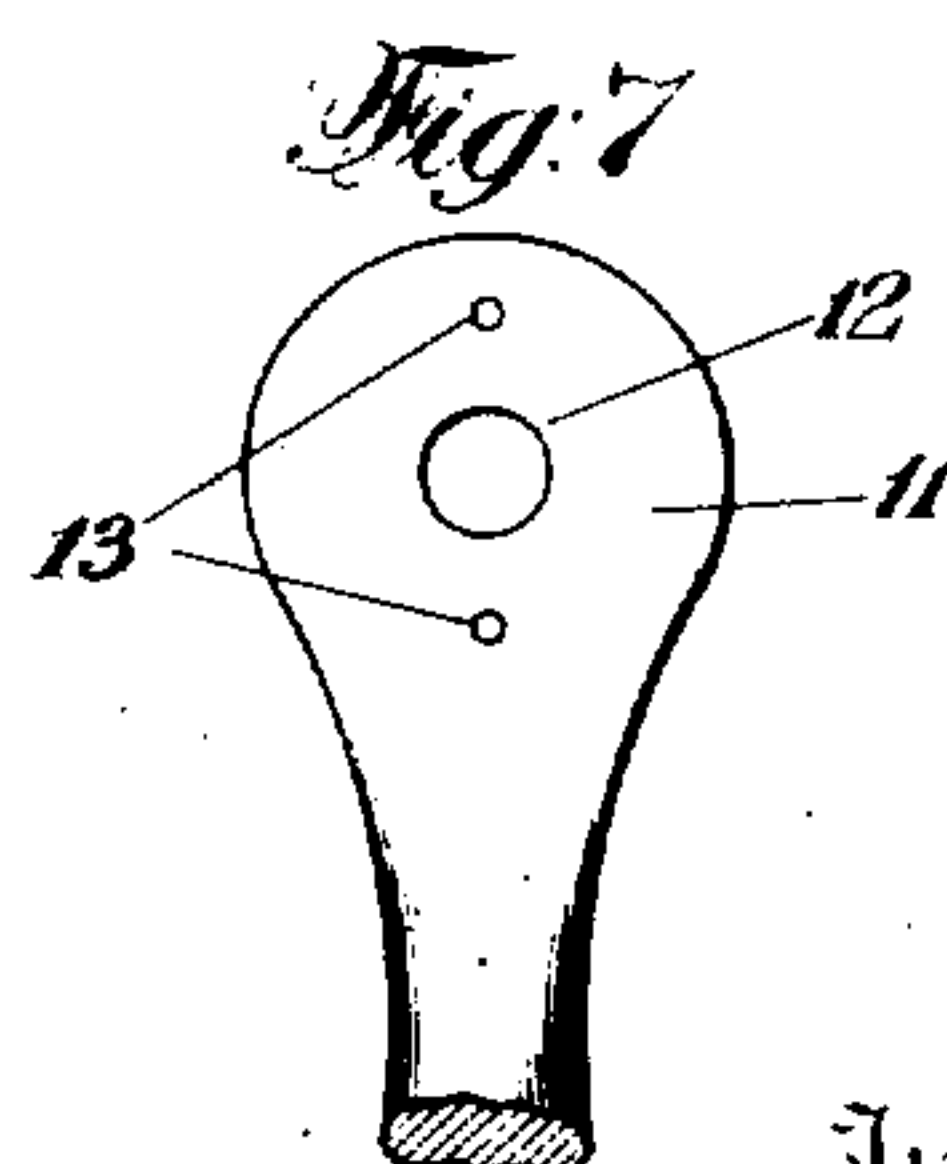
