

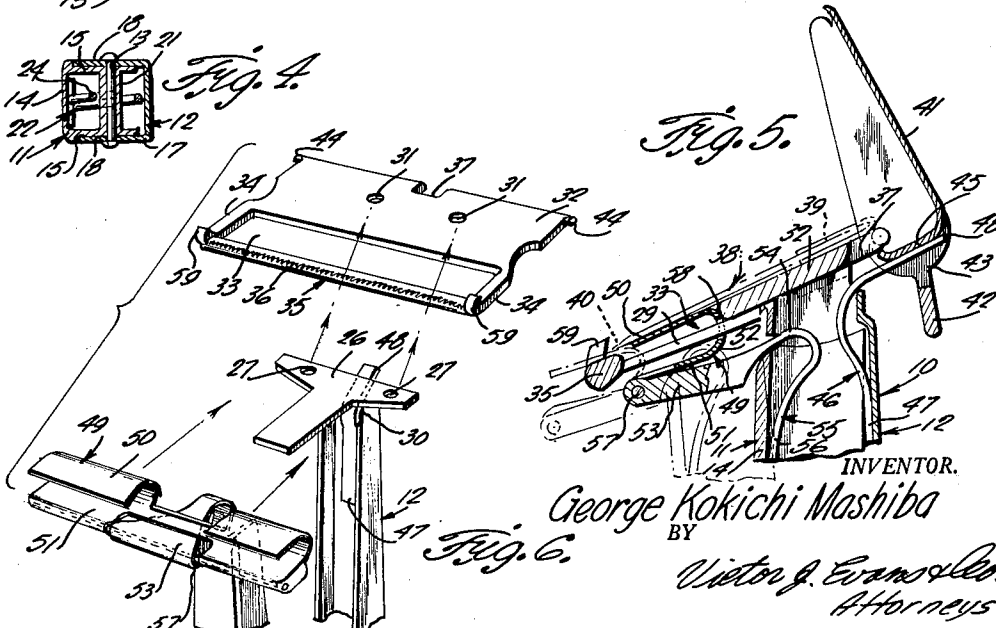
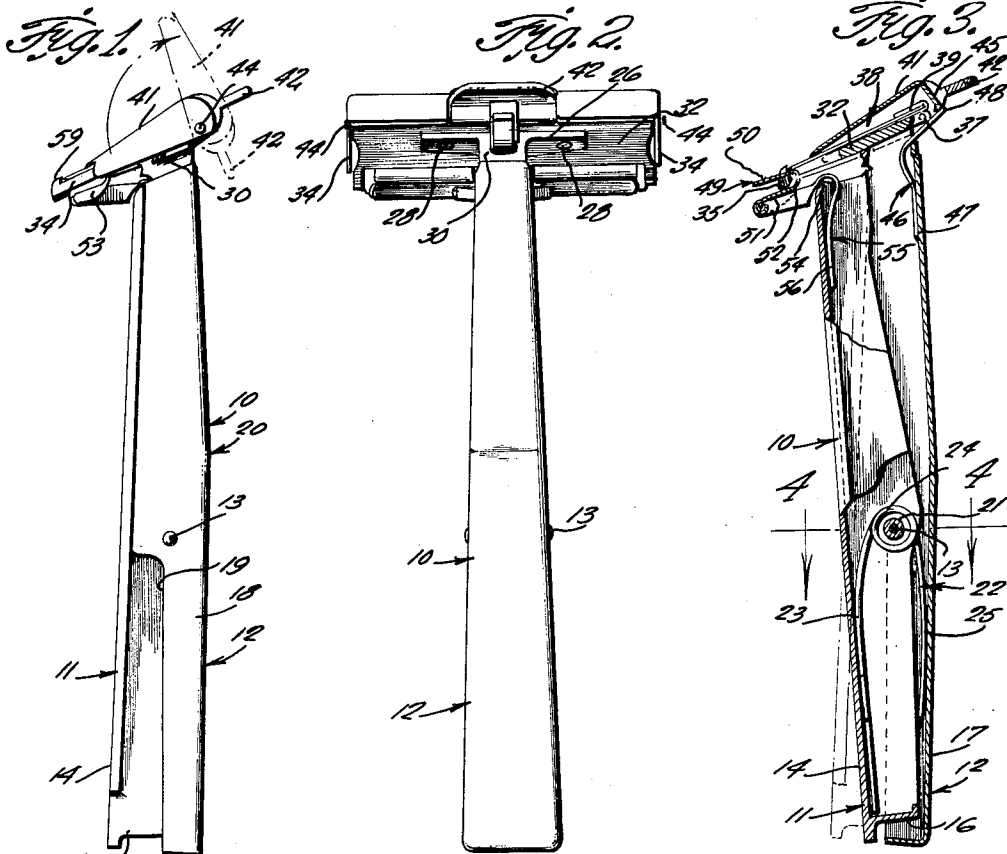
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SELF-SHARPENING SAFETY RAZOR

