Oct. 24, 1944. F. J. LEWANDO 2,361,216

SAFETY RAZOR

Filed Nov. 12, 1943

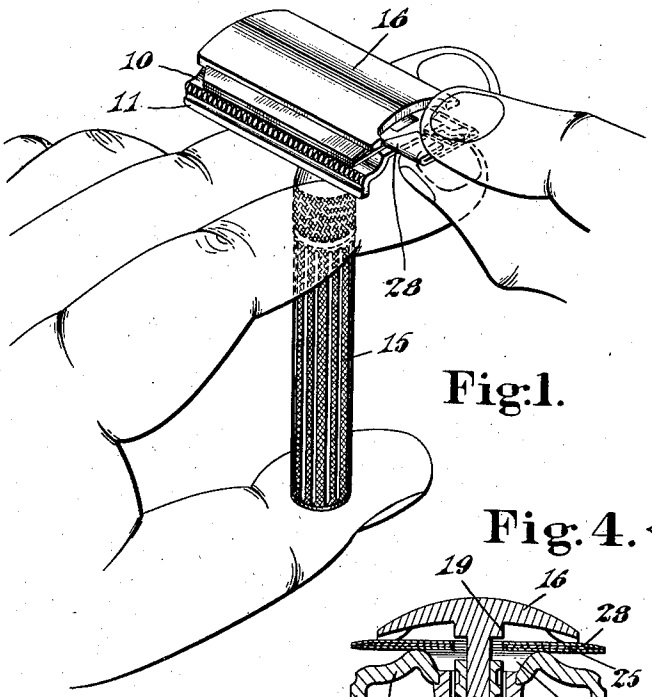


Fig:1.

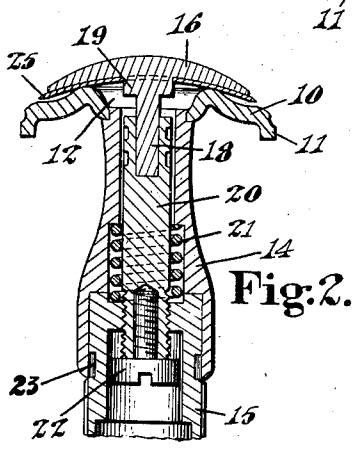


Fig:2.

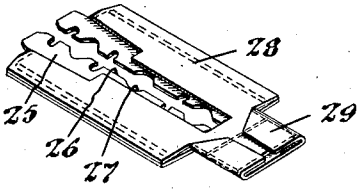


Fig:3.

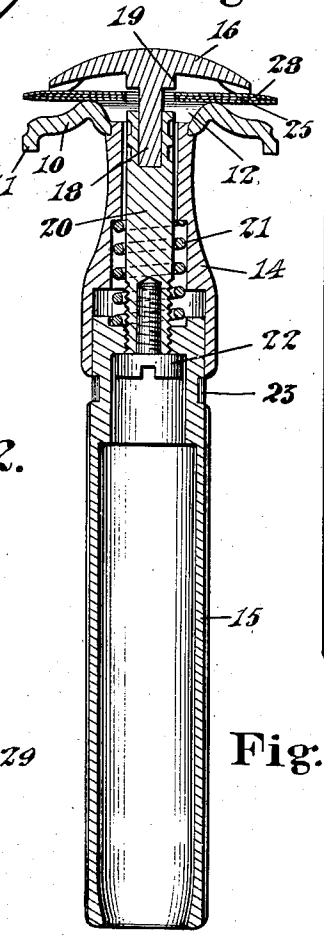


Fig:4.

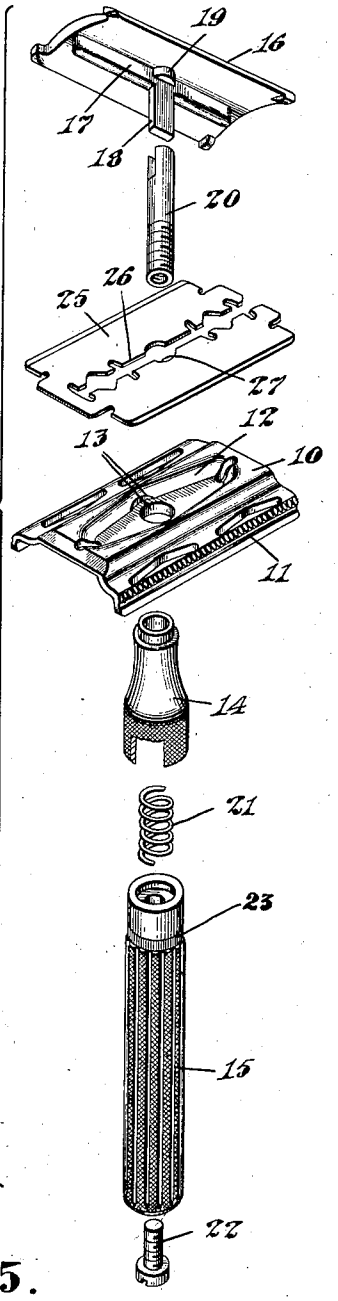


Fig:5.

