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(54) **DISPENSING DEVICE AND SYSTEM HAVING A DISPENSING DEVICE**

(57) A dispensing device (1) comprising a main body (3) and a spout (4) with an outer shell (5) and an outlet tube (6) and outlet conduit (7) housed in the outer shell (5) is described. The outer shell (5) comprises a main portion (8) and a terminal portion (9) that can be positioned in a first position in which the terminal portion (9) is coupled with the main portion (8) and in a second position in which the terminal portion (9) is separated from the main portion (8). The spout (4) comprises a first outlet (10) in fluidic connection with the outlet tube (6) and configured to allow for the discharging of a first liquid, and the first outlet is arranged in and/or coupled to the terminal portion (9). The spout also comprises a second outlet (11) in fluidic connection with the outlet conduit (7) and configured to allow for the discharging of a second liquid. The second outlet (11) is arranged in and/or coupled with the main portion (8).

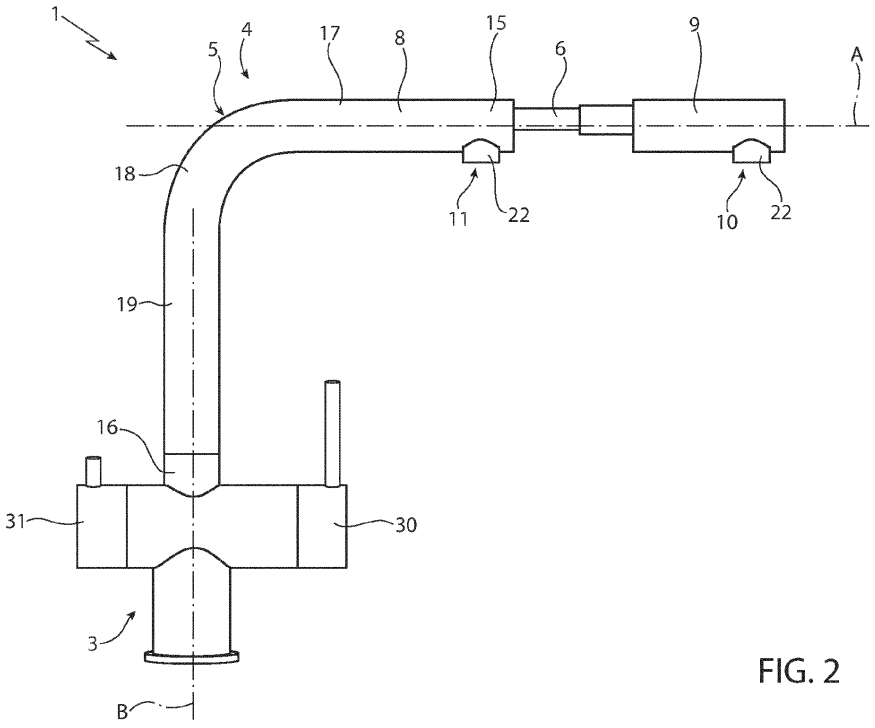

FIG. 2

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Description

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This patent application claims priority from Italian patent application no. 102022000006137 filed on March 29, 2022, the entire disclosure of which is incorporated herein by reference.

TECHNICAL FIELD

[0002] The present invention relates to a device for dispensing a first liquid and a second liquid, in particular a second treated liquid.

[0003] The present invention also relates to a system having a device for dispensing a first liquid and a second liquid, in particular a second treated liquid, and a conditioning device configured to treat a liquid to obtain the second liquid.

BACKGROUND

[0004] There are known dispensing devices for dispensing in a controlled way a first liquid such as cold water, hot water, mixed water and a second liquid such as filtered water or sparkling water.

[0005] The known dispensing devices comprise a main body having a first main inlet conduit and a second main inlet conduit, wherein the first liquid corresponds to a respective liquid which is, in use, conveyed into the first main inlet conduit or to a respective liquid which is, in use, conveyed into the second main inlet conduit or which corresponds to a mixture between a liquid which is, in use, conveyed into the first main inlet conduit and a respective liquid which is, in use, conveyed into the second main inlet conduit. The main body also comprises an auxiliary inlet conduit for the second liquid.

[0006] The known dispensing devices also comprise a spout having an outer shell and a first outlet tube and a second outlet tube housed within the outer shell.

