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(54) SHOWER WITH EASY-TO-ASSEMBLE-AND-DISASSEMBLE COVER

(57) The present disclosure discloses a shower with an easy-to-assemble-and-disassemble cover comprising a body portion and a cover assembly, the cover assembly is detachably connected to the body portion, and the cover assembly comprises a water outlet assembly and a connecting member. The water outlet assembly is connected to the connecting member to at least define a connection configured to move synchronously in an assembling direction, the connecting member is detachably connected to the body portion, the cover assembly is connected to the body portion by connecting the connecting member to the body portion, and the water outlet assembly moves synchronously along the assembling direction due to an assembly and a disassembly between the connecting member and the body portion. The technical solution of the present disclosure has the following advantages. When the connecting member is assembled or disassembled, the cover assembly is configured to be assembled to or disassembled from the body portion. When the connecting member is disassembled, the cover assembly can be easily disassembled, and there is no need to separate the cover assembly and the body portion by hands.

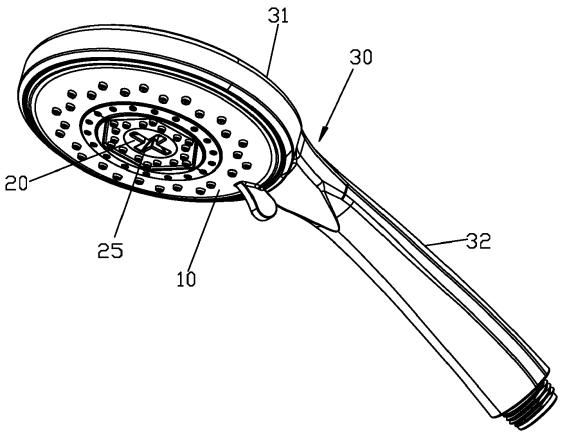

Fig. 1

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Description

FIELD OF THE DISCLOSURE

[0001] The present disclosure relates to a shower in a bathroom, and in particular relates to a shower with an easy-to-assemble-and-disassemble cover.

BACKGROUND OF THE DISCLOSURE

[0002] The existing shower comprises a body portion, and a cover assembly, the body portion comprises a body and a water dividing assembly, the water dividing assembly is rotatably connected to the body, and the cover assembly is fixedly connected to the water dividing assembly to define a rotating portion, and the water passages are switched by rotating the rotating portion relative to the body. In real life, there may be requirements to replace the cover assembly, such as to replace a color of a cover or to replace a damaged cover. In order to solve the above-mentioned deficiencies, a technical solution for disassembling the cover was provided. For example, the cover assembly can be detachably connected to the water dividing assembly by a fastener structure. Although the structure can be assembled and disassembled, the assembly and disassembly structure is very inconvenient, and it is necessary to open the cover assembly manually to take off the cover assembly.

BRIEF SUMMARY OF THE DISCLOSURE

[0003] The present disclosure provides a shower with an easy-to-assemble-and-disassemble cover to solve deficiencies of the existing techniques.

[0004] In order to solve the aforementioned technical problems, a technical solution of the present disclosure is as follows.

[0005] A shower with an easy-to-assemble-and-disassemble cover comprises a body portion and a cover assembly. The cover assembly is detachably connected to the body portion. The cover assembly comprises a water outlet assembly and a connecting member. The water outlet assembly is connected to the connecting member to at least define a connection configured to move synchronously in an assembling direction, the connecting member is detachably connected to the body portion, the cover assembly is connected to the body portion by connecting the connecting member to the body portion, and the water outlet assembly moves synchronously along the assembling direction due to an assembly and a disassembly between the connecting member and the body portion.

[0006] In a preferred embodiment, the connecting member comprises a lock member, the lock member is screwed to the body portion, and the lock member is connected to the water outlet assembly to define a structure configured to achieve relative rotation and to limit movement in an axial direction.

[0007] In a preferred embodiment, the body portion comprises a body and a water dividing assembly, and the water dividing assembly is rotatably connected to the body. The water outlet assembly is hermitically sealed to the water dividing assembly by screwing to define a rotating portion configured to rotate relative to the body as a whole. The rotating portion comprises a plurality of water outlet passages, and the rotating portion rotates to switch water to flow out from the plurality of water outlets passages.

[0008] In a preferred embodiment, an axis of a relative rotation between the lock member and the water outlet assembly and an axis of a relative rotation between the water dividing assembly and the body are coaxial.

[0009] In a preferred embodiment, the lock member is locked to the water dividing assembly.

[0010] In a preferred embodiment, the water dividing assembly comprises an internal thread, the lock member comprises a threaded portion, the threaded portion comprises with an external thread, and the lock member is locked to the water dividing assembly by a cooperation of the external thread and the internal thread.

[0011] In a preferred embodiment, the water dividing assembly or the body comprises an axial guiding track, the lock member comprises an axial guiding portion, and the axial guiding portion cooperates to the axial guiding track.

[0012] In a preferred embodiment, the water dividing assembly comprises a stepped hole having a small inside and a large outside, and the stepped hole comprises a large hole section and a small hole section. At least a portion of the large hole section comprises an internal thread. The small hole section defines an axial guiding track, the lock member comprises a threaded portion and an axial guiding portion connected to the threaded portion, and the threaded portion comprises an external thread. The lock member is locked to the water dividing assembly by a cooperation of the external thread and the internal thread, and the axial guiding portion cooperates to the axial guiding track.

[0013] In a preferred embodiment, the water outlet assembly comprises a through passage, and the lock member comprises a lock joint. The lock member passes through the through passage and is locked to the body portion, and the lock joint is connected to the water outlet assembly to define a structure configured to achieve relative rotation and not configured to achieve movement in an axial direction.

[0014] In a preferred embodiment, the water dividing assembly comprises at least one first annular ring extending outward, and an axis of the at least one first annular ring and an axis of a relative rotation between the water dividing assembly and the body are coaxial. A back surface of the water outlet cover comprises at least one second annular ring extending outward, and an end surface of each of the at least one second annular ring defines an annular sealing groove extending inward. The at least one first annular ring cooperates to the at least

one annular sealing groove.

[0015] In a preferred embodiment, the water outlet assembly is hermitically sealed to the water dividing assembly to define the plurality of water outlet passages, and the first annular ring cooperates to the annular sealing groove to define a divider structure configured to separate two adjacent water outlet passages of the plurality of water outlet passages.

[0016] In a preferred embodiment, the lock member is locked to the body.

[0017] In a preferred embodiment, an outer end of the lock member is fixedly disposed with an operation portion configured to be held by a user.

[0018] In a preferred embodiment, an outer end of the lock member comprises a plug slot extending inward.

[0019] In a preferred embodiment, the water outlet assembly comprises a through passage, and an inner wall of the through passage comprises one or more positioning ribs protruding. An outer peripheral wall of the connecting member comprises an annular groove extending inward. The one or more positioning ribs are disposed in the annular groove, and the one or more positioning ribs cooperates to the annular groove to define a connection configured to move synchronous in the assembling direction.

