July 8, 1930. H. J. GAISMAN 1,770,170

SAFETY RAZOR

Filed Oct. 22, 1927

Fig. 1

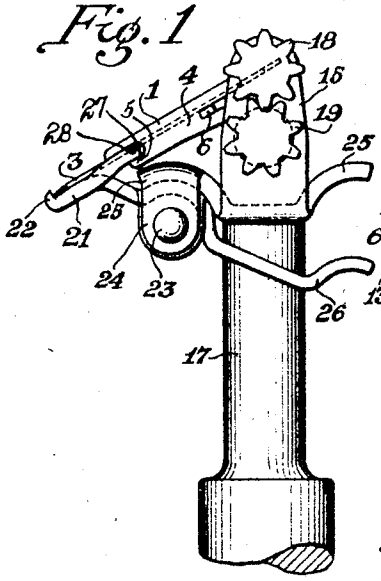


Fig. 2

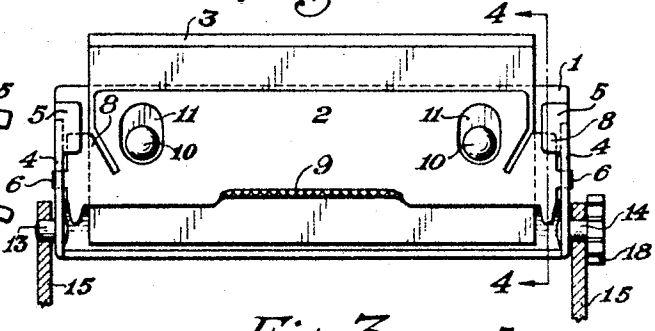


Fig. 3

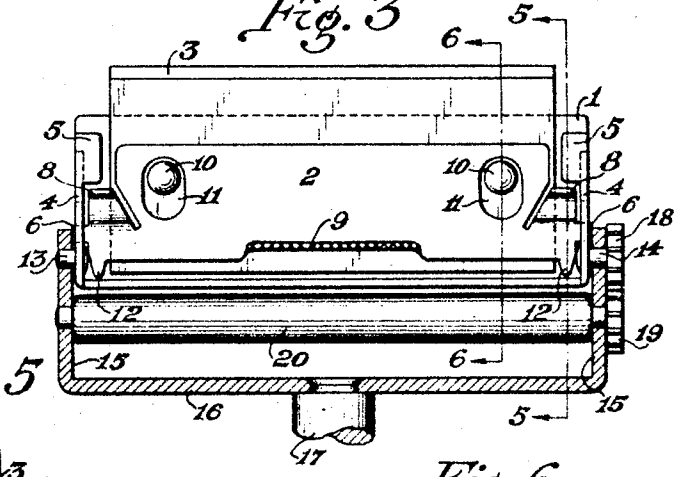


Fig. 4

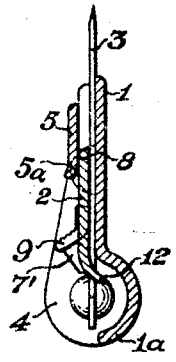


Fig. 5

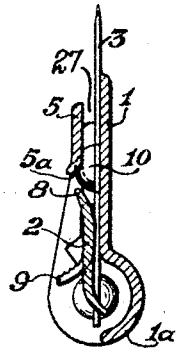


Fig. 6

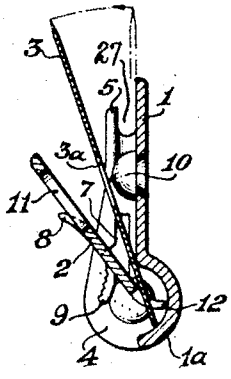


Fig. 4a

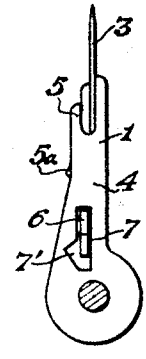


Fig. 5a

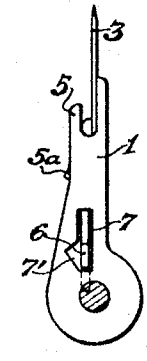
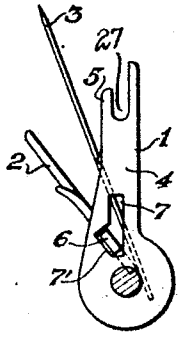


Fig. 6a



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UNITED STATES PATENT OFFICE

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SAFETY RAZOR

Application filed October 22, 1927. Serial No. 227,884.

This invention relates to improvements in blade holders and is particularly adapted as a blade holder for safety razors.

An object of the invention is to provide a blade holder in which blade clamping members are movable relatively one along another for clamping and releasing the blade and are movable away from one another to permit insertion and removal of a blade.

