

Aug. 24, 1937.

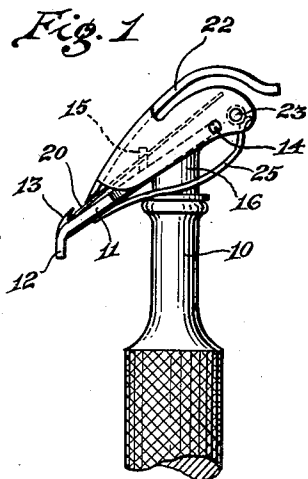
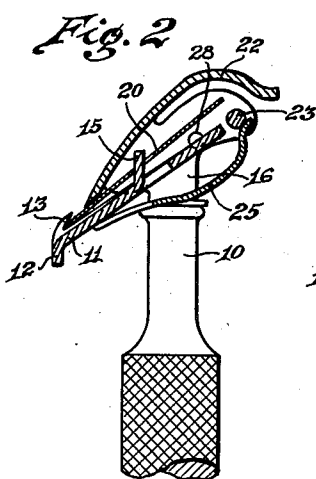
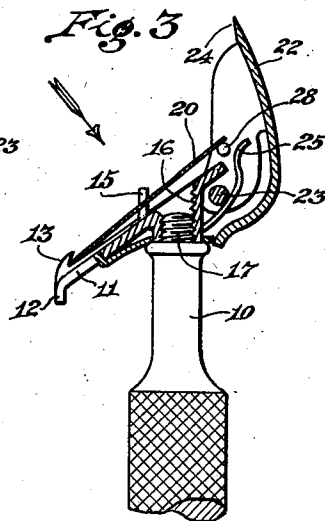
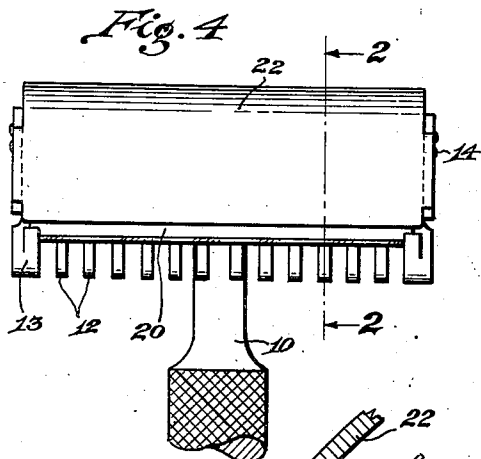
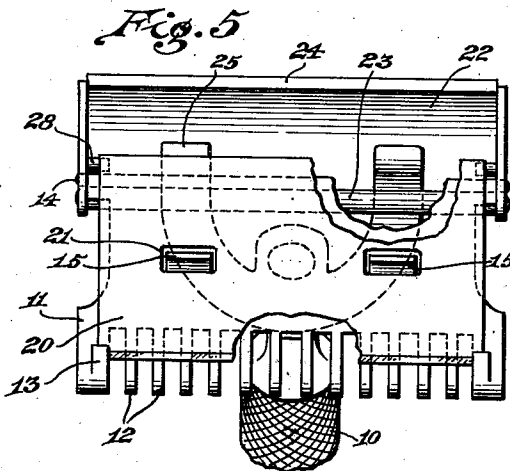
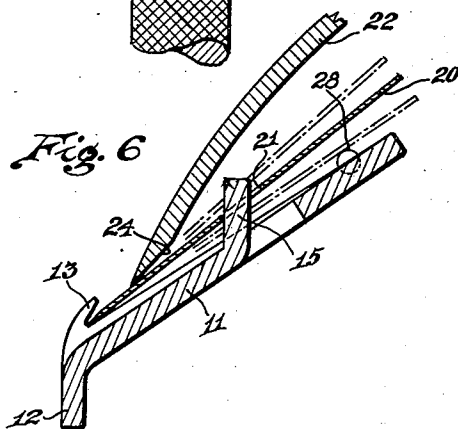
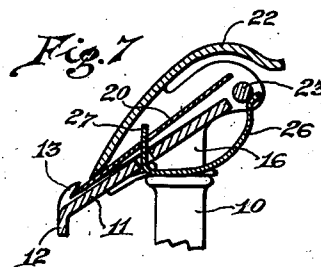
N. TESTI

