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(54) **THERMOSTATIC FAUCET**

(57) A thermostatic faucet comprises a housing (1), an inner main body (2), a hot water inlet connector (4) and a cold water inlet connector (5). The inner main body (2) is formed with a hot water passage (21) connected with the hot water inlet connector (4), a cold water passage (22) connected with the cold water inlet connector (5), and a mixed water passage (23). The hot water passage (21) and the cold water passage (22) are communicated with the mixed water passage (23) through a thermostatic valve (6). The thermostatic valve (6) is disposed at one end of the inner main body (2) close to the hot water inlet connector (4). Another end of the inner main body (2) is provided with a flow valve (7). The inner main body (2) is connected to the housing (1) through two ther-

mal insulation bushings (3) fitted at two ends thereof and fixed through a fixing device. A gap is formed between the inner main body (2) and the housing (1). The thermostatic valve (6) is disposed at one end of the inner main body (2) close to the hot water inlet connector (4) so as to shorten the hot water passage (21). The inner main body (2) is connected to the housing (1) through the thermal insulation bushings (3) and the fixing device. A gap is formed between the inner main body (2) and the housing (1). This can prevent the heat of the inner main body (2) from being conducted to the housing (1) so as to effectively reduce scalding accidents caused by the thermostatic faucet.

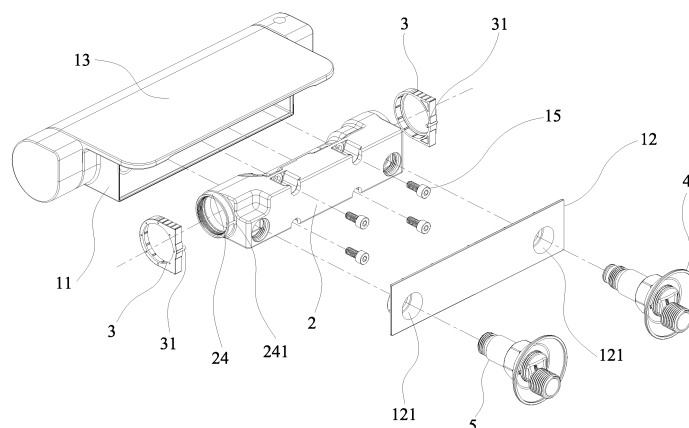


FIG. 1

Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a faucet structure, and more particularly to a thermostatic faucet.

2. Description of the Prior Art

[0002] Most of thermostatic faucets on the market are made of a copper material. The copper material has better heat conductivity. When in use, the temperature of the surface of the faucet body may be too high, resulting in that the faucet scalds the user.

[0003] In view of this situation, Chinese Patent Publication No. CN203363288U discloses a thermostatic faucet. The thermostatic faucet comprises a faucet body. Two ends of the faucet body are provided with a temperature control valve and a water outlet switch, respectively. Wherein, the faucet body has cold and hot water inlets. The interior of the faucet body is formed with a cold water passage, a hot water passage, and a mixed water passage. The temperature control valve is disposed at the left end of the faucet body. The water outlet switch is disposed at the right end of the faucet body. This shortens the route of the hot water inlet connected to the temperature control valve, effectively lowering the temperature of the surface of the faucet body to prevent scalding.

[0004] However, the connecting portion of the aforesaid thermostatic faucet close to the hot water inlet still has a temperature above 50 degrees. If the user touches this connecting portion accidentally, the faucet may scald the user. Besides, if hot water is required, the hot water flows through the hot water passage to the mixed water passage. In this way, the heat is conducted to the faucet body, which may cause scalding accidents. That is to say, the thermostatic faucet cannot completely avoid the risk of scalding.

[0005] Accordingly, the inventor of the present invention has devoted himself based on his many years of practical experiences to solve these problems.

SUMMARY OF THE INVENTION

[0006] The primary object of the present invention is to provide a thermostatic faucet which can shorten the internal hot water passage of an inner main body to reduce the heat conduction of the inner main body. This can prevent the heat of the inner main body from being conducted to a housing so as to effectively reduce scalding accidents caused by the thermostatic faucet.

