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Description

The present invention relates to disposable razors and relates in particular to one-piece ultra low cost disposable razors.

The disposable razor market is highly competitive, and it is vital that manufacturing costs, particularly material handling costs, be held to an absolute minimum. Consequently a continuing effort must be made to seek out cost reduction methods and procedures.

It is an object of the present invention to provide a razor body capable of being moulded in one piece thereby reducing the expense of handling piece-parts.

The expression "one piece" in this specification refers to the initial moulding of all elements of a razor body as a single piece-part. The expression "blade package" denotes a single twin blade (with blade spacer if twin), all blades having a single cutting edge.

US-A-3,492,722 relates to a disposable razor comprising a case having a hinged cover mounted thereto, the cover being capable of closing the case. A substantially vertical, integrally mounted extension is provided on the outer portion of the hinged cover, and the outermost limit of the extension is less than the depth of the case. Tabs are provided at the end of the case to receive a razor blade which is mounted on the extension. The cover can be closed against the case so that the razor blade is housed within the case and cannot be used. Other items such as shaving cream etc. may also be housed in the case. The preamble of claim 1 is based on this document.

US-A-3,388,468 relates to a safety razor having a removable safety cover. The cover is provided with jaws for engaging the razor head in order to secure the cover to the head. The cover is removed when it is desired to use the razor, and is replaced for razor storage.

According to one aspect of the present invention we provide a one-piece disposable razor body comprising a head having a support surface for receiving at least one single cutting edge blade, said head having a face-engaging surface opposite said support surface, said face-engaging surface having a forward margin adjacent a cutting edge of the blade and an opposite rear margin adjacent a rear of the blade, a guard bar, a handle, and a temporary blade edge protector all moulded as a single-piece part, said protector being operable to overlie the face-engaging surface, characterised in that the protector is joined to the head by means of breakaway links located at said rear margin of said face engaging surface, said protector being operable to engage the head releasably when said links are broken, and one of said head and protector is formed with latch means in the form of a pair of claws formed integrally with the head or protector which operate to latch releasably with mating indentations on the other of the head and protector. The protector is operable at the time of manufacture

to be latched releasably to the razor body immediately following its being broken away from the one-piece moulding.

The invention also includes a one-piece disposable razor comprising a body as defined above and a blade package located on said blade support.

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

Figure 1 is a vertical section of a one-piece moulding as it is ejected from the mould;

Figure 2 is a top plan view of the razor of Figure 1;

Figure 3 is an enlarged view of a portion of Figure 1;

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

Figure 5 is a detail of the latching claw.

Referring now to the drawings, the reference numeral 11 indicates a one-piece moulded plastic razor as it appears immediately after ejection from a mould comprising a handle 12, a guard bar 13, a head 14 having a blade package support surface 16, a face-engaging surface 17, and a blade edge protector 18 connected to the head 14 by breakaway links 19 and 21.

After securing a blade package 22 upon blade support surface 16, integral rivet or rivets 23 are upset to the dotted line configuration of Figure 1.

The cutting edge 24 of the blade package is positioned between the guard bar 13 and the face-engaging surface 17 in accord with well-known principles of blade geometry.

Incidentally, the means of securing the blade package is not critical to the present invention and may take form and structure which security of blade package and assembly machine design configuration dictate.

The blade edge protector 18 is formed with a pair of latching means including claws 26 and 27 and cam followers 28 and 29 and the claws are free to flex outwardly and snap inwardly as the cam followers traverse mating cams, as will be apparent immediately.

Brackets 31 and 32 connecting the head 14 and the handle 12 and supporting the head are formed with indentations 33 and 34 having cam surfaces 36 and 37 which lead into said indentations.

As an assembly step in the course of manufacture of the razor, the blade edge protector is manufactured automatically to (1) break the links 19 and 21 and (2) snap the protector 18 releasably into latching engagement with the head as shown in dotted lines in Figure 1.

During this occurrence, the followers 28 and 29 traverse their respective cams 36 and 37 and thereafter the claws 26 and 27 latch releasably with the mating indentations 33 and 34.

It is anticipated that a wide variety of modifications may be devised within the scope of this invention as defined in the claims. For example, the cam-cam follower arrangement can be reversed and the blade package may be attached frictionally with blade barbs engaging blade slots in the head 14.

Claims

1. A one-piece disposable razor body (11) comprising a head (14) having a support surface (16) for receiving at least one single cutting edge blade (23), said head (14) having a face-engaging surface (17) opposite said support surface (16), said face-engaging surface (17) having a forward margin adjacent a cutting edge (24) of the blade (23) and an opposite rear margin adjacent a rear of the blade (23), a guard bar (13), a handle (12), and a temporary blade edge protector (18) all moulded as a single-piece part, said protector (18) being operable to overlie the face-engaging surface (17), characterised in that the protector (18) is joined to the head (14) by means of breakaway links (19, 21) located at said rear margin of said face-engaging surface (17), said protector (18) being operable to engage the head (14) releasably when said links (19, 21) are broken, and one of said head (14) and protector (18) is formed with latch means in the form of a pair of claws (26, 27) formed integrally with the head (14) or protector (18) which operate to latch releasably with mating indentations (33, 34) on the other of the head (14) and protector (18).

