Feb. 9, 1932. H. J. GAISMAN 1,844,318

SAFETY RAZOR

Original Filed Nov. 26, 1928

Fig. 1

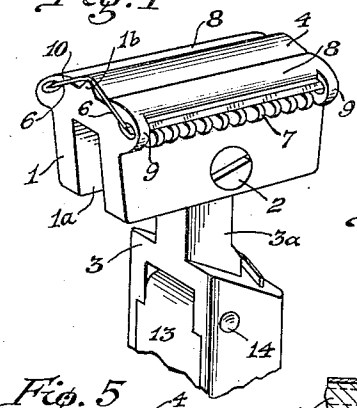


Fig. 2

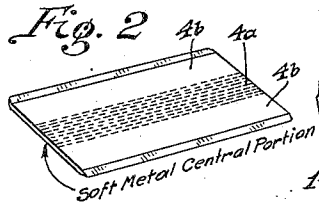


Fig. 4

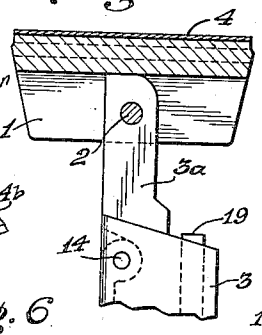


Fig. 3

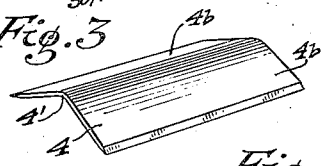


Fig. 6

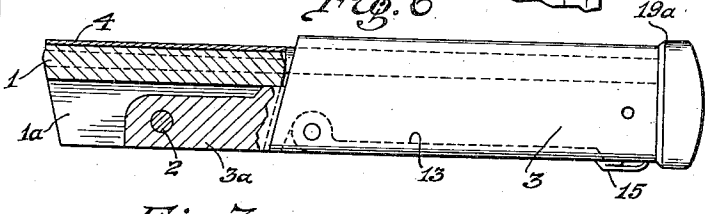


Fig. 5

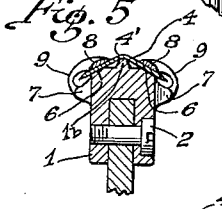


Fig. 7

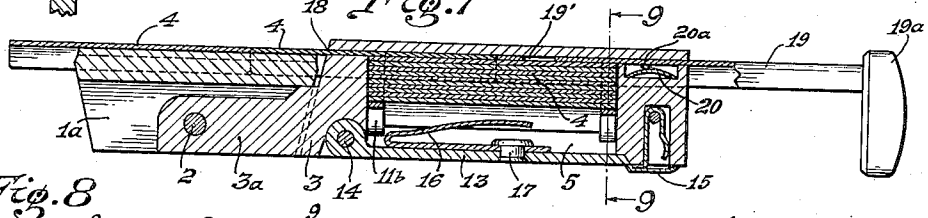


Fig. 8

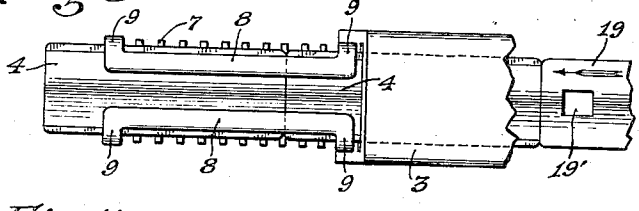


Fig. 9

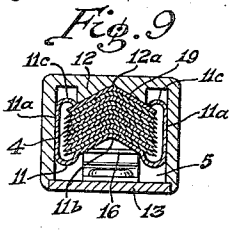


Fig. 11

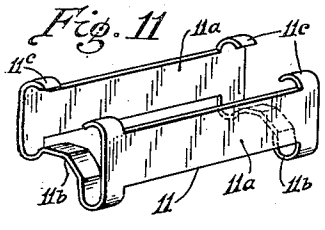


Fig. 10

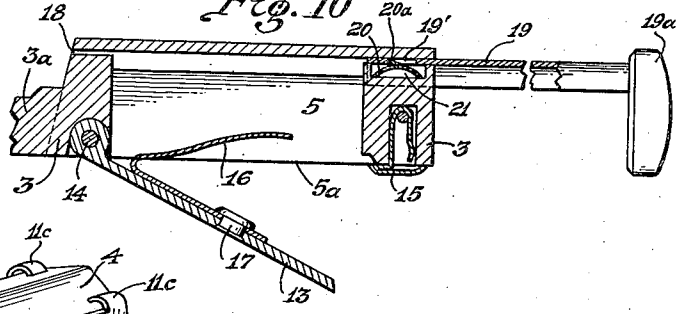
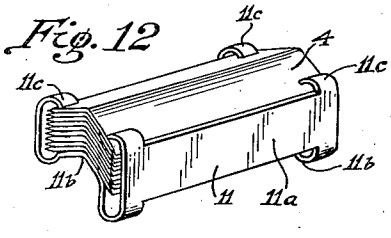


Fig. 12



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UNITED STATES PATENT OFFICE

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SAFETY RAZOR

Application filed November 26, 1928, Serial No. 321,793. Renewed February 24, 1931.

My invention relates more particularly to the class of safety razors in which the blades are retained in a stack for use and are to be successively pushed into a blade holder for shaving, the advance of a new blade into the holder serving to discharge a used blade therefrom.

An object of my invention is to provide blades of such a shape that they will cooperate with complemental portions of the blade holder for maintaining proper shaving position while being inserted into the holder without injury to the cutting edges of the blades, my invention being particularly applicable to double-edged razor blades.

Another object of my invention is to provide a clip or retainer for a stack of blades, which may be inserted in a magazine to retain the blades therein with their cutting edges out of contact with the magazine and in position to be pushed into the blade holder.

My invention comprises novel details of improvement that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part hereof, wherein

Fig. 1 is a perspective view illustrating my improved razor in position for use;

Fig. 2 is a perspective view of a blank for a blade;

Fig. 3 is a similar view illustrating the blade shaped for use;

Fig. 4 is a partly vertical section through Fig. 1;

Fig. 5 is a cross section of the blade holder of Fig. 1;

Fig. 6 is a partly sectional side view, illustrating the blade holder in position to receive a blade from a magazine;

Fig. 7 is a longitudinal section illustrating the position of the parts when a blade is being inserted into the blade holder from the magazine;

