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O. SPAHR

SAFETY RAZOR

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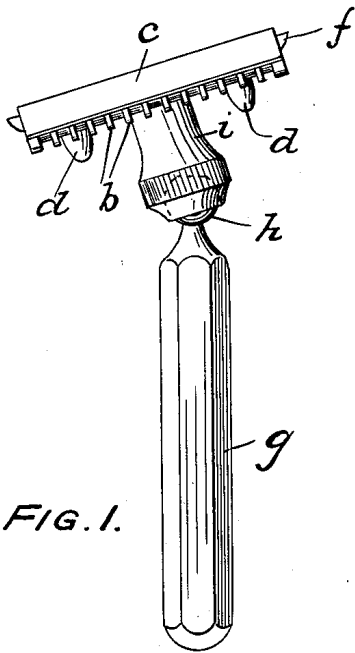


FIG. 1.

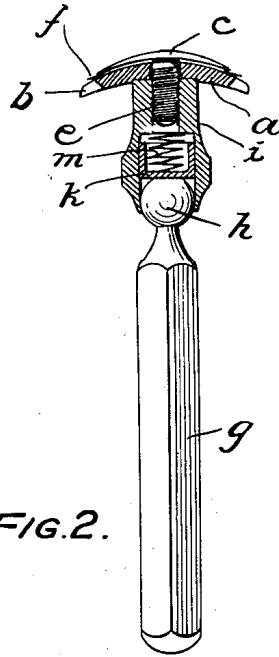


FIG. 2.

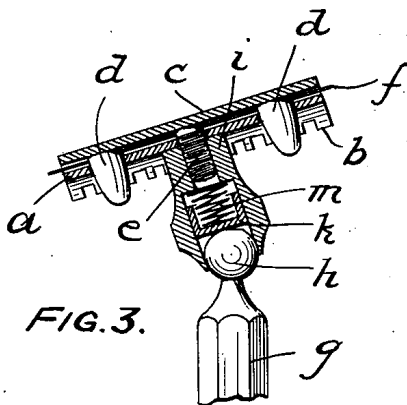


FIG. 3.

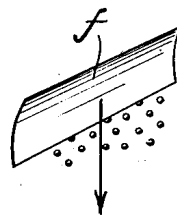


FIG. 4.

WITNESS:

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SAFETY RAZOR.

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In the commonly used type of safety razor, the axis of the handle extends at right angle to the longitudinal direction of extension of the blade. The natural and most convenient mode of operating such a razor is to pull it across the surface of the face in a direction at right angles to the cutting edge of the blade. This results in a scraping action which effects a bending of the hairs before their severance, with the result that there is a pulling action on the hair and a failure to effect a shave of maximum closeness. In other words, the razor is not then operated in a highly efficient way and the user experiences more or less discomfort. Consequently the user is advised to hold the handle at such an angle to the intended direction of movement of the blade that the cutting edge will be moved across the face in a direction at an oblique angle to the cutting edge. Such a manipulation involves considerable skill and any awkwardness by the user involves danger of cutting the face.

One of the objects of my invention is to so position the handle that, by an unskillful operation of the razor, that is, by pulling the handle in the most natural and convenient direction, which in the ordinary razor would effect a scraping action, the blade will slide over the face in a direction at an oblique angle to the cutting edge and thereby effect a shearing, as distinguished from a scraping action, thereby operating the razor in its most efficient way, severing the hairs without pulling them, giving a clean shave, preserving the cutting edge, and avoiding discomfort.

Another object of the invention is to so hinge the razor-carrying frame to the handle that the handle may be adjusted to any desired angle to the blade, so that the axis of the handle will not only extend at an oblique angle to the longitudinal direction of extension of the blade, but may be within the plane of the longitudinal center line of the blade or at an angle to such plane, as the user may prefer.

Another object of the invention is to so hinge the handle to the blade that the handle may be so adjusted that its axis will extend at a right angle to the longitudinal extension of the blade in order that in changing blades, the handle may be conveniently unscrewed therefrom and screwed thereto.

Another object of the invention is to so pivot the handle on the blade-carrying frame

that when the handle is moved to occupy either a perpendicular or any desired oblique angle to the blade, no other manipulation will be required to maintain it in the adjusted position, but it will automatically maintain itself in that position until the proper force is applied in a proper way to adjust it to a different position.

In the drawings, which show a preferred embodiment of the invention:

Fig. 1 is an elevation of the razor with the handle adjusted at an oblique angle to the longitudinal direction of extension of the blade.

