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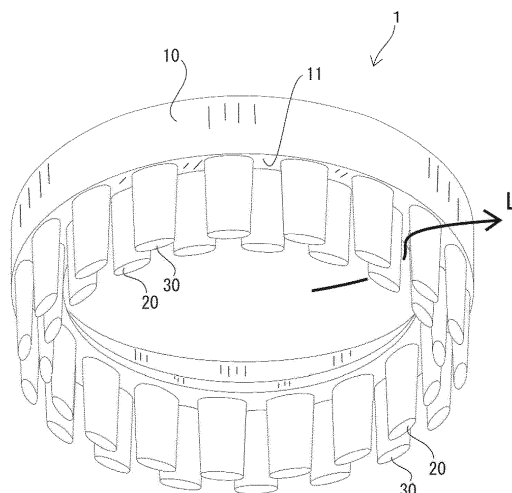
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(54) **WATER SPLASH PREVENTION HOOD MOUNTED TO SHOWER HEAD**

(57) A water splash prevention hood 1 is provided, which can enhance both a water splash preventing effect and a water draining effect. In the water splash prevention hood 1 of the present invention, a plurality of protruding plates 20, 30 are formed on an end surface 11 of a cylindrical body 10, which is to be connected to a shower head. In such the configuration, there is no straight way

of water jetted to the outside from the inside of the hood 1. Thus, it is possible to prevent the water from vigorously splashing out to outside. At the same time, the gaps are formed between the protruding plates, by which some meandering paths "L" of water are formed. Thus, the water can flow out to the outside gently with a sufficient flow rate, by properly setting size of the gap.

Fig. 3



Description

TECHNICAL FIELD

[0001] The present invention relates to a water splash prevention hood, which is to be used in a state where the water splash prevention hood is mounted on a shower head.

BACKGROUND ART

[0002] For example, in a barbershop, a beauty salon or the like, in order to enhance a hair washing effect or a head massaging effect, there may be a case where hair is washed with a shower head disposed as close as possible to a customer's head. In such the case, on the shower head is mounted a hood (water splash prevention hood), by which the water jetted from a nozzle portion of the shower head can be prevented from splashing to the surroundings. On the other hand, it is necessary to discharge water filled in the inside of the hood and hence, water drain openings are formed on a wall surface of the hood (see Patent Documents 1 to 3), for example.

PRIOR ART DOCUMENTS

PATENT DOCUMENTS

[0003]

Patent Document 1: Japanese Patent No. 4694779
Patent Document 2: Japanese Design Registration No. 1078858
Patent Document 3: Japanese Design Registration No. 1078859

SUMMARY OF THE INVENTION

PROBLEMS TO BE SOLVED BY THE INVENTION

[0004] A known water splash prevention hood having water drain openings in its wall has the following drawbacks. That is, it is necessary to make the openings large so as to efficiently perform draining of water. On the other hand, when the openings become excessively large, the primary function of the hood (the prevention of splashing of water) is impaired.

[0005] As above, there exist two requirements which contradict with each other, that is, "the requirement for making the water drain openings large so as to perform draining of water efficiently" and "the requirement for preventing the water drain openings from becoming excessively large for enhancing a water splash preventing effect". In an actual water splash prevention hood, the size of the water drain opening is determined, based on a compromise between these two requirements.

[0006] The present invention has been made in view of the above-mentioned conventional circumstances,

and it is an object of the present invention to provide a water splash prevention hood which can enhance both "a water splash preventing effect" and "a water draining effect".

SOLUTIONS TO THE PROBLEMS

[0007] The water splash prevention hood according to the present invention is to be mounted on a shower head having a nozzle for jetting water. The water splash prevention hood comprises: a cylindrical body which is to be connected to the shower head, such that the cylindrical body surrounds a jetting opening of the nozzle; and a plurality of protruding plates, which are formed on an end surface of the cylindrical body and are alternately arranged in a staggered pattern with gaps formed therebetween. By the plurality of protruding plates, water jetted from the jetting opening is prevented from splashing out to the surroundings, and the water is drained to the outside through the gaps formed between the protruding plates.

