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(54) **HAIRCARE DEVICE**

(57) The present invention discloses haircare device configured for being used when styling hair. The hair care device comprising a hollow body, an air inlet through which air can enter the hollow body and a hair receiving portion on the outside of the hollow body, wherein the hair receiving portion comprises multiple air outlets through which air can exit the haircare device. The haircare device further comprises a fan configured for transporting air from the air inlet to the air outlet, wherein the hair receiving portion comprises multiple slats provided under an obtuse angle with the hair receiving portion, wherein the slats are positioned along one or more straight lines wherein the multiple slats have a substantially rounded surface on the outside of the hollow body such that in use an airflow is generated that moves predominantly along the hair receiving portion.

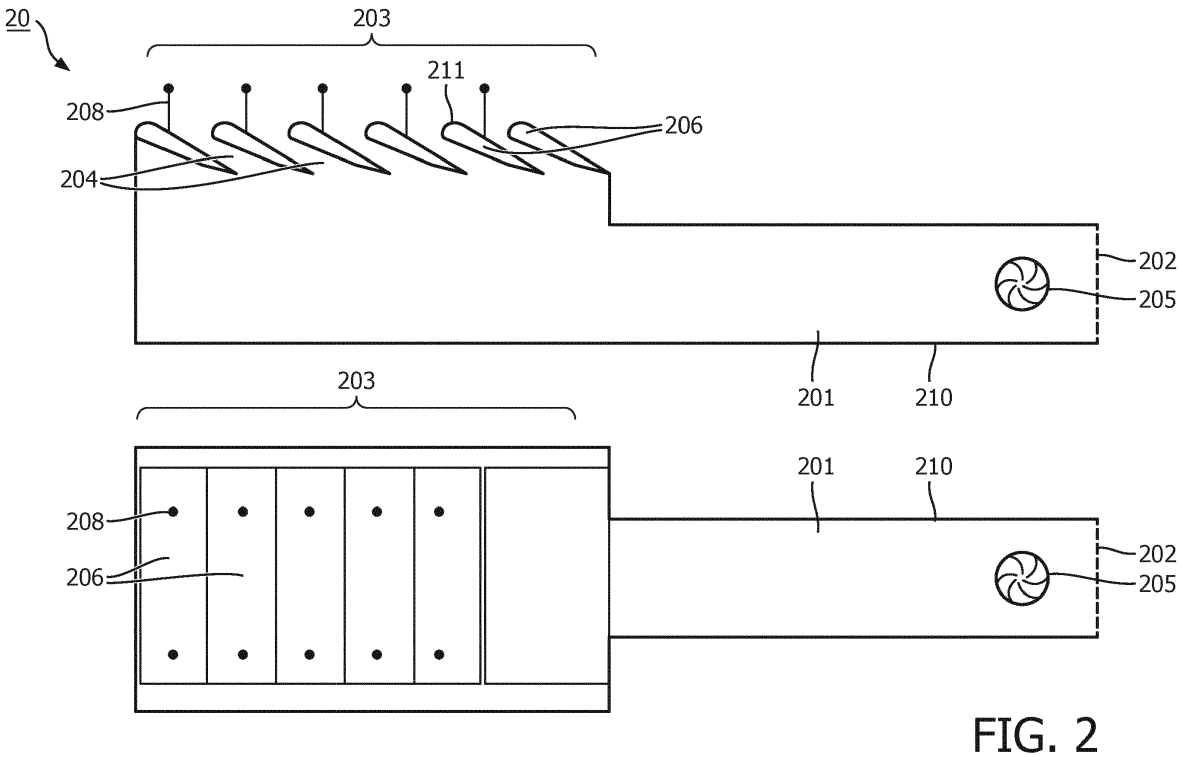

FIG. 2

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Description

FIELD OF THE INVENTION

[0001] The invention relates to the field of haircare, in particular to the field of haircare devices and even more particular to hairdryers.

BACKGROUND OF THE INVENTION

[0002] Hair dryers are commonly used for drying hair. One of the disadvantages with current hair dryers is that usually two hands are needed to style and dry the hair. Another disadvantage is that different attachments are needed for creating different hairstyles. Examples of existing attachments are nozzles, brushes, combs, diffusers etc.

