Aug. 24, 1943. Z. AUERBACH 2,327,388

SAFETY RAZOR AND MAGAZINE

Filed April 7, 1942 2 Sheets-Sheet 1

Fig. 7

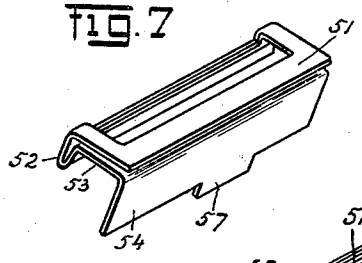


Fig. 1

Fig. 2

Fig. 6

Fig. 4

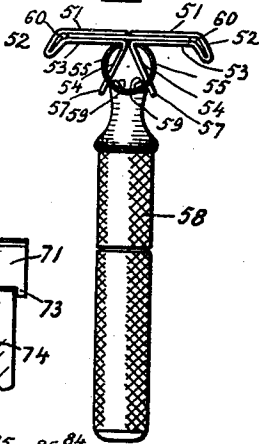


Fig. 3

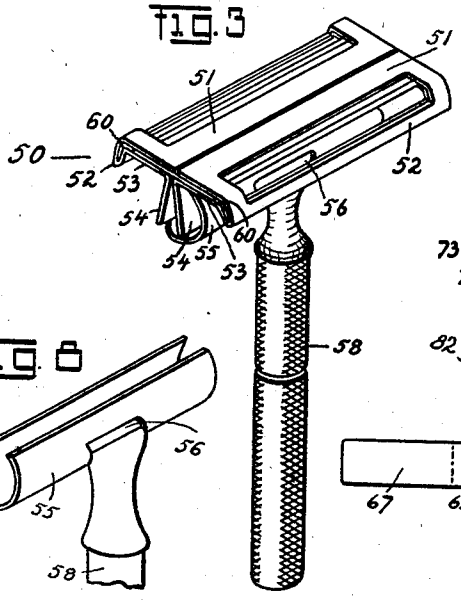
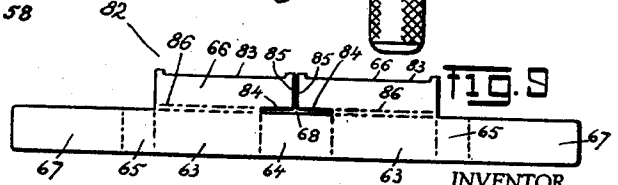