EFFECTS OF THE INVENTION

[0008] In the water splash prevention hood according to the present invention having the above-mentioned configuration, the plurality of protruding plates are formed on an end surface of the cylindrical body and are alternately arranged in a staggered pattern with gaps formed therebetween. Thank to such the configuration, water discharge paths running toward the outside from the inside of the hood are made to meander, where there is no straight path of water jetted to the outside from the inside of the hood. Thus, it is possible to prevent the water from vigorously splashing out to outside. At the same time, the gaps are formed between the protruding plates, and thus it is possible to allow the water to flow out to the outside gently with a sufficient flow rate by properly setting size of the gap.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009]

Figs. 1A and 1B are perspective views of a water splash prevention hood according to one embodiment of the present invention, in a state where the water splash prevention hood is mounted on a shower head.

Fig. 2A is a bottom plan view showing only the shower head in Fig. 1, as viewed from just below.

Fig. 2B is a bottom plan view of the shower head, wherein the water splash prevention hood is mounted on the shower head shown in Fig. 2A.

Fig. 3 is a perspective view showing only the water splash prevention hood in Fig. 1.

Fig. 4 is a bottom plan view of the water splash prevention hood shown in Fig. 3, as viewed from just

below.

Figs. 5A-5C are views explaining an effect brought by the shape of a flow passage "L" in the present invention.

EMBODIMENTS OF THE INVENTION

[0010] An embodiment of the present invention is described hereinafter with reference to attached drawings. Figs. 1A and 1B are perspective views of a water splash prevention hood 1 according to one embodiment of the present invention, in a state where the water splash prevention hood 1 is mounted on a shower head 2. Fig. 1A is the perspective view from a lower side, and Fig. 1B is the perspective view from an upper side.

«Summary of the shower head 2»

[0011] Fig. 2A is a bottom plan view showing only the shower head 2 from just below, and Fig. 2B shows a state where the water splash prevention hood 1 is mounted on the shower head 2. As can be understood from Fig. 1A and Fig. 2A, the shower head 2 includes a large number of projections 3, and jetting openings 4 are formed between the projections 3. The jetting openings 4 communicate with a nozzle disposed in the shower head 2, and a water flow which passes through the nozzle jets from the jetting openings 4.

[0012] The projections 3 are provided for enhancing a massaging effect on the scalp by coming into contact with the scalp. However, the projections 3 are not indispensable elements in the present invention. That is, the water splash prevention hood 1 of the present invention can be used with a shower head having no such the projections 3.

<<Configuration of the water splash prevention hood 1>>

[0013] Fig. 3 is a perspective view showing only the water splash prevention hood 1 in Fig. 1. Fig. 4 is a bottom plan view of the water splash prevention hood 1 from just below.

[0014] As can be understood from Fig. 3, the water splash prevention hood 1 includes a cylindrical body 10 which is to be connected to the shower head, and a plurality of protruding plates 20, 30 formed on an end surface 11 of the cylindrical body. The cylindrical body 10 of the water splash prevention hood 1 is to be connected to the shower head 2, such that the cylindrical body 10 surrounds all jetting openings 4 from the outside.

[0015] In the shown embodiment, the plurality of protruding plates 20, 30 are positioned on two imaginary concentric circles "X" and "Y" having different diameters. In this embodiment, the protruding plates positioned on the inner concentric circle "X" are referred to as "inner protruding plate 20", and the protruding plates positioned on the outer concentric circle "Y" are referred to as "outer protruding plate 30".

[0016] As can be understood from Fig. 3 and Fig. 4, on the end surface 11 of the cylindrical body 10, the inner protruding plates 20 and the outer protruding plates 30 are alternately arranged in a staggered pattern with gaps formed therebetween, and flow passage "L" is formed in a gap between the protruding plates.

[0017] That is, the water jetted from the jetting openings 4 of the shower head 2 is temporarily retained in a space surrounded by the hood 1 and a scalp, and thereafter the water flows out to the outside through the flow passages "L". At this time, thanks to the shape of the flow passage "L" realized by the arrangement of the protruding plates 20, 30 unique to the present invention, it is possible to prevent water from vigorously splashing out toward the surroundings, and at the same time the water flows out to the outside gently. This principle is described hereinafter.

<<Effect by the shape of the flow passage "L">>

[0018] Fig. 5A is a partially enlarged view of a bottom surface of the water splash prevention hood 1 shown in Fig. 4, wherein two outer protruding plates 30 and one inner protruding plate 20 are shown. Fig. 5B shows that region viewed laterally from a side of the water splash prevention hood 1. In Fig. 5B, the inner protruding plate 20 at the center is depicted as being slightly higher than the outer protruding plates 30 on both sides of the inner protruding plate 20. However, such the representation is intended for clear illustration, and in an actual water splash prevention hood it is preferable that all protruding plates 20, 30 have the same height.

