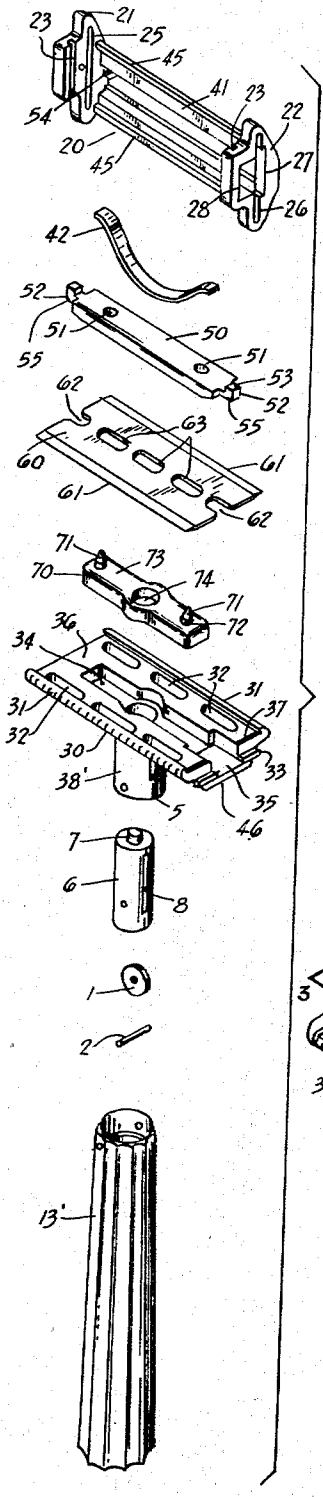
Aug. 24, 1954 R. F. LANDWEHR 2,686,967

RAZOR AND DISPENSING MAGAZINE THEREFOR

Filed Aug. 31, 1951

2 Sheets-Sheet 1



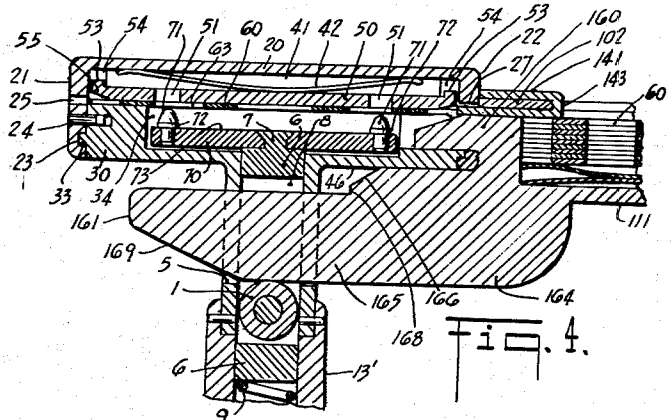


Fig. 4.

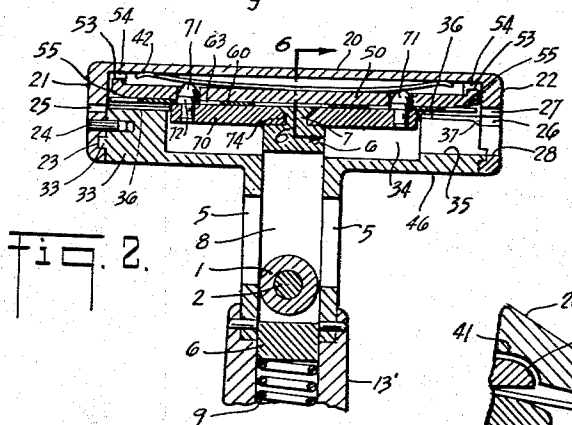


Fig. 2.

Fig. 3.

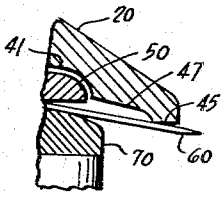


Fig. 6.

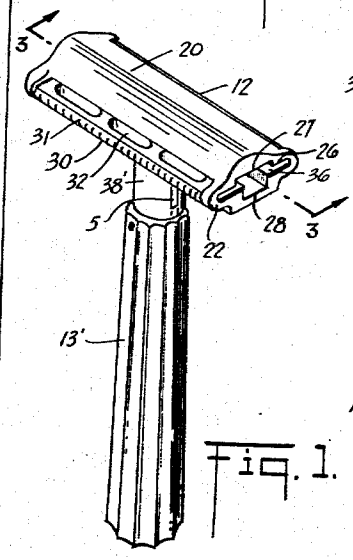


Fig. 1.

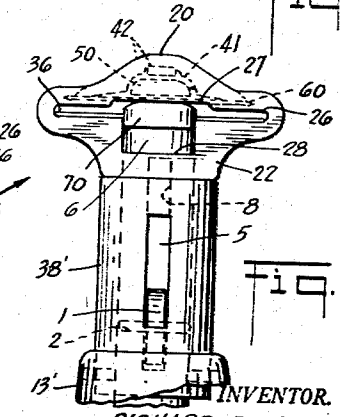


Fig. 5.

