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(54) **WATER DELIVERY SYSTEM**

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Description

[0001] The present invention relates to a water delivery system which comprises an installation device.

[0002] In particular, the present invention falls within the field related to hydraulic plant engineering. Such a plant engineering typically is embedded in the walls of a room.

[0003] Such a plant engineering is well-known in the background art, comprising ducts and specific connections and/or installation devices which are embedded in the walls by means of masonry operations. Solutions of water delivery systems are also known comprising, in addition to the installation device, also other devices, which project from the walls to allow the water to be enjoyed by regulating and commanding the delivery thereof. Specifically, said "devices" comprise delivery devices through which the water is dispensed, e.g. taps. Additionally, said "devices" comprise mixing and regulation devices typically having a lever, the handling of which allows the user to command the delivery of the water by regulating the flow rate and/or temperature.

[0004] Solutions of installation devices to be installed in a wall connected to the plant pipes in which said installation devices are connectable to the mixing and regulation devices and the delivery devices, are well-known in the prior art.

[0005] A series of problems typically affecting such water delivery systems is also known in the background art. Indeed, firstly the water delivery systems have a geometry of the respective components which is particularly complex. Secondly, the water delivery systems are complex to install, typically forcing the installer to position them only in a single position. These problems are such as to limit the practicality of use, availability, and affordability of such components. Examples of said water delivery systems are disclosed in document DE202013104585U1 and in document DE102008032185B3.

[0006] It is the object of the present invention to provide a water delivery system which resolves the aforesaid problems of the known solutions. That is, it is the object of the present invention to provide a water delivery system, which is simple to manufacture, versatile and simple to install.

[0007] Such an object is achieved by a water delivery system made according to claim 1. The claims dependent thereon describe further preferred embodiments of the invention.

[0008] The features and advantages of the water delivery system according to the present invention will become apparent from the following description, given by way of a non-limiting example, according to the accompanying drawings, in which:

- Figures 1a, 1b, 1c and 1d show some perspective views of a water delivery system according to the present invention, in which the water delivery system

is in different possible assembly configurations, respectively;

- Figure 2 shows a perspective view with separate parts of a water delivery system according to the present invention, according to a preferred embodiment;
- Figure 3 shows a perspective view with separate parts of an installation device comprised in the water delivery system, according to a preferred embodiment;
- Figure 4 shows a perspective view of the main member comprised in the installation device in Figure 3;
- Figure 5 shows a perspective view of the inner body comprised in the main member in Figure 4;
- Figure 6 shows a perspective view with separate parts of an installation device and of the specific plugs which may be used therewith, for example in the hydraulic plant testing operations;
- Figure 7 shows a longitudinal sectional view of the installation device in Figure 6;
- Figures 7', 7'' and 7''' show some enlarged views of areas A, B and C in Figure 7.

[0009] In the accompanying drawings, numeral 1 indicates an installation device as a whole. Moreover, a water delivery system comprising said installation device 1 according to the present invention is indicated as a whole by 900.

[0010] The water delivery system 900 comprises a mixing and regulation device 910 and a delivery device 920. It is worth noting that the features of the mixing and regulation device 910 and a delivery device 920 are not limiting for the purposes of the present invention, with the exception of the features described below.

[0011] In particular, as shown in the accompanying Figures described below, the mixing and regulation device 910 and the delivery device 920 indeed are suitable to engage, and to fluidically connect to, the installation device 1.

[0012] According to a preferred embodiment, the mixing and regulation device 910 comprises a mixing cartridge 911 extending along a cartridge axis C-C between a command end 911' and a mixing end 911'', the latter suitable to mix and regulate the flow of water.

[0013] Moreover, the mixing and regulation device 910 comprises a command linkage 912 engageable to the mixing cartridge 911, in particular to the command end 911' thereof, so that the actuation of the command linkage 912 commands a respective configuration of the mixing cartridge 911, therefore regulating the flow rate and mixing of the water.

[0014] According to a preferred embodiment, said mixing cartridge 911 is positionable inside the, hereinafter described, installation device 1 (in particular, in the hereinafter described mixing and regulation chamber 31) in a plurality of angular positions (as shown by way of example in Figures 1a, 1b, 1c and 1d).

[0015] According to the present invention, the installa-

tion device 1 is installable inside a wall, for example, it is suitable to be embedded therein, within the scope of specific masonry operations.

[0016] According to the present invention, and as extensively described hereinbelow, the installation device 1 is suitable to be positioned in the wall in a multiplicity of positions (see, for example Figures 1a, 1b, 1c and 1d).

[0017] According to the present invention and as extensively described hereinbelow, the installation device 1 is suitable to be fluidically connectable with the cold and hot water pipes comprised in the plant. In particular, preferably the installation device 1 is suitable to be fluidically connectable with the cold and hot water pipes regardless of the position thereof in the wall.

[0018] According to a preferred embodiment, the installation device 1 is a fluidic collector.

[0019] According to the present invention, with the exception of the features claimed, the shape and features of the installation device 1 are optional, with the exception of those claimed. Preferably, the chambers, openings, fluidic connecting mouths hereinafter described instead are fundamental in the installation device 1, regardless of the fact that they are housed or created in one component rather than in another one. In other words, in certain embodiments, certain features described below as belonging to a specific component are positioned on another component, but they are suitable however to form part of the installation device 1 which comprises such components and such features.

[0020] According to a preferred embodiment, the installation device 1 comprises a main member 2, which is fluidically connectable to a cold water pipe and to a hot water pipe. Specifically, the main member 2 is that component which allows the fluid collection with the hot and cold water pipes and is suitable to be engaged with the mixing and regulation device 910 and the delivery device 920 for mixing, regulating and delivering the water circulating in said pipes.

[0021] According to a preferred embodiment, the installation device 1 is specifically applied to washbowls.

[0022] The main member 2 preferably has a front side I1 and a rear side I2. Preferably, the front side I1 faces the outside of the wall, while the rear side I2 faces the inside of the wall. In other words, the front side I1 is proximal to the user while the rear side I2 is distal from the user.

[0023] According to a preferred embodiment, the main member 2 comprises an inner body 3 and an outer body 4. The inner body 3 indeed is at least partially covered by said outer body 4.

[0024] According to a preferred embodiment, the main member 2, preferably the inner body 3, comprises a mixing and regulation chamber 31 provided with a front mixer opening 310 (i.e. positioned at the front side I1), into which the mixing and regulation device 910 is at least partially insertable. In particular, the mixing end 911" of the mixing cartridge 911 is housed in said mixing and regulation chamber 31.

[0025] According to a preferred embodiment, said mixing and regulating chamber 31 extends axially with respect to a chamber axis Y-Y, and the mixing cartridge 911 is insertable into the mixing and regulation chamber 31 so that the cartridge axis C-C corresponds or is parallel to the chamber axis Y-Y.

[0026] Preferably, the mixing cartridge 911 is housable inside the mixing chamber 310, installable in a plurality of angular positions.

[0027] According to a preferred embodiment, the mixing cartridge 911 is housable inside the mixing chamber 310 in four distinct positions.

[0028] Preferably, therefore, the command linkage 912 is assemblable so that whatever the position of the installation device 1 inside the wall is, it "faces downwards" (as shown in the accompanying figures).

[0029] Moreover, according to the present invention, the main member 2, preferably the inner body 3, comprises a delivery chamber 32 provided with a front delivery opening 320 (i.e. positioned in correspondence of the front side I1), into which the delivery device 920 is at least partially insertable.

[0030] Additionally, according to a preferred embodiment, the inner body 3 comprises a conduit 35, which extends along an axis X-X and fluidically connects the mixing and regulation chamber 31 to the delivery chamber 32.

[0031] Preferably, the mixing and regulation chamber 31 and the delivery chamber 32 are part of two separate components, in particular mutually separated along axis X-X. Preferably, the two chambers are in fluid communication by means of the conduit 35. Preferably, therefore, the water mixed and regulated by the mixing and regulation device 910 in the mixing and regulation chamber 31, flowing through conduit 35, reaches the delivery chamber 32 and then the delivery device 920.

[0032] As mentioned above and exemplified by way of example in the accompanying drawings, the mixing and regulation device 910 and the delivery device 920 extend from the installation device 1, preferably from the main member 2, orthogonally therefrom in the front side I1; both the mixing and regulation device 910 and the delivery device 920 preferably extend parallel to an orthogonal axis Z-Z.

[0033] According to a preferred embodiment, the inner body 3 is made of rigid material.

[0034] Preferably, the inner body 3 is made of metal material, for example it is made of a material belonging to the family of brass alloys.

[0035] According to a preferred embodiment, the inner body 3 comprises a first portion 3' in which the mixing and regulation chamber 31 is formed and a second portion 3" in which the delivery chamber 32 is formed.

[0036] Preferably, conduit 35 is obtained in the first portion 3' and/or in the second portion 3".

[0037] According to a preferred embodiment, the inner body 3 is assemblable. Preferably, the first portion 3' and the second portion 3" are mutually engageable and flu-

idically connectable to each other along axis X-X.

[0038] Preferably, for example, the first portion 3' and the second portion 3" are mutually joinable by means of specific screw means. Preferably, the first portion 3' and the second portion 3" are joinable in such a manner as to obtain a single component.

