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Remarks:
Amended claims in accordance with Rule 86 (2) EPC.

(54) Shower head with massaging effect

(57) A shower head with massaging effect, of the type that is connected to a flexible water supply hose and forms at least one dispensing surface (4) provided with a plurality of nozzles (5), comprising electrically-operated vibrating means (7) that are adapted to generate a massaging vibration that can be transmitted to the body of the user substantially by direct contact with the dispensing surface (4).

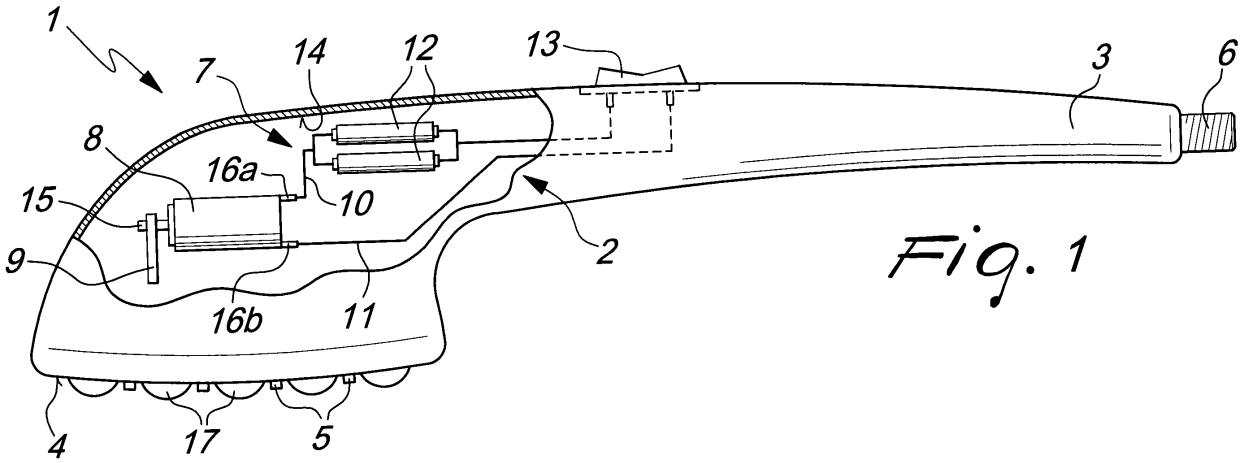

Fig. 1

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Description

[0001] The present invention relates to a shower head with massaging effect.

[0002] Shower heads are known which are equipped internally with elements that allow to produce a continuous vibration that allows the user to perform a more or less intense massage on the body parts involved.

[0003] These known shower heads are generally provided with elements that operate substantially hydraulically, i.e., are actuated directly by the flow of the water used to wet the body. Some of these elements are constituted for example by sorts of small turbines that are supported so that they can rotate in the shower head and are suitable to generate a vibrating effect by means of their rotation by direct actuation on the part of the water flow.

[0004] These heads, however, are not free from drawbacks. First of all, mechanically- and hydraulically-actuated vibrating elements are usually rather complicated and complex in terms of manufacturing and assembly: accordingly, the head is certainly too heavy and its relatively high cost places it in a disadvantageous situation on the market.

[0005] Secondly, the intensity of the vibrating effect produced by the head is necessarily conditioned by the flow-rate of water that flows through the head, and accordingly is scarcely adjustable by the user.

[0006] The aim of the present invention is to obviate the drawbacks noted above, by providing a shower head in which the massaging effect can be adjusted continuously and precisely at the discretion of the user with a massaging effect.

[0007] Within this aim, an object of the present invention is to provide a shower head with massaging effect that is extremely simple and reliable in terms of manufacturing and has low production costs.

[0008] This aim and this and other objects that will become better apparent hereinafter are achieved by the present shower head with massaging effect, of the type that is connected to a flexible water supply hose and forms at least one dispensing surface provided with a plurality of nozzles, characterized in that it comprises electrically-operated vibrating means that are adapted to generate a massaging vibration that can be transmitted to the body of the user substantially by direct contact with said dispensing surface.

[0009] Further characteristics and advantages of the present invention will become better apparent from the following detailed description of preferred but not exclusive embodiments of a shower head with massaging effect according to the invention, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a partially sectional side elevation view of a first embodiment of the shower head according to the invention;

Figure 2 is a partially sectional front view of the head of Figure 1;

Figure 3 is a partially sectional side elevation detail view of a second embodiment of the shower head according to the invention.

[0010] In the embodiment that follows, individual characteristics may actually be interchanged with other different characteristics that exist in other embodiments.

[0011] 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.

[0012] With reference to the figures, the reference numeral 1 generally designates a shower head with massaging effect according to the invention.

