March 8, 1932. E. SCHODLBAUER 1,848,666

SAFETY RAZOR

Filed Dec. 19, 1930

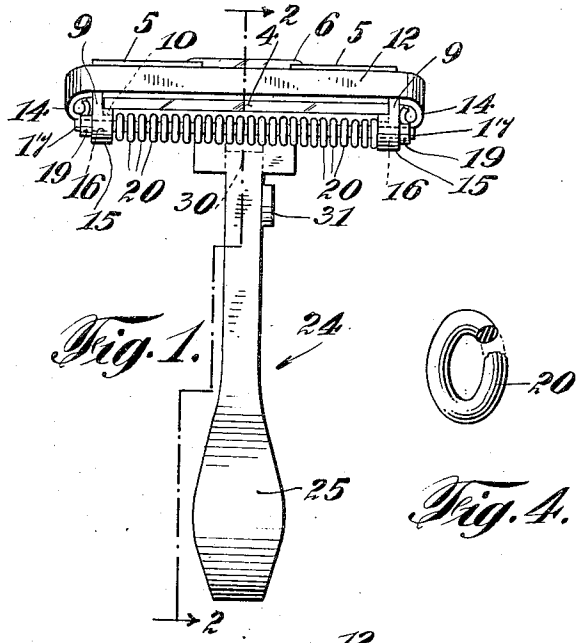


Fig. 1.

Fig. 4.

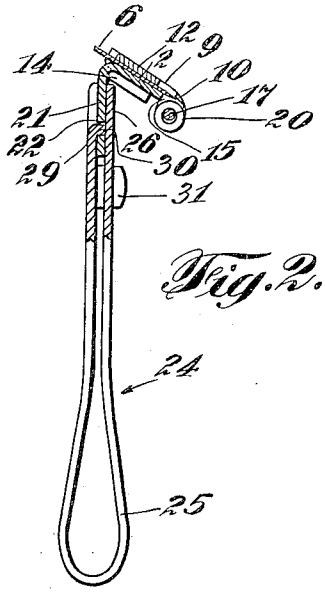


Fig. 2.

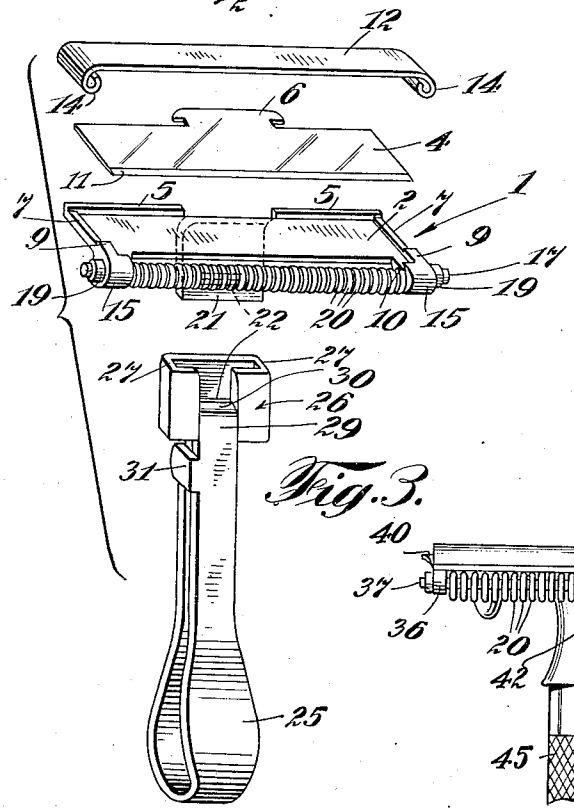


Fig. 3.

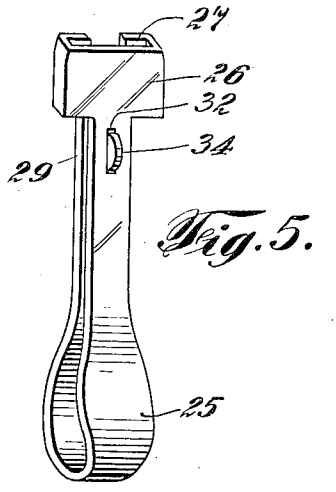


Fig. 5.

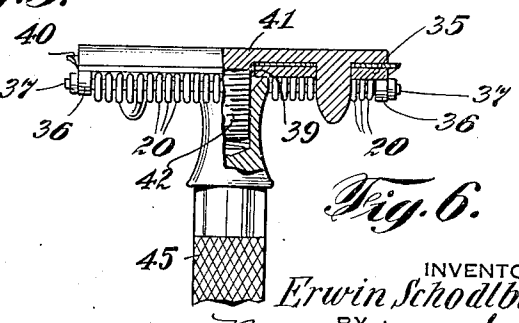


Fig. 6.

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UNITED STATES PATENT OFFICE

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SAFETY RAZOR

Application filed December 19, 1930. Serial No. 503,419.

The present invention relates more particularly to improvements in safety razors intended to facilitate shaving and also to facilitate assembly and disassembly of the parts of the razor.