The invention also 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 an end view of a safety razor provided with the improved blade holder;

Fig. 2 is a face view partly in section, illustrating the blade clamped in the holder;

Fig. 3 is a partly sectional side view of Fig. 1 illustrating the blade holder parts in blade releasing position;

Fig. 4 is a section on line 4, 4, in Fig. 2;

Fig. 4ª is an edge view of the parts shown in Fig. 4;

Fig. 5 is a section on line 5, 5, in Fig. 3;

Fig. 5ª is an edge view of the parts shown in Fig. 5;

Fig. 6 is a section on line 6, 6, in Fig. 3 illustrating the parts in position for removal of a blade, and

Fig. 6ª is an edge view of the parts shown in Fig. 6.

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

The blade holder comprises two main members 1 and 2 shown substantially in plate-like form adapted to receive a blade 3 therebetween. The member 1 is shown provided with laterally disposed projections or webs 4 at its ends, from which keepers or clips 5 extend substantially parallel with and spaced from the member 1, which parts may be formed from a single sheet of metal. The member 2 is shown operatively fitted between the projections or webs 4 and provided at its ends with projections 6 which may be struck from the metal of the member and extend into slots 7 in the projections 4, whereby the member 2 is slidably guided for movement relatively to member 1. The slots 7 are provided with laterally disposed or offset portions 7′ near the inner ends of the slots, in which the projections 6 may operate to permit the member 2 to rotate or swing pivotally relatively to member 1. The edge portions of member 2 are adapted to fit in the spaces between member 1 and the keepers 5 when member 2 is clamped upon the blade to retain the parts, (Figs. 2 and 4). By preference the member 2 is provided with spring-acting fingers or projections 8, the free ends of which are bent laterally with respect to the plane of member 2, so as to engage the keepers 5 in a spring-like way to retain member 2 from sliding respecting member 1. The inner edges 5ª of the keepers 5 are extended outwardly so that the outwardly extended projections 8 may readily slide under the keepers to be forced into spring contact therewith when member 2 is pushed from the position shown in Fig. 5 to the position shown in Fig. 4. A finger piece 9 on member 2 permits ready manipulation of the latter, which finger piece may be stamped out of the metal of member 2. The member 1 is shown provided with spaced projections or studs 10 that are adapted to enter openings 3ª in blade 3 and slots 11 in member 2, the slots permitting the member 2 to slide along the blade when clamped against the latter.

The inner portion of member 1 is shown provided with a curved abutment 1ª in position to engage the inner edge or heel of blade 3 when the latter is inserted between the members 1 and 2, to register the blade openings 3ª with the projections 10, as illustrated in Fig. 6. When a blade is to be secured in the blade holder the members 1 and 2 will be slid relatively, as illustrated in Figs. 6 and 6ª, to disconnect the member 2 from the keepers 5, and members 1 and 2 will be spread apart, at which time the projections 6 will be in the offset portions 7′ of the slots 7 and projections 12 that extend from the inner edge of member 2 will engage the portion 1ª of member 1 to retain the member 2 in spread position, (Fig. 6). The blade will be placed edgewise between the members 1 and 2 and the heel of the blade will pass beyond the in-

ner edge of member 2 between the projections 12 to engage the abutment or stop portion 1ª of member 1, since said projections are spaced apart a greater distance than the length of the blade, (Figs. 3 and 6). The member 2 may next be pushed toward member 1 and will encounter the blade, thereupon pushing the blade against member 1 in the positions shown in Figs. 5 and 5ª, and then the member 2 may be slid along the blade to the positions shown in Figs. 4 and 4ª to engage the projections 8 of said member with the keepers 5 to retain the blade clamped between the members 1 and 2. As the blade is pushed toward member 1 the openings 3ª of the blade will receive the projections 10 to keep the blade in position between the members 1 and 2, the blade passing away from curved portion 1ª, (Fig. 5). When the blade is to be removed from the holder the member 2 will be slid to the position shown in Fig. 5 to release the projections 8 from the keepers 5, and said member will swing outwardly, whereby the blade may be gripped at its ends and removed from the holder, (Figs. 6 and 6ª).

