

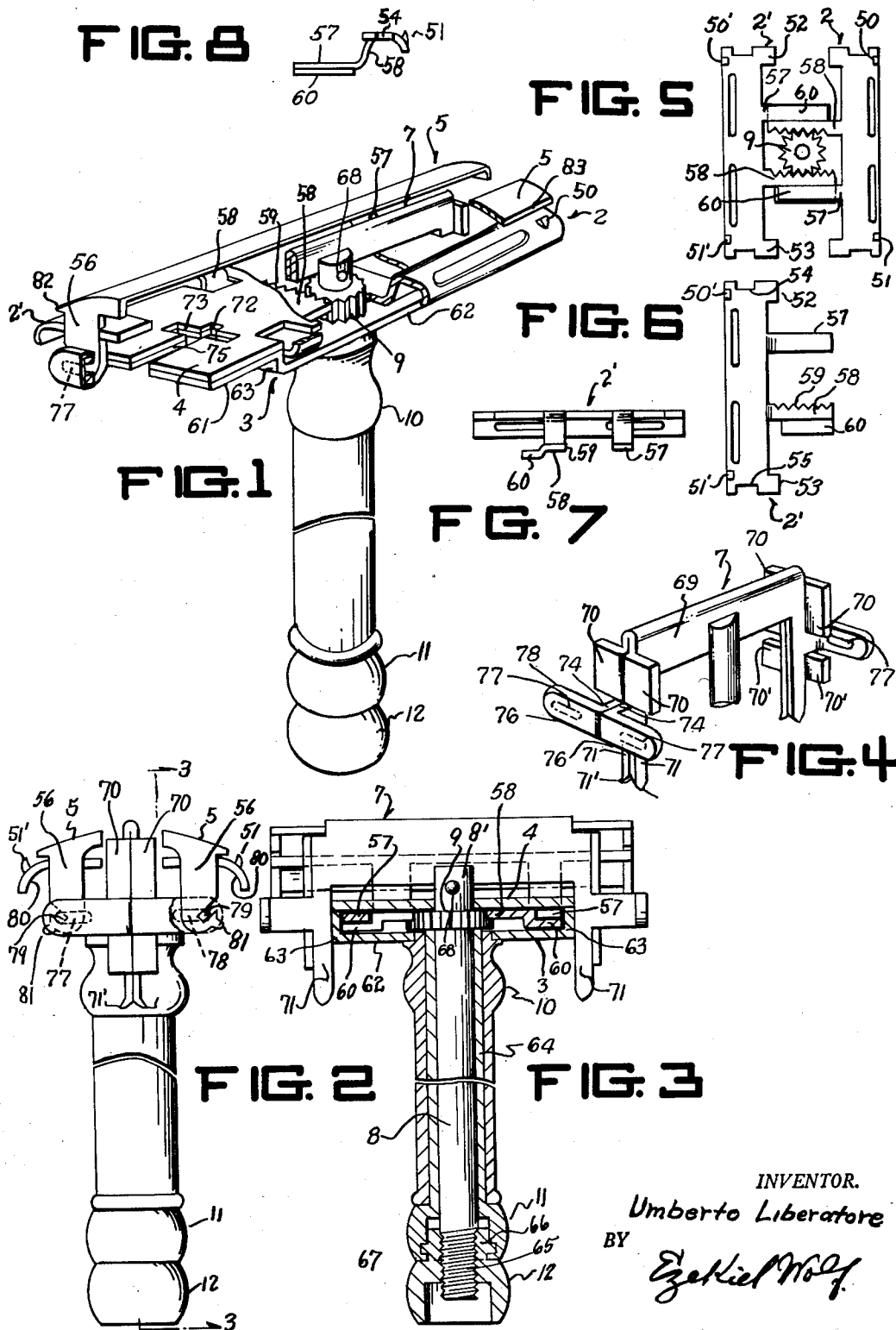
July 17, 1956

U. LIBERATORE
SAFETY RAZORS

2,754,583

Filed July 16, 1952

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

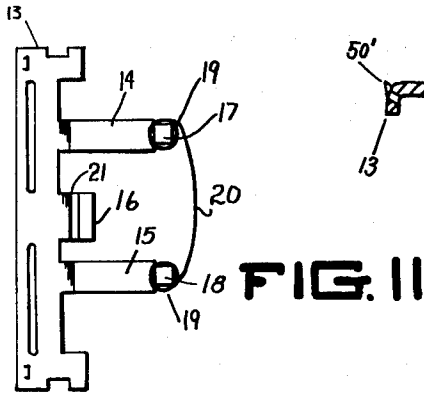


FIG. 11

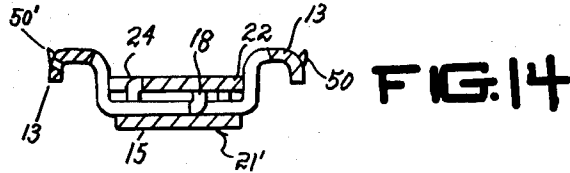


FIG. 14

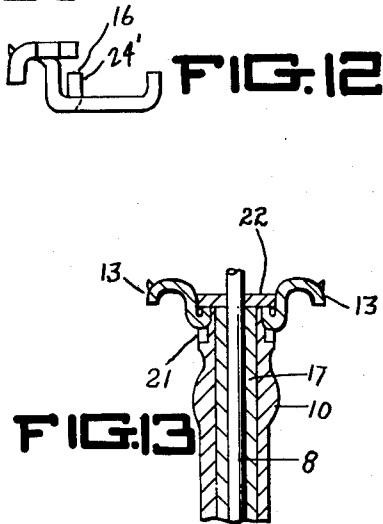


FIG. 13

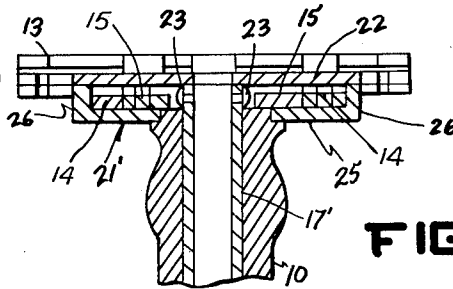


FIG. 10

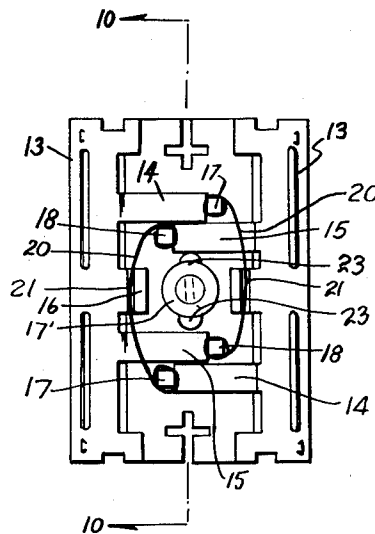


FIG. 9

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2,754,583

SAFETY RAZORS

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17 Claims. (Cl. 30—60.5)

The present invention relates to safety razors and in particular to the common double edged blade razor which has a removable blade clamped or secured in a holder with a guard adjacent the edge of the blade to control the cut of the blade for preventing the blade from cutting the flesh. It is noticeable in razors of this type that very often a new blade is apt to produce skin cuts, particularly when the blade is used for the first time. While these cuts may in some cases be produced because of the sharpness of the edge of the blade, this appears to be rather unlikely. I have found that one of the chief causes of cutting by the blade is excess exposure of the blade's edge beyond the effective protection of the guard, such exposure being measured in the magnitude which the blade's edge extends beyond the guard and the cap or clamping member which holds the razor blade to the guard.

In the present invention I have overcome the difficulties which cause the cutting in the use of most new blades and also used blades by providing means for adjusting the position of the blade with regard to the guard and also the cap. This adjustment makes it possible to use many factory rejected blades, new blades and used blades which have been resharpened again and again without any danger of cutting and also providing the necessary exposure for a good close shave.

For this purpose the invention provides means for moving the guard; and cap and clamp member both inwardly and outwardly in the proper automatic positioning of the blade. This provision is also highly useful since blades which vary slightly from the standard width due to inaccuracies in manufacture need not be rejected but can be used as successfully as blades which are all first quality which meet the standard specifications of dimensions.

