Feb. 15, 1955 C. E. BUTLIN 2,701,910

INJECTOR RAZOR

Filed Aug. 13, 1952

FIG. 1

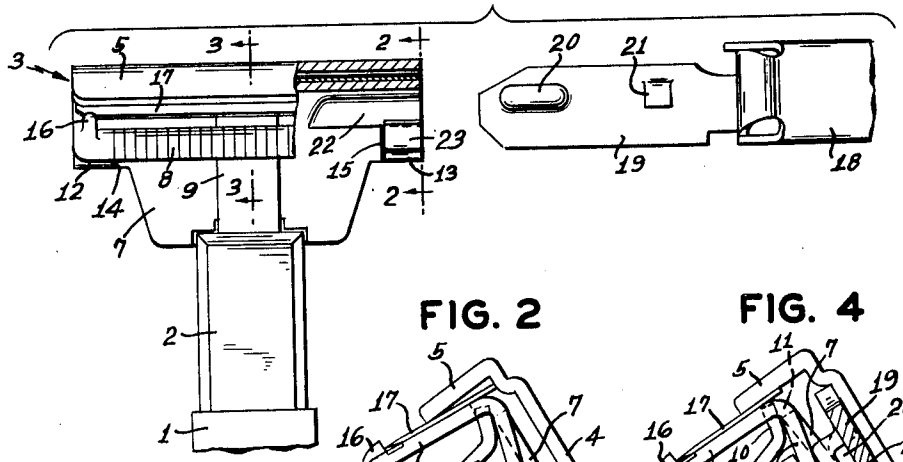



FIG. 2

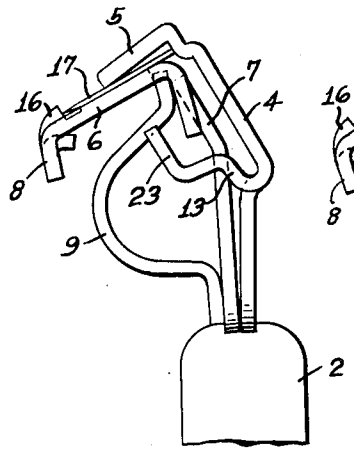



FIG. 4

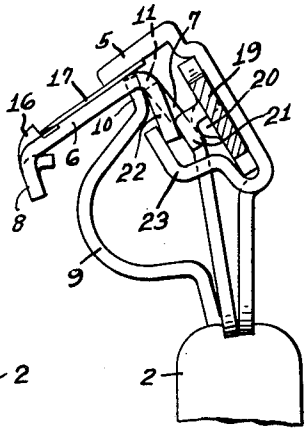
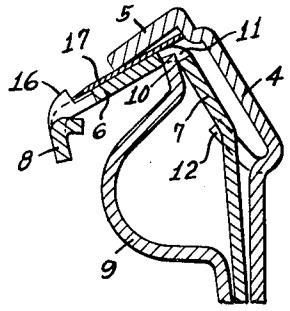



FIG. 3




INVENTOR.
Charles E. Butlin
BY
Pennie, Edmonds, Morton, Barrows & Taylor
ATTORNEYS

United States Patent Office

2,701,910

Patented Feb. 15, 1955



2,701,910

# INJECTOR RAZOR

Charles E. Butlin, Plattsburg, N. Y., assignor, by mesne assignments, to American Safety Razor Corporation, Brooklyn, N. Y., a corporation of Virginia

Application August 13, 1952, Serial No. 304,143

2 Claims. (Cl. 30—62)

This invention relates to injector razors and has for its object the provision of means for preventing distortion of the razor by the injector before or after injection of a blade, or at any rate for lessening the possibility of such distortion.

The injector razor in common use today comprises a back plate terminating in a forwardly extending blade-clamping cap, and a blade platform and guard with a cam plate depending from the rear edge of the platform articulated to the back plate and held with the blade platform in contact with the cap and the back plate by means of a spring, the whole being mounted on a handle. A blade stop is provided at either end of the guard. The blade being slightly wider than the blade platform is clamped on the platform between the stop and the back plate and under the cap by the spring pressure. Blades are fed to such a razor from an injector magazine which is provided with a forwardly extending cam finger designed to be inserted between the cam plate and the back plate and by moving the cam plate forward, to release the spring pressure upon the blade, whereupon the topmost blade of a stack of sharp blades in the magazine is fed forward between the cap and the platform, discharging the dull blade as the sharp one moves into shaving position. The rear edge of the incoming blade slides along the back plate so that its forward sharp edge is not dulled by rubbing against the near stop which has been moved forward by the cam finger.