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RAZOR AND DISPENSING MAGAZINE THEREFOR

Filed Aug. 31, 1951

2 Sheets-Sheet 2

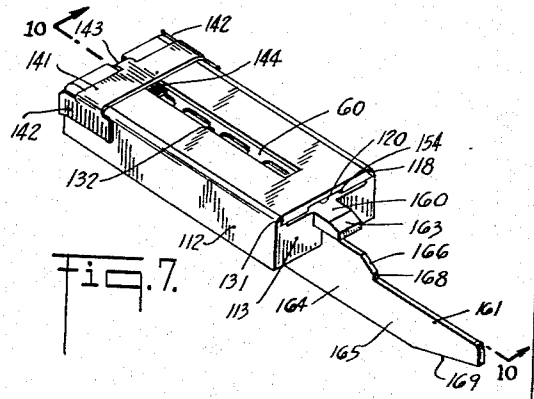


Fig. 7.

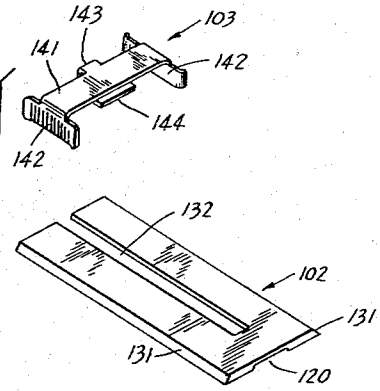


Fig. 8.

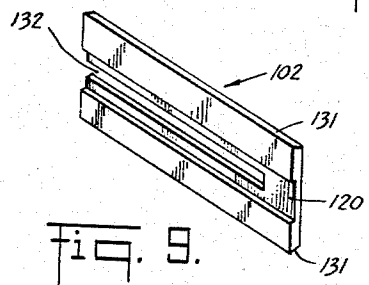
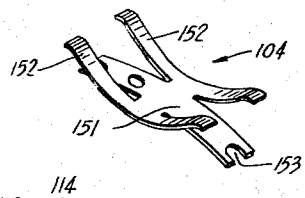
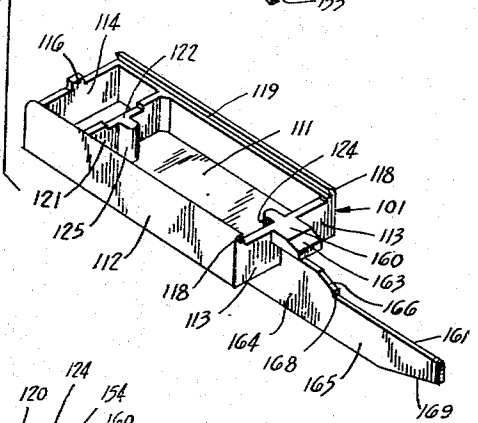


Fig. 9.





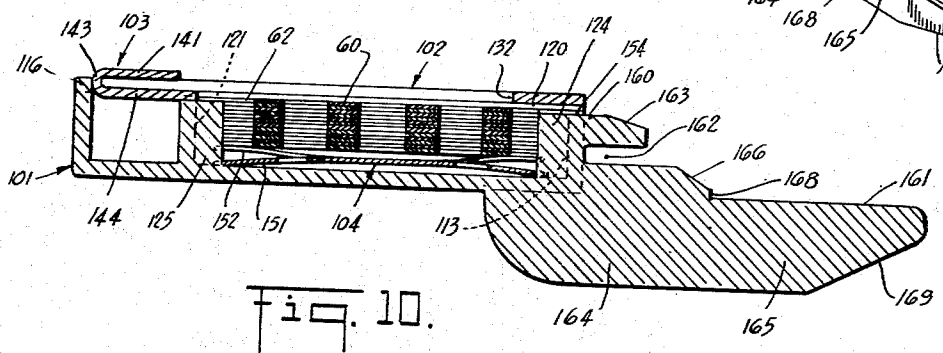


Fig. 10.

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Patented Aug. 24, 1954

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UNITED STATES PATENT OFFICE

2,686,967

RAZOR AND DISPENSING MAGAZINE THEREFOR

Richard F. Landwehr, Laurelton, N. Y., assignor to American Safety Razor Corporation, Brooklyn, N. Y., a corporation of Virginia

Application August 31, 1951, Serial No. 244,507

24 Claims. (Cl. 30—40)

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My invention relates to a safety razor and more particularly to a razor devised for blade replacement by a dispensing blade magazine; my invention relates also to a dispensing magazine and more particularly to a magazine devised for detachable association with a razor for blade replacement.

This application is a continuation in part of application Ser. No. 146,798, filed February 28, 1950.

One of the general objects of the invention is an improved razor of the type wherein a blade is enterable endwise thereinto.

Another general object is the provision in a razor of improved means for locating a blade with its shaving edge in proper relation to the guard.