A further feature of the present invention is that the razor permits the blade to be changed easily and to be clamped in position for proper shaving without any effort on the part of the user. The razor is also simple to assemble and inexpensive to manufacture. These and other features of the present invention will be best understood and appreciated from the following description in the specification set forth below when taken in connection with the drawings illustrating the invention in which:

Figure 1 is a perspective view of the razor with portions broken away to show the interior construction.

Figure 2 is an end view of the razor shown in Figure 1.

Figure 3 is an elevation shown substantially on the section line 3—3 of Figure 2.

Figure 4 is a perspective view of the element known as the spanner of the razor shown in the other figures.

Figure 5 is a plan view of the assembly of the pair of razor guards used in the present invention.

Figure 6 is a detail of one of the razor guards shown in Figure 5.

Figure 7 is a side elevation of the elements shown in Figure 6, as seen from the right of Figure 6.

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Figure 8 is a detailed view of the elements shown in Figure 7, when viewed from the right of Figure 7.

Figure 9 is a view of a modification of the guard member of the arrangement shown in Figures 1—8.

Figure 10 is a vertical elevation of the modification shown in Figure 9 showing the razor head taken substantially on the section 10—10 of Figure 9.

Figure 11 is a plan view showing the left hand guard as viewed from above of Figure 9.

Figure 12 is an end view of the element shown in Figure 11.

Figure 13 is a sectional view taken substantially on the line 13—13 of Figure 9, and,

Figure 14 is a sectional view taken substantially on the line 14—14 of Figure 9.

In the arrangement shown in Figures 1—8 inclusive the razor head is provided with two guards 2 and 2' upon which a razor blade rests. These guards each have projections or bosses 50 and 51 for the right hand guard and 50' and 51' for the left hand guard which project slightly from the surface of the guards near the end corners of the guards against which the edge of the blade near its ends rests when it lies on the guard. The guards 2 and 2' are similar in construction and both have side surfaces downwardly arched from a substantially flat top surface against which the plate is clamped by means which will later be described. These guard members are constructed of heavy metal and may be die formed, pressed or made in any other suitable manner, and this also applies to practically all of the elements of the razor. The guard is further provided with two inwardly extending ears 52 and 53 at the ends of the guard along the outer edge of which are two square shaped recesses 54 and 55 which receive the dependent projecting arms or plates 56 extending from the end edges of the cap member 5, which comes down over the top surfaces of the blade and provides the other elements of the clamping and guard alignment as will be later described. Continuing with the guard member 2 it will be seen that this member has an inwardly and downwardly projecting arm 57 extending from the inner side of each guard and a second inwardly projecting arm 58 also projecting from the inner long side of the guard. The arm member 58 is provided at its inner side edge with a series of gear teeth forming a rack 59 which meshes with the pinion gear 9 rotatably in the symmetrical center of the razor. From the side of the arm 58 opposite to the edge upon which the rack is formed is a downwardly and outwardly projecting arm or plate member 60 which is arranged parallel to the plate member 58 but offset from it at a lower level equivalent to the thickness of the arm 57. The purpose of this is so that the arm 57 of the opposite guard member may lie on top of the arm or plate member 60 with its top surface at the same level as the top surfaces of the arm member 57 of the other guard member. That is to say; the two guard members as indicated in Figure 5 interlock, with the arm extension 57 resting over the arm extension 60 offset to one side and below the rack of the same guard member. The two guard members may be formed from the same die.

