



(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
04.08.2021 Bulletin 2021/31

(51) Int Cl.:
B26B 19/14 (2006.01) B26B 19/38 (2006.01)

(21) Application number: **20864286.8**

(86) International application number:
PCT/CN2020/083110

(22) Date of filing: **03.04.2020**

(87) International publication number:
WO 2021/109380 (10.06.2021 Gazette 2021/23)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

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(30) Priority: **02.12.2019 CN 201911213339**

(54) **STRUCTURE HAVING SEVERAL ANNULAR SHAVER CUTTER NETS CAPABLE OF ROTATING FORWARDLY AND REVERSELY**

(57) A razor mesh structure having a plurality of circles of ring-shaped meshes capable of rotating forwardly and reversely comprising a mesh assembly, wherein the mesh assembly further comprises a first mesh 1, a second mesh 2, a third mesh 3 and a plurality of circles of meshes. The second mesh 2 is arranged in the first mesh 1, and the third mesh 3 is arranged in the second mesh 2. The first mesh 1, the second mesh 2, the third mesh 3 and the plurality of circles of meshes rotate forwardly or reversely by taking a mounting shaft 5 as the symmet-

rical point. The first mesh 1, the second mesh 2, the third mesh 3 and the plurality of circles of meshes are internally provided with inner blades. The upper surfaces of the first mesh 1, the second mesh 2, the third mesh 3 and the plurality of circles of meshes are provided with a plurality of hair slots 4. The plurality of circles of ring-shaped meshes and hair slots may rotate forwardly and reversely such that the meshes may actively grab the hairs. The present invention achieves a high shaving efficiency, has a simple structure and achieves a good market prospect.

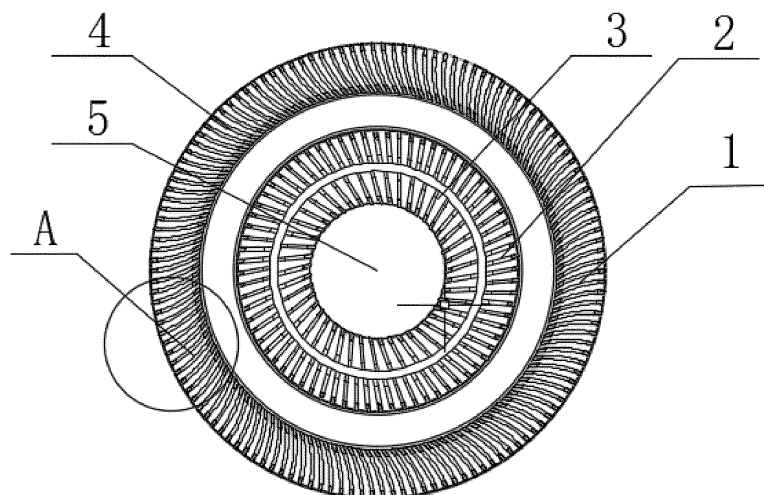


FIG.1

Description

TECHNICAL FIELD

[0001] This invention relates to razor mesh structures, and more particularly, to a razor mesh structure having a plurality of circles of ring-shaped meshes capable of rotating forwardly and reversely.

BACKGROUND

[0002] An electric razor is a beauty appliance which propels inner blades to shave off facial hairs using electricity. The conventional electric razors typically comprise a stainless-steel mesh cover, inner blades, a micromotor and a shell, wherein the mesh cover is a fixed outer mesh provided with a plurality of holes or slots for trapping the hairs, and the micromotor propels the inner blades to operate by electric energy. By utilizing a shearing principle, the hairs slip into the openings are cut off completely. According to the operating modes of the inner blades, the electric razors may roughly be divided into a rotary type and a reciprocating type. The power supply may include a dry battery, a storage battery and AC charging.

[0003] The conventional electric razors normally have a fixed mesh. During use, for the razor is manually maneuvered to trace the contours of the face, the mesh passively moves around the face and the hairs passively slip into the holes, resulting in poor shaving effect and low efficiency. As a result, the facial hairs fail to quickly and entirely slip into the mesh to be cut off by the inner blades. Moreover, the shaving direction is single, and the hair slots cannot precisely grab the hairs due to the fixed mesh. Thus, it is urgent for those skilled in the art to develop a novel razor mesh structure.

SUMMARY

[0004] The purpose of the present disclosure is to provide a razor mesh structure having a plurality of circles of ring-shaped meshes capable of rotating forwardly and reversely.

