

Description

The present invention relates to plastics razor cartridges and razors, in particular one-piece razor cartridges and razors.

The expression "one-piece" refers to all elements of the cartridge or razor save the blade or blades. The expression "blade" or "blade edge" is intended to include one or more single cutting edge blades.

The transition from conventional shaving appliances to the so-called disposable razors is occurring at an accelerated pace. Consequently, emphasis is upon structures that accommodate high-speed, low-cost manufacturing processes that do not sacrifice quality and performance in the end product.

One desirable feature of any razor cartridge or razor is convenience in ridding the razor of shaving debris accumulated during the course of shaving. That is, it is desirable to provide a structure that is readily purged of shaving debris by exposure to a stream of domestic water.

A prior art construction which exhibits a structure facilitating purging of shaving debris is disclosed and described in our U.S. Patent No. 4,016,648. The razor disclosed is frequently referred to as a "spacerless razor" and comprises a structure supporting and retaining blades upon posts instead of the usual and customary flat shim-like spacer member.

In the prior razor the blade 14 rests upon blade support 62 and is held spaced from the upper blade 16 by posts 7, 8 and 9, extending from a solid cap and projecting downwardly through perforations in the upper blade. Correspondingly, posts 3, 4, 5 and 6 project upwardly from the blade support 62 and through mating perforations in the lower blade 14. The posts 3, 4, 5 and 6 bear against upper blade 16 insuring support and the maintenance of blade spacing.

This post structure provides voids defining a path for washing away shaving debris developing between blades, particularly at the blade cutting edges.

An object of the present invention is to provide an improved plastics razor cartridge or razor.

According to the present invention we provide a one-piece plastics razor cartridge comprising a blade support including a skin-engaging guard bar, a plurality of spaced posts projecting from said support, a perforated blade having a cutting edge which projects towards said guard bar, said blade being disposed upon said support so that said posts project through mating perforations, and means for securing the blade to the blade support, characterised in that a first path for purging the razor of shaving debris is defined by gaps between skin engaging portions of the posts, the means for securing the blades to the blade support is a portion of selected posts obtained by upsetting or deforming the posts and each post terminates in a predetermined configuration so as to develop collectively a contoured skin-engaging surface which in combina-

tion with said guard bar and blade develops a predetermined blade edge geometry.

Advantageously there are second and third paths for purging the razor of shaving debris, the second path being defined by vertical spacing between blades, and the third path being defined by elongated slots between the guard bar and the blade edges.

The cartridge may be provided with an integral handle to form a disposable razor.

Reference is now made to the drawings, in which:—

Figure 1 is a perspective view of a razor embracing the invention;

Figure 2 is a top plan view of the razor;

Figure 3 is a front elevation;

Figure 4 is a vertical section of Figure 3 in the plane of the line 4-4; and

Figure 5 shows a razor of the present invention with an integral handle.

The reference numeral 11 indicates a razor having a track 12 engageable with a razor handle (shown in Figure 5 only) in well-known fashion.

The razor includes a first skin-engaging surface defining a guard bar 13 spaced from a pair of offset cutting edges 14 and 16 by elongated through slots 17-17 providing a flow path for purging shaving debris.

Blades 18 and 19 are each formed with a plurality of perforations for receiving mating upstanding posts 21-21 which collectively define a cap or second skin-engaging surface indicated generally by the reference numeral 22 in Figure 1.

A first or lower blade 18 having a plurality of perforations 24 is in contact with and supported by a generally flat surface 26.

Offset or shoulder 27 of each post 21 projects upwardly through mating perforation 24 of lower blade 18 and makes a snug fit therewith.

Portions of the shoulder 27 are deformed or upset as shown at 28 in Figures 2 and 3 to fix and retain lower blade 18 in place.

Blade 19 rests on the top surface 29 of shoulder 27 providing uniform spacing between blades while creating openings 31-31 from post to post and blade to blade. The openings 31-31 collectively define an additional flow path for purging shaving debris.

