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(54) Spout, particularly for washbasins and the like, with device for automatic activation of a valve body

(57) A spout (1), particularly for washbasins and the like, with a device for the automatic activation of a valve body (3), comprising a tubular body (2) that can be associated with a valve body (3) of a washbasin at a first end (2a) thereof and is associated, at a second end (2b) thereof, with an aerator (4); the aerator (4) can be sealingly connected to the valve body (3) of the washbasin by means of a pipe (5) that lies inside the tubular body (2), the tubular body (2) comprising a first tubular element (6) and a second tubular element (7), which are associated to each other, without mutual contact, by means of an insulating element (8), the second tubular element (7), which is associated with the aerator (4), being associated with contact sensor means (9) that are connected to means (10) for actuating the valve body (3), forming a contact-sensitive region arranged at the end of the spout of the washbasin.

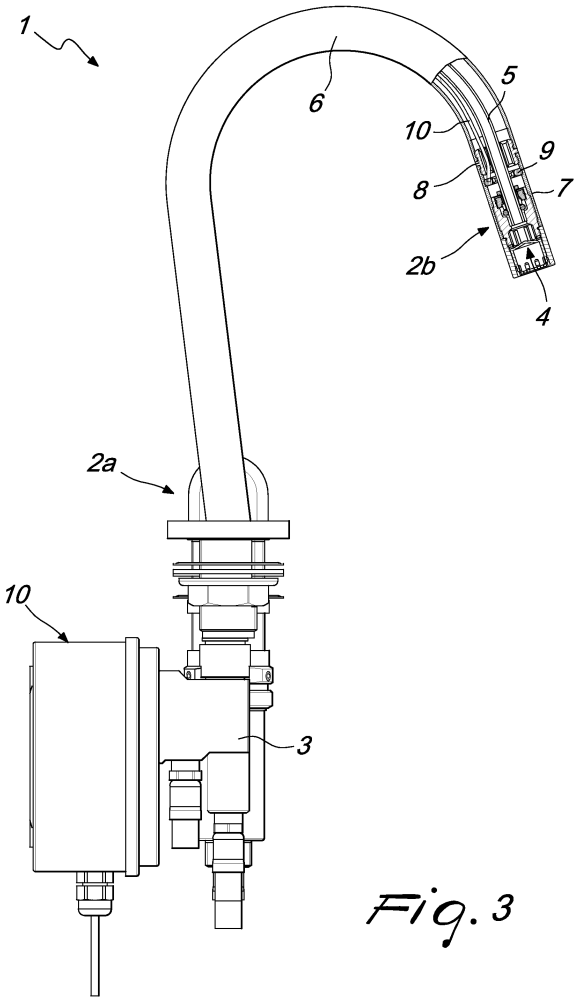

Fig. 3

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Description

[0001] The present invention relates to a spout, particularly for washbasins and the like, with device for automatic activation of a valve body.

[0002] More particularly, the invention relates to a spout that comprises a time-controlled valve body with automatic activation, combined with a battery-powered ceramic or thermostatic cartridge.

[0003] Automatic activation devices for controlling and managing the opening of the valve body of faucets of washbasins and the like are known.

[0004] For example, among the most widespread devices, motion detection devices are known which comprise a photocell or a proximity sensor that is installed proximate to the spout of the washbasin and is adapted to detect the presence of the user in order to open and/or close the valve body of the faucet.

[0005] Generally, closure of the valve body is linked to a timer, which is activated simultaneously with the opening of the valve body and, once the preset time has elapsed, closes the valve body automatically.

[0006] Another type of automatic activation devices is constituted by contact devices.

[0007] This last type of device is characterized by the presence of capacitive or inductive contact sensor means, which are associated with the spout of the washbasin to operate the valve body of the faucet when the user touches the spout of the washbasin.

[0008] In these known devices, the spout of the washbasin in fact becomes a totally sensitive element, which is connected to a control unit that measures the variation in capacitance or inductance that is associated with an electric circuit connected to the spout of the washbasin.

[0009] These known devices are not devoid of drawbacks, which include the fact that having a totally sensitive washbasin spout or having motion sensors located proximate to the spout causes activation of the valve body even when this is not required, such as for example during cleaning of the washbasin.

[0010] The aim of the present invention is to eliminate the drawback noted above by providing a spout, particularly for washbasins and the like, with a device for the automatic activation of a valve body that allows to actuate the valve body only when this is actually required, without possibility of error.

[0011] Within this aim, an object of the present invention is to provide a spout for washbasins that is easy to install and uses easily available components.

