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(54) WATER INLET STRUCTURE OF GARMENT PROCESSING DEVICE, AND GARMENT PROCESSING DEVICE

(57) Provided is a water inlet structure of a garment processing device. The structure includes an inner drum (1) and an outer tub (2). The sidewall of the inner drum (1) includes an annular water-permeable area (11) and an annular water-blocking area (12) connected to each other. The annular water-permeable area (11) is provided with a water-permeable hole (111). The outer tub (2) sleeves the outer side of the inner drum (1). The sidewall of the outer tub (2) is provided with a water inlet (21). The water inlet (21) faces the annular water-blocking area (12). The annular water-blocking area (12) is configured such that water entering the outer tub (2) through the water inlet (21) is blocked by the annular water-blocking area (12).

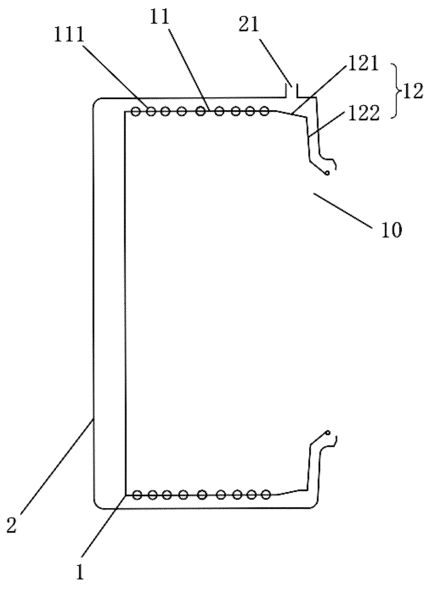

FIG. 1

EP 4 036 303 A1

Description

[0001] This application claims priority to Chinese Patent Application No. 201910901483.5 filed with the China National Intellectual Property Administration (CNIPA) on Sep. 23, 2019, the disclosure of which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0002] The present application relates to the field of garment processing device technology, for example, a water inlet structure of a garment processing device and a garment processing device.

BACKGROUND

[0003] A conventional garment processing device processes garments through water washing or dry cleaning. This processing method may result in deformation of the garments, deterioration of a hand feel and aging of the garments.

[0004] For this reason, manufacturers introduce a garment processing method for steam washing. The use of steam for garment washing has the advantages of short process, apparent energy-saving effect, freshness and deodorization, good wrinkle removal effect and no damage to the garments.

[0005] The working process of a garment processing device in a steam washing mode includes the following steps: Water is filled into the outer tub through a water inlet valve. When a water level reaches a preset water level, water filling is stopped. Then a heating pipe is opened for heating, and a sufficient amount of steam is generated. At the same time, the inner drum rotates at a low speed, and garments roll in the inner drum filled with the steam. Therefore, a peculiar smell can be dissolved in the steam, and at the same time, the garments are moistened by the steam. After the peculiar smell is eliminated, and moistening is completed, air is blown into the inner drum through a drying system to dry the garments to achieve the purpose of removing the wrinkles of the garments.

[0006] In a garment processing device in the related art, when water is filled into the outer tub, the water drips and splashes into the inner drum. Thus, a special requirement for steam washing without water immersion in the inner drum is not satisfied. As a result, the steam washing is impeded, and the effect of the steam washing is affected.

SUMMARY

[0007] The present application provides a water inlet structure of a garment processing device and a garment processing device, which can effectively prevent inflow water from flowing into an inner drum during steam washing.

[0008] An embodiment provides a water inlet structure of a garment processing device. The structure includes an inner drum and an outer tub.

[0009] The sidewall of the inner drum includes an annular water-permeable area and an annular water-blocking area connected to each other. The annular water-permeable area is provided with a water-permeable hole.

[0010] The outer tub sleeves the outer side of the inner drum. The sidewall of the outer tub is provided with a water inlet. The water inlet faces the annular water-blocking area. The annular water-blocking area is configured such that water entering the outer tub through the water inlet is blocked by the annular water-blocking area.