[0039] According to a preferred embodiment, the installation device 1, preferably the main member 2, preferably the inner body 3, preferably the first portion 3', comprises at least one pair of connecting mouths 311, 312 fluidically connected to the mixing and regulation chamber 31, respectively connectable with the cold water pipe and with the hot water pipe of a domestic system.

[0040] Preferably, said pair of connecting mouths 311, 312 extends orthogonally to axis X-X and to the front mixer opening 310.

[0041] Preferably, said pair of connecting mouths 311, 312 lies on an imaginary plane O1 which extends orthogonally to axis X-X and to the front mixer opening 310.

[0042] Preferably, the two connecting mouths 311, 312 are axially spaced apart parallel to axis X-X, respectively.

[0043] According to a preferred embodiment, the installation device 1, preferably the main member 2, preferably the inner body 3, preferably the first portion 3', comprises two pairs of connecting mouths 311, 312; 311', 312' fluidically connected to the mixing and regulation chamber 31, respectively connectable with the cold water pipe and with the hot water pipe of a domestic system, in which the two pairs are positioned specular to axis X-X.

[0044] Preferably, each pair of connecting mouths lies on a respective imaginary plane O1, O2, wherein said imaginary planes O1, O2 are specular to axis X-X. Preferably, the mixing cartridge 911 is positionable so that the command linkage 912 is positioned having the linkage parallel or orthogonal to the aforesaid imaginary plane O1.

[0045] Preferably, therefore, as shown by way of example in figures 1a, 1b, 1c, 1d, the position inside the wall of the installation device 1 is indifferent having a multiplicity of connecting mouths connectable to the pipes according to needs. Specifically, indeed, the installation device 1 is vertically installable both in a configuration in which the delivery device 920 is positionable in an upper position and in a configuration in which the delivery device 920 is positionable in a lower position (as shown in Figures 1c and 1d). Or again, indeed, the installation device 1 is horizontally installable both in a configuration in which the delivery device 920 is positionable to the right with respect to the mixing and regulation device 910 and in a configuration in which the delivery device 920 is positionable to the left with respect to the mixing and regulation device 910 (as shown in Figures 1a and 1b).

[0046] As mentioned above, in the main member 2 is also comprised an outer body 4, which contains the inner body 3.

[0047] In particular, said outer body 4 extends around the inner body, thus identifying planar wing portions 40.

[0048] According to a preferred embodiment, said planar wing portions 40 lie on the same imaginary plane.

[0049] Preferably, said planar wing portions 40 lie in correspondence of the centerline of the height of the inner body 3.

[0050] According to a preferred embodiment, the outer body 4 has substantially constant thickness.

[0051] According to any one of the preceding claims, the outer body 4 comprises a main cord 400 engageable, preferably in a sealed manner, by the box-like member 5 described below.

[0052] Preferably, the main cord 400 extends both on the front side I1 and on the rear side I2.

[0053] Preferably, the main cord 400 is positioned in a region proximal to the perimeter of the outer body 4.

[0054] According to a preferred embodiment, the outer body 4 comprises respective auxiliary cords 451, 452 positioned perimetally in proximity of the front mixer opening 310 opening 310 and the front delivery opening 320.

[0055] According to a preferred embodiment, the auxiliary ropes 451, 452 are positioned on the front side I1.

[0056] Preferably, the auxiliary ropes 451, 452 are sealingly engageable.

[0057] Preferably, the sides of the outer body 4 and rope 400 are substantially linear. For example, in plan, the outer body 4 (and therefore the main member 2) is substantially rectangular in shape.

[0058] According to a preferred embodiment, the outer body 4 is made of an elastically deformable material.

[0059] Preferably, the outer body 4 is made of a polymer material, preferably it is made of rubber.

[0060] According to a preferred embodiment, the outer body 4 is over-molded on the inner body 3.

[0061] According to a preferred embodiment, the outer body 4 covers substantially the whole inner body 3, with the exception of the edges of the various openings and mouths, to allow an easy engagement thereof by the respective components (which according to needs are screwable or engageable to the inner body 3, for example by means of screws).

[0062] Moreover, according to the present invention, the installation device 1 also comprises a box-like member 5 comprising a housing chamber 50 into which the main member 2 is inserted.

[0063] Said box-like member 5 comprises a first shell 51 and a second shell 52 mutually engageable in an axial direction by engaging said outer body 4. Preferably, said shells 51, 52 are mutually engageable parallel to the orthogonal axis Z-Z.

[0064] According to a preferred embodiment, the first shell 51 and the second shell 52 in the mutual engagement are suitable to sealingly tighten the main member 2 in orthogonal direction, thus engaging the outer body 4 thereof. Preferably, the outer body 4 is tightened in proximity of the peripheral sides thereof. Preferably, the outer body 4 is tightened at rope 400.

[0065] Preferably, therefore, the sidewalls of the first

shell 51 and of the second shell 52 extend in length like the rope 400.

[0066] According to a preferred embodiment, the first shell 51 comprises a mixing and regulation device housing 511, in which the mixing and regulation device 910 is housable to engage the front mixer opening 310, and thus the mixing and regulation chamber 31, and a delivery device housing 512 in which the delivery device 920 is housable to engage the front delivery opening 320, and thus the delivery chamber 32.

[0067] Preferably, the mixing and regulation device housing 511 and the delivery device housing 512 are specifically shaped to support and keep the mixing and regulation device 910 and the delivery device 920 in a predetermined position.

[0068] According to a preferred embodiment, the edges defining the mixing and regulation device housing 511 and the delivery device housing 512 sealingly engage the respective auxiliary ropes 451, 452.

[0069] According to a preferred embodiment, the walls of the mixing and regulation device housing 511 are engageable by a cartridge striker 915 comprised in the mixing cartridge 911; thereby, the mutual engagement objectivizes certain desired preferred angular positions of cartridge 911 (such as, for example the four position in Figures 1a, 1b, 1c and 1d).

[0070] Preferably, the first shell 51 and the second shell 52 comprise mouth semi-housings through which the connecting mouths 311, 312; 311', 312' are housed and extend. It is worth noting that, preferably, rope 400 is also engageable at said mouth semi-housings.

[0071] As shown in the accompanying Figures, and in particular in Figure 6, the installation device 1 preferably also comprises specific plug elements 7, 71, 72, 73 positionable on the above-described mouths and/or openings to perform specific checking operations of the hydraulic plant. Preferably, a single plug suitable to engage and close both the front mixer opening 310 and the front delivery opening 320 is provided, preferably sealingly engaging the mixing and regulation device housing 511 and the delivery device housing 512.

[0072] Preferably, plug elements 72 are providable, to be placed on the installation device 1 in an installed configuration, on the pair of mouths which is not connected to the plant pipes.

[0073] Innovatively, the water delivery system of the present invention allows achieving the predetermined object.

[0074] Advantageously, the water delivery system of the present invention is simple and functional to manufacture and install.

[0075] Advantageously, the water delivery system of the present invention has a small number of components.

[0076] Advantageously, the installation device of the present invention is affordable to manufacture and produce.

[0077] Advantageously, the water delivery system of the present invention is versatile to use, allowing a plu-

rality of installation positions and installation configurations.

[0078] The water delivery system is advantageously suitable to allow a desired positioning of the command linkage so that it always faces downwards, regardless of the positioning of the installation device in the wall.

[0079] Advantageously, the water delivery system of the present invention has a simplified installation.

[0080] In the case of breakdowns or technical problems, the water delivery system of the present invention advantageously avoids for any water leaks to occur in the wall, rather they are conveyed into the box-like member or directed towards the outer side.

[0081] The installation device of the present invention advantageously solves the problem of noise, e.g. gurgling, which is typical of hydraulic plants. Advantageously, noises and gurgling in the installation device are soundproofed due to the presence of the outer body, as well as due to the housing of the main member in the box-like member.

[0082] Advantageously, the installation device of the present invention is highly suitable to be used with sanitary applications, and in particular with a washbowl.

[0083] It is apparent that those skilled in the art may make changes to the above-described installation device and to the water delivery system, in order to meet contingent needs, all contained within the scope of the following claims.

Claims

1. A water delivery system (900) connectable to a hydraulic network comprising:

A) a mixing and regulation device (910) which comprises:

- i) a mixing cartridge (911) extending along a cartridge axis (C-C) between a command end (911') and a mixing end (911");
- ii) a command linkage (912) engageable to said command end (911'), comprising a linkage, in such a way that the actuation of the command linkage (912) controls a respective configuration of the mixing cartridge (911);

B) a delivery device (920), for example a tap;
C) an installation device (1) installable inside a wall and fluidically connectable to a cold water pipe and to a hot water pipe, having a front side (11) and a rear side (12) wherein the installation device (1) comprises:

L) a main member (2) comprising:

- x) an inner body (3) comprising:

- a mixing and regulation chamber (31) provided with a front mixer opening (310) in which the mixing cartridge (911) is at least partially insertable;
 - a delivery chamber (32) provided with a front delivery opening (320) in which the delivery device (920) is at least partially insertable; and
 - a conduit (35) which extends along an axis (X-X) and fluidically connects the mixing and regulation chamber (31) to the delivery chamber (32);

y) an outer body (4) which contains the inner body (3);

M) a box-like member (5) comprising a housing chamber (50) in which the main member (2) is inserted, wherein the box-like member (5) comprises a first shell (51) and a second shell (52) mutually engageable in an axial direction by engaging said outer body (4), wherein the first shell (51) comprises a mixing and regulation device housing (511) wherein the mixing and regulation device (910) is housable to engage the front mixer opening (310) and thus the mixing and regulation chamber (31) and a delivery device housing (512) wherein the delivery device (920) is housable to engage the front delivery opening (320) and thus the delivery chamber (32);

wherein the mixing cartridge (911), is insertable into the mixing and regulation chamber (31) in a plurality of angular positions, and comprises a cartridge striker (915) which engages the walls of the mixing and regulation device housing (511), so that the shape couplings between the cartridge striker (915) and the mixing and regulation device housing (511) define the different angular positions of the mixing cartridge (911).

