United States Patent [19]

Goffe

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[45] **July 23, 1974**

[54] **ENVELOPE OPENER**

[76] Inventor: **William L. Goffe,** 301 Burnett Rd., Webster, N.Y. 14580

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[52] **U.S. Cl.** **30/294,** 30/314, 30/DIG. 3

[51] **Int. Cl.** **B26b 29/00**

[58] **Field of Search** ..... 30/294, 289, DIG. 3, 286, 30/280, 314, 305, 317

[56] **References Cited**

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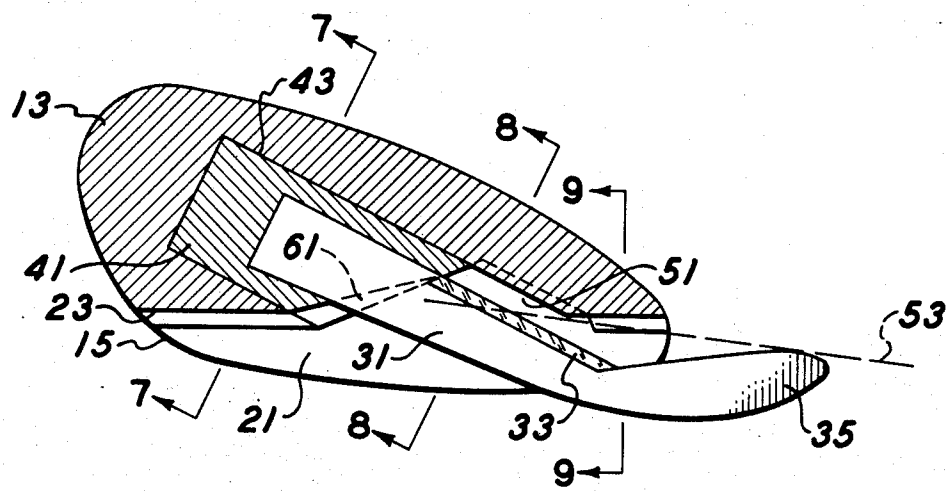
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Primary Examiner—Al Lawrence Smith
Assistant Examiner—J. T. Zatarga
Attorney, Agent, or Firm—Stonebraker & Shepard

[57] **ABSTRACT**

An envelope opener having a small body to be manually grasped, with a groove along one edge of the body, sufficiently wide to receive an edge of an envelope to be opened. An oblique knife blade lies entirely within the groove, and a small guiding member projects forwardly from the forward end of the knife blade, to a visible position beyond the edge of the body, so that the guiding member may be inserted between the envelope flap and the rear wall of the envelope, at one corner of the envelope, to guide the top fold or crease of the envelope into the groove, whereupon the knife blade will cut the top fold when the top edge of the envelope is slid along the groove.