[0007] The known dispensing devices also comprise a first control group to selectively control a fluidic connection between the first main inlet conduit and the second main inlet conduit with the first outlet tube, and a second control group to selectively control a fluidic connection between the auxiliary inlet conduit and the second outlet tube.

[0008] The dispensing device also comprises a first outlet and a second outlet in fluidic connection with the first outlet tube and the second outlet tube respectively. The outer shell carries the first outlet and the second outlet.

[0009] In some known dispensing devices, the outer shell comprises a main portion and a terminal portion which is movable between a first position in which the end portion is connected to the main portion and a second position in which the terminal portion is separated and spaced apart from the main portion. The terminal portion carries the first outlet and the second outlet. The possibility of moving the terminal portion to the second position allows to move the first outlet and the second outlet closer to a container to be filled.

[0010] In order to be able to control the terminal portion between the first position and the second position, the first outlet tube and the second outlet tube must be arranged in an extendable manner. For this reason, the dispensing device also comprises a first buffer unit for the first outlet tube and a second buffer unit for the second outlet tube.

[0011] Each one of the first buffer unit and the second buffer unit is configured to contain a respective section of the first outlet tube and the second outlet tube respectively, which make it possible to move the terminal portion from the first position to the second position and vice versa.

[0012] A drawback lies in that, between uses, it is necessary to make the portions of the first liquid or second liquid, left respectively in the first outlet tube and in the second outlet tube, flow out respectively of the first outlet and of the second outlet, before a fresh portion of the first liquid or second liquid is obtained. These losses are high because the first outlet tube and the second outlet tube are extendable to allow for the movement of the terminal portion between the first position and the second position.

[0013] A further drawback lies in that the diameter of the first outlet tube and the second outlet tube is small in order to allow for the respective extensions of the first outlet tube and the second outlet tube.

SUMMARY

[0014] The aim of the present invention is to provide a dispensing device which is free of the drawbacks described above and, at the same time, is easy and cheap to manufacture.

[0015] According to the present invention, a dispensing device is provided as defined in the attached independent claim, and preferentially, in any one of the claims directly or indirectly depending on the aforesaid independent Claim.

[0016] Further advantageous features of the present invention are set forth in the dependent Claims.

[0017] According to the present invention, a system as defined in Claim 15 is also provided.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] The present invention will now be described with reference to the attached drawings, which show two non-limiting embodiments thereof, wherein:

- Figure 1 shows in a perspective view a dispensing device according to the present invention installed adjacent to a sink and in a first configuration, with parts removed for the sake of clarity;

- Figure 2 shows schematically and in a side view the dispensing device of Figure 1 in a second configuration, with parts removed for the sake of clarity;
- Figure 3 schematically shows a partially sectioned detail of the dispensing device of Figure 1 controlled in the second configuration, with parts removed for the sake of clarity; and
- Figure 4 shows a portion of the dispensing device of Figure 1, with parts removed for the sake of clarity.

DESCRIPTION OF EMBODIMENTS

[0019] In Figure 1, reference 1 generically denotes a dispensing device, in particular a faucet, for dispensing, in a controlled way a first liquid and a second liquid, in particular a second treated liquid.

[0020] The dispensing device 1 may be installed adjacent to a sink 2, washbasin or the like. More specifically, the dispensing device 1 may be mounted on a worktop or sink 2 or on the washbasin.

[0021] The first liquid may be cold water or hot water, or mixed water obtained by mixing cold and hot water. Preferentially, cold water and/or hot water can come from a supply system, e.g. a system of a house or a camper or a caravan or the like.

[0022] The second liquid may be a second treated liquid. More specifically, the second liquid may be treated water, e.g. filtered water and/or carbonised water and/or flavoured water and/or enriched water and/or water heated above 75°C. Preferentially, treated water is obtained by means of a conditioning device inserted in a respective installation. For example, the conditioning device may be installed adjacent to and/or under or above the sink 2 or the washbasin.

[0023] In particular, the dispensing device 1 and the conditioning device may define a system.

[0024] Preferentially, the conditioning device may be and/or may be configured to treat an initial liquid, such as cold water, to obtain the second liquid. In particular, the conditioning device may be in fluidic connection with the supply system to receive the initial liquid such as cold water.

[0025] According to some possible embodiments, the conditioning device may be configured to filter and/or carbonise and/or flavour and/or enrich the initial liquid and/or heat the initial liquid to a temperature above 75°C.