[0011] An embodiment provides a garment processing device. The device includes the preceding water inlet structure of a garment processing device.

BRIEF DESCRIPTION OF DRAWINGS

[0012]

FIG. 1 is a view illustrating the structure of a water inlet structure of a garment processing device according to an embodiment of the present application.

FIG. 2 is a view illustrating a partial structure of a garment processing device according to an embodiment of the present application.

Reference list

[0013]

1	inner drum
10	loading opening
11	annular water-permeable area
111	water-permeable hole
12	annular water-blocking area
121	annular drum wall area
122	annular flange area
2	outer tub
21	water inlet
3	heating pipe
4	drain pipe
5	drain pump

DETAILED DESCRIPTION

[0014] In the description of embodiments of the present application, unless otherwise expressly specified and limited, the term "connected to each other", "connected" or "fixed" is to be construed in a broad sense, for example, as fixedly connected, detachably connected, mechanically connected or electrically connected, directly connected to each other or indirectly connected to each other via an intermediary, or internally connected or interactional between two components. For those of ordinary skill in the art, the above terms can be construed accord-

ing to specific circumstances in the present application.

[0015] In the description of the present application, unless otherwise expressly specified and limited, when a first feature is described as "on" or "below" a second feature, the first feature and the second feature may be in direct contact, or be in contact via another feature between the two features instead of being in direct contact. Moreover, when the first feature is described as "on", "above" or "over" the second feature, the first feature is right on or obliquely on the second feature, or the first feature is simply at a horizontally higher level than the second feature. When the first feature is described as "under", "below" or "underneath" the second feature, the first feature is right under, below or underneath the second feature or the first feature is obliquely under, below or underneath the second feature, or the first feature is simply at a lower level than the second feature.

[0016] As shown in FIGS. 1 and 2, the present application provides a water inlet structure of a garment processing device. The structure includes an inner drum 1 and an outer tub 2. The sidewall of the inner drum 1 includes an annular water-permeable area 11 and an annular water-blocking area 12 connected to each other. The annular water-permeable area 11 is provided with a water-permeable hole 111. The outer tub 2 sleeves the outer side of the inner drum 1. The sidewall of the outer tub 2 is provided with a water inlet 21. The water inlet 21 faces the annular water-blocking area 12. The annular water-blocking area 12 is configured such that water entering the outer tub 2 through the water inlet 21 is blocked by the annular water-blocking area 12.

[0017] In the present application, the annular water-blocking area 12 on the sidewall of the inner drum 1 effectively blocks off the water filled into the outer tub 2 from the water inlet 21 during steam washing. Therefore, the inflow water is effectively prevented from flowing into the inner drum 1 during a water filling process, and a requirement of no water immersion in the inner drum 1 during the steam washing is ensured.

[0018] Optionally, the annular water-blocking area 12 is disposed at one end of the inner drum 1 along the axial direction of the inner drum 1. Thus, the annular water-blocking area 12 can efficiently guide the inflow water away from the annular water-permeable area 11. In this manner, a blocking effect is improved.

[0019] For example, the annular water-blocking area 12 is located at the front of the inner drum 1, where the front is provided with a loading opening 10. Therefore, the influence on the water-permeable hole 111 can be minimized, and the area of the annular water-permeable area 11 can be ensured.

[0020] Optionally, the annular water-blocking area 12 includes an annular drum wall area 121 and an annular flange area 122. The diameter of the annular drum wall area 121 is not less than the diameter of the annular flange area 122. A first end of the annular drum wall area 121 is connected to the annular water-permeable area 11. A second end of the annular drum wall area 121 is connected to a first end of the annular flange area 122. The opening formed by a second end of the annular flange area 122 is the loading opening 10. With this configuration, the flange structure in which the loading opening 10 is disposed at the front of the inner drum 1 is fully used. Thus, the range where the water inlet 21 is disposed on the sidewall of the outer tub 2 is increased. Finally, the water entering the outer tub 2 from the water inlet 21 can be blocked by at least one of the annular drum wall area 121 and the annular flange area 122.