16 Claims, 11 Drawing Figures



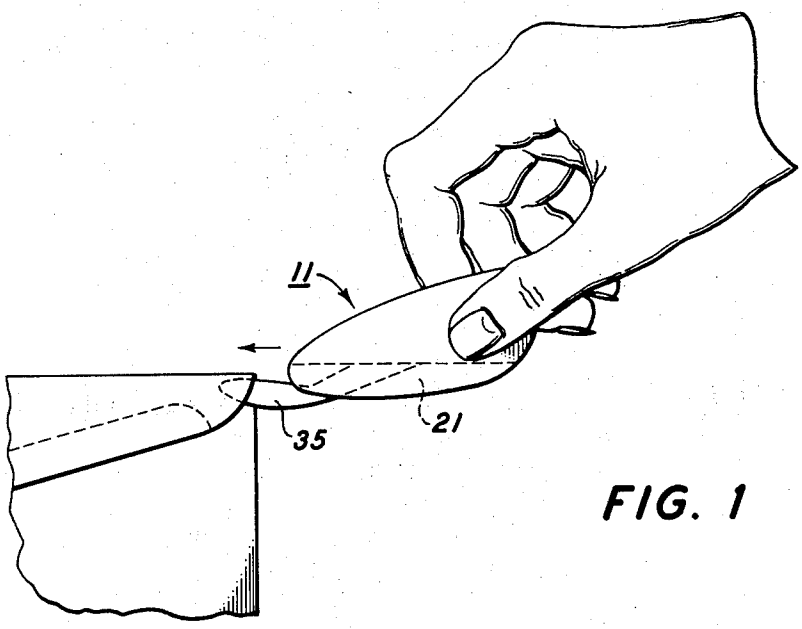


FIG. 1

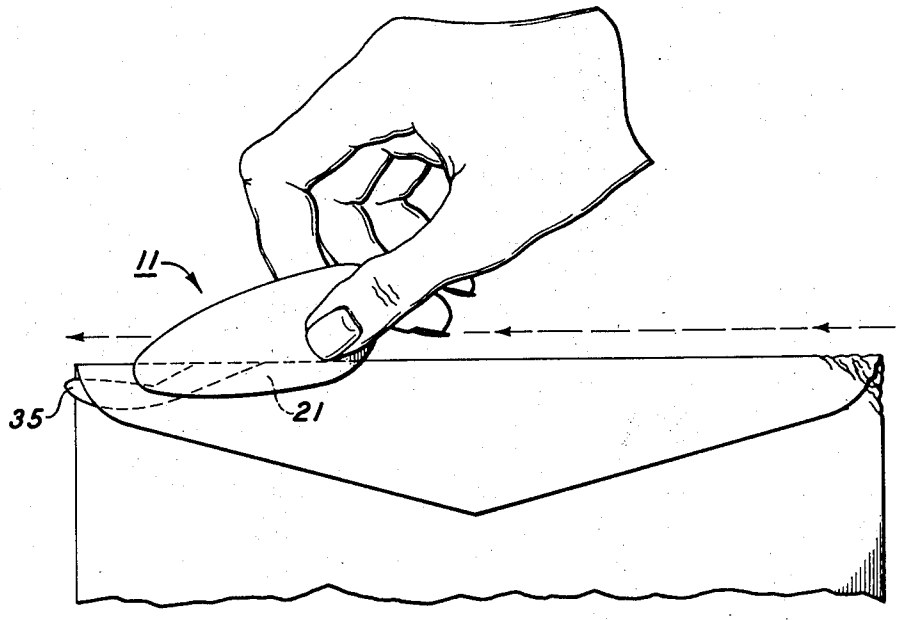


FIG. 2

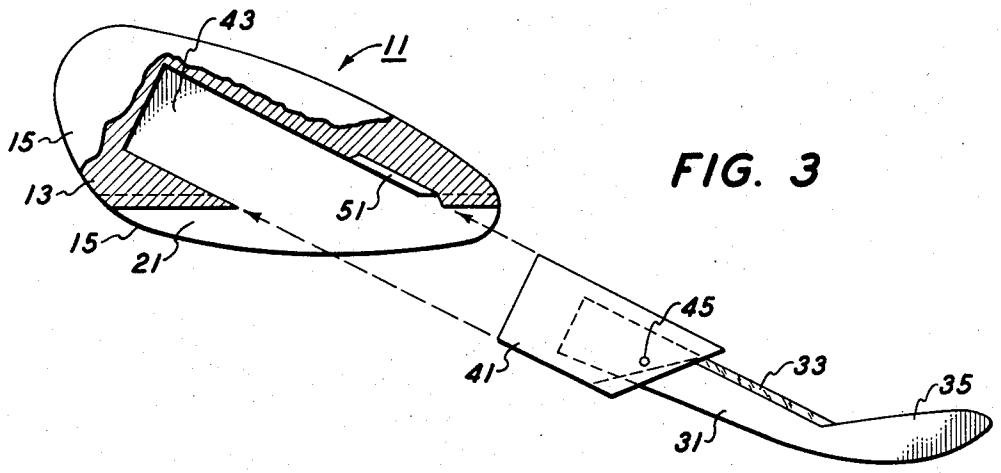


FIG. 3

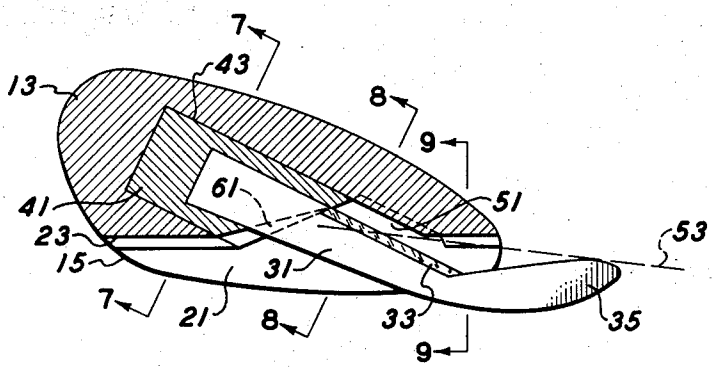


FIG. 5

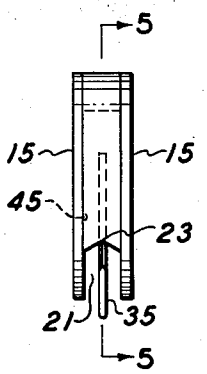


FIG. 4

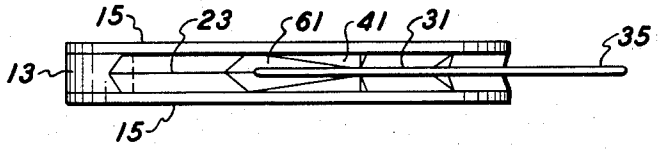


FIG. 6

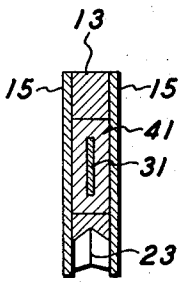


FIG. 7

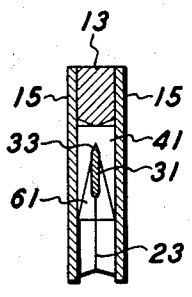


FIG. 8

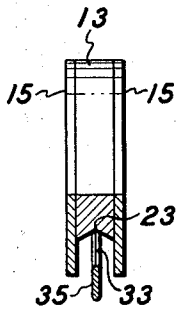


FIG. 9

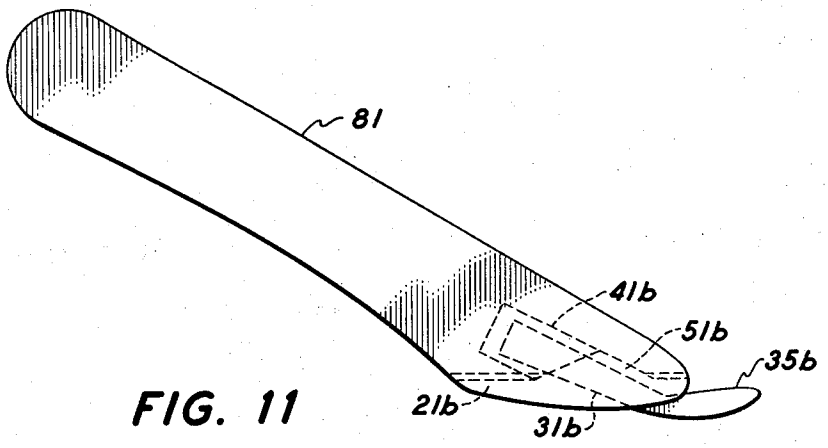