2. Water delivery system (900) according to claim 1, comprising at least one pair of connecting mouths (311, 312) fluidically connected to the mixing and regulation chamber (31) respectively connectable with the cold water pipe and with the hot water pipe of a domestic system, wherein said pair of connecting mouths (311, 312) lies on an imaginary plane (O1) which extends orthogonally to the axis (X-X) and to the front mixer opening (310), wherein the mixing cartridge (911) is positionable in such a way that the command linkage (912) is positioned having the linkage parallel or orthogonal to the aforesaid imaginary plane (O1).

3. Water delivery system (900) according to claim 2,

comprising two pairs of connecting mouths (311, 312; 311', 312') fluidically connected to the mixing and regulation chamber (31) respectively connectable with the cold water pipe and with the hot water pipe of a domestic system, wherein each pair of connecting mouths lies on a respective imaginary plane (O1, O2), wherein said imaginary planes (O1, O2) are specular to the axis (X-X).

4. Water delivery system (900) according to any one of the preceding claims, wherein the outer body (4) extends around the inner body (5) and extends therefrom defining planar wing portions (40), preferably lying on the same imaginary plane, wherein the first shell (51) and a second shell (52) clamp said outer body (4) and said planar wing portions (40) thereof in an axial direction.

5. Water delivery system (900) according to any one of the preceding claims, wherein the inner body (3) is made of a rigid material and the outer body (4) is made of an elastically deformable material.

6. Water delivery system (900) according to claim 5, wherein the inner body (3) is made of metal material, preferably it is made of a material belonging to the family of brass alloys, and the outer body (4) is of a polymeric material, preferably rubber.

7. Water delivery system (900) according to any one of the preceding claims, wherein the outer body (4) is over-molded on the inner body (3).

8. Water delivery system (900) according to any one of the preceding claims, wherein the inner body (3) comprises a first portion (3') in which the mixing and regulation chamber (31) is formed and a second portion (3'') in which the delivery chamber (32) is formed, wherein the conduit (35) is formed in the first portion (3') and/or in the second portion (3''), wherein the first portion (3') and the second portion (3'') are mutually engageable and fluidically connectable to each other along the axis (X-X).

9. Water delivery system (900) according to any one of the preceding claims, in combination with claims 2 or 3, wherein the inner body (3), preferably the first portion (3') comprises the at least one pair of connecting mouths (311, 312) or the two pairs of connecting mouths (311, 312; 311', 312').

10. Water delivery system (900) according to any one of the preceding claims, wherein the outer body (4) comprises a main cord (400), positioned both on the front side (I1) and on the rear side (I2), in a region proximal to the perimeter of the outer body (4), wherein said main cord (400) is engageable, preferably in a sealed manner, both by the first shell (51)

and by the second shell (52).

11. Water delivery system (900) according to any one of the preceding claims, wherein the outer body (4) comprises respective auxiliary cords (451, 452) positioned around the perimeter in the vicinity of the front mixer opening (310) and the front delivery opening (320) engageable, preferably in a sealed manner, by the first shell (51).

Patentansprüche

1. Wasserabgabesystem (900), das mit einem hydraulischen Netzwerk verbindbar ist, umfassend:
- A) eine Misch- und Reguliervorrichtung (910), die umfasst:
- i) eine Mischkartusche (911), die sich entlang einer Kartuschenachse (C-C) zwischen einem Steuer- bzw. Befehlsende (911') und einem Mischende (911'') erstreckt;
- ii) eine Steuer- bzw. Befehlsverbindung (912), die mit dem Befehlsende (911') in Eingriff bringbar ist, umfassend eine Verbindung derart, dass die Betätigung der Befehlsverbindung (912) eine jeweilige Konfiguration der Mischkartusche (911) steuert bzw. regelt;
- B) eine Abgabevorrichtung (920), beispielsweise ein Wasserhahn;
- C) eine Installationsvorrichtung (1), die im Inneren einer Wand installierbar und fluidisch mit einer Kaltwasserleitung und einer Warmwasserleitung verbindbar ist, aufweisend eine Vorderseite (11) und eine Rückseite (12), wobei die Installationsvorrichtung (1) umfasst:
- L) ein Hauptglied (2), umfassend:
- x) einen inneren Körper (3), umfassend:
- eine Misch- und Regulierkammer (31), die mit einer vorderen Mischeröffnung (310) versehen ist, in die die Mischkartusche (911) zumindest teilweise einsetzbar ist;
- eine Abgabekammer (32), die mit einer vorderen Abgabeöffnung (320) versehen ist, in die die Abgabevorrichtung (920) zumindest teilweise einsetzbar ist; und
- einen Kanal (35), der sich entlang einer Achse (X-X) erstreckt und die Misch- und Regulierkammer (31) fluidisch mit der Abgabekammer (32) ver-

bindet;

y) einen äußeren Körper (4), der den inneren Körper (3) enthält;

M) ein kastenartiges Glied (5), das eine Gehäusekammer (50) umfasst, in die das Hauptglied (2) eingesetzt ist, wobei das kastenartige Glied (5) eine erste Hülle (51) und eine zweite Hülle (52) umfasst, die in einer axialen Richtung durch Eingriff in den äußeren Körper (4) miteinander in Eingriff bringbar sind, wobei die erste Hülle (51) ein Misch- und Reguliervorrichtungsgehäuse (511), in dem die Misch- und Reguliervorrichtung (910) unterbringbar ist, um in die vordere Mischeröffnung (310) und somit in die Misch- und Regulierkammer (31) einzugreifen, und ein Abgabevorrichtungsgehäuse (512) umfasst, in dem die Abgabevorrichtung (920) unterbringbar ist, um in die vordere Abgabeöffnung (320) und somit in die Abgabekammer (32) einzugreifen; wobei die Mischkartusche (911) in die Misch- und Regulierkammer (31) in einer Mehrzahl von Winkelpositionen einsetzbar ist und einen Kartuschenbolzen bzw. -stößel (915) umfasst, der in die Wände des Misch- und Reguliervorrichtungsgehäuses (511) eingreift, so dass die Formkopplungen zwischen dem Kartuschenbolzen (915) und dem Misch- und Reguliervorrichtungsgehäuse (511) die unterschiedlichen Winkelpositionen der Mischkartusche (911) definieren.

2. Wasserabgabesystem (900) nach Anspruch 1, umfassend zumindest ein Paar von Verbindungs- bzw. Anschlussmündungen (311, 312), fluidisch verbunden mit der Misch- und Regulierkammer (31), die mit der Kaltwasserleitung bzw. der Warmwasserleitung eines Haushaltssystems verbindbar sind, wobei das Paar von Anschlussmündungen (311, 312) auf einer imaginären Ebene (O1) liegt, die sich orthogonal zu der Achse (X-X) und zu der vorderen Mischeröffnung (310) erstreckt, wobei die Mischkartusche (911) derart positionierbar ist, dass die Befehlsverbindung (912) so positioniert ist, dass sie die Verbindung parallel oder orthogonal zu der vorgenannten imaginären Ebene (O1) aufweist.
3. Wasserabgabesystem (900) nach Anspruch 2, umfassend zwei Paare von Verbindungs- bzw. Anschlussmündungen (311, 312; 311', 312'), fluidisch verbunden mit der Misch- und Regulierkammer (31), die mit der Kaltwasserleitung bzw. der Warmwasserleitung eines Haushaltssystems verbindbar sind, wobei jedes Paar von Anschlussmündungen auf einer jeweiligen imaginären Ebene (O1, O2) liegt, wo-

bei die imaginären Ebenen (O1, O2) spiegellnd zu der Achse (X-X) sind.

