May 31, 1938. P. DIETRICH 2,119,045

RAZOR BLADE HOLDER

Filed April 17, 1937

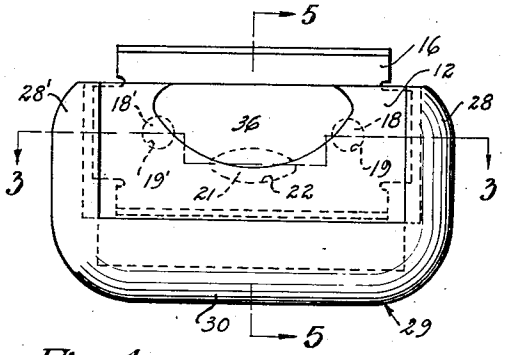

Fig. 1.

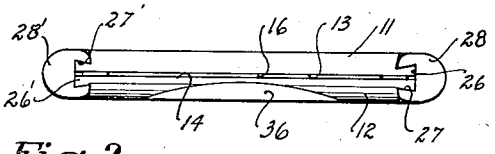

Fig. 2.

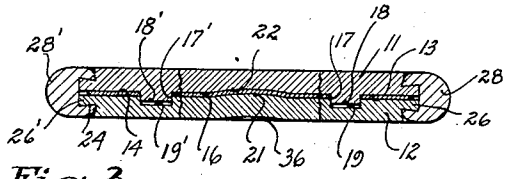

Fig. 3.

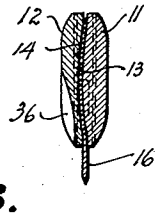

Fig. 8.

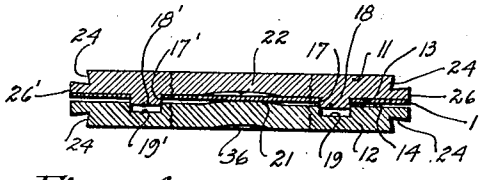

Fig. 4.

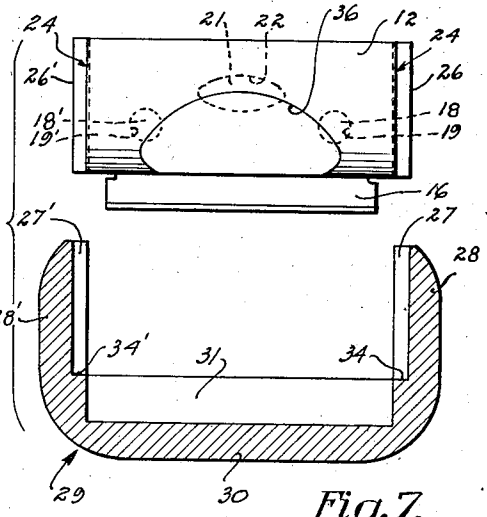

Fig. 7.

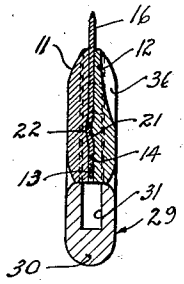

Fig. 5.

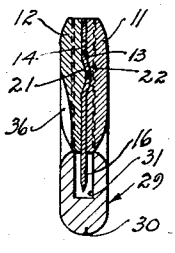

Fig. 6.

Inventor,
Paul Dietrich

Attorney.

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RAZOR BLADE HOLDER

Paul Dietrich, Los Angeles, Calif.

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8 Claims. (Cl. 30—332)

This invention has to do in a general way with cutting or scraping devices, and is more particularly related to that class of such devices which are designed to utilize razor blades as the cutting or scraping elements.

It is the primary object of this invention to provide an improved razor blade holder which is of simple form and construction and may be economically manufactured, such holder being so designed that it can be readily dismantled and reassembled for the replacement of the cutting element or blade. In this connection, my invention contemplates a device in which the blade is supported between two separate jaw plates having opposed faces formed so as to flex the blade when they are pressed together. In this way, the flex resisting tension of the blade tends to force the two plates apart. Associated with the supporting jaws or plates I provide a frame which has its side ways adapted to receive the end portions of the plates, such ways being dimensioned so as to press the two plates together, thereby flexing the blade so that the tension of the blade is utilized to hold the supporting jaws in frictional engagement with the frame.

It is a further object of this invention to provide a blade holding member of the class described which is constructed so that the blade supporting jaws can be completely removed from the containing frame and reversed and reinserted in the frame to provide a holder for the scraping or cutting edge which protects the same. In this way, I have provided a device which can be easily carried in the pocket and in which the blade can be made available merely by removing the jaws and reversing their position in the frame.