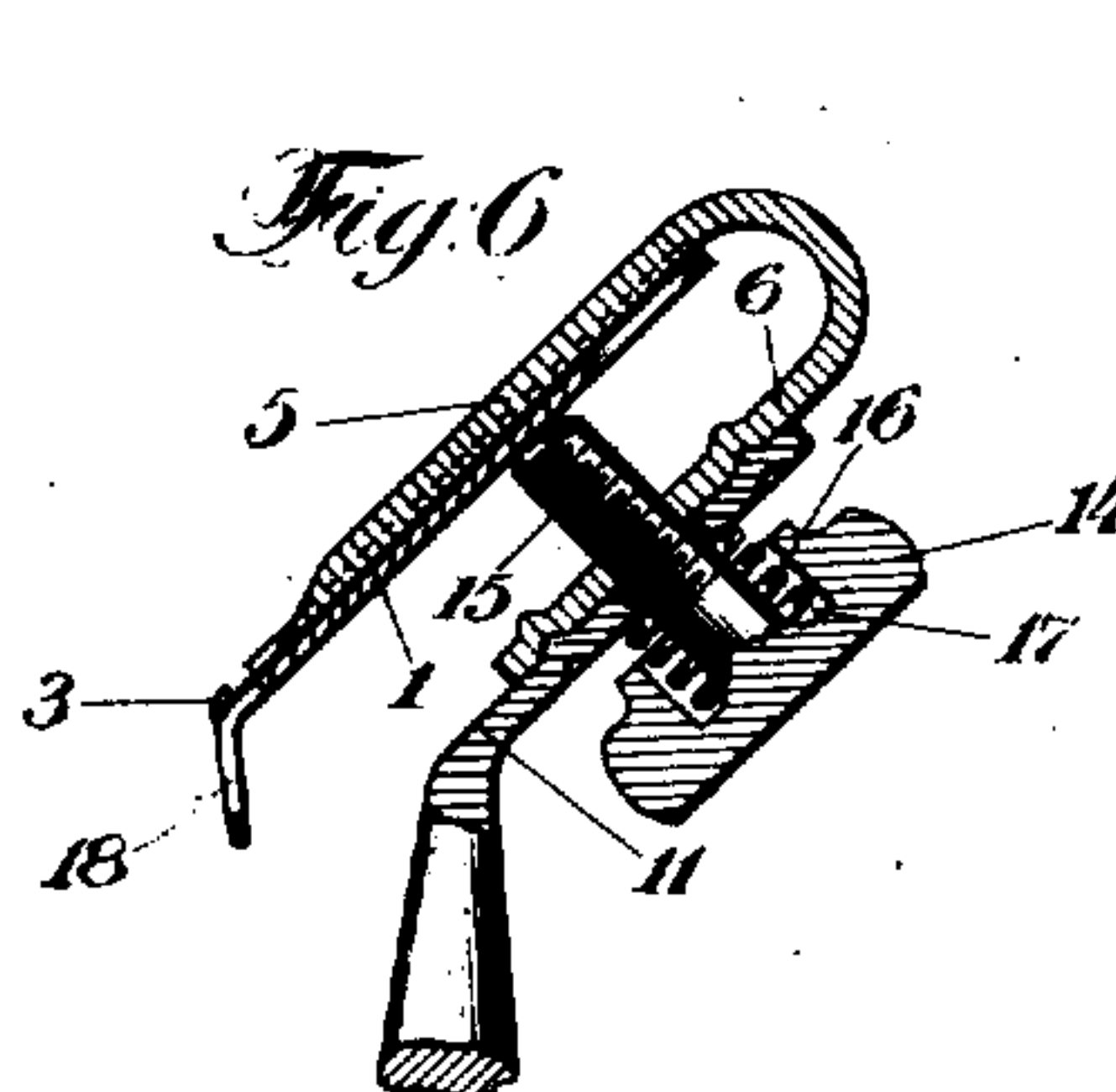
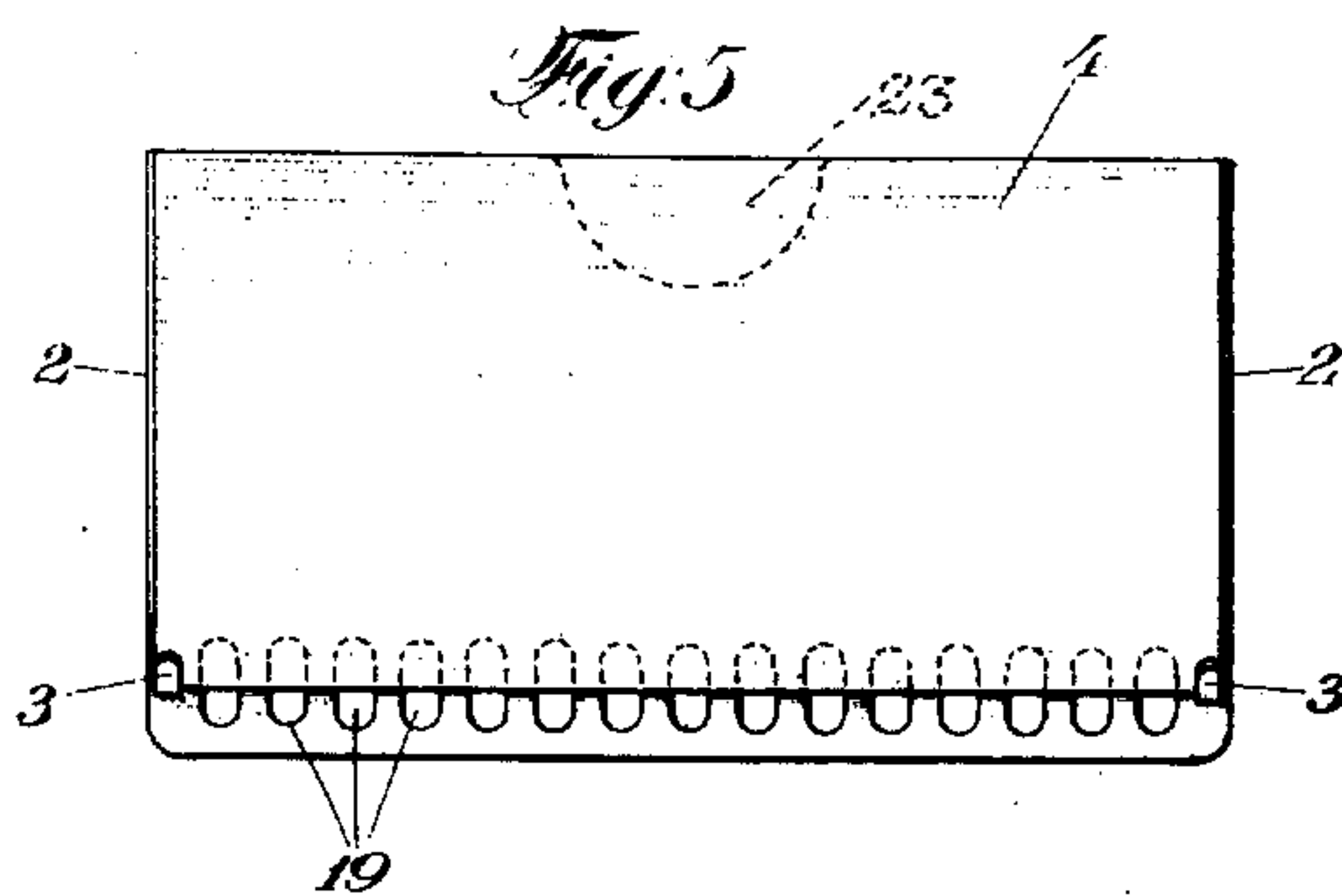