[0019] In Fig. 5B, the width "K" of the inner protruding plate 20 is set larger than the distance "J" between two adjacent outer protruding plates 30, and the inner protruding plate 20 extends over the entire width of the distance "J" between two outer protruding plates 30, in a circumferential direction. That is, when viewed laterally from a side of the hood 1, the other side of the plates 20, 30 cannot be seen, being interrupted by the plates 20, 30 themselves. In other words, there is no flow passage which runs straightly in a radial direction of the cylindrical body 10, and only the flow passage "L" which meanders as shown in Fig. 5A exists.

[0020] As a result, it is possible to prevent the water from vigorously splashing toward the outside from the inside of the hood 1. On the other hand, between the inner protruding plates 20 and the outer protruding plates 30 exists a radial direction gap, and further between the inner protruding plates 20 and between the outer protruding plates 30 there also exist gaps. Accordingly, by suitably setting sizes of these gaps, it is possible to make the water flow out to the outside gently, with a sufficient flow rate.

[0021] Fig. 5C shows a modification to the embodiment shown in Fig. 5B. In this modification, an inner protruding plate 20 does not extend over the entire width of the distance "J" between the adjacent two outer protruding

plates 30, and there exists a gap "Q". That is, there is a flow passage which extends straightly in a radial direction, passing through the gap "Q". In this case, regarding the above-mentioned advantage (it is possible to prevent the water from vigorously splashing out, and it is also possible to make the water gently flow out with a sufficient flow rate), the modification may be somewhat inferior to the embodiment shown in Fig. 5B. However, even in this modification, such the advantageous effect can be sufficiently obtained, provided that the size of the gap "Q" is small.

[0022] It is most preferable that the protruding plates 20, 30 be arranged as shown in Fig. 5B over the entire circumference of the cylindrical body 10. However, provided that the arrangement shown in Fig. 5B is provided at least one on a circumferential wall of the cylindrical body 10, such the advantageous effect can be obtained to some extent. The more the arrangements are increased, the more such the advantageous effect would be enhanced.

[0023] Even in a case where all protruding plates 20, 30 are arranged as shown in Fig. 5C, as long as the protruding plates 20, 30 are alternately arranged in a staggered pattern with gaps formed therebetween, the above-mentioned advantageous effect can be obtained to some extent by setting the size of the gap "Q" to small.

<<Other embodiments>>

[0024] In the shown embodiments, particularly in the embodiment shown in Fig. 4, two imaginary concentric circles "X", "Y" are given, and the inner protruding plates 20 and the outer protruding plates 30 are concentrically arranged on these circles. However, in the present invention, even when the plurality of protruding plates are not arranged with such the arrangement, it is sufficient that the plurality of protruding plates be alternately arranged in a staggered pattern on an end surface of the cylindrical body 10 such that gaps are formed therebetween. It is unnecessary that the protruding plates be regularly arranged on two concentric circles as in the shown embodiments.

[0025] For example, the arrangement of the inner protruding plates 20 is considered as an "inner row", and the arrangement of the outer protruding plates 30 is considered as an "outer row". Where, the "inner row" and the "outer row" could be two circles having the centers at different points, or otherwise the "inner row" and the "outer row" could be in other shaped rows, other than circles. In the shown embodiments, the circle "X" corresponds to the "inner row", and the circle "Y" corresponds to the "outer row".

[0026] Further, it is not necessary that the plurality of protruding plates 20, 30 belong to clear "two rows". It is sufficient that the plurality of protruding plates 20, 30 be alternately arranged in a staggered pattern such that gaps are formed therebetween.

[0027] Any convenient shapes of the cylindrical body

10 could be employed, in accordance with the shape of the shower head. For example, the cylindrical body 10 could have a quadrangular cylindrical shape, or an elliptical cylindrical shape, other than the circular cylindrical shape.

