Feb. 20, 1940. H. R. SEGAL 2,191,324

RAZOR

Filed June 23, 1936 2 Sheets-Sheet 1

Fig. 1

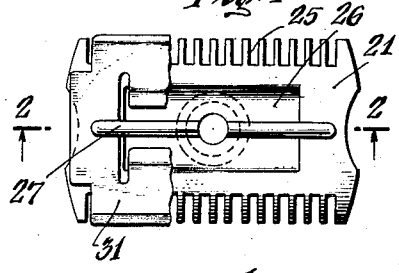


Fig. 3



Fig. 4

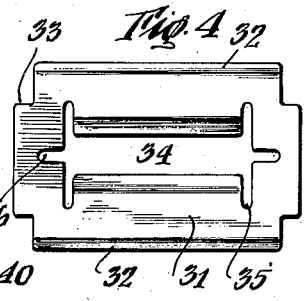


Fig. 6

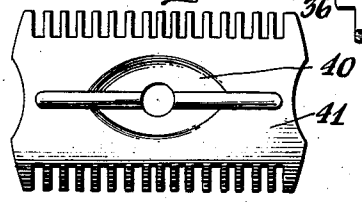


Fig. 2

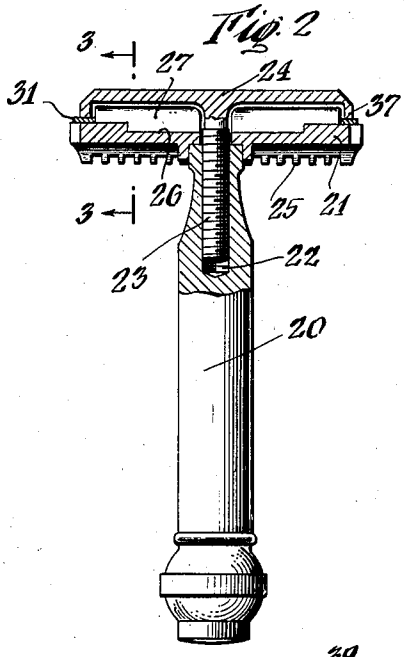


Fig. 5

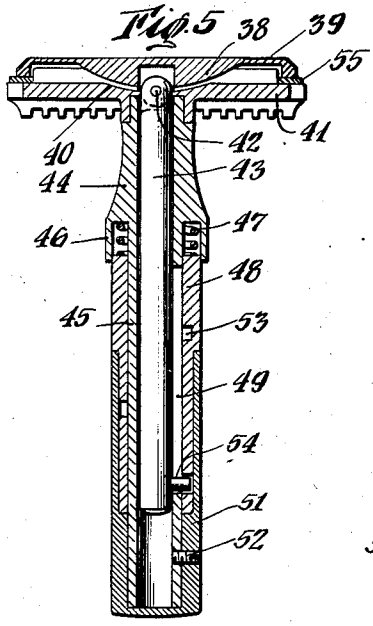


Fig. 7

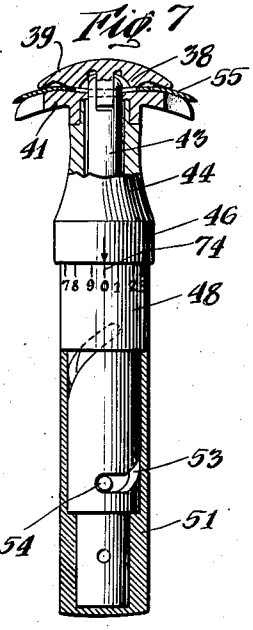


Fig. 8

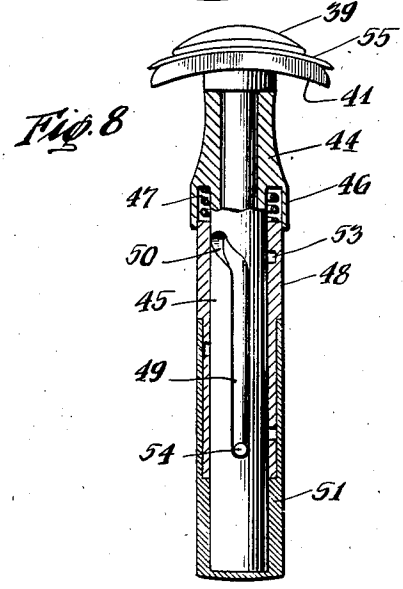
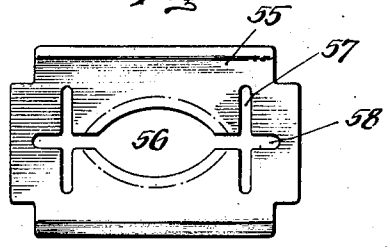


