July 1, 1958 J. NARIZZANO 2,840,901

SAFETY RAZOR WITH ADJUSTABLE UNIT FOR VARYING BLADE EXPOSURE

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FIG. 1

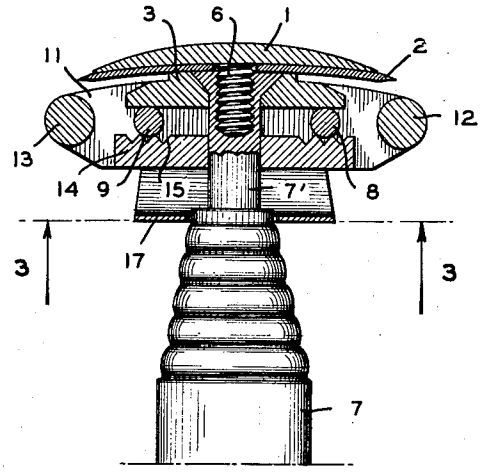
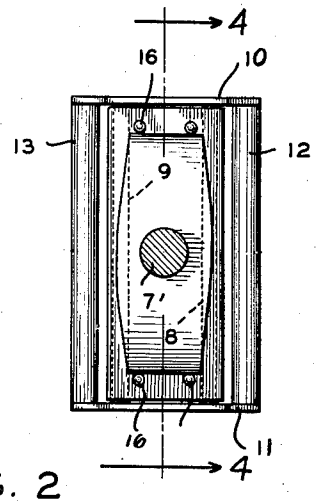



FIG. 3



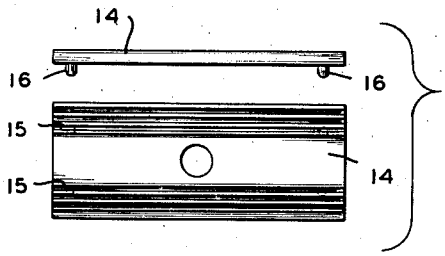




FIG. 2

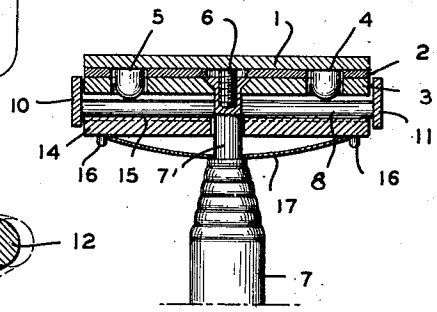



FIG. 4

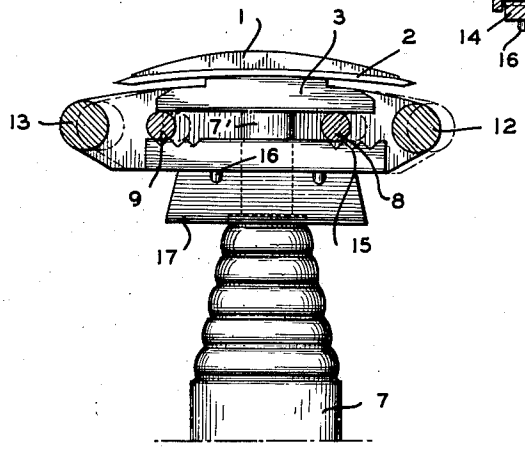



FIG. 5

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# SAFETY RAZOR WITH ADJUSTABLE UNIT FOR VARYING BLADE EXPOSURE

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6 Claims. (Cl. 30—73)

The present invention refers to improvements in safety razors of the kind comprising a handle and a pair of clamping members for the blade, said members being arranged to provide a controllable cutting angle.

More particularly, the invention relates to a safety razor in which the conventional safety bar or guard is incorporated in a slidably mounted laterally shiftable unit enabling the lateral position of the safety bar or guard to be adjusted with respect to the edge of the blade in a simple and efficient manner.

The invention will be described illustratively by reference to a construction in which the laterally shiftable unit is pressed against the plate which supports the razor blade by means of a laterally fixed follower plate and the unit is provided with longitudinal bars which slide against the under surface of the blade supporting plate and the bars are engageable by longitudinal positioning grooves in the upper surface of the follower plate. As will be evident, considerable variation from the construction illustrated can be made without departing from the new structural interaction of the invention.

