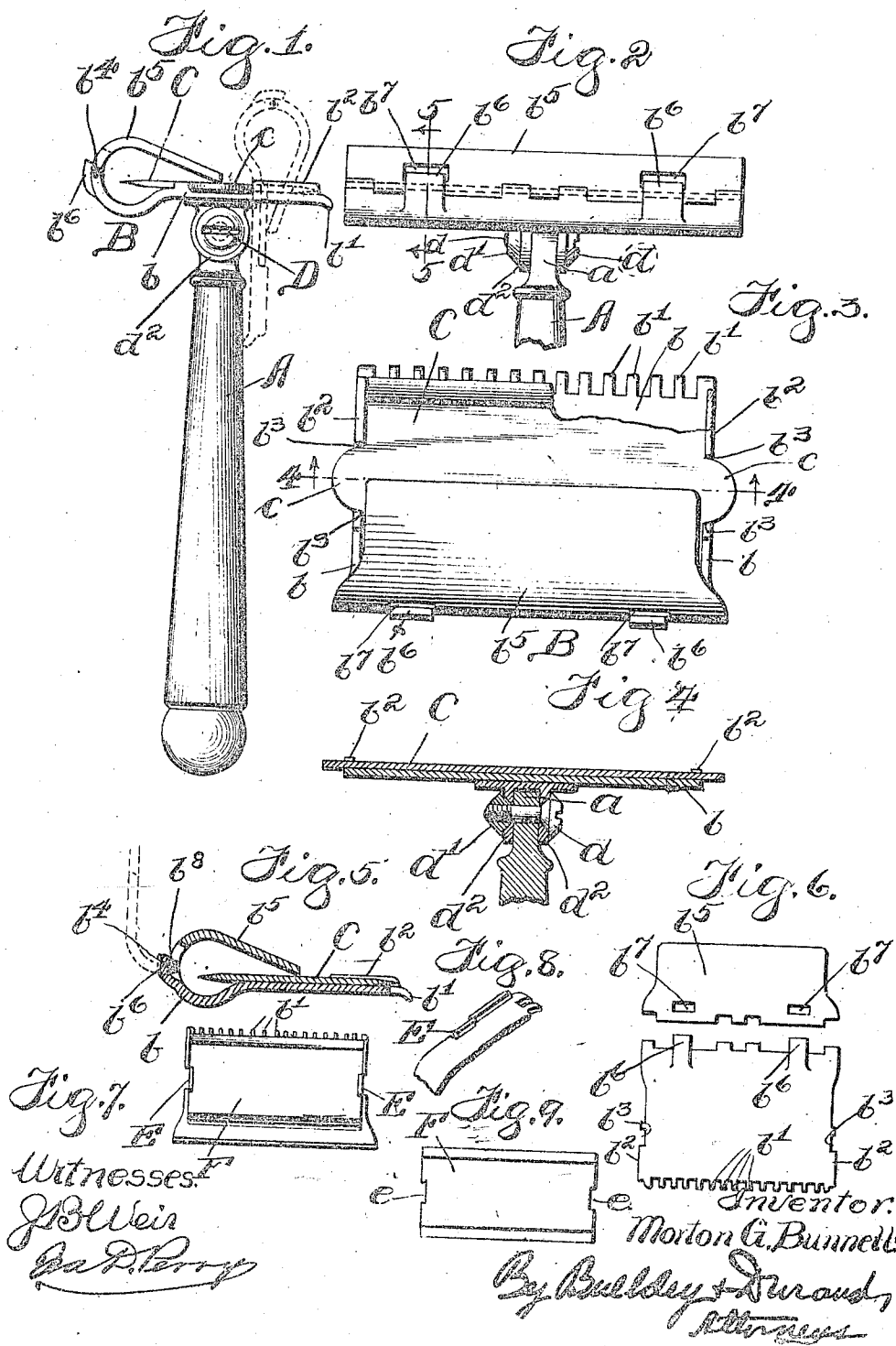


M. G. BUNNELL.
SAFETY RAZOR.

APPLICATION FILED JUNE 24, 1905. RENEWED NOV. 21, 1910.

1,011,111.

Patented Dec. 5, 1911.



UNITED STATES PATENT OFFICE.

MORTON G. BUNNELL, OF PORTER, INDIANA, ASSIGNOR TO JOSIAH CRATTY AND
GEORGE C. MASTIN, OF CHICAGO, ILLINOIS.

SAFETY-RAZOR.

1,011,111.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed June 24, 1905, Serial No. 266,831. Renewed November 21, 1910. Serial No. 593,506.

To all whom it may concern:

Be it known that I, MORTON G. BUNNELL, a citizen of the United States of America, and resident of Porter, Porter county, Indiana, have invented a certain new and useful Improvement in Safety-Razors, of which the following is a specification.

