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J. H. RAND, JR

2,186,122

INNER CUTTER DETACHING DEVICE FOR DRY SHAVERS

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FIG. 1.

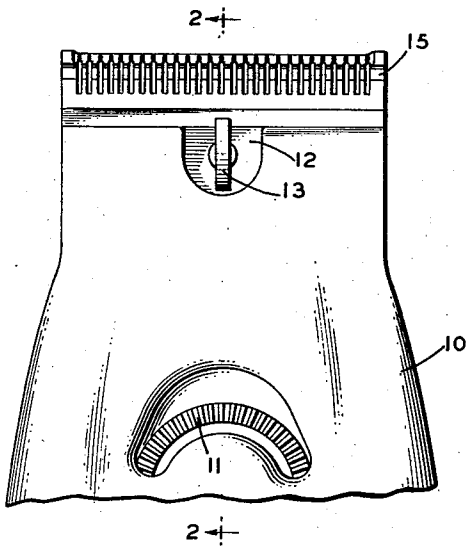


FIG. 2.

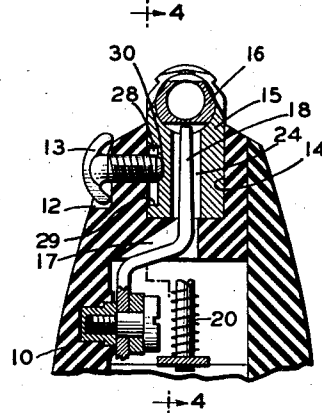


FIG. 3.

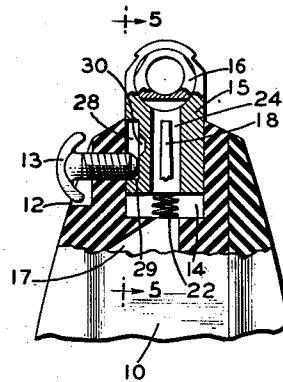


FIG. 4.

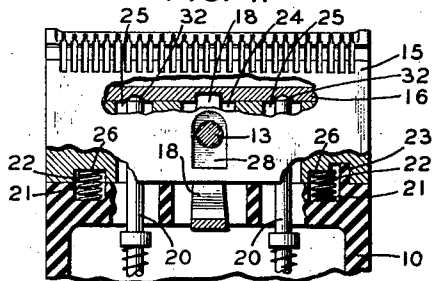
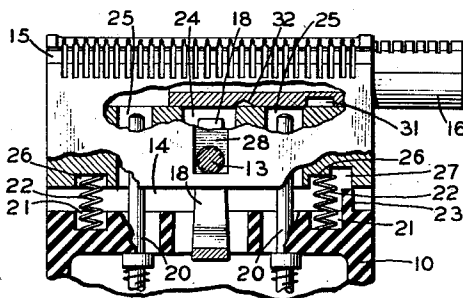


FIG. 5.



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INNER CUTTER DETACHING DEVICE FOR
DRY SHAVERS

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Buffalo, N. Y., a corporation of Delaware

Application November 17, 1937, Serial No. 174,982

3 Claims. (Cl. 30-43)

This invention relates to improvements on electric dry shavers of a well known type, and particularly to devices in connection therewith for disengaging the inner cutters thereof.

In all the known dry shavers now commercially in use, it becomes necessary at times to detach the inner cutter from the fixed outer cutter head, either to remove the hair clippings or particles therefrom or for other purposes. But in no instance, so far as is known, is this done without first removing the entire shearing head or by some other means that proves rather difficult and entails a great waste of time.

It is the general object of this invention to achieve this result of readily removing the inner cutter by means of the device herein fully disclosed.

A specific object of this invention is to provide an inexpensive and adequate means for readily removing the inner cutter of dry shavers without having first disengaged the entire shearing head from the motor casing.

Another object of this invention is to provide means for rapidly removing the inner cutters of dry shavers to facilitate the removal of hair particles and clippings that collect therein.

Further objects of this invention will readily appear from the following full and detailed description thereof.

This invention resides substantially in the combination, construction, arrangement, and relative position of parts, all as will be described in full and complete details in the following specification in connection with the drawing attached thereto, in which:

Fig. 1 is a fragmentary side elevational view of a device embodying the invention herein;

Fig. 2 is a cross section view of the device taken substantially along line 2-2 of Fig. 1, showing the cutter heads secured in a non-removable position;

Fig. 3 is a view similar to that shown in Fig. 2 with only a portion of the casing broken away and showing the cutter heads disengaged for the removal of the inner cutter;

Fig. 4 is a view of the device taken substantially along line 4-4 of Fig. 2; and

Fig. 5 is a view of the device taken substantially along line 5-5 of Fig. 3, showing the inner cutter head partly removed.

Like characters of references refer to like parts in all views.