[0005] To achieve the above purpose, the present disclosure adopts the following technical solution: a razor mesh structure having a plurality of circles of ring-shaped meshes capable of rotating forwardly and reversely comprising a mesh assembly, wherein the mesh assembly further comprises a first mesh, a second mesh, a third mesh and a plurality of circles of meshes, wherein the second mesh is arranged in the first mesh, and the third mesh is arranged in the second mesh, wherein the first mesh, the second mesh, the third mesh and the plurality of circles of meshes rotate forwardly or reversely by taking a mounting shaft as the symmetrical point, wherein the first mesh, the second mesh, the third mesh and the plurality of circles of meshes are internally provided with inner blades, wherein the upper surfaces of the first mesh, the second mesh, the third mesh and the plurality

of circles of meshes are provided with a plurality of hair slots.

[0006] In another aspect of the present invention, the first mesh, the second mesh, the third mesh and the plurality of circles of meshes are ring-shaped.

[0007] In another aspect of the present invention, the first mesh, the second mesh, the third mesh and the plurality of circles of meshes are concentrically arranged on the mounting shaft.

[0008] Compared with the prior art, the present invention has the following advantages: through the arrangement of the plurality of meshes capable of rotating forwardly and reversely during use, the hairs may be thoroughly and efficiently captured, thus achieving good shaving effect. The meshes capable of rotating forwardly or reversely allow the razor mesh structure of the present invention to grab hairs with different physiological features. The present invention achieves better control sense, has a simple structure, may be conveniently operated and achieves high practicability.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009]

Figure 1 is a conceptual diagram illustrating an example structure of the razor mesh structure having a plurality of circles of ring-shaped meshes capable of rotating forwardly and reversely of the present invention.

Figure 2 is an enlarged diagram illustrating portion A of the razor mesh structure having a plurality of circles of ring-shaped meshes capable of rotating forwardly and reversely of the present invention.

In the Figures:

1-The First Mesh, 2-The Second Mesh, 3-The Third Mesh, 4-Hair Slot, 5-Mounting Shaft.

DETAILED DESCRIPTION

[0010] To make the technical means, inventive features, purposes and effects of the present invention easy to understand, detailed embodiments are combined hereinafter to further elaborate the technical solution of the present invention.

[0011] As shown in Figures 1-2, the razor mesh structure having a plurality of circles of ring-shaped meshes capable of rotating forwardly and reversely comprises a mesh assembly, wherein the mesh assembly further comprises a first mesh 1, a second mesh 2, a third mesh 3 and a plurality of circles of meshes. The second mesh 2 is arranged in the first mesh 1, and the third mesh 3 is arranged in the second mesh 2. The first mesh 1, the second mesh 2, the third mesh 3 and the plurality of circles of meshes rotate forwardly or reversely by taking a mounting shaft 5 as the symmetrical point. The first mesh 1, the second mesh 2, the third mesh 3 and the plurality

of circles of meshes are internally provided with inner blades. The upper surfaces of the first mesh 1, the second mesh 2, the third mesh 3 and the plurality of circles of meshes are provided with a plurality of hair slots 4. The first mesh 1, the second mesh 2, the third mesh 3 and the plurality of circles of meshes of the present invention are capable of independently rotating when driven by a driving mechanism. Specifically, each mesh may rotate clockwise and counter-clockwise. Through adopting the aforesaid design, the meshes rotate continuously during use, thus enabling the razor mesh structure to actively grab the facial hairs such that the hairs are trapped into the hair slots 4 by the rotating meshes. In this way, the hairs are completely cut off by the inner blades. The meshes capable of rotating forwardly or reversely allow the razor mesh structure of the present invention to grab hairs with different physiological features. Compared with conventional electric razors, the operating efficiency of the present invention is significantly improved.

[0012] Further, the first mesh 1, the second mesh 2, the third mesh 3 and the plurality of circles of meshes are ring-shaped. Through the arrangement of the plurality of meshes, the covering area of the razor becomes larger. Thus, when the razor traces the contours of the face, the facial hairs may be captured thoroughly and efficiently.

[0013] Further, the first mesh 1, the second mesh 2, the third mesh 3 and the plurality of circles of meshes are concentrically arranged on the mounting shaft 5, and the first mesh 1, the second mesh 2, the third mesh 3 and the plurality of circles of meshes may rotate forwardly or reversely relative to the mounting shaft 5.

