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(54) WALL-ATTACHED WATER DISCHARGING DEVICE

(57) A wall-attached water discharging device (10) is provided with a valve housing (1), a valve core (2), a handle (3), two connecting pieces (4), and two water inlet connectors (5). The valve housing (1) is provided with two laterally extending extension tubes (14), the two connecting pieces (4) are slidably connected to the two extension tubes (14), so that the water inlet connectors (5) inserted into the connecting pieces (4) may be easily aligned with and connected to two water inlet tubes pre-buried in a wall. Based on the foregoing technical solution, installation and adjustment are simple, a thickness is small, and the wall-attached water discharging device (10) is in an upright posture after installation.

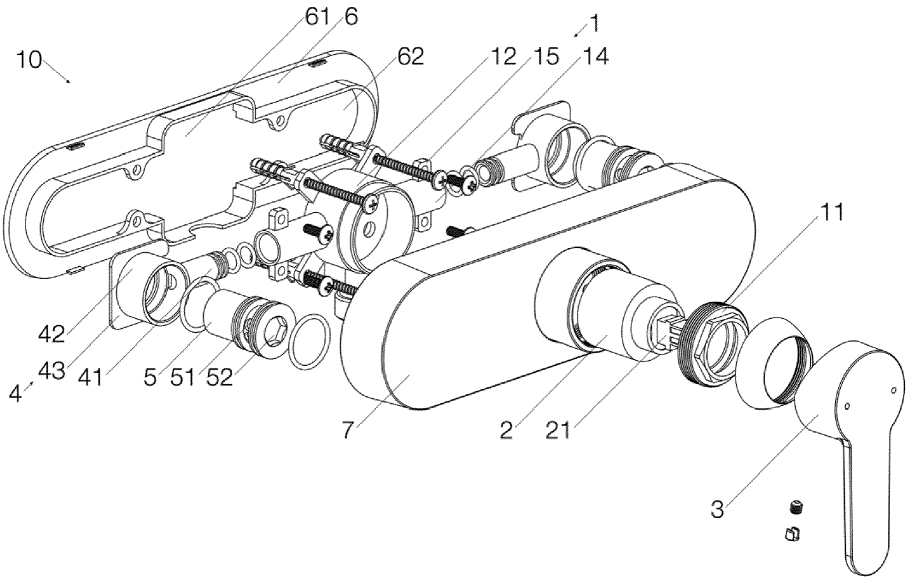

Fig. 2

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Description

BACKGROUND

Technical Field

[0001] This application relates to the field of water discharging devices, in particular to a wall-attached water discharging device.

Description of Related Art

[0002] In the prior art, during house decoration, two water inlet tubes spaced apart from each other are first pre-buried in a wall. When a wall-attached water discharging device is installed, such as a shower, an angle adjustment structure is generally used to connect the wall-attached water discharging device to the two pre-buried water inlet tubes. However, when the angle adjustment structure is used, a thickness of the water discharging device out of the wall is relatively large, which is not beautiful enough, installation and adjustment are complicated, and it is also easy to make the wall-attached water discharging device in a skewed posture after installation.

SUMMARY

[0003] A wall-attached water discharging device is provided to overcome the foregoing shortcomings or problems in the prior art. The wall-attached water discharging device is simple to install and adjust, further has a relatively small thickness, and is in a upright posture after installation.

[0004] To achieve the above objective, the following technical solutions are used:

