Dec. 16, 1930. E. W. ERICSSON 1,785,545

SAFETY RAZOR

Filed March 21, 1930

Fig. 1

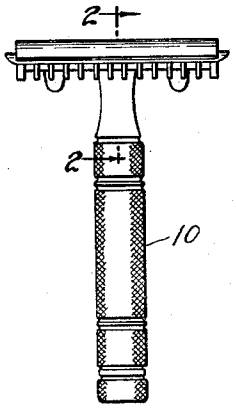



Fig. 2

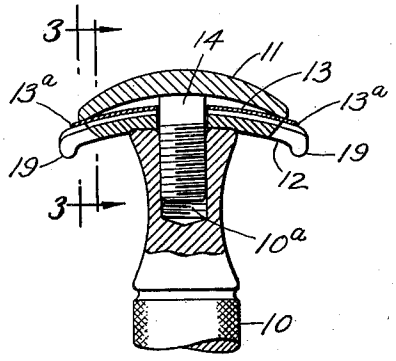



Fig. 3

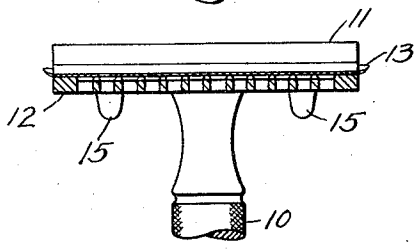



Fig. 4

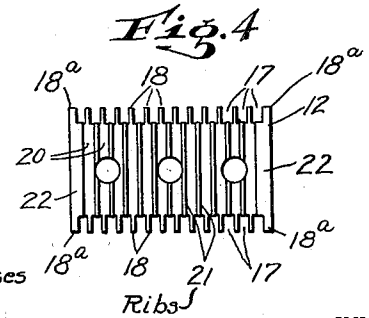
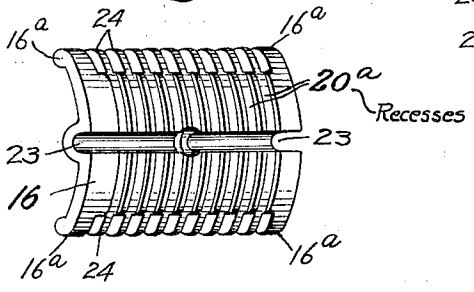



Fig. 5




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# UNITED STATES PATENT OFFICE

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## SAFETY RAZOR

Application filed March 21, 1930. Serial No. 437,642.

This invention relates to safety razors and particularly to devices of this class employing double edged blades and a holder for supporting such blades; and the object of the invention is to provide an improved type of blade holder and especially an improved guard plate for holders of this class whereby a free cutting edge is formed on each edge of the blade when mounted in the holder from points adjacent the ends or corners of the blade throughout the full length of said edges; a further object being to support a blade in connection with the holder in the manner set forth and to provide a plurality of transverse passages between the guard plate and blade and extending from one cutting edge to the other and into which the lather is free to pass in the operation or use of the razor, and further to the provision of supporting ribs arranged intermediate said passages or grooves upon which the blade is supported; a further object being to arrange the transverse grooves of the guard plate in alinement with the projecting guard fingers disposed at opposite side edges of the guard plate so as to arrange the upper surfaces of said fingers in spaced relation with respect to the cutting edges of the blade; and with these and other objects in view, the invention consists in a razor of the class and for the purpose specified which is simple in construction, efficient in use and which is constructed as hereinafter described and claimed.

Fig. 1 is a view of one side of a razor made according to my invention.

Fig. 2 is an enlarged, sectional detail view on the line 2—2 of Fig. 1, and showing only part of the construction.

Fig. 3 is a section on the line 3—3 of Fig. 2.

Fig. 4 is a plan view of the guard plate which I employ; and,

Fig. 5 is a perspective view of another form of guard plate which I employ.

