

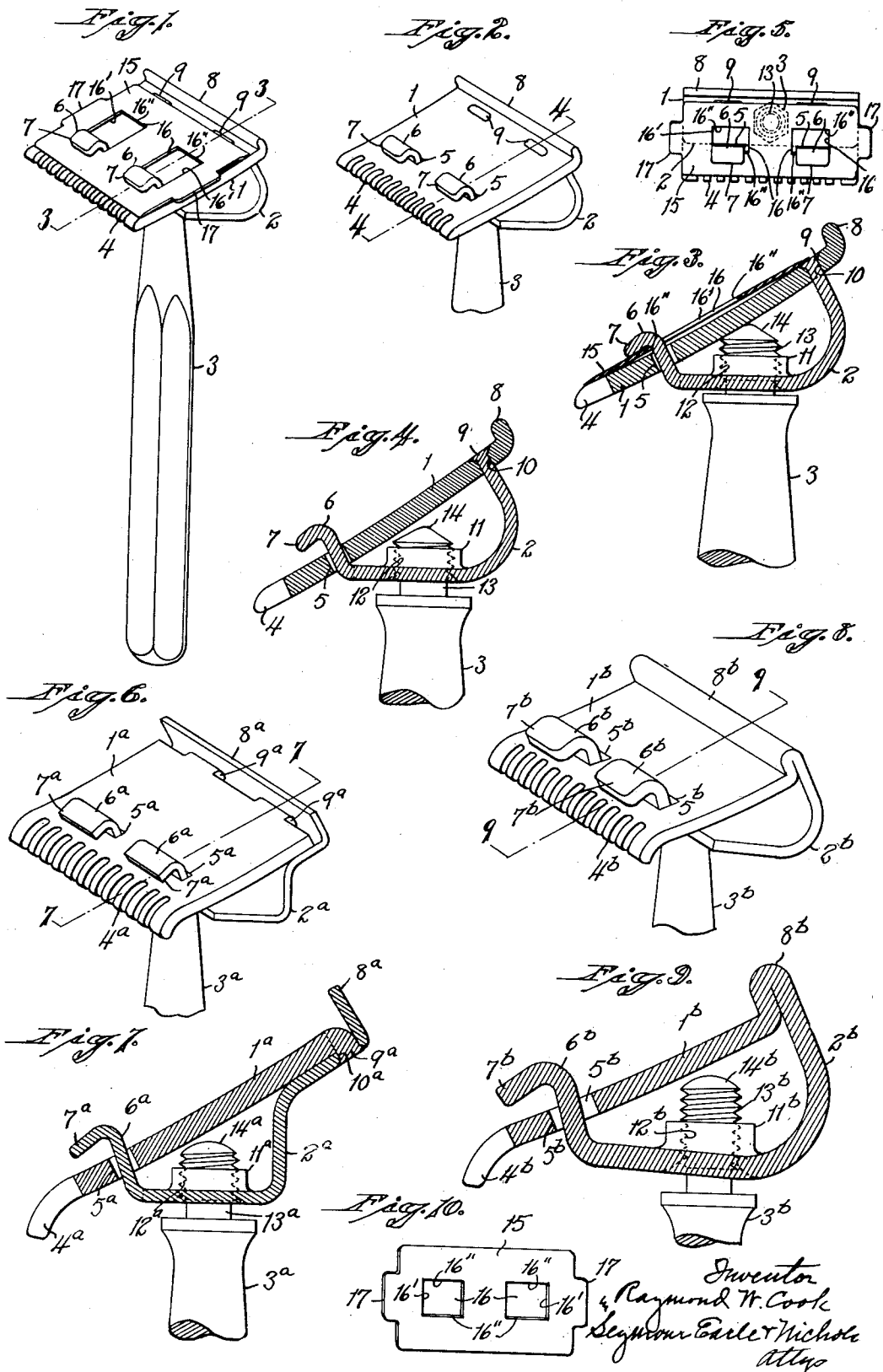
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RAZOR

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## UNITED STATES PATENT OFFICE

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RAZOR

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This invention relates to safety razors, and particularly to a safety razor blade holder adapted for cooperation with a relatively rigid double-edged blade.

tion of the parts mentioned, all as will be explained hereinafter more particularly and finally claimed.

