

Nov. 5, 1935.

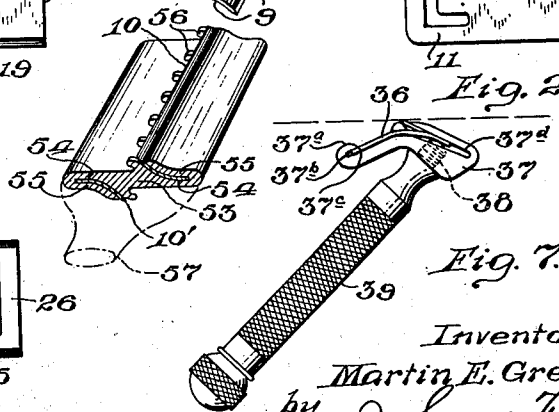
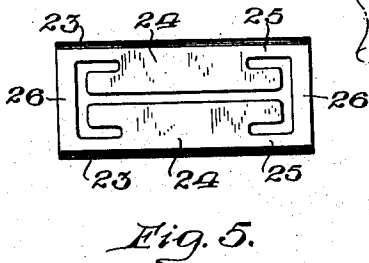
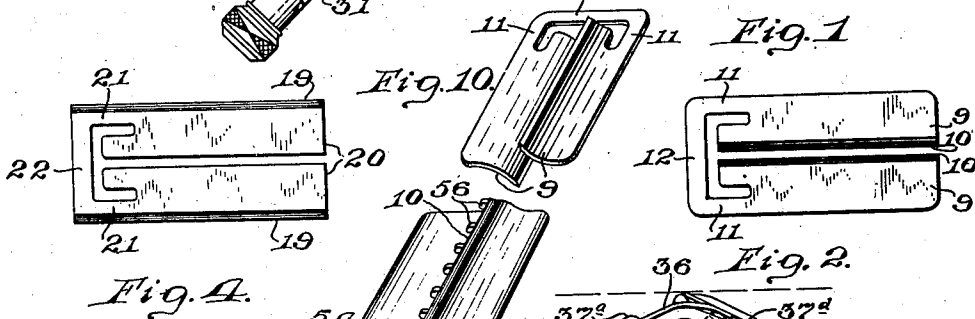
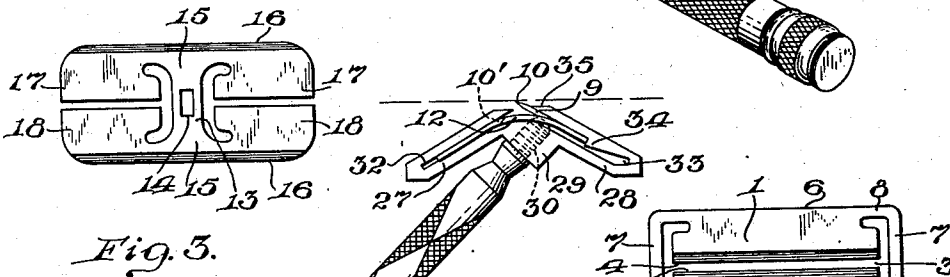
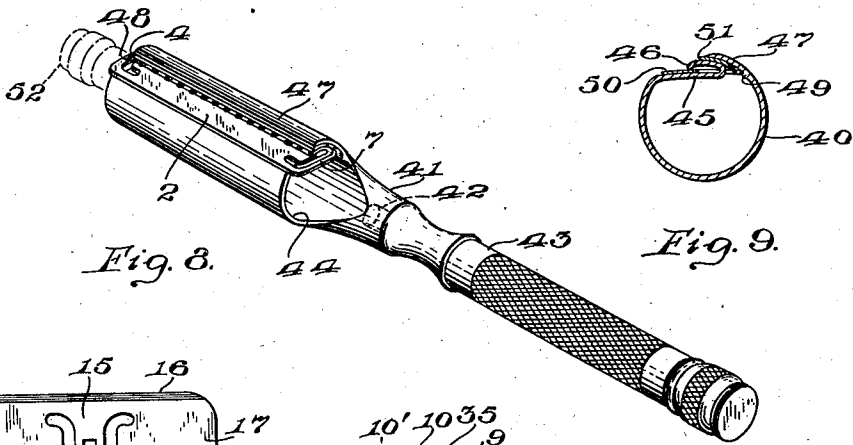
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2,020,116