In the drawing, 10 represents the usual handle member of what is known as a double edge safety razor blade holder, 11 the plate retaining cap, 12 the guard plate and 13 the double edge blade disposed between the guard plate and cap. The cap has a centrally threaded stud 14 adapted to be passed through apertures arranged in the blade 13 and guard plate 12 and in threaded engagement with a threaded aperture 10*a* at one end of the handle member 10. As in other razors of this class, the cap 11 has downwardly directed guide pins 15 which pass through other apertures in the blade 13 and plate 12 with the form of construction shown in Figs. 1 to 4 inclusive. However, with the guard plate 16 shown in Fig. 5 of the drawing, the pins 15 are not employed.

The present invention relates primarily to the construction of the guard plate 12—16. The opposite side edges of the plate 12, note Fig. 4, are recessed as seen at 17 to form a plurality of longitudinally spaced fingers 18, the outer and lower surfaces of which are rounded as seen at 19, note Fig. 2. The upper face of the plate 12 is also provided with a plurality of transverse recesses 20 arranged in alinement with all of the fingers 18 excepting the outer fingers at each end of the plate designated by the reference character 18*a*. These recesses form correspondingly spaced ribs 21 normally in the same arc-shaped path as the upper surfaces of the ends 22 of the guard plate so that in supporting and clamping the blade 13 upon the guard plate, said plate rests upon the ends 22 and the ribs 21, thus forming of the recesses 20 transverse channels extending from one side of the plate 12 to the other side thereof or in other words from one cutting edge of the blade 13 to the other, and further operating to support the cutting edges 13*a* of said blade intermediate the ends 22 above and in spaced relation from the upper surfaces of the fingers 18, thus providing an unobstructed passage beneath the cutting edges of the blade into which the lather is free to pass and extend into the channels formed by the recesses 20. At the same time, it will be apparent that the cutting edges are supported by the side edges of the cap 11 and the end portions of the ribs 21.

It will also be apparent that the corner portions of the cutting edges of the blade will be supported snugly upon the corners 18*a* of the guard plate 12, thus preventing the possibility of cutting or injury to the face with a shaving stroke, but permitting the use of the

corner portions in shaving as in other razors of the class under consideration.

In addition to providing means for the free passage of lather beneath the blade of the razor, the provision of the recesses or channels 20 also facilitates cleaning the razor by simply loosening the cap 11 and allowing water to flow transversely through the razor from one side edge to the other, the channels serving to break up and loosen the lather from the surfaces of the several parts of the razor and the ends of the ribs 21 serving to deflect the water downwardly through the spaces between the fingers 18 to thoroughly clean the razor.

The guard plate 16 shown in Fig. 5 of the drawing differs from the plate 12 simply in the provision of arc-shaped channels 23 at opposite sides of the central portion of said plate, the channels opening outwardly through the upper convex surface of the plate and being substituted for the side apertures through which the guide pins 15 pass. This type of plate is designed for use in conjunction with other types of blades. However, the upper surface of the plate 16 has the transverse recesses 20*a* similar to the recesses 20 and arranged in alinement with the spaced fingers 24 at opposite sides of the plate and forms between the blade and said plate the channels above referred to and also the free suspension of the cutting edges of the razor blade between the corners 16*a* of said plate. The recesses 20*a* form on the upper face of the guard plate raised ribs. The end ribs being wider and longer than the intermediate ribs and the upper surfaces of the fingers 24 being continuous with the bottom surfaces of said recesses.

It will also be understood that my invention may be applied to other types and forms of razor blade holders and other changes in and modifications of the construction herein shown and described may be made within the scope of the appended claims without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A guard plate for razors of the class described having a plurality of projecting members spaced longitudinally of opposite side edges of said plate and a plurality of recesses arranged transversely of the plate and in alinement with each of said projecting members.

2. A guard plate for razors of the class described having a plurality of projecting members spaced longitudinally of opposite side edges of said plate and a plurality of recesses arranged transversely of the plate and in alinement with each of said projecting members, said recesses forming a plurality of ribs spaced longitudinally of said plate intermediate said members and the upper faces of said ribs and the end portions of said plate being in alignment and of the same arcuate contour.

