

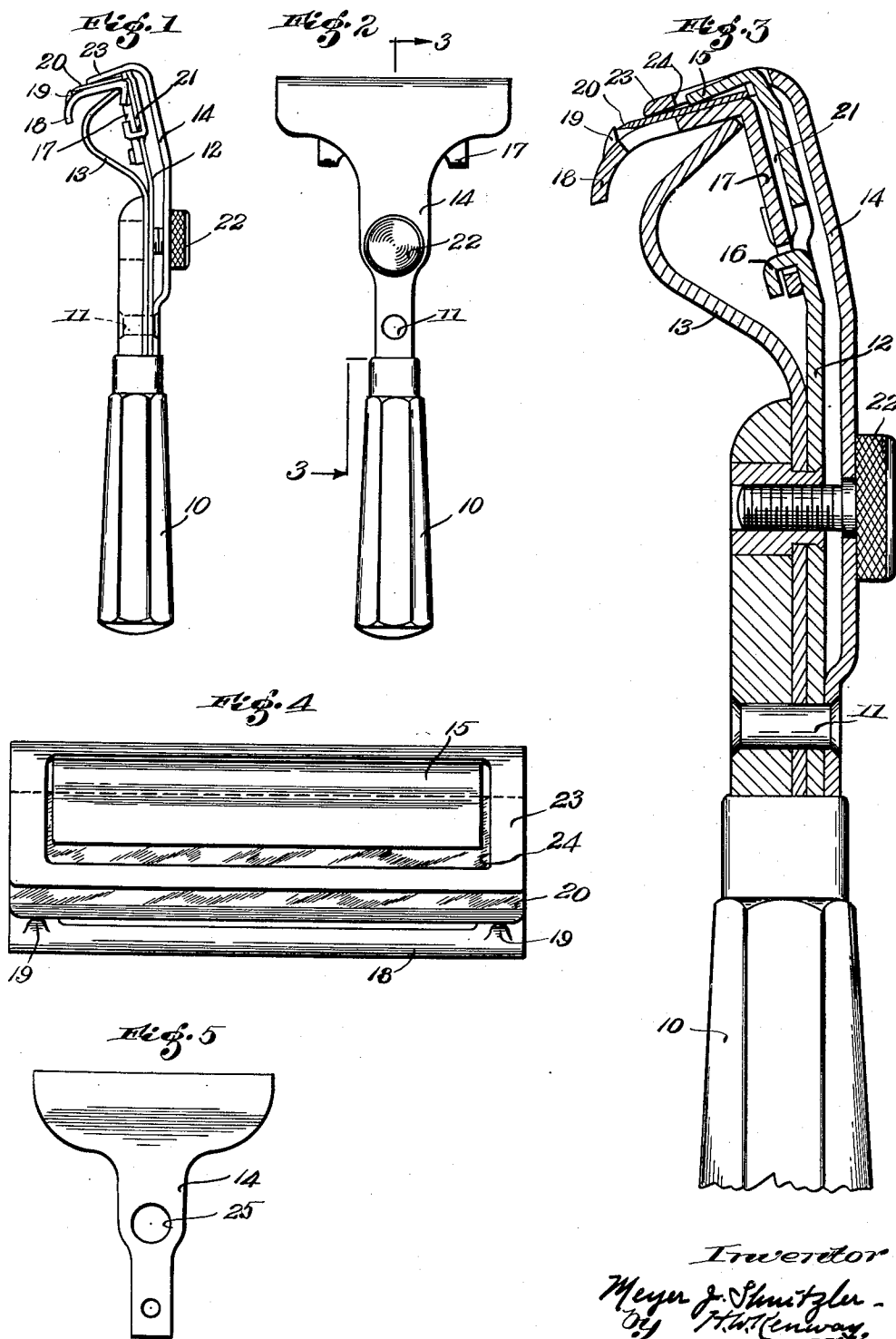
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RAZOR WITH ADJUSTABLE GUARD

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RAZOR WITH ADJUSTABLE GUARD

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This invention relates to safety razors wherein a thin, sharp-edged blade is presented in shaving position between cooperating blade-clamping members.

The general object of the invention is to provide such a razor with means under the convenient control of the user for varying and regulating the edge exposure of the blade. This is a critical factor in obtaining smooth and satisfactory shaving. The optimum edge exposure is different for different users, for different blades and for different shaving conditions. Accordingly, the present invention contemplates a razor construction wherein adjustment of edge exposure may be made conveniently at any time, even without interrupting the shaving operation if desired.

A more specific object of the invention is to provide means for such adjustment of edge exposure in safety razors of the magazine type, that is to say, razors constructed and arranged to receive fresh blades presented mechanically from a magazine and wherein the blade-clamping members are arranged to be temporarily separated to receive a fresh blade and then moved or restored to their operative blade-clamping position.

With these objects in view, a feature of the invention consists in a safety razor construction comprising opposed blade-clamping members, one of which may carry an edge guard, in combination with a second edge guard adjustably mounted upon the other of the blade-clamping members. Preferably, and as herein shown, the adjustable edge guard is constructed and arranged for adjustment independently of the blade-clamping action of the clamping members. In the preferred embodiment of the invention, the adjustable edge guard is shaped partially to enclose one of the blade-clamping members with sufficient clearance to permit full range of adjusting movement without in any way disturbing the clamping member with which the guard is associated.

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

Figs. 1 and 2 are views of the razor in side and rear elevation, respectively;

Fig. 3 is a view of the razor head in longitudinal section and on a greatly enlarged scale;

Fig. 4 is a plan view of the razor head on the same scale as Fig. 3; and

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Fig. 5 is a rear view of the adjustable guard member.