[0026] With particular reference to Figures 1 to 3, the dispensing device 1 comprises at least:

- a main body 3, in particular configured to be mounted on the worktop and/or sink 2 (or washbasin); and
- a spout 4, in particular connected to and/or extending from the main body 3 (in particular, the main body 3 carries the spout 4).

[0027] The main body 3 comprises a first main inlet conduit for at least a portion of the first liquid.

[0028] Preferentially, the main body 3 may also comprise a second main inlet conduit. In particular, the first main inlet conduit may be configured to convey a liquid of a first type and the second main inlet conduit may be configured to convey a liquid of a second type, other from the first type.

[0029] For example, the liquid of the first type may be cold water and the liquid of the second type may be hot water. In other words, according to such an example, the first inlet conduit may be configured to convey cold water and the second inlet conduit may be configured to convey hot water.

[0030] Furthermore, the first liquid corresponds to the liquid of the first type or to the liquid of the second type or to a mixture obtained from a portion of the liquid of the first type and a portion of the liquid of the second type. According to the non-limiting example, the first liquid corresponds to cold water or hot water or to the mixture of cold and hot water.

[0031] The main body 3 also comprises an auxiliary inlet conduit for at least a portion of the second liquid, in particular for the second liquid.

[0032] Preferentially, the first main inlet conduit, in particular also the second main inlet conduit, is/are controllable and/or is/are in fluidic connection with the supply system, in particular to receive the liquid of the first type and the liquid of the second type respectively.

[0033] Preferentially, the auxiliary inlet conduit may be and/or may be controlled in fluidic connection with the conditioning device to receive the second liquid from the conditioning device.

[0034] With particular reference to Figures 1 to 3, the spout 4 comprises:

- an outer shell 5, in particular having an inner space,
- an outlet tube 6 for the first liquid, housed in the outer shell 5, in particular in the inner space; and
- an outlet conduit 7, in particular being at least partially formed by a tube, housed in the outer shell 5, in particular in the inner space.

[0035] In addition, the outlet tube 6 is in fluidic connection and/or is controllable in fluidic connection with the first main inlet conduit and/or the second main inlet conduit, in particular to allow for the discharging of the first liquid from the delivery device 1.

[0036] The outlet conduit 7 is in fluidic connection and/or is controllable in fluidic connection with the auxiliary inlet conduit, in particular to allow for the discharging of the second liquid out of the dispensing device 1.

[0037] In particular, the outer shell 5 may have a tubular configuration.

[0038] In further detail, the outer shell 5 comprises a main (tubular) portion 8 and a terminal (tubular) portion 9. The terminal portion 9 may be positioned in a first position (see Figure 1) in which the terminal portion 9 is coupled, in particular in contact, with the main portion 8, and in a second position (see Figures 2 and 3) in which the terminal portion 9 is separated (and spaced apart)

from the main portion 8. In particular, the terminal portion 9 may be repeatedly moved from the first position to the second position and vice versa.

[0039] In particular, the terminal portion 9 may also be moved to a plurality of second positions.

[0040] In further detail, the main portion 8 and the terminal portion 9 may extend along a first axis A with the terminal portion 9 being positioned in the first position.

[0041] In addition, the main portion 8 and the terminal portion 9 may be coaxial with each other.

[0042] According to some preferred embodiments, the terminal portion 9 protrudes from the main portion 8 along a direction parallel to the first axis A when the terminal portion 9 is placed in the first position.

[0043] Furthermore, the terminal portion 9 is arranged after the main portion 8.

[0044] In particular, the spout 4 also comprises a first outlet 10 in fluidic connection with the first outlet tube 8 and configured to allow for the (controlled) discharging of the first liquid from the first outlet tube 8 and the spout 4.

[0045] The first outlet 10 is arranged in and/or coupled with the terminal portion 9. This means that a displacement of the terminal portion 9 also results in a displacement of the first outlet 10. For example, it is possible to move the first outlet 10 closer to the container that has to receive the first liquid by moving the terminal portion 9.

[0046] The spout 4 also comprises a second outlet 11 in fluidic connection with the outlet conduit 7 and configured to allow for the discharging of the second liquid, in particular out of the outlet conduit 7 and out of spout 4.

[0047] The second outlet 11 is arranged in and/or coupled with the main portion 8. Thereby, while it is possible to move the first outlet 10 closer to the container to be filled, this is not possible for the second outlet 11.