FIG. 11

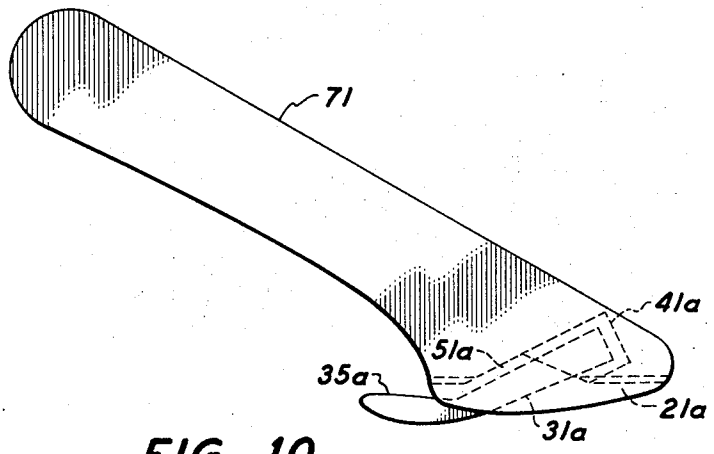


FIG. 10

ENVELOPE OPENER

BACKGROUND OF THE INVENTION

Many forms of hand-held envelope openers are known. Among them are, for example, British Pat. No. 603,942 (1948), Swiss Pat. No. 225,802 (1943), and U.S. Pat. Nos. 586,170 (1897), 1,032,865 (1912), 2,187,634 (1940), 2,204,763 (1940), 2,266,916 (1941), 2,439,639 (1948), 2,442,694 (1948), 2,535,555 (1950), 2,748,478 (1956), and 2,814,111 (1957). All of these, however, exhibit disadvantages of one kind or another.

