Jan. 20, 1942. S. C. STAMPLEMAN ET AL 2,270,790

MAGAZINE FOR SAFETY RAZOR BLADES

Filed May 3, 1940

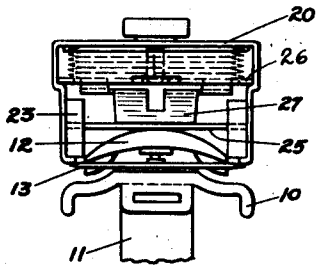


Fig. 1

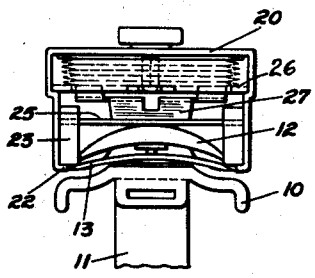


Fig. 2

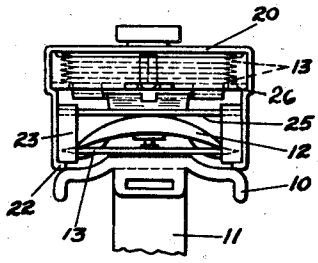


Fig. 3

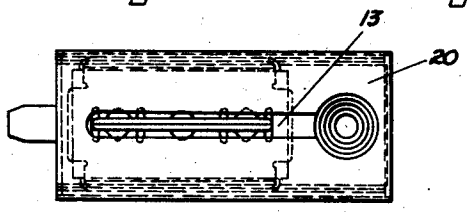


Fig. 4

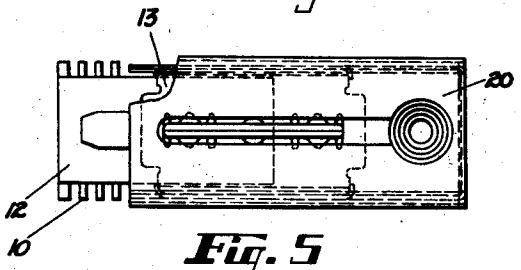


Fig. 5

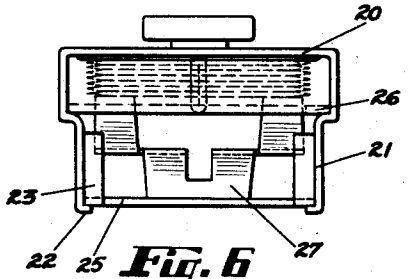


Fig. 6

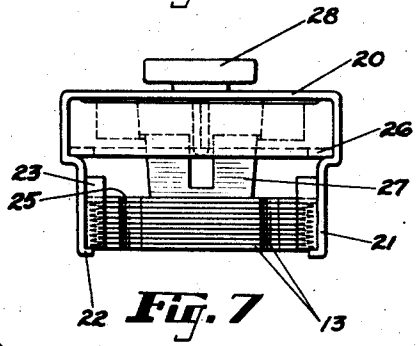


Fig. 7

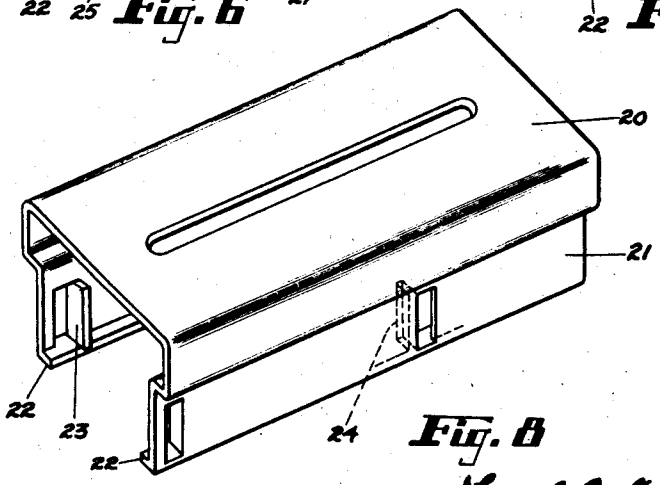


Fig. 8

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by J. W. Yelaway. Atty.

