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(54) FAUCET STRUCTURE FOR A WASHBASIN

(57) A faucet structure includes a main body having an inclined pipe, a handle, and a connecting cover. The said inclined pipe having an internal portion within which an inclined surface is arranged on an end face adjacent to the handle and a side adjacent to the main body. An outlet pipe extending within the internal portion of the inclined pipe. One side within the inclined pipe away from the main body is provided with a secure joint. An internal portion of the main body, starting from an end face and in a direction away from the handle, is sequentially provided with an upper cover, a valve core, a pressure cover, and a valve core seat. The handle is connected to the main body through the valve core. The pressure cover and upper cover are located outside of the valve core and on the said end face.

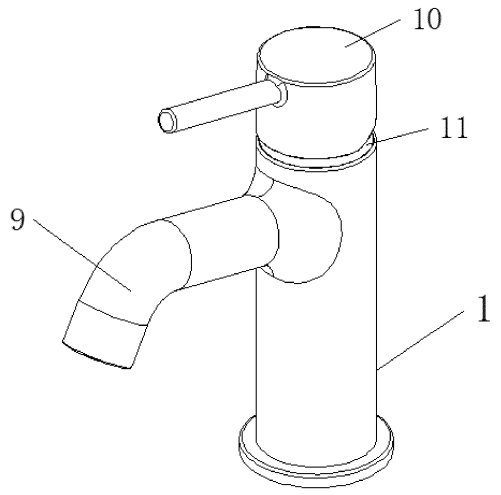

FIG. 1

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Description

TECHNICAL FILED

[0001] The present disclosure relates to the technical field of faucets, more particularly to a faucet structure for a washbasin.

BACKGROUND

[0002] Washbasin faucets are water outlet apparatus installed on washbasins. Conventional washbasin faucets in the market typically use all-copper materials. However, copper materials are expensive, and often result in excessive heavy metal precipitation. Therefore, structures that employ plastic components for water passage, with a metal shell (the shell material can be plastic, zinc alloy, aluminum alloy, etc.) which reduce costs, and with plastic components for water passage and a non-water-passing shell they prevent issues such as exceeding the standard for nickel metal in electroplated parts or exceeding the lead content in copper materials.

SUMMARY

[0003] The object of the present disclosure is to address the issues of high cost and exceeding standards for nickel metal in electroplated parts or lead content in copper materials in washbasin faucet structures in prior art. The present disclosure provides a faucet structure for a washbasin.

[0004] To achieve the above object, the present disclosure provides a faucet structure for a washbasin. The faucet structure includes a main body. The main body is provided with an inclined pipe, a handle, and a connecting cover. The inclined pipe having an internal portion within which an inclined surface is arranged on an end face adjacent to the handle and a side adjacent to the main body. An outlet pipe extending within the internal portion of the inclined pipe. One side within the internal portion of the inclined pipe away from the main body is provided with a secure joint. An internal portion of the main body, starting from an end face and in a direction away from the handle, is sequentially provided with an upper cover, a valve core, a pressure cover, and a valve core seat. The handle is securely connected to the main body through the valve core. The pressure cover and upper cover are located on the outside of the valve core and on the end face. An internal portion of the valve core seat is provided with a U-shaped water outlet assembly. A groove is arranged on an end face within the internal portion of the main body away from the handle. The U-shaped water outlet assembly is securely connected to the main body through the groove. An internal portion of the U-shaped water outlet assembly is provided with a U-shaped pipe. A plug is provided on one side of the internal portion of the U-shaped water outlet assembly adjacent to the inclined pipe and towards an end face of the U-shaped water outlet assembly away from the handle. A snap ring is provided on the end face of the U-shaped water outlet assembly away from the handle and a side of the U-shaped water outlet assembly adjacent to the inclined pipe. On an inner wall of main body, a protrusion is provided on a side surface of the groove and on one side adjacent to the inclined pipe.

[0005] As a further aspect of the disclosure: a notch is located on one side of the valve core seat adjacent to the inclined pipe. One side of the outlet pipe away from the secure joint is securely connected to a water outlet end of the U-shaped water outlet assembly through the notch. The outlet pipe is detachably connected, and extending within the main body by the inclined pipe and the inclined surface.

[0006] As a further aspect of the disclosure: the outlet pipe is securely connected to one side within the internal portion of the inclined pipe away from the main body through the secure joint.

[0007] As a further aspect of the disclosure: a snap-fit groove is provided on one side within the U-shaped water outlet assembly adjacent to the inclined pipe and an end face adjacent to the handle. An input end of the outlet pipe is located within the snap-fit groove and is detachably connected to and in communication with an output end of the U-shaped water outlet assembly by the snap-fit groove. An input end of the inclined pipe is connected to an output end of the U-shaped pipe.

