

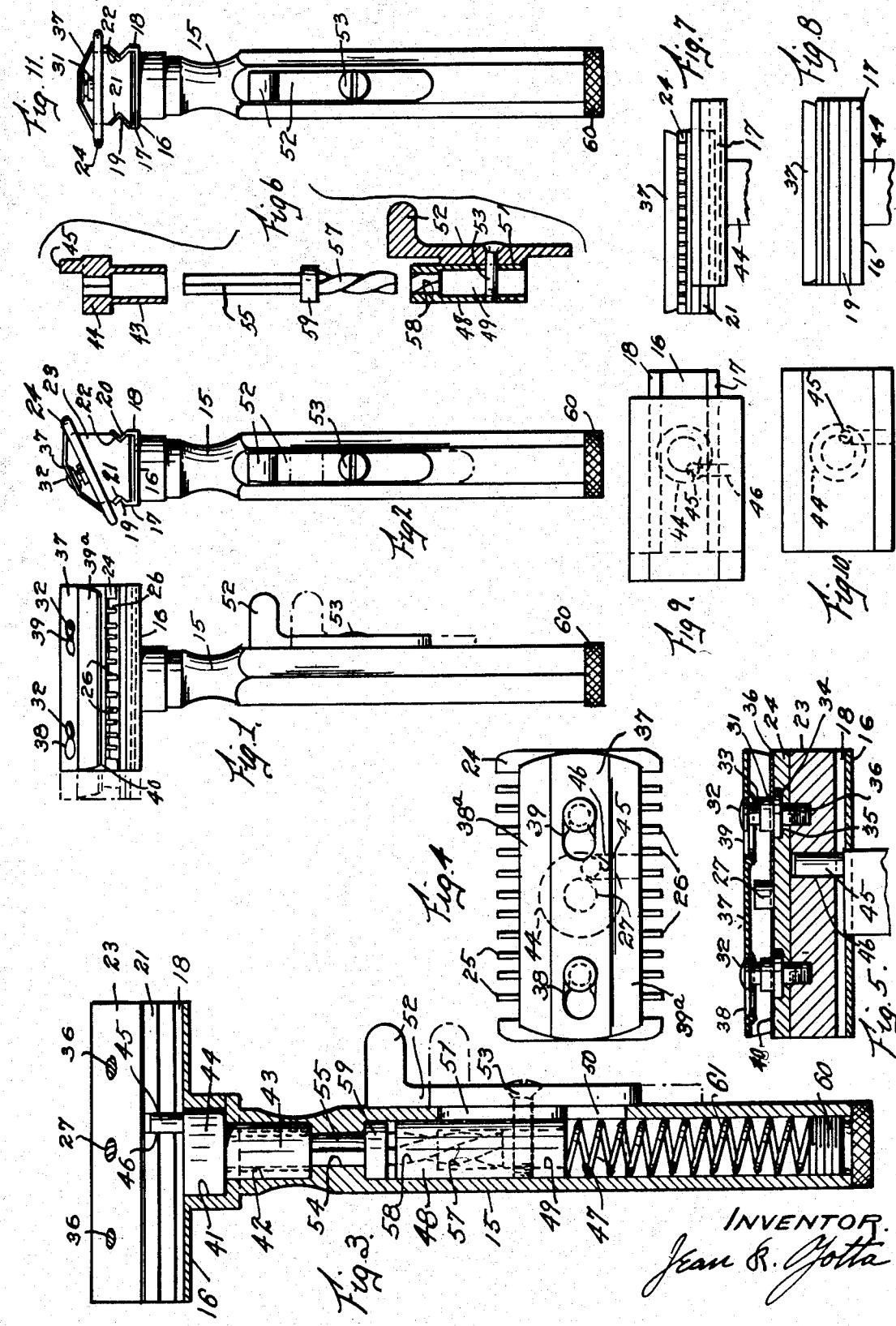
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SAFETY RAZOR

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## SAFETY RAZOR

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My invention relates primarily to safety razors of the T head type, that is, the type in which the blade mounting is positioned at a right angle to the handle although it is not necessarily limited to any particular type or shape of safety razor, and it has for its object the provision of means whereby the razor blade is caused to travel in a diagonal direction relative to the handle when the razor is being used in shaving and thus produce a slicing effect in cutting the hairs.