The unit mentioned can preferably occupy three different positions with relation to the plates. In each of these positions, the safety bars are parallel to the cutting edges of the razor and define, together with said cutting edges, individual planes that correspond substantially to the incidence of the cutting edge on the surface submitted to shaving. In this manner, three distinct angles of incidence can be selected at will by the user.

In order that the present invention may be more clearly understood and readily put into practice, same will now be described with particular reference to an embodiment illustrated in the attached drawing, in which:

Figure 1 is a transverse cross section through an illustrative safety razor constructed in accordance with the invention taken through the longitudinal axis of the handle, e. g. in a plane normal to the cutting edge of the blade.

Figure 2 is a side elevation and plan view respectively of the follower plate and showing the details thereof.

Figure 3 is a sectional view through line 3—3 of Figure 1.

Figure 4 is a sectional view through line 4—4 of Figure 3, and

Figure 5 is a view similar to that of Figure 1 but illustrating the movable assembly in one of its end positions to show variability of the cutting angle.

Like numerals represent like or similar parts throughout the several figures of the drawing.

With reference to the drawing, the arrangement as illustrated comprises a slightly curved blade supporting plate 3 serving to support razor blade 2, the latter being clamped to the former by means of a blade clamping plate 1, as will be clearly seen later on. Plate 1 is provided with at least two guiding means to be inserted into the corresponding openings in blade 2. In the present embodiment, said means consists of two projecting pins



4 and 5. Plate 1 includes a threaded stem 6 permitting the blade clamping plate to be secured to end 7' of handle 7, for which purpose said end 7' is provided with a threaded bore to receive the stem 6. Plate 3 is provided with the necessary openings to receive pins 4 and 5, thus fixing the relative position of blade 2, and a further central orifice is provided for the passage of the widened portion of end 7' of handle 7. The surface of plate 3, opposite the blade-supporting surface, is perfectly smooth in the illustrated embodiment in order to offer a sliding surface for at least two elongated cylindrical slide members or rods 8 and 9, which are arranged parallel to the cutting edge of blade 2, such members being rigidly joined by their ends to two end strips 10 and 11. These end strips 10 and 11 are separated by a distance which is substantially equivalent to the length of plate 1 taken parallel to the cutting edges of 2; their length, on the other hand, taken normally to the cutting edges of blade 2, is slightly greater than the non-cutting edges of blade 2. The end strips 10 and 11 are free with respect to the plates 1 and 3 and are movable with respect thereto. In this manner, safety guards or bars 12 and 13, being of greater diameter than members 8 and 9 and being furthermore joined to the ends of said end strips 10 and 11, partly occupy an area which is close to the cutting edges of the blade 2. Members 8 and 9, on the other hand, are supported on a follower plate 14, the supporting surface of which is provided with at least four grooves parallel to said parts 8 and 9. These grooves are identified by reference 15 and are symmetrically grouped with regards to a central orifice furnished in follower plate 14; this orifice permits the projecting portion 7' of the handle 7 to reach the stem 6. Furthermore, that face of follower plate 14 which is opposite to grooves 15 is equipped with guide means 16 for a resilient plate 17, the edges of which rest on plate 14, while its central opening is supported by the tapered section of handle 7. As will be observed from the drawing, the handle 7 is formed with a shoulder or stop which bears against the under surface of the resilient plate or leaf spring 17.

In the arrangement as described, resilent plate 17, when resting on 14, presses the latter against members 8 and 9 and the latter, riding in grooves 15, determine the position of the laterally shiftable unit comprising an integral open frame consisting of parts 8, 9, 10, 11, 12 and 13. Rods 8 and 9, furthermore, exert pressure against blade supporting plate 3, and the latter, in turn, is urged upwardly against the blade 2.

It can easily be seen that the assembly of parts 8, 9, 10, 11, 12 and 13 permits translatory displacements in a direction which is normal to the cutting edges of the blade 2. In this manner, the asesmbly can be fixed in position with the aid of grooves 15, such positions being as many as there are pairs of grooves in follower plate 14 (three in the case illustrated). It is thus possible to vary the angle of incidence of the cutting edges of blade 2, inasmuch as said cutting edges, together with surfaces 12 and 13, define a plane of support for the portion of skin submitted to a shaving operation, the inclination of which plane is a function of the distance between a cutting edge of the blade 2 and the associated safety bar or guard which is varied by lateral displacement of the laterally shiftable unit, as illustrated in Figure 5. As will be evident, the laterally shiftable unit is displaced by pressure applied to one of the safety guards or bars 12 or 13, such pressure being easily applied in the form of finger pressure as for example by grasping the handle 7 in one hand and pressing the thumb against one of the safety bars or guards 12 or 13.

