

Sept. 1, 1925.

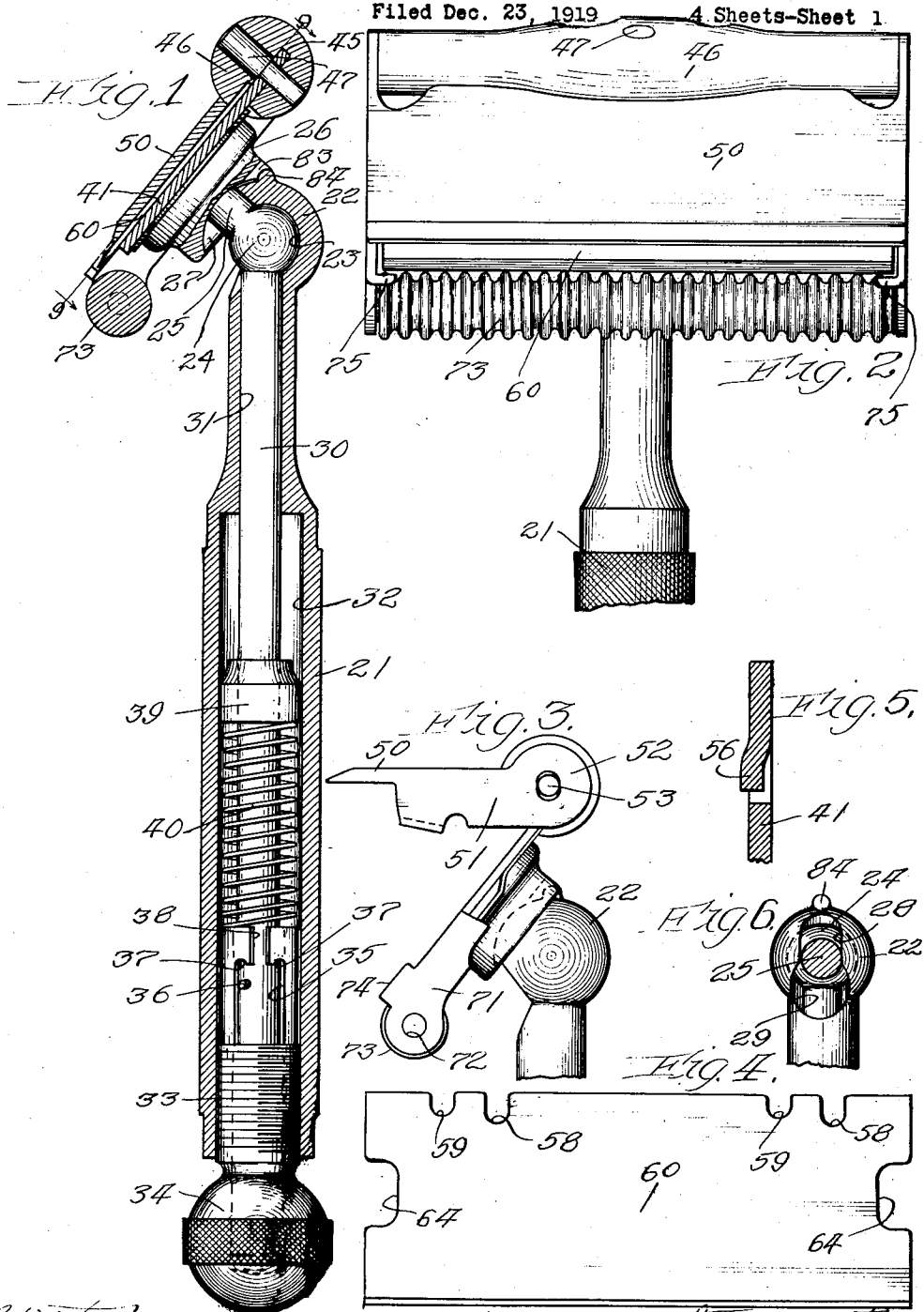
1,552,234

A. C. ROEBUCK

SAFETY RAZOR

Filed Dec. 23, 1919

4 Sheets-Sheet 1



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Sept. 1, 1925.

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SAFETY RAZOR

Filed Dec. 23, 1919

4 Sheets-Sheet 2

Fig. 7.

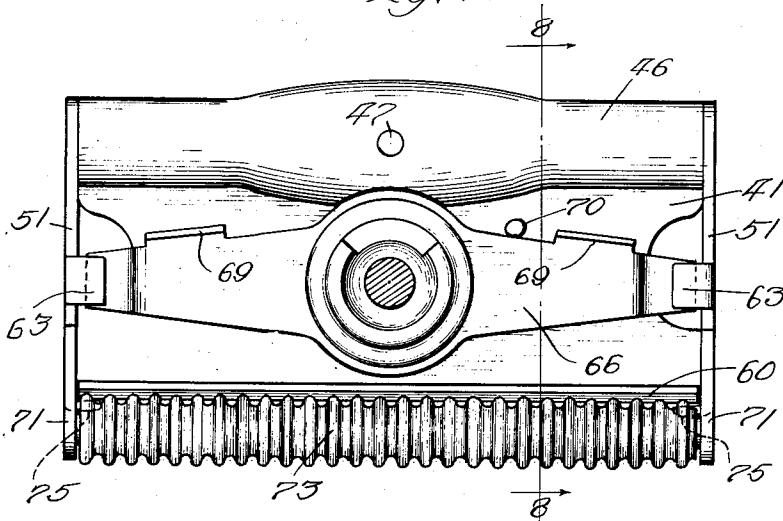


Fig. 8.

