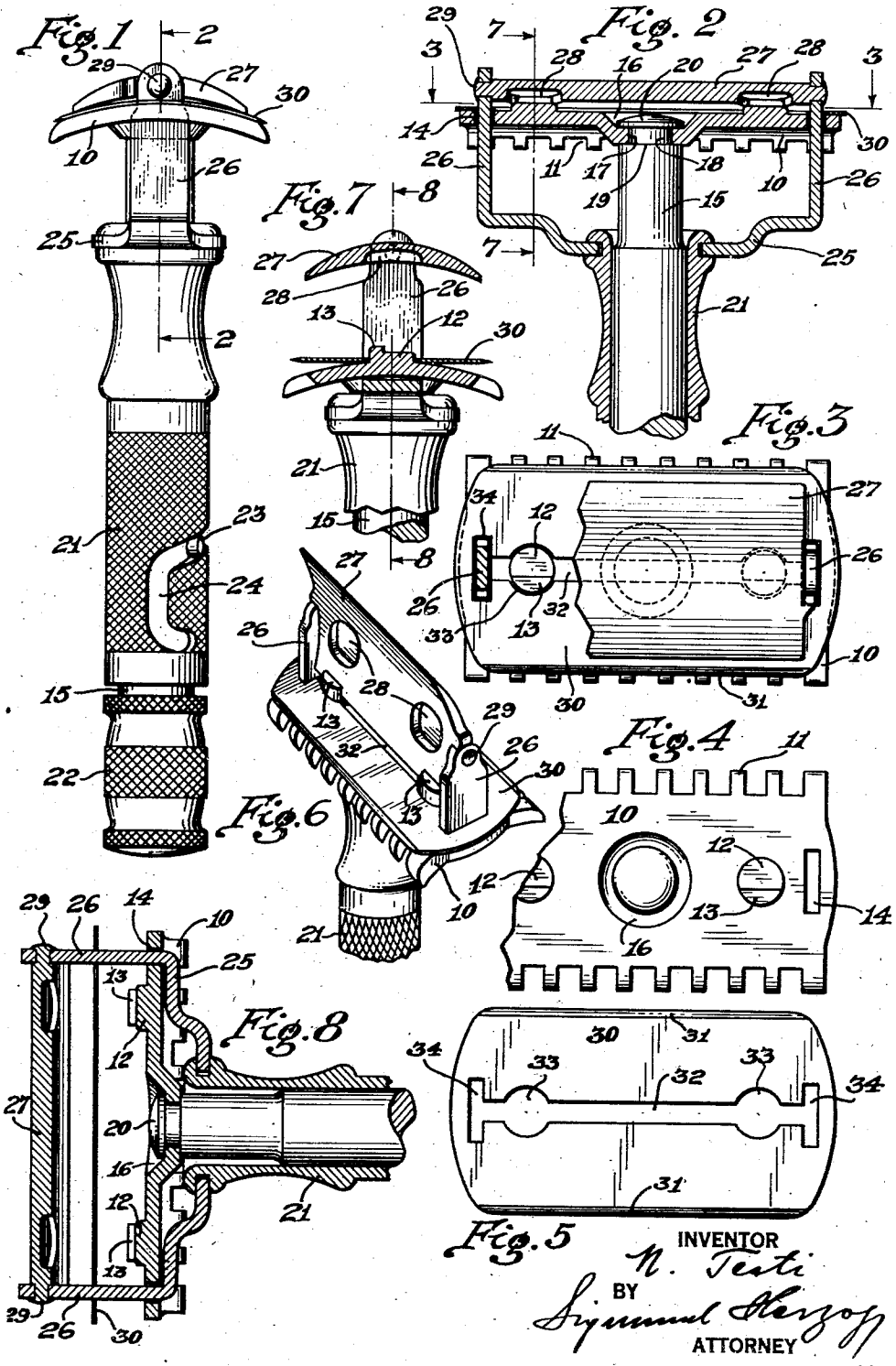
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SAFETY RAZOR

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SAFETY RAZOR

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The present invention relates to that class of safety razors in which two clamping members, a guard member and a blade backing member, are provided, and a thin flexible blade is clamped between the guard and backing members to retain the cutting edges of the blade in shaving relation to the guard teeth.

The main object of the invention is to provide a safety razor of the type mentioned on which a blade may be conveniently mounted and which can be efficiently cleaned without the necessity of taking apart the implement with the consequent liability of losing parts, thus removing an objectionable feature of the devices of this character.

Another object of the invention is to so design a razor of the character specified that it is adapted to be employed in connection with slotted blades now generally in use.

A further object of the invention is to produce a razor of the type mentioned which permits of quick mounting and dismounting of the blade, and wherein the two clamping members are so constructed that their relative positions for mounting and dismounting the blade are predetermined by stops on one of said members for co-operation with the other member.

