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(54) **Hair roller and method**

(57) A hair roller, comprising a tubular body (1) defining a housing (1 a) and a distribution of openings (2) formed on it to promote the passage of hot air, **characterised in that** it also comprises shutter means (4) of said housing (1a) along a first axial edge (1c) of the body

(1), adapted to define, in cooperation with the body itself, a closed chamber for constricting a curl of hair (C) collected inside the body, following prior arrangement of the body (1) to abut, with a second axial edge (1b) opposite said first edge (1c), against the scalp of a user.

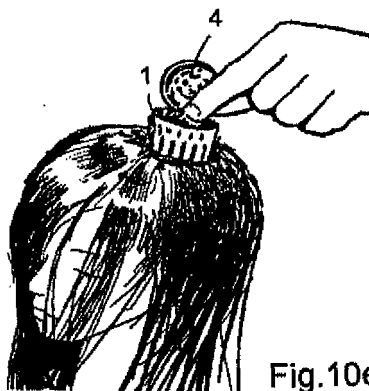


Fig.10e

Description

DESCRIPTION

[0001] The present invention concerns the field of hair-dresser accessories, and more in general the field of items for treating hair, for professional use and also for use at home.

[0002] Amongst such accessories there is the well known roller, i.e. that small cylinder made from plastic or other material around which wisps of humid hair are wound to curl them and style them with the help of a hot air drying jet. The hair is wound around the outside in a loop or spiral. A distribution of holes achieves the purpose of promoting the passage of hot air. The stabilisation of the curl on the roller can be carried out with the help of clips, but radial projections can also be integrated in the roller and suitable for holding the hair promoting its stable positioning.

[0003] In the field there is, on the other hand, a constant search for new cutting and styling methods, and for relative accessories, able to offer clients solutions capable of producing new and creative aesthetic effects, as well as providing hair dressers with more room for creativity and greater work flexibility.

[0004] The present invention indeed proposes to achieve the aforementioned purposes, by providing a hair roller with a new configuration suitable for making it possible to obtain, in spite of an extremely simple structure, new and surprisingly effective operation methods.

[0005] A hair roller according to the present invention comprises a tubular body defining a housing and a distribution of openings formed in the body to promote the passage of hot air. The roller is **characterized in that** it also comprises reversible shutter means of said housing along a first axial edge of said body, adapted to define, in cooperation with the same body, a closed chamber for constricting a curl of hair collected inside the body, after the body has been arranged so as to abut, with a second axial edge opposite to said first edge, against the scalp of a user.

[0006] In a hairdressing method according to the invention the hair roller is thus arranged on the scalp of a user so as to abut against it with the second axial edge, while a wisp of hair is passed within the body with the shutter means in an open condition, is collected inside the body to form a curl and secured to it. The shutter means are then closed to complete the constriction of the hair curl, and finally the assembly thus formed is dried.

[0007] The invention shall now be illustrated with the description of one of its embodiments, given as an example and not for limiting purposes, with reference to the attached drawings, in which:

- figure 1 is a side view of the roller according to the invention, in the closed configuration;
- figure 2 is a back view of the roller of figure 1;
- figure 3 is a plan view of the roller from above;

- figure 4 is a plan view from below;
- figure 5 is a section view of the roller taken along lines V-V of figure 3;
- figure 6 is a section view of the roller taken along lines VI-VI of figure 3;
- figure 7 is a side view analogous to that of figure 1, but with the roller in the open configuration;
- figure 8 is a back view of the roller of figure 7;
- figure 9 is a front view of the roller of figure 7; and
- figures 10a to 10f represent examples of a method for using the roller according to the invention.

[0008] With reference to figures 1 to 9, a hair roller according to the invention comprises a tubular body 1, for example with a circular section like in the example, but more generally oval or polygonal, made from plastic material with suitable heat resistance like for those already in use for conventional rollers. The body 1, that internally defines a housing 1a, is extensively covered by a distribution of openings 2, typically in the form of axial notches or axially developing windows that project out on the ring band of material defining the body 1. The openings 2 are intended to allow the passage of the hot drying air.