[0020] Compared with the existing techniques, the technical solution of the present disclosure has the following advantages.

[0021] The water outlet assembly is connected to the connecting member to at least define a connection configured to move synchronously in the assembling direction, and the cover member is connected to the body portion by connecting the connecting member to the body portion. The connecting member is assembled or disassembled to the body portion to drive the body portion to move synchronously along the assembling direction, therefore, when the connecting member is assembled or disassembled, the cover assembly is configured to be assembled to or disassembled from the body portion. When the connecting member is disassembled, the cover assembly can be easily disassembled, and there is no need to separate the cover assembly and the body portion by hands.

[0022] The lock member is screwed to the water dividing assembly, and the lock member is connected to the water outlet assembly to define a connection not configured to achieve movement in an axial direction. When the connecting member the lock member is unscrewed, the cover assembly is configured to be disassembled from the body portion. so that the cover assembly can be easily disassembled and there is no need to separate the cover assembly and the body portion by hands..

[0023] The lock member is locked to the water dividing assembly, so that the rotating portion defined by the water dividing assembly and the water outlet assembly is more integral, convenient for switching, and switching stability and reliability is ensured.

[0024] The water dividing assembly comprises an internal thread, the lock member comprises a threaded portion, the threaded portion comprises an external thread, the structure is simple, and the assembly and disassembly is convenient and rapid.

[0025] The water dividing assembly or the body comprises an axial guiding track, the lock member comprises an axial guiding portion, the axial guiding portion cooperates to the axial guiding track, the assembly is convenient, strength and alignment of the assembly is improved, and assembly and disassembly convenience is improved, and convenience of rotation switching is improved.

[0026] The water outlet assembly is hermitically sealed to the water dividing assembly to define a plurality of water outlet passages, and the first annular ring cooperates to the circular sealing groove to define a divider structure configured to separate the two adjacent water outlet passages, the structure is simple, and sealing performance is good.

[0027] The outer end of the lock member is fixedly disposed with an operating portion to be held by the user, which is convenient for the user to assemble or disassemble the cover assembly.

[0028] The outer end of the lock member comprises a plug slot extending inward, so that the user can insert other object to assemble or disassemble the cover assembly the other object is, for example, a coin.

BRIEF DESCRIPTION OF THE DRAWING

[0029] The present disclosure will be further described with the combination of the accompanying embodiments and the accompanying drawings.

Fig. 1 illustrates a perspective view of a shower of Embodiment 1.

Fig. 2 illustrates an exploded perspective view of the shower of Embodiment 1.

Fig. 3 illustrates a perspective view of a combination of a body and an upper water dividing body of Embodiment 1.

Fig. 4 illustrates a perspective view of a cover assembly of Embodiment 1.

Fig. 5 illustrates a perspective view of an assembly of the cover assembly and a lock member of Embodiment 1.

Fig. 6 illustrates a perspective view of a first portion of the lock member of Embodiment 1.

Fig. 7 illustrates a second perspective view of a second portion of the lock member of Embodiment 1.

Fig. 8 illustrates a cross-sectional view of the assembly of the cover assembly and the lock member of Embodiment 1.

Fig. 9 illustrates a first cross-sectional view of the shower of Embodiment 1 when the cover assembly and a body portion are assembled.

Fig. 10 illustrates a second cross-sectional view of the shower of Embodiment 1 when the cover assem-

bly and the body portion is being disassembled.

Fig. 11 illustrates a third cross-sectional view of the shower of Embodiment 1 when the cover assembly and the body portion are disassembled.

Fig. 12 illustrates a cross-sectional view of an assembly of a cover assembly and a lock member of Embodiment 2.

Fig. 13 illustrates a first perspective view of the lock member of Embodiment 2.

Fig. 14 illustrates a second perspective view of the lock member of Embodiment 2.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0030] Referring to Figs. 1, 2, 9, 10, and 11, a shower with an easy-to assemble-and-disassemble cover comprises a body portion A and a cover assembly 100, and the cover assembly 100 comprises a water outlet assembly 10 and a connecting member 200. In this embodiment, the connecting member 200 comprises a lock member 20. The body portion A comprises a body 30 and a water dividing assembly 40, the water dividing assembly 40 and the body 30 are assembled, and the water dividing assembly 40 is rotatable relative to the body 30 and rotates about a rotation axis X1. The lock member 20 is rotatable relative to the water outlet assembly 10 and has a relative rotation axis X2. A structure disposed between the lock member 20 and the water outlet assembly 10 is configured to prevent movement of the lock member 20 and the water outlet assembly 10 along the relative rotation axis X2 (e.g., relative movement of the lock member 20 and the water outlet assembly 10). The lock member 20 is screwed to the water dividing assembly 40, and the water outlet assembly 10 is hermetically sealed to the water dividing assembly 40 by screwing to define a rotating portion 300 configured to rotate relative to the body 30 as a whole. The water outlet assembly 10 is hermetically sealed to the water dividing assembly 40 to define a plurality of water outlet passages 11. The rotating portion 300 rotates to switch water to flow out from the plurality of water outlet passages 11. By way of example, the water is switched to flow out from different water outlet passages and/or the water is switched to flow out from some of the plurality of water outlet passages simultaneously, etc. After being screwed, the rotation axis X1 and the relative rotation axis X2 are coaxial. In this embodiment, the relative rotation axis X2 is a center line of the water outlet assembly 10.

[0031] Referring to Figs. 2, 3, 9, 10, and 11, the body 30 comprises a shower head 31 and a hand-held portion 32, and the shower head 31 is fixedly connected to hand-held portion 32. A water inlet passage 321 is disposed in the hand-held portion 32, and the hand-held portion 32 is connected to the water inlet passage 321 to introduce a water source into the shower head 31. The shower head 31 comprises a back wall, an outer peripheral wall 311 extending forward from an outer periphery of the back wall, and an inner peripheral wall 312 fixedly connected to a front surface of the back wall and disposed in the outer peripheral wall 311. The body 30 further comprises a mounting base 33, the mounting base 33 is fixedly connected to the back wall of the shower head 31 and is disposed in the outer peripheral wall 311. The mounting base 33 comprises a first ring wall 331, and the first ring wall 331 is disposed in the inner peripheral wall 312.

[0032] Referring to Figs. 2-11, the water dividing assembly 40 comprises an upper water dividing body 41 and a lower water dividing body 42. The upper water dividing body 41 is hermetically sealed to the lower water dividing body 42, the upper water dividing body 41 is rotatably connected to the mounting base 33, and a water dividing chamber 34 disposed between the upper water dividing body 41 and the mounting base 33 is connected to the water inlet passage 321. A connecting structure of the upper water dividing body 41 and the mounting base 33 is as follows, for example, the upper water dividing body 41 comprises a connecting peripheral wall 411 extending outward, and an upper peripheral edge of the connecting peripheral wall 411 extends outward to define a lock element 412, and the mounting base 33 comprises a fastener 332. The lock element 412 is connected to the fastener 332, and so the upper water dividing body 41 is inseparably connected to the mounting base 33 to enable the connecting peripheral wall 411 to be hermetically sealed to the mounting base 33 to define the water dividing chamber 34. A plurality of water dividing passages 43 are disposed between the upper water dividing body 41 and the lower water dividing body 42, and the plurality of water dividing passages 43 are switched due to a rotation between the water dividing assembly 40 and the body 30.

