

Dec. 6, 1927.

1,651,917

J. E. CONNOLLY

SAFETY RAZOR

Filed Nov. 16, 1926

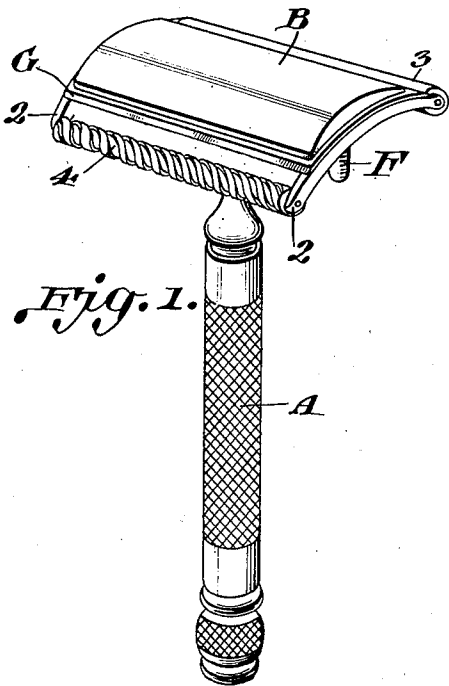


Fig. 1.

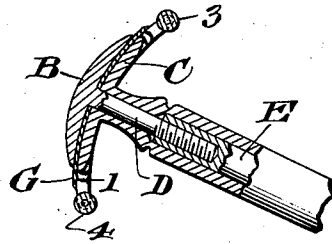


Fig. 2.

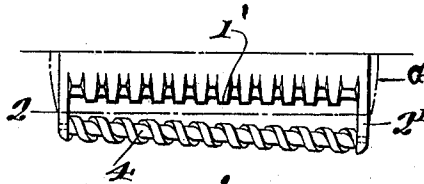


Fig. 3.

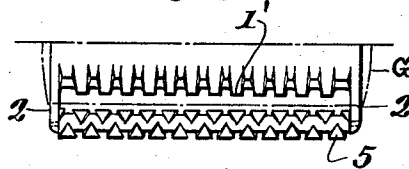


Fig. 4.

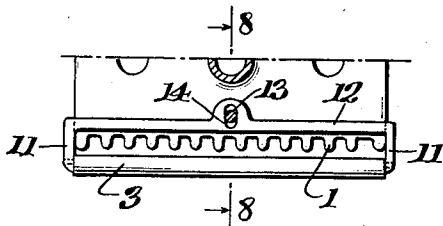


Fig. 7.

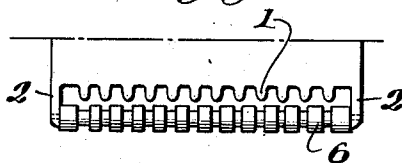


Fig. 5.

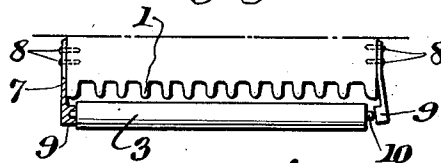


Fig. 6.

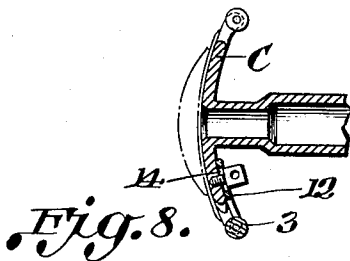


Fig. 8.

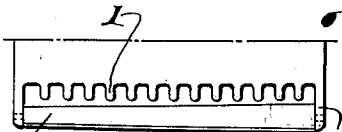


Fig. 9.

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SAFETY RAZOR.

Application filed November 16, 1926. Serial No. 143,854.

This invention relates to an improvement in safety razors which consists broadly in the provision of a roller carried by the guard member and positioned in advance of the edge of the razor blade when clamped between the guard member and the usual clamping member.

