Nov. 18, 1941. J. D. VERNER 2,263,372

DRY SHAVING IMPLEMENT

Filed Dec. 6, 1939

Fig. 1

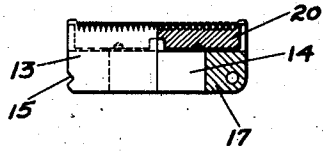


Fig. 2

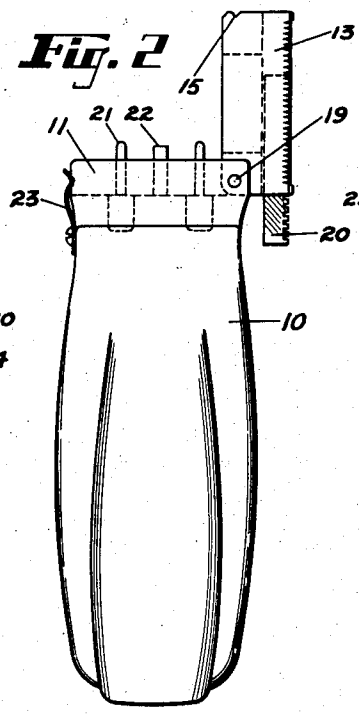


Fig. 3

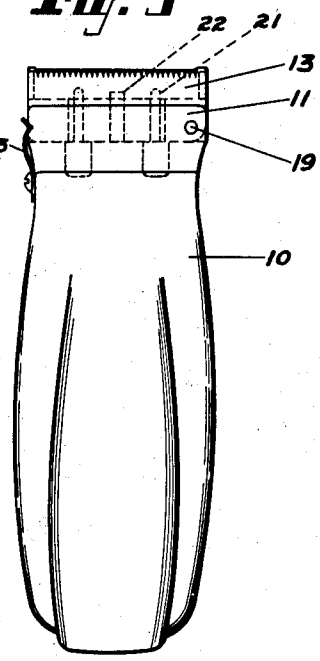


Fig. 4

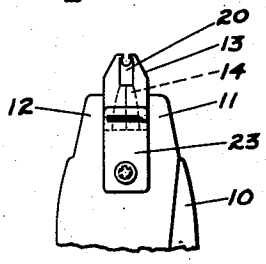


Fig. 5

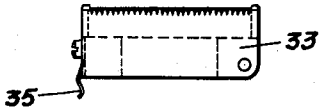


Fig. 6

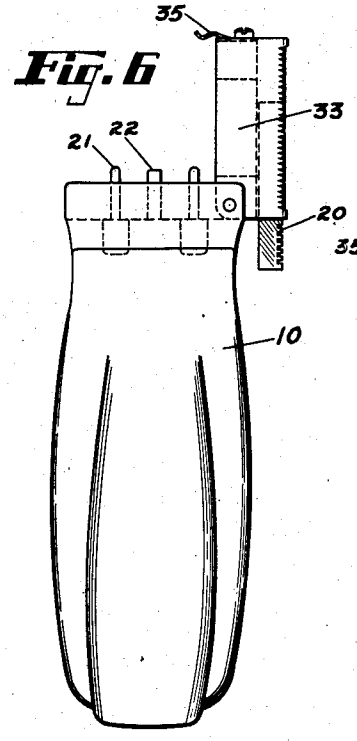
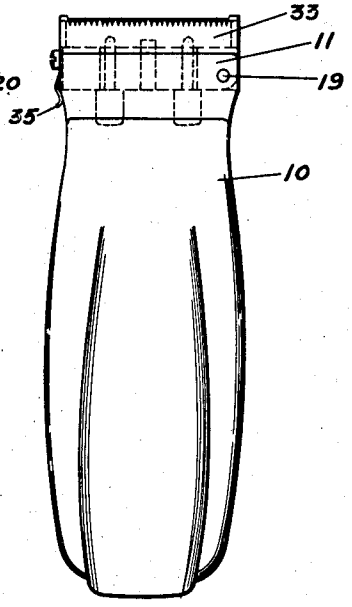


Fig. 7



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DRY SHAVING IMPLEMENT

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3 Claims. (Cl. 30—43)