Another of the general objects of my invention is improved means for holding the blade in shaving position and more particularly of means whereby the blade when so held is given a transverse flexure.

Another general object of my invention is a razor having an improved arrangement for permitting the attachment thereto of a blade magazine for blade replacement.

Another general object of my invention is an improved blade container and coordinately of improved means therein for dispensing a blade therefrom.

A more particular object of the invention is a construction for the attainment of the aforementioned general objects wherein the blades are of the double edged type.

Some of the features for the attainment of the aforementioned and additional objects are these; blade clamping means in the razor which are elevatable to elevate a blade clamped thereby, from a lower level for blade reception to a higher level for shaving performance; means in the path of the blade as it is elevated, to cause the blade to flex transversely; a fixed seat upon which a blade entered into the razor is initially received and a separate blade seat which is elevatable to engage the seated blade and lift it off said fixed seat; a blade seat elevatable to and above the plane of a blade entered into the razor and locating means thereon engageable with the blade before the seat engages and elevates it; fixedly related top and bottom members and blade clamping elements therebetween which are initially movable relatively to each other into adjacency and then movable together relatively (to said members) to bring the blade into its shaving level; a resiliently biased member in the blade chamber of a razor for exerting pressure on a

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blade being entered thereinto for engagement by locating means in the razor; a razor whose blade chamber entrance is substantially deeper than blade thickness whereby a blade may be entered at a level above the blade seat to gravitate thereupon; a razor head whose blade channel has an entrance mouth capable of receiving both a finger projecting from and the ejecting slide of a magazine; a blade feeding magazine having a finger enterable into a razor to form a continuation of the bottom wall of the blade discharge mouth; elevatable blade clamping elements, resiliently biased to normally engage and elevate the elements; and more particularly the effectuation thereof by magazine attachment; a razor head having a fixed seat and a movable seat normally resiliently biased to shaving position thereabove and movable therebelow upon magazine attachment; a blade seat normally elevated yieldingly for shaving, having means depending therefrom and accessible from the exterior for lowering it and more particularly wherein the lowering can be effected by and attachment of a magazine thereto; an improved magazine for containing and dispensing blades and coordinately an improvement arrangement for attaching it to the razor to attain the aforementioned objects.

For the attainment of these and such other objects as may hereinafter appear or be pointed out, I have illustrated an embodiment of my invention in the appended drawings, wherein:

Fig. 1 is a perspective view of the razor of my illustrated embodiment;

Fig. 2 shows the razor with its parts separated in an exploded view;

Fig. 3 is an enlarged section taken on line 3—3 of Fig. 1 showing the position of the razor parts in their operative shaving position;

Fig. 4 is a section similar to that of Fig. 3 showing the position of razor head parts for blade reception or replacements;

Fig. 5 is an end view of the razor head;

Fig. 6 is an enlarged fragmentary sectional view taken on line 6—6 of Fig. 3, showing parts of said razor element in their shaving position with the blade flexed an exaggerated amount;

Fig. 7 is a perspective view of the magazine of my illustrated embodiment;

Fig. 8 shows the magazine with its parts separated in an exploded view;

Fig. 9 is a perspective view of one of these parts; and

Fig. 10 is a cross section taken on line A—A of Fig. 7.

The razor head 12 comprises a hollow frame

having a top portion 20 and a bottom portion 30 (see Fig. 1). These portions are preferably formed separately as shown in the exploded view of Fig. 2 because of manufacturing considerations and convenience of assembly. When assembled, they constitute an integrated frame structure with the top and bottom portions in spaced apart relation to provide a chamber within which the blade and the locating and clamping means therefor are receivable in the manner and for functioning as hereinafter to be set forth. It will be understood, of course, that many if not most of the objectives of my invention are attainable even though this frame is made other than of two separate members. For convenience of reference, the top frame portion 20 will hereafter be referred to as the cap and the portion 30 as the frame seat.

The cap 20 is shown at the top of Fig. 2 as provided with end walls or flanges 21 and 22, preferably formed integrally with the connecting web portion therebetween.

The means for securing together cap 20 and frame seat 30 shown in Fig. 2 comprise lateral extending grooves 23, on each of the depending flanges, which slidably receive mating projections 33 on the frame seat. The two parts may be secured in this relation as by locking pin 24.

A slot 25 extends through end wall 21 of the cap member and is so dimensioned and positioned as to permit ejection of a used, dull blade from the razor. The opposite wall of the cap is provided with a similar slot 26 to permit insertion of a new blade into the razor chamber. This slot 26 is substantially wider than blade thickness and is further widened centrally, both upwardly and downwardly, by portions 27 and 28 for purposes to be later described.

The central longitudinal web portion of cap 20, extends for a distance slightly more than the length of a blade and is provided with downward blade engaging abutments 45 at the sides of its inner surface. The under surface is sloped at 47 to permit blade flexing by abutments 45 and is also recessed for its entire length at 41, to receive the spring 42 and the pressure pad 50.

