

J. W. McAULIFFE,
 SAFETY RAZOR AND STROPPER.
 APPLICATION FILED MAY 5, 1921.

1,411,287.

Patented Apr. 4, 1922.

2 SHEETS—SHEET 1.

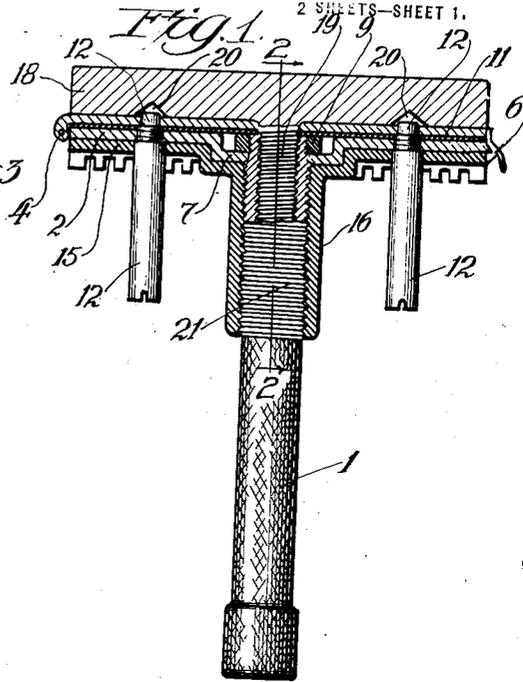
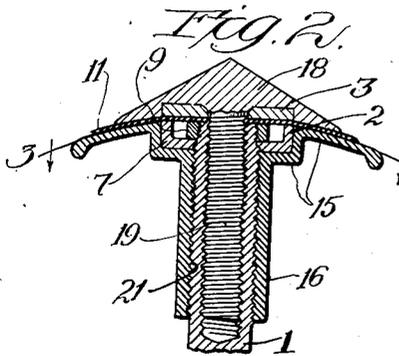


FIG. 3.

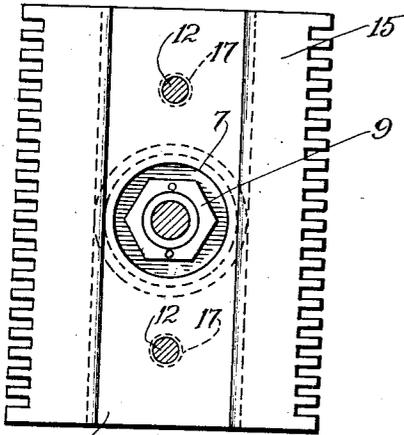


FIG. 4.

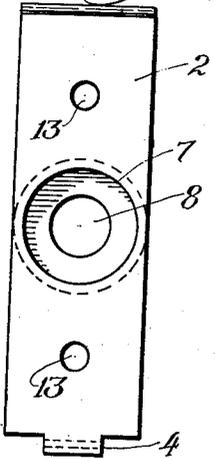


FIG. 5.

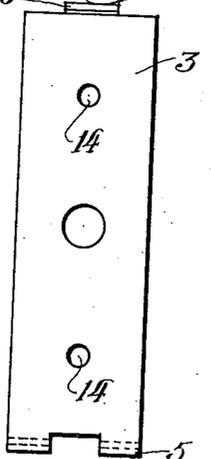
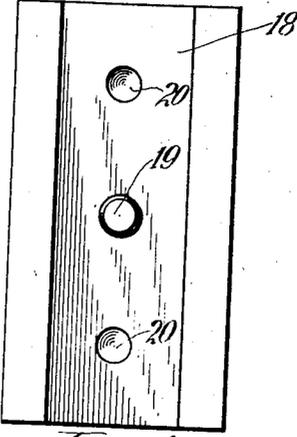


FIG. 6.



Witness
 Harry S. Gutter

Inventor:
 John W. McAuliffe
 by Chamberlins, Brendenreich, & Co.

