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D. J. YELLON

2,989,804

SELF PROTECTED SHAVING DEVICE HAVING MULTIPLE CUTTING EDGES

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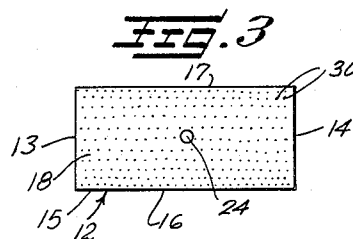
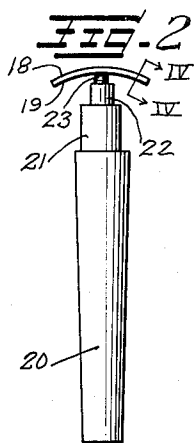
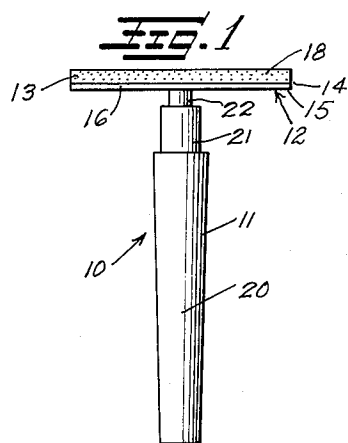


FIG. 4

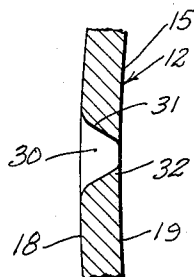


FIG. 5

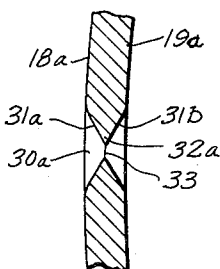


FIG. 6

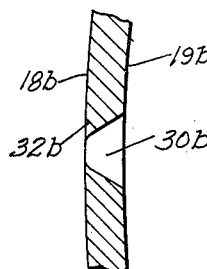


FIG. 7

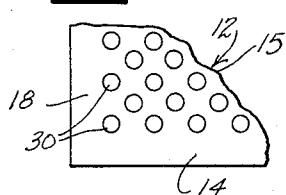


FIG. 8

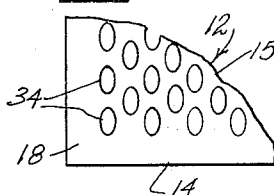


FIG. 9

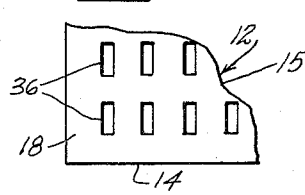


FIG. 10

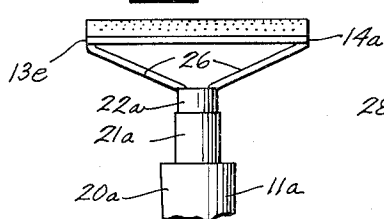


FIG. 11



Inventor
Donald J. Yellon

By *Kell, Sherman, Morris, Galt & Simpson Attys*

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SELF PROTECTED SHAVING DEVICE HAVING MULTIPLE CUTTING EDGES

Donald J. Yellon, 639 W. Sheridan, Chicago, Ill., assignor of one-half to Edgar Bernhard, Chicago, Ill.

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1 Claim. (Cl. 30-32)

This invention relates generally to cutting instruments, and more specifically relates to a razor instrument used for shaving, characterized by the provision of plural, self-protected cutting edges.

The ordinary razor or instrument used for shaving usually consists of a hardened steel blade made with an extremely fine sharp edge and fitted into a handle, by means of which the blade may be manipulated with the sharp edge in contact with the skin of the user.

Since the razor is considered a dangerous instrument, many attempts have been made to improve the construction and operation thereof. At the beginning of this century, the principle of the "safety" razor was introduced, wherein a guard is physically interposed between the skin and the cutting edge of the razor blade, so that the guard permits the edge to pass over the uneven surface of the part to be shaved, removing the hair without cutting the skin.