The razor frame seat 30 has an upper surface 36 (hereafter referred to as the fixed blade seat). It is provided with side flanges 31 (serrated) to form the blade guards. The edge of the blade receiving end of the fixed seat 36 is shown beveled at 37 to facilitate blade entrance. The openings 32 through the saddle discharge lather, debris and the like. The seat 36 is recessed longitudinally centrally thereof as shown at 34, to receive the locator 70 wholly therewithin. The bottom of this recess 34 is recessed downwardly, as at 35, to provide a channel whose purpose will shortly be pointed out.

A collar 38' depending centrally from the bottom of razor seat 30 has its bore open through the seat 30 into recess or space 34 thereof. The undersurface of the seat member 30 merges at its ends into the guard edges 31 and is shown as formed flat at the bottom 46 and then curved upwardly and outwardly on each side in alignment with the bottom edges of flanges 21 and 22 of the cap.

The means for supporting and locating the blade in shaving position within the razor head frame comprise a pair of blade clamping members 50 and 70 movable in the frame and a system of springs which normally maintain these two clamping members in blade clamping relation at a relatively higher level. These means are so contrived that lower clamping member 70 can be moved to a level below the fixed blade seat 36 to inactivate it and permit pressure plate 50 to yieldingly engage directly the fixed blade seat 36 or the blade thereon when blade placement or replacement is to be effected. The locator 70 which is the lower blade clamping member seats the blade at this upper level and will hereafter be referred to as the supplemental blade seat. This locator member 70 is shown generally rectilinearly shaped and enlarged in width centrally thereof to conform in configuration to the shape of recess 34.

Pins 71 are fixed to and extend upwardly from the locator 70. These pins are shown as provided with heads which are beveled or conically formed and a cylindrical neck portion 72 therebelow dimensioned and conformed to be engageable through openings 63 provided in the blade when the locator is moved upwardly. The shape of the head facilitates entrance of the pins into the blade openings and serves also to relocate a blade inserted into a razor slightly off center. These pins are fixed in the locator 70 in any desired manner as by force or friction fit. The upper surface 73 of the locator is shown as conversely curved so that the shaving edges of a blade supported centrally thereon may be flexed downwardly. Upon reference to Fig. 2, it will be observed that the locator is centrally apertured at 74 for a purpose shortly to be pointed out.

The upper clamping member or pressure pad shown as rectangular is provided with openings 51 therethrough to receiving locating studs 71 upon elevation of locator 70, and is provided with end projections 52 upturned at 53 for reception in mating channels 54 defined by shoulders at the ends of channel 41 in the cap 20. These projections guide the pressure pad or upper clamping member vertically with relation to both the cap and the seat. The pressure pad is preferably formed with a flat undersurface for engaging the top surface of the razor blade 60. The upward extensions 53 on lugs 52 serve further to space the upper surface of the pressure pad from the top of the channel 41 at the limit of its upward movement to provide space therebetween for the spring member 42. At least one of the lugs 52 is provided with a blade guiding beveled edge 55.

The disclosed razor embodiment has been specially devised to service flexible blades of the double edge type having cutting edges 61, locating slots 63 to receive locator pins 71 and end slots 62 for facilitating stacking in the magazine to be described later. It will be understood that the major objects of the invention are obtainable with razors constructed to utilize blades other than that shown and described.

The hollow razor handle portion 13' (see Fig. 4) is affixed to the lower end of the collar 38' to complete the razor handle. It will be observed that the bore through the collar 38' and the handle portion 13' are the same so that the bore in the latter is continued without substantial change through the former to open into recess 34 in the razor head. The two may be affixed, for example as shown, by enlarging the bore of 13' sufficiently to seat the lower end of collar 38' on shoulder 4, whose width is predetermined to the wall thickness of collar 38'. The collar 38' is provided with slots 5—5 which are preferably in diametrical registration and with their ends respectively below the underface of seat 30

and above the upper end of the handle member 13'.

A member 6 (see Fig. 2) is secured at its upper end to the locator 70, for example by upwardly extending pin 7 received through a central opening 74 in the locator 70 and upset at its upper end. This slide is slotted diametrically as shown at 8 (see Figs. 2 and 4). The cross section of member 6 is so related to the handle bore that the member can be entered therein for vertical movement to correspondingly elevate or lower locator 70 between its positions of Figs. 3 and 4. A spiral spring 9 in the bore 13' underlies slide member 6 (see Fig. 4) and serves normally to elevate this slide member and with it the locator 70 from its lower position of Fig. 3 to its upper position of Fig. 4.

A roller 1 is mounted in slot 8 on pin 2 angularly positioned to register roller 1 with slots 5—5 of sleeve 38'. The level of pin 2 is shown as such that upper portion of the roller is accessible through registering slots 5—5—8.

It will be observed that slot 8 of slide member 6 registers with and is longer than slots 5—5 and that the movement of the slide is restricted to a rectilinear one as and for the reasons to be pointed out hereinafter.

The handle portion 13' is shown fluted and beveled in Fig. 2 for convenience of handling.