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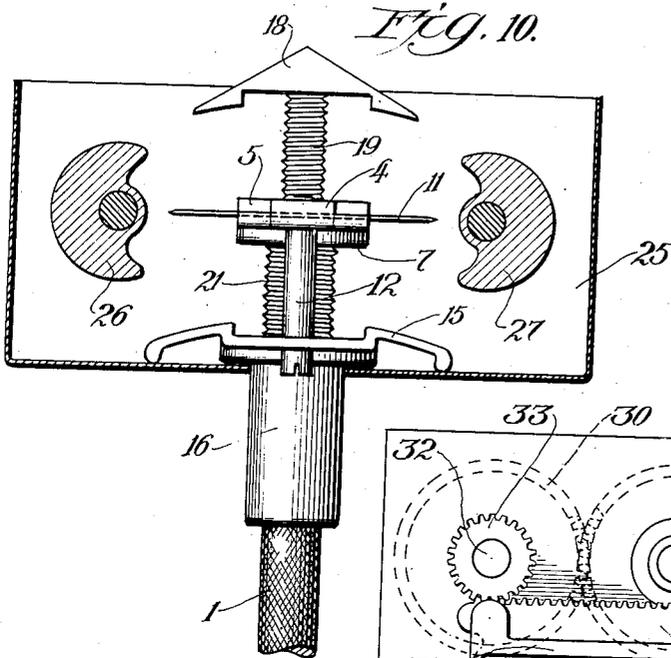


Fig. 10.

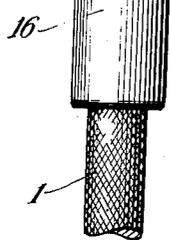


Fig. 7.

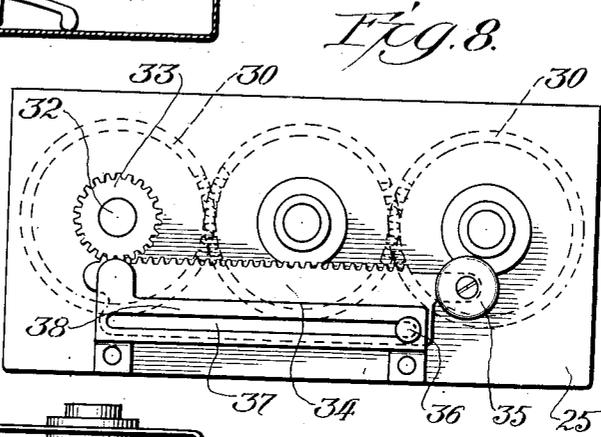


Fig. 8.

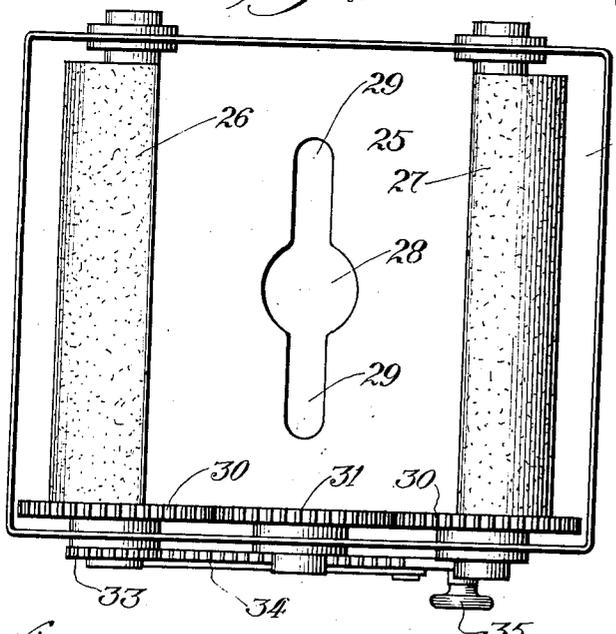
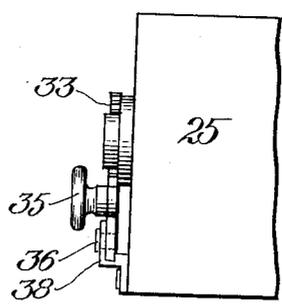


Fig. 9.



