March 9, 1965 R. R. REAM 3,172,200

DOUBLE DETENT HOLDING MEANS FOR ELECTRIC SHAVER HEAD UNIT

Filed Aug. 7, 1963 2 Sheets-Sheet 1

Fig. 1.

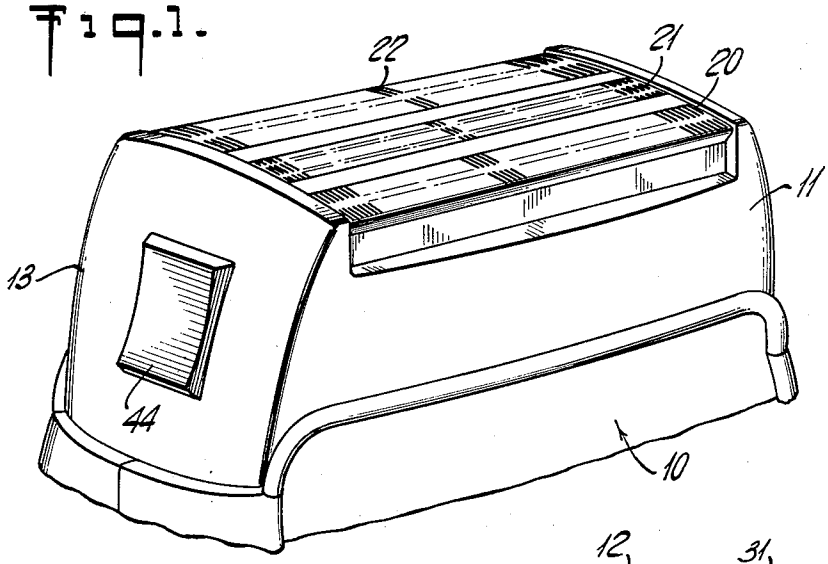


Fig. 2.

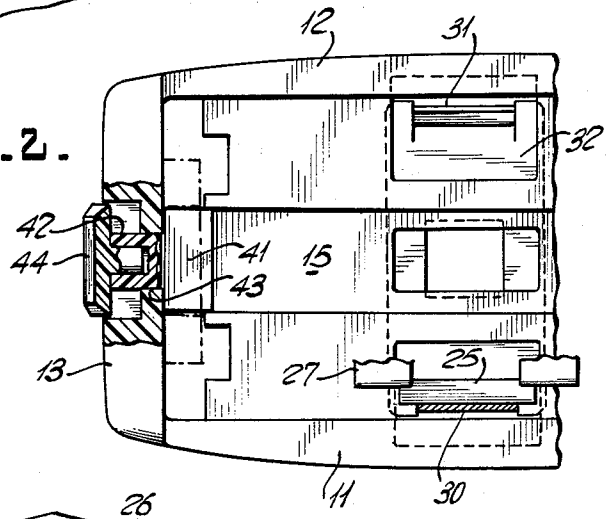
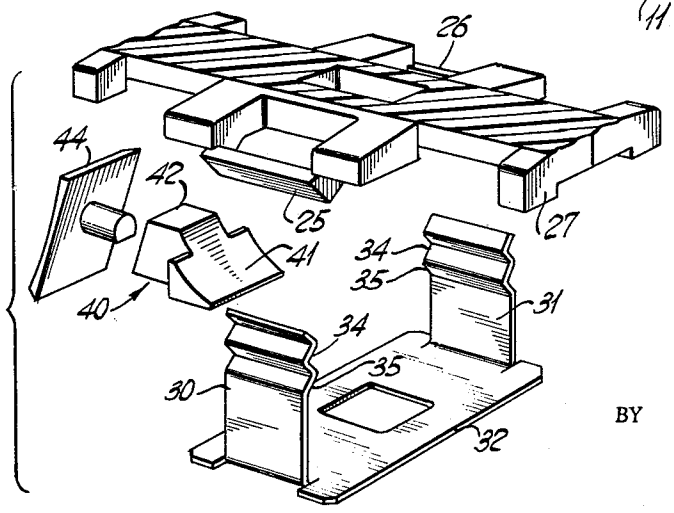


Fig. 3.