[0033] Referring to Figs. 2-11, a center of the upper water dividing body 41 comprises a stepped ring wall 413, and a back portion of the stepped ring wall 413 is disposed in the first ring wall 331, and the lower water dividing body 42 surrounds an outer side of the stepped ring wall 413. The stepped ring wall 413 comprises a stepped hole having a small inside and a large outside (e.g., a size of the small inside is smaller than a size of the large outside). The stepped hole comprises a large hole section 414 and a small hole section 415 (e.g., a size of the large hole section 414 is larger than a size of the small hole section 415), at least a portion of the large hole section 414 comprises an internal thread, and the small hole section 415 defines an axial guiding track 416.

[0034] Referring to Figs. 2-11, the water outlet assembly 10 comprises an outer cover 12 and a water outlet cover 13. The outer cover 12 comprises a plurality of through holes 121, and the water outlet cover 13 comprises a plurality of water outlets 131. The water outlet cover 13 abuts a back surface of the outer cover 12, and the plurality of water outlets 131 are disposed in the plurality of through holes 121 and pass through the plurality of through holes 121. The water outlet assembly 10 comprises a through passage 14. The lock member 20 com-

prises a lock joint 21, a connection portion 22, a threaded portion 23, and an axial guiding portion 24 connected in series, and the threaded portion 23 comprises an external thread. An outer end of the through passage 14 defines an enlarging hole, the lock joint 21 is disposed in the enlarging hole, and the lock joint 21 comprises a structure configured to prevent the two (e.g., locker member 20 and the water outlet assembly 10) from moving along an axis. The structure is as follows, for example, the connection portion 22 comprises an annular groove 221 extending inward, the through passage 14 comprises a plurality of positioning ribs 141 protruding and annularly distributed, and the plurality of positioning ribs 141 are disposed in the annular groove 221. Or, the structure comprises a fixed member configured to prevent the two (e.g., locker member 20 and the water outlet assembly 10) from moving in an axial direction.

[0035] The axial guiding portion 24 of the lock member 20 is disposed in the axial guiding track 416 of the stepped ring wall 413, and the threaded portion 23 is screwed to the large hole section 414 of the stepped ring wall 413 of the water dividing assembly 40 to enable the water outlet assembly 10 to be hermetically sealed to the water distribution assembly 40 to define the rotating portion configured to rotate relative to the body 30 as a whole. The plurality of water outlet passages 11 are disposed between the water outlet assembly 10 and the water dividing assembly 40, and the plurality of water outlet passages 11 are connected to the plurality of water dividing passages 43 one-to-one. In some embodiments, the lower water dividing body 42 comprises at least one annular ring 421, and an axis of the at least one first annular ring 421 and the rotation axis X1 are coaxial. A back surface of the water outlet cover 13 comprises at least one second annular ring 133 extending outward, and an end surface of each of the at least one second annular ring 133 comprises an annular sealing groove 132 extending inward, and an axis of the at least one annular sealing groove 132 and the relative rotation axis X2 are coaxial. The at least one first annular ring 421 is disposed in the at least one annular sealing groove 132 to achieve sealing, and the at least one first annular ring 421 cooperates to the at least one annular sealing groove 132 to define a sealed divider structure 60 configured to separate two adjacent water outlet passages 11 of the plurality of water outlet passages 11.

[0036] Referring to Fig. 7, an outer end of the lock joint 21 of the lock member 20 comprises a cross-shaped plug slot 25 extending inward, and the cross-shaped plug slot 25 is configured to drive the lock member 20 to rotate when a coin is inserted into the cross-shaped plug slot 25.

[0037] Referring to Figs. 9-11, the water outlet assembly 10 is hermetically sealed to the water dividing assembly 40 to define the rotating portion 300. At this time, the rotating portion 300 rotates relative to the body 30 to switch the plurality of water outlet passages. When a user drives the lock member 20 to rotate in a reverse direction by the coin (e.g., the reverse direction is a counterclockwise direction), a screwing connection is gradually released, so that the water outlet assembly 10 is gradually and automatically disengaged from the water dividing assembly 40, as shown in Fig. 10. When a rotation in the reverse direction is completed, the screwing connection is completely disengaged, so that the water outlet assembly 10 is completely disengaged from the water dividing assembly 40, as shown in Fig. 11. During an installation, aligning the water dividing assembly 40 and the water outlet assembly 10, aligning the lock member 20 and the stepped ring wall 415, driving the lock member 20 to rotate in a forward direction to enable the water outlet assembly 10 to be connected to the water dividing assembly 40 (e.g., the forward direction is a clockwise direction).

[0038] In order to improve a switching feel, a position mechanism 50 is configured to be disposed between the lower water dividing body 42 and the back wall of the body 30, the positioning mechanism 50 comprises a positioning pin 51 movably disposed on the body 30 and a spring 52 abutting the positioning pin 51, the lower water dividing body 42 comprises a plurality of positioning slots 422, the positioning pin 51 abuts one of the plurality of positioning slots 422 to achieve positioning, so that the user can feel an accomplishment of a switching to maintain a switching position.

[0039] In some embodiments, the lock member 20 is fixedly connected to the water outlet assembly 10, and the lock member 20 is locked to the water dividing assembly 40.

Embodiment 2

[0040] Referring to Figs. 12-14, this embodiment differs from Embodiment 1 in that an outer end surface of the lock joint 21 of the lock member 20 comprises a groove 261 extending inward, and a groove bottom of the groove 261 is fixedly disposed with an operation portion 26 configured to be held by the user, and the operation portion 26 comprises, by way of example, a panel structure perpendicular to the outer end surface of the lock joint 21.

[0041] It will be apparent to those skilled in the art that various modifications and variation can be made in the present disclosure without departing from the spirit or scope of the disclosure. Thus, it is intended that the present disclosure cover the modifications and variations of this disclosure provided they come within the scope of the appended claims and their equivalents.

Claims

1. A shower with an easy-to-assemble-and-disassemble cover comprising
a body portion (A) and
a cover assembly (100),
wherein the cover assembly (100) is detachably con-

nected to the body portion (A), and
wherein the cover assembly (100) comprises a water outlet assembly (10) and a connecting member (200), **characterized in that**
the water outlet assembly (10) is connected to the connecting member (200) to at least define a connection configured to move synchronously in an assembling direction,
wherein the connecting member (200) is detachably connected to the body portion (A),
wherein the cover assembly (100) is connected to the body portion (A) by connecting the connecting member (200) to the body portion (A), and
wherein the water outlet assembly (10) moves synchronously along the assembling direction due to an assembly and a disassembly between the connecting member (200) and the body portion (A).

