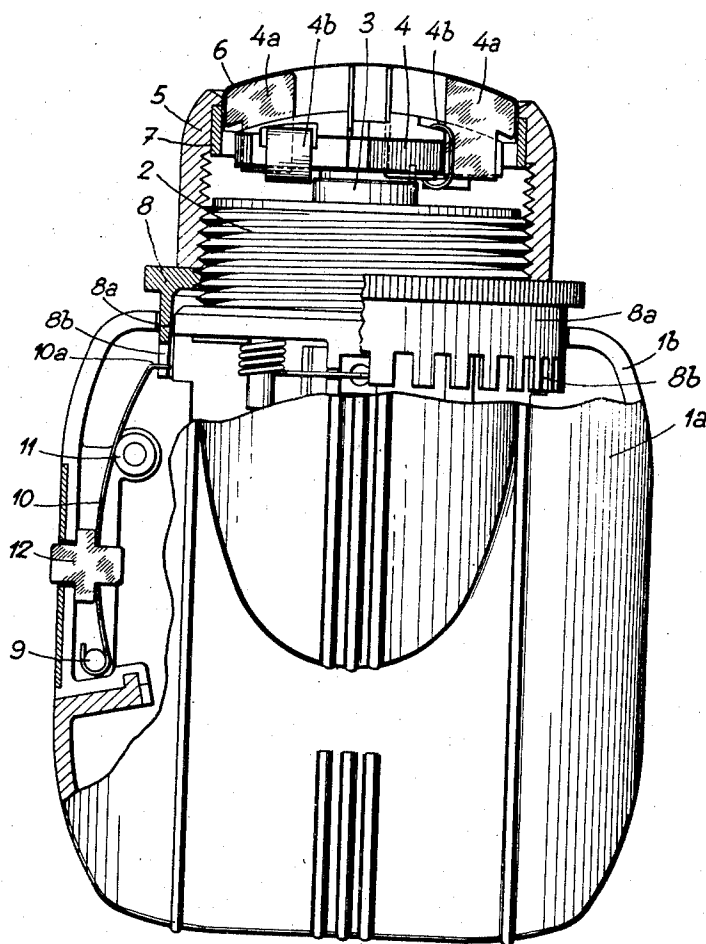


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DRY SHAVER INCLUDING ADJUSTING COLLAR AND
RELEASABLE LOCKING MEANS THEREFOR
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DRY SHAVER INCLUDING ADJUSTING COLLAR AND RELEASABLE LOCKING MEANS THEREFOR

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2 Claims. (Cl. 30—43)

This invention relates to razors, and more particularly to dry shavers and the like.

Dry shavers usually comprise blades which are forced against a guard by springs or the like. In the use of dry shavers of the prior art, it has been observed that the force with which the blades are pressed against the guard, does not give the same satisfactory results with hard as well as with soft beards, and a control of this force dependent on the hardness or softness of the beard shaved, has appeared as a desideratum in this art. This demand for control of the blade-guard relationship has been increased due to additional considerations. When a dry shaver has been used for quite some time, the springs forcing the blades against the guard, show signs of fatigue, and the effective operating portions or edges of guard and blades begin to get blunt. Manifestly, a restoration of the force with which the blades originally applied on the guard, at this point, is bound to increase materially the life of the dry shaver and permit extended use prior to sharpening and other repair or parts exchange work.

The present invention has as its primary object to obviate the drawbacks discussed above, and to provide a dry shaver with an adjustable blade-guard relationship whereby to adapt the shaver to the beard treated, and to prolong the life of the shaver by compensation for the wear of its springs, blades and guard.

Other objects, and the manner in which the same are attained, will become apparent as this specification proceeds.

In pursuit of its aims, the invention contemplates providing a dry shaver including blades mounted on a blade holder below a guard arranged in a head which is axially displaceable relative to the blade holder, with an adjusting collar disposed in the path of the head, for axial displacement relative to the blade holder, whereby to vary the axial position of the head.

In the drawing accompanying this application and forming part thereof, one embodiment of the invention is illustrated diagrammatically by way of example.

The sole figure of the drawing shows a side view, partly in section and with parts broken away for the sake of clarity, of a dry shaver according to the invention.

The mechanical and electrical components of the driving mechanism for the blade holder which are hidden, in the drawing, by the external case 1a, are arranged as usual, in the internal case 1b, the two cases 1a and 1b forming the housing or casing of the dry shaver. An externally threaded portion 2 is mounted on top of the internal case 1b, and this portion 2 is traversed by the shaft 3 of the blade holder 4. The head 5 is internally threaded and screwed on the portion 2; the guard 6 is mounted, by means of a holding ring 7, in the top of the head 5. The blades 4a carried by the blade holder 4 are forced, as usual, against the bottom surface of the guard 6, by means of springs 4b; on rotation of the blade holder 4, these blades slide, under a mild pressure, across the bottom surface of the guard 6.