Patented Jan. 20, 1942 2,270,790

UNITED STATES PATENT OFFICE

2,270,790

MAGAZINE FOR SAFETY RAZOR BLADES

Samuel C. Stampleman, Cohasset, and Joseph Muros, Cambridge, Mass., assignors to Gillette Safety Razor Company, Boston, Mass., a corporation of Delaware

Application May 3, 1940, Serial No. 333,166

9 Claims. (Cl. 30—40)

This invention relates to safety razors of the type employing a thin flexible blade adapted to be removably supported and clamped in shaving position by co-operating blade-engaging members. In one aspect the invention comprises a novel combination of safety razor and magazine so organized that used blades may be removed from between the blade-clamping members of the razor mechanically and accurately without danger of cutting the fingers of the user. In still another aspect the invention consists in an improved magazine for used safety razor blades characterized by a restricted entrance through which the used blades may pass only when narrowed by transverse bowing.

Our invention deals more especially with the problem of removing sharp edged blades from a safety razor in which the blade-clamping members are releasably but not detachably connected, that is to say, safety razors in which the clamping members are permanently maintained in superposed relation and are released for separation only sufficiently to permit the used blade to be slipped out from between them. A safety razor of this type is disclosed in the prior patent to Joseph Muros, No. 1,953,685, April 3, 1934. For purposes of illustration the present invention is shown in its adaptation to a safety razor of that type, although it will be understood that the invention is not limited in scope to that or to any specific safety razor.

In general the objects of our invention are to provide a blade-receiving magazine of ample capacity in which a substantial number of used blades may be collected and retained, the magazine being so constructed that it may be brought successively into engagement with a blade actually located in the safety razor, withdraw it from the razor and deliver it automatically to the interior of the magazine. A further object is to provide a magazine of such construction that the sharp edges of the used blades will be dulled or rounded in being introduced therein, thus definitely distinguishing used from an unused blade.

With these and other objects in view an important feature of the invention consists in a magazine shaped to be forced over one of the blade-clamping members of a safety razor and having an entrance shaped for engaging and bowing a flexible blade so that it may pass into the entrance opening which is narrower than the width of the flat blade.

Another feature of the invention consists in blade-engaging elements arranged to contact with the blade when it has been thus received within the magazine and being effective to advance the blade positively out of the safety razor as the magazine as a whole is moved longitudinally with respect thereto. As herein shown the magazine is provided with blade-engaging flanges or the like which are spaced so as to receive between them the cap of the safety razor and to engage the blade at its opposite edges. Pressure exerted by the magazine is effective to narrow the blade by bowing it over its blade seat in the razor and thus bring it within the magazine and within range of blade-feeding elements which engage end edges of the blade and advance it positively when the magazine is moved longitudinally with respect to the razor.

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:

Figs. 1, 2 and 3 are end views of the magazine in position on the razor;

Figs. 4 and 5 are plan views showing the magazine upon the razor in two different positions;

Figs. 6 and 7 are end views on an enlarged scale showing the magazine in empty and full condition respectively; and

Fig. 8 is a view in perspective also on an enlarged scale of the shell of the magazine.

The magazine of our invention is herein shown in an embodiment designed particularly for use in connection with the safety razor of Patent No. 1,953,695 already identified. In the present drawing only so much of the razor construction is shown as is necessary for a full understanding of the invention and for further details of construction reference may be had to the said patent.

