

Dec. 10, 1929.

M. B. BEHRMAN
RAZOR AND BLADE THEREFOR
Filed Feb. 2, 1929

1,739,280

Fig. 1

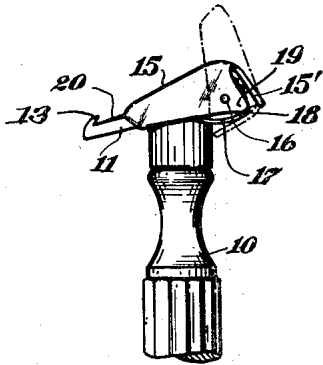


Fig. 2

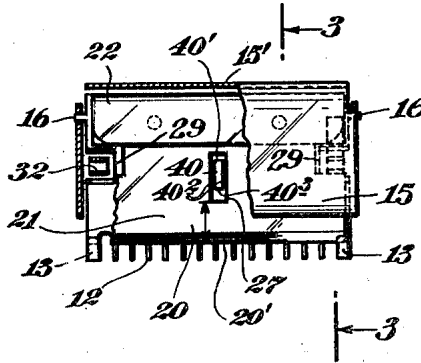


Fig. 3

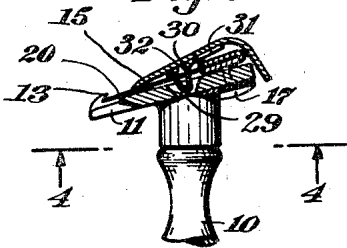


Fig. 4

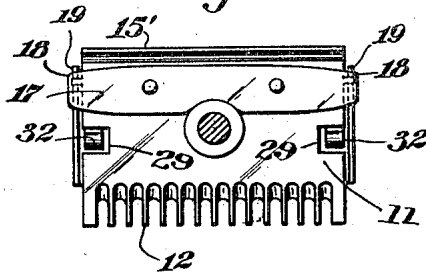


Fig. 5

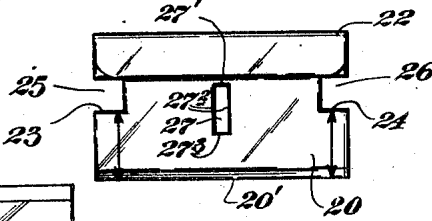
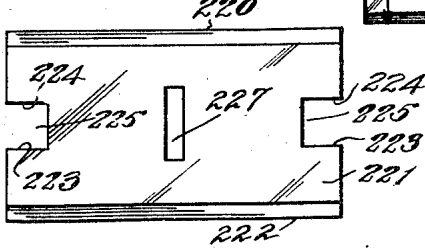


Fig. 6



INVENTOR
Marcus B. Behrman,
BY *William O. Black*
ATTORNEY

UNITED STATES PATENT OFFICE

MARCUS B. BEHRMAN, OF BROOKLYN, NEW YORK, ASSIGNOR TO AMERICAN SAFETY RAZOR CORPORATION, OF BROOKLYN, NEW YORK, A CORPORATION OF VIRGINIA

RAZOR AND BLADE THEREFOR

Application filed February 2, 1929. Serial No. 336,991.

My present invention relates to safety razors of the type wherein the blade is pressed against fixed stops with its shaving edge always in the same predetermined position with respect to the razor guard. This insures a proper shaving action notwithstanding expected dimensional variations in blades employed.

The invention aims primarily to provide a razor blade having special features of construction by the use of which the above mentioned adjustment of the blade with reference to the stops may be carried out with greater effectiveness and certainty, certain additional features of construction being preferably employed in the blade to insure that during assembly it will be preliminarily positioned within the proper range of action of the mechanism employed to press it against the stops.

The invention also includes a novel blade holder adapted to cooperate with a blade of the nature above referred to, to press the blade against the stops as aforesaid.

For the attainment of the foregoing objects and such other objects as may hereinafter appear or be pointed out, I have illustrated embodiments of my invention in the accompanying drawings, in which:—

Fig. 1 is a side elevational view of my invention embodied in a type of razor somewhat like that illustrated in Patent No. 1,091,436;

Fig. 2 is a top plan view of Fig. 1, with parts broken away;

Fig. 3 is a section taken on line 3—3 of Fig. 2;

Fig. 4 is a bottom elevational view of Fig. 1, looking upward;

Fig. 5 shows the blade employed in the embodiment of Fig. 1;

Fig. 6 is a modified form of blade embodying my invention.

