

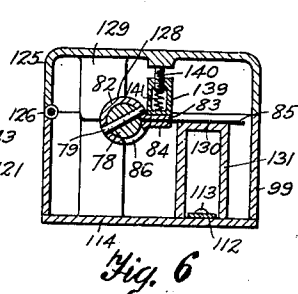
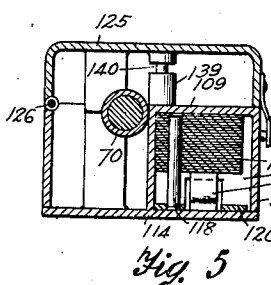
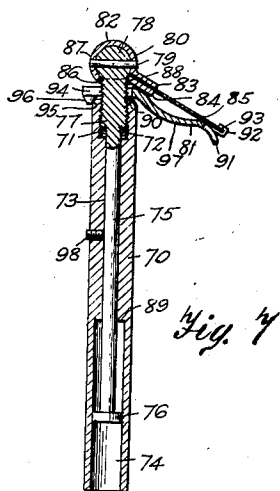
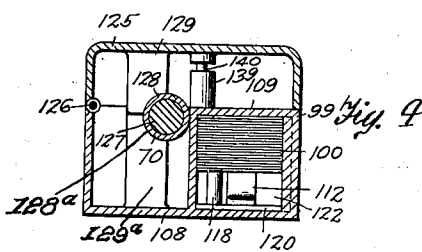
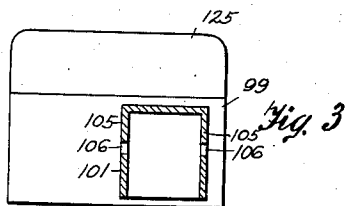
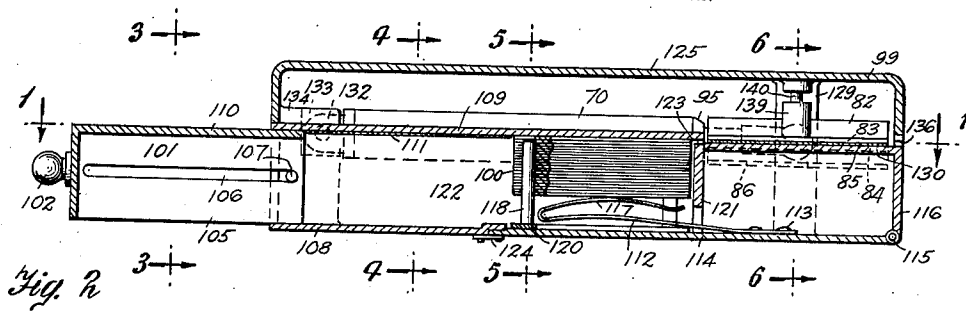
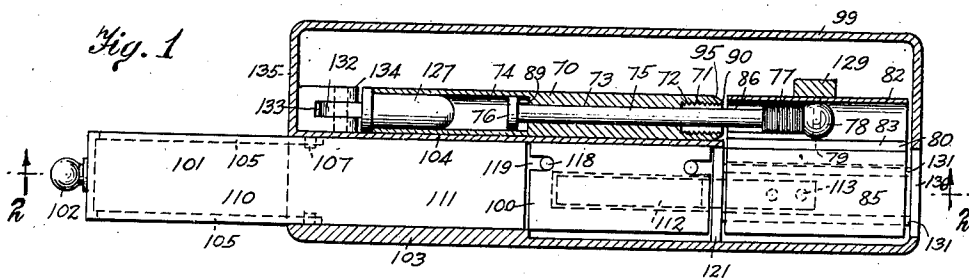
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2,259,163

SHAVING DEVICE

Original Filed May 31, 1930



INVENTOR

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UNITED STATES PATENT OFFICE

2,259,163

SHAVING DEVICE

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Original application May 31, 1930, Serial No. 458,150. Divided and this application January 4, 1935, Serial No. 456. Renewed May 6, 1939

9 Claims. (Cl. 30—40)

This invention relates to safety razors and razor blade storage means adapted to cooperate with said safety razor and to thereby replace a used blade therein with a new blade, and is a division of the application originally filed in the Patent Office May 31, 1930, Serial No. 458,150 which has resulted in Patent No. 2,008,211.