As will be seen also from Figure 5 and from Figure 1, the racks 59 of each of the guard members mesh with the gear 9 so that when the gear 9 turns, the guards either move outwards together or inward together. Both guards slide outwards and inwards on the fixed or main supporting frame 3 of the razor. This is made up of a top plate 4 and a bottom plate 61. The bottom plate 61 has an offset or depressed central section 62 forming a hollow section to receive the hollow handle or shaft 10 which may have a forced fit or secured in any suitable manner

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in the bottom of the plate 61. The plates 4 and 61 may be held together in any suitable way by braising, welding, riveting or they may be held by screws in which event it is possible to separate the two sections of the support or frame. The recessed or depressed portion 62 of the lower frame element has such a width so that the side shoulders 63 serve as side guides for the edges of the plate member 60 of the guard extension arms and also as side guides for the side edges of the arms 57. It will also be noted from Figure 3, that the surface of the top plate 4 also serves as a guide for the top surface of the arms 53 carrying the racks 59 while the section 62 of the bottom plate serves also as a guide for the underneath base of the offset plates 60. Elements 57 and 60 of the opposing guards overlay one another in sandwich fashion so that the guards themselves while movable inwardly and outwardly of the frame or support are rigidly held in aligned motion without up or down or side movement.

The hollow shaft 10 carries within inner surface, a sleeve 64 which at the end is provided with a knob 11, rigidly secured to it by means of which the sleeve 64 may be rotated within the tube 10. The sleeve 64 at its top has the pinion gear 9 previously mentioned rigidly secured to it so that it will turn when the knob or handle 11 is turned and thereby move the guards either outwards or inwards to conform to the blade width, so that the edges of the blade may be made to rest against the small bosses or projections 50, 51 and 50' and 51' as has been explained above.

It should be noted in the operation of this razor that the guards 2 and 2' only move outwardly and inwardly and not in perpendicular direction up and down. Within the rotatable sleeve 64 in the hollow tube or shaft 10 and concentrically positioned therewith is an inner shaft or tube 8 which is threaded at the end as indicated at 65 to receive a similarly threaded end knob 12. The end knob 12 is provided with an upwardly extending collar 66 which turns within the handle 11 and this collar is provided with an outwardly projecting rib 67 movably fitting in a corresponding groove on the inside wall of the knob or handle 11. The result of this is that while the knob 12 may be turned it does not move up or down but instead moves the shaft 8 up or down. The shaft 8 extends through a hole in the gear 9 and is centrally positioned with respect to the gear 9 so that a turning of the knob 12 will move the shaft 8 up or down in a vertical direction depending upon the direction of rotation of the knob 12. The shaft 8 is forked at its end 8' by a centrally located groove in which the top spanner member 7 is rigidly secured by means of a rivet 68 passing through the end extension 8' of the shaft through the spanner 7 in a transverse direction.

The spanner 7 may be welded, braised or force fitted to the end 8' of the shaft. The spanner 7 which is shown in perspective in Figure 4 is the member upon which the blade rests. For this purpose the blade should be provided with a punched out center section corresponding through which the lengthwise support 69 of the spanner fits so that it may be slipped over the top of the spanner and rest reasonably free but fully supported by it. The spanner 7 comprises the longitudinal bar member or support 69 and other elements which may be formed of an integral metallic sheet shaped as shown in Figure 4.

The longitudinal bar member 69 is formed by bending a single sheet upon itself with the faces of the sheet abutting and with the ends of the bent sheet folded outwards at right angles in aligned flanges 70, 70'. In the same plane as the flanges 70, 70' but spaced below them are a second set of flanges 70', 70' formed from a downwardly extending apron of the lower ends of the bar member 69. Between the flanges 70 and 70' the apron has outwardly extending arms 74, one from each end of the apron in the same plane as the apron, longitudinally with the bar 69 and at the end of these arms which lie face to face, the arms are bent outwards at right angles, forming plates or

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bars 76, 76 in alignment transversely of the longitudinal direction of the member 69.

The bars 76 have each a short groove 77 and 77 on their inner faces and the two aligned bars 76 are capped on the outer side by a cover 78. The apron at the ends of the member 69 have downwardly extending strips 71 extending below the ends of the flanges 70', 70', which strips 71 are in face contact with each other and at their very ends are turned outwards away from one another at 71', similar to the manner in which a cotter pin is opened to secure the spanner from being raised upwards beyond a desired distance. Both ends of the spanner 7 are the same so that the description above applies to both ends.