4. Wasserabgabesystem (900) nach einem der vorhergehenden Ansprüche, wobei sich der äußere Körper (4) um den inneren Körper (5) erstreckt und sich von diesem erstreckt, wobei er planare Flügelabschnitte (40) definiert, die vorzugsweise auf derselben imaginären Ebene liegen, wobei die erste Hülle (51) und eine zweite Hülle (52) den äußeren Körper (4) und die planaren Flügelabschnitte (40) davon in einer axialen Richtung festklemmen. 5 10
5. Wasserabgabesystem (900) nach einem der vorhergehenden Ansprüche, wobei der innere Körper (3) aus einem starren Material besteht und der äußere Körper (4) aus einem elastisch verformbaren Material besteht. 15
6. Wasserabgabesystem (900) nach Anspruch 5, wobei der innere Körper (3) aus einem metallischen Material besteht, vorzugsweise aus einem Material aus der Familie der Messinglegierungen, und der äußere Körper (4) aus einem Polymermaterial, vorzugsweise Gummi, besteht. 20 25
7. Wasserabgabesystem (900) nach einem der vorhergehenden Ansprüche, wobei der äußere Körper (4) auf den inneren Körper (3) aufgeformt ist. 30
8. Wasserabgabesystem (900) nach einem der vorhergehenden Ansprüche, wobei der innere Körper (3) einen ersten Abschnitt (3'), in dem die Misch- und Regulierkammer (31) ausgebildet ist, und einen zweiten Abschnitt (3'') umfasst, in dem die Abgabekammer (32) ausgebildet ist, wobei der Kanal (35) in dem ersten Abschnitt (3') und/oder in dem zweiten Abschnitt (3'') ausgebildet ist, wobei der erste Abschnitt (3') und der zweite Abschnitt (3'') miteinander in Eingriff bringbar und entlang der Achse (X-X) fluidisch miteinander verbindbar sind. 35 40
9. Wasserabgabesystem (900) nach einem der vorhergehenden Ansprüche in Kombination mit Anspruch 2 oder 3, wobei der innere Körper (3), vorzugsweise der erste Abschnitt (3'), das zumindest eine Paar von Anschlussöffnungen (311, 312) oder die zwei Paare von Anschlussöffnungen (311, 312; 311', 312') umfasst. 45 50
10. Wasserabgabesystem (900) nach einem der vorhergehenden Ansprüche, wobei der äußere Körper (4) eine Hauptschnur (400) umfasst, die sowohl auf der Vorderseite (11) als auch auf der Rückseite (12) in einem Bereich proximal zu dem Umfang des äußeren Körpers (4) positioniert ist, wobei die Hauptschnur (400) sowohl durch die erste Hülle (51) als auch durch die zweite Hülle (52) vorzugsweise auf 55

abgedichtete Weise in Eingriff nehmbar ist.

11. Wasserabgabesystem (900) nach einem der vorhergehenden Ansprüche, wobei der äußere Körper (4) jeweilige Hilfsschnüre (451, 452) umfasst, die um den Umfang in der Nähe der vorderen Mischeröffnung (310) und der vorderen Abgabeöffnung (320) positioniert sind, wobei sie durch die erste Hülle (51) vorzugsweise auf abgedichtete Weise in Eingriff nehmbar sind.

Revendications

1. Système de distribution d'eau (900) pouvant être relié à un réseau hydraulique, comprenant :

A) un dispositif de mélange et de régulation (910) qui comprend :

- i) une cartouche de mélange (911) s'étendant le long d'un axe de cartouche (C-C) entre une extrémité de commande (911') et une extrémité de mélange (911'') ;
- ii) un raccordement de commande (912) pouvant s'engager avec ladite extrémité de commande (911'), comprenant un raccordement, de telle sorte que l'actionnement du raccordement de commande (912) contrôle une configuration respective de la cartouche de mélange (911) ;

B) un dispositif de distribution (920), par exemple un robinet ;

C) un dispositif d'installation (1) pouvant être installé à l'intérieur d'une paroi et pouvant être relié de manière fluide à un tuyau d'eau froide et à un tuyau d'eau chaude, ayant un côté avant (11) et un côté arrière (12), le dispositif d'installation (1) comprenant :

L) un élément principal (2) comprenant :

x) un corps intérieur (3) comprenant :

- une chambre de mélange et de régulation (31) pourvue d'une ouverture de mélangeur avant (310) dans laquelle la cartouche de mélange (911) peut être au moins partiellement insérée ;
- une chambre de distribution (32) pourvue d'une ouverture de distribution avant (320) dans laquelle le dispositif de distribution (920) peut être au moins partiellement inséré ; et
- un conduit (35) qui s'étend le long d'un axe (X-X) et relie de manière fluide la chambre de mélange et de régulation (31) à la chambre de distribution (32) ;

- y) un corps extérieur (4) qui contient le corps intérieur (3) ;
- M) un élément du type boîte (5) comprenant une chambre de logement (50) dans laquelle l'élément principal (2) est inséré, dans lequel l'élément du type boîte (5) comprend une première enveloppe (51) et une seconde enveloppe (52) pouvant entrer en prise mutuellement dans une direction axiale en s'engageant avec ledit corps extérieur (4), la première enveloppe (51) comprenant un logement de dispositif de mélange et de régulation (511) dans lequel le dispositif de mélange et de régulation (910) peut être logé pour s'engager avec l'ouverture de mélangeur avant (310) et par conséquent la chambre de mélange et de régulation (31), et un logement de dispositif de distribution (512) dans lequel le dispositif de distribution (920) peut être logé pour s'engager avec l'ouverture de distribution avant (320) et par conséquent la chambre de distribution (32) ;
- dans lequel la cartouche de mélange (911) peut être insérée dans la chambre de mélange et de régulation (31) dans une pluralité de positions angulaires, et comprend un percuteur de cartouche (915) qui s'engage avec les parois du logement de dispositif de mélange et de régulation (511), de telle sorte que les accouplements de formes entre le percuteur de cartouche (915) et le logement de dispositif de mélange et de régulation (511) définissent les différentes positions angulaires de la cartouche de mélange (911).
2. Système de distribution d'eau (900) selon la revendication 1, comprenant au moins une paire d'embouchures de connexion (311, 312) reliées de manière fluide à la chambre de mélange et de régulation (31) pouvant être connectées respectivement au tuyau d'eau froide et au tuyau d'eau chaude d'un système domestique, dans lequel ladite paire d'embouchures de connexion (311, 312) se situe sur un plan imaginaire (O1) qui s'étend orthogonalement à l'axe (X-X) et à l'ouverture de mélangeur avant (310), dans lequel la cartouche de mélange (911) peut être positionnée de façon telle que le raccordement de commande (912) est positionné en ayant le raccordement parallèle ou orthogonal au plan imaginaire (C1) susmentionné.
 3. Système de distribution d'eau (900) selon la revendication 2, comprenant deux paires d'embouchures de connexion (311, 312; 311', 312') reliées de manière fluide à la chambre de mélange et de régulation (31) pouvant être connectées respectivement au tuyau d'eau froide et au tuyau d'eau chaude d'un système domestique, dans lequel chaque paire d'embouchures de connexion se situe sur un plan imaginaire (C1, 02) respectif, lesdits plans imaginaires (C1, 02) étant spéculaires par rapport à l'axe (X-X).
 4. Système de distribution d'eau (900) selon l'une quelconque des revendications précédentes, dans lequel le corps extérieur (4) s'étend autour du corps intérieur (5) et s'étend à partir de celui-ci en définissant des portions d'ailes planes (40), de préférence se situant sur le même plan imaginaire, dans lequel la première enveloppe (51) et une seconde enveloppe (52) serrent ledit corps extérieur (4) et lesdites portions d'ailes planes (40) de celui-ci dans une direction axiale.
 5. Système de distribution d'eau (900) selon l'une quelconque des revendications précédentes, dans lequel le corps intérieur (3) est fait d'un matériau rigide, et le corps extérieur (4) est fait d'un matériau déformable élastiquement.
 6. Système de distribution d'eau (900) selon la revendication 5, dans lequel le corps intérieur (3) est fait d'un matériau métallique, de préférence il est fait d'un matériau appartenant à la famille des alliages de laiton, et le corps extérieur (4) est en matériau polymère, de préférence en caoutchouc.
 7. Système de distribution d'eau (900) selon l'une quelconque des revendications précédentes, dans lequel le corps extérieur (4) est surmoulé sur le corps intérieur (3).
 8. Système de distribution d'eau (900) selon l'une quelconque des revendications précédentes, dans lequel le corps intérieur (3) comprend une première portion (3') dans laquelle est formée la chambre de mélange et de régulation (31), et une seconde portion (3'') dans laquelle est formée la chambre de distribution (32), le conduit (35) étant formé dans la première portion (3') et/ou dans la seconde portion (3''), la première portion (3') et la seconde portion (3'') pouvant s'engager mutuellement et pouvant être reliées de manière fluide l'une à l'autre le long de l'axe (X-X).
 9. Système de distribution d'eau (900) selon l'une quelconque des revendications précédentes, en association avec les revendications 2 ou 3, dans lequel le corps intérieur (3), de préférence la première portion (3'), comprend la paire d'embouchures de connexion (311, 312), au moins au nombre de une, ou les deux paires d'embouchures de connexion (311, 312 ; 311', 312').

10. Système de distribution d'eau (900) selon l'une quelconque des revendications précédentes, dans lequel le corps extérieur (4) comprend un cordon principal (400), positionné à la fois sur le côté avant (11) et sur le côté arrière (12), dans une région à proximité du périmètre du corps extérieur (4), ledit cordon principal (400) pouvant être engagé, de préférence d'une manière étanche, à la fois par la première enveloppe (51) et par la seconde enveloppe (52).

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11. Système de distribution d'eau (900) selon l'une quelconque des revendications précédentes, dans lequel le corps extérieur (4) comprend des cordons auxiliaires (451, 452) respectifs positionnés autour du périmètre dans les environs de l'ouverture de mélangeur avant (310) et de l'ouverture de distribution avant (320) et pouvant être engagés, de préférence d'une manière étanche, par la première enveloppe (51).

