No. 842,928. PATENTED FEB. 5, 1907.

A. A. WARNER.

SAFETY RAZOR.

APPLICATION FILED FEB. 24, 1906.

Fig. 1.

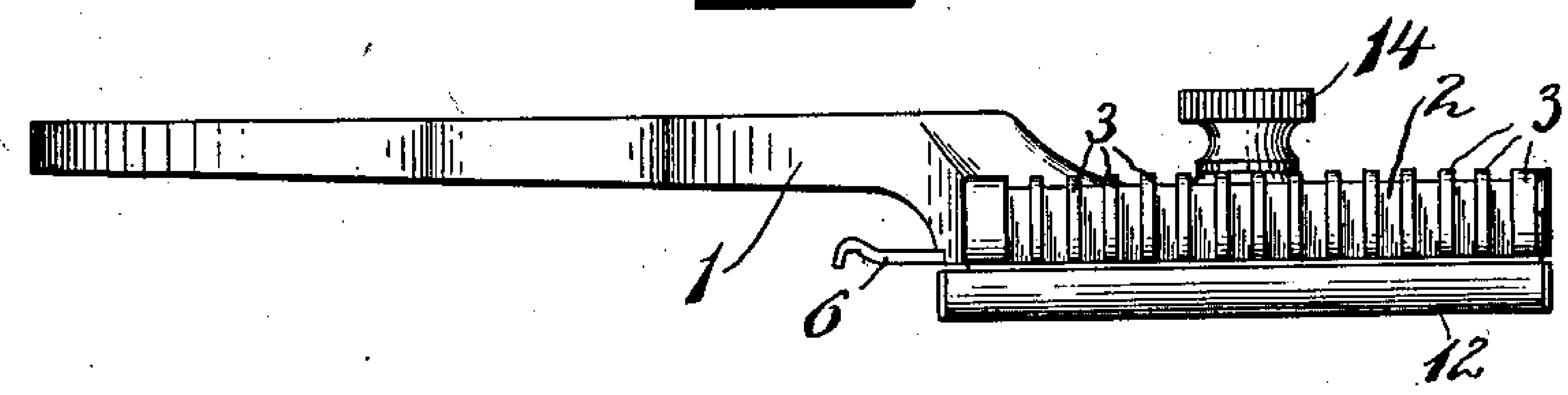


Fig. 7.

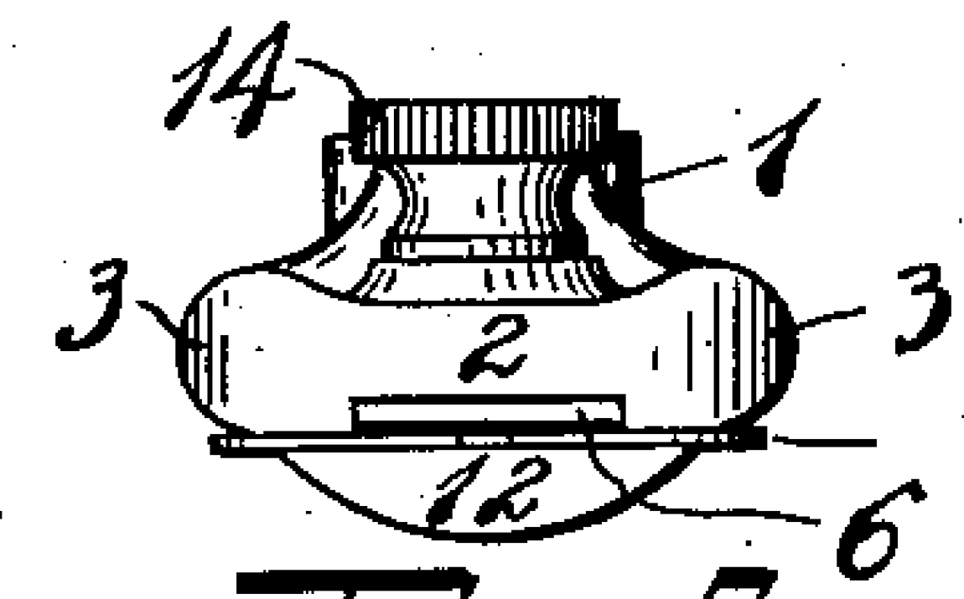


Fig. 8.

