April 6, 1954 C. E. BUTLIN 2,674,036

INJECTOR MAGAZINE FOR SAFETY RAZOR BLADES

Filed Jan. 5, 1951 2 Sheets-Sheet 1

FIG. 1

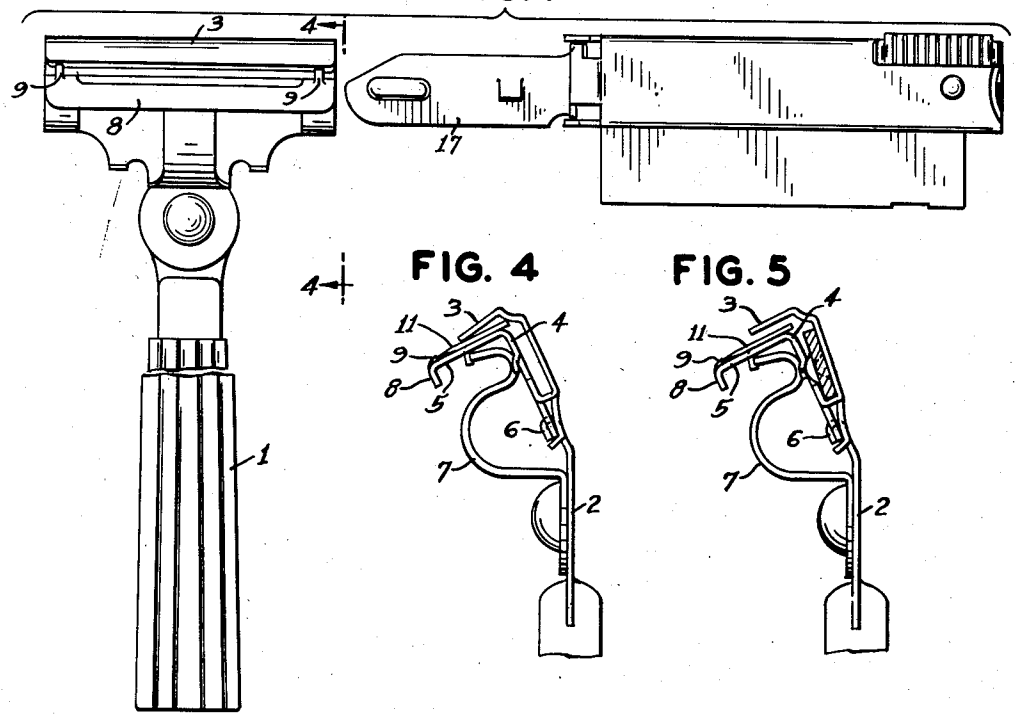


FIG. 4

FIG. 5

FIG. 2

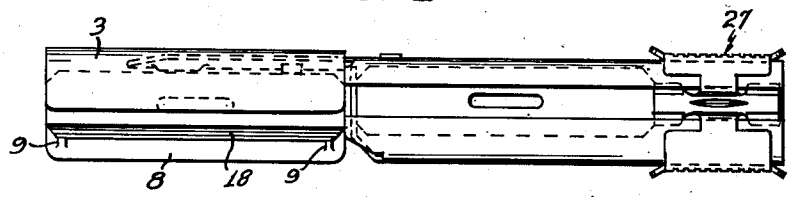
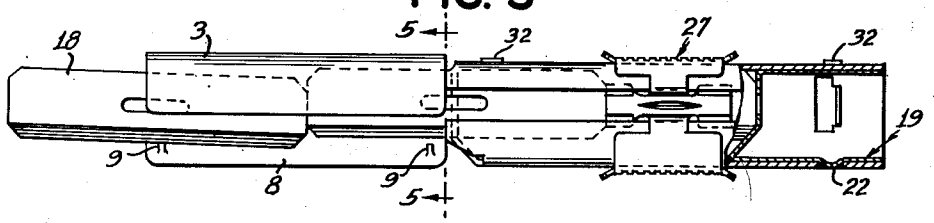