My invention contemplates the provision of a simple and inexpensive razor designed for permitting stropping of the blade without removal thereof from the razor, and adjustable to any shaving angle.

My invention further contemplates the provision of a casing for the razor designed to act not only as a handy and portable container therefor, but also as a blade storage means designed to permit the user to quickly change the blade in the razor while it is in the casing, and thereby eliminating the necessity for handling the blades at any time.

The various objects of my invention will be clear from the description which follows, and from the drawing, in which

Fig. 1 is a horizontal section of my improved container taken on the line 1—1 of Fig. 2, and showing the razor in position to have the blade thereof ejected and a fresh blade substituted therein.

Fig. 2 is a vertical section of the same, taken on the line 2—2 of Fig. 1.

Fig. 3 is a vertical transverse section of the blade ejector taken on the line 3—3 of Fig. 2.

Fig. 4 is a vertical section of the container taken on the line 4—4 of Fig. 2.

Fig. 5 is a similar section taken on the line 5—5 of Fig. 2.

Fig. 6 is a similar section taken on the line 6—6 of Fig. 2.

Fig. 7 is a vertical section of my improved razor, as it appears removed from the casing ready for the shaving operation.

In that practical embodiment of my invention which I have illustrated by way of example and referring to Figs. 1 to 7, inclusive, and particularly to Fig. 7, my improved razor there shown consists of a comparatively long, hollow and preferably cylindrical handle 70. The upper portion 71 of the opening in the handle is internally threaded as at 72. The intermediate passage 73 in the handle connects the upper opening 71 with a wider opening 74 extending less than half way from the lower portion of the handle and upwardly from the bottom thereof. Slidably mounted in the passage 71 of the handle and preferably made in the form of a rod is the spin-

dle 75. Said spindle is of sufficient length to extend through the passage 73 and into the opening 74 and terminates at its lower end in the enlarged piston-like guide and stop 76. Said stop is of substantially the same diameter as that of the opening 74, and guides the spindle by its engagement with the wall of said opening, as the spindle is moved relatively to the passage 73. Said stop serves further to prevent the spindle from falling out of the handle 70 when the handle is completely separated from the blade holding portion of the razor, by reason of the engagement of said stop with the upper end of the opening 74. Extending from the upper end of said spindle 75 and preferably integral therewith is the externally threaded member 77, which is designed to engage the internal thread 72 of the opening 71. Said member 77 terminates at its upper end in the ball head 78, through the center of which is passed the pivot pin 79. I prefer to arrange the axis of said pin perpendicularly to the axis of the spindle for the purpose which will be pointed out more fully hereinafter.

Above the handle 70 and preferably secured to the ball head 78 is mounted means for holding the blade in shaving and stropping position, said means being rotatable relatively to the spindle and to the handle. Said means includes the blade holder 80 which cooperates with the guard 81 to maintain the blade in position.

The blade holder 80 is preferably made of a single piece of sheet material being suitably bent to form a tubular portion 82 and a pair of similar and cooperating flanges 83 and 84 normally pressed toward each other by the spring action of the tubular portion and designed to receive the razor blade 85 therebetween. In order that the ball head 78 may be inserted into the tubular portion 82 and pivoted thereto as above described, a suitable slot 86 (Figs. 1 and 2) is made in the lower part of said tubular portion and extends from one end of said portion somewhat past the center thereof. The width of said slot is substantially the same as the diameter of the externally threaded member 77 whereby the parts may be assembled without difficulty. For supporting the spindle, the pin 79 is secured in suitable openings 87 in the tubular portion 82.

It will be noted (Fig. 7) that one edge 88 of the slot is close to the lower flange 84 of the blade holder and that the edges of said slot are disposed symmetrically about the axis of the spindle 75. It thereby becomes possible to rotate said spindle about the pivot 79 into a position wherein the axis of the spindle lies in the same plane as that

passing through the center of the blade 85 held between the flanges 83 and 84, and coaxially of the tubular portion 82. The member 77 gradually passing through the slot 86 and entering the hollow space of the tubular member 82 during its rotary movement about the pivot 79 into the position above described. It will be understood that during the rotary movement mentioned, the handle 70 should be unscrewed completely from the member 77 whereupon said handle drops along the spindle 75 until the stop 76 engages the upper end 89 of the opening 74.