In the accompanying drawing illustrating the invention, in the several figures of which like parts are similarly designated,

Fig. 1 is a perspective view of a razor holder and blade embodying the principle of the invention;

Fig. 2 is a fragmentary perspective view, similar to Fig. 1 but with the clamping means for the blade released and the blade removed;

Fig. 3 is an enlarged fragmentary sectional elevation taken substantially in the plane of line 3—3 of Fig. 1;

Fig. 4 is a view similar to Fig. 3 but taken in the plane of line 4—4 of Fig. 2;

Fig. 5 is a top plan view of the razor looking at same substantially directly along the axis of the handle of the holder, the parts therein appearing somewhat foreshortened due to the inclination of the guard member relatively to the axis of the handle;

Fig. 6 is an enlarged fragmentary perspective view of a holder constructed in accordance with the invention but illustrating a modified form;

Fig. 7 is a section substantially similar to Fig. 4 but taken in the plane of line 7—7 of Fig. 6;

Fig. 8 is a view similar to Fig. 6 but illustrating a still further modification;

Fig. 9 is a section similar to Fig. 7 but taken in the plane of line 9—9 of Fig. 8; and

Fig. 10 is a perspective view of the blade.

Referring particularly to Figs. 1 to 5 inclusive and 10, it will be seen that the razor blade holder of the invention comprises a guard member 1, a back member 2 and a handle 3. The guard member 1 is preferably provided adjacent to one of its edges with guard teeth 4 and is apertured, as indicated at 5, for passage through it of blade-engaging means 6 preferably formed integral with the back member 2 and having blade-clamping portions 7, shown in the form of hooks overlying a portion of the guard member. The guard member is also provided with a shield member 8, hereinafter more particularly referred to.

The back member, in the form of the invention illustrated in the figures just mentioned, is provided with means, preferably in the form of lugs 9 for engagement with complementary means such as the slots 10 in the guard member, whereby by heading over the lugs 9, as shown, the guard member and the back member may be riveted together to provide between them a fixed connection of such a nature as to permit their relative resilient movement.

One object of the invention is to provide in a safety razor a holder of unitary construction, that is to say, one in which the parts of the holder need not be disassembled in order to remove the blade therefrom or to reverse the position of the cutting edges of the blade relatively thereto.

Another object of the invention is to provide a blade holder of such construction that when its blade holding parts are loosened relatively to one another, the inherent resiliency of these parts will result in automatic unclamping of the blade regardless of the position of the holder, so that the said blade may be easily removed.

A further object of the invention is to provide, in combination with a relatively rigid double-edged blade, a holder element so formed that, when the blade is clamped in a shaving position relatively thereto, both cutting edges of the blade will lie in close proximity to the holder element, one of same in position for shaving, and the other in a position protected by the holder element.

Another object of the invention is to provide a razor holder of relatively few parts and of such simple construction that it may be manufactured at low cost and with an economy of material; it being, nevertheless, of a practical and durable construction.

A still further object of this invention is to provide a safety razor in which the upper surface thereof is relatively free from marked projections to thus permit ready shaving of the upper lip, for instance, and in which the blade is so held as to preclude chattering.

With these objects in view, the invention contemplates a safety razor comprising a blade holder, and a blade for cooperation therewith, the blade holder including a guard member, a back member and a handle, the guard member and back member being permanently and fixedly connected and capable of resilient relative movement, the back member provided with blade clamping means extending through the guard member, which latter is apertured to receive them, and the handle so cooperating with the guard member and back member as to impart relative movement thereto to clamp the blade between them by virtue of the cooperation of the blade clamping means with the blade and with the guard member; and the invention contemplates, further, various details of construc-

The back member 2 is formed preferably of sheet metal, and it is provided with a sleeve 11 interiorly screw threaded, as indicated at 12, to receive the screw threaded extension 13 of the handle 3, this screw threaded extension preferably having its end 14 so formed as to furnish it with a good bearing for engagement with the under face of the guard member 1.

The blade 15 which, as hereinbefore mentioned, is of substantially rigid construction and of the double edged type, is apertured as indicated at 16 to provide for the passage through it of the blade-engaging means 6, and has offstanding from its ends lugs 17 by means of which it may be readily grasped. The apertures 16 are, as shown in Fig. 5, of somewhat greater longitudinal extent than that of the engaging means 6, so that the blade may readily be engaged with and disengaged from the engaging means. However, in order that the blade may be properly positioned longitudinally of the guard member, the edges 16' of the apertures 16 adjacent to the ends of the blade are spaced apart a distance complementary to the outer edges of the engaging members 6.

In order that, when clamped against the guard member, the edge of the blade adjacent to the face-contacting or toothed edge of the guard member may lie closely thereagainst, and that its opposite edge also may lie in close contact with the portion of the guard member adjacent to it, the upper surface of the guard member is transversely curved. The effect of this curved construction will be particularly apparent from an inspection of Fig. 3.