[0007] In order to achieve the aforesaid object, the thermostatic faucet of the present invention comprises a housing, an inner main body, a hot water inlet connector, and a cold water inlet connector. The inner main body is formed with a hot water passage connected with the hot

water inlet connector, a cold water passage connected with the cold water inlet connector, and a mixed water passage. The hot water passage and the cold water passage are communicated with the mixed water passage through a thermostatic valve. The thermostatic valve is disposed at one end of the inner main body close to the hot water inlet connector. Another end of the inner main body is provided with a flow valve. The inner main body is connected to the housing through two thermal insulation bushings fitted at two ends thereof and fixed through a fixing device. A gap is formed between the inner main body and the housing.

[0008] Preferably, the thermostatic valve is provided with a hot water inlet and a cold water inlet. The cold water passage is communicated with the cold water inlet. The hot water passage passes through the cold water passage and is communicated with the hot water inlet.

[0009] Preferably, the fixing device includes at least two fixing posts disposed in the housing and screws mated with the fixing posts. The screws pass through the inner main body and are locked to the fixing posts.

[0010] Preferably, the two ends of the inner main body protrude outwardly to form bosses, respectively. The thermal insulation bushings are fitted on the bosses, respectively.

[0011] Preferably, the bosses each have a positioning hole, and the thermal insulation bushings each have a positioning post mated with the positioning hole.

[0012] Preferably, the housing includes a front housing and a rear end cover which are mated and connected with each other. The inner main body is accommodated in the front housing.

[0013] Preferably, the rear end cover is a plastic thermal insulation cover. The rear end cover is provided with two insertion holes for insertion of the hot water inlet connector and the cold water inlet connector.

[0014] Preferably, the front housing is formed with a plate which shields upper ends of the hot water inlet connector and the cold water inlet connector and is configured for placement of articles.

[0015] In the present invention, the thermostatic valve is disposed at one end of the inner main body close to the hot water inlet connector so as to shorten the hot water passage. The hot water passage is communicated with the hot water inlet of the thermostatic valve. The cold water passage wraps the hot water passage and is communicated with the cold water inlet of the thermostatic valve. The cold water passage plays the role of heat insulation for the hot water passage. The inner main body is connected to the housing through the thermal insulation bushings and the fixing device. A gap is formed between the inner main body and the housing. This can prevent the heat of the inner main body from being conducted to the housing so as to effectively reduce scalding accidents caused by the thermostatic faucet.

[0016] In addition, the rear end cover is a plastic thermal insulation cover that prevents the heat of the hot water inlet connector from being conducted to the front

housing via the rear end cover, effectively preventing the heat conduction of the hot water inlet connector. The plate of the front housing shields the hot water inlet connector to prevent the user from touching the hot water inlet connector and scalding. The plate can be used for placing shower gel and other items, so that the thermostatic faucet has the function of placing articles.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017]

FIG. 1 is an exploded view of the present invention;

FIG. 2 is another exploded view of the present invention;

FIG. 3 is a cross-sectional view of the present invention; and

FIG. 4 is a longitudinal sectional view of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0018] Embodiments of the present invention will now be described, by way of example only, with reference to the accompanying drawings.

[0019] As shown in FIG. 1 to FIG. 4, the present invention discloses a thermostatic faucet, which comprises a housing 1, an inner main body 2, a hot water inlet connector 4, and a cold water inlet connector 5. Wherein, the inner main body 2 is formed with a hot water passage 21 connected with the hot water inlet connector 4, a cold water passage 22 connected with the cold water inlet connector 5, and a mixed water passage 23. The hot water passage 21 and the cold water passage 22 are communicated with the mixed water passage 23 through a thermostatic valve 6. The thermostatic valve 6 is disposed at one end of the inner main body 2 close to the hot water inlet connector 4. Another end of the inner main body 2 is provided with a flow valve 7. The inner main body 2 is connected to the housing 1 through two thermal insulation bushings 3 fitted at two ends thereof. A gap is formed between the inner main body 2 and the housing 1.

[0020] In the present invention, the thermostatic valve 6 is disposed at one end of the inner main body 2 close to the hot water inlet connector 4 so as to shorten the hot water passage 21 and reduce the area through which the hot water flows. The inner main body 2 is connected to the housing 1 through the thermal insulation bushings 3 and a fixing device. A gap is formed between the inner main body 2 and the housing 1. This can prevent the heat of the inner main body 2 from being conducted to the housing 1 so as to effectively reduce scalding accidents caused by the thermostatic faucet.