The plates 4 and 61 have in their end sections, a central longitudinally extending slot 72, 75 and a transversely extending slot 73. The transversely extending members 70 and 70' of the spanner fit into the transversely extending slot 73, while the outwardly extending arms 74 and the aprons extending downward from the ends of the member 69 fits into the slot 75, 72 which are aligned with one another on either side of the slots 73. The slots 72, 73, and 75 form a Maltese cross at both ends of the supporting plate or frame. The slots serve as a means of guiding the spanner in an up and down direction.

As has been mentioned the cap members 5 have at each end downwardly extending arms 56 from the outer end faces of which pins 79 project for engagement in the grooves 77. The caps 5 are therefore held by the spanner by means of these pins. Since however the arms 56 at the ends of the cap engage in the end slots 54 and 55 of the guards, they also must be movable with the guards which is only inwardly and outwardly in planes parallel to each other and to the supports on which the movable razor mechanism is mounted. It will be understood therefore that the inward and outward motion of the guards 2 and 2' carry with them the caps 5 and therefore the pins projecting outwardly from the ends of the arms 56 move along grooves or recesses 77, 77 in the cross arms 76 supported as a part of the spanner member as the caps 5 move. By turning the nut 12 the spanner is raised up and down together with the supported cap members 5 with the depending arms 56 with respect to the guards 2 which is relatively stationary. The guard member 2 is arched on its under side at its ends 80. When the projecting fingers 81 projecting from the outer corners of the depending arms 56 butt the arched corners 80 the caps are caused to open up outwardly at the top.

As viewed in Figure 2, the arm 56 at the right of the center moves in a clockwise direction and the arm 56 at the left of the center moves in a counterclockwise direction.

The operation and use of the razor readily follows from the description given above. By turning the knob 11 in a counterclockwise direction the two guards will be sent outwards the same amount, as measured by the movement of the racks 59 against the gear 9. The operator in using the razor should do this first; that is, separate the guards before turning the knob 12. Then by turning the knob 12, the spanner 7 will be raised. Raising the spanner 7 to the point where the fingers 81 come in contact with the underside of the guard will open up the caps 5 outwardly at the top to permit the insertion of the blade longitudinally over the support 69 of the spanner. When this has been accomplished the knob 11 should be turned to retract the guards until the small projections 50, 51 and 50', 51' come against the corner edges of the razor. This will carry inwardly the cap 5 so that the edges of the cap 82 and 83 will be in just the right position for the proper exposure of the blade. The knob 12 may then be turned to bring the cap down straight over the razor to clamp the razor in its properly aligned position.

Consideration of the description given above will show that relatively the outer edge 83 of the top clamping cap 5 will always have the same relative position as the projec-

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tions of bosses 50, 51 and 50', 51' and therefore the exposure of the blade edge with respect to the exposed section of the guard and clamping cap will always be the same and the cap also will have the same relative position. Even when the blades are resharpened or if the blades are not quite standard, this will always hold true. It should be noted in this respect that the inner slots in the razor blades are not such close fits with the spanner to prevent the guards on both sides of the blade to be brought up against the two blade edges. A true symmetrical alignment is therefore always maintained. Many of the razor blades are inefficient and poor, not because they are not properly held with the right amount of exposure for the blade. Too little exposure will prevent the edge from properly cutting, while too much exposure causes scratching and cutting particularly surface skinning which may be quite painful as well as dangerous.

In the modification shown in Figures 9, 10, 11, 12, 13 and 14, the structure differs from that shown chiefly in use of a spring retracting means for expanding the space between the guards. Referring more specifically to the figures the guards are indicated at 13 and are similar to the guards in the previous figures except that they are provided with inwardly extending arms 14 and 15 and a smaller inwardly extending arm 16. Each of the arms 13 and 15 are provided with upwardly extending posts 17 and 18, respectively, about which are positioned convolutions 19 of a spring 20 which spans the space between the two posts 17 and 18. The inner ends of these springs are fixed or secured to the posts so that small extension is provided between the spanning section of the spring 20. The central region of the spanning section of this spring strip engages in a slot 21 in the shorter arm 16 of the opposite guard. The guards are held in position in the supporting frame or head between a lower supporting plate 21' and an upper supporting plate 22, somewhat similarly as in the structure of the previous figures. The side-ways extension of the guards 13, 13 is obtained by means of the rotation of the sleeve 17' corresponding to the sleeve 64 in Figure 3. This sleeve carries at its top end, outwardly projecting fingers or bosses 23, positioned diametrically opposite from one another and adapted to bear against the inner side faces 24' of the arms 16 extending inwardly from the guards 13. When the sleeve 17' is turned 90° from the position shown in Figure 9, the guards 13 will be forced outward against the action of the spring strips 20 and this will permit the guard to be positioned against the blade when placed on the spanner which is of the same construction as in the modification of the Figures 1 to 8. Turning the sleeve 17' away from the above position allows the guards to come back against the blade by the action of the springs 20. The construction and operation of the cap member in conjunction with the spanner and the guards is also the same as shown in the first modification.

