Dec. 20, 1927. 1,653,081

W. G. ADAMS

SAFETY RAZOR

Filed July 24, 1925

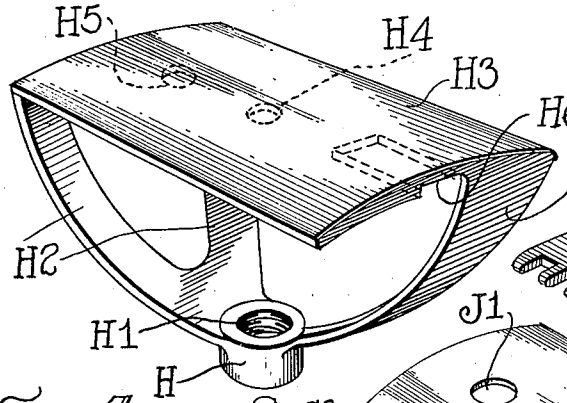



Fig. 1.

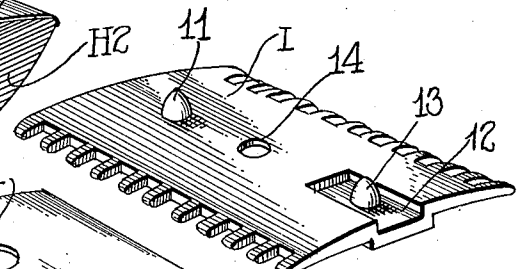



Fig. 2.

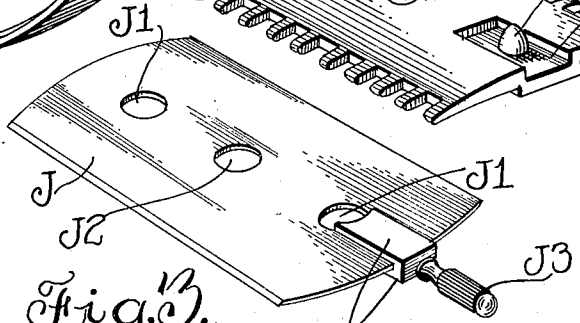



Fig. 3.

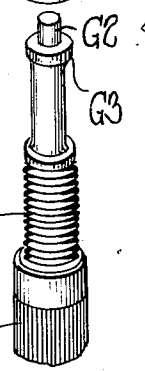



Fig. 5.

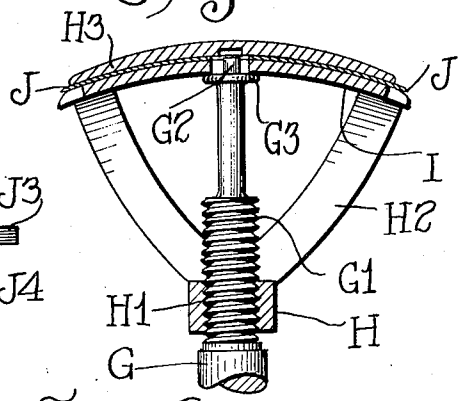



Fig. 6.

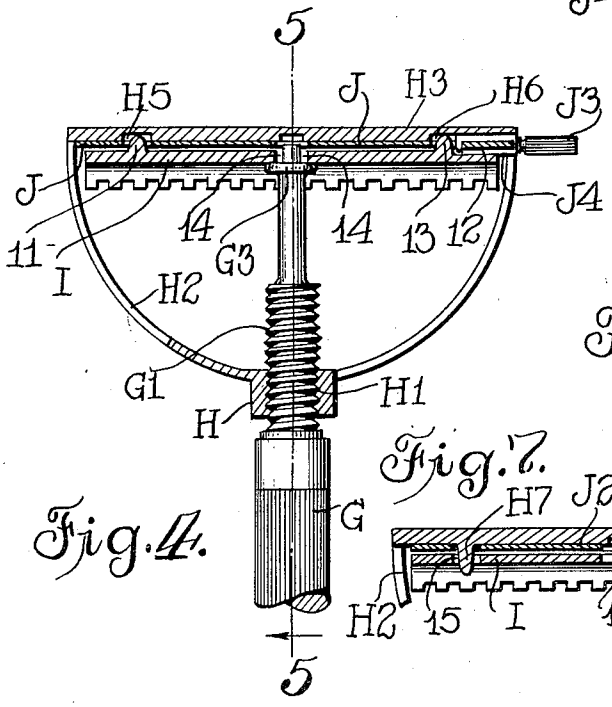



Fig. 4.

