March 1, 1932. H. J. GAISMAN 1,847,556

SAFETY RAZOR

Filed April 17, 1931

Fig. 1

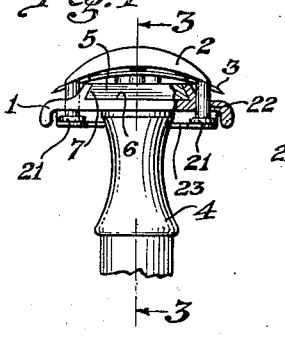


Fig. 3

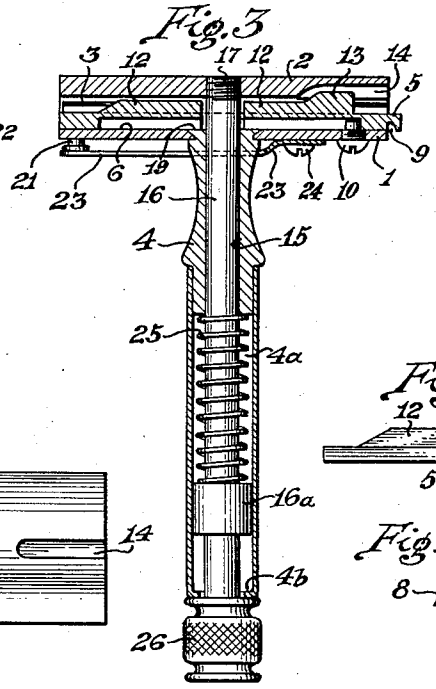


Fig. 2

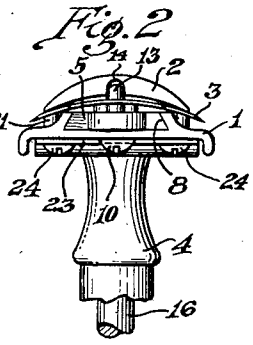


Fig. 6

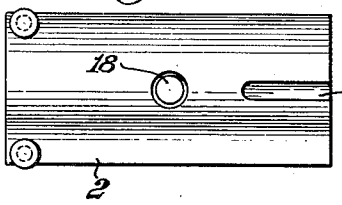


Fig. 7

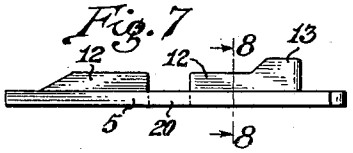


Fig. 8

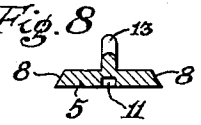


Fig. 4

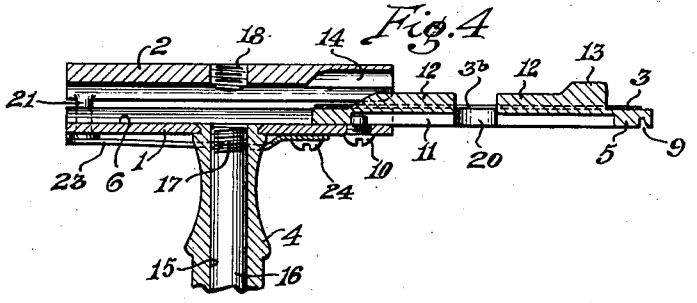
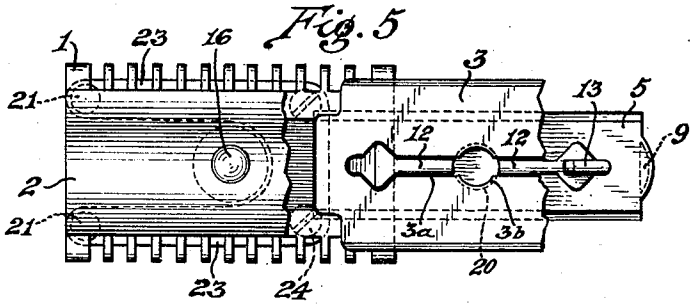


Fig. 5



INVENTOR

Henry J. Gaisman

BY

A. F. Bourne

ATTORNEY

Patented Mar. 1, 1932 1,847,556

UNITED STATES PATENT OFFICE

HENRY J. GAISMAN, OF NEW YORK, N. Y., ASSIGNOR TO GILLETTE SAFETY RAZOR COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF DELAWARE

SAFETY RAZOR

Application filed April 17, 1931. Serial No. 530,838.

My invention relates to improvements in safety razors of the class in which a flexible blade is clamped in a position of transverse curvature between a guard member and a cap or backing member, and an object of my invention is to provide improved means to permit insertion of a blade in shaving position in the razor and its removal therefrom without disconnecting the clamping members.