Witness:
Harry S. Gaiter

Inventor
John W. McAuliffe
 by *Chamberlin & Prendergast*
Attys

UNITED STATES PATENT OFFICE.

JOHN W. McAULIFFE, OF PELHAM, NEW YORK.

SAFETY RAZOR AND STROPPER.

1,411,287.

Specification of Letters Patent. Patented Apr. 4, 1922.

Application filed May 5, 1921. Serial No. 466,878.

To all whom it may concern:

Be it known that I, JOHN W. McAULIFFE, a citizen of the United States, residing at town of Pelham, county of Westchester, State of New York, have invented a certain new and useful Improvement in Safety Razors and Stoppers, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object to produce a simple and novel safety razor, especially one adapted for a double-edged blade, so constructed and arranged that the blade can conveniently be stropped without removing it.

The various features of novelty whereby my invention is characterized will hereinafter be pointed out with particularity in the claims; but, for a full understanding of my invention and of its object and advantages, reference may be had to the following detailed description taken in connection with the accompanying drawings, wherein:

Figure 1 is a vertical section through a razor arranged in accordance with my invention, the section being taken on a plane containing the axis of the handle and the longitudinal central axis of the blade;

Fig. 2 is a section taken on line 2—2 of Fig. 1;

Fig. 3 is a section taken approximately on line 3—3 of Fig. 2;

Fig. 4 is a top plan view of the lower blade-clamping bar;

Fig. 5 is a top plan view of the upper blade-clamping bar;

Fig. 6 is a bottom plan view of the upper holding or gripping plate;

Fig. 7 is a top plan view of a stropping device adapted to be used in stropping the razor;

Fig. 8 is a side elevation of the stropping device;

Fig. 9 is an end elevation of the stropping device, only a fragment of the device being shown; and

Fig. 10 is a view consisting of a vertical section through the stropping device and an end elevation of the razor occupying a stropping position in the device.

Referring to the drawings, 1 represents a handle of any usual or suitable construc-

tion on the upper end of which a razor blade is adapted to be supported. In the arrangement shown, the blade is adapted to be clamped between two bars, 2 and 3, hinged together at one end by a suitable hinge of which the parts on the respective bars are indicated at 4 and 5; the blade being adapted to be laid upon the bar 2, the bar 3 being then swung downwardly on top of the blade and locked in place by means of a suitable catch device between the free ends of the bars, such a device being indicated at 6. The middle portion of the bar 2 may be pressed downwardly as indicated at 7, the cup thus formed being provided in the bottom thereof, at the center, with an opening, 8, through which the upper end of the handle projects. A nut, 9, on the upper end of the handle, housed within the depression, serves to hold the blade-holding bar 2 upon the handle, the upper end of the handle being preferably reduced somewhat in diameter, as shown; the nut and the shoulder limiting the movement of the bar lengthwise of the handle, but permitting it to turn on the handle. The blade, which is indicated at 11, is properly aligned by means of pins, 12, screw threaded into openings, 13, near the ends of the bar 2 and adapted to project through properly located openings in the blade through openings, 14, in the upper clamping bar. The pins, 12, are made long so as to project downwardly a considerable distance from the lower clamping bar and serve as guides for a guard plate, 15, which lies underneath the bar 2 and is provided with a long downwardly-projecting hub or sleeve, 16, screw threaded upon the handle. The guard is provided with openings, 17, through which the guiding pins, 12, extend.

