May 31, 1966 J. B. KRUGER ETAL 3,253,335

INJECTOR TYPE SAFETY RAZOR WITH ONE-PIECE BRIDGE AND KEY RETAINER MEMBER

Original Filed July 16, 1963 2 Sheets-Sheet 1

FIG. 1

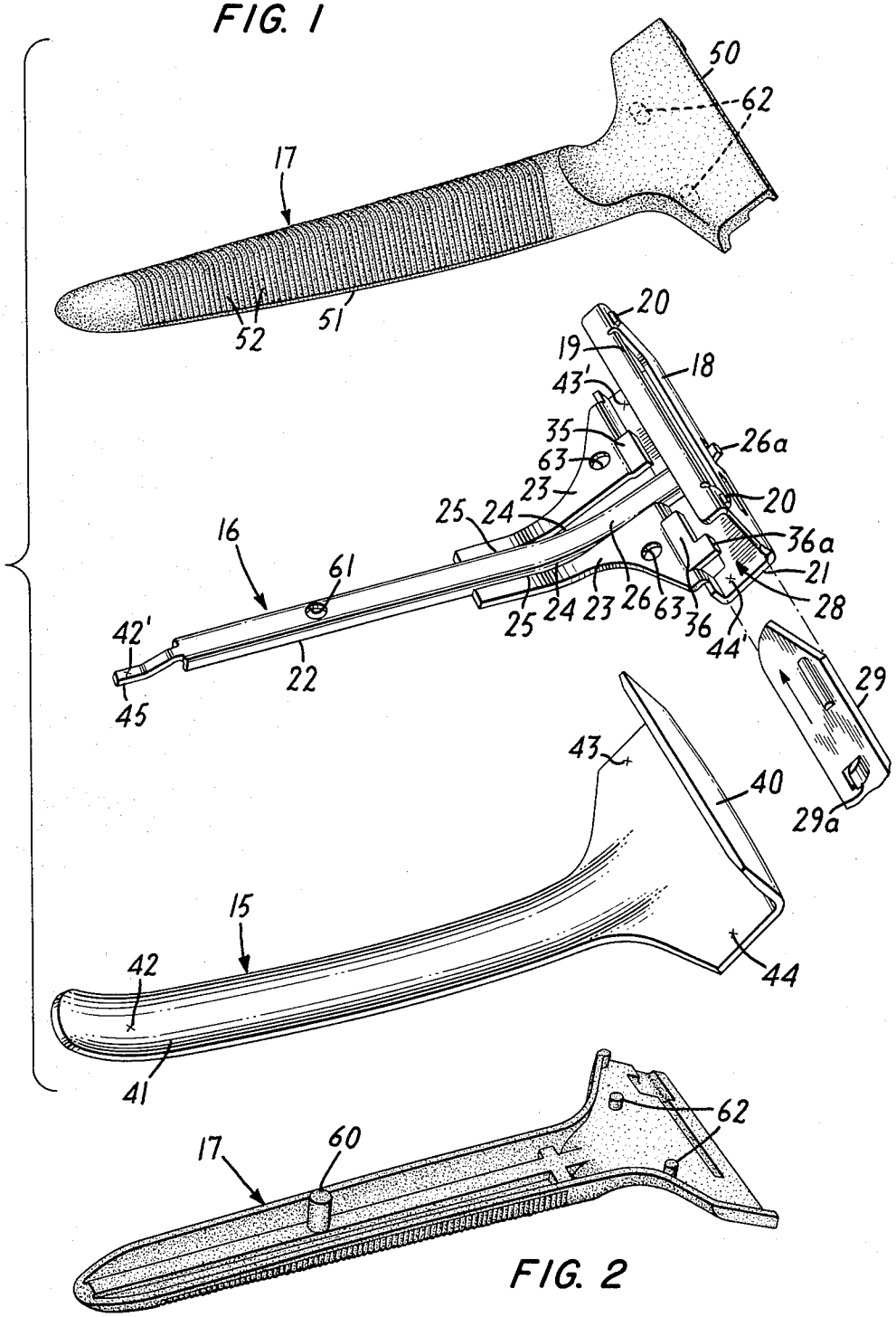


FIG. 2

FIG. 3

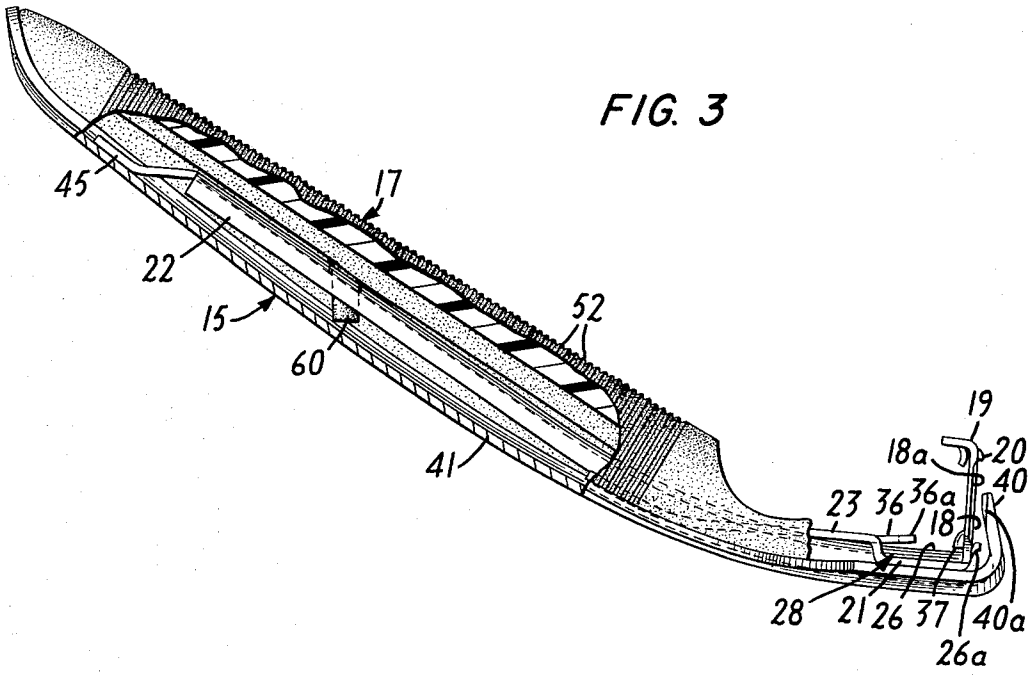


FIG. 4

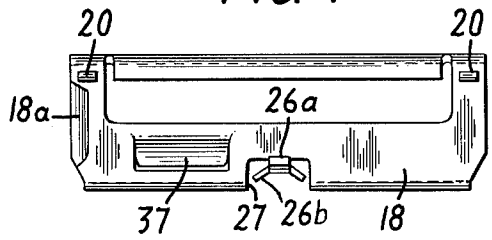
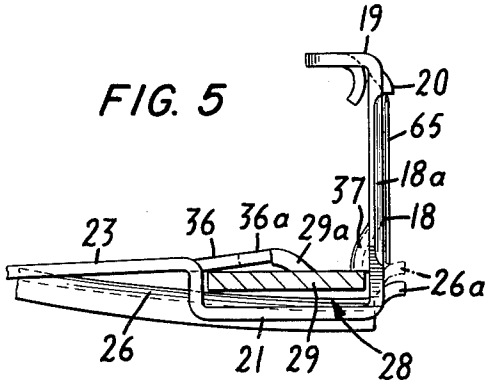


FIG. 5



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INJECTOR TYPE SAFETY RAZOR WITH ONE-PIECE BRIDGE AND KEY RETAINER MEMBER

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7 Claims. (Cl. 30—62)

This is a continuation of our presently pending application Serial Number 295,399, filed July 16, 1963, now abandoned.

