

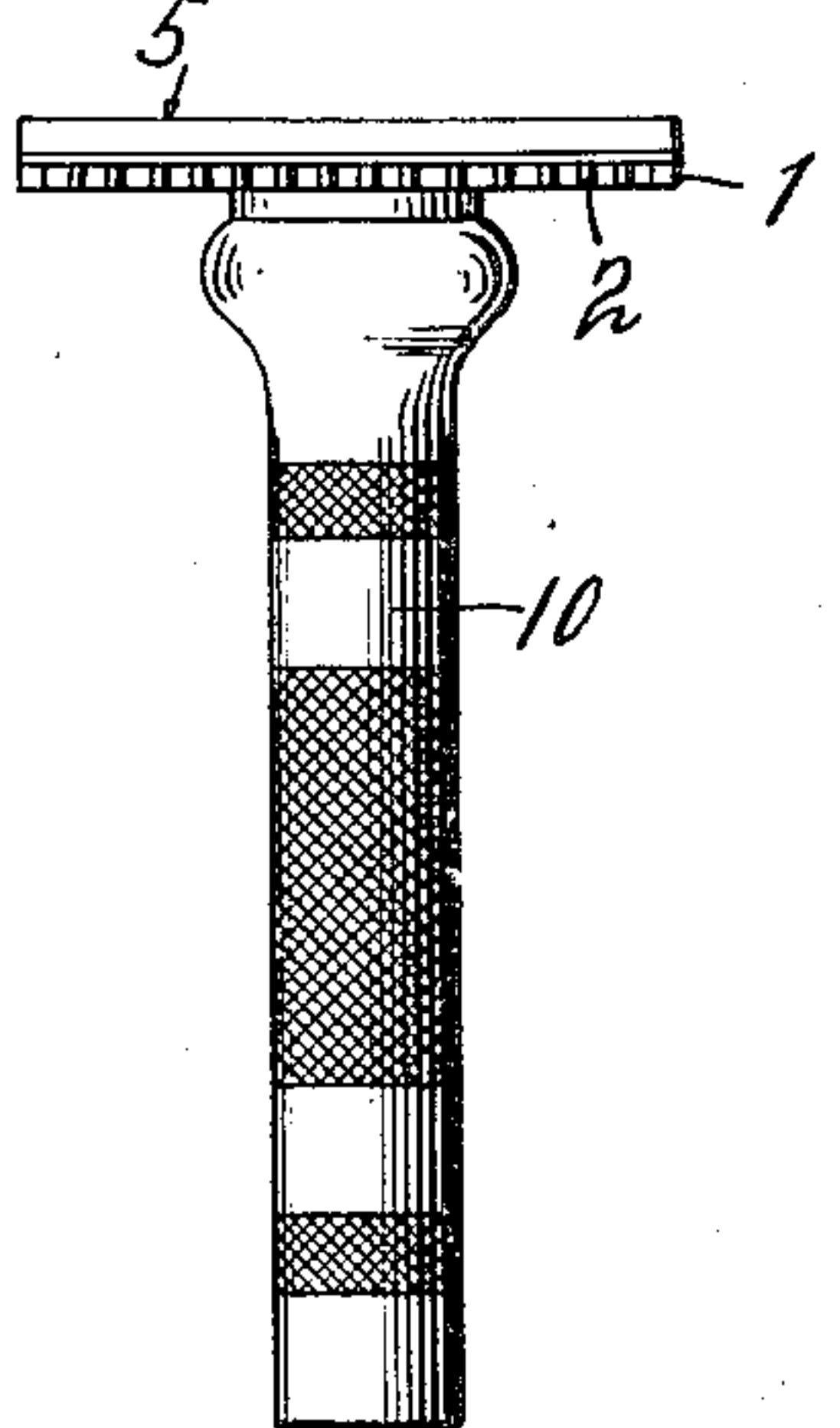
H. H. BOYCE.  
SAFETY RAZOR.