When the razor parts described above, and shown in exploded view in Fig. 2, are assembled, the razor will have the appearance illustrated in Fig. 1. It will be observed that the improved razor comprises a head which has spaced upper and lower members 20 and 30 which are fixedly related to define a blade chamber which is provided with a blade ingress aperture in one end and a blade exit aperture at the opposite end. The operative position for a shaving performance of the aforementioned razor parts within the frame and handle shown in Fig. 3 of the drawings, is normally maintained by underlying spring 9 in handle part 13'. Replacing the contained blade requires that the locator 70 be lowered into space 34 to a level below the fixed seat 36 to disengage pins 71 from blade openings 63 and permit the used blade to seat on fixed seat 36 by spring pressure plate 50, which lowered position of the parts is shown in Fig. 4. In this lowered position of the parts, the used blade on seat 36 registers with both discharge mouth 25 and admission mouth 26.

The magazine shown in Figs. 7 to 10 inclusive, has means for attaching it to the razor of such nature that its attachment thereto will lower these parts automatically to their position of Fig. 4 and bring the mouth of the magazine through which the blades are discharged levelled with the used blade on the fixed blade seat so that the blade entering the razor through mouth 26 of the razor head and between fixed seat 36 and pressure plate 50, will engage and expel the used blade through opening 25.

This dispensing blade magazine is comprised of container body 101, top closure 102, blade ejecting slide 103 and the spring 104 which underlies and elevates the stack (see exploded view of Fig. 8).

Container body 101 is defined by bottom 111, side walls 112, front wall 113 and rear wall 114. The front wall is shown with its top cut down sufficiently below side walls 112 to provide a space through which a blade can be passed. The rear wall 114 is of the height of the side walls and is therefore higher than the front wall 113 by no less than blade thickness and has flange 116 extending upwardly centrally thereof. Side walls 112 may have flanges 118 extending upwardly from and longitudinally thereof to receive top closure 102 therebetween. Transverse partition wall 121 subdivides the container space into a front chamber and a rear chamber. The height of this partition is shown as that of the side and rear walls and as reduced centrally thereof approximately to the height of the front wall to provide groove 122 centrally of its top. Rib 124 extending inwardly from the front wall is shown coterminous at its top with the top of the front wall. Rib 125 extending inwardly from partition wall 121 is shown coterminous at its top with the bottom of aforementioned groove 122. The two ribs are shown in longitudinal registration centrally of the front chamber and may be of the same height. The dimensions of the front chamber and its ribs 124 and 125 and the location of the latter are such that the blade shown in Fig. 2 can be received in this chamber with its side notches 62 engaged with these ribs and with its shaving edges held spaced from the side walls of this chamber.

The top closure 102 is removably associated with the container 101 in any preferred manner, for example by beveled side faces 131 shown in Fig. 8 engaged in beveled grooves 119 in side wall flanges 118. The drawings show these bevels as of the full length of side walls 118, although the invention does not require it. This top closure is provided with slot 132 longitudinally thereof and open at one end. Its underface is thinned out longitudinally centrally thereof to provide a groove 126 preferably wider than slot 132. The location and dimensions of cover slot 132 are such that its open end will receive therein flange 116 extending upwardly from rear wall 114 and will overlie the ribs 124 and 125 and groove 122 in the partition wall. The fit of the cover is preferably relatively tight because it remains closed until exhaustion of the contained blades. It is made separable for convenience of manufacture and filling.

Blade ejecting slide 103 shown in Fig. 8 may be formed from flat material to provide top web 141, side flanges 142 of greater width, a relatively narrow neck 143 extending outwardly from and preferably centrally of a side edge of a top web 141 and bent into approximately U-shape, and a blade engaging portion 144 extending forwardly from the end of underlying portion of neck 143 and beyond top web 141. Slide 103 is assembled with the container as shown in Fig. 7, with the side flanges 142 engaged with side walls 112 to slide therealong. The details of construction and the character of material employed is preferably such that this engagement supplies sufficient pressure to control the movement of the slide and the curved ends and ridged central portion of flanges 142 participate in this control. The width of neck 143 of the ejector slide is no greater than that of slot 132 in the cover so that the neck portion can be entered into the open end of cover slot 132 and maintained therein by projection 116 on the container. In its normal position of Fig. 7, the blade engaging portion 144 of the slide is levelled to the topmost blade engaged with the inner surface of top 102 by underlying spring 104.

Spring 104 is comprised of a longitudinally extended downwardly bowed central member 151 and two longitudinally extending relatively narrow upwardly bowed side portions 152 connected to the central member by relatively narrow necks.

Central member 151 has its ends recessed at 153 and the dimensions of these parts are such that recesses 153 engage with and are centered by ribs 124 and 125.

It will be observed that in this normal position of the pusher, the inner end of the blade engaging portion 144 is partly entered into groove 122 in the partition for clearance and guidance. A forward movement of the slide causes the blade engaging portion 144 thereof to engage the adjacent end of the topmost blade and advance that blade through the mouth in the front wall of the casing.

