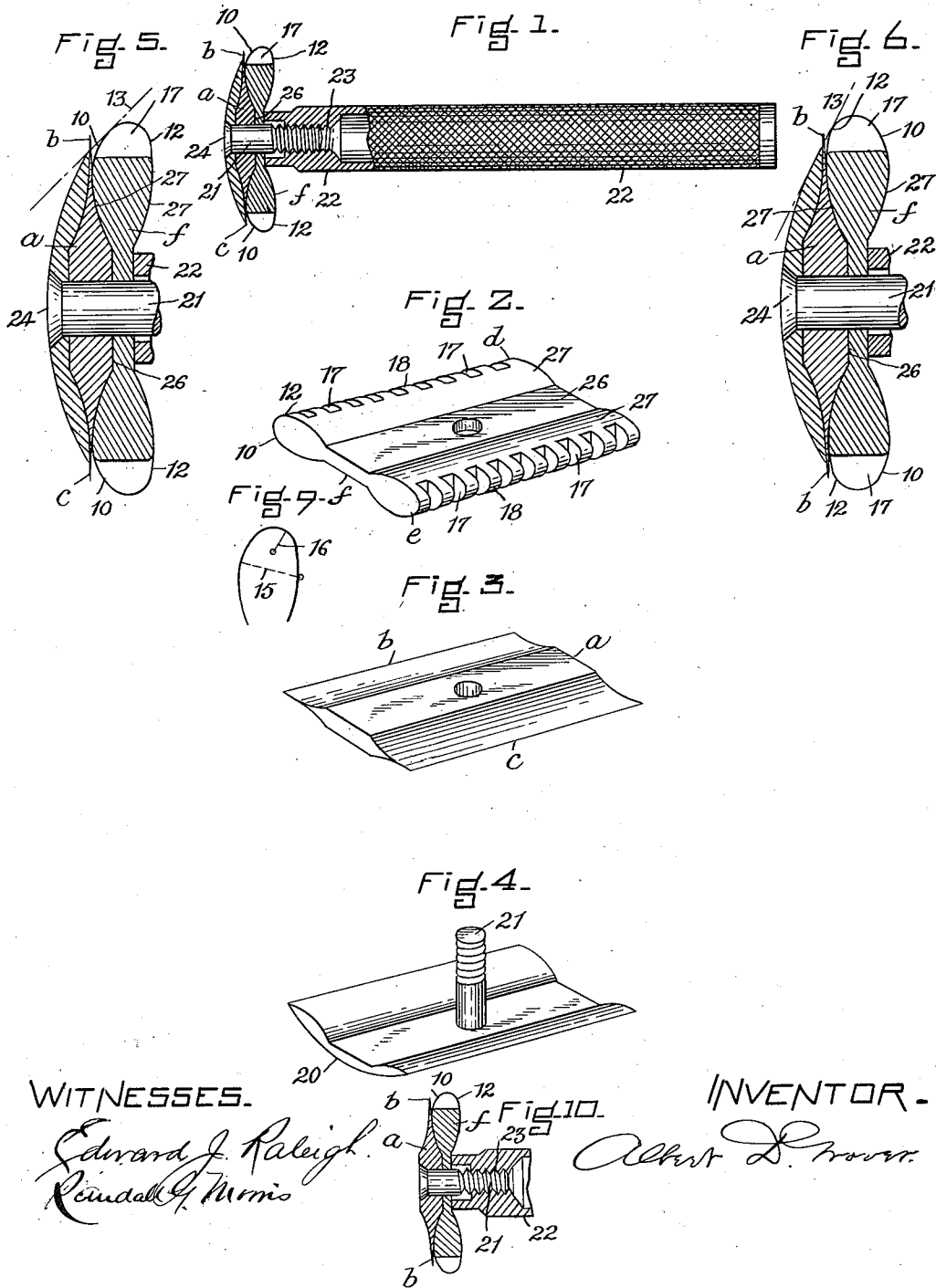


A. D. GROVER.
SAFETY RAZOR.
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1,008,966.

Patented Nov. 14, 1911.



WITNESSES.

Edward J. Raleigh
Richard C. Morris

INVENTOR.

Albert D. Grover

UNITED STATES PATENT OFFICE.

ALBERT D. GROVER, OF MALDEN, MASSACHUSETTS, ASSIGNOR TO SOCIÉTÉ GÉNÉRALE DE COUTELLERIE ET ORFÈVREURIE, OF PARIS, FRANCE, A CORPORATION OF FRANCE.

SAFETY-RAZOR.

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To all whom it may concern:

Be it known that I, ALBERT D. GROVER, a citizen of the United States, residing in Malden, county of Middlesex, and State of Massachusetts, have invented an Improvement in Safety-Razors, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to a razor of that class known as safety razors, and has for its object to provide a razor in which a rigid or inflexible blade of steel of sufficient body to enable it to be tempered, may be used and obtain shaves of different degrees of closeness. To this end, I employ a guard member capable of being reversed and against either face of which the rigid steel blade is firmly held or secured, and provide the edges of the guard with surfaces of different shapes which cooperate with the cutting edge of the blade so as to uncover more or less of the same according to the kind of shave desired, namely, close, medium or coarse. The rigid blade may be flat or concaved, and if desired, said blade may be located between the guard and a clamping member, as will be described. These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 represents in elevation and section a safety razor embodying this invention. Fig. 2 is a perspective of the guard shown in Fig. 1. Fig. 3, a perspective of the rigid blade shown in Fig. 1. Fig. 4, a perspective of the clamping member shown in Fig. 1. Figs. 5 and 6, sectional details on an enlarged scale of the razor shown in Fig. 1. Fig. 7, a detail of the guard shown in Fig. 1, and Fig. 8, a modification of the razor shown in Fig. 1 to be referred to.