[0021] For example, the diameter of the annular drum wall area 121 decreases gradually from the first end of the annular drum wall area 121 connected to the annular water-permeable area 11 to the second end of the annular drum wall area 121 connected to the annular flange area 122. With the configuration of the preceding structure in which the radius decreases gradually, the inflow water splashes towards one side of the loading opening 10 after hitting the annular water-blocking area 12. Thus, the blocking effect is improved.

[0022] For example, from the first end of the annular drum wall area 121 connected to the annular water-permeable area 11 to the second end of the annular drum wall area 121 connected to the annular flange area 122, the contour of the of the annular drum wall area 121 is a straight line or an arc. In this embodiment, the contour is configured as a straight line.

[0023] Optionally, the annular water-blocking area 12 may not only be disposed at the front of the inner drum 1, but may also be located at the rear of the sidewall of the inner drum 1 or in the middle of the sidewall of the inner drum 1. When the annular water-blocking area 12 is located at the rear of the inner drum 1, the annular water-blocking area 12 may be an inclined flange structure to guide the inflow water to the bottom of the outer tub 2. When the annular water-blocking area 12 is located in the middle of the inner drum 1, the annular water-blocking area 12 may be a concave structure to guide the inflow water downwards along the concave recess.

[0024] Optionally, the water inlet 21 is disposed on the upper side of the outer tub 2. Thus, the inflow water can be guided under gravity to the bottom by the annular water-blocking area 12.

[0025] Optionally, the water inlet 21 is disposed at a position lower than the highest point of the outer tub 2. During steam washing, an area that is located in the annular water-blocking area 12 of the inner drum 1 and that initially blocks off inflow water moves first down and then up. As seen from the loading opening 10 to the inner drum 1, the water inlet 21 is disposed on the right of the outer tub 2 if the inner drum 1 is configured to rotate clockwise during steam washing and is disposed on the left of the outer tub 2 if the inner drum 1 is configured to rotate counterclockwise during steam washing. With this configuration, when water is filled into the outer tub 2, water droplets dripping on the annular water-blocking area 12 of the inner drum 1 separate, under shear stress, from the inner drum 1 in the tangential direction of the

inner drum 1 and then flow downwards to separate from the inner drum 1 as soon as possible. Thus, the water droplets are prevented from adhering to the outer side of the inner drum 1 or the inner side of the outer tub 2 and then flowing into the inner drum 1 through the water-permeable hole 111 when the water flows upwards.

[0026] In this embodiment, the annular water-permeable area 11 and the annular water-blocking area 12 are integrally formed.

[0027] The present application further provides a garment processing device. The device includes the preceding water inlet structure of a garment processing device.

[0028] In the present application, the annular water-blocking area 12 is disposed on the sidewall of the inner drum 1. With this configuration, during steam washing, the water filled into the outer tub 2 through the water inlet 21 is effectively blocked. Therefore, the inflow water is effectively prevented from flowing into the inner drum 1 during the water filling process, and the requirement of no water immersion in the inner drum 1 during the steam washing is ensured.

[0029] For example, the garment processing device of the present application further includes a heating pipe 3, a drain pipe 4 and a drain pump 5. The bottom of the outer tub 2 is provided with an evaporation recess. The heating pipe 3 is disposed in the evaporation recess. One end of the drain pipe 4 communicates with the evaporation recess. The drain pump 5 is disposed on the drain pipe 4.

[0030] For example, the garment processing device of the present application is a washing machine with a steam washing function, a garment dryer with a steam washing function or a washer-dryer with a steam washing function.