A wall-attached water discharging device, configured to connect two water inlet tubes pre-buried in a wall and mutually spaced apart, and including a valve housing, where the valve housing is provided with a valve cover, a body, a water outlet tube and two extension tubes, the body, the water outlet tube and the two extension tubes are mutually communicate with each other; the valve cover covers an end portion of the body to form a first cavity; the water outlet tube extends upwards and/or downwards from the body; the two extension tubes respectively extend from the body to two sides; a valve core, disposed in the first cavity, where a valve stem of the valve core extends out of the valve cover, two water inlet ends of the valve core respectively communicate with the two extension tubes, and a water outlet end of the valve core communicates with the water outlet tube; a handle, fixedly connected to the valve stem, and used by a user to control the valve stem, to control the valve core; two connecting pieces, where each of the two connecting pieces is provided with a side tube and a connecting tube that communicate with each other; one end of each of two side tubes is slidably connected to the two extension tubes, and the other end of each of the two side tubes is vertically connected to a middle portion of a corresponding connecting tube; and two water inlet connectors, respectively inserted into the two connecting tubes and respectively communicating with the two corresponding side tubes, where one end of each of the two water inlet connectors is closed, and the other ends of the two water inlet connectors are configured to respectively connected to the two water inlet tubes. In this embodiment of this application, because the two connecting pieces are laterally and slidably connected to the two extension tubes of the valve housing, the two connecting tubes may be conveniently adjusted to be aligned with the two water inlet tubes, so that the water inlet connector inserted into the connecting piece is connected to the water inlet tube. Therefore, installation and adjustment are very simple. In this embodiment of this application, since a maximum thickness of the wall-attached water discharging device is determined by a length of the connecting tube which has no curved angle, the wall-attached water discharging device in this application is thinner than that using an angle adjustment manner. In this embodiment of this application, since a posture of the wall-attached water discharging device is determined by a posture of the valve housing connected to the wall, compared with the angle adjustment manner, it is easy to keep an upright posture.

[0005] Further, the wall-attached water discharging device further includes a base. The base is provided with a first through-hole for the base to sleeve on the valve housing, the two connecting pieces and the two water inlet connectors; and a decoration cover, provided with a second through-hole from which the end portion of the body extends through, where the valve housing is fixedly connected to the wall; the base is detachably and fixedly connected to the valve housing; the decoration cover detachably covers the base. In this embodiment of this application, since the base is connected to the decoration cover, the valve housing, the two connecting pieces and the two water inlet connectors all can be covered by the decoration cover. Therefore, the wall-attached water discharging device in this application is simple and beautiful.

[0006] Further, the decoration cover is clamped with the base. In this embodiment of this application, the decoration cover is clamped with the base, thereby facilitating a connection.

[0007] Further, each extension tube is provided with connecting portions that respectively extend upwards and downwards for a detachable and fixed connection between the connecting portions and the base.

[0008] Further, sliding slots are respectively formed on two sides of the first through-hole; for each connecting piece, a sliding plate slidably connected to the sliding slot is disposed on an outer wall of the connecting tube of each connecting piece, so that the side tube is smoothly and slidably connected to the extension tube. In this embodiment of this application, since the sliding slots are respectively formed on the two sides of the first through-hole for the slidable connection of the sliding plate of the

connecting piece, it is easy to ensure a sliding connection between the side tube and the extension tube, thereby avoiding unsmooth sliding between the side tube and the extension tube caused by uneven force while directly pushing the connecting tube.

[0009] Further, the side tubes of the two connecting pieces are respectively inserted into the two extension tubes; a tube wall of each side tube is provided with a sealing ring groove for accommodating a sealing ring. In this embodiment of this application, because the side tube is inserted into the extension tube, it is easy to arrange the sealing ring.

[0010] Further, at least two connecting holes distributed in a circumferential direction are provided on a side wall of a middle portion of each water inlet connector, and the connecting hole is used to communicate with the corresponding side tube; a sealing ring groove for accommodating a sealing ring is provided on an outer wall on each of two sides of the connecting hole. In this embodiment of this application, because of the at least two connecting holes distributed in the circumferential direction, the connection between the connecting hole and the side tube may be always ensured. By disposing sealing rings on the outer walls on both sides of the connecting hole, the sealing connection between the water inlet connectors and the connecting pieces can be ensured.

