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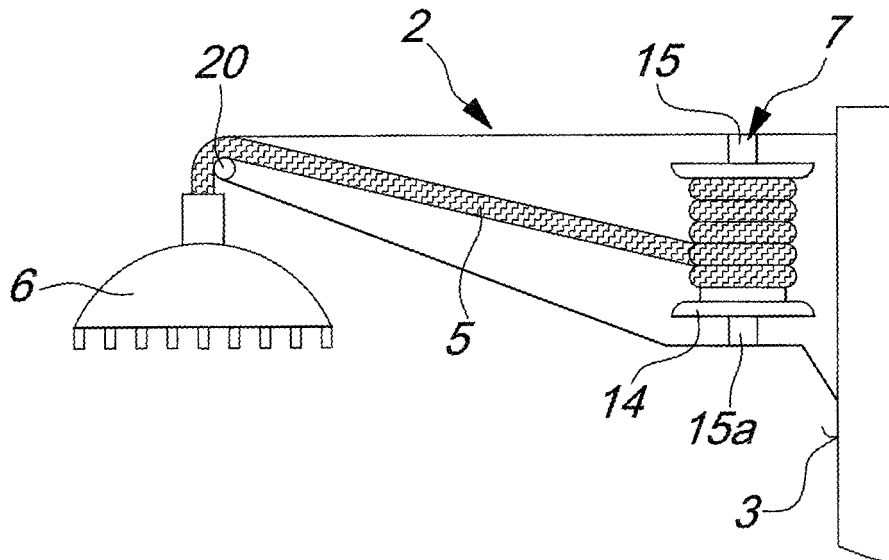
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(54) **Variable-configuration shower**

(57) A variable-configuration shower, comprising at least one support (2), which is fixed to the wall (3) inside the shower enclosure and is provided with at least one connector (4) for connection to the domestic mains, for at least one flexible hose (5) of preset length, which is connected to the connector (4) at a first end (5a) and to

at least one water head (6) at a second end (5b), the support (2) comprising means (7) for the elastic return of the flexible hose (5) which allow and contrast the movement of the head (6) by manual traction from at least one fixed retracted position, in which it is retained substantially at the support (2), to any extended position for use within the shower enclosure at the user's discretion.



*Fig. 5*

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## Description

**[0001]** The present invention relates to a variable-configuration shower.

**[0002]** As it is known, traditional showers are substantially of two kinds, i.e., a first kind, in which the head is fixed to the internal wall of the shower enclosure and accordingly cannot be moved from its position, and a second kind, in which the head is associated with a flexible hose so that it can be used in the position chosen at the user's discretion.

**[0003]** Showers of the first type are of course very inflexible to use, since it is not possible to direct the jet of water except by small variations of the inclination of the head; showers of the second type, instead, although allowing to use the head in the chosen position, require supports, such as slide bars and the like, which are installed inside the shower enclosure for the head in situations in which the head is used in a fixed position or in which both hands are busy and the head cannot be held.

**[0004]** The aim of the present invention is to obviate the cited drawbacks, by providing a variable-configuration shower which allows at the same time to use the water head in the fixed position and likewise in any chosen position to spray specific parts of the body without needing the installation of slide bars or the like.

**[0005]** Within this aim, an object of the present invention is to provide a variable-configuration shower which is simple, quick and cheap to install.

**[0006]** Another object of the present invention is to provide a variable-configuration shower which is simple, relatively easy to provide in practice, safe in use, effective in operation, and has a relatively low cost.

**[0007]** This aim and these and other objects which will become better apparent hereinafter are achieved by the present variable-configuration shower, characterized in that it comprises at least one support, which is fixed to the wall inside the shower enclosure and is provided with at least one connector for connection to the domestic mains, for at least one flexible hose of preset length, which is connected to said connector at a first end and to at least one water head at a second end, said support comprising means for the elastic return of said flexible hose which allow and contrast the movement of said head by manual traction from at least one fixed retracted position, in which it is retained substantially at said support, to any extended position for use within the shower enclosure at the user's discretion.

**[0008]** Further characteristics and advantages of the invention will become better apparent from the following detailed description of a preferred but not exclusive embodiment of a variable-configuration shower according to the invention, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a side elevation view of the variable-configuration shower according to the invention in a first embodiment;

Figure 2 is a partially sectional front view of the shower of Figure 1, with the head in a fixed retracted position;

Figure 2a is a partially sectional front view of the shower of Figure 1, with the head in an extended position for use;

Figure 3 is a view of a constructive detail of Figure 2a; Figure 4 is a side elevation view of the shower in a second embodiment;

Figure 5 is a partially sectional side elevation view of a variable-configuration shower according to the invention in a third embodiment, with the head in a fixed retracted position;

Figure 5a is a partially sectional side elevation view of the shower of Figure 5, with the head in an extended position for use;

Figure 6 is a partially sectional side elevation view of a variable-configuration shower according to the invention in a fourth embodiment, with the head in a fixed retracted position;

Figure 6a is a partially sectional side elevation view of the shower of Figure 6, with the head in an extended position for use;

Figure 7 is a partially sectional side elevation view of a variable-configuration shower according to the invention in a fifth embodiment, with the head in a fixed retracted position;

Figure 7a is a partially sectional side elevation view of the shower of Figure 7, with the head in an extended position for use.