2. The shower with the easy-to-assemble-and-disassemble cover according to claim 1, **characterized in that**
the connecting member (200) comprises a lock member (20),
wherein the lock member (20) is screwed to the body portion (A), and
wherein the lock member (20) is connected to the water outlet assembly (10) to define a structure configured to achieve relative rotation and to limit movement in an axial direction.

3. The shower with the easy-to-assemble-and-disassemble cover according to claim 2, **characterized in that**
the body portion (A) comprises a body (30) and a water dividing assembly (40), wherein the water dividing assembly (40) is rotatably connected to the body (30), wherein the water outlet assembly (10) is hermitically sealed to the water dividing assembly (40) by screwing to define a rotating portion (300) configured to rotate relative to the body (30) as a whole,
wherein the rotating portion (300) comprises a plurality of water outlet passages (11), and
wherein the rotating portion (300) rotates to switch water to flow out from the plurality of water outlets passages (11).

4. The shower with the easy-to-assemble-and-disassemble cover according to claim 3, **characterized in that** an axis of a relative rotation between the lock member (20) and the water outlet assembly (10) and an axis of a relative rotation between the water dividing assembly (40) and the body (30) are coaxial.

5. The shower with the easy-to-assemble-and-disassemble cover according to claims 3 or 4, **characterized in that** the lock member (20) is locked to the water dividing assembly (40).

6. The shower with the easy-to-assemble-and-disassemble cover according to claims 3 or 4, **characterized in that**
the water dividing assembly (40) comprises an internal thread,
wherein the lock member (20) comprises a threaded portion (23),
wherein the threaded portion (23) comprises with an external thread, and wherein the lock member (20) is locked to the water dividing assembly (40) by a cooperation of the external thread and the internal thread.

7. The shower with the easy-to-assemble-and-disassemble cover according to claims 3 or 4, **characterized in that**
the water dividing assembly (40) or the body (30) comprises an axial guiding track (416),
wherein the lock member (20) comprises an axial guiding portion (24), and wherein the axial guiding portion (24) cooperates to the axial guiding track (416).

8. The shower with the easy-to-assemble-and-disassemble cover according to claims 3 or 4, **characterized in that**
the water dividing assembly (40) comprises a stepped hole having a small inside and a large outside,
wherein the stepped hole comprises a large hole section (414) and a small hole section (413),
wherein at least a portion of the large hole section (414) comprises an internal thread,
wherein the small hole section (415) defines an axial guiding track (416), wherein the lock member (20) comprises a threaded portion (23) and an axial guiding portion (24) connected to the threaded portion (23),
wherein the threaded portion (23) comprises an external thread,
wherein the lock member (20) is locked to the water dividing assembly (40) by a cooperation of the external thread and the internal thread, and
wherein the axial guiding portion (24) cooperates to the axial guiding track (416).

9. The shower with the easy-to-assemble-and-disassemble cover according to claims 3 or 4, **characterized in that**
the water outlet assembly (10) comprises a through passage (14),
wherein the lock member (20) comprises a lock joint (21),
wherein the lock member (20) passes through the through passage (14) and is locked to the body portion (A), and
wherein the lock joint (21) is connected to the water outlet assembly (10) to define a structure configured

to achieve relative rotation and not configured to achieve movement in an axial direction.

10. The shower with the easy-to-assemble-and-disassemble cover according to claims 3 or 4, **characterized in that**
the water dividing assembly (40) comprises at least one first annular ring (421) extending outward,
wherein an axis of the at least one first annular ring (421) and an axis of a relative rotation between the water dividing assembly (40) and the body (30) are coaxial,
wherein a back surface of the water outlet cover (13) comprises at least one second annular ring (133) extending outward,
wherein an end surface of each of the at least one second annular ring (133) defines an annular sealing groove (132) extending inward,
wherein the at least one first annular ring (421) cooperates to the at least one annular sealing groove (132).

11. The shower with the easy-to-assemble-and-disassemble cover according to claim 10, **characterized in that**
the water outlet assembly (10) is hermitically sealed to the water dividing assembly (40) to define the plurality of water outlet passages (11),
wherein the first annular ring (421) cooperates to the annular sealing groove (132) to define a divider structure (60) configured to separate two adjacent water outlet passages (11) of the plurality of water outlet passages (11).

12. The shower with the easy-to-assemble-and-disassemble cover according to claims 3 or 4, **characterized in that** the lock member (20) is locked to the body (30).

13. The shower with the easy-to-assemble-and-disassemble cover according to claims 3 or 4, **characterized in that** an outer end of the lock member (20) is fixedly disposed with an operation portion (26) configured to be held by a user.

14. The shower with the easy-to-assemble-and-disassemble cover according to claims 3 or 4, **characterized in that** an outer end of the lock member (20) comprises a plug slot (25) extending inward.

15. The shower with the easy-to-assemble-and-disassemble cover according to claims 1 or 2 or 3 or 4, **characterized in that**
the water outlet assembly (10) comprises a through passage (14),
wherein an inner wall of the through passage (14) comprises one or more positioning ribs (141) protruding,
wherein an outer peripheral wall of the connecting member (200) comprises an annular groove (221) extending inward,
wherein the one or more positioning ribs (141) are disposed in the annular groove (221), and
wherein the one or more positioning ribs (141) cooperates to the annular groove (221) to define a connection configured to move synchronous in the assembling direction.

