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(54) **Hair styling device**

Haarstylingvorrichtung

Dispositif de coiffure

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Description

FIELD OF THE INVENTION

[0001] The present invention relates to a hair styling device according to the preamble of claim 1 such as one that can be used for curling and straightening hair, for example. The device may also be designed so that it serves preferably one of these two purposes and then is sold either as a straightening rod or as a straightening iron. The present invention is suitable for use in the private sector and also for use in the professional area, for example, in a hair styling salon.

BACKGROUND OF THE INVENTION

[0002] British Patent GB 1,519,930 (filed May 27, 1977) discloses a hair styling device having two arms, each having heating elements. The arms may be moved toward one another by a lever mechanism with the help of a grip lever. This movement can be made in a reliable and controlled manner, in particular avoiding contact of one's fingers with the heating elements, but the design appears to be complex.

[0003] Unexamined German Patent DE 102 39 713 A1 (filed August 29, 2002) discloses a hair styling device with which steam can also be applied to hair. This device is optimized for one-handed operation. There is a clamping element against a heated styling rod. This clamping element may be swiveled out of the way by means of a push button or lever.

[0004] This device also has a vaporizer, which is supplied with water from a tank. This tank is situated at the tip of the styling rod. Water for vaporizing may be supplied by means of operating button. This operating button is situated approximately at the level of the push button, allowing convenient one-handed operation.

[0005] Due to the tank being arranged at the tip of the heated styling rod, there is also no risk of getting burned at this end of the device. However, this design is somewhat complex on the whole and is optimized specifically for a device using a vaporizer. The clamping forces with which hair is pressed against the styling rod by the clamping element depend to a significant extent on the design of the device, i.e., essentially on the available spring force in the embodiment shown here, and cannot be increased beyond this spring force.

[0006] US Patent 6,029,677 (filed March 31, 1998) also discloses a hair styling device with a vaporization unit. The hair styling device has a heatable, essentially cylindrical styling rod and a clamping device, which comes in contact with it under spring tension. The heatable styling part is equipped with a heat guard element, which may be made of plastic and has a row of longitudinal ribs and ring-shaped transverse ribs. Furthermore, grip concavities are provided on the end of the styling rod and also on the end of the clamping part. These grip concavities should serve to press the clamping part against the heated styling part. The corresponding grip concavities are seemingly created in one piece on the clamping part and/or on the styling part. At any rate, the grip concavity for the styling part is also embodied as elements that are independent of the heat guard. This in turn seems to result in a certain manufacturing complexity. Furthermore, the exterior of the device also has many, details which interfere with a uniform aesthetic shape.

[0007] US 6,070,596 discloses a hair styling device having two tubular legs pivotally joined to each other at respective handle ends. Opposite to the handle ends, styling ends are provided at the tubular legs. On a top surface of one of the legs, a plurality of teeth are provided at the styling end to separate and brush the hair as it flows over the hair styling device. On the other leg a plurality of similar tooth are provided. Further, there is provided a plurality of ridges higher than the tooth, each ridge separated from the next by equal intervals. The ridges act as brake when the user squeezes the first leg against the second leg. On the end of the styling ends of the tubular legs, there are arranged heat insulated plastic pieces as separate handles that allow the user to grasp the end of the styling device during use. The WO 2004/004513 A2 discloses a similar separate handle at the outer end of the hair styling device.

[0008] In the US 2008/072921 A1, a hair styling device is disclosed having a first plate in a first housing and a second plate in a second housing. The proximal ends of the housings are coupled to a handle each. Both handles of the housings form a hinge. Each housing includes a face member and an end member being formed as a single part and building a common base for fins protruding from the face member and the end member. The fins on the face member and the end member are arranged in parallel to each other and at the same distance. As the temperature at the exposed ends of the fins is not significantly hotter than ambient temperature and all of the fins are spaced apart from each other a distance less than a width of a finger, the user may grasp the hair styling device even at the housings without touching the hot face of end members. The height of the fins on the face member and on the end member is identical. The US D 557 863 S1 and the US D 501 275 S1 show a similar structure of the fins on the housing of the hair styling device.

[0009] An improved hair styling device is to be made available with the present invention. In particular, an esthetically attractive but at the same time inexpensive heat guard is to be offered. This heat guard should allow the guidance of heated parts, at least the styling part, without any risk of bums.

[0010] This object is achieved by a hair styling device according to claim 1.