The specific object of the invention is the provision of grooves of differing types upon this roller in order that the same may act not only as a guard for the razor blade but will have the effect of massaging the skin and flesh and will also retain a sufficient amount of the lather to permit a second shave over any portion of the face without further applying lather thereto.

Further detail objects of the invention will be apparent from the following specification and set forth in the appended claims.

In the drawings:

Figure 1 is a perspective view of a well known type of safety razor having my invention applied thereto.

Figure 2 is a transverse section through the same.

Figures 3, 4, and 5 are detail views showing different forms of rollers.

Figure 6 is a fragmentary view showing a different means for holding the roller in position.

Figure 7 is a detail view showing the roller mounted in a support which is adjustably carried by the guard.

Figure 8 is a section on the line 8—8 of Figure 7.

Figure 9 is a view showing a modified form of roller.

The invention is illustrated in Figure 1 as being applied to the well known Gillette safety razor, employing a double edged blade and therefore necessitating two rollers, but it is to be understood that the invention is applicable to other forms of safety razors employing a single edged blade which necessitates only a single roller. It is to be understood, therefore, that the illustration is not to be regarded as limiting the invention in this respect.

There is shown a safety razor having the usual handle A, clamping member B, and guard plate C, the clamping member having a projecting arm D which is screw threaded at its end to engage a screw threaded mem-

ber E carried by the handle A. The guard member is provided with the usual guide lugs F which pass through holes in the razor blade G and this latter is clamped between the member B and the guard C in the usual way. Whatever may be the type of razor to which the invention is applied, there will be found members which correspond to the clamping member B and the guard member C. The guard member C is provided at its edge with serrations 1 which lie slightly in the rear of the edge of the blade. At each side the guard is provided with outwardly extending lugs 2 in which is journaled a roller 3. This roller lies outside the ends of the serrations 1 and is of a size to project beyond the ends of the lugs 2.

This roller may be of different forms. As shown in Figures 6 and 7 and in one of the rollers of Figure 1, this may be a simple cylindrical roller. As shown in the other guide roller of Figure 1 and as indicated in Figure 3, the roller may have a spiral groove or grooves running from one end to the other. As indicated in Figure 4, these spiral grooves may run in opposite directions, thus providing the roller 5 with a plurality of diamond shaped projections upon its surface. As shown in Figure 5, the roller is provided with a plurality of circumferential grooves 6, while Figure 9 shows a form in which the roller 15 may taper slightly from one end to the other.

The ends of the roller may be journaled in the lugs 2 in any desired manner and in general the roller will lie with its axis parallel to the edge of the razor blade. It has been found, however, that it is highly advantageous to place the roller with its axis at a slight angle to the edge of the razor blade as indicated in Figure 3. In this form one of the lugs 2' is made somewhat longer than the other so that the roller will lie at the desired angle. In using the razor the same will be naturally drawn across the face in a direction perpendicular to the axis of the roller and if the latter lies at an angle to the edge of the blade this will produce the desired shearing cut which is much more effective than if the razor is moved directly at right angles to the edge of the blade. It will be found in this form of roller that it is also desirable to use the spiral

grooves shown at 4 instead of the other forms of rollers.

A somewhat similar effect may be obtained by having the roller taper from one end to the other as indicated in Figure 9 and it is to be understood that the tapering roller may be provided with any of the forms of corrugations or grooves illustrated as applied to the cylindrical roller.

The modification shown in Figure 6 discloses a different form for attaching the roller to the guard and in this case there is provided at each edge a spring member 7, one end of which is fastened to the guard by fastening means 8 of any desired character and the outer end 9 of which is enlarged and provided with a depression adapted to engage a pintle 10 on the end of the roller. It is, of course, evident that any form of roller may be employed in this form and it is also apparent that one of the spring arms 7 may be longer than the other in order to mount the roller with its axis at an angle to the edge of the blade.