Fig. 5



Fig. 8

Fig. 9



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Fig. 10

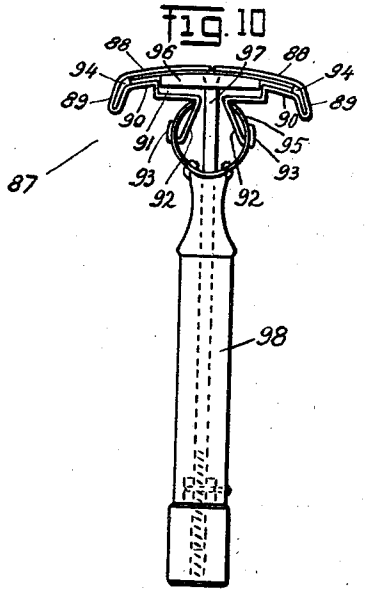


Fig. 11

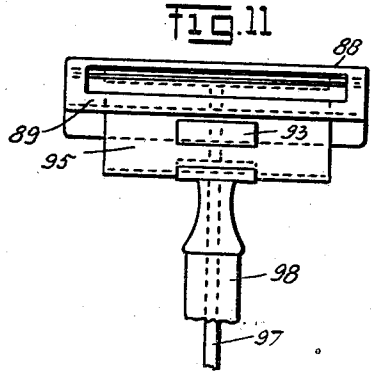


Fig. 12

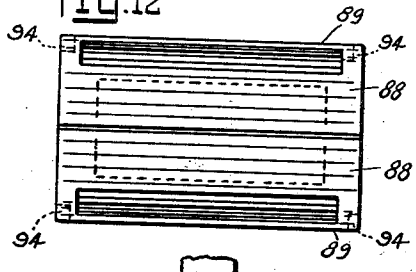


Fig. 13

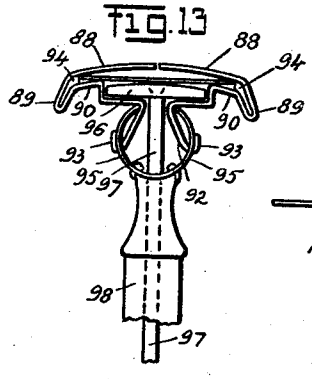


Fig. 14

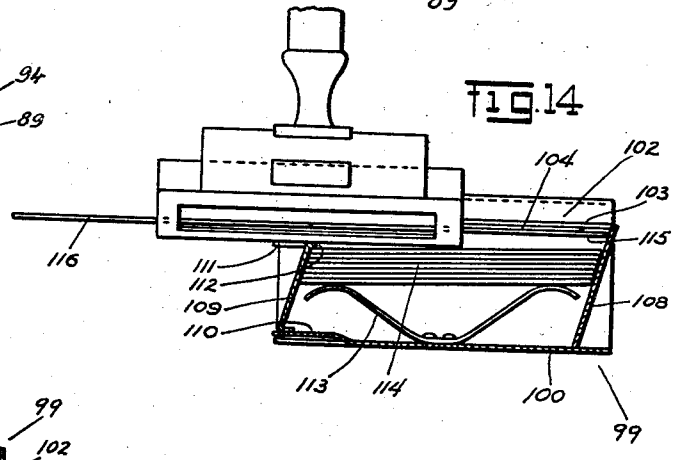


Fig. 15

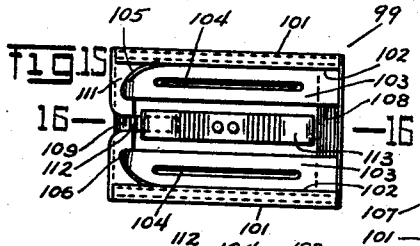


Fig. 16

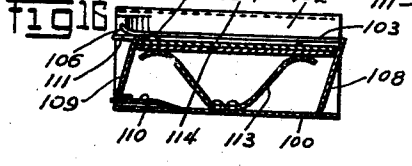
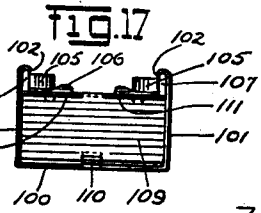


Fig. 17



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UNITED STATES PATENT OFFICE

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SAFETY RAZOR AND MAGAZINE

Zemach Auerbach, New York, N. Y.

Application April 7, 1942, Serial No. 437,954

18 Claims. (Cl. 30—40)

This invention relates to improvements in safety razors and in magazines for same.

Briefly, an object of my invention is to provide a razor which is inexpensive to manufacture, simple in construction, easy to operate and which will provide the shaver with a better shave.

More particularly, another object of my invention is to position the double-edged blade within the razor head so that both cutting edges are at the same distance from the longitudinal medial line of the blade platform so as to present cutting edges equally spaced with respect to the guard so that the shaver will have a greater degree of safety.

Another object of my invention is to provide a novel combined platform guard and cap, fashioned of one piece of material, to receive the blade which is automatically positioned so that the cutting edges of the blade are in an exact and predetermined position with relation to the guard.

Another object of my invention is to provide a razor head which will automatically take care of any differences in the width of different razor blades.

Another object of my invention is to provide an improved magazine for double-edged razor blades which provides for automatic positioning of the blades and for feeding the blades into the razor and for retaining the blades in a central position within the magazine so that the cutting edges are out of contact with the magazine walls.

For a fuller understanding of the nature and objects of my invention reference is had to the following detailed description, in connection with the accompanying drawings, in which:

Fig. 1 is a perspective view of a razor showing a magazine in position with the razor head.