[0008] As a further aspect of the disclosure: the outer sides of the pressure cover and upper cover are both provided with multiple sets of external threads. The end face within the main body and adjacent to the handle and an inner wall of the connecting cover are both provided with multiple sets of internal threads. The pressure cover and upper cover are threadedly connected to the main body and connecting cover, respectively, through a mutual cooperation of the external threads and the internal threads.

[0009] As a further aspect of the disclosure: the plug is snap-fit connected to the U-shaped water outlet assembly through the snap ring. The plug is limit-connected to the main body and U-shaped water outlet assembly through the protrusion.

[0010] Compared to the prior art, the advantages of the disclosure are as follows.

[0011] Through the arrangement of the main body, outlet pipe, U-shaped water outlet assembly, valve core seat, and inclined surface, during use, the plug is inserted into the U-shaped pipe, or the plug is inserted into the U-shaped pipe and secured on the U-shaped pipe with a snap ring. The plug is limited by the protrusion on the main body. Alternatively, the plug is inserted into the U-shaped pipe, fixed on the U-shaped pipe with a snap ring, and the outlet pipe is threaded into the main body, inserted into the U-shaped pipe water outlet assembly, and connected to form a water path after the valve. The inclined surface assists in smooth installation of the outlet

pipe. The secure joint secures the outlet pipe to the main body. The valve core seat fixes the outlet pipe and U-shaped water outlet assembly and is secured to the main body with the pressure cover. The valve core is installed on the valve core seat. Finally, other accessories such as the handle and hose are installed. This device is cost-effective and effectively prevents issues such as exceeding standards for nickel metal in electroplated parts or lead content in copper materials.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012]

FIG. 1 is a three-dimensional view of the faucet structure for a washbasin according to the present disclosure.

FIG. 2 is an exploded view of the faucet structure according to the present disclosure.

FIG. 3 is a schematic diagram of the faucet structure according to the present disclosure.

FIG. 4 is a partial schematic diagram of the faucet structure according to the present disclosure.

FIG. 5 is a schematic diagram of the U-shaped water outlet assembly according to the present disclosure.

FIG. 6 is a cross-sectional diagram of the faucet structure according to the present disclosure.

FIG. 7 is a cross-sectional diagram and top view of the faucet structure showing the inside of the faucet structure according to the present disclosure.

[0013] In the drawings: 1, main body; 101, groove; 102, protrusion; 2, outlet pipe; 201, input end of the outlet pipe; 3, secure j oint; 4, U-shaped water outlet assembly; 401, U-shaped pipe; 402, plug; 403, snap ring; 404, output end; 405, snap-fit groove; 5, valve core seat; 501, notch; 6, pressure cover; 7, valve core; 8, upper cover; 9, inclined pipe; 10, handle; 11, connecting cover; 12, inclined surface.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0014] The following will provide a clear and complete description of the technical solution in the embodiments of the present disclosure in conjunction with the accompanying drawings. Obviously, the described embodiments are only part of the embodiments of the present disclosure, not all embodiments. Based on the embodiments of the present disclosure, all other embodiments obtained by ordinary skilled workers without creative labor are within the scope of protection of the present disclosure.

[0015] In the description of the present disclosure, it needs to be clarified that terms such as "center," "upper," "lower," "left," "right," "vertical," "horizontal," "inner," "outer," etc., indicating orientation or positional relationships, are based on the orientation or positional relationships shown in the drawings. This is for ease of describing the present disclosure and simplifying the description, and it does not indicate or imply that the device or component referred to must have a specific orientation, be constructed and operated in a specific orientation, and should not be understood as limiting the present disclosure. In addition, terms such as "first," "second," "third" are used for descriptive purposes only and should not be understood as indicating or implying relative importance. In the description of the present disclosure, it needs to be clarified that, unless otherwise expressly specified and limited, the terms "installation," "connection," "assembly" should be broadly interpreted, for example, it may be a fixed connection, or a detachable connection, or an integral connection; it may be a mechanical connection, or an electrical connection; it may be directly connected, or indirectly connected through an intermediate medium, and may be connected inside two components. For ordinary skilled workers in this field, the specific meanings of the above terms in the present disclosure can be understood according to specific situations. The following is an explanation of the embodiments based on the overall structure of the present disclosure.