**[0009]** In the exemplary embodiments that follow, individual characteristics, given in relation to specific examples, may actually be interchanged with other different characteristics that exist in other exemplary embodiments.

**[0010]** Moreover, it is noted that anything found to be already known during the patenting process is understood not to be claimed and to be the subject of a disclaimer.

**[0011]** With reference to Figure 1, the reference numeral 1 generally designates a variable-configuration shower according to the invention.

**[0012]** The shower can be installed easily and quickly in any shower enclosure without any limitation and requires no particular modification to the domestic water mains.

**[0013]** The variable-configuration shower according to the invention comprises advantageously at least one support, generally designated by the reference numeral 2, which is fixed to a wall 3 inside the shower enclosure and is provided with at least one connector 4 for connection to the domestic water mains, for at least one flexible hose 5 of preset length which is connected, at a first end 5a, to the connector 4; a second end 5b of the flexible hose 5 is instead connected to a water head 6, of a substantially traditional type, provided for example with any number of water ejectors and having any shape.

**[0014]** Conveniently, the support 2 comprises elastic return means, generally designated by the reference numeral 7, for the flexible hose 5, means adapted to allow and contrast the movement of the head 6, by manual traction on the part of the user and in relation to his/her requirements, from at least one fixed retracted position, in which it is retained substantially at the support 2 (Figure 2), to any extended position for use within the shower enclosure (Figure 2a). This allows the user of the shower to have the head 6 available in any position, insofar as allowed by the overall length of the flexible hose 5, subsequently allowing said hose to return elastically to the retracted position, acting as an ordinary fixed head.

**[0015]** The support 2 is preferably substantially box-like and is made equally either of stainless metallic material or of synthetic material such as plastics; the support 2 has at least one side 8 for fixing to the wall 3 inside the shower enclosure and at least one end portion 9 which forms a receptacle 10 for the head 6 in the fixed retracted position, the receptacle 10 being affected by a first hole 11 for the passage of the flexible hose 5. The support 2 further forms, at the side for fixing to the wall 8, at least one second hole 12 for the passage of the flexible hose 5.

**[0016]** The receptacle 10 comprises conveniently at least one gasket 13, which is made of a substantially elastically flexible material adapted to cushion the insertion of the head 6 in the receptacle 10, said insertion being rather sudden, in certain circumstances, due to the elastic action applied by the means 7. The gasket 13 can be shaped for example like a bushing, as shown in Figures 2 and 2a, or can have any other shape suitable for the specific requirements of application.

**[0017]** Advantageously, the elastic return means 7 for the flexible hose 5 comprise at least one drum 14, which has a substantially horizontal axis, is accommodated within the support 2, and is provided with two mutually opposite axial extensions 15 and 15a, which are supported so that they can rotate within the support 2: the drum 14 is advantageously adapted to wind the flexible hose 5 around its own outer surface 16, so that when necessary it can be unwound by the user by pulling, moving the head 6 to any extended position (Figure 2a).

**[0018]** One of the axial extensions 15 is internally hollow in order to allow the passage of the flexible hose 5; further, for the same purpose, the outer surface 16 of the drum 14 is affected by at least one opening 17.

**[0019]** The mutually opposite axial extensions 15, 15a are conveniently associated with respective torsion springs 18, 19, which are adapted to keep elastically the drum 14 in the angular position at which the head 6 is in the respective retracted position. Each of the torsion springs 18, 19 has a respective first end 18a, 19a, which is rigidly coupled to the box-like support 2, and a respective second end 18b, 19b, which is rigidly coupled to the drum 14.

**[0020]** The method of use of the variable-configuration shower according to the invention is fully intuitive. It is sufficient to pull the head 6 to the intended position to

spray the body, subsequently guiding it back into the retracted position after use.

**[0021]** It has thus been shown that the invention achieves the intended aim and objects.

5 **[0022]** The variable-configuration shower according to the invention allows to combine in a single product, without installation complications and without high costs, the advantageous characteristics of a traditional fixed shower and of a shower with a flexible hose, while eliminating their respective drawbacks.

10 **[0023]** The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

15 **[0024]** A second embodiment of the variable-configuration shower is shown schematically in Figure 4. In this embodiment, which is particularly advantageous, the box-like support 2 is substantially compact and small and is mounted at the end of a fixed head of the traditional type: in this manner, wall-mounted installation inside the shower enclosure is avoided.