[0009] A first axial edge end, indicated with reference numeral 1c, engages with the peripheral outline 4a of a lid 4 that reversibly shuts the housing 1a of the tubular body 1. The lid 4 can indeed be articulated between a closed position (figures 1-6), in which it abuts against the first edge 1c of the body 1 arranging itself perpendicular to the axis Z of the latter, and an open position (figures 7 - 9) in which it lifts up rotating around a substantially tangential axis X until it liberates the housing 1a in a substantially complete manner. The lid 4 in turn has openings 51, 52 for the air to pass through, in this case radial and including in particular a central fan-like distribution 52. The peripheral outline 4a is also suitably shaped so as to promote the stable engagement, in the closed position, with the first edge 1 c of the body 1.

[0010] Advantageously, the articulation of the lid 4 is obtained through a system which does not need metal components and allows it to totally separate, and to be easily assembled, with respect to the body 1. For such a purpose, elastic tie means 6 are provided engaging, by stretching, between the lid 4 and a second axial edge 1 b of the body 1, opposite to the first edge 1 c.

[0011] In the illustrated embodiment, the elastic tie 6 is a common string or cable made from rubber and having an annular development, which after being linearly doubled back on itself, is arranged diametrically on the inner face 4b of the lid 4. Then the ends are passed, outwards, through respective holes 7 formed in a diametrically opposite position near to the peripheral outline 4a of the lid itself. Such ends then pass beyond the aforementioned peripheral outline 4a and go down axially along the outer side surface of the body 1, hooking into carvings 8 formed in an opposing manner on the second edge 1b, in a substantially intermediate position between the tangential ro-

tation axis X and the center of the body.

[0012] The lid 4, in a distal position with respect to the articulation axis X, provides a radial tongue 9 to promote its actuation. On the diametrically opposite side, i.e. near to the articulation axis X, the lid 4 comprises a raised flap 10, projecting obliquely so as to raise the peripheral outline 4a with respect to the remaining part of said lid, i.e. not forming part of the raised flap 10. As can be seen in particular in figure 6, at the raised flap 10, a L-shaped rib 11 projects from the inner face 4b of the lid 4, said rib defining, in cooperation with the tab itself, a groove 12 extending along the axis X substantially in correspondence therewith.

[0013] More precisely, the groove 12 extends with a certain curvature, corresponding to that of the body 1, so that when the lid is in the open position (figures 7 - 9) there is in practice a coupling with the first edge 1c, capable of ensuring stability to such a position, the raised flap 10 placing itself over the side surface of the body 1. The lid is slightly inclined outwards with respect to the axial direction of the body 1.

[0014] In practice, the position and the physical and/or size characteristics of the elastic tie 6, groove 12, holes 7 and carvings 8 are such as to provide stability to both the open and closed positions of the lid 4, with the elastic tie 6 which, stretched in both cases, exerts the traction force necessary to keep the two parts joined, with the contribution indeed of the particular shape conferred to the rear area of the raised flap 10 with the rib 11.

[0015] The passage from the closed position to the open one can be easily actuated manually by exerting a simple pressure on the raised flap 10, with the thumb of a hand, axially from outside, whereas the other fingers keep the body still and promote the opening by acting upon the radial tongue 9 by lifting it. In a first step of the rotation/lifting, the elastic force 6 must be overcome, so that, passed the exact axial configuration, the elastic itself will draw back the lid making the groove 12 snap onto the edge 1c. The opposite operation will of course be necessary to make the lid 4 flip back on the body 1.

[0016] Further fixing windows 3 are formed extending circumferentially near to the second axial edge end 1 b, making up the base edge intended to be placed in contact with the head in the configuration of use of the roller, as shall be understood hereafter.

[0017] With reference now to figures 10a-10f, the hair roller according to the invention is used in the following manner. Once isolated a wisp of hair C to be curled (figure 10a), it is inserted into the housing of the body 1, making this slide from the free end of the wisp until it reaches the scalp, the lid 4 being of course kept in an open position (figure 10b). At this point the body 1 is fixed in position by using common hair clips or barrettes M, which tie the head of hair to the body 1 through inserting and engaging with the relative fixing openings 3 (figure 10c).