Claims

1. A water inlet structure of a garment processing device, comprising:

an inner drum (1), wherein a sidewall of the inner drum (1) comprises an annular water-permeable area (11) and an annular water-blocking area (12) connected to each other, and the annular water-permeable area (11) is provided with a water-permeable hole (111); and
an outer tub (2) sleeving an outer side of the inner drum (1), wherein a sidewall of the outer tub (2) is provided with a water inlet (21), the water inlet (21) faces the annular water-blocking area (12), and the annular water-blocking area (12) is configured such that water entering the outer tub (2) through the water inlet (21) is blocked by the annular water-blocking area (12).

2. The water inlet structure of a garment processing device according to claim 1, wherein the annular water-blocking area (12) is disposed at one end of the inner drum (1) along an axial direction of the inner drum (1).

3. The water inlet structure of a garment processing device according to claim 2, wherein the annular water-blocking area (12) is located at a front of the inner drum (1), wherein the front of the inner drum (1) is provided with a loading opening (10).

4. The water inlet structure of a garment processing device according to claim 3, wherein the annular water-blocking area (12) comprises an annular drum wall area (121) and an annular flange area (122), a diameter of the annular drum wall area (121) is not less than a diameter of the annular flange area (122), a first end of the annular drum wall area (121) is connected to the annular water-permeable area (11), a second end of the annular drum wall area (121) is connected to a first end of the annular flange area (122), and an opening formed by a second end of the annular flange area (122) is the loading opening (10).

5. The water inlet structure of a garment processing device according to claim 4, wherein the diameter of the annular drum wall area (121) decreases gradually from the first end of the annular drum wall area (121) connected to the annular water-permeable area (11) to the second end of the annular drum wall area (121) connected to the annular flange area (122).

6. The water inlet structure of a garment processing device according to claim 2, wherein the annular water-blocking area (12) is located at a rear of the sidewall of the inner drum (1).

7. The water inlet structure of a garment processing device according to any one of claims 1 to 6, wherein the water inlet (21) is disposed on an upper side of the outer tub (2).

8. The water inlet structure of a garment processing device according to claim 7, wherein the water inlet (21) is disposed at a position lower than a highest point of the outer tub (2).

9. The water inlet structure of a garment processing device according to claim 8, wherein during steam washing, an area that is located in the annular water-blocking area (12) of the inner drum (1) and that initially blocks off inflow water moves first down and then up.

10. A garment processing device, comprising the water inlet structure of a garment processing device according to any one of claims 1 to 9.

