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D. H. WARD

1,989,576

SAFETY RAZOR

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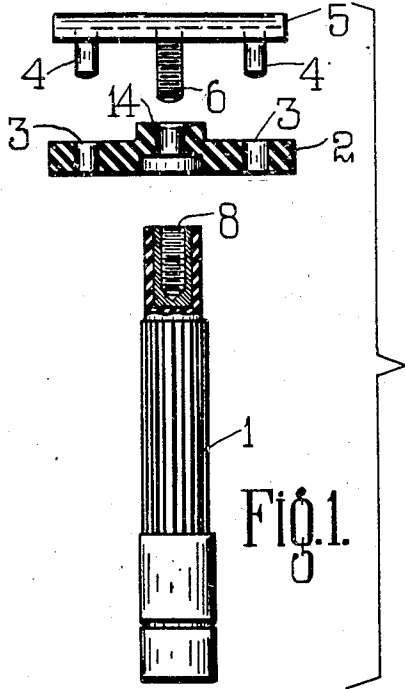


FIG. 1.

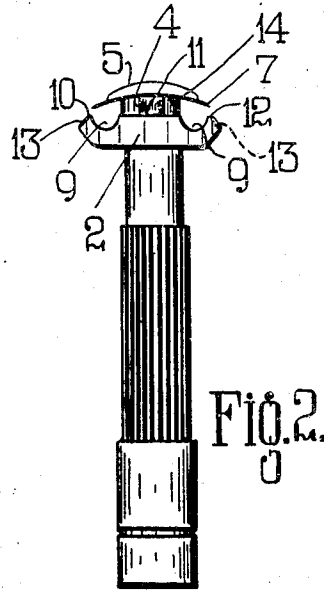


FIG. 2.

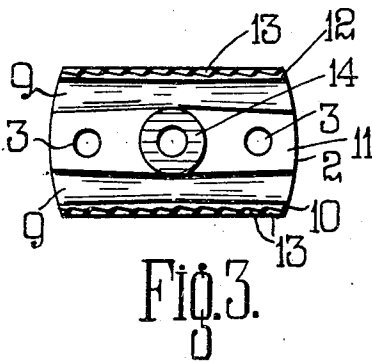


FIG. 3.

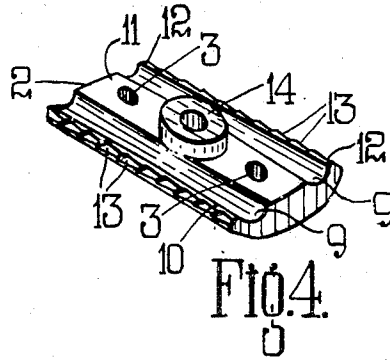


FIG. 4.

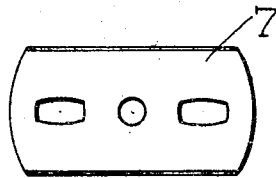


FIG. 5.

Inventor:  
David H. Ward,  
By *Andrew Messersmith*  
Attorneys.

# UNITED STATES PATENT OFFICE

1,989,576

## SAFETY RAZOR

David Harold Ward, Grappenhall, near Warrington, England, assignor to Thomas Ward & Sons Limited, Warrington, England, a British company

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In Great Britain August 25, 1931

1 Claim. (Cl. 30—12)

My invention relates to improvements in safety razors, and particularly to safety razors in which thin flexible blades are used. I consider the use of the upstanding guard teeth, which are common in safety razor constructions, to be disadvantageous, for various reasons, including difficulty in cleaning the same, and accordingly I provide a razor, the face-engaging surfaces of the guard of which are continuous, that is, not provided with separated teeth. Such teeth being done away with, hair, soap, etc., cannot escape between the edge of the blade and the guard, and accordingly I provide longitudinal channels, in the guard, parallel to the blade edges, and open at the ends, for the reception and discharge of such accumulations.

I consider also that it is highly desirable to permit the flexing of the blade, in use, away from the face, in case the blade edge meets an obstruction, such as a particularly tough hair, or an irregularity in the skin, etc., while preventing flexure of the blade, in use, towards the face, cutting of the skin being prevented by such means. I have found, however, that accumulations of hair and soap beneath the blade, (when guard teeth are not used, to provide an escape therefor), will prevent sufficient flexing of the blade, in use, to accomplish my purpose. Accordingly, I have provided a construction in which channels or passages are arranged for the reception and clearance of the hair and soap accumulations, while permitting flexure of the blade away from the face, on encountering obstructions or irregularities, sufficiently to clear the same, unimpeded by the accumulations referred to. An object of my invention, accordingly, is the provision of an improved safety razor construction having the capabilities referred to. Other objects of the invention consist in the provision of improved combinations of parts and details of construction, as will be more fully described hereinafter.

