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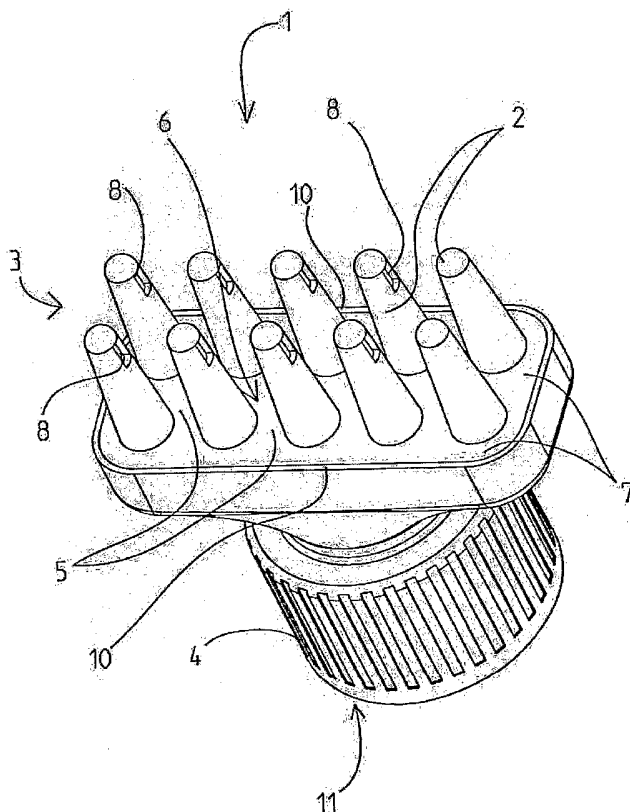
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[Continued on next page]

(54) Title: DEVICE TO APPLY A FLOWABLE PRODUCT TO HUMAN SCALP HAIR



(57) Abstract: In order to achieve even and effective application of product with a device (1) to apply a flowable product to human scalp hair, with a product dispenser (3) having prongs (2) provided with multiple openings (8) to dispense the product, it is recommended that all openings be aligned laterally with respect to an inner space (9) extending between the prongs (2) and located above the inner area (5), wherein the inner space (9) contains the prongs (2).

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DEVICE TO APPLY A FLOWABLE PRODUCT TO HUMAN SCALP HAIR

The object of the invention relates to a device (1) to apply a flowable product to human scalp hair in the hair salon sector.

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These types of devices are used in the hair salon sector to apply hair treatment agents. Said treatment agent should be distributed evenly throughout the hair as a flowable product.

A device with a product dispenser having multiple prongs is known from US
10 6,053,177; this device has a base to accommodate the prongs. The base consists of an inner area extending between the prongs, which is bordered by an outer area of the base. The product dispenser can be connected to a reservoir via a connection. The prongs have openings for dispensing the product.

15 The known device has openings arranged in the center of the top in the prongs from which the product exits. This is disadvantageous in that the hair that is between the prongs cannot be wetted with sufficient product, which can lead to inhibited hair wetting if the device is tightly pulled through very curly hair.

20 The object was to further develop a device according to the preamble of Claim 1, which would overcome this disadvantage.

The object is achieved according to the distinguishing component of Claim 1. Accordingly, all openings are aligned laterally with respect to an inner space, which is
25 located above the inner area and extends between the prongs, wherein the prongs are located in the inner space.

The suggested device has the advantage that hair can be well wetted with a flowable product if the device is pulled through the hair like a comb. The device is particularly well
30 suited for very curly hair if relatively few prongs, e.g. six to sixteen prongs, are provided. Because all openings are aligned with one another with respect to the inner space, hair lying between two prongs is always wetted with product. An opening is not aligned away from

the inner space to the outside, e.g. aligned to an outer area of the base. This type of alignment would result in an ineffective use of the product. This is an advantage, particularly with very curly hair from which only one strand proceeds relatively in the center of the product dispenser, if the dispenser is moved along the strand.

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Advantageous embodiments of the proposed invention are described in Claims 2 to 8.

Two rows of prongs (Claim 2) are suitable for relatively easy pulling of the product dispenser through very curly hair.

10

If an outer area of the base is provided according to Claim 3, and the outer area is bordered by an edge, then this edge can be used to wipe excess product from the hair.