The holding bars 2 and 3 are made quite narrow so as to leave wide marginal portions of the blade free when a blade is clamped in place and it is for that reason that the additional guard plate is employed, the guard plate being adapted to be moved along the handle away from the blade when it is desired to strop the latter. It is also desirable to have an upper clamping or holding plate, wider than the plate 3, to engage the top of the blade while the latter is being used for shaving. I have therefore provided a comparatively wide top plate, 18, having on the under side a central post, 19, adapted to be screwed down into the upper end of the han-

5 dle. The plate, 18, is also preferably provided with seats or depressions, 20, to receive the upper ends of the pins 12 when the plate 18 is in the position in which it engages the razor blade; the pins 12 therefore
 10 serving to center or align the plate 18 with the blade and the guard. The guard plate and also the top plate 18 are properly grooved or chambered in their upper and
 15 lower faces, respectively, to form a housing in which the two hinge clamping bars are nested when the plates 15 and 18 are closed on the blade.

20 The screw threaded connections of the handle with the guard plate and the top plate 18 are oppositely disposed so that if the screw threads, 21, between the handle and the hub of the guard plate are left hand threads, those on the post 19 will be right
 25 hand threads. Consequently it is only necessary to turn the handle while what may be termed the head of the razor is being held stationary, in order to cause the plates 15 and 18 either to move away from each other
 30 and from the blade or toward each other and into operative relation to the blade. Thus in Figs. 1 and 2 these two members are shown closed upon the the blade, namely in their shaving positions, while in Fig. 10
 35 they are shown separated from each other, thus leaving the blade free to be stropped. It will be seen that when the parts are in the positions shown in Figs. 2 and 3, it is only necessary to turn the handle relatively
 40 to the holding or clamping plates in order to bring the parts into the positions shown in Fig. 10 while, upon turning the handle in the opposite direction, the parts are shifted from the positions which they occupy in Fig. 10 to those which they occupy
 45 in Figs. 1 and 2.

50 When the razor has been placed in a stropping condition, namely with the guard plate and the upper holding plate spread apart as shown in Fig. 10, it may conveniently be stropped with a device such as illustrated in Figs. 7 to 10 inclusive. Referring to these figures, 25 represents a rectangular box open at the top and having therein two
 55 parallel mutilated stropping rollers, 26 and 27; there being in the bottom of the box a central opening, 28, large enough to permit the passage of the hub or sleeve, 16, on the guard plate, together with slots, 29, extending
 60 in opposite directions from the hole 28, parallel with the axes of the stropping rollers, and wide enough to receive the lower ends of the guide pins 12. The parts are so proportioned that when the razor, after
 65 having been placed in a stropping condition, is dropped, handle first, into the stropping box, the sleeve or hub on the guard plate and the guide pins serve properly to position and align the razor so as to bring the blade into operative stropping relation to

the rollers 26 and 27. These rollers are then oscillated simultaneously in opposite directions through substantially complete turns, causing each cutting edge to be stropped first from one side and then from the other.
 70 After the blade has been sufficiently stropped, the razor is lifted out of the stropper and, by turning the handle in the proper direction, is returned to the conditions shown in Figs. 1 and 2.
 75

80 The stropping rollers may be operated in any suitable manner. In the arrangement shown, each of the rollers has on one end thereof a gear wheel, 30, meshing with an intermediate idle wheel, 31. On the extreme
 85 end of one of the rollers or of the shaft, 32, on which it is mounted, is a pinion, 33, lying on the exterior of the box or casing. Meshing with this pinion is a rack bar, 34, slidably mounted on the box or casing in
 90 any suitable way, and provided with a handle, 35, for moving it back and forth. The movement of the rack bar is preferably limited in some way so that it can travel only far enough in either direction to give approximately one complete turn to each of the
 95 rollers. In the arrangement shown, the rack bar is provided with a pin, 36, extending through a slot, 37, in a guide plate, 38, for the rack bar; the travel of the rack in both directions being controlled by the pin and slot.