20 **[0025]** Figures 5 and 5a relate to a third embodiment of the variable-configuration shower according to the invention. In this embodiment, the drum 14 for winding the flexible hose 5 has a substantially vertical axis of rotation, thus producing a smaller lateral space occupation of the box-like support 2; the support is further provided with at least one tension element 20, over which the flexible hose 5 slides.

25 **[0026]** A fourth embodiment of the variable-configuration shower according to the invention, which is particularly cheap in construction, is shown in Figures 6 and 6a. Here the elastic return means 7 comprise at least one contrast weight 21, which is associated with at least one ring 22 through which the flexible hose 5 passes. Preferably, the ring 22 is associated with at least one roller 23 for the rolling of the flexible hose 5, so as to limit friction. The box-like support 2 forms conveniently at least one lower chamber 24, which is adapted to allow the movement of the contrast weight 21 by manual traction of the head 6 by the user, from a lower position, which corresponds to the retracted position of the head 6 (Figure 6), to an upper position, which corresponds to the extended position of the head 6 (Figure 6a).

30 **[0027]** A fifth embodiment of the shower according to the invention is shown in Figures 7 and 7a. In this embodiment the elastic return means 7 comprise at least one pair of sliding tension elements 25 and 26, which are engaged in respective guides 27, 28 provided in the box-like support 2 (and constituted for example by slotted openings), and are associated with respective helical springs 29, 30, which are arranged coaxially with respect to the guides 27 and 28, each having an end which is rigidly coupled to the support 2. The flexible hose 5 is wound around the sliding tension elements 25 and 26, which are actuated so as to slide, by manual traction of the head 6 and contrasted elastically by the springs 29 and 30, from respective first stroke limit positions, which correspond to the retracted position of the head 6 (Figure

7), to respective second stroke limit positions, which correspond to the extended position of the head 6 (Figure 7a).

**[0028]** The shower can be provided conveniently with a device for slowing the return stroke of the head 6 toward the retracted position, which can be selected among the ones of the type that is substantially known and traditional.

**[0029]** All the details may further be replaced with other technically equivalent ones.

**[0030]** In practice, the materials used, as well as the shapes and the dimensions, may be any according to requirements without thereby abandoning the scope of the protection of the appended claims.

**[0031]** The disclosures in Italian Patent Application No. BO2005A000729 from which this application claims priority are incorporated herein by reference.

**[0032]** 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 variable-configuration shower, **characterized in that** it comprises at least one support (2), which is fixed to the wall (3) inside the shower enclosure and is provided with at least one connector (4) for connection to the domestic mains, for at least one flexible hose (5) of preset length, which is connected to said connector (4) at a first end (5a) and to at least one water head (6) at a second end (5b), said support (2) comprising means (7) for the elastic return of said flexible hose (5) which allow and contrast the movement of said head (6) by manual traction from at least one fixed retracted position, in which it is retained substantially at said support (2), to any extended position for use within the shower enclosure at the user's discretion.
2. The shower according to claim 1, **characterized in that** said support (2) is substantially box-like and has at least one side (8) for fixing to the wall (3) within the shower enclosure, and at least one end portion (9) which forms a receptacle (10) for said head (6) in said fixed retracted position, which is affected by a first hole (11) for the passage of said flexible hose (5).
3. The shower according to claims 1 and 2, **characterized in that** said side (8) for fixing to the wall (3) forms at least one second hole (12) for the passage of said flexible hose (5).
4. The shower according to one or more of the preceding claims, **characterized in that** at least one gasket (13) made of substantially elastically flexible material is inserted in said receptacle (10) and is adapted to cushion the insertion of said head (6) in said receptacle (10).
5. The shower according to one or more of the preceding claims, **characterized in that** said means (7) for the elastic return of said flexible hose (5) comprise at least one drum (14), which is provided with two mutually opposite axial extensions (15, 15a), which are supported so that they can rotate in said box-like support (2), which is adapted to wind said flexible hose (5) around its own outer surface (16), at least one of said axial extensions (15, 15a) being internally hollow in order to allow the passage of said flexible hose (5), said outer surface (16) being affected by at least one opening (17) for the passage of said hose (5), said mutually opposite axial extensions (15, 15a) being associated with respective torsion springs (18, 19), which are adapted to keep said drum elastically in the retracted position of said head.
6. The shower according to one or more of the preceding claims, **characterized in that** each of said torsion springs (18, 19) has a first end (18a, 19a), which is rigidly coupled to said box-like support (2), and a second end (18b, 19b), which is rigidly coupled to said drum (14).
7. The shower according to one or more of the preceding claims, **characterized in that** said drum (14) has a substantially horizontal axis of rotation.
8. The shower according to one or more of the preceding claims, **characterized in that** said drum (14) has a substantially vertical axis of rotation.
9. The shower according to one or more of the preceding claims, **characterized in that** said box-like support (2) is provided with at least one tension element (20) for said flexible hose (5).
10. The shower according to one or more of claims 1 to 4, **characterized in that** said elastic return means (7) comprise at least one contrast weight (21), which is associated with at least one ring (22) through which said flexible hose (5) passes.
11. The shower according to claim 10, **characterized in that** said ring (22) is associated with at least one roller (23) for the rolling of said flexible hose (5).
12. The shower according to claim 10 or 11, **characterized in that** said box-like support (2) forms at least one lower chamber (24), which is adapted to allow the movement of said contrast weight (21), by man-