Interposed between the upper end 90 of the handle 70 and the lower part of the blade holder 80 is the guard 81 preferably made of a single piece of material. The teeth 91 of said guard are of the usual construction except at the extreme ends thereof where the material between the teeth, instead of being completely cut away, is turned forwardly and then upwardly and rearwardly to provide the fold 92 having the groove 93 therein for the reception of the extreme end portions of the edge of the blade. At its rear edge and arranged substantially in the middle portion of the guard, I prefer to provide a slot as 94 of about the same width as the diameter on the member 77, whereby the guard may be arranged in place by arranging the edges of the slot about said member 77.

To provide for proper adjustment of the blade to various degrees of shaving such as fine shaves and coarse shaves, the upper end 90 of the handle is bevelled as at 95 and coacts with the depending conical cam members 96 which are arranged adjacent each edge of the slot 94. It will be seen that as the handle is rotated in the proper direction to raise it on the member 77, the bevelled portion 95 engages the conical surface of the cams 96 and thereby force said cams together with the guard member rearwardly or away from the axis of the spindle and thereby cause the blade 85 to enter more deeply into the groove 93 of the guard so that the edge of the blade is arranged closer to the ends of the guard teeth. Similarly, if the handle is rotated in the opposite direction, the cam members 96 are released from the bevelled end 95, thereby allowing the guard member to be moved under the spring action of its curved portion 97 or manually forwardly to position the edge of the blade further from the guard teeth 91.

It will be understood that the slot 94 is of sufficient depth to provide the required adjustment and that the guard may be self-maintained in place by the frictional engagement of the sides of said slot with the member 77.

As shown in Fig. 7, the razor is in the proper position for the shaving operation. In order, however, that the razor blade may be properly stropped, it is desirable that the guard 81 be first removed. Toward this end, the handle 70 is rotated in the proper direction to unscrew it completely from the member 77 and so that said handle drops along the spindle 75 until arrested by the stop 76.

The guard 81 being thereby freed, it may be pulled forwardly to remove it from its engagement with the blade and with the member 77. The handle 70 together with the member 77 and its spindle may now be rotated as a unit about the pivot 79 into a position at right angles to that shown in Fig. 7 wherein the axis of the spindle, handle and member 77 lies in the same plane as the blade. To prevent movement of the handle relatively to the blade holder 80, a screw as

98 passing through the handle and designed to engage the spindle may be provided which when tightened, secures the spindle relatively to the handle. The razor is now in the proper position to allow stropping of the blade or to allow the razor to be inserted into its case 99 until next used. In this position, the razor blade may be stropped in the same manner as is the ordinary barber's razor. The stropping operation need not therefore be described in detail.

The case 99 has a two-fold purpose. It may serve as a container for the razor and as a support for a pile 100 of fresh blades, whereby a suitable and convenient portable case, protecting the razor from damage, is provided. The case, however, serves the additional function of enabling the user to eject a used blade and substitute a fresh one without touching the blade with the fingers at any time. It is well known that even the most perfect edge on a razor blade may be rendered imperfect and its shaving qualities impaired by merely touching the edge with the finger or any other object.

It will be further understood that necessity for handling blades in the present type of razors is a serious disadvantage as accidents frequently occur due to the careless handling of such blades, particularly by unskilled persons. My improved case 99, therefore, is provided with means soon to be described for the purpose of enabling the replacement of the razor blade in the razor without danger of cutting the fingers or damage to the edge of the blade, as has been indicated.

Said means comprises the ejector 101 provided at one end with the knob or handle 102 and mounted between the front wall 103 of the casing and the partition 104 thereof. The side walls 105 of the ejector 101 are provided with slots 106 into which the pins 107 projecting from the partition 104 and from the wall 103, are inserted. The ejector is guided in its reciprocatory movement into and out of the casing by the bottom 108 of the casing as well as by the members 104 and 103 and is also guided and maintained in position by the horizontal partition 109. Suitably secured to and extending from the top 110 of the ejector is the thin blade engaging member 111 of sufficient length to just clear the pile 100 when the ejector 101 is withdrawn from the case into its outermost position (Figs. 1 and 2). Said pile 100 rests upon the sheet spring 112 and is normally urged thereby upwardly into contact with the horizontal partition 109.

