July 21, 1936. J. MUROS 2,048,559

SAFETY RAZOR

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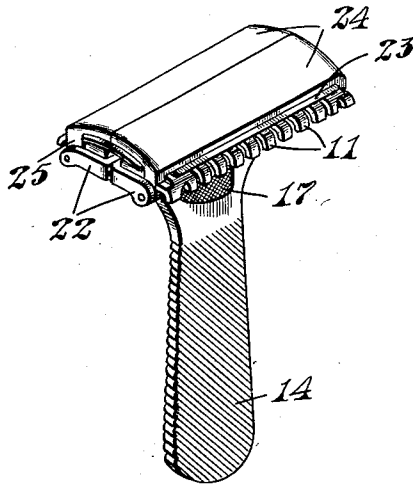


Fig.1.

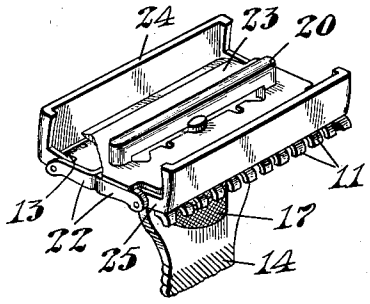


Fig.2.

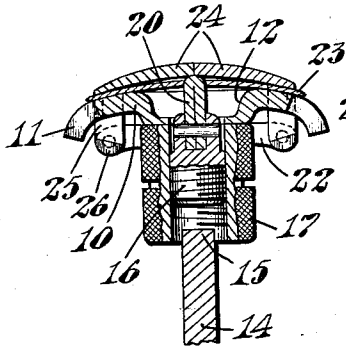


Fig.3.

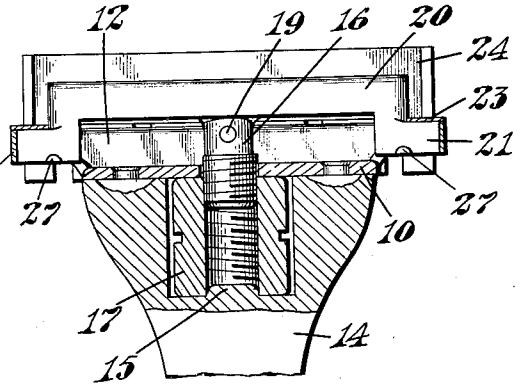


Fig. 4.

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SAFETY RAZOR

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Application September 24, 1935, Serial No. 41,914

4 Claims. (Cl. 30—61)

This invention relates to safety razors of the type employing a sectional cap in combination with a guard or other blade-supporting member. Such a razor is shown, for example, in my prior Patent No. 2,009,272. The general object of the present invention is to simplify the construction of razors of this general type and to provide a construction which may be manufactured advantageously and at low cost.

With these ends in view an important feature of the invention consists in a rotatable actuating device arranged in contact with or closely adjacent to the guard and connected to the cap sections for controlling the position thereof both in their pivotal movement toward and from each other and in their joint movement of translation to and from blade-clamping position. As herein shown, the rotatable device comprises a knurled nut located conveniently for manipulation by the user and arranged to react directly against the under face of the guard.

The actuating nut let into the body of the handle in an opening provided for that purpose, may be journaled at one end to turn upon a stationary boss which projects from the handle into such opening. The connection between the nut and the cap sections may be supplied, as herein shown, by a short threaded pin or stud of less length than the nut and arranged to be received therein.

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 drawing, in which,—

Fig. 1 is a view in perspective of the razor in closed condition;

Fig. 2 is a similar view of the razor head in opened condition;

Fig. 3 is a view of the razor head in vertical cross-section; and

Fig. 4 is a sectional view at right angles to that shown in Fig. 3 and on an enlarged scale.

In the preferred embodiment of the present invention the guard 10 is utilized as a blade-supporting member for shaping the blade when it is clamped in shaving position. The guard is constructed of heavy sheet metal and provided upon its longitudinal edges with guard teeth 11 of the usual construction. It is formed by die-pressing and bending a single blank and is provided with an elongated depressed recess or chamber 12 of diamond-shaped contour and this chamber is bounded about its upper margin by an outwardly extending convex blade-supporting face. The guard is provided centrally at each end with a slotted opening through the wall of the chamber 12 to permit the passage of the ends 21 of the bar 20, to be presently described. The guard is also provided adjacent each corner with square notches 13 to permit free passage of the cap section arms 25.

The guard 10 is rigidly connected to a flat handle 14 by rivets or the like and the handle is provided in its upper end with a rectangular recess beneath the guard into which projects a boss 15 and upon this is centered a knurled cylindrical nut 17. Threaded into the upper end of the nut 17 and projecting upwardly through the bottom of the guard 10 is a threaded pin 16. In the upper end of the pin is a transverse pivot 19 to which is connected a downwardly extending stem upon the cross-bar 20, the pivot connection permitting a slight rocking and equalizing movement of the bar 20 and the blade carrier of which it is a part. The bar is made by longitudinally folding a sheet metal blank and its ends 21 are offset downwardly and pass out through the slots of the end of the recess 12 of the guard. The offset ends 21 terminate in transversely-disposed arms 22 which extend across opposite ends of the guard and are movable freely up and down with the bar and the pin 16 independently of the guard. Limit stops in the form of ears 27 are struck outwardly from the lower side of the end portions 21 and these are arranged to bear against the lower face of the guard in the uppermost position of the bar 20.