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SELF-SHARPENING SAFETY RAZOR
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This invention relates to a self-sharpening and self-cleaning razor.

The primary object of this invention is to provide a razor that includes an improved means for sharpening and cleaning the razor blade so that the razor blade can be used for longer periods of time than would ordinarily be possible.

A further object is to provide a self-sharpening and self-cleaning razor which is constructed so that by manually operating or manipulating the same, a sharpening and cleaning unit or hone can be readily moved into and out of engagement with the cutting edge of the razor blade so that the cutting edge can be readily sharpened, and wherein the present invention also provides an improved means for facilitating the cleaning of the razor.

Still another object is to provide such a razor that is economical to manufacture and efficient in operation and which is rugged in structure and foolproof in use.

These and other objects and advantages of the invention will become apparent from a reading of the following specification and claim, together with the accompanying drawings, wherein like parts are referred to and indicated by like reference characters and wherein:

FIGURE 1 is a side elevational view of the razor of the present invention.

FIGURE 2 is a view taken at right angles to the view shown in FIGURE 1.

FIGURE 3 is a sectional view of the razor.

FIGURE 4 is a sectional view taken on the line 4—4 of FIGURE 3.

FIGURE 5 is a fragmentary enlarged sectional view illustrating the movement of the sharpening and cleaning unit of the razor and showing the cover in opened position.

FIGURE 6 is a fragmentary perspective view showing the parts separated.

Referring in detail to the drawings, the numeral 10 indicates the razor of the present invention which is shown to include a handle that is indicated generally by the numeral 20, and the handle 20 comprises first and second body members 11 and 12 that are pivotally connected together as at 13. The first body member 11 includes a wall portion 14 that has a pair of spaced parallel side pieces 15 secured thereto or formed integral therewith, and the numeral 16 indicates an end piece which is likewise affixed to the body member 11.

The second body member 12 comprises a wall section 17 as well as a pair of spaced parallel side members 18, and the side members 18 are cut away or recessed as at 19, and as shown in the drawings the side members 18 straddle the side pieces 15 of the body member 11 when the parts are properly assembled. As shown in FIGURE 4 a tubular bushing 21 is secured to or formed integral with the side pieces 15 and extend between the side pieces 15, and the pivot pin 13 extends through the bushing or bearing 21.

The interior of the handle 20 is hollow, and arranged within the handle is a spring member 22, and as shown in FIGURE 3 for example the spring member 22 includes an end portion 23 that bears against or engages the wall portion 14 of the body member 11, and the spring member 22 further includes an intermediate coiled portion 24 that is circumposed on the bushing 21, and the spring

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member 22 includes an end portion 25 that bears against the wall section 17 of the body member 12.

The numeral 26 indicates a bracket that is secured to an end portion of the second body member 12, and the bracket 26 is provided with apertures or openings 27 therein whereby suitable securing elements such as rivets 28 can be extended through these apertures 27 and into engagement with openings 31 of a plate 32 whereby the bracket and plate are affixed together. However, other securing means can be used if desired or required, and for example the bracket and plate may be welded together or formed integrally as one piece. The bracket 27 is provided with an integral projecting tongue 29 thereon, and the numeral 30 indicates the point of connection or securement of the bracket 26 to the body member 12.

The plate 32 is provided with an enlarged recess or opening 33 therein, and the recess 33 is partially bounded by spaced parallel fingers 34, and the numeral 35 indicates a bridge piece which inter-connects the fingers 34 together, and as shown in FIGURE 5 for example, the bridge piece 35 is adapted to be provided with serrations or fine teeth 36. The rear portion of the plate 32 is recessed as at 37 for a purpose to be later described.