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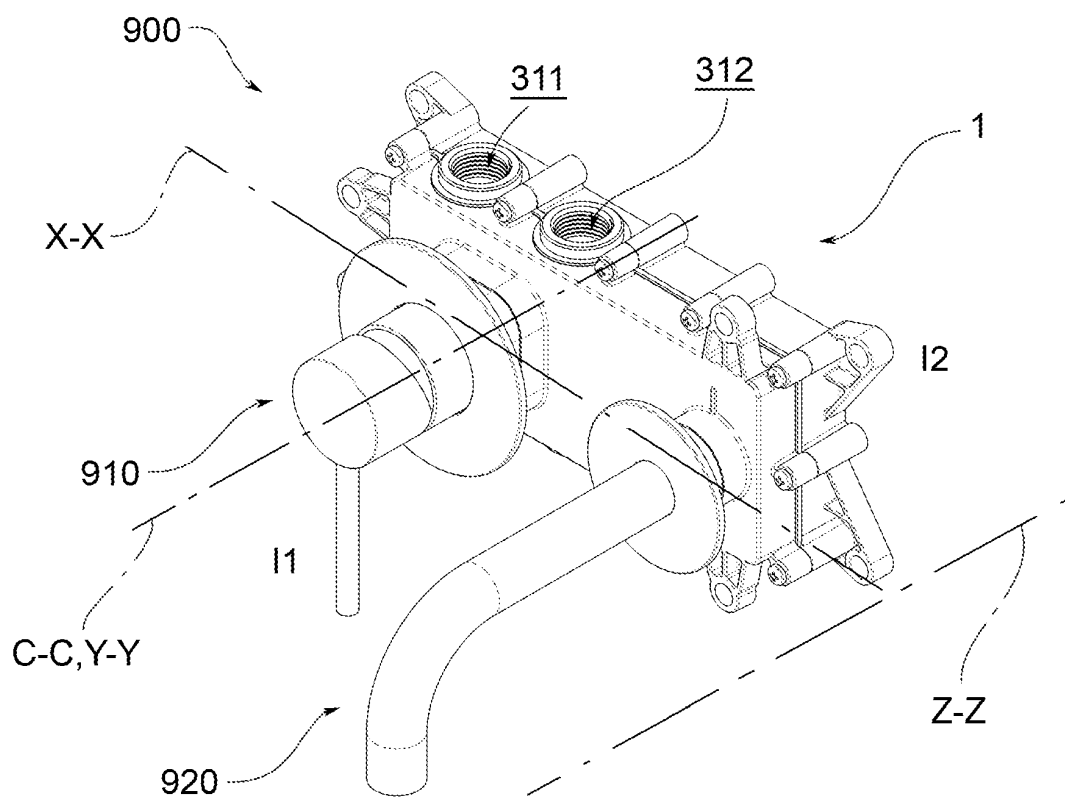


FIG.1a

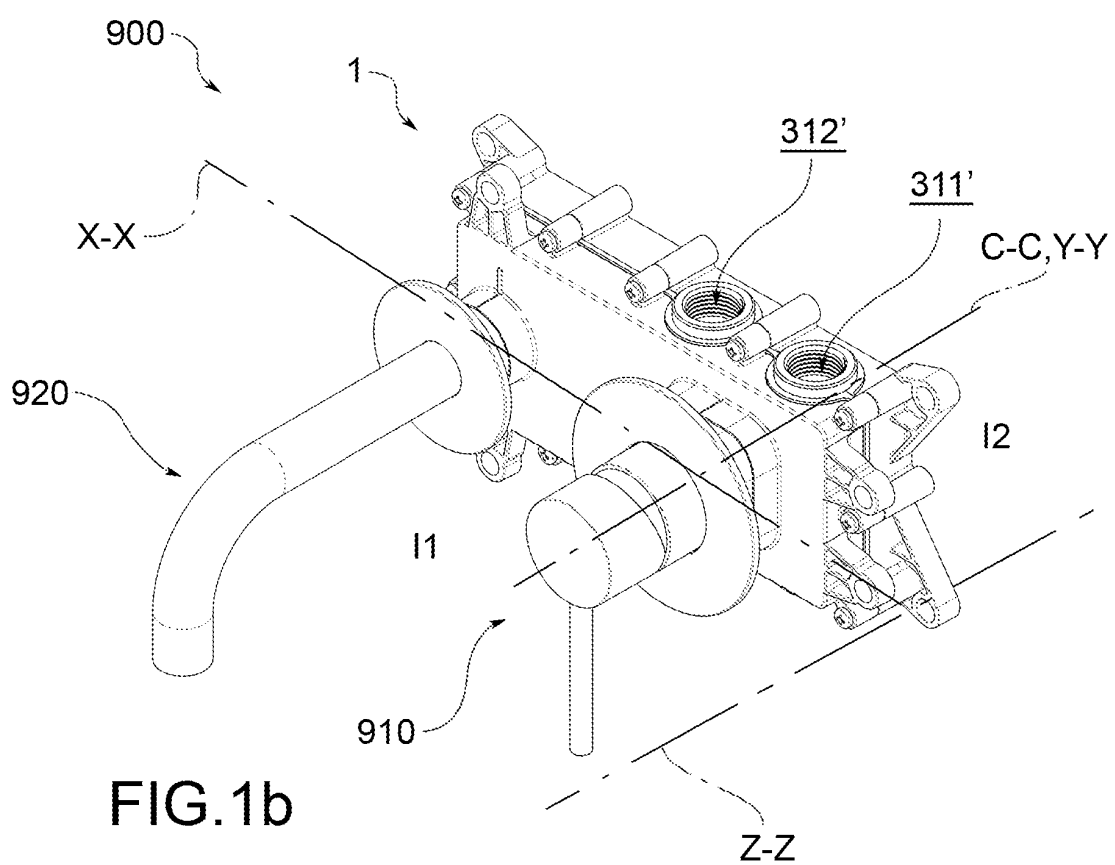
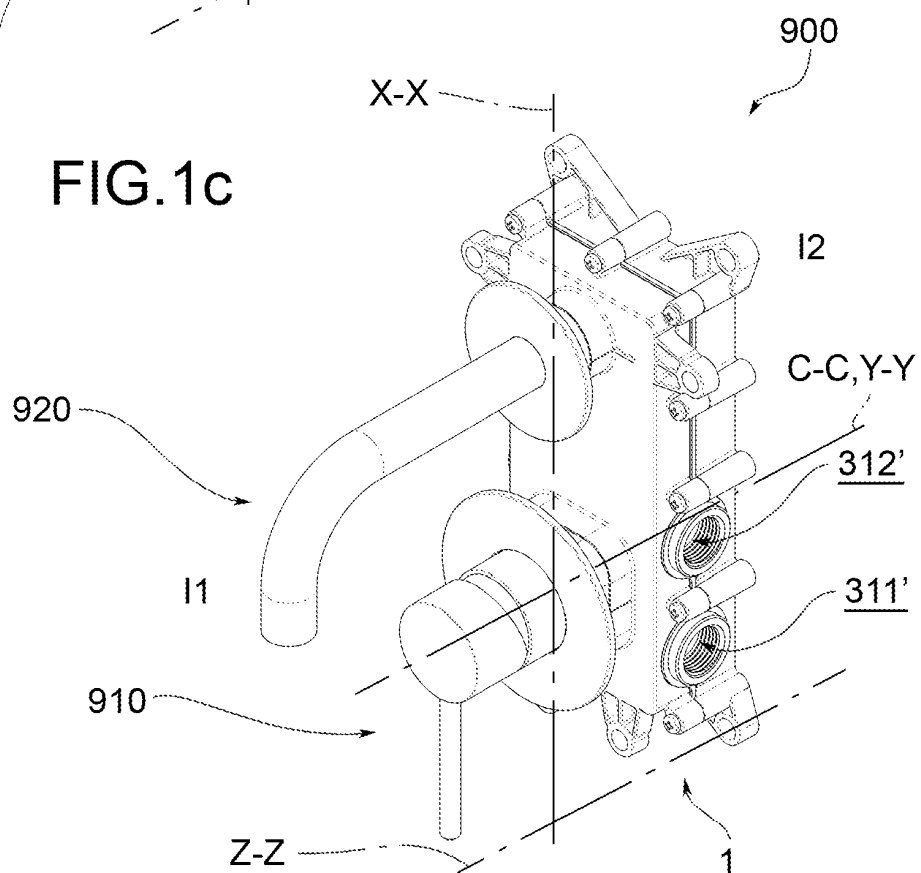
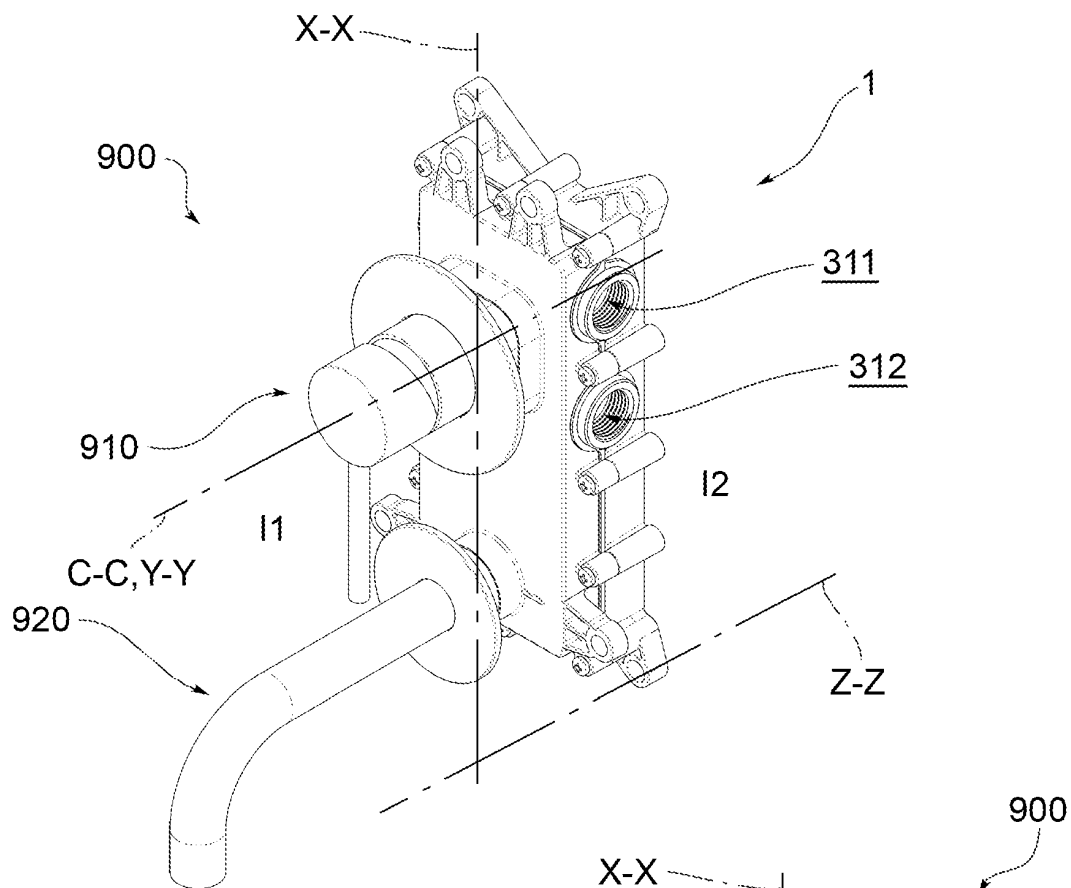