[0048] Preferentially, the main portion 8 may comprise a seat, within which a section of the terminal portion 9 is housed when the terminal portion 9 is in the first position. This ensures that the terminal portion 9 takes on the first position in a defined manner.

[0049] In further detail, the outlet tube 6 may be extendable, in particular to allow for the movement of the terminal portion 9 from the first position to the second position and vice versa.

[0050] In particular, the outlet tube 6 may be partially taken out of the main portion 8.

[0051] In addition, a maximum length of the outlet tube 6 can result in a maximum displacement of the terminal portion 9.

[0052] Preferentially, the outlet tube 6 can also be flexible and/or bendable. This makes it possible for the terminal portion 9 and the first outlet 10 to be arranged in various second positions.

[0053] According to some embodiments, the dispensing device 1 may also comprise a buffer unit for the outlet tube 6.

[0054] More specifically, the buffer unit may be configured to house a portion of the outlet tube 6 when the terminal portion 9 is in the first position and to release the portion of outlet tube 6 when the terminal portion 9 is in the second position. In other words, the buffer unit can house the portion of the outlet tube 6 that allows for a partial extraction of the outlet tube 6 from the main portion 8.

[0055] According to some possible embodiments, the buffer unit may comprise a mechanism which is configured to exert a force on the outlet tube 6 that pushes the terminal portion 9 towards the first position.

[0056] Referring in particular to Figure 3, the outlet conduit 7 may be fixed. In other words, the outlet conduit 7 cannot vary its respective length. In fact, this is not necessary in the present solution, as the second outlet 11 cannot be moved closer to the container to be filled by a movement of the second outlet 11.

[0057] Referring in particular to Figures 1 and 2, the spout 4, in particular the main portion 8, may be connected to and may extend from the main body 3.

[0058] In greater detail, the main portion 8 may extend from a first final zone 15 to a second final zone 16 opposite the first final zone 15.

[0059] The second final zone 16 may be connected to the main body 3.

[0060] The first final zone 15 may be in contact with the terminal portion 9, when the terminal portion 9 is in the first position.

[0061] In further detail, the spout 4, in particular the main portion 8, may be curved.

[0062] In particular, the main portion 8 may comprise a first linear section 17 having the first final zone 15, a second curved section 18 and a third linear section 19 having the second final zone 16. In particular, the second section 18 may be interposed between and connected to the first section 17 and the second section 19.

[0063] Furthermore, the first section 17 and the third section 19 may extend along the first axis A and a second axis B respectively. Preferentially, the first axis A and the second axis B may be transverse, in particular perpendicular, to each other.

[0064] According to some embodiments, the spout 4 may be coupled to the main body 3 in a rotatable manner. In particular, the spout 4 may be rotatable about a rotation axis, preferentially parallel, in particular coaxial, to the second axis B.

[0065] Referring in particular to Figures 3 and 4, the dispensing device 1 may comprise an insert 20 housed in the main portion 8, in particular at the first final zone 15.

[0066] The insert 20 may have an opening for the outlet tube 6. Preferentially, the insert 20 may be configured to guide the outlet tube 6 outside the main portion 8, in particular to ensure that the outlet tube 6 is not damaged when moving the terminal portion 9 from the first position to the second position and vice versa (e.g. due to contact with an edge of the main portion 8).

[0067] More specifically, the insert 20 may be provided with a channel 21 within which a section of the outlet tube 6 slides, in particular during a displacement of the terminal portion 9. The channel 21 may comprise and/or define

the aperture.

[0068] In further detail, the insert 20 may have a face having the aperture, the face facing the terminal portion 9, in particular with the terminal portion 9 being in the first position.

[0069] In particular, the insert 20 allows the outlet tube 6 to slide and also protects the inner surfaces of the main portion 8 from possible splashes of a liquid, such as water splashes, which might enter.

[0070] Preferentially, the insert 20 may have a substantially cylindrical shape.

[0071] According to some preferred embodiments, the insert 20 may have an outer diameter that (substantially) corresponds to an inner diameter of the main portion 8, in particular of the first final zone 15.

[0072] Preferentially, the insert 20 may be made of a polymeric material and/or may comprise a polymeric material.

[0073] Preferentially, the dispensing device 1 may also comprise a seal at least partially interposed between the outer shell 5 and the insert 20.