Fig. 8 is a partly broken plan view of Fig. 7;

Fig. 9 is a cross section on line 9, 9, in Fig. 7;

Fig. 10 is a sectional detail of the razor handle;

Fig. 11 is a perspective of the blade clip, and

Fig. 12 is a perspective view illustrating a stack of blades in the clip.

Similar numerals of reference indicate corresponding parts in the several views.

A blade holder 1 is shown pivotally connected at 2 with a handle 3. The holder 1 is shown provided with a longitudinal recess 1*a* in one side in which the reduced end portion 3*a* of the handle is pivoted, so that the holder may be turned to the shaving position relatively to the handle, as shown in Fig. 1, and the holder may be turned to a position in alignment with the handle to receive blades 4 from a magazine or chamber 5 in the handle, (Fig. 7). The blades are shown of the variety having two cutting edges, and the blade holder is shown provided with spaced seats or guiding portions 6 upon which adjacent portions of the blade rests when sliding into and in shaving position in, the holder. The blade holder is also shown provided with guards 7, on opposite sides beyond the seats 6, and with blade retainers 8 over the respective seats, (Figs. 1 and 5). The retainers are resiliently supported by spring-like arms 9 extending from the blade holder, and so positioned as to provide guiding spaces 10 for the blades between the retainers and the seats 6. The blades are shown of permanent curvilinear or non-flat shape in the transverse direction between the cutting edges, (Fig. 3), and the seats 6 and the inner edges of the associate retainers 8 are shown located at an acute angle so that the marginal portions of the blade will be retained in the holder with the cutting edges projecting beyond the seats 6 adjacent to the guards. The holder is shown provided with a longitudinal rib 1*b*, between the seats 6, to engage the curved mid-portion 4′ of the blade to guard the latter as it slides into the holder, to keep the blade edges out of contact with the holder. The curved mid-portion 4′ of the blade and the rib 1*b* cooperate to retain the blade from edgewise movement and with the cutting edges of the blade in shaving relation to the guards. To form and retain the blades in the curvilinear shape shown the

blanks for the blades may have their central portions, indicated at 4*a* in Fig. 2, of metal sufficiently soft to permit the blades to be bent to the shape desired, the outer portions 4*b* of the blade being properly hardened for the cutting edges.