FIG. 3



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FIG. 6

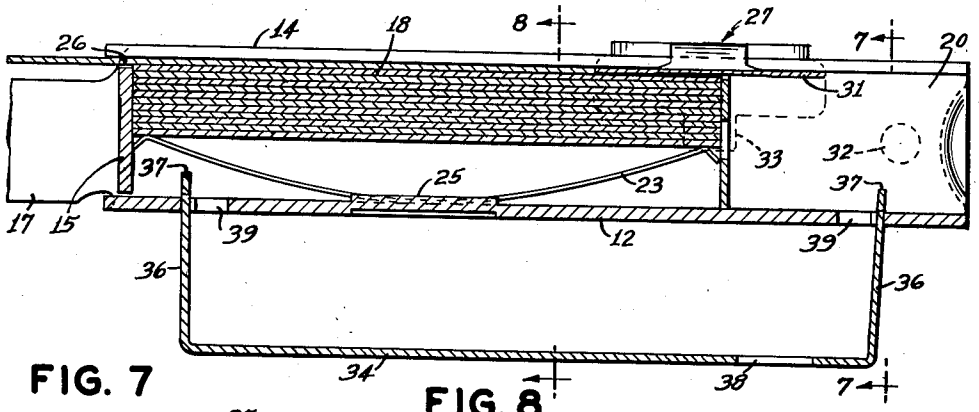


FIG. 7

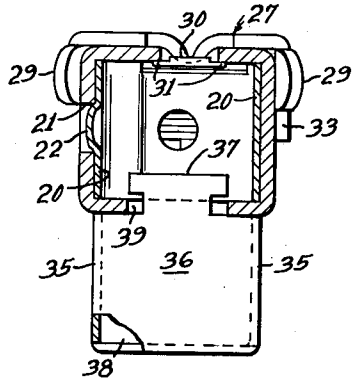


FIG. 8

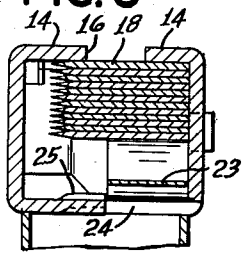


FIG. 10

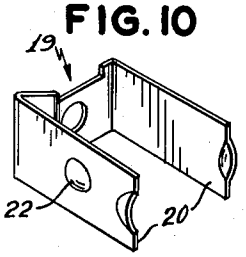


FIG. 9

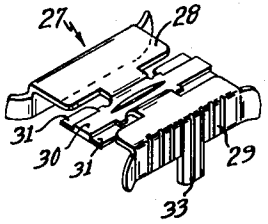


FIG. 11

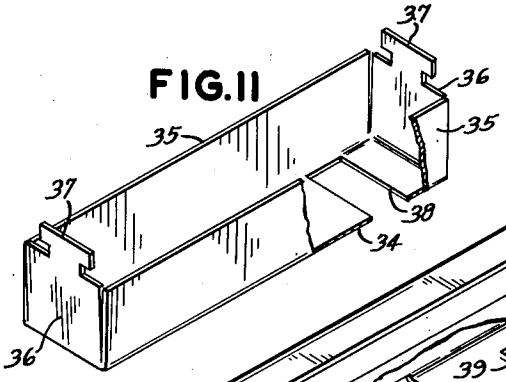
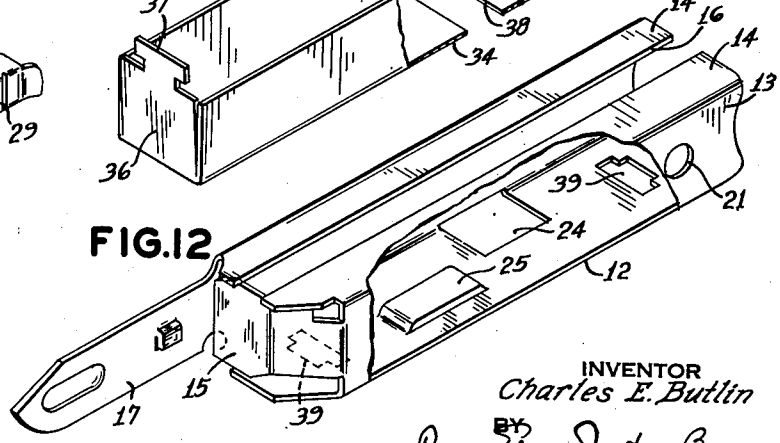


FIG. 12



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UNITED STATES PATENT OFFICE

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INJECTOR MAGAZINE FOR SAFETY RAZOR BLADES

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Application January 5, 1951, Serial No. 204,559