Posts 21-21 project upwardly through mating perforations 23 beyond top blade 19 and are contoured as shown in Figures 1 and 4 to provide a second skin-engaging surface with gaps 32-32 providing collectively a still further flow path for purging shaving debris.

Blade 19 is held in position by upsetting or deforming a further portion of the posts 21 as is again apparent in Figures 2 and 3, indicated by the reference numeral 33.

The razor is fabricated entirely of plastics with the exception of the blades 18 and 19 which are usually metallic. The razor may have an integrally moulded handle as shown in Figure 5.

Claims

1. A one-piece plastics razor cartridge (11) comprising a blade support including a skin-engaging guard bar (13), a plurality of spaced posts (21) projecting from said support, a perforated blade (18) having a cutting edge (14) which projects towards said guard bar (13), said blade (18) being disposed upon said support so that said posts (21) project through mating perforations (24), and means for securing the blade (18) to the blade support, characterised in that a first path for purging the razor of shaving debris is defined by gaps (31) between skin engaging portions (22) of the posts (21), the means for securing the blade (18) to the blade support is a portion (28) of selected posts (21) obtained by upsetting or deforming the posts (21) and each post (21) terminates in a predetermined configuration so as to develop collectively a contoured skin-engaging surface (22) which in combination with said guard bar (13) and blade (18) develops a predetermined blade edge geometry.

2. A razor according to Claim 1, characterised in that selected posts (21) are formed with spaced, aligned offsets or shoulders (27) creating a second blade support for a second perforated blade (14), said posts (21) project through mating perforations (23) in said second blade (14) and means for securing said second blade (19) to said second blade support.

3. A razor according to Claim 2, characterised in that there are second and third paths for purging the razor of shaving debris, the second path being defined by vertical spacing between blades (18, 19), and the third path being defined by elongated slots between the guard bar (13) and the blade edges (14, 16).

4. A razor according to Claim 2 or 3, characterised in that the means for securing the second blade (19) to the blade support is a portion (33) of selected posts (21) obtained by upsetting or deforming the posts (21).

5. A razor according to any preceding claim, characterised by a handle formed integrally with the cartridge (11) to define with said supports a one-piece unitary assembly.

Patentansprüche

1. Rasierapparat-Scherkopf (11) aus Kunststoff, mit einer Klingenauflage mit einer der Haut anliegenden Schutzleiste (13), einer Mehrzahl von mit Abstand voneinander angeordneten, aus der Klingenauflage herausragenden Pfosten (21), sowie einer mit Aussparungen versehenen Klinge (18) mit einer Schneidkante (14), die in Richtung der Schutzleisten (13) ragt, wobei die Klinge (18) so auf der Klingenauflage angeordnet ist, daß die Pfosten (21) durch entsprechende Ausnehmungen (24) ragen, und mit Mitteln, um die Klinge (18) an der Klingenauflage zu befestigen, dadurch gekennzeichnet, daß ein erster Weg zum Säubern des Rasierapparates von Rasierrückständen von Lücken (31) zwischen den mit der Haut in Berüh-

rung stehenden Teilen (22) der Pfosten (21) gebildet wird, daß die Mittel zum Befestigen der Klinge (18) an der Klingenauflage aus durch Anstauchen oder Deformieren der Pfosten (21) gewonnenen Abschnitten (28) einiger der Pfosten (21) bestehen, und daß jeder Pfosten (21) so in einer bestimmten Konfiguration endet, daß die Pfosten gemeinsam eine konturierte Anlagefläche (22) für die Haut bilden, welche in Verbindung mit der besagten Schutzleiste (13) und der Klinge (18) die gewünschte Schneidkanten geometrie ergibt.