[0012] This aim, as well as these and other objects that will become better apparent hereinafter, are achieved by a spout, particularly for washbasins and the like, with a device for the automatic activation of a valve body, comprising a tubular body that can be associated with a valve body of a washbasin at a first end thereof and is associated, at a second end thereof, with an aerator, which can be sealingly connected to said valve body by means of a pipe that lies inside said tubular body, characterized in that said tubular body comprises a first tubular element and a second tubular element, which are associated to each other, without mutual contact, by means of an insulating element, said second tubular element being associated with said aerator and being associated with contact sensor means that are connected to means for actuating said valve body, forming a contact sensitive region arranged at the end of the spout of the washbasin.

[0013] Further characteristics and advantages of the present invention will become better apparent from the description of preferred but not exclusive embodiments of a spout, particularly for washbasins and the like, with a device for automatic activation of a valve body, according to the invention, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a perspective view of a first embodiment of a spout for washbasins according to the invention;
Figure 2 is a perspective view of a second embodiment of a spout for washbasins according to the invention;
Figure 3 is a partially sectional side elevation view of the spout shown in Figure 1;
Figure 4 is a partial sectional detail view of Figure 1.

[0014] With reference to the figures, the spout, particularly for washbasins and the like, with device for automatic activation of a valve body, generally designated by the reference numeral 1, comprises a tubular body 2, which substantially has a cylindrical cross-section and can be associated with a valve body 3 of a washbasin at a first end thereof 2a and is associated, at a second end thereof 2b, with an aerator 4, according to a system that is per se known and therefore is not described.

[0015] The spout is further associated with a battery-powered thermostatic or ceramic cartridge 3a.

[0016] The aerator 4 can be sealingly connected to the valve body by means of a flexible hose or pipe 5 that lies inside the tubular body 2.

[0017] According to the invention, the tubular body 2 comprises a first tubular element 6 and a second tubular element 7, which are associated to each other without mutual contact by means of an insulating element, which consists of a bush 8 that is sealingly inserted with a first portion thereof 8a in the first tubular element 6 and with a second portion thereof 8b in the second tubular element 7.

[0018] Electrical insulation between the first tubular element 6 and the second tubular element 7 is achieved by way of a radial expansion 8c, which is formed on the bush 8 and is arranged between the first portion 8a and the second portion 8b of the bush.

[0019] Of course, the materials of the bush 8, of the first tubular element 6 and of the second tubular element 7 are selected appropriately in order to provide an electrical insulation between the first tubular element 6 and the second tubular element 7.

[0020] The second tubular element 7 is associated with

the aerator 4 and is associated with contact sensor means of the capacitive type, which comprise at least a contact element 9 that acts as a first electrode of the capacitor.

[0021] As will become apparent hereinafter, the second electrode of the capacitor is the user proper.

[0022] In a possible embodiment, the contact element 9 is a ring that is screwed inside the second tubular element 7, since the latter has a circular cross-section.

[0023] In the same embodiment, the connection between the first and second tubular elements 6 and 7 and the bush 8 is also provided by way of a threaded coupling with a male thread on the bush 8, on both portions 8a and 8b, and female threads on the first and second tubular elements 6 and 7.

[0024] The contact element 9 is connected to means for actuating the valve body 3, which comprise at least one control unit 10, which can be arranged inside the washbasin in order to manage and control the valve body 3 by means of at least one wire 11.

[0025] In order to allow the passage of both the hose 5 and of the wire 11, the bush 8 comprises a through hole 8d along its axis.

[0026] According to the requirements, it is possible to provide additional embodiments that differ from the first one substantially in the shapes of the components, without altering the inventive concept.

[0027] For example, in a second possible embodiment, shown in Figure 2, the spout, generally designated by the reference numeral 101, can comprise a tubular body 102 that has substantially a rectangular cross-section with rounded edges.

[0028] In this case also, the tubular body 102 comprises a first and second tubular elements 106 and 107, which are associated to each other without mutual contact by means of an insulation element, which consists of a bush 108 that is sealingly inserted in the first tubular element 106 and in the second tubular element 107.

[0029] In this second embodiment, the aerator 104 in any case maintains a cylindrical cross-section and is associated with the end 102b of the tubular body 102.

[0030] The internal components, the control unit and the valve body can remain substantially unchanged.

[0031] Operation of the device for automatic activation of the spout 1 is clear and evident from what has been described.