The razor comprises a handle 11 carrying at its upper end a blade-supporting member 10 which supplies a seat for the blade and is provided along both edges with downturned guard teeth. The guard member 10 is longitudinally shouldered, so that the blade may be flexed transversely upon it, and co-operates with a cap member 12 having a concave blade-engaging face. The handle 11 carries a spindle (not shown) in which is pivotally mounted a connector engaging an undercut guideway in the concave face of the cap. The cap is always engaged by this connector and may be bodily moved through the medium thereof from a closed, blade-clamping position, wherein the blade is clamped under pronounced transverse curvature, to a released open position as shown in Fig. 1 wherein

the blade rests in flat condition upon the guard member 10.

The blades 13 herein shown and selected for illustrative purposes are double-edged blades of a well-known commercial construction and have corner notches defining elongated unsharpened end portions. The blades may be .004 to .006 inch in thickness and are consequently thin, flexible and resilient in their nature.

In using the razor herein shown fresh blades are presented by being pushed endwise into position between the released guard and cap, temporarily displacing the connector in its movement and being then clamped in curved condition for shaving. At the conclusion of the shaving operation the guard and cap are released, allowing the blade to resume a flat condition and it may now be withdrawn endwise from its position between the cap and guard. As already explained the purpose in the present invention is to provide means for mechanically removing used blades from a razor of this type and collecting or storing them safely without any danger of cutting the user. The magazine now to be described is designed and well adapted for this purpose.

As herein shown, the magazine comprises a sheet metal shell rectangular in outline and comprising upper and lower compartments. The upper compartment is formed by the top wall 20 of the shell, side walls and an inserted partition 26. The side walls of the main shell are shouldered and offset inwardly and the offset side walls 21 are provided at their lower edges with inturned flanges 22. The offset side walls 21, the partition 26 fitting above them and the flanges 22 form the lower compartment of the magazine and in this compartment the used blades are collected, while a stack of new sharp blades may be contained in the upper compartment. The upper compartment and its feed mechanism operated by the knob 28 are the invention of Joseph Muros and are fully disclosed and claimed in his application, Serial Number 329,942. No further reference to them is, therefore, included in the present application.

The inturned flanges 22 extend longitudinally from one end of the shell to the other, serve as spaced abutments to bow the blade and define in the bottom of the enclosure a restricted entrance through which the successive blades must be passed in entering the magazine. These inner edges are spaced apart by a distance slightly less than the width of the flat blade, the width of the entrance being such that when the blade is narrowed by bowing it may be forced between the flanges 22 and may then spring out and be supported in flat condition by them. Vertically projecting flanges 23 and 24 are struck out of the offset walls 21 and these extend inwardly above the longitudinal flanges 22. They are slightly wider than the flanges 22 and spaced longitudinally so as to engage the shouldered ends of the blades 13, locating them in a vertical stack while permitting free up and down movement thereof. Within the magazine is located a forked and bowed leaf spring 29. This has the function of yieldingly opposing the entrance of the successive blades and for this purpose bears against the inner face of a loose partition 25 which normally rests upon the flanges 22, as shown in Fig. 6, but may be displaced inwardly with the entrance of the first blade.

In using the magazine above described it will be assumed that the cap and guard members of the razor have been released from blade-flexing pressure and that a blade 13 rests in flat position upon the blade seat of the guard member 10. As shown in Fig. 1 the magazine is then brought over the top of the razor, being registered in the proper transverse position by the engagement of the vertical flanges 23 and 24 with the edges of the cap 12. The longitudinal position of the magazine must be determined by the eye of the user and by locating the vertical flanges 23 and 24 in the cut-out corners of the blade as these are exposed beyond the edges of the cap 12. Having located the magazine as shown in Fig. 1 it is now depressed by the user, as suggested in Fig. 2, bowing the blade 13 upon the blade seat and causing the blade to be narrowed to an extent that it will pass between the flanges 22. In this operation the loose partition 25 is forced upwardly by the cap 12 against the compression of the spring 29 and the sharp blade edges are wiped across the flanges 22 and effectively dulled. When the edges of the blade 13 have been passed above the flanges 22 the bowed blade has made its entrance into the magazine. When pressure on the magazine is now released the blade straightens out so that its edges extend beyond the flanges 22 and into position to be supported from beneath by those flanges. Meanwhile, the blade is held at its four corners by the vertical flanges 23 of the magazine. The parts described occupy this position as shown in Figs. 3 and 4. The magazine is now moved toward the right, as indicated in Fig. 5, and in this movement the vertical flanges 23 positively carry the blade 13 along with the magazine, sliding it toward the right between the cap and guard of the safety razor and removing it completely therefrom. While the magazine is passing to the right over the razor the cap 12 is of course located between the partition 25 and the blade 13 which has just been delivered to the magazine. Subsequently, when the magazine leaves the razor, the partition 25 moves down into position just behind the newly delivered blade. Fig. 6 is an end view of the empty magazine showing the loose partition 25 in its initial position. Fig. 7 indicates the same magazine after it has received ten used and dulled blades and it will be noted that these have displaced the loose partition 25 so that it lies in contact with the upper blade of this stack.