The spring 112 is secured at one end as by means of the rivets 113 to the bottom portion 114 of the case, said bottom portion being hinged as at 115 to the rear wall 116. The other end 117 of the spring 112 is bent rearwardly upon itself and engages the lowermost blade of the pile. Said pile 100 is maintained in position and guided in its upward movement under the influence of the spring 112 by means of suitable posts 118. Said posts enter the aligned openings 119 in the blades and thereby maintain the entire pile of blades in proper alignment. The posts 118 may be connected at their lower ends by means of the connecting member 120 resting on the hinged bottom 114. In the closed position of the bottom 114, the upper ends of the posts are spaced from the underface of the partition 109 a distance slightly greater than the thickness of a blade but less than twice the thickness of a blade whereby the uppermost blade is free of the posts and is maintained in place by friction under the pressure of the spring 112.

The rear partition as 121 substantially closes the ejector and blade magazine compartment 122, a suitable slot as 123 being provided at the upper end of said partition for the passage of the uppermost blade out of said compartment when the ejector 101 is pushed back into said compartment whereby the blade engaging member 111 serves to engage the forward end of the uppermost blade and to remove said blade from the pile through said slot 123. It will be understood that the door 114 may be opened and the pile of fresh blades arranged on the posts 118 to replenish the case with blades, as desired. Normally, however, the bottom 114 is closed, being maintained in its closed position by means of a suitable latch 124 arranged on the front edge thereof and of any well known type.

Means are provided for holding the razor in proper position in the case 99 to allow the blade removed from the pile 100 to be inserted into the razor while at the same time to eject the used blade from the razor out of the case. Said means includes various supports for holding the razor blade in substantially the same position as that previously described in which it is arranged for the stropping operation. That is, the guard 81 is removed and the handle 70 and spindle 75 arranged with their axes in the same plane as that of the blade, as will be seen clearly from Figs. 1 and 2. To insert the razor into the case, the cover 125 is opened about its hinge 126 to expose the interior of the case. The opening 74 of the razor is then arranged adjacent the hinged pin 127 and said pin is inserted into said opening 74. The razor is then swung down until the tubular portion 82 rests in the partly cylindrical recess 128a of the support 129a upstanding from the bottom 114. The blade 85, however, held by the blade holder, rests on the upper wall 130 extending forwardly from the rear wall 116 of the case and having its upper surface aligned with the lower edge of the slot 123.

To reinforce and strengthen said wall 130, it is provided with depending side walls 131 which are also secured to and project from the rear wall 116 or which are made integral with said rear wall. To allow the razor to be swung into the position thus described, the pin 127 is provided with a hinged portion 132 pivoted in the groove 133 of the hinge support 134 extending rearwardly from the front wall 135 of the case.

It will be understood that the hinge portion 132 and the groove 133 may be so shaped that the pin 127 can swing only to a substantially horizontal position and is prevented from swinging below said position.

In the position of the blade just described wherein it rests on the upper surface of the upper wall 130, said blade is aligned with the slot 136 in the rear wall 116.

It will be seen that as the uppermost blade of the pile 100 is pushed rearwardly by the blade engaging member 111 toward the razor, the rear end of said blade thus removed engages the front end of the blade held between the members 83 and 84 of the razor and on further movement thereof, ejects the blade held by the razor out through the slot 136 and out of the case. In the innermost position, therefore, of the ejector 101, a fresh blade has been supplied to the razor and the blade engaging member 111 constitutes the uppermost member of the pile 100 and is supported at its rearmost end by the entrance thereof into the slot 123.

The cover 125 carries the downwardly extend-

ing lug 129 which is suitably recessed as 128 to engage the tubular portion 82 with the blade holder to maintain the razor in the case securely against rattling or displacement. To further secure the blade holder against vibration or displacement within the case, a hollow plunger as 139 is adjustably secured at its upper end to the screw 140 projecting downwardly from the upper wall of the cover 125.