My invention relates to safety razors in general, but more particularly to safety razors comprising a removable double-edged blade, and especially to safety razors of the type shown and described in my prior application No. 263,715, filed by me in the United States Patent Office on June 5, 1905, and in which I have claimed my invention broadly.

In a safety razor comprising a rectangular blade, having two parallel cutting edges and suitable end portions, a rectangular holder having a pair of upwardly projecting lugs for each end of the blade, the members of each pair of lugs being separated or spaced apart to receive and embrace an end portion of the blade between them, to prevent displacement of the blade in all directions in the plane thereof, said upstanding lugs being disposed substantially at the four corners of the holder and blade, a guard for the cutting edge in use, a handle on the bottom of the holder, and means bearing upon the upper surface of the blade to hold it fixed from displacement upon the holder, my invention consists in certain novel features, in combination therewith, as follows: first, a spring-actuated member in the said holder, movable without moving the handle, for releasably uncovering the blade in the fixed plane thereof; second, a movable member in the said holder which is separable from the holder without removing the handle, for releasably uncovering the blade in the fixed plane thereof; and third, a hinged member in the said holder, movable without moving the handle, for releasably uncovering the blade in the fixed plane thereof. By stating that the blade is releasably uncovered, I mean that the blade is uncovered sufficiently to leave it free to be released by lifting it from its seat between the lugs by which it is held against displacement during use.

In the accompanying drawings, Figure 1 is a side elevation, on an enlarged scale, of a safety razor embodying the principles of my invention. Fig. 2 is a rear elevation

of the head or upper portion of said razor. Fig. 3 is a plan or top view of the razor shown in Fig. 1. Fig. 4 is a section on line 4-4 in Fig. 3. Fig. 5 is a section on line 5-5 in Fig. 2, showing the spring-pressed member or clamping jaw raised or thrown back in dotted lines. Fig. 6 is a view, on a reduced scale, showing the two blanks from which the head or blade-holder is made. Fig. 7 is a view similar to Fig. 3, but on a smaller scale, and showing another construction of the head, and a different form of blade. Fig. 8 is a detail perspective of a portion of the blade-holder shown in Fig. 7. Fig. 9 is a detail view of the blade involved in the construction shown in Fig. 7.

Referring to Figs. 1 to 6 inclusive, my improved safety razor comprises a handle A, a blade-holder B, and a double-edged razor blade C. The said handle A is preferably joined to the head or blade-holder B by means of a pivotal joint D, consisting, preferably, of a screw d and a nut d' , together with a pair of ears d'' which are rigid with the blade-holder, and which embrace the upper portion a of the handle. With this arrangement, the said screw can be loosened or tightened, so as to decrease or increase the friction of the joint, and thereby permit the head or blade-holder to be adjusted to any desired position relative to the handle. The said head or blade-holder preferably comprises a base or lower portion b having its forward edge provided with teeth b' adapted to provide a guard for the cutting edge of the razor blade. This portion of the head or blade-holder is also preferably provided at each end with up-turned flanges b'' having openings b''' . At its rear edge, the portion b has a hinge-like or pivotal connection b^4 with the spring-pressed member or clamping jaw b^5 . It will also be seen that this lower portion b is provided with a couple of springy projections b^6 adapted to engage the lower edges of the openings b''' in the upper portion b^5 . The razor blade C is preferably provided at each end with tangs or projections c adapted to fit into the notches or openings b^3 . When the blade is adjusted in place, one edge is held in the proper relation to the toothed forward edge or guard of the blade-holder, while its other edge is properly guarded or protected. The spring tension of the portion b^5 is exerted

in a direction to keep the spring-pressed member or clamping jaw b^5 pressed tightly upon the upper surface of the blade, so as to prevent the displacement of the latter. The said member or jaw b^5 can, however, be raised against the tension of the springy portions b^5 , (as shown in dotted lines in Fig. 5), and when thrown back, it is held in such a position by the tension of the portion b^6 . This, it will be understood, is due to the fact that while the portion b^5 is down upon the razor blade, the portions b^5 engage the outer surface of the same; but when the spring-pressed member or clamping jaw b^5 is thrown back, the portions b^5 then reach into the openings b^7 and engage the flat inner edges b^8 , so as to temporarily retain the said member or jaw in its open position. Any springy hinge arrangement of a character to yieldingly hold the member or jaw in both its opened and closed positions can, however, be employed in place of the construction shown, without departing from the spirit of my invention.