INVENTOR.
ROBERT R. REAM

BY

Reginald Hicks
ATTORNEY

March 9, 1965 R. R. REAM 3,172,200

DOUBLE DETENT HOLDING MEANS FOR ELECTRIC SHAVER HEAD UNIT

Filed Aug. 7, 1963 2 Sheets-Sheet 2

Fig. 4.

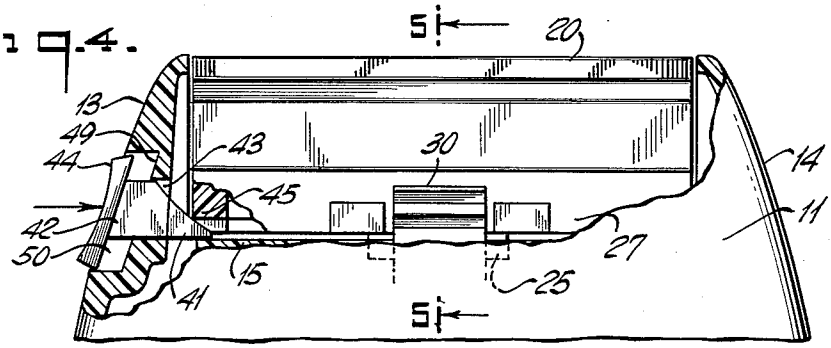


Fig. 6.

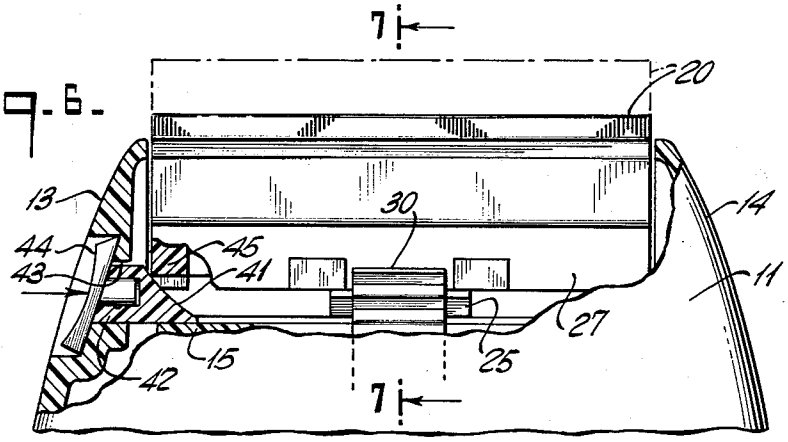


Fig. 5.

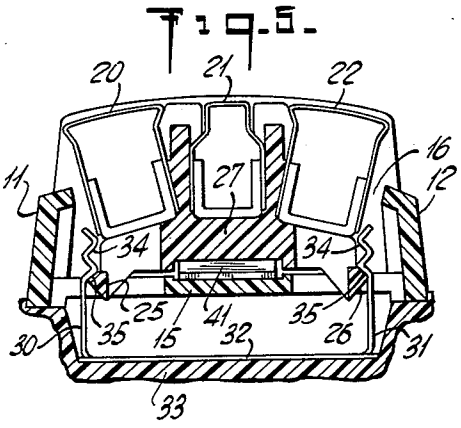
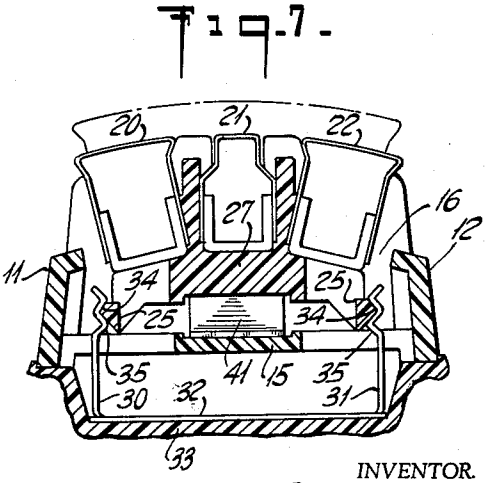


Fig. 7.