The construction of the razor head supporting plates 22 and 21' are somewhat different than the first modification. The plate 22 has fingers 24 pressed downward out of the metal of plate 22 which fingers bear upon the top of the arms 15 and hold the movement of the arms over the surface of the plate 21'. The top of the end posts 18 of the arms 15 lie against the bottom surface of the plate 22 thus also steadying the movement of the guards inward and outward. Besides this the posts 18 and the fingers 24 may be in transverse alignment to limit the motion of the guards outwardly.

The bottom plate 21' of the head support is recessed in its central region at 25 (Figure 10) so that the arms 14 have their side edges lying against the shoulders 26 of the bottom plate 21' similarly as in the construction of Figures 1-8.

Having now described my invention I claim:

1. A safety razor comprising a razor head adapted to

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hold a double edge blade, said head having at the top an elongated spanner member in a horizontally fixed non-rotatable position to receive said blade in a fixed position of symmetry with the spanner, two pair of guard and cap members, each pair symmetrically positioned longitudinally on each side of the spanner, the guard beneath the blade position and the cap above the same, means for bringing the guard and cap members on each side of the blade into a predetermined position with respect to the edges of the blade and means for clamping the cap members down on the blade.

2. A safety razor comprising a razor head adapted to hold a double edge blade, said head having at the top an elongated spanner member in a horizontally fixed non-rotatable position to receive said blade in a fixed position of symmetry with the spanner, a guard member and a cap member, means connected with said spanner engaging the cap member with the guard member for permitting the movement of the cap member towards or away from the guard member, and means independent of said spanner for moving both cap and guard members outwards and inwards of said spanner.

3. A safety razor comprising a razor head and hollow handle, a spanner member running lengthwise of the razor head on which a double edge blade may be supported, a pair of guard members supported in symmetrical positions on either side of the head, a shaft extending through said handle having means at its upper end connected with said guard members for moving the latter inwardly and outwardly with respect to said head, a pair of cap members connected with said guard members for movement therewith and means positioning the blade with respect to the guard and cap members.

4. A safety razor comprising a razor head and hollow handle, a spanner member running lengthwise of the razor head on which a double edge blade may be supported, a pair of guard members supported in symmetrical positions on either side of the head, a shaft extending through said handle having means at its upper end connected with said guard members for moving the latter inwardly and outwardly with respect to said head, including a gear on said shaft and racks extending from said guard members engaging said gear one on each side thereof, a pair of cap members connected with said guard members for movement therewith and means positioning the blade with respect to the guard and cap members.

5. A safety razor comprising a razor head and hollow handle, a spanner member running lengthwise of the razor head on which a double edge blade may be supported, a pair of guard members supported in symmetrical positions on either side of the head, a shaft extending through said handle having means at its upper end connected with said guard members for moving the latter inwardly and outwardly with respect to said head, a second shaft coaxially with the first shaft, means connecting said second shaft with said spanner, for raising the same, a pair of cap members connected with said guard members for motion towards or away from the same, means connecting said cap members with said spanner for providing said movement thereof and clamping the blade in a selected position with respect to said blade.