[0018] The curl C is at this stage curled or, in any case, folded upon itself with any creative method, and thus forced to completely insert itself in the housing 1a of the

body 1 (figures 10d and 10e). The lid 4 is closed, and a chamber is thus formed in which the constriction and stabilizing operation of the curl C in a curled configuration is completed. A jet of hot drying air, for example emitted by a common hairdryer H, completes the styling operation (figure 10f) like for conventional rollers. In the figures the arrangement of a single roller has been represented for the sake of simplicity and clarity, but of course the drying shall normally be carried out after a plurality of rollers has been arranged, according to the type of hairstyle that is wished to be obtained.

[0019] It is thus clear from what has been previously described that the hair roller according to the invention makes it possible to implement a styling technique which is completely different from those known, and that is capable of creating new and particularly popular looks, offering the hairdresser, or the user directly, a wider array of creative variations. In order to obtain a satisfactory containment of the curl, it is advantageous if the body 1 defines a suitable volume, in particular as far as the base surface is concerned, which shall preferably be defined by an average inner body diameter of between 4 and 8 cm, even more preferably equal to about 5 cm. Of course, other sizes even outside such a range can be used.

[0020] The use of the roller is basic, and its structure is very simple, in particular using the preferred embodiment previously described, which as said - without needing additional articulation elements such as metal hinges - has also the advantage of a greater strength, no vulnerability with respect to oxidation, and safer hygiene coming from the capability of being able to completely separate the two parts making up the assembly (body 1 and lid 4).

[0021] The distribution of openings for the passage of hot air can be varied as wished, even for the purpose of "creating" writings or graphical patterns for aesthetic or personalization purposes. In the case illustrated such a result has been for example sought with the fan-like openings 52 on the lid 4 (a hole 13 identical to the holes 7 being formed near to the radial tongue 9, without any functional value but only for symmetric purposes and for aesthetic homogeneity). In this sense, the roller can also convey ornamental, personal, advertising content etc., which current common rollers cannot.

[0022] The body 1 may have, according to what has already been mentioned, a shape with an elliptical base, generally oval or polygonal, the profile of the lid 4 consequently having to be adapted. The invention is not on the other hand limited to the aforementioned and illustrated embodiment but it comprises any variant thereof.