[0011] Further, an end surface of a closed end of each water inlet connector is provided with an insertion hole for inserting a screwdriver. In this embodiment of this application, since the closed end of the water inlet connector is provided with the insertion hole, a user can easily screw the water inlet connector for connecting the water inlet connector to the water inlet tube.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] In order to more clearly describe the technical solutions of the embodiments, the following briefly introduces the accompanying drawings that need to be used:

Fig. 1 is a three-dimensional diagram of a wall-attached water discharging device according to an embodiment;

Fig. 2 is a explosive view of a wall-attached water discharging device according to an embodiment;

Fig. 3 is a cutaway diagram of a wall-attached water discharging device according to an embodiment.

[0013] Descriptions of reference numerals:
a wall-attached water discharging device 10, a valve housing 1, a valve cover 11, a body 12, a water outlet tube 13, an extension tube 14, and a connecting portion 22; a valve core 2, and a valve stem 21; a handle 3; a connecting piece 4, a side tube 41, a connecting tube 42, and a sliding plate 43; a water inlet connector 5, a connecting hole 51, and an insertion hole 52; a base 6, a first through-hole 61, and a sliding slot 62; a decoration cover 7.

DESCRIPTION OF THE EMBODIMENTS

[0014] The technical solutions in the embodiments are clearly and completely described below with reference to the accompanying drawings.

[0015] With reference to Fig. 1 to Fig. 3,a wall-attached water discharging device 10 according to the embodiments is shown. The wall-attached water discharging device 10 in this embodiment is configured to connect two water inlet tubes pre-buried in a wall and mutually spaced apart.

[0016] Generally, one of the water inlet tubes is used to provide cold water, and the other water inlet tube is used to provide hot water. The wall-attached water discharging device 10 is configured to control the on-off state of hot and cold water and obtain mixed water at a suitable temperature.

[0017] In this embodiment, the wall-attached water discharging device 10 includes a valve housing 1, a valve core 2, a handle 3, two connecting pieces 4, two water inlet connectors 5, a base 6, and a decoration cover 7.

[0018] The valve housing 1 includes a valve cover 11, a body 12, a water outlet tube 13, and two extension tubes 14. The body 12, the water outlet tube 13 and the two extension tubes 14 communicate with each other. The body 12 is of a cylindrical shape as a whole, a bottom portion of the cylinder faces the wall, and an opening end of the body 12 faces away from the wall. The valve cover 11 covers the opening end of the body 12 to form a first cavity. The water outlet tube 13 can extend downwards from a cylinder wall of the bottom portion of the body 12 and/or extends upwards from a cylinder wall of a top portion of the body 12. In this embodiment, there is only one water outlet tube 13, which extends from the cylinder wall of the bottom portion of the body 12. The water outlet tube 13 can be used to connect to a faucet, a handheld shower, and/or a top shower. The two extension tubes 14 respectively extend from tube walls on both sides of the body 12 to both sides. An outer wall of the body 12 is further provided with a connecting sheet extending obliquely. The connecting sheet is provided with a hole for an expansion screw to pass through, so that the valve housing 1 can be fixed to the wall. Each extension tube 14 is provided with connecting portions 15 respectively extending upwards and downwards for connecting the base 6 and the valve housing 1.

[0019] The valve core 2 is placed in the first cavity, the valve stem 21 of the valve core 2 extends out of the valve cover 11, two water inlet ends of the valve core 2 are respectively connected to the two extension tubes 14, and the water outlet end of the valve core 2 communicates with the water outlet tube 13. The valve core 2 is configured to control communication between the two water inlet ends and the water outlet end. The two water inlet ends and the water outlet end may all be closed, or only one water inlet end may be connected to the water outlet end, or a communication area between the water outlet end and the two water inlet ends may be adjusted,

so that the user obtains mixed water at a suitable temperature. Certainly, the valve core 2 in this embodiment is the same as the valve core in the prior art. Therefore, a structure of the valve core 2 in this embodiment is not described again.

