In such a construction, an easily replaceable single-edged blade can be arranged to be firmly settled in its fixed position during cutting operation without any rocking or vibrating motion, and a relatively large groove to receive shavings can be provided in the blade support as near as possible to the edge of the blade in order to avoid choking of shavings which prevents good cutting action, and moreover, a relatively simple surface can be provided over the outer perforated tube surface towards the direction of the edge of the blade for receiving plenty of the beard hairs passing through perforations.

According to another characteristic of the invention the safety razor, can be constructed as a double acting type, in such a manner that two unit assemblages, each comprising a cylindrical support, a single edged blade, and a freely rotateable perforated metal tube covered thereon, are carried side by side in a single holder.

According to a further characteristic of the invention, the replacement of the L shaped blade is easily effected without disassembly of the razor by rotating said cylindrical support by 180°, whereby a used blade can be removed sideways from said support, through a recess provided on a holder frame and replaced by a new blade.

For a better understanding of the invention, reference will be made to the accompanying drawings in which:

FIG. 1 is a front view partially in section of a dry shaver according to the present invention.

FIG. 2 is a side view of the razor of FIG. 1.

FIG. 3 is a top plan view of a cylindrical support of a blade utilized in the razor.

FIG. 4 is a side view of said cylindrical support in an enlarged scale.

FIG. 5 shows a single edged blade utilized in this razor in an enlarged scale.

FIGS. 6 and 7 show respectively a front view and a side view of another embodiment of the invention.

FIG. 8 is a perspective view of a holder grip of the embodiment shown in FIGS. 6 and 7.

FIGS. 9 and 10 show respectively a side view of an embodiment of a razor of the double acting type and a perspective view of its holder frame.

Referring to FIGS. 1 to 4, a dry shaver according to the present invention has a construction wherein a groove 4 to remove shavings is provided axially on the top surface of a solid cylindrical support 3. A single edged blade of inverted L sectional form 6 is inserted by means of its supporting leg 6' into a narrow slit 3' arranged on said support 3 parallel to said groove 4 so that the edge of said blade 6 is supported in a slightly projected state over the groove 4. Said cylindrical support 3 is housed within a finely perforated metal tube 8, and the entire assembly is adapted for being supported in holder 1 in such a manner that said cylindrical support 3 is fixed in supporting holes 2, provided on said holder by a stop piece, while said perforated tube 8 can rotate freely in said cylindrical support 3.

In this case, this support 3 is maintained in its regular position without any blind motion by fitting stop pieces 9, provided on both sides of said hole 2 into a slot 9 provided on an end surface of support 3 and the perforated tube 8 is covered on said cylindrical support 3 in such a manner that said tube 8 can rotate freely around said support 3 guided by a plurality of circular collars 7 which are provided on the outer periphery of said support 3. Moreover, by rotating the cylindrical support 3 by 180° in the holder frame for example, by means of a screw driver placed into said slot 9, a used blade 6 can be easily removed sideways from said support 3, in a recess 10 cut at the bottom of a supporting hole for said cylindrical support on said holder frame 1 in order to be replaced by new blade. After replace-
ment of the blade, the support 3 can be easily brought back to its original shaving position, by rotating said support 3 by 180°. Furthermore, by arranging a holder grip 11 so as to enclose said holder frame 1, the razor can be operated conveniently for shaving.

A shaving operation by the dry shaver of the invention is effected as follows:

When the perforated metal tube 8 is placed directly on the face and moved repeatedly thereover by moving the grip 11, the tube 8 is automatically caused to be rotated around the cylindrical support 3 of blade 6, and during this rotation, the hairs of a beard project through the perforations of said rotating tube 8 and are cut by the edge of blade 6 in the vicinity of upper border of the groove 4, and the shavings are deposited in groove 4.

This kind of dry shaver is very compact, and may be used at any time and everywhere without need for soap or water, and moreover the face is perfectly protected from any injury by the perforated metal tube 8 serving as a screen.

In other words, by using this razor according to the present invention, a most perfect and safe dry shaving operation is expected.

As dry shaving by this kind of razor is effected by so-called "reverse cutting" operation, its blade can not be allowed to rock or vibrate in its position.

In the razor of the invention, the single edged blade 6 can be fixed on its support 3 by inserting its supporting leg 6' into a narrow slit 5, and accordingly, said blade 6 remains quite stable in its fixed position during its shaving operation and can effect always an efficient "reverse cutting" while maintaining a constant angle in the support. The shavings are easily removed in a fine powdery state through the groove 4.

According to another example of the invention, as shown in FIGS. 6 to 8, the holder grip 11 can be shaped to give a more reliable grip, in such a manner that the height of holder frame 1 (FIG. 7) is shortened, and supporting legs 12, 12 provided on the bottom of frame 1 are adapted to be inserted into central holes 13, 13 provided in holder grip 11, and a central gap of said frame 1 is enclosed by two upper side pieces 11', 11' of said holder grip 11.

According to a further example of the invention, as shown in FIGS. 9 and 10, the dry shaver can be constructed as a double acting type, in such a manner that two unit assemblies, each comprising a cylindrical support 3 carrying a single edged blade 6 inserted into a slit 5 and a freely rotatable perforated metal tube 8 covered thereon, are adapted to be carried side by side by a single holder frame 1.

In such a double acting construction, by selecting suit-ably the direction of each edge of blade and setting these two blades into an effective combination, the shaving operation can be effected in double acting manner in both strokes or in a single stroke of said metal tube 8, and thereby double efficiency can be achieved as compared with the single operation of a single blade only.

While the particular embodiments of this invention have been illustrated and described herein, this invention is by no means limited to such embodiments and changes and modifications can be made and incorporated within the scope of the following claims.

What I claim is:

1. A dry shaver comprising a solid elongated cylindrical support having a longitudinal axis, said support being provided with a groove opening externally thereof, said groove extending longitudinally along said support, said support having a slit parallel to said groove, a blade including legs arranged in the form of an L, one of said legs having a cutting edge, the other of said legs being supported in said slit, said one leg extending from said slit at an angle thereto to project over the groove so that said groove is adapted for accommodating shavings, said one leg being supported by the cylindrical support between said slit and groove, a perforated tube surrounding said cylindrical support, said blade being operatively associated with said perforated tube to perform a cutting function on hair extending inside said tube, and a holder for said support and tube, said support being supported in said holder in stationary manner while said tube is freely rotatable around said cylindrical support, said blade being adapted to perform a cutting operation in combination with said tube as said holder is advanced on a surface to cause rolling of the tube and advancement of the blade with said holder.

2. A shaver as claimed in claim 1, wherein said holder is provided with a longitudinally extending opening for accommodating said support, said holder being provided with a recess in communication with said opening enabling replacement of said blade in said holder with said support remaining in said holder.

References Cited in the file of this patent

UNITED STATES PATENTS

2,229,971 Hammerling .......... Jan. 28, 1941
2,247,661 Moskovic's et al. ... July 1, 1941
2,360,785 Mehle ............... Oct. 17, 1944
2,520,487 Arey ............... Aug. 29, 1950
2,839,829 Knapp ............. June 24, 1958

FOREIGN PATENTS

494,363 Canada ............... July 14, 1953