The conventional forms of safety razors now on the market have a series of curved projections or teeth extending over and in front of the edge of the razor blade to serve as a guard to permit the blade to shave the skin without cutting it. In previous patents, rotatable bars have been shown positioned in front of the edge of the blade to facilitate the movement of the blade over the skin. The latter have not, so far as applicant is aware, been introduced commercially, one reason being that hair is likely to become entangled with the roller, resulting in a pull which is likely to cause the razor blade to cut the skin. To obtain a smoot shave without what is customarily called "razor pull", it is desirable to move the blade in a direction oblique to its cutting edge. A solid roller makes it difficult to do this. In some cases, the roller is grooved, but this does not help the situation. The present invention aims to eliminate these difficulties by providing a guard which comprises a plurality of loosely mounted ring members spaced forwardly of the cutting edge of the blade. The rings are spaced sufficiently far apart to permit the rings to operate independently and to prevent hairs being caught between two rings, as would be the case if the rings were mounted relatively close together. The loose mounting permits the rings to adjust themselves longitudinally of the shafts supporting them to release hair or foreign substances contacting with the guard. In addition, the loose rings afford a smooth massaging shave which gives a pleasing and invigorating feeling.

The present invention also contemplates an improved arrangement and construction of the parts to hold the blade rigidly in position and to permit rapid assembly and disassembly of the parts to facilitate cleaning the razor or replacing the blade. By reason of the arrangement and construction of the parts, the blade may be removed without removing the handle, and vice versa.

An object of the present invention is to minimize or eliminate the difficulties enumerated above.

Another object of the invention is to provide an inexpensive razor which may be readily manufactured.

Another object of the invention is to eliminate or minimize "razor pull" during shaving.

Another object of the invention is to provide a rotatable safety guard comprising loosely mounted rings of uniform diameter, whereby accidental injuries will be minimized and a smooth massage shave is effected.

Another object of the invention is to provide a razor blade which may be readily removed and replaced without disconnecting the handle.

A further object of the invention is to provide a handle connection which may be quickly attached and detached.

Other and further objects of the invention will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art, upon employment of the invention in practice.

A preferred embodiment of the invention has been chosen for purposes of illustration and description and is shown in the accompanying drawings, forming a part of the specification, wherein

Fig. 1 is a front elevational view of a preferred embodiment, illustrating the present invention;

Fig. 2 is a sectional view taken along the line 2—2 on Fig. 1;

Fig. 3 is a perspective view illustrating the parts of the preferred embodiment prior to being assembled;

Fig. 4 is an enlarged perspective view of one of the ring members;

Fig. 5 is a perspective view illustrating a slightly different handle member; and

Fig. 6 is a front elevational view, partly in

section, illustrating the present invention applied to a double edge razor.

Referring to the drawings, there is shown a blade-holder 1, having a substantially rectangular surface 2 adapted to seat a razor blade 4. The back portion of the holder 1 is provided with extensions 5 interrupted at the middle thereof to permit a suitable projection 6 at the back of the blade to pass therebetween and engage the inner ends of the extensions 5. In this manner, the blade is prevented from sliding out of position with respect to the holder. To further guard against accidental displacement of the blade, extensions 7 are provided at the sides of the holder, which are preferably the same height as the thickness of the blade, and, at the forward corners of the holder, L-shaped extensions 9 are provided, being slightly grooved at 10 to receive the shaving edge 11 of the blade, whereby the corners of the blade are securely positioned and are guarded to prevent injuries if the razor is manipulated improperly.

For connecting the blade to the holder, a bar member 12 may be provided of substantial width to nest snugly between the extensions 5 and 9. When assembled, the top surface of the bar is preferably flush with the extensions. The ends 14 of the bar are rolled or bent upon themselves to provide substantially resilient means for engaging the sides of the holder. The blade may thus be readily assembled by snapping the bar 12 upon the holder 1.

At the sides of the holder, in advance of the edge of the blade, a pair of bearing members 15 are provided which are preferably formed integral with the holder. The members 15 have transversely extending apertures or bearings 16 therein, which are adapted to receive a rod 17, held in position by the members 19 on the ends thereof. In order to provide a suitable safety guard, a plurality of rotatable rings 20 are mounted upon the rod 17. These rings have a substantially circular cross-section, as illustrated in Fig. 4, so that there is a minimum amount of contact between individual rings. The rings may be made in any suitable manner. In some instances, it may be desirable to construct the rings 20 of hard rubber, bakelite or the like.

In the preferred embodiment of the invention, it will be noted that the rings are mounted loosely upon the rod 17 so that there is ample space between individual rings. In the event that a hair or other foreign substance is caught between the rings, the rings affected will stop rotating independently of the other rings, which will not be affected, but will continue to rotate to facilitate a smooth shave. The rings, being free to move, will adjust themselves to avoid obstructions and to prevent jamming. If the rings were mounted closely with respect to each other, the engagement of foreign matter would cause all the rings to jam and to rotate as a solid roller. This is likely to cause the sharp edge of the razor blade to be drawn downwardly against and to cut the skin. The rotating safety guard, having loosely mounted rings, massages the face during the shaving operations, imparting a fresh and invigorating feeling. It will, of course, be understood that the rings may be of any suitable size as long as they are properly positioned with respect to the razor edge.