Referring to the drawing in detail, there is shown the upper portion of a dry shaver of a type well known in the art, of which 10 represents a

casing or grip handle made of a suitable material. Said casing or grip handle 10 encloses any suitable well known motor, not shown or described herein as it forms no part of this invention. On one side of casing 10 is a knurled thumb wheel 11 which is connected to the motor within. Above this knurled thumb wheel 11 and near the top of casing 10 is a U-shaped cut-out portion 12. Within the cut-out portion 12 is a thumb screw 13. Sufficient allowance is made in said cut-out portion 12 for the head of thumb screw 13 to be turned therein. In the neck of casing 10 is a rectangular groove 14, into which a fixed outer cutter 15 is secured by said thumb screw 13. Mounted within the fixed outer cutter 15 is a reciprocating inner cutter 16.

Below the rectangular groove 14, the casing 10 is formed with an opening 17 through which a pivotal cutter-operating rock lever 18 extends. On each side of said opening 17 are the openings (not shown) through which resilient pins 20 extend. At each side of openings 19 are pockets 21, in which springs 22 are loosely held. At one side of one of the pockets 21 is a locating lug 23 which insures correct seating of the cutter 15 in the groove 14.

The fixed outer cutter 15 has in its base three openings, of which 24 represents the central opening registering with opening 17 and through which rock lever 18 extends. The side openings 25 register respectively with openings 19, and through these openings the resilient pins 20 extend. On each side of the openings 25 are inverted pockets 26 which receive the upper ends of the springs 22. At one side of one of the pockets 26 is a groove 27 which engages the locating lug 23. On one side of the fixed outer cutter 15 and in the direction of the longitudinal axis of the casing 10 is a rectangular cut-out 28, forming at its lower edge a stop ledge 29. In the center of said cut-out 28 is a small depression 30 shaped to receive the end of thumb screw 13.

Inner cutter 16 has a rectangular groove 31 formed therein, which groove engages the end of rock lever 18. On each side of said groove 31 are formed depressions 32 which receive the ends of the resilient pins 20.

In the operation of the device according to this invention, to secure the outer cutter 15 in the rectangular groove 14, groove 27 must be placed in alignment with lug 23 and pockets 26 must be forced down on springs 22 until said springs are compressed from the position shown in Fig. 5 to that shown in Fig. 4. Then thumb screw 13 is turned until the end of said screw is

firmly seated within the depression 30 (Fig. 2) and serves as a lock for the outer cutter 15.

To disengage the inner cutter 16 without removing the outer cutter 15, thumb screw 13 is turned until its extreme end is out of engagement with depression 30 though still within the cut-out 28. Then springs 22 will force the outer cutter upwardly (Fig. 3), thus removing depression 30 from alignment with thumb screw 13 and bringing stop ledge 29 into contact with the thumb screw to limit this upward movement. Outer cutter 15 will have been forced up a sufficient distance to disengage rock lever 18 and resilient pins 20 from their engagement with inner cutter 16 (Fig. 5), thus permitting inner cutter 16 to be readily removed.

To completely remove the entire shearing head comprising the inner and outer cutters, thumb screw 13 is unscrewed until its extreme end is out of engagement with the rectangular cut-out 28.

While I have described what I consider to be a highly desirable embodiment of my invention, it is obvious that many changes in form could be made without departing from the spirit of my invention, and I, therefore, do not limit myself to the exact form herein shown and described, nor to anything less than the whole of my invention as hereinbefore set forth, and as hereinafter claimed.

What I claim as new and desire to secure by Letters Patent, is:

1. A dry shaver of the type described including a motor casing, a fixed shearing head having an inner cutter reciprocally mounted therein, means for detachably securing said shearing head to the motor casing, spring members between the motor casing and the shearing head, a corresponding number of pockets in the motor casing

ing and of inverted pockets on the base of said shearing head to detachably confine said spring members, a rectangular cut-out on said shearing head into which said securing means extends, said cut-out defining stop means for permitting limited longitudinal movement of said shearing head, thereby affording means for detaching only said inner cutter therefrom.

2. A dry shaver of the type described including a motor casing, a fixed shearing head having an inner cutter reciprocally mounted therein, means for securing the shearing head to the motor casing, spring members between the motor casing and the shearing head, a corresponding number of pockets in the motor casing and of inverted pockets on the base of said shearing head to detachably confine said spring members, a rectangular cut-out on said shearing head into which said securing means extends, stop means on said cut-out operable by releasing said securing means for limiting the longitudinal movement of said outer cutter head a sufficient amount to disengage the inner cutter head while the outer cutter is still secured to the motor casing.

3. A dry shaver of the type described including a motor casing, a fixed shearing head having an inner cutter reciprocally mounted therein, means for securing the shearing head to the motor casing, spring members between the motor casing and the shearing head, a corresponding number of pockets in the motor casing and of inverted pockets on the base of said shearing head to detachably confine said spring members, and means on said outer cutter head to disengage the inner cutter while the outer cutter is still secured to the motor casing.

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