

C. BALLREICH.  
SAFETY RAZOR.

APPLICATION FILED MAR. 29, 1912. RENEWED MAY 31, 1917.

1,246,219.

Patented Nov. 13, 1917.

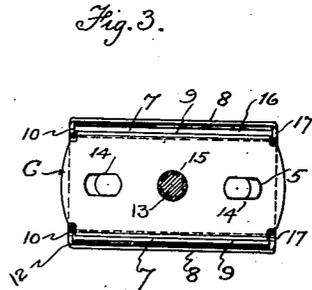
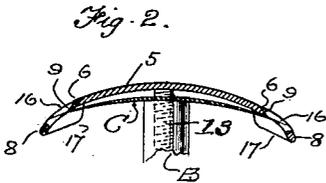
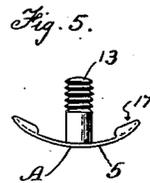
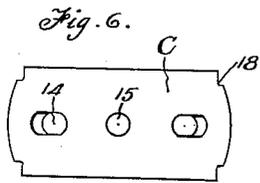
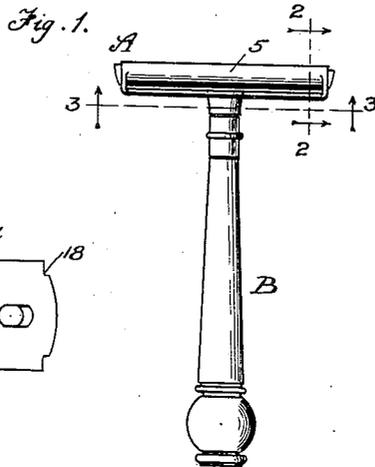
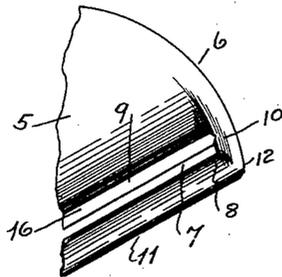


Fig. 4.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHARLES BALLREICH, OF PUEBLO, COLORADO.

## SAFETY-RAZOR.

1,246,219.

Specification of Letters Patent.

Patented Nov. 13, 1917.

Application filed March 29, 1912, Serial No. 687,073. Renewed May 31, 1917. Serial No. 171,816.

*To all whom it may concern:*

Be it known that I, CHARLES BALLREICH, a citizen of the United States, residing at Pueblo, in the county of Pueblo and State of Colorado, have invented new and useful Improvements in Safety-Razors, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to improvements in safety razors and has for its object the production of a device in which the razor blade is firmly held without danger of the corners cutting the user.

A further object is the production of a device in which the guard is formed integral with the holder and the relative position of the blade with respect thereto is regulated by the movement of the handle.

A further object is the production of a device in which a blade is used of such a thickness as not to require external support to give rigidity to its cutting edge.

A further object is the production of a device in which the required flexibility of the blade is attained without drawing the metal to such a degree of thinness as to require external support.

A further object is the production of improved means for preventing the lateral movement of the blade, thereby holding it rigidly within the holder.

A further object is the production of a device utilizing a minimum number of parts and one that can be cheaply constructed and one not liable to get out of order.

These and such other objects as are hereinafter set forth are obtained by my device, an embodiment of which is illustrated in the accompanying drawings, in which—

Figure 1 represents a front elevation of my device;

Fig. 2 represents an enlarged sectional view on the line 2—2 of Fig. 1 looking in the direction opposite to that indicated by the arrows;

Fig. 3 represents a sectional view on the line 3—3 of Fig. 1 looking in the direction indicated by the arrows;

Fig. 4 represents an enlarged perspective of a portion of my device;

Fig. 5 is an end view of the combined blade holder and guard portion of my device; and

Fig. 6 is a plan view of the blade used in my device.

Referring now to the drawings, my improved razor comprises only three parts, a combined holder and guard A, a handle B and a razor blade C.

The holder A comprises a curved backing plate 5 having at its opposite sides the ends curved downwardly more abruptly, as shown at 6, and having oppositely disposed cut away portions or slits 7 between the outer edge or guard bar 8 and the center of the plate. The portions of the plate A forming the upper sides of the slits are acute-angled, as shown at 9.