Claims

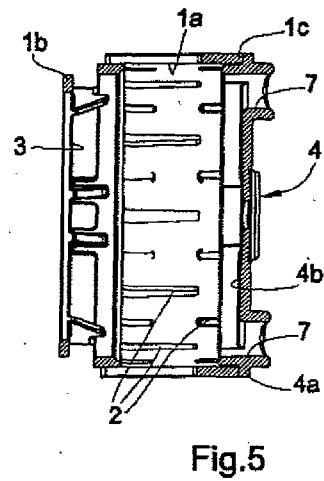
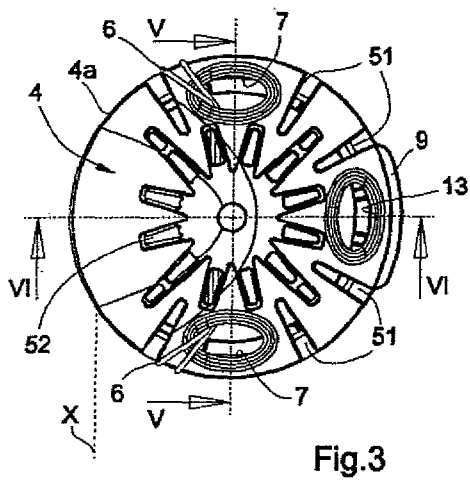
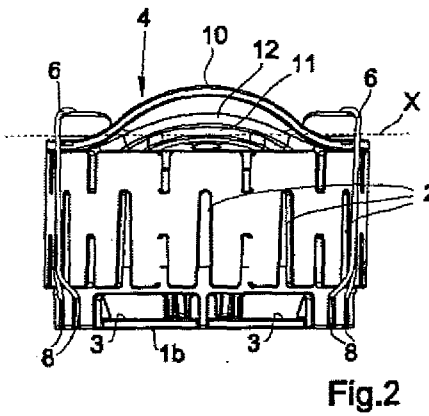
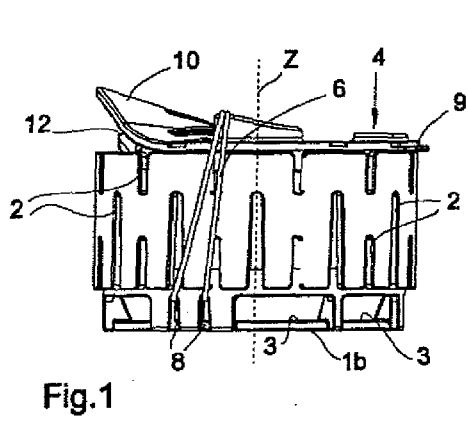
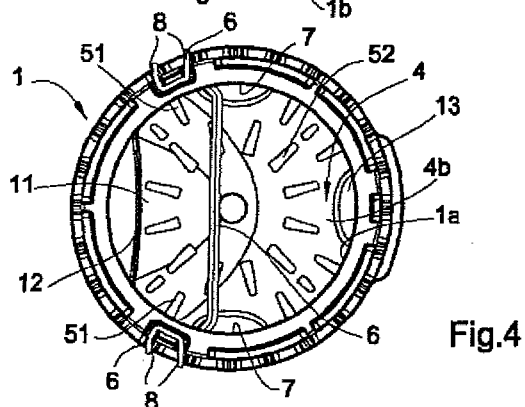
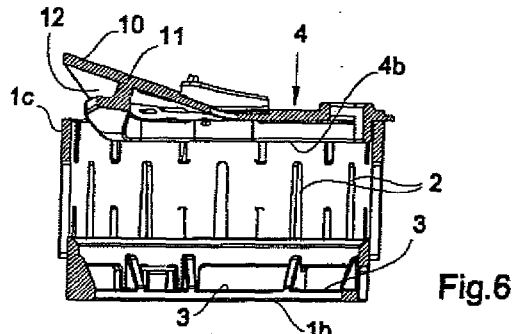
1. A hair roller for hair styling, comprising a tubular body (1) defining a housing (1 a) and a distribution of openings (2) formed on the body to promote the passage of hot air, **characterized in that** it also comprises

reversible shutter means of said housing along a first axial edge of said body, adapted to define, in cooperation with the same body, a closed chamber for constricting a curl of hair collected inside the body, after the body has been arranged so as to abut, with a second axial edge opposite to said first edge, against the scalp of a user.

2. The roller according to claim 1, wherein said tubular body (1) has an inner diameter of at least 4 cm to promote the arrangement of said curl (C) inside it. 10
3. The roller according to claim 2, wherein said diameter is of between 4 and 8 cm.
4. The roller according to claim 3, wherein said diameter is of about 5 cm.
5. The roller according to any of the previous claims, wherein said shutter means (4) comprise a lid (4) mobile between a closed position, wherein it abuts against said first edge (1 c) of said body (1), and an open position, wherein it lifts up articulating around a substantially tangential axis (X) of said body (1) liberating said housing (1 a) in a substantially complete manner. 20
6. The roller according to claim 5, wherein said lid (4) is fixedly connected to said body (1) through elastic tie means (6) engaged with the lid and with said second edge (1b) of said body (1), said open position being stabilized by a coupling between a shaped groove (12) formed on an inner face (4b) of said lid (4) near to said articulation axis (X) and along it, and radially facing outwards, and said first edge (1 c) of said body. 25
7. The roller according to claim 6, wherein said groove (12) is defined by a rib (11) projecting from said inner face (4b) of the lid (4) at a raised actuation flap (10), said raised flap (10) projecting so as to raise the peripheral margin of the lid, said groove (12) being shaped in a way such as to provide the lid (4), in said open position, with a configuration inclined outwards. 30
8. The roller according to claim 6 or 7, wherein said elastic tie means (6) comprise an annular tie (6) that, after being linearly doubled back on itself, is arranged diametrically on said inner face (4b) of the lid (4) and thus passed with the two ends, outwards, through respective holes (7) formed in a diametrically opposite position near to the peripheral outline (4a) of the lid itself, such ends thus passing beyond the aforementioned peripheral outline and, going down axially along the outer side surface of the body, hooking into carvings (8) formed in an opposing manner on said second edge (1b) of the body, in a substan- 35

tially intermediate position between the tangential rotation axis (X) and the center of the body.