For example, in some of these the cutting blade is exposed on one or both sides, so that it may be damaged by accidental contact with other articles or may accidentally cut the fingers or various articles not intended to be cut. In others, the cutting blade is protected from accidental contact, but is so placed that it will not operate effectively on an envelope with a crumpled or wrinkled corner. In some, the blade is designed to cut a narrow strip from the edge of the envelope, and actually may do this quite effectively, but this is undesirable when the letter within the envelope happens to be crowded close to the edge of the envelope which is being cut, for then the letter itself will also be cut.

In other known constructions, the edge of the envelope being cut is not sufficiently guided and controlled to prevent it from being deflected to the junction between the sharp edge of the blade and the body material from which the blade projects, thereby jamming the edge of the envelope in the mechanism. In other constructions, there is no guiding prong or protruberance which can be inserted between the flap of the envelope and the back wall of the envelope, to start the action, or if there is such a guiding projection, it is in such a location that it is hard to insert the projection at the proper place in the envelope, particularly when the corner of the envelope is crushed, wrinkled, or otherwise damaged.

SUMMARY OF THE INVENTION

An object of the invention is the provision of a simple, inexpensive, light, and compact manually held envelope opener, so designed as to overcome the objections to the above-noted constructions of the prior art. This is done, according to the present invention, by providing a small body of convenient size to be held between a thumb and finger, the body having a longitudinal groove along one edge, wide enough to receive the edge of an envelope, which may be slid longitudinally along the groove. A cutting member has a sharp cutting edge lying obliquely and entirely within the groove, protected completely by the side walls of the groove (on both sides of the cutting member) from accidental contact from any objects except the envelope embraced in the groove. A guiding member has a prong or protuberance extending forwardly from the vicinity of the outer end of the sharp cutting edge, and projects forwardly a little beyond the forward edge of the body, so that the end of the guiding member can be readily seen by the user, and therefore can be easily guided visually into the usual small space at the corner of the envelope to be opened, underneath the envelope flap and outside of the rear wall of the envelope. This starts the action, and the edge of the envelope is then slid longitudinally along the groove in the body of the opener (or the opener body is slid along the edge of the envelope, which amounts to the same thing) so that the cutting edge slits the envelope along the fold joining the flap to the front wall of the envelope. Preferably the guiding and cutting member is mounted on a mounting block which is removably held in the body.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a side elevation of the opener according to a preferred embodiment of the invention, showing it being inserted in a corner of an envelope to start the cutting action;

FIG. **2** is a similar view showing the envelope with the opener moved most of the way along the edge of the envelope, nearing the completion of the cutting or opening action;

FIG. **3** is an exploded view of the opener in side elevation (viewed from the opposite side shown in FIGS. **1** and **2**) with parts broken away to show the interior construction, and with the blade and its mounting block removed from the body;

FIG. **4** is an end elevation or edge view of the device, with the parts fully assembled in operative condition;

FIG. **5** is a vertical section taken approximately on the line **5—5** of FIG. **4**;

FIG. **6** is a bottom edge view of the device;

FIG. **7** is a section taken approximately on the line **7—7** of FIG. **5**;

FIG. **8** is a section taken approximately on the line **8—8** of FIG. **5**;

FIG. **9** is a section taken approximately on the line **9—9** of FIG. **5**;

FIG. **10** is a side elevation of an opener according to a second embodiment; and

FIG. **11** is a similar view of a third embodiment.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, the device has a main body indicated in general at **11.** This may be made of any convenient material, such as metal, wood, or plastic, which may be either transparent, translucent, or opaque. Transparent plastic is found to be very suitable. Regardless of which material is chosen, the body may be all of a single integral piece, or may be laminated. It is conveniently made from laminated plastic, comprising a thicker central member **13,** and two side plates **15** cemented or otherwise secured to the central core or filler **13.**

The body is preferably of somewhat oval outline, and of a small size conveniently grasped between the thumb and forefinger of the user. To give some dimensions merely as examples, and not as limitations, the body may have a length of about 1½ inches, a width of about 5/8ths of an inch, and a thickness (including the central member **13** and the two side panels **15**) of about 3/16ths of an inch.