[0011] According to the present invention, a hair styling device having a first styling part and a second styling part is thus made available. The two styling parts should be movable relative to one another, so that hair can be placed between the two styling parts. A styling part is understood to be a part of the device, which is suitable

for coming in contact with the hair. The styling part may be either heated or unheated. In the case of a hair straightener, for example, two heated styling parts of essentially the same shape are often used. In the case of a curling rod, however, there will typically be a first styling part in the form of a heated cylindrical body and a clamping device, which may be understood in this context as being a second styling part. This second styling part in the form of the clamping device is then typically unheated. The mobility of the styling parts relative to one another may be accomplished, for example, by the possibility of a pivoting motion about a shared axis, but may also be achieved in a variety of other forms.

[0012] At least one of the styling parts should have a hair guidance part and also a grip part differentiable from the former. A hair guidance part may be understood to be any part, which imparts a preferential direction to hair being guided along the hair guidance part and/or divides the hair into multiple strands of hair. Preferably, however, exclusively plastic parts are not used here. The grip part in particular may be tailored to the anatomy of the hand or the fingers, but this need not be the case. At any rate, it is structurally different from the hair guidance part.

[0013] According to the invention, the hair guidance part should have a row of convexities and concavities. Such convexities and concavities may have multiple different shapes; for example, nubs may be considered as convexities and troughs or similar recesses may be considered as the concavities. Likewise, fins or webs with recessed grooves in between may also be considered. Hence, the term convexity can herein also be replaced by the term nub, fin, or web. Hence, the term concavity can herein also be replaced by the term trough or recess. A row of convexities and concavities is understood to be at least two convexities with a concavity in between. As a rule, the number of convexities and accordingly also the number of concavities will also be much higher. A concavity is to be seen in relation to a convexity.

[0014] A hair guidance part influences the course of the hair as it is supplied to the device or guidance of the hair away from the styling part. For example, such a hair guidance part may be mounted on the rear end of the styling part. Then the hair is guided in strands through the hair guidance part and is oriented in a certain direction. Usually the hair is supplied at a right angle to the edge of the styling parts. For hair guidance, such convexities and concavities are especially expedient, but they also have an additional benefit for the hair guidance part because a human finger does not rest on the complete area of the part, which is usually at least warm, but it touches only the convexities.

[0015] According to the present invention, the hair guidance part and the grip part have a common base area and are designed in one piece.

[0016] Furthermore, it is advantageous if the hair guidance part and the grip part (either one or both) are arranged so that one develops into the other. In other words, there should not be any distance between the hair guidance part and the grip part beyond the single width or two times the width of the neighboring concavities.

[0017] It has thus proven to be advantageous according to the invention that the convexities are arranged closer together in the grip part. The distance between two convexities in the grip part should be smaller than the distance between two convexities in the hair guidance part. In the case of grooves extending in a first direction, the corresponding distance of the grooves would then be measured at a right angle to this first direction.

[0018] It has also proven to be advantageous according to the invention that the convexities in the hair guidance part are higher than the convexities in the grip part. This achieves especially reliable hair guidance, whereas convexities of a lower height in the grip part may be quite adequate as an efficient heat guard and also for a secure grip.

[0019] It is also especially beneficial if the grip part is arranged in the end area of the styling part. The outer end area of the styling part is understood to be the area in which the styling part is openly accessible and which is thus usually opposite the hinge (or a similar connection) by means of which the styling part is movably connected to the other styling part. Furthermore, it is expedient if the grip part is curved. The curvature may approximately simulate a taper of the styling part on its outer end. Furthermore, an anatomically favorable finger rest can be achieved in this way.

[0020] The hair styling device is preferably designed so that each of the two styling parts has one grip part and one hair guidance part. Both the grip zone and the hair guidance are advantageously each mounted on the rear end of the styling part. The rear end is understood to be the end opposite the hair treatment end. In an especially preferred embodiment, the hair styling device has two symmetrical styling parts, with two grip parts and two hair guidance parts situated opposite one another in a symmetrical arrangement.

[0021] For efficient treatment of hair, it is especially advantageous if the hair is guided by the hair treatment area first to a styling edge and then away from the styling edge to the hair guidance part. This styling edge may result in more efficient curling of the hair, for example. If no styling edge is provided on the hair styling device, hair may be guided along an edge area of the hair treatment area accordingly.

[0022] In one embodiment, one styling part on an inventive hair treatment device may be heated while the other remains unheated. This embodiment is very useful for a curling rod. Alternatively, however, both styling parts may be heated in an inventive hair styling device. A hair straightener having two symmetrical styling parts, both of which are heated, is especially preferred.