RAZOR BLADE AND HOLDER THEREFOR

Filed July 14, 1933

2 Sheets-Sheet 1



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RAZOR BLADE AND HOLDER THEREFOR

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2 Sheets-Sheet 2

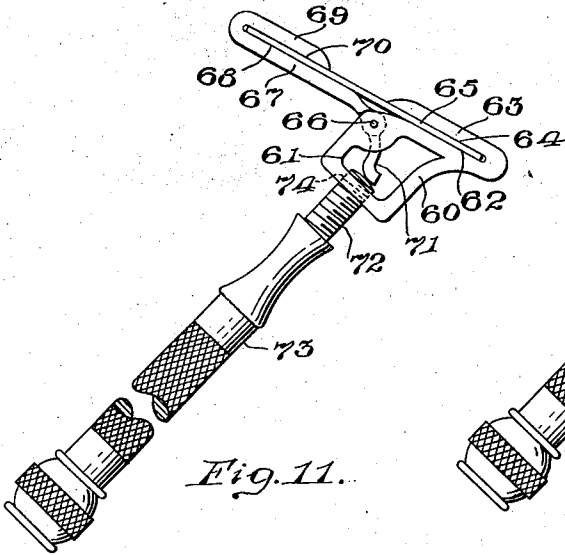


Fig. 11.

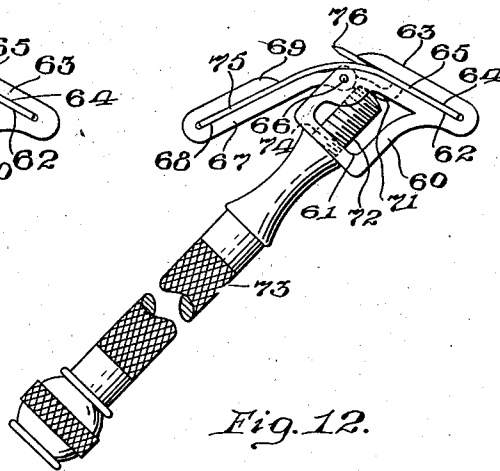


Fig. 12.

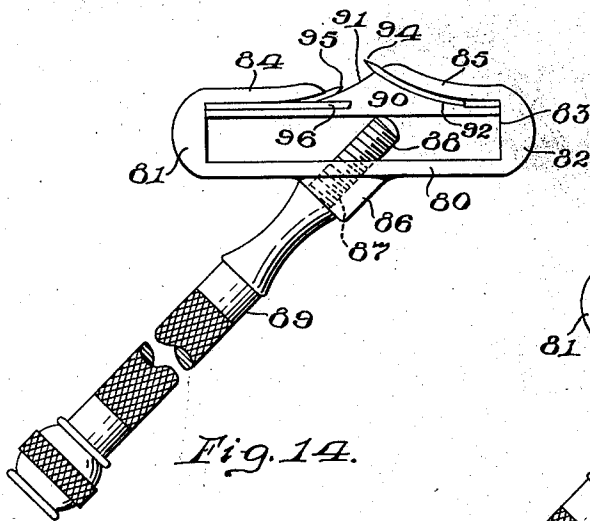


Fig. 14.

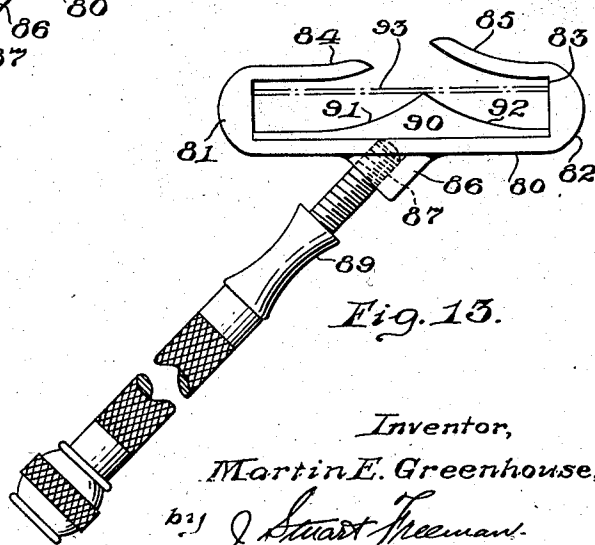


Fig. 15.