The present invention concerns a safety razor of the injector blade type in which the blade is inserted from a magazine having a key adapted to be engaged in the razor head preceding the blade insertion from the magazine.

The invention comprises such a type razor marked by simplicity and particularly economy of manufacture and assembly of the parts. In the specific embodiment disclosed exemplifying the invention, the razor is comprised of three parts each a unitary piece. Of outstanding importance is the part which may be appropriately referred to as a combined bridge and key retainer member. This member in itself comprises the essential or most important parts from an operational standpoint of a safety razor of the type stated. It is of a character such that it is economically made of a single piece of sheet metal stamping having a platform portion, a guard part, and a back wall portion which includes elements shaped to provide a channel for the injector key and a spring element for releasably engaging the inserted blade and urging it into the normal forward stop lugs. The member also includes an elongated stem portion extending downwardly from the back wall portion into the handle part of the razor.

The member just described could function as a razor, but for convenience in handling and appearance there is associated with the member a handle member which includes a cap portion extending over the blade in the bridge member and a long narrowed stem portion comprising the handle. The handle member like the bridge and key retainer member is made of a single piece sheet metal stamping. The two members are readily and economically secured together by simple means such as spot welding or brazing in appropriate areas.

The third member comprises in substance a plastic appropriately shaped member adapted to be secured over the inside face of the bridge and key retainer member opposite to the handle member, the grip portion preferably having a widened head part adapted to engage over and conceal the shaped lugs and other elements forming or associated with the injector key channel, and an elongated stem part extending down into the handle suitably shaped to combine with the handle member and together form a handle which is convenient to hold and attractive in appearance. The grip member is a single piece plastic molded member. The character and relation of the three parts are such as to result in a razor having an outwardly smooth sculptured appearance.

Other features and advantages of the safety razor will be made apparent from a consideration of a specific embodiment exemplifying the principles of the razor. For a fuller understanding thereof reference should be had to the following detail description taken in conjunction with the accompanying drawings in which:

FIGURE 1 is an exploded perspective view of the parts comprising the razor of the present invention, showing additionally a fragment of the key of an injector blade magazine which is engaged in the razor head during blade changing.

FIGURE 2 is a perspective view of the handle grip member, the member being shown in an inverted position.

FIGURE 3 is a side elevational view of the assembled razor, portions of the handle grip member including the head portion thereof being broken away to illustrate the razor details with clarity.

FIGURE 4 is an end elevational view of the combined bridge and key retainer member.

FIGURE 5 is an enlarged fragmentary side elevational view of the razor head end of the combined bridge and key retainer member showing the injector key inserted therein for retracting the spring element during blade changing.

The razor depicted in the drawings comprises three individual parts, namely a handle member **15**, a combined bridge and key retainer member **16** and a handle grip member **17**.

The bridge and key retainer member **16** will be described first. It embodies all the features of an injector type razor necessary for normal use, the other two members principally contributing to the appearance and handling of the razor. The bridge and key retainer member **16** includes a blade platform **18** having at its forward edge a guard portion **19** and adjacent the forward edge a pair of lugs **20** adapted to form stops at the ends of the cutting edge of the blade. The blade platform **18** extends at an angle to a back wall portion **21** to match the key angle on the blade injector. Extending downwardly from the back wall portion is a stem portion **22** which is semi-circular or at least arc-shaped in cross section. The back wall includes flange portions **23** which extend down along the stem portion **22** a limited distance as appears in FIG. 1. The flange portions **23**, however, are separated from the stem portion **22** by slits **24** extending for a substantial distance from the platform area down along the stem portion, the flanges being joined to the stem portion at areas **25** as indicated in FIG. 1. Slits **24** therefore produce an elastic finger or blade spring **26** freely movable at its outer end in a notch **27** in the platform portion **18** and having an offset finger or lug **26***a* extending beyond the platform adapted to engage against the back edge of a blade when resting on the platform and urge the blade forwardly into engagement with the lugs **20**.