[0074] According to some preferred embodiments, the first outlet 10 and the second outlet 11 each comprise a respective faucet aerator 12.

[0075] In particular, each faucet aerator 12 extends from the main portion 8 or the terminal portion 9, preferentially in a direction perpendicular to the first axis A.

[0076] Preferentially, the insert 20 may comprise a cavity 23 within which the faucet aerator 12 of the second outlet 11 is inserted.

[0077] With particular reference to Figure 1, the delivery device 1 may also comprise at least a first control group 30 configured to selectively control the fluidic connection between the outlet tube 6 with the first main inlet conduit, and in particular also with the second main inlet conduit.

[0078] In particular, the control group 30 may also be configured to mix the liquid of the first type which is conveyed, in use, from the first main inlet conduit and the liquid of the second type which is conveyed, in use, from the second main inlet conduit.

[0079] The first control group 30 may also be configured to control a flow rate of the first liquid.

[0080] Preferentially, the first control group 30 may be a mixer.

[0081] The dispensing device 1 may also comprise a second control group 31 configured to selectively control the fluidic connection between the auxiliary inlet conduit and the outlet conduit 7. In particular, the second control group 31 may also be configured to control a flow rate of the second liquid.

[0082] The main body 3 may comprise a first seat and a second seat for the first control group 30 and the second control group 31, respectively.

[0083] In particular, the first seat may be fluidically interposed between the outlet tube 6 and the first main inlet conduit, and in particular the second main inlet conduit.

[0084] The second seat may be fluidically interposed between the outlet conduit 7 and the auxiliary inlet conduit.

[0085] In use, it is possible to fill a container with the first liquid and/or the second liquid.

[0086] In order to dispense the first liquid, a user can operate the first control group 30, whereas in order to dispense the second liquid, the user can operate the second control group 31.

[0087] Before or while dispensing the first liquid, it is also possible to move the terminal portion 9 closer and consequently the first outlet 10 from which the first liquid exits by displacing the terminal portion 9 from the first position to the second position.

[0088] After examining the characteristics of the dispensing device 1 made according to the present invention, the advantages it allows to obtain are clear.

[0089] In particular, an advantage lies in the fact that the second outlet 11 is fixed and is not displaced by a shift of the terminal portion 11.

[0090] The fact that outlet conduit 7 must not enable the displacement of the terminal portion 9 makes it possible to maintain the total length of the outlet conduit 7 to a minimum, thus reducing possible wastes of the second liquid.

[0091] A further advantage lies in the fact that the outlet conduit 7 may have a larger diameter as it is not required to extend. The flow rate of the second liquid may thereby be optimised.

[0092] Finally, it is clear that modifications and variations can be made to the dispensing device 1 described and shown herein without thereby departing from the scope of protection defined by the claims.

Claims

1. Dispensing device (1) for dispensing a first liquid and a second liquid comprising:

   - a main body (3) having a first main inlet conduit for at least a portion of the first liquid and an auxiliary inlet conduit for at least a portion of the second liquid; and
   - a spout (4) having an outer shell (5) and an outlet tube (6) and an outlet conduit (7) arranged within the outer shell (5);

   wherein the outlet tube (6) is in fluidic connection and/or is controllable into fluidic connection with the first main inlet conduit and the outlet conduit (7) is in fluidic connection and/or is controllable into fluidic connection with the auxiliary inlet conduit;

   wherein the outer shell (5) comprises a main portion (8) and a terminal portion (9);

   wherein the terminal portion (9) is positionable in a first position in which the terminal portion (9) is coupled, in particular in contact, with the main portion (8) and in a second position within

which the terminal portion (9) is separated from the main portion (8);
wherein the spout (4) comprises a first outlet (10) in fluidic connection with the outlet tube (6) and configured to allow for the discharging of the first liquid; wherein the first outlet (10) is arranged within and/or coupled to the terminal portion (9); wherein the spout (4) comprises a second outlet (11) in fluidic connection with the outlet conduit (7) and configured to allow for the discharging of the second liquid; wherein the second outlet (11) is arranged within and/or is coupled to the main portion (8).

2. Dispensing device according to claim 1, wherein the outlet tube (6) is extendable.

3. Dispensing device according to claim 1 or 2, further comprising a buffer unit for the outlet tube (6).

4. Dispensing device according to claim 3, wherein the buffer unit is configured to house a portion of the outlet tube (6) when the terminal portion (9) is in the first position and to release the portion of the outlet tube (6) when the terminal portion (9) is in the second position.