[0020] The handle 3 is connected to the valve stem 21 of the valve core 2, so that the user controls the valve stem 21 to control the valve core 2

[0021] Each of the two connecting pieces 4 is provided with a side tube 41 and a connecting tube 42 that communicate with each other. One end of each of two side tubes 41 is provided with a sealing ring groove for accommodating a sealing ring. The side tubes are inserted into the two extension tubes 14 and are slidably connected to the extension tubes 14. The other end of each of the two side tubes 41 is vertically connected to a middle portion of a corresponding connecting tube 42. Since the two extension tubes 14 and the two side tubes 41 could be easily adjusted to a horizontal position when the two extension tubes 14 and the two side tubes are connected to the wall, by sliding the two side tubes 41, the two connecting tubes 42 may be easily aligned with the two water inlet tubes. In this embodiment, an outer wall of each of the two connecting tubes 42 is further provided with a sliding plate 43.

[0022] At least two connecting holes 51 distributed in a circumferential direction are provided on a side wall of a middle portion of each of the two water inlet connectors 5. The connecting hole 51 is configured to be in communication with the corresponding side tube 41 when the water inlet connector 5 is inserted into the connecting tube 42. A sealing ring groove for accommodating a sealing ring is provided on an outer wall on each of two sides of the connecting hole 51 of the water inlet connector 5, so as to ensure sealing communication between the connecting hole 51 and the side tube 41. One end of each of the two water inlet connectors 5 is closed, and an end face of the closed end of the water inlet connector 5 is provided with an insertion hole 52 for inserting a screwdriver, so that an user can easily connect the other ends of the two water inlet connectors 5 to the two water inlet tubes 42, to implement a screw connection. In this embodiment, since the side tube 41 is inserted into the extension tube 14, it is easy to arrange the sealing ring. Because of the at least two connecting holes 51 distributed in the circumferential direction, the connection between the connecting hole 51 and the side tube 41 may be always guaranteed. By disposing sealing rings on outer walls on both sides of the connecting hole 51, the sealing connection between the water inlet connectors 5 and the connecting pieces 4 can be ensured. Since the closed end of the water inlet connector 5 is provided with the insertion hole 52, the user can easily screw the water inlet connector 5 for connecting the water inlet connector 5 to the water inlet tube.

[0023] The base 6 is provided with a first through-hole 61 for the base 6 to sleeve on the valve housing 1, the two connecting pieces 4 and the two water inlet connectors 5. Two sliding slots 62 are respectively formed on two sides of the first through-hole 61. The sliding slot 62 is slidably connected to the sliding plate 43, so as to ensure a sliding connection between the side tube 41 and the extension tube 14, thereby avoiding unsmooth sliding between the side tube 41 and the extension tube 14 caused by uneven force while directly pushing the connecting tube 42. The base 6 is detachably and fixedly connected to the connecting portion 15 of the valve housing 1 by using a screw.

[0024] The decoration cover 7 is clamped with the base 6, so that the decoration cover 7 can cover the base 6. The decoration cover 7 is provided with a second through-hole from which the end portion, connected to the valve cover 11, of the body 12 extends through. Since the base 6 is connected to the decoration cover 7, the valve housing 1, the two connecting pieces 4, and the two water inlet connectors 5 all can be covered by the decoration cover 7. Therefore, the wall-attached water discharging device 10 in this application is simple and beautiful. The decoration cover 7 is clamped with the base 6, thereby facilitating an user's connection.

[0025] While installing the wall-attached water discharging device 10 in this application, the body 12 of the valve housing 1 is first fixedly connected to a middle position between the two water inlet tubes on the wall by using an expansion screw, the base 6 is then installed onto the valve housing 1, then the sliding plate 43 of the connecting piece 4 is inserted into the sliding slot 62, and the side tube 41 is inserted into the extension tube 14, then sliding the sliding plate 43 to make the two connecting tubes 42 be aligned with the two water inlet tubes. The two water inlet connectors 5 are inserted into the two connecting tubes 42, and screwing the water inlet connector 5 by a screwdriver, so that the water inlet connector 5 is firmly connected to the water inlet tube. Then the decoration cover 7 covers the base 6, so that an outer end of the body 12 extends out of the second through-hole. Then the valve core 2 is placed into the body 12 and the valve cover 11 covers the body, so that the valve stem 21 extends out of the valve cover 11. Finally the handle 3 is connected to the valve stem 21, the installation of the wall-attached water discharging device 10 is completed.