In order to modify this pressure or force with which the blades apply against the guard, dependent on the relative hardness of the beard to be shaved, and to restore the original force once the springs and effective portions of blades and guard show signs of fatigue and wear, the invention provides an annular adjusting member or collar 8 which is screwed on the portion 2. The collar 8, at its bottom and remote from the head 5, has an extension 8a formed as a hollow cylinder. The bottom of this extension is serrated to provide notches 8b which are evenly distributed along the entire circumference of the collar extension 8a. Inasmuch as these notches are designed to form part of a click-stop arrangement, they could be replaced by bores, projections or similar components of a click-stop system.

The extension 8a has a length such that it extends into the space delimited by the cases 1a and 1b, respectively. The internal case 1b mounts, on a pin 9, one end of a spring 10 which is bent outwardly, i. e. toward the case 1a, and which, further on, abuts against an abutment 11. The free end 10a of the spring 10 is bent off to form a hook-shaped click which is designed to enter one of the notches 8b in the extension 8a of the collar 8, to prevent the same from being turned and thus axially displaced as long as the click 10a remains in engagement with any particular notch. In the embodiment of the invention shown in the drawing, the abutment 11 is a fitting pin which on assembly of the cases 1a and 1b, enters a corresponding opening in the external case 1a. A latch 12 traversing the cases 1a, 1b and abutting against the spring 10 is arranged between the spring mount 9 and the abutment 11, in a manner such that when this latch is pushed inwardly, the free or click end 10a of the spring 10 disengages itself from the notch 8b, thus releasing the adjusting collar 8 which may now be turned to effect an axial displacement thereof.

When the cutting characteristics of the dry shaving apparatus require modification, for example due to wear of the blade and guard edges, the latch 12 is pushed in and the adjusting collar 8 is turned in the direction of downward axial displacement, away from the head 5. Once the desired degree of adjustment has been reached, the latch 12 is released so it can return, under the influence of the spring 10, to its position of rest provided the click end 10a is so disposed that it can enter a notch 8b. If this is not the case, the collar 8 must be turned slightly back or forth until the click-top engagement is perfected. Hereafter, the head 5 is screwed downwardly on the portion 2 until its bottom edge again comes to rest on the top edge of the collar 8. This axial displacement of the head in downward direction brings guard 6 into closer proximity and contact with the blades 4a, and thus restores the force with which the blades originally applied against the guard.

The adjustment of the cutting characteristics of the dry shaver is equally useful for purposes of compensation for wear, and of adapting these characteristics to the relative hardness of the beard to be shaved.

In elaboration of the basic principle of the invention described above, a coupling could be provided whereby temporarily to couple the head 5 with the adjusting collar 8 so that in the course of an adjustment, the portions 5 and 8 would automatically effect the same rotary displacement. For purposes of cleaning the dry shaver, the coupling would simply be disengaged so the head 5 could be removed.

The axial displacement of the blades relative to the guard could be effected in other ways than by rotary displacement along a helical path, such as a sliding displacement along a straight line, for example.

I wish it to be understood that I do not desire to be limited to the precise details of construction, design and

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operation shown and described, as numerous modifications falling within the scope of the following claims and involving no departure from the spirit of the invention nor any sacrifice of the advantages thereof, may occur to a person skilled in the art.

I claim:

1. In a dry shaver including a rotary blade holder having a shaft, blades mounted on said holder, a head arranged for axial displacement relative to said blade holder, a guard mounted on said head, and above said blade holder, an adjusting collar disposed in the path of the head and arranged for axial displacement relative to said blade holder whereby to variably fix the axial position of the head, a threaded portion traversed by the shaft of the blade holder and mounting the head and the adjusting collar, an axial, hollow cylindrical extension on the side of the adjusting collar remote from the head, a plurality of notches in this extension, and releasable locking means adapted to engage said notches for impeding any displacement of the adjusting collar, the improvement which comprises releasable locking means in the form of a leaf spring having a free end adapted to enter one of said notches, and releasing means for removing said spring end from any notch thus engaged.

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2. A dry shaver according to claim 1 including an external case, and an abutment, the leaf spring having a base fixed on said case, said spring being bent toward said case and arranged to abut against said abutment, and the releasing means being provided in the form of a latch traversing said external case and abutting against the spring at a point intermediate its fixed base and said abutment.

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