In the modification shown in Figures 7 and 8 the lugs 2 are omitted and the roller which may be of any desired form is journaled in arms 11 which are connected by a groove member 12 having an enlarged portion provided with a slot 13 in which passes the screw 14 or similar fastening member. The end of this screw is threaded into the guard member so that by loosening the screw, the position of the roller relative to the edge of the blade may be adjusted. Not only may the roller be brought closer to the edge of the blade, but by providing a slight lost motion at the edges, it is possible to adjust the roller so that its axis lies parallel with the edge of the blade or at an angle thereto.

The serrations on the guard member C may be of the usual form as shown in Figures 5 to 7, but I prefer to construct these in the form shown at 1' in Figures 3 and 4. In this form the serrations lie almost entirely on the under side of the guard plate and are hardly visible upon a direct view of the top thereof. They lie in the rear of the edge of the plate and as indicated in Figures 3 and 4, there is a space between the edge of the blade and the guard roller. In this construction the serrations hold the lather and distribute it so that particularly when used in connection with a guard roller having a corrugated surface it is not necessary to apply fresh lather to the face when going over the same a second time.

It is found that a razor equipped with a roller of the type shown, particularly with the corrugated rollers 4 or 5, is very efficient as a massaging device and it therefore has the double function of acting as a guard for the edge of the razor blade and massaging the flesh over which it passes. Moreover,

rollers of this type tend to retain and distribute a portion of the lather when it is desired to pass the razor over any portion of the face a second time, thus avoiding the necessity of using additional lather when said second shave is desired. Particularly where a roller 4 is mounted with its axis at an angle to the edge of the razor blade, it is found that the action of a razor thus equipped is very satisfactory. In addition to acting as above described, the roller facilitates the movement of the razor and does not cause any scraping movement which tends to irritate the skin.

When the rollers of the types shown in Figures 4, 5 and 6 are employed, it is found that the massaging effect is very appreciable and if desired the razor may be used without the blade as a simple massaging implement. When so used it has been found to be very efficient.

It is obvious that various detail changes may be made and that the invention may be applied to safety razors of widely varying types without in any way departing from the spirit of the invention, which is to be regarded as limited only by the scope of the appended claims.

I claim as my invention:

1. In a safety razor, the combination with a guard having a serrated edge, of a blade mounted on said guard and having its cutting edge disposed forward of said serrated edge and in parallelism therewith, and a roller journaled on said guard and disposed in front of the cutting edge of the blade and in spaced relation to the serrated edge of the guard for cooperation therewith to retain lather.

2. In a safety razor; the combination with a guard having a serrated edge, of a blade mounted on said guard and having its cutting edge disposed forward of said serrated edge and in parallelism therewith, and a spirally grooved roller journaled on said guard and disposed in front of the cutting edge of the blade and in spaced relation to the serrated edge of the guard for cooperation therewith to retain lather.

3. In a safety razor, the combination with a guard having a serrated edge, of a blade mounted on said guard and having its cutting edge disposed forward of said serrated edge and in parallelism therewith, and a roller journaled on said guard and disposed in front of the cutting edge of the blade and in spaced relation to the serrated edge of the guard for cooperation therewith to retain lather, the longitudinal axis of the roller being disposed at a slight angle to the cutting edge of the blade.

4. In a safety razor, the combination with a guard having a serrated edge, of a blade mounted on said guard and having its cutting edge disposed forward of said serrated

edge and in parallelism therewith, a grooved
frame adjustably fitted over the serrated
edge portion of the guard, a roller journaled
on said frame and disposed in front of the
cutting edge of the blade and in spaced rela-
5 tion to the serrated edge of the guard for
cooperation therewith to retain lather, and
means for securing the frame to the guard
whereby the roller may be secured in any
position of adjustment relative to the cut- 10
ting edge of said blade.

In testimony whereof, I have hereunto
subscribed my name.

JAMES E. CONNOLLY.