DESCRIPTION OF REFERENCE NUMERALS

[0028]

- 1: water splash prevention hood
- 2: shower head
- 3: projection
- 4: jetting opening
- 10: cylindrical body
- 11: end surface
- 20: inner protruding plate
- 30: outer protruding plate

Claims

1. A water splash prevention hood, which is to be mounted on a shower head (2) having a nozzle for jetting water, the water splash prevention hood comprising:

a cylindrical body (10) which is to be connected to the shower head, such that the cylindrical body (10) surrounds a jetting opening (4) of the nozzle; and

a plurality of protruding plates (20, 30), which are formed on an end surface (11) of the cylindrical body (10) and are alternately arranged in a staggered pattern with gaps formed therebetween;

characterized in that, by the plurality of protruding plates (20, 30), water jetted from the jetting opening (4) is prevented from splashing out to the surroundings, and the water is drained to the outside through the gaps formed between the protruding plates (20, 30).

2. The water splash prevention hood according to claim 1, wherein the plurality of protruding plates (20, 30) comprises inner protruding plates (20) belonging to an inner row (X) and outer protruding plates (30) belonging to an outer row (Y), on the end surface (11) of the cylindrical body (10), and the inner protruding plates (20) are arranged such that the inner protruding plates (20) are viewable between two adjacent outer protruding plates (30) when viewed laterally from a side of the water splash prevention hood.
3. The water splash prevention hood according to claim 2, wherein at least one of the inner protruding plates (20) extends over an entire width between the two

adjacent outer protruding plates (30).

4. The water splash prevention hood according to claim 2 or 3, wherein the inner row and the outer row extend along two concentric circles (X, Y) having different diameters. 5