I claim:

1. In a safety razor, a handle and two blade-gripping members secured to the handle by oppositely-disposed screw threads.

2. In a safety razor, a handle and two blade-gripping members extending transversely of the handle, one of said members being secured to the handle by a right hand thread and the other member being secured to the handle by a left hand thread.

3. In a safety razor, a handle, two blade-gripping members, and means for supporting said members on the handle in such a way that they may be moved simultaneously in opposite directions along the handle.

4. In a safety razor, a handle, means for supporting a blade on said handle so as to leave a wide marginal portion free for stropping purposes, together with holding and guard members adapted to engage said blade on opposite sides to maintain it in a shaving condition, and means connecting said members to said handle in such a manner that said members may be moved away from each other and from the blade without detaching them from the handle.

5. In a safety razor, a handle, means for detachably securing a blade on the handle so as to extend transversely of the latter, a guard member and a co-operating clamping member lying respectively below and above said means, the aforesaid members being connected to said handle by oppositely-dis-

posed screw devices whereby they may be caused to move toward each other or away from each other by turning the handle in one direction or the other.

5 6. In a safety razor, a handle, means for securing a blade to the handle so as to cause it to extend transversely thereof, holding members adapted to lie above and below the blade, said members having right and left
10 handed screw thread connections with said handle whereby they may be caused to move from and toward each other by turning the handle.

15 7. In combination, a safety razor, comprising a handle, means for supporting a blade on said handle so as to leave a wide marginal portion free for stropping purposes, together with holding and guard members adapted to engage said blade on opposite sides to maintain it in a shaving position, means for connecting said members to said handle in such
20 a manner that said members may be moved away from each other and from the blade without detaching them from the handle and
25 leave the blade in a condition for stropping; and a stropping device adapted to be set on said razor and having a stropping device adapted to lie in operative relation to said
30 blade when the latter is being held in stropping position.

8. In a safety razor, a handle, a clamp mounted on the upper end of the handle and rotatable about the axis of the handle, said
35 clamp being constructed and arranged to grip the central portion of a double-edged razor blade and leave wide marginal portions along the cutting edges exposed, and a pair of guard and holding plates lying respectively above and below said clamp, said
40 plates being connected to the handle by oppositely disposed screw threads.

9. In a safety razor, a handle, a clamp mounted on the upper end of the handle and rotatable about the axis of the handle, said
45 clamp being constructed and arranged to grip the central portion of a double-edged razor blade and leave wide marginal por-

tions along the cutting edges exposed, a pair of guard and holding plates lying respectively above and below said clamp, said
50 plates being connected to the handle by oppositely-disposed screw threads, and guide pins projecting from said clamp through one of said plates to hold the clamp against turning
55 relatively to said plate.

10. In a safety razor, a handle, means for supporting a blade on said handle so as to hold it flat and leave a wide marginal portion free for stropping purposes, together with holding and guard members adapted to
60 engage said marginal portion of the blades on opposite sides thereof to bend said marginal portion and hold it in a shaving condition, and means for moving said members away from said blade so as to leave the latter
65 in a stropping position.

11. In a safety razor, a handle, a long narrow clamp mounted on the upper end of the handle, said clamp being constructed and arranged to grip the central portion of a double
70 edged razor blade and hold it in a flat stropping position with wide marginal portions exposed, a pair of guard and holding plates lying respectively above and below
75 said clamp and movable from and toward the latter, and guide pins projecting from said clamp through one of said plates to prevent relative rotary movements between the
same.

12. In a safety razor, a handle, means on
80 the handle for gripping a double edged flexible blade along the center so as to hold it flat in a stropping position with wide marginal portions exposed, and a pair of guard and holding members arranged respectively be-
85 low and above said clamp and movable from and toward the blade, said guard and holding member being constructed and arranged to bend the marginal portions of the blade and hold them in a bent position for shaving.

In testimony whereof, I sign this specification.

JOHN W. McAULIFFE.