[0026] In this embodiment of this application, since the two connecting pieces 4 are laterally and slidably connected to the two extension tubes 14 of the valve housing 1, the two connecting tubes 42 may be conveniently adjusted to be aligned with the two water inlet tubes, so that the water inlet connector 5 inserted into the connecting piece is connected to the water inlet tube.

[0027] Therefore, installation and adjustment are very simple. In this embodiment, since a maximum thickness of the wall-attached water discharging device 10 is determined by a length of the connecting tube 42 which has no curved angle, the wall-attached water discharging device 10 in this application is thinner than that using an angle adjustment manner. In this embodiment, since a

position of the wall-attached water discharging device 10 is determined by a position of the valve housing 1 connected to the wall, compared with the angle adjustment manner, it is easy to keep an upright position.

[0028] In the claims and the specification, unless otherwise defined, the terms "first", "second", and "third" are used to distinguish different objects, rather than to describe a specific order.

[0029] In the claims and the specification, unless otherwise defined, the orientations or positional relationships indicated by the terms "center", "transverse", "longitudinal", "horizontal", "vertical", "top", "bottom", "inside", "outside", "up", "down", "front", "back", "left", "right", "clockwise", "counterclockwise" are the orientations and position relationships shown based on the drawings, and the orientations and position relationships are for ease of description only and do not imply that the apparatus or element referred to must have a specific orientation or be constructed and operated in a specific orientation.

[0030] In the claims and the specification, unless otherwise defined, the term "fixed connection" or "fixedly connected" should be understood in a broad sense, that is, any connection method without displacement relationship and relative rotation relationship between the two, that is, including non-removable fixed connection, removably fixed connection, connected as a whole, and fixed connection through other devices or components.

[0031] In the claims and the specification, unless otherwise defined, the terms "including", "having", and variations thereof mean "including but not limited to".

[0032] The descriptions in the foregoing specification and embodiments are used to explain the protection scope of this application, but do not constitute a limitation on the protection scope of this application.

Claims

1. A wall-attached water discharging device (10), configured to connect two water inlet tubes pre-buried in a wall and mutually spaced apart, and comprising a valve core (2) and a handle (3), the valve core (2) having a valve stem (21) and being provided with a water outlet end and two water inlet ends, and the handle (3) being fixedly connected to the valve stem (21), **characterized by** further comprising:

   a valve housing (1), wherein the valve housing is provided with a valve cover (11), a body (12), a water outlet tube (13) and two extension tubes (14), the body (12), the water outlet tube (13) and the two extension tubes (14) are mutually communicate with each other; the valve cover (11) covers an end portion of the body (12) to form a first cavity for accommodating the valve core (2), and the valve stem (21) extends out of the valve cover (11); the water outlet tube (13) extends upwards and/or downwards from the body (12) and communicates with the water outlet end of the valve core (2); the two extension tubes (14) respectively extend from the body (12) to two sides and respectively communicate with the two water inlet ends of the valve core (2); two connecting pieces (4), wherein each of the two connecting pieces is provided with a side tube (41) and a connecting tube (42) that communicate with each other; one end of each of two side tubes (41) is slidably connected to the two extension tubes (14), and the other end of each of the two side tubes (41) is vertically connected to a middle portion of a corresponding connecting tube (42); and
   two water inlet connectors (5), respectively inserted into two connecting tubes (42) and respectively communicating with the two corresponding side tubes (41), wherein one end of each of the two water inlet connectors (5) is closed, and the other ends of the two water inlet connectors (5) are configured to respectively connect to the two water inlet tubes.