5. Dispensing device according to any one of the preceding claims, wherein the outlet conduit (7) is fixed.

6. Dispensing device according to any one of the preceding claims, further comprising an insert (20) housed within a final zone (15) of the main portion (8); wherein the insert (20) presents an aperture for the outlet tube (6).

7. Dispensing device according to preceding claim 6, wherein the insert (20) is in and/or comprises a polymeric material.

8. Dispensing device according to claim 6 or 7, wherein the second outlet (11) comprises a faucet aerator (22) and the insert (20) comprises a cavity (23) within which the faucet aerator (22) is inserted.

9. Dispensing device according to any one of the preceding claims 6 to 8, wherein the insert (20) is provided with a channel (21) within which a section of the outlet tube (6) slides; wherein the channel (21) comprises and/or defines the aperture.

10. Dispensing device according to any one of the preceding claims 6 to 9, wherein the insert (20) presents a substantially cylindrical shape.

11. Dispensing device according to any one of the preceding claims, comprising at least a first control group (30) configured to selectively control the fluidic connection between the first main inlet conduit and the outlet tube (6); and a second control group (31) configured to selectively control the fluidic connection between the auxiliary inlet conduit and the outlet conduit (7).

12. Dispensing device according to claim 11, wherein the main body (3) comprises a first seat and a second seat for the first control group (30) and the second control group (31), respectively.

13. Dispensing device according to any one of the preceding claims, wherein the main body (3) carries the spout (4) .

14. Dispensing device according to any one of the preceding claims, wherein the first main inlet conduit is configured to transport a liquid of a first type;

the dispensing device (1) comprises also a second main inlet conduit configured to transport a liquid of a second type;
wherein the first liquid corresponds to the liquid of the first type or to the liquid of the second type or a mixture obtained by a portion of the liquid of the first type and of a portion of the second type.

15. Dispensing system comprising a dispensing device (1) according to any one of the preceding claims and a conditioning device configured to treat a liquid for obtaining the second liquid.

