CLAIMS:

1. A hair-cutting unit (5) for use in a shaving device (1), said hair-cutting unit comprising an external cutting member (6) and an internal cutting member (7) which is rotatable relative to the external cutting member in a rotational direction (8) about an axis of rotation (9), wherein:

- the internal cutting member comprises a plurality of cutting elements (10), each having a cutting edge (11) with a respective main directional component of extension in a radial direction relative to the axis of rotation and located on a side of said cutting element leading in said direction of rotation;
- the external cutting member comprises an annular wall (12) having an outer surface (14) facing away from the internal cutting member and a plurality of hair-entry slits (15) which are mutually separated by hair-guiding strip portions (16) of the annular wall (12), each hair-entry slit and each hair-guiding strip portion being elongated and having a respective main directional component of longitudinal extension in a radial direction relative to the axis of rotation, and each hair-guiding strip portion having a counter-cutting edge (17) for co-operation with the cutting edges of the internal cutting member during rotation of the internal cutting member in said rotational direction;
- each hair-guiding strip portion has an inward surface (18) facing the internal cutting member, an outward surface being part of said outer surface, a first side surface facing in the rotational direction, and a second side surface (22) facing in a direction opposite to the rotational direction, wherein said inward surface and said second side surface mutually connect at the counter-cutting edge of the respective hair-guiding strip portion;

and wherein, as seen in a cross-section taken perpendicularly to the radial direction at least within a range of radial positions relative to the axis of rotation:

- a maximum depth D of a respective hair-entry slit is defined as a length of a maximum axial extension of a hair-guiding strip portion adjacent to the respective hair-entry slit in an axial direction parallel to the axis of rotation;
- a depth y is defined as a depth within the respective hair-entry slit as measured from said outer surface and along the axial direction, wherein $0 \leq y \leq D$;
- first normal vectors at a respective first side surface and second normal vectors

at a respective second side surface are each defined in a direction facing away from the corresponding hair-guiding strip portion;

- if said first normal vector has a non-zero component in said axial direction facing away from the internal cutting member, a first angle $\alpha 1$ between the first normal vector and said axial direction is defined in the acute angular range $0^\circ < \alpha 1 < 90^\circ$, and if said first normal vector has no component in said axial direction or a non-zero component in said axial direction facing towards the internal cutting member, said first angle $\alpha 1$ is defined in the obtuse angular range $90^\circ \leq \alpha 1 < 180^\circ$, wherein $\alpha 1(y)$ is a value of the first angle $\alpha 1$ in a position on the first side surface at the depth y;
- if said second normal vector has a non-zero component in said axial direction facing away from the internal cutting member, a second angle $\alpha 2$ between the second normal vector and said axial direction is defined in the acute angular range $0^\circ < \alpha 2 < 90^\circ$, and if said second normal vector has no component in said axial direction or a non-zero component in said axial direction facing towards the internal cutting member, said second angle $\alpha 2$ is defined in the obtuse angular range $90^\circ \leq \alpha 2 < 180^\circ$, wherein $\alpha 2(y)$ is a value of the second angle $\alpha 2$ in a position on the second side surface at the depth y;
- said first side surface has an upper segment extending from the outer surface until a depth y1 and a lower segment extending from a depth y2 in a direction away from the upper segment, wherein $y2 \geq y1$, $y1 \leq 0.2*D$ and $y2 \leq 0.6*D$;
- said second side surface has an upper segment extending from the outer surface until a depth y3, an intermediate segment extending from the depth y3 until a depth $y4 > y3$, and a lower segment extending from the depth y4 in a direction away from the intermediate segment, wherein $y3 \leq 0.2*D$, $y4 \leq 0.6*D$ and $y4 - y3 \geq 0.2*D$;
- an average angle of normal vectors of said intermediate segment of said second side surface $\alpha 2AV = 0.5*\{\alpha 2(y3) + \alpha 2(y4)\}$; $\alpha 2(y3) = \alpha 2AV +/- \alpha 2\delta$ and $\alpha 2(y4) = \alpha 2AV +/- \alpha 2\delta$; $\alpha 2AV$ is in a range from 20° until 50°; $\alpha 2\delta$ is in a range from 0° to 10°;
- in each position on the upper segment of said first side surface $\alpha 1 \leq \alpha 1(y1)$ and $d\alpha 1(y)/dy \geq 0$;
- in each position on the lower segment of said first side surface $70^\circ \leq \alpha 1 \leq 110^\circ$;
- in each position on the upper segment of said second side surface $\alpha 2 \leq \alpha 2(y3)$ and $d\alpha(y)/dy \geq 0$; and
- in each position on the lower segment of said second side surface $70^\circ \leq \alpha 2 \leq 110^\circ$.