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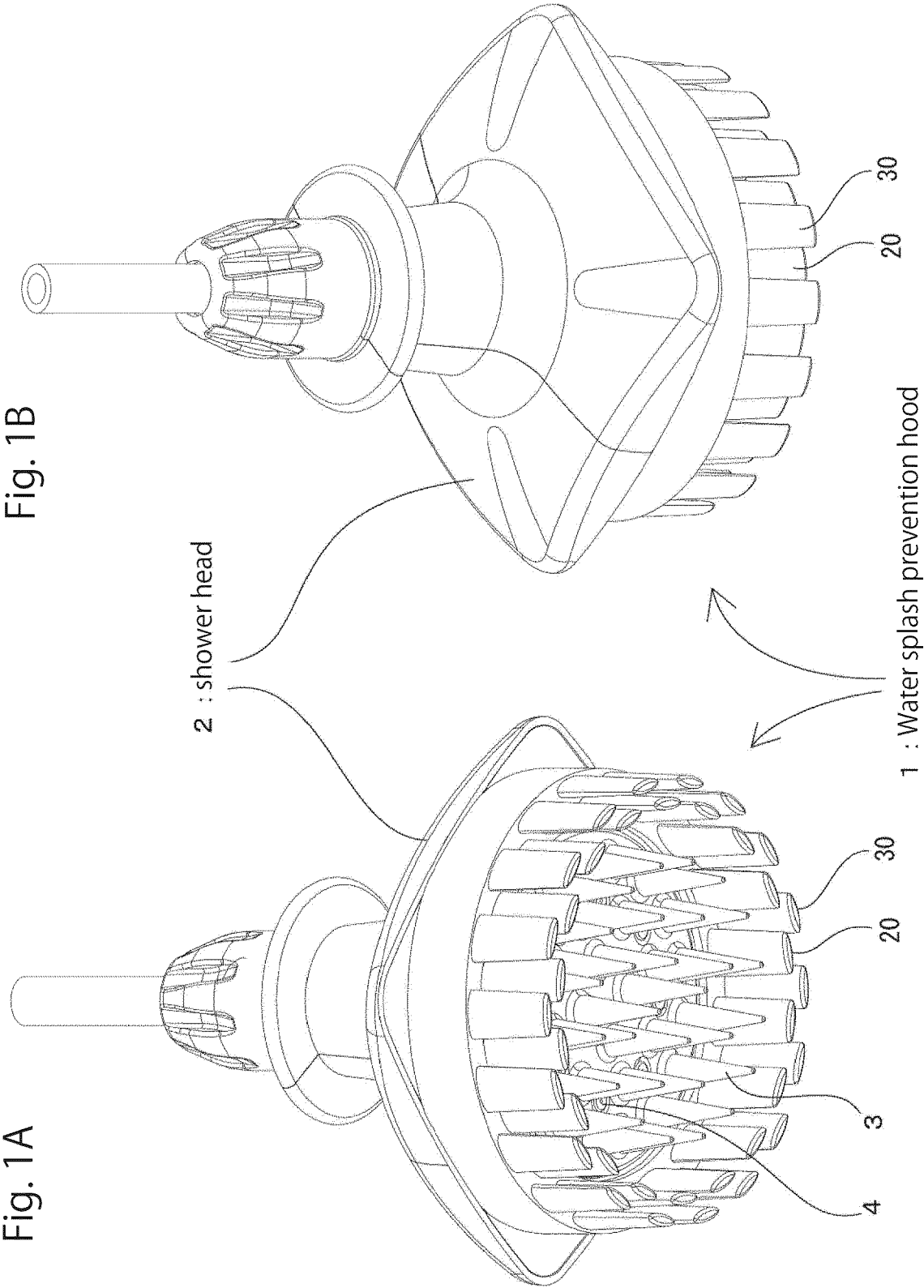
