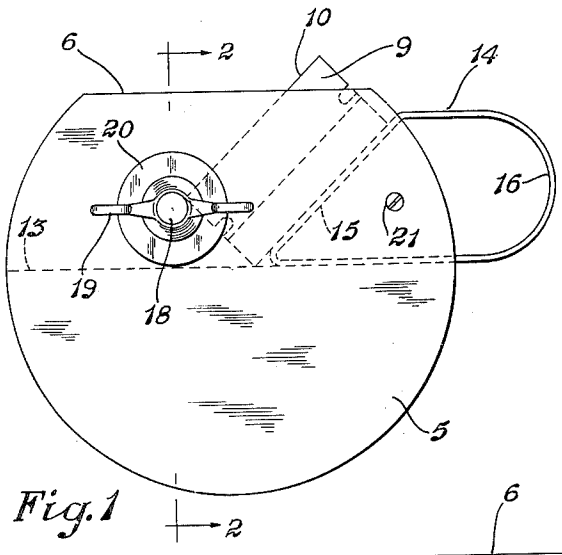


Fig. 1

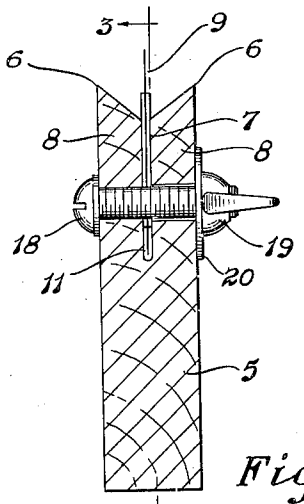


Fig. 2

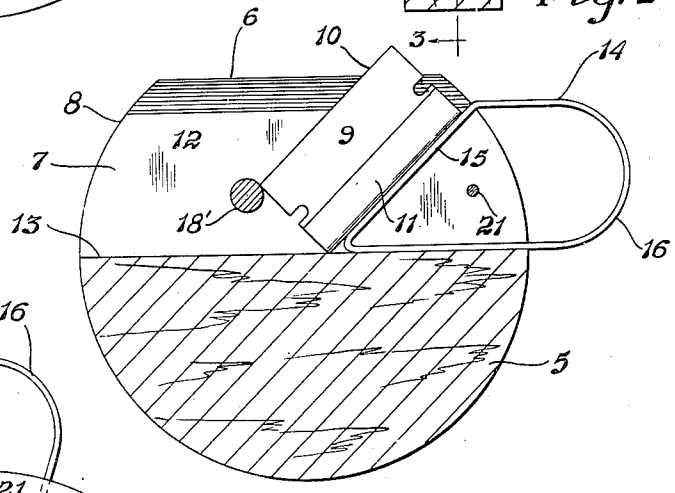


Fig. 3

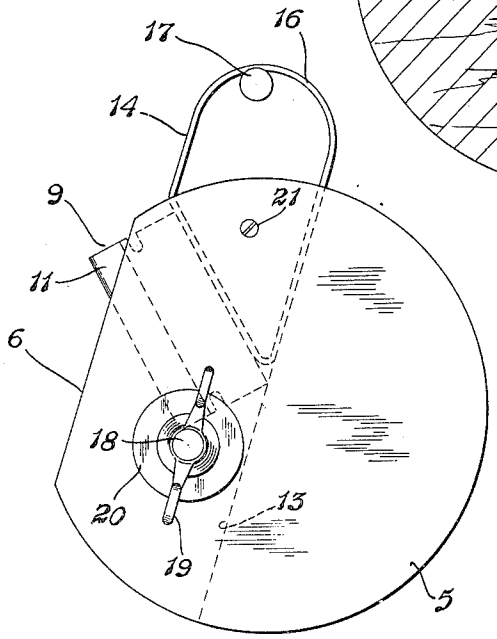


Fig. 4

INVENTOR.
Earl C. Willis

BY

Frease and Bishop
ATTORNEYS

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CARTON CUTTER

Earl C. Willis, Canton, Ohio

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1 Claim. (Cl. 30—2)

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The invention relates generally to devices for opening paper cartons, and more particularly to a carton cutter utilizing a replaceable blade such as an ordinary razor blade.