Fig. 2 is a perspective view of the magazine shown in Fig. 1.

Fig. 3 is a perspective view of the razor shown in Fig. 1 without the magazine and with a blade in position within the razor head.

Fig. 4 is a front view of the razor shown in Figs. 1 and 3.

Fig. 5 is a top view of the blade pusher in relation to a blade, with the blade partly broken away.

Fig. 6 is a modified razor with the handle partly broken away.

Fig. 7 is a perspective view of one half of the razor head shown in Figs. 1, 3 and 4.

Fig. 8 is a perspective view of the spring and upper portion of the handle of razors of Figs. 1, 3 and 4.

Fig. 9 is a plan view of a blank of magazine shown in Fig. 2.

Fig. 10 is a front view of a modified razor for flexible blades, showing a blade in flexed position.

Fig. 11 is an enlarged side view of the upper part of the razor shown in Fig. 10.

Fig. 12 is an enlarged top view of the razor shown in Figs. 10 and 11.

Fig. 13 is a front view of the upper part of the razor shown in Fig. 10 with a blade in position before flexing.

Fig. 14 is a side view of a modified magazine showing a razor head in position upon same.

Fig. 15 is a top view of the magazine shown in Fig. 14.

Fig. 16 is a section taken through line 16—16 of Fig. 15.

Fig. 17 is a front view of the magazine shown in Figs. 14, 15 and 16.

Referring to the drawings, Figs. 1, 3 and 4, numeral 50 represents a split razor head comprising a split cap constituted of two complementary plates 51—51 with their edges parallel with each other and disposed in a common plane, guards 52—52, a split platform constituted of two complementary plates 53—53 with their edges parallel with each other and disposed in a common plane and flanges 54—54 with tongues 57—57. Flanges 54—54 are bent outwardly and at an angle from the split platform 53—53. The split razor head 50 is held together by a spring member 55, having slots 56 through which tongues 57—57 of flanges 54—54 pass.

Handle 58 is attached to spring member 55 by flanges 59—59 which pass through slots 56 and are bent inwardly.

Within the guards 52—52 and between the cap 51—51 and platform 53—53 and in the vicinity of each end of each of the guards there are stops or abutments 60.

Referring to Figs. 1 and 2, numeral 61 represents a magazine for double-edged razor blades, comprising a bottom 62, sides 63—63, a back 64, a front 65, a top 66 and a vertical tongue 67 located in the center of front 65. Front 65 has a horizontal opening 68 near the top 66. Top 66 has a longitudinal opening 69 along the longitudinal medial line. Finger piece 70 attached to pusher 71 through the opening 69 slides along the top 66. A spring (not shown) is attached to the bottom 62 on the inside of the magazine to hold a stack of blades under upward pressure.

The uppermost blade 74 of a stack of blades fits within the recess 72 of pusher 71 while extensions 73—73 embrace the uppermost blade 74 to assure movement of blade 74 along the medial line of the magazine, preventing the cutting edges from touching the inside walls of sides 63—63.

Fig. 6 is a modified razor having a one-piece head comprising a split platform constituted of two complementary plates 77—77 with their edges parallel with each other and disposed in a common plane, guards 66—66, one depending from the exterior edge of each of the plates, a split cap composed of two complementary plates 75—75, one extending from one of the guards and the other extending from the other of the guards, both of the plates extending over the blade platform and spaced therefrom to form a space for confining a blade in shaving position, and a spring 78 resiliently urging the platform plates together with the cap plates toward one another. At the ends of the guards 76—76 and between the cap 75 and platform 77—77, there are stops or abutments 79 one in the vicinity of each end of each guard. Through openings in the lower part of spring 78, flanges 80—80 of handle 81 are passed and bent inwardly.