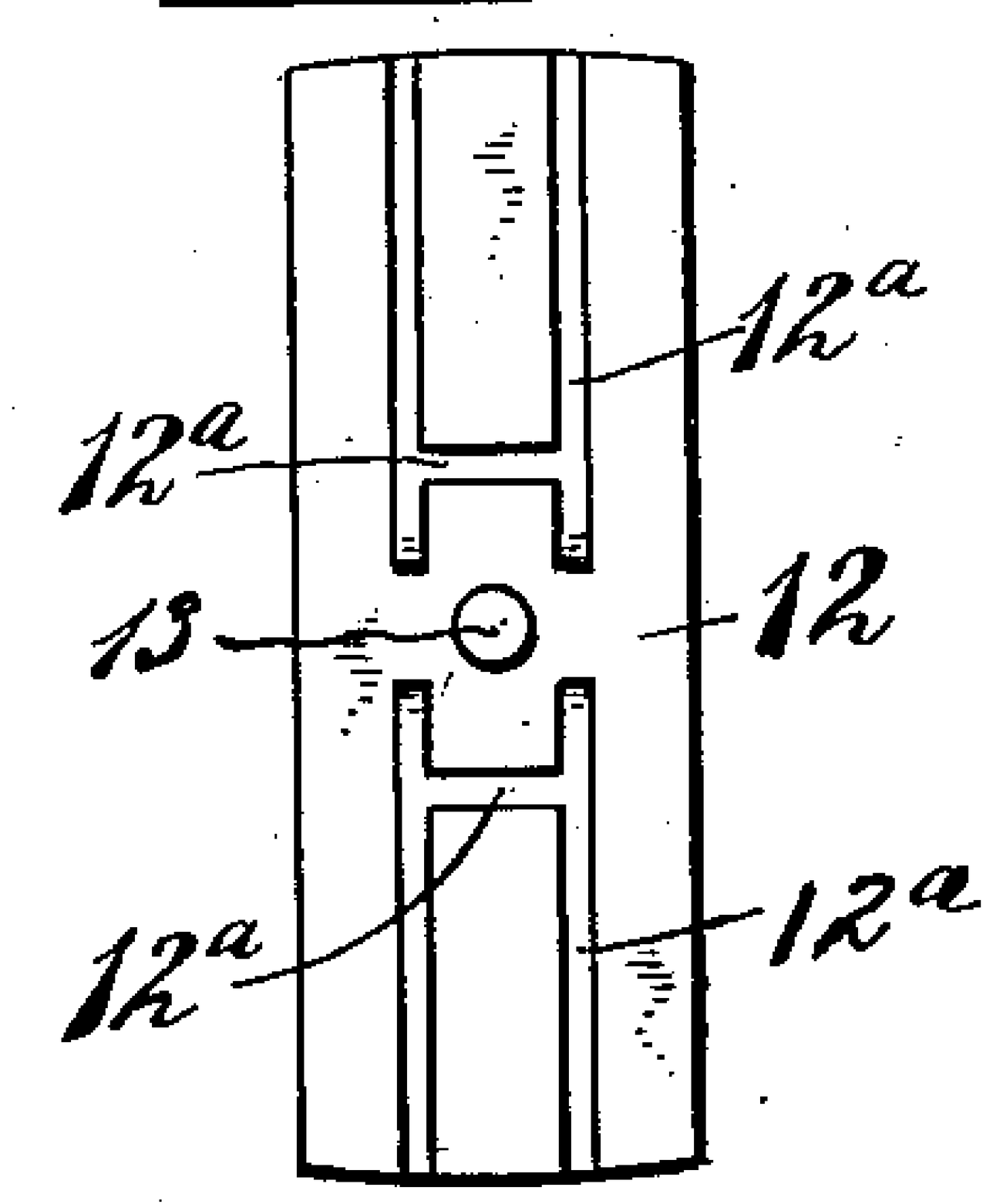


Fig. 2.