By this construction and method of operation I have produced a safety razor having a diagonal cutting effect which is simple in construction and operation, which provides a smooth working device, and which increases the cutting efficiency of the razor many fold in addition to prolonging the life of the blades.

Other objects and advantages will appear hereinafter and while I have shown and will describe the preferred form of my invention, I wish it to be specifically understood that I do not limit myself to such preferred form but that various changes and adaptations may be made therein without departing from the spirit of my invention.

In the drawing accompanying and forming a part hereof:

Fig. 1 is a front elevation of my razor ready for use, with broken lines indicating the visual movement of the parts relative to the handle.

Fig. 2 is a right hand elevation of Fig. 1.

Fig. 3 is a view similar to Fig. 1, but on an enlarged scale and partly in section to show the interior thereof.

Fig. 4 is a plan view of the head of Fig. 1, on an enlarged scale.

Fig. 5 is a central longitudinal section through Fig. 4.

Fig. 6 is a view, partly in section and partly in elevation of certain details of my device.

Fig. 7 is a diagrammatic view showing a front edge elevation of my razor in its operated position.

Fig. 8 is a similar view showing my razor in its non operated position.

Fig. 9 is a top plan of Fig. 7.

Fig. 10 is a top plan of Fig. 8.

Fig. 11 is a side elevation of my razor provided with a head of another form from the preferred form.

Referring to the drawing 15 indicates the handle, the upper end of which terminates in the head 16, preferably extending at right angles thereto, and centrally of its length. Extending upwardly from the longitudinal edges of the head

16 are side walls 17 and 18, the medial portions of which are formed into inwardly projecting V's 19 and 20, and these V's 19 and 20 are positioned loosely within similarly shaped grooves 21 and 22 extending lengthwise of the reciprocating head 23. Head 23 has the grooves 21 and 22 provided near the lower wall thereof and has its upper end formed at an angle or incline, as best shown in Figs. 1 and 2, and rigidly mounted upon this inclined face is the comb 24 of the usual type having the teeth 25 and 26 on opposite edges thereof. Projecting upwardly from the comb 24, centrally thereof and preferably integral therewith, is the locating pin 27, and projecting upwardly from said comb 24 at each side of the pin 27 are the blade holding pins or studs which serve to hold the blade properly positioned for use. These blade holding pins consist of the body portion 31 upon which the blade is mounted and a head 32 joined to the body portion by the neck 33. Immediately below the body portion 31 is an annular flange 34 positioned within a recess 35 in the upper face of the comb 24 and immediately below this flange is a reduced screw-threaded portion 36 in screw threaded engagement with the reciprocating head 23. While I have shown and described these blade holding pins as being separable from the head and comb it will be understood that the whole may be made integral if so desired or found advisable. A retaining member 37 is provided with elongated slots 38 and 39, one end of these slots being of a size to permit the free passage of the heads 32 and the other ends being of a size to permit the passage of the neck 33 only and to engage the underside of the heads 32. This retaining member 37 is preferably formed of resilient or flexible material or metal and comprises the central portion 37 which lies parallel with the upper face of the comb 24 and the angularly disposed side or edge portions 38<sup>a</sup> and 39<sup>a</sup>, the lowermost edges of which are adapted to bear against the upper face of the blade 40, so that when positioned for use with the central portion engaging the lower face of the pin heads 32 and the lowermost edges of the side portions bearing against the blade the latter is held spring pressed against the upper face of the comb. Provided in the upper end of the handle 15, at its junction with the head 16 is an enlarged upwardly opening recess 41, and extending downwardly from the bottom wall of this recess, concentric therewith, is a smaller recess 42. Rotatably mounted within the recess 42 is a stem 43 on the upper end of which is a head 44 mounted within the recess 41, and extending