When the vertical tongue 67 of the magazine shown in Fig. 2 is projected between the flanges 54—54 of Fig. 1, the complementary parts of the blade platform are forded away from each other to an extent whereby the distance between the pair of abutments on one plate and the pair of abutments on the other plate is greater than the width of the blade to be used in the razor cap, so that a blade can be injected into the blade confining space without hindrance from the abutments. When the vertical tongue is withdrawn, the complementary plates come together, causing the blade to be gripped between the opposing pairs of abutments and therefore rigidly held in position for shaving. A similar action takes place in the form shown in Fig. 6, although the vertical tongue of the magazine would in that case have a cross-section area of a shape that would accommodate itself to the space between the branches of the spring 78.

Referring to Fig. 9, numeral 82 is a blank for the upper part of the magazine shown in Figs. 1 and 2, comprising the back 64, sides 63—63, front 65, tongue 67, top 66 and cutouts 83 to form opening 69 shown in Figs. 1 and 2. Top portions 66 are cut horizontally at 84 and vertically at 85 adjacent the back 64 and extend to the center of back 64 forming an extension beyond the back 64. Top 66 is bent at 86 which is slightly above sides 63—63 to form opening 68.

Referring to Figs. 10 to 13, inclusive, numeral 87 is a modified razor comprising a split cap composed of complementary plates 88—88, guards 89—89, a split blade platform composed of the two complementary plates 90—90 with their edges parallel with each other, a depression 91 in the center of the blade platform, flanges 92—92, and tongues 93—93 passing through opening (not shown) in spring 95 which holds together the razor head. At the ends of each guard 89, there are stops or abutments 94. A movable platform 96, fitting within depression 91 is attached to a shaft 97 which passes through an opening (not shown) in the center of spring 95, and through a hollow handle 98 which is attached to spring 95 in a similar manner as shown in Fig. 4. The razor in Figs. 10 to 13 inclusive can be made so that spring 95 is bent from the same material as the platform 90—90 in the same manner as shown in Fig. 6. It will be seen that as the movable platform is raised it will cause the blade in the blade confining space to curve upwardly, thus resulting in a shaving angle that is more satisfactory to most users then as though the blade remained in an unflexed condition.

Referring to Figs. 14 to 17, inclusive, numeral 99 is a magazine for double-edged blades comprising a bottom 100, sides 101—101, channel members 102—102, flanges 103—103 bent horizontally from the channel members 102—102, ribs 104—104 pressed into the flanges 103—103, all of the above being fashioned of one piece of material. The front part of channel members 102—102 are curved inwardly as shown at 105, and the front part of flanges 103—103 are curved upwardly as shown at 106. Between sides 101—101 and 102—102 there are longitudinal channels 107. Between the sides 101—101 and bottom 100 there is a stationary sloping back 108. At the front of magazine 99 there is a vertically movable front wall 109 sloping in the same direction as the back 108. A spring 110 bent upward from the same material as bottom 100 retains front wall 109 under upward pressure. The top of wall 109 has a flange 111 bent outward and a small projection 112 bent inwardly at the center. Bottom 100 has a spring 113 for retaining a stock of blades 114 under upward pressure.

In order to use magazine 99 in connection with a razor, the razor head is placed with the head downward upon flange 111 and pressed down. This causes the front wall 109 to descend at the same time, causing small projection 112 to depress the stock of blades 114 with the exception of the uppermost blade 115. As the razor head is thus pressed downward it is also moved horizontally into the magazine 99. The guards of the razor enter channels 107—107 which causes the split razor head to spread apart since the distance between channels 107—107 is greater than the distance between the guards of the razor. The platform of the razor enters the space between the long ribs 104—104. The downward movement of front wall 109 creates a clearance for the entrance of the cap of the razor, leaving the uppermost blade 115 ready to contact the used blade 116 in the razor head. As the razor head is moved into the magazine 99, the uppermost blade 115 contacts the used blade 116 in the razor head and ejects it while the uppermost blade 115 enters the razor head.

Upon withdrawing the razor from the magazine 99, the razor head contracts and automatically positions the blade firmly in the razor head ready for use.