2. The ~~A~~ hair-cutting unit as claimed in claim 1, wherein:

- said first side surface further has an intermediate segment extending from the depth y1 until the depth y2 > y1 and y2 – y1 ≥ 0.2*D; and
- an average angle of normal vectors of said intermediate segment of said first side surface $\alpha1AV = 0.5*\{\alpha1(y1) + \alpha1(y2)\}$; $\alpha1(y1) = \alpha1AV +/- \alpha1\delta$ and $\alpha1(y2) = \alpha1AV +/- \alpha1\delta$; $\alpha1AV$ is in a range from 20˚ until 50˚; $\alpha1\delta$ is in a range from 0˚ to 10˚.

3. The ~~A~~ hair-cutting unit as claimed in claim 2, wherein in any cross-section, taken perpendicularly to the radial direction, within said range of radial positions, y1 = y3 and/or y2 = y4.

4. The ~~A~~ hair-cutting unit as claimed in claim 2 or claim 3, wherein in any cross-section, taken perpendicularly to the radial direction, within said range of radial positions, $\alpha1_{AV} = \alpha2_{AV}$.

5. The ~~A~~ hair-cutting unit as claimed in any of the claims 2-4, wherein in any cross-section, taken perpendicularly to the radial direction, within said range of radial positions, $\alpha1\delta = \alpha2\delta$.

6. The ~~A~~ hair-cutting unit as claimed in any of the claims 2-5, wherein in any cross-section, taken perpendicularly to the radial direction, within said range of radial positions y2 – y1 ≥ 0.3*D.

7. The ~~A~~ hair-cutting unit as claimed in any one of the preceding claims, wherein in any cross-section, taken perpendicularly to the radial direction, within said range of radial positions, y4 – y3 ≥ 0.3*D.

8. The ~~A~~ hair-cutting unit as claimed in any one of the preceding claims, wherein in any cross-section, taken perpendicularly to the radial direction, within said range of radial positions, $\alpha2_{\delta} = 0$ and $\alpha2 = \alpha2_{AV}$ in each position on the intermediate segment of said second side surface.

9. The ~~A~~ hair-cutting unit as claimed in any one of the claims 2-6, wherein $\alpha1\delta = 0$ and $\alpha1 = \alpha1AV$ in each position on the intermediate segment of said first side surface.

10. The ~~A~~ hair-cutting unit as claimed in any one of the preceding claims, wherein $y2 \leq 0.5*D$ and/or $y4 \leq 0.5*D$.

11. The ~~A~~ hair-cutting unit as claimed in any one of the preceding claims, wherein in any cross-section, taken perpendicularly to the radial direction, within said range of radial positions:

- in each position on the lower segment of said second side surface for which $y \leq 0.8*D$, $70^\circ \leq \alpha2 \leq 110^\circ$; and/or
- in each position on the lower segment of said first side surface for which $y \leq 0.8*D$, $70^\circ \leq \alpha1 \leq 110^\circ$.

12. The ~~A~~ hair-cutting unit as claimed in claim 11, wherein in each position on the lower segment of said second side surface for which $y \leq 0.9*D$, $70^\circ \leq \alpha2 \leq 110^\circ$.

13. The ~~A~~ hair-cutting unit as claimed in any one of the preceding claims, wherein, in any cross-section taken perpendicularly to the radial direction, said first side surface has a rounded shape connecting the lower segment of said first side surface to an adjacent portion of said inward surface.

14. The ~~A~~ hair-cutting unit as claimed in any one of the preceding claims, wherein, in any cross-section taken perpendicularly to the radial direction within said range of radial positions, a width W of each hair-entry slit has a value in the range $0.24 \text{ mm} \leq W \leq 0.36 \text{ mm}$, and said maximum depth D of each hair-entry slit has a value in the range $0.19*W \leq D \leq 0.42*W$.

15. ~~A~~ The hair-cutting unit as claimed in any one of the preceding claims, wherein rotary paths of the cutting edges (11) of the internal cutting member along an inward surface of said annular wall extend from a radially inward cutting zone boundary (31) at a first radial diameter (R1) relative to the axis of rotation until a radially outward cutting zone boundary (32) at a second radial diameter (R2) relative to the axis of rotation, and wherein, for each of said hair-entry slits, said range of radial positions extends at least radially outwardly from a radially outermost one of said first radial diameter (R1) and a radially inward radial end of said hair-entry slit to a radially innermost one of said second radial diameter (R2) and a radially outward radial end of said hair-entry slit.

16. A shaving unit (3) for use in a shaving device (1), said shaving unit comprising a supporting member (4) and at least two hair-cutting units (5) according to any one of the preceding claims.

17. A shaving device (1) comprising a shaving unit (3) according to claim 16 and a main body (2) accommodating a motor and a drive system, wherein the shaving unit is coupled to the main body such that the internal cutting members (7) of the hair-cutting units (5) are rotatable by means of the motor via the drive system.