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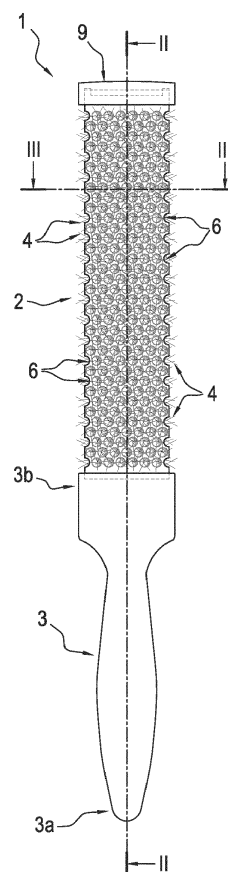
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(54) **IMPROVED HOT-AIR HAIRBRUSH**

(57) Described is an improved hot-air brush (1) comprising a body (2) exhibiting a longitudinal development along a determined central axis (A) and a grip (3) connected to an end of the body (2) which comprises a tubular wall exhibiting on the relative surface a plurality of through-holes (6), and a plurality of bristles (4) emerging from the holes (6).

FIG. 1



Description

[0001] This invention relates to an improved hair brush.

[0002] More specifically, this invention relates to a hot-air hair brush of a professional type.

[0003] These brushes are extremely widespread for looking after hair and there are currently many types, selected on the basis of the specific effect one wishes to obtain but also according to the type of hair to be treated.

[0004] Delicate hair or scalp, curly hair, long hair and wavy hair require specific brushes, in the same way that various types of brush are also required to create crimping in the hair, or to straighten it, increasing or reducing the volume.

[0005] As a function, therefore, of the specific purposes, the brushes can be chosen on the basis of shape and dimensions, the material of the bristles and their density or on the basis of the material of the body of the brush or the type of grip.

[0006] Especially in professional applications, the use is known of so-called hot-air brushes which have the distinctive feature of accumulating heat, for example emitted by a hairdryer, to be then released to the hair during combing according to methods known to hairdressers.

[0007] For this purpose, these brushes have a metallic central body, made of perforated plate. The bristles designed to engage with the hair protrude from the holes of the plate.

[0008] Thanks to its capacity to accumulate heat, the body, preferably made of aluminium and aluminium alloys, makes it possible to operate on the hair with a tool which is able to transfer heat and this heat transfer enables a more incisive and long-lasting action to be performed on the hair.

[0009] Although the prior art hot-air brushes provide a satisfactory result in many different treatments, they have not proven to be effective in certain hair treatments such as, for example, particular crimping of the hair or even some reductions in volume.

[0010] The aim of this invention is to provide an improved hot-air brush which is able to overcome the shortcomings of the prior art brushes.

[0011] A further aim of this invention is to provide an improved brush which is easy and practical to use and inexpensive to make.

[0012] The technical features of the invention, according to the above-mentioned aims, are clearly described in the appended claims and its advantages are apparent from the detailed description which follows, with reference to the accompanying drawings which illustrate non-limiting example embodiments of it, and in which:

- Figure 1 is a schematic front elevation view of a first embodiment of the hot-air brush according to this invention;
- Figure 2 is a schematic cross section according to the line II - II of Figure 1;
- Figure 3 is an enlarged schematic cross section

according to the line III - III of Figure 1;

- Figure 4 is a schematic side elevation view of the brush of Figure 1;

- Figure 5 is a schematic front elevation view of a second embodiment of the hot-air brush according to this invention;

- Figure 6 is an enlarged schematic cross section according to the line VI - VI of Figure 5;

- Figure 7 is a schematic cross section according to the line VII - VII of Figure 5;

- Figure 8 is a schematic side elevation view of the brush of Figure 5.

[0013] As illustrated in the accompanying drawings, the reference numeral 1 denotes, in their entirety, two variant embodiments of the improved hot-air hair brush made in accordance with this invention.

[0014] The two embodiments of the brush 1, illustrated, respectively, in Figures 1 to 4 and 5 to 8, differ from each other solely in terms of dimensional aspects, having the same components which will therefore be labelled with the same reference numbers.

[0015] The hot-air brush 1 comprises a body 2 having a longitudinal extension according to a predetermined central axis A, and a grip 3 connected to the body 2 at a longitudinal end of the latter.

