

E. A. CHRISTOPH.
SAFETY RAZOR.

APPLICATION FILED DEC. 31, 1904. RENEWED JULY 29, 1910.

971,827.

Patented Oct. 4, 1910.

Fig. 1.

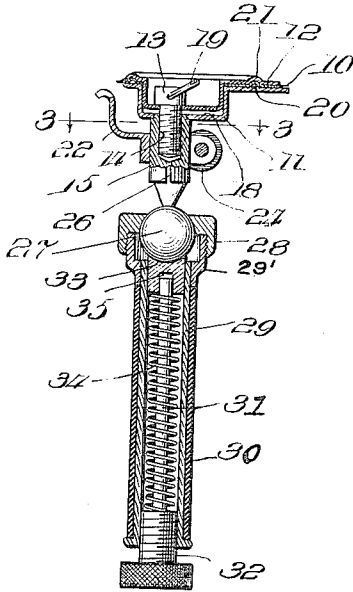


Fig. 2.

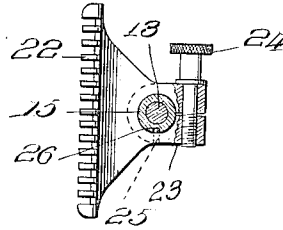


Fig. 3.

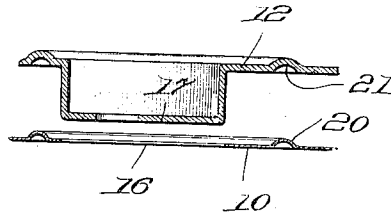


Fig. 4.

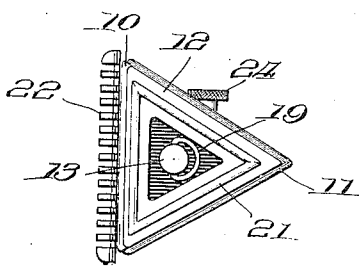


Fig. 5.

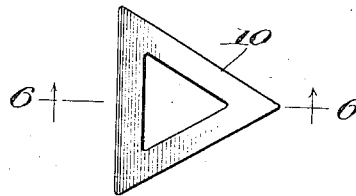


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

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SAFETY-RAZOR.

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To all whom it may concern:

Be it known that I, EMIL A. CHRISTOPH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Safety-Razors, of which the following is a specification.

Heretofore safety razors have been provided with detachable blades having a plurality of cutting edges and these blades have been made elastic so that they can be bent to adjust the cutting edge in proper relation to the guard for shaving as close as the user may desire.

It is my object to provide a safety razor with a detachable blade having a plurality of cutting edges and with means whereby the relative position of the cutting edge of the blade and the guard can be adjusted as desired without bending the blade.

It is also my object to provide a safety razor with a guard and a handle which can each be readily adjusted to suit the requirements of the user; and to provide means for rigidly securing the blade in fixed position.

In the accompanying drawings, I have illustrated one embodiment of the invention in which—

Figure 1 is a sectional view. Fig. 2 is a top plan view. Fig. 3 is a sectional view on the line 3—3 of Fig. 1. Fig. 4 is an enlarged detail sectional view of the blade and clamping plate. Fig. 5 is a plan view of a flat blade without the rib. Fig. 6 is a sectional view on the line 6—6 of Fig. 5.

Referring to the drawings 10 is a blade which is secured in place between the head plate 11 and the clamping plate 12 by a screw 13 which enters a threaded opening 14 in one end of the stem 15 which carries the head plate. The blade is provided with an opening 16 to receive the depressed central part 17 of the clamping plate, and the head plate is provided with a correspondingly depressed part 18 to receive the depressed part 17 of the clamping plate whereby these plates are interengaged against relative edgewise and rotatory movement. The head of the screw 13 is provided with a pivoted handle 19 of suitable character which facilitates its adjustment. The depressions in the clamping and head plates form a socket to accommodate the head and handle of the screw 13 so that they may lie out of the way below the top of the

razor. The handle can readily be swung into upright position to enable the screw to be turned.

I prefer to employ a blade of triangular shape with each of its edges constituting a cutting edge and as a further means of clamping the blade in rigid position I prefer to make the depressions in the clamping and head plates of angular shape so that they will fit snugly without turning one within the other, and also to provide the blade with a bead to fit in a groove in the clamping or head plates. I have shown the blade provided with a bead 20 on its upper side and located opposite each cutting edge to fit in a corresponding groove 21 in the clamping plate (Figs. 1, 4), and this bead and groove, as well as the depressed parts of the clamping and head plates may be formed by stamping the metal in a manner familiar in the trades.

The guard 22 is carried by a split collar 23 which is adjustable on the stem 15 and fastened securely in adjusted position by the screw 24. The guard can thus be adjusted to any desired position relative to the edge of the blade which is arranged in cutting position and hence the razor can be adjusted to cut as required by the user without bending the blade which at all times remains clamped flatly between the clamping and head plates. A pin 25 on the collar 23 travels in a slot 26 in the stem and holds the guard in its proper position parallel with the edge of the blade in cutting position.