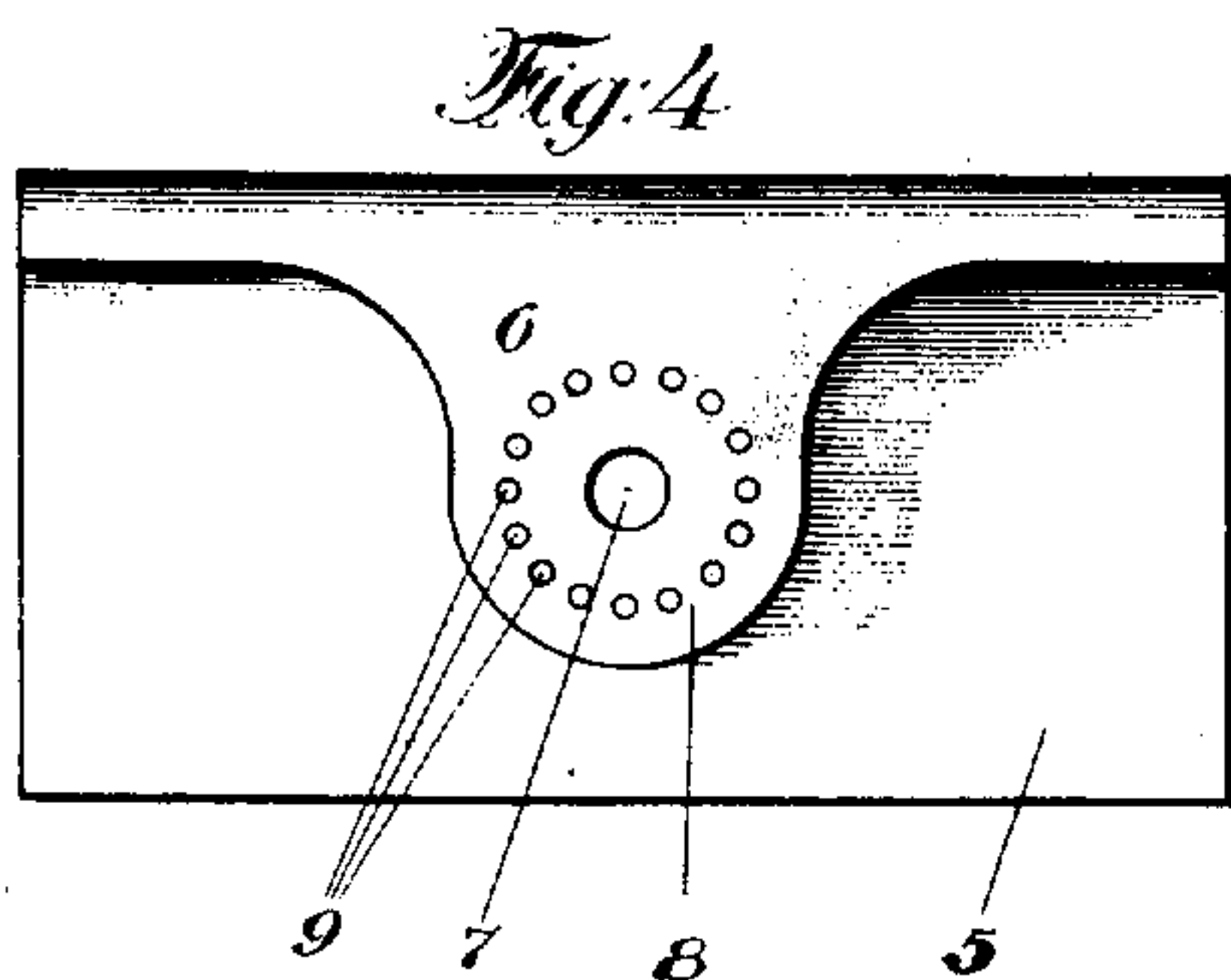