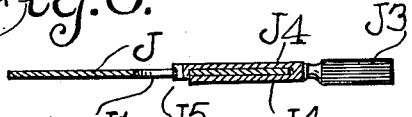
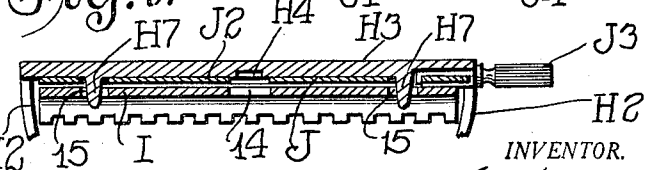



Fig. 7.




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# UNITED STATES PATENT OFFICE.

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## SAFETY RAZOR.

Original application filed September 26, 1923, Serial No. 664,972. Divided and this application filed July 24, 1925. Serial No. 45,837.

My improvement relates to a safety razor structure wherein provision is made for conveniently turning the blade so as to bring first one side and then the other side of the blade against the face during the shaving operation, whereby the blade may longer be kept in cutting condition.

Structures for this purpose are described in my Letters Patent, No. 1,489,102, dated April 1, 1924, and in my Letters Patent, No. 1,492,233, dated April 29, 1924. In those structures the blade is held by a holder which is attached to and turnable on the supporting frame. In the construction of the present application, the blade holder is easily detachable from the supporting frame for turning the holder and thereby reversing the blade.

This application is a division of my application, Serial No. 664,972, filed September 26, 1923.

In the accompanying drawings,

Fig. 1 is a perspective showing the frame and the upper part of the handle of a structure embodying my improvement;

Fig. 2 is a perspective of the guard plate;

Fig. 3 is a perspective of the blade and handle;

Fig. 4 is an upright section along the middle longitudinal line of the blade;

Fig. 5 is an upright section on the line, 5—5, of Fig. 4, looking toward the left;

Fig. 6 is a section on the line, 6—6, of Fig. 3;

Fig. 7 shows the upper part of Fig. 4 in another form.

Referring to said drawings, the structure shown is of the Gillette type and includes a flexible blade having two cutting edges, and means are applied to that blade for conveniently removing the blade from its support, turning the blade, and then replacing it.

But it is to be noted that my structure embodies several well-defined features not present in the Gillette structure.

G is a handle having a screw-threaded neck, $G^1$. At the upper end of the neck is a cylindrical lug, $G^2$, at the lower end of which is an annular shoulder, $G^3$.

H is a spider-form top plate support comprising an interiorly threaded bearing, $H^1$, and three arms, $H^2$, on the upper end of which is the top plate, $H^3$. The neck, $G^1$, of the handle is screwed into the bearing, $H^1$, as shown in Fig. 10. The top plate is in the form of an elongated parallelogram and it is crowned between its long edges. In the lower face of the top plate in its middle longitudinal line, is a socket, $H^4$, which is adapted to receive the upper end of the cylindrical lug, $G^2$. On the same line near one end of the top plate is a socket, $H^5$, which receives a lug described further on. At the other end of the top plate and on said line there is formed in the lower face of the top plate a channel, $H^6$, which receives the upper part of the fork-form holder described further on. The guard, I, is in the form of an elongated parallelogram a little wider than the top plate and toothed along its long edges and crowned between its long edges to conform to the crowning of the top plate. Near one end the guard has on its upper face a lug, $I^1$. At its other end, the guard has in its upper face a channel, $I^2$, corresponding to the channel, $H^6$. In the channel, $I^2$, is a lug, $I^3$. At the middle of the middle longitudinal line of the guard is an aperture, $I^4$.