INVENTOR.

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Patented Oct. 24, 1944

2,361,216

UNITED STATES PATENT OFFICE

2,361,216

SAFETY RAZOR

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Application November 12, 1943, Serial No. 509,970

4 Claims. (Cl. 30—70)

This invention relates to safety razors of the type in which a thin flexible blade is clamped for shaving between co-operating supporting members. In one aspect it consists in an improved construction whereby a blade having a protective envelope or wrapper may be presented to the razor, located fully in its final shaving position and then temporarily held in place so as to afford the user an opportunity for removing the blade wrapper preparatory to clamping the blade for shaving.

The shaving edge of a thin safety razor blade is brought to such a high degree of fineness that it is extremely delicate and its keenness is likely to be destroyed if the edge is accidentally drawn across any part of the razor or a blade magazine or even the blade wrapping material preparatory to shaving. Great care and considerable skill is required ordinarily on the part of the user to extract such a blade from its wrapper and present it safely in its shaving position without some such damage to its edge. The present invention deals with blades of a type which may be effectively protected at the time of manufacture by being enclosed in a paper wrapper. This wrapper overlaps and safeguards the sharp edge or edges of the razor blade but must be removed to make the blade edge accessible for shaving. We contemplate a safety razor so organized that the wrapped blade may be delivered directly thereto in its final shaving position and temporarily held as thus positioned while the user has only to strip the wrapper from the blade and withdraw it from the razor, all this being effected without danger and even without the possibility of touching the keen cutting edge of the blade.

The construction of my invention is such that the elements which have been heretofore employed regularly in safety razors and with which the public is entirely familiar may be utilized by suitable modification and addition to perform the function of temporarily holding and releasing the blade independently of the clamping movement of the razor parts. To this end an important feature of the invention consists in providing in a safety razor a projecting detent upon one of the blade-clamping members and spring means operating to bow a blade, when once located in shaving position, into interlocking engagement with such projection, that is to say, the blade may be presented in substantially flat condition, then, as a preliminary step, bowed into engagement with the detent and so held or anchored against longitudinal movement while the user withdraws the blade wrapper. Subsequently, the blade-clamping step is carried out in the usual manner as is also the unclamping step. Convenient means are provided in or adjacent to the handle of the razor for releasing the blade from its bowing stress, thereby allowing it to re-assume its flat condition and disengage the detent so that it is free for removal from the razor.

As herein shown the cap member has a centrally located boss or detent for engaging and holding an apertured and protected blade, this detent being located symmetrically within the cap outline and in line with its shank where it may be engaged with and disengaged from the usual central hole provided in the blade for the passage of the shank on which the cap is mounted.

As another novel feature the razor of my invention may include a colored signal band or area arranged to be concealed when the blade is fully clamped and to be exposed whenever the clamping pressure on the blade is relieved sufficiently to make its edge exposure dangerous to the user.

These and other features of the invention will be best understood and appreciated from the following description of a preferred embodiment thereof, selected for purposes of illustration and shown in the accompanying drawing, in which:

Fig. 1 is a view of the razor in perspective showing the hands of the user in presenting a protected blade;

Fig. 2 is a view of the razor head in longitudinal section and on an enlarged scale;

Fig. 3 is a view in perspective of a protected blade;

Fig. 4 is a view in perspective showing the various parts of the razor and the blade in exploded relation; and

Fig. 5 is a view of the complete razor in longitudinal section and on an enlarged scale.

The razor selected for illustration is of the "Gillette" type although the invention is not restricted to that or to any other particular type of razor. As herein shown, however, the razor comprises a guard member 10 which is generally rectangular in outline and slotted at each side to define solid downwardly and outwardly extending guard bars 11. The guard has a flat blade-supporting face bounded by parallel shoulders over which the blade is flexed in use. Within the blade-supporting face is formed an elongated depression 12 diamond-shaped in outline

and having a central circular perforation 13 for connection with the handle.

The handle comprises a ferrule member 14 having an upwardly projecting collar which passes into the perforation 13 of the guard and is headed therein for permanent connection. The lower hollow end of the ferrule is shaped to fit freely over the upper end of the barrel 15 of the handle, the latter being provided with a red band 23 which is concealed by the ferrule when the blade is clamped.

Co-operating with the guard 10 is a cap member 16 similar in outline to the guard but slightly narrower and provided with an inner concave face which in engaging a blade flexes it transversely over the fulcrum shoulders of the guard. It has also a longitudinal blade-locating rib 17 which projects from its concave face and merges centrally into a flattened downwardly extending stem 18 and into a central boss 19. The two sides of the boss 19 provide a circular projection disposed symmetrically on both sides of the rib 17. The bulging side portions of the boss 19 are in line with the flat sides of the stem 18. Two corners of the cap may be reenforced with projecting lugs as shown in Fig. 4 or not as desired.