It is obvious that various changes and modifications may be made in the details of construction without departing from the general spirit of the invention, as set forth in the appended claims.

I claim:

1. In a razor of the character described, a one piece razor head for a removable blade, comprising a split cap, guards bent from said split cap, said guards on opposite sides of the longitudinal medial line, stops at the ends of said guards for positioning said blade, a split platform bent from said guards and a spring bent from said split platform, said spring holding said split head together under pressure.

2. In a razor of the character described, a

complete razor head fashioned of one piece of metal for a removable double-edged blade, comprising a split cap, guards bent from said split cap, said guards on opposite sides of the longitudinal medial line, a split platform bent from said guards and a spring bent from said split platform for holding said razor head resiliently together for movement in directions opposite to the longitudinal medial line.

3. The combination of a one-piece razor with a double-edged flexible removable blade, comprising a split cap, guards bent from said split cap, said guards on opposite sides of the longitudinal medial line, a split platform bent from said guards and a spring bent from said split platform for holding said razor head under constant pressure toward the longitudinal medial line, stops at the ends of said guards for automatically positioning said double-edged blade of said razor.

4. In a razor of the character described, a razor head for a removable blade, comprising two opposed identical pieces, each of said pieces consisting of half of a cap, a guard bent from said cap, stops at the ends of said guard, half of a platform bent from said guard, a flange bent downwardly from said half platform, and a tongue extending from said flange, a spring holding said opposed identical pieces together at the flange portions, slots in said spring to receive said tongues, and a handle attached to said spring.

5. In a razor of the character described, a razor head for a removable blade, comprising a split cap, guards bent from said cap, said guards on opposite sides of the longitudinal medial line, stops at the ends of said guards for positioning said blade, a split platform bent from said guards, a spring, a depression in the center of said platform, a movable platform fitting within said depression and attached to a shaft passing through an opening in said spring and through a hollow handle attached to said spring, and means for raising and lowering said shaft and platform for flexing a wafer blade within the razor head.

6. In a razor of the character described, a razor head for a removable blade, comprising two opposed identical pieces, each of said pieces consisting of half of a cap, a guard bent from said cap, stops at the ends of said guard, half of a platform bent from said guard, a flange bent downwardly from said half platform, and a tongue extending from said flange, a spring holding said opposed identical pieces together at the flange portions, slots in said spring to receive said tongues, a handle attached to said spring, a depression in the center of said platform, a movable platform fitting within said depression and attached to a shaft passing through an opening in said spring and through a hollow handle attached to said spring, and means for raising and lowering said shaft and platform for flexing a wafer blade within the razor head.

7. The combination of a spreadable razor for double-edged blades with a magazine having means for spreading the razor for inserting double-edged blades within the razor head without marring the cutting edges of said blades.

8. The combination of a razor for double-edged blades with a magazine, said razor having a split head held together by a spring under pressure toward the longitudinal medial line, said magazine having means for spreading said split razor head for inserting a double-edged blade into said razor head to avoid marring the cutting edges of said blades.

9. The combination of a razor for double-edged blades with a magazine for double-edged blades, said razor having a split head and spring means for holding said split head together, said magazine having a projecting tongue for spreading said razor head for feeding said double-edged blades into said razor head so that the cutting edges of said blades are not injured.

10. The combination of a spreadable razor for double-edged blades with a magazine, said magazine having means for gradually spreading the razor head to permit the entrance of the razor head into said magazine for automatically ejecting a used blade and injecting a fresh blade.

11. The combination of a spreadable razor for double-edged blades with a magazine, said magazine having an extension in the central part of the front for inserting said extension longitudinally into the central portion of the razor head for spreading said razor head, a pusher on said magazine for inserting double-edged blades into said razor head without injury to the cutting edges of said double-edged blades.

12. The combination of a spreadable razor for double-edged blades with a magazine having opposed parallel channels, means to permit the entrance of opposed guards of said razor into said channels, said channels gradually spreading the razor head for inserting double-edged blades from said magazine into said razor head without marring the cutting edges of said double-edged blades.