9. The roller according to claim 7 or 8, wherein said lid (4) also comprises an actuation radial tongue (9) projecting radially from the opposite side with respect to said raised flap (10). 40
10. The roller according to any of the previous claims, wherein said distribution of openings (2) also covers said lid (4), and is formed so as to make graphical patterns or ornamental or distinctive writings.
11. The roller according to any of the previous claims, wherein near to said base edge (1b) of said body (1), fixing windows (3) are formed intended to engage with barrettes or clips for fastening said body (1) to the hair.
12. The roller according to any of the previous claims, wherein said tubular body (1) has a circular cross section.
13. A hairdressing method with a hair roller according to any of the previous claims, **characterized in that** the hair roller is arranged on the scalp of a user so as to abut against it with the second axial edge, while a wisp of hair is passed within the body with the shutter means in an open condition, is collected inside the body to form a curl and secured to it; the shutter means are then closed to complete the constriction of the hair curl, and finally the assembly thus formed is dried. 45



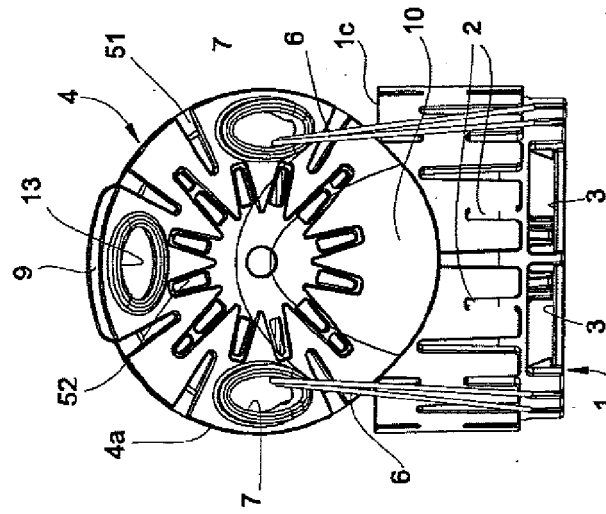


Fig. 8