Prongs that are rounded off like knobs in the area facing the head (Claim 4) are relatively easy to pull through very curly hair especially if they have a relatively large diameter (approx. 0.08-0.4 in. (2 to 10 mm) at the midpoint). A conical shape that tapers towards the top is also advantageous.

15

If all openings are at the same height (Claim 5), then a strand of hair at this height will be evenly wetted with product. However, if the openings are at various heights (Claim 6), then, after the product dispenser is pulled through the strand one or more times, the strand, at different heights, will be more evenly wetted. Very good results are obtained when, according to Claim 7, lateral openings are provided on the top with a portion of the prongs and on the bottom with the remaining portion of the prongs.

20

If the connection according to Claim 8 has an inner thread that can be screwed onto a neck of a reservoir, this makes it easy, after the device is screwed onto a container, to remove product from the container so that it can be directly applied to the hair.

25

The invention is described in detail below with reference to Figures that show three exemplary embodiments. The following is shown:

30

- Figure 1 shows a perspective view of an embodiment of the suggested device with two rows of prongs, wherein each prong has an opening to dispense a flowable hair conditioning product and no opening is aligned from an inner space towards the outside;
- 5 Figure 2 shows a perspective view of the device of Figure 1, but with each of the six prongs arranged in the center having two openings; and
- 10 Figure 3 shows a perspective view of a device similar to Figure 2 that is rotated vertically by 90 degrees, but with openings alternatingly arranged in the top and bottom.

With a device 1 to apply a flowable product to human scalp hair, a product dispenser 3 has multiple prongs 2 (Figure 1). The product dispenser 3 has a base 6 to accommodate the prongs 2. The base 6 consists of an inner area 5 extending between the prongs 2, which is bordered by an outer area 7 of the base 6. The product dispenser 3 can be screwed onto a reservoir via a connection 4, which has an inner thread 11. The prongs 2 have openings 8 for dispensing the product. All openings 8 are aligned laterally with respect to an inner space 9 located above the inner area 5, wherein the prongs 2 are located in the inner space 9. None of the openings 8 points towards the outer area 7, which is bordered by an edge 10 to wipe off excess product from the hair.

There are two rows of prongs 2, each prong 2 being rounded off like a knob in the area facing the head. Each opening 8 is the same height as the other openings 8. Eight openings 8 point in the same direction; two openings 8 of two prongs 2 arranged on the side walls point in the opposing direction. Thus, via each of the prongs 2, a certain quantity of product is deposited onto a hair strand, if the product dispenser 3 is pulled through the hair strand in order to straighten the hair, e.g. using a straightening agent. No product is deposited to the outer area 7, which means there is optimal use of the product.

30

With the exemplary embodiment of Figure 2, the six center prongs 2 each have two openings 8, whereas the four prongs 2 bordering the two rows each only have one

opening 8. This ensures that hair strands running through product dispenser 3 will each be wetted with product on the opposing sides. As with the first exemplary embodiment, the strands are wetted at a constant height with respect to the base 6 of the device 1.

5 Contrarily, with the exemplary embodiment of Figure 3, lateral openings 8 are provided on the top with a portion of the prongs 2 and on the bottom with the remainder of the prongs 2 to achieve wetting of the strands at different heights. Four of the prongs 2 have one opening 8 and, in the center, six of the prongs 2 have two openings 8. However, as shown in the exemplary embodiment of Figure 1, one opening 8 could be omitted in
10 each of the six prongs 2 in the center. With the exemplary embodiment of Figure 3, each prong 2 has two openings 8 at the same height on a prong 2.

	1	Device
	2	Prong
15	3	Product dispenser
	4	Connection
	5	Inner area
	6	Base
	7	Outer area
20	8	Opening
	9	Inner space
	10	Edge
	11	Inner thread

What is claimed is

1. A device (1) to apply a flowable product to human scalp hair, with a product dispenser (3) having multiple prongs (2), with said dispenser (3) having a base (6) to accommodate the prongs (2), wherein the base (6) consists of an inner area (5) extending between the prongs (2), with the inner area (5) preferably being bordered by an outer area (7) of the base (6), wherein the product dispenser (3) can be connected to a reservoir via a connection (4), and openings (8) are provided in the prongs (2) to dispense the product, characterized in that all openings (8) are aligned laterally with respect to an inner space (9) extending between the prongs (2) and located above the inner area (5), wherein the inner space (9) contains the prongs (2).
2. The device (1) according to Claim 1, wherein two rows of prongs (2) are provided.
3. The device according to Claim 1 or Claim 2, wherein an outer area (7) of the base is provided, which is bordered by an edge (10).
4. The device according to Claim 1, Claim 2, or Claim 3, wherein the prongs (2) are rounded off like knobs in the area facing the head.
5. The device according to one of Claims 1 through 4, wherein all openings (8) are at the same height.
6. The device according to one of Claims 1 through 4, wherein all openings (8) are at different heights.
7. The device according to Claim 6, wherein lateral openings (8) are provided on the top with a portion of the prongs (2) and on the bottom with the remainder of the prongs (2).
8. The device according to one of Claims 1 through 7, wherein the connection (4) has an inner thread (11) that can be screwed onto a neck of a reservoir.