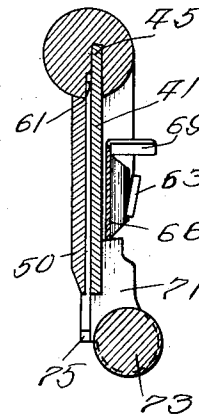


Fig. 9.

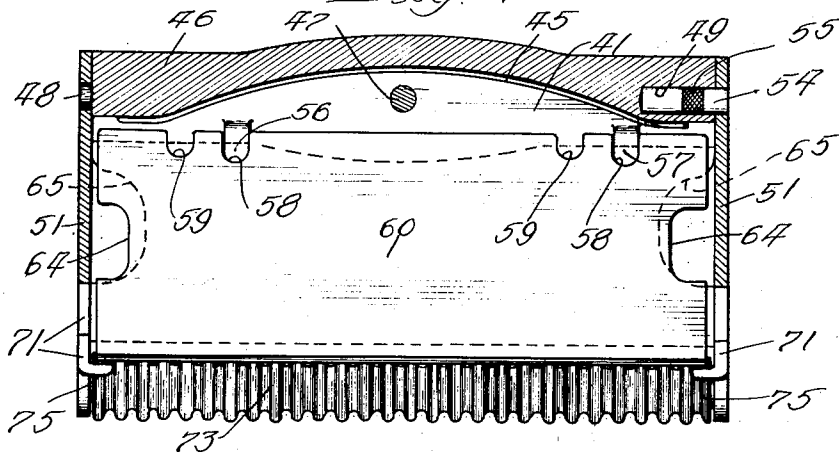
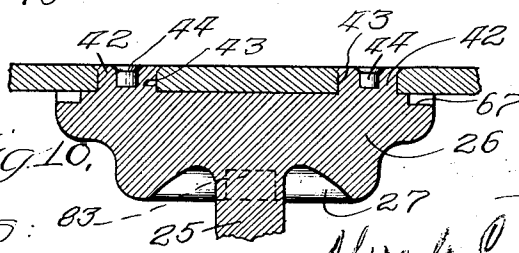


Fig. 10.



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SAFETY RAZOR

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4 Sheets-Sheet 3

Fig. 11.

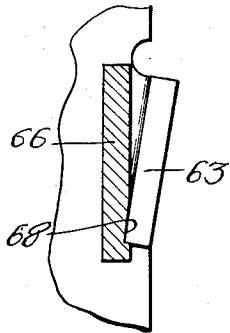


Fig. 12.

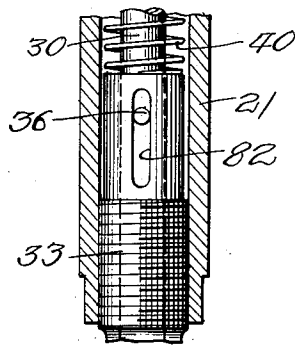


Fig. 13.

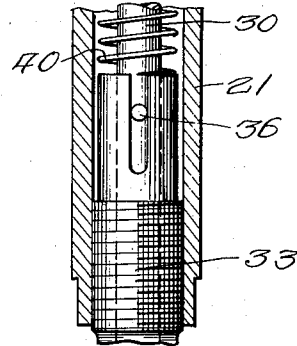


Fig. 14.

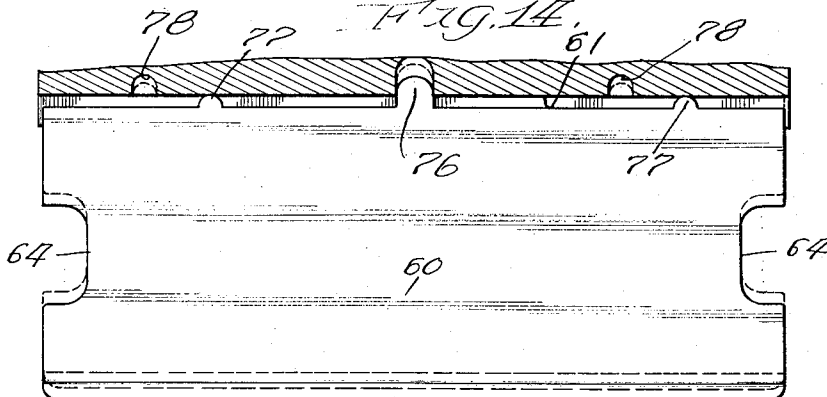
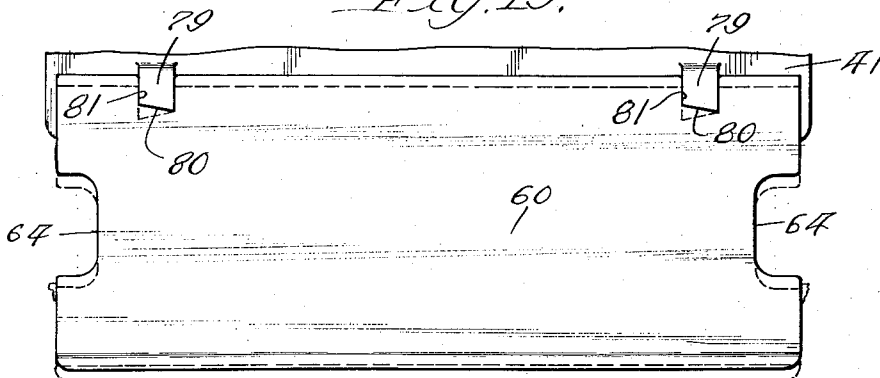


