

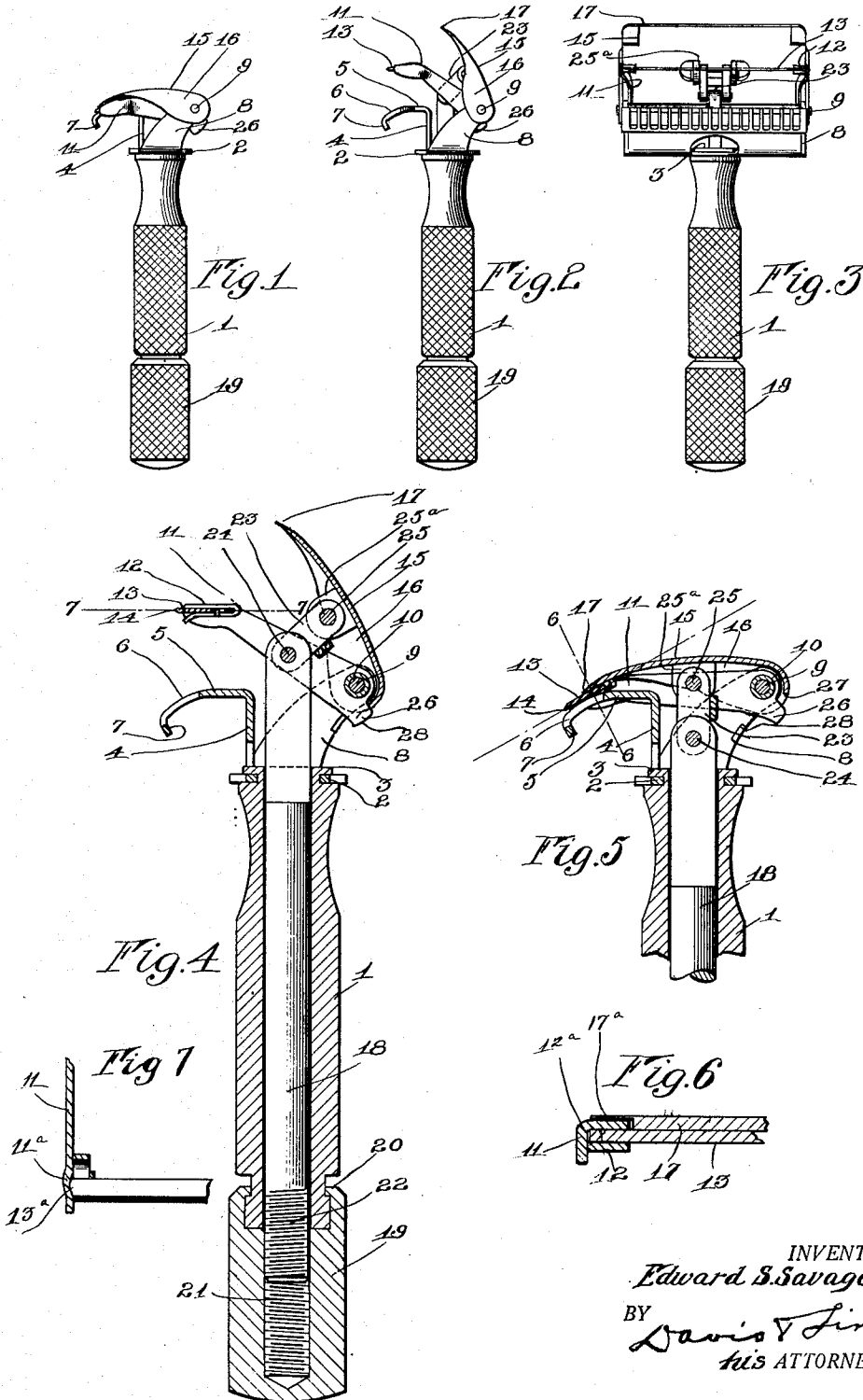
April 21, 1925.

1,534,665

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SAFETY RAZOR

Filed Oct. 14, 1922



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SAFETY RAZOR.

Application filed October 14, 1922. Serial No. 594,591.

To all whom it may concern:

Be it known that I, EDWARD S. SAVAGE, a citizen of the United States, and resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Safety Razors, of which the following is a specification.

The present invention relates to safety razors and more particularly to the type in which there is employed a guard, a blade co-operating with said guard, an object of the invention being to provide an improved means of supporting a blade so that the blade may be readily moved toward and from the guard without removing the blade from the blade supporting means. Another object is to provide means having a single operating member which will effect the separation of the blade, the guard and a clamping member, so that the blade may be held out of contact with the guard and the clamping member, when not in use, in order to permit the blade to be held in a condition where it will not retain moisture. Still another object of the invention is to provide a construction in which a single operating member effects the movement of the clamping member and the blade away from each other and also away from the guard carried by the handle. A further object of the invention is to provide a safety razor in which a blade in the form of a narrow strip may be employed, the plane of which will be so positioned with reference to the handle that the blade will lie at the proper angle to the face during the shaving for the normal position of the handle in the hand of the user.