upwardly from the upper face of head 44, at one side thereof, is a pin 45. Pin 45 extends into a slot 46 provided in the front face or edge of the blade carrying block or reciprocating head 23, so that as the head 44 and stem 43 are reciprocated around their vertical axis head 23 will be caused to reciprocate in a horizontal plane or at right angles to the reciprocation of said stem and head. Formed in the opposite end of the handle 15 is an elongated concentric chamber 47, in the upper end of which is slidably mounted the manually reciprocated operating member which consists of a tubular body member 48, mounted to slide lengthwise of said chamber 47 and provided with a central opening 49 therethrough. Provided through the side wall of the handle 15 near the upper end of the chamber 47 is a slot 50, and projecting through this slot is an abutment 51, the inner edge of which bears against the outer face of the body member 48 and the outer edge of which bears against the inner face of the thumb or finger member 52, a screw 53 serving to detachably hold said members assembled for use. Abutment 51 is of a thickness slightly greater than the thickness of the wall of the handle 15 and is sufficiently less in length than the slot 50 to permit the full downward movement of the body member 48 as hereafter described.

Connecting the lower end of the recess 42 to the upper end of the chamber 47 is a passage 54 and rotatably mounted in this passage is the rotator or reciprocator 55. The upper end of this rotator is rigidly connected to the stem 43 and head 44 so that they all rotate or reciprocate in unison and the lower end of said reciprocator is twisted or otherwise formed into a helix 57. The upper end of the opening 49 in body member 48 is reduced in size and is provided with an interior helix 58 adapted for cooperation with the helix 57 whereby when said body member 48 is reciprocated vertically the rotator 55 will be rotated or reciprocated horizontally. An integral collar 59 surrounds rotator 55 immediately above the helix 57 and bears against the upper end of the wall of chamber 47. The lower end of the chamber 47 is closed by means of a screw-threaded plug 60.

Positioned within the lower end of the chamber 47, between the upper end of the plug 60 and the lower end of the body member 48, is a coil spring 61 the function of which is to normally hold member 48 in its uppermost position.

In the operation of my razor, the same is drawn along the surface by means of the handle in a similar manner to the usual procedure with the ordinary safety razor, and at the same time, by means of the thumb or finger, the thumb or finger piece 52 is moved downwardly causing the reciprocating head to move at a right angle or

diagonally to the direction of movement of the handle.

Having described my invention what I claim is:

1. In a safety razor, the combination of a hollow handle having a removable closure for the lower end thereof and a transversely extending head on the upper end thereof and longitudinally extending guideways in the upper face of said head, a blade carrying block slidably mounted in said guideways and having blade securing means, and means mounted within said handle for manually causing said blade carrying block to slide in said guideways, said means comprising a disc rotatably mounted in the upper end of said handle, an eccentrically mounted pin projecting from the upper face of said disc, a transverse slot in said blade carrying block into which said pin projects, a rectangular stem rigidly secured at its upper end to said disc and extending axially therefrom concentrically of the handle, the lower portion of said stem being twisted axially to form a spiral, a sleeve slidably but non-rotatably mounted in said handle having a passage therethrough, said passage being of a configuration to coincide with the configuration of said stem whereby relative lengthwise movement of said sleeve and stem will cause said stem to rotate, a finger piece slidably mounted against the outer wall of said handle and connected to said sleeve for moving said sleeve lengthwise of the handle, and a coil spring mounted in said handle between the bottom end of said sleeve and the lower end of said handle adapted to maintain said sleeve in its uppermost position.

2. In a safety razor having a transversely movable blade carrying means, means for moving said blade carrying means including a supporting handle, said handle being hollow, a disc rotatably mounted in the upper end of said handle concentrically thereof and having a concentric integral sleeve depending downwardly from the lower face thereof and a rectangular stem depending downwardly from said sleeve, the projecting portion of said stem being twisted axially to form an external spiral, a longitudinally extending slot through the side wall of said handle, a sleeve slidably mounted in said handle and having a spiralled passage therethrough for the reception of the spiralled stem whereby lengthwise movement of said sleeve will rotate said stem, said sleeve having a finger piece projecting through said slot for manual reciprocation of the same and to limit the vertical movement thereof, said finger piece terminating in a head at the outer wall of the handle, arranged to inclose the slot in the handle, and a coil spring in the lower end of the handle arranged to yieldably retain said sleeve in its uppermost position.

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