[0014] The operating principle of the present invention is: the first mesh 1, the second mesh 2, the third mesh 3 and the plurality of ring-shaped meshes of the present invention are capable of independently rotating when driven by a driving mechanism. Specifically, each mesh may rotate clockwise and counter-clockwise. Through adopting the aforesaid design, the meshes rotate continuously during use, thus enabling the razor mesh structure to actively grab the facial hairs such that the hairs are trapped into the hair slots 4 by the rotating meshes. In this way, the hairs are completely cut off by the inner blades. The meshes capable of rotating forwardly or reversely allows the razor mesh structure of the present invention to capture hairs with different physiological features. The operating efficiency of the present invention is significantly improved compared with conventional razors. Through the arrangement of the plurality of meshes, the covering area of the razor becomes larger. Thus, when the razor traces the contours of the face, the facial hairs may be captured thoroughly and efficiently. The first mesh 1, the second mesh 2, the third mesh 3 and the plurality of circles of meshes may rotate forwardly or reversely relative to the mounting shaft 5.

[0015] It should be noted that, in the description of the present invention, relation terms such as "first" and "second" are used merely to distinguish one entity or operation from another, and do not necessarily require or imply

any actual relationships or sequences between those entities or operations. Moreover, the terms "comprising", "including" and any of their variants mean a non-exclusive containing. Thus, a process, method, article or device comprising a series of elements comprises not only those elements but also other elements that are not explicitly listed or originally included in such process, method, article or device.

[0016] Although the embodiments of the present invention are described, those skilled in the art may make a variety of changes, modifications, substitutions and alterations based on these embodiments without departing from the principle and spirit of the present invention. Thus, the scope of the present invention is defined by the claims and their equivalents.

Claims

1. A razor mesh structure having a plurality of circles of ring-shaped meshes capable of rotating forwardly and reversely, comprising:
a mesh assembly, wherein the mesh assembly further comprises a first mesh (1), a second mesh (2), a third mesh (3) and a plurality of circles of meshes, wherein the second mesh (2) is arranged in the first mesh (1), and the third mesh (3) is arranged in the second mesh (2), wherein the first mesh (1), the second mesh (2), the third mesh (3) and the plurality of circles of meshes rotate forwardly or reversely by taking a mounting shaft (5) as the symmetrical point, wherein the first mesh (1), the second mesh (2), the third mesh (3) and the plurality of circles of meshes are internally provided with inner blades, wherein the upper surfaces of the first mesh (1), the second mesh (2), the third mesh (3) and the plurality of circles of meshes are provided with a plurality of hair slots (4), or the upper surfaces of the plurality of circles of meshes are provided with a plurality of round hair holes or irregularly-shaped hair holes.
2. The razor mesh structure having a plurality of circles of ring-shaped meshes capable of rotating forwardly and reversely of claim 1, wherein the first mesh (1), the second mesh (2), the third mesh (3) and the plurality of circles of meshes are ring-shaped.
3. The razor mesh structure having a plurality of circles of ring-shaped meshes capable of rotating forwardly and reversely of claim 1, wherein the first mesh (1), the second mesh (2), the third mesh (3) and the plurality of circles of meshes are concentrically arranged on the mounting shaft (5).