This invention relates to dry shaving implements of the type employing relatively movable members presenting cooperating shearing teeth. It consists in an improved mounting for the head of the implement whereby the latter may be securely retained in its casing in operative shaving position, or may be swung into an inoperative position for releasing the cutter so that the latter may be conveniently removed to permit cleaning the implement when it is desired to do so. The cutter ordinarily comprises a thin elongated steel bar which is arranged to reciprocate in a passageway beneath the shearing teeth in the head of the implement. The cutter is normally retained in its position in the head by engagement with the driving mechanism of the implement or other instrumentalities carried by the housing of the implement. It is important for efficient operation that the cutter be removed from time to time so that the shaving debris may be cleared from the shaving head and the tendency of clogging thus obviated.

The desirable conditions are that the cutter head should be securely and reliably held in place without strain on the casing when the implement is in use and that it should be capable of being conveniently disconnected for movement into a more accessible position at the option of the user; that the cutter should be securely retained in the head while the latter is in its operative position but freed for removal when the head is moved into its inoperative or accessible position. With these ends in view an important feature of my invention consists in a head containing a removable cutter and being pivotally mounted upon its casing and provided with a spring catch which may be conveniently disengaged so as to permit the head to be swung into an inoperative position wherein the cutter is disconnected from all the elements carried by the casing and freed for removal from the head.

These and other features of the invention will be best understood and appreciated from the following description of two preferred embodiments thereof, selected for purposes of illustration and shown in the accompanying drawing, in which:

Fig. 1 is a view partly in elevation and partly in section of the cutter head containing the cutter;

Fig. 2 is a view in elevation of the complete implement with the cutter head swung into its inoperative position;

Fig. 3 is a similar view with the cutter head shown in operative position;

Fig. 4 is a fragmentary view of the implement in side elevation showing an endwise view of the cutter head;

Fig. 5 is a view corresponding to Fig. 1 of a modified construction; and

Figs. 6 and 7 are views corresponding to Figs. 2 and 3 of the same modified construction.

The implement herein shown comprises a hollow casing 10 of "Bakelite" or other mouldable material which is shaped to serve as a handle and also as a housing for the motor of the implement. It is provided at its upper end with a pair of parallel flanges 11 and 12 spaced from each other and forming between them a seat to receive the cutting head. The cutting head comprises an elongated outer member 13 of tempered steel having inturned flanges which are transversely serrated to form two opposed series of stationary shearing teeth. Internally the cutter head is provided with a recessed filler block 17 and this is provided with a large rectangular opening 14 for a pair of retaining pins and to permit passage of the operating arm of the driving motor. Above the filler piece 17 the cutter head has an unobstructed opening from end to end. The upper surface of the block 17 supplies a seat for the reciprocating cutter 20 which is an elongated bar of steel having a pair of spaced longitudinally flanges serrated to form shearing teeth which underlie the shearing teeth of the head 13. The cutter 20 is provided with a central aperture in its lower face for the driver arm and with a pair of sockets for the ends of the retaining pins, as will presently be described.

The cutter head is pivotally mounted upon a transverse pivoted pin 19 which extends through the flanges 11 and 12 of the casing 10 and through the lower right-hand end of the cutter head as seen in Fig. 3. The opposite end of the cutter head is provided with a transverse notch 15 which extends across both sides of the head and the end of the filler block 17. The casing 10 is provided with a pair of vertically movable spring-pressed pins 21 which normally engage at their upper ends in the sockets in the bottom face of the cutter 20 and serve yieldingly to press the cutter upwardly, maintaining the shearing teeth always in yielding engagement. Projecting from the casing 10 midway between the pins 21 is the oscillating driving arm 22 of the motor, not shown. As already explained the pins 21 and the driver arm 22 are long enough to pass easily through the vertical opening 14 in the bar 17 of the cutter head and to enter the recesses or sockets provided for them in the lower face of the

cutter 20. A spring detent 23 is secured to the casing 10 and provided with a V-shaped projection located in registration with the notch 15 of the head when the head is seated in operative position between the flanges 11 and 12 of the casing. The head is thus retained securely in place, at one end by the pivot pin 19 and at the other by engagement of the detent 23. It will be observed that this mounting throws practically no bending or twisting stress on the flanges of the casing 10, and this is particularly true since the pivot pin 19 is located as low as possible in the flanges 11 and 12.