[0021] The thermostatic valve 6 is provided with a hot

water inlet 61 and a cold water inlet 62. The cold water passage 22 of the inner main body 2 is communicated with the cold water inlet 62 of the thermostatic valve 6. The hot water passage 21 of the inner main body 2 passes through the cold water passage 22 and then is communicated with the hot water inlet 61 of the thermostatic valve 6. The cold water passage 22 wraps the hot water passage 21, such that the cold water passage 22 plays the role of heat insulation and reduces scalding accidents caused by the thermostatic faucet.

[0022] The two ends of the inner main body 2 protrude outwardly to form first bosses 24, respectively. The first bosses 24 each have a positioning hole 241. Correspondingly, the thermal insulation bushings 3 each have a positioning post 31. When the thermal insulation bushings 3 are fitted on the first bosses 24, the positioning posts 31 of the heat insulation bushings 3 are inserted into the positioning holes 241 of the first bosses 24 respectively to prevent the thermal insulation bushings 3 from rotating relative to the first bosses 24 so that the inner main body 2 can cooperate with the housing 1.

[0023] The housing 1 includes a front housing 11 and a rear end cover 12 which are mated and connected with each other. The front housing 11 may be formed of zinc alloy to ensure the quality of the thermostatic faucet. The front housing 11 may be formed of plastics. The inner main body 2 is accommodated in the front housing 11. The inner main body 2 is a copper inner main body. The rear end cover 12 has two insertion holes 121 for insertion of the hot water inlet connector 4 and the cold water inlet connector 5. The rear end cover 12 is a plastic thermal insulation cover that prevents the heat of the hot water inlet connector 4 from being conducted to the front housing 11 via the rear end cover 12, effectively avoiding heat conduction of the hot water inlet connector 4.

[0024] The front housing 11 is provided with two second bosses 111 therein. The second bosses 111 are mated and connected with the thermal insulation bushings 3 to ensure the gap between the inner main body 2 and the housing 1.

[0025] The front housing 11 is formed with a plate 13 which shields the upper ends of the hot water inlet connector 4 and the cold water inlet connector 5 and is configured for placement of articles. The plate 13 shields the hot water inlet connector 4 to prevent the user from touching the hot water inlet connector 4 and scalding. The plate 13 can be used for placing shower gel and other items, so that the thermostatic faucet has the function of placing articles.

[0026] The front housing 11 is internally provided with four fixing posts 14, and the fixing posts 14 have first fixing holes 141. The outer side of the inner main body 2 is formed with four second fixing holes 25 corresponding to the fixing posts 14. Screws 15 pass through the second fixing hole 25 and are locked to the first fixing holes 141 of the fixing posts 14, so that the inner main body 2 is fixedly connected to the front housing 11. The mating structure between the fixing posts 14 and the

screws 15 constitutes the fixing device.

[0027] The second fixing holes 25 are disposed at the outer side of the inner main body 2, specifically the outer periphery of the cold water passage 22, away from the hot water passage 21, such that the heat is not conducted to the front housing 11 by the screws 15 and the fixing posts 14.

[0028] In actual use, according to the industry standard, the hot water inlet connector 4 is arranged at the left end and the cold water inlet connector 5 is arranged at the right end, so that the thermostatic valve 6 is arranged at the left end of the inner main body 2 and the flow valve 7 is arranged at the right end of the inner main body 2. The cold water inlet 62 of the thermostat valve 6 is located at the left end of the hot water inlet 61 so that the cold water passage 22 wraps the hot water passage 21.

[0029] Although particular embodiments of the present invention have been described in detail for purposes of illustration, various modifications and enhancements may be made without departing from the spirit and scope of the present invention. Accordingly, the present invention is not to be limited except as by the appended claims.