Fig. 15.



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SAFETY RAZOR

Filed Dec. 23, 1919

4 Sheets-Sheet 4

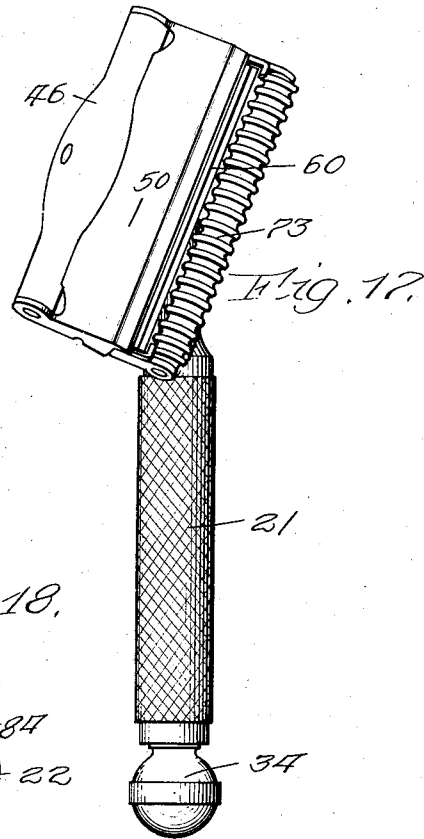
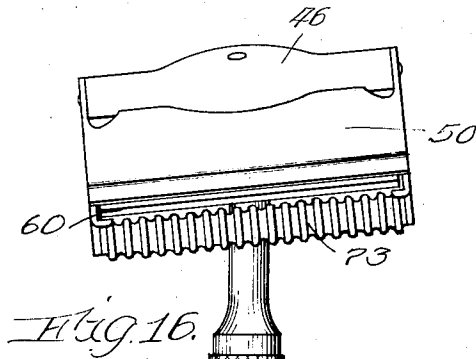
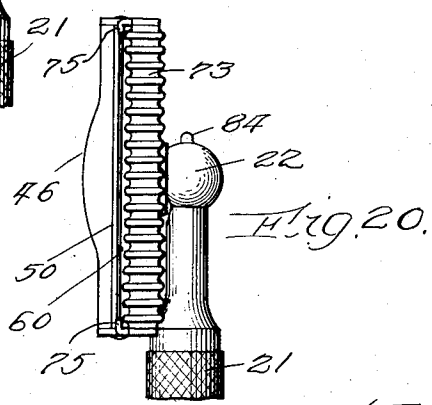
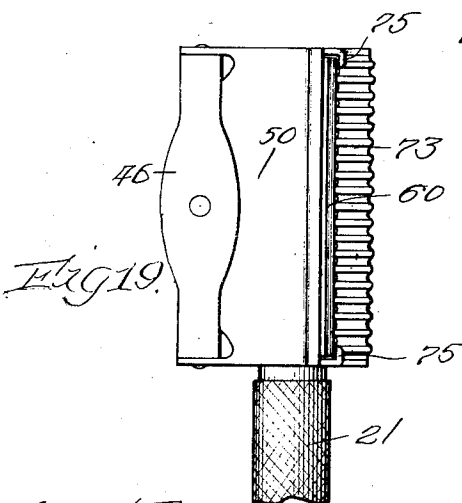
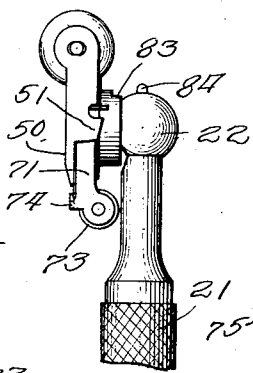


Fig. 18.



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UNITED STATES PATENT OFFICE.

ALVAH C. ROEBUCK, OF EVANSTON, ILLINOIS.

SAFETY RAZOR.

Application filed December 23, 1919. Serial No. 346,929.

To all whom it may concern:

Be it known that I, ALVAH C. ROEBUCK, a citizen of the United States, residing at Evanston, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Safety Razors, of which the following is a specification.

This invention has for its object the provision of a device of the class named which shall be of improved construction and operation.

The invention is exemplified in the combination and arrangement of parts shown in the accompanying drawings and described in the following specification, and it is more particularly pointed out in the appended claims.