In Fig. 2 is shown one form of blade 23 suitable for use in a safety razor of my invention. It is provided with a long central slot designed to fit accurately upon the bar 20 and so locate the blade in the razor and with reentrant recesses at each corner which define an elongated unsharpened centrally-disposed portion at each end of the blade. The blade is sharpened at its opposite edges for shaving and the blade slot may be provided with spaced transverse enlargements for the reception of blade-locating studs of various shapes in other safety razors.

The arms 22 of the bar 20 are located beneath the elongated ends of the blade 23 and act to lift the blade and move it away from the blade engaging face of the guard when the bar 20 and the carrier structure associated therewith is moved upwardly.

The cap sections 24 are transversely concave in contour and co-operative with the guard 10 in imparting a transverse curvature to the blade when the latter is clamped in shaving position.

Each cap section 24 is provided at both of its upper corners with downwardly extending arms 25 and these in turn are pivotally connected to the outwardly extending arms 22 of the carrier. Each of the arms 25 is adapted to pass downwardly through one of the notches 13 in the corners of the guard and each arm is formed at its lower end or otherwise provided with a semicircular inwardly projecting cam piece 26. These cam pieces 26 are adapted to co-operate with the stationary shoulder of the guard adjacent the notch 13 as the carrier is raised and accordingly acts to swing the cap sections into open position as the carrier is moved upwardly. In this movement the arms 25 swing outwardly into substantially horizontal position as shown in Fig. 2 and the cap sections rest upon the guard teeth 11, the flat faces of the cams 26 extending almost vertically in this position of the cap sections. In the downward movement of the carrier the pivot points of the arms 25, being moved below the walls of the notches 13, the arms are swung upwardly by engagement with the shoulder of the notch and the cap sections moved toward their closed position, the cams 26 turning and passing endwise through the notches 13.

The vertical position of the pin 16 and associated parts is positively determined at all times by the threaded connection with the cylindrical nut 17. It will be understood that the nut is held positively against vertical displacement between the bottom of the guard 10 and the boss 15 of the handle. Figs. 1 and 3 represent the razor in closed condition with the nut 17 turned so as to force the pin 16 into its lowermost position in which the blade is securely clamped in a transversely convex condition between the cap sections 24 and the guard 10 with the nut 17 reacting against the bottom of the guard. If the user now desires to release the blade and open the razor for the purpose of cleaning or replacing the blade he has only to turn the knurled nut 17 toward the left as seen in Fig. 3. This movement lifts the pin 16 and the bar 20, at once releasing the blade and by the co-action of the cam projections 22 with the shoulders of the notches 13 causing the cap sections to open as they are carried upwardly with the bar 20, until they are arrested in open position, as shown in Fig. 2, by contact of the cap sections with the guard teeth or by contact of the limit stops 27 with the underside of the guard 10. The stops 27 positively prevent the pin 16 from being entirely disengaged from the nut 17.

It will thus be seen that rotation of the nut 17 by the user if effective, on the one hand, to cause the cap sections to swing toward each other to closed position and then move jointly downwardly to clamp the blade upon the guard, and on the other hand, to move the cap sections jointly away from the guard and then, at a predetermined degree of separation, to swing them apart to wide open position.

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

1. A safety razor comprising a guard member having a blade-supporting face, a carrier movable with respect to said face into and out of position to engage a blade resting thereon, cap sections pivotally mounted on the carrier for swinging movement toward or away from said face, and rotary means located substantially in contact with the outer face of the guard for raising and lowering the carrier.

2. A safety razor having a guard member with a blade-supporting face, a cross bar located above said face and having a downwardly extending threaded shank extending through the bottom of the guard, a knurled nut threaded upon said shank and reacting against the lower face of the guard in forcing downwardly the bar, and co-operating cap sections pivotally mounted and carried with the bar.

3. A safety razor having a recessed guard with a flat bottom, a handle secured to the guard bottom and having an opening bounded by the guard bottom, a blade carrier including a cross bar with a threaded stem extending into said opening, cap sections pivoted upon the carrier, and a nut threaded upon the stem, located in the opening of the handle and arranged to bear against the guard bottom.

4. A safety razor having a blade-supporting member, a handle secured thereto having an opening and a boss projecting into the opening, co-operating cap sections mounted for pivotal movement about the blade-supporting member, a short threaded pin connected to the cap sections, and a screw threaded device rotatable upon said boss for positively controlling the position of said cap sections and being of greater length than the threaded portion of said pin.

JOSEPH MUROS.