2. A razor body according to Claim 1, characterised in that the head (14) is formed with cam surfaces (36, 37) leading to said mating indentations (33, 34) and each claw (26, 27) includes a cam follower (28, 29), whereby the claws (26, 27) make a snap-fit with said indentations (33, 34) after cam action.

3. A razor body according to Claim 1 or 2, characterised in that the breakaway links (19, 21) comprise a pair of spaced links.

4. A one-piece disposable razor comprising a razor body (11) as claimed in any of Claims 1 to 3, and a blade package (23) located on said blade support (16).

Patentansprüche

1. Einteiliger Wegwerfrazierer (11) mit einem Kopfteil (14), der eine Auflagefläche (16) zur Aufnahme mindestens einer einzelnen Schneidklinge (22) aufweist, wobei der Kopfteil (14) mit einer dem Gesicht anliegenden, der Auflagefläche (16) gegenüberliegenden Anlagefläche (17) ausgestattet ist, die einen vorderen, einer Schneidkante (24) der Schneidklinge (22) und einen gegenüberliegenden hinteren, dem hinteren Rand der Schneidklinge (22) benachbarten Rand aufweist, mit einer Schutzleiste (13), einem Handgriff (12) und einem zweitweisen Schneidkantenschutz (18), wobei alle Teile einstückig gegossen sind und der Schneidkantenschutz (18) über die Anlagefläche (17) gelegt werden kann, dadurch gekennzeichnet, daß der Schneidkantenschutz (18) mit dem Kopfteil (14) durch abbrechbare Bindeglieder (19, 21) verbunden ist, die an dem besagten hinteren Rand der Anlagefläche (17) für das Gesicht angeordnet sind, wobei der Schneidkantenschutz (18) in lösbarer Weise mit dem Kopfteil (14) verbindbar ist,

wenn die Bindeglieder (19, 21) abgebrochen sind, und wobei entweder an dem Kopfteil (14) oder am Schneidkantenschutz (18) Befestigungsmittel in Form eines Paares von einteilig mit dem Kopfteil (14) bzw. dem Schneidkantenschutz (18) ausgebildeten Klauen (26, 27) angeformt sind, die in lösbarer Weise mit Rastvertiefungen (33, 34) an dem gegenüberliegenden Schneidkantenschutz (18) bzw. dem Kopfteil (14) in Eingriff bringbar sind.

2. Rasierer nach Anspruch 1, dadurch gekennzeichnet, daß an dem Kopfteil (14) Kurvenflächen (36, 37) angeformt sind, die zu den besagten Rastvertiefungen (33, 34) führen, und daß jede Klaue (26, 27) eine Nockenfläche (28, 29) aufweist, wobei die Klauen (26, 27) nach Durchlaufen der Kurvenfläche mit den besagten Rastvertiefungen (33, 34) eine Schnappverbindung eingehen.

3. Rasierer nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die abbrechbaren Bindeglieder (19, 21) ein Paar von mit Abstand voneinander angeordneter Bindeglieder umfassen.

4. Einteiliger Wegwerfrazierer mit einem Körper (11) nach einem der Ansprüche 1 bis 3 und ein an der Auflagefläche (16) für die Klingen angeordnetes Klingepaket (22).

Revendications

1. Un corps (1) de rasoir jetable d'une seule pièce comprenant une tête (14) présentant une surface (16) de support destinée à recevoir au moins une lame (23) à une seule arête coupante, ladite tête (14) comportant une surface (17) d'engagement avec le visage opposée à ladite surface (16) de support ladite surface (17) d'engagement présentant une bordure avant adjacente à une arête coupante (24) de la lame (23) et une bordure arrière opposée adjacente à l'arrière de la lame (23), une barre (13) de garde, un manche (12) et un moyen de protection temporaire (18) de l'arête de lames, tous moulés en formant une pièce d'un seul tenant, ledit moyen de protection (18) pouvant être manoeuvré pour recouvrir la surface (17) d'engagement du visage, caractérisé en ce que le moyen de protection (18) est relié à la tête (14) au moyen de liaisons (19, 21) cassables situées sur la bordure arrière de ladite surface (17) d'engagement du visage, ledit moyen de protection (18) pouvant être manoeuvré pour engager la tête (14) de façon libérable lorsque lesdites liaisons (19, 21) sont cassées, et en ce que l'un des éléments consistant en la tête (14) ou le moyen de protection (18) comporte des moyens de verrouillage sous forme d'une paire de griffes (26, 27) formée d'un seul tenant avec la tête (14) ou le moyen de protection (18) susceptible de se verrouiller de façon libérable avec les indentations (33, 34) correspondantes prévues sur l'autre élément donc le moyen de protection (18) ou la tête (14).

2. Un corps de rasoir selon la revendication 1, caractérisé en ce que la tête (14) comporte des surfaces (36, 37) de cames conduisant vers lesdites indentations (33, 34) correspondantes et en



ce que chaque griffe (26, 27) comporte une contre-came (28, 29), les griffes (26, 27) réalisant un ajustment à encliquetage avec lesdites indentations (33, 34) après action de la came.

3. Un corps de rasoir selon la revendication 1 ou 2, caractérisé en ce que les liaisons (19, 21)

cassables comprennent une paire de liaisons espacées

4. Un rasoir jetable d'un seul tenant comprenant un corps (11) de rasoir selon l'une quelconque des revendications 1 à 3, et un jeu de lame (23) situé sur ledit support (16) de lames.

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