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A. MATTSON ET AL

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MOTOR DRIVEN RAZOR

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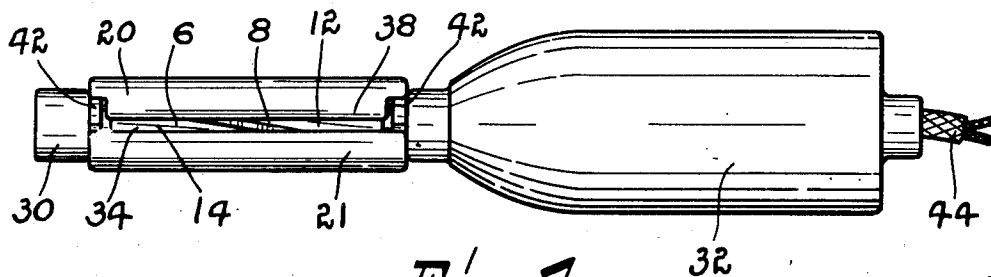


Fig. 1

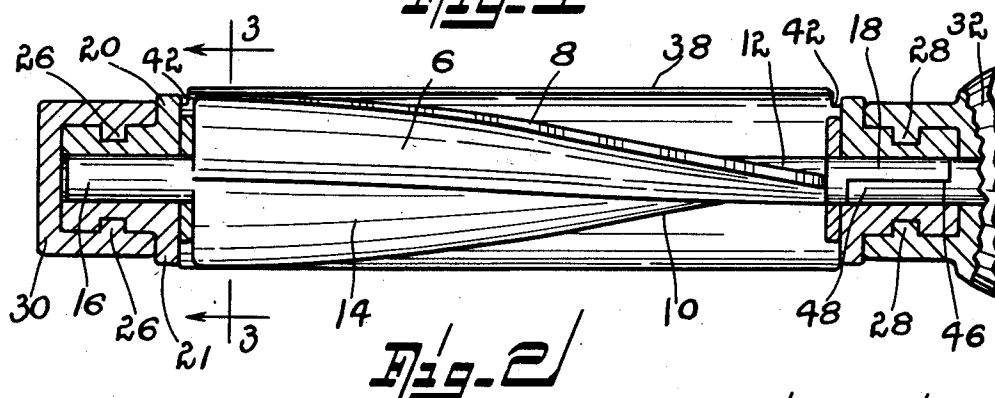


Fig. 2

Fig. 3

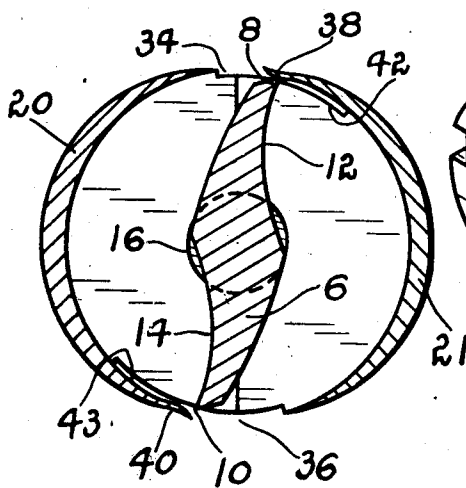
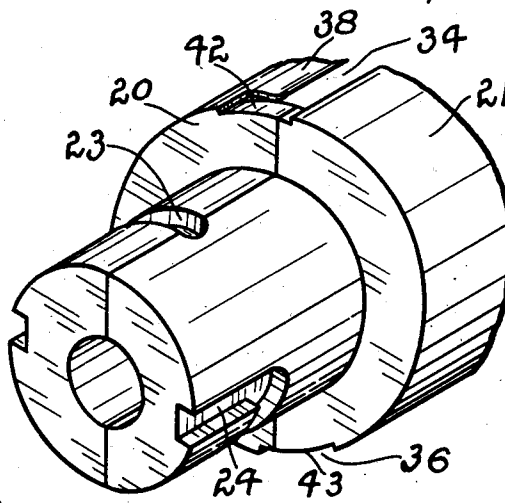


Fig. 4



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MOTOR DRIVEN RAZOR

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2 Claims. (Cl. 30-43)

Our present invention relates to the art of shaving devices and more particularly to a motor driven razor.

Many types of razors have been produced to date. These cover a wide variety of designs all far removed from the older type of straight blade razor. There have also been produced some razors which shave by actually clipping the hair after the form of finely toothed clippers so that it is not necessary to use shaving soap, or cream, to soften the beard and hold it in position for shaving. Our present device follows the general design of rotary bladed razors which act on the clipping principle and do not require lather. In our present design we believe that we have provided a razor which, while working very satisfactorily without any lather, is so constructed as to provide a maximum of safety to the user and one which will require resharpening only after long periods of use.

The principal object of our present invention, therefore, is to provide a rotary blade razor of a type that is provided with shielding means that not only add to the safety of the razor but also assist the same in producing a clean, close shave.

A further object of our present invention is to provide a razor of the rotary blade type which can be very easily and quickly cleaned, so that the useful life of the razor can be extended for a long period.

Other and more specific objects will be apparent from the following description taken in connection with the accompanying drawing, wherein

Figure 1 is a plan view showing a razor made after the teachings of our present invention.

Figure 2 is an enlarged, longitudinal, sectional view through the cutting head of our razor.

Figure 3 is a cross-sectional view along the line 3-3 of Figure 2.