6. A safety razor comprising a razor head and hollow handle, a spanner member running lengthwise of the razor head on which a double edge blade may be supported, a pair of guard members supported in symmetrical positions on either side of the head, a shaft extending through said handle having means at its upper end connected with said guard members for moving the latter inwardly and outwardly with respect to said head, a second shaft coaxially with the first shaft, means connecting said second shaft with said spanner, for raising the same, a pair of cap members each positioned over one guard member, said cap members having downwardly extending side arms slidable up and down in grooves in the sides of said guards and hav-

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ing projecting pins engaging said spanner whereby the cap members may be moved up and down.

7. A safety razor comprising a razor head and hollow handle, a spanner member running lengthwise of the razor head on which a double edge blade may be supported, a pair of guard members supported in symmetrical positions on either side of the head, a shaft extending through said handle having means at its upper end connected with said guard members for moving the latter inwardly and outwardly with respect to said head, a second shaft coaxially with the first shaft, means connecting said second shaft with said spanner, for raising the same, a pair of cap members each positioned over one guard member, said cap members having downwardly extending side arms slidable up and down in grooves in the sides of said guards and having projecting pins engaging said spanner whereby the cap members may be moved up and down and means provided on the under side of said guard members and on said arms for pivoting outwards said cap members when they have been raised to a top position by the upward movement of said spanner.

8. A safety razor comprising a razor head having a longitudinal diametrical symmetry with a plate supporting member having transverse slot means between upper and lower parts of the plate, two pairs of guard and cap members having arms slidable positioned in said slot means from both sides of said plate, means for moving both guard and cap members simultaneously outwardly or inwardly and means for bringing down said cap members in said guard members for clamping a razor blade in position.

9. A safety razor comprising a razor head having a longitudinal diametrical symmetry with a plate supporting member having transverse slot means between upper and lower parts of the plate, two pairs of guard and cap members each guard member having two arms slidable positioned in said slot, means one arm of the guard members having an offset section below and parallel to the arm and the other arm of the guard parallel to the first arm and in the same plane said arms arranged so that when they are opposed to one another in the slot means the first arm of each guard engages the other arm of the other guard, means for moving both guard and cap members simultaneously outwardly or inwardly and means for bringing down said cap members in said guard members for clamping a razor blade in position.

10. A safety razor comprising a razor head having a longitudinal diametrical symmetry with a plate supporting member having transverse slot means between upper and lower parts of the plate, two pairs of guard and cap members each guard member having two arms slidable positioned in said slot, means one arm of the guard members having an offset section below and parallel to the arm and the other arm of the guard parallel to the first arm and in the same plane, said arms arranged so that when they are opposed to one another in the slot means the first arm of each guard engages the other arm of the other guard, means for moving both guard and cap members simultaneously outwardly or inwardly including a rack on the inner edges of said first arms and a rotatable shaft having a gear positioned to engage said racks on either side thereof for adjusting the position of said guards against the blades and means for bringing down said cap members on said guard members for clamping the razor blade in position.

11. A safety razor comprising a razor head having a longitudinal diametrical symmetry with a plate supporting member having transverse slot means between upper and lower parts of the plate, two pairs of guard and cap members each guard member having two arms slidable positioned in said slot, means one arm of the guard members having an offset section below and parallel to the arm and the other arm of the guard parallel to the first arm and in the same plane, said arms arranged so that when they are opposed to one another in the slot means

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the first arm of each guard engages the other arm of the other guard, means for moving both guard and cap members simultaneously outwardly or inwardly including a rack on the inner edges of said first arms and a rotatable shaft having a gear positioned to engage said racks on either side thereof for adjusting the position of said guards against the blades and means for bringing down said cap members on said guard members for clamping the razor blade in position said guard members having projection near the ends thereof, positioned to engage the corners of the blade for fixing the position of the blade's edges with respect to the guard and cap to regulate the exposure thereof.

12. A safety razor comprising a razor head and handle therefor said razor head formed with a pair of plates faced together to which the handle is secured, said plates having a longitudinal diametrical symmetry with a space between the plates in the central region running transverse of the longitudinal direction, a spanner member having a longitudinally extending bar with downward extensions slidable up and down through slots in said plates, said bar extending along the diametrical line of symmetry, two pair of guard and cap members, each pair positioned at the sides of the head extending in a longitudinal direction thereof, said guard members having arm supports slidable held in the space between the plates, said cap members having means slidable positioned for up and down with respect to said guards, means connecting said spanner with said last mentioned means for moving the cap members up and down and means independent thereof for moving the cap and guard members in and out.