The razor is adapted to use a conventional razor blade such as the single edge razor blade 38 which includes the usual back portion 39 as well as the cutting edge 40.

As shown in FIGURE 5 a cover 41 is provided, and the cover 41 has a finger engaging lug or tab 42 thereon, and there is provided within the lug 42 an opening or recess 43. The cover 41 is hingedly or pivotally connected to the plate 32 by means of trunnions or pintle pins 44. The cover 41 is provided with a shoulder 45 that is integral therewith or secured thereto, and the numeral 46 indicates a spring piece which has an end portion 47 secured as by welding to the body member 12, and the spring piece 47 further includes an end portion 48 that is adapted to selectively engage the shoulder 45 of the cover 41 whereby the cover 41 can be readily maintained in either opened or closed position as desired or required.

The razor of the present invention further includes a sharpening and cleaning unit or hone that is indicated generally by the numeral 49, and the unit 49 is of a cross-section that is generally U-shaped in configuration so that the unit 49 comprises an upper and lower portions 50 and 51 that are interconnected or joined by an intermediate connecting portion 52. The numeral 53 indicates a base that is secured to or formed integral with a projecting portion 54 of a spring element 55, and the spring element 55 also includes a portion 56 that is secured as by welding to the body member 11. A hinge member 57 is pivotally supported or mounted in the base 53, and the hinge member 57 is secured to or formed integral with the sharpening and cleaning unit 49. The unit 49 is provided with an opening or aperture 58 that is arranged in the portion 52 thereof, and this opening 58 provides clearance for the tongue 29 which extends therethrough, and the tongue 29 is secured to the bridge piece 35 of the plate 32.

From the foregoing, it is apparent that there has been provided a razor which is provided with a built-in sharpener and cleaner, and in use with the parts arranged as shown in the drawings, it will be noted that the blade 38 is adapted to be supported on the plate 32, and when the razor is being used for shaving, the cover 41 is in the closed position, as for example as shown in solid lines in FIGURE 1. When the blade 38 is to be removed or replaced, the cover 41 can be pivoted upwardly from the solid line position of FIGURE 1 to the position shown in broken lines, and the lug 42 is adapted to be

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manually engaged in order to pivot the cover to its opened or closed position. The cover 41 has the integral shoulder 45 which is adapted to be engaged by the portion 48 of the spring 46, so that for example with the parts in the position of FIGURE 5 it will be seen that the portion 48 of the spring 46 engages the shoulder 45 of the cover 41 in order to hold the cover 41 in open position. The cover 41 is hinged to the plate 32 by means of the trunnions 44, and the space 43 provides clearance for the portion 48 of the spring 46 to project therethrough. When the cover 41 is to be closed, it is only necessary to apply slight finger pressure to the lug 42 so that the cover 41 can move from the open position of FIGURE 1 to a closed position in order to cause the cover to be arranged over the razor blade 38. When the cover 41 is in closed position the spring portion 48 engages an edge of the shoulder 45 as for example as shown in FIGURE 3 so as to urge or bias the cover into its closed position in order to help prevent accidental opening of the cover.

The razor is adapted to be used in the usual manner for shaving, and when the edge 40 of the blade 38 is to be sharpened, it is only necessary to manually squeeze together the members 11 and 12 and cause these members to pivot about an axis extending through the pin 13. As the members 11 and 12 have finger pressure applied thereto, the spring 22 will be compressed, and when pressure is released on the members 11 and 12 the spring 22 will return the members 11 and 12 from a position such as that shown in solid lines in FIGURE 3 to the broken line position of FIGURE 3. As the members 11 and 12 are squeezed together, the unit 49 will be moved relative to the blade 38 so that the hone portion 50 will slide back and forth in engagement with the lower surface of the cutting edge 40 of the blade 38 in order to sharpen the blade. When manual pressure is released on the members 11 and 12, the spring 22 will return the parts to their normal position so that the unit 49 will be spaced rearwardly from the edge 40 in order to permit the razor to be used in the regular manner for shaving. This sharpening action between the razor blade and unit 49 takes place because the unit 49 is connected to the hinge member 57 which is carried by the base 53, and the base 53 is secured to the spring 55, and the spring 55 is formed integral with or secured to the body member 11. Thus, as the members 11 and 12 move relative to each other about the pivot 13, the unit 49 will move back and forth in engagement with the lower edge or surface 40 so as to sharpen the edge 40, and it is to be understood that the portion 50 of the unit 49 may be made of a suitable material that will sharpen the razor blade cutting edge with the desired degree or amount of sharpness or fineness.