INVENTOR.
ROBERT R. REAM

BY

Reginald Hicks
ATTORNEY

United States Patent Office 3,172,200
Patented Mar. 9, 1965

3,172,200

DOUBLE DETENT HOLDING MEANS FOR ELECTRIC SHAVER HEAD UNIT

Robert R. Ream, Ephrata, Pa., assignor to Schick Electric Inc., a corporation of Delaware

Filed Aug. 7, 1963, Ser. No. 300,487
3 Claims. (Cl. 30—43.1)

This invention relates to the attachment of an electric shaver shearing head unit to and its release from the case of the shaver, housing the drive motor, and has for its object to provide a construction which minimizes the likelihood of the head unit being dropped and damaged in the course of its removal from the case, as for cleaning.

According to the invention, the head unit is spring-held in its normal operating position on the case and is adapted for release by a manually movable wedge, the latter being so arranged that it only partially disengages the head unit from its holding means, so that there is no danger of the user inadvertently "popping" the unit completely off the case and dropping it. After the head unit has been thus partially disengaged, it is fully released and withdrawn by hand.

As applied to an electric shaver including a case having an open-topped, head-receiving recess at one end, the said recess bounded by a floor portion, side walls and at least one end wall, the preferred form of the invention comprises the combination of a leaf spring upstanding in the recess adjacent each side wall, the upper end of each spring incorporating upper and lower detent notches, a shearing head unit including a base having a locking element on each side thereof adapted for snap-engagement successively with the upper and lower detent notches when the head unit is pressed into the recess, a wedge seated on the recess floor portion adjacent said end wall with its thin end disposed beneath the head unit base, the wedge being movable longitudinally of the recess to raise the head unit and adapted to raise the same only to an extent such as to cause the locking elements to be transferred from the lower to the upper detent notches, the wedge having a shank portion passing through said end wall and an operating button on the outer end of the wedge shank for effecting said longitudinal movement of the wedge.

The invention will be readily understood from the description of the accompanying drawings, in which:

FIG. 1 is a perspective view of the upper or head end of an electric shaver incorporating the invention in a preferred form;

FIG. 2 is a broken out and partially sectioned plan view of the shaver of FIG. 1, with parts omitted the more clearly to show the head unit locking means;

FIG. 3 is an exploded perspective view of the major components of the locking and release means for the head unit;

FIG. 4 is a partially sectioned side elevational view of the shaver of FIG. 1, showing the head unit in its fully locked position;

FIG. 5 is a sectional view on the line 5—5 of FIG. 4;

FIG. 6 is a view similar to FIG. 4 but showing the head unit in its partially released position; and

FIG. 7 is a sectional view on the line 7—7 of FIG. 6.

Without regard to the details of the preferred form described below, the case or handle portion of the shaver incorporates a head-receiving recess, with a leaf spring upstanding on each of the two sides of the recess and the upper end of each spring incorporates upper and lower detent notches. The shearing head (or head unit in the case of a multiple head structure such as illustrated herein) is provided with locking elements adapted for snap-engagement successively with the upper and lower detent notches when the head is pressed into the recess; and a manually movable wedge is provided, mounted on the case adjacent the head for sliding movement beneath it, to raise the head but only to such an extent as to transfer the locking elements from the lower to the upper detent notches. The latter serve to retain the head and the latter can then be readily grasped and withdrawn by hand.

Referring now to the drawings, the upper end of the shaver case, generally designated **10**, terminates in a shell comprised of the side walls **11**, **12** and end walls **13**, **14**, the floor portion **15** of the shell completing the head-receiving recess **16**.

The details of the triple shearing head construction illustrated form no part of the present invention and for that reason need not be described, it being sufficient to note that, in any known or preferred manner, three individual heads **20**, **21**, **22** (FIGS. 5 and 7) are assembled as a unit for bodily attachment to and removal from the case. It may also be noted at this juncture that, in order to simplify the drawings, the drive means for the inner cutters of the heads and various related details have been omitted, they also forming no part of this invention and being well known. For present purposes, it is required only that the head unit be provided with suitable locking elements, as mentioned above; and in the preferred form illustrated, such elements take the form of bars **25**, **26** formed as an integral part of the plastic base or cradle **27** of the head unit assembly.