[0003] US 3,837,581 describes a nozzle for a hair dryer having a cylindrical barrel terminating in a circular output port. The nozzle includes a cylindrical section for frictionally engaging the output port end of the barrel, and a fluid accelerating section having an oblong opening for providing a flat main stream of air. The accelerating section includes a pair of arcuate surfaces, which extend from the cylindrical section and define the long sides of the oblong opening. The arcuate surfaces include slots for providing auxiliary streams of air substantially parallel to the main stream. In one embodiment louver boards extend over the slots for directing the auxiliary streams.

SUMMARY OF THE INVENTION

[0004] An object of the invention is to provide for a hairdryer with an increased ease of use. Another or additional object of the invention is to provide for a hair dryer which is configured to be used for creating multiple styles without the use of attachments.

[0005] At least one of these objects is a achieved by a haircare device according to claim 1. The features claimed in claim 1 result in an airflow having a direction substantially parallel to the haircare device. This airflow is caused by the so-called coanda effect.

[0006] The coanda effect works according to the following mechanism. If a solid surface, like the hair receiving surface, is placed close, and approximately parallel to the outgoing air, removal of air from between the solid surface and the outgoing air causes a reduction in air pressure between the solid surface and the outgoing air. This reduction in air pressure cannot be balanced as rapidly as the low pressure region on the other (open) side of the outgoing air. The pressure difference airstream to deviate towards the nearby surface, and then to adhere to it. The outgoing air adheres even better to curved surfaces because each incremental change in direction of the surface brings about the effects as described above.

[0007] The rounded surface of the slats according to claim 1 therefore cause the outgoing air to adhere to the hair receiving portion. Therefore, when using haircare device according to claim 1, a user may only need one hand for styling his / her hair.

[0008] According to further embodiments, the haircare device comprises one or more heating elements for heating the air in the hollow body. Heating may be advantages when drying and styling hair.

[0009] An advantage of this embodiment is that, because the air will stick to the air outlet, the hair will also stick to the air outlet. As a result, air warmed by the heater will blow along the hair, opposed to more conventional heater which blow air through the hair. As a result of blowing air along the hair, the hot air may be along the hair longer, which may increase the heating efficiency.

[0010] The hair receiving portion can take many different shapes, as long as it is flat or the slats are positioned in one or multiple straight lines. Preferably, the generated airflow is substantially parallel to the one or more straight lines.

[0011] According to further embodiments the hair receiving portion comprises bristles. This embodiment is advantageous, because due to the coanda effect the hair may be blown in the bristles, which may make styling easier, because only a single hand may be needed for the styling.

[0012] According to further embodiments of the invention, the haircare device may comprise a handle, wherein the hair receiving portion is substantially parallel to the handle. This embodiments is advantageous, because this makes the way of hair styling similar to styling by means of a brush or comb, which may be an intuitive way of styling.

[0013] According to further embodiments of the invention at least some of the slats are rotatable around an axis parallel to the hair receiving portion or rotatable around an axis parallel to the respective slat. The advantage of this is that the slats can be under a variable angle with the hair receiving portion. By changing the angles of the slats the outgoing airstream can be altered. It can be made more focused, e.g. by closing slats in some of the straight lines. It can be made wider and the shape of the airstream can be changed. Different shapes of airstreams could be used for different hairstyles without the need of further attachments. However, even though embodiments of the invention can have the advantage that less attachments are needed, according to one aspect the invention is an attachment for a haircare device according to claim 9. The advantage of separate attachments is that the user can more easily vary with the shape of hair receiving portions.

[0014] These and other aspects of the invention will be apparent from and elucidated with reference to the embodiments described hereinafter.

BRIEF DESCRIPTION OF THE FIGURES

[0015]