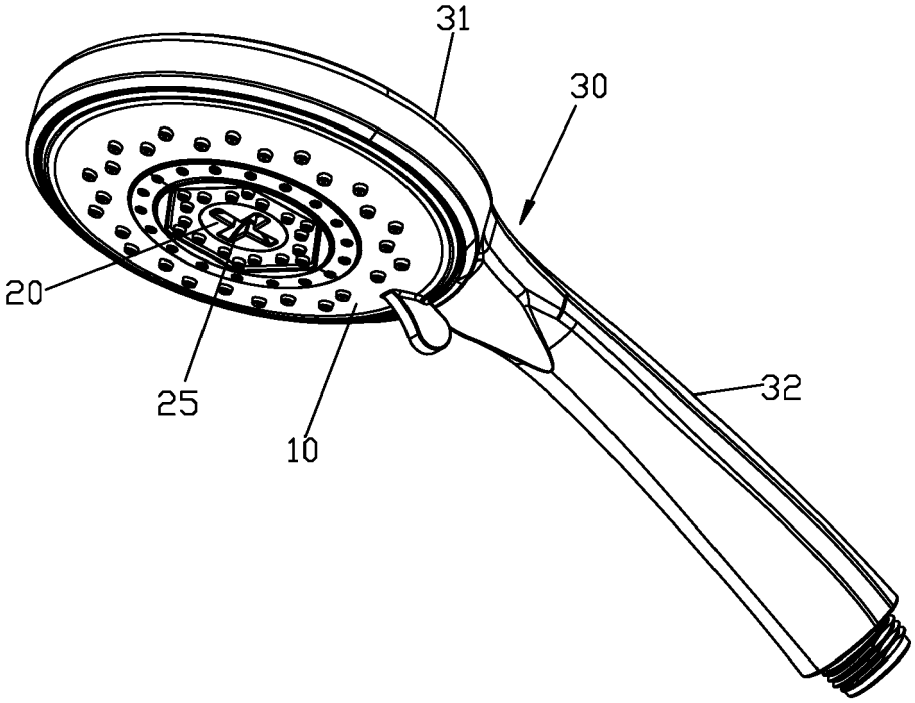


Fig. 1

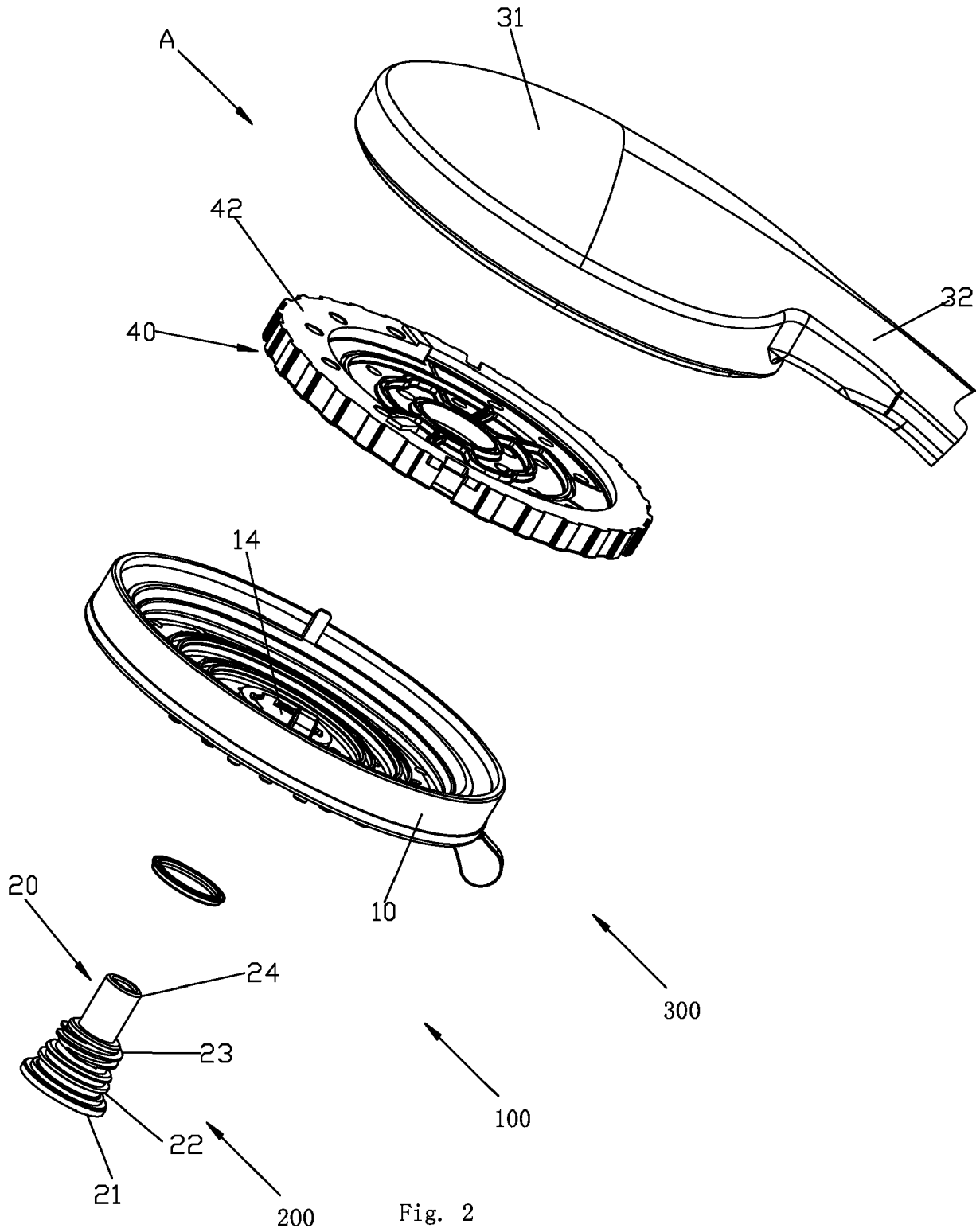


Fig. 2

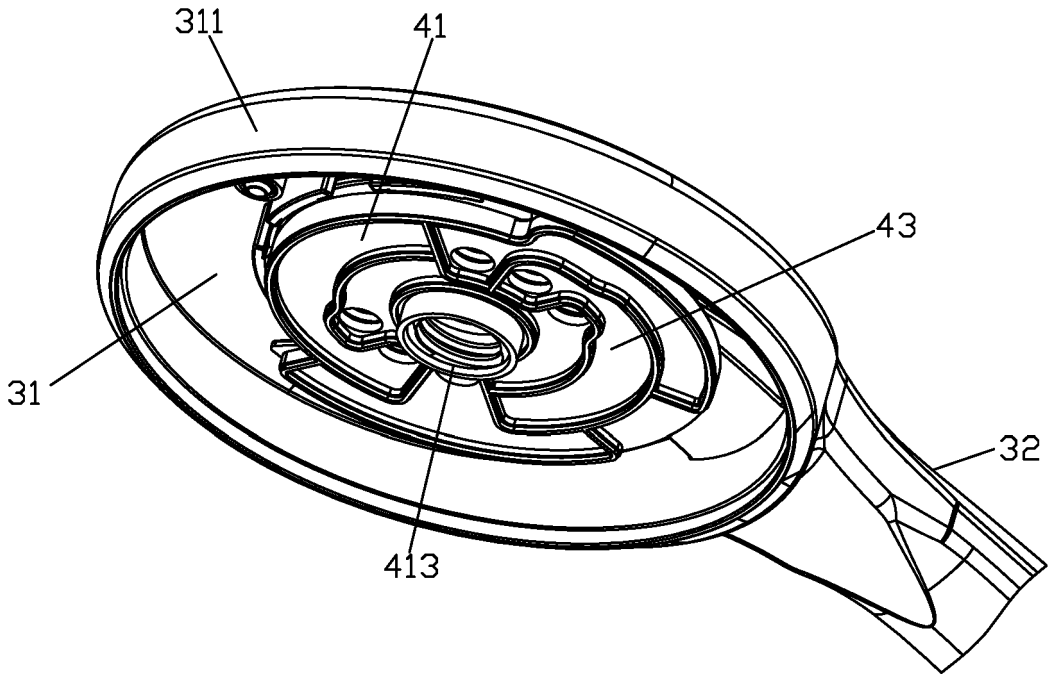


Fig. 3

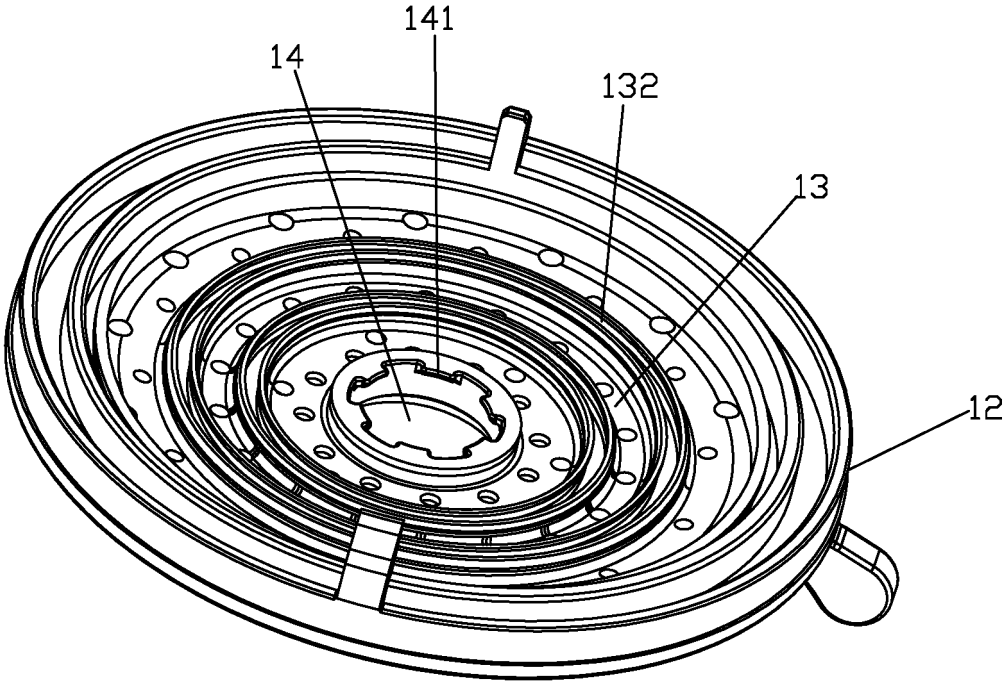


Fig. 4