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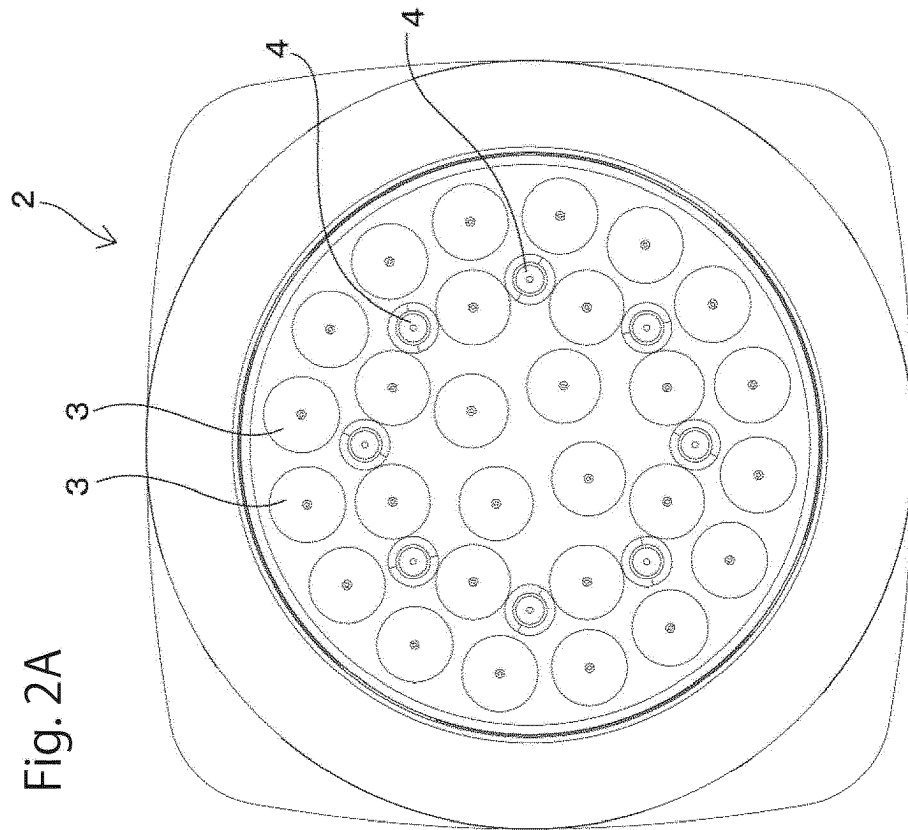
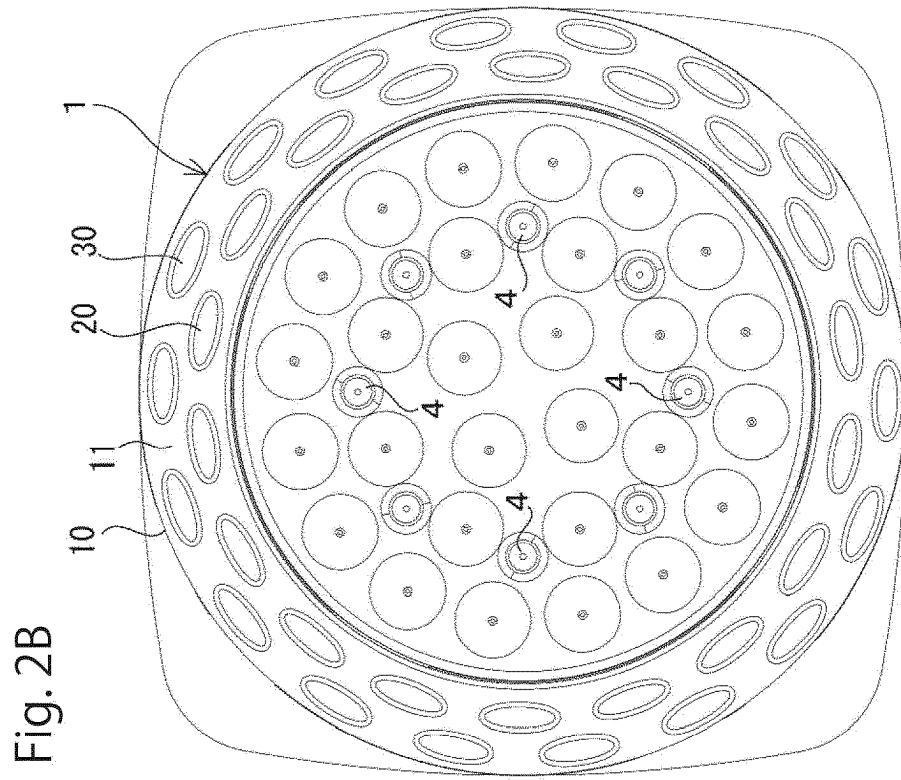