[0032] In particular, it must be stressed that as electric current flows through the wire 11 and thus into the contact element 9, the contact element 9 acts as a first electrode of a capacitor, the second electrode of which is provided by the body of the user.

[0033] Since the contact element 9 engages the second tubular element 7, on the latter there is a contact sensing region arranged at the end of the spout 1 of the washbasin.

[0034] The control unit 10 performs the function of detecting the difference in capacitance associated with the first electrode, provided by the contact element 9, and of activating the valve body 3 for the outflow of the water from the spout.

[0035] In practice it has been found that the spout, particularly for washbasins and the like, with device for automatic activation of a valve body, according to the present invention, fully achieves the intended aim and objects, since it prevents unwanted activations of the device following operations by the user that do not require the delivery of water from the faucet.

[0036] Another advantage of the spout according to the present invention consists in that it is provided by means of components that are easily available, thereby entailing a low cost thereof and an easy installation.

[0037] The spout particularly for washbasins and the like with device for automatic activation of a valve body thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0038] All the details may further be replaced with other technically equivalent elements.

[0039] In practice, the materials used, so long as they are compatible with the specific use, as well as the contingent shapes and dimensions, may be any according to requirements and to the state of the art.

[0040] The disclosures in Italian Patent Application no. MI2008A000473, from which this application claims priority, are incorporated herein by reference.

[0041] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A spout (1), particularly for washbasins and the like, with a device for the automatic activation of a valve body, comprising a tubular body (2; 102) that can be associated with a valve body (3) of a washbasin at a first end (2a) thereof and is associated, at a second end (2b) thereof, with an aerator (4; 104), which can be sealingly connected to said valve body (3) by means of a pipe (5) that lies inside said tubular body (2), **characterized in that** said tubular body (2) comprises a first tubular element (6; 106) and a second tubular element (7; 107), which are associated to each other, without mutual contact, by means of an insulating element (8; 108), said second tubular element (7; 107) being associated with said aerator (4; 104) and being associated with contact sensor means (9) that are connected to means (10) for actuating said valve body (3), forming a contact sensitive region arranged at the end of the spout (1) of the washbasin.

2. The spout according to claim 1, **characterized in that** said contact sensor means (9) are of the capacitive type.

3. The spout according to one or more of the preceding claims, **characterized in that** said contact sensor means (9) comprise at least one contact element that engages said second tubular element (7) and is connected to said actuation means (10) by way of at least one wire (11) which, being crossed by an electrical current, acts as a first electrode of a capacitor.

4. The spout according to one or more of the preceding claims, **characterized in that** said actuation means (10) comprise at least a control unit, which can be arranged proximate to the washbasin to manage and control said valve body (3).

5. The spout according to one or more of the preceding claims, **characterized in that** said insulating element (8) is a bush that is sealingly inserted with a first portion thereof (8a) in said first tubular element (6) and with a second portion thereof (8b) in said second tubular element (7), said bush comprising a through hole (8d) along its own axis for the passage of said pipe (5) and of said at least one wire (11) and comprising a radial expansion that is arranged between said first (8a) and second (8b) portions for the mutual insulation of said first tubular element (6) and of said second tubular element (7).

6. A faucet particularly for washbasins and the like, **characterized in that** it comprises a spout according to one or more of the preceding claims.

7. The faucet according to claim 6, **characterized in that** a battery-powered ceramic or thermostatic cartridge is associated with the valve body (3) of said faucet.