13. A safety razor comprising a razor head and handle therefor said razor head formed with a pair of plates faced together to which the handle is secured, said plates having a longitudinal diametrical symmetry with a space between the plates in the central region running transverse of the longitudinal direction, a spanner member having a longitudinally extending bar with downward extensions slidable up and down through slots in said plates, said bar extending along the diametrical line of symmetry, two pair of guard and cap members, each pair positioned at the sides of the head extending in a longitudinal direction thereof, said guard members having arm supports slidable held in the space between the plates, said cap members having means slidable positioned for up and down with respect to said guards, means connecting said spanner with said last mentioned means for moving the cap members up and down and means independent thereof for moving the cap and guard members in and out both said means having operating shafts extending through said handle.

14. A safety razor comprising a razor head and handle therefor said razor head formed with a pair of plates faced together to which the handle is secured, said plates having a longitudinal diametrical symmetry with a space between the plates in the central region running transverse of the longitudinal direction, a spanner member having a longitudinally extending bar with downward extensions slidable up and down through slots in said plates, said bar extending along the diametrical line of symmetry, two pair of guard and cap members, each pair positioned at the sides of the head extending in a longitudinal direction thereof, said guard members having arm supports slidable held in the space between the plates, said cap members having means slidable positioned for up and down with respect to said guards, means connecting said spanner with said last mentioned means for moving the cap members up and down and means independent thereof for moving the cap and guard members in and out both said means having operating shafts extending through said handle including an outer shaft having gear connections with said arms of said guard and an inner shaft for raising said spanner.

15. A safety razor comprising a razor head and handle therefor said razor head formed with a pair of plates

faced together to which the handle is secured, said plates having a longitudinal diametrical symmetry with a space between the plates in the central region running transverse of the longitudinal direction, a spanner member having a longitudinally extending bar with downward extensions slidable up and down through slots in said plates, said bar extending along the diametrical line of symmetry, two pair of guard and cap members, each pair positioned at the sides of the head extending in a longitudinal direction thereof, said guard members having arm supports slidable held in the space between the plates, said cap members having means slidable positioned for up and down with respect to said guards, means connecting said spanner with said last mentioned means for moving the cap members up and down and means independent thereof for moving the cap and guard members in and out both said means having operating shafts extending through said handle including an outer shaft having cam connections with said guards and an inner shaft for raising said spanner.

16. A safety razor comprising a razor head and handle therefor said razor head formed with a pair of plates faced together to which the handle is secured, said plates having a longitudinal diametrical symmetry with a space between the plates in the central region running transverse of the longitudinal direction, a spanner member having a longitudinally extending bar with downward extensions slidable up and down through slots in said plates, said bar extending along the diametrical line of symmetry, two pair of guard and cap members, each pair positioned at the sides of the head extending in a longitudinal direction thereof, said guard members having arm supports slidable held in the space between the plates, said cap members having means slidable positioned for up and down with respect to said guards, means connecting

said spanner with said last mentioned means for moving the cap members up and down and means independent thereof for moving the cap and guard members in and out both said means having operating shafts extending through said handle, said guards each having a strip spring extending from one arm across to the other arm of a guard and having a part attached to the opposite guard whereby when the guards are moved outwards said springs will be tensioned, said operating shafts including an outer shaft having cam connections with said guards for forcing said guards apart and an inner shaft for raising said spanner.

17. In a safety razor as set forth a spanner member formed of an integral metal sheet with the bar section folded upon itself on a longitudinal line of symmetry and the ends of said folded section having a plurality of outwardly extending flanges at right angles to the bar section, one flange of each section being aligned with a corresponding flange of the other section transversely of the bar section with transversely extending grooves on the inner sides of said flange sections said aligned flanges being spaced longitudinally from said bar section, the other outwardly extending flanges being positioned at the ends of said bar section, and also aligned one with the other.

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