Fig. 3

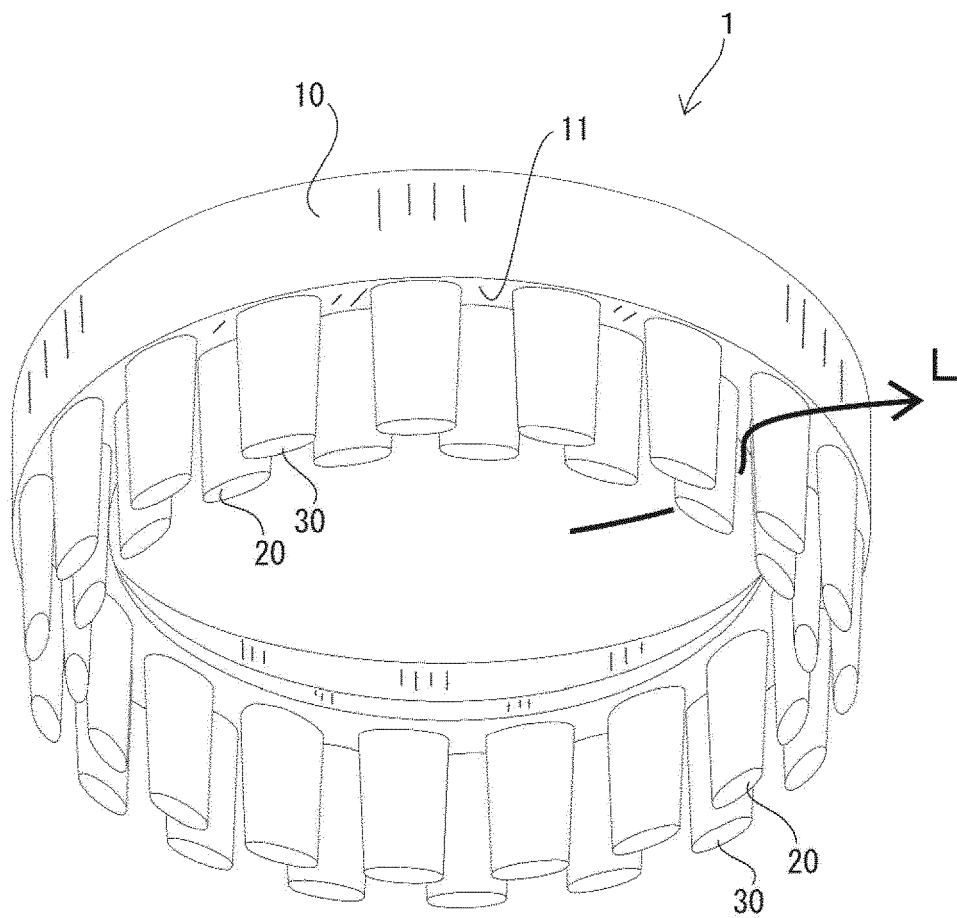
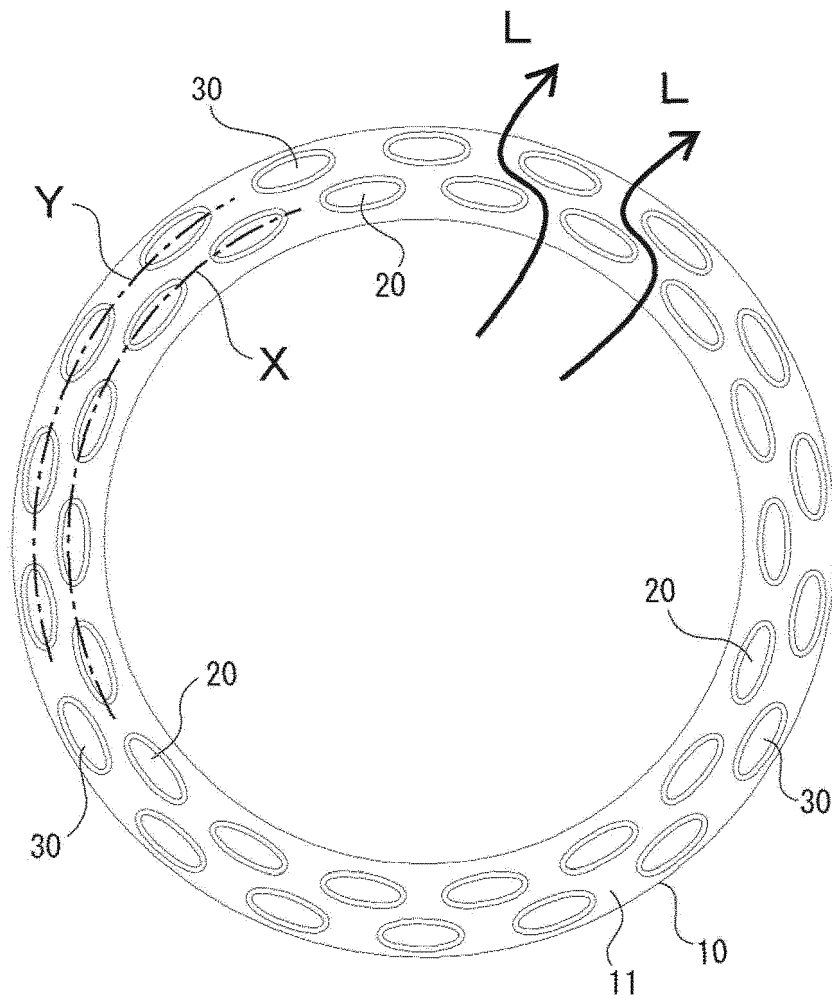