Along one edge of the body is a groove **21.** When the body is oriented as shown in FIGS. **1, 2, 3,** and **5,** the groove **21** extends along the lower edge, but of course the body may be oriented in any desired way, and the terms "lower" or "upper" and similar expressions are used merely for convenience of description. This groove **21** extends throughout the major part of the length of the body, as shown. It has a width or thickness sufficient to receive a thickness of ordinary commercial letter envelopes. When the body is made of the laminated construction illustrated, the groove is conve-

niently of the width or thickness between the two side plates or panels **15**, as illustrated especially in FIGS. **4** and **9**, so that the side panels **15** form the opposite sides of the groove. The top of the groove, when viewed as in FIGS. **4** and **5** (or what one would normally consider the bottom of the groove, when inverting the structure and looking downwardly into the groove) is of V-shaped cross section, as illustrated, so that when the edge of an envelope or similar article is inserted into the groove and pressed toward the top of the groove (or toward the bottom, if considered from that standpoint) the cross sectional shape of the groove will tend to center the edge of the envelope in the thickness of the groove.

It is seen that the apex **23** of the groove lies in what might be described as a central plane, midway between and parallel to the flat or approximately flat outer side surfaces of the body. Also lying in this same central plane is a cutting and guiding member having a main portion **31** provided with a sharp cutting edge **33** faced fowardly and extending obliquely in the central plane above mentioned. From the forward end of the cutting edge **33**, the member **31** extends forwardly as at **35**, in a general direction approximately parallel to the general longitudinal axis of the groove **21**. This portion **35** constitutes a projection or protuberance serving as a guide to be entered into the space at the corner of an envelope between the rear wall and the closure flap, to guide the edge of the envelope into the groove **21**. The guiding projection **35** is not sharpened, but it is relatively small so as to be easily inserted at the corner of the envelope.

It is to be noted that the sharp cutting edge **33** lies entirely within the groove **21**, and does not project out at all beyond the outline of the body, so that it will not come in accidental contact with the fingers of the user, or with articles which might damage the sharpness of the cutting edge or be accidentally cut by the cutting edge. The guiding projection **35**, however, does extend appreciably beyond the outline of the body, so that it may be readily seen by the user and may be visually inserted into the proper place in the envelope. It may project, for example, about 1/4 inch or 5/16ths inch beyond the outline of the body.

Conveniently the portion **31** and **35** are formed integrally from the same piece of metal, such as steel, and they are quite thin, having approximately the thickness of an ordinary razor blade as used in a modern safety razor. If desired, however, the guiding projection **35** may be separately formed from the main blade portion **31**, and may be attached to the blade portion.

The portion **31** may be mounted in the body in any suitable way. It can be, for example, molded into the body if the body is molded, or riveted in place. Preferably, however, the base or butt end of the member **31** is molded into a mounting block **41** which is detachably mounted in the body. This is best seen in FIG. **3**, which is an exploded view illustrating how the mounting block **41** can be withdrawn from the cavity **43** of the body, by motion in a direction parallel to the cutting edge **33**. The parts are preferably dimensioned so that the block **41** has a snug sliding fit in the receiving cavity **43**. But greater tolerance in dimensions is possible if the parts are made with dimples or the like, such as a dimple or small recess **45** in one or both sides of the mounting block **41**, to receive a slight projection at a corresponding place in the body.

It will be noted especially from FIG. **5** that the body is cut away or recessed at **51** in the vicinity of the sharp cutting edge **33**, so that the sharp cutting edge extends inwardly some distance beyond a straight line tangent to the upper edge of the part **35** and the portion of the apex **23** which is closest to and just in front of the cutting edge of the blade. Such a line is indicated at **53**, and this line represents the most unfavorable angle that could be assumed by the edge of an envelope being opened. Even at this angle, the edge of the envelope would engage a sharp portion of the blade **31**. There is no danger of the folded edge of the envelope jamming into the acute angle between the blade and the thick mounting material **13** or **41**, either before or after the cut of the fold has been started, particularly before.