[0016] Please refer to FIGS. 1-6. In the embodiments of the present disclosure, a faucet structure for a washbasin includes a main body 1. The main body is provided with an inclined pipe 9, a handle 10, and a connecting cover 11. The inclined pipe having an internal portion within which an inclined surface 12 is provided on an end face adjacent to the handle 10 and on a side adjacent to the main body 1. An outlet pipe 2 extending within the internal portion of the inclined pipe 9. A secure joint 3 is provided on one side within the internal portion of the inclined pipe 9 away from the main body 1. An internal portion of the main body 1, starting from an end face and in a direction away from the handle 10, is sequentially provided with an upper cover 8, a valve core 7, a pressure cover 6, and a valve core seat 5. The handle 10 is securely connected to the main body 1 by the valve core 7. The pressure cover 6 and upper cover 8 are located on the outside of the valve core 7 and on the end face. An internal portion of the valve core seat 5 is provided with a U-shaped water outlet assembly 4. An end face within the internal portion of the main body 1, away from the handle 10 is provided with a groove 101. The U-shaped water outlet assembly 4 is securely connected to the main body 1 through the groove 101. An internal portion of the U-shaped water outlet assembly 4 is provided with a U-shaped pipe 401. A plug 402 is provided on one side within the internal portion of the U-shaped water outlet assembly 4 adjacent to the inclined pipe 9 and towards an end face away from the handle 10. A snap ring 403 is provided on an end face of the U-shaped water outlet assembly 4 away from the handle 10, and on one side adjacent to the inclined pipe 9. On an inner wall of main body 1, a protrusion 102 is provided on a side surface of the groove 101 and on one side adjacent to the inclined pipe 9. The U-shaped water outlet assembly 4 can be assembled into the groove 101 of the main body 1,

pressed by the valve core seat 5. This requires no other fixing methods, making the installation simple.

[0017] Please further refer to FIGS. 2, 3, 4, and 6. A notch 501 is located on one side of the valve core seat 5 adjacent to the inclined pipe 9. One side of the outlet pipe 2 away from the secure joint 3 is securely connected to a water outlet end of the U-shaped water outlet assembly 4 through the notch 501. The outlet pipe 2 is detachably connected and extending within the main body 1 by the inclined pipe 9 and the inclined surface 12. In this disclosure, water does not pass through the main body 1. The main body 1 can be made of plastic, aluminum alloy, zinc alloy, etc. The product has a high-grade appearance, and the main body 1 internally has an inclined surface 12 to facilitate smooth installation of the outlet pipe 2. The outlet pipe 2 and the U-shaped water outlet assembly 4 are directly anchored by the valve core seat 5 without complex installation structures, resulting in short installation time and high efficiency.

[0018] Please refer to FIGS. 2, 3, 4, 5, and 6. The outlet pipe 2 is securely connected to one side within the internal portion of the inclined pipe 9 away from the main body 1 through the secure joint 3.

[0019] Please refer to FIGS. 1, 2, 3, 4, 5, and 6. A snap-fit groove 405 is provided on one side within the U-shaped water outlet assembly 4 adjacent to the inclined pipe 9 and an end face adjacent to the handle 10. An input end 201 of the outlet pipe 2 is located within the snap-fit groove 405 and is detachably connected to and in communication with an output end 404 of the U-shaped water outlet assembly 4 by the snap-fit groove 405. An input end of the inclined pipe 9 is connected to and in communication with an output end of the U-shaped pipe 401.

[0020] Please refer to FIGS. 2, 3, 4, and 6. The outer sides of the pressure cover 6 and upper cover 8 are both provided with multiple sets of external threads. The end face within the main body 1 and adjacent to the handle 10, and an inner wall of the connecting cover 11 are both provided with multiple sets of internal threads. The pressure cover 6 and upper cover 8 are threadedly connected to the main body 1 and connecting cover 11, respectively, through a mutual cooperation of the external threads and the internal threads.

[0021] Please refer to FIGS. 2, 3, 4, 5, and 6. The plug 402 is snap-fit connected to the U-shaped water outlet assembly 4 through the snap ring 403. The plug 402 is limit-connected to the main body 1 and U-shaped water outlet assembly 4 through the protrusion 102. Another protrusion may be arranged on a position of the plug 402 on a side surface on the U-shaped water outlet assembly 4 on the main body 1, configured to anchor the plug 402 and improve its docking stability.

[0022] The working principle of the present disclosure is as follows: when using the device, insert the plug 402 into the U-shaped pipe 401, or insert the plug 402 into the U-shaped pipe 401 and fix it on the U-shaped pipe 401 with the snap ring 403. The plug 402 is limited by the protrusion 102 on the main body 1. Alternatively, insert the plug 402 into the U-shaped pipe 401 and fix it on the U-shaped pipe 401 with the snap ring 403. Insert the outlet pipe 2 into the main body 1, insert it into the U-shaped pipe, and connect to form a water path after the valve. The main body 1 has an inclined surface 12 to assist in smooth installation of the outlet pipe 2. Then, fix the outlet pipe 2 to the main body 1 using the secure joint 3. Use the valve core seat 5 to fix the outlet pipe 2 and U-shaped water outlet assembly 4, and use the pressure cover 6 to fix the valve core seat 5 to the main body 1. Install the valve core 7 on the valve core seat 5. Finally, install the handle, hose, and other accessories. This device is cost-effective and effectively prevents issues such as exceeding standards for nickel metal in electroplated parts or lead content in copper materials.