Fig. 1 diagrammatically shows a haircare device ac-

cording to embodiments of the invention and
Fig. 2 diagrammatically shows a haircare device according to further embodiments of the invention and
Fig. 3 diagrammatically shows hair receiving portions according to embodiments of the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0016] Fig. 1 diagrammatically shows a haircare device 10 according to embodiments of the invention. The haircare device 10 comprises a hollow body 101 and an air inlet 102 through which air can enter the hollow body. The haircare device further comprises a hair receiving portion 103 comprising multiple air outlets 104 through which air can exit the haircare device 10. The haircare device further comprises a fan 105 and preferably a heating element 107. The fan is configured for transporting air from the air inlet 102 to the air outlets 104. The heating element is configured for heating the air. The hair receiving portion 103 comprises multiple slats 106. These slats are arranged under an obtuse angle with the hair receiving portion. In Fig. 1 the slats are positioned along one straight line in the direction of arrows 109. The slats 106 have substantially rounded surfaces 111 on the outside of the hollow body such that in an airflow is generated that moves predominantly along the hair receiving portion in a direction parallel to the straight line of the hair receiving portion. The dominant direction of the air flow is indicated by arrows 109 and 110. Arrows 109 indicate the air exiting from the air outlets 104. Because of the above explained coanda effect, the air predominantly sticks to the surface of the hair receiving portion. Arrows 110 indicate the air coming from the outside of the haircare device. This air is dragged along with air 109.

[0017] Fig. 2 diagrammatically shows a haircare device 20 according to further embodiments of the invention. In Fig. 2 the same numbering is used as in Fig. 1, although the first digit of the number is now referred to as "2" from Fig. 2. Like in Fig. 1, Fig. 2 depicts a hollow body 201, an air inlet 202, a hair receiving portion 203 comprising multiple air outlets 204, a fan 205, multiple slats 206 along a straight line. The slats have a substantially rounded surface 211 on the outside of the hollow body. The haircare device 20 further comprises bristles 208, configured for brushing the hair. The haircare device 20 further comprises a handle 210. The handle is substantially parallel to the hair receiving portion 203. The advantage of this arrangement is that it is very similar to an ordinare brush. The haircare device can therefore be used in a very similar manner as the ordinary brush. Because the generated airflow is substantially parallel to the hair receiving portion 203, the user may be capable to style his or her hair with one single hand and may not need a second hand to keep the hair close to the brush. Optionally, at least some of the slats are rotatable around an axis parallel to the hair receiving portion. For example some of the slats may be closed to create a more focussed airflow. Alternatively, the slats may be opened under a different angle in order to alter the overall shape of the airflow. In this way, the airflow may be adapted to the desired hairstyle.

[0018] Fig. 3 diagrammatically shows hair receiving portions according to embodiments of the invention. The hair receiving portion can take multiple shapes, like for example flat 312, convex 315, concave 316, or comprising multiple flat surface, resulting for example in a triangle shape 317. Although the shape of the hair receiving portion can vary, the slats are always arranged in straight lines 320. These lines indicate the predominant direction of the airflow.

[0019] Whilst the invention has been illustrated and described in detail in the drawings and foregoing description, such illustrations and description are to be considered illustrative or exemplary and not restrictive; the invention is not limited to the disclosed embodiments.

Claims

1. A haircare device configured to be used when styling hair comprising

   - a hollow body
   - an air inlet through which air can enter the hollow body and;
   - a hair receiving portion on the outside of the hollow body, wherein the hair receiving portion comprises multiple air outlets through which air can exit the haircare device and wherein the haircare device further comprises;
   - a fan configured for transporting air from the air inlet to the air outlet, wherein the hair receiving portion comprises multiple slats provided under an obtuse angle with the hair receiving portion, wherein the slats are positioned along one or more straight lines wherein the multiple slats have a substantially rounded surface on the outside of the hollow body such that in use an airflow is generated that moves predominantly along the hair receiving portion.

2. A haircare device according to claim 1 further comprising one or more heating elements configured for heating the air in the hollow body.

3. A haircare device according to any of the preceding claims, wherein the hair receiving portion is configured as a flat surface.

4. A haircare device according to any of the preceding claims wherein the hair receiving portion comprises bristles.

5. A haircare device according to any of the preceding claims further comprising a handle, wherein the hair-receiving portion is substantially parallel to the han-

dle.

6. A haircare device according to any of the preceding claims, wherein the hair receiving portion comprises multiple flat surfaces.

7. A haircare device according to any of the preceding claims, wherein the hair receiving portion comprises a curved surface.

8. A haircare device according to any of the preceding claims, wherein the generated airflow is substantially parallel to the one or more straight lines.

9. A haircare device according to any of the preceding claims, wherein at least some of the slats are rotatable around an axis parallel to the hair receiving portion or wherein at least some of the slats are rotatable around an axis parallel to the respective slats.