Fig. 9



INVENTOR

Hyman R. Segal

BY Duell, Kane & Smoot

ATTORNEYS

Feb. 20, 1940. H. R. SEGAL 2,191,324

RAZOR

Filed June 23, 1936 2 Sheets-Sheet 2

Fig. 10

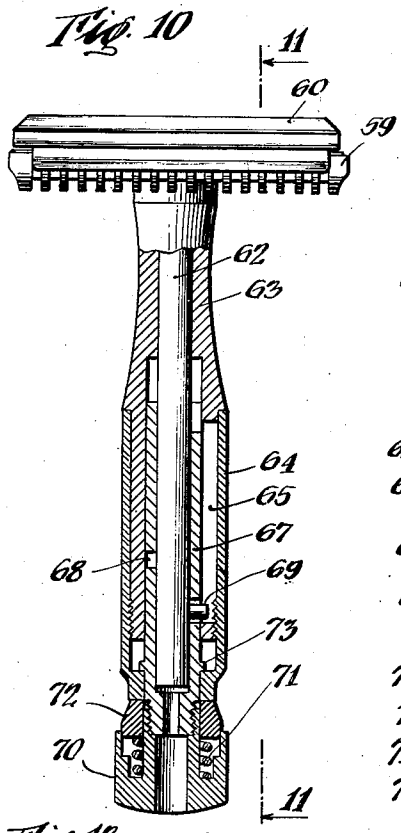


Fig. 11

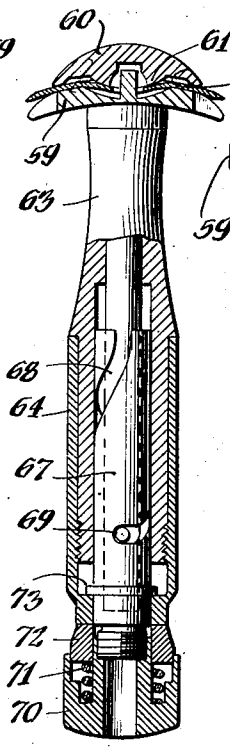


Fig. 12

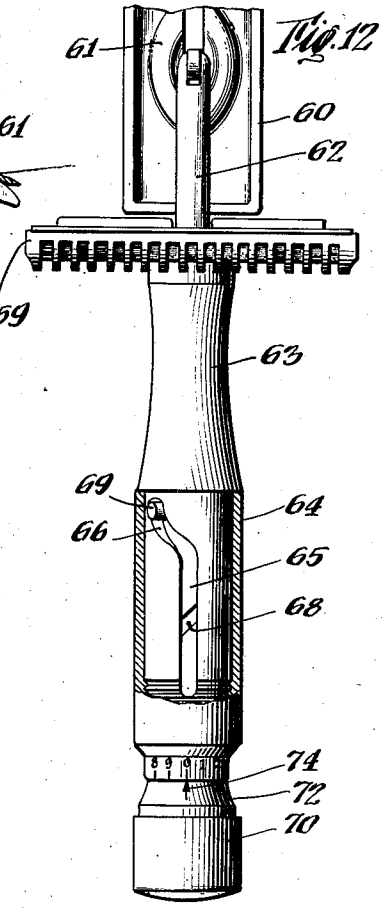


Fig. 13

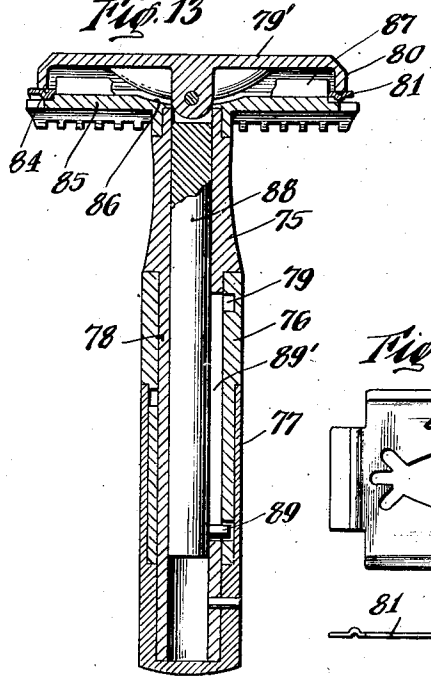


Fig. 14

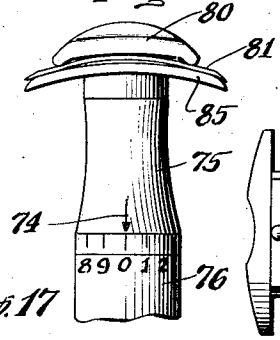


Fig. 15

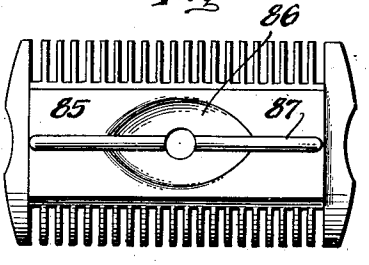


Fig. 17

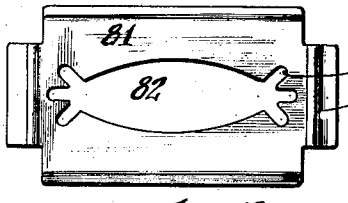


Fig. 16

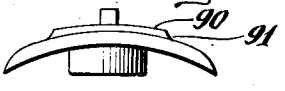
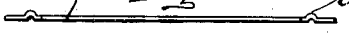


Fig. 18



INVENTOR

Hyman R. Segal

BY Duell, Kane & Smoot

ATTORNEYS

Patented Feb. 20, 1940 2,191,324

UNITED STATES PATENT OFFICE

2,191,324

RAZOR

Hyman R. Segal, New York, N. Y.

Application June 23, 1936, Serial No. 86,720

4 Claims. (Cl. 30—72)

This invention relates to a structurally and functionally improved razor and blade.

According to one aspect it is an object of the invention to provide a razor and blade which will present an improved structure over that included in my prior Patent No. 2,037,180, of April 14, 1936.

According to another aspect it is an object of the invention to furnish a razor in which the parts will always be maintained in the position to which they have been adjusted.

A still further object is that of furnishing a razor and blade by means of which the blade will be desirably tensioned and will be yieldably maintained in the condition to which it has been adjusted so that extremely desirable results are achieved.

An additional object is that of providing a razor and blade which may be manufactured in large quantities at minimum expense and which will embody relatively few parts, each individually simple and rugged in construction and capable of ready assemblage to furnish a unitary structure which will operate over long periods of time with freedom from difficulties.

With these and other objects in mind, reference is had to the attached sheets of drawings illustrating practical embodiments of the invention and in which:

Fig. 1 is a plan view of a razor guard with a blade positioned thereon, such blade being broken away to disclose underlying construction;