2,090,968

SAFETY RAZOR

Filed April 11, 1935

2 Sheets-Sheet 1



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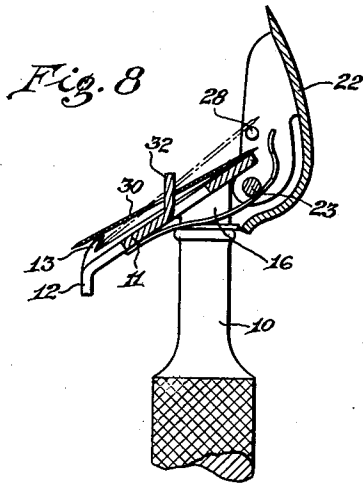
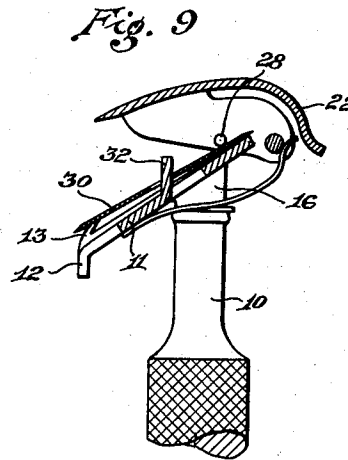
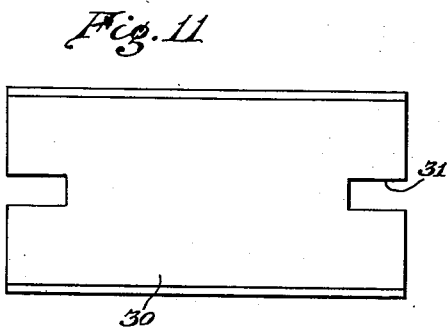
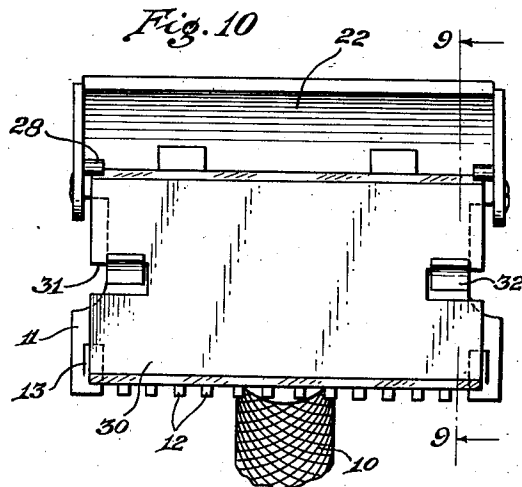
N. TESTI

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SAFETY RAZOR

Filed April 11, 1935

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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SAFETY RAZOR

Nicholas Testi, Boston, Mass., assignor to Gillette Safety Razor Company, Boston, Mass., a corporation of Delaware

Application April 11, 1935, Serial No. 15,831

9 Claims. (Cl. 30—58)

This invention relates to safety razors of the class in which a thin detachable blade is positioned for shaving by blade stops which engage the cutting edge of the blade or other gauging edge provided in the blade for that purpose. In a razor of this type it is important that the blade should be reliably brought up to the gauging point preparatory to use and that this gauging movement of the blade should be effected accurately and with sufficient force to insure the proper location of the blade, and yet without subjecting its cutting edge to unnecessary pressure which might tend to damage it or to cut the blade-locating stops. An object of the present invention is to provide a razor in which these desirable qualifications are fully realized and in which the operator is relieved of the necessity of himself moving the blade to gauging position. On the contrary, the construction contemplated in my novel razor is such that when once presented the blade tends automatically and by the action of gravity to move to its proper gauged position.