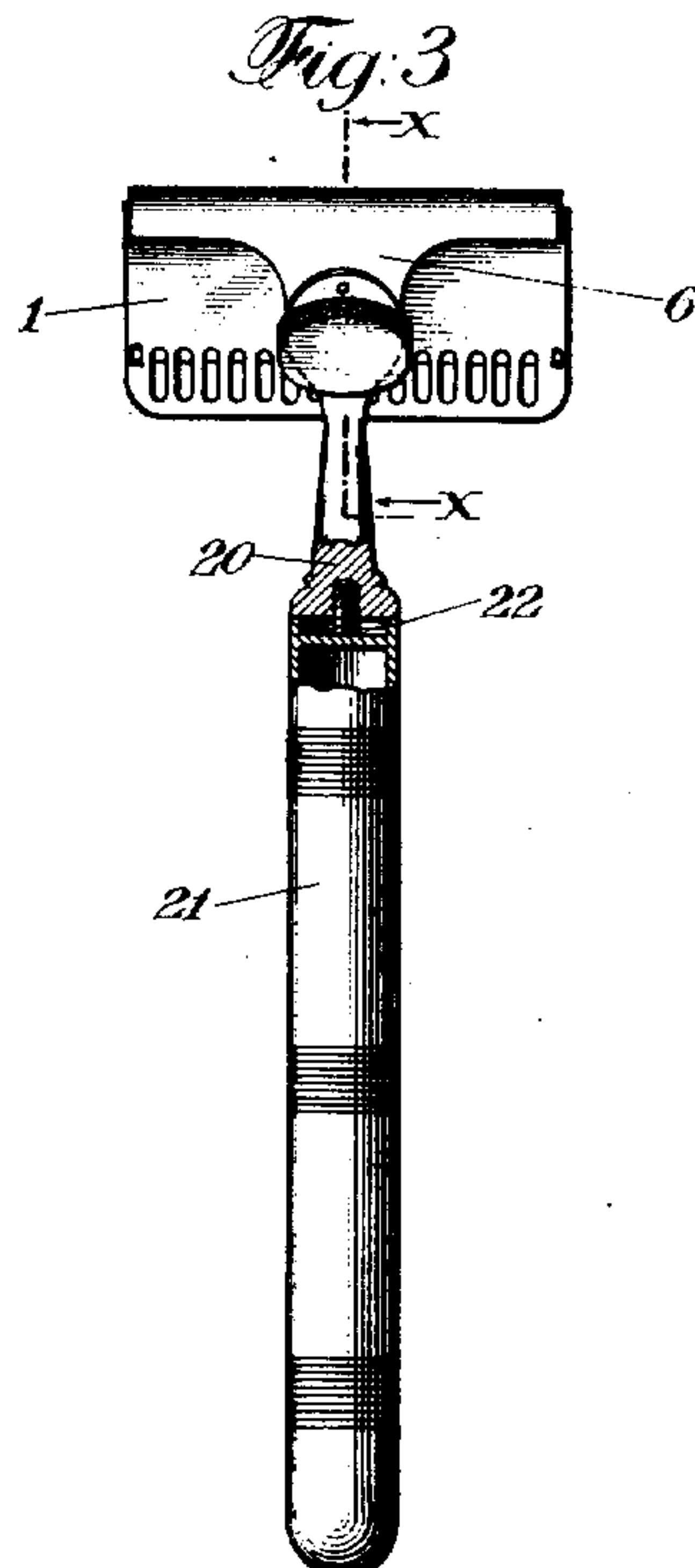
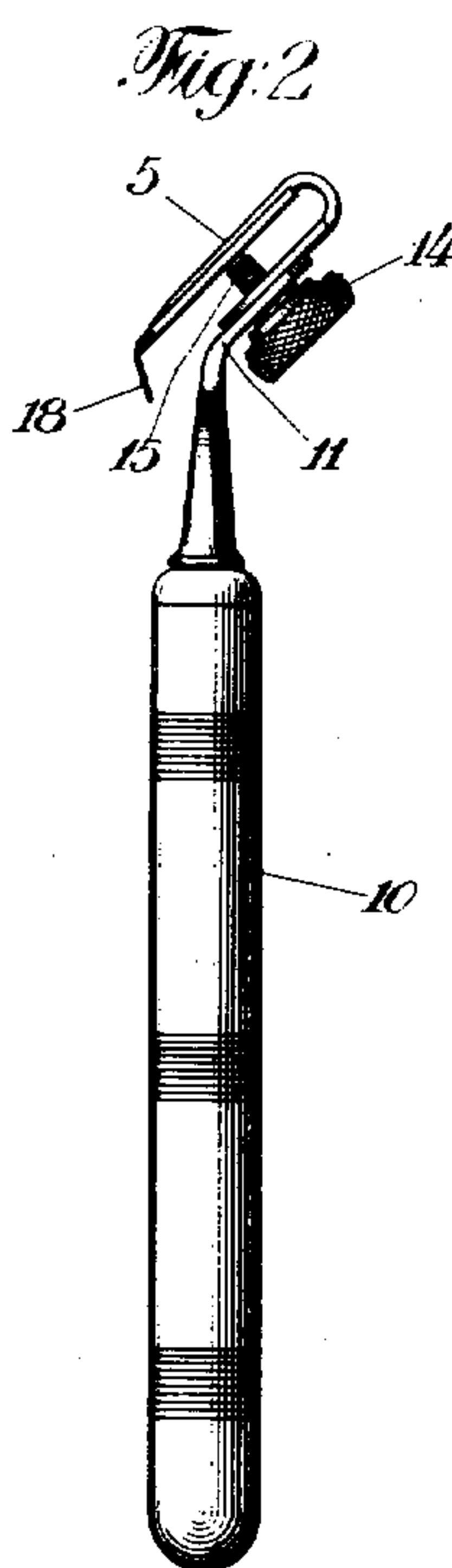