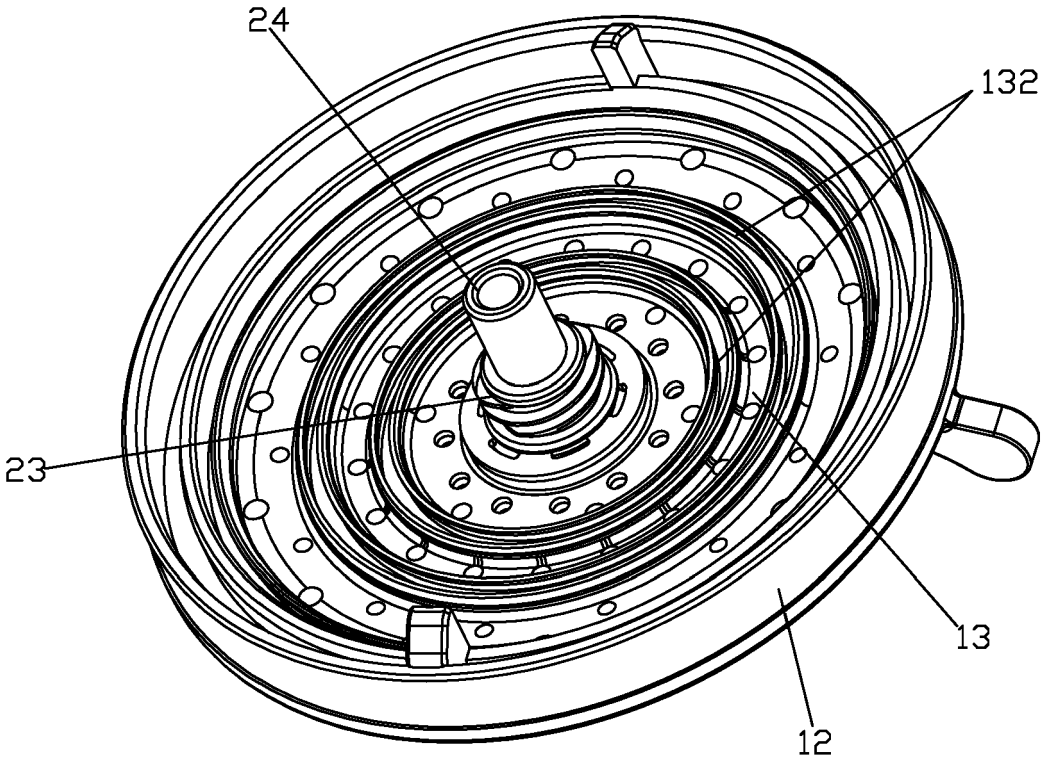


Fig. 5

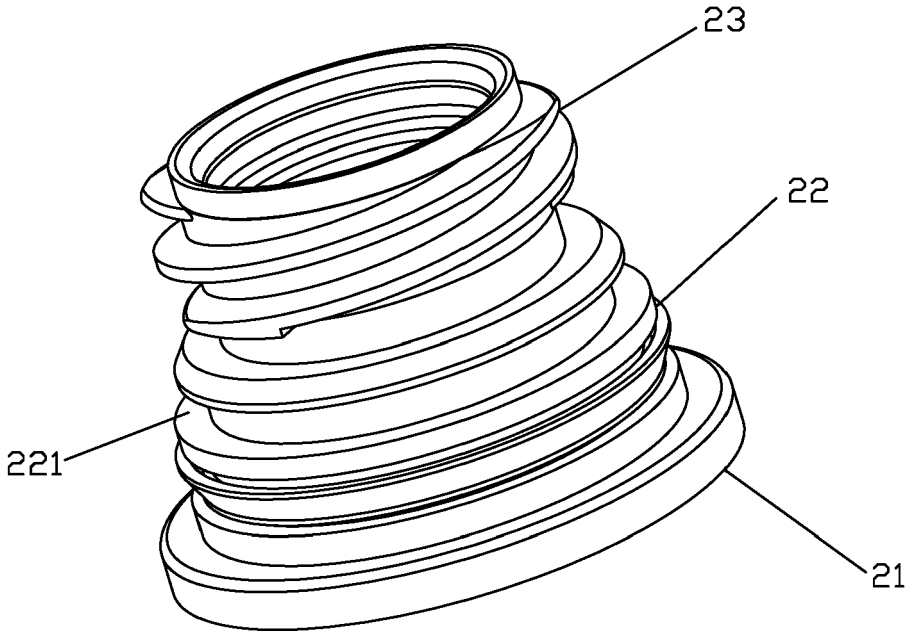


Fig. 6

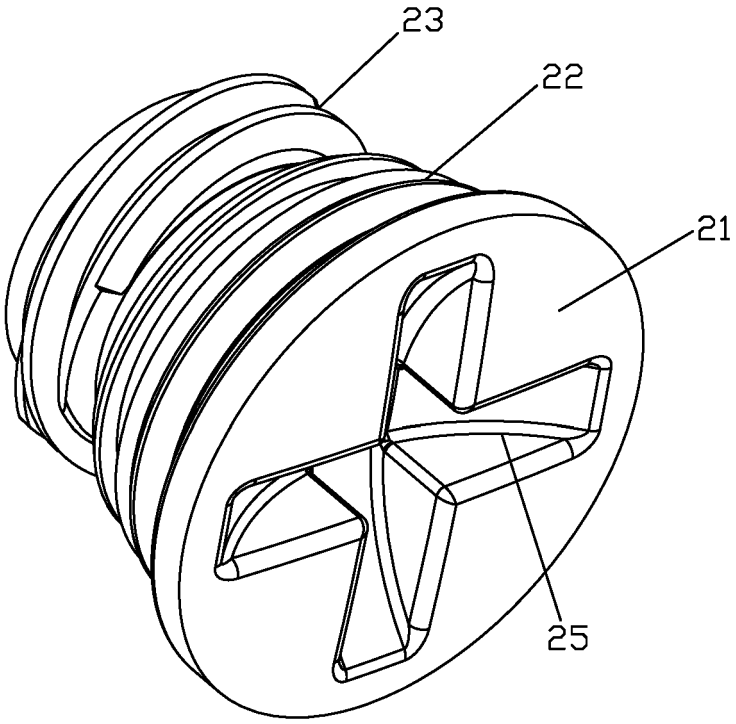
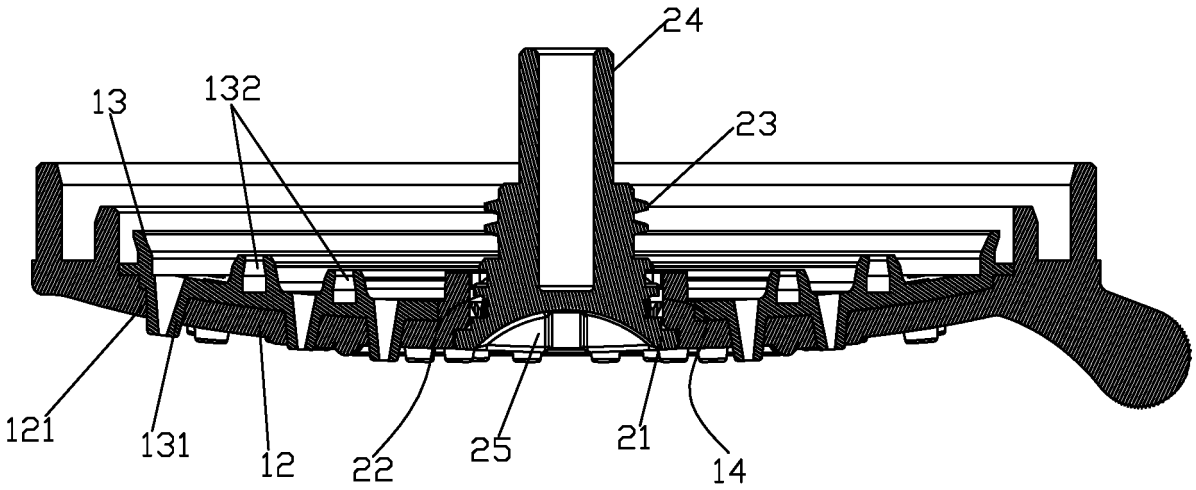


Fig. 7



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