J is the blade. This is of approximately the length and width of the guard and each of its long edges is a cutting edge. Near each end of the blade, in position to receive the lug, $1^1$, or the lug, $I^3$, of the guard, is an aperture, $J^1$. At the middle of the middle longitudinal line of the blade is an aperture, $J^2$, in position to receive the cylindrical neck, $G^2$, of the handle. To the blade handle, $J^3$, is attached a fork-form holder, $J^4$, the arms of which are flat and flexible. (Figs. 4 and 6.) On the inner end of one of said arms is a lip, $J^5$, directed toward the other arm. The holder receives one end of the blade, and the arms of the holder are long enough to bring the lip, $J^5$, into the adjacent aperture, $J^1$, the lip bearing against the wall of the aperture which is nearer the adjacent end of the blade. By this means the blade handle is firmly held and the aperture, $J^1$, is left open to receive the lug, $I^3$, on the guard.

For assembling the parts, the guard is placed on the lug, $G^2$, of the handle, G. Then the blade is laid on the guard, the lug, $G^2$, entering the blade aperture, $I^4$, and the lower arm of the holder going into the channel, $I^2$, and the lugs, $I^1$ and $I^3$, entering the apertures, $J^1$, of the blade. Then the handle, G, is turned to drive it upward to

lift the guard and blade, whereby the blade is pressed against the lower face of the top plate, the lug, $I^1$, entering the socket, $H^5$, and the lug, $I^3$, and the upper arm of the holder, $J^4$, entering the channel, $H^6$, of the top plate. While the handle, G, is being thus driven upward, the lug, $G^2$, being free in the aperture, $I^4$, of the guard plate and the aperture, $J^2$, of the blade, the annular shoulder, $G^3$, is free to bear against the lower face of the guard and affords a relatively large area for such engagement. In assembling, the aperture, $I^4$, of the guard plate and the aperture, $J^2$, of the blade receives the lug, $G^2$, for positioning the guard and the blade. This relationship also functions for giving stability to the structure composed of the top plate, $H^3$, and the three arms, $H^2$, due to flexibility of the arms, $H^2$, whereby lateral movement relative to the handle, G, is limited or avoided. If the lug, $G^2$, fits closely, such lateral movement is altogether avoided, and if said lug does not fit closely, such lateral movement is at least limited.

When, during use, the blade is to be reversed, the handle, G, is turned for retracting until the guard has been lowered sufficiently to release the blade and allow it to be moved in the plane of the blade. Then the operator grasps the handle, $J^3$, withdraws the blade horizontally or in the plane of the blade, gives the blade a half turn on its longitudinal, middle line, and then returns the blade, by movement in the plane of the blade, into its position on the guard. Then the operator again turns the handle to drive it upward to press the guard and the blade into working position. If, when the handle has been lowered, the guard is turned a little on the axis of the handle, the blade may be removed and replaced by endwise movement.

At the end of the top plate, $H^3$, which has the channel $H^6$, there is only one arm, $H^2$, and that is at one side of the channel, $H^6$. Thus space is made for the handle, $J^3$, and for inserting and removing the blade.

In Fig. 7, the construction is the same as in Fig. 4, excepting that apertures, $I^5$ are substituted for the lugs, $I^1$ and $I^3$, of the guard and downward-directed lugs, $H^7$, are placed on the lower face of the top plate, $H^3$, to extend downward through the apertures, $J^1$, of the blade and into the apertures, $I^5$, of the guard, I.

The top plate constitutes a relatively stationary blade-supporting member against which the blade is laid flatwise, and the guard and the handle constitute releasable means for engaging the blade and holding it against the relatively stationary blade-supporting member. The blade has a handle which is in the plane of the blade, and the insertion and removal of the blade are accomplished by moving the blade in the plane of the blade. The blade is reversed by grasping its handle and withdrawing the blade and then giving the blade a half turn and then again inserting it into the working position.

