O. KAMPFE.

SAFETY RAZOR.

APPLICATION FILED MAR. 26, 1920.

1,391,478. Patented Sept. 20, 1921.

Fig. 1

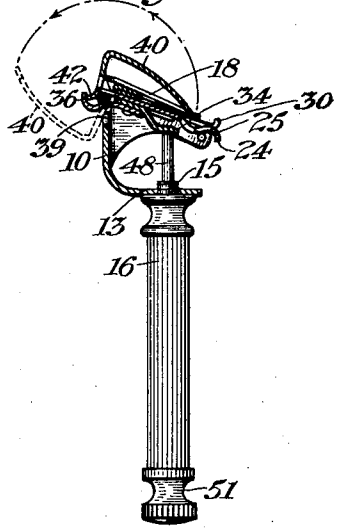


Fig. 2

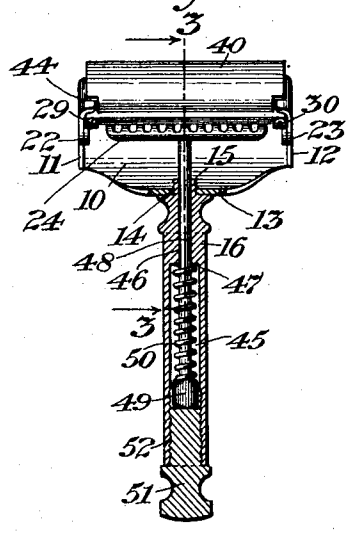


Fig. 3

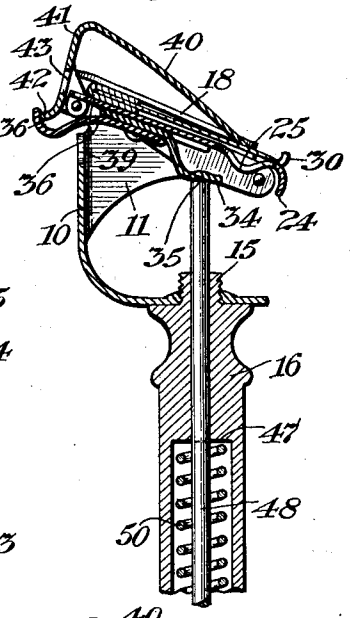


Fig. 4

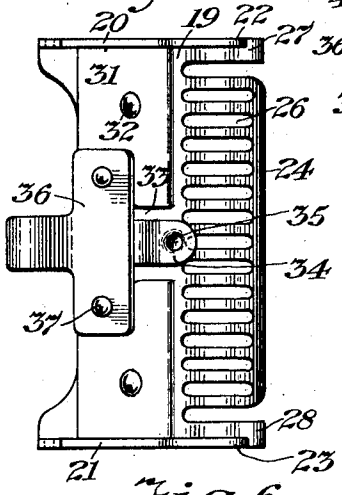


Fig. 5

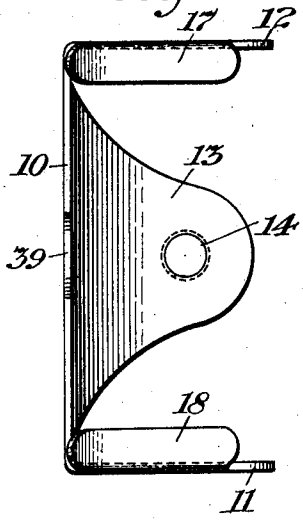


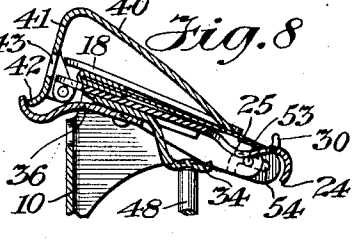
Fig. 6



Fig. 7



Fig. 8



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SAFETY-RAZOR.

1,391,478. Specification of Letters Patent. Patented Sept. 20, 1921.

Application filed March 26, 1920. Serial No. 368,878.

To all whom it may concern:

Be it known that I, OTTO KAMPFE, a citizen of the United States, residing at Bellmore, in the county of Nassau and State of New York, have invented an Improvement in Safety-Razors, of which the following is a specification.