APPLICATION FILED JULY 17, 1907. RENEWED FEB. 16, 1909.

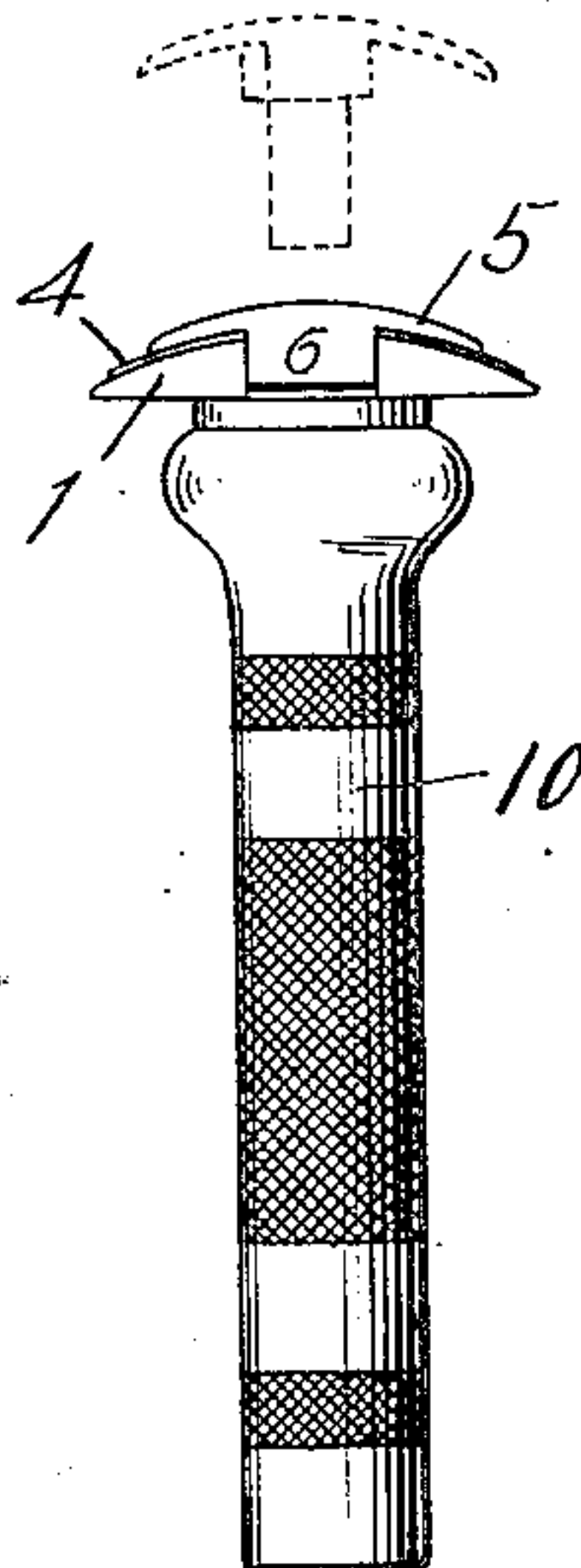
917,532.

Patented Apr. 6, 1909.