One form of blade constructed in accordance with the invention is disclosed in Fig. 5 of the drawings, such blade having a shaving edge 20 and being provided on its rear edge, if desired, with a cover 22. To enable the blade to be effectively pressed against stops of the nature above referred to, I will pro-

vide it with cut-away portions 25 and 26, located adjacent its opposite side or end edges and rearwardly of its shaving edge, these cut-away portions thereby presenting abutment shoulders 23 and 24 between the cut-away portions and the shaving edge 20, which may be engaged by properly cooperating movable parts on a blade holder, to press the blade cutting edge against the stops on the holder as aforesaid.

Although the shoulders 23 and 24 afford widely spaced and symmetrical points or portions to which force may be applied to the blade in adjusting it as aforesaid, and thereby tend to insure accurate adjustment, I prefer also to provide the blade with an opening 27 located preferably centrally between the cut-away portions 25 and 26, this opening 27 running transverse to the cutting edge 20 of the blade and usually at right angles thereto, in such manner as to provide elongated linear side walls 27², which may receive a projection in the blade holder and thereby confine the blade to the desired range of position and movement with respect to the blade holder. The end wall 27³ of opening 27 serves to limit the rearward position or movement of the blade with respect to the stops to be engaged by it, while the side walls 27² of opening 27 confine the blade preliminarily to a position substantially parallel to its final adjusted position, and also may guide the blade toward such final position during its adjustment.

The above features of construction, however, still permit the blade to be used in certain previously known types of razor holders, for example, as described in United States Patents Nos. 1,091,436 and 1,135,775, if desired.

In Figures 1 to 4, I have illustrated one form of blade holder adapted to be used in connection with a blade of the above nature, such holder being provided with a handle member 10 carrying a saddle or blade seat 11, having guard teeth 12 at its front end and fixed stops 13 as above referred to adapted to define a line to which the shaving edge 20 of the razor blade is to be brought for the purposes of maximum efficiency and

shaving smoothness. A cover member 15 is pivoted to the seat at the rear 16 so as to permit it being swung from the full line position of Fig. 1, which is the position of blade engagement, to dotted line position in that figure, which is the position of blade release. The cover 15 is maintained either in one or the other of these positions by means of the spring 17 (see Fig. 4) secured to the saddle, in any preferred or desired manner, having free ends 18 which engage the toe portions 19 on opposite sides of the cover and to the rear of the pivot 16. The lips 18 of the spring and the toe portions 19 of the cover are of such a character that the spring serves as a double acting one, forcing the cover to closed position when the cover is on one side of the critical angle and forcing it to open position when on the other side of this critical angle.

In accordance with the embodiment of the invention herein disclosed, the means on the cover for maintaining the blade with its shaving edge against the front stops and for advancing the blade along the seat, when it is not already so engaged, are in the form of members 30 which, in the illustrated embodiment, comprise spring elements bent in the shape of a V and each secured at the free end of one leg 31 to the cover and having the end of the other leg 32 free, this last-mentioned leg serving as the active advancing element. The cover is provided with two such spring members, one on each side, and positioned well to the front of the cover pivot and intermediate of the front stops and the cover pivot. I thereby obtain not only an increased leverage for the advancing means but the added advantage that the depth of the razor can be somewhat shortened as the springs have been moved from a position to the rear of the blade to a position above the blade. To provide clearance for these members 30, the seat or saddle is cut away at each side, as clearly shown at 29 in Fig. 3.

The distance between the abutment shoulders 23 and 24 and the shaving edge 20 is such that when the blade is initially seated on the razor these abutment shoulders 23 and 24 will each be engaged by a leg 32 of the spring member 30 as the cover is brought into clamping position, to advance the blade along its seat to bring the shaving edge 20 into engagement with the front stops 13 and therefore into that line which has been predetermined as the line of maximum shaving efficiency, where it is not already so engaged, and to maintain such engagement.

By the employment in the razor of Fig. 1 of a blade having abutment shoulders 23 and 24 positioned as set forth, and due to the manner of their cooperation with the advancing members 30 carried by the cover, I not only secure the advantage of the longer leverage with a shortening of the razor but also find that the advancing motion on the blades will

generally be of a more uniform and improved character.