FIG.1b



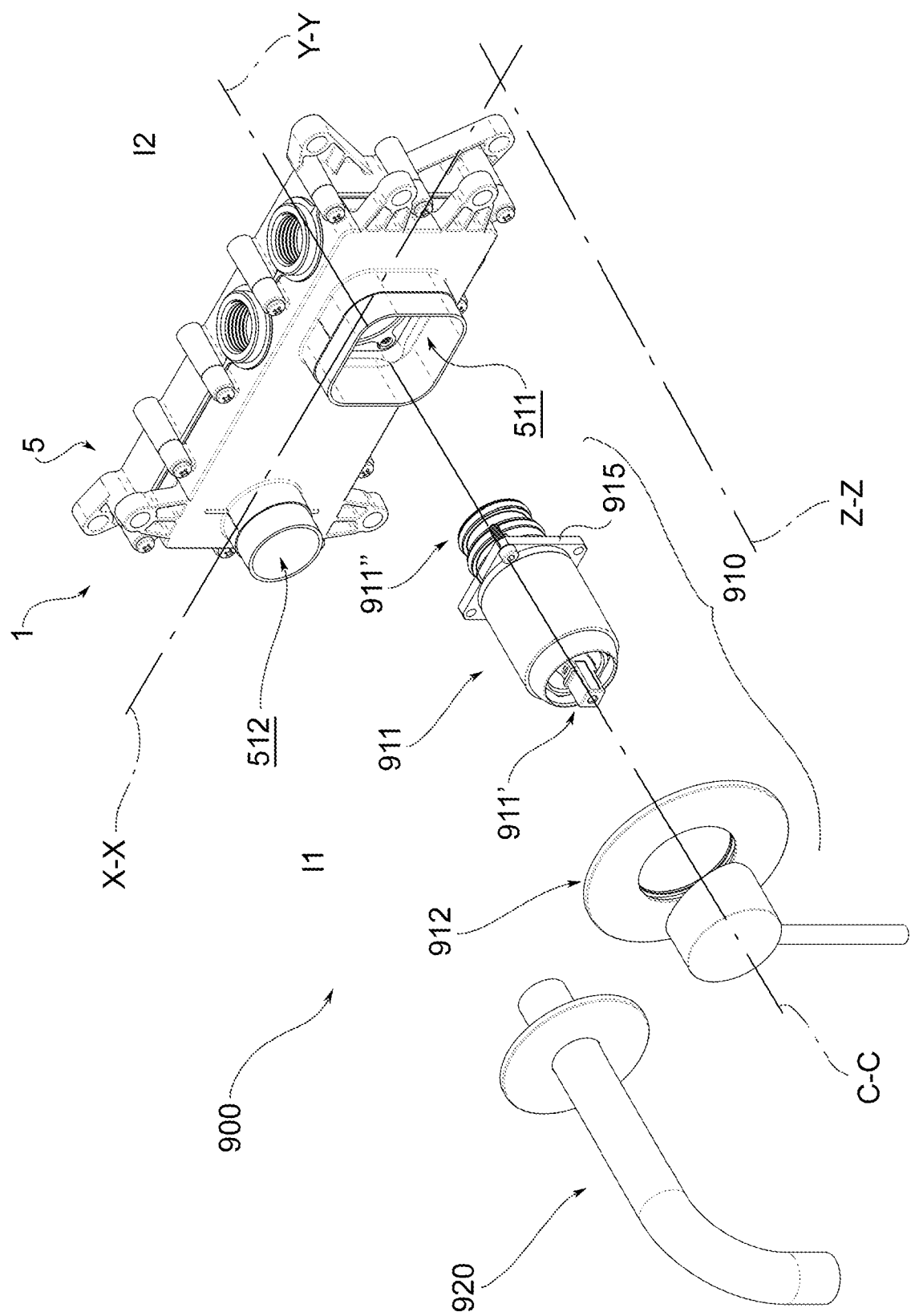


FIG.2

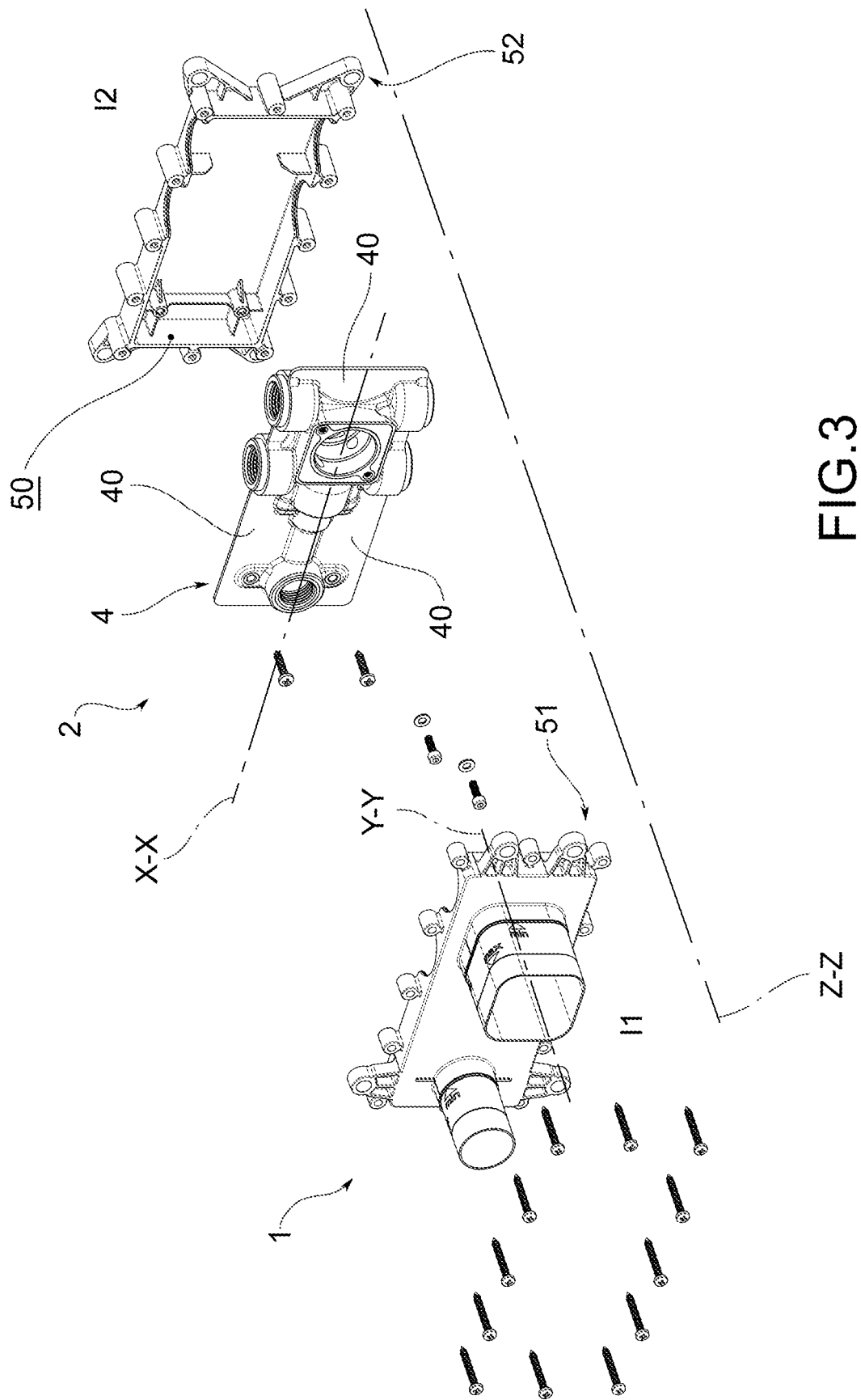


FIG.3

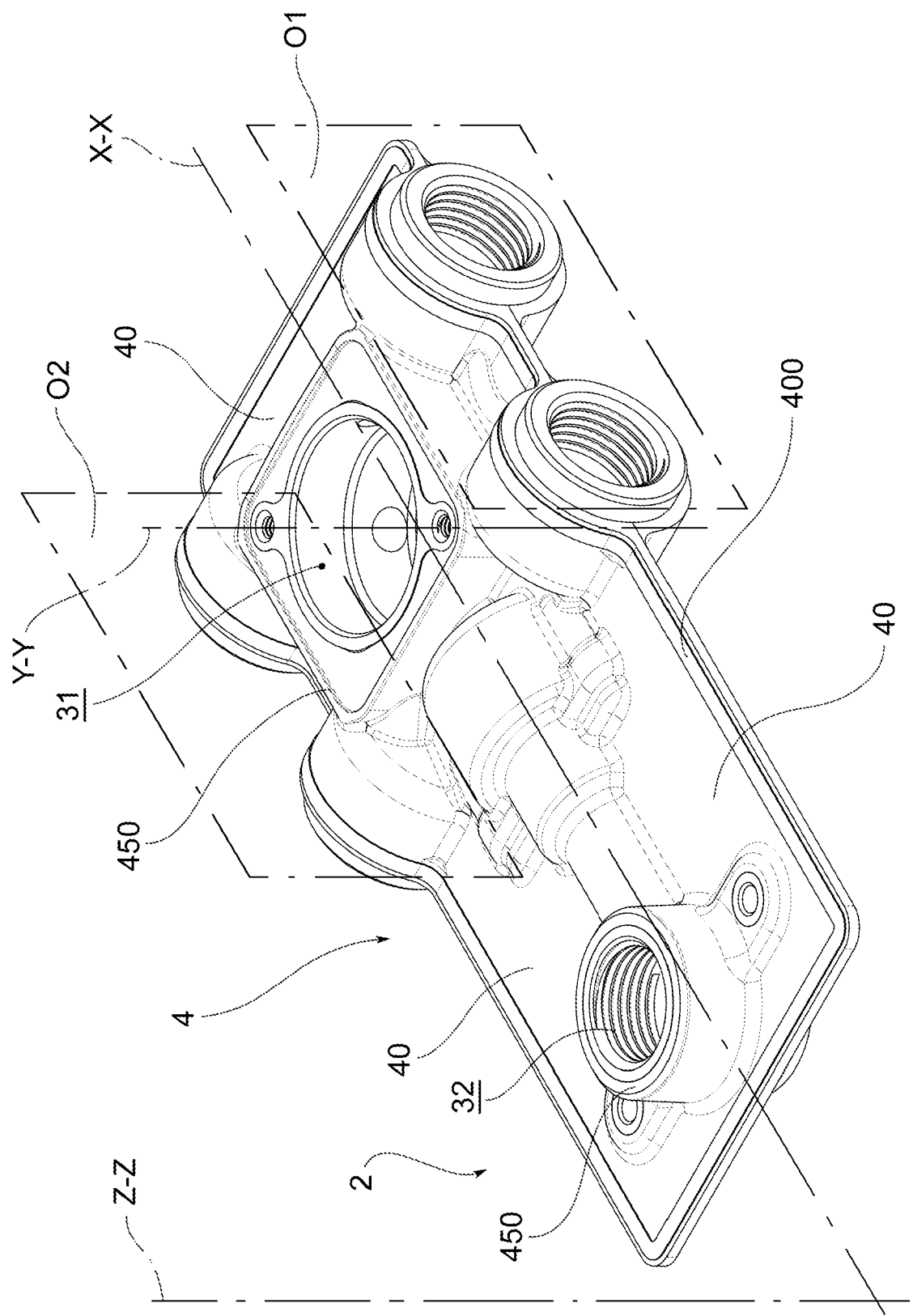


FIG.4