10. An attachment for a haircare device, wherein the attachment is disconnectably connectable to the haircare device, the attachment further comprising a hair receiving portion comprising multiple air outlets through which air can exit the haircare device when the attachment is connected to the haircare device, wherein the hair receiving portion further comprises multiple slats provided under an obtuse angle with the hair receiving portion, wherein the slats are positioned along one or more straight lines wherein the multiple slats have a substantially rounded surface on the outside of the haircare device when the attachment is attached to the haircare device such that in use an airflow is generated that moves predominantly along the hair receiving portion.

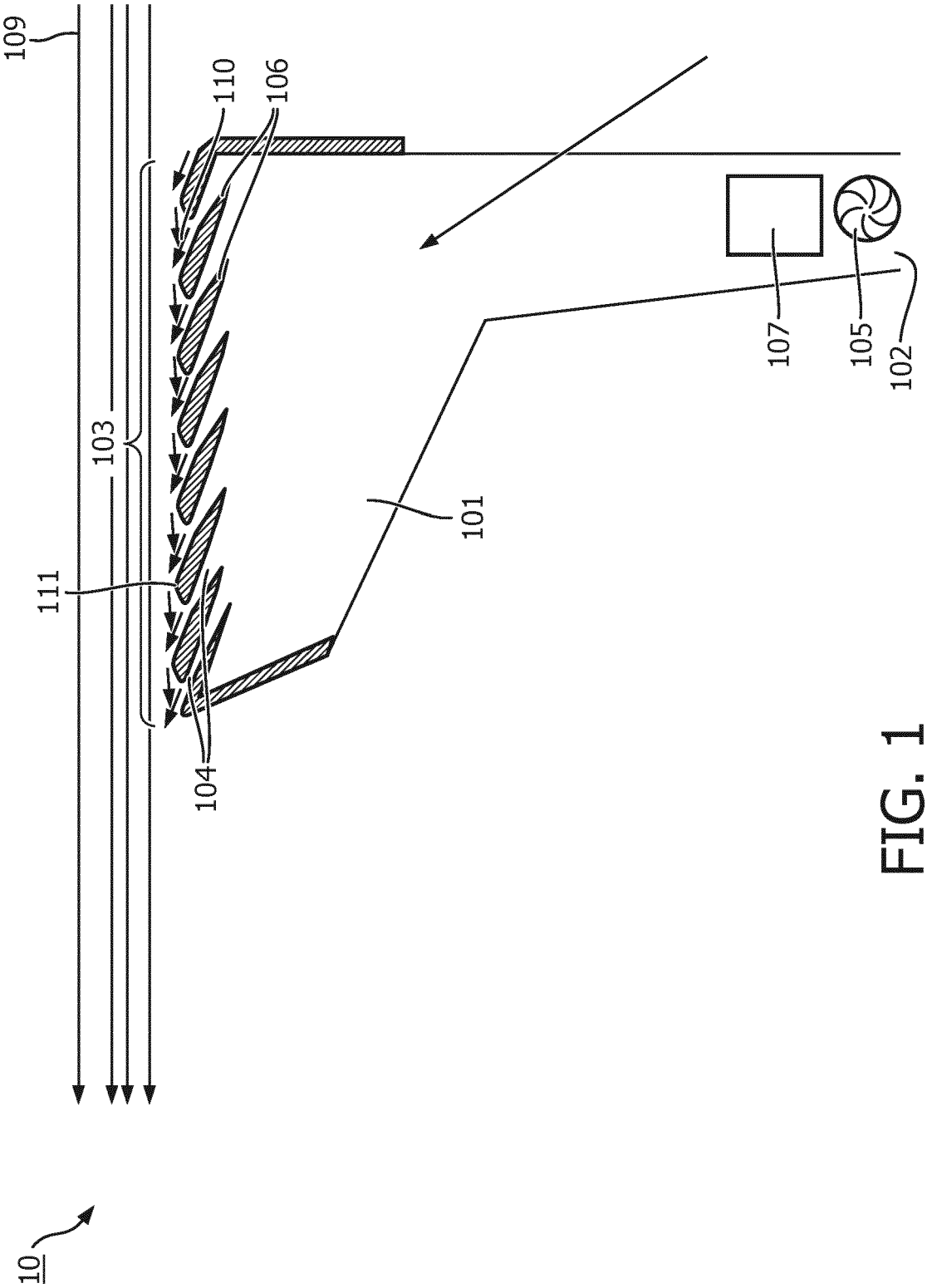

FIG. 1

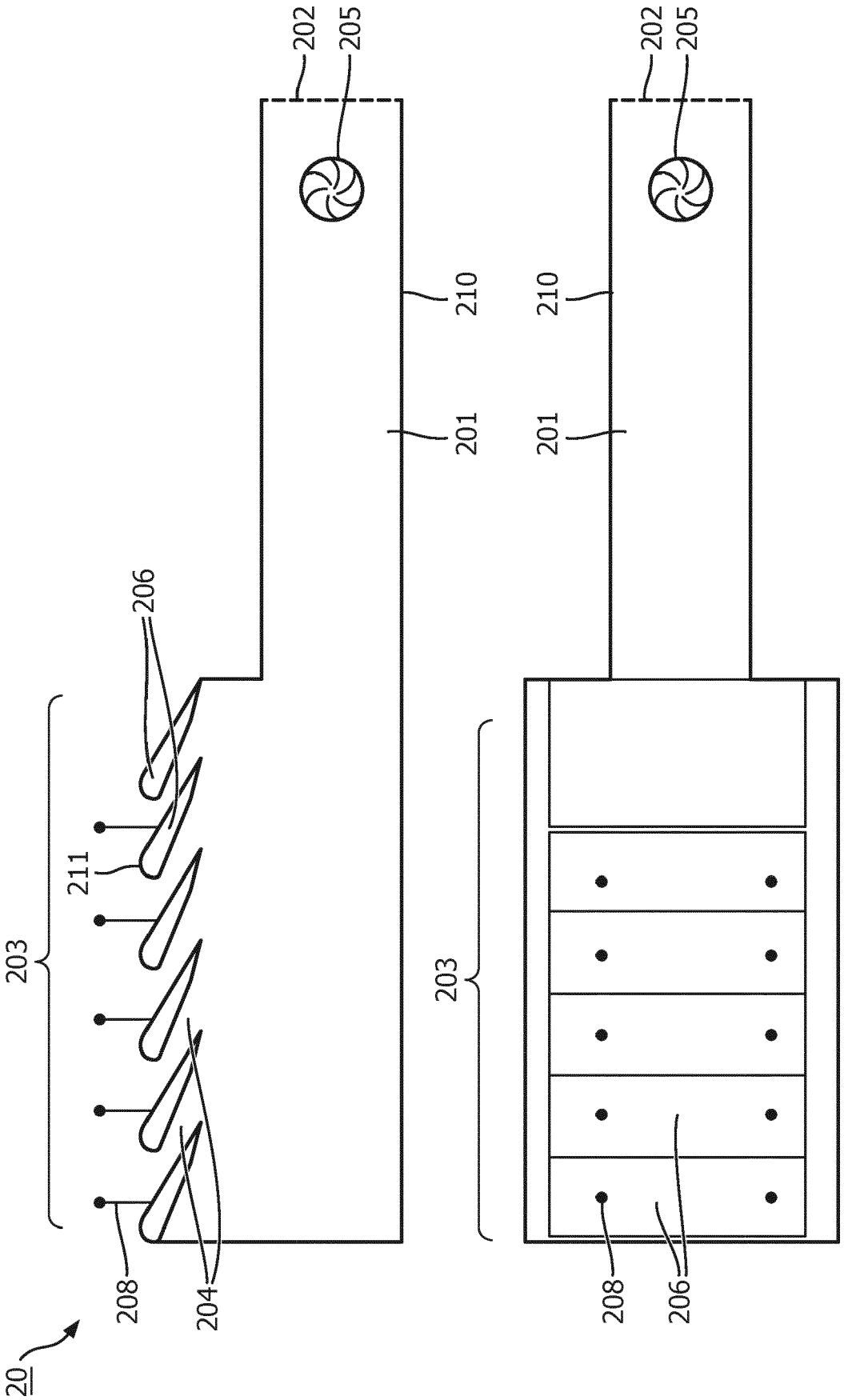
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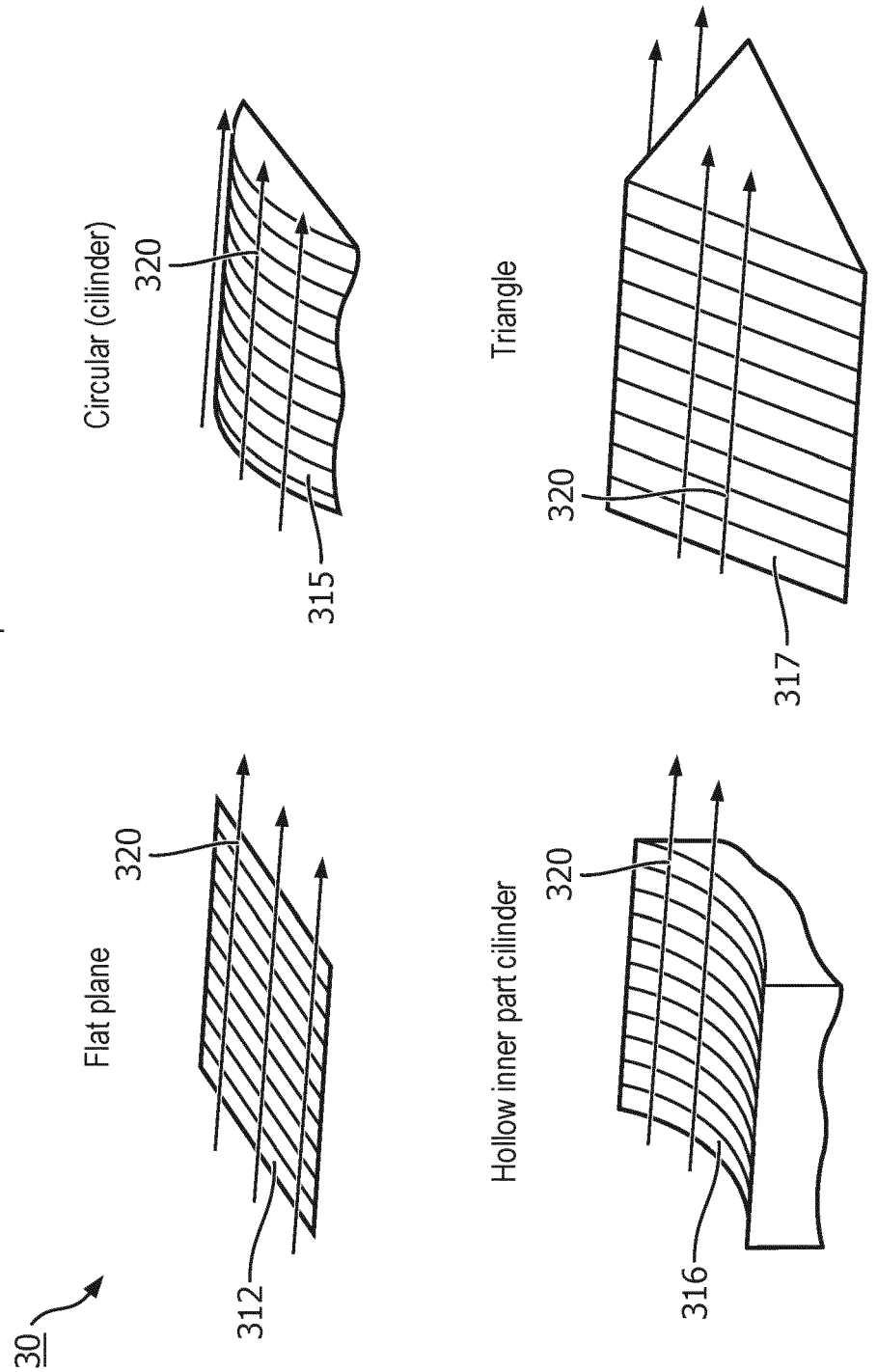
FIG. 2


Examples:
Circular (cilinder)
320
315
Triangle
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317
Flat plane
320
312
Hollow inner part cilinder
320
316
30

FIG. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 19 21 5502

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	CN 204 393 640 U (SUN LUEN ELECTRICAL MFG CO LTD) 17 June 2015 (2015-06-17) * figures 6a, 7a *	9	
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TECHNICAL FIELDS SEARCHED (IPC)

A45D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	15 June 2020	van de Beek-Duijker

CATEGORY OF CITED DOCUMENTS

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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