[0016] The grip 3 also extends longitudinally along the above-mentioned axis A and has two ends 3a, 3b respectively distal and proximal with reference to the body 2.

[0017] Close to the relative proximal end 3b, the grip 3 has an area of transition to the dimensions of the body 2.

[0018] The above-mentioned body 2 comprises a plurality of bristles 4 and a tubular metal wall 5 enclosing these bristles 4.

[0019] The tubular metal wall 5 is tubular in shape.

[0020] The metal wall 5 has a plurality of through holes 6 through which the above-mentioned bristles 4 emerge towards the outside to be able to engage, in use, with the hair to be treated.

[0021] The body 2 also comprises a core 7 for retaining the bristles 4 positioned inside the tubular wall 5 and anchored stably on the grip 3 at its proximal end 3b.

[0022] The core 7 for retaining the bristles 4 is advantageously of the twisted metal wire type wherein, in known manner, two or more metal wires are wound in the form of a spiral with the bristles 4 interposed between them.

[0023] The bristles 4 are advantageously made of synthetic material.

[0024] Alternatively, the bristles 4 are made from bristles of a natural origin.

[0025] The metal wall 5 has a first and a second end portion 5a, 5b longitudinally opposite each other.

[0026] The first end portion 5a is inserted in a housing cavity 8 formed at the end 3b near the grip 3.

[0027] The second end portion 5b, on the other hand, is engaged by a protective and closing cap 9.

[0028] As shown in Figures 3 and 7 which illustrate respective cross sections views of the body 2 of the brush 1, the tubular metal wall 5 has two substantially flat portions P1, P2, opposite one another and two curved stretches T1, T2 connecting the flat portions.

[0029] In other words, the two above-mentioned portions P1, P2 are located on opposite sides of the central axis A and the core 7 for retaining the bristles 4, and are connected to each other by the two curved stretches T1, T2.

[0030] With reference to the accompanying drawings, it is evident that the bristles 4 emerge through the holes 6 from the tubular wall 5, from both the substantially flat portions P1, P2 and from both the curved stretches T1, T2.

[0031] In other words, there are no significant parts of the tubular wall 5 from which bristles 4 do not protrude.

[0032] According to the preferred embodiments of the brush 1 according to this invention illustrated in the accompanying drawings, the above-mentioned substantially flat portions P1, P2 are parallel to each other.

[0033] With reference to Figures 3, 4 and 7, 8 the substantially flat portions P1, P2 have respective external faces fp1, fp2 which are designed to come into contact with the hair.

[0034] The outer faces fp1, fp2 are positioned mutually spaced by a first distance D1.

[0035] Advantageously, the value of the first distance D1 is between 4 mm and 20 mm.

[0036] Preferably, the value of the first distance D1 is between 5 mm and 12 mm. Even more preferably the value of the first distance D1 is about 7 mm.

[0037] As illustrated in Figures 3 and 7, similarly to the flat portions P1, P2, the curved stretches T1, T2 of the tubular metal wall 5 have respective external faces ft1, ft2.

[0038] The external faces ft1, ft2 are positioned mutually spaced by a second distance D2 which is defined by the maximum dimensions of the tubular wall 5 in a direction D perpendicular to the central axis A and parallel to each of the substantially flat portions P1, P2.

[0039] It has been found experimentally that the optimum results in terms of efficiency of the brush 1 are obtained with dimensions such that the ratio between the second distance D2 and the first distance D1 is greater than 1.5.

[0040] Even better results are obtained with D2/D1 ratios greater than 2.

[0041] With reference to the tubular metal wall 5, it is advantageously made of an aluminium alloy. Alternatively, it is made of a titanium alloy or any other metal alloy or also a non-metallic material which is able to offer a high heat accumulation capacity.

[0042] The ceramic constitutes an example of a non-metallic material which can be used to make the tubular wall 5, even in a partial manner, limited to the surface coating of a metal wall.

[0043] In use, the hot-air brush 1 according to this in-

vention has been found to be particularly effective in the treatment of hair, with specific reference, for example, to obtaining special crimped effects in hair and also to prevent the formation of unwanted curls.

5 [0044] A contribution to this effectiveness of the brush 1 is its particular flattened configuration, wherein the two substantially flat portions P1, P2 of the tubular metal wall 5 are connected to each other by curved stretches T1, T2 having a reduced radius of curvature.