ual traction of said head (6), from a lower position, which corresponds to the retracted position of said head (6), to an upper position, which corresponds to the extended position of said head (6).

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13. The shower according to one or more of claims 1 to 4, **characterized in that** said elastic return means (7) comprise at least one pair of sliding tension elements (25, 26), which are engaged in respective guides (27, 28) provided in said box-like support (2) and are associated with respective helical springs (29, 30), which are arranged coaxially with respect to said guides (27, 28), and around which said flexible hose (5) is wound, said sliding tension elements (25, 26) being actuated so as to slide, by manual traction of said head (6) and contrasted elastically by said helical springs (29, 30), from respective first stroke limit positions, which correspond to the retracted position of said head (6), to respective second stroke limit positions, which correspond to the extended position of said head (6).

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14. The shower according to one or more of the preceding claims, **characterized in that** it comprises a device for slowing the return stroke of said head (6) toward said retracted position.

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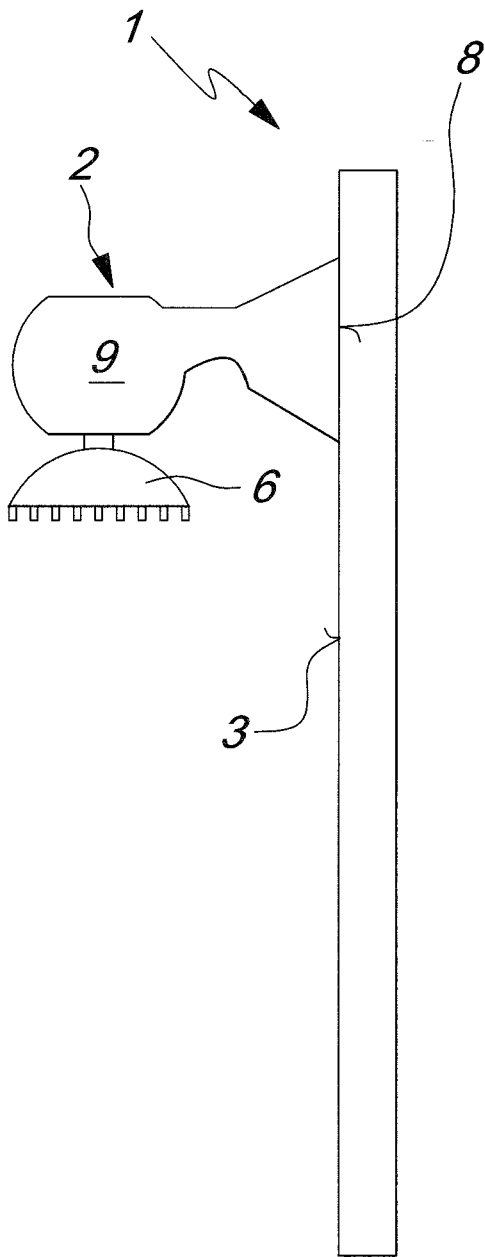
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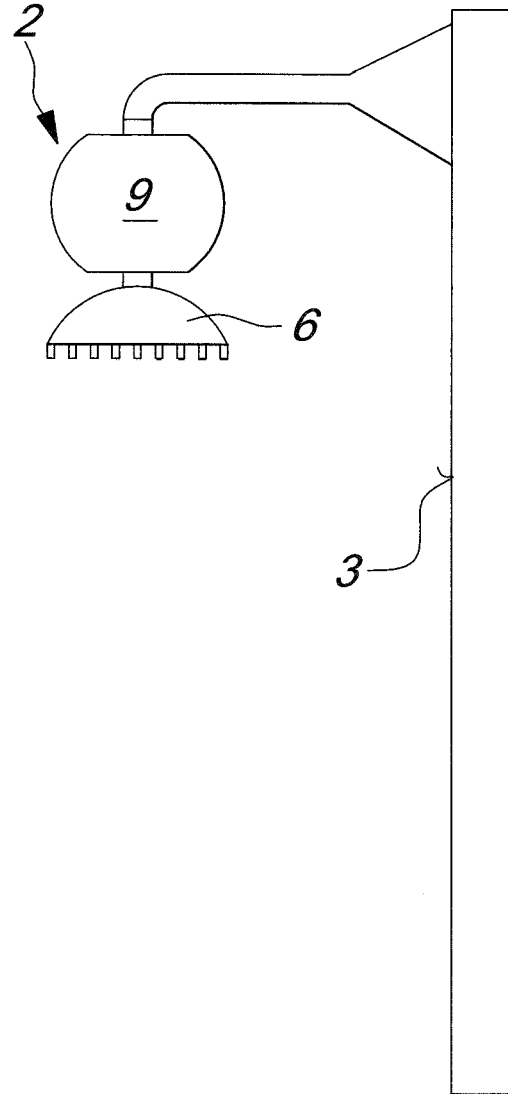
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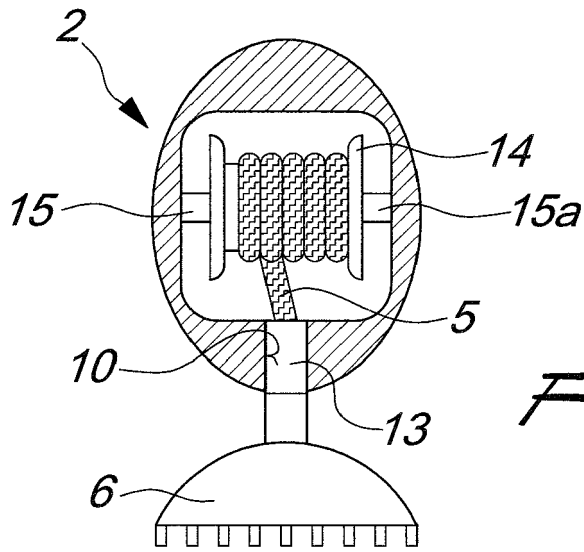
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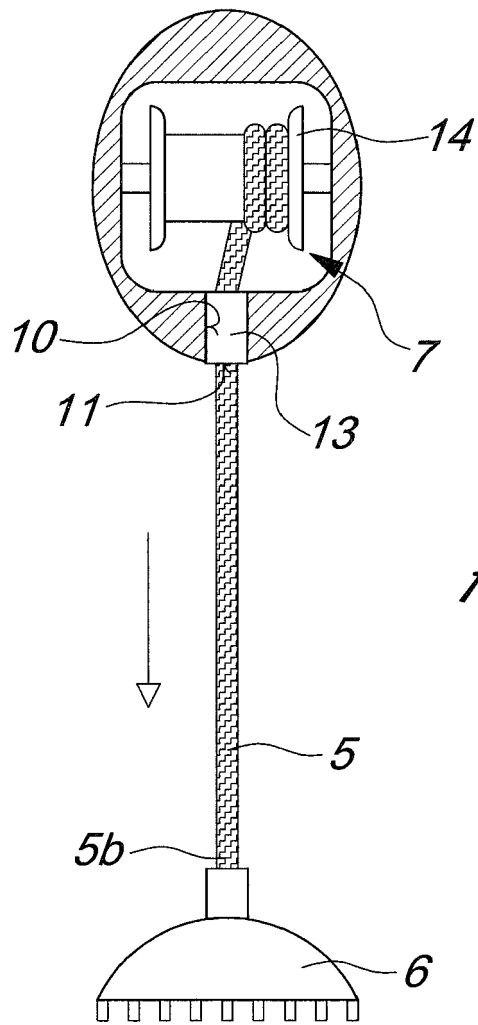
*Fig. 1*