In the drawings—

Fig. 1 is a longitudinal sectional view of a safety razor showing one embodiment of the present invention;

Fig. 2 is a view looking from the left in Fig. 1 with the handle broken away;

Fig. 3 is a view looking from the right of Fig. 2, the blade holder being open and the blade removed;

Fig. 4 is a plan view of one form of blade forming a part of the invention;

Figs. 5 and 6 are fragmentary drawings showing details of construction;

Fig. 7 is a view of the handle side of the blade holder with the connecting neck for the ball connection shown in section;

Fig. 8 is a sectional view on line 8—8 of Fig. 7;

Fig. 9 is a sectional view substantially on line 9—9 of Fig. 1;

Figs. 10 and 11 are sectional views showing details of construction;

Figs. 12 and 13 are fragmentary sectional views showing modified details of construction;

Figs. 14 and 15 show blades having different means for providing adjustment thereof; and

Figs. 16 to 20, inclusive, show various positions of adjustment of the blade holder or head.

In the embodiment of the invention illustrated in the drawings the numeral 21 designates a hollow handle provided with a ball-shaped socket member 22 at one end thereof. The member 22 is provided with a spherical opening 23 in its interior which receives a ball 24 having a neck 25, connecting it with

a head 26, as shown in Fig. 10. The head 26 about its connection with the neck 25 is concave, as shown at 27, to conform to the outer periphery of the socket member 22. The member 22 is slotted, as shown at 28, to accommodate the neck 25 and to permit the head 26 and the blade holder carried thereby to be tilted to various angular positions relative to the handle 21. The end of the slot 28 limits the angular position of the blade holder, as shown in Fig. 1, to about 45 degrees relative to the handle 21, which is generally recognized as being the proper angle in shaving. The slot 28 near the handle 21 is enlarged, as shown at 29, Fig. 4. This permits the ball 24 to be moved into and out of the socket 23 in the member 22 by a slight movement of the ball downwardly out of its normal position. When the ball 24 is in its normal position, as shown in Fig. 1, it is held in place in the socket by the sides of the slot 28, and the ball is retained in this position by a plunger 30 arranged to slide in an opening 31 in the handle 21. The end of the plunger 30 is concave to conform to the contour of the ball 24 so that when the plunger engages the ball with a slight pressure only, the ball may be turned in its socket. When the end of the plunger is forced into firm contact with the ball, in a manner to be described, the ball will be clamped by the plunger against movement in the socket.

The central opening in the handle 21 is enlarged, as shown at 32, and the interior of the opening adjacent its lower end is threaded to receive a regulating screw 33 provided with a knurled ball 34 by which the screw 33 may be rotated. The screw 33 is centrally bored to receive the lower end of the plunger 30 and the upper portion of the side of the screw is cut away, as shown, to provide a double bayonet slot 35. The plunger 30 is provided with a pin 36 arranged to move up and down in the slot 35 and to engage notches 37 at each side of the slot to limit the upward movement of the plunger 30 relative to the screw 33. A narrow central passage 38 permits the pin to move into and out of the bayonet slot 35 so that the plunger 30 may be connected and disconnected with the screw 33. The plunger 30 is provided with a collar 39 fixed thereto intermediate the ends thereof, and a spring 40 is interposed between the collar

39 and the end of the screw 33 and normally tends to force the plunger 30 away from the screw 33 and to cause the ends of the plunger 30 to bear resiliently against the ball 24. This resilient pressure of the plunger 30 against the ball 24 permits of adjustment of the ball in the socket 23 and yet frictionally retains the ball in any adjusted position to which it is moved. When it is desired to lock the ball and the blade holder carried thereby in fixed position in the socket 22, the member 34 is screwed into the end of the handle 21 until the lower end of the plunger 30 engages the bottom of the opening in the screw 33. After this engagement further rotation of the member 34 will positively force the plunger 30 into locking engagement with the ball 24 and clamp the ball against movement in the socket 23. Thus by merely rotating the ball 34 at the end of the handle the plunger 30 may be adjusted to permit frictional movement of the blade holder into various positions of adjustment or to positively clamp the blade holder in any one of its adjusted positions. By unscrewing the member 34 a sufficient distance the ball 24 may be permitted to move into a position opposite the opening 29 in which position the entire blade holder may be readily removed from the handle. When the member 34 is unscrewed from the handle 21, the spring 40 will force the plunger out of the opening in the screw 33 until the pin 36 engages one of the notches 37. This will prevent the plunger 30 from being ejected from the screw 33, and the screw 33 may be entirely removed from the handle 21 which will permit withdrawal of the plunger 30, the screw 33, and associated parts, all intact away from the handle. It is, of course, unnecessary to remove the plunger entirely from the handle during the ordinary use of the razor, but this may be done where inspection of the mechanism within the handle is desirable for any purpose, as for cleaning the parts to prevent corrosion and gumming, thus permitting them to work freely.