[0023] It is especially inexpensive and expedient if the hair guidance part and the grip part are both made of plastic, advantageously using the same plastic. Plastic can be processed well and is also a good heat guard material.

[0024] The invention will now be explained in greater detail on the basis of one exemplary embodiment, which relates to a hair straightener. Other embodiments may of course also be considered, so the features of this hair straightener, which are presented together here, may also appear in other inventive hair styling devices but need not appear in a similar combination.

[0025] In the figures:

Figure 1 shows a side view of a hair straightener,

Figure 2 shows a view of the hair straightener from above.

[0026] Figure 1 shows a hair straightener having a first styling part 12 at the top and a second styling part 14 at the bottom. The two styling parts are joined by the connecting hinge 16. A first heating element 18 is provided on the first styling part 12. Symmetrically with that, a second heating element 20 is provided on the second styling part 14. Hair can be inserted between these two styling parts. Hair guidance parts, namely a first hair guidance part 22 on the first styling 12 and a second hair guidance 24 on the second styling part 14, are both opposite the heating elements.

[0027] As a rule, hair is not guided along the two styling parts in the same way. Instead, due to the largely symmetrical design of this device, it is possible to either guide the hair around the first styling arm 12, so that it is guided in the first hair guidance part 12, or alternatively to guide the hair around the second styling part 14, so that it is guided in the second hair guidance part 24.

[0028] Each of the hair guidance parts has a row of convexities and concavities. For simplicity, only one convexity is labeled with reference numeral 26 here and one neighboring concavity is labeled with reference numeral 28. In the embodiment shown here, the hair guidance part 22 has a base area 30. The convexities 26 protrude above this base area. Sections of the base area between the two convexities form the concavities. The hair guidance parts are attached to grip parts, namely a first grip part 32 on the outer end of the first styling part 12 and a second grip part 34 on the outer end of the second styling part 14. These grip parts in turn have a row of convexities (not identified further), which are elevated above the same base area 30. The first hair guidance part 22 is thus embodied in one piece with the first grip part 32 because both the grip part and the hair guidance part have the same base area 30. Accordingly, the second hair guidance part 24 and the second grip part 34 also share a base area, so that a one-piece design is again achieved. This side view also shows readily that the convexities in the area of the grip parts 32 and 34 do not protrude as far above the base area 30 as they do in the area of the hair guidance parts 22 and 24.

[0029] Figure 2 shows a view of the hair straightener from above. In this view, it can be seen that the first styling part 12 also carries the electric connecting cable 36. The device is thus operated electrically as a whole. It may be turned on by the switch 38, where its temperature can also be preselected. The ON-position is indicated by the display 40. In this view, it can be seen that convexities 26 are arranged on the base area 30 so they are equidistant in the area of the first hair guidance part 22. Accordingly, there are also concavities of the same width between the convexities 26. The base area also develops into the first grip part 32, but the latter is curved here. Accordingly, the convexities there have a different orientation. As shown clearly here, they are also definitely more densely arranged in the area of the grip part 32 than in the area of the hair guidance part 22. Furthermore, a styling edge 42 is discernible in this view. Hair could be supplied to the hair treatment zone via the first hair guidance part i.e., guided along heating elements and around the styling edge 42, having been supplied from above, based on this view.

[0030] A very efficient hair styling device that can be handled safely can be manufactured in this way.

Reference numerals

[0031]

10	hair styling device
12	first styling part
14	second styling part
16	styling part connecting hinge
18	first heating element
20	second heating element
22	first hair guidance part
24	second hair guidance part
26	convexity
28	concavity
30	base area
32	first grip part
34	second grip part
36	cable
38	switch
40	display
42	styling edge

Claims

1. A hair styling device (10) having a first styling part (12) and a second styling part (14), such that the two styling parts are movable in relation to one another and hair can be placed between the two styling parts, at least one styling part having a hair guidance part (22, 24) and also having a grip part (32, 34) that is structurally different from the hair guidance part, wherein the hair guidance part (22, 24) has a row of convexities (26) and concavities (28) and the grip part (32, 34) has a row of convexities (26) and concavities (28), and the hair guidance part (22, 24) and the grip part (32, 34) are designed in one piece and

have a shared base area (30), **characterised in that** the convexities (26) are arranged more densely in the grip part (32, 34) than in the hair guidance part (22, 24) and, the convexities (26) in the hair guidance part (22, 24) are higher than those in the grip part (32, 34).