It will be understood that the partition 26 fits securely and immovably into the upper part of the magazine above the shoulders which define the offset walls of the magazine. This partition forms a permanent bottom for the upper compartment of the magazine and a permanent top for the lower compartment. On the other hand, the partition 25 is loosely held between the offset walls of the lower compartment and is at all times free to move up and down against the pressure of the spring 27.

Ordinarily the magazine will be distributed as a blade container with ten or more new sharp blades in its upper compartment. These will be used up one by one and delivered to the lower compartment in the manner above explained. When this happens the magazine with the used and dull blades may be thrown away or returned to the manufacturer.

Having thus disclosed our invention and described a specific embodiment thereof for illus-

trative purposes, we claim as new and desire to secure by Letters Patent:

1. A safety razor having movably connected blade-clamping members, in combination with a magazine arranged to be detachably connected to the razor and having blade-engaging means movable to remove a blade from between said members.

2. A safety razor having movably connected blade-clamping members, in combination with a magazine shaped to be forced over one of said members and having abutments spaced to bow a blade in the razor so that it may pass between them.

3. A safety razor having a blade-clamping cap, in combination with a magazine having abutments spaced to bow a blade beneath the cap so that the blade may pass between them, and means for thereafter engaging the ends of the blade.

4. A safety razor having a blade seat, in combination with a magazine having an entrance to receive a blade while located on said blade seat, and means for wiping across and dulling the edges of the blade passing through the entrance.

5. A safety razor having blade-clamping members with transversely curved blade-engaging faces, connecting means for holding said members in clamping position, maintaining a thin flexible blade curved between them or for releasing said members to support a blade in flat condition between them, in combination with a magazine having an entrance defined by walls spaced for engaging and bowing a flat blade so placed and blade-feeding elements inside said walls.

6. A safety razor having a blade seat for a thin flexible blade, in combination with a magazine having an entrance with spaced walls for bowing a blade in said seat to reduce its effective width, and means within the magazine for yieldingly opposing the entering movement of the bowed blade.

7. A safety razor having a guard, a cap, and an interposed blade, in combination with a magazine having an entrance closed by a yielding partition, the magazine being constructed and arranged to engage the cap of the razor between the blade and said partition and then to be moved endwise to extract the blade from the razor.

8. A safety razor having a cap and a flexible blade beneath it, in combination with a magazine having spaced flanges defining an entrance and supporting a yielding partition, the magazine being constructed and arranged to engage the cap of the razor within the magazine enclosure and between the partition and the blade, and the partition being movable into contact with the blade when the cap is passed endwise from the magazine.

9. A razor and blade magazine combination including a safety razor having opposed members for clamping a flexible double edged blade between them, and a magazine having parallel side walls spaced to engage the outer edge portions of a blade while the blade remains in the razor and to flex the latter so that it may enter between the walls of the magazine, and projections carried by the said walls for dulling both edges of the blade as it is received.

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