2 Claims. (Cl. 30—40)

1

This invention relates to a blade dispenser or injector to be used in connection with an injector razor. One type of such a razor comprises a back plate, terminating in a forwardly extending blade-clamping cap, and a blade platform on a downwardly extending supporting plate articulated to the back plate and held with the blade platform in contact with the clamping cap by means of a spring. Blades are commonly fed to such a razor from an injector magazine which is provided with a forwardly extending cam finger designed to be inserted between the supporting plate and the back plate and, by separating the two, to release the clamping pressure of the clamping cap upon the blade on the platform, whereupon the topmost blade of a stack of blades in the magazine is fed forward through a discharge slot, and between the cap and the platform, by means of a manually operated slide, discharging the dull blade as the sharp one moves into shaving position. The stack of blades is pressed against the underface of the top of the magazine by means of a spring bearing against the bottom of the magazine and the bottom blade of the stack so that the topmost blade is always in alignment with the discharge slot.

It has been the practice to make injector magazines non-refillable so that when empty they must be thrown away and a new magazine purchased. It is an object of the present invention to make a readily refillable injector magazine so that when the first stack of blades has been used up a new stack may be inserted and the useful life of the magazine prolonged indefinitely. I attain this object by providing the magazine with a readily removable rear wall and with an opening in its bottom through which the blade pressing spring may be inserted after the new stack of blades has been placed within the magazine. It is a further object of my invention to provide such a magazine with a removable vault for the reception of used blades, this vault to be removably mounted on the magazine so that when filled with used blades it may be removed and emptied and then restored to position.

In the accompanying drawings I have illustrated a preferred embodiment of my invention. In these drawings

Figure 1 is a front elevation of an injector razor showing the injector of my invention in juxtaposition to the razor and in position for being mounted upon it;

Figure 2 is a plan view of the razor and injector of Figure 1, but showing the injector mounted upon the razor in blade injecting position;

Figure 3 is a plan view similar to Figure 2, but showing a new blade partly injected into and a dull blade partly ejected from the razor;

Figure 4 is an end view of the razor shown in Figure 1 looking in the direction of the arrows 4—4 of Figure 1;

Figure 5 is a view similar to Figure 4, but with the injector mounted upon the razor and taken along line 5—5 of Figure 3;

Figure 6 is a longitudinal vertical section on an enlarged scale through the injector and the used blade vault mounted thereon;

Figure 7 is a transverse section taken along line 7—7 of Figure 6;

Figure 8 is a transverse section taken along line 8—8 of Figure 6;

Figure 9 is a perspective view of the ejector slide;

Figure 10 is a perspective view of the removable blade-retaining clip;

Figure 11 is a perspective view of the used blade vault, and

Figure 12 is a perspective view of the empty injector with a part of the near side wall cut away.

The injector razor illustrated in these drawings comprises a handle 1 from which extends a back plate 2 bent forward at its upper end to form an upper blade-clamping cap 3. A supporting plate 4, bent forward at its upper end to form a blade-supporting platform 5, is articulated to the back plate by means of a tongue 6 struck from the latter and extending forward through an opening in the supporting plate, which plate is normally held in contact with the back plate by means of a spring 7. The supporting plate is bent downward at its outer edge to form the usual guard 8 and provided, at each end, with the usual blade stops 9. The foregoing is a description of a common type of injector razor and, of itself, forms no part of my invention.

As shown in Figure 4, the clamping cap 3 is holding a blade 11 in shaving position upon the blade platform 5. In order to enable the shaver to remove this blade when it becomes dull and to substitute a sharp one, an injector is provided as already stated. I shall now describe the novel blade injector of my invention.

The injector is made from a single piece of metal bent to form a casing or magazine having a bottom 12, side walls 13, a top 14 and a front

end wall 15. The top is provided with a longitudinal slot 16 which constitutes the space between the longitudinally opposed edges of the sheet metal bent to form the top. One side wall, shown in Figure 12, is extended to form a cam finger 17.