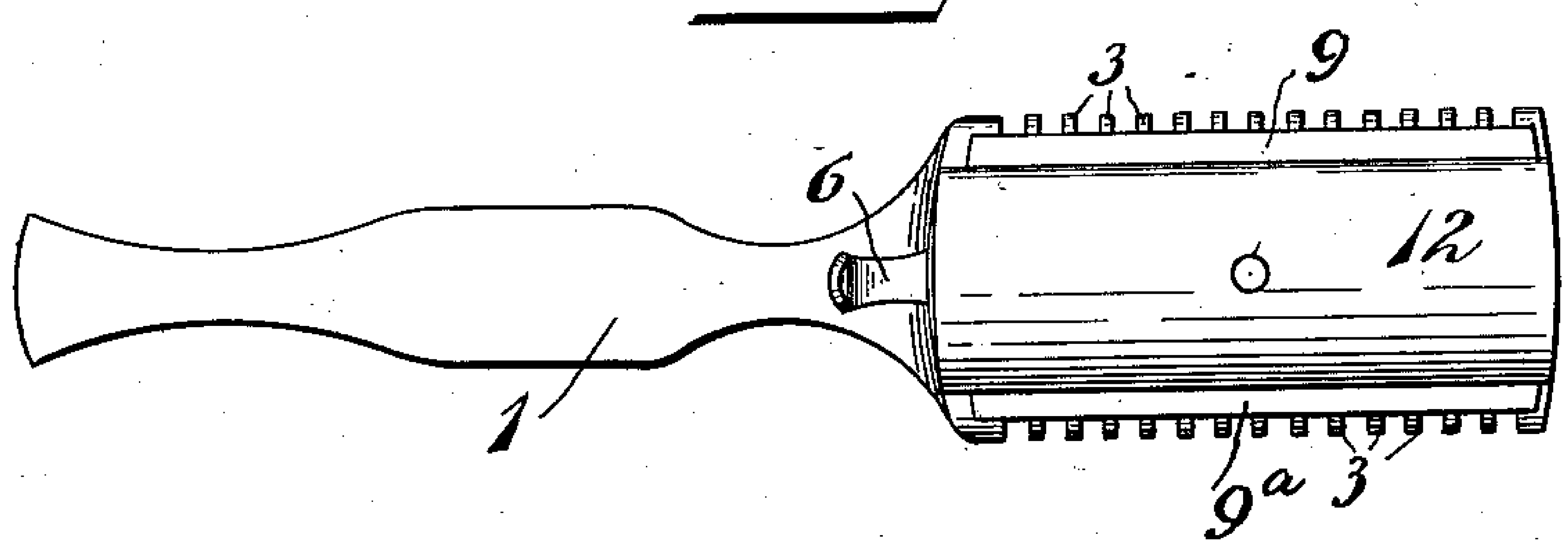


Fig. 3.