On the lower end of the stem is a ball 27 which is connected with the handle by a cap 28. The handle comprises a sleeve 29 having at its upper end a collar 29' which is screwed into the cap 28. The sleeve is provided with a cover 30 of rubber or other suitable material. The outer surface of the sleeve may be serrated or roughened so that the rubber covering, which can be slipped on the sleeve over its lower end, will be prevented from turning on the sleeve. A spindle 31 is arranged within the sleeve and its lower end 32 is enlarged and threaded to screw into the threaded lower end of the sleeve, and this spindle carries at its upper end a block 33 which has its upper face shaped to fit the ball 27. A coil spring 34 on the spindle between the block 33 and the enlarged lower end 32 operates to hold the block in frictional engagement with the ball 27, and by adjusting the spindle longitudinally of the

sleeve, this engagement between the block and the ball can be regulated as required to secure the handle to the upper or head part of the device fixedly in any position to which it may be adjusted. The upper end of the spindle fits loosely in a socket 35 in the block 33, whereby the adjustment of the spindle will not cause the block to turn but will simply adjust the tension on the spring 34.

It will be readily understood that as the tension of the spring is increased by the adjustment of the spindle, the block 33 will be tightly clamped against the ball 27 like a brake block or shoe and operate to lock the parts to any position in which they have been adjusted.

My invention is simple in construction and can be manufactured at very low cost. By avoiding the necessity for bending the blade in adjusting the razor for the work to be done, I am able to harden the blade like the ordinary razor blade which permits them to be made with a superior cutting edge and also greatly prolongs their life. The blades can be made very thin and the head may be employed to strengthen the thinnest blades but it is not necessary on thicker blades as shown in Figs. 5 and 6. It is intended that the blades shall be used until all of the cutting edges, which are arranged successively in cutting position, become dull, and then it can be thrown away or sharpened. The head can be adjusted in angular relation to the handle, and after the spindle has once been set, this adjustment can be effected by the user without operating the spindle. Only one cutting edge of the blade is in cutting position at one time while the other edges are protected. This protection can be afforded by making both the clamping plate and head plate overlap or aline with those cutting edges which are not in cutting position, or the same result may be accomplished by simply making the head plate larger than the blade as the blade is clamped tightly against the head plate and the cutting edges out of cutting position would be protected by the projecting edges of the head plate.

In Figs. 1 and 2 I have shown the head plate projecting beyond those cutting edges of the blade which are not in cutting position and the clamping plate flush with said edges. In fact the area of the clamping plate may be considerably reduced when the blade is protected by the projecting edges of the head plate, as just described, as it is only sufficient to provide a bearing of the clamping plate on the blade of sufficient character to effect the clamping of the parts together.

By adjusting the spindle 31 the block 33 can be pressed thereby tightly against the ball 27 to form a dead lock, and in this way the head and handle can be locked together in adjusted position without the spring 34

as well as with the spring as heretofore described. For this reason I may omit the spring 34 and depend entirely upon the adjustment of the spindle against the block to lock the head and handle in adjusted position.

Without limiting myself to the exact construction and arrangement of parts herein shown and described, what I claim and desire to secure by Letters Patent is:—

1. In a safety razor, the combination of a head plate and a clamping plate, said plates being provided with depressed parts to fit one within the other, a blade arranged between said plates and provided with an opening to receive the depressed part of the clamping plate, and means for securing said plates together.

2. In a safety razor, the combination of a head plate and a clamping plate, said plates being provided with depressed parts to fit one within the other, a blade arranged between said plates and having an opening to receive the depressed part of the clamping plate, and a screw for fastening said plates together and having its head contained within the socket formed by the depressed part in the clamping plate.

3. In a safety razor, the combination of a head plate having a depressed central part, a clamping plate having a depressed central part to fit in the depressed part of the head plate, a blade arranged between said plates and having an opening to receive the depressed part of the clamping plate, and means for securing said plates together with the blade therebetween.

4. In a safety razor, the combination of a head plate and a clamping plate, said plates being provided with depressed parts to fit one within the other, a blade arranged between said plates and having an opening to receive the depressed part of the clamping plate, there being a groove on the clamping plate around said depressed part and said blade having a bead to fit said groove.

5. In a safety razor, the combination of a head plate, a blade having a plurality of cutting edges, and means comprising a plate for clamping the blade against the head plate, said blade being provided with a bead opposite each of its cutting edges and said clamping plate being grooved to accommodate said bead.

6. In a safety razor, the combination of a head carrying the blade, a ball on said head, and a handle connected to said ball and comprising a sleeve, a cup connecting the sleeve to the ball, a spring pressed friction block within the sleeve bearing on the ball, and means for regulating the spring tension on said block.

7. In a safety razor, the combination of a head carrying the blade, a ball on said head, a sleeve, a cup on the ball for connecting the

sleeve thereto, a friction block in the sleeve and bearing on the ball, said friction block having a socket, a spindle in the sleeve having its upper end arranged in the socket in
5 said friction block and its lower end enlarged and threaded to screw into the lower end of the sleeve, and a spring on the spindle between the friction block and the enlarged end of the spindle.

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Witnesses:

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