A still further object of the invention is to produce a razor of the type above referred to which is simple in construction, efficient in operation, durable in use and capable of manufacture on a commercial scale, or in other words one which is not so difficult to make as to be beyond the reasonable cost of such a contrivance.

A further object of the invention is to provide a slotted blade for co-operation with a razor of the type specified.

With these and other objects in view, which will more fully appear as the nature of the invention is better understood, the same consists in the combination, arrangement and construction of parts hereinafter described, pointed out in the appended claims and illustrated in the accompanying drawing, it being understood that many changes may be made in the size and proportion of the several parts and details of construction within the scope of the appended claims, without departing from the spirit or sacrificing any of the advantages of the invention.

One of the many possible embodiments of the invention is illustrated in the accompanying drawing, in which:—

Figure 1 is an end view of a razor constructed in accordance with the present invention; Fig. 2 is a section taken on line 2—2 of Fig. 1; Fig. 3 is a section taken on line 3—3 of Fig. 2, part of the blade backing member being shown in elevation to more clearly illustrate the co-operation of the elements; Fig. 4 is a top plan view of the guard member of the construction; Fig. 5 is a plan view of the improved blade; Fig. 6 is a perspective view of the razor with its blade backing member in a position to permit mounting and dismounting of a blade on the razor; Fig. 7 is a central transverse vertical section taken through the construction shown in Fig. 6 with the blade backing member shifted to a position ready to clamp the blade; and Fig. 8 is a section taken on line 8—8 of Fig. 7.

In the drawing the numeral 10 indicates a guard member, provided with suitable guard teeth 11 along its opposite longitudinal edges. In the longitudinal center line of the guard member are provided on the blade receiving face thereof two spaced blade-positioning studs 12 of any suitable configuration. In the case illustrated these studs are cylindrical, and from the free end of each of the same projects within the area of the stud a stop 13, for a purpose hereinafter to be described. These stops are located in alignment with one another on one side of the longitudinal center line of the guard member, as clearly appears from the several figures of the drawing. Between each stud and the adjacent transverse edge of the guard is formed in the latter an opening 14, to receive a post associated with the blade backing member, as will hereinafter more fully appear.

The guard member is mounted on a spindle 15, which extends rotatably through the center thereof. In the example illustrated in the drawing, a central cup-shaped depression 16 is formed on the guard member, having a hole 17 through which is extended the reduced end 18 of the spindle, a shoulder 19 being thus formed, which bears against the depression. The reduced end 18 of the spindle is provided with a head 20, wholly disposed within the depression 16 so as not to interfere with the proper positioning of the blade on the guard. The reduced portion 18 of the spindle fits somewhat loosely in the hole 17 in the guard, thus permitting rotation of the spindle on the guard.

The spindle 15 extends rotatably and slidably through a tubular handle 21, and carries on its outer end, which is disposed outside of the handle 21, a knurled knob 22. To the spindle 15 is fixed a pin 23, seated in a cam slot 24 in the handle. To the handle 21 is attached a bridge member 25, from which project two posts 26 extending

through and fitting snugly the openings 14 in the guard member. To the free ends of these posts is hinged the blade backing member 27, in the blade engaging face of which are formed two recesses 28, which are adapted to accommodate the positioning studs 12 and their stops 13. The pivot pins 29 of the blade backing member are disposed on the transverse edges of the latter in the longitudinal center line of the same, and the posts 26 are each of a length to permit shifting of the guard member thereon a distance that the blade backing member may be swung on its pivot pins from its blade clamping position substantially 90 degrees, as clearly shown in Fig. 6 of the drawing.

The blade 30, to be mounted upon the razor above described, is of the thin flexible type, having two cutting edges 31, and is provided with an aperture 32 which is in the form of a central longitudinal slot. This slot is provided with two spaced enlargements 33 intermediate its ends, through which the positioning studs 12 are adapted to extend. The contour of these enlargements corresponds, obviously, to the outline of the transverse cross-sections of the positioning studs. The blade slot is furthermore provided at each of its ends with an enlargement 34, through which one of the posts 26 is adapted to pass. The width of the slot 32 exceeds the thickness of the heaviest, that is of the central portion of the blade backing member, to permit the latter to be extended through the said slot when the blade is to be mounted upon or to be taken off the razor in a manner presently to be described.