I claim as my invention,

1. In a safety razor, the combination of a top plate support having in its lower part an interiorly threaded upright bearing, a top plate on said support, a guard located below the top plate and apertured at its middle, a blade between the guard and the top plate and apertured at its middle, and a handle extending upward through and threaded into said bearing and having its upper end in the apertures of the guard and the blade and engaging and pressing the guard upward, substantially as described.

2. In a safety razor, the combination of a top plate, a top plate support having in its lower part an interiorly threaded upright bearing and the support being attached to one end edge of the top plate at one side of the middle of said end, a guard below the top plate, a blade between the guard and the top plate, and a handle extending upward through and threaded into said bearing and having its upper end engaging and pressing the guard upward, substantially as described.

3. In a safety razor, the combination of a top plate, a top plate support having in its lower part an interiorly threaded upright bearing and the support being attached to one end edge of the top plate at one side of the middle of said end, a guard located below the top plate and apertured at its middle, a blade between the guard and the top plate and apertured at its middle, and a handle extending upward through and threaded into said bearing and having its upper end in the apertures of the guard and the blade and engaging and pressing the guard upward, substantially as described.

4. In a safety razor, the combination of a top plate, a top plate support having in its lower part an interiorly threaded upright bearing and the support being attached to one end edge of the top plate at one side of the middle of said end, a guard below the top plate, a blade between the guard and the top plate, and a handle extending upward through and threaded into said bearing and having at its upper end a shoulder engaging and pressing the guard, substantially as described.

5. In a safety razor, the combination of a top plate support having in its lower part an interiorly threaded upright bearing, a top plate on said support, a guard located below the top plate and apertured at its middle, a blade between the guard and the top plate and apertured at its middle, a handle on one end of the blade, and a handle extending up-

ward through and threaded into said bearing and having its upper end in the apertures of the guard and the blade and engaging and pressing the guard upward, substantially as described.

6. In a safety razor, the combination of a top plate support having in its lower part an interiorly threaded upright bearing, a top plate attached to said support and having a channel in its lower face, a guard located below the top plate and having in its upper face a channel, a blade between the guard and the top plate, a handle on one end of the blade and extending into said channels, and a handle extending upward through and threaded into said bearing and having its upper end engaging and pressing the guard upward, substantially as described.

7. In a safety razor, the combination of a top plate support having in its lower part an interiorly threaded upright bearing, a top plate on said support, a guard below the top plate, a blade located between the guard and the top plate and having an aperture near one end, and a handle having arms extending along opposite sides of the blade and one of said arms extending into said aperture, whereby said handle is detachably secured to said blade, substantially as described.

8. In a safety razor, the combination of a top plate support having in its lower part an interiorly threaded upright bearing, a top plate on said support, a guard below the top plate, a blade located between the guard and the top plate and having an aperture near one end, a handle located at one end of and over-lapping a part of the blade and having a lip extending into said aperture, and a handle extending upward through and into said bearing and having its upper end in the apertures of the guard and the blade and engaging and pressing the guard upward, substantially as described.

9. In a safety razor, the combination of a top plate, a guard below the top plate, a blade between the guard and the top plate, a detachable handle on one end of the blade, the lower face of the top plate and the upper face of the guard being recessed to receive the detachable handle, and means for pressing the guard and the blade toward the top plate, substantially as described.

10. In a safety razor, the combination of a top plate, a spider-form top plate support, a guard below the top plate, a blade between the guard and the top plate, a detachable handle on one end of the blade, and means for pressing the guard and the blade toward the top plate, substantially as described.

11. In a safety razor, the combination of a top plate, a three-arm spider-form top plate support, a guard below the top plate, a blade between the guard and the top plate, a detachable handle on one end of the blade, and means for pressing the guard and the blade toward the top plate, substantially as described.

12. In a safety razor, the combination of a top plate, a three-arm spider-form top plate support, the arms being at the ends of the top plate and only one arm being at one end of the top plate and at one side of the middle of said end, a guard below the top plate, a blade between the guard and the top plate, and means for pressing the guard and the blade toward the top plate, substantially as described.

In testimony whereof I have signed my name, this 13th day of June, in the year one thousand nine hundred and twenty-five.

WILLIAM G. ADAMS.