Vertically related and spaced apart fingers or projections 160 and 161 of the general nature shown, extend centrally forwardly from the magazine front wall 113. Upper projection 160 is relatively short and has its top leveled to the tops of front wall 113 and is rib 124, and is shown beveled transversely of its front end 163 and wider than rib 124.

The lower projection or finger 161 is relatively long and thin and is comprised of a rear portion 164 affixed to the container and a front portion 165 whose height is diminished by bevel 166 and shoulder 168 on its top face and is further and gradually diminished at its extreme front end by the upward angle given the extreme end 169 of its bottom face or edge so that the height of that part of the front portion 165 between top shoulder 168 and bottom bevel 169 is uniform and is shown as slightly less than the height of slots 5, 5 in collar 33' of the razor.

Before describing the operation of the razor and the cooperation therewith of the magazine for blade replacement, it will be pointed out that the upper finger 160 is predeterminedly dimensioned and contoured to be received in aligned grooves 23 and 35 slightly above the lower edge of razor entrance passage 26 and slightly below the blade receiving seat 36 in the razor; the space vertically between fingers 160 and 161 corresponds approximately to saddle thickness at this end of the razor and which is measured from the bottom of groove 35, to the under surface 46 of the saddle; the thickness of the portion of finger 161 to the front of shoulder 168 approximates substantially the width of the slots 5, 5 in the razor sleeve 33'; the width of slot 8, through razor slide member 6 is no less than that of the slots 5, 5; and slot 8 is sufficiently longer than slots 5, 5 and is so located that it will open into slots 5, 5 for their full length in its upper and lower positions; and roller 1 forms a yieldable obstruction to the entrance of magazine finger 161 through slot 8.

Fig. 3 shows the blade clamping members normally elevated by underlying spring 9 in the handle; and Fig. 4 shows these parts lowered to condition the razor for blade replacement. This conditioning is effected automatically with and by the attachment of the magazine to the razor, by entering its finger 161 into and through the registering slots 5, 5 and 8, the height of the tip and of finger 161 being preferably less than the space between the topmost point of roller 1 and the top end of slots 5, 5 (see Fig. 3) to facilitate finger entry. This entry of finger 161 will cause its beveled bottom portion 169 to engage the top of freely rotatable roller 1 and gradually depress it to the level of the bottom of slots 5 and bring the parallel top and bottom of the finger portion immediately in back of bevel 169, into adjacency to upper and lower ends of slots 5 and spring 9 will cooperate to hold the top edge of finger 161 engaged with the top walls of slots 5—5. Entry of finger 161 also enters finger 160 into razor space 35 below its receiving mouth and the saddle portion below space 35, into the space between these fingers.

Lowering the roller in the manner aforementioned lowers locator 70 and its pins 71 below fixed seat 36 and permits the pressure pad 50 to engage the used blade seated thereon.

Attachment of the magazine in the manner aforementioned brings its discharge mouth close to and in registration with razor entrance mouth 26, so that a blade moved by slide 103 through magazine discharge mouth 154 is entered into and through slot 26 to expel the used blade through razor mouth 25 as it itself is being entered into the razor head. The forward thrust permitted the slide is such that its blade engaging member 144 enters the enlargement 27 of mouth 26 to fully enter the new blade on seat 36. In this fully advanced position, the web and neck portions 141 and 143 are shown engaged respectively against the front end wall of the razor and the closed end of cover slot 133 so that either or the two together serve to limit slide advancement.

At the beginning of such blade movement the forward end of the blade, as it enters slot 26 of the razor, is supported by finger 160 and its rib 124 until its advancing edge reaches the beveled portion 37 of the razor receiving seat. As blade advancement is continued the forward edge of the blade rides up the beveled portion 37 and engages the beveled surface 55 at the edge of the pressure pad to be guided onto receiving seat 36 and under the pressure pad 50. Further advancement of the ejector pushes the blade entirely into the blade chamber of the razor against the resistance of the pressure pad, so that the direction and extent of travel of the blade is limited to that imparted by the pusher. At the limit of its forward motion the pusher extends into slot 27 of the razor cap and the new blade is fully entered, occupying the position shown in Fig. 3.

It will be noted that the widened blade entrance 26 to the razor, the positioning of the blade receiving seat 36 above its lower edge plus the bevels 37 and 55 on the seat and pressure pad respectively will permit a new blade to find its proper level on seat 36 regardless of the level of its entrance into slot 26. This arrangement has the advantage of permitting relatively large manufacturing tolerances and error in all of the mating parts including the attaching finger while guaranteeing operability of the combined razor and magazine to inject new and eject old blades. The device is operative for these functions even though under certain manufacturing conditions the upper finger 160 finds a level above receiving seat 36, for in this case the new blade would still be guided under the pressure pad and supported at one end between the pad and the magazine finger until elevated by the locator.