Referring to Figs. 7 to 9 inclusive, it will be seen that the construction of the blade-holder is practically the same as in the preceding figures, but with the exception that in this case said blade-holder has its ends provided with lugs or projections E adapted to engage notches e in the ends of the blade F. With this arrangement, there are no projections on the ends of the blades, as is the case with the construction shown in Figs. 1 to 6 inclusive. In either case, however, the ends of the blade are securely held against both end-wise and lateral displacement, and the corners of the cutting edge of the blade are guarded or protected, so as to prevent the said corners from doing injury to the user. Also, in either construction, the blade is held in place by a hinged and freely swinging but spring-pressed member or clamping jaw adapted to be yieldingly retained by spring means in either its opened or closed position. Also, the handle of my improved razor is adjustable, as previously explained, so as to facilitate the use of the razor and permit the user to adjust it to suit his taste and convenience.

It will be seen that the blade-holder illustrated comprises two sheet-metal and hinge-connected portions, whereof one is subject to spring tension of such a character that it is adapted to yieldingly retain itself in both its opened and closed positions. In this way, the blade-holder can be made from two sheet-metal blanks, the lugs b^6 on the rear edge of one blank supplying the requisite spring tension for yieldingly holding the upper member of the blade-holder in both its opened and closed positions, as explained. This, it will be seen, not only in a measure facilitates the insertion and removal of the blades, but also permits the blade-holder to

be conveniently opened up for the purpose of repairing or cleaning the different parts thereof.

Any suitable materials can be employed for the different parts, according to the requirements of different methods of manufacturing.

From the foregoing it will be seen that I provide upstanding portions and overhanging portions for holding the blade in place, in combination with a shifting or mechanical connection for releasably uncovering the blade, while the same remains at rest upon the holder. More specifically considered, this mechanical or shifting connection is a pivotal or hinge-like connection, whereby the said overhanging portions may be raised from engagement with the blade, so as to leave the latter free to be lifted from the blade seat on the holder. Thus it will be seen that I provide means by which certain portions overhanging the blade can be withdrawn therefrom, thus releasably uncovering the blade—that is, leaving the blade free to be removed from the holder. This is done without any movement of the handle; and furthermore the part b^5 can be separated from the holder without removing the handle, as by removing the pivot b^4 . Consequently, it is not necessary to raise the blade against the pressure of the spring means, as the blade can be released without lifting it from its seat, if such is desired.

What I claim as my invention is:

1. In a safety-razor, the combination of a plate, a guard, lugs on the ends of said plate, a blade having its ends engaging said lugs, said blade seated on said plate, a spring pressed member hinged to the rear edge of said plate, engaging the top of the blade with its forward edge to hold the same on the plate, and a handle, said lugs embracing and holding the blade against edgewise displacement in any direction.

2. In a safety razor, the combination of a rectangular blade having two cutting edges and suitable end portions, a rectangular holder having a pair of upwardly projecting lugs for each end of the blade, means including a springy member in the holder for uncovering the blade in the fixed plane thereof without unseating the blade, the members of each pair of lugs being separated or spaced apart to receive and embrace an end portion of the blade between them, to prevent displacement of the blade in all directions in the plane thereof, said upstanding lugs being disposed substantially at the four corners of the holder and blade, a guard for the cutting edge in use, and a handle on the bottom of the holder, said member bearing upon the upper surface of the blade to hold it fixed from displacement upon the holder, said springy member being readily movable without moving the handle.

3. In a safety razor, the combination of a rectangular blade having two cutting edges and suitable end portions, a rectangular holder having a pair of upwardly projecting lugs for each end of the blade, means including a movable member in the holder for uncovering the blade in the fixed plane thereof without unseating the blade, the members of each pair of lugs being separated or spaced apart to receive and embrace an end portion of the blade between them, to prevent displacement of the blade in all directions in the plane thereof, said upstanding lugs being disposed substantially at the four corners of the holder and blade, a guard for the cutting edge in use, and a handle on the bottom of the holder, said member bearing upon the upper surface of the blade to hold it fixed from displacement upon the holder, said member being separable from the holder without removing the handle.

4. In a safety razor, the combination of a rectangular blade having two cutting edges and suitable end portions, a rectangular

holder having a pair of upwardly projecting lugs for each end of the blade, means including a swinging member hinged in the holder for uncovering the blade in the fixed plane thereof without unseating the blade, the members of each pair of lugs being separated or spaced apart to receive and embrace an end portion of the blade between them, to prevent displacement of the blade in all directions in the plane thereof, said upstanding lugs being disposed substantially at the four corners of the holder and blade, a guard for the cutting edge in use, and a handle on the bottom of the holder, said member bearing upon the upper surface of the blade to hold it fixed from displacement upon the holder, said hinged member being movable without moving the handle.

Signed by me at Chicago, Ill., this 16th day of June, 1905.

MORTON G. BUNNELL.

Witnesses:

CLARENCE M. THORNE,
ALBERT J. SAUSER.