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Shaving apparatus

The invention relates to a shaving apparatus having a cutting member which is reciprocable relative to a foil, the foil being provided with a regular pattern of round apertures and oblong apertures.

Such a shaving apparatus is for example known from US—A—2.900.719.

It is the object of the invention to provide an improved construction which owing to the simple shape of the apertures can be manufactured cheaply and which in an optimum manner complies with the requirements imposed to the foil in respect to the strength and rigidity and the ratio between the total area of the apertures and the area of the foil.

The shaving apparatus in accordance with the invention is characterized in that the round apertures are located at the vertices of a regular pattern of hexagons, an oblong aperture being located within each hexagon, the longitudinal axis of each oblong aperture being parallel with or inclined at an angle of under 45° to the direction of reciprocation of the cutting member.

The DE—A—947.685 shows foil patterns with oblong apertures arranged with different angles of inclination between the longitudinal axis of an aperture and the direction or reciprocation of the cutting member. However the combination of round apertures and oblong apertures which permits a high ratio between the total area of the apertures and the working area of the shear foil, i.e. the area which will be swept by the cutting member in the operation of the shaving apparatus, is not known from this DE-patent. In such a combination the oblong apertures are intended for catching long hairs, whereas the round apertures are suitable for catching short hairs.

The invention will be explained hereinafter by means of a description of an embodiment.

Figure 1 is a perspective view of a shaving apparatus with partly cut-away foil.

Figure 2 shows the shaving apparatus of Fig. 1 partly in side view and partly in cross-sectional view.

Figure 3 shows a section of a development of the foil of the apparatus of Figs. 1 and 2 on an enlarged scale.

The shaving apparatus in accordance with Figures 1, 2 and 3 comprises a housing 1 with a detachable shaving head 2. The shaving head 2 is provided with a foil 3 with apertures 4, 5. For the fixation of the foil 3 to the shaving head 2 said head is provided with hook-shaped projections 6 which engage with corresponding openings 7 at the edge of the foil. A cutting member 8 which is reciprocable relative to the foil is located at the inner side of the foil. The cutting member 8 is provided with arcuate cutting elements 9 which at the ends are secured to the strips 10. At the ends these strips 10 are inter-

connected by the transverse members 11, so that a frame 12 is obtained which is the base for the cutting member. This frame 12 is provided with a pin 13 for the coupling of the cutting member 8 to the vibrator motor 15 via the drive spindle 14. The cutting member 8 is reciprocated in the directions P relative to foil 3.

During use of the apparatus the foil 3 is moved over the skin. Hairs which are caught in an aperture 4 or 5 and project into the interior of the shaving head are shaved off by the shearing action between the cutting element 9 and the foil 3. The round apertures 4 are suitable for catching short hairs, whilst the oblong apertures 5 are intended for longer hairs.

Developed into a plane the foil 3 has a rectangular shape, a section of said foil being shown on an enlarged scale in Fig. 3. The round apertures 4 are located at the vertices of a regular pattern of hexagons 16 which cover the entire area. Within every hexagon 16 an oblong aperture 5 is formed whose longitudinal direction is represented by the longitudinal axis 17.

The longitudinal axes 17 of the oblong apertures 5 enclose an acute angle α under 45° with the direction of reciprocation P of the cutters. The hexagons 16 are of irregular shape, i.e. at least two of the three diagonals 18, 19 and 20 have different lengths. The oblong apertures 5 are approximately oriented in accordance with the longest diagonal 18, i.e. the longitudinal axis 17 encloses an acute angle β with the diagonal 18 which is smaller than the angles γ and δ enclosed by the longitudinal axis 17 and the diagonals 19 and 20 respectively.

It has been found that thus a highly homogeneous bending resistance of the foil is obtained to bending in a plane perpendicular to the direction of movement P, which is important for a correct engagement of the foil 4 with the cutting member 8 and thus for a satisfactory shaving result.

Also can be obtained a high ratio between the total area of the apertures and the working area of the shear foil, i.e. the area which will be swept by the cutting member in the operation of the shaving apparatus.

Claim

A shaving apparatus having a cutting member (8) which is reciprocable relative to a foil (3), the foil being provided with a regular pattern of round apertures (4) and oblong apertures (5), characterized in that the round apertures (4) are located at the vertices of a regular pattern of hexagons (16), an oblong aperture (5) being located within each hexagon, the longitudinal axis (17) of each oblong aperture being parallel with or inclined at an angle of under 45° to the direction of reciprocation of the cutting member (8).

Patentanspruch

Rasiergerät mit einem Schneidelement (8), das mit einer hinund hergehenden Bewegung gegenüber einer Folie (3) beweglich ist, wobei die Folie mit einem regelmässigen Muster kreisrunder Öffnungen (4) und mit länglichen Öffnungen (5) versehen ist, dadurch gekennzeichnet, dass die kreisrunden Öffnungen (4) an den Eckpunkten eines regelmässigen Musters von Sechsecken (16) liegen, während sich innerhalb jedes sechseckes eine längliche Öffnung (5) befindet, wobei die Längsachse (17) jeder länglichen Öffnung sich parallel zur oder in einem Winkel von weniger als 45° zu der Bewegungsrichtung des Schneidelementes (8) erstreckt.

Revendication

Rasoir comportant un organe de coupe pouvant être animé d'un mouvement de va-et-vient par rapport à un peigne (3), qui est muni d'une configuration régulière d'ouvertures circulaires (4) alternant avec des ouvertures allongées (5), caractérisé en ce que les ouvertures circulaires (4) sont placées aux sommets d'une configuration régulière d'hexagones (16), une ouverture allongée (5) se situant à l'intérieur de chaque hexagone, alors que l'axe longitudinal (17) de chaque ouverture allongée est parallèle au sens du mouvement de va-et-vient de l'organe de coupe (8) ou qu'il est incliné sous un angle inférieur à 45° par rapport à ce sens.

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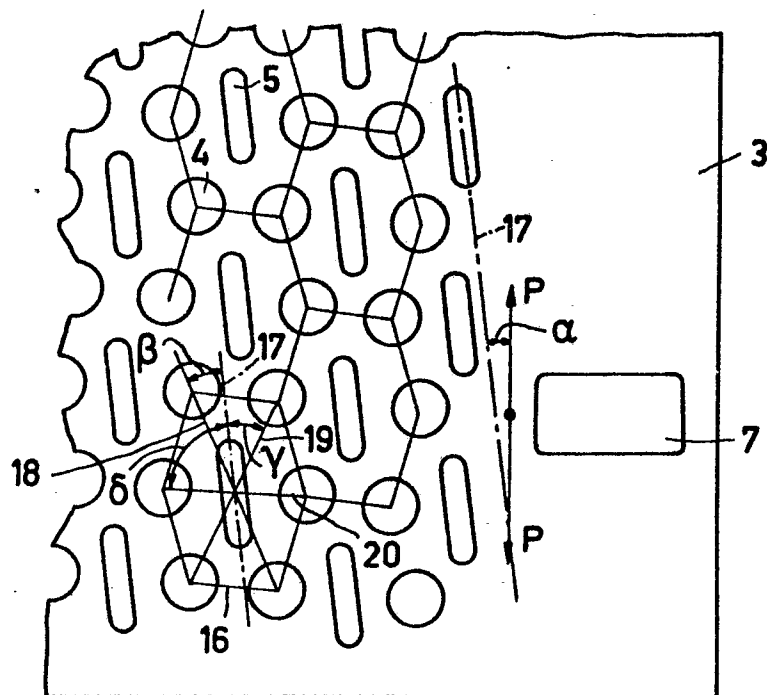


FIG.3