In order to connect the blade-holder to a handle, there is provided a depending extension 21, preferably formed integral with the holder and disposed at a suitable angle thereto. The extension is provided with a slot 22 adapted to be engaged by a projection on a suitable handle member 24, illustrated more particularly in Figs. 1, 2 and 3. The handle may comprise a substantially resilient member bent upon itself, having a suitable holding portion 25 and means for engaging and locking the blade holder thereto. To provide these means, the longer end 26 of the handle member is provided with a pair of grooved members 27 adapted to receive the extension 21. The shorter end 29 of the handle member extends between the members 27 and is provided with an inwardly projecting tongue 30, which is adapted to engage the slot 22 in the blade holder. Due to the springy nature of the handle 24, the ends 26 and 29 may be pried apart to permit the tongue 30 to be inserted in or released from the slot 22. To expedite this result, an extension 31 is preferably provided at the side of the shorter end 29, which permits manual engagement thereof to pry the ends apart.

A modified handle construction is illustrated in Fig. 5, being similar to handle 24 except that slightly different means are provided for attaching and detaching the blade holder. The longer end 26 is provided with a vertical slot 32 and the shorter end 29 has a projection 34 at the inner side thereof which passes through the slot 32. To pry the ends apart, the projection 34 is pushed inwardly through the slot and is held in that position until the blade holder is connected or removed from the handle.

A slightly different construction is shown in Fig. 6, wherein the present improved safety guard is shown applied to a common form of double-edged razor. The type selected is a commercial construction sometimes called the "Gillette" razor. Described generally, the razor comprises a holding member 35 having a centrally disposed aperture 39 and an arcuate holding member 41 provided with an integral threaded projection 42. The blade 40, with the centrally disposed aperture, is placed between the members 35 and 41 and the projecting member 42 extends through

the aperture in the blade and the aperture in the member 35 to hold the blade in position. A handle 45 is threaded onto the end of the member 42 to rigidly position the parts.

On each side of the holding member 35 are suitable projections 36 adapted to receive the ends of a rod or pin 37 on which are loosely mounted the rings 20. As pointed out above, the rings are spaced from each other a substantial distance so that the rings will not wedge or rotate as an entirety. The rings rotate independently of each other and are free to move longitudinally of the pin 37 to free any substance tending to clog or wedge the guard. It will be understood, of course, that the guard described herein may be applied to other types of razors, the present embodiment being illustrative.

It will be seen that the present invention provides an efficient and inexpensive razor which facilitates a very satisfactory shave. The rings eliminate friction and rotate to massage the face during the shaving operations. The rings are loosely mounted and will not stop rotating accidentally, thereby causing injuries. It will be noted that the blade may be removed without removing the handle, or vice versa, thus effecting a saving of time. The parts of the razor are rugged in construction and will readily withstand the rough usage to which they may be subjected.

As various changes may be made in the form, construction and arrangement of the parts herein without departing from the spirit and scope of the invention and without sacrificing any of its advantages, it is to be understood that all matter herein is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim:

1. In a device of the class described, the combination of a blade supporting member, means for attaching a razor blade upon said member, and a safety guard comprising a supporting member, and a plurality of rotatable ring members loosely mounted thereon, said ring members having an enlarged aperture to permit tilting thereof with respect to the supporting member.

2. In a device of the class described, the combination of a blade supporting member, a removable handle connected to said member, means for mounting a razor blade upon said member, and a plurality of rings mounted loosely to permit rotation and tilting movement with respect to the axis about which they rotate to provide a safety guard for the shaving edge of the razor blade.

3. In a device of the class described, the combination of holding means for a razor blade, and a guard comprising a plurality of loosely mounted rings adapted to rotate independently of each other, and adapted to tilt with respect to the axis about which they turn.

4. In a device of the class described, the combination of a holding member for a razor blade, a razor blade mounted on said holding member, and a guard comprising a shaft with a plurality of loosely mounted rings of substantially circular cross-section adapted to rotate independently of each other and adapted also to move longitudinally of said shaft, said rings having a smooth surface.

5. In a device of the class described, the combination of a holding member for a razor blade, a razor blade mounted upon said holding member, and a guard comprising a shaft having a plurality of rings loosely mounted thereon and movable longitudinally thereof, said rings having a substantially circular cross-section.

6. The combination with a blade having a cutting edge, of guide means comprising a plurality of guard rollers mounted adjacent said cutting edge for rotative movement and also for tilting movement with respect to the axis about which the same turn.

7. The combination with a blade having a cutting edge, of guide means comprising a plurality of guard rings mounted adjacent to said cutting edge for rotative, tilting, and longitudinal movement with respect to the axis about which said rings turn.

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