It will be understood that the conical shape of the locator pins 71 enable the latter upon elevation of the locator to engage the end edges of slot 63 in the razor blade and shift said blade to center it by an amount equal to the radius of the pins, should the blade have been inserted slightly out of center position in the razor chamber.

Conditioning an unloaded razor for blade placement will be no different from that described above for a loaded razor except that entry of a blade from the magazine will elevate the pressure pad for blade thickness.

After blade placement (or replacement) has

been effected the razor clamping members are returned by spring 9, to their normal upper level, upon separation of the magazine by withdrawal of its finger 161; with locator pins 71 entered through blade openings 63 and pressure pad openings 51, and the blade shaving edge portions flexed as shown in Fig. 6 and the shaving edges properly related to guards 31. To this end, the upward pressure of underlying handle spring 9 is substantially greater than the downward pressure of overlying spring 42.

What I claim is:

1. A razor for use with a magazine having a razor attaching finger, said razor being comprised of a frame having top and bottom members which define a chamber therebetween and a mouth through which a blade can be entered thereinto, a shaving edge guard on the frame at a level above the mouth, a blade carrier within the chamber mounted for vertical movement from a lower level which clears the mouth to a level thereabove to lift a blade entered through the mouth into shaving relation to the guard and spring pressed means normally operative to elevate said blade carrier, said means being accessible for operation upon magazine attachment to move said carrier to its lower level.

2. In combination a razor comprised of a frame having top and bottom members which define a chamber therebetween and a mouth through which a blade can be entered thereinto, a shaving edge guard on the frame at a level above the mouth, a blade carrier within the chamber mounted for vertical movement from a lower level which clears the mouth to a level thereabove to lift a blade entered through the mouth into shaving relation to the guard and normally operative means for elevating said blade carrier, and a magazine having an attaching finger enterable into the razor for depressing said blade carrier.

3. In combination a razor comprised of a handle and a head comprised of a frame having top and bottom members which define therebetween a chamber and a mouth through which a blade can be entered thereinto, a blade carrier within the chamber and means for mounting it for vertical movement from a lower level which clears the mouth to a level thereabove to thus elevate a blade thereon, normally operative means for maintaining said blade carrier elevated comprising a member depending downward from the carrier and slideably received in the handle and a means for yieldably applying an upward pressure to the slideable member and a magazine having an attaching finger enterable into the razor for depressing the blade carrier.

4. A razor and magazine combination as characterized in claim 3, wherein registering slots are provided through said depending member and adjacent portions of the handle for reception of the magazine finger to depress said depending member.

5. The razor and magazine combination as characterized in claim 4 wherein a roller is mounted within the slot in said depending member to partially project into the lower end thereof so that the magazine finger entered thereinto will engage said roller and depress the carrier.

6. A razor handle and a head carried thereon comprised of a frame having top and bottom members which define therebetween a chamber and a mouth through which a blade can be entered thereinto, a blade carrier within the chamber and means for mounting it for vertical movement from the lower level to clear the mouth to a level thereabove to thus elevate a blade thereon, normally operative means for maintaining said blade carrier elevated comprising a member depending downward from the carrier and slideably received in the handle and means for yieldably applying an upward pressure to the slideable member, the slideable member and adjacent portions of the handle member having registering slots for the reception of a tool to depress the slideable member, the slot in the slideable member being longer than that in the handle member.

7. For use with an attachable magazine, a razor comprising spaced apart fixedly related blade receiving seat and cap portions, a pair of relatively movable blade clamping members therebetween and means normally operative for engaging and maintaining said members and the blade clamped therebetween elevated above the seat, said means being accessible by a tool to render them inoperative.

8. The combination with the razor as set forth in claim 1, of a magazine having a finger extending forwardly therefrom and enterable into the razor to depress the blade carrier to clear it of the razor mouth for the reception therethrough of a blade fed from the magazine whereby withdrawal of the finger will free the carrier for vertical movement to elevate the received blade.

9. In combination a razor comprised of a handle and a head comprised of a frame having top and bottom members which define therebetween a chamber and a mouth through which a blade can be entered thereinto, a blade carrier within the chamber and means for mounting it for vertical movement from a lower level which clears the mouth to a level thereabove to thus elevate a blade thereon, normally operative means for maintaining said blade carrier elevated comprising a member depending downward from the carrier and a magazine having a forwardly projecting finger engageable with said depending member to depress it and hold the carrier at its lower level for blade replacement.

10. A razor and magazine combination as set forth in claim 9, wherein a registering slot is provided through said depending member for reception of the magazine finger.

11. A razor and magazine combination as characterized in claim 9, wherein registering slots are provided through said depending member and adjacent portions of the handle for reception of the magazine finger.

12. A razor and magazine combination as set forth in claim 9 wherein the depending member is receivable for sliding movement in the handle and wherein registering slots are provided through said depending member and adjacent portions of the handle for reception of the magazine finger to depress said depending member.

13. A razor and magazine combination as set forth in claim 12, wherein a roller is mounted in said depending member to partially project into the lower end thereof so that the magazine finger will depress said depending member by engagement with said roller.