The back wall portion **21** is suitably shaped and has several tabs **35**, **36** cut from and projecting from the sheet metal material to form a guiding and supporting channel **28** for a standard type injector key **29** such as that shown in fragmentary view in FIGURE 1 and in section in FIGURE 5. The back wall is pressed into a generally U-shape as indicated in FIGURES 1 and 5, the tabs **35** and **36** being pressed out of the back wall area as shown. The key **29** is adapted to slide into and along the channel being retained at its forward face by the tabs **35** and **36** and also at the top edge by a further tab **37** which helps to prevent the key from rocking. In addition the tab **36** has a lug extension **36***a* adapted to engage against the conventional lug or knob **29***a* on the key **29** and more firmly hold the key against twisting movement in the channel, and which serves also to insure the proper location of the blade dispenser in a plane parallel to wall **21** and in proper relation to blade platform **18**. The side surface of the finger **26** has a 45° ramp as indicated at **26***b* in FIG. 4 to facilitate the entrance of the injector key **29** and depression of finger **26** to release the blade.

The handle member **15** is shown as an individual part in FIG. 1. It includes a cap portion **40** and an elongated narrowed stem portion **41**. As indicated by FIG.

3 the handle member conforms in general to the shape of the bridge and key retainer member **16**, the cap portion **40** fitting around the blade platform **18** and the stem portion **41** conforming generally to the stem portion **22** of the bridge and key retainer member. These two members when assembled, are held together by any suitable means such as welding or brazing at appropriate points, the corresponding joining spots being indicated at **42–42'**, **43–43'** and **44–44'** in FIGURE 1. To facilitate fastening at spot **42'** the member **16** may have at its outer end a flat offset extension **45** adapted to engage against the stem portion **41**. Preferably the opposed surfaces of the platform **18** and the cap **40** are chamfered at the blade entrance edge as indicated at **18***a* and **40***a* respectively to facilitate the insertion of the blade.

The handle grip member **17** is shown in FIGS. 1 and 2 in detail unassembled form. It includes a widened head portion **50** and a narrowed stem or grip portion **51** suitably shaped in side elevation as indicated in FIG. 3 to conform to the shape of the bridge and key retainer member **16**. The parts are shown in assembled relation in FIG. 3. The widened head portion **50** is adapted to fit over the key retainer area of the bridge and key retainer member **16** and present a smooth outward surface. The grip portion **51** is generally of an inverted V-shape and adapted to engage against the handle stem portion **41** as indicated particularly in FIG. 3. The member **17** is preferably made of molded plastic material in a singlee piece, the general shape of the hand grip portion being apparent from FIGS. 1 and 2. Preferably the outer surface is provided with transverse serrations as indicated at **52**. The grip member is positioned over the bridge member **16** and secured by any suitable means such as adhesive securing it principally to the bridge and key retainer member **16**. For this purpose locating means are provided including a pin **60** integral with the handle adapted to enegage in a hole **61** in the stem portion **22** of the bridge and key retainer member, and also a pair of lugs or pins **62** adapted to engage in openings **63** in the bridge member **16**.

In the assembled condition shown in FIG. 3 the razor presents a smooth sculptured appearance both front and back and including the head portion. A blade is indicated at **65** in FIGURE 5 in position in the razor with the forward cutting edge engaged against the lugs **20** and the rear edge engaged by the lug **26***a* on the flexible finger **26**. To change blades the magazine key **29** is inserted as indicated in FIGS. 1 and 5, the key being firmly guided in the channel so that the forward end engages against the rounded top surface of the flexible finger **26** pressing it downwardly away from the blade whereby the blade is freed from the lugs **20** and may be readily pushed out and replaced by the incoming blade. The latter may be seen in FIGURE 5 wherein the lug **26***a* on the flexible finger **26** has moved from the position shown in dashed lines to the position shown in full lines. Upon withdrawal of the key **29** the flexible finger **26** of course is released and the lug **26***a* thereon moves back into engagement with the back edge of the newly inserted blade.