To these and other ends, the invention consists of certain parts and combinations of parts, all of which will be hereinafter described, the novel features being pointed out in the appended claims.

In the drawings:

Fig. 1 is a side view of a safety razor constructed in accordance with this invention, showing the parts in position for use;

Fig. 2 is a similar view, showing the parts and the cover plate, blade and guard separated;

Fig. 3 shows a front view of the razor with parts shown in Fig. 2;

Fig. 4 is an enlarged sectional view with the parts shown in the position of Fig. 2;

Fig. 5 is an enlarged fragmentary section

showing the parts in the position illustrated in Fig. 1;

Fig. 6 is a detail view showing the co-operation of the cover member and blade; and

Fig. 7 is a fragmentary sectional view on the line 7—7, Fig. 4.

In the illustrated embodiment of the invention there is employed a handle 1 preferably in the form of a tube which carries a guard at its upper end, the guard, in this instance, being rigid with the handle and being formed from a single piece of sheet material provided with a perforated body 2 through which the upper end of the handle 1 extends, said handle being upset at 3 on the upper side of the guard. From the perforated portion 2 the guard extends at 4 in the direction of the length of the handle and is then bent outwardly at 5, thence outwardly and downwardly at 6 at an angle other than at a right angle to the axis of the handle and thence downwardly and inwardly at 7. The portion 6 is provided with openings through which the lather and the cut hairs may pass.

Projecting from opposite sides of the guard are arms 8, which are connected by a pivot pin 9 and act as supporting means for the blade holder. The blade holder, in this instance, embodies a tube 10, surrounding the pivot pin 9 between the arms 8 and connecting arms 11 extending laterally therefrom at opposite ends thereof, said arms 11 carrying on their opposed faces near their outer ends recessed projections 12 in which the blade 13 is adapted to be received, the opposed faces of the arms 11 in said recessed portions 12 having pockets 11^a in which projections 13^a at the opposite ends of the blade 13 are received. The recessed projections are each preferably formed in one piece of sheet metal with their arms 11, and to this end each arm has an elongated extension bent laterally at 12^a from the plane of the arm and bent between its ends at 12^b to provide the recessed projection 12. A lug 12^c is provided on the lower portion of each recessed projection to cooperate with the edge of the blade 13, in order to limit the rearward movement of the latter in the recessed projection. The blade 13 is an elongated narrow body of flexible steel with one edge bevelled at 14 to provide the cutting edge. When in operative position this blade

lies against the guard over the openings 6 in the manner shown in Fig. 5, so that its plane is at an angle other than a right angle to the axis of the handle.

5 To cooperate with the opposite side of the blade a clamp or holding member 15 is provided which is in the form of a curved plate with side flanges 16 secured to the ends of the pivot pin 9 which is extended beyond
10 the arms 8. When in operative position the free edge 17 of this clamping plate cooperates with the blade 13 in the manner to hold the latter firmly against the guard, the plane of the blade intersecting the plane
15 of the clamp. In order to permit the proper cooperation of the clamping member with the blade 13, the clamping member is recessed at its opposite ends at 17^a so as to receive the recessed projections 12.
20 Provision is made whereby a separation of the clamping member, the blade and the guard may be effected. This is secured, in this instance, by an adjusting rod 18 longitudinally movable in the tubular handle
25 1 preferably through a nut 19 mounted to turn on the lower end of the handle but held against axial movement with relation thereto by an interlocking portion 20. This nut 19 is internally threaded at 21 to engage
30 an externally threaded portion 22 on the adjusting rod 18. The adjusting rod connects with the clamping member 15 preferably through two links connected in parallel relation by a portion 23^a, the upper end of
35 the rod being pivoted at 24 between the two links and the links in turn being pivoted at 25 to two lugs 25^a stamped up from the clamping member 15 to one side of the turning or swinging axis of the latter. It is ap-
40 parent that, when the adjusting rod 18 is moved axially through the turning of the nut 19, the movement will be communicated to the swinging or clamping member 15 to swing the latter on the pivot rod 9.
45 With the end in view of causing the blade holding means to move with the clamping member, the cover plate has preferably a lost motion connection with the blade holding means. This lost motion connection, in
50 this instance, embodies lugs 26 projected rearwardly from the arms 11 in the path of the rear edge 27 of the clamping member 15. The clamping member during its first movement does not engage these lugs 26, thus
55 permitting the clamping member to separate from the blade. After a time the lugs 26 are engaged by the edge 27 and the blade is shifted away from the guard, until the lugs 26 engage stops 28 projected inwardly
60 from the arms 8 on the guard. When the adjusting rod 18 is moved in the opposite direction under the nut 19, it pulls the clamping member downwardly which frees the blade holding means and permits the
65 blade to move by gravity into cooperation

with the guard, after which the clamping member cooperates with the blade and draws the blade firmly into engagement therewith to guard and to support the blade against flexing.