2. The wall-attached water discharging device (10) according to claim 1, **characterized by** further comprising:

   a base (6), provided with a first through-hole (61) for the base (6) to sleeve on the valve housing (1), the two connecting pieces (4), and the two water inlet connectors (5); and
   a decoration cover (7), provided with a second through-hole from which the end portion of the body (12) extends through; wherein
   the valve housing (1) is fixedly connected to the wall, the base (6) is detachably and fixedly connected to the valve housing (1), the decoration cover (7) detachably covers the base (6).

3. The wall-attached water discharging device (10) according to claim 2, **characterized in that** the decoration cover (7) is clamped with the base (6).

4. The wall-attached water discharging device (10) according to claim 2, **characterized in that** each extension tube (14) is provided with connecting portions (15) that respectively extend upwards and downwards for a detachable and fixed connection between the connecting portions and the base (6).

5. The wall-attached water discharging device (10) according to claim 2, **characterized in that** sliding slots (62) are respectively formed on two sides of the first through-hole (61); for each of the two connecting pieces (4), a sliding plate (43) slidably connected to the sliding slot (62) is disposed on an outer wall of the connecting tube (42), so that the side tube (41)

is smoothly and slidably connected to the extension tube (14).

6. The wall-attached water discharging device (10) according to claim 1, **characterized in that** the side tubes (41) of the two connecting pieces (4) are respectively inserted into the two extension tubes (14); a tube wall of each of the side tubes (41) is provided with a sealing ring groove for accommodating a sealing ring.

7. The wall-attached water discharging device (10) according to claim 1, **characterized in that** at least two connecting holes (51) distributed in a circumferential direction are provided on a side wall of a middle portion of each of the two water inlet connectors (5), and the connecting hole (51) is used to communicate with the corresponding side tube (41); a sealing ring groove for accommodating a sealing ring is provided on an outer wall on each of two sides of the connecting hole (51).

8. The wall-attached water discharging device (10) according to claim 1, **characterized in that** an end surface of a closed end of each of the two water inlet connectors (5) is provided with an insertion hole (52) for inserting a screwdriver.