The blade holder 6 may be used in any desired way. In Figs. 1, 2 and 3 the blade holder is shown pivotally supported in a safety razor frame. The blade holder is shown provided with pivots 13 and 14 that are journaled in spaced uprights 15 extending from a base 16 of a razor frame, which is shown provided with a handle 17. Pivot 14 is shown provided with a gear 18 in mesh with a gear 19 carried by a roller 20 that is journaled in the uprights 15, (Fig. 3), whereby when the razor is mounted upon a strop and the roller is reciprocated in contact with the strop the roller will be rotated to cause the blade holder to be rocked for stropping opposite sides of the blade edge. A guard for the blade is indicated at 21 provided with stops 22 to engage the blade edge, the guard being pivotally supported at 23 upon lugs 24 extending from one of the strop-tensioning members 25 of the razor frame. A finger piece 26 extending from the guard may be operated to cause the guard to approach and recede from the blade. The style of the razor illustrated is substantially the same as in the well known Auto Strop safety razor. The blade holder has recesses 27 adjacent to its free or outer corners, which recesses are shown formed between the member 1 and the clips 5, and the guard member 21 is shown provided with projection 28, adjacent to an end or corner, to enter a recess 27 of the blade holder. There may be a projection 28 on the guard member for each recess 27. The clip 5 serves as a stop to cooperate with projection 28 to retain the blade holder. When the guard is swung on its pivot to the position shown in Fig. 1 the blade will be in shaving position on the guard and the projection 28 will enter the adjacent recess 27 to cooperate with the associate clip or stop 5 to retain the blade holder with the blade in shaving relation to the guard. When the guard is swung away from the blade the projection 28 will pass out of the recess 27, away from the stop 5, and release the blade holder and the blade.

The blade holder set forth is simple to manufacture, convenient in operation and adapted for ready manipulation, providing a convenient means for inserting and removing blades and a secure means for retaining the blades in the holder for use.

Razors as now manufactured are constructed of relatively thin gage metals and where it is possible to employ the metal to the best advantage, it may be turned to increase its rigidity or durability, just as in this construction the web 4 with its slot has its edges engaged by the guard so that the resistance offered by the web is in a direction edgewise thereof. Furthermore, in this construction an adjustment is permitted which may result in locating the cutting edges of the blade in different positions with respect to the guard so that the degree of closeness of the shaving action may be regulated.

Changes may be made in the details of construction set forth, within the scope of the appended claims, without departing from the spirit of the invention.

Having now described my invention what I claim is:

1. A blade holder comprising members adapted to retain a blade between them, said members being relatively transversely slidable and pivotally connected together for admission and removal of blades, and means to retain said members with the blade clamped therebetween.

2. A blade holder as set forth in claim 1, in which one of the members is provided with one or more projections to enter a corresponding opening in the blade.

3. A blade holder as set forth in claim 1, in which one of the members is provided with a portion to engage the heel of the blade when said members are spread apart to receive the blade.

4. A blade holder comprising a pair of members adapted to receive a blade therebetween, said members having projections at their ends slidably and pivotally interengaged, whereby said members may slide transversely and rotate relatively one to another to engage and release a blade therebetween, and means cooperative between said members for retaining them clamped against an interposed blade.

5. A blade holder comprising a member having lateral projections at its ends provided with slots, a second member having projections at its ends slidably and pivotally retained in said slots, whereby the members may spread to receive a blade therebetween

and may be moved transversely relatively one to another to be clamped against the blade, and means to retain said members clamped against the blade.

6. A blade holder comprising a member having laterally disposed projections at its ends provided with slots, said member having keepers, and a second member having projections operable in said slots, whereby the members may slide transversely relatively and rotate relatively one to another for clamping and releasing a blade therebetween, the second named member having portions cooperative with said keepers to keep the members clamped against an interposed blade.

7. A blade holder comprising a member having laterally disposed projections at its ends provided with slots having offset portions, said member having keepers, and a second member having projections slidable in said slots and pivotal in said offset portions of said slots, whereby the members may slide transversely and rotate relatively one to another for clamping and releasing a blade therebetween, the second named member having fingers to engage said keepers to keep the members clamped against a blade.

8. A blade holder comprising a member having laterally disposed projections provided with slots, said member having keepers, and a second member having projections operable in said slots, whereby the members may slide and rotate relatively one to another for clamping and releasing a blade therebetween, the second named member having fingers to engage said keepers to keep the members clamped against a blade, the fingers being spring-acting and provided with end portions projecting laterally with respect to the corresponding member to engage the keepers in a spring-like way to retain the members from sliding relatively to one another.

9. A blade holder comprising a pair of members slidably and pivotally connected together to receive a blade therebetween, means to retain said members clamped against a blade, one of said members having a curved portion to receive the heel of a blade and the other member having spaced projections adapted to engage said curved portion of the other member when the members are spread apart to permit passage of the heel portion of the blade between said projections into engagement with said curved portion of said member.

10. A safety razor comprising a frame, a blade holder movably carried thereby and provided with a stop, and a movable guard provided with a projection to cooperate with said stop to retain the blade holder and a blade in shaving relation to the guard.

11. A safety razor comprising a frame, a blade holder movably carried thereby and provided with an elongated recess, and a guard provided with a projection to enter said recess to retain the blade holder with a blade in different shaving positions with relation to the guard.

12. A safety razor as set forth in claim 11 in which the recess is located between the holder and a stop carried thereby and spaced therefrom.

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