2. Rasierapparat nach Anspruch 1, dadurch gekennzeichnet, daß an einigen Pfosten (21) voneinander beabstandete, gegeneinander ausgerichtete Absätze oder Schultern (27) ausgebildet sind, welche eine zweite Klingenauflage für eine zweite mit Ausnehmungen versehene Klinge (19) bilden, wobei die Pfosten (21) durch entsprechende Ausnehmungen (23) der zweiten Klingen (19) greifen, und daß Mittel zum Befestigen der zweiten Klinge (19) an der zweiten Klingenauflage vorgesehen sind.

3. Rasierapparat nach einem der Ansprüche 1 oder 2, dadurch gekennzeichnet, daß zweite und dritte Wege zum Säubern des Rasierapparates von Rasierrückständen vorgesehen sind, wobei der zweite Weg durch einen vertikalen Abstand zwischen den Klingen (18, 19) und der dritte Weg durch längliche Schlitz zwischen der Schutzleiste (13) und den Schneidkanten (14, 16) gebildet wird.

4. Rasierapparat nach Anspruch 2 oder 3, dadurch gekennzeichnet, daß die Mittel zum Befestigen der zweiten Klinge (19) an der Klingenauflage von Teilen (33) einzelner Pfosten (21) gebildet werden, welche durch Anstauchen oder Deformieren der Pfosten (21) gewonnen werden.

5. Rasierapparat nach einem der vorhergehenden Ansprüche, gekennzeichnet durch einen einstückig mit dem Rasierapparat-Scherkopf (11) geformten Handgriff, welcher zusammen mit den besagten Klingenauflagen ein einheitliches Gerät bildet.

Revendications

1. Tête de rasage en matière plastique d'une seule pièce (11) comprenant un support de lame qui comporte une barrette de garde (13) destinée à entrer en contact avec la peau, une pluralité de plots espacés (21) faisant saillie à partir dudit support, une lame perforée (18) ayant un fil ou bord de coupe (14) en direction de ladite barrette de garde (13), ladite lame (18) étant disposée sur ledit support pour que ces plots (21) traversent des perforations (24) dimensionnées dans ce but et des moyens pour fixer la lame (18) au support de lame, caractérisé en ce qu'une première voie pour l'élimination des résidus du rasage est définie par des ouvertures (31) comprises entre des parties (22) des plots (21) entrant en contact avec la peau, en ce que les moyens pour fixer la lame (18) au support de lame est une partie (28) de certains plots (21) obtenue par compression ou déformation de ces plots (21), en ce que chaque plot a une surface qui se termine selon une



(12)

configuration prédéterminée de façon à ce qu'ensemble avec les autres plots ils forment une surface d'engagement avec la peau présentant un profil qui, combiné avec ladite barrette de garde (13) et la lame (18) contribue à la formation d'un bord de lame ayant une géométrie prédéterminée.

2. Un rasoir selon la revendication 1, caractérisé en ce que certains plots (21) comportent des décalages ou épaulements (27) espacés et alignés formant un second support de lame pour une seconde lame perforée (19), en ce que lesdits plots (21) traversent des perforations (23) dimensionnés dans ce but dans ladite seconde lame (14) et en les moyens pour fixer ladite seconde lame (19) audit second support de lame.

3. Un rasoir selon la revendication 1 ou 2,

caractérisé en ce que des seconde et troisième voie permettent d'éliminer du rasoir les résidus du rasage, la seconde voie étant définie par le décalage vertical entre les lames (18, 19) et la troisième voie étant définie par les fentes allongées disposées entre la barrette de garde (13) et les bords de coupe (14, 16).

4. Un rasoir selon la revendication 2 ou 3, caractérisé en ce que les moyens pour fixer la seconde lame (19) au support de lame est une partie (33) de certains plots (21) obtenue par compression ou déformation de ces plots (21).

5. Un rasoir selon l'une des revendications 1 à 2, caractérisé par un manche faisant partie intégrante de la tête de rasoir (11) et qui définit avec lesdits supports un montage d'une seule pièce.

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