Other types of safety devices have also been devised. However, such modifications have usually retained the general form of an ordinary razor, while rendering it safer for use by fitting suitable guards to the blade of the ordinary razor, or by substitution of a holder carrying an adjustable blade of the strip-steel type.

According to the principles of the present invention, there is provided a razor instrument for shaving wherein the head portion of the instrument forms plural openings with each opening having margin portions providing a whetted cutting edge. The instrument is, in principle, a thin, curved or otherwise offset plate, of metal or other suitable material, perforated with holes which are so spaced, and of such a diameter, as to admit the hairs of the beard or other hirsute area desired to be shaved in lather-type shaving. Such spacing and diameter can be varied to accommodate different types of shaving needs. Thus, the plate-like head member rests against the skin and the hairs to be removed penetrate the openings, thereby to be engaged by the corresponding cutting edge.

By virtue of the arrangement thus provided, the plural cutting edges are all located interiorly of the outer margins of the cutting head and the use of extraneous guard devices is completely eliminated without loss of function, because the cutting head is, in effect, self-protecting.

It is an object of the present invention, therefore, to provide an improved cutting instrument for removing hair from the skin.

Another object of the present invention is to provide a razor instrument which is safe and dependable in use.

A further object of the present invention is to provide a razor instrument having plural cutting edges disposed in a cutting head in self-protecting relation.

Yet another object of the present invention is to provide a razor device which completely eliminates the necessity of separate guard members without a loss of the safety functions contemplated with separate guards.

Many other features, advantages and additional objects of the present invention will become manifest to those versed in the art upon making reference to the detailed description which follows and the accompanying sheet of drawings, in which preferred structural embodiments of a cutting instrument for removing hair from the skin are shown by way of illustrative example.

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On the drawings:

FIGURE 1 is a front elevational view of a cutting instrument for removing hair from the skin embodying the principles of the present invention;

FIGURE 2 is a side elevational view of the instrument shown in FIGURE 1;

FIGURE 3 is a top plan view of the instrument shown in FIGURES 1 and 2;

FIGURE 4 is an enlarged fragmentary cross-sectional view of a single perforation taken through the plate-like head member and showing specific details of construction, the section plane being taken on line IV-IV of FIGURE 2;

FIGURE 5 is a view similar to FIGURE 4 but showing an alternative embodiment;

FIGURE 6 is a view similar to FIGURES 4 and 5 and showing yet another embodiment;

FIGURES 7, 8 and 9 are fragmentary enlarged views showing examples of different configurations of openings which may be provided in a cutting instrument according to the principles of the present invention;

FIGURE 10 is a fragmentary elevational view similar to FIGURE 1, showing an alternative manner of interconnecting the plate-like head portion and a handle, designed to avoid the loss of cutting area possibly attendant upon fastening the handle through the center of the cutting head of FIGURE 3; and

FIGURE 11 is an alternative embodiment, with a different form of hand-gripping means for the device of the present invention.

As shown on the drawings:

The cutting instrument of the present invention is indicated generally at 10 and comprises a handle portion shown generally at 11 and a head means indicated generally at 12.

More specifically, the head means 12 comprises a plate form member 15 of generally rectangular configuration having end margins 13 and 14 and side margins 16 and 17 bounding an upper surface 18 and a lower surface 19, the surfaces 18 and 19 being substantially parallel and spaced from one another by the thickness of the plate form member.

In order to particularly adapt the upper surface 18 for presentation to a hirsute dermal area, the plate form member comprising the head means 12 is offset so that, as shown in the exemplary embodiment illustrated herein, the surfaces 18 and 19 extend through a curvilinear path, and so the instrument 10 may be more easily manipulated by holding the device at an angle with respect to the skin of the user.

In the form of the invention illustrated in FIGURES 1-3, the handle 11 comprises an elongate generally cylindrical or prismoid member of appreciable axial extent, the handle 11 including a first portion 20 adapted to be grasped by the hand of the user and having formed, at its upper end, successively reduced sections, indicated at 21 and 22, and terminating in a threaded stud portion 23 adapted to be threadedly engaged with a correspondingly threaded aperture 24 formed in the head means 12. Thus, the handle 11 is placed in firm assembly with the head means 12.