As herein shown one satisfactory construction for effecting the desired result comprises a pair of lugs so inclined with respect to the blade-supporting plate that when the blade is positioned roughly or preliminarily on the lugs they react with the blade to cause the same to settle by gravity evenly and in a balanced manner against suitable blade stops. As herein shown, and in accordance with the present invention the blade-supporting plate is normally downwardly inclined and provided with blade stops near its forward and lower edge, while the blade-positioning lugs are arranged to extend in a substantially vertical direction. Accordingly, when a recessed blade is placed upon the inclined supporting plate so as to receive the lugs it is urged gently but reliably downwardly until it makes firm bearing against the blade stops.

It sometimes happens that a user may present a blade so carelessly to the razor as to render its proper location impossible, as for example by placing its edge above instead of in engagement with the blade stops. My invention contemplates as another important feature a safety device which will in this circumstance prevent the user from closing the razor and endeavoring to shave with the blade in a dangerous position. In a razor having a pivotally mounted cover the desired results may be attained by providing the cover with projecting studs arranged to engage an improperly placed blade and arrest closing movement of the cover. When this occurs the user's attention is aroused and he is brought to

the realization that further attention to the organization of his razor is required. On the other hand, if the blade is properly presented its rear edge is held above the surface of the supporting plate and the studs are free to swing in a path out of contact with the blade so that the cover may be freely closed into the proper blade-clamping position.

These and other features of the invention will be best understood and appreciated from the following description of a preferred embodiment thereof, selected for purposes of illustration and shown in the accompanying drawings, in which:—

Fig. 1 is a view of the razor in end elevation, the razor being shown closed or in shaving condition;

Fig. 2 is a similar view in cross-section on the line 2—2 of Fig. 4;

Fig. 3 is a similar view showing the razor in opened condition;

Fig. 4 is a view of the razor in front elevation and corresponding to Fig. 1;

Fig. 5 is a view in front elevation corresponding to Fig. 3;

Fig. 6 is a fragmentary sectional view of the razor on an enlarged scale;

Fig. 7 is a view corresponding to Fig. 2 showing a modified form of razor;

Fig. 8 is a sectional view of the razor corresponding to Fig. 3 but showing a double-edged blade improperly located therein;

Fig. 9 is a corresponding view showing the cover arrested in its closing movement;

Fig. 10 is a view in front elevation corresponding to Fig. 8, and

Fig. 11 is a plan view of one form of recessed blade suitable for use in connection with the razor of my invention.

The razor comprises a handle 10 knurled to give the user a good grip and having its upper end 17 threaded for connection with a rectangular bed plate or blade-supporting plate 11. The plate 11 is formed integral with an internally threaded downwardly-extending boss 16 which is designed to receive the threaded end 17 of the handle and make a firm connection therewith. The plate 11 is rectangular in outline and so disposed that it is inclined downwardly and forwardly when the handle 10 is held in a vertical position. At its lower edge the plate 11 is provided with downwardly inclined guard teeth 12 of usual construction and two outermost teeth are provided with upwardly projecting blade-locating stops 13 which are slightly under-

cut or hook-shaped and so located as to engage the outer corners of the blade as shown in Fig. 5.

Near its rear edge the plate 11 is provided at both ends with outwardly extending hinge pins 14 and upon these is pivotally mounted a cover member 22 which will be referred to hereinafter. The plate 11 is also provided with a pair of spaced blade-positioning lugs 15 which may be struck out of the material of the plate and bent upwardly into substantially vertical position or parallel in direction to the handle 10. In such position the lugs 15 are inclined with respect to the surface of the plate 11, their free ends being located farther away from the blade stops 13 than their lower ends which are connected with the plate.