The blades described are adapted to be placed in a stack or pile to be retained in the magazine 5 of the handle 3 in position to be pushed into the blade holder as required, (Figs. 7, 8 and 9). A clip for retaining the stack of blades within the magazine is indicated at 11. The clip 11 may be made of metal, having spaced sides 11*a* curved transverse connecting members 11*b*, and inwardly bent or extending fingers 11*c*. When the stack of blades is slid into the clip 11 the inner blade will rest against the members 11*b* and the outer blade will be engaged by the fingers 11*c*, the slip parts including the fingers preferably being resilient to flexibly grip the blades, and retain their cutting edges out of contact with the sides of the clip, (Figs. 9 and 12). The sides of the clip 11 preferably fit snugly against the side walls of the magazine 5, and the wall 12 of the magazine is shown curved at 12*a*, substantially corresponding to the curvature of the blades, so as to guide the latter as they are pushed out of the clip and the magazine into the blade holder and keep the cutting edges of the blade out of contact with the handle 3, (Fig. 9).

The clip 11 with its stack of blades is adapted to be inserted into the magazine 5 through the open side 5*a* thereof, (Fig. 10). A movable cover or closure 13 for the magazine is shown pivoted to the handle 3, at 14, and a spring catch 15 is shown on the handle to keep the cover closed, (Fig. 7). A spring 16, which may be riveted on the cover 13, at 17, is adapted to bear against the blades within the magazine, tending normally to press said blades against the wall 12. The handle 3 is shown provided with an outlet opening at 18, through which the innermost blade may be pushed into the blade holder 1, (Figs. 7 and 10). An ejector 19 is slidably guided by the handle 3, in alignment with the outlet opening 18, to push the innermost blade through said opening into the blade holder. The ejector is preferably curved to substantially conform to the curvature of the portion 12*a* of wall 12 and the curvature of the blades, (Fig. 9), whereby the ejector is slidably guided. The ejector is shown provided with a handle-like head 19*a*, adapted to abut against the outer end of handle 3 to limit inward sliding of the ejector. The ejector is also shown provided with an opening 19′ adapted to receive a projection 20*a* from a spring 20 that is located within a recess 21 in the handle, to limit outward movement of the ejector, (Figs. 7, 8 and 10). The projection 20*a* is shown inclined to permit the ejector to slide over the projection on the blade-ejecting stroke of the ejector.

When a blade is to be inserted into the blade holder the ejector will be drawn outwardly (from a position over the stack of blades) and the innermost blade will be pushed into alignment with the outlet opening, against the wall 12, in front of the ejector. The ejector will be pushed inwardly thereby engaging the adjacent end of the last named blade and will push the latter through the opening into the blade holder, ejecting from the latter a used blade, in manner illustrated in Fig. 7. When the blade is being pushed from the magazine the curved portion 12*a* of wall 12 and the fingers 11*c* of clip 11 will guide the blade so that its cutting edges will not engage the clip nor the handle 3. When the blade is being pushed into the blade holder the angular seats 6 and the retainers 8, in conjunction with the curvature of the blade, as well as the rib 1*b*, will maintain the proper shaving alignment or position of the blade respecting the guards of the blade holder, until the blade rests in its final shaving position, where said seats, retainers and rib will keep the blade in its proper shaving position. During such sliding movement of the blade the seats, retainers and rib will maintain the blade edges free from contact with any parts of the blade holder, so as not to dull the blade edges, since the angular seats, retainers and rib keep the blade from sliding angularly or to either side of the shaving alignment or position.