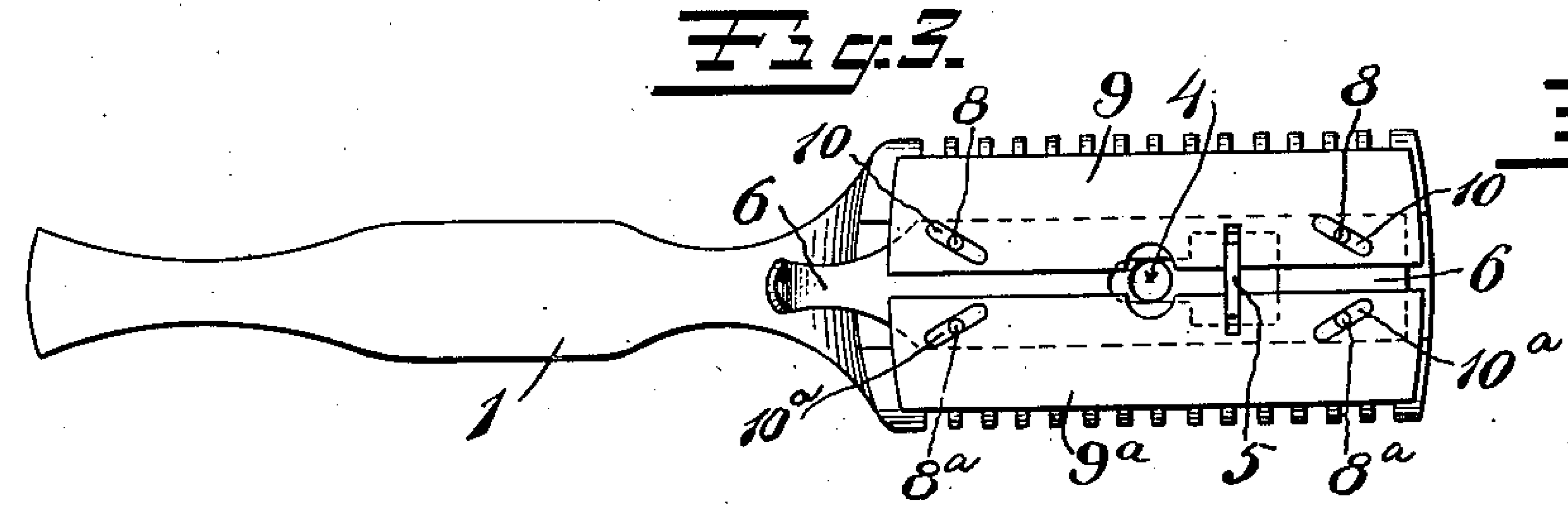


Fig. 9.

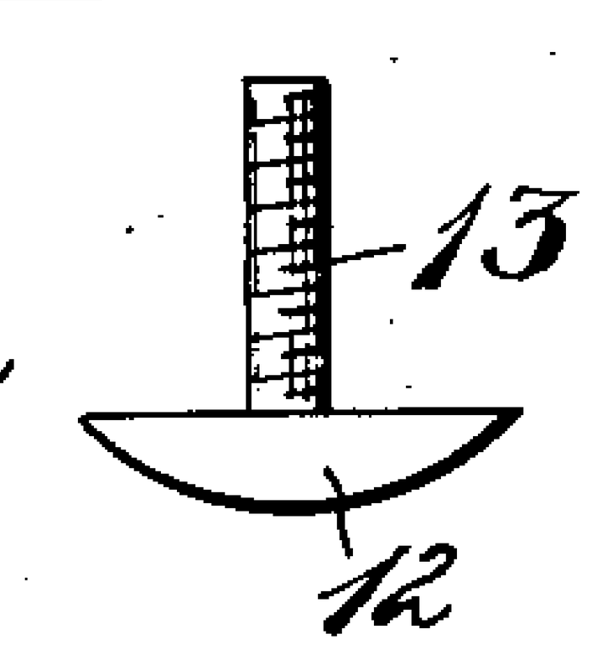


Fig. 4.

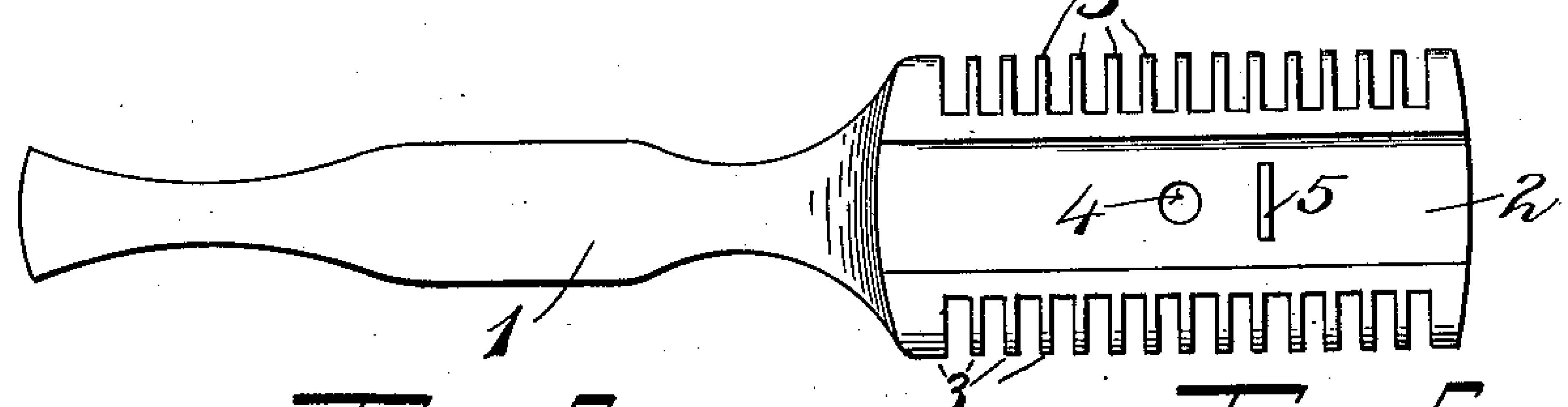


Fig. 5.