2. The hair styling device (10) according to claim 1, in which the hair guidance part (22, 24) and the grip part (32, 34) are arranged so they can develop one into the other.

3. The hair styling device (10) according to any one of the preceding claims, wherein the grip part (32, 34) is attached to the outer end of the styling part (12, 14).

4. The hair styling device (10) according to any one of the preceding claims, wherein the grip part (32, 34) has a curved base area (30).

5. The hair styling device (10) according to any one of the preceding claims, having a first styling part (12) with a first hair guidance part (22) and a first grip part (32) as well as having a second styling part (14) with a second hair guidance part (24) and a second grip part (34).

6. The hair styling device (10) according to any one of the preceding claims, wherein the hair guidance part (22, 24) and the grip part (32, 34) are arranged on the rear end of the styling part.

7. The hair styling device (10) according to any one of the preceding claims, wherein at least one of the styling parts has a styling edge (42).

8. The hair styling device (10) according to any one of the preceding claims, wherein only one styling part (12, 14) is heated.

9. The hair styling device (10) according to any one of the preceding claims 1 to 8, wherein the first styling part (12) and the second styling part (14) are heated.

10. The hair styling device (10) according to any one of the preceding claims, in the form of a hair straightening having symmetrical styling parts.

11. The hair styling device (10) according to any one of the preceding claims, wherein the first hair guidance part (22), the second hair guidance part (24), the first grip part (32) and the second grip part (34) are made of plastic.

Patentansprüche

1. Frisiergerät (10), das ein erstes Frisierteil (12) und ein zweites Frisierteil (14) derart aufweist, dass die zwei Frisierteile in Beziehung zueinander beweglich sind und Haar zwischen die zwei Frisierteile platziert werden kann, wobei mindestens ein Frisierteil ein Haarführungsteil (22, 24) aufweist und außerdem ein Griffteil (32, 34) aufweist, das sich strukturell von dem Haarführungsteil unterscheidet, wobei das Haarführungsteil (22, 24) eine Reihe von Konvexitäten (26) und Konkavitäten (28) aufweist und das Griffteil (32, 34) eine Reihe von Konvexitäten (26) und Konkavitäten (28) aufweist und das Haarführungsteil (22, 24) und das Griffteil (32, 34) einstückig gestaltet sind und eine gemeinsame Grundfläche (30) aufweisen, **dadurch gekennzeichnet, dass** die Konvexitäten (26) in dem Griffteil (32, 34) dichter angeordnet sind als in dem Haarführungsteil (22, 24) und die Konvexitäten (26) in dem Haarführungsteil (22, 24) höher sind als diejenigen in dem Griffteil (32, 34).

2. Frisiergerät (10) nach Anspruch 1, bei dem das Haarführungsteil (22, 24) und das Griffteil (32, 34) so angeordnet sind, dass sie ineinander übergehen können.

3. Frisiergerät (10) nach einem der vorstehenden Ansprüche, wobei das Griffteil (32, 34) am äußeren Ende des Frisierteils (12, 14) befestigt ist.

4. Frisiergerät (10) nach einem der vorstehenden Ansprüche, wobei das Griffteil (32, 34) eine gekrümmte Grundfläche (30) aufweist.

5. Frisiergerät (10) nach einem der vorstehenden Ansprüche, das ein erstes Frisierteil (12) mit einem ersten Haarführungsteil (22) und einem ersten Griffteil (32) aufweist sowie ein zweites Frisierteil (14) mit einem zweiten Haarführungsteil (24) und einem zweiten Griffteil (34) aufweist.

6. Frisiergerät (10) nach einem der vorstehenden Ansprüche, wobei das Haarführungsteil (22, 24) und das Griffteil (32, 34) am hinteren Ende des Frisierteils angeordnet sind.

7. Frisiergerät (10) nach einem der vorstehenden Ansprüche, wobei mindestens eines der Frisierteile eine Frisierkante (42) aufweist.

8. Frisiergerät (10) nach einem der vorstehenden Ansprüche, wobei nur ein Frisierteil (12, 14) beheizt ist.

9. Frisiergerät (10) nach einem der vorstehenden Ansprüche 1 bis 8, wobei das erste Frisierteil (12) und das zweite Frisierteil (14) beheizt sind.

10. Frisiergerät (10) nach einem der vorstehenden Ansprüche in Form eines Haarglätters mit symmetri-

schen Frisierteilen.