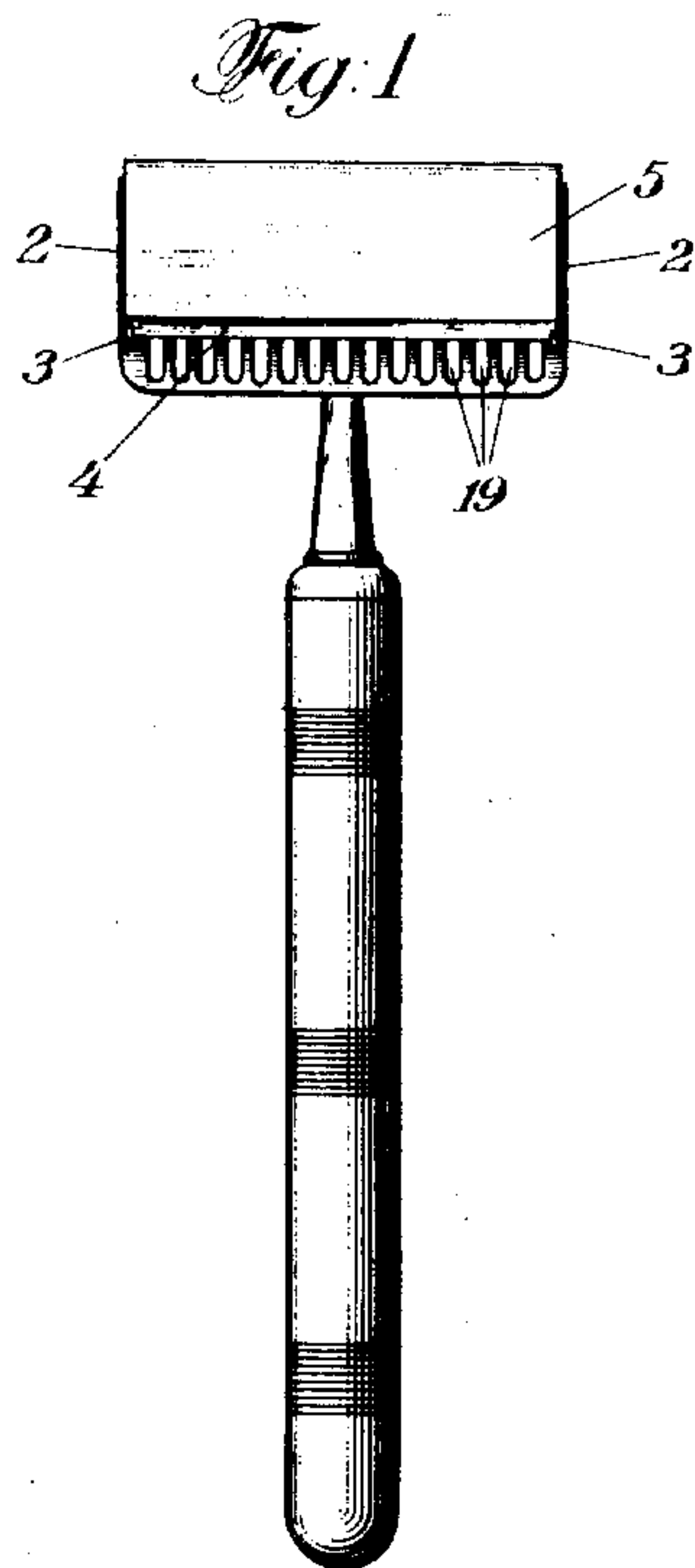