The invention as described and illustrated, may be

clearly understood and further explanations will not be required by those versed in the art.

Inasmuch as the present invention has been described and illustrated with particular reference to an embodiment preferred for explanatory purposes, it will be understood that changes may be introduced in the general construction and details of the apparatus without thereby departing from the essential nature of the invention, as clearly defined in the following claims.

I claim:

1. A safety razor comprising a handle, a lower blade supporting plate and an upper blade clamping plate, means to releasably secured said upper blade plate to said lower blade supporting plate in blade clamping engagement therewith, a laterally shiftable unit comprising a pair of end strips free of said plates, a pair of longitudinally extending rods secured to said end strips, said rods underlying said blade supporting plate in sliding engagement therewith, at least one safety bar interconnecting said end strips, a plurality of positioning means formed in a laterally fixed member abutting said rods, said positioning means longitudinally interengaging said rods and means urging said laterally shiftable unit against said blade supporting plate.

2. A safety razor comprising a handle, a lower blade supporting plate and an upper blade clamping plate, means to releasably secure said upper blade clamping plate to said lower blade supporting plate in blade clamping engagement therewith, a laterally shiftable unit comprising a pair of end strips free of said plates, a pair of longitudinally extending rods secured to said end strips, said rods underlying said blade supporting plate in sliding engagement therewith, at least one safety bar interconnecting said end strips, a laterally fixed follower member mounted on said handle and abutting said rods, said follower member having formed therein a plurality of longitudinal grooves interengageable with said rods to fix the position thereof in a plurality of laterally shifted positions and means urging said laterally shiftable unit against said blade supporting plate.

3. A safety razor comprising a handle, a lower blade supporting plate, means overlying said lower plate for releasably securing a double-edged blade in fixed position upon said lower plate, a laterally shiftable unit comprising an integral open frame positioned immediately beneath said lower plate, said frame including a pair of



spaced end strips and a pair of laterally spaced safety bars interconnecting said end strips, said end strips and said safety bars being free of said plates, said frame including slide means positioned between said safety bars and directly underlying said lower plate, said slide means fixed to said end strips and extending longitudinally of said blade supporting plate from one end strip to the other and means resiliently urging said frame upwardly to force said slide means against said lower plate whereby said frame may be slid in the plane of said lower plate and in a direction transverse to the length of said lower plate.

4. A safety razor as recited in claim 3 in which said end strips are positioned adjacent the outer longitudinal extremities of said lower blade supporting plate.

5. A safety razor comprising a handle, a lower blade supporting plate and an upper blade clamping plate, means to releasably secure said upper blade clamping plate to said lower blade supporting plate in blade clamping engagement therewith, a laterally shiftable unit comprising an integral open frame positioned immediately beneath said lower plate, said frame including a pair of spaced end strips positioned adjacent the outer longitudinal extremities of said lower plate and at least one safety bar interconnecting said end strips, said end strips and said safety bar being free of said plates, said frame including slide means fixed to said end strips and extending longitudinally of said blade supporting plate from one end strip to the other, said slide means being laterally offset from said handle on both sides thereof and means resiliently urging said frame upwardly to force said slide means against said lower plate whereby said frame may be slid laterally in the plane of said lower plate.

6. A safety razor as recited in claim 5 in which means mounted upon said handle is provided to fix said laterally shiftable unit in a plurality of laterally shifted positions.

**References Cited** in the file of this patent

UNITED STATES PATENTS

| | | |
|---|---|---|
| 1,880,881 | Dildine | Oct. 4, 1932 |
| 2,312,503 | Testi | Mar. 2, 1943 |
| 2,382,957 | Brandt | Aug. 21, 1945 |

FOREIGN PATENTS

| | | |
|---|---|---|
| 100,830 | Australia | Apr. 29, 1937 |