The leaf springs **30**, **31** are shown as comprising the upstanding arms of a single detent member **32** which may be seated on and suitably secured in relation to the case wall portion **33** (FIGS. 5 and 7), the spring arms projecting upwardly through appropriate openings in the floor portion **15** into the head-receiving recess and, at their upper ends, being formed with the upper and lower detent notches **34**, **35**. Accordingly, when the head unit is inserted in the recess **16** and pressed downwardly, its locking bars will first engage the upper detent notches and then the lower, in which position the upper surfaces of the shearing heads are substantially flush with the tops of the recess end walls **13**, **14** (FIGS. 1, 4, 5).

The wedge means by which the head unit is raised, generally designated **40**, consists of a tapered or working portion **41**, a reduced shank **42** which protrudes through an opening **43** in end wall **13**, and an exterior push button **44** cemented or otherwise secured to the shank of the wedge.

The bottom face or "flat" of the wedge rides on the floor of the head-receiving recess and its sloping surface is engaged by the corner **45** of the base of the head unit. The wedge is freely movable so that, when the head unit is inserted, the base will engage the wedge and move it outwardly, into the position shown in FIG. 4.

It will be apparent that when pressure is applied to push button **44**, the inward movement of the wedge will serve to raise the head unit against the holding action of the detent springs; also that the travel of the wedge is limited by the engagement of the push button with the end face **49** of the push button recess **50** (FIG. 4). This limited movement of the wedge is just sufficient to raise the head unit enough to cause the locking elements to disengage from the lower detent notches and pass into engagement with the upper notches, as illustrated in FIGS. 6 and 7. In this position of the unit, the heads **20**, **21** and **22** protrude from the recess far enough that they can be firmly grasped and the head unit readily detached from the upper detent notches. However, until so grasped and manually withdrawn, the head unit is sufficiently held that it will not drop out, no matter how the shaver happens to be held when the push button is pressed.

In the light of the foregoing exemplification of the principles of the invention, the following is claimed.

1. In an electric shaver including a case having an open-topped, head-receiving recess at one end, the said recess bounded by a floor portion, side walls and at least one end wall, the combination of a leaf spring upstanding in the recess adjacent each side wall, the upper end of each spring incorporating upper and lower detent notches, a shearing head unit including a base having a locking element on each side thereof adapted for snap-engagement successively with the upper and lower detent notches when the head unit is pressed into the recess, a wedge seated on the recess floor portion adjacent said end wall with its thin end disposed beneath the head unit base, the wedge being movable longitudinally of the recess to raise the head unit and adapted to raise the same only to an extent such as to cause the locking elements to be transferred from the lower to the upper detent notches, the wedge having a shank portion passing through said end wall and an operating button on the outer end of the wedge shank for effecting said longitudinal movement of the wedge.

2. In an electric shaver including a case having an open-topped, head-receiving recess at one end, the said recess bounded by a floor portion, side walls and at least one end wall, the combination of a leaf spring upstanding in the recess adjacent each side wall, the upper end of each spring incorporating upper and lower detent notches, a shearing head unit including a base having a locking element on each side thereof adapted for snap-engagement successively with the upper and lower detent notches when the head unit is pressed into the recess, a manually movable wedge mounted on the case adjacent the head end for sliding movement beneath the head unit to raise the same, the wedge being adapted to raise the head unit only to an extent such that the locking elements are transferred from the lower to the upper detent notches.

3. In an electric shaver including a case having a head-receiving recess, the combination of a leaf spring upstanding on each of two sides of the recess, the upper end of each spring incorporating upper and lower detent notches, a shearing head unit having locking elements adapted for snap-engagement successively with the upper and lower detent notches when the head unit is pressed into the recess, and a manually movable wedge mounted on the case adjacent the head unit for sliding movement beneath the unit to raise the same, the wedge being adapted to raise the head unit only to such an extent as to transfer the locking elements from the lower to the upper detent notches.

References Cited by the Examiner

UNITED STATES PATENTS

2,758,370	8/56	Gray et al.	40—43.92
2,793,430	5/57	Carissimi	30—43.92
3,039,188	6/62	Somers et al.	30—43.92
3,090,119	5/63	Jepson	30—43.92 X
3,101,537	8/63	Kleinman	30—43.92
3,105,298	10/63	Carissimi	30—43.92
3,111,754	11/63	Locke	30—41.6

WILLIAM FELDMAN, *Primary Examiner.*