In Fig. 5 is shown one form of blade 20 adapted for use with the razor of my invention. It is of thin sheet steel, sharpened at its edge for shaving and provided with a pair of rectangular recesses 21 which are located symmetrically in the blade and in position to receive the lugs 15 when the blade is placed upon the plate 11 with its cutting edge adjacent to the blade stops 13. It will be noted that when the blade 20 is so presented it is threaded over the lugs 15 and that the front edge of each recess 21 rests against the front face of one of the lugs 15. The result is that the blade is held in a downwardly and forwardly inclined position and is therefore advanced by gravity as it settles upon the lugs 15 until its edge is brought into even engagement with the blade stops 13 and further movement thus arrested. In other words, the effect of the lugs 15 is to urge the blade gently forwardly in a balanced manner and to secure automatically even engagement of the blade edge with the blade stops and therefore, very accurate location of the blade in shaving position.

The shape of the blade and the location of the recesses 21 are such that the blade is not permitted to seat itself upon the plate 11 but is held above the surface of the plate at an acute angle as shown on a large scale in Fig. 6. The dot and dash lines in this figure indicate positions which would be assumed by blades of greater or less width than the blade shown in full lines; that is, if the blade is narrower between its cutting edge and the forward edge of its recesses 21 than is the blade represented in full lines, it will more nearly approach the surface of the plate 11, while if it is wider in this respect it will be held farther away from the plate 11 than the blade 20 represented in full lines. This relationship of razor and blade permits the exacting requirements of blade manufacture to be reasonably relaxed, since blades varying slightly from each other in width may be all reliably and accurately located with their sharpened edges in the proper position for shaving.

The cover 22 pivotally mounted upon the pins 14, as explained, is arched so that it may enclose the projecting lugs 15 without touching them and engage and clamp the blade along a line adjacent to its cutting edge. To this end the forward edge of the cap 22 is bevelled to provide a flat blade-engaging surface 24. A transverse shaft 23 extends between the side walls of the cap in a position to the rear of the pivot pins 14. This shaft is engaged upon its rear and lower sides by a curved U-shaped spring 25 which is secured to the plate 11 at its forward end and shaped so as to straddle the handle 10 and press upwardly upon the shaft 23 when the razor is in closed position as shown in Figs. 1 and 2. The cap 22 is extended rearwardly

beyond the shaft 23 and curved to provide a finger grip by which it may be forcibly swung in a clockwise direction against the pressure of the spring when it is desired to open the razor. In this movement of the cap the shaft 23 is carried into the curve of the spring 25 and beyond the dead center position so that the cap is yieldingly held in its open position as shown in Fig. 3. On the other hand, when in the closing movement of the cap, the shaft 23 is carried past its dead center position the spring will snap the cap shut and hold it in clamping engagement with the blade.

In Fig. 7 is shown a slightly modified form of razor in which a single spring member 26 is utilized to supply both the spring for the cap 22 and blade locating lugs. In this construction the plate 11 is perforated to receive tongues bent upwardly from the spring member to constitute lugs 27 and the portions of the spring between these tongues is secured to the under face of the plate 11.

In Fig. 5 there is shown a single-edged blade having internal recesses 21. In Figs. 8 to 11 is shown a double-edged blade 30 having external recesses 31 and this blade is also adapted for use in the razor of my invention. In using such a blade the lugs 32 are so located as to enter the recesses 31 and advance the blade into engagement with the blade stops 13, and in this case it will be noted that the inner sharpened edge of the blade is suspended within the razor in a position entirely out of contact with the parts thereof and where it will be held safely against damage.