The head 26 carries a bed plate 41 upon which the blade-holding mechanism is mounted. A pair of studs 42 are formed integral with the head 26 and fit into openings 43 in the plate 41. After the studs 42 have been placed in position a pointed tool is driven into openings 44 in the studs 42 which spreads the ends of the studs 42 into the counterbored portion in the openings 43. In this way a countersunk riveted connection is provided between the head 26 and the plate 41 in a very simple and efficient manner, and one which permits the parts to be plated and polished before assembling.

The bed plate 41 at its rear edge, as shown most clearly in Figs. 1 and 9, extends into a slot 45 cut into a roll or bar 46. The plate

41 and the roll 46 are held together by a pin 47 driven through registering openings in the roll and plate. The roll 46 at one end is provided with a pivot stud 48 formed integrally therewith, and at its opposite end is provided with an opening 49 in axial alinement with the stud 48. A blade clamp or cover plate 50 is provided with bent over ends 51, shown best in Fig. 3, which form flanges at each end of the bed plate 41 and roll 46. The rear end of the flanges 51 are extended to form ears 52, and each ear is perforated with an opening 53 which is elongated in a direction transverse to the plane of the cover plate 50. In assembling the device the opening 53 in one of the ears 52 is placed over the stud 48, and the other ear 52 is moved into position to bring the opening 53 therein into alinement with the opening 49 in the end of the roll 46. A pin 54 is then driven through the opening 53 into the opening 49 to cooperate with the stud 48 in providing a hinge bearing for the cover plate 50. The pin 54 has a portion of its periphery serrated, as shown at 55, to hold the pin in place in the opening 49.

The bed plate 41 is provided with bosses 56 and 57 struck up from the plane thereof, as shown in Figs. 5 and 9. These bosses are unequally spaced from the respective ends of the bed plate and are arranged to cooperate with notches 58 and 59 in the rear edge of a blade 60. Each pair of notches 58 and 59 is unsymmetrical relative to the length of the blade 60 and they are arranged so that when the blade is placed upon the bed plate 41 in one position the notches 58 will register with the bosses 56 and 57. When the blade is reversed, however, that is, turned end for end, the notches 59 will register with the bosses 56 and 57. Since the notches 58 are of a different depth from the notches 59 the edge of the blade 60 will be held in one position when the deeper notches are in cooperation with the bosses 57 and will be held in a more advanced position when the shallower notches are in engagement with the bosses 56 and 57. Thus it will be possible to adjust the blade for either a medium or a close shave simply by reversing the position of the blade in the holder.

It will be observed from Figs. 8 and 9 that the slot 45 for the bed plate 41 fits the bed plate closely in the rear portion thereof, but is enlarged at its front portion, as shown at 61, to receive the rear edge of the blade 60. This will prevent the blade from being placed in the holder in such position that it will rest upon the bosses 56, because it is impossible to insert the rear edge of the blade into the slot 61 unless the bosses 57 are in registration with one or the other of the sets of notches 58 or 59. The blade is placed in position in the holder while the cover plate 50 is open, as shown in Fig. 3.

after which the cover plate is closed in which position it bears upon the entire upper surface of the blade 60. Each flange 51 of the cover plate carries a projection 63 which is turned inwardly and which passes through a notch 64 in the end of the blade 60 and through a corresponding notch 65 in the end of the bed plate 41 when the cover plate is swung into closed position. The notches 65 are preferably larger than the notches 64 to facilitate grasping of the blade for handling. A spring latch 66 is pivotally mounted in a groove 67 on the head 26 beneath the bed plate 41, as shown best in Fig. 7. The ends of the spring latch 66 pass behind the projection 63 on the cover plate to hold the cover plate in its closed position. The projections 63, as shown in Fig. 8, are inclined, and the inclination of the two projections is in opposite directions so that as the latch 66 is moved into place it produces a wedging action tending to draw the cover plate 50 tightly against the upper face of the blade 60. The elongated openings 53 in the ears 52 permit the cover plate to be drawn tightly against the blade at all portions of the surface thereof as no part of the cover plate is held stationary by its pivotal connection. The plate, however, is held against movement in the direction of the plane thereof since the elongated openings 53 permit movement of the plate upon its pivot in one direction only in addition to the pivotal movement about the axis of the pivot.

As shown in Fig. 11, the ends of the spring latch 66 may be notched, as illustrated at 68, to receive the corner of the projection 63. In this way the spring latch 66 will be held against accidental displacement when the cover plate is locked in closed position. Ears 69 on the edges of the latch 66 are bent upwardly to form finger pieces by which the latch may be swung upon its pivot into and out of locking position. Since the latch 66 will be swung always in one direction for opening, a stop 70 may be provided for limiting the movement of the latch in the opposite direction.

Forward portions of the ends of the bed plate 41 are bent over, as shown at 71, in Figs. 3, 7, 8 and 9, to form ears having openings 72 in which a guard roller 73 is journaled. The roller 73 may be provided with longitudinally spaced peripheral grooves, as shown, and bears upon the face in shaving to properly gauge the position of the blade and to guard against cutting the skin. A closed or open comb, or any other well-known or approved guard may be substituted for the roller 73. The upper edges of the ears 71 are provided with extensions 74 which carry inwardly bent projections 75 extending in front of the edge of the blade 60 at the corners thereof. The projections

75 cooperate with the bosses 56 and 57 in locating the blade in the holder, and also serve as guards for the corners of the blades to prevent the corners from cutting the skin. The rear ends of the ears 71 are shaped to conform to the forward ends of the flanges 51 so that when the cover plate is closed the flanges 51 and the ears 71 will lie in the same plane and form a substantially continuous plate at each end of the blade holder.