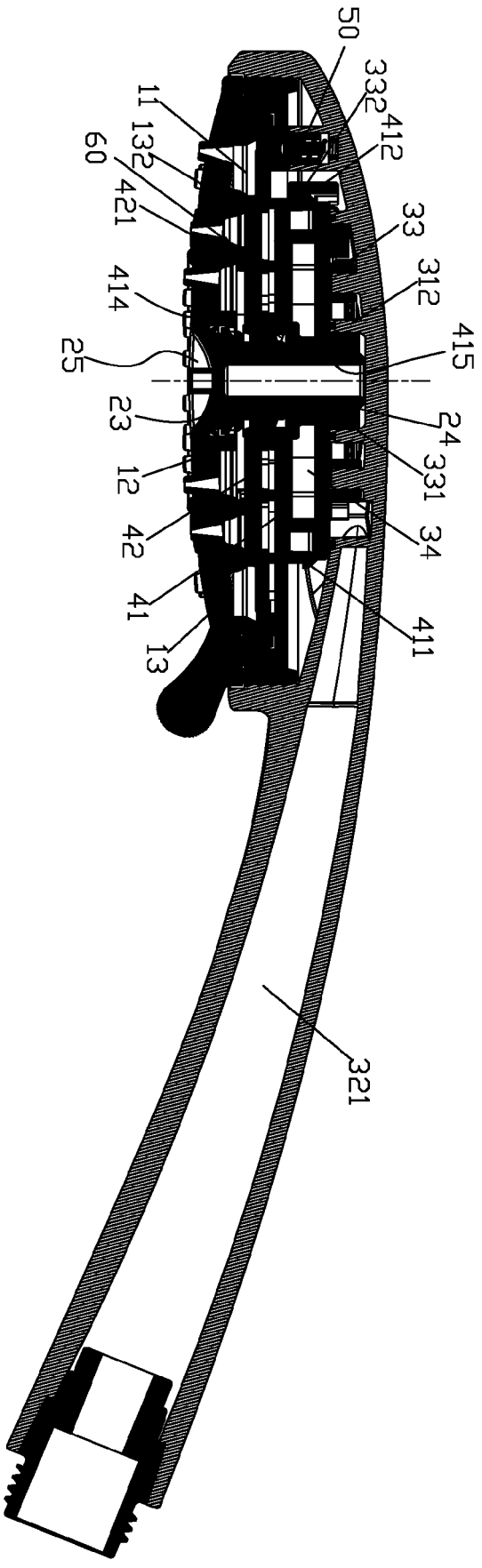
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Fig. 9

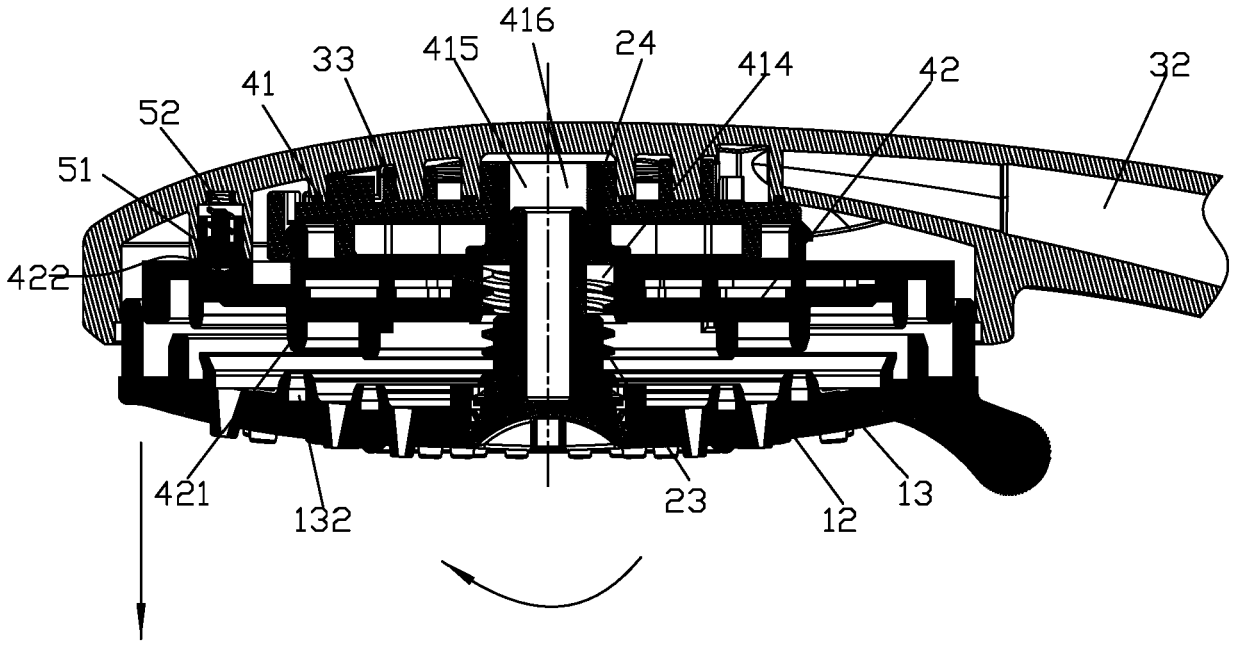
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Fig. 10