In order to prevent the user from inadvertently closing the cover of the razor when the blade is not properly positioned it is proposed to provide the cover of the razor with safety stops in the form of a pair of studs 28 which are arranged to project inwardly from the end walls of the cover 22. These studs are located at such a distance from the axis of the hinge pins 14 that they will swing with the cover in an arc below the blade when the latter is properly supported with its rear end in elevated position, as it is when the cutting edge of the blade is properly engaged with the blade stops 13. When the blade is thus properly located the studs 28 have no function and they remain practically unnoticed by the user, although they may contact temporarily with the under face of the blade as suggested in Figs. 3 and 8. However, should the blade be presented carelessly to the razor so that its cutting edge lies above the blade stops 13 as suggested in Fig. 8, then the rear or inner edge of the blade will be positioned below the studs 28. Consequently, when the cover 22 is swung about its pivotal axis for closing, the studs 28 engage the upper surface of the blade and arrest the closing movement of the cover. The user's attention is thus drawn to the fact that his blade is improperly positioned and he is led to open the cover and properly position the blade before proceeding to use the razor.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States is:—

1. A safety razor having a blade-supporting member with spaced blade-locating stops arranged adjacent to one edge, and stationary locating lugs projecting above said member and inclined with respect thereto in such a direction as to engage a blade placed thereon, holding it in inclined relation to the surface of said mem-

ber and thereby causing it to be advanced by gravity toward said stops and into shaving position.

2. A safety razor having a handle, a blade-supporting plate carried thereby and normally inclined downwardly toward its lower edge, blade stops located near the lower edge of the plate and vertically disposed stationary blade-engaging lugs so located as to hold a blade presented to said plate in inclined relation to the plate, thereby causing the blade to be advanced by gravity until arrested in shaving position by said stops.

3. A safety razor comprising blade holding members connected for movement from blade-receiving to blade-clamping position, blade stops for determining the shaving position of the blade in the razor, and stationary means for supporting in downwardly inclined position a blade presented to the razor so that gravity will cause it to advance until arrested in shaving position by said stops independently of any blade-clamping action in the razor.

4. A safety razor comprising a blade-supporting plate having a blade stop near one edge, a cover pivotally mounted near the other edge of said plate and arched to engage a blade adjacent to said stop, and a fixed lug extending upwardly from the plate, beneath the arch of the cover and having a face so disposed as to bring its lower end substantially nearer to the stop than its upper end and to support a blade in shaving position while it occupies an angular relation with respect to said plate.

5. A safety razor including in its structure, a blade-supporting plate having blade stops at its outer forward corners and a pair of fixed lugs projecting from the plate within and behind said stops, having blade-engaging faces and extending in such direction as to bring their free ends substantially further away from the stops than their lower ends and to support a blade in shaving position while it occupies an angular relation with respect to said plate.

6. A safety razor including in its structure, a

normally inclined blade-supporting plate having blade stops located adjacent to its outer and lower corners, a pair of fixed lugs projecting from said plate at intermediate points symmetrically located with respect to the stops and being inclined with respect to the face of the plate, downwardly toward its lower edge, to engage and automatically advance toward the stops a recessed blade positioned upon the plate and to hold its rear edge away from the plate, and an arched cover pivotally mounted at the rear edge of the plate and shaped to enclose said lugs and engage the blade along a line adjacent to the stops.

7. A safety razor including in its structure a blade-supporting plate having blade stops at one edge, and fixed lugs projecting from the plate at an angle to its face and in such location as to hold a recessed blade in upwardly inclined relation to the face of the plate with one edge in engagement with said stops and the other held spaced from said plate.

8. A safety razor including in its structure a blade-supporting plate having blade stops near one edge, fixed lugs projecting from the plate at an acute angle to its face and in such location as to hold a recessed blade in upwardly inclined and spaced relation to said plate with its edge in engagement with said stops, a blade-clamping cover pivotally mounted in the razor to engage and clamp a blade in a line adjacent to the stops, and means to prevent the closing of said cover when the blade is improperly positioned with respect to said stops.

9. A safety razor including in its structure a blade supporting plate having blade stops and lugs arranged normally to support a blade in an inclined position upon said plate with its rear edge elevated therefrom, a cover pivotally mounted in the razor to swing into blade-engaging position, and ears on the cover so located as to move beneath the elevated portion of the blade when the latter is properly located and to engage the blade and prevent closing of the cap when the blade lies flat on said plate.

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