In Fig. 14 is shown a modified form of blade and corresponding modifications in the holder in which the blade is provided with a centering projection 76 and projections 77 for adjusting the position of the edge of the blade. The projections 77 are arranged non-symmetrically relative to the blade so that when the blade is in the position shown in the figure, the projections 77 will bear against the rear edge of the notch or groove 61 and thus fix the location of the forward edge of the blade. A pair of openings 78 are formed in the rear edge of the notch 61 in position to receive the projections 77 when the blade is reversed so that in the reverse position the blade may be moved rearwardly, as indicated in broken lines in Fig. 14, to provide an additional adjustment of the blade.

In the preferred form of the invention shown in Fig. 15, a pair of bosses 79 are struck up from the bed plate 41, the bosses being arranged symmetrically relative to the center line of the bed plate. The front ends of the bosses 79 are beveled, as shown at 80, and the blade 60 is provided with notches 81 symmetrically arranged relative to the length thereof and having the inner edges thereof beveled to correspond to the beveled portions of the bosses 79. In one position of the blade, as shown in full lines in Fig. 15, the beveled ends of the bosses 79 will fit the beveled portions of the notches 81 and the blade will have one position of adjustment. If the blade is reversed, however, the more advanced portions of the bosses 79 will strike the rearmost portions of the notches 81 and hold the blade in an advanced position, as shown in broken lines in Fig. 15.

In Fig. 12 a slightly modified handle construction is shown in which the screw 33 is provided with a straight slot 82 in place of the bayonet slot shown in Fig. 1. Where this construction is used the plunger 30 cannot be separated from the screw 33 after the parts have been once assembled unless the pin 36 be removed.

In Fig. 13 the slot 82 instead of being closed at its upper end is entirely open so that the plunger 30 may be removed from the screw 33, but in this construction the plunger 30 may be ejected from the screw by the spring 40 when the screw is removed from the handle 21, and the parts are not

held together outside of the handle as they are by the bayonet slot 35 in the form shown in Fig. 1.

It should be noted that the blade holder 5 is supported by the ball and socket joint very close to the handle so that adjustment of the holder relative to the handle does not throw the razor out of balance. In Fig. 16 the holder is shown in the ordinary shaving position. It will be seen that the holder 10 is swung to bring the edge of the blade at an angle to the axis of the handle so that when the blade is drawn over the face by movement of the handle, what is known as a draw-cut will be imparted to the blade. 15 In order that the holder may be accurately set at the proper angle to produce a draw-cut the head 26, as shown in Figs. 1 and 7, is provided with a notch 83 and the socket member 22 is provided with a boss 84 which 20 extends into the notch 83 when the blade holder is swung into shaving position. By tilting the holder about the axis of the neck 25 until the boss 84 engages one end or the other of the slot 83, the edge of the blade 60 is brought to the proper angle relative to the axis of the handle to give the best result when the blade is drawn over the face. The holder may be tilted in either direction 30 relative to the axis of the handle for shaving on opposite sides of the face, or to suit the preference of different users. The forward edge of the blade holder may be swung inwardly toward the handle, as shown in 35 Fig. 18, and in this position the holder and handle will occupy a very compact space. This position also frees the boss 84 from the notch 83 so that the blade holder may be swung into longitudinal alinement with the 40 handle, as shown in Figs. 19 and 20. This brings the handle and holder into a still more compact arrangement, since in this position the greatest lateral dimension is the width of the blade holder, and the greatest 45 thickness is the thickness of the blade holder, plus the diameter of the socket member 22.

Fig. 17 shows still another position of the blade holder relative to the handle in which 50 the plane of the holder is brought more nearly parallel with the axis of the handle than in Fig. 1 so as to free the boss 84 from the notch 83. The holder is then tilted into the angular position shown in Fig. 17 in 55 which position the razor may be used by a movement similar to that of razors of the old style. This position is especially convenient if a person wishes to use the razor for shaving the back of the neck. The end 60 of the handle may extend forwardly during such an operation so that the rear of the neck may be easily reached without the necessity of placing the hand farther back than the shoulder. The holder may, of course, 65 be reversed so that the edge of the blade is

on the opposite side from that shown in the drawings for shaving different sides of the back of the neck.

I claim:—

1. A safety razor comprising a blade 70 holder, a handle therefor, means for securing said holder to said handle with one face thereof substantially contiguous to said handle and with the opposite face thereof 75 directed laterally away from the axis of said handle for all positions of said holder, and means for yieldingly holding said blade-holder in various angular positions on said handle.