In the form of the invention illustrated in FIGURE 10, a handle 11a is provided with corresponding portions indicated at 20a, 21a and 22a. However, there is provided a yoke-type bracket 26 connected at one end to the reduced section 22a of the handle 11a and connected at the outer ends to the marginal portions of the head means shown in FIGURE 10 at 13a and 14a.

It will be further appreciated that any form of hand-manipulable supporting means may be provided for the cutting instrument of the present invention, and, if de-

sired, a hand grasping support, as shown at 11b in FIGURE 11, may be provided, which handle 11b is adapted to be grasped directly in the hand of the user and having attached thereto a plate form head member, shown at 12b, curvately formed to provide an enlarged head surface 18b and interconnected in firm assembly with the handle 11b as shown at 27 and 28.

Referring now more specifically to the structural details of either the head means 12 or the head means 12b, it is contemplated by the present invention to provide plural spaced openings virtually rendering the plate-like head member foraminous, the openings, which are indicated at 30, being disposed in spaced relation in longitudinal rows or in any other spaced array, as may be desired. Each opening 30 is particularly characterized by the provision of margin portions forming an edge which may be whetted to form plural cutting edges, for example, each perforation may be rounded on the convex rim of the perforation next to the skin and honed to razor sharpness on the concave rim or other inner portion of the perforation, as shown in the drawings. Thus, as shown in the enlarged detail of FIGURE 4, an opening 30 extends through the plate form head means 12 between the surfaces 18 and 19. In the particular form of the invention illustrated in FIGURE 4, the margins or edges of the opening 30, indicated at 31, taper inwardly from the outer surface provided by the surface 18 towards the inner surface provided by the surface 19. The widest portion of each aperture 30, as shown in FIGURE 4, is located in the surface 18, while the smallest portion of each opening is formed in the surface 19. By virtue of such arrangement, the margins or edges 31 of the opening 30 in the surface 19 are disposed at an acute angle, as shown at 32, and the pointed edges 32 are readily whetted to form cutting edges for severing bristles or hairs which penetrate the openings 30 when the surface 18 is rested against the skin and is drawn with a sweeping motion over the surface of the skin.

In the form of the invention illustrated in FIGURE 5, an opening 30a is provided with margins 31a and 31b which taper inwardly from each respective surface 18a and 19a thereby to form an acute angle 32a resulting in the disposition of a cutting edge 33 intermediate the surfaces 18a and 19a.

In the arrangement of FIGURE 6, an opening 30b tapers inwardly from the inner surface 19b towards the outer surface 18b, thereby to dispose the largest part of the opening 30b in the surface 19b while disposing the narrowest portion of the opening 30b in the outer surface 18b so that the acute angle 32b will provide a cutting edge in the outer surface 18.

According to the present invention, it is possible to constitute the plate form head means 12 as a disposable member which may be discarded after shaving use, the head means 12 being made of any suitable material. However, should reuse be indicated, the principles of the present invention readily adapt to a resharpening operation, since either the entire surface 19 or 18b may be stropped to resharpen the plural cutting edges, or, in the use of the arrangement shown in FIGURE 5, one of the inclined surfaces 31a or 31b of each of the respective openings may be engaged by a stropping means to resharpen the cutting edge 33.

It will be appreciated that the openings 30, 30a or 30b can take any convenient geometric or other form so long as the minimum dimension of the opening is of sufficient size to admit penetration of the hair when the surface 18 is engaged against the skin. Thus, as shown in FIGURE 7, each of the openings 30 is shown as being circular in configuration, the smallest circular diameter of the opening 30 being large enough to pass the hair of the human beard, for example. In FIGURE 8, openings are shown at 34 which are of ovaloid configuration and wherein the minor axis of each ovaloid or elliptical

opening 34 is sufficiently large to pass the hair of a human beard.