Careless or ignorant users sometimes twist the injector magazine after the cam finger has been inserted between the cam plate and the back plate, and this twisting may proceed so far as permanently to bend and distort the spring to such an extent as to destroy the usefulness of the razor. In accordance with the present invention I provide rigid means limiting the separation of the cam plate and back plate, thus protecting the spring against distortion.

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

Figure 1 is a front elevation, with one end broken away, of the head of an injector razor embodying my invention, showing the cam finger of an injector magazine in position for insertion;

Figure 2 is an end elevation of the razor head of Figure 1, looking in the direction of the arrows 2—2;

Figure 3 is a transverse section taken along line 3—3 of Figure 1; and

Figure 4 is a view similar to Figure 2, but after insertion of the cam finger of the injector magazine; it is therefore a section taken along line 2—2 after such insertion.

The injector razor illustrated in these drawings comprises a handle 1, carrying a ferrule 2 on which is mounted a razor head 3. This head comprises a back plate 4, bent forward at its upper end to form a blade-clamping cap 5, a blade-supporting platform 6 having a cam plate 7 depending from its rear edge and a guard 8 at its forward edge, and a spring 9 which holds the rear edge of the blade platform against the inner face of the back plate. This spring is provided at its upper end with a projection 10 which extends within a slot 11 at the intersection of the platform 6 and the plate 7 at the middle of the razor head. The blade platform 6 is held in position longitudinally of the cap 5 not only by means of the projection 10 and slot 11, but by two tongues 12 and 13 bent forwardly and upwardly at the sides of the back plate 4 and lying within notches 14 and 15 respectively at the sides of the plate. Blade stops 16 extend upwardly from the blade seat, one at each end of the guard. A blade 17 is shown in Figure 2 mounted on the platform 6 and held in normal shaving position against the stops 16 by the back plate while overlaid by the cap 5.



The injector blade magazine 18, shown at the right of the razor in Figure 1, is provided with the usual cam finger or key 19 having a cam rib 20 pressed outwardly from the forward end of the finger, and a tongue 21 struck from the rear end of the finger and bent outwardly and downwardly (as shown most clearly in Figure 4). To facilitate insertion of the finger 19 between the back plate 4 and the cam plate 7, the right hand side of the plate 7, as seen in Figure 1, is provided with an outwardly bent lip 22 designed to receive the rib 20. When the forward end of the rib 20 reaches the inner end of the lip 22, the plate 7 is cammed outwardly by further insertion of the finger 19 and its rib 20. When the injector magazine abuts against the razor the rib 20 will be opposite the spring 9 and the tongue 21 will be under and in engagement with the lip 22, as shown in Figure 4, and the parts will be in position for ejecting the dull blade 17 and injecting a sharp one from the magazine.

The description so far is applicable to injector razors generally and is specifically applicable to the injector razor shown in Patent No. 2,666,257, granted to me on January 19, 1954. Now with the tongue 19 fully inserted, as shown in Figure 4, the user might destroy the usefulness of the razor by twisting the magazine and permanently destroying the spring were it not for the present invention. Extending outwardly and upwardly from the tongue 13 is an extension 23, which acts as a rigid stop for the cam plate 7. When the tongue 19 has been fully inserted, as shown in Figure 4, the lip 22 has been swung outwardly until it abuts against the stop 23. Any attempted twisting of the tongue 19 would be resisted by the stop 23, and as the metal of the stop is much more rigid than that of the spring, the latter is protected against any but the most vicious attempts to destroy the razor.

I claim:

1. An injector razor comprising a blade platform, a cam plate depending from the platform, a blade-clamping cap overlying the platform, a back plate depending from the cap, a spring pressing the platform toward the back plate to clamp a blade in shaving position, the cam plate and back plate being separable against the pressure of the spring by the insertion between them of the finger of an injector blade magazine to permit removal of a dull blade and injection of a new one, and a stop on said back plate to limit the separation of the cam plate and the back plate.

2. An injector razor comprising a blade platform, a cam plate depending from the platform, a blade-clamping cap overlying the platform, a back plate depending from the cap, a spring pressing the platform toward the back plate to clamp a blade in shaving position, the cam plate being separable from the back plate against the pressure of the spring by the insertion between them of the finger of an injector blade magazine to permit removal of a dull blade and injection of a new one, and a rigid stop projecting from the back plate to a point in front of the cam plate limiting the movement of the latter away from the back plate to prevent undue distortion of the spring.

**References Cited** in the file of this patent

UNITED STATES PATENTS

| | | |
|---|---|---|
| 1,969,945 | Rodrigues | Aug. 14, 1934 |
| 2,058,633 | Rodrigues | Oct. 27, 1936 |
| 2,132,798 | Muros | Oct. 11, 1938 |
| 2,444,105 | Miller | June 29, 1948 |