Many prior devices have been constructed for opening the paper cartons which are in wide spread use for packaging a great variety of goods. A large proportion of such devices have employed ordinary razor blades to furnish the cutting edge. However, in all of such devices of which I am aware, the blades are held by means of bolts or pins inserted through holes in the blade, and the insertion of such bolts or pins requires time and trouble when inserting or replacing a blade.

Moreover, in order to adjust the projecting part of the blade edge so as to adjust the depth of the cut, a comparatively complicated and expensive holder has been required. Furthermore, the projecting edge of the cutting blade is likely to cause accidental injury when the holder is not in use but is left laying on a table or the like, and it is not expedient to remove the blade from the holder after each use thereof.

It is an object of the present invention to provide a novel carton opener which utilizes an ordinary razor blade, and which is held in cutting position in such manner as not to require any fastening means to be inserted through the blade.

Another object is to provide a novel carton cutter construction which is adjustably held in cutting position by means of a simple wedge member engaging the back edge of the blade.

A further object is to provide a novel carton cutter comprising means for adjustably holding a razor blade in cutting position, and for quickly and easily clamping the blade in reversed or non-cutting position.

Finally, it is an object of the present invention to provide a novel and improved carton cutter which overcomes the disadvantages of prior carton opening devices, and which is simple and inexpensive to construct, and easily operated and used by inexperienced persons.

These and other objects are accomplished by the parts, constructions and arrangements which comprise the present invention, the nature of which is set forth in the following general statement, and a preferred embodiment of which is set forth in the following description and illustrated in the accompanying drawing, and which is particularly and distinctly pointed out and set forth in the appended claim forming part hereof.

In general terms, the carton cutter comprising the present invention may be stated as including a substantially flat holder disk having straight

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edge guide surfaces along one side, and a central slot extending inwardly from said guide surfaces and forming opposed jaw portions adapted for receiving a preferably single edge razor blade with a backing strip along the edge opposite to its cutting edge, the backing strip of the blade being adjustably engaged by a sliding wedge member in said slot, and the inner end of the blade being supported by the shank of a bolt which clamps the jaw portions of the holder together.

Referring to the drawing forming part hereof, in which a preferred embodiment of the invention is shown by way of example;

Figure 1 is an elevation of the improved carton cutter with the blade adjustably clamped ready for use;

Fig. 2 is a transverse sectional view substantially on line 2—2, Fig. 1;

Fig. 3 is a sectional view as on line 3—3, Fig. 2; and

Fig. 4 is an elevational view similar to Fig. 1 showing the blade held in a non-cutting position and the holder supported on a hanger.

Similar numerals refer to similar parts throughout the several views of the drawing.

The body or holder of the improved carton cutter is indicated at 5 and is shown as being constructed of wood although it may be made of various other materials including plastic or light weight metal and the like. The holder is substantially in the form of a flat disk as shown, being preferably circular throughout the greater part of its periphery, and having straight upper and lower edges 6 along one side for acting as guiding edges when slidably engaging the surface of a carton container.

Between the edges 6, a slot 7 is formed parallel with the top and bottom disk surfaces and extending inwardly through the body 5 substantially to the central portion thereof, and forming two opposed jaw portions 8 one on each side of the slot. Preferably, the outer ends of the jaw portions are bevelled from the guide edges 6 inwardly to the slot 7 as shown in the drawing.

The width of the slot 7 is slightly greater than the thickness of an ordinary razor blade, preferably a single edge blade as indicated at 9, having a cutting edge 10 and a backing strip 11 secured around the edge of the blade opposite the cutting edge. The depth of the slot from the guide edges 6 to its bottom 13 is such that when a standard blade 9 is inserted into the slot in an angular position as shown, the outer corner of the blade will project so as to cut through the

paper of a carton as the guide edges 6 are drawn along the surface thereof.