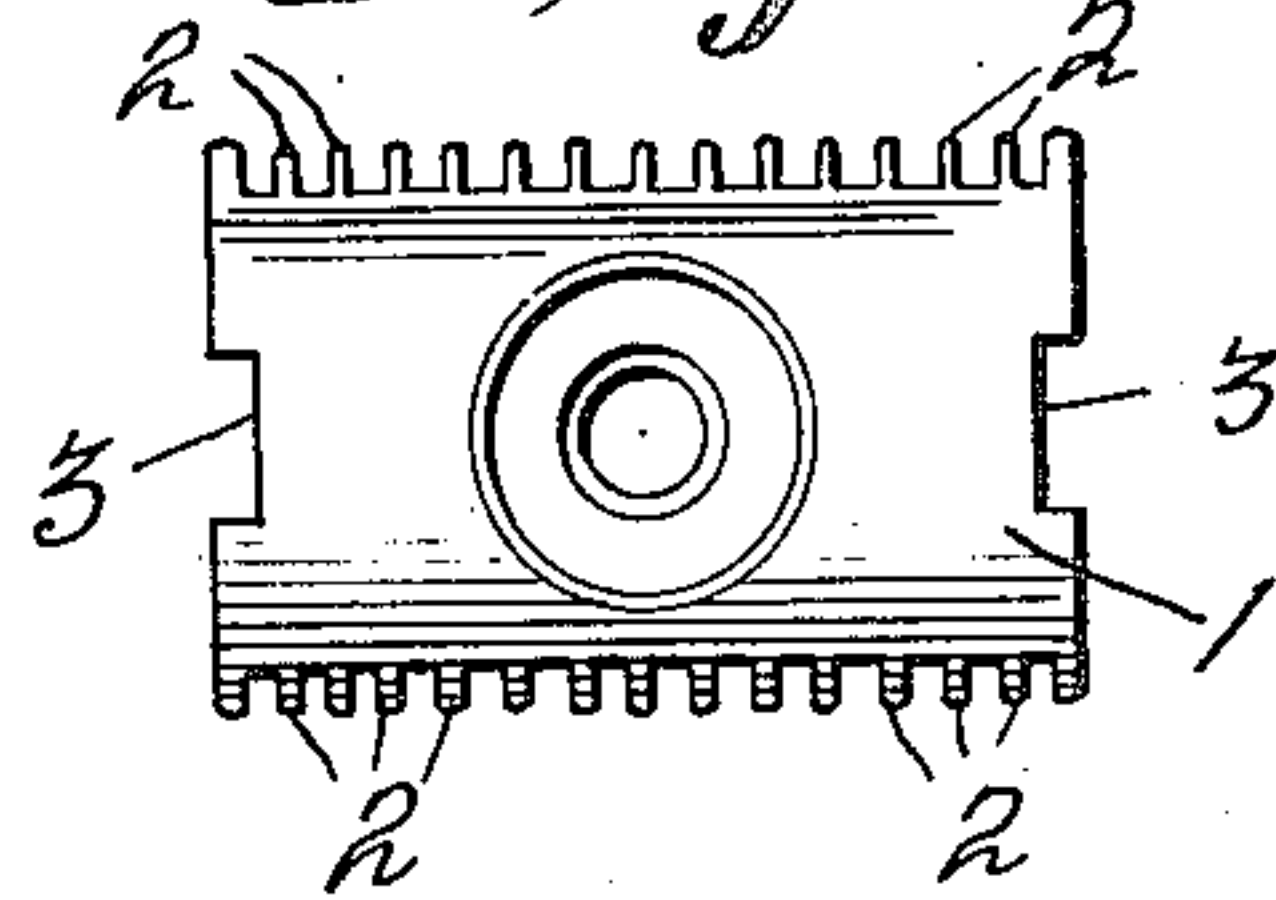
*Fig. 1.*



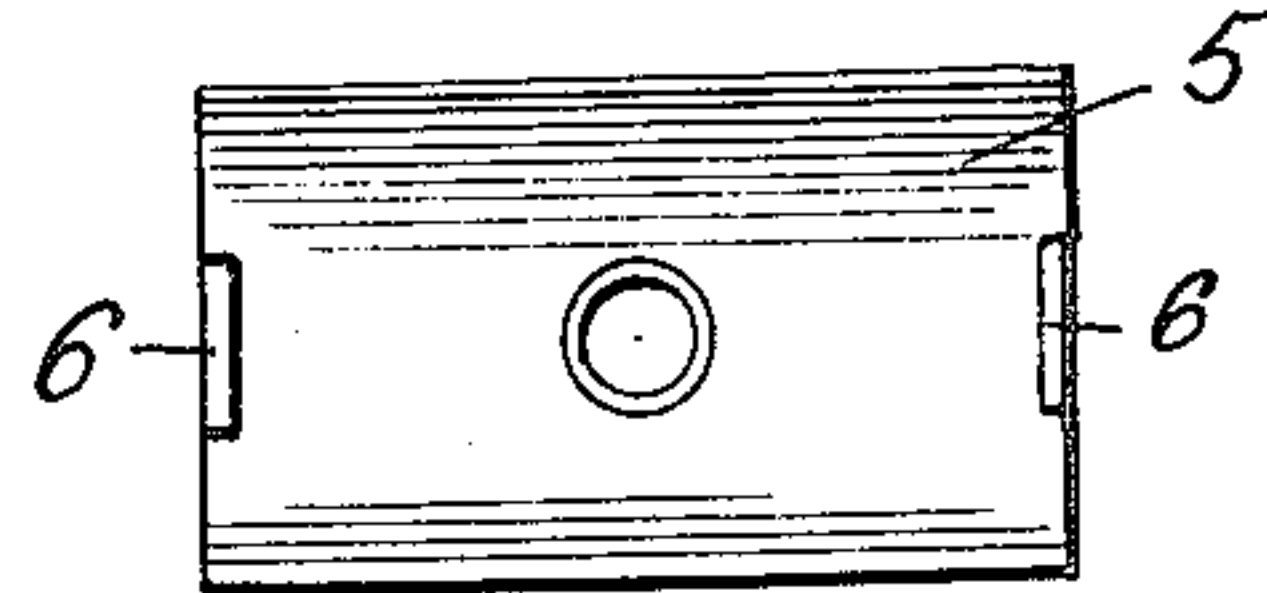
*Fig. 2.*



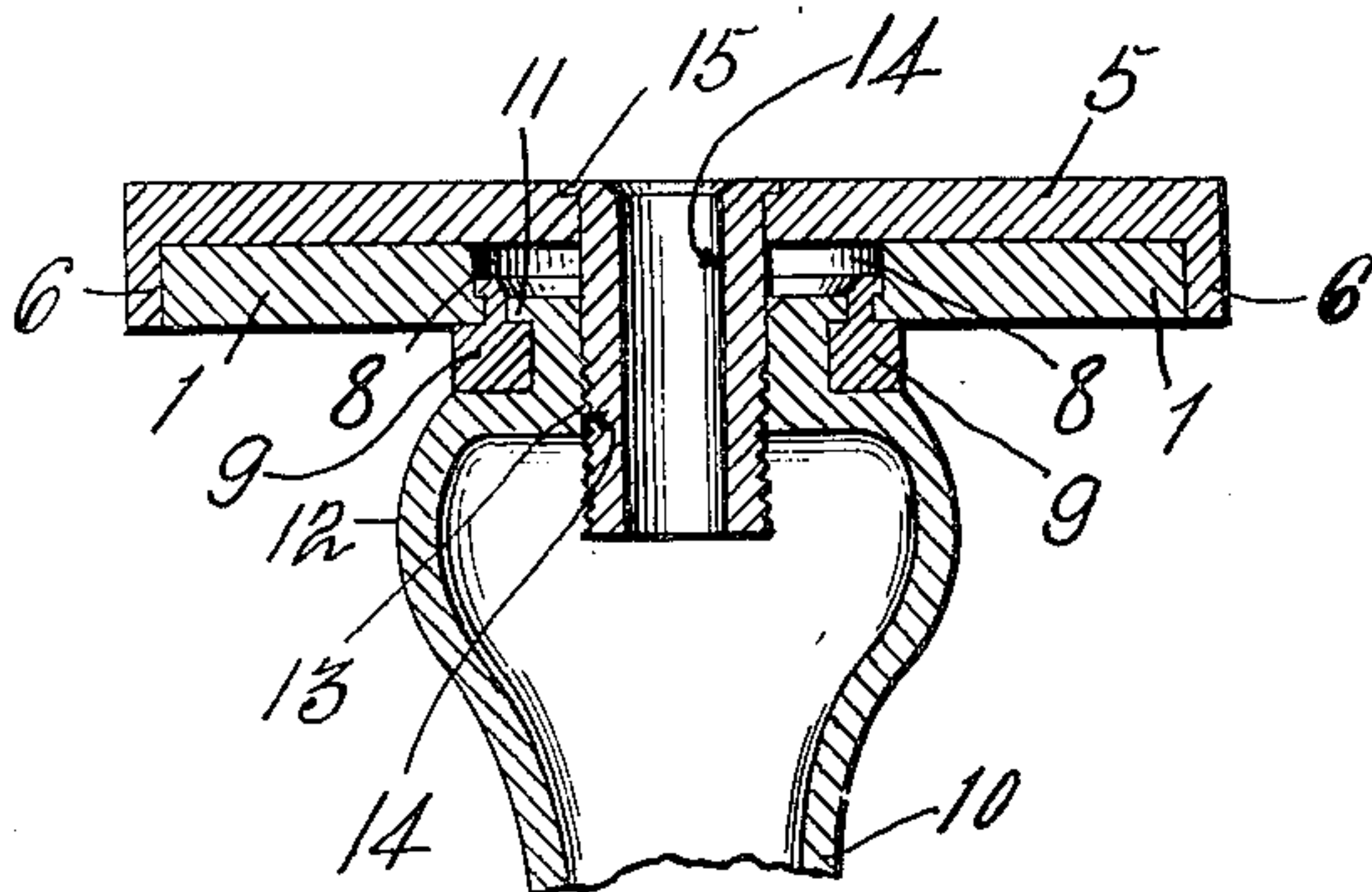
*Fig. 3.*



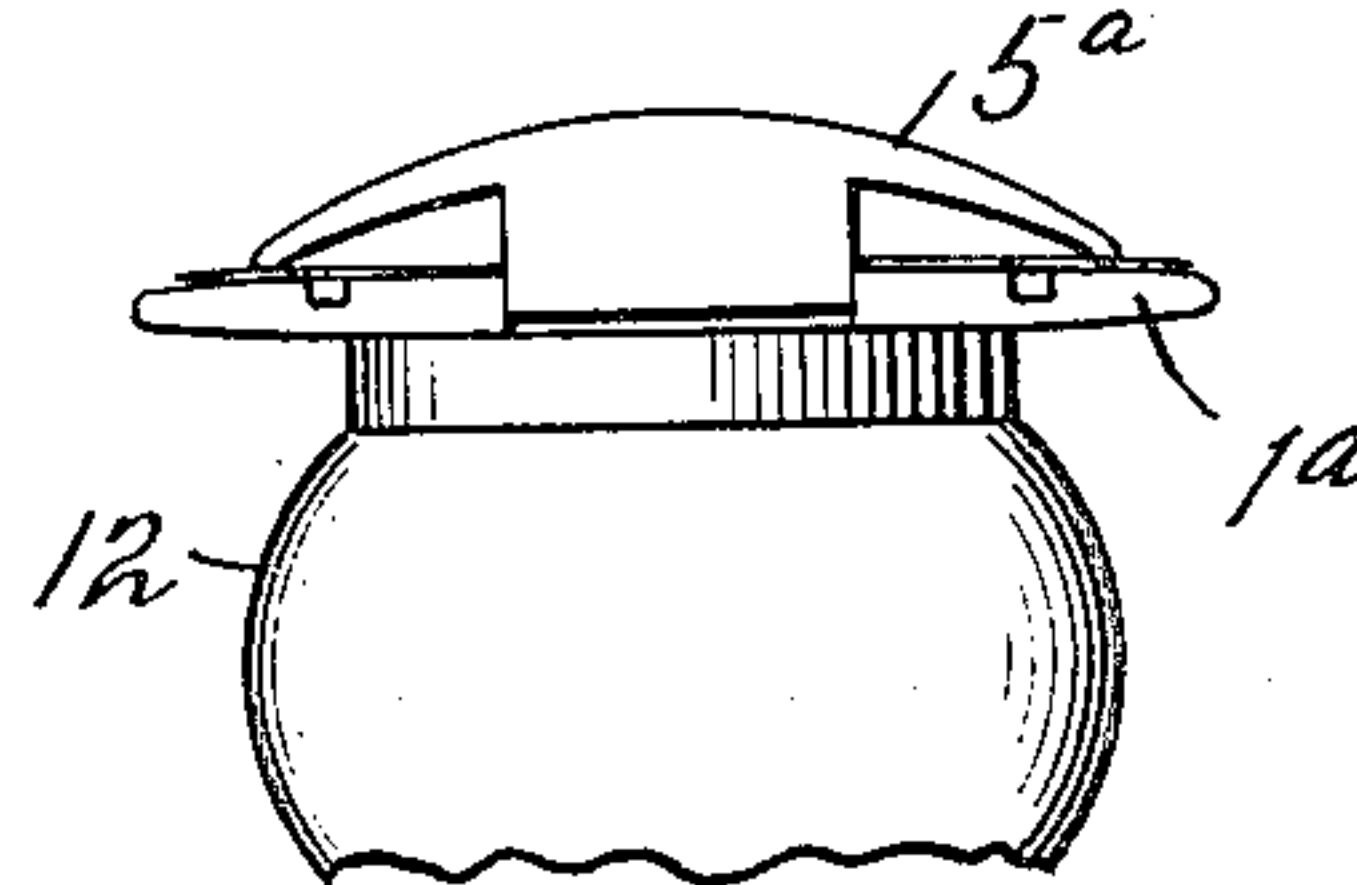
*Fig. 4.*



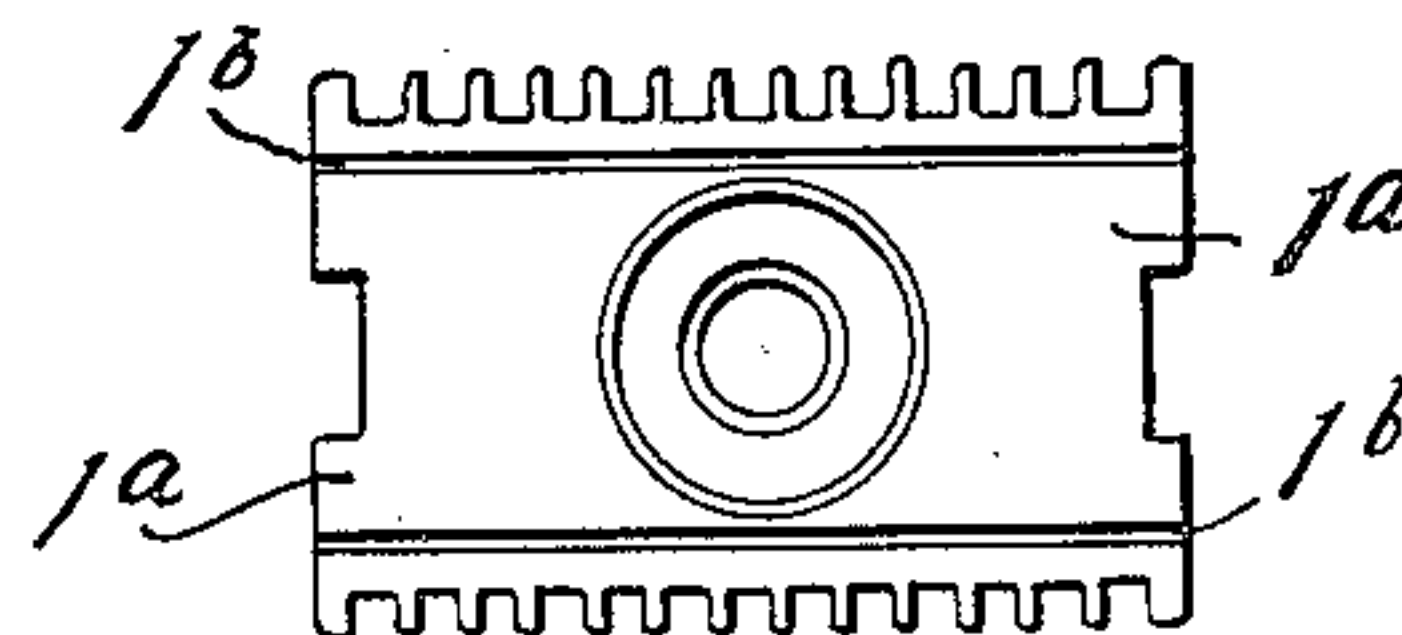
*Fig. 5.*



*Fig. 6.*



*Fig. 7.*



Witnesses:  
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Charles A. Schuler.

Harrison H. Boyce  
Inventor

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# UNITED STATES PATENT OFFICE.

HARRISON H. BOYCE, OF NEW YORK, N. Y., ASSIGNOR TO GILLETTE SAFETY RAZOR COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

## SAFETY-RAZOR.

No. 917,532.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed July 17, 1907, Serial No. 334,134. Renewed February 16, 1909. Serial No. 478,333.