In Figs. 1 to 3, inclusive, of the drawing, the razor elements are in their shaving positions, a blade being clamped between the guard and blade backing members. In order to clean the razor after shaving, the tubular handle is taken hold of with one hand and the knob 22 with the other hand and the said knob turned in the proper direction, whereby, by the intermediary of the pin 23 and cam slot 24, the guard member with the blade thereon is shifted until it abuts against the bridge 25, the elements being then in the positions shown in Figs. 7 and 8 of the drawing, when the guard and blade backing members and the blade may be efficiently wiped or cleaned without actually taking apart the razor. In order to reach both faces of the blade, the latter may be separated from the guard member, as clearly shown in Fig. 8 of the drawing, whereby at the same time proper cleaning of the blade receiving face of the guard member is permitted. The blade may then be placed upon the guard member and the knob 22 turned to move the guard and blade backing members into blade clamping positions, when the razor is again ready for use. If the blade is to be removed from the razor for replacement, the elements are first brought into the positions shown in Fig. 7 of the drawing, after which the blade backing member is tilted 90 degrees into the position shown in Fig. 6 of the drawing, in which one of its longitudinal edges abuts against the stops 13. In these positions of the elements, the said longitudinal edge of the blade backing member is in alignment with the slot 32 in the blade, and the latter may be moved on the posts 26 and over the blade clamping member, the slot accommodating the said clamping member, as appears from above. A new blade is then inserted by first locating that longitudinal edge of the blade backing member which projects above the posts in the slot 32 in the new blade, and drawing the blade toward the guard member until the posts are seated in the transverse enlargements 34 of the blade slot, the said posts guiding the blade in its movement and facilitating the seating of the blade positioning studs 12 in the enlargements 33 of the slot. When the blade is properly positioned on the guard, the blade clamping member is shifted from the position shown in Fig. 6 of the drawing into that shown in Fig. 7, after which the spindle 15 is turned in the proper direction to move the blade and guard member into blade clamping relation with the backing member.

It is obvious that, while herein the guard member has been described as mounted upon a rotatable spindle and the blade backing member has been illustrated as being pivoted, by the intermediary of the posts 26, to the tubular handle 21, the relationship may be reversed without departing from the invention, which lies mainly in the provision of guard and blade backing members which are adapted to be moved toward and away from one another to permit of swinging the blade backing member into a position substantially at right angles to the blade receiving face of the guard member to allow of mounting and dismounting of a slotted blade between the blade clamping members, and also to provide a safety razor that can be efficiently cleaned without the necessity of taking the device to pieces.

What I claim is:—

1. A safety razor, comprising a guard member provided with blade positioning studs, a blade backing member, two interconnected guide posts shiftable at right angles in relation to said guard member, each of a length exceeding one-half of the width of said backing member, said blade backing member being pivotally mounted adjacent its transverse edges to said guide posts and being adapted to be extended substantially at right angles to said guard member, a blade adapted to be clamped between said guard and blade backing members and having a central longitudinal slot having enlargements fitting said studs and being of a length exceeding that of said blade backing member, the width of said slot exceeding the thickness of said blade backing member and having on each of its ends an enlargement for receiving said guide posts, and co-acting means on said guide posts and said guard member for relatively moving said guard and blade backing members into blade clamping position.

2. A safety razor according to claim 1, comprising means for limiting the movement of said backing member on its pivots in relation to said guard member.

3. A safety razor according to claim 1, comprising stops on said positioning studs for limiting the movement of said backing member on its pivots in relation to said guard member.

4. A safety razor, comprising a guard member provided with blade positioning studs, a blade backing member, means shiftable at right-angles to said guard member, said backing member being pivotally mounted on said shiftable means to permit oscillation thereof on its longitudinal axis to cause one of its longitudinal edges to substantially coincide with the longitudinal axis of said guard member, a blade adapted to be clamped between said guard and blade backing members having a central longitudinal slot provided with enlargements fitting said studs and being of a length exceeding that of said blade backing member, the width of said slot exceeding

the thickness of said blade backing member, said slot permitting the blade to be moved over said shiftable means and said backing member when one of the longitudinal edges of the latter coincides with the longitudinal axis of said guard member, and means for relatively moving said guard and blade backing members into blade clamping position.

5. A safety razor according to claim 4, comprising stops on said guard member for limiting the oscillating movement of said backing member in relation to said guard member.

6. A safety razor according to claim 4, comprising stops on said positioning studs for limiting the oscillating movement of said backing member in relation to said guard member.

7. A safety razor comprising a guard member, a blade backing member, means shiftable at right angles to said guard member, said backing member being pivotally mounted on said shiftable means to permit oscillation thereof on its longitudinal axis to cause one of its longitudinal edges to substantially concide with the longitudinal axis of said guard member when said guard and blade backing members have been moved apart a distance exceeding one-half of the width of said backing member, and stops on said guard member for limiting the oscillating movement of said backing member in relation to said guard member.

8. In a safety razor a blade seat; a handle extending from said seat, a blade having cutting edges on opposite sides thereof; a clamping member to engage said razor blade rearwardly of and immediately adjacent its cutting edges to hold said razor blade between the said member and the seat; means to secure the clamping member in place; guide elements at the opposite ends of the said member slidably extended through the seat to guide said member; and means on the opposite ends of the said member to journal the said member to said guides.

9. A safety razor having a guard member, a blade backing member shorter than the guard member and supported for pivotal movement within the boundary of the guard member, and a flexible blade adapted to be maintained in a position of pronounced transverse curvature by said members and having a slot longer than said backing member and shorter than said guard member through which the backing member may be passed.

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