The razor seat or saddle 11 is provided with an upstanding projection 40 on its upper face positioned a substantial distance to the rear of the lines connecting the front stops 13, and in the illustrated embodiment this projection takes a generally oblong form with the longer dimension extending transversely of the saddle, that is, at right angles to the line connecting the front stops 13. The opening 27 in the blade is substantially longer than the projection 40 and is of a width sufficiently larger than the width of the projection 40 so as to permit of the projection being freely received through the opening. Due to the substantially increased length of the opening over that of the projection, it will be understood that the blade, even though it is positioned over the projection, can be shifted with reference to the projection and the blade seat in a direction to bring the shaving edge 20 toward or away from the front stops 13, and by giving this opening and these projections the disclosed contours and the relative dimensions as above set forth, the projection serves additionally to limit the blade to a substantially rectilinear movement and to guide it in such movement. The size of the opening 27 is preferably such with reference to the projection 40 and particularly the length of the opening with reference to the length of the projection, that when the blade has been seated with the projection received through the opening 27 thereof, the blade edge 20 will be in proximity to the line connecting the front stops 13 and therefore in proximity to the final position which the shaving edge is to take. The distance of the rear wall 27' of the opening 27 in the blade from the blade edge 20 is greater than the distance of the rear wall 40' of the projection 40 from the line connecting the front stops 13, 13, so that at no time can the projection 40 serve to prevent the blade edge from being advanced into engagement with the front stops. So also, the distance of the front wall 27^s from the shaving edge 20', while less than the distance of the front wall 43' from the aforementioned line, is such with reference to said aforementioned distance that in any rearward position of the blade, while 40 and 27 are in engagement, the rear end of the blade will be prevented from striking the rear part of the cover.

The slots 25 and 26 and the opening 27 are positioned laterally of each other in the central zone of the blade, as clearly shown in Fig. 5, the latter being positioned wholly within the perimeter of the blade although this is not essential as to certain phases of my invention. The front wall 27^s of the opening is closer to the edge of the blade than are the abutment shoulders 23 and 24 presented by the slots 25 and 26. As a result of this ar-

rangement, the shoulder 27^a serves not only to limit the initial position of the blade rearwardly of the razor saddle or seat, but makes this limiting position such as to always present the abutments 23 and 24 in a positional relation with reference to the spring members 30 on the cover, so as to permit of the proper coaction between the cover and the abutments 23 and 24.

The side walls 40^a, which along with the rear wall 40^b and the front wall 40^c define the oblong character of the projection 40, serve to guide the blade in its forward and rearward movement by their coaction with the side walls 27^a which define the oblong character of the opening 27 in the blades.

While I have described the elements 27 and 40 both as to their relative contours, dimensions and positional relationship to each other and to the razor parts because of the added function and utility which result from such detail arrangement, it will be understood that such details of construction, while advantageous, are not essential to the border phases of my invention in this respect, and that therefore my invention is not to be considered as limited to such features unless such details are specifically called for in the claims. One of those broader phases, for example, is the positioning of a portion of the blade between the projection 40 and the front stops 13, so as to bring the abutment shoulders 23 and 24 into proper cooperative relation to the members 30.

My invention permits of the employment with razors of the general type herein disclosed, characterized as herein set forth, of a double edged blade without in any way requiring any changes except in dimensions of the parts, for example as shown in Fig. 6 of the drawings. The blade 221 is provided with cutting edges 220 and 222 at opposite ends and symmetrically of the longest dimension of the blade, i. e., the dimension from side to side, there are portions cut away to provide slots 225 and 226 defined in part by the two pairs of oppositely positioned abutment shoulders 223 and 224. There are thus provided two sets of abutment shoulders to cooperate alternatively with the depending members on the cover, for example springs 32, so that when one shaving edge, for example the shaving edge 222, is the active one, the abutment shoulders 223 will be in cooperative relationship to the aforementioned springs 32 and when the razor blade is reversed so as to bring the other edge 220 into active position, the abutment shoulders 224 will be the active shoulders for the same purpose. By arranging these shoulders 223 and 224 so that each pair are in alignment and at the same distance from its adjacent cutting edge, as the other pair is from its adjacent cutting edge, the blade can be reversed not only to bring the other cutting edge into active position, but

can be reversed from side to side so as to reverse the face of the blade. The advancing spring members shown in Fig. 3, for example, can be of a character to accommodate the all-symmetrical arrangement of the slots 225 of the blade of Fig. 6 because of the inherently flexible character of the leg 32 thereof or by a slight change in their position on the cover can be made to do so. The inactive cutting edge of the blade of Fig. 6 will be prevented from contacting with any portion of the cover on its rearward movement away from the front stops by the limiting action of the projection 40 or 140, as the case may be, as already aforementioned, and this inactive rear edge of the blade will be protected against accidental contact by the skirt 15^a projecting downwardly from the cover at its rear (see Fig. 1).