10 [0045] The user who handles the hot-air brush 1, can in fact exploit, by suitably modulating the force acting on the hair, for the purposes of curling and/or straightening, the curved stretches T1, T2 or the substantially flat portions P1, P2, thus conditioning the hair according to a wide variety of styles.

15 [0046] Moreover, the reduced radius of curvature of the curved stretches T1, T2 of the tubular wall 5 makes it possible to also obtain, when required, very marked and clearly defined curls of the hair, which cannot be obtained with the normal round or oval brushes.

20 [0047] The improved hot-air brush 1 according to the invention therefore brings considerable advantages and achieves the preset aims.

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Claims

1. An improved hot-air hair brush, comprising a body (2) exhibiting a longitudinal development along a determined central axis (A) and a grip (3) connected to an end of the body (2), the body (2) comprising a tubular metal wall (5) exhibiting on a surface thereof a plurality of through-holes (6), and a plurality of bristles (4) emerging from the holes (6), **characterised in that** the tubular metal wall exhibits two substantially flat portions (P1, P2), opposite one another and connected by two curved parts (T1, T2), the bristles (4) emerging from both the substantially flat portions (P1, P2) and both the curved parts (T1, T2).
2. The hot-air brush according to claim 1, **characterised in that** the substantially flat portions (P1, P2) are parallel to one another and arranged on opposite sides of the central axis (A).
3. The hot-air brush according to claim 2, **characterised in that** the flat portions (P1, P2) exhibit respective external faces (fp1, fp2) which are arranged at a reciprocal first distance (D1) comprised between 4 mm and 20 mm.
4. The hot-air brush according to claim 3, **characterised in that** the first distance (D1) between the external faces is comprised between 5 mm and 12 mm.
5. The hot-air brush according to claim 3, **characterised in that** the first distance (D1) between the external faces is about 7 mm.

6. The hot-air brush according to any one of claims from 3 to 5, wherein the curved parts (T1, T2) exhibit respective external faces (ft1, ft2) which are arranged at a reciprocal second distance (D2) defined by a maximal size of the tubular wall (5) in a perpendicular direction (D) to the central axis (A) and parallel to each of the substantially flat portions (P1, P2), **characterised in that** the ratio between the second distance (D2) and the first distance (D1) is greater than 1.5.
7. The hot-air brush according to claim 6, **characterised in that** the ratio between the second distance (D2) and the first distance (D1) is greater than 2.
8. The hot-air brush according to any one of the preceding claims, **characterised in that** the metal wall (5) is made of an aluminium alloy.
9. The hot-air brush according to any one of the preceding claims, **characterised in that** the metal wall (5) is made of a titanium alloy.