This invention relates to a safety razor and more particularly to that type of safety razors in which a swinging guard has been employed. I am aware that heretofore safety razors have been made with swinging guard members, and in such instances, for example, the blade has been secured in position in the razor frame by a cam operated by a lever. One of the features of my present invention is to so construct a safety razor in which a pivoted guard member is employed so that there will be a double or dual gripping action between the guard and the razor blade and the frame of the razor, and also between the handle and its attachment to the frame of the razor so as to prevent the handle from twisting and becoming loose in the frame in the use of the instrument. I am also aware that heretofore it has been proposed in safety razor structures to employ a rod or spindle passing through the handle and adjustable from the end thereof to engage a razor blade to secure the same in position in the frame of the razor, but so far as I am aware no safety razor structure has been heretofore devised in which the double yielding gripping action has been proposed or employed. In the razor as constructed in accordance with this invention, the securing of the razor blade in position by the adjustable device is operative from the end of the handle which device also causes a gripping action between the connection between the handle and the razor frame so as to prevent the handle from turning in the frame when the razor is being used. This safety razor also includes a cap or cover which also acts as a support or holder for the razor blade, if necessary, in removing the same from the frame, and this is another novel feature of the present invention. Furthermore, in the razor made in accordance with this invention, the guard member may be so constructed as to be removable from the frame and thus adjustable to position therein so that by adjusting the guard member to any one of its pivotal positions or employing different guard members, the relative positions of the edges of the razor blade to the comb section of the guard member may be varied depending upon the cut which it is desired to make by the instrument; that is, whether it is desired to make a short cut to obtain a close shave or a long cut to obtain a shave which is not so close and smooth. These, with other features of my invention, will be hereinafter more particularly described.

In the drawing:

Figure 1 is an elevation and partial cross section illustrating the safety razor made in accordance with this invention.

Fig. 2 is an elevation and partial cross section showing the razor in another position.

Fig. 3 is a section on line 3—3, Fig. 2.

Fig. 4 is an inverted plan view of the guard member.

Fig. 5 is a plan view of the razor frame with the guard member and handle removed.

Fig. 6 is a partial plan and cross section of the end of a guard member which is removable from the frame.

Fig. 7 is a plan of a portion of the end of a frame adapted to receive the removable guard, and

Fig. 8 is a cross section illustrating the removable guard mounted in a razor frame.

Referring to the drawing, the safety razor made in accordance with this invention preferably comprises a frame 10 made of suitable metal or other material and provided with end members 11 and 12 and a base portion 13 in which there is an opening 14 which is tapped and adapted to receive a screw threaded shank 15 provided for this purpose at one end of a handle 16. The frame or body of the razor also includes guide members 17 and 18 which are inturned at right angles from the upper edges of the end members 11 and 12 respectively.

The razor also includes a guard member, the body portion of which is indicated at 19 and which at the extremities is provided with ends 20 and 21 formed at right angles thereto and adapted to fit within and extend between the end members 11 and 12 of the body of the razor. As illustrated in Figs. 1, 2 and 3 of the drawing, the guard member may be pivotally connected to the end members of the frame at the pivots indicated at 22 and 23. This pivoted guard member

is provided with a comb structure adjacent the outermost edge when the guard is in position in the frame, this edge of the pivoted guard being indicated at 24 adjacent which the edge portion of the guard is curved as indicated at 25, the comb structure in this portion of the pivoted guard being provided with series of preferably parallel slots 26. At the extremities of the guard member the end portions 20 and 21 thereof have the usual stop arms 27 and 28 to determine the position of the razor blade when placed in the frame, one surface of the razor blade at the ends thereof bearing against these stop arms and the edge of the razor blade at the extremities thereof contacting with projections 29 and 30 turned up respectively at the extremities of the stop arms to properly position the razor blade relatively to the pivotal guard and the frame. On the inner or under side of the pivotal guard member I fix a plate 31. This plate 31 may be secured to the guard member by rivets 32 or otherwise, and approximately centrally there are recesses 33 in the outer edge of the plate 31 so as to provide a spring 34 provided in its inner or under surface with a recess 35 for the purpose which will be hereinafter indicated. Also as illustrated, a plate 36 may be secured to the plate 31 by rivets 37 or otherwise, and this plate 36 is provided with an extension 38, the material of which the plate 36 is made being sufficiently resilient to cause the projection 38 when properly bent or curved to function as a spring for the purpose also hereinafter indicated. The upper edge of the frame body 10 is centrally recessed as indicated at 39 in order to receive the spring projection 38 when the pivoted guard member is in a released position.