Claims

1. A thermostatic faucet, **characterized in that** the thermostatic faucet comprises a housing (1), an inner main body (2), a hot water inlet connector (4) and a cold water inlet connector (5), the inner main body (2) is formed with a hot water passage (21) connected with the hot water inlet connector (4), a cold water passage (22) connected with the cold water inlet connector (5) and a mixed water passage (23), the hot water passage (21) and the cold water passage (22) are communicated with the mixed water passage (23) through a thermostatic valve (6), the thermostatic valve (6) is disposed at one end of the inner main body (2) close to the hot water inlet connector (4), another end of the inner main body (2) is provided with a flow valve (7); the inner main body (2) is connected to the housing (1) through two thermal insulation bushings (3) fitted at two ends thereof and fixed through a fixing device, and a gap is formed between the inner main body (2) and the housing (1).
2. The thermostatic faucet as claimed in claim 1, wherein the thermostatic valve (6) is provided with a hot water inlet (61) and a cold water inlet (62), the cold water passage (22) is communicated with the cold water inlet (62), and the hot water passage (21) passes through the cold water passage (22) and is communicated with the hot water inlet (61).
3. The thermostatic faucet as claimed in claim 1, wherein the fixing device includes at least two fixing posts (14) disposed in the housing (1) and screws (15)

mated with the fixing posts (14), and the screws (15) pass through the inner main body (2) and are locked to the fixing posts (14).

4. The thermostatic faucet as claimed in claim 1, wherein the two ends of the inner main body (2) protrude outwardly to form bosses (24) respectively, and the thermal insulation bushings (3) are fitted on the bosses (24) respectively.
5. The thermostatic faucet as claimed in claim 4, wherein the bosses (24) each have a positioning hole (241), and the thermal insulation bushings (3) each have a positioning post (31) mated with the positioning hole (241).
6. The thermostatic faucet as claimed in claim 1, wherein the housing (1) includes a front housing (11) and a rear end cover (12) which are mated and connected with each other, and the inner main body (2) is accommodated in the front housing (11).
7. The thermostatic faucet as claimed in claim 6, wherein the rear end cover (12) is a plastic thermal insulation cover, and the rear end cover (12) is provided with two insertion holes (121) for insertion of the hot water inlet connector (4) and the cold water inlet connector (5).
8. The thermostatic faucet as claimed in claim 6, wherein the front housing (11) is formed with a plate (13) which shields upper ends of the hot water inlet connector (4) and the cold water inlet connector (5) and is configured for placement of articles.