The details in the construction of a preferred embodiment of my invention, together with other objects attending its production, will be best understood from the following description of the accompanying drawing, which are chosen for illustrative purposes only, and in which:

Fig. 1 is a front elevation illustrating a preferred form of holder and blade assembly with the cutting edge of the blade extended;

Fig. 2 is a plan view of the device as shown in Fig. 1;

Fig. 3 is a plan section taken on the line 3—3 of Fig. 1;

Fig. 4 is a plan section similar to Fig. 3 but illustrating the jaws without the supporting frame so as to show the manner in which the supporting plates or jaws are spread apart by the blade when positive pressure is not applied to the jaws;

Fig. 5 is a sectional elevation taken in a plane represented by the line 5—5 of Fig. 1;

Fig. 6 is a sectional elevation similar to Fig. 5, but showing the supporting jaws and blade assembly as having been reversed in the frame so as to protect the cutting edge of the blade;

Fig. 7 is a detached front elevation showing the frame in section to illustrate one preferred manner of constructing the frame so as to provide a device which will protect the blade when the unit is assembled with the cutting elements reversed; and

Fig. 8 is a sectional elevation of a blade and jaw assembly of modified construction.

Referring now to the drawing for a more detailed description of the invention as illustrated herein, reference numerals 11 and 12 indicate plates or jaws which have opposed faces 13 and 14 adapted to engage a razor blade 16. This razor blade may be of any conventional type, and, as is usual in the construction of such razor blades, it is provided with openings 17—17' formed along a medial line. In the present embodiment of this invention, I take advantage of these openings to provide means for holding or supporting the blade against transverse movement relative to its supporting jaws. I accomplish this by providing one of the plate members (11) with projections 18 and 18' which are alined with openings 19 and 19' in the other plate member (12), such projections and openings being situated so as to fall into alinement with the openings in the razor blade itself. In this way, when the two jaws and the razor blade are assembled, the projections extend through the openings in the razor blade and support such blade against transverse movement. These openings and the size of the plates are so proportioned that one edge of the blade extends from the plate when the three members are assembled and the other edge of the blade is contained within the space between the plates.

As I have previously pointed out, the opposed faces of the jaws or plates 11 and 12 are shaped so as to flex the blade when these two plates are pressed together with the blade therebetween. This flexing action is utilized to spread the two plates apart by the tension of the blade and may be obtained in various ways.

In the preferred embodiment of my invention as illustrated herein, the flexing action of the blade as just described is obtained by providing one of the jaw plates (12 for example) with an inwardly extending bulge or projection indicated by reference numeral 21, and by providing the

other jaw plate (11) with a recess 22 that is opposite the bulge or projection 21 on the plate 12. With this arrangement, it will be seen from Fig. 4 that when the two plates are assembled with a blade therebetween that the bulge or projection 21 on the plate 12 acts upon the blade 16 to hold the two plates in a slightly spaced relation.

In the present embodiment of my invention the ends of the plates are shown as being grooved as indicated generally by reference numeral 24, so that when the plates or jaws are assembled these grooved end portions cooperate to form dove-tailed projections generally indicated by reference numerals 26 and 26'. These dove-tailed projections are adapted for reception in correspondingly shaped ways 27 and 27' formed in the side members 28 and 28' of an open-sided frame generally indicated by reference numeral 29.

As is perhaps best illustrated in Fig. 7, this open-sided frame 29 is made of U-shaped cross section having a closed side member 30 preferably formed with a depending recess 31.

The ways 27 and 27' are dimensioned in cross section so that their width is substantially equal to the width of the end portions of the plates plus the width or thickness of the blade, and in this way when the blade and plate assembly is forced into the ways it will be seen that the two plates are pressed inwardly toward each other, thereby flexing the blade so that the resistance of the blade to flexure exerts outward pressure on the plates and presses the ends of the plates firmly into engagement with the ways, setting up sufficient frictional resistance to positively hold the jaws tightly assembled within the frame.

When the unit is to be used as a cutting or scraping tool the jaw and blade assembly is inserted within the frame in the manner illustrated in Figs. 1 and 5. When the unit is not in use it is preferable to remove the jaw and plate assembly, reverse its position in the manner illustrated in Fig. 7 and reinsert it in the frame so that it occupies the position shown in Fig. 6. When the unit is assembled in this way, the recess 31 affords means for protecting the blade and in this connection it will be observed that the ways 27 and 27' terminate at their lower ends in shoulders 34 and 34' which engage the ends of the plates and support the plate assembly in a position where the lower edge of the blade does not come into engagement with the bottom of the recess or the corresponding opposed surface in the frame. This arrangement is perhaps best illustrated in Figs. 6 and 7.