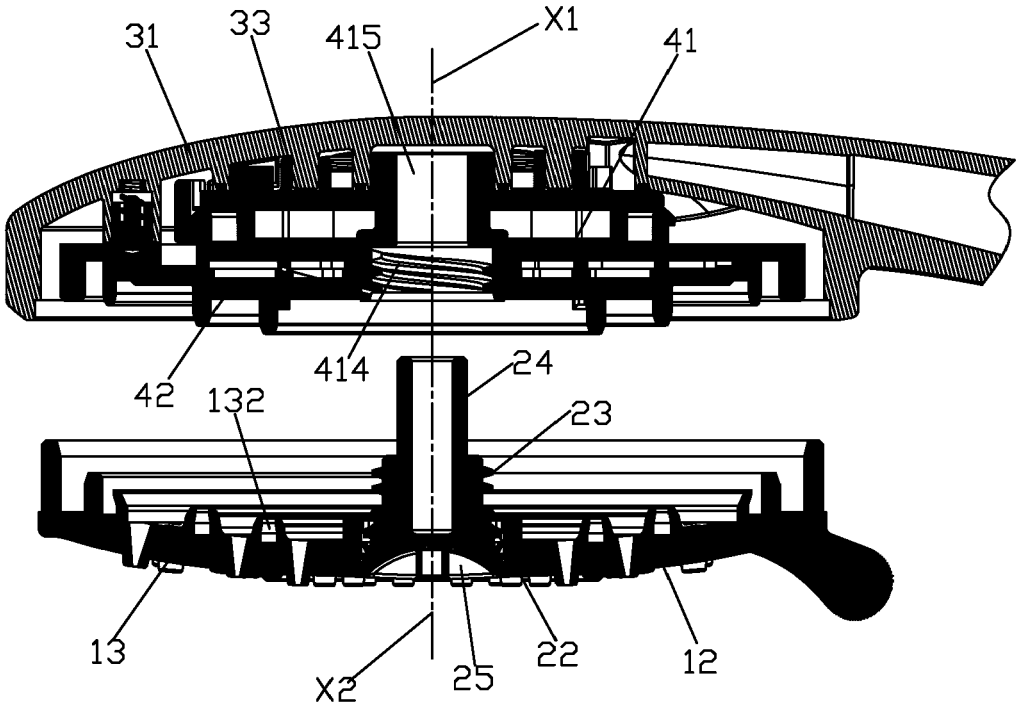
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Fig. 11

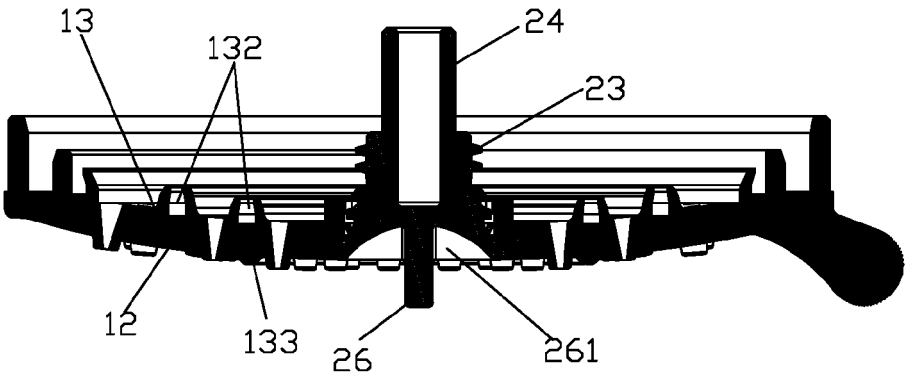

Fig. 12

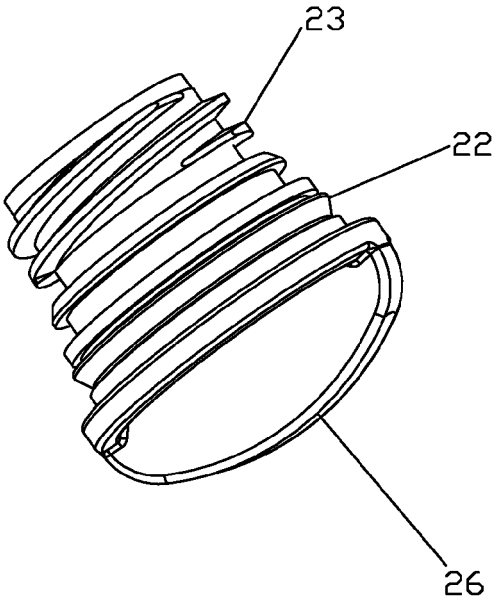

Fig. 13

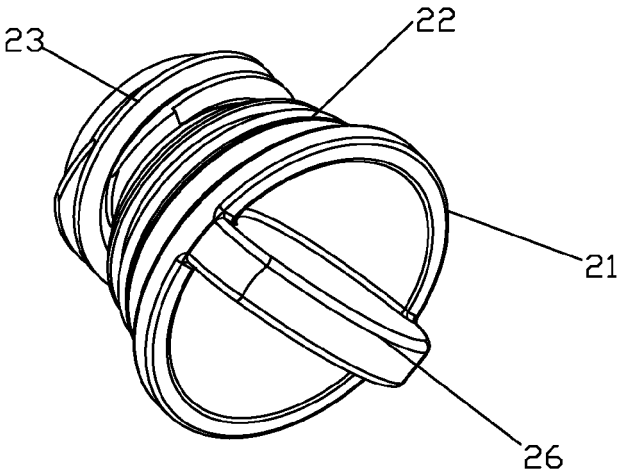

Fig. 14

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EUROPEAN SEARCH REPORT

Application Number
EP 20 17 6361

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B05B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	29 September 2020	Frego, Maria Chiara

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