In the arrangements of FIGURES 7 and 8, the circular openings 30 and the ovaloid openings 34 are disposed in staggered relationship on adjacent longitudinal rows. In the arrangement of FIGURE 9, slotted openings are shown at 36, each opening having the longest dimension in a longitudinal direction and the respective slotted openings being disposed in evenly spaced rows.

In use, the cutting instrument of the present invention is presented to a hirsute dermal area, such as the human face, after the skin has been wetted or lathered, whereupon the surface 18 is moved in any desired direction relative to the adjacent skin surface on which it rests so that all of the hairs penetrating the openings 30 will be severed.

The ends 13 and 14, the sides 16 and 17 of the plate-like head means 12, and the convex rims of each perforation, are rounded so that no cutting action will occur when such portions of the head or rims engage the skin of the user. Thus, because all of the cutting edges are confined within the bounds of the sides and the ends and the surfaces of the instrument, each respective cutting edge is self-protected, so that the necessity of providing extraneous guard members or bars or of placing a guard between the skin and the cutting edge is completely eliminated. The construction of the foraminous head member with plural cutting edges permits the head member to pass over the uneven surface of the part to be shaved and to remove the hair therefrom without cutting the skin. It will be understood, of course, that the size of the openings or holes 30 is designed to preclude extrusion of the skin therethrough, thus to insure that the skin will not be cut during the shaving process. Rather, the size of the openings 30 is controlled to be larger than the diameter of a hair, but small enough to prevent normal dermal tissue from being extruded through the openings.

By virtue of the arrangement described, I have provided a cutting instrument wherein less material is used than in other forms of safety razors, thereby affording economies of production; and a lower price to the ultimate user should be possible. Additionally, the cutting instrument of the present invention, unlike safety razors of the prior art, can be used in an up, down, sidewise or other direction without turning the device. Moreover, the lack of moving parts in and the mechanical simplicity of the device disclosed preclude the disrepair into which other safety razors often fall.

The device of the present invention should afford real economies to the user because the provision of numerous honed edges actually provides cutting edges which exceed the cutting area available in other razor instruments in general use, while affording greater safety in handling. The cutting instrument disclosed also significantly precludes skin irritation by placing the cutting edge away from the dermal area to be shaved, unlike other forms of razor instruments. Furthermore, the absence of covers, bars and guards greatly facilitates cleaning of the device after each use by a simple rinsing in water. Because of the many variations which may be made in the size and shape of the perforations, as well as the angularity of the respective honed edges, the principles of the present invention may be embodied in different models adapted to a greater variety of shaving needs, including those arising from differences in the growth and resistance of facial beard hairs.

Although various minor modifications might be suggested by those versed in the art, it should be understood that I wish to embody within the scope of the patent warranted hereon all such modifications as reasonably and properly come within the scope of my contribution to the art.

I claim as my invention:

A cutting instrument for shaving comprising a handle

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portion and a head means connected to said handle portion, said head means including a plate form member of generally rectangular configuration having end margins and side margins bounding an upper surface and a lower surface, said upper and lower surfaces being substantially parallel and spaced from one another by the thickness of said plate form member, said member being curved to form said upper surface as a skin engaging surface for presentation to a hirsute dermal area at an angle with respect to the plane of the skin, said head means having formed therein plural spaced openings disposed in transverse and longitudinal rows to render said plate form member substantially foraminous, the minimum dimension of any said opening being of sufficient size to admit penetration of the hair when said upper surface is engaged against the skin, the maximum dimension of any said opening being small enough to preclude extrusion of the skin therethrough, each said opening having a convex rim formed at said skin engaging surface, thereby protecting the skin while assisting in guiding hairs into the openings and each said opening having said marginal edge portions disposed to taper inwardly from said skin engaging surface to form a whet-

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ted cutting edge at the narrowest portion of the inwardly tapered edge portions, said end margins and said side margins being rounded and forming continuous engagement surfaces to prevent any cutting action when such portions of said head means engages the skin of the user, whereby all of the cutting edges are confined within the sides and ends of the instrument to form a self protected shaving device.

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