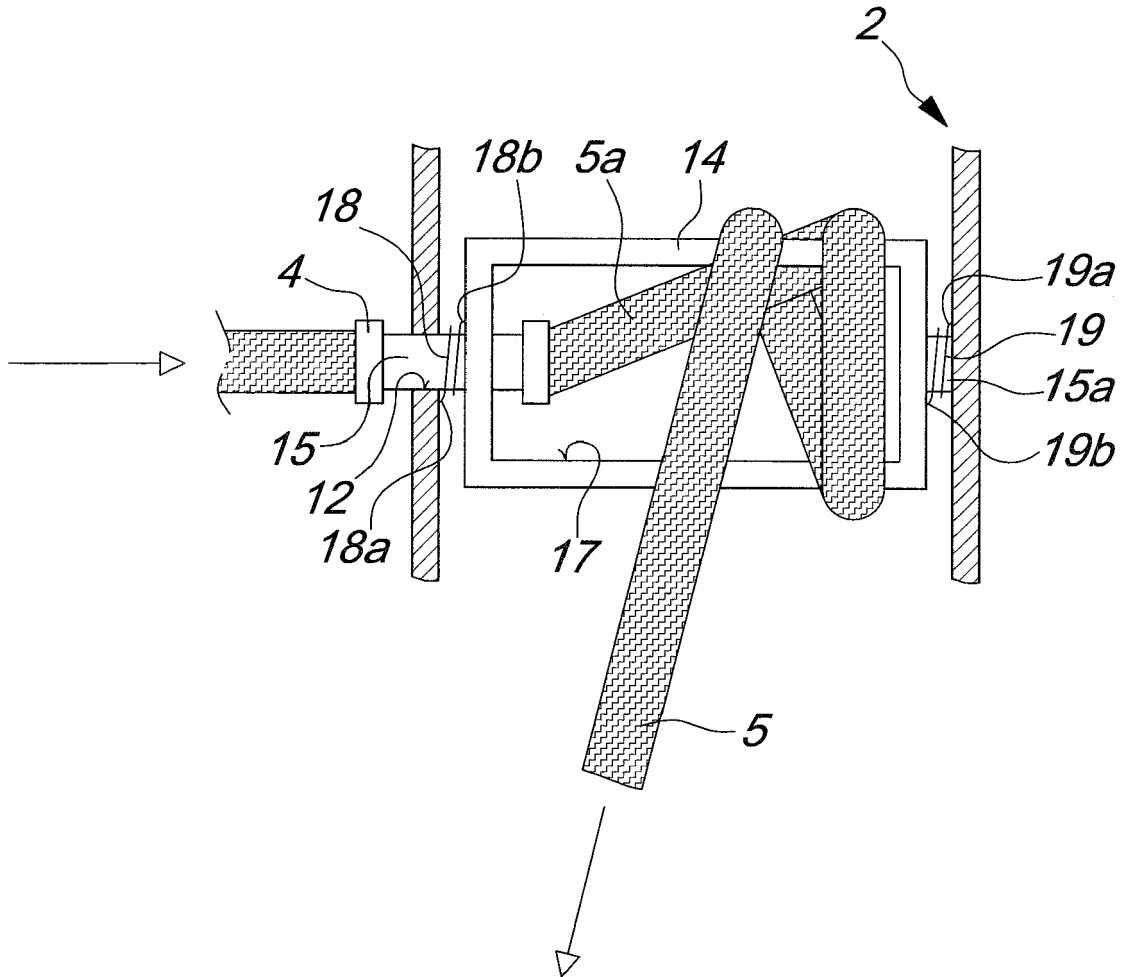
*Fig. 4*



*Fig. 2*

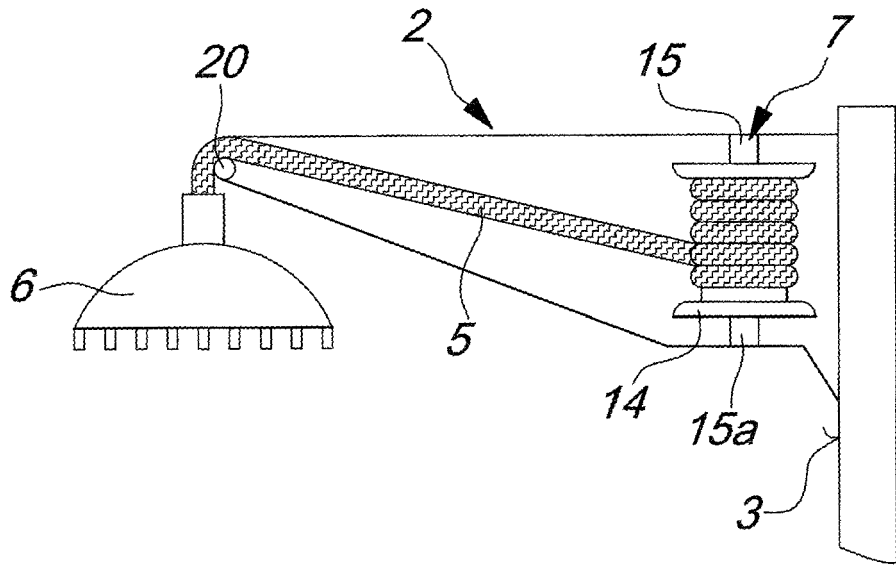


*Fig. 2a*

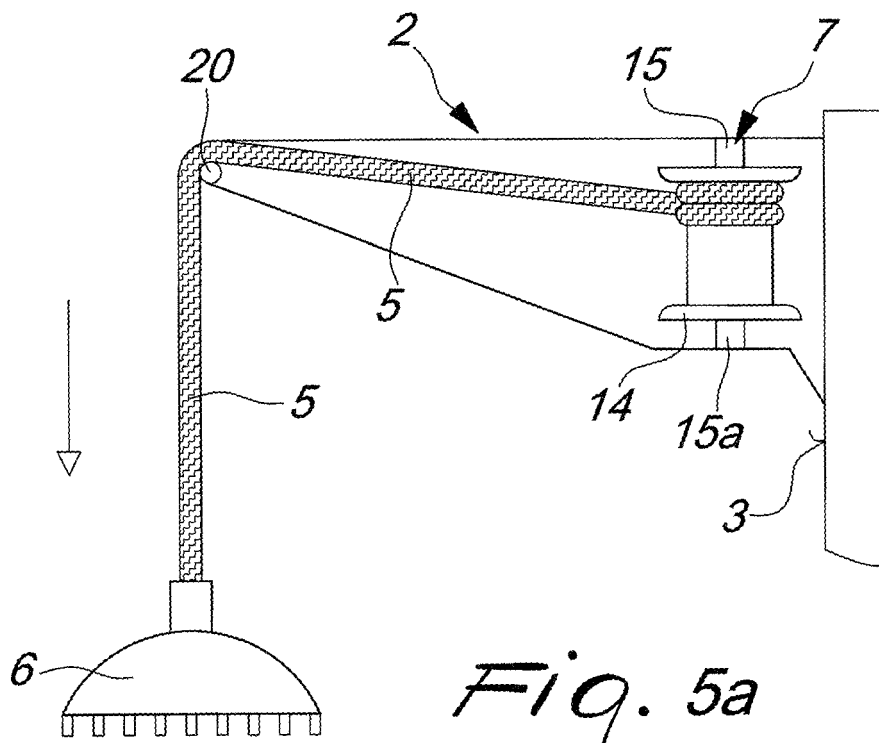


*Fig. 3*

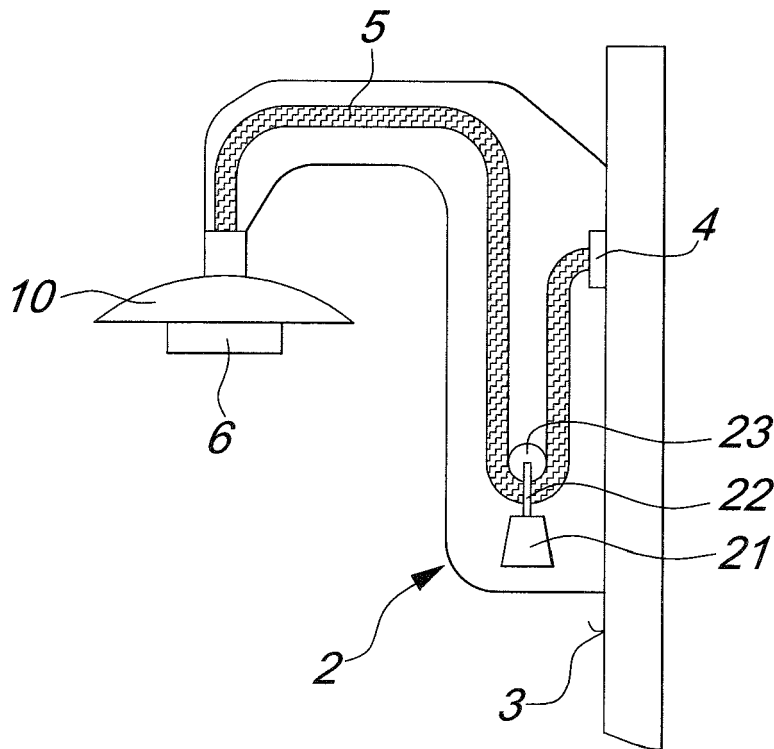