2. A safety razor comprising a blade 80 holder, a handle therefor, means for securing said holder to said handle with one face thereof substantially contiguous to said handle and with the opposite face thereof 85 directed laterally away from the axis of said handle for all positions of said holder, and means for yieldingly holding said blade holder in various angular positions on said handle and for clamping said holder in various positions of adjustment. 90

3. A safety razor comprising a blade holder, a handle therefor, means for securing said holder to said handle with one face thereof substantially contiguous to said 95 handle and with the opposite face thereof directed laterally away from the axis of said handle for all positions of said holder, frictional means for yieldingly holding said blade holder in various positions of adjustment on said handle, and means for tightening 100 said frictional-holding means to clamp said blade holder in adjusted positions.

4. A safety razor comprising a blade holder, a handle therefor, means for securing said holder to said handle with one face 105 thereof substantially contiguous to said handle and with the opposite face thereof directed laterally away from the axis of said handle for all positions of said holder, spring-pressed frictional means for holding 110 said blade holder in various positions of adjustment on said handle, and positive means for clamping said holder in adjusted positions.

5. A safety razor comprising a blade 115 holder, a handle therefor, a ball and socket joint for securing said blade holder to said handle, with one face of said holder substantially contiguous to said handle and with 120 the opposite face thereof directed laterally away from the axis of said handle for all positions of said holder, and spring-pressed frictional means for yieldingly holding said ball and socket joint in various adjusted 125 positions.

6. A safety razor comprising a blade holder, a handle therefor, a ball and socket joint for connecting said holder to said 130 handle, with one face of said holder substantially contiguous to said handle the

socket for said joint being formed in said handle and having an open side facing laterally from said handle with the portion at the end of the handle closed, a spring-pressed plunger for exerting resilient pressure on said ball and socket joint, and threaded means for locking said ball and socket joint in adjusted positions.

7. A safety razor comprising a blade holder, a handle therefor, and a ball and socket joint for securing a lateral face of said blade holder to the side of said handle, the socket of said joint having an opening of a size to permit removal of the ball from said socket when said ball and socket are moved into one position relative to one another to permit detachment of said blade holder from said handle.

8. A safety razor comprising a blade holder, a handle therefor, and a ball and socket joint for securing a lateral face of said blade holder to said handle, the socket of the side of said joint having an opening to render the parts of the joint separable when moved into one position with the plane of said holder approximately parallel with the axis of said handle, to permit detachment of said blade holder from said handle.

9. A safety razor comprising a blade holder, a handle therefor, and a ball and socket joint for securing a lateral face of said blade holder to the side of said handle in juxtaposition therewith, the socket of said joint having an opening through which the ball will pass when said parts are moved into one position relative to one another to permit detachment of said holder from said handle.

10. A safety razor comprising a blade holder, a handle therefor, and a ball and socket joint for securing a lateral face of said blade holder to the side of said handle in juxtaposition therewith, the socket of said joint having an opening through which the ball will pass, to permit detachment of said holder from said handle, when said parts are moved into one position relative to one another with the plane of said holder approximately parallel with the axis of said handle.

11. A safety razor comprising a blade holder, a handle therefor, a ball and socket joint for securing a lateral face of said holder to the side of said handle, the socket of said joint having an opening through which the ball will pass when moved into one position relative to said socket, to permit removal of said holder from said handle, means for clamping said ball and socket joint to hold said blade holder in fixed position on said handle, and resilient means for preventing accidental separation of the parts of said ball and socket joint when said clamping means is released to permit movement of said blade holder relative to said handle.

12. A safety razor comprising a blade

holder, a handle therefor, a ball and socket joint for securing a lateral face of said holder to the side of said handle in juxtaposition therewith, the socket of said joint having an opening through which the ball will pass when moved into one position relative to said socket, to permit removal of said holder from said handle, means for clamping said ball and socket joint to hold said blade in fixed position on said handle, and resilient means for preventing accidental separation of parts of said ball and socket joint when said clamping means is released to permit movement of said blade holder relative to said handle.

13. A safety razor comprising a blade holder, a handle therefor, a ball and socket joint for securing a lateral face of said holder to the side of said handle, the socket of said joint having an opening through which the ball will pass when moved into one position relative to said socket with the plane of said blade holder approximately parallel with the axis of said handle, to permit removal of said holder from said handle, means for clamping said ball and socket joint to hold said blade holder in fixed position on said handle, and resilient means for preventing accidental separation of the parts of said ball and socket joint when said clamping means is released to permit movement of said blade holder relative to said handle.

14. A safety razor comprising a blade holder, a handle therefor, a movable joint for holding said blade holder in various positions of adjustment on said handle with a lateral face of said holder directed toward the side of said handle and secured at a plunger in said handle for co-operating with said joint to secure said holder in adjusted positions, a threaded member separate from said plunger for exerting pressure thereon, resilient means for exerting pressure on said plunger, and means for retaining said threaded member and plunger in assembled relation when said plunger and threaded member are removed from said handle.

15. A safety razor comprising a blade holder, a handle therefor, a plunger arranged within said handle for holding said blade holder in position on said handle, a threaded member for exerting pressure on said plunger, a spring for moving said plunger relative to said threaded member, and a bayonet slot for holding said plunger in position relative to said threaded member when said threaded member is unscrewed relative to said handle.