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UNITED STATES PATENT OFFICE

2,020,116

RAZOR BLADE AND HOLDER THEREFOR

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Application July 14, 1933, Serial No. 680,358

1 Claim. (Cl. 30—12)

The object of the invention is to provide improvements both in razor blades per se of the so-called safety razor type, and in improved holders which are adapted to operatively support both said improved blades and others which may have somewhat similar characteristics.

Another object more specifically is to provide a duplex blade, that is one having two cutting edges, in which the cutting edges are directed towards each other, rather than in opposite directions, with the result that they are relatively shielded against many of the contacts with extraneous objects, which at present tend to dull the edges of the blades now in use, besides protecting one's fingers from being cut as is always possible with present-day constructions, since with the outermost edges blunt or unsharpened the blade can be picked up and handled at will without hesitancy.

A further object is to provide blades having either their adjacent internal, or oppositely extending external edge portions so connected to the supporting portions, that a maximum portion the length of each of such edges flexes relatively freely and maintains a substantially complete rectilinear shape, by virtue of elongated torsional intermediate portions extending parallel with said edge portions.

Still another object is to provide an improved holder for these blades, and one which might be also used for other types or shapes of blades not herein specifically illustrated and described, said holder being such that the blade can be inserted into it longitudinally, and so constructed as to permit one internal edge to extend freely in operative position, while the other internal edge is withheld in a retracted and shielded position, said blade as a unit being positively positioned by direct engagement with one of its blunt external edges engaging a portion of said holder.

And a still further object is to provide a modified form of holder, which operatively supports the blade in a manner similar to that of said first holder, but which is also characterized by a handle, which normally extends axially with respect to the generally cylindrical character of the holder proper, and which handle when the device is not in use is adapted for disconnection from said holder and insertable telescopically therein, in order to fill as little space as possible when being carried about from place to place.

With the objects thus broadly stated, the invention comprises further details of construction and operation, which are hereinafter fully brought out in the following description, when

read in conjunction with the accompanying drawings, in which

Figs. 1 and 2 are plan views of two forms of razor blades, characterized by internal or adjacent cutting edges; Figs. 3, 4, and 5 are similar views of as many different types of blades, characterized by external or oppositely directed cutting edges; Fig. 6 is an end elevation of improved holder for the use of either of the blades shown in Figs. 1 and 2; Fig. 7 is a similar view of a modified form of holder for operatively supporting the same type of blade; Fig. 8 is a perspective view of a modified form of holder for this same type of blade, but characterized by the fact that the handle extends substantially axially with respect to the holder proper; Fig. 9 is an enlarged transverse section of the holder of Fig. 8, showing a blade operatively positioned therein; Fig. 10 is a fragmentary perspective view of a still further modified form of holder for the same type of blade as shown in Fig. 2, and also showing a blade separated from but in alignment with such holder; Fig. 11 is a side elevation of a modified form of razor holder, in the position for receiving the blade; Fig. 12 is a similar view adjusted to operative relation of its parts; Fig. 13 is a side elevation of a still further modified form of holder with its parts in position for receiving the blade; and Fig. 14 is a similar view of the same adjusted to operative relation of its parts.

Referring to Fig. 1, there is here shown an improved blade comprising a pair of parallel portions 1 and 2, between which there is preferably a slight space 3, while their adjacent or internal edges are sharpened to form razor cutting edges 4 and 5, and their oppositely directed edges 6 are blunt or unsharpened. Said blunt edge portions are of greater extent than and project longitudinally beyond said sharpened edges, and are connected by relatively narrow, transversely flexible sections 7. In this manner there are provided parallel, longitudinally extending torsional sections 8, of sufficient length to provide for the flexing of the body portions 1 and 2 independently of each other, and in such manner that the sharpened edges will not be bent or flexed out of rectilinear shape. The flexible connecting sections 7 are here shown as being positioned in spaced relation with the adjacent ends of the sharpened body portions of the blade, but such is not essential, as they may if desired be in close juxtaposition. In any case, the torsional sections 8 are as long as feasible, and

for this purpose extend partially to the rear of the cutting edges 4 and 5.