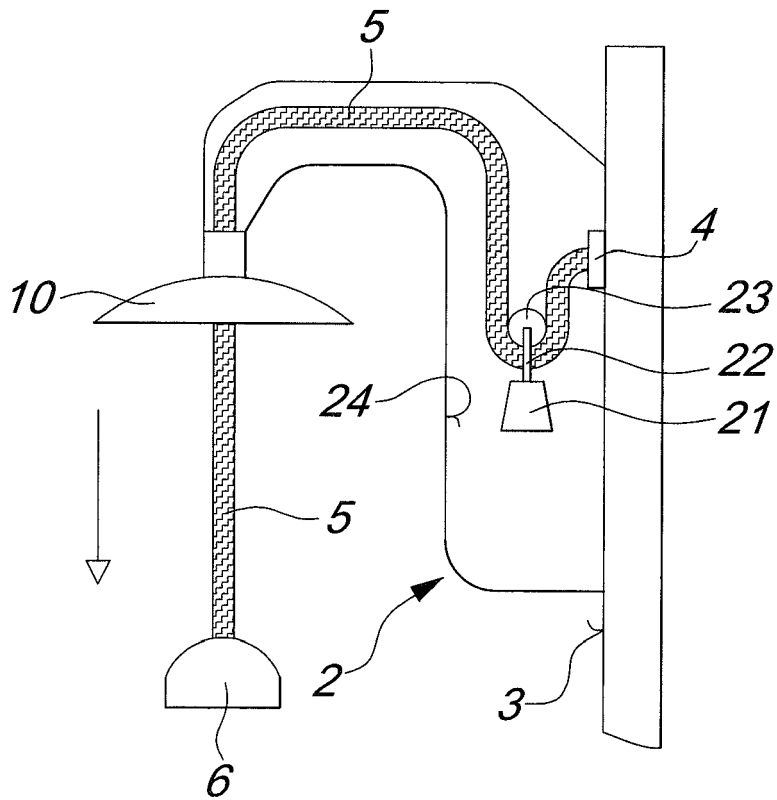
*Fig. 5*



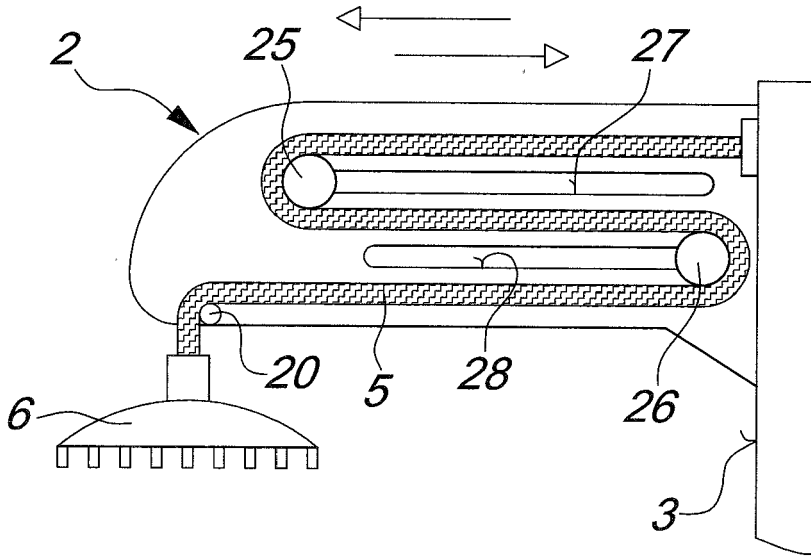
*Fig. 5a*



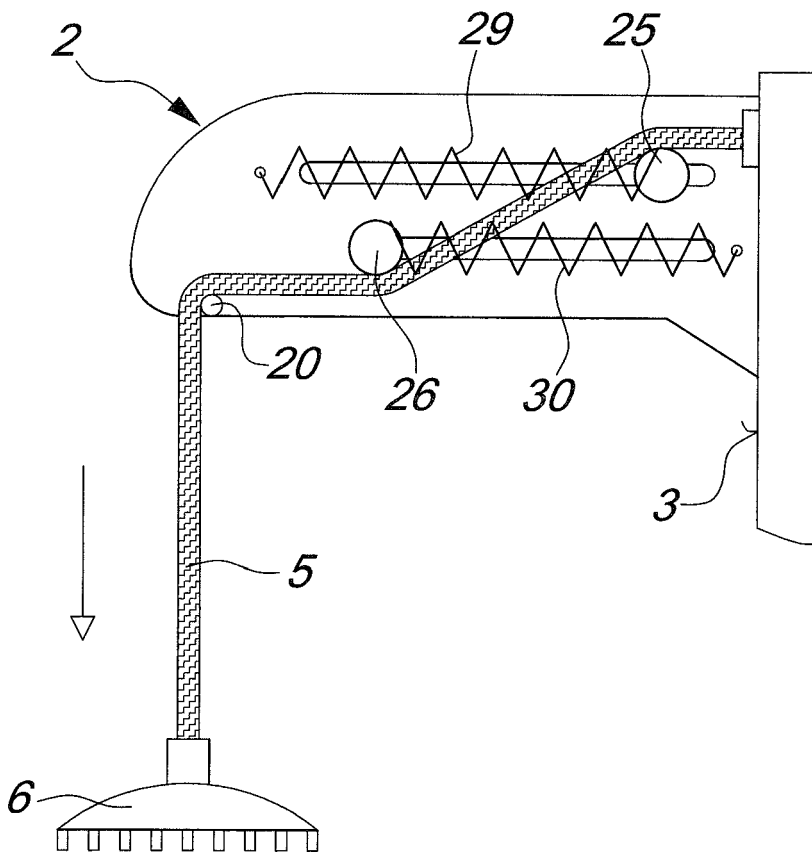
*Fig. 6*



*Fig. 6a*



*Fig. 7*



*Fig. 7a*

**REFERENCES CITED IN THE DESCRIPTION**

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**Patent documents cited in the description**

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