Sept. 13, 1932. R. E. THOMPSON 1,877,082

SAFETY RAZOR

Filed Nov. 17, 1930

Fig. 1

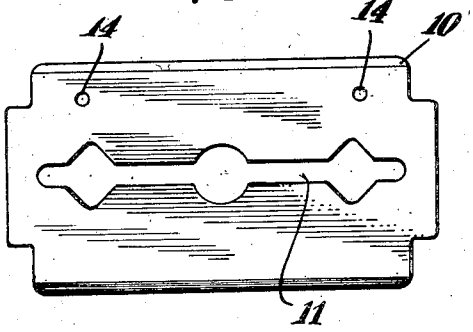


Fig. 3

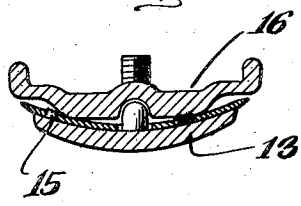


Fig. 2

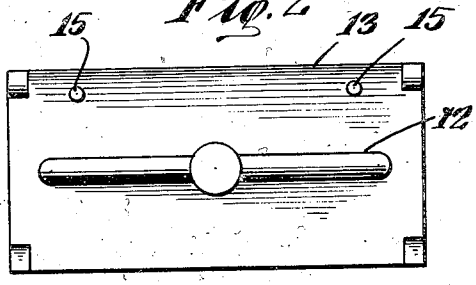


Fig. 4

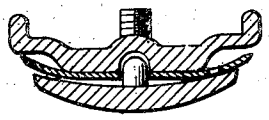


Fig. 5

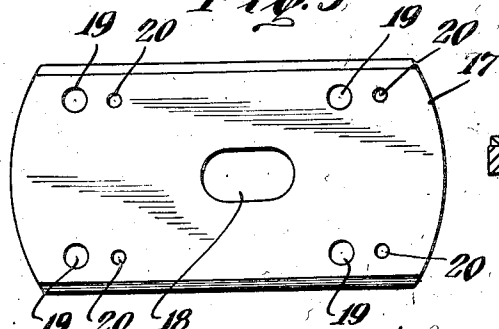


Fig. 7

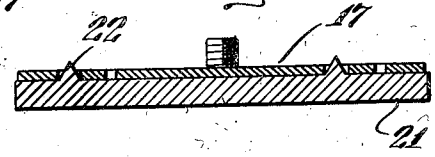


Fig. 8

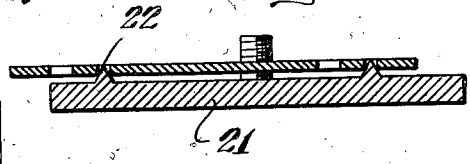
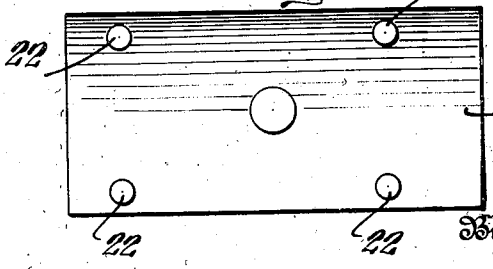


Fig. 6



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UNITED STATES PATENT OFFICE

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SAFETY RAZOR

Application filed November 17, 1930. Serial No. 496,170.

This invention relates to safety razors of the Gillette type, and has as its general object the adjustment of the amount of exposure of the shaving edges of a transversely flexible safety razor blade.

The ordinary type of safety razor, using a transversely flexible blade, comprises a cap and a guard member, between which the blade is clamped to flex it in its shaving position. The longitudinal edge of the cap member bends the blade over the guard to place the shaving edges of the blade in their proper position relative the edges of the guard. The position of the edge of the blade, relative the guard, determines the degree of exposure of the cutting edge and the closeness of the shave obtained by the user.

The shaving edge of this type of safety razor blade ordinarily cannot be adjusted without loosening the cap and guard, since the position of the shaving edge is defined by the physical proportions and relative position of the blade and of the cap and guard members. It is desirable to be able to adjust the edge exposure of a flexible safety razor blade to enable the blade to be used for shaves of varying degrees of closeness.

According to this invention, a safety razor is provided, the shaving edges of the blade of which can be adjusted as desired to give a close or a coarse shave. This is accomplished in one embodiment of the invention by having extensions on the cap member press against one side of the razor blade to force it closer to the guard member in the clamping operation, thus giving a blade with a low edge exposure which will give a close shave and which, when the blade is placed in another position, will fit into openings in the blade, leaving the blade edge in its normal position.

The invention will now be described with reference to the drawing, of which:

Fig. 1 is a plan view of one embodiment of a safety razor blade, according to this invention;

Fig. 2 is a plan view of a cap member adapted to co-operate with the blade of Fig. 1;

Fig. 3 is a side view of the blade, in section, showing the blade of Fig. 1, the cap member of Fig. 2, and the ordinary guard member in assembled relation, the blade in this figure having its edges in their normal position;

Fig. 4 is a view similar to Fig. 3, showing how one edge of the blade is given a low exposure by contact with the extensions on the cap member;

Fig. 5 is a plan view of another embodiment of the razor blade, according to this invention;

Fig. 6 is a plan view of a cap member adapted to co-operate with the blade of Fig. 5;

Fig. 7 is a side sectional view of the blade of Fig. 5 placed on the cap member of Fig. 6 in one position, and

Fig. 8 is a view similar to Fig. 7, showing the blade on the cap member in another position, in this instance being adjusted to give a low edge exposure.