To maintain the plunger 139 against loosening of said screw 140, a suitable spring as 141 may be arranged in the interior of the plunger to engage said plunger and said screw and thereby to resist relative movement thereof. The lower face of the plunger 139 engages the flange 83 of the blade holder and serves to maintain it in proper position when the case is closed.

It will be seen that all the parts are maintained in the case normally against movement, and that the cover 125 may be maintained in its closed position by means of a suitable spring latch 142 engaging a suitable stop as 143 projecting from the side wall of the case.

It will be seen that I have provided a simple and efficient razor which may be readily arranged in shaving or in stropping position, as desired, and further, that I have provided means for encasing the razor when not in use, which means is effective to supply the razor with a fresh blade conveniently when desired.

It will further be seen that the devices herein shown and described are simple, capable of economical manufacture and designed to meet the severe requirements of practical use.

It will further be understood that while I have shown and described a specific embodiment of my invention, I do not wish to be understood as limiting myself thereto but intend to claim my invention as broadly as may be permitted by the state of the prior art and the terms of the appended claims.

I claim:

1. The combination with a razor comprising a blade holder and a handle pivotally connected to said holder, of a case for said razor, said case having a blade discharging slot therein, a member pivotally mounted in said case, said handle being detachably mounted on said member for positioning said razor in said case for blade ejecting and replenishing operation thereof, a plurality of blades in said case, an ejector member slidably mounted in said case for advancing a razor blade from the case into the holder of the razor, and through the slot of the case whereby the blade in the holder is ejected therefrom by the blade so advanced.

2. In a safety razor device, the combination of a blade holder, a handle pivotally connected to said holder, a case for said razor having a slot in an end wall thereof, a magazine for separate blades formed in said case, said razor as a unit having detachable connection with said case to position the razor for the reception of the blade ejected from said magazine and inserted into said holder, and to rigidly maintain the holder in alignment with the magazine, and an ejector slidably mounted in said case for ejecting a razor blade from the magazine into the blade holder and out of the case through the slot thereof.

3. In a device of the character described, a case having a slot in one end thereof, a holder for a pile of blades in said case, a foldable safety razor unit adapted to be pivotally mounted on the case within said case, an ejector slidably mounted at the other end of said case for ejecting

a razor blade from said holder into said razor and for simultaneously ejecting the blade of the razor through the slot of the case, said razor being arranged for disengagement from said case for the shaving operation.

4. A razor comprising a handle, a blade holder mounted on said handle, a guard movably arranged on the handle adjacent the blade holder and cooperating cams on the handle and the guard member in operative engagement for selectively adjusting the shaving position of the guard member relatively to the blade.

5. In a safety razor provided with a handle comprising a pair of relatively movable members, a movable guard member arranged on the handle, a clamping member adjacent the guard member, a razor blade arranged between the guard and clamping members and cooperating means on one of the handle members and the guard member for urging the guard member and clamping member into selective relative blade retaining position upon movement of one of the handle members relatively to the other, said means comprising a cam on the handle member in operative engagement with a cam on the guard member.

6. The combination with a razor having a blade holder of a case for said razor, a magazine for separate blades arranged in said case, means arranged on said magazine for transferring a blade therefrom into the blade holder, and a pivoted member on the casing adapted to detachably engage the razor whereby said razor

may be rotated into the casing in alignment with magazine for blade transferring operation.

7. The combination set forth in claim 6 and including means on the casing arranged to engage the blade holder to rigidly hold the magazine in alignment with the razor during blade transferring operation.

8. The combination with a razor having a blade holder of a case for said razor, a magazine for separate blades arranged in said case, means arranged on said magazine for transferring a blade therefrom into the blade holder, means arranged on the case for detachably positioning the razor within the case for blade transferring operation, a removable enclosing cover arranged on the case and means arranged on the case for rigidly maintaining the razor in blade transferring alignment with the magazine upon arranging the cover on the case to completely enclose the razor during blade transferring operation.

9. In a device of the character described, a case having a slot in one end thereof, a holder for a pile of blades in said case, a foldable safety razor unit adapted to be mounted on the case within said case, an ejector slidably mounted at the other end of said case for ejecting a razor blade from said holder into said razor and for simultaneously ejecting the blade of the razor through the slot of the case, said razor being arranged for disengagement from said case for the shaving operation.

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