It is to be noted that the sharpening unit 49 is operatively connected to the member 11 by means of a yieldable connection which includes the spring 55 and the hinge 57, and this construction serves to insure that the portion 50 of the unit 49 will be urged or biased into engagement with the lower surface of the cutting edge 40 so that the honing portion or surface 50 will be maintained or urged in engagement with the cutting edge of the blade and whereby the honing surface 50 will follow a contour of the razor blade in order to insure that the proper contacts will be maintained between the portion 50 and the edge 40 whereby the desired sharpening or cleaning can take place. The unit 49 is mounted for movement back and forth through the space 33 of the plate 32, and the tongue 29 which extends through the opening 58 in the unit 49 serves to help guide the unit 49 whereby the unit 49 will be maintained in its proper aligned position as it moves back and forth. The serrated or roughened portion 36 of the bridge piece 35 helps insure that the razor can move smoothly across the face of the user, and this surface 36 also helps guide the hair follicles into proper position to be shaved or cut off.

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The plate 32 is firmly secured to the body member 12 through the medium of the bracket 26, so that it will be seen that in effect as the members 11 and 12 are squeezed together manually, the unit 49 and blade 38 will move relative to each other so that the desired or necessary sharpening or cleaning of the blade can take place. Flanges or shoulders 59 are on the plate 32, and help hold the blade 38 in place so as to prevent accidental shifting of the blade during the sharpening and cleaning thereof.

The parts can be made of any suitable material and in different shapes or sizes.

By holding the razor under water and moving the unit 49 back and forth as previously stated, any soap, hair or other foreign matter that may be clinging to the blade 38 will be scraped off so that the unit 49 will not only function as a sharpening device but will also provide a means for readily and conveniently cleaning the razor. Also, the surface 50 will have a double sharpening action since the sharpening will take place as the unit 49 moves back and forth beneath the razor blade. In other words the razor has a two way sharpening and cleaning device. The razor blade in the razor will therefore have a longer life since it can be sharpened and used over and over again. The razor is provided with a wide opening for facilitating insertion of the blade therein, and the razor is made so that it will have the power needed for pressing the blade down for a comfortable shave.

With the parts arranged as shown in the drawings, it will be seen that after shaving, the razor can be placed under running water and then the members 11 and 12 can be pressed together so as to move the sharpener and cleaner forward relative to the razor blade, and when pressure is released from the members 11 and 12 the attachment or unit 49 will return to the original position, and by repeating this action several times the blade will be simultaneously sharpened and cleaned.

The present invention is adapted to be incorporated in a safety razor wherein an automatic cleaner and sharpener is built into the razor.

While certain embodiments of the invention have been illustrated and described in detail, it will be obvious that the invention may be otherwise embodied and the dimensions and interrelation of parts changed so long as the objects of the invention are attained.

What is claimed is:

A razor comprising a handle embodying first and second body members pivotally connected together, said first body member including a wall portion having a pair of spaced parallel side pieces affixed thereto, an end piece affixed to said side pieces and wall portion; said second body member including a wall section having a pair of spaced parallel side members integral therewith, said side members straddling said side pieces, a tubular bushing extending between said side pieces and affixed thereto, a pivot pin extending through said bushing and pivotally connecting said side members and side pieces together, a spring member having an intermediate portion thereof coiled on said bushing, said spring member having end portions engaging said wall portion and wall section; a bracket secured to an end portion of said second body member, a tongue affixed to said bracket, a plate secured to said bracket and said plate being provided with a recess which is bounded by spaced parallel fingers and a bridge piece which interconnects the fingers together, said tongue being secured to said bridge piece, said plate adapted to have a razor blade positioned thereon, a spring pressed cover hingedly connected to said cover; a spring element having an end portion secured to said first body member and said spring element including an outer portion having a support member providing a base thereon, a hinge member including a portion pivotally connected to said base, a sharpening and cleaning unit affixed to said hinge member, and said sharpening and cleaning unit being movably mounted in the recess in said

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plate, said sharpening and cleaning unit including upper and lower portions which are interconnected by a back portion, and said back portion having an opening therein for the projection therethrough of said tongue.

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