[0023] The above-described embodiments are only the preferred specific embodiments of the present disclosure, but the scope of protection of the present disclosure is not limited thereto. Any technical personnel familiar with the field of this technology, within the technical scope disclosed by the present disclosure, can make equivalent substitutions or changes based on the technical solution of the present disclosure and its innovative concept, all of which should be covered within the protection scope of the present disclosure.

Claims

1. A faucet structure for a washbasin, **characterized by** comprising a main body (1); the main body (1) is provided with an inclined pipe (9), a handle (10), and a connecting cover (11);

   wherein the said inclined pipe (9) having an internal portion within which an inclined surface (12) is arranged on an end face adjacent to the handle (10) and a side adjacent to the main body (1); an outlet pipe (2) extending within the internal portion of the inclined pipe (9); and one side within the internal portion of the inclined pipe (9) away from the main body (1) is provided with a secure joint (3);

   wherein an internal portion of the main body (1), starting from an end face and in a direction away from the handle (10), is sequentially provided with an upper cover (8), a valve core (7), a pressure cover (6), and a valve core seat (5); the handle (10) is securely connected to the main body (1) through the valve core (7); the pressure cover (6) and upper cover (8) are located on the outside of the valve core (7) and on the said end face; an internal portion of the valve core seat (5) is provided with a U-shaped water outlet assembly (4); a groove (101) is arranged on an end face within the internal portion of the main body (1) away from the handle (10); the U-shaped water outlet assembly (4) is securely

connected to the main body (1) through the groove (101); an internal portion of the U-shaped water outlet assembly (4) is provided with a U-shaped pipe (401); a plug (402) is provided on one side of the internal portion of the U-shaped water outlet assembly (4) adjacent to the inclined pipe (9) and towards an end face of the U-shaped water outlet assembly (4) away from the handle (10); a snap ring (403) is provided on the end face of the U-shaped water outlet assembly (4) away from the handle (10) and a side of the U-shaped water outlet assembly (4) adjacent to the inclined pipe (9); on an inner wall of main body (1), a protrusion (102) is provided on a side surface of the groove (101) and on one side adjacent to the inclined pipe (9).

2. The faucet structure according to claim 1, **characterized in that** a notch (501) is located on one side of the valve core seat (5) adjacent to the inclined pipe (9); one side of the outlet pipe (2) away from the secure joint (3) is securely connected to a water outlet end of the U-shaped water outlet assembly (4) through the notch (501); the outlet pipe (2) is detachably connected, and positioned through the main body (1) by the inclined pipe (9) and the inclined surface (12).

3. The faucet structure according to claim 1, **characterized in that** the outlet pipe (2) is securely connected to one side within the internal portion of the inclined pipe (9) away from the main body (1) through the secure joint (3).

4. The faucet structure according to claim 1, **characterized in that** a snap-fit groove (405) is provided on one side within the U-shaped water outlet assembly (4) adjacent to the inclined pipe (9) and an end face adjacent to the handle (10); an input end (201) of the outlet pipe (2) is located within the snap-fit groove (405) and is detachably connected to and in communication with an output end (404) of the U-shaped water outlet assembly (4) by the snap-fit groove (405); an input end of the inclined pipe (9) is connected to an output end of the U-shaped pipe (401).

5. The faucet structure according to claim 1, **characterized in that** the outer sides of the pressure cover (6) and upper cover (8) are both provided with multiple sets of external threads; the end face within the main body (1) and adjacent to the handle (10) and an inner wall of the connecting cover (11) are both provided with multiple sets of internal threads; the pressure cover (6) and upper cover (8) are threadedly connected to the main body (1) and connecting cover (11), respectively, through a mutual cooperation of the external threads and the internal threads.

6. The faucet structure according to claim 1, **characterized in that** the plug (402) is snap-fit connected to the U-shaped water outlet assembly (4) through the snap ring (403); the plug (402) is limit-connected to the main body (1) and U-shaped water outlet assembly (4) through the protrusion (102).