In carrying out my invention I provide blade clamping members, a rest for a blade slidable between said members into and out of shaving position, and means to clamp said members against a blade when said rest is in proper position between said members and to release the clamping pressure against the blade to permit said rest to be pulled outwardly for blade replacement.

My 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 edge view of my improved razor partly in section showing the parts in shaving position;

Fig. 2 is a similar view from the rear of Fig. 1;

Fig. 3 is a section on line 3, 3 in Fig. 1;

Fig. 4 is a view substantially similar to Fig. 3 showing the parts in position for replacement of a blade;

Fig. 5 is a partly broken plan view of Fig. 4;

Fig. 6 is an inverted plan view of the blade backing or cap member;

Fig. 7 is a detail edge view of the blade rest, and

Fig. 8 is a section on line 8, 8 in Fig. 7.

Similar numerals indicate corresponding parts in the several views.

The numeral 1 indicates a guard member and 2 indicates a blade cap or backing member, adapted to clamp a blade 3 therebetween in shaving position. At 4 is a handle rigidly attached to the guard member as at 19. A movable rest for the blade is indicated at 5, shown mounted to slide between the members 1 and 2. The guard member 1 is shown provided with a seat 6 along which the member 5 is adapted to slide, said seat being shown provided with inclined spaced guides 7 cooperative with substantially correspondingly inclined sides 8 on the rest 5 whereby said rest is slidably retained on the guard member. A notch or recess at 9, in the outer portion of the rest, permits ready pulling out of the rest with a blade thereon. A stop screw 10 on the guard is adapted to enter a longitudinal recess 11, in the under side of the rest 5, to limit longitudinal movement of the rest in an inward and an outward position, shown in Figs. 3 and 4. The rest 5 is shown provided with projections 12 adapted to receive the apertured portion 3*a* of blade 3 to position the blade on the rest. The rest 5 is also shown provided with a projection 13 adapted to enter and engage a groove or recess 14 extending longitudinally in the undersurface of the cap or backing member 2, whereby the latter will be retained in proper shaving relation to the blade when the parts are in shaving position, as in Figs. 1, 2 and 3.

The handle 4 is shown provided with a longitudinal bore 15 in which a rod 16 is longitudinally slidable. At its outer end the rod 16 is shown provided with screw threads at 17 adapted to mesh in a threaded aperture 18 in the cap or backing member 2 for clamping the blade between the members 1 and 2. The guard member 1 is provided with an opening 19 in register with the bore in the handle, through which opening the rod 16 may slide, and the rest 5 is shown provided with an aperture or hole 20 adapted to register with the bore in a handle and with the opening 18 in the cap member, when the rest is in shaving position, to permit the rod 16 to pass through the rest, as in Fig. 3. The blade also has an aperture enlargement at 3*b* to register with the aperture 20 in the rest 5 when the blade is upon the rest and is in shaving position as controlled by the projections 12 of the rest, (Figs. 4 and 5).

In order to permit ready sliding of the rest into and from shaving position between the clamping members 1 and 2, and to retain said members in operative relation, I provide

means to guide the cap member 2 and permit it to move toward and from the member 1. For such purpose I have shown the cap member 2 at one end provided with headed projections or studs 21, shown spaced apart, said projections or studs being slidably guided in holes 22 in the guard member. The heads on the studs will engage the guard members to limit outward movement of the cap. At 23 is spring means operative with the projections or studs 21 and normally tending to push said studs outwardly from the guard member to move the backing or cap member 2 in a direction away from the guard member when the cap member is released from the rod 16. The spring 23 is shown attached to the guard member by means of screws 24. Said spring means may comprise two separate springs or a spring plate divided into two prongs to respectively engage the projections or studs 21, as illustrated in Fig. 5.

A spring 25 is shown within the handle portion 4*a* and operative against the handle and against a stop 16*a* on rod 16, the spring tending normally to push the rod in an outward direction respecting the handle. The stop 16*a* may engage the inturned end portion 4*b* of the handle to limit the movement of rod 16 in an outward direction, as to limit the rod to the position indicated in Fig. 4. A fingerpiece 26 on rod 16 permits manipulation of the rod.

When a blade is to be inserted in the razor the rod 16 is rotated to release it from the backing member 2, whereupon the spring 25 will push the rod outwardly, out of the path of the rest 5, and the spring means 23 will push the projections or studs 21 outwardly to move the cap or backing member 2 away from the blade and the rest 5, the heads of the studs engaging the guard member, as in Fig. 4. Said rest 5 may be pulled outwardly carrying the blade with it, as in Figs. 4 and 5, whereupon a used blade may be removed from the rest and may be replaced by a new blade. The rest carrying the new blade may next be pushed inwardly, to the position shown in Fig. 3. The rod 16 will next be pushed inwardly to engage its threads 17 with the threaded opening 18 of the cap or backing member 2, and then by rotating the rod said cap will be drawn toward the blade for flexing and clamping the blade between the cap and the guard member, and the blade will be retained in shaving position as in Figs. 1, 2 and 3.