11. Frisiergerät (10) nach einem der vorstehenden Ansprüche, wobei das erste Haarführungsteil (22), das zweite Haarführungsteil (24), das erste Griffteil (32) und das zweite Griffteil (34) aus Kunststoff hergestellt sind.

Revendications

1. Dispositif de coiffage de cheveux (10) comportant une première partie de coiffage (12) et une deuxième partie de coiffage (14), de telle sorte que les deux parties de coiffage sont mobiles l'une par rapport à l'autre et des cheveux peuvent être placés entre les deux parties de coiffage, au moins une partie de coiffage comportant une partie de guidage de cheveux (22, 24) et comportant également une partie de préhension (32, 34) qui est structurellement différente de la partie de guidage de cheveux, dans lequel la partie de guidage de cheveux (22, 24) possède une rangée de convexités (26) et de concavités (28) et la partie de préhension (32, 34) possède une rangée de convexités (26) et de concavités (28), et la partie de guidage de cheveux (22, 24) et la partie de préhension (32, 34) sont de conception en une pièce et ont une aire de base partagée (30), **caractérisée en ce que** les convexités (26) sont arrangées plus densément dans la partie de préhension (32, 34) que dans la partie de guidage de cheveux (22, 24) et les convexités (26) dans la partie de guidage de cheveux (22, 24) sont plus élevées que celles dans la partie de préhension (32, 34).

2. Dispositif de coiffage de cheveux (10) selon la revendication 1, dans lequel la partie de guidage de cheveux (22, 24) et la partie de préhension (32, 34) sont arrangées de sorte qu'elles peuvent se développer l'une dans l'autre.

3. Dispositif de coiffage de cheveux (10) selon l'une quelconque des revendications précédentes, dans lequel la partie de préhension (32, 34) est fixée à l'extrémité externe de la partie de coiffage (12, 14).

4. Dispositif de coiffage de cheveux (10) selon l'une quelconque des revendications précédentes, dans lequel la partie de préhension (32, 34) a une aire de base courbée (30).

5. Dispositif de coiffage de cheveux (10) selon l'une quelconque des revendications précédentes, comportant une première partie de coiffage (12) avec une première partie de guidage de cheveux (22) et une première partie de préhension (32) et comportant également une deuxième partie de coiffage (14) avec une deuxième partie de guidage de cheveux (24) et une deuxième partie de préhension (34).

6. Dispositif de coiffage de cheveux (10) selon l'une quelconque des revendications précédentes, dans lequel la partie de guidage de cheveux (22, 24) et la partie de préhension (32, 34) sont arrangées sur l'extrémité arrière de la partie de coiffage.

7. Dispositif de coiffage de cheveux (10) selon l'une quelconque des revendications précédentes, dans lequel au moins l'une des parties de coiffage comporte un bord de coiffage (42).

8. Dispositif de coiffage de cheveux (10) selon l'une quelconque des revendications précédentes, dans lequel une seule partie de coiffage (12, 14) est chauffée.

9. Dispositif de coiffage de cheveux (10) selon l'une quelconque des revendications précédentes 1 à 8, dans lequel la première partie de coiffage (12) et la deuxième partie de coiffage (14) sont chauffées.

10. Dispositif de coiffage de cheveux (10) selon l'une quelconque des revendications précédentes, sous la forme d'un lisseur à cheveux possédant des parties de coiffage symétriques.

11. Dispositif de coiffage de cheveux (10) selon l'une quelconque des revendications précédentes, dans lequel la première partie de guidage de cheveux (22), la deuxième partie de guidage de cheveux (24), la première partie de préhension (32) et la deuxième partie de préhension (34) sont constituées de plastique.