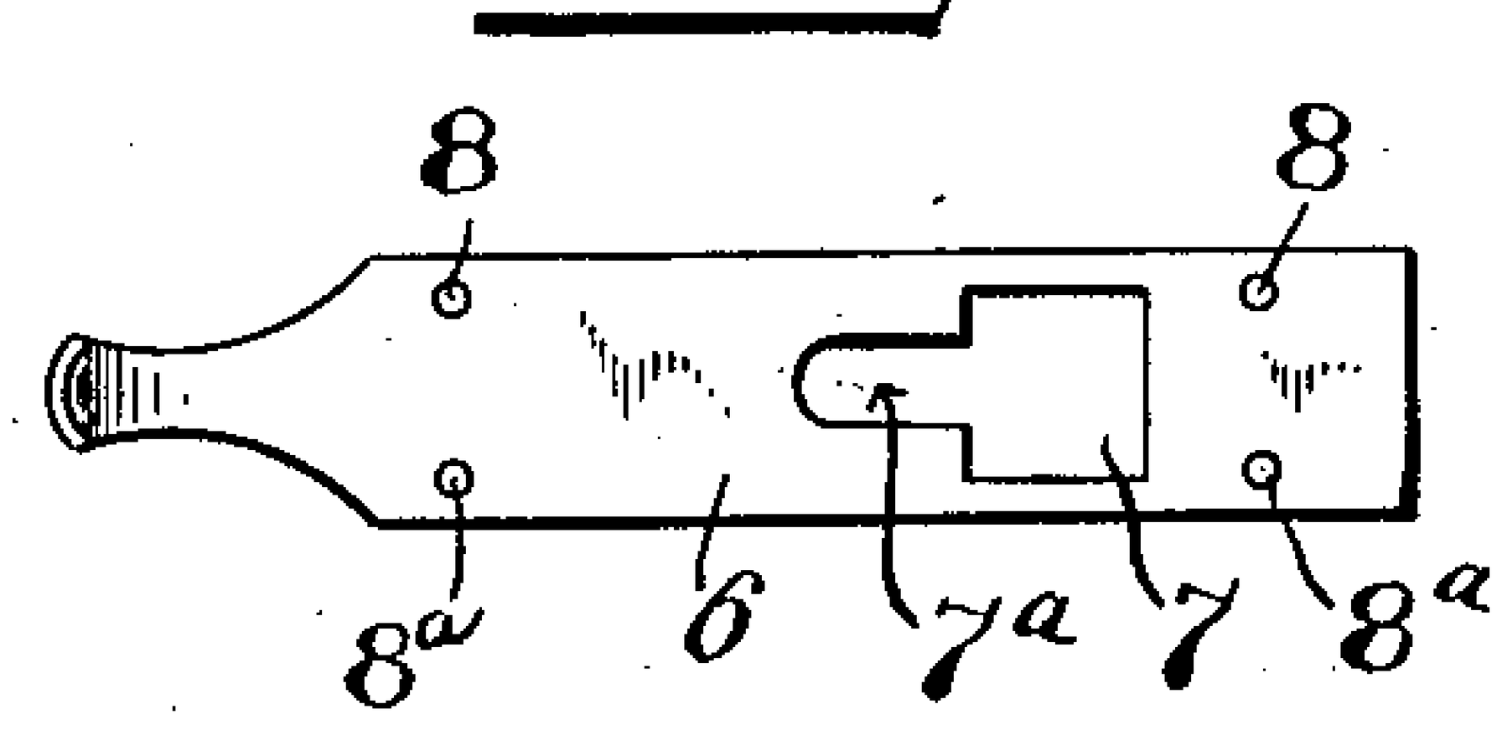
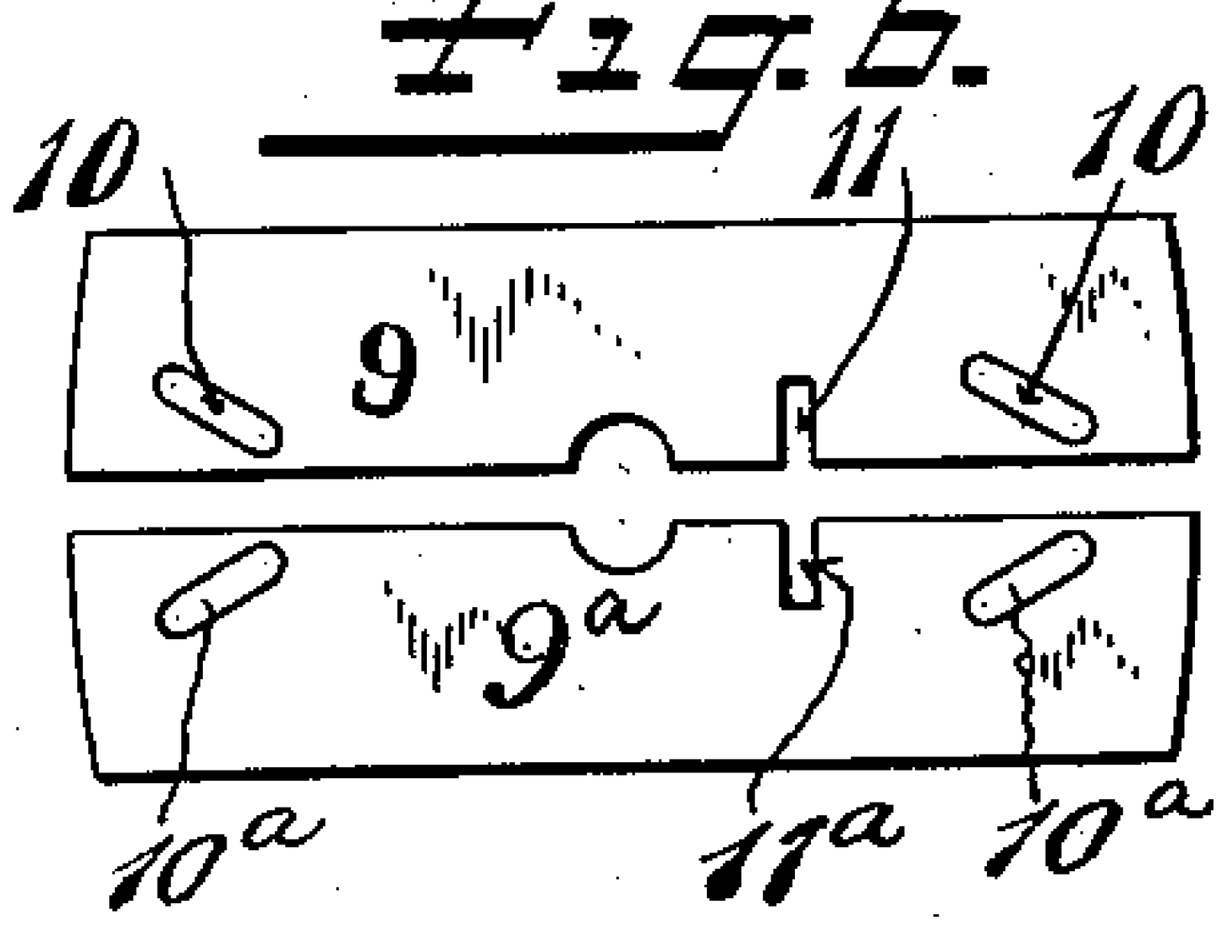