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FIG. 1

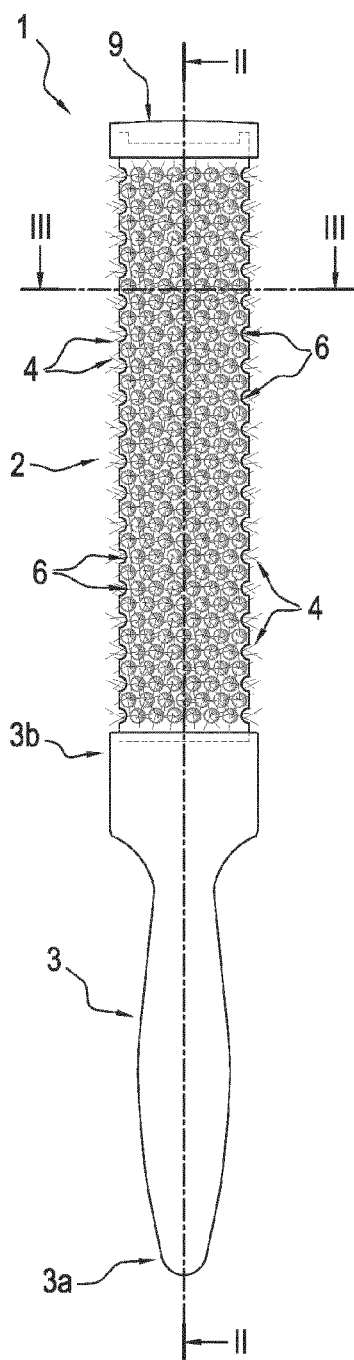


FIG. 3

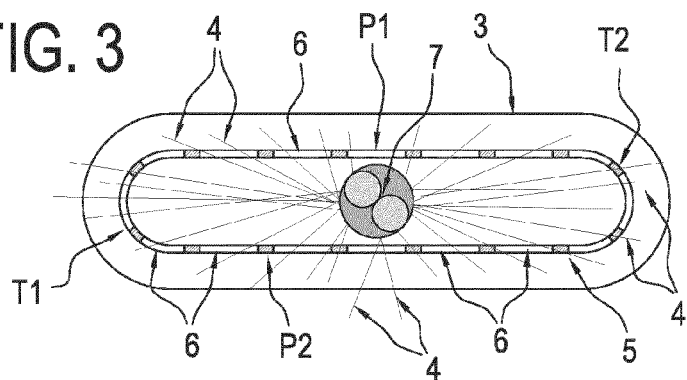


FIG. 2

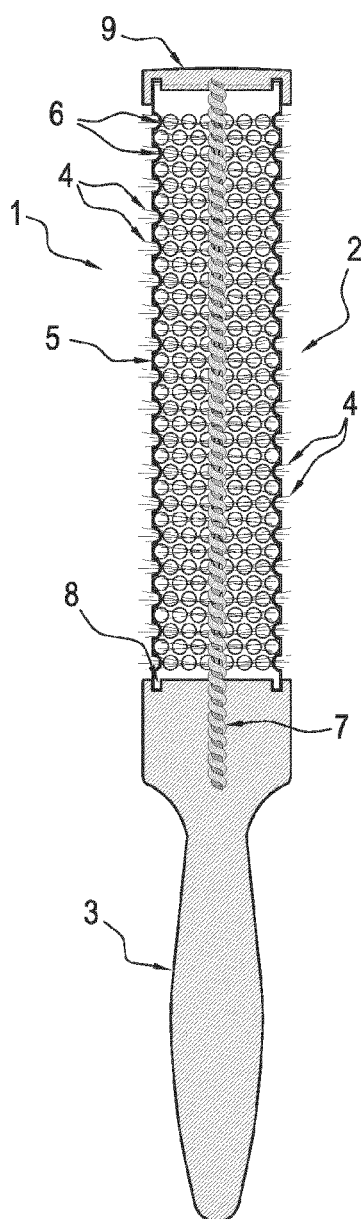


FIG. 4

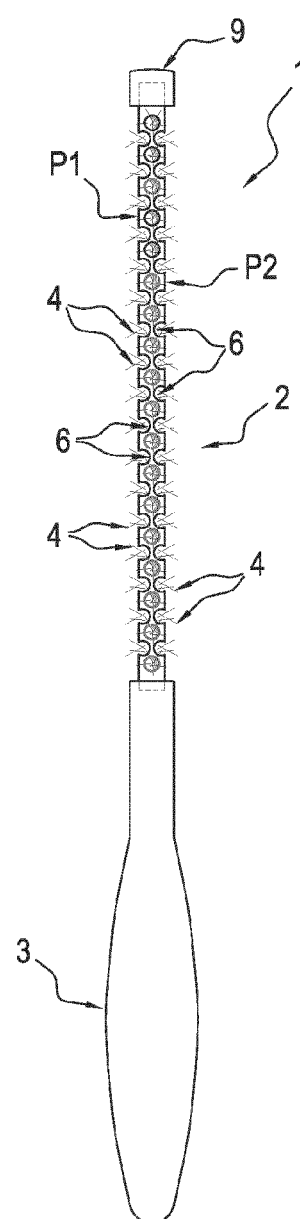


FIG. 5

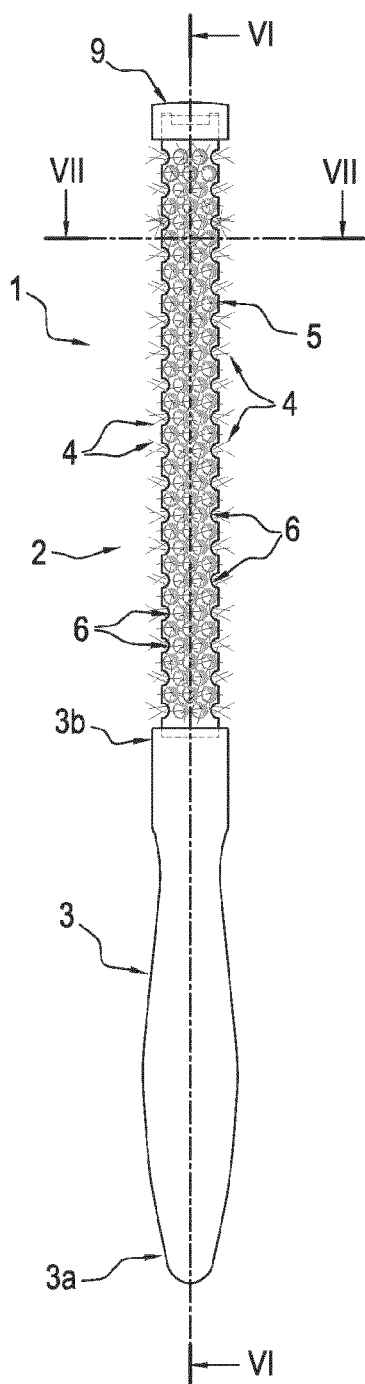


FIG. 7

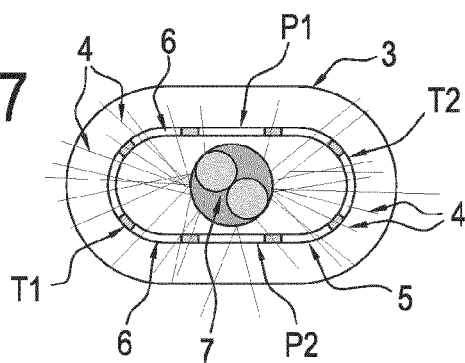


FIG. 6

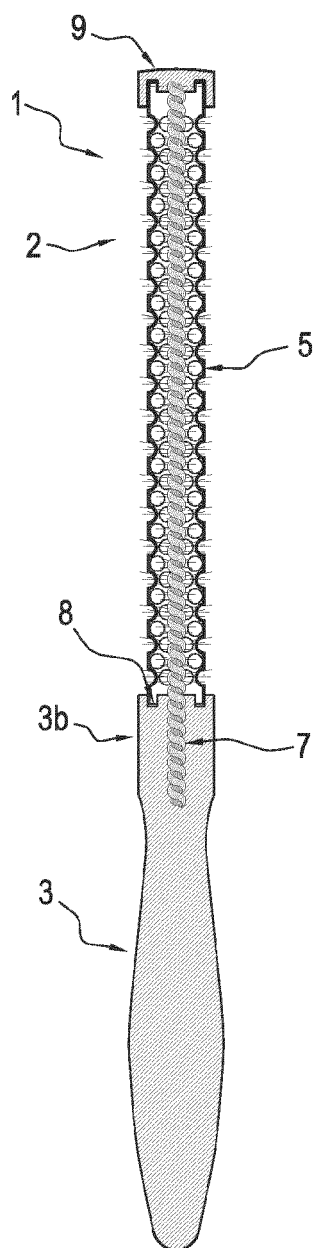