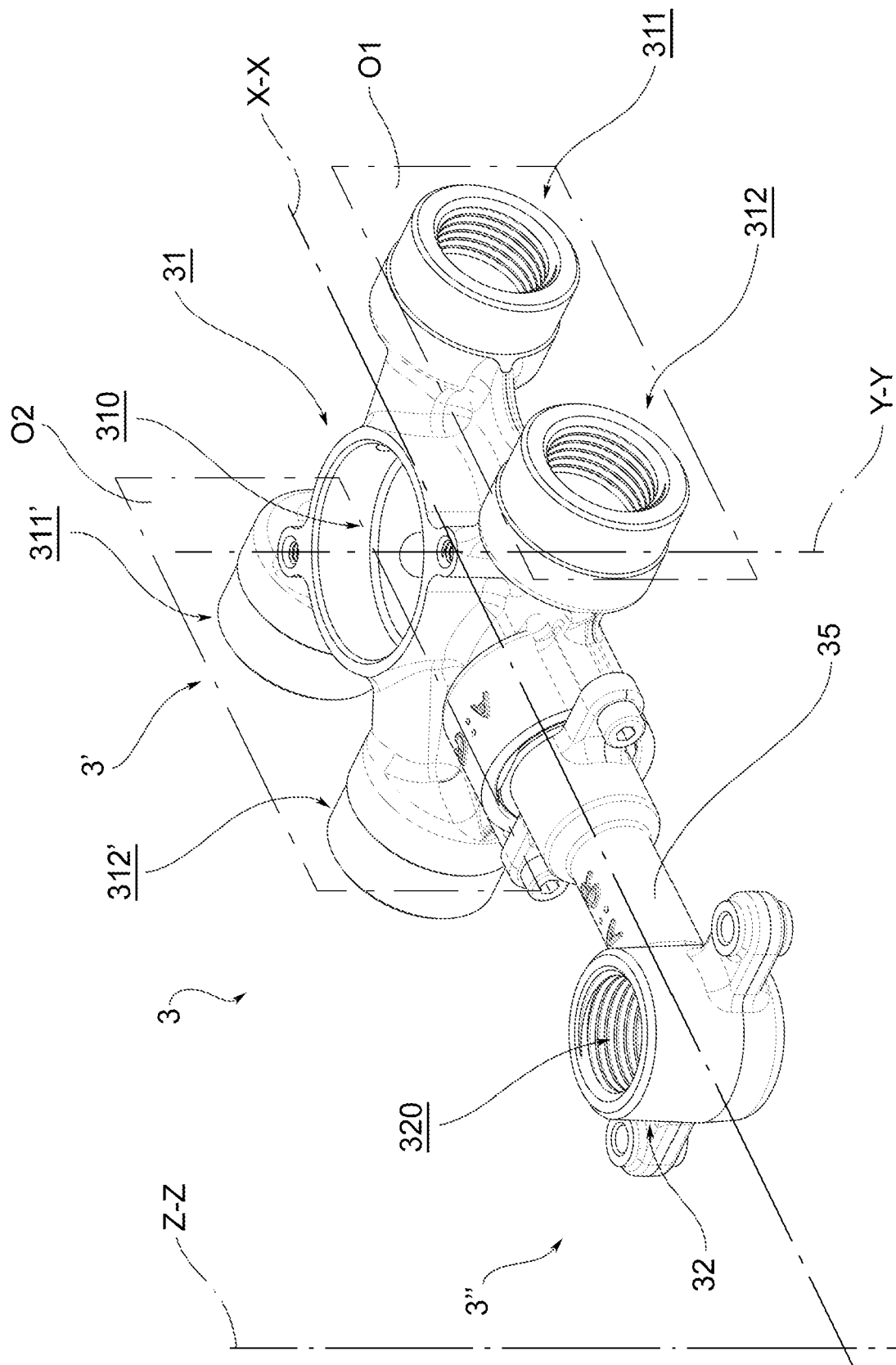


FIG.5

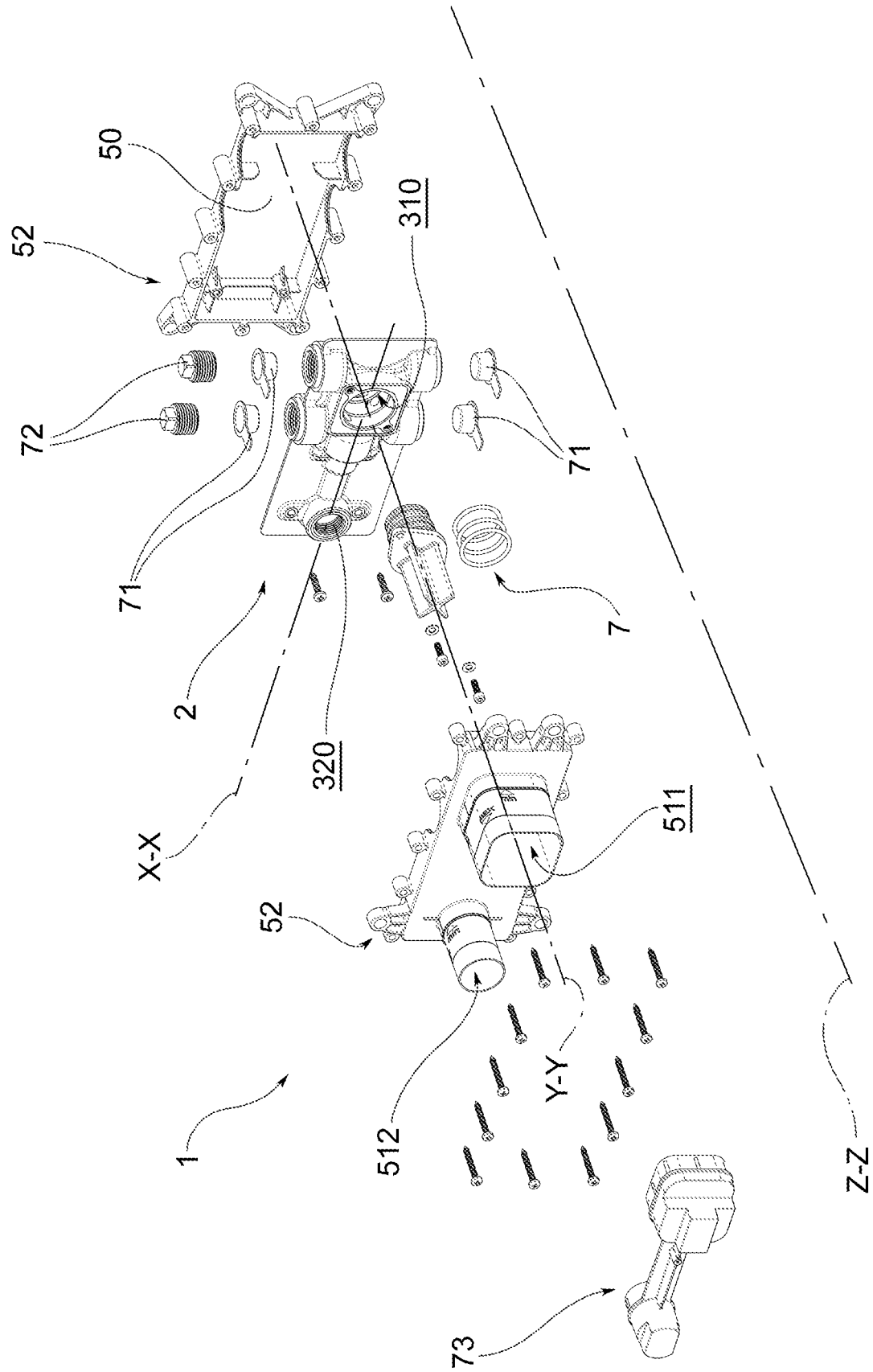


FIG.6

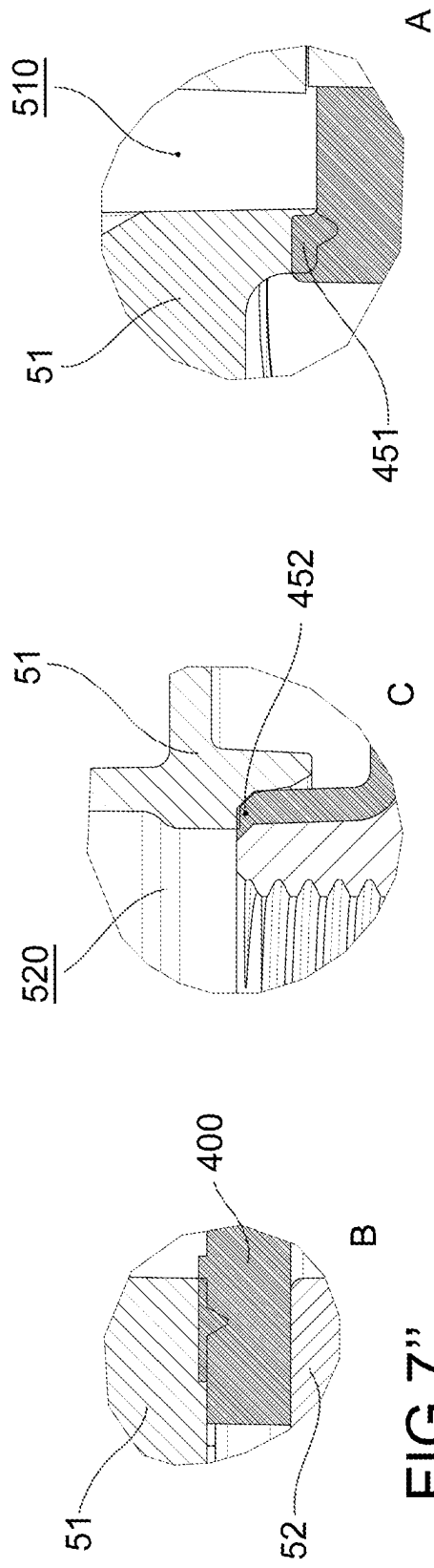


FIG. 7'