I have herein disclosed my invention as embodied in varying constructions, and have described these constructions in detail. Such detailed description, or any part thereof, is not to be construed in a limitative sense unless called for by the language of the claims or the logical interpretation to be given to such language.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent is:—

1. In combination, a razor holder having a guard and fixed stops adjacent the ends of the guard adapted to fix the position of the shaving edge of a blade with reference to the guard when such a blade is pressed against the stops, a razor blade having cut-away portions therein disposed rearwardly of its shaving edge and presenting abutment shoulders in the blade between said portions and said stops, said holder being provided with a movable portion having means fixed thereto to be received within said cut-away portions to engage said shoulders to press the edge of the blade against said stops.

2. In combination, a razor holder having a guard and fixed stops adjacent the ends of the guard adapted to fix the position of the shaving edge of a blade with reference to the guard when such a blade is pressed against the stops, a razor blade having cut-away portions therein disposed rearwardly of its shaving edge and presenting abutment shoulders in the blade between said portions and said stops, said holder having means to be received within said cut-away portions to engage said shoulders to press the edge of the blade against said stops, said blade having an opening therein disposed between said cut-away portions and running transverse to its shaving edge, and said holder having a projection adapted to be received within said opening to preliminarily position the blade with respect to said means, but having such clearance in a direction transverse to the shaving edge that the edge of the blade

will engage said stops before the projection engages an end of said opening, said opening having side walls confining the blade in its movement to a path of travel toward the stops.

5 3. In a device of the character described, in combination, a razor comprising a saddle having a guard for the shaving edge and a member projecting upwardly from the saddle for initially locating the blade and front stops to define the final position of the shaving edge, and a cover pivoted thereto having blade advancing members depending downwardly along opposite sides thereof, said advancing members having engaging portions on the forward portion thereof and a blade cut away so as to provide an opening to receive freely the upwardly projecting locating member, and abutment shoulders positioned adjacent its opposite side edges at such a distance from the shaving edge that when the blade is seated on the saddle with the upwardly projecting member received in the aforementioned opening, the blade will be preliminarily located with its shaving edge in proximity to the line connecting the front stops and in proper position for advancement thereagainst, and the side abutments will be positioned as to be engaged by said engaging portions of the depending blade advancing members, and advanced thereby relatively to the saddle and to the upwardly projecting locating member, as the cover is brought down to blade clamping position.

35 4. In combination, a razor holder having a guard and fixed stops adjacent the ends of the guard adapted to fix the position of the shaving edge of a blade with reference to the guard when such a blade is pressed against the stops, a razor blade having cut-away portions therein disposed rearwardly of its shaving edge and presenting abutment shoulders in the blade between said portions and said stops, said blade also having an opening between said cut-away portions, and said holder having adjustable means adapted to be received within said cut-away portions to engage said shoulders to press the edge of the blade against said stops, said holder also having a projection adapted to be received in said opening to preliminarily position the blade with respect to said adjustable means.

55 5. A safety razor blade having a shaving edge provided with stop engageable corner portions and cutaway portions in the central zone of the blade and in the opposite sides thereof, said cutaway portions presenting abutment shoulders therebetween and said shaving edge, said blade also having an opening between said cut-away portions with elongated linear side walls running transverse to said shaving edge to guide said stop engageable corner portions to their final predetermined stopping position.

65 6. A safety razor blade having a shaving

edge provided with stop engageable corner portions and cut-away portions adjacent opposite side edges which are spaced in a rearward direction from the shaving edge and present abutment shoulders between said portions and said shaving edge, said blade also having an opening between said cut-away portions which is elongated in a direction transverse to said shaving edge so as to extend closer to the shaving edge than said abutment shoulders, said cutaway portions and said opening being located in the central zone of the blade.

7. A double edged safety razor blade having substantially parallel front and rear shaving edges provided with stop engageable corner portion, and cut-away portions adjacent opposite side edges which present abutment shoulders respectively spaced substantially equally from said front and rear edges, said blade also having an opening disposed substantially centrally between said cut-away portions, said opening being elongated in a direction transverse to said first mentioned edges and having end walls spaced substantially equally from the respective adjacent front and rear edges.