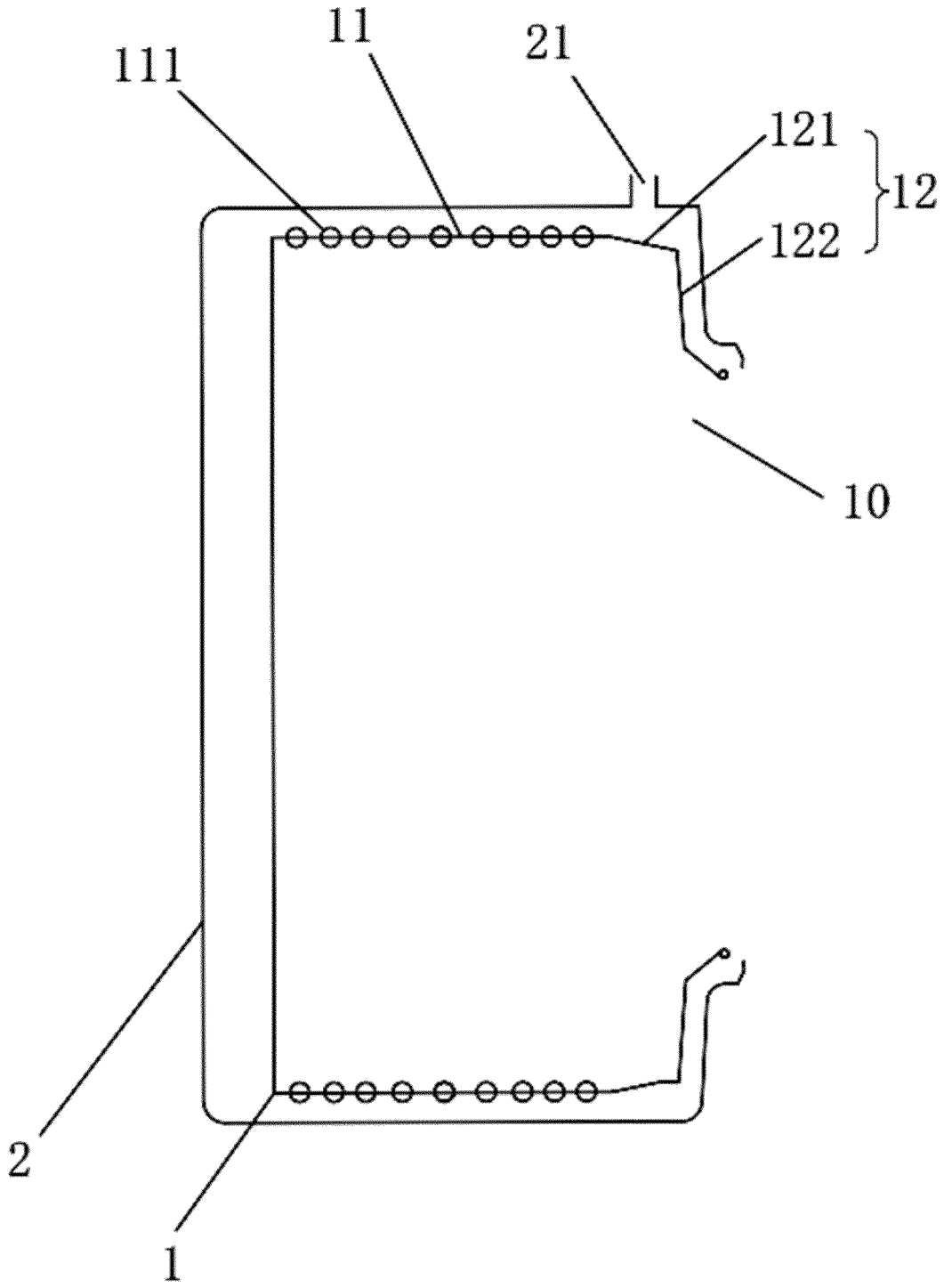

FIG. 1

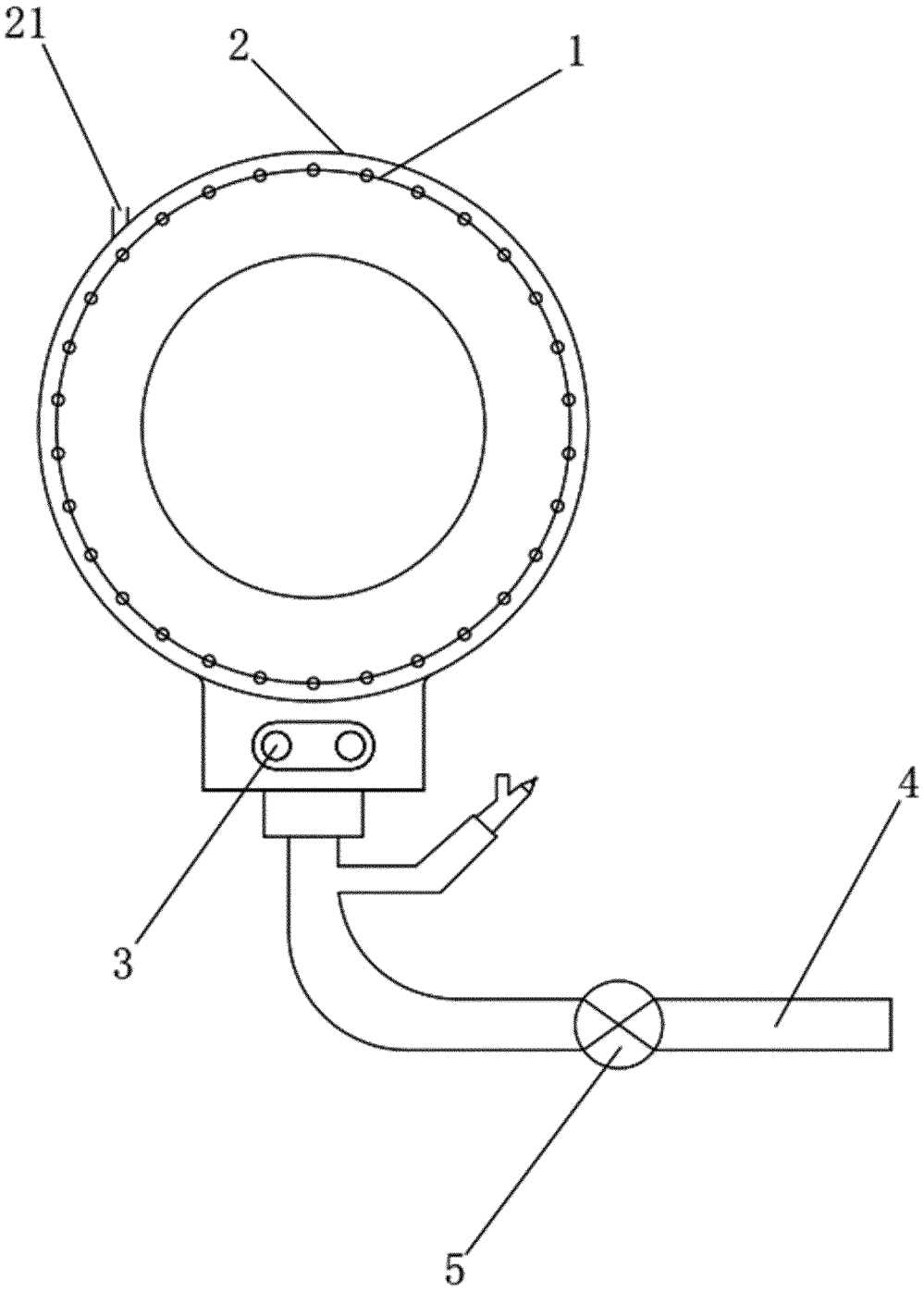

FIG. 2

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2020/114984

A. CLASSIFICATION OF SUBJECT MATTER

D06F 39/08(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)

D06F

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)

CNPAT, WPI, EPODOC, CNKI: 海尔, 小天鹅, 蒸汽, 蒸汽洗, 无水洗, 外筒, 外桶, 内桶, 滚筒, 内筒, 阻水, 挡水, 隔水, 挡片, 进水, 喷水, 挡, drum, inlet, baffle, water, vapor+, liquid, outer, inner, steam+, spray+, inject+, prevent+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 1388284 A (SANYO ELECTRIC CO., LTD.) 01 January 2003 (2003-01-01) description, specific embodiments, figure 1	1-10
A	CN 109252327 A (BEIJING PUNIXIN TECHNOLOGY CO., LTD. et al.) 22 January 2019 (2019-01-22) entire document	1-10
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A	EP 1734170 A1 (SAMSUNG ELECTRONICS CO., LTD.) 20 December 2006 (2006-12-20) entire document	1-10
A	KR 20180097305 A (LG ELECTRONICS INC.) 31 August 2018 (2018-08-31) entire document	1-10

☐ Further documents are listed in the continuation of Box C. ☑ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
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"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" 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
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
03 December 2020	**11 December 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.

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
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REFERENCES CITED IN THE DESCRIPTION

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