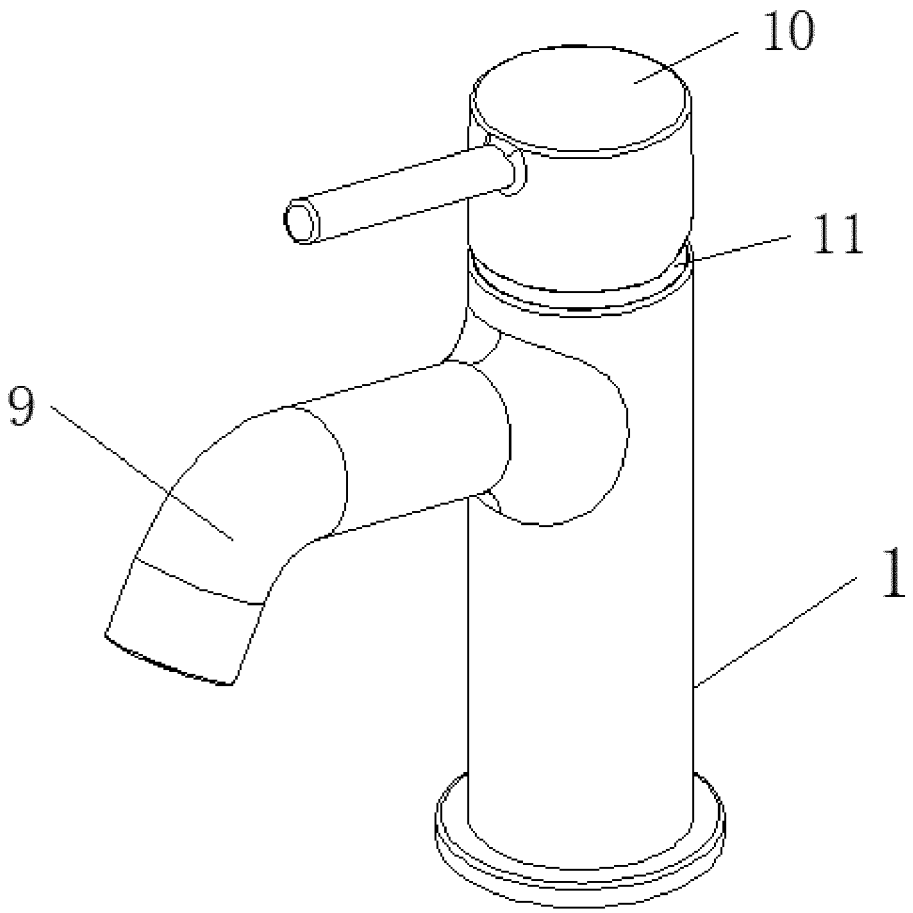

FIG. 1

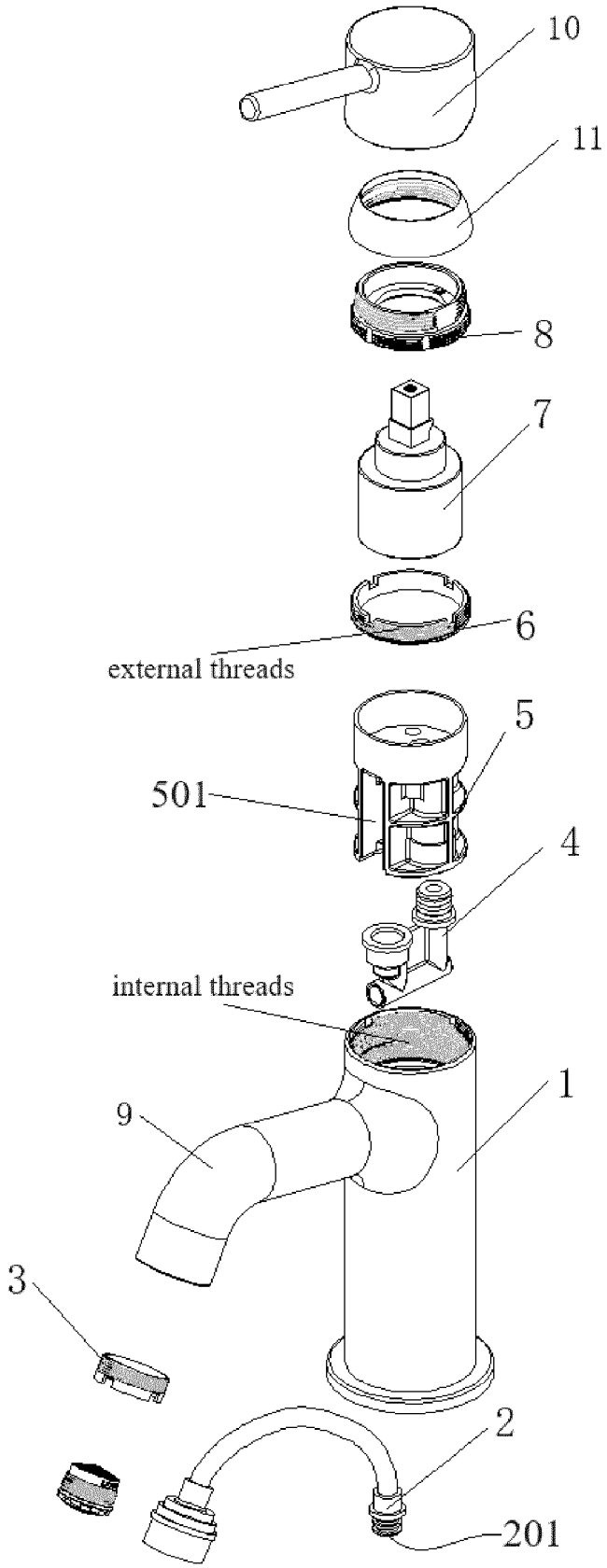

FIG. 2

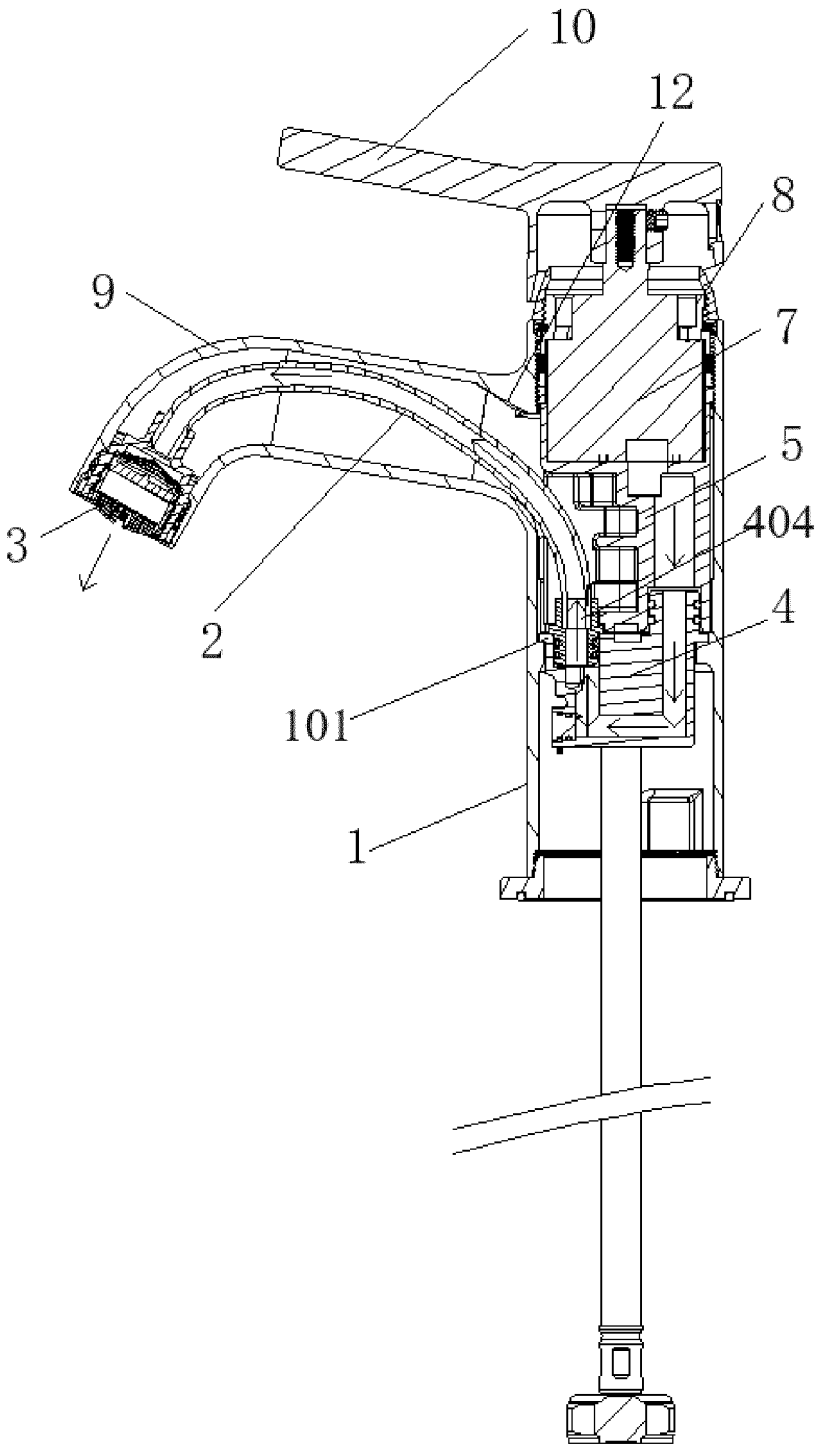

FIG. 3

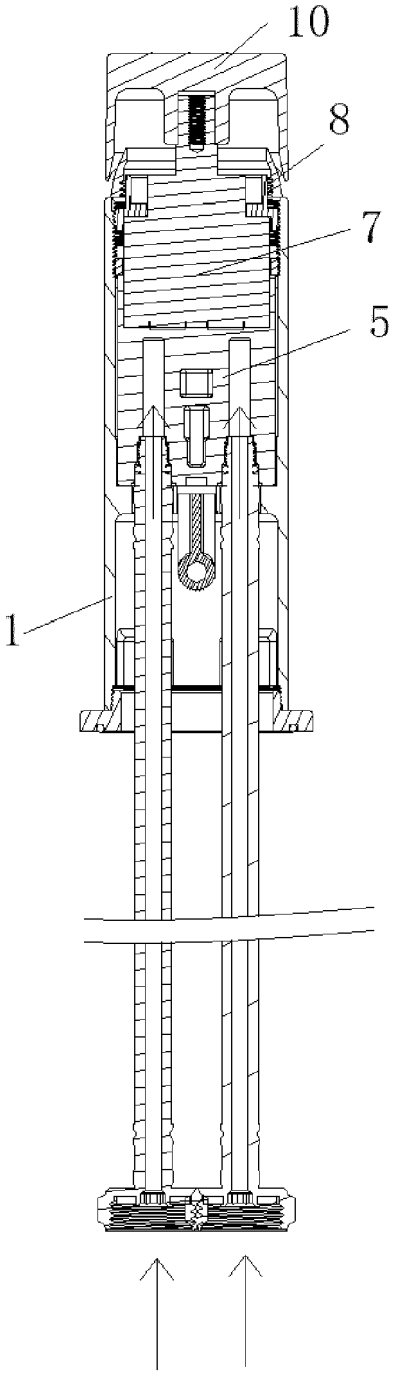

FIG. 4

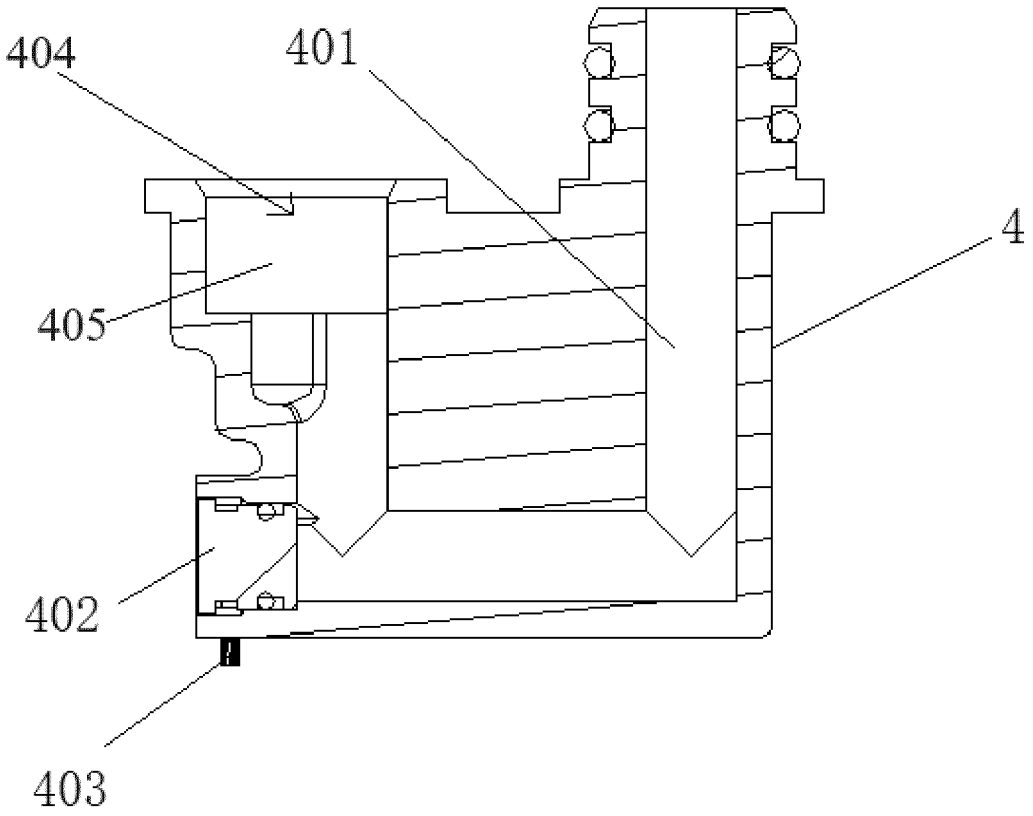