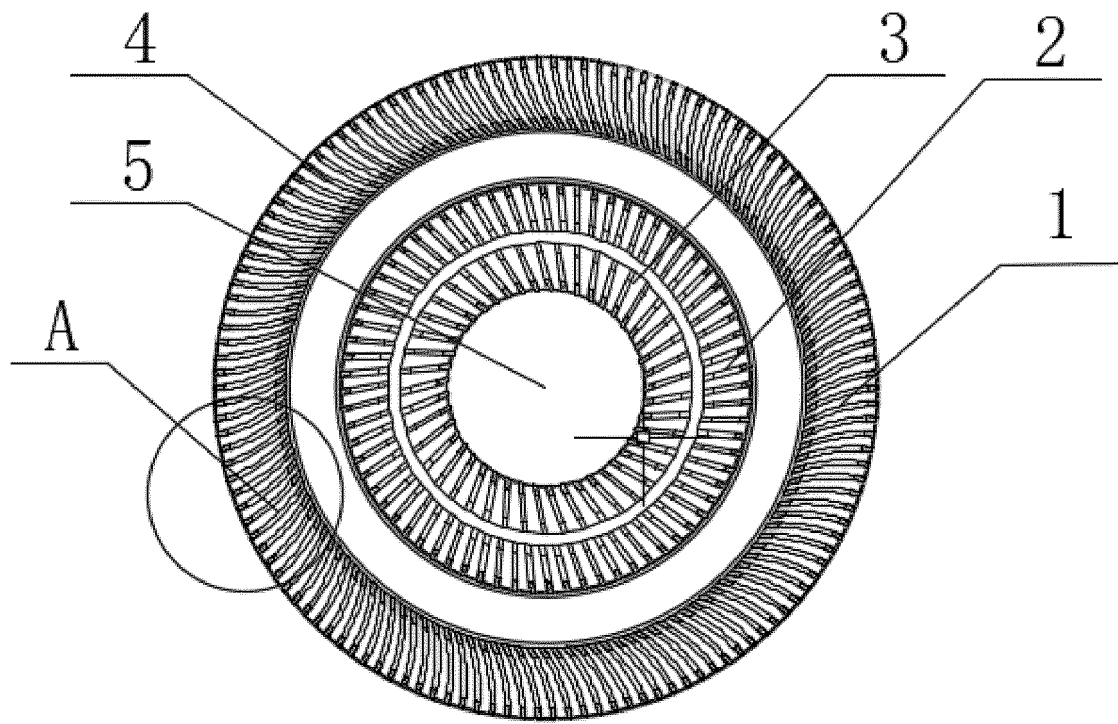


FIG.1

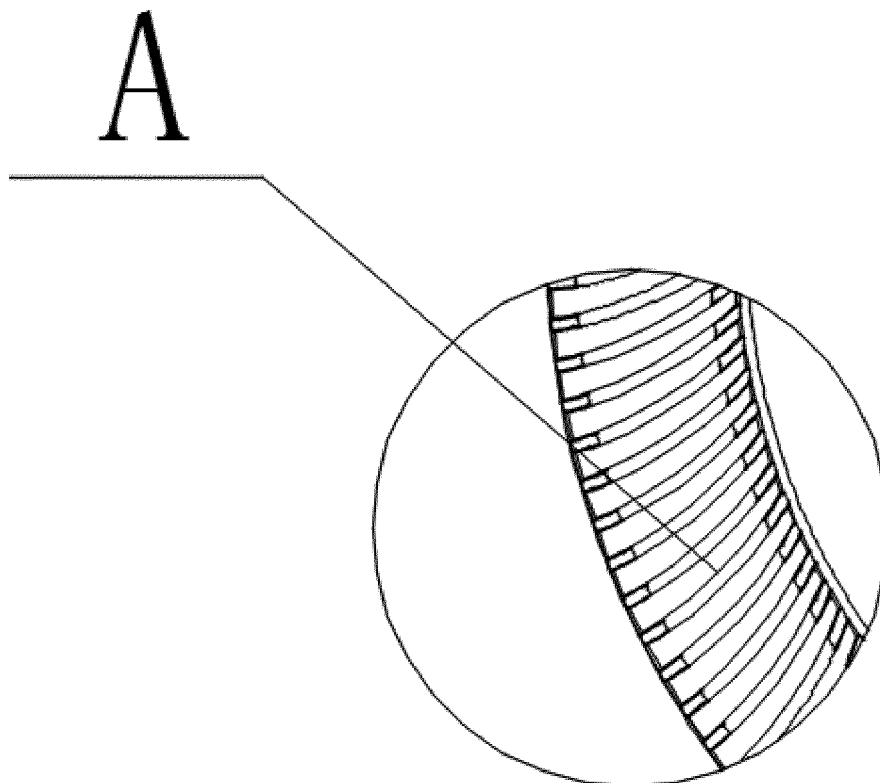
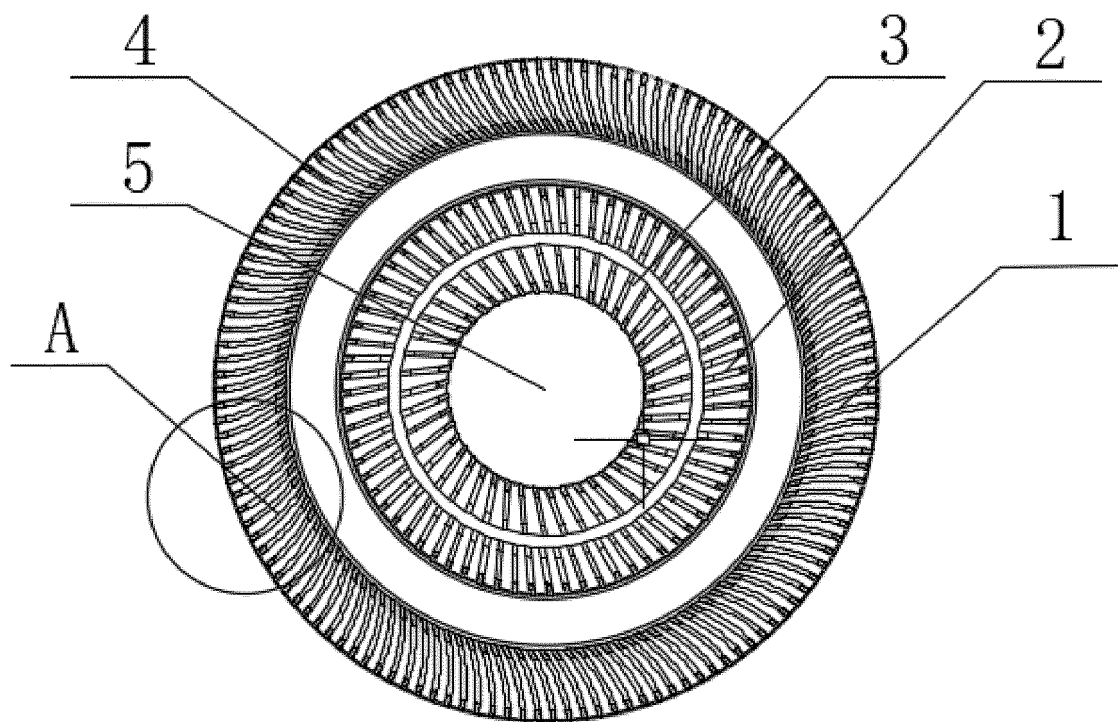