Fig. 6.



Witnesses

Chas. A. Pearl

Robt. S. Allyn

Inventor

ALONZO A. WARNER

By his Attorneys

Bartlett Brownell & Mitchell

UNITED STATES PATENT OFFICE.

ALONZO A. WARNER, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO LANDERS, FRARY & CLARK, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

SAFETY-RAZOR.

No. 842,928. Specification of Letters Patent. Patented Feb. 5, 1907.

Application filed February 24, 1906. Serial No. 302,697.

To all whom it may concern:

Be it known that I, ALONZO A. WARNER, a citizen of the United States, residing at New Britain, county of Hartford, Connecticut, have invented certain new and useful Improvements in Safety-Razors, of which the following is a full, clear, and exact description.

My invention relates to improvements in shaving appliances, and particularly to "safety razors," so called.

The object of the invention is to provide simple and effective means whereby the cutting edge of the blade or blades may be adjusted relatively to the guard portion. The construction comprises but few parts, all of which are easily assembled for use or separated for cleaning.

In the drawings, Figure 1 is a side elevation of the razor, all parts being assembled. Fig. 2 is a view of the under side thereof. Fig. 3 is a view of the under side with the bottom member detached and removed. Fig. 4 is a view of the under side of the handle and guard member, all of the other parts being detached. Fig. 5 is a plan view of the adjusting device. Fig. 6 is a plan view of the blades. Fig. 7 is an end elevation of the end device as shown in Fig. 1. Fig. 8 is a view of the top side of the bottom plate. Fig. 9 is an end elevation thereof.