Referring to Fig. 2, the body portions 9, characterized by the adjacent sharpened cutting edges 10 and 10' are connected by tortional sections 11 at one end only of a single transversely flexible connecting section 12, respectively similar to the tortional sections 8 and connecting the sections 7 of Fig. 1. The operation and use of this blade is similar to that of Fig. 1, except that this latter type permits of its being inserted longitudinally into a holder, whereas the first type must be placed or inserted transversely into a holder, whether substantially in the plane of the blade itself, or angularly with respect to such plane.

Referring to Fig. 3, a blade is shown comprising a sectional transversely flexible section 13, which may be provided with an aperture 14, if desired, for engagement with a pin or lug such as is carried by many types of blade holders, while said section at its opposite ends merges into parallel, longitudinally extending body portions 15, the oppositely extending edges 16 of which are sharpened, while said body portions extend upon opposite sides of said flexible section 13, to provide pairs of wing sections 17 and 18 respectively, each sharpened edge 16 extending substantially the full length of the body portion and adjacent to the wing sections of which it forms a part.

The blade shown in Fig. 4 is quite similar in contour to that of Fig. 2, except that it provides oppositely directed cutting edges, carried by parallel body portions 20, which are connected thru tortional sections 21 with a transversely extending flexible section 22. This blade also like that of Fig. 2 may be inserted longitudinally in certain types of holders, while the blade shown in Fig. 5 is more closely similar to that of Fig. 1, except that it provides oppositely directed cutting edges 23, carried by body portions 24, which in turn are connected to the tortional sections 25 with oppositely positioned transversely extending flexible sections 26.

Referring now to Fig. 6 a holder is shown comprising angularly extending wing sections 27 and 28, connected together at least at one point by means of an enlarged integral lug 29, provided with a threaded bore 30, into and thru which normally extends the threaded reduced end portion of a handle 31. Said wing sections are respectively provided preferably throughout their entire length with relatively deep yet narrow slots 32 and 33, adapted to receive in suitable sliding engagement the oppositely positioned body portions 1 and 2 of a blade of the type shown in Fig. 1, or the body portion 9 of a blade of the type shown in Fig. 2, while the threaded portion of the handle 31 is in slightly withdrawn position. Either type of blade may thus be slidably inserted longitudinally in said slots 32 and 33, which are angularly disposed with respect to each other, in such transverse position that the rearwardly positioned blunt edge of the blade bears directly against a lug 34, forming a support to prevent further transverse movement of the blade in that direction.

With the blade in this position, the cutting edge 10 will extend freely beyond the plane 35 (or the slightly spaced planes) which defines the limit of the outer sides or walls of said wing sections, the opposite cutting edge 10' being maintained within the slot 32 and shielded by the outer wall of the adjacent wing section 27. After the blade has been placed in this operative posi-

tion, if its tension against the adjacent surfaces of the holder, due to the flexing of the blade, is not considered sufficient to maintain it in operative position while in use, it may be more positively held in operative position by providing a slightly longer threaded portion of said handle, and thus screwing the end of this threaded portion firmly against the deflected body portion 9 of the blade, as shown in Fig. 6. When the operative edge becomes dull thru use, it is obvious that the blade may be released, if necessary, by first loosening the handle and sliding said blade longitudinally outwardly from within the slots 32 and 33, after which the blade may be reversed and the cutting edge 10' brought into extended operative position, while the cutting edge 10 is thereafter retained in inoperative or shielded position.