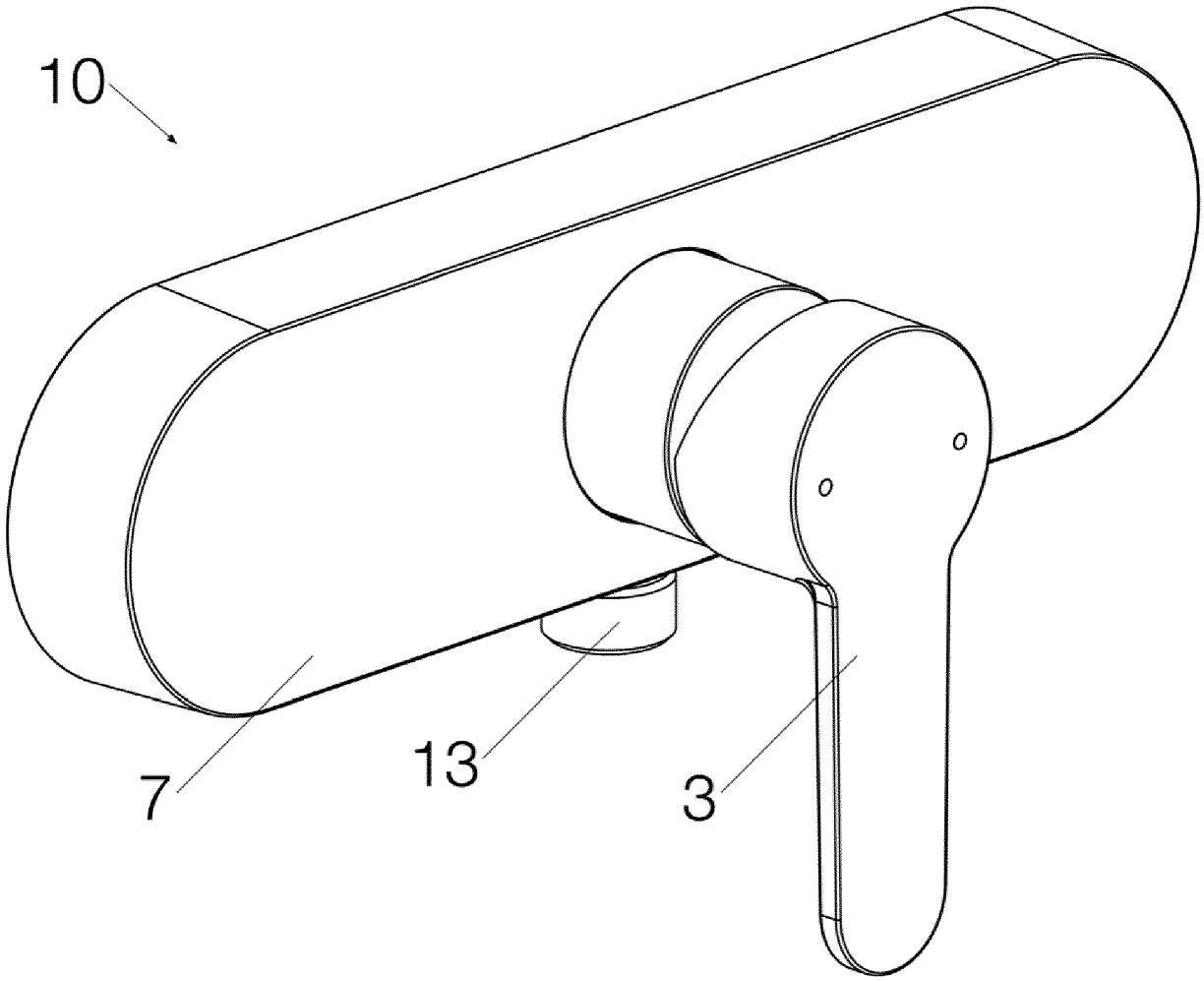

Fig. 1

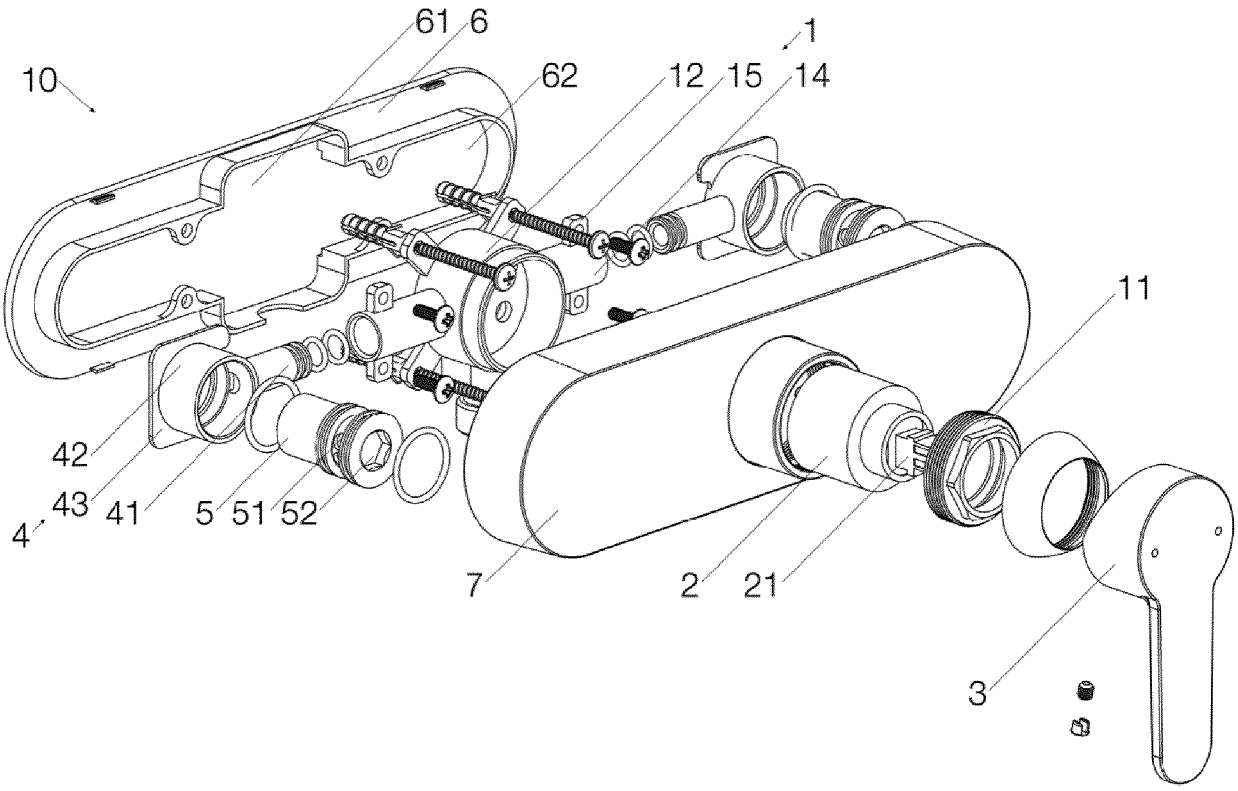
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Fig. 2