1 is the handle, formed of any suitable material—such as hard wood, rubber, or ivory.

2 is what I will term the "guard member" or "backing member." This part is preferably formed integrally of the handle 1 and may be of the same material. Notches are cut in this backing member 2 to form the individual guard members or tongues 3 3.

4 is a central passage through the backing member 2.

5 is an abutment on the backing member 2. This abutment stands above the surface of said member and extends transversely relatively thereto. As best seen in Figs. 4 and 7, the guard or backing member has a longitudinal cavity or recess in its lower side to receive a blade-adjusting member 6. This adjusting member has an elongated opening or recess 7 to afford clearance for the abutment 5, and this opening is of such length as to permit the adjusting member 6 to be shifted to and fro. The clearance-passage 7 is also extended slightly, as at 7^a, to afford clearance for the central screw-stump later described.

8 8 and 8^a 8^a are guide-pins on the adjusting member 6.

9 and 9^a are blades, and these blades are supported on the adjuster 6 and the adjacent edges of the guard or backing member 2. These blades are provided with cam-grooves 10 10 and 10^a 10^a, respectively. These grooves 10 10 and 10^a 10^a are adapted, respectively, to the guide-pins 8 8 and 8^a 8^a, respectively.

11 11^a are notches formed in the opposite inner edges of said blades 9 9^a, said notches being of sufficient size to afford clearance of the abutment 5. The width of each of said notches is, however, only very slightly greater than the width of said abutment, so that the blades cannot be shifted longitudinally relatively to the backing 2.

As shown in Fig. 3, the blades stand in an intermediate position of adjustment. If the adjusting member 6 is moved to the right, the action of the pins 8 8 8^a 8^a will be to expand the blades and push the cutting edge outwardly relatively to the guard-tongues 3. If the adjusting member 6 is moved to the left, the action will be reversed, the blades 9 9^a being drawn back or toward each other, exposing less of the edge for cutting purposes.

12 is the bottom or clamping plate, the lower side of which forms a smooth unbroken bearing or contact surface for the face, while the upper surface of the same bears against the blades 9 9^a and holds them tightly against their seats.

13 is a screw-stump carried by the plate 12 and passing through the perforation 4 in guard member 2. A thumb-nut 14 on stump 13 affords means by which the parts may be clamped together when the proper adjustment of the blades has been effected.

In the preferred form of construction the abutment 5 and the pins 8 8^a are of such length as to project entirely through the blades 9 9^a, and hence suitable clearance spaces or grooves 12^a are desirable in the top side of the clamping-plate 12.

From the foregoing it will be seen that to adjust the blades it is merely necessary to let up slightly on the thumb-nut 14, whereupon the blades are freed sufficiently to permit the adjusting device 6 to be moved to or

fro. By this movement the cutting edge of the blades will be projected to the desired degree. By again setting down the thumb-nut 14 all the parts are rigidly clamped together.

What I claim is—

1. In a safety-razor, a guard or backing member, guard-tongues at opposite edges thereof, two independent blades providing cutting edges adjacent to the guard members at each edge of the backing member, means for moving simultaneously said blades toward or away from each other for causing said cutting edges to project more or less, as desired, relatively to the guard-edges, said means consisting of an adjusting member positioned between the guard member and clamping-plate and provided with a series of pins engaging in slots in each of said blades.

2. In a safety-razor, a backing or guard member, an abutment thereon and extending transversely thereof, a blade notched to engage said abutment and laterally movable relatively to said backing member, an adjusting device longitudinally movable relatively to said backing member, a guide-pin carried by said adjusting device, a cam-groove in said blade into which said guide-pin projects, all arranged whereby when the adjusting member is moved longitudinally the blade will be moved laterally to expose more or less of its cutting edge, and means for clamping said parts rigidly in any desired position of adjustment.

3. In a safety-razor, a handle having a backing portion with guard-teeth arranged along opposite edges and disposed on opposite sides of the longitudinal axis of the handle, and a longitudinal groove, an adjusting member located in said groove, and means for clamping a blade to the backing portion.

ALONZO A. WARNER.

Witnesses:
WM. W. PEASE,
B. F. WILLIAMS.