It should be understood that various changes may be made in the above described razor and different embodiments of the invention could be made without departing from the scope thereof, and it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. In an injector blade safety razor, a unitary single piece combined bridge and injector key retainer member comprising a blade platform having a forward guard portion, blade stop means on the platform adjacent said guard portion, a blade spring integral with the member having a flexible mounted finger extending through an opening at the rear part of said platform for engaging

the rear edge of the blade and urging it against the stop means, and guide and locating means for an injector key adapted when the key is inserted to direct said key into engagement with the blade spring to retract it and free the blade for removal.

2. In an injector blade safety razor, a unitary single piece combined bridge and injector key retainer member comprising a blade platform portion, a guard part at the forward part thereof, a flange portion extending downwardly from the rear part of the platform and forming an angle with the platform, blade stop means on the platform adjacent said guard part, a blade spring integral with said flange portion having a finger flexibly mounted thereon extending through the rear part of said platform for engaging the blade and urging it against the stop means, and guide and locating means for an injector key adapted when the key is inserted to direct said key into engagement with the blade spring to retract it and free the blade for removal.

3. In an injector blade safety razor, a unitary single piece combined bridge and key retainer member having as integral parts thereof, a blade platform provided with a forward guard portion, blade stop means on the platform adjacent said guard portion, a back wall part extending from the rear part of said platform, a flexible spring portion extending upwardly through the rear part of said platform for normally engaging the rear edge of the blade and urging it into engagement with said stop means, a lug at each side of said spring portion defining with said back wall part a channel for an injector key, said spring portion being biased normally into the channel whereby insertion of an injector key engages the portion and retracts it away from the blade edge.

4. A combined bridge and key retainer member as set forth in claim **3** wherein at least one of the lugs at the side of said spring portion has a lug extension, said lug extension being engaged by a projection on the injector key for locating the injector key in proper relation to said blade platform.

5. In an injector blade safety razor, a member having a blade platform, a back wall, a forward guard portion, and a blade stop means on the platform adjacent said guard portion; a blade spring integral with said member having a flexibly mounted finger extending through an opening in the rear part of said platform and said back wall for engaging the rear edge of a blade and urging it against the stop means, and guide and locating means cooperating with the rear wall of said member for receiving an injector key, said last-mentioned means directing said key into engagement with the blade spring for retracting it and freeing the blade for removal.

6. In an injector blade safety razor, a member having a blade platform, a back wall extending downwardly from the rear part of the platform and forming an angle therewith, said back wall having elongated flange extensions, a guard portion at the forward part thereof, and blade stop means on the platform adjacent said guard portion; a blade spring integral with said flange extensions and having a flexibly mounted finger extending through the rear part of said platform and said back wall for engaging a blade and urging it against the stop means, and guide and locating means cooperating with the back wall of said member for receiving an injector key, said last-mentioned means directing said key into engagement with the blade spring for retracting it and freeing the blade for removal.

7. In an injector blade safety razor, a member having a blade platform provided with a forward guard portion, blade stop means on the platform adjacent said guard portion, and a back wall extending downwardly from the rear part of the platform, said back wall having elongated flange extensions, the rear part of said plat-

form and said back wall having a common slotted opening therein; a flexible spring integral with said flange extensions and extending upwardly through said slotted opening for normally engaging the rear edge of a blade and urging it into engagement with said stop means, and guide and locating means comprising a member extending at each side of said spring portion in front of said back wall and cooperating with said back wall for receiving an injector key, and directing said key into engagement with the flexible spring for retracting it from the blade rear edge and freeing the blade for removal.

References Cited by the Examiner

UNITED STATES PATENTS

2,288,302	6/1942	Reyburn et al.	30—62
2,771,673	11/1956	Nash	30—64
2,911,714	11/1959	Preis et al.	30—64
3,095,645	7/1963	Stahl	30—73
3,111,756	11/1963	Kruger et al.	30—63

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