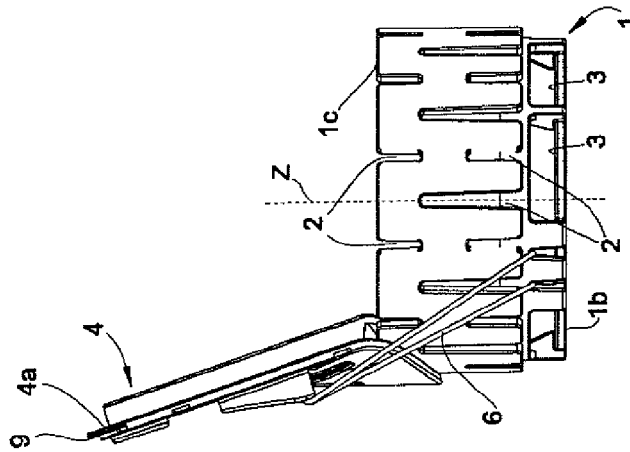


Fig. 7

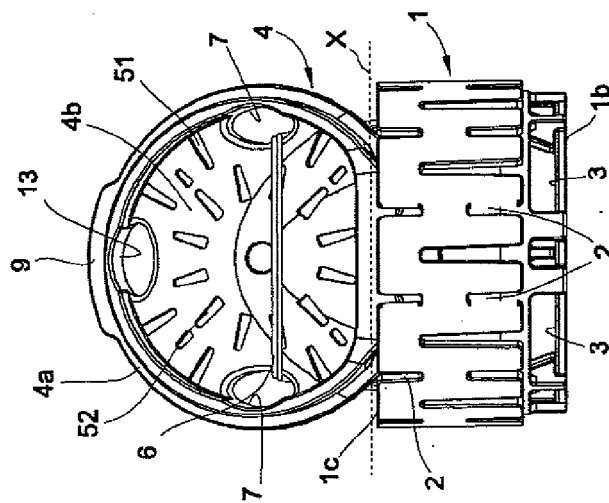
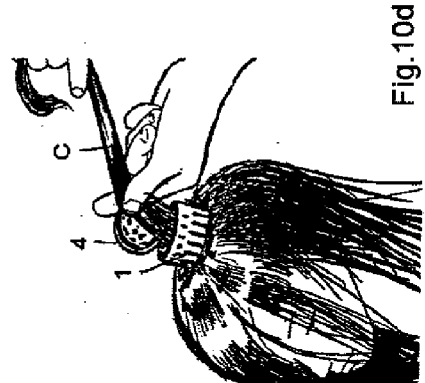
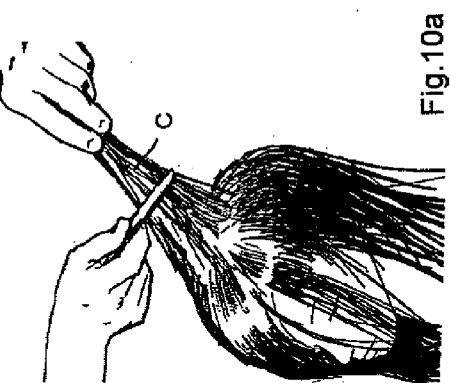
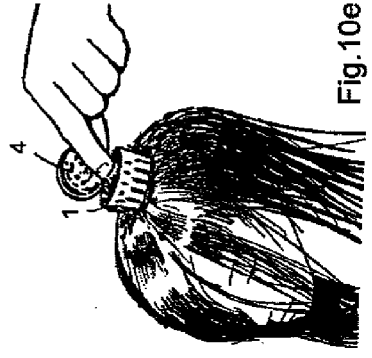
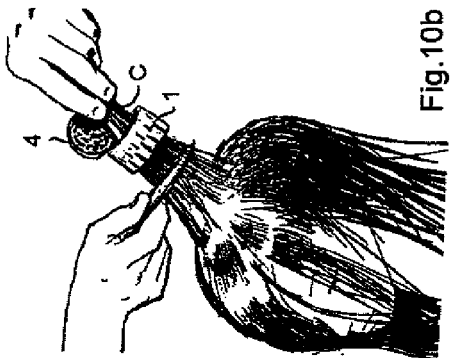
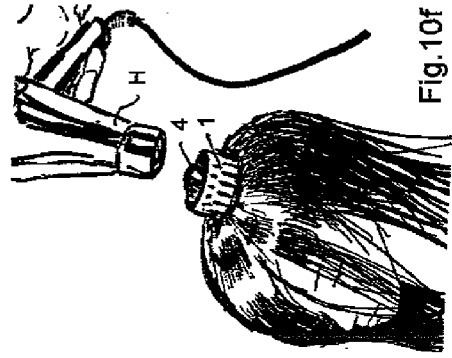
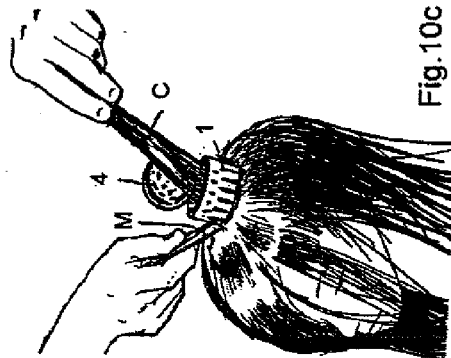


Fig. 9





EUROPEAN SEARCH REPORT

Application Number
EP 10 16 0216

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 5 845 657 A (CARBERRY GEOFF [CA] ET AL) 8 December 1998 (1998-12-08) * column 2, line 66 - column 3, line 30; claims; figures *	1-13	INV. A45D2/08
A	US 2 042 397 A (HIGH IVAN M ET AL) 26 May 1936 (1936-05-26) * page 1, left-hand column, line 58 - right-hand column, line 15; claims; figures *	1-13	
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A	US 2 910 990 A (JOHN CECIL) 3 November 1959 (1959-11-03) * the whole document *	1-13	
			TECHNICAL FIELDS SEARCHED (IPC)
			A45D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 30 August 2010	Examiner Acerbis, Giorgio
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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 10 16 0216

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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30-08-2010

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