At the four corners of the plate 5 the metal is continued forming supports 10 for the bars 8 and closing the ends of the slits 7. These extensions are in a plane above the cutting edge of blade 16 and serve to guard the corners of the blade, making it impossible for said corners to come into contact with the face and cut the same. The outer edge 11 of the bar 8 is made smooth and rounded and the corners 12 are also rounded so that the razor may slip smoothly over the face.

The holder is provided with a central screw 13 adapted to pass through the central hole 15 in the blade C. This blade is formed from steel of a sufficient thickness so as not to require external support to give rigidity to its cutting edge. I attain the desired flexibility of the blade by cutting out a portion of the interior of the material, as indicated by the holes 14, the size and shape of which may be varied, depending on the thickness of the blade used and the degree of flexibility desired. As the greatest degree of flexibility is required to enable the blade to be pressed on the inside of the holder, I find the best results are obtained by cutting away the portions in such a manner as to leave oblong openings with rounded corners on either side of the central opening and substantially midway between the central openings and the ends of the blade. This object may also be attained by thinning the metal of the blade medially parallel with the cutting edges, or in any other suitable manner.

When the blade C is slipped in place the edges project through the slits as shown at 16, the ends of the blades adjacent the corners striking against four shoulders 17 formed on the inner face of the holder at

each corner and at the ends of the slits. To this end the corners of the blade should preferably be notched as shown at 18 in Fig. 6, to aid in positioning the blade against the shoulders 17. The ends of the blades are adapted to fit snugly against the inner faces of the shoulders so as to hold the blade rigidly in place.

I may, if I so desire, extend the shoulders 17 down below the lower edge of the bar 8, in which case it will be impossible for either edge of the blade C to come into contact with the bar 8 at any point and the blade will be perfectly positioned by cooperation of the shoulders 17 and the notches 18 prior to reaching the level of the bars 8, thus avoiding any possible dulling of the cutting edge. I have found in practice, however, that if, in placing the blade, its edges do come into contact with the bar 8, due to the blade not being inserted parallel with the bars, such contact does not tend to dull the blade in any appreciable degree; and, furthermore, such contact occurs only at the extreme corners of the blade, which part of the blade is used but little, if any, due to the corners being guarded by the extensions 10. For these reasons I prefer the form of my invention shown in the drawings.

It will be noted by reference to Fig. 2 that the edge of the blade extends beyond the acute-angled edge 9 of the plate so as to present a cutting edge for use.

While I have shown the blade as being held in place by means of the central screw forming part of the handle and shoulders of the holder, I may adopt other means to prevent the cutting edges of the blades from coming in contact with the bars when the blades are slipped in place.

The handle B is provided at its end with a threaded opening or socket adapted to receive the screw 13 and when the handle is screwed home the face of the end engages the face of the razor blade and by regulating the pressure of the face on the blade one may regulate the distance the edge of the blade projects through the slit, thereby making it possible to adjust the razor so as to secure a close or a smooth shave.

Attention is also particularly called to the purpose of the guard bars 8 which are preferably, but not necessarily, formed integral with the plate. These smooth bars serve the purpose of the teeth of the ordinary safety razor but in a much better manner smooth the way in the same manner as though the skin were stretched by the hand.

I prefer to use blades of comparatively thick metal as by its use the vibrations incident to the use of thin metal are obviated. This is quite an important feature in my invention as in the use of thin blades the vibra-

tion of the blade cuts the beard unevenly, giving what may be termed a poor shave. It also, on account of its uneven cut, causes the face to smart.

By the use of a blade of the character described I provide a blade that is susceptible of stropping, which is also a very essential element, as it is a well known fact that no edge of any kind on the blade will give as good a second or third shave as the first shave unless the blade is stropped before subsequent use.

Heretofore in the use of thin blades, it has been necessary to support the blade itself in order to give rigidity to its cutting edge while in use and also to prevent vibration. Blades of this character are also so thin as to be useless after one or two shaves and being too thin to be stropped must be thrown away. Also, even the second shave with a thin blade of this character is not as good as the first shave, as heretofore set forth. By the use, however, of my improved blade with a flexible portion the requisite degree of flexibility can be readily secured without sacrificing any of the rigidity of the blade, thus insuring a perfect shave.