E. I. YOUNG.  
SAFETY RAZOR.  
APPLICATION FILED OCT. 20, 1909.

973,734.

Patented Oct. 25, 1910.



Witnesses:  
W. C. Morgan  
A. Harold Bush

Inventor  
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Jones, Addington & Ames

# UNITED STATES PATENT OFFICE.

ELMER I. YOUNG, OF MONTCLAIR, NEW JERSEY, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO YOUNG SPECIALTY COMPANY, A CORPORATION OF NEW YORK.

## SAFETY-RAZOR.

973,734.

Specification of Letters Patent.

Patented Oct. 25, 1910.

Application filed October 20, 1909. Serial No. 523,556.

*To all whom it may concern:*

Be it known that I, ELMER I. YOUNG, a citizen of the United States, residing at Montclair, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Safety-Razors, of which the following is a specification.

My invention relates to improvements in safety razors.

One of the objects of my invention is to provide a safety razor in which the blade-holding means can be quickly and positively adjusted so that the cutting edge of the blade may lie obliquely to the direction of movement of the blade to give a shearing cut.

Another object is to provide a safety razor in which the handle can be rotated and positively adjusted at any angle to the cutting edge of the blade.

Another object is to provide a safety razor in which the blade can be quickly removed or replaced.

Other objects and advantages will be apparent from the detailed description to follow.

One form of my invention is illustrated in the accompanying drawings forming a part of the specification, in which,

Figure 1 is a front view of the same. Fig. 2 is a side view. Fig. 3 is a back view. Fig. 4 is an enlarged back view of the clamping-plate. Fig. 5 is an enlarged front view of the bed-plate with the blade *in situ*. Fig. 6 is an enlarged sectional view of the head of the razor taken on line X—X of Fig. 3, looking in the direction of the arrows. Fig. 7 is an enlarged view of the inner flattened end of the handle showing the two lugs or pins to engage the rack on the clamping-plate.

Similar letters of reference refer to similar parts throughout the several views.