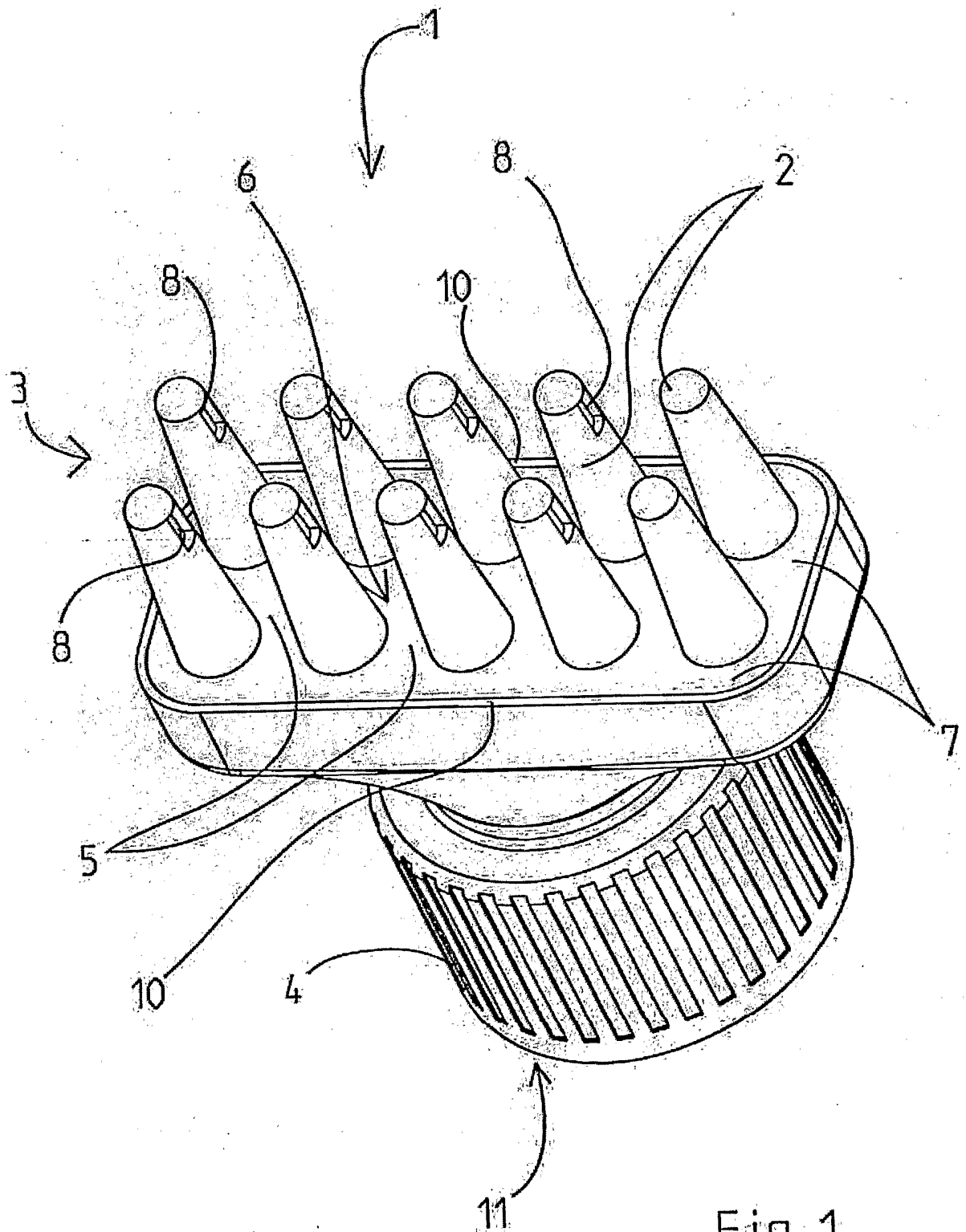


Fig. 1

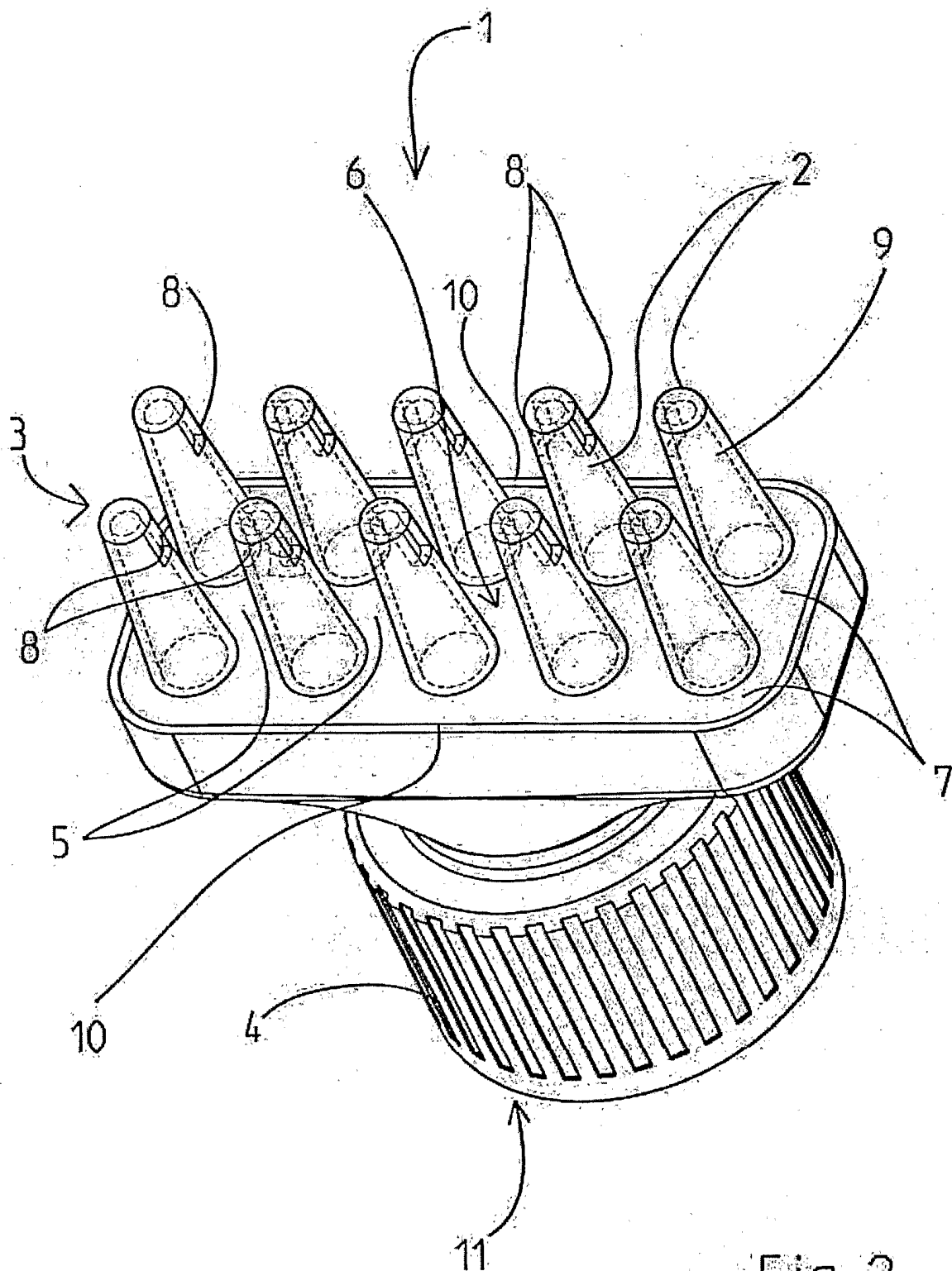


Fig. 2

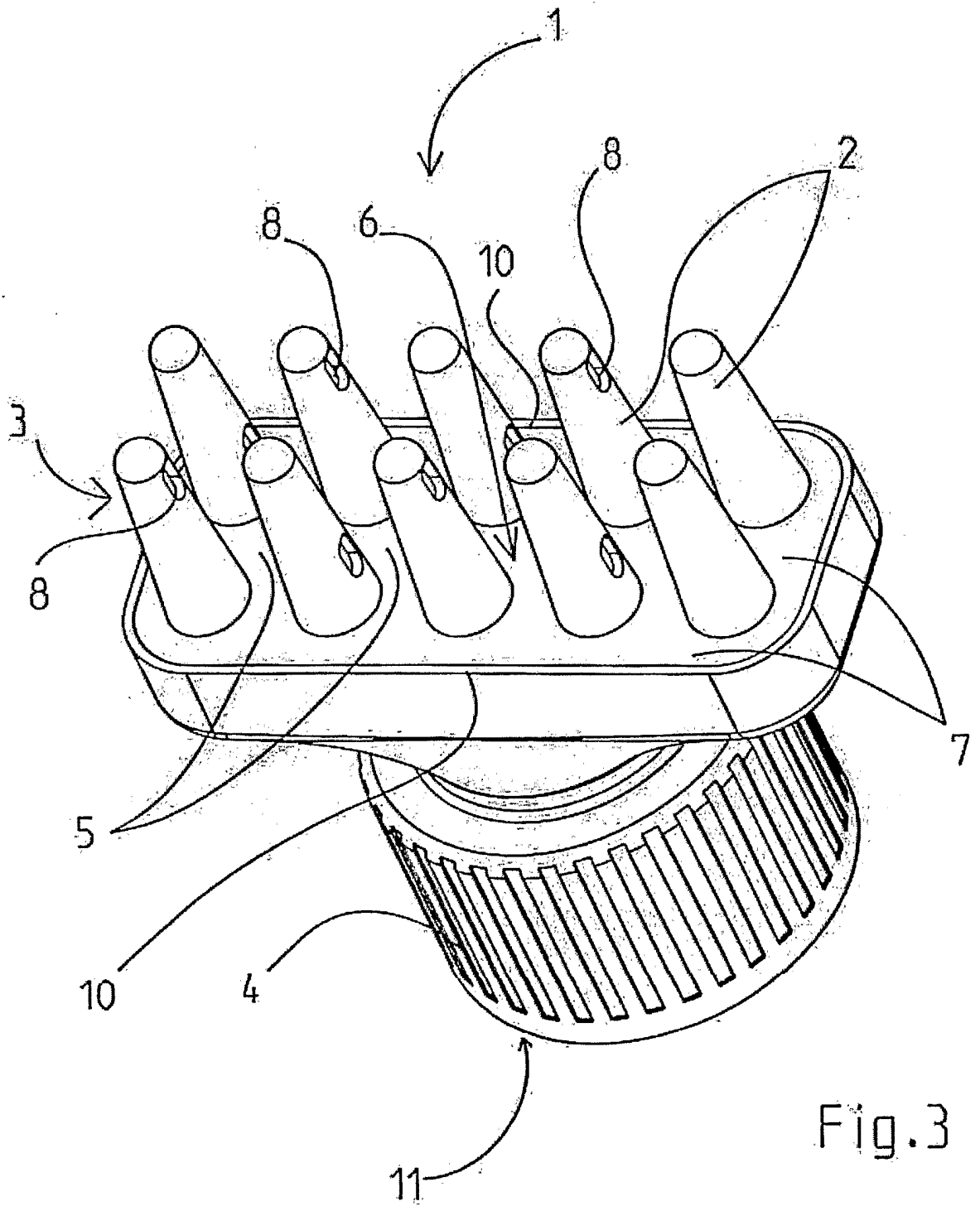


Fig. 3

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A45D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/016440 A1 (DE LAFORCADE) 29 January 2004 (2004-01-29) abstract; figures	1-8
X	US 5 975 089 A (SIMON) 2 November 1999 (1999-11-02) abstract; figures	1-8
X	DE 94 19 660 U1 (ALBRECHT) 9 February 1995 (1995-02-09) figure 4	1-8
X	EP 0 890 326 A2 (AUGUSTIN) 13 January 1999 (1999-01-13) figure 4	1-8
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Coniglio, Carlo

INTERNATIONAL SEARCH REPORT

International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 543 913 A (WILKESON) 1 October 1985 (1985-10-01) column 4, line 10 - line 12; figures -----	1-8
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2006/021047

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