In my preferred construction, the blade is clamped at its centre between a boss on the guard member and the cover, leaving its edges free and spaced away from the guard, which has open-ended longitudinal grooves, parallel to the edges of the blade, and lying within the space covered by the blade. I provide these grooves with sufficient depth and cross-sectional area to prevent accumulations therein from impeding the proper desired flexing of the blade, as described.

In order that the invention may be more clearly understood, attention is hereby directed

to the accompanying drawing, illustrating certain embodiments of the invention, in which:—

Figure 1 shows the parts of a safety razor disassembled.

Figure 2 is a corresponding view of the parts assembled.

Figure 3 is a plan view of the guard or body member.

Figure 4 is a corresponding perspective view.

Figure 5 is a plan view of the blade used.

Referring to the drawing, handle 1 of a safety razor may be formed in any desired way, either of metal, a phenol condensation product or the like, or again, of metal covered with a phenol condensation product.

The guard or body member 2 has the usual holes 3 in it for the reception of the pegs 4 on the cover 5 for the indexing of the blade 7. This cover 5 also has a threaded spindle 6 co-operating with a threaded socket 8 of the handle 1. The guard 2 may, preferably, be made of a phenol condensation product, a cellulose composition, vulcanite or the like heat material having heat insulation properties, and the body 5 may also be formed of similar material, or again these two elements 2 and 5 may be metal covered with such material.

The guard 2 has grooves or channels 9 provided in its upper face extending longitudinally of the guard adjacent its edges. Further, the face of this guard is preferably uniplanar; that is to say, that the surfaces 10, 11, 12 lie in the same plane, whilst the size of these channels 9 is such that the blade when mounted as shown in Figure 2, does not quite overlap the channels.

The side surfaces 13 of the guard are continuous, that is, are not provided with separated teeth, between which lather and hair can escape. These surfaces are adapted to engage the skin, in advance of the blade edge, at an angle, as shown. These surfaces preferably are provided with shallow oblique grooves, as shown, so as to tend to incline the hairs presented to the blade edge at an angle.

The surface 11 of the guard is provided with a central boss 14, preferably cylindrical, between which and the cover 5 the blade is clamped. It will be seen that the boss engages the central portion only of the blade, which is flexed over the boss by the concave inner surface of the cap, so that a considerable portion of the blade overhangs the grooves 9, as shown. The cap 5, however, covers a considerable area of the outer surface of the blade, as shown. Accordingly, the blade is held rigidly against movement by flexure

towards the face, while having a sufficient area of its under surface free to enable it to flex towards the grooves 9, over the outer edges of which the edges of the blade are positioned.

5 Grooves 9 are preferably semi-circular in cross-section, so as to provide a free and unimpeded entry therein for hair, soap, etc., released from the blade, in shaving. As stated, the grooves 9 are sufficiently deep and broad to permit hair and soap from accumulating therein, during shaving, without impeding the desired flexure of the blade towards the grooves. It being, of course, understood, that the accumulated hair and lather will be cleared after each one or several operations. It will be noted that this can be effected by putting the razor under a tap of running water, without unscrewing it. I have discovered, by experiment, that such flexure is actually prevented in other constructions of razor, in which 10 grooves of sufficient area and depth are not provided, because of the impeding of the blade's movement by the accumulated material underneath the blade.

It will be noted that the provision of the boss 14 in cylindrical form, or the like, provides spaces across surface 11, on opposite sides of boss 14, between surface 11 and the cap 5, through which the hair and lather may be cleared from one channel 9 to the other, as well as through the 15 channels 9.

I declare that what I claim is:—

In a safety razor, the combination of a guard

member having a central cylindrical boss and upstanding continuous side edge portions separated from said boss by longitudinal semi-circular grooves, open at both ends, a thin flexible blade, having two parallel longitudinal edges, a cover member, and means for clamping the blade between said cover member and boss, said cover member being shaped to contact against the greater part of the adjacent blade surface and to flex it concavely over said grooves, with the blade edges adjacent to said side edge portions, but free to flex further towards and into said grooves, said grooves being of sufficient depth and area to contain the hair and soap resulting from a shaving operation without such material preventing such flexure of the blade towards the same as might be caused by the blade edge meeting an obstruction in shaving, and said side edge portions of the guard member having face-engaging outer surfaces, and said central boss engaging the central portion of the blade only, said guard member having a plane longitudinal surface intermediate said grooves, from which said boss extends, to provide transverse open spaces on opposite sides of said boss, between said plane surface and said cover member, through which hair and lather may pass from one of said grooves to the other.

DAVID HAROLD WARD.