The invention is herein shown as embodied in a safety razor utilizing a thin, single-edged blade, which is held in flat position by the blade-clamping members of the razor, although with appropriate modification the invention is capable of adaption to razors utilizing a blade which is flexed in shaving position.

The illustrated razor comprises a handle 10, having a projecting shank to which are permanently secured by a rivet 11, three sheet-metal members, viz. a main support 12; a spring 13; and an adjustable guard member 14. At its upper end, the main supporting member 12 is provided with a forwardly and downwardly-extending flange 15 which constitutes the upper blade-clamping member. A tongue 16 is struck out of the metal of the member 12, being struck forwardly and downwardly to form a permanent connection with an angular member 17 which is also turned downwardly and forwardly at its upper end and constitutes the lower of the two blade-clamping members. The flange of the member 17 is extended downwardly and forwardly in a curve to provide the lower edge guard 18 for the blade. The spring 13 is curved, first forwardly and then extended rearwardly so that its upper end lies in the vertex of the angle in the blade-supporting member 17 and tends at all times to press this member yieldingly toward the rear and to bring the lugs 19 and the blade 20 positioned thereby into the proper shaving position. The rear edge of the blade bears against a pair of ears or lugs projecting into the vertex angle of the member 12.

The upper portion of the main support 12 is offset rearwardly above the tongue 16 so as to provide an elongated rectangular space 21 between the rear face of the blade-supporting member 17 and the front face of the main support 12. The razor is customarily employed with a magazine having a pilot projection shaped to be forcibly inserted into the space 21 and thus to separate the two blade-clamping members by springing them apart and thus temporarily to release the blade from the lugs 19 so that it may be removed and replaced by a fresh blade.

The upper edge-guard member 14 is provided at its upper end with a flat downwardly and forwardly extending portion 23, which is shaped to engage the upper face of the blade 20 and cooperate with the lower edge-guard 18 in protecting the shaving edge of the blade. The edge exposure of the blade, which in practice may vary

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from 0.001 to 0.004 inch, is the distance by which the edge of the blade extends beyond a tangent drawn to the effective faces of the two edge guards 18 and 23. Ordinarily if the edge exposure does not amount to 0.001 inch, the razor will pull, while if it exceeds 0.004 inch, the razor becomes dangerous and is likely to cut the user. Many users, however, find that an adjustment of edge exposure within the range indicated is beneficial and extremely desirable.

The forwardly and downwardly-extending portion of the edge guard 23 is provided with a rectangular recess or window 24, shaped to receive with substantial clearance the upper blade-clamping member 15 which is about the same thickness as the guard as will be apparent from Fig. 4. As shown in Fig. 5, the shank portion of the upper guard 14 is provided with an aperture 25 through which extends an adjusting screw 22 threaded into a bushing located in the upper portion of the shank of the handle 10 and headed to serve as an additional fastening for the main supporting member 12 and the spring 13 of the razor. The edge guard 14 is made of spring metal and tends always to spring rearwardly toward a position of maximum edge exposure. However, by turning the adjusting screw 22 in a clockwise direction, the edge-guard may be advanced and the edge exposure of the blade correspondingly reduced. The window 24 of the edge-guard is of such dimensions that it clears the upper blade-clamping flange 15 and may be given its full range of adjusting movement without in any way disturbing the latter. On the other hand, the guard member in no way interferes with the temporary separation of the blade-clamping members, effected by inserting the pilot of the magazine in the space 21. On this account, it will be apparent that the adjusting screw 22 may be manipulated by the user of the razor at any time to the effect of varying edge exposures ascertained during the shaving operation.

Having thus disclosed my invention and described in detail an illustrative embodiment thereof, I claim as new and desire to secure by Letters Patent:

1. A safety razor comprising upper and lower angular members presenting forwardly and downwardly extending blade-clamping members, a blade clamped between said members, blade locating lugs on the lower of said members, an upper guard member having a flat portion overlying the blade and provided with a rectangular window surrounding with clearance the blade-

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engaging portion of the upper angular member, and threaded adjusting means for shifting said guard member without disturbing the engagement of said upper and lower blade-clamping members.

2. A safety razor comprising a blade, superposed forwardly opening blade-clamping members of which the lower is extended to provide a lower guard for the blade edge and the upper of which terminates at a distance behind the blade edge, an upper guard for the blade edge having a flat blade-engaging portion provided with a window that surrounds the blade-engaging portion of the upper blade-clamping member, and an adjustable connection between said upper guard and the blade-clamping member surrounded thereby whereby the relative position of the two may be varied to adjust the edge exposure of the blade.

3. A safety razor including in its structure upper and lower blade-clamping members, a blade clamped at its opposite faces between said members, stops on one member for determining a fixed relation between it and the blade edge, and an edge guard adjustably mounted in the razor and having a flat portion provided with a window in which is received with clearance the upper of said blade-clamping members, whereby the edge guard may be adjusted without disturbing the clamping engagement of either member with the blade.

4. A safety razor including in its structure a blade, a lower member having an extended flat blade seat and a lower edge guard portion, an upper edge guard engaging the upper face of the blade behind its cutting edge and having an elongated window therein, and an upper blade-clamping member having a portion movable within said window and engaging the blade in a zone behind the upper guard, and means for adjusting the upper guard toward or from the blade-engaging portion of the upper blade-clamping member and at the same time toward or from the edge of the blade clamped thereby.

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