Fig. 2 is a partly sectional side view taken along the lines 2—2 and in the direction of the arrows as indicated in Fig. 1, and showing a clamping plate in association with the guard and blade;

Fig. 3 is a transverse sectional view taken along the lines 3—3 and in the direction of the arrows as indicated in Fig. 2;

Fig. 4 is a plan view of one form of blade which may be associated with this razor;

Fig. 5 is a sectional side view of a second form of razor;

Fig. 6 is a plan view of the guard portion thereof;

Fig. 7 is a partly sectional end view of the unit as shown in Fig. 5;

Fig. 8 is a partly sectional end view thereof;

Fig. 9 is a plan view of a further form of blade which may be constructed;

Fig. 10 is a partially sectional side view of a still further form of razor or blade holder;

Fig. 11 is a transverse sectional view taken along the lines 11—11 and in the direction of the arrows as indicated in Fig. 10;

Fig. 12 is a side elevation of this latter form of razor with certain of the parts broken away to show underlying construction and with the clamping plate in inoperative position;

Fig. 13 is a view similar to Fig. 5 but showing an alternative form of construction;

Fig. 14 is an end view of the device as shown in Fig. 13;

Fig. 15 is a further form of guard;

Fig. 16 is an end view of such guard;

Fig. 17 is a face view of an alternative form of blade which may be employed, and

Fig. 18 is an edge view of such blade.

Referring primarily to Figs. 1, 2 and 3, it will be observed that the numeral **20** indicates the handle of a razor, to the upper end of which a guard **21** is applied, such handle being rotatable with respect to the guard and being furnished, for example with a screw threaded socket **22** within which the correspondingly threaded stem **23** of a clamping plate **24** extends. It is obvious that with the guard applied to the handle and the clamping plate properly positioned with respect to both of these members, a turning of the handle with respect to the guard will cause the clamping plate to be moved toward or projected away from the guard.