The holder 37 shown in Fig. 7 is in general similar to that in Fig. 6, except that in design it is not so angular, and is preferably designed to accommodate a relatively narrower blade 36 than the holder of Fig. 6 is adapted to support. This last-named holder, instead of being provided with a stop such as the lug 34 of Fig. 4, provides for the transverse adjustment and positioning of the blade, the desired position being solely maintained by said blade being engaged and clamped by the reduced threaded end portion 38 of the handle 39. Also, by relatively abbreviating the outer wall 37^a of the slot 37^b receiving the inactive portion of the blade, so that substantially only the free unsharpened edge 37^c of said inactive portion is engaged and held out of alignment with the active portion, the blades of both of Figs. 1 and 2 may be used, the blade in either case being inserted transversely into the opposite slot 37^d, flexed into said slot 37^b until the edge 37^c is safely secured, and the handle tightened against said active portion of the blade, or said active portion may rest against a stop or lug, such as the stop 34 in Fig. 6.

Referring to Figs. 8 and 9, this form of holder comprises a substantially cylindrical portion 40, collapsed or closed at one end 41, except for the provision of a preferably threaded bore 42, adapted to receive the correspondingly threaded reduced end portion of a handle 43, while between said closed portion 41 and the cylindrical portion 40, said holder is provided with a laterally directed relatively enlarged aperture 44, designed to permit free flow of water thru said holder, in order to flush the same and assist in cleansing, by removing therefrom all trace of cream, lather, hair, or the like, the opposite end of said holder being open throughout its full transverse extent.

Structurally this holder is cut longitudinally so as to provide a flattened inwardly directed section 45, the free edge portion of which is reversely folded to provide a lip 46, overlapping and adjacent to which is positioned the opposite free edge portion 47 of the holder, which last-named portion is preferably continuous and unbroken, while the lip is toothed so as to provide a guard 48. Either of the blades of Figs. 1 and 2 may be used in this holder, as they may be inserted therein either transversely or longitudinally. In either case they are positioned transversely against a suitable pocket or lug 49, while the inoperative portion 50 of said blade lies flat against the outer surface of the flattened section 45, and the operative edge portion 51 is deflected angularly by the lip 46, and extends between said lip and the adjacent edge portion 47. The blade may be withdrawn from this holder in the opposite direc-

tion to that by which it is inserted for replacement or reversal of the position as desired, while the handle 43 may be disconnected and inserted longitudinally in the opposite end of a holder, as indicated by the dot and dash lines 52.

Referring to Fig. 10, the blade of Fig. 2 is shown both, as being operatively positioned within a holder comprising a further modification of the invention, and in alignment with said holder to clearly illustrate the method by which they are brought into operative union or cooperation. This holder comprises a body portion 53, in cross section of irregular shape. Viewed in cross section, this holder embodies a pair of oppositely directed, substantially arcuate slots 54, in which the laterally opposite body portions 9 of said blade are slidably positioned longitudinally, so that the cutting edges 10 and 10' of the blade extend in oppositely directed operative positions. The outer wall 55 of each of said slots comprises a means for retaining the flexible portions of the blade in operative position, while the opposite walls of said slots, adjacent to the central portion of said holder are deflected abruptly away from alignment with the major portion of said slots to provide flanges, which flanges by being serrated provide oppositely directed toothed guards 56 adjacent to but spaced from the respective cutting edges of the blade.

The flexible connecting portion 12 of the blade may if desired enter a slot in the opposite or free end portion of said holder, or may preferably extend freely therefrom, in order to provide a finger-engaging means for removing the blade from said holder, for resharpening and/or replacement.

As the handle for said holder does not enter into the invention, the same is merely suggested by dot and dash lines 57, it being understood that this handle may be of any shape, size, type or construction as desired.

Referring to Figs. 11 and 12, the modified form of holder here shown comprises a body portion 60, which may but need not be open in skeleton form as indicated at 61. This body portion is provided with a preferably flat surface 62, beyond which in one direction there is integrally connected with said body portion a parallel wall 63, which with said body portion provides a slot or recess 64, and also forms a guard for a razor blade 65 of either of the types shown in Figs. 1 and 2, said blade extending freely from said slot or recess.