To facilitate handling and working with the device, one, or both, of the plate members may be provided with a depression 36 on its outer surface.

As previously stated, the flexing of the blade by the opposed faces on the plate members may be accomplished in various ways and in Fig. 8 I have illustrated a modified form of my invention in which this flexure is obtained by cooperatively curving the opposed faces of the plate members along a longitudinal axis. In other words, the blade, in this form of my invention, is flexed along one longitudinal axis instead of being flexed along two axes as was the case when a small hump or projection was formed on one face and a correspondingly formed depression was provided on the other face.

It will be apparent from the foregoing description that the device contemplated by this invention is of simple form and construction, it may be easily and cheaply manufactured, and can be readily assembled and dismantled. It will also be observed that it affords the added feature of protecting the blade and guarding the cutting edge when the unit is not in use.

It is to be understood that while I have herein described and illustrated one preferred embodiment of the invention, the invention is not limited to the precise construction described above and includes within its scope whatever changes fairly come within the spirit of the appended claims.

I claim:

1. A razor blade holder embodying: a pair of jaws having opposed faces adapted to engage and support a blade, said faces being shaped so as to engage and flex a blade held therebetween and to be yieldably held in extended relation by the flexed blade; and a U-shaped frame having open-ended ways in its opposite side members adapted to receive said jaws, said ways being dimensioned so as to press said jaws together against the extending action of said blade.

2. A razor blade holder embodying: a pair of jaws having opposed faces adapted to engage and support a blade, said faces being shaped so as to engage and flex a blade held therebetween and to be yieldably held in extended relation by the flexed blade; a U-shaped frame having open-ended ways in its opposite side members adapted to receive the ends of said jaws, said ways being dimensioned so as to press said jaws together against the extending action of said blade, and cooperative projection and recess means on the opposed faces of said jaws, said projection means being adapted to extend through openings in said blade.

3. A razor blade holder embodying: a pair of jaw plates having opposed faces adapted to engage and flex a blade clamped therebetween; and a U-shaped frame having open-ended ways in its opposite side members slidably receiving the ends of said jaw plates, said ways being dimensioned so as to press said plates together thereby flexing said blade.

4. A razor blade holder embodying: a pair of separate jaw plates having opposed faces adapted to engage and flex a blade clamped therebetween; and a U-shaped frame having open-ended ways in its opposite side members adapted to slidably receive the ends of said plates, said ways being dimensioned so as to press said plates together to flex said blade whereby the plates and blade are frictionally held in said frame by the flex resisting tension of said blade.

5. A cutting device embodying the combination of: a pair of jaw plates having opposed faces adapted to engage and flex a razor blade supported therebetween; a blade interposed between said plates with an edge thereof extending; and an open-ended U-shaped frame having open-ended ways in its opposite side members slidably engaging said plates, said ways being dimensioned so as to press said plates together thereby flexing said blade.

6. A cutting device embodying the combination of: a pair of jaw plates having opposed faces adapted to engage and flex a razor blade supported therebetween; a blade interposed between said plates with an edge thereof extending; an open-ended U-shaped frame having open-ended ways in its opposite side members slidably engaging the ends of said plates, said ways being dimensioned so as to press said plates together thereby flexing said blade, and shoulders in said ways adapted to engage the ends of said plates

thereby limiting the movement of said plate and blade assembly into said frame.

7. A cutting device embodying the combination of: a pair of jaw plates having opposed faces adapted to engage and flex a razor blade supported therebetween; a blade interposed between said plates with an edge thereof extending; and an open sided frame having ways slidably engaging the ends of said plates, said ways being dimensioned so as to press said plates together thereby flexing said blade, the closed side of said frame being provided with a recess adapted to receive and protect the edge of said blade.

8. A cutting device embodying the combination of: a pair of jaw plates having opposed faces adapted to engage and flex a portion of a razor blade supported therebetween; a blade interposed between said plates with an edge thereof extending; and an open sided frame having end ways slidably engaging the ends of said plates, said ways being dimensioned so as to press said plates together thereby flexing a portion of said blade, the closed side of said frame being provided with a recess adapted to receive and protect the edge of said blade when said blade and plate assembly is reversed in said frame.

PAUL DIETRICH.