When the cutter head 13 is in operative position as shown in Fig. 3 the ends of the pins 21 enter their sockets in the lower face of the cutter and the oscillating driving arm 22 enters the central recess provided for it. The spring pins 21 are yieldingly mounted so as to follow the reciprocations of the cutter bar without retarding it. The opening in the bar 17 of the cutter head provides the necessary clearance for this as well as for the vibratory motion of the driving arm 22. Under such conditions the cutter 20 is positively prevented from being passed endwise out of the cutter head and while in operative position the spring detent 23 holds the cutter head in the position of Fig. 3. When, however, the cutter head is swung forceably upwardly and the detent 23 forced to disengage the cutter head the latter may be rocked upwardly sufficiently to disengage the pins 21 and the driver arm 22 from the cutter bar. As soon as such a position is reached the cutter bar may be slipped freely in an endwise direction out of either open end of the cutter head, all as suggested in Fig. 2. Thus the implement is opened from end-to-end beneath the shearing teeth and may be conveniently cleaned.

A second embodiment of my invention is illustrated in Figs. 5, 6 and 7. This is similar to that already described except that the spring clip or detent is fast to the head instead of the casing as in the implement above described. Referring to these figures, the head 33 is shown as pivotally mounted at its right-hand end and provided at its left-hand end with a spring detent 35. The side wall of the casing 10 flares outwardly just below the seat which is provided for the head between its flanges and the detent 35 is shaped to snap over the shoulder thus formed and catch over the inwardly sloping wall of the casing, as shown in Fig. 7. The detent thus retains the pivoted head securely in operative position unless the head is forced upwardly with sufficient force to spring the detent 35 outwardly to release the head so that it may be swung into its open or accessible position, as shown in Fig. 6.

It will be noted that in both embodiments of the invention above described the spring detent not only holds the head down on its seat but maintains it under continuing yielding pressure. In this way it takes up all backlash and holds the head always in a fixed initial position, thus contributing to the accuracy of setting the cutter most advantageously in the head.

While the spring detent is herein shown as located in an exposed position this is not necessary for the detent may be located so as to engage inside the casing if that is desired.

Having thus disclosed my invention and described preferred embodiments thereof for illustrative purposes but not in any limiting sense I claim as new and desire to secure by Letters Patent:

1. A dry shaving implement including in its structure a casing having a flange at one end forming therewith a seat, an elongated open-ended cutter head pivotally mounted at one end of said flange, a reciprocatory cutter contained within the head, a driving arm within the casing connected to said cutter, and a detent for detachably holding the head down on its seat and for maintaining operative connection between the cutter and said arm and releasable to permit the head to be swung into a position in which the cutter may be disengaged from the driving arm and removed through the open end of the head.

2. A shaving implement including in its structure a casing having a seat at one end thereof from which projects a motor driven actuator, an elongated open-ended cutter head pivotally mounted at one end in the casing, a cutter mounted for reciprocation therein and retained therein by engagement with said actuator, and a spring detent for releasably connecting the free end of the cutter head with said casing to hold the cutter head upon the seat, said detent being releasable to permit the head to be swung from its seat into a position in which the cutter may be disengaged from its actuator and removed through an open end of the head.

3. A shaving implement including in its structure a casing of moulded material having parallel flanges defining a seat extending across one end of the casing, an elongated open-ended cutter head pivotally mounted to swing about a transverse axis located above the seat and having an opening in its lower face, a motor driven arm projecting from the seat into said opening in the head, a cutter bar mounted to reciprocate in the head above said opening and having a recess receiving the end of the driven arm, and a spring clip fast to the free end of the cutter head and shaped to interlock releasably with the casing below said seat to hold the head in operative position or to free it for pivotal movement to disengage the cutter from said driven arm and permit its removal through the open end of the head.

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