FIG. 5

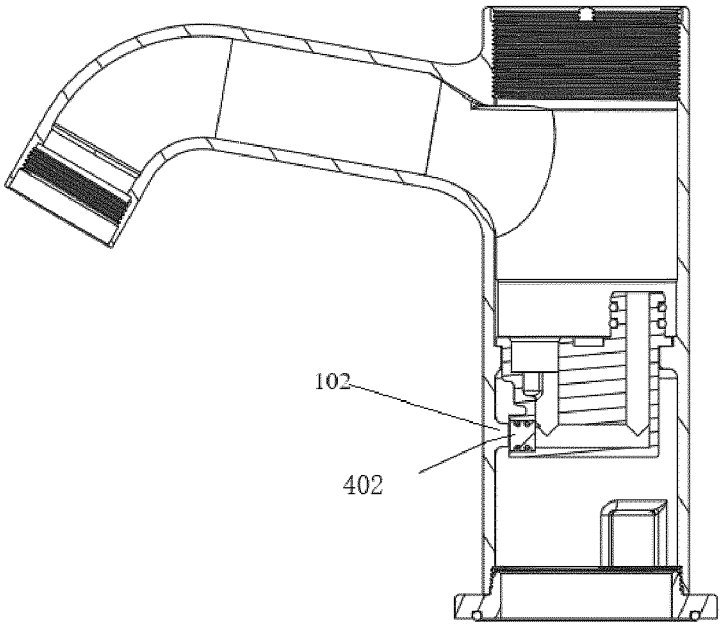

FIG. 6

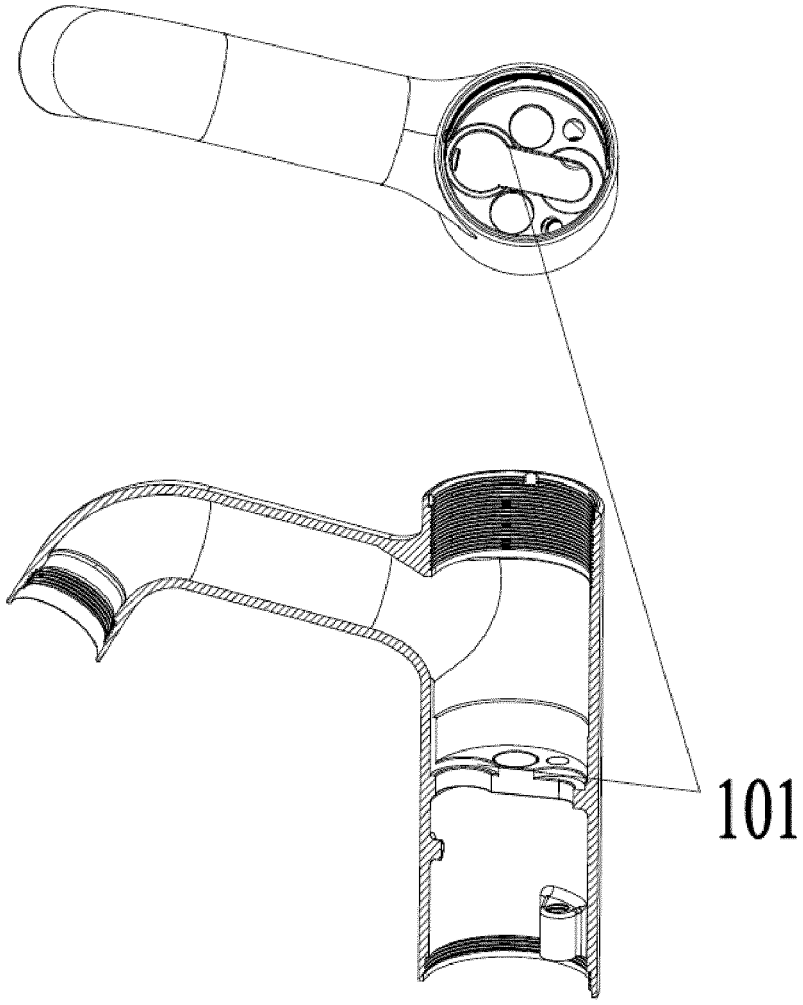

FIG. 7

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EUROPEAN SEARCH REPORT

Application Number
EP 24 16 3454

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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X	EP 3 105 381 B1 (GROHE AG [DE]) 5 August 2020 (2020-08-05) * paragraphs [0007], [0030], [0031], [0034]; figures 2,3,6,7 *	1	
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TECHNICAL FIELDS SEARCHED (IPC)

E03C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	2 August 2024	Isailovski, Marko

CATEGORY OF CITED DOCUMENTS

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