FIG.2



(Abstract)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2020/083110

A. CLASSIFICATION OF SUBJECT MATTER B26B 19/14(2006.01)i; B26B 19/38(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) B26B 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 practicable, search terms used) CNABS; CNTXT; CNKI: 剃须刀, 刮胡刀, 刀网, 外刀, 外刀, 网, 罩, 进须环, 刀环, 第一, 多, 若干, 两, 二, 三, 四, 圈, 环, 旋转, 正转, 翻转, 转动, 单头, 捕捉, 胡须 VEN; JPABS; EPTXT; USTXT; WOTXT: razor?, shaver?, mesh, net, foil, guard, outer blade, external blade, ring, hoop, turn+, revolv+, rotat+																		
C. DOCUMENTS CONSIDERED TO BE RELEVANT <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>PX</td> <td>CN 110788888 A (WANG, Rui) 14 February 2020 (2020-02-14) description, paragraphs 3-24, and figures 1-5</td> <td>1-3</td> </tr> <tr> <td>A</td> <td>CN 202668592 U (ANHUI ZHENQUAN CNC TECHNOLOGY CO., LTD.) 16 January 2013 (2013-01-16) description, paragraphs 3-14, and figures 1-2</td> <td>1-3</td> </tr> <tr> <td>A</td> <td>CN 105818172 A (ZHEJIANG JINDA ELECTRICAL APPLIANCE CO., LTD.) 03 August 2016 (2016-08-03) entire document</td> <td>1-3</td> </tr> <tr> <td>A</td> <td>CN 202763865 U (NINGBO MEIZUAN ELECTROMECHANICAL CO., LTD.) 06 March 2013 (2013-03-06) entire document</td> <td>1-3</td> </tr> <tr> <td>A</td> <td>JP 2011200490 A (PANASONIC ELECTRIC WORKS CO., LTD.) 13 October 2011 (2011-10-13) entire document</td> <td>1-3</td> </tr> </tbody> </table>	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	PX	CN 110788888 A (WANG, Rui) 14 February 2020 (2020-02-14) description, paragraphs 3-24, and figures 1-5	1-3	A	CN 202668592 U (ANHUI ZHENQUAN CNC TECHNOLOGY CO., LTD.) 16 January 2013 (2013-01-16) description, paragraphs 3-14, and figures 1-2	1-3	A	CN 105818172 A (ZHEJIANG JINDA ELECTRICAL APPLIANCE CO., LTD.) 03 August 2016 (2016-08-03) entire document	1-3	A	CN 202763865 U (NINGBO MEIZUAN ELECTROMECHANICAL CO., LTD.) 06 March 2013 (2013-03-06) entire document	1-3	A	JP 2011200490 A (PANASONIC ELECTRIC WORKS CO., LTD.) 13 October 2011 (2011-10-13) entire document	1-3
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Date of the actual completion of the international search 21 July 2020	Date of mailing of the international search report 28 August 2020																	
Name and mailing address of the ISA/CN China National Intellectual Property Administration (ISA/CN) No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088 China Facsimile No. (86-10)62019451	Authorized officer Telephone No.																	

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

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Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)		Publication date (day/month/year)
CN	110788888	A	14 February 2020	None		
CN	202668592	U	16 January 2013	None		
CN	105818172	A	03 August 2016	CN	105818172	07 August 2018
CN	202763865	U	06 March 2013	None		
JP	2011200490	A	13 October 2011	None		

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