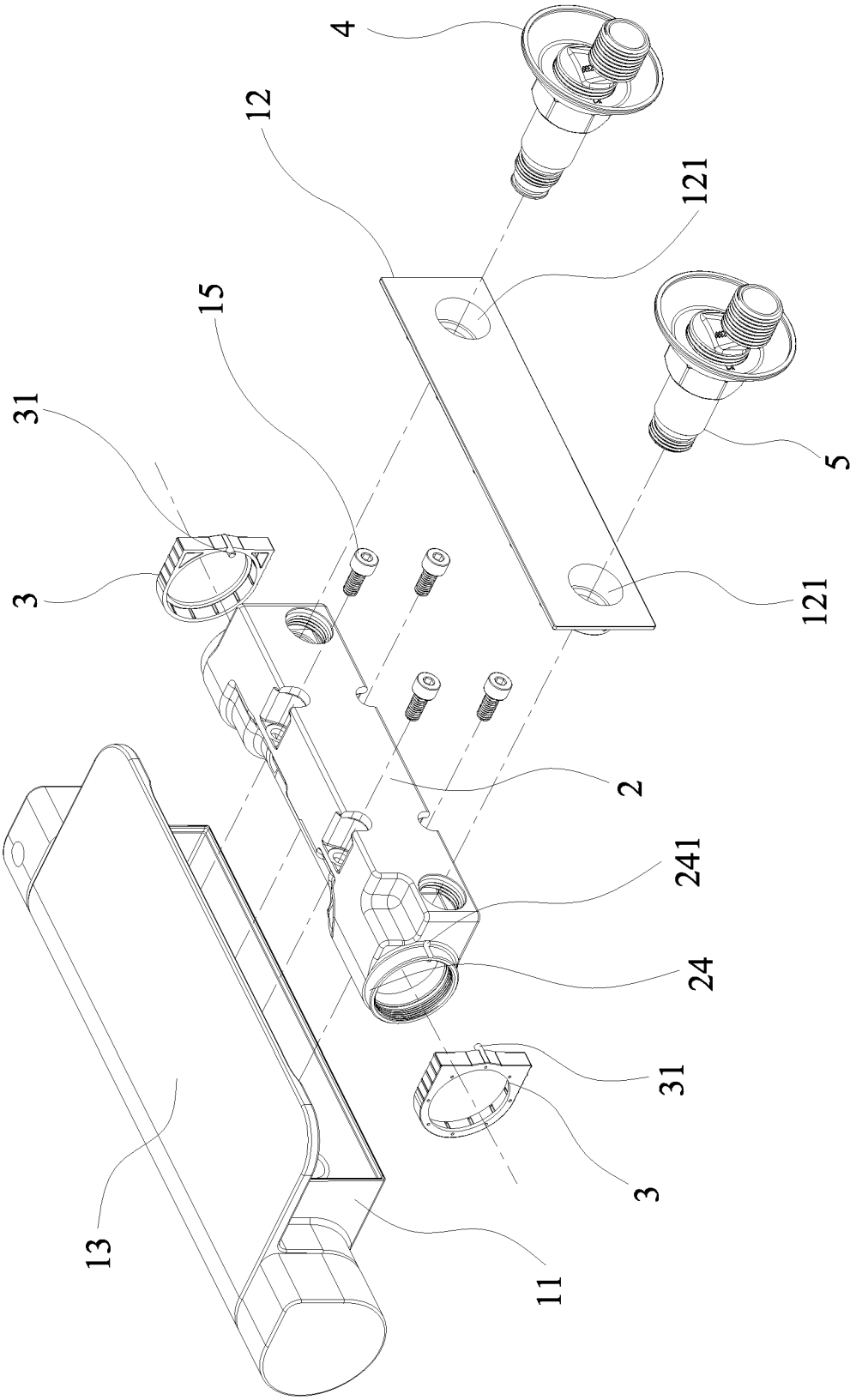


FIG.1

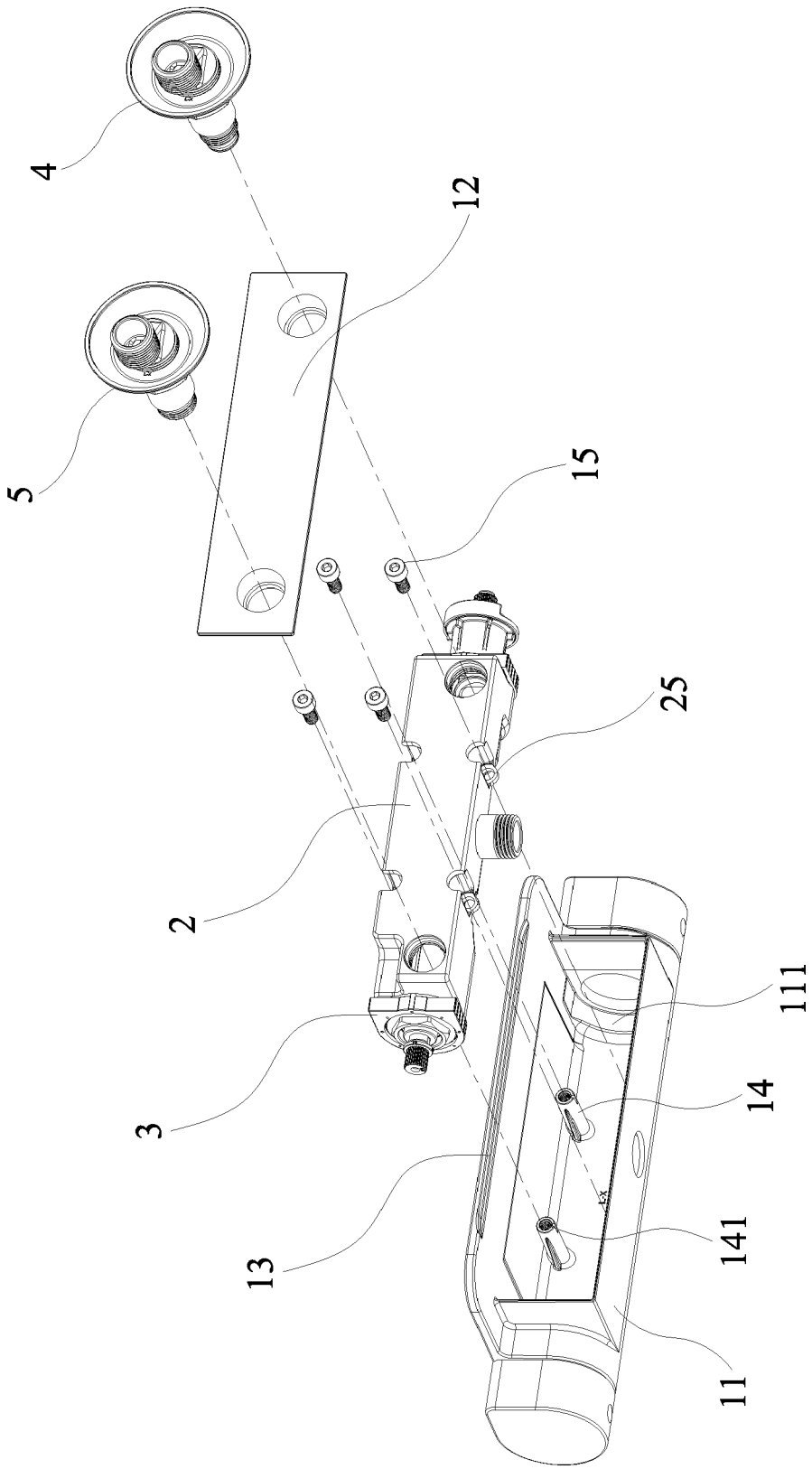


FIG. 2

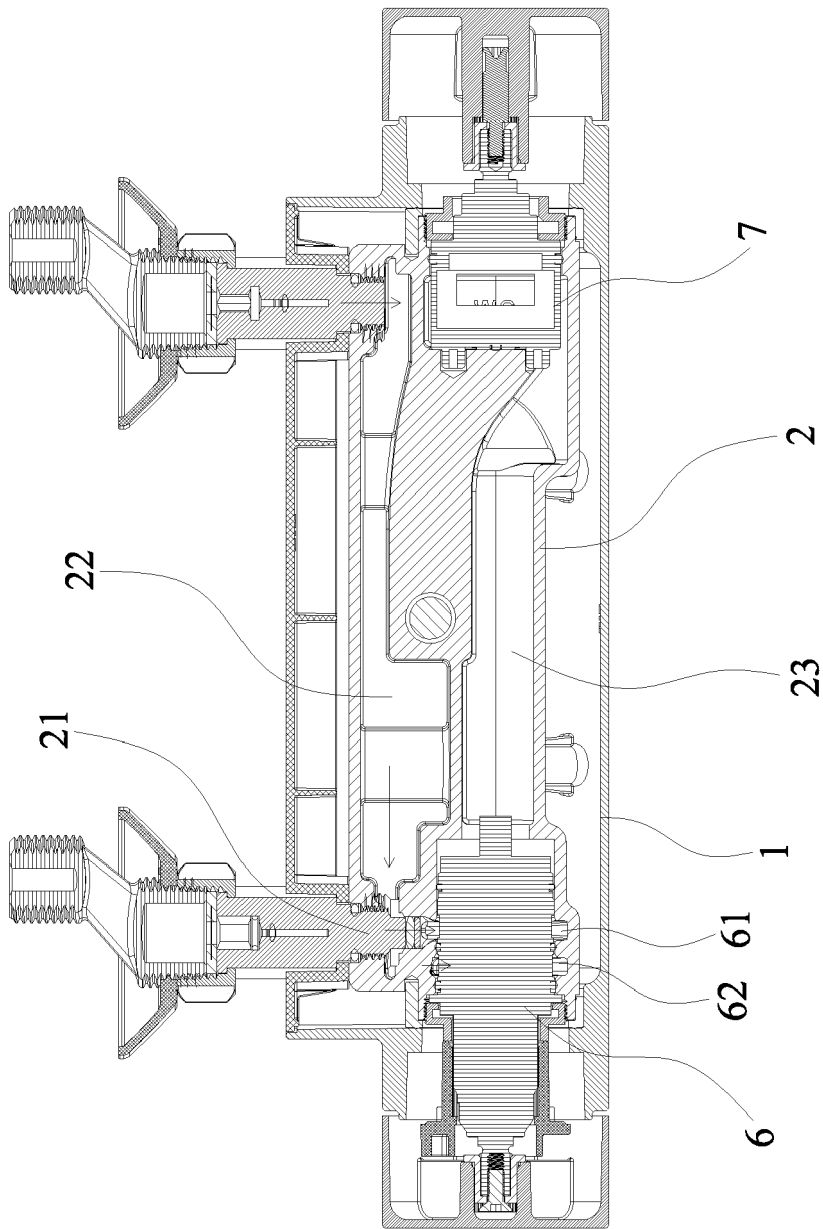


FIG. 3