Pivotaly mounted to said body portion by any suitable means as at 66 or other suitable location is a wing 67 having a preferably flat surface 68, and which is also provided with an integrally connected wall 69, which with said wing forms a slot or space 70, into which the laterally opposite portion of said blade enters, as the blade is inserted longitudinally into said slots 64 and 67, when in the same plane or alignment, as shown in Fig. 11. Beyond this pivotal support said wing is provided with a suitably shaped lever arm 71, which extends into the body portion 60, and is preferably directly engaged by the extremity of the threaded end portion 72 of a handle 73, which enters and is in threaded engagement with a bore 74 in said body portion after a blade is inserted into this type of holder, as hereinbefore mentioned, rotation of said handle operates to oscillate the lever arm 71 inwardly, so that the wing 67 is shifted angularly about its pivotal support, with the result that the inactive lateral portion of the blade 65 is flexed into the position

75, shown in Fig. 12, thereby leaving the cutting edge 76 of the active portion of the blade 65 extending freely for the purpose of shifting in the usual manner. In order to remove this blade for resharpening or replacement, the handle is rotated in the reverse direction, permitting the lever 71 to return to the position shown in Fig. 11, and the slot 70 into alignment with the slot 64, so that said blade can be readily removed therefrom. While the resiliency of the blade itself is sufficient for all practical purposes to firmly retain it in fixed position within said holder during the act of shaving, or other use for which said blade may be adapted, if desired the free end of said lever 71 may be made to directly engage the under-surface of the active portion of said blade, as indicated in Fig. 2, thereby even more positively binding said blade in said holder and thereby preventing any shifting between said blade and holder.

Referring to Figs. 13 and 14, a holder is shown which is substantially rectangular in end elevation. This type of holder comprises a body portion or plate 80, from the normally forward and rear edge portions of which rise integral extensions 81 and 82, which together define a substantially rectangular interior space 83, the fourth side of said space being largely spanned by the inwardly directed and outwardly curved flanges 84 and 85 respectively. The curvature of said last-named flange is greater than that of the former, while the free edge portion of said last-named flange extends outwardly farther than the corresponding edge portion of said first-mentioned flange.

The plate 80 is preferably provided with an angularly directed boss 86, thru which extends a bore 87, within which is positioned in threaded engagement the threaded end portion 88 of a handle 89. Within the space 83, and adapted to be in contact with said end portion 88 of said handle is a roughly triangular flexing member 90, comprising a pair of upwardly directed preferably curved surfaces 91 and 92, substantially corresponding in curvature with the inner surfaces of the flanges 84 and 85 respectively, said member being shiftable within said holder from the position shown in Fig. 13 into the position shown in Fig. 14. When in said first position, it is possible to insert a blade 93, of such types as those shown in Figs. 1 and 2 longitudinally into said space 83, after which rotation of said handle forces said flexing member upwardly against said blade in such a manner that the active edge portion 94 of said blade is brought into operative position freely extending beyond the adjacent edge portion of the guard flange 85, while the inactive edge portion 95 is flexed into either a completely shielded position, or into a position extending slightly beyond the limits of the free edge portion of the flange 84, as shown in Fig. 14, and in which position of said blade the connecting end section or sections 96 remain in their initially rectilinear position upon the laterally opposite ends of said flexing member (one only of 65 said end sections being shown in Fig. 14, to represent either of the end sections 7 of Fig. 1, or the end sections 12 shown in Fig. 2).

In order to remove said blade for resharpening or replacement, it is only necessary to rotate the handle 89 in reverse direction, in order to again release the flexing member 90 into the position shown in Fig. 13, and thereby permit the straightened blade to be manually removed from the position indicated at 93, in said Fig. 13.

I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive, reference being had to the accompanying claim rather than to the foregoing description to indicate the scope of the invention.

5
10 Having thus described my invention what I claim and desire to protect by Letters Patent of the United States is:—

A safety razor blade comprising a single sheet of flexible metal, a medially arranged slot extending longitudinally of the blade but terminating short of the ends, a transversely extending slot at each end of said longitudinal slot, thereby forming a pair of inwardly extending opposed tongues capable of being flexed out of the normal plane of the blade and the adjacent edges of said tongues being sharpened.

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