Figure 4 is an enlarged, perspective view showing the bayonet slot arrangement for holding the two half members of our shield arrangement in place, and also showing the spring cutting bar which has been found so desirable in a razor of this type.

Referring to the drawing, throughout which like reference characters indicate like parts, 6 designates the rotary cutter element of our arrangement. This is provided with a spirally disposed blade terminating in two diametrically opposite cutting edges 8 and 10. These cutting edges follow in general the principle of lawn-mower cutter blades, in that they provide a sub-

stantial shearing edge, rather than a thin cutting edge as is common with the ordinary straight razor blades. When so arranged it has been found that extreme keenness as normally considered in a razor is not necessary. This characteristic lends itself to this form of construction most readily, in that the blade itself can be of substantial cross-section and can be repeatedly ground on its concave faces as 12 and 14 so as to restore the cutting edges 8 and 10.

Forged integral with blade 6 are end bearing surfaces or journals 16 and 18. These are so arranged as to be axially disposed with respect to the shield member which is formed of the two elements 20 and 21. The shield, or guard, members are preferably formed as indicated of the two similar parts 20 and 21 to the end that the parts may be readily taken apart for thorough cleaning. Each end of the guard members is extended to form the bearings for journals 16 and 18 and, further, as an added convenience in disassembling the razors each of the guard members 20 and 21 is arranged with bayonet slots as 23 and 24 into which detents 26 and 28 are arranged to seat. Detents 26 are formed within a cap member 30 while detents 28 are formed within the handle member 32. It will be readily understood, it is believed, that a partial turn of the guard member with respect to cap 30 and handle 32 will release the detents from their complementary bayonet slots and thus permit the ready disassembly of the entire razor.

While guard members 20 and 21 are similar in construction it has been found desirable to have them slightly different so as to provide openings 34 and 36 of different extent. This permits bringing the cutting edges of the razor as 8 and 10 closer to the face when the larger opening is used than when opening 34 is used. It is further desired to point out at this time that it is very necessary to have the openings so that when one is being used against the face the other will provide a free exit out of which the hair cut at the opposite opening can be expelled.

It has further been found desirable to provide that the edges of members 20 and 21 adjacent openings 34 and 36 will have the minimum thickness. Therefore, the structure shown in Figure 3 has been found very desirable. With a relatively fine edge such as exists by reason of the eccentricity of the inner and outer walls of members 20 and 21, there is some danger of the fine edge being mutilated by dropping or striking the edges against some firm object. It has been

found most practical, therefore, to provide the cutting bar edges as 38 and 40, with a slightly out-turned edge so that the cutting edges of the razor blade 6 will never come in contact with the extreme edges of the opening. The proportions shown in the enlarged Figure 3 have been found quite satisfactory, in which the cutting edges 8 and 10 are brought practically into contact with margins 38 and 40 but at a point somewhat back from the extreme edge; so as to give a degree of resilience and adjustment to edges 38 and 40 it has been found desirable to undercut the same as at 42 and 43. In this way the cutting bars can be adjusted to provide a very light contact with the cutting edges 8 and 10.

In use the guard member is held so that either of the openings as 34 or 36 is against the face and is held in the desired position by means of handle 32. The cutting blade, itself, 6, is rotated with respect to the guard member by any suitable means. For use in barber shops and the like it might be most desirable to employ a flexible shaft drive. For use by the individual, however, it has been found desirable to enlarge handle 32 to the point where it can accommodate a small electric motor, fed by electric cable 44, which may in turn be connected to any suitable source of power. As the power required to drive blade 6 is very slight it has been found convenient to use an overlapping joint arrangement as is shown at 46 to join journal 18 with the motor shaft 48.

In using our present razor the smaller of the two openings as 34, is normally used first. The cutting edges of blade 6, being spiralled, cuts only at one point along this opening at any one instant, so that only a few hairs are being cut at any one time. The rapidity, however, with which blade 6 is revolved gives the effect of continuous cutting along the entire opening. The hair, as it is sheared between edge 8 and bars 38, is carried around through half a circle and discharged out opening 36. Now, if a very close shave is desired, the razor may be used with opening 36 against the face and, in a like manner, the clipped off hair will be expelled out opening 34.

In providing a razor of this general structure one of the principal aims has been to produce a razor that will be efficient in operation, can be produced cheaply and one which can be disassembled for thorough cleaning very easily. This latter feature is a very important one, as the ability to clean a device of this character is essential if it is going to be operable, in an efficient manner, for reasonably long periods.

The foregoing description and the accompanying drawing are believed to clearly disclose a preferred embodiment of our invention but it will be understood that this disclosure is merely illustrative and that such changes in the invention may be made as are fairly within the scope and spirit of the following claims.

We claim:

1. The combination with a rotary razor blade having end journals, of a housing having diametrically opposed longitudinal openings and comprising longitudinal sections, each said section having an outwardly bent free edge along an opening, said edge being adapted for marginal contact with the blade, bearings on the housing for said journals, and detachable means for securing said bearings about the journals.

2. The combination with a rotary razor blade having integral journal ends and means for attaching one of said ends to a power shaft, of a housing comprising two longitudinal sections forming diametrically opposed openings, each section having an outwardly bent free edge along an opening, said edge being adapted for marginal contact with the blade, said sections having segmental ends forming bearing heads for the journals, said bearing heads having exterior locking grooves, a cap having a pair of locking lugs for fastening one bearing head, a handle, and said handle having a collar and a pair of locking lugs on the collar for co-action with the other bearing head.

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