In constructing the razor made in accordance with this invention, I also employ a cover member 40. This cover member includes a flange 41, the end 42 of which is centrally extended and outturned to act in conjunction with the spring extension 38 to maintain the cover yieldingly in its position for use in which it extends over the larger portion of the razor blade when in position in the instrument, and also by the connection of the plate 37 to the guard member to exert a yielding pressure upwardly applied at approximately the central portion of the guard so as to cause the same to yieldingly press against the razor blade when in place. The flange 41 of the cover is also provided with an aperture 43 of sufficient length when in the proper position to receive the spring extension 38 of the flange of the cover when the cover is turned out of its normal operative position and to the dotted line position, for example, as shown in Fig. 1 in which the cover acts as a support for receiving the razor blade, if so desired, when the razor blade is removed from the instrument. Furthermore, the cover member, as clearly indicated in Fig. 2 of the drawing may be provided with notches or cut away portions 44 in order to clear the guide members 17 and 18 and permit the free edge of the cover to come into contact with the outer surface of the razor blade when the instrument is in use.

The handle member 16, as illustrated, is provided with bores of different diameters, one of these bores is indicated at 45 and is of larger diameter than the other bore which is indicated at 46 so that a shoulder 47 is provided interiorly in the handle 16. I also employ a rod 48 which is of such a diameter as to pass through and snugly fit in the bore 46. The rod 48, at one end, is adapted to fit into the recess 35 provided in the spring member 34, and at its opposite end within the bore 35 of the handle is provided with a head 49 which preferably is of such a diameter as to snugly fit, but to be movable in the bore 45. Surrounding the rod 48 and extending between the shoulder 47 and the adjacent side of the head 49 there is a helical spring 50. The outer end of the handle is fitted with a button 51 having a screw threaded shank or extension 52 adapted to fit and be turned to position in the tapped outer end of the handle member. It will now be understood that the tension of the spring 50 is sufficient to normally force and maintain the head 49 against the end of the shank 52 and that in using the instrument the button 51 is unscrewed so that the head 49 may follow the shank 52 and in so doing cause the opposite end of the rod 48 to be removed from the spring 34. With the parts in this position and the cover turned back to the dotted line position shown in Fig. 1, the razor blade is placed on the pivoted guard member and the button 51 turned in the opposite direction so as to cause the shank 52 to enter the handle and force the rod 48 upwardly against the action of the spring 50 until the outer end of the rod engages the recess 35 in the spring 34 and forces the pivoted guard member to position with the razor blade in place between the same and the guide members 17 and 18 so that the razor blade through the action of the spring 34 will be maintained yieldingly in place in the instrument so that with this yielding pressure, as well as that exerted by the cover member through the spring extension 38 the guard member is forced against the blade when in position by the double yielding grip to which reference has hereinbefore been made. Furthermore, in so adjusting the parts to place it will be understood that the action of the spring 50 coacting with the rod 48 and through the tension placed on the pivotal guard member exerts an increased friction between the inner end of the handle

and the adjacent portion of the base 13 of the frame of the razor with which it contacts, causing a sufficient frictional contact between these parts to prevent the accidental loosening of the handle by turning in the frame during the use of the instrument.

By reference to Figs. 6, 7 and 8, it will be seen that the guard member instead of being connected positively, that is fixedly in the frame member by the pivotal points, may be removably connected therein by providing pins 53 in the outer ends of the frame members 11 and 12 and providing the ends 20 and 21 of the guard member with slots 54 adapted to receive the pins 53 so that any one of a number of different guard members may be removably connected to the frame so as to be pivotally mounted therein, these guard members being so constructed that the relative distances from the edge of the blade to the edge of the guard is different so as to determine the nature of the cut which is made by the instrument in the use thereof.

I claim as my invention:

1. In a safety razor, a frame, a handle therefor, a guard mounted in the frame, a tension device connected to the guard and extending from one edge of the guard and beneath the same toward the opposite edge, and means operated through the handle for engaging the tension device to yieldingly hold the guard in position in the frame for use.

2. In a safety razor, a frame, a handle therefor, a guard pivotally mounted in the frame, a tension device connected to one edge of the guard extending beneath the same toward the other edge, a rod extending through the handle, a button at the free end of the handle, and devices for normally maintaining one end of the rod in the position against the button so that the same may be adjusted to position to bear at its opposite end against the said tension device to yieldingly secure the guard in position in the frame for use.

3. In a safety razor, a frame, a guard member mounted therein, a handle connected to the frame, a spring secured to the guard adjacent the rear portion thereof and having a part extending toward the front of the guard and spaced therefrom, and means associated with and operated through the handle for engaging the said forwardly extending part of the spring to yieldingly engage the same to hold the guard member in position against a razor blade for use.