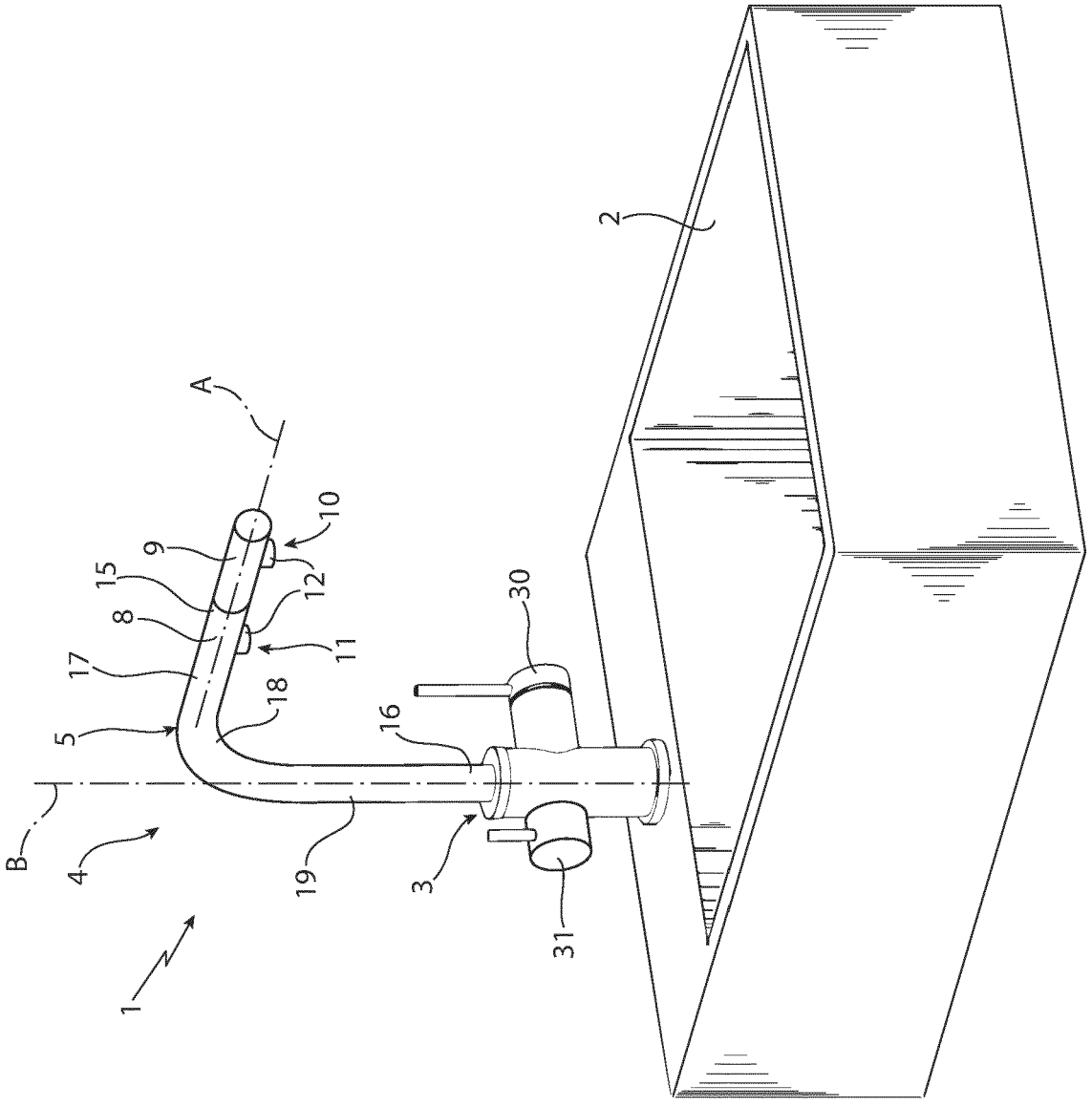

FIG. 1

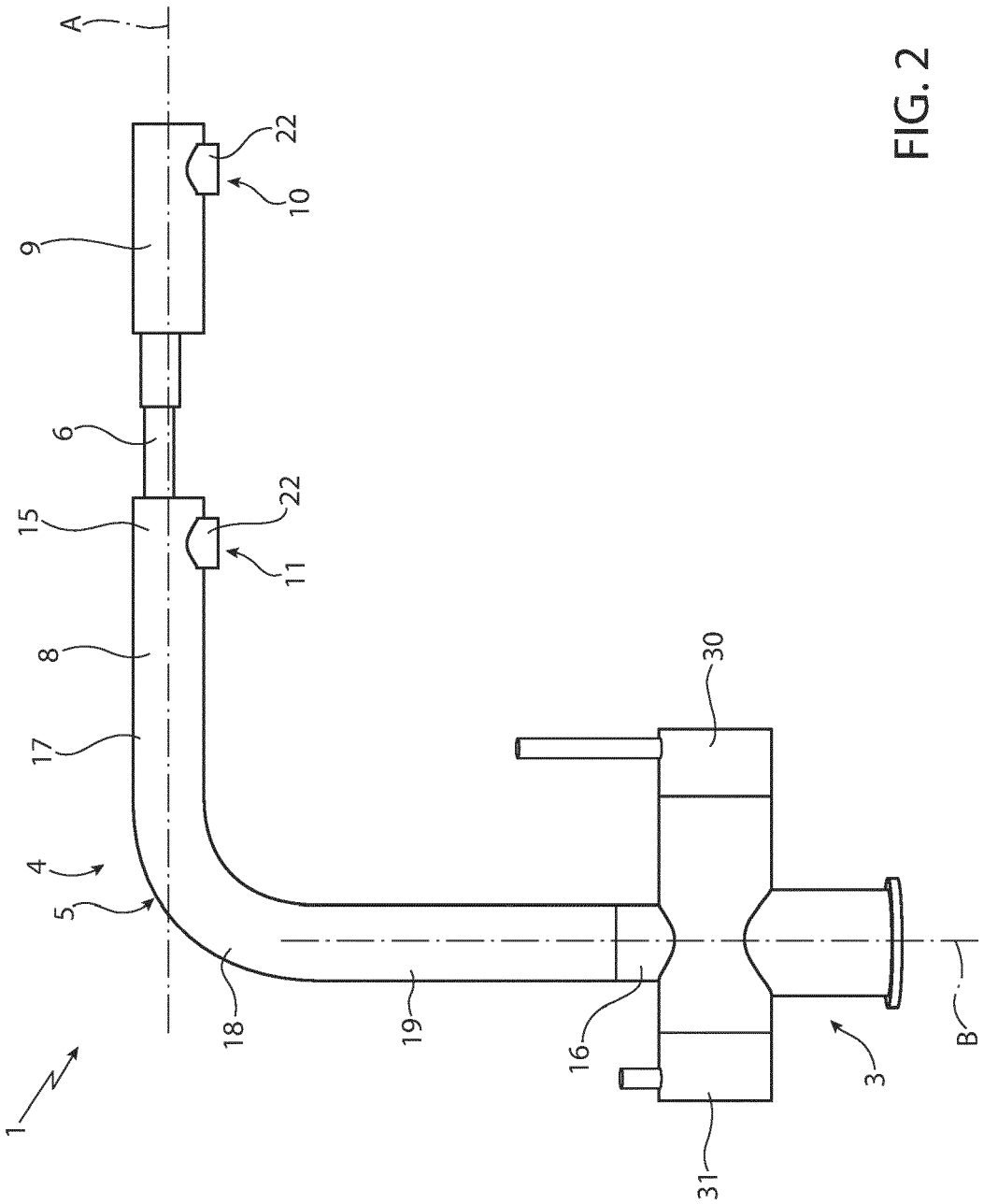

FIG. 2

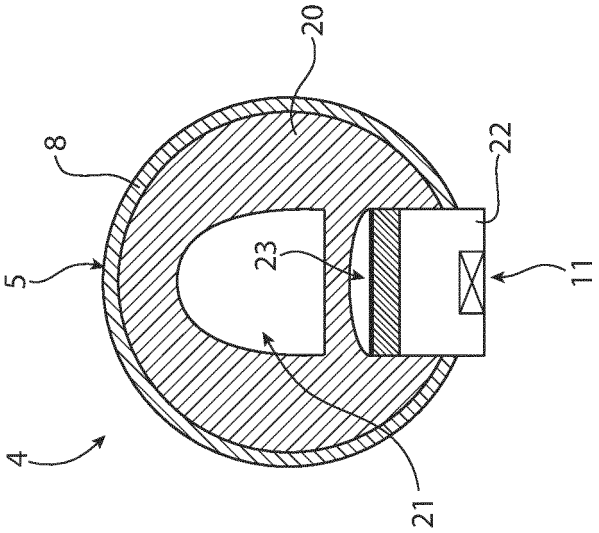

FIG. 4

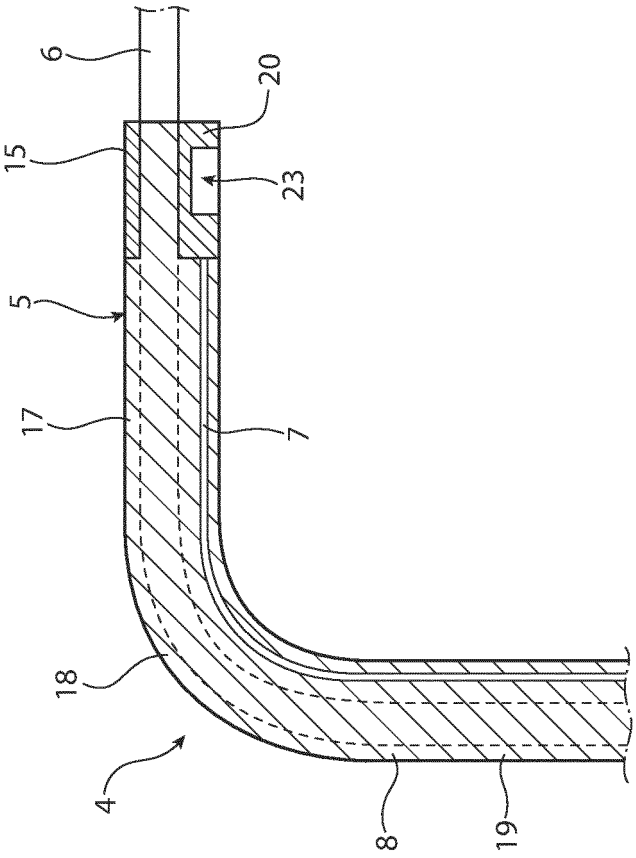

FIG. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 23 16 4269

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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E03C B65D B05B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	18 August 2023	Isailovski, Marko

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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