Fig. 4



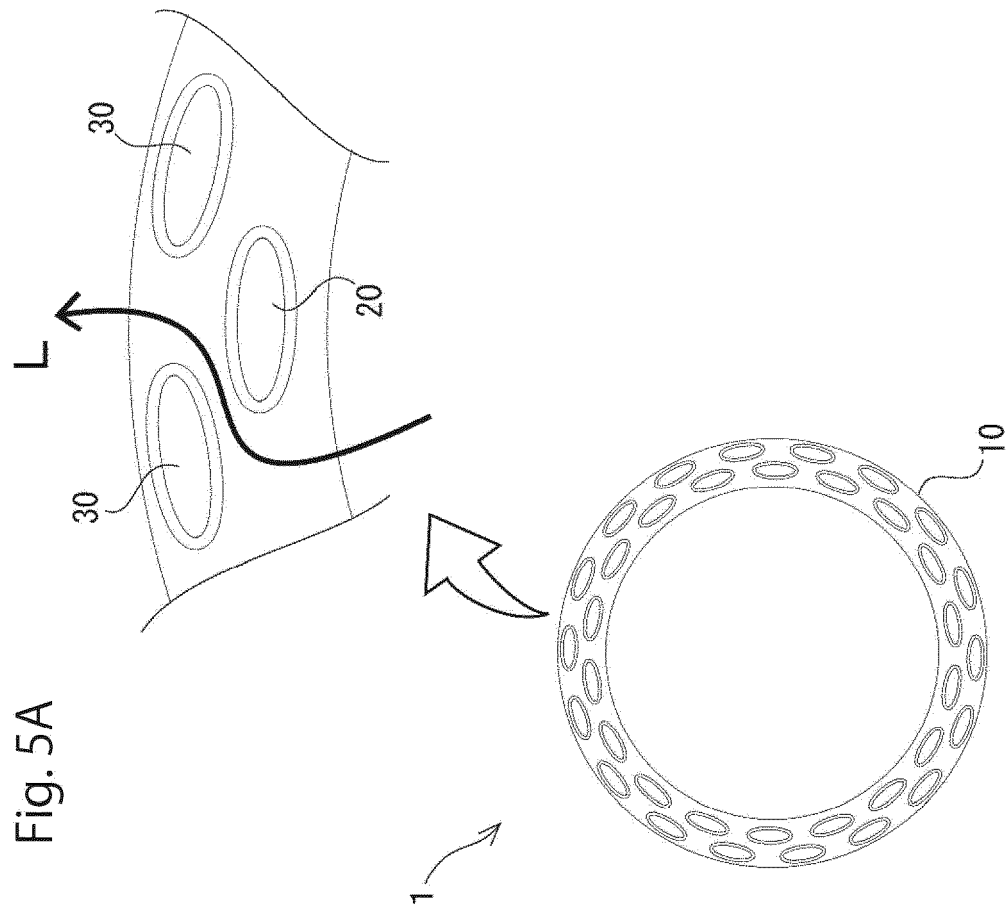


Fig. 5A

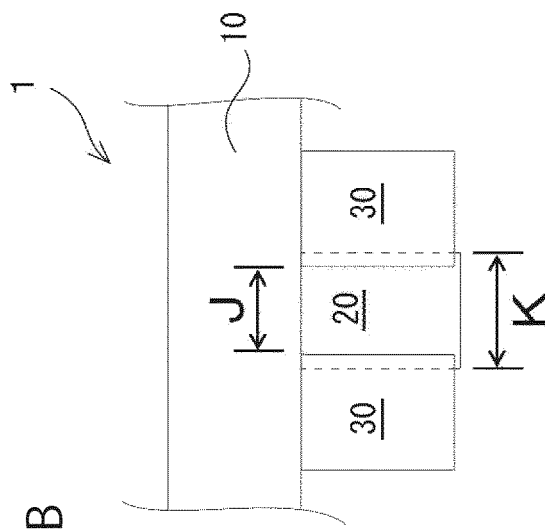


Fig. 5B

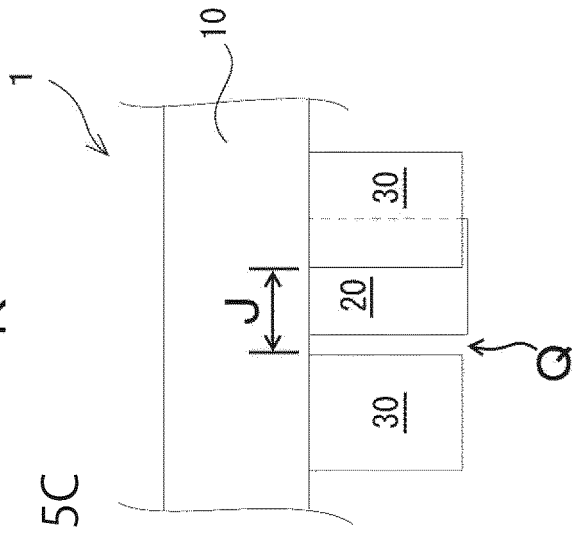


Fig. 5C

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2015/057434

A. CLASSIFICATION OF SUBJECT MATTER

A45D19/00(2006.01)i, B05B1/18(2006.01)i

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)

A45D19/00, B05B1/18

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

Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2015
 Kokai Jitsuyo Shinan Koho 1971-2015 Toroku Jitsuyo Shinan Koho 1994-2015

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	JP 7-313571 A (Takao KOJIMA), 05 December 1995 (05.12.1995), paragraph [0010]; fig. 2 (Family: none)	1-2, 4 3
Y	JP 3155787 U (Masahiro HIRATA), 03 December 2009 (03.12.2009), paragraphs [0014], [0029]; fig. 2 (Family: none)	3
A	JP 2014-155680 A (EXPAND FIT Inc.), 28 August 2014 (28.08.2014), entire text; all drawings (Family: none)	1-4



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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document member of the same patent family

Date of the actual completion of the international search

31 March 2015 (31.03.15)

Date of mailing of the international search report

07 April 2015 (07.04.15)

Name and mailing address of the ISA/

Japan Patent Office

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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- JP 1078858 A [0003]
- JP 1078859 A [0003]