Referring to the drawings, the bed-plate 1 is provided at each end with flanges 2, 2, and at each lower corner with upturned flanges or shoulders 3, 3, to receive a blade 4. These flanges or shoulders 3, 3, are preferably formed by punching up the metal of the bed-plate 1 and are adapted to receive the lower edge of the blade 4, forming a stop and guard for each corner of the blade. This blade is adapted to be held in place by a clamping-plate 5, the edges of which are arranged to be engaged by the

flanges 2, 2 of the bed-plate 1. The U-shaped clamping-plate 5 is provided with a projection or portion 6 curving rearwardly and downwardly until it is substantially parallel with the inner face or body portion of the clamping-plate 5, or the blade 4. The projection or part 6 is centrally provided with an interiorly-threaded hole 7 surrounding which is a circular rack 8, consisting of a plurality of depressions 9, 9. These depressions 9, 9 are preferably formed by punching up the metal of the projection or part 6. The inner end 11 of the handle 10 is flattened and extends at an angle to the remainder of the handle, and is adapted to engage the projection or part 6 of the clamping-plate 5. This end 11 is provided with a non-threaded central hole 12, and a plurality of pins or projections 13, 13, arranged to engage the depressions 9, 9 of the rack 8. These pins or projections 13, 13 are likewise preferably formed by punching up the metal of the end 11.

In the preferred form of my invention, the handle is formed in two sections 20, 21, secured together by the screw 22. Means are provided for holding the end 11 of the handle 10 in pivotal and frictional engagement with the projection or part 6 of the clamping-plate 5, and also the several parts of the device in operative relation with each other, said means being at a fixed angle to the blade. In the form of my invention, as shown, such means are arranged perpendicularly to the blade, and consists of the thumb-nut 14 having a screw-threaded stem 15, which is adapted to pass through the hole 12 and engage the threaded hole 7 in the projection or part 6. Surrounding the screw-threaded stem 15 and secured to the nut 14 is the spring 16 adapted to lie in the annular groove 17 in the inner face of the thumb-nut 14, whereby the end 11 is held in yielding engagement with the projection or part 6 of the clamping-plate. The stem 15 is also arranged to press the bed-plate 1 against the clamping-plate 5 and thus hold the bed-plate and the blade 4 firmly in place. The clamping-plate 5 and the thumb-screw 15 thus form clamping-jaws in which the bed-plate 1 and the blade 4, or either alone, may be clamped and held in operative position.

In order to guard against the blade cutting the face during the operation of shaving



ing, the bed-plate is provided with a guard consisting of a rearwardly curved extension 18 integral with said bed-plate and having a plurality of holes 19 therein. If desired, however, other forms of guards may be used. The bed-plate 1 also has a portion 23 in its rear edge cut away, so as to provide a place for grasping the blade when the bed-plate and blade are removed from the other parts of the device.

The parts when assembled are in operative relation to each other, as shown in the drawings. When it is desired to remove the blade for cleaning, renewing or other purposes, the nut 14 is loosened sufficiently to allow the bed-plate 1 and the blade 4 to be removed together without dis-assembling the other parts. To reinsert the blade, it is placed upon the bed-plate 1, and they are together slipped between the clamping-plate 5 and the end of the stem 15. The thumb-nut 14 is then tightened sufficiently to engage the bed-plate 1 to hold the same and the blade 4 firmly against the clamping-plate 5. During the foregoing operations, the spring 16 maintains the inner end 11 of the handle 10 in yielding engagement with the projection or part 6 of the clamping-plate 5. The handle 10, being in pivotal and frictional engagement with the projection or part 6 of the clamping-plate, may be swung to any desired position so that the handle may assume any angle with relation to the cutting edge of the blade. The pins 13, 13 engaging the rack 8 form co-acting means for maintaining the handle in the position to which it is moved.

As will appear from the foregoing, the handle may be revolved bodily about the stem 15 as an axis through an arc of 360°, or more, and held in positive adjustment at any desired angle to its normal position (as shown in Fig. 3) by the pins 13, 13 engaging the rack 8. The handle will thus revolve about an axis at an angle to and lying outside of said handle.

While I have shown and described one specific form of my invention, it will be obvious to those skilled in the art that various changes, modifications, alterations and substitutions may be made therein, without departing from the spirit or scope of my invention.

What I claim as new, and desire to secure by Letters Patent, is:

1. In a safety razor, the combination with blade holding devices, of a handle oblique thereto, means securing the handle to said devices and permitting it to rotate about an axis other than its own while yieldingly resisting such movement, a blade in the plane of said holding devices, and means rigidly securing the blade to the holding devices and permitting rotation of the handle; whereby the blade and holding devices read-

ily rotate upon the handle and in their own plane while rigidly locked together.