My device is also especially valuable to persons having wrinkled skin, as the bar glides easily over the wrinkles and permits an angular or sliding movement, such as is used with the old style of razor.

With the ordinary safety razor when shaving against the grain the teeth catch in the folds or wrinkles of the face or neck, but with this device no such action can take place, thus making it possible to shave against the grain on any portion of the face or neck.

It will also be noted that the razor proper consists of only two pieces besides the blade that can be easily kept clean and quickly assembled and disassembled. This is a very valuable feature as it is a well known fact that while shaving the lather and beard collects on the under side of the blade and this can be removed as often as desired by simply dipping the razor in water, making the razor practically clean, while with other forms in use the lather and beard collects between the teeth and between the razor blade and the upper and lower plates, making it necessary to take the razor apart in order to clean it.

As the razor is constructed, a blind man can put it together, shave himself and take it apart without danger of cutting himself. So, also, it can be used on trains or boats regardless of the shaking of the trains or boats as there is no chance whatever of cutting oneself.

I do not limit myself to the present form illustrated as I am aware that other forms

can be made within the scope of my invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is—

1. In a safety razor, the combination with an arched blade support having slits near its straight edges and a handle attaching stud projecting from its central portion, of a normally flat, centrally perforated blade engaging said stud and projecting into said slits, and a handle cooperating with said stud and having a shoulder engaging said blade whereby said blade is secured in position.

2. In a safety razor, the combination with an arched blade support having slits near its straight edges and a handle attaching stud projecting from its central portion, of a normally flat, centrally perforated blade engaging said stud and projecting into said slits, the parts being so proportioned that the ends of said slits guard the corners of said blade, and a handle cooperating with said stud and having a shoulder engaging said blade whereby said blade is secured in position.

3. In a safety razor, the combination with an arched blade support having slits near its straight edges and a handle attaching stud projecting from its central portion, of a normally flat, centrally perforated blade engaging said stud and projecting into said slits, the parts being so proportioned that the corners of said blade always lie below the end portions of said slits and are guarded thereby, and a handle cooperating with said stud and having a shoulder engaging said blade whereby said blade is secured in position.

4. In a safety razor, the combination with an arched blade support, having slits near its straight edges, shoulders depending from its under side adjacent the ends of said slits and a handle attaching stud projecting from its central portion, of a normally flat, centrally perforated blade engaging said stud and projecting into said slits, said blade being provided with notches at its corners for engaging said shoulders and positioning said blade, and a handle cooperating with said stud and having a shoulder engaging said

blade whereby said blade is secured in position.

5. In a safety razor, the combination with an arched blade support having slits near its straight edges and a handle attaching stud projecting from its central portion, of a normally flat, centrally perforated blade of sufficient thickness to give rigidity to its cutting edge, said blade engaging said stud and projecting into said slits, and a handle cooperating with said stud and having a shoulder engaging said blade whereby said blade is secured in position.

6. In a safety razor, the combination with an arched blade support having slits near its straight edges and a handle attaching stud projecting from its central portion, of a normally flat, centrally perforated blade of sufficient thickness to give rigidity to its cutting edge, said blade being so proportioned as to permit of flexing and to project into said slits, and a handle cooperating with said stud and having a shoulder engaging said blade whereby said blade may be flexed to adjust the degree of its protrusion into said slits and may be secured in position.

7. In a safety razor, the combination with an arched blade support having slits near its straight edges and a handle attaching stud projecting from its central portion, of a normally flat, centrally perforated blade of sufficient thickness to give rigidity to its cutting edges and projecting into said slits, the parts being so proportioned that the ends of said slits guard the corners of said blade and that the blade is capable of being flexed, and a handle cooperating with said stud having a shoulder engaging said blade whereby said blade may be flexed to adjust the degree of its protrusion into said slits and may be secured in position.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

CHARLES BALLREICH.

Witnesses:

CHAS. H. WILLIAMS,  
CHAS. W. O'DONNELL.