In order that the edge of the blade which is not being used may be shielded, so that it may not cut the fingers or face of the user or other things which might come in contact with it, the shield member 8, which stands above the upper surface of the guard member, is provided.

It will be apparent from the foregoing that the blade is assembled with the holder simply by arranging it with its apertures 16 passed over the securing means 6 and its cutting edge adjusted relatively to the face-contacting or toothed edge of the guard member by pushing it rearwardly of the guard member until the edges 16'' of the apertures adjacent to the blade edge to be used are stopped by the members 6, and then screwing up the handle so that the end 14 of its screw threaded extension 13 firmly presses the guard member, and with it the blade, against the hook-like portions 7 of the blade-securing means 6. In order to remove the blade from the holder, all that is necessary is to unscrew the handle slightly, whereupon, because of the resiliency of the guard member 1 and back member 2, the guard member and the blade with it will move away from the hook-like portions 7 of the blade-securing means 6, and the blade may be removed.

It is to be noted that, due to its double-edged formation and the relative arrangement of its cutting edges and the edges 16'' of its apertures adjacent to these cutting edges, and which are in parallel alignment therewith, the blade, no matter which of its edges is to be used, is capable of proper positioning relatively to the skin-contacting edge of the guard member and to the guard teeth formed therein.

In all functional characteristics the modified form of the holder illustrated in Figs. 6 and 7 is the same as that just described. However, in this modified form of the invention, the guard member 1<sup>a</sup> is formed with riveting lugs 9<sup>a</sup> and the back member 2<sup>a</sup> with complementary slots 10<sup>a</sup>.

Also, instead of merely rounding the upper surfaces of the guard teeth as shown in Figs. 1 to 4 inclusive, the guard teeth 4<sup>a</sup> of the guard member 1<sup>a</sup> are rounded by bending down or curving the edge of the guard member in which they are formed. The blade-securing means 6<sup>a</sup> and their hook-like members 7<sup>a</sup> are substantially the same as those previously described, as are also the handle 3<sup>a</sup> with its screw threaded extension 13<sup>a</sup> engaging screw thread 12<sup>a</sup> of the sleeve 11<sup>a</sup>. The end 14<sup>a</sup> of the extension 13<sup>a</sup> is of slightly different formation from the end 14 previously described, but will function just as efficiently.

In this form of the invention the shield member 8<sup>a</sup> is formed upon the back member 2<sup>a</sup> rather than upon the complementary guard member.

In the modified form of the invention illustrated in Figs. 8 and 9, the guard member 1<sup>b</sup> and the back member 2<sup>b</sup> are integral, and the shield member 8<sup>b</sup> thereof forms the flexing connection at which the resilient action between the guard member 1<sup>b</sup> and back member 2<sup>b</sup> takes place. In this form of the invention the blade-securing means 6<sup>b</sup>, made integral with the back member 2<sup>b</sup> are passed through the apertures 5<sup>b</sup> and are thereafter bent to form the hook portions 7<sup>b</sup>. The guard teeth 4<sup>b</sup> are formed in a manner similar to the guard teeth 4<sup>a</sup> of Figs. 6 and 7, and are similarly curved.

The handle 3<sup>b</sup> and its screw threaded extension 13<sup>b</sup> and the parts 11<sup>b</sup> and 12<sup>b</sup> of the back member are formed in substantially the same manner as the corresponding parts of the modification illustrated in Figs. 6 and 7.

It is to be noted, that the apertures 5<sup>b</sup> of the guard member 1<sup>b</sup> are relatively somewhat larger than those of the forms of the invention in which the guard member and back member are made as separate elements and united, for the reason that sufficient clearance must be provided to permit appropriate bending of the portions of the guard member which form the blade securing means 6<sup>b</sup> and their hook portions 7<sup>b</sup>.

From the foregoing description, it will be seen that the invention provides a holder for double-edged blades which not only need not be disassembled for the purpose of removing the blade or of reversing the position of its cutting edges, but one in which the blade-securing means automatically separate to free the blade so that it may be removed from the holder as soon as clamping pressure is released.

It will be apparent, also, that the holder, due to the simplicity of its construction, may be easily manufactured at relatively low cost.

Various changes and modifications are considered to be within the spirit of the invention and the scope of the following claims.