8. A double edged safety razor blade having substantially parallel front and rear shaving edges provided with stop engageable corner portions, and cut-away portions adjacent opposite side edges which present abutment shoulders respectively spaced substantially equally from said front and rear edges, said blade also having an opening disposed substantially centrally between said cut-away portions, said opening being elongated in a direction transverse to said first mentioned edges and having end walls spaced substantially equally from the respective adjacent front and rear edges, and elongated linear walls to serve for blade guiding purposes.

9. A razor blade comprising shaving edges along opposite edges provided with stop engageable corner portions, the active edge being adapted to contact with a front gauge on a razor, a plurality of sets of abutment portions each set being arranged abreast, intermediate the opposed shaving edges and each set at the same distance from its adjacent shaving edge and adapted to be engaged and forwardly pressed toward said front gauge when its adjacent shaving edge is the active one and an intermediate positioning slot adapted to position the blade for said forward movement, regardless of which edge is the active one, said slot extending closer to the opposed shaving edges than said abutment.

10. A razor blade comprising a shaving edge having stop engaging corners adapted to contact with front gauge stops of a razor, a plurality of abutment portions arranged abreast in the central zone of the blade and adapted to be engaged and forwardly pressed

to bring said stop engaging corners against said front gauge stops and an intermediate positioning slot adapted to position the blade for said forward movement.

5 11. A razor blade comprising a shaving edge having stop engaging corners adapted to contact with front gauge stops of a razor, a plurality of slots directed inwardly from the sides and arranged abreast in the central
10 zone of the blade and presenting abutment portions adapted to be engaged and forwardly pressed to bring said stop engaging corners against said front gauge stops and an intermediate positioning slot arranged in laterally overlapping relation with reference
15 to the aforementioned positioning slots and adapted to position the blade for said forward movement.

20 12. A razor blade adapted for use with blade supporting and clamping members, said blade embodying a shaving edge along one side and a plurality of abutment portions positioned across the blade and laterally of each other in the central zone of the blade,
25 the intermediate abutment portion serving to locate the blade on its seat in proximity to the front stops and the abutment portions to each side thereof in position to cooperate with blade advancing means associated with
30 said members, said intermediate abutment portion being positioned in closer proximity to the shaving edge of the blade than the other aforementioned abutment portions.

In witness whereof I have signed this specification this 1st day of February, 1929.

MARCUS B. BEHRMAN.

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DISCLAIMER

1,739,280.—*Marcus B. Behrman*, Brooklyn, N. Y. RAZOR AND BLADE THEREFOR. Patent dated December 10, 1929. Disclaimer filed June 21, 1934, by the assignee, *American Safety Razor Corporation*.

Hereby enters this disclaimer to the subject matter constituting claims 5, 10, 11, and 12 of said patent which read as follows:

"5. A safety razor blade having a shaving edge provided with stop engageable corner portions and cutaway portions in the central zone of the blade and in the opposite sides thereof, said cutaway portions presenting abutment shoulders therebetween and said shaving edge, said blade also having an opening between said cutaway portions with elongated linear side walls running transverse to said shaving edge to guide said stop engageable corner portions to their final predetermined stopping position."

"10. A razor blade comprising a shaving edge having stop engaging corners adapted to contact with front gauge stops of a razor, a plurality of abutment portions arranged abreast in the central zone of the blade and adapted to be engaged and forwardly pressed to bring said stop engaging corners against said front gauge stops and an intermediate positioning slot adapted to position the blade for said forward movement.

"11. A razor blade comprising a shaving edge having stop engaging corners adapted to contact with front gauge stops of a razor, a plurality of slots directed inwardly from the sides and arranged abreast in the central zone of the blade and presenting abutment portions adapted to be engaged and forwardly pressed to bring said stop engaging corners against said front gauge stops and an intermediate positioning slot arranged in laterally overlapping relation with reference to the aforementioned positioning slots and adapted to position the blade for said forward movement.

"12. A razor blade adapted for use with blade supporting and clamping members, said blade embodying a shaving edge along one side and a plurality of abutment portions positioned across the blade and laterally of each other in the central zone of the blade, the intermediate abutment portion serving to locate the blade on its seat in proximity to the front stops and the abutment portions to each side thereof in position to cooperate with blade advancing means associated with said members, said intermediate abutment portion being positioned in closer proximity to the shaving edge of the blade than the other aforementioned abutment portions."

[*Official Gazette August 14, 1934.*]