My improvements are simple in construction and enable the guard and the cap or backing members to be retained together at all times for cleaning and blade replacement, thereby overcoming the necessity of separately handling the guard and blade backing members for cleaning as is customary in well known types of safety razors.

Having now described my invention what I claim is:

1. A safety razor comprising blade clamping members with cooperating blade shaping faces, means for moving said members to flex and to clamp a blade between them, and a rest for a blade movable longitudinally into and out of shaving postion between said members.

2. A safety razor as set forth in claim 1 in which the blade rest is slidably guided by one of said members.

3. A safety razor as set forth in claim 1 in which the blade rest is provided with means to position a blade thereon for shaving when the blade and the rest are between said members.

4. A safety razor as set forth in claim 1 in which the blade rest is provided with projecting means to enter an aperture in a blade to position the blade on the rest in shaving position between said members.

5. A safety razor comprising a guard member having a handle, a blade cap, a rod slidable along the handle, said rod and cap having cooperative means to clamp a blade between the cap and the guard member, and a blade rest movable longitudinally between the guard and the cap to position a blade therebetween for shaving.

6. A safety razor as set forth in claim 5 in which the blade rest is slidably guided by the guard member.

7. A safety razor as set forth in claim 5 in which the blade rest is slidably guided by the guard member and is provided with a hole for the passage of said rod.

8. A safety razor comprising a guard member having a convex blade-shaping face, a blade cap, means movably guiding the cap on the guard member toward and from the latter, means to clamp the guard member and the cap against a blade to flex the blade upon the guard member, and a blade rest movably supported between said guard member and said cap to move outwardly to receive a blade and to move inwardly to position the blade between the guard member and the cap for shaving.

9. A safety razor comprising a guard member, a blade cap, means movably guiding the cap on the guard member to move toward and from the latter, means to clamp the guard member and the cap against a blade, a blade rest movably supported between said guard member and said cap to move outwardly to receive a blade and to move inwardly to position the blade between the guard member and the cap for shaving, and spring means tending normally to move the cap away from the guard.

10. A safety razor comprising a cap having a blade-shaping face, a guard member having guiding means, a blade rest guided slidably by said means to move outwardly to receive a flexible blade and inwardly to

position the blade between the guard member and the cap, and means to clamp said guard member and said cap against a blade on said rest to maintain the blade in a flexed position thereon.

11. A safety razor as set forth in claim 10 provided with means to limit outward and inward movements of said blade rest on the guard member.

12. A safety razor as set forth in claim 10 in which the blade rest is provided with a groove and the guard member is provided with a stop operative in said groove to limit endwise movements of said rest.

13. A safety razor comprising a guard member, a cap for a blade, means to clamp said member and cap against the blade, and a blade rest slidably guided on the guard member, said rest having blade positioning means and having a projection, the cap having a groove to receive said projection.

14. A safety razor comprising a guard member having a handle provided with a bore, a blade cap, a blade rest supported for longitudinal movement between said member and said cap to move outwardly and inwardly relatively thereto, and a rod slidable in said bore, the blade rest having a hole to receive the rod, and means cooperative between the rod and the cap for clamping a blade between the guard member and the cap.

15. A safety razor as set forth in claim 14 provided with a spring cooperative with the handle and with the rod to move the latter outwardly with respect to the guard member to retain the cap against the blade.

16. A safey razor as set forth in claim 14 provided with a spring cooperative with the handle and with the rod to move the latter outwardly, the handle being provided with stop means cooperative with the rod to limit its outward movement when released from the cap and retain the rod out of the path of the blade rest.

17. A safety razor comprising a guard member, a cap for a blade, the cap having projections movably guided by the guard member permitting the cap to have movement toward and from the guard member, a blade rest guided for longitudinal movement between the guard member and the cap, and means to clamp the cap and the guard member against a blade.

18. A safety razor as set forth in claim 17 in which the projections from the cap have means to limit outward movement of the cap relatively to the guard member.

19. A safety razor comprising a guard member, a cap for a blade, the cap having projections movably guided by the guard member permitting the cap to have movement toward and from the guard member, a blade rest movably guided between the guard member and the cap, means to clamp the cap and the guard member against a blade, and spring means co-operating with the projections from the cap normally tending to move the cap away from the guard member.

HENRY J. GAISMAN.