*To all whom it may concern:*

Be it known that I, HARRISON H. BOYCE, a citizen of the United States, residing in the city of New York, borough of Manhattan, county and State of New York, have invented certain new and useful Improvements in Safety-Razors, of which the following is a full, clear, and exact specification.

This invention relates generally to safety razors and particularly to razors of the flat, thin blade type. As usually constructed, razors of this type comprise four principal parts: viz., a cap, a guard, a handle, and a rotary member independent of the handle for securing the guard and cap together so as to clamp the thin, flat blade between them.

The principal object of the present invention is to decrease the number of the principal parts to three and to cause the three parts to accomplish the same results as the four parts above enumerated.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in a razor construction wherein the handle, instead of serving the sole function of a handle in the usual manner, is caused to serve the two-fold function of a handle and a rotary locking member for drawing the guard and cap together, whereby the necessity of employing an additional or independent rotary locking member is avoided, and the razor construction is thus simplified and rendered less expensive in construction.

The invention also resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of the claims without departing from the spirit of the invention.

In the accompanying drawing forming part of this specification, Figure 1 is a side elevation of a safety razor constructed in accordance with the invention. Fig. 2 is an end elevation, or, in other words, is a view at right angles to Fig. 1. Fig. 3 is a plan view of the guard. Fig. 4 is an under plan view of the cap. Fig. 5 is an enlarged detail view, in vertical section, through the upper end of the razor. Fig. 6 is an enlarged detail view, in side elevation, showing a slightly modified construction. Fig. 7 is a detail

view of the modified form of guard shown in Fig. 6.

Like reference numerals indicate corresponding parts in the different figures of the drawing.

The reference numeral 1 in Figs. 3 and 5 indicates the guard, which preferably is formed along its opposite edges with teeth 2. At the ends thereof the guard 1 is suitably cut away to form rectangular recesses 3. The upper surface of the guard 1 preferably is of convex form so as to flex or bend the thin, flat blade 4 in the usual manner.

The reference numeral 5 indicates the cap, the lower or under surface of which preferably is concave in form to cooperate in the usual manner with the convex upper face of the guard 1 in flexing the razor blade. The cap 5 at the ends thereof is formed with downwardly-extending projections 6, which fit into the recesses 3 in the guard 1, and also engage similar recesses formed in the thin blade for the purpose of holding the blade in position flatwise between the cap and the guard.