14. A razor and magazine combination characterized in claim 13 wherein the slot through the depending member is longer than the registering slots through the handle.

15. A razor attachable blade dispensing magazine having a bottom, a top and a front wall, a plurality of blades stacked therein, said front wall having an exit slot for the topmost blade, a guiding finger projecting forwardly from and be-

yond said front wall, the top face of said finger being levelled to the bottom of said magazine blade exit slot and a rib longitudinally aligned with said finger and extending inwardly from said front wall and whose top surface is also levelled to the bottom of the magazine exit mouth so that in its advance, the topmost blade will be supported and guided from the innermost end of the rib to the outermost end of the finger.

16. In a razor and magazine combination, a razor head comprising a frame having an upper, lower and an end wall to define a blade chamber, a blade entrance passage through the end wall, enlarged intermediate its length both upwardly and downwardly, a blade feeding magazine provided with a finger enterable into the downward enlargement in said blade entrance and an ejector finger on said magazine enterable into the upward enlargement of said blade entrance passage.

17. In a razor and magazine combination, a razor head including fixedly related seat and cap members, a blade feeding magazine having a blade feed slot in one wall thereof, means for attaching the magazine with said feed slot and an entrance mouth in alignment, means for ejecting a blade endwise from the magazine onto the razor seat, and means in said razor between said seat and cap for grasping the entered blade therebetween and lifting it from engagement with the seat into engagement with the cap.

18. For use with a razor having a head comprising a blade receiving channel and a normally spring elevated blade seat, a hollow handle attached to said blade seat containing depressing members to depress said blade seat, and an access opening in said hollow handle below said head to communicating with said depressing means; a blade dispensing magazine having a discharge mouth at the upper end of its front wall and a flange portion which projects downwardly from the front end of the magazine bottom and extends a substantial distance beyond said front wall, and a razor attaching finger extending forwardly from the front end of said flange; said attaching finger being spaced below the blade receiving channel of the razor head and being receivable in the access opening of the razor to actuate said depressing member.

19. A magazine as set forth in claim 18, wherein a stop shoulder is provided at the front end of the top edge of the flange to limit attaching insertion of the finger into the razor.

20. A blade dispensing razor attachable magazine having a discharge mouth at the upper end of its front wall and a flange portion which projects downwardly from the front end of the magazine bottom and extends for a substantial distance beyond said front wall; a razor attaching finger extending forwardly from the front end of said flange; and a relatively short finger spaced vertically above said flange extending forwardly from the front walls and having its upper surface levelled to the bottom edge of the discharge mouth; said attaching finger being at a level immediately below the bottom whereby razor attachment will be effected at a level below the magazine bottom.

21. A blade dispensing razor attachable magazine having a discharge mouth at the upper end of its front wall and a flange portion which projects downwardly from the front end of the magazine bottom and extends for a substantial distance beyond said front wall; a razor attaching finger extending forwardly beyond the front wall of said flange; said portion of the flange which extends beyond the front wall being extended vertically so that the flange is engaged about the lower front corner; and said attaching finger being at a level immediately below the bottom whereby razor attachment will be effected at a level below the magazine bottom.

22. A blade dispensing razor attachable magazine having a discharge mouth at the upper end of its front wall and a flange portion which projects downwardly from the front end of the magazine bottom and extends for a substantial distance beyond said front wall; a razor attaching finger extending forwardly beyond the front wall of said flange; the front end portion of said finger having its under surface beveled upwardly forwardly toward its terminal end to serve as a cam for automatically conditioning the razor for blade reception when attachment is effected; and said attaching finger being at a level immediately below the bottom whereby razor attachment will be effected at a level below the magazine bottom.

23. A razor having a frame comprised of top and bottom members defining a chamber therebetween and a mouth opening into said chamber for blade reception, upper and lower clamping members in the chamber and spring means for biasing each of the members toward the other and into engagement, the bias of said means upon the lower member being greater than the bias thereof upon the upper member, so that the engaged clamping members will be moved thereby to a higher level.

24. A razor having a frame comprised of top and bottom members defining a chamber therebetween and a mouth opening into said chamber for the reception of a blade, and an upper clamping member and a spring for biasing said member downwardly and a lower clamping member and a spring for biasing it upwardly, the bias of the second mentioned spring being greater than most of the bias of the first mentioned spring so that the two springs will engage the clamping members and lift them as a unit to a higher level.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,107,538	McDermott	Aug. 18, 1914
2,327,383	Auerbach	Aug. 24, 1943
2,329,692	Auerbach	Sept. 21, 1943
2,351,627	Muros	June 20, 1944
2,361,216	Lewando	Oct. 24, 1944
2,361,512	Testi	Oct. 31, 1944
2,392,431	Testi	Jan. 8, 1946
2,439,243	Dalkowitz	Apr. 6, 1948
2,446,715	Muros	Aug. 10, 1948
2,473,812	Muros	June 21, 1949
2,637,101	Cutler	May 5, 1953