I claim:

1. In a safety razor, a holder comprising a guard member, a back member, and a handle, said guard member and back member fixedly connected together but having portions capable of a limited relative movement, said guard member comprising an apertured plate, and said back member provided with blade-engaging means passing through said guard member by virtue of the apertured formation thereof, and overlying same, and adapted to pass through and engage a complementarily apertured blade, said handle providing a means for exerting pressure between said guard member and back member to cause relative movement of same and thereby clamp said blade between said guard member and the overlying blade-engaging means.

2. In a safety razor, a holder comprising a guard member, a back member, and a handle, said guard member and back member fixedly connected together but having portions capable of a limited resilient relative movement, said guard member comprising an apertured plate, and said back member provided with blade-engaging means passing through said guard member by virtue of the apertured formation thereof, and overlying same, and adapted to pass through and engage a complementally apertured blade, said handle providing a means for exerting pressure between said guard member and back member to cause relative movement of same and thereby clamp said blade between said guard member and the overlying blade-engaging means, the capability of said guard member and back member for resilient relative movement permitting same to separate upon release of the pressure exerted by said handle to thus release said blade.

3. In a safety razor, a holder comprising a guard member, a back member, and a handle, said guard member and back member fixedly connected together but having portions capable of a limited relative movement, said guard member comprising a plate provided with a pair of slots, and said back member provided with a pair of blade-engaging members complemental to said slots and passing therethrough and having portions overlying said guard member adjacent to said slots and adapted to pass through and engage a complementally slotted blade arranged upon said guard member, said handle having a shank arranged in adjustable screw-threaded engagement with said back member and adapted to exert pressure upon said guard member for causing relative movement between said guard member and back member, whereby said blade-engaging means may move relatively to said guard member to clamp the blade between said guard member and the overlying portion of said blade-engaging means and to release said blade with respect thereto.

4. In a safety razor, a holder comprising a guard member, a back member and a handle, and a substantially rigid apertured blade for cooperation therewith, said guard member comprising an apertured plate having an appropriately formed skin-contacting edge, and said back member provided with blade-engaging means passing through and shaped to overlie said guard member and blade by virtue of the apertured formation thereof, said handle providing a means for exerting pressure between said guard member and back member to cause relative movement of same and thereby clamp said blade between said guard member and the overlying portion of said blade-engaging means, said guard member being curved upon its blade-adjacent face so that one cutting edge of the blade clamped thereagainst will lie in close proximity to said skin-contacting edge.

5. In a safety razor, a holder comprising a guard member, a back member and a handle, and a substantially rigid apertured blade for cooperation therewith and provided with two cutting edges, said guard member comprising an apertured plate,

and said back member provided with blade-engaging means passing through and shaped to overlie said guard member and blade by virtue of the apertured formation thereof, said handle providing a means for exerting pressure between said guard member and back member to cause relative movement of same and thereby clamp said blade between said guard member and the overlying portion of said blade-engaging means, said guard member being curved upon its blade-adjacent face so that both cutting edges of said blade when clamped thereagainst will be in contact therewith.

6. In a safety razor, a holder comprising a guard member, a back member and a handle, and a substantially rigid apertured blade for cooperation therewith and provided with two cutting edges, said guard member comprising an apertured plate having an appropriately formed skin-contacting edge, and said back member provided with blade-engaging means passing through and shaped to overlie said guard member and blade by virtue of the apertured formation thereof, said handle providing a means for exerting pressure between said guard member and back member to cause relative movement of same and thereby clamp said blade between said guard member and the overlying portion of said blade-engaging means, said guard member being curved upon its blade-adjacent face so that one cutting edge of the blade clamped thereagainst will lie in close proximity to said skin-contacting edge, said holder provided with a shield member for shielding the opposite cutting edge of said blade.

7. In a safety razor, a holder comprising a guard member, a back member and a handle, said guard and back members provided with complementary means whereby they may be riveted together to provide portions arranged in resiliently movable relationship, said back member provided with means for overlying and engaging a blade positioned upon said guard member, and said guard member and blade apertured to permit passage therethrough of said blade-engaging means, said handle operable to impart relative movement to said guard member and back member to cause said overlying blade-engaging means to engage said blade at its aperture adjacent portion to clamp the blade between the overlying blade-engaging means and said guard member.

8. In a safety razor, a holder comprising a guard member and a back member formed of an integral piece of material, and a handle, said guard member and back member having portions capable of a limited resilient relative movement, said back member provided with means for overlying and engaging a blade positioned upon said guard member, and said guard member and blade apertured to permit passage therethrough of said blade-engaging means, said handle operable to impart relative movement to said guard member and back member to cause said overlying blade-engaging means to engage said blade at its aperture adjacent portion to clamp the blade between the overlying blade-engaging means and said guard member.

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