70 From the foregoing it will be seen that there has been provided a safety razor in which a means is provided having a single operating member which will effect the
75 separation of the blade, the guard and the clamping member, so that the blade may be held out of contact with both the guard and the clamping member to permit the
80 blade to be held in a drying condition when the razor is not in use. This result is preferably effected through the movement of the clamping member away from a guard
85 held in fixed relation to the handle, there being provided a lost motion connection between the clamping member and the blade holding means which effects the movement
90 of the blade holding means away from the guard after the clamping member has been moved away from the blade. A novel means is also provided for supporting a blade so
95 that it may be moved toward and from a guard without removing such blade from the holding means. It will also be noted that there is employed a very narrow blade
100 which utilizes but a small amount of material and makes it possible to reduce the material in the blade to a minimum. Furthermore this narrow blade permits the plane
105 of the blade to intersect the plane of the clamping member and lie at an angle other than a right angle to the longitudinal axis of the handle, thus permitting the angle of
110 the blade to be so arranged that a proper cutting action is obtained without the user holding the handle in an uncomfortable and unnatural position and without, at the same
115 time, the portion of the clamping member in rear of the blade engaging with the face of the user and interfering with this cutting action. It will be further noted that
120 the rear edge of the blade is situated at a point between the longitudinal axis of the handle and the cutting edge of the blade and that the plane of the blade intersects the clamping member or the portion which
125 is farthest removed from the handle at a point between the longitudinal axis of the handle and the cutting edge of the blade, all of which tends to give the proper angle to the blade without interference by the
130 face of the user of the portion of the clamping member in rear of the cutting edge.

What I claim as my invention and desire to secure by Letters Patent is:

1. A safety razor comprising a handle, a guard rigid with the handle, blade holding means, and clamping member for clamping the blade in the blade holding means against the guard, and a common means for effecting a movement of the clamping member

and the blade out of engagement with the guard and also out of engagement with each other.

2. A safety razor comprising a handle, a guard rigid with the handle, a blade holding means for moving the blade toward and from the guard, said blade holding means being mounted to turn about an axis parallel with the edge of the blade in the blade holding means, and a common means for effecting the movement of the blade holding means and the clamping member so that the blade in the blade holding means moves out of engagement with the guard and the guard moves out of engagement with the blade holding means.

3. A safety razor comprising a handle, a guard rigid with the handle, blade holding means movable relatively to the guard to carry the blade toward and from the latter, a movable clamping member separate from the blade holding means for clamping the blade against the guard, said clamping member being movable relatively to the guard and to the blade holding means, a connection between the clamping member and the blade holding means permitting the clamping member to be moved a limited distance away from the guard without moving the blade holding means, and means for operating the clamping member to move the latter first away from the guard and then by a continued movement of the clamping member to move the blade holding means away from the guard.

4. A safety razor comprising a handle, a guard mounted thereon, blade holding means pivotally mounted to carry a blade toward and from the guard, a clamping member pivotally mounted to move toward and from the guard in order to hold a blade in cooperative relation with the guard, a connection between the clamping means and the blade holding means, and means for operating the clamping means to effect the movement of the clamping means and the blade holding means.

5. A safety razor comprising a handle, a guard, a pair of supporting arms, extending from opposite sides of the guard, a shaft connecting said arms, a tubular member mounted on said shaft, a pair of arms extending from said tubular member and hav-

ing recessed portions on their opposed faces for supporting a blade between the arms for cooperation with the guard, a blade clamping member pivotally mounted on said shaft, a lost motion connection between the blade clamping member and the arms, and means connected with the blade clamping member for effecting the movement of the latter toward and from the guard and through the lost motion connection a movement of the blade holding arms toward and from the guard.

6. A safety razor comprising a tubular handle, a guard secured at one end of the handle and having a guarding portion located to one side of the longitudinal axis of the handle, a clamping member pivotally mounted on the handle on the opposite side of said longitudinal axis and adapted to cooperate with said guarding portion to clamp the blade, and a link connection between the operating rod and the clamping member.

7. A safety razor comprising a handle, a guard, a blade holding means mounted to turn about an axis parallel with the edge of the blade held by the blade holding means, a clamping member mounted to move independently of the blade holding means and the guard about the same axis, a lost motion connection between the clamping member and the blade holding means, and means for operating the clamping member toward and from the guard to effect also the movement of the blade holding means toward and from the guard.

8. A safety razor comprising a tubular handle, a guard rigid with the tubular handle, blade holding means movable relatively to the guard to carry the blade toward and from the guard about an axis parallel with the edge of the plane in the blade holding means, a clamping member movable relatively to the guard and also to the blade holding means about the same axis, a lost motion connection between the clamping member of the blade holding means, and an operating rod having a link connection with the clamping member to move the latter toward and from the guard and through such lost motion connection to move the blade also toward and from the guard.

EDWARD S. SAVAGE.