Referring to the drawing, *a* represents one form of rigid steel blade comprising a double concaved blade having the cutting edges *b*, *c*, which cooperate with the opposite faces *d*, *e*, of a reversible guard member *f*.

In accordance with this invention, the guard member has its opposite faces shaped to conform to the shape of the blade *a*, so as to firmly support the blade except at the cutting edge, and said guard member is provided with the sides *d*, *e*, whose opposite surfaces 10—12, are of different shapes, so

that when one surface of the guard member, as 10, is arranged to engage the blade, a certain amount of the cutting edge of the blade will project beyond a plane 13 tangential to one surface of the side of the guard member and passing through the cutting edge of the blade (see Fig. 5), and when the other surface 12 of the guard member is arranged adjacent to the blade, the cutting edge of the blade will project beyond the plane 13 a less distance (see Fig. 6). In the first case, represented in Fig. 5, the cutting edge of the blade will effect a close shave, and in the second case, represented in Fig. 6, the cutting edge of the blade will effect a coarser shave. The surfaces 10—12 of the sides of the guard member may be of different curvatures, the surface 10 having a curvature whose radius is represented by the line 15, Fig. 7, and the surface 12 having a curvature whose radius is shorter and is represented by the line 16. The faces *d*, *e* of the guard member may and preferably will be provided with transverse slots 17, which subdivide the same into fingers 18 having the surfaces 10—12.

The blade *a* may be interposed between the guard *f* and a clamping member 20, and said parts may be secured in fixed relation to one another by a screw 21 extended through them, and into a handle 22 having a threaded socket 23 with which the screw 21 engages, after the manner represented in Fig. 1. The clamping member 20 may and preferably will be provided with a countersunk opening 120 for the reception of the head 24 of the screw 21.

In Fig. 1, the guard member is shown as provided with faces, each of which is composed of a straight surface 26 between curved surfaces 27 so as to conform to the shape of the concaved blade *a*, but it is not desired to limit the invention to any particular shape of blade, as the invention is applicable to blades of other shapes.

The clamping member 20 may be dispensed with and the blade secured in fixed relation to the guard member by the screw 21, as represented in Fig. 8.

From the above description, it will be seen that the blade is of rigid or inflexible steel and of sufficient body to enable it to be tempered, and may in fact be of the same quality as the ordinary or old fashioned razor, while the guard member may be shaped at its sides

so as to expose different lengths of the cutting edges of the blade, so as to obtain a shave of any desired degree of closeness. In the present instance, the fingers 18 are 5 shaped so as to obtain the same kind of a shave with either cutting edge, but if desired, the fingers 18 on one side cooperating with one cutting edge may be shaped to obtain a coarse or medium shave while those 10 on the other side may be shaped to obtain a fine shave with the other cutting edge without necessitating reversal of the guard member.

The blade and guard member may and 15 preferably will be made double as herein shown, but it is not desired to limit the invention in this respect, as a blade having a single cutting edge and a guard member having one set of fingers may be used to advantage. 20

Claims:

1. In a razor of the class described, in combination, a rigid blade capable of being tempered, a reversible guard cooperating 25 with said blade and having its edge which cooperates with the cutting edge of the blade provided on opposite sides thereof with surfaces of different shapes to uncover different amounts of the cutting edge of the blade by 30 reversal of the guard, and means to secure said blade and guard in fixed relation to either face of said guard, substantially as described.

2. In a razor of the class described, in 35 combination, a rigid blade capable of being tempered, a reversible guard cooperating with said blade and having its edge which cooperates with the cutting edge of the blade provided with opposite surfaces of different 40 shapes to uncover different amounts of the cutting edge of the blade by reversal of the guard, a clamping member between which and the guard said blade is interposed, and means to secure said parts in fixed relation 45 to one another, substantially as described.

3. In a razor of the class described, in combination, a double concaved rigid blade, capable of being tempered and provided with

a hole extended through it between the concaved portions thereof, a guard cooperating 50 with said blade and provided with curved surfaces conforming in shape to the concavities of the said blade and with an intermediate substantially straight portion having a hole or opening through it, a handle provided with a threaded socket, and a screw 55 extended through the holes in said blade and guard and into said threaded socket, substantially as described.

4. In a razor of the class described, in 60 combination, a rigid blade having cutting edges on its opposite sides, a reversible guard member cooperating with said blade and having fingers cooperating with the cutting edges, said fingers being shaped on their opposite surfaces to uncover different amounts 65 of said cutting edges when the guard is reversed, a handle, and means to secure said blade and guard to said handle in fixed relation to each other, substantially as described. 70

5. In a razor of the class described, a reversible guard plate adapted to cooperate with the cutting edge of the blade, one end portion of the plate being provided on opposite faces thereof with surfaces of different 75 shapes whereby reversal of the plate with respect to the blade will provide different distances between the end portion of the plate and the cutting edge of the blade.

6. In a razor of the class described, a reversible guard plate adapted to cooperate 80 with a blade having two cutting edges, the end portions of the said plate being provided on the opposite faces thereof with surfaces of different shapes whereby reversal of the 85 guard with respect to the blade will provide different distances between each end portion of the plate and each cutting edge of the blade.

In testimony whereof, I have signed my 90 name to this specification in the presence of two subscribing witnesses.

ALBERT D. GROVER.

Witnesses:

JAS. H. CHURCHILL,
J. MURPHY.