The recess behind the cutting edge slopes rearwardly, and is V-grooved at **61**, to guide the advancing corner of the envelope into the rear part of the straight groove **21**. As soon as the cut has progressed about an inch, the edge of the envelope is held and guided by the apex **23** of the groove behind the cutting edge, and now glides smoothly along the groove both in front of and behind the cutting edge and it cannot work up to jam against the blade where it meets with the body material which supports it.

Variations in the resistance of the envelope material and in the way the operator manipulates the device, and variations in the condition of the corner where cutting is commenced, will cause some variations in the angle of entry, but in no case can there be any jamming, for the reasons explained above.

The relieved or cut away portion **51** of the body may also be thought of as an enlargement of the groove. It is noted that this enlargement **51** increases the free space around the cutting edge of the blade, so that there is ample space to receive the tiny fragments of paper which usually result from the operation of cutting a fold in a piece of paper, and there is plenty of space for such tiny fragments to drop out of the groove after completion of one cutting or opening operation and before the next envelope is opened, so that there is no accumulation of tiny paper fragments in the device.

Because the projecting guiding member **35** is clearly visible, it can be easily guided by the user into the corner of the envelope, between the rear wall and the closure flap, as illustrated in FIG. **1**. This is possible even if the corner of the envelope has been damaged in transit, as by folding or crushing as is often the case in the mail. Even such a damaged corner, as indicated schematically at the right of FIG. **2**, is easily operated upon in practice by the construction of the present invention. Because of the small size and readily accessible and visible nature of the projecting end **35**, it can be worked into even a crushed corner of the envelope, without much difficulty. Then the device is slid along the edge of the envelope, as indicated by the arrows in FIGS. **1** and **2**, and the edge of the envelope is thus cut open along its entire length, without damage to the contents. Of course it is a matter of relative motion, and it does not make any difference whether the envelope is held stationary in one hand, and the opener is moved along the envelope (which is the action indicated in FIGS. **1** and **2**) or whether the opener is held stationary and the envelope is moved along the groove of the opener.

The cutting edge **33** preferably makes an angle of about **25** degrees to the longitudinal axis of the groove

21. This angle provides optimum cutting action and promotes long life of the cutting blade. For example, more than 2,000 envelopes were opened with one device, with the blade set at this angle, with no apparent loss in ease of operation and no appreciable deterioration in the sharpness of the cutting edge.

The envelope opener in the form above described, with reference to FIGS. 1–9, is the preferred form of the device, very compact, adapted to be held between the thumb and one or two fingers, and of a size to be conveniently carried in even a very small pocket, such as the change pocket often found inside a larger pocket of a man's suit or overcoat. With this preferred size and shape of the device, the force of operation, once the cutting has commenced, is minimized by being directed simply along the edge of the envelope. Any additional force, such a torque about an axis perpendicular to the surface of the envelope, is not needed, and actually can interfere with the smooth operation of the device. Operating the device with a simple grasp between the thumb and one or more fingers minimizes the chance of accidentally producing undesired torque, especially when the envelope is pulled or held by grasping it near the edge which is being cut.

However, some individuals may have manual dexterity problems that do not permit an easy grasping of the device in the simple preferred form above described. For such individuals, an extension or handle may be desirable, of sufficient size so that it may be held in the palm of the hand and the fingers may be wrapped around the handle. One form of such a construction is illustrated in FIG. 10, where the handle is shown at 71, and the other parts are indicated by the same reference numerals used for corresponding parts in FIGS. 1–9, with the addition of the letter *a* to each numeral. This handle slopes in what may be referred to as a forward direction, so that, assuming that the envelope is being held stationary, the user grasps the handle and draws it toward him, along the edge of the envelope.

Another embodiment is shown in FIG. 11, where the handle is indicated at 81, and the other parts are designated by the same numerals used in FIGS. 1–9 except for the addition of the letter *b* to each numeral. Here, the handle slopes in the opposite direction from the direction of the handle 71 in FIG. 10, and the user grasping the handle pushes the device away from him (assuming that the envelope is being held stationary) rather than pulling it toward him.