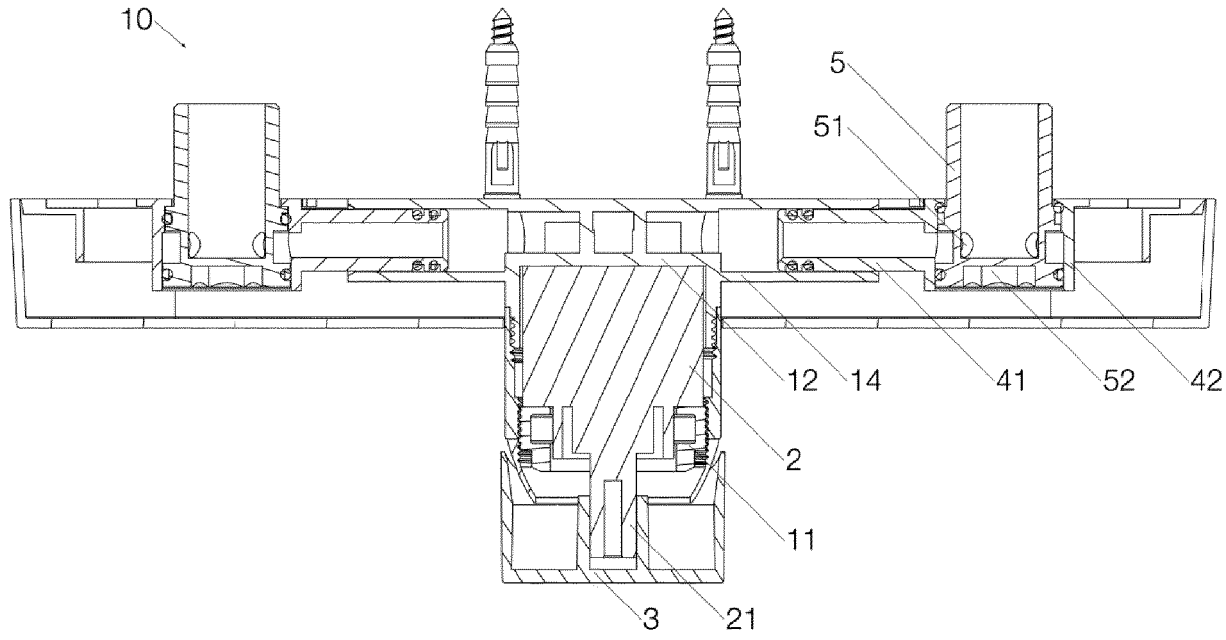
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Fig. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 20 21 3898

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
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