4. In a safety razor, a frame, a guard member mounted therein, a tension device associated with the guard member, a handle connected to the frame, a cover member pivotally mounted in the said frame and adapted when in position for use to engage a part of the said tension device, and adjustable devices associated with and operated through the said handle for engaging another portion of the said tension device so that through the coöperation of the engagement with the tension device by the said cover and the adjustable devices in the handle the guard is yieldingly held in position to correspondingly maintain a razor blade in place for use.

5. In a safety razor, a frame, a guard member pivotally mounted therein, a cover member also pivotally mounted in the frame, a handle connected to the frame, a spring member connected to the said guard adjacent the rear portion thereof and having a part extending rearwardly therefrom to be engaged by a portion of the said cover when in position for use and a part extending forwardly and spaced from the said guard member, and devices adjustable in and operated through the handle for engaging the forwardly extending portion of the said spring to exert a yielding pressure against the guard member thereby coacting with the cover member to yieldingly maintain the guard member against a razor blade when in position for use.

6. In a safety razor, a frame, a guard member pivotally mounted therein, a spring attached to and extending from the said guard member, a handle, a rod extending through the handle, a head on the said rod, a button at the outer end of the handle, and a spring bearing against the said head so as to maintain the same in contact with the said button so that the latter may be moved to adjust the said rod to position against the action of the spring to cause the inner end of the rod to bear against the spring attached to the pivoted guard member in order to yieldingly maintain the guard member in position for use.

7. In a safety razor, a frame, a guard member pivotally mounted therein, a handle associated with the frame, a cover member pivotally mounted in the frame, means coacting between the said cover member and pivotally mounted guard for exerting a yielding pressure against the said guard when the cover member is in its normal position, the said cover member being adapted to act as a support for a razor blade in removing the same when the cover is turned to its inoperative position.

8. In a safety razor, a frame, a guard member pivotally mounted therein, a tension device associated with the said guard, a cover member also pivotally mounted in the said frame and having an extension adapted to coöperate with the said tension device for causing a yielding pressure to be exerted against the said pivotally mounted guard when the cover member is in its normal position for use.

9. In a safety razor, a frame, a guard member pivotally mounted therein, a spring connected to and extending from the said guard member, a cover member also pivotally mounted in the said frame, and an arm extending from the said cover member adapted to engage with the said spring for causing a yielding tension to be exerted against the said guard member when the cover is in its normal position for use.

10. In a safety razor, a frame, a guard member pivotally mounted therein, a cover member also pivotally mounted in the frame, a handle, means coacting between the cover and the guard for exerting a yielding tension against the guard when the cover is in its normal position, and means associated with the guard and devices cooperating with the same through the handle for also exerting a yielding tension against the said guard to further assist in maintaining the same in position for use.

11. In a safety razor, a frame, a guard member pivotally mounted therein, a handle, a tension device extending from the said guard member, an arm extending from the said cover and adapted to bear against the tension device when the cover is in its normal position for causing a yielding tension to be exerted against the said guard, and means associated with the guard and coacting with the devices operated through the handle for also exerting a yielding tension against the said guard to further yieldingly maintain the same in position for use.

12. In a safety razor, a frame, a guard member pivotally mounted therein, a cover member also pivotally mounted in the frame, a handle connected to the said frame, means coacting between the guard and the cover for exerting a yielding tension against the said guard when the cover is in its normal position, a spring associated with the said guard, a rod extending through the handle, a button adjustable to position at the outer end of the handle, and means for maintaining one end of the rod in contact with the button so that by the adjustment of the button the rod may be moved to bear against the said spring to further exert a yielding tension against the said guard member in maintaining the same in position for use.

13. In a safety razor, a frame, a guard pivotally mounted therein, a cover also pivotally mounted in the said frame, a handle associated with the said frame, a spring associated with and extending from the said guard, an arm extending from the said cover and adapted to coact with the said spring for exerting a pressure against the said guard when the cover is in its normal position, a second spring also associated with and spaced from the said guard, a rod extending through the said handle, a button associated with the outer end of the handle, and means for maintaining one end of the said rod against the said button so that by adjusting the button the said rod is caused to bear against the said second spring to further yieldingly maintain the said guard in position for use.

14. In a safety razor, a frame comprising a body portion and end members, there being a slot and bearings in the said end members, guard members, and pivot pins extending from oppositely disposed position in the said guard member and adapted to enter the said slots and to be seated in the said bearings in the ends of the frame to pivotally mount the said guard member in a removable manner in the said frame.

Signed by me this 1st day of March, 1920.

OTTO KAMPFE.