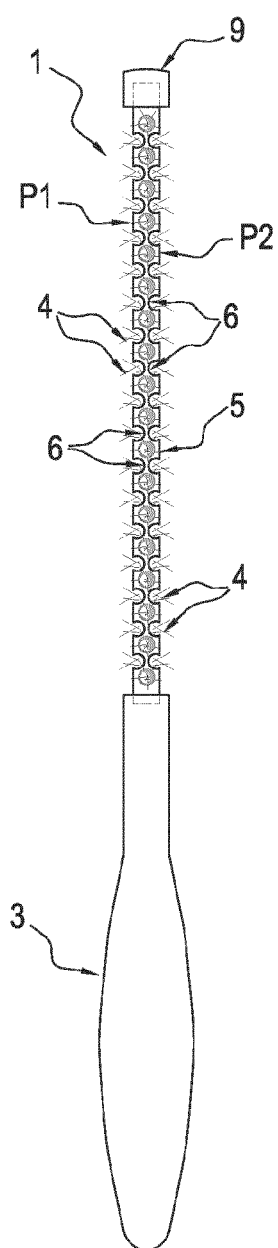


FIG. 8





EUROPEAN SEARCH REPORT

Application Number
EP 16 15 6049

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			TECHNICAL FIELDS SEARCHED (IPC)
			A45D A46B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 6 July 2016	Examiner Ehrsam, Sabine
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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