The most important improvements of the present invention relate to the means for locking the guard and cap together. In this connection it is proposed to swivel the handle of the razor on to the guard 1 in such manner that it will serve the two-fold purpose of a handle and a rotary locking member. In carrying out this idea, the guard 1 is formed with a central rabbeted opening 8, in which is rigidly fastened, in any suitable manner, a hard metal ring 9, which preferably is secured in place in the opening 8 by upsetting or expanding its upper end, as shown in Fig. 5. The hard metal ring 9 is stationary with respect to the guard 1 being held in place by its upset end 8, and by its outer periphery which passes under the guard 1 and forms an external shoulder and serves as a washer for taking up wear. The handle 10 extends at its upper end through the washer 9 and is expanded or enlarged as indicated at 11 so as to provide a swivel joint between the washer 9 and said handle. Below the washer 9 the handle 10 preferably is bulged outward, as shown at 12 in Fig. 5, to complete the swivel joint between the washer 9 and said handle. The inner edge of ring 9 forms a flange which passes between a pair of annular shoulders in the handle



formed by the expanded part 11, and the upper surface of bulged portion 12, the said construction permitting a free relative rotation of the parts while preventing a relative longitudinal movement. The handle 10 is internally threaded, as indicated at 13, and is adapted to engage the external threads of a stud 14, which is rigidly connected in any suitable manner with the cap 5. The stud 14 preferably is hollow, as shown, and is riveted on to the cap 5 as indicated at 15, although it may be otherwise connected therewith if desired. It will be apparent that by rotating the handle 10 in one direction or the other, the cap 5 will be moved toward or from the guard 1.

In the modified construction illustrated in Figs. 6 and 7, the convex guard 1 is dispensed with and a flat guard 1<sup>a</sup> is employed. This flat guard 1<sup>a</sup> preferably is formed of spring metal, such, for example, as brass, and is formed along its side edges with grooves 1<sup>b</sup>, the purpose of which is to weaken the flexible guard 1 and thus facilitate its bending on lines parallel with the guard teeth, so that when the cap 5<sup>a</sup> is screwed down on to the guard 1<sup>a</sup>, the outer edges of said guard 1<sup>a</sup> will bend, and thus give the proper angle to the cutting edges of the flexible blade, as will be apparent.

The improved razor of this invention is strong, simple, durable, and inexpensive in construction, as well as thoroughly efficient in operation. By swiveling the handle on to the guard, said handle, as before explained, is caused to serve the two-fold function of a handle and a rotary locking member, and in this way the independent rotary locking member which is usually employed can be dispensed with, and the principal

parts of the razor are reduced from four to three.

What is claimed is:

1. A safety razor comprising a cap, a threaded shank thereon, a guard having an annular, shouldered recess, a flanged washer mounted in said recess and provided with an external shoulder adapted to pass under the guard, and an internal flange, a handle having a pair of shoulders engaging said internal flange, and internally threaded.

2. A safety razor comprising a cap, a threaded shank thereon, a guard, external lugs on said cap adapted to engage corresponding recesses in said guard, a handle having an annular recess, a flange on said guard entering said recess, and a threaded opening in said handle.

3. A safety razor comprising a cap, a threaded shank thereon, a guard having an annular, shouldered recess, an internally threaded handle having a ring swiveled to it at its upper end, and a flange on said ring engaging said shoulder.

4. A safety razor comprising a cap, a threaded shank thereon, a guard, a handle having a threaded opening, a swivel connection between said guard and handle comprising a flange on one and a pair of shoulders on the other, and means for preventing relative, lateral movement of the cap and guard comprising a projection on one adapted to enter a recess in the other.

In testimony whereof, I have hereunto set my hand in the presence of two subscribing witnesses.

HARRISON H. BOYCE.

Witnesses:

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