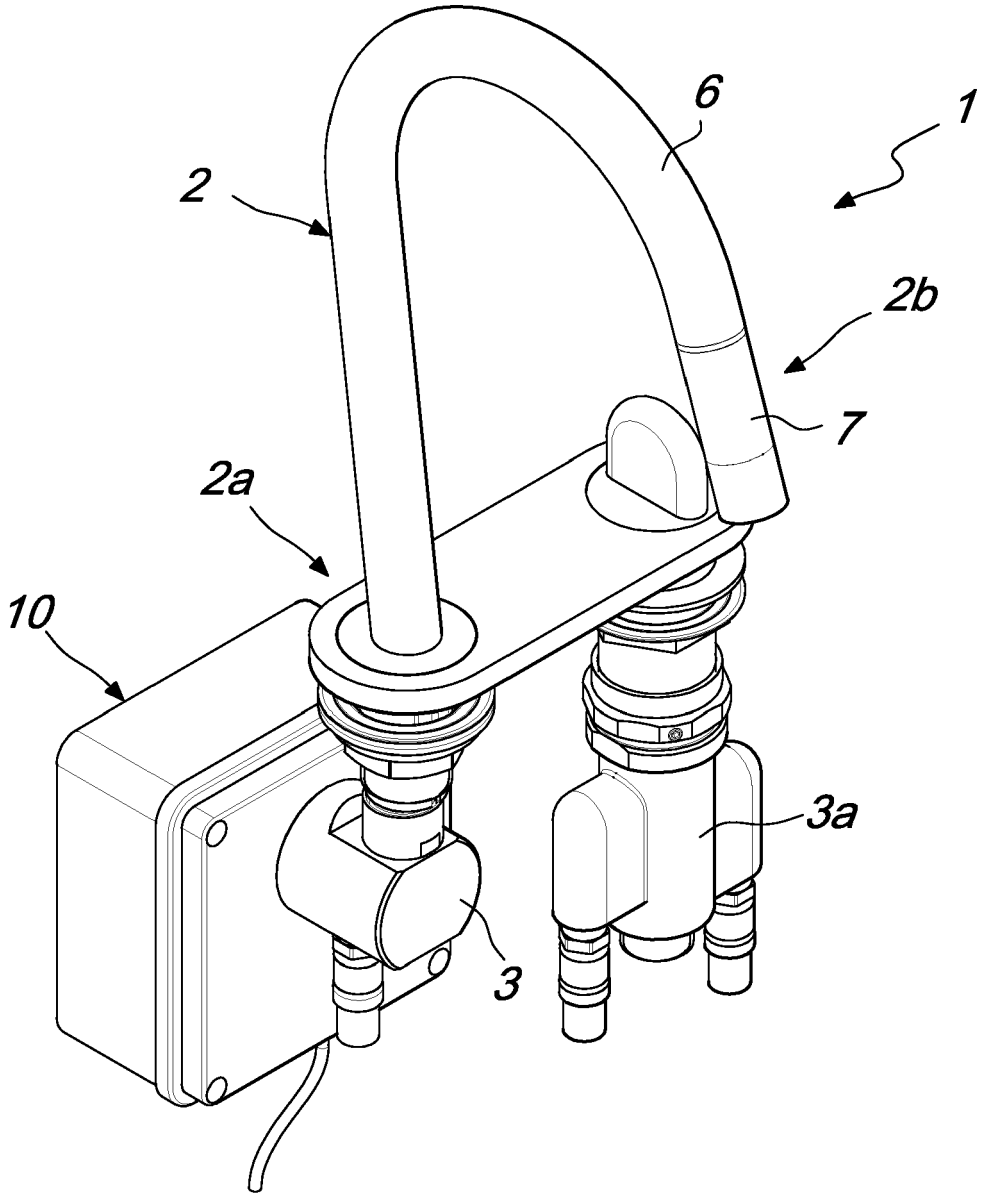

Fig. 1

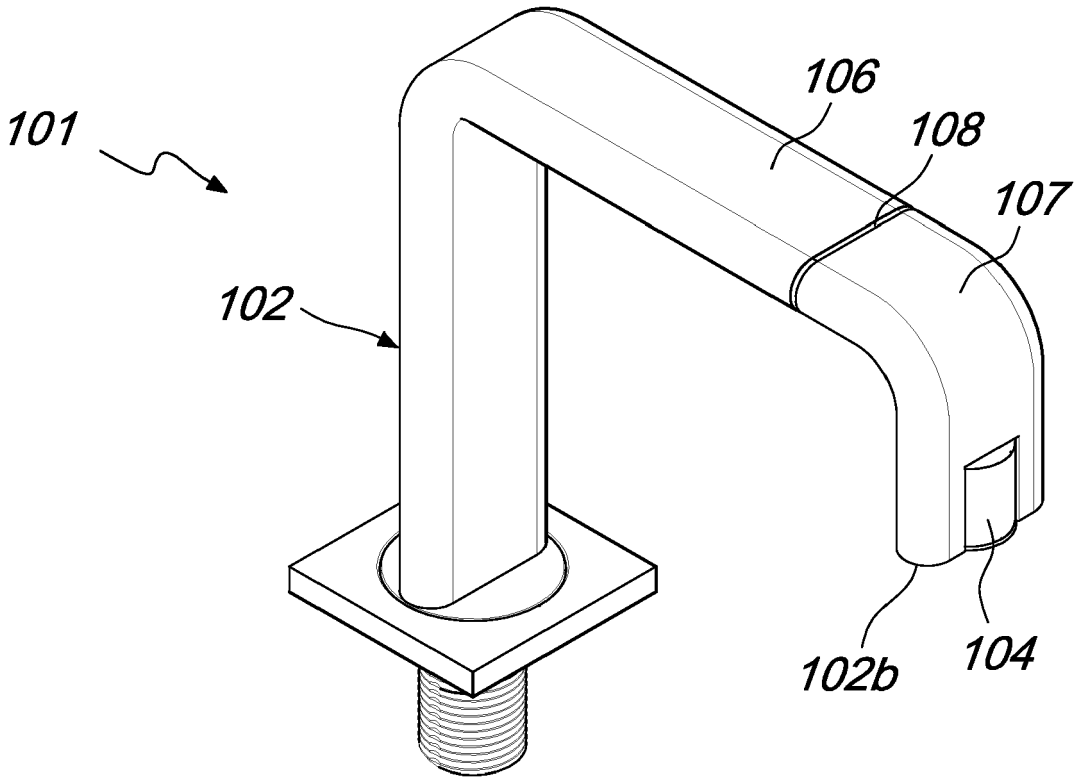