16. A safety razor comprising a blade holder, a handle therefor, and a ball and socket joint for securing the end of said handle at one side thereof to said blade holder at a point immediately adjacent the face of said blade holder to permit angular

adjustment of said blade holder relative to said handle while maintaining a proper balance of said blade holder on said handle.

17. A safety razor comprising a blade holder, a handle therefor, a joint between said blade holder and said handle arranged to permit said holder to be moved to bring the plane of a blade therein into and out of shaving positions and to permit angular adjustment of the edge of said blade, means for limiting the angular adjustment of the edge of said blade, when the plane thereof is in proper shaving position, to insure proper angular shaving position of the edge of said blade.

18. A safety razor comprising a blade holder, a handle therefor, a joint for adjustably securing said blade holder to said handle, said joint being arranged to permit angular adjustment of the plane of said blade holder relative to said handle and also angular adjustment of the axis of said handle relative to the edge of a blade held in said blade holder, and means for limiting both of said angular adjustments to secure proper position of said blade holder relative to said handle.

19. A safety razor comprising a blade holder, a handle therefor, a ball and socket joint for connecting said blade holder to said handle, said ball and socket joint being arranged immediately adjacent the rear face of said blade holder, and a stop for limiting the movement of said ball and socket joint for determining the angular position of the edge of a blade in said blade holder.

20. A safety razor comprising a blade holder, a handle therefor, a ball and socket joint for connecting said blade holder to said handle, said ball and socket joint being arranged immediately adjacent the rear face of said blade holder, a stop for limiting the movement of said ball and socket joint for determining the angular position of the edge of a blade in said blade holder, and means for clamping said joint to hold said blade holder in adjusted position.

21. A safety razor comprising a blade holder, a ball joint member connected with said blade holder in juxtaposition with the rear face thereof, a handle for said blade holder having a socket member at one end thereof for receiving said ball to form a ball and socket joint therewith, said socket member having a slot therein for permitting movement of said blade holder to adjust the plane thereof relative to said handle, said ball being rotatable in said socket member to adjust the angle of the edge of said blade holder relative to said handle, and co-operating stops on said handle and blade holder for limiting the rotary movement of said ball in said socket when the plane of

said blade holder is in one position relative to said handle.

22. A safety razor comprising a blade holder, a ball joint member connected with said blade holder in juxtaposition with the rear face thereof, a handle for said blade holder having a socket member at one end thereof for receiving said ball to form a ball and socket joint therewith, said socket member having a slot therein for permitting movement of said blade holder to adjust the plane thereof relative to said handle, said ball being rotatable in said socket member to adjust the angle of the edge of said blade holder relative to said handle, and co-operating stops on said handle and blade holder for limiting the rotary movement of said ball in said socket when the plane of said blade holder is in proper position for shaving.

23. A safety razor comprising a blade holder, a ball joint member connected with said blade holder in juxtaposition with the rear face thereof, a handle for said blade holder having a socket member at one end thereof for receiving said ball to form a ball and socket joint therewith, said socket member having a slot therein for permitting movement of said blade holder to adjust the plane thereof relative to said handle, said ball being rotatable in said socket member to adjust the angle of the edge of said blade holder relative to said handle and co-operating stops on said handle and blade holder for limiting the rotary movement of said ball in said socket when the plane of said blade holder is at approximately 45° relative to said handle.

24. A safety razor comprising a blade holder, a handle therefor, a joint for securing said blade holder to said handle in juxtaposition therewith, said joint being arranged to permit said blade holder to be moved into a position so that the plane of said blade holder is arranged at an angle to the axis of said handle and so that the edge of the blade held by said blade holder is at an acute angle relative to a perpendicular to the axis of said handle, and means for limiting said acute angular position.

25. A safety razor comprising a blade holder, a handle therefor, and a joint for securing said blade holder to said handle, said joint being arranged to permit said blade holder to be moved to bring the plane thereof into and out of position parallel with the axis of said handle and to permit rotation of said blade holder into various angular positions relative to said handle while the plane of said blade holder is parallel with the axis of said handle and also while the plane of said blade holder is angularly arranged relative to the axis of said handle and means for limiting said ro-

tation when said blade holder occupies one angular position relative to said handle.

26. A safety razor comprising a handle member having an axial opening therein, a
5 plunger positioned within said opening, a member threaded in said opening and arranged to bear upon said plunger, a spring for pressing said plunger away from said threaded member, and a separable connection for retaining said plunger, spring and
10 threaded member in assembled relation independently of said handle.

27. A safety razor comprising a handle member having an axial opening therein,
15 a blade holder, a ball and socket joint for connecting said blade holder and handle member, a plunger arranged within said

opening for holding said ball and socket joint against movement, a member threaded in said opening, and a spring interposed between said member and said plunger for
20 exerting yielding pressure on said plunger for certain positions of said threaded member, said threaded member being arranged to engage said plunger to exert positive force
25 thereon for other positions of said threaded member, and stops for limiting the movement of said plunger and threaded member under the influence of said spring.

In testimony whereof I have signed my
30 name to this specification on this 17th day of December A. D. 1919.

ALVAH C. ROEBUCK.