3. A guard plate for razors of the class described having a plurality of projecting members spaced longitudinally of opposite side edges of said plate and a plurality of recesses arranged transversely of the plate and in alinement with each of said projecting members, and said plate being arc-shaped in cross sectional form and the surfaces of the base of said recesses being continuous with the upper surfaces of said projecting members.

4. A guard plate for razors of the class described having a plurality of projecting members spaced longitudinally of opposite side edges of said plate and a plurality of recesses arranged transversely of the plate and in alinement with each of said projecting members, said plate being arc-shaped in cross sectional form and the surfaces of the base of said recesses being continuous with the upper surfaces of said projecting members, and the outer and lower edges of said projecting members being rounded.

5. A guard plate for razors of the class described, said plate being arc-shaped in cross sectional form, the convex surface of said plate having a plurality of longitudinally spaced transverse grooves, the side edges of the plate having longitudinally spaced recesses forming correspondingly spaced projecting members, said projecting members being arranged in alinement with each of said transverse grooves.

6. A guard plate for razors of the class described having a plurality of projecting members spaced longitudinally of opposite side edges of said plate and the upper face of said plate having a plurality of recesses in registering alignment with the respective projecting members.

7. A razor of the class described comprising a guard plate, a cap movable toward and from the guard plate and adapted to clamp a razor blade between the same and said plate, the side edges of the guard plate having longitudinally spaced, projecting fingers, and the upper surface of said plate having longitudinally spaced recesses arranged in alignment with each of said fingers, and means maintaining the blade edges in spaced relation to said fingers.

8. A razor of the class described comprising a guard plate, a cap movable toward and from the guard plate and adapted to clamp a razor blade between the same and said plate, the side edges of the guard plate having longitudinally spaced, projecting fingers, and the upper surface of said plate having longitudinally spaced recesses arranged in alignment with each of said fingers, means maintaining the blade edges in spaced relation to

said fingers, and the upper surfaces of said fingers being continuous with the lower surfaces of said recesses.

9. A razor of the class described comprising a guard plate, a cap movable toward and from the guard plate and adapted to clamp a razor blade between the same and said plate, the side edges of the guard plate having longitudinally spaced, projecting fingers, and the upper surface of said plate having longitudinally spaced recesses arranged in alignment with each of said fingers, the upper surfaces of said fingers being continuous with the lower surfaces of said recesses to form between a blade arranged upon that part of said plate intermediate the recesses a plurality of transverse channels, and a space extending longitudinally of and below each of the cutting edges of said blade.

10. A razor of the class described comprising a guard plate, a cap movable toward and from the guard plate and adapted to clamp a razor blade between the same and said plate, the side edges of the guard plate having longitudinally spaced, projecting fingers, and the upper surface of said plate having longitudinally spaced recesses arranged in alignment with each of said fingers, the upper surfaces of said fingers being continuous with the lower surfaces of said recesses to form between a blade arranged upon that part of said plate intermediate the recesses a plurality of transverse channels, a space extending longitudinally of and below each of the cutting edges of said blade, and the corner portions of the guard plate being disposed above said fingers to support the corner portions of the blade.

11. A guard plate for razors of the class described having a plurality of projecting fingers spaced longitudinally of opposite side edges of said plate, the upper face of said plate having a plurality of recesses registering with each of said projecting members, said recesses forming on the upper face of said plate and inwardly of and intermediate said fingers, upwardly directed ribs forming when a blade is mounted on the ribs of said plate, longitudinal recesses at each side of the plate outwardly of said ribs and above said fingers, over which the cutting edges of the blade are arranged.

12. A guard plate for razors of the class described having an arc-shaped upper surface, recessed side edges forming between the ends of said plate, spaced, guard fingers, the upper surfaces of which are arranged below the upper surface of said plate, and the upper surface of said plate having recesses arranged in alignment with the respective, projecting fingers, to form between said plate and a blade arranged thereon, a plurality of transverse channels in alignment with said fingers, and longitudinal recesses at each side of the plate below the edges of the blade and above said fingers, and in communication with said channels.

In testimony that I claim the foregoing as my invention I have signed my name this 19th day of March, 1930.

ERIC W. ERICSSON.