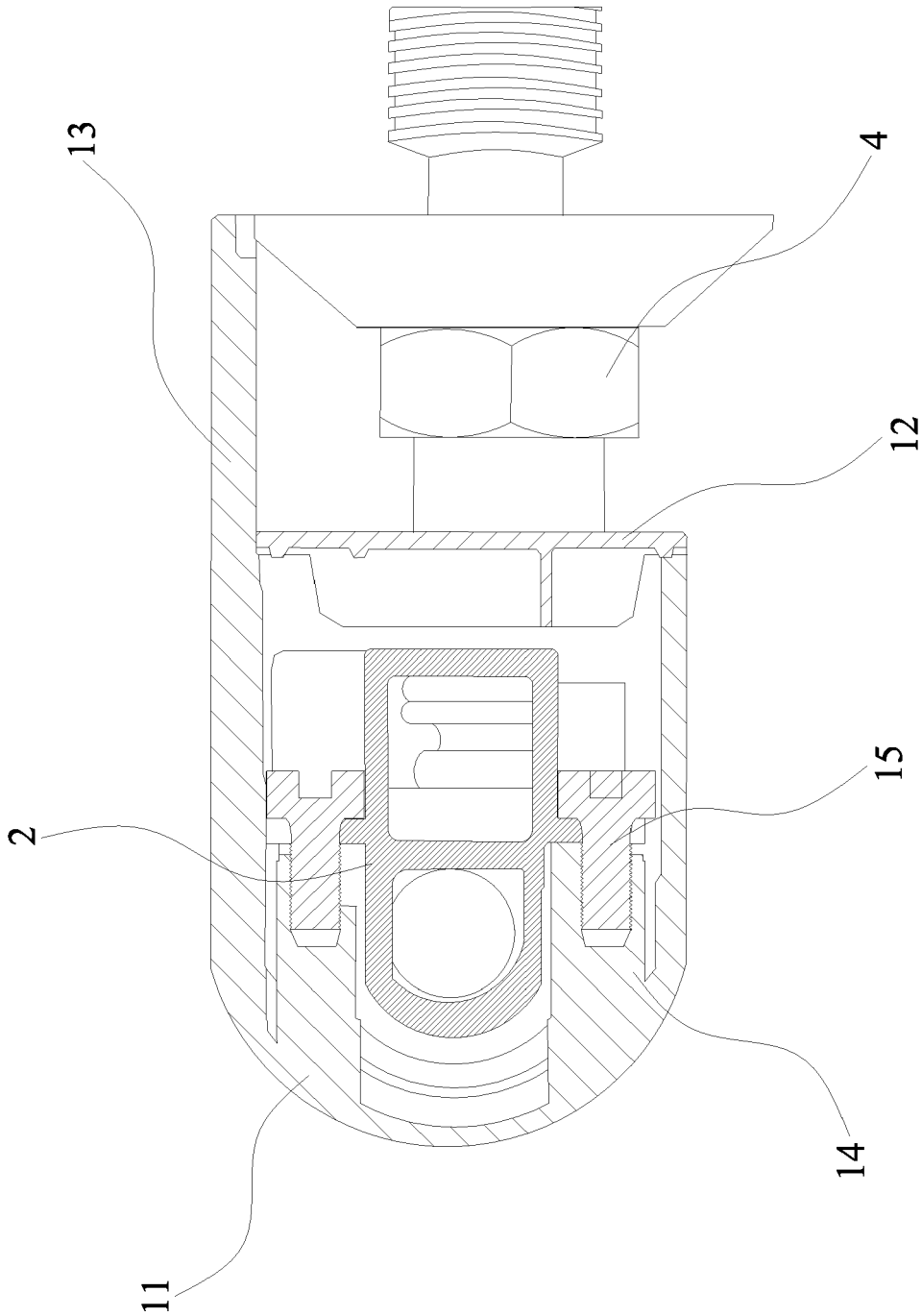


FIG. 4



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Application Number
EP 18 15 8332

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 3 September 2018	Examiner Horst, Werner
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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