As illustrated, especially in Figs. 1 and 3, the guard may have serrated or toothed side edge portions **25** and a centrally recessed or well portion **26** which is of preferably quadrangular outline. Extending upwardly from the recess **26** is a rib **27**, this rib acting as a blade positioning abutment. Cooperable with the guard—as aforestated—is the clamping plate which, in the embodiment under consideration, has a centrally positioned bulged portion or projection **28**. This member is of a configuration corresponding to that of the recess **26**. Moreover, this portion may be grooved as indicated at **29** to accommodate the rib **27**. The side edges of the plate **24** may be relatively extended as has been indicated at **30**, it being observed that the adjacent faces of the guard and clamping plate are each transversely curved and that when the latter is applied to the former the projection **28** extends into the recess **26**.

A blade suitable for coaction with a razor of this nature has been illustrated in Fig. 4 in which the numeral **31** indicates the blade body which may have oppositely disposed side edge portions **32**, each ground and honed to furnish a suitable cutting edge. The corners of the blade may be

notched as at 33 and the center of the blade is provided with a longitudinally extending opening 34, the ends of which are defined by slots 35 and the end edges of which are preferably slotted as at 36 to accommodate the ends of rib 27. It is to be observed that the length of opening 34 is preferably equal to the length of projection 28. In other words, with the blade positioned upon the guard, the slots 35 will lie substantially in line with the ends of recess 26. While of course any desired form of mechanism may be employed to draw the clamping plate toward the guard, it is apparent that if such action occurs and with the parts in proportion as shown, the projection 28 will force those portions which are adjacent the central opening 34 and which extend longitudinally of the blade body into the recess 26. Thus areas of double flex occur throughout the entire central zone of the blade. The end edges of the blade, however, are subjected to but a single flexing strain.

It is also to be observed that according to the teachings of the present invention, the end edges of the clamping plate may be extended downwardly as has been indicated at 37 to define clamping portions bearing against the end zones of the blade to firmly maintain the same against movement with respect to the guard.

In the form of construction shown in Figs. 5 to 8, it will be primarily observed that the abutment or projecting portion 38 of the clamping plate 39 may be dome-shaped and the recess 40 of the guard 41 may be generally oval to thus accommodate such projecting portion. In this form of the unit the clamping plate is pivotally connected as at 42 to a rod or stem 43 slidably disposed within a handle 44. The handle may include a tubular portion 45, adjacent the upper end of which a preferably integral and outer tubular portion 46 is concentrically disposed. Between these tubular portions a spring 47 may be interposed. A sleeve 48 may likewise have its upper edge interposed between these portions. Within the innermost portion a stem 43 is disposed and this inner tubular portion 45 is formed with a slot 49 having an offset upper end 50. Surrounding sleeve 48 adjacent its lower end is a second sleeve 51 which may be anchored against movement with respect to the inner tubular portion 45 in any desired manner as by the use of a screw 52. The sleeve 48 is formed with a spirally extending slot or groove 53 and a pin 54 carried by stem 43 projects through both slots 49 and 53.

It follows that when an operator grasps the handle 44 and turns sleeve 48 with respect to the same, such turning will cause pin 54 to ride upwardly through slots 53 and 49 and finally through the tangential portion 50 of the former slot. Consequently the stem 43 and clamping plate 39 will be elevated and the latter will tilt with respect to the sleeve and also be rotated axially.

It follows that a blade such as has been shown in Fig. 9 may be passed over the clamping plate when the latter is in such position. This blade may include a body 55 having cutting edge portions and formed with a central substantially oval aperture 56 the ends of which are defined by slots 57 intersected by slot 58 so that the rib or blade positioning pin carried by the guard may prevent the blade from unduly moving with respect to the latter. As the sleeve 48 is rotated in a reverse direction with respect to handle 44, it is apparent that stem 43 will be drawn downwardly carrying with it the clamping plate and securing the latter against movement with respect to the blade which has now been double flexed with respect to its central area and single flexed with respect to its end zones.

In a razor of this type it is shown that an operator may grasp the handle 44 within the palm of his hand and effect rotation of sleeve 48 with respect thereto by manipulating such sleeve between his thumb and forefinger. As the clamping plate begins to flex the blade the spring 47 will be slightly compressed and this compression will be maintained until the parts have been shifted to the final position which they are capable of assuming. During such final stages spring 47 will act against the tension inherent to the flexible blade body. Consequently the blade is properly maintained under a condition of tension. Also the spring 47 will serve to prevent any accidental rotation of the parts which might result in the blade being released to a greater or lesser extent.