The device has been referred to as an envelope opener, and is designed especially for performing such function. However, it may be used equally well for cutting any folded piece of paper along the fold line. The reference to an envelope opener, in the claims and elsewhere, is merely for convenience of description, and is not intended in a limiting sense.

What is claimed is:

1. An envelope opener comprising a relatively flat body having opposite side surfaces approximately parallel to each other, said body having along one edge a narrow groove sufficiently wide, in a direction perpendicular to said side surfaces, to receive an edge of an envelope to be opened, said groove having a bottom which is of V-shape in cross section at least near a front end and a rear end of said groove, with the apex of the groove lying substantially in a central plane parallel to and substantially midway between said opposite side surfaces of said body, the V-shape of said groove serving to center the edge of an envelope midway in the width of said groove as the opener body is slid longitudinally along the edge of the envelope while being pressed against such edge, and a guiding and cutting member mounted in said body at an intermediate point between said front end and said rear end of said groove and projecting from said body obliquely forwardly into said groove, said member having a cutting portion with a forwardly faced sharp cutting edge lying substantially in said central plane and extending obliquely from the bottom of said groove outwardly and forwardly toward said front end of said groove, said sharp cutting edge lying entirely within said groove and being incapable of contact with any object not located within said groove, said guiding and cutting member including a guiding portion extending forwardly from the forward end of said cutting edge to a front end projecting materially beyond said front end of said groove, both said cutting portion and said guiding portion of said member being relatively thin in said direction perpendicular to said side surfaces and lying substantially in said central plane, said front end of said guiding portion projecting beyond said front end of said groove sufficiently far to provide a readily visible nose for insertion between a body wall and a sealing flap at a corner of an envelope to be opened.

2. A construction as defined in claim 1, wherein said sharp cutting edge extends at an angle of about 25° to the longitudinal axis of said groove.

3. A construction as defined in claim 1, wherein said forwardly projecting guiding portion of said member extends in a general direction approximately parallel to the longitudinal axis of said groove.

4. A construction as defined in claim 1, in which said cutting and guiding member has its rear end mounted in a mounting block, and in which said mounting block is detachably mounted in said body of the envelope opener.

5. A construction as defined in claim 1, in which said cutting portion and said guiding portion of said member are of substantially the same thickness in said direction perpendicular to said central plane.

6. A construction as defined in claim 1, in which said cutting portion and said guiding portion of said member are integrally formed from the same piece of metal.

7. A construction as defined in claim 1, wherein said flat body is of a small size adapted to be grasped, during a cutting operation, between a thumb and one or more fingers.

8. A construction as defined in claim 1, wherein the bottom of said groove has a recess in the vicinity of said sharp cutting edge, and said sharp cutting edge extends into said recess to a point further into said opener body than a straight line tangent to the uppermost part of said guiding portion and to the apex of the portion of said groove nearest the forward part of said recess.

9. A construction as defined in claim 8, wherein the rear portion of said recess slopes rearwardly to the apex of the portion of said groove lying rearwardly of said sharp cutting edge.

10. A construction as defined in claim 1, in which said body of said envelope opener has a mounting recess extending inwardly from the bottom of said groove, and in which said cutting and guiding member is mounted on a mounting block insertable into and re-

movable from said mounting recess and having a snug fit therein.

11. A construction as defined in claim **10,** further including resilient detent means tending to retain said mounting block in said mounting recess.

12. A construction as defined in claim **10,** in which said mounting recess and mounting block are so shaped that insertion and removal of said block relative to said recess takes place in a direction substantially parallel to the direction of said sharp cutting edge.

13. A construction as defined in claim **1,** wherein said flat body is provided with an extended handle elongated in a direction at a material angle to the longitudinal axis of the apex of said groove.

14. A construction as defined in claim **13,** wherein said angle is about 25°.

15. A construction as defined in claim **13,** wherein said handle is sloped forwardly relative to the longitudinal axis of said apex.

16. A construction as defined in claim **13,** wherein said handle is sloped rearwardly relative to the longitudinal axis of said apex.

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