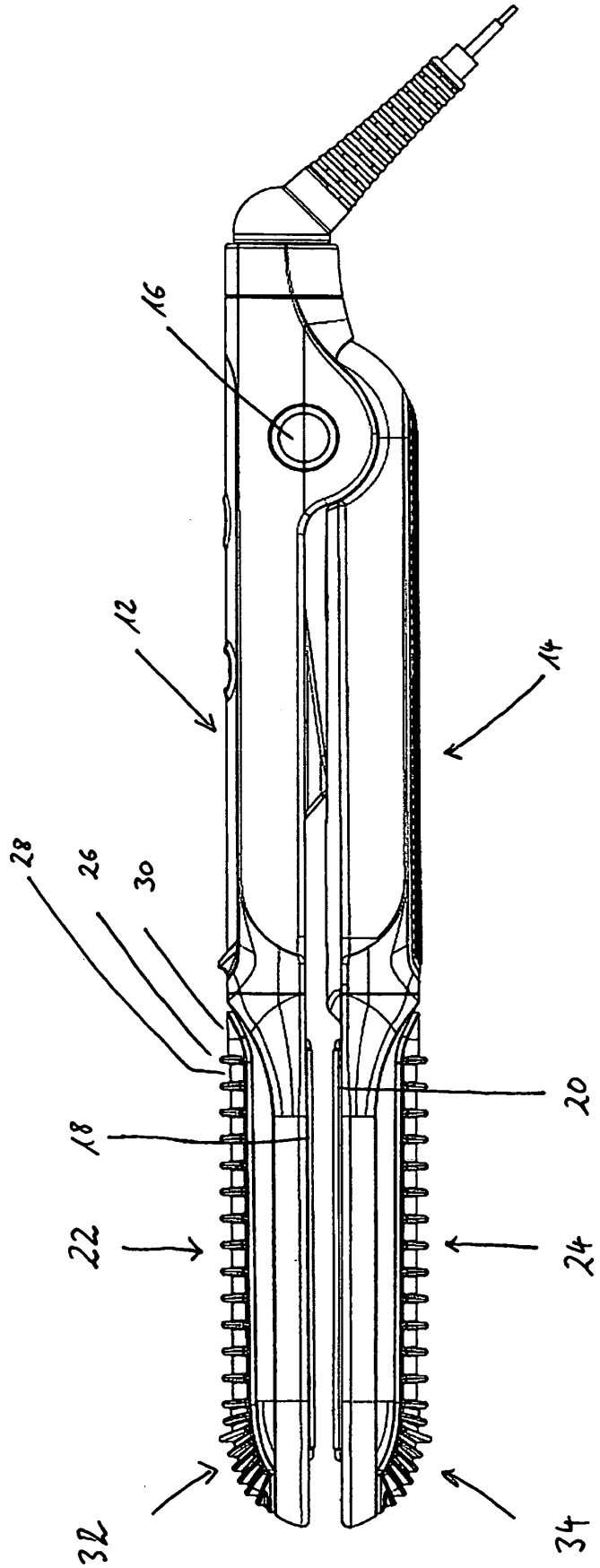

Fig. 1

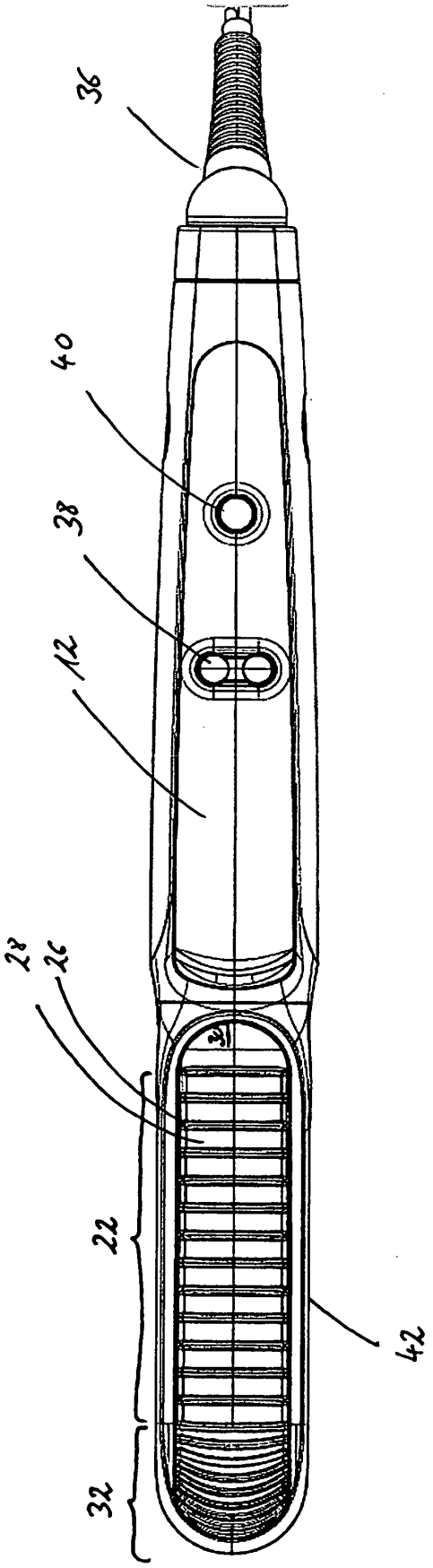

Fig. 2

REFERENCES CITED IN THE DESCRIPTION

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