My improvement will be found of particular advantage in the class of razors having double-edged blades, since neither of such edges should slide against metal to guide the blade to shaving position for fear of dulling the cutting edge.

My improvements are not limited to the details of construction set forth, as the same may be varied, within the scope of the appended claims, without departing from the spirit of my invention.

Having now described my invention what I claim is:

1. A blade holder having guards and means to slidably guide a blade to shaving position with respect to said guards without engagement of either of the blade edges with the holder, an ejector, and means to guide the ejector for pushing individual blades into the holder.

2. A blade holder as set forth in claim 1 in which the guiding means for the blade are located between the guards.

3. A blade holder as set forth in claim 1 in which the guiding means for the blade are located in the centre and on opposite sides of the holder between the guards.

4. A blade holder having spaced guards and spaced guiding means for a blade between the guards for slidably guiding the

blade to shaving position between the guards, an ejector, and means to guide the ejector for pushing individual blades into the holder.

5. A blade holder having spaced guards, spaced blade seats between the guards, and spaced retainers associated with the seats to guide and retain a blade between the seats and the retainers, an ejector, and means to guide the ejector for pushing individual blades into the holder.

6. A blade holder as set forth in claim 5 in which the blade seats are angularly disposed with respect to one another.

7. The combination of a blade having spaced cutting edges, said blade being curvilinear in the direction between said edges, with a blade holder having spaced guards, and guiding means between said guards for the blade arranged to guide the curvilinear portions of the blade to keep its cutting edges out of contact with the holder, a magazine for blades, said magazine having a curved wall to guide a blade, an ejector, and means to guide the ejector for advancing blades from the magazine.

8. A razor as set forth in claim 7 in which the blade guiding means includes spaced seats and retainers between the guards for guiding the blade to shaving position between the guards.

9. The combination of a blade curvilinear in the direction of the edge, with a blade holder having a guard, and guiding means arranged to guide the blade by its curvilinear portion to keep the cutting edge of said blade out of contact with the holder, a magazine for blades, said magazine having a curved wall to guide a blade, an ejector, and means to guide the ejector for advancing blades from the magazine.

10. The combination of a blade curvilinear in the direction of its edge, with a blade holder having a guard, a magazine for a stack of individual blades, guiding means arranged to guide the blade by its curvilinear portion out of the magazine and into the blade holder with its cutting edge out of contact with the holder, an ejector, and means to guide the ejector for advancing individual blades into the blade holder.

11. A safety razor as set forth in claim 9 in which the guiding means for the blade includes a rib upon the holder to engage a curved portion of the blade to retain the cutting edge of the blade out of contact with the holder.

12. A safety razor comprising a blade holder having means to slidably guide a curvilinear blade having parallel cutting edges to shaving position, a handle movably connected with the holder and provided with a magazine for a stack of individual blades, said magazine having a curvilinear wall for guiding the curvilinear blades between cutting edges, the handle having an ejector for the blades.

13. A safety razor as set forth in claim 12 provided with a clip for a stack of blades adapted to fit within said magazine.

14. A safety razor as set forth in claim 12 provided with a spring operative within said magazine against the blades to press the latter toward said curvilinear wall.

15. A razor comprising a magazine which constitutes a handle, the magazine being adapted to receive a stack of blades, each of said blades having parallel cutting edges, a blade holder having guards pivoted on the end of the handle and adapted to be swung to one position for receiving a blade and to another position for shaving, means for expelling a blade from the stack onto the holder when the latter is in blade receiving position, and means within said handle and on said holder adapted to be brought into alignment when said holder is swung into blade receiving position to slidably guide a blade from the magazine to said holder without engagement of either of the blade edges with said magazine and said holder.

16. A razor comprising a handle having a recess therein, a blade holder secured on the end of said handle, a clip adapted to hold a stack of blades, each blade having parallel cutting edges, said clip being insertable into and removable from the recess in the handle, an ejector movable across the mouth of said clip to slide the top-most blade from the stack onto said holder, and co-acting means on said handle and said clip for guiding the blade from said handle onto said holder without engagement of either of the blade edges with said clip and said handle.

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