In the form of construction shown in Figs. 10, 11 and 12 the guard 59 has cooperating with it a clamping plate 60 which, as shown, may have an oval abutment or projecting portion 61. The clamping plate is pivotally mounted adjacent the upper end of stem 62 and the latter is slidably disposed within the handle 63 secured to the guard. This handle has secured to it a sleeve 64 and within such sleeve is formed with a slot 65 extending parallel to the axis of the handle and which slot has a tangential end portion 66. Interposed between the handle 63 and the stem 62 is a sleeve 67 formed with a spirally extending slot 68. The stem carries a pin 69 which rides within both slots 65 and 68. The sleeve 67 is firmly secured to a knob 70 which may be recessed to accommodate a spring 71 serving yieldingly to force the knob 70 away from a collar 72 which latter is interposed between the end of sleeve 64 and the knob. It accordingly follows that spring 71 will, when compressed, be constantly urging sleeve 67 toward the outer, or head end of the razor. Movement of the parts in this direction is limited by a stop or flange 73 which engages the end of sleeve 64.

In this form of construction and common with the operation of the parts as heretofore described in connection with Figs. 5, 7 and 8, it is obvious that a rotation of the knob 70 with respect to the sleeve or casing 64 will cause the parts to shift from the position shown in Figs. 10 and 11 to that shown in Fig. 12. A reverse movement of the parts will, of course, result in the clamping plate being drawn towards the guard in both forms of construction. It is apparent that the springs serve to yieldingly flex the blade and to prevent accidental rotation of the parts. In each instance it is apparent that double flexing of the blade and the structure incident thereto need not be resorted to. Also indicia indicated at 74 in these two forms of the invention may, in each instance, be employed as a registering mechanism or index to indicate exactly the extent to which the parts have been adjusted.

Now referring to Figs. 13 and 14, it will be observed that there has been illustrated a handle 75 which is continued in the form of a sleeve 76 enclosed by a tube 76 formed with a spirally extending slot 79. Bearing against the tube 76 is a cap 77 which is secured to the portion 78 so that the tube 76 is limited to rotational movements. A cap 79' preferably formed with end flanges 80

cooperates with a blade mounted upon the guard. This blade may include a body 81 formed with a positioning aperture 82 having tangential slot portions 83 defining the ends of the double flexing zone and the end portions of the blade may have transversely extending rigidifying portions 84. These portions may be furnished by striking out parts of the blade as indicated. The guard 85 may be formed with a depression 86 with which the bulged portion or projection of the cap may cooperate to effect double flexing of the blade.

It is, of course, to be understood that with a blade of the type shown in Fig. 17 any danger of end cracking is substantially avoided. Moreover, this blade or the blades shown in Figs. 4 and 9, when used in connection with a holder or guard such as has been especially shown in Fig. 16, will permit of the parts simply being loosened and cleaned by running water through the same, due to the fact that the guard includes a substantially elevated central shelf 90 defining what might be termed "scooped-out" portions 91, so that water may freely circulate around those portions of the blade which are adjacent its cutting edges.

Thus, among others, the several objects of the invention as afore noted are achieved. It is obvious that numerous changes in construction and rearrangements of the parts might be resorted to without departing from the spirit of the invention as defined by the claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A razor including a guard, a clamping plate, a handle fixed with respect to said guard said plate cooperating with said guard, a sleeve mounted by said handle, means cooperable with said sleeve and handle for effecting shifting of said clamping plate and guard as said sleeve is turned, and a spring for yieldingly urging said sleeve away from said handle.

2. A razor including a guard, a clamping plate, means for drawing said plate and guard toward each other, a projection extending from the under face of said plate to centrally tension a blade positioned upon said guard, said guard being formed with a recess to receive said projection and the extended portion of said blade, a blade positioning rib extending from and perpendicular to the face of said guard, said rib being positioned within said recess, and said plate being formed with a groove extending across the surface of said projection and to accommodate said rib.

3. A razor including a guard, a clamping plate, means for drawing said plate and guard toward each other, a projection extending from the under face of said plate to centrally tension a blade positioned upon said guard, said guard being formed with a recess to receive said projection and the extended portion of said blade, a blade positioning rib extending from and perpendicular to the face of said guard, said rib being positioned within said recess, said plate being formed with a groove extending across the surface of said projection and to accommodate said rib, and end flanges forming a part of said plate and extending substantially across the entire end edges thereof and toward said guard to contact the outer face of said blade.

4. A razor including in combination a guard and a clamping plate, each transversely curved and to receive between them a double-edged blade which is to be flexed, with both of its cutting edges extending in shaving relation to said guard and plate, means for drawing said plate and guard towards each other, a projection extending from one of said elements, the second of said elements being formed with a recess to receive said projection, said projection and recess being substantially rectangular and being cooperative with the surfaces of an interposed blade to flex the same.

HYMAN R. SEGAL.