The stem 18 is received within the forked upper end of a short shank 20 and is permanently united thereto by having the material of the shank swaged against it as suggested in Figs. 2 and 4. The shank is arranged to slide freely in a longitudinal bore provided for its reception in the ferrule member 14 and is threaded at its lower end for connection with the internally threaded upper end of the handle barrel 15. The ferrule is provided with a concentric chamber for the reception of a compression spring 21 which bears against the upper end of the handle barrel tending always to depress it and to lower the shank 20 and its connected cap into a position in which an interposed flexible blade is bowed sufficiently to engage the boss 19. A headed stop screw 22 is inserted in the end of the shank 20. This is received with clearance in the body of the barrel 15, determines the amount of separation which may occur between the cap and guard as indicated in Fig. 5 and prevents complete withdrawal of the shank 20 from the handle and separation of the cap from the guard. The lower end of the ferrule member 14 and the upper end of the barrel 15 make sliding telescopic connection and guide each other in relative longitudinal movement.

One type of blade adapted for use with the illustrated razor is shown in Figs. 3 and 4. It is a flexible double-edged blade 25 of the commercial "Gillette" type having its corners recessed to define elongated unsharpened end portions and having a central slot 26 which is open at one end. The slot is provided with a central circular recess or enlargement 27 of such diameter as freely to receive the boss 19 of the cap member.

The protective cover 28 of the blade as herein shown comprises sheet material folded on both sides of the blade and projecting outwardly beyond its cutting edges and having integral ears 29 folded over the solid end portion of the blade and projecting substantially beyond the end of the blade. The wrapper 28 is cut away so as to expose the entire outline of the blade slot 26 and its intermediate enlargements. The blade is shaped so that it may be presented endwise to the razor, the slot 26 receiving the rib 17 of the cap and when fully in shaving position the detent 19 registering with the central perforation of the blade.

When the handle barrel 15 is unscrewed from the shank 20 to the limit permitted by the stop screw 22 the spring 21 acts to force the cap and guard members of the razor together. In doing this it lifts the guard and the ferrule 14 with respect to the barrel 15 and exposes the red band 23. In order to present an open-end blade between the cap and the guard it is necessary for the user to lift the cap by pushing upwardly on the end of the handle barrel 15 and holding stationary the ferrule 14, as suggested in Fig. 1. In this way the cap 16 may be lifted until the stop screw 22 engages the shoulder of the barrel 15, as shown in Fig. 5. With the cap so lifted the user is free to slip the protected blade endwise into position between the cap and the guard, the slot 26 receiving the rib 17 and the blade as a whole passing beneath the boss 19. Inward movement of the blade is arrested when the end of the slot 26 brings up upon the end of the rib 17 and in this position the circular enlargement 27 of the blade registers with the boss 19.

Now, when pressure upon the end of the handle is released the spring 21 moves the cap and guard together again and slightly flexes the blade so that the boss 19 enters the circular recess 27. This positively anchors the protected blade in shaving position and the user has only to grasp the folded end of the cover and strip it from the blade. The blade has thus been located fully in its shaving position without any possibility of contact with its shaving edges and it remains only for the user to rotate the handle barrel positively to clamp the cap upon the interposed blade in its position of pressure. In this operation the red band 23 of the handle barrel passes upwardly beneath the lower end of the ferrule 14 and becomes completely concealed as shown in Fig. 2. The red band, therefore, serves as a danger signal to the user warning him that the razor is not safe for shaving so long as it is visible. This is important because the spring 21 moves the cap and guard together and partially flexes the blade creating a condition which can hardly be distinguished from that in which the blade is fully clamped.

When it is desired to remove a used blade from the razor the sequence of operations above set forth has only to be reversed. The handle barrel 15 is rotated in a counter-clockwise direction until arrested by the stop screw 22. Then upon holding the razor with its head in a vertical position and again pressing upon the end of the handle barrel the blade is completely released and is free to drop from the razor of its own weight.

Having thus disclosed my invention and described in detail an illustrative embodiment thereof, I claim as new and desire to secure by Letters Patent:

1. A safety razor comprising cooperating blade-shaping members spring-pressed together and having a rib between them and a detent located substantially midway between the ends of the rib, in combination with a flexible blade, slotted to embrace the rib and having a central detent-receiving aperture arranged to interlock with the detent when the blade is advanced endwise to shaving position between said blade-shaping members.

2. A safety razor comprising cooperating blade-shaping members connected for limited separation to receive a thin apertured blade between them, a blade-locating rib projecting from one

of said members, and a centrally disposed detent wider than the rib, of less height than the rib and located substantially midway between the ends of the rib.

3. A safety razor having relatively movable cap and guard, handle members telescopically related and connected respectively to the cap and guard, a threaded connection between the handle members, spring means for moving the cap and guard toward each other, and a warning signal on one of the handle members arranged to be concealed by the other handle member only when the threaded connection is operated to clamp the cap and guard together.

4. A safety razor having telescopically related handle members, a cap connected to one member and a guard connected to the other member, a threaded connection between the handle members, a spring at all times urging the cap and guard together, and a warning signal on one handle member arranged to be exposed by the action of the spring, and concealed when the handle parts are telescoped together by operation of their said threaded connection.

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