The injector just described is open at its rear end and it is through this open end, the one remote from the front end wall 15, that it is loaded with a stack of blades 18. These blades are introduced through the rear end with their cutting edges pointing away from the cam finger, and with the magazine lying on its top, and moved forward until their forward ends abut the front end wall 15. Thereupon a U-shaped blade-retaining clip 19 is inserted through the open rear end of the magazine until its cross member engages the rear of the stack of blades. This clip is made of spring metal and its rearwardly extending side arms 20 are sprung slightly outward so that they tend to press against the inner face of the adjacent side walls of the magazine. One of these side walls is provided with an opening 21 designed to receive a dimple 22 on one of the arms of the clip so that as the clip is inserted this dimple snaps into place within the opening 21 and the clip is securely but removably retained in position.

The stack of blades is pressed against the underface of the top of the magazine by means of an arcuate spring 23, whose center bears against the bottom of the magazine and whose arms press against the bottom of the stack of blades. This spring is inserted into the magazine through an opening 24 in its bottom. Lateral displacement of the spring is prevented by means of a projection 25 pressed upwardly from the bottom of the magazine.

The front end wall 15 terminates short of the underface of the top 14 by a distance greater than the thickness of one blade, but less than the thickness of two, thus forming a blade discharge slot 26. The topmost blade of the stack is ejected through this slot by means of an ejector slide 27, shown in Figure 9. This slide comprises a plate 28 which overlies and slides upon the magazine in a manner to be described presently. It is provided with depending knurled or serrated flanges 29 which embrace the sides of the magazine. The plate 28 is cut away to form a forwardly extending tongue 30 depressed slightly below the plane of the plate and provided with longitudinal flanges 31. The tongue 30 is designed to slide within the slot 16, the flanges 31 underlying the adjacent sections of the top 14. The magazine is longer than the blades so that the slide can be retracted beyond the rear end of the stack and the forward end of the tongue will then engage the topmost blade of the stack. Thus forward movement of the slide causes the topmost blade to pass out of the magazine through the blade discharge slot 26. The slide is also provided with a rearwardly extending counterpart of the tongue 30 and its flanges which assist in keeping the slide in place. In order to limit the movement of the slide and prevent its passing out through the open ends of the slot 16, I provide one side wall of the magazine with stops 32, and the adjacent flange of the slide with a downwardly projecting finger 33 which engages the stops when the slide is in its limiting positions.

The used blade vault, shown in Figure 11, comprises a single sheet of metal bent to form a bottom 34, side walls 35 and end walls 36. The end walls are provided with upwardly extending undercut tongues 37 and the bottom 34 with a transverse slot 38 for the reception of used blades. The bottom 12 of the magazine is provided with two spaced T-shaped openings 39 designed to receive the tongues 37 of the vault. The end walls 36 of the vault are (or at least one of them is) resilient and are normally sprung outwardly, as shown in Figure 11. To mount the vault upon the magazine, the end walls are pressed inwardly so that the tongues 37 pass through the openings 39. Thereupon release of the pressure on the end walls causes them to spring outwardly again so that the neck of the tongue fits within the narrow section of the slot 39, and is locked in place. In use, when a dull blade is ejected from the razor it is grasped by the shaver and deposited in the vault through the slot 38.

When a stack of blades has been used up it is a simple matter to re-load the magazine. First the vault is removed by pressing inwardly on its rear walls to release the tongues 37. The clip 19 is then removed after pressure applied inwardly on the arms 20 has freed the dimple 22. The spring 23 is then removed, the magazine turned over on its top, a new stack of blades inserted through the open end, the clip replaced, the spring re-inserted through the opening 24 and the vault remounted.

I claim:

1. A refillable blade injector for an injector razor comprising a magazine for a stack of blades having a top, a bottom, side walls and a front end wall, a forwardly extending cam finger for mounting the magazine upon the razor, an exit slot for one blade between the upper edge of the front end wall and the top, a spring for pressing the blades against the undersurface of the top, with the topmost blade in alignment with the exit slot, an ejector slide for ejecting the topmost blade through the exit slot, a removable U-shaped blade retaining clip having a cross-member forming the rear end wall of the magazine and resilient, rearwardly extending side arms, one of which has a projecting dimple, and an opening in a side wall of the casing for reception of the dimple.

2. A blade injector for an injector razor comprising a magazine for a stack of blades, a forwardly extending cam finger for mounting the magazine upon the razor, an ejector slide for ejecting the topmost blade, spaced openings in the bottom of the magazine, one near each end, a used blade vault having a bottom, side and end walls, upwardly projecting resilient tongues on the end walls designed to enter the spaced openings in the bottom of the magazine to removably mount the vault upon the magazine.

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