Means for backing up the blade 9 to support the cutting edge during the cutting operation preferably includes a back-up member or wedge 14 which has an inclined front portion 15 for engaging the backing strip 11 of the blade. Preferably, the member 14 may be made out of a closed loop of stiff wire as shown, so that the protruding semi-circular portion 16 serves as a handle and may be supported on a hanger such as a nail 17 or the like, for hanging up the holder when it is not in use.

Means for tightly clamping the blade 9 and wedge 14 in the slot 7 preferably includes a bolt 18 extending through the jaw portions 8 and preferably in threaded engagement with one of said jaw portions to prevent turning of the bolt when the wing nut 19 is tightened on the outer end thereof to clamp the jaws together. As shown, a washer 20 may be interposed between the wing nut and the holder, and the shank 18' of the bolt is located so that when the blade 9 is in cutting position, its inner end will engage the shank 18 and aid in supporting the blade during the cutting operation. Preferably, a screw 21 or the like extends through the jaw portions 8 and through the wedge member 14 to prevent the latter from being withdrawn from the slot 7 and accidentally becoming misplaced or lost.

In the operation of the improved carton cutter, assuming that a blade 9 is in cutting position in the slot 7, the depth of the cut to be taken is quickly regulated by adjusting the projecting corner of the blade inward or outward and this is done by slightly loosening the wing nut 19 and then moving the wedge member 14 toward or away from the bolt 18 as the case may require. The broad flat disk 5 provides a convenient and comfortable holder for fitting in the palm of the operator as he draws the guiding edges 6 along the surfaces of the carton to score or cut the paper walls thereof. When the projecting corner of the blade becomes dull, it is quickly reversed by merely loosening the wing nut 19, removing the blade and turning it end for end, and when both ends are dull, the blade is just as quickly replaced in a similar manner.

When the novel carton cutter is not in use, the blade 9 is easily withdrawn by loosening the wing nut 19 and the blade is inserted into the slot with the cutting edge in and the backing strip 11 out. When the blade is clamped in such position, there is no danger of accidental injury to any person carelessly or thoughtlessly picking up the holder or bumping their hand or arm into it. When not in use, the holder is conveniently hung in an out of the way place by engaging the portion 16 of the wedge member over a projecting support such as a nail or the like, as indicated in Fig. 4.

The novel and improved carton cutter is simple and inexpensive to construct and easily operated with comparative safety by the most inexperienced person, and while it is preferably used with a single edge blade, a double edge blade can be used without changing the construction of the holder. Moreover, the improved carton cutter provides for a quick reversing or replacing of the blade, because it is not necessary to enter the clamping means of the holder through the blade, and the depth of the cutting edge is quickly adjusted merely by moving the wedge member 14 back and forth.

In the foregoing description, certain terms have been used for brevity, clearness and understanding, but no unnecessary limitations are to be implied therefrom beyond the requirements of the prior art, because such words are used for descriptive purposes herein and are intended to be broadly construed.

Moreover, the embodiment of the improved construction illustrated and described herein is by way of example, and the scope of the present invention is not limited to the exact details of construction.

Having now described the invention, the construction, the operation and use of a preferred embodiment thereof, and the advantageous new and useful results obtained thereby; the new and useful constructions, and reasonable mechanical equivalents thereof obvious to those skilled in the art, are set forth in the appended claim.

I claim:

Carton cutter construction including a substantially flat holder disk substantially conforming to the palm of the operator and having straight guide edges along one side and a central slot extending inwardly from said edges to form a pair of clamping jaw portions, a razor blade in said slot, a back-up member slidable in said slot and formed of a closed wire loop having an inclined portion engaging the back side of said razor blade for adjustably supporting it in inclined position with one corner projecting beyond said guide edges, and a clamping bolt for drawing said jaw portions together and for engaging the inner end of said blade in inclined position, whereby adjoining edges of the blade are supported respectively by the inclined member and clamping bolt.

EARL C. WILLIS.

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