FIG. 7''

FIG. 7

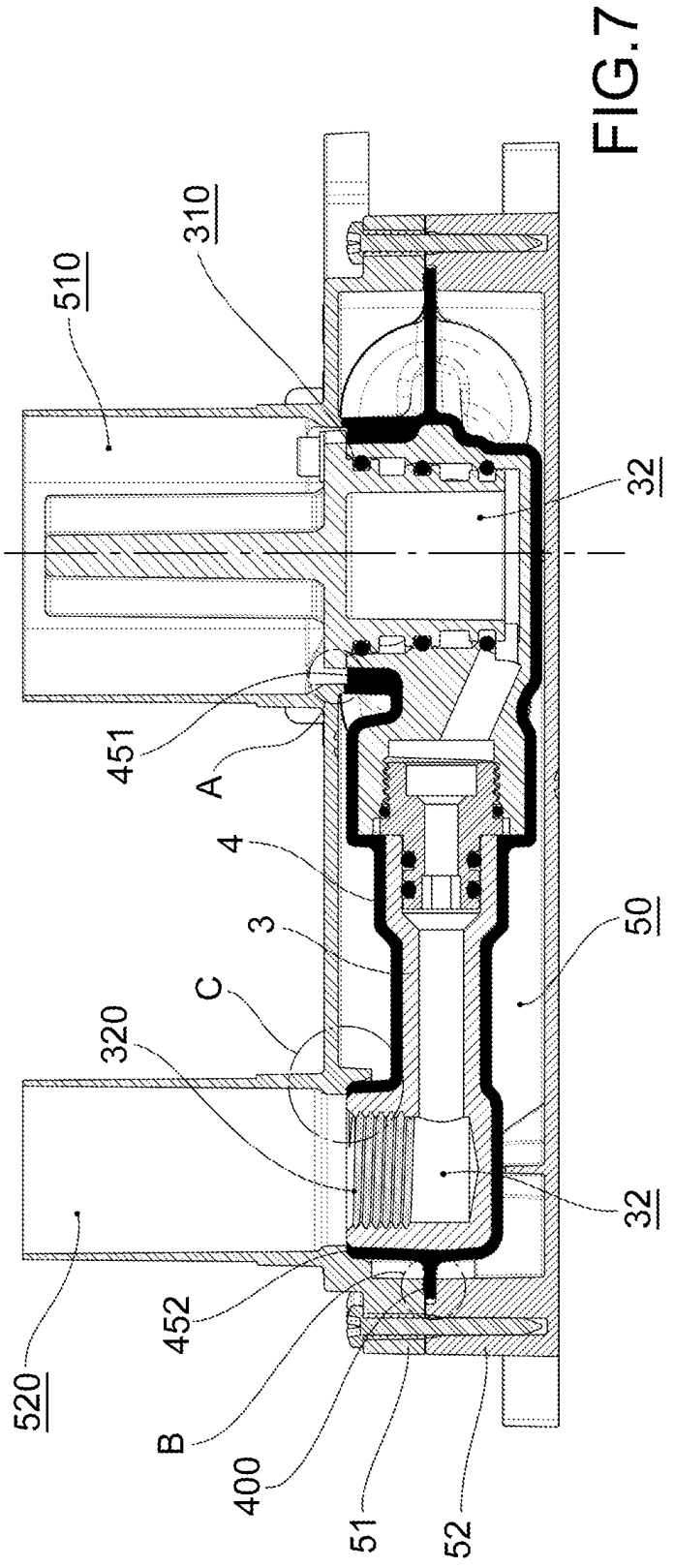


FIG. 7

REFERENCES CITED IN THE DESCRIPTION

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