Fig. 2

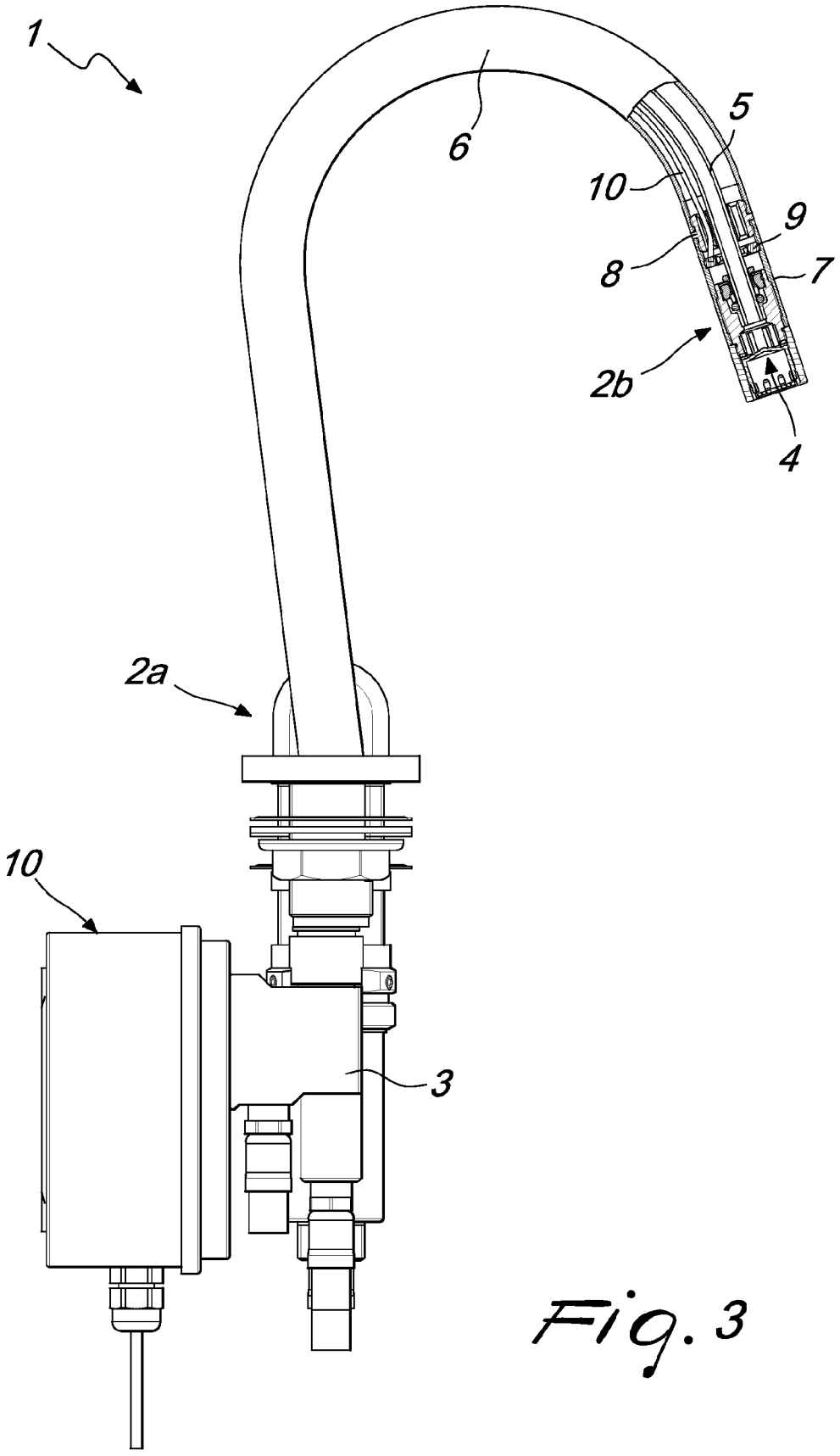

Fig. 3

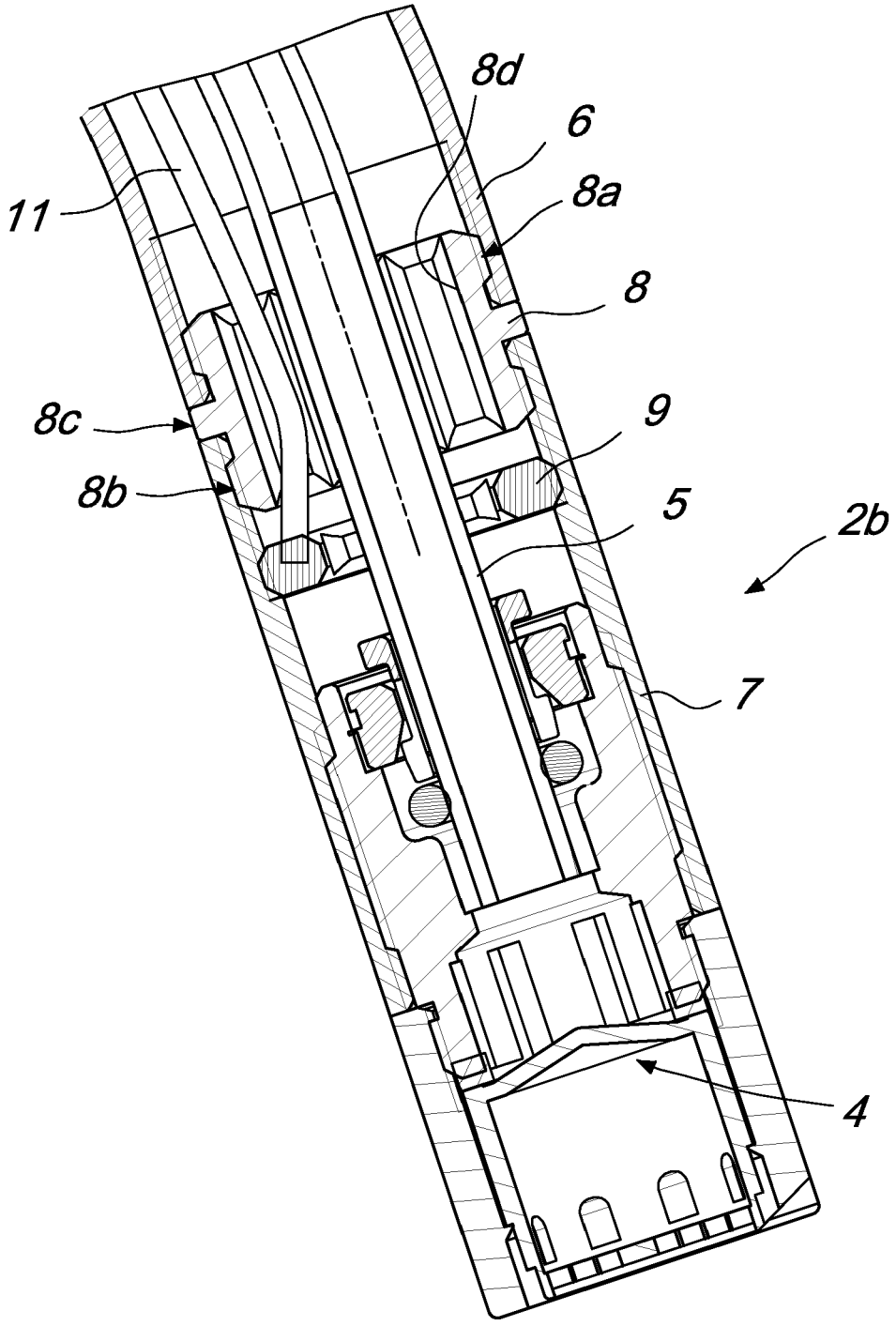

Fig. 4

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- IT MI20080473 A **[0040]**