2. In a safety razor, the combination with a handle, of a guarded blade oblique to the axis of the handle and mounted upon the latter to rotate in its own plane, and means for locking it at any desired point in its rotary path.

3. In a safety razor, the combination with a handle, of a guarded blade oblique to the axis of the handle and mounted upon the latter to rotate in its own plane while held against other displacement, and means for yieldingly holding it in any desired adjustment about its axis of rotation.

4. In a safety-razor, the combination with blade-holding means, of a blade, a guard, a handle and means for yieldingly and positively securing the handle to said blade-holding means and arranged to revolve bodily through substantially a complete revolution about an axis lying outside of said handle.

5. In a safety-razor, the combination with blade-holding means, of a blade, a guard, a handle and means for yieldingly and positively securing the handle to said blade-holding means at an angle to an axis which is substantially perpendicular to the plane of the blade, said handle being arranged to revolve bodily through substantially a complete revolution about said axis.

6. In a safety-razor, the combination with blade-holding means, of a blade, a guard, a handle, means for pivotally securing said handle to said blade-holding means, said handle being arranged to revolve bodily through a complete revolution about the axis of said pivotal means said axis lying outside the said handle, and means for positively and yieldingly holding said handle in any desired position about said axis.

7. In a safety-razor, the combination with blade-holding means, of a blade, a guard, a handle, means for revolvably securing said handle to said blade-holding means, the axis of said securing means being perpendicular to said blade and outside of said handle, and means for retaining said handle at any desired position during its adjustment.

8. In a safety-razor, the combination with blade-holding means, of a guard, a handle secured to said blade-holding means and revoluble about an axis other than its own, and co-acting means carried by said blade-holding means and said handle for retaining said handle at any desired position during its adjustment.

9. In a safety razor, the combination with a handle, of a bed plate oblique to the handle's axis, a blade, and a single thumbscrew clamping the blade immovably and the handle rotatably to the bedplate.

10. In a safety-razor, the combination with a blade, of a guard for said blade,



blade-holding means, a handle, and means at right angles to said blade for maintaining said handle in pivotal relation with said blade-holding means, the axis of said handle being arranged at a fixed angle with the axis of said pivotal means.

11. In a safety-razor, the combination with a blade, of a guard for said blade, a bed-plate, a clamping-plate between which and the bed-plate the blade is clamped, a handle, and means at right angles to said blade for maintaining said handle in pivotal engagement with said clamping-plate, the axis of said handle being arranged at a fixed angle with the axis of said pivotal means.

12. In a safety-razor, the combination with a bed-plate, of a guard, a clamping-plate having a projection substantially parallel with said clamping-plate, a plurality of depressions in said projection to form a rack, a handle oblique to the plane of the bed plate and rotatably and adjustably secured to said projection, and means carried by said handle to engage said rack.

13. In a safety razor, the combination with a handle, of a guarded blade oblique to the axis of the handle and secured thereto by devices allowing it to rotate in its own plane when rotary force exceeds a predetermined limit; whereby the position of the cutting edge with respect to the angle made with the handle's axis may, without preliminary manipulation of any part, be varied at will by rotating the blade in its own plane.

14. In a safety-razor, the combination with a clamping-plate, of a handle rotatably

secured at a fixed oblique angle thereto, one of said parts being provided with a rack and the other having a cooperating projection or projections to engage said rack and a guard.

15. In a safety razor, the combination with a bed plate provided with a guard, of a blade, a handle, a U-shaped clamping plate having a portion extending over said bed plate the other part being adjacent to the handle, and a thumb-screw passing through said handle and part, in threaded engagement with the latter, free from the former and pressing against said bed plate.

16. In a safety-razor, the combination with a bed-plate, of a guard, a clamping-plate between which and said bed-plate a blade is held, said clamping-plate having a projection provided with an interiorly threaded hole, a plurality of depressions surrounding said hole to form a rack, a handle, one end of which is flattened and provided with an opening therein, a pin carried by said end of the handle to engage said rack, a thumb-nut having a threaded stem to pass through said opening and engage said hole, and arranged to hold said blade between said clamping-plate and said bed-plate, and a spring to hold said handle in engagement with said clamping-plate.

In testimony whereof, I sign this specification in the presence of two witnesses.

ELMER I. YOUNG.

Witnesses:

W. C. MARGESON,  
D. HAROLD BUSH.