13. The combination of a spreadable razor for double-edged blades with a magazine having opposed parallel channels, means to permit the entrance of opposed guards of said razor into said channels, said channels gradually spreading the razor head, a front wall of said magazine movable vertically, a small projection at the top of said front wall for separating the uppermost blade and depressing the other blades within said magazine upon entrance of the razor head into said channels of said magazine.

14. The combination of a spreadable razor for double-edged blades with a magazine having opposed parallel channels, means to permit the entrance of opposed guards of said razor into said channels, said channels gradually spreading the razor head, opposed flanges bent horizontally outward from said channels, longitudinal ribs in said flanges creating clearance for the razor platform, a vertically movable front wall of said magazine, a blade depressor projecting inwardly from said front wall creating clearance for the razor cap.

15. A razor comprising a blade platform constituted of two complementary plates with their edges parallel with each other, a guard bar depending from the exterior edge of each of said plates, a cap composed of two plates complementary to each other, one extending from one of said guard bars and the other extending from the other of said guard bars, both of said cap plates extending over said blade platform and spaced therefrom to form a space for confining a blade in shaving position, said plates so forming said blade platform being provided with spring means resiliently urging said plates toward one another, abutments located in said blade confining space, one in the vicinity of each end of each guard bar, the distance between the pair of abutments in the vicinity of one guard bar and the other pair being normally less than

the width of a blade to be used in the razor, but being greater than the width of said blade when said plates are forced apart against the resistance of said spring means.

16. A razor comprising a blade platform constituted of two complementary plates disposed in a common plane with their edges parallel with each other, a guard bar depending from the exterior edge of each of said plates, a cap composed of two plates complementary to each other, one extending from one of said guard bars and the other extending from the other of said guard bars, both of said cap plates extending over said blade platform and spaced therefrom to form a space for confining a blade in shaving position, said plates so forming said blade platform being provided with spring means resiliently urging said plates toward one another, abutments located in said blade confining space, one in the vicinity of each end of each guard bar, the distance between the pair of abutments in the vicinity of one guard bar and the other pair being normally less than the width of a blade to be used in the razor, but being greater than the width of said blade when said plates are forced apart against the resistance of said spring means.

17. A razor comprising a blade platform constituted of two complementary plates with their edges parallel with each other, a guard bar depending from the exterior edge of each of said plates, a cap composed of two plates complementary to each other, one extending from one of said guard bars and the other extending from the other of said guard bars, both of said cap plates extending over said blade platform and spaced therefrom to form a space for confining a blade in shaving position, said plates so forming said blade platform being provided with spring means resiliently urging said plates toward one another, abutments located in said blade confining space, one in the vicinity of each end of each guard bar, the distance between the pair of aubutments in the vicinity of one guard bar and the other pair being normally less than the width of a blade to be used in the razor, but being greater than the width of said blade when said plates are forced apart against the resistance of said spring means, and a movable platform positioned between the plates forming the blade platform and adapted to be raised for curving upwardly a blade positioned in the blade confining space, said platform being provided with means for raising and lowering it.

18. A razor comprising a blade platform constituted of two complementary plates disposed in a common plane with their edges parallel with each other, a guard bar depending from the exterior edge of each of said plates, a cap composed of two plates complementary to each other, one extending from one of said guard bars and the other extending from the other of said guard bars, both of said cap plates extending over said blade platform and spaced therefrom to form a space for confining a blade in shaving position, said plates so forming said blade platform being provided with spring means resiliently urging said plates toward one another, abutments located in said blade confining space, one in the vicinity of each end of each guard bar, the distance between the pair of abutments in the vicinity of one guard bar and the other pair being normally less than the width of a blade to be used in the razor, but being greater than the width of said blade when said plates are forced apart against the resistance of said spring means, means for causing a blade in the blade confining space to curve upwardly toward the cap plates, said means comprising a platform located between the platform plates and detached therefrom, and means for raising and lowering the platform.

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