Referring now to Figs. 1 to 4 inclusive of the drawing, the transversely flexible blade 10 is provided with the central slot 11 which serves to position the blade on the rib 12 of the cap member 13. The blade 10 is provided adjacent and near each end of one of its shaving edges, with the small openings 14. The cap member 13 is provided with small projections or studs 15 adjacent and near each end of one of its longitudinal edges, which are adapted to fit into the small openings 14 of the blade 10. When the blade is placed relative the cap member so that the openings 14 fit over the projections 15, the adjustment of the blade edges is unaffected by the projections 15, this condition being shown clearly by the drawing, the blade being there shown clamped between the cap member 13 and the guard 16.

When it is desired that one of the blade edges be given a low exposure, so as to afford a lighter shave, the blade is turned over on the cap member 13 so that the openings 14 are adjacent the opposite side of the cap member to that which contains the projections 15. The projections 15 then having no opening into which they may fit, contact against the surface of the blade, and when the blade is clamped in its holder, push down the edge

of the blade, against which they contact, so that it is closer to the edge of the guard than it normally is, thus giving a low edge exposure and affording a coarser or lighter shave. The other edge of the blade has a normal exposure, this condition being shown clearly by Fig. 4. According to this embodiment of the invention, it is only necessary, when it is desired to obtain a light shave with one edge of the blade, to reverse its position in the holder. In one position, both edges give a normal shave. In the other position, one edge gives a light shave and the other a normal shave.

The embodiment of the invention, illustrated by Figs. 5 to 8 inclusive, comprises the transversely flexible blade 17 which is provided with the central opening 18, through which the threaded stud of the cap member extends. The blade contains the four circular openings 19 which are arranged one near each of the four corners of the blade and the four smaller circular openings 20, each of which is arranged adjacent one of the openings 19. The distance between the centers of the circular openings 19 and the distance between the centers of the circular openings 20 is exactly the same, both longitudinally and transversely of the blade. The cap member 21, which is adapted to cooperate with the blade of Fig. 5, is provided with the four peaked extensions 22, which are spaced apart both transversely and longitudinally the same distance as the distance between the pairs of openings 19 and the pairs of openings 20 in the blade, and which are adapted to engage one or the other of the sets of openings 19 and 20, according to how the blade 17 is placed on the cap member 21.

Fig. 7 illustrates the blade 17 placed on the cap member 21 so that the peaked projections 22 fit into the large openings 19 of the blade. The openings 19 have sufficient diameter to entirely clear the peaked projections 22, so that the projections when the blade is placed in this position, do not interfere with the blade adjustment. This condition is shown by Fig. 7, the blade in this instance, when clamped in its holder, having normal edge exposure on both cutting edges. The circular openings 20 have a smaller diameter than the openings 19, and their size is so arranged, with respect to the size of the peaked projections 22, that when the blade is placed on the cap member with the peaked projections extending into the small openings 20, the blade is placed and held a predetermined distance from the cap member 21. With the blade so placed, it has, when it is clamped between the cap and guard members of the razor, its cutting edges depressed nearer the guard edges, due to the projections 22, so that the blade has a less blade exposure on each side and gives, therefore, a lighter shave on each side. In this embodiment of the invention, the blade is shifted longitudinally along the cap member so that one or the other of the sets of openings of the blade engage with the projections on the cap member when a close or a normal shave is desired.

With the embodiment shown by Figs. 5 to 8 inclusive, obviously, the projections 22 could be left off of one of the longitudinal sides of the cap member so that one edge of the blade would always give a normal shave and the other could be shifted to give a light or a normal shave, as desired.

Whereas one or more embodiments of the invention have been described for the purpose of illustration, it should be understood that the invention is not limited to the exact details disclosed, as many departures may be made by those skilled in the art without departing from the spirit of the invention.

What is claimed is:

1. A safety razor comprising a blade adapted to be transversely flexed between two clamping elements of the razor, apertures in said blade behind one of its shaving edges, and projections on one of said clamping members which fit partially into said apertures behind one edge of said blade and which space said edge of said blade from the clamping member with which they are associated.

2. A safety razor blade having adjacent the shaving edge a pair of small apertures and a pair of larger apertures, the distance between the apertures of one of the pairs being the same as the distance between the apertures of the other of said pairs.

3. A safety razor comprising, in combination, a blade, a clamping member for supporting said blade, a large aperture and a small aperture in said blade adjacent a shaving edge, and peaked blade positioning projections on said member, said blade being adapted to be placed in two positions on said extensions, in one position the projections pass freely through the larger of said apertures to give one degree of exposure of the shaving edge, and in the other position the projections contact with the sides of said small aperture to shift the edge of the blade to give another degree of edge exposure.

4. A safety razor blade having an internal aperture, a cutting edge, and openings of unequal size located in similarly arranged pairs adjacent to both ends of said edge.

5. A safety razor comprising, in combination, a guard member having a fulcrum shoulder, a flexible blade having spaced apertures therein, and a cap member having correspondingly spaced projecting studs arranged to engage the blade and bend its cutting edge over said fulcrum shoulder or to pass into said apertures without bending the blade according to the position in which the blade is presented.

6. A safety razor comprising, in combina-

tion, a guard having a fulcrum shoulder, a flexible blade having symmetrically disposed cutting edges and an opening adjacent to one of said edges, and a cap having a stud arranged to enter said opening when the blade is presented in one position and to engage the blade and bend its cutting edge over said fulcrum shoulder when the blade is presented in another position.

7. A safety razor including a guard of convex contour, a flexible blade having oppositely disposed cutting edges and spaced openings adjacent to one of said edges, and a cap having projections so located as to enter said openings when the blade is presented to the cap in one position and to engage the surface of the blade and bend its edge toward the guard when presented in another position.

Signed at Boston, Massachusetts, this 15th day of November, 1930.

RALPH E. THOMPSON.