Fig. 2 is a view at a right angle to Fig. 1 with the handle extending at a right angle to the blade; the blade-holding frame and the arm connecting the handle and frame being shown in cross-section.

Fig. 3 is a view similar to Fig. 1, but with the blade-holding frame and arm connecting the handle and frame shown in cross-section.

Fig. 4 is a diagram showing the position of the blade and its direction of movement relatively to the hairs in operation.

Base *a* is provided with the usual notched or serrated longitudinal edges having guards *b* for the blade edges. The clamp *c* is provided with the positioning pins *d*, and with a central threaded post *e*; the pins and post extending through orifices in the base. The described base and clamp constitute a blade-holding and positioning frame of common construction. The blade *f* is shown as confined between the base and clamp.

The handle comprises a shank *g* having a contracted neck supporting a spherical shaped head *h*, the sphere being flattened on the face thereof most distant from the shank. The handle is connected to the blade-holding frame by means of an arm *i* having a threaded hole in its upper end adapted to engage the post *e* and a downwardly opening cylindrical cavity containing a flanged follower plate *k* and a spring *m*. The wall of this cavity comprises a shell into which the spherical head *h* extends and the lower edges of which are crimped slightly against the head so as to prevent the withdrawal of the head and the detachment of the handle from the arm *i*.

From the above description it will be understood that the handle *g* is permanently secured to, but pivotally movable on, the arm *i*. In order to secure the handle *g* and arm *i* to the blade-carrying frame, the

handle is swung so that it extends at a right angle to the longitudinal direction of extension of the frame, as shown in Fig. 2. In this position of the parts, the spring *m* 5 holds the plate *k* against the flat face of the sphere *h*, so that the handle tends to maintain itself in this perpendicular position. It is only in this position that it is possible by a mere turning movement of the handle on its own axis, to thread the 10 arm *i* on the post *e*. Moreover, if the arm were in fixed relation to the handle and the handle occupied a permanent position of obliquity to the arm, it would not be possible to screw the arm *i* tightly against the base 15 *a* with any assurance that, when so seated, the handle would extend in that one of the infinite number of possible oblique directions in which it is desired to have it extend 20 in operation. However, with the described construction, after the arm *i* is firmly screwed against the base *a*, the handle *g*, by the exercise of moderate force, may be moved, on its universal pivotal axis, into any 25 desired position of obliquity to the blade *f* and at an oblique angle of any desired number of degrees within any possibly desirable limit. When the handle is so swung on its pivot, say into the position shown in Figs. 1 30 and 3, the plate *k* will be forced further from the center of the sphere *h*, thereby further compressing the spring, which tends to hold the handle in the oblique position to which it is adjusted.

35 When now the user operates the razor by pulling the handle in the direction in which it is most easy and natural to pull it, the blade will at every position extend across the face at an angle to its direction 40 of movement and cut the hairs with a shearing action, as illustrated in Fig. 4.

It is, of course, possible to effect one of the purposes of the invention by positioning the arm *i* and handle *g* as shown in Figs. 1 45 and 3 and securing them together in permanent relationship, which would be equivalent to providing the handle with a bent frame-engaging end; but this would be an embodiment of the invention only in its broadest

50 aspect, and, which workable, would be inconvenient to manipulate in attaching the handle to, and detaching it from, the blade-carrying frame, and would give to the user no means to adjust the handle at such angle to the frame as he may prefer. 55

Having now fully described my invention, what I claim and desire to protect by Letters Patent is:

1. A safety razor comprising a frame for a blade, a handle for the frame, and a universal connection between the hand hold of the handle and frame including a spherical like head and a spring pressed element engaging the head for frictionally retaining the frame and handle in their adjusted positions, said head having a flattened end forming a seat for the spring pressed element for positioning the handle perpendicular to the frame. 60 65

2. A two part handle for a safety razor, having means for connecting one part of the handle to the frame of the razor, one of said parts having a spring receiving cavity, a spring in said cavity, a spherical like head on the end of the other part, seated in the cavity in the other part and having a flat end, and a flanged follower between the spring and the head. 70 75

3. A two part handle for a safety razor having two clamping plates between which the blade is clamped, the one part of the handle having a threaded socket at one end for engaging a clamping screw on one of the plates, the other end of said handle part having a cavity therein, a coil spring seated in said cavity, a ball like head having a flattened end on the end of the other handle part seated in the end of the cavity, means for retaining the head in the cavity and a flanged follower in the cavity having a flat face for engaging the head on the second part of the handle between the spring and head. 80 85 90

In testimony of which invention, I have hereunto set my hand, at Philadelphia, Penna., on this 26th day of January, 1926. 95

OTTO SPAHR.