[0013] The shower head is of the type that is connected to a flexible hose for supplying water of a substantially traditional type, and is constituted by a substantially elongated body 2, which forms internally a water flow path. The body 2 further forms a grip 3 and at least one dispensing surface 4, which is provided with a plurality of nozzles 5 for ejecting water with the chosen intensity, which are variously distributed according to any geometric configuration. The grip 3 ends, at its free end, with means 6 for connection to a flexible duct, which are constituted for example by a threaded shank with a standardized thread or by other substantially equivalent means (for example a quick coupling).

[0014] According to the invention, the shower head advantageously comprises electrically-operated vibrating means, generally designated by the reference numeral 7, which are suitable to generate a massaging vibration that can be transmitted to the body of the user substantially by direct contact with the dispensing surface 4, i.e., by resting said surface on the part of interest and keeping it pressed thereon for the chosen time. The vibrating means 7 are shown schematically in Figure 1.

[0015] Conveniently, the electrically-operated vibrating means 7 comprise at least one direct-current electric motor 8 for driving at least one eccentric mass 9, which is functionally connected, by way of electric wires 10 and 11, to electric power supply means 12 and to a device 13 for adjusting the massaging vibration, at the user's discretion. The electric motor 8 is arranged so that its axis is substantially parallel to the dispensing surface 4, so as to generate a vibration in a direction that is perpendicular to said dispensing surface.

[0016] Conveniently, the electrically-operated vibrating means 7 are accommodated in a watertight receptacle 14, which is formed in the body 2 of the shower head and is suitable to prevent the penetration of water in its flow from the flexible supply hose to the dispensing surface 4. The receptacle 14 for accommodating the vibrating means 7 can be accessed conveniently from outside, for performing ordinary maintenance operations, for example by means of a removable flap (of the interlocking type, with screws) associated with the body 2, which is

not shown in the figures since it is of a fully conventional type; as an alternative, the body 2 can be provided by means of two or more detachable shells.

[0017] The electric motor 8 is conveniently of the type supplied with direct current, and has a driving shaft 15 to which the eccentric mass 9 is fixed rigidly. The electric motor 8 has two terminals 16a and 16b for connection to the wires 10 and 11, respectively.

[0018] The electric power supply means 12 are advantageously constituted by replaceable batteries or, as an alternative, rechargeable batteries, which can be accessed easily from outside; in the embodiment shown in Figure 1, there are two AA-type batteries, which are arranged and accommodated within the body 2 so that they can be extracted easily for replacement. However, it is noted that the batteries can be of any type and of any number, depending on the requirements of application.

[0019] Conveniently, the device 13 for adjusting the massaging vibration comprises a switch that can be operated by the user and is connected electrically to the wires 10 and 11. The switch is provided externally with respect to the body 2 of the shower head. Moreover, the device 13 for adjusting the massaging vibration can be provided conveniently with an integrated circuit that is adapted to vary continuously and precisely the rotation rate of the electric motor 8 at the user's discretion, over a suitably broad variation range.

[0020] The dispensing device 4 has a plurality of protrusions and studs 17, which are adapted to facilitate the massaging action and improve its effectiveness. The protrusions, which are present in any number and with any distribution, can be constituted for example by balls that rotate in their receptacles; as an alternative, they can be constituted conveniently by spring-loaded balls, i.e., balls that are associated with small springs accommodated in their respective receptacles.

[0021] The operation of the shower head with vibrating effect according to the invention is as follows. The vibrating means 7 can be operated at any time by the user, regardless of the dispensing of water and of its flow-rate; the intensity of the vibrating effect is adjustable precisely and accurately by acting on the device 13.

[0022] It has thus been shown that the invention achieves the intended aim and object. The shower head with massaging effect has a simple, sturdy and low-cost construction and is extremely lightweight and easy to handle. The watertightness of the receptacle 14 ensures maximum safety in operation, to which the low voltage of the electric power supply means 12 also contributes.

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

[0024] A second embodiment of the shower head according to the invention is shown in detail in Figure 3. Here, the electric motor 8 is arranged advantageously so that its axis is substantially perpendicular to the dispensing surface 4, so as to generate a vibration in a direction that is parallel to said dispensing surface. This vibration naturally has different massaging effects on the body part that it affects.

[0025] All the details may be replaced with other technically equivalent ones.

[0026] In practice, the materials used, as well as the shapes and dimensions, may be any according to requirements without thereby abandoning the protective scope of the appended claims.

[0027] 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 shower head with massaging effect, of the type that is connected to a flexible water supply hose and forms at least one dispensing surface (4) provided with a plurality of nozzles (5), **characterized in that** it comprises electrically-operated vibrating means (7) that are adapted to generate a massaging vibration that can be transmitted to the body of the user substantially by direct contact with said dispensing surface (4).

2. The shower head according to claim 1, **characterized in that** said electrically-operated vibrating means (7) comprise at least one electric motor (8) for actuating at least one eccentric mass (9), which is connected functionally to electric power supply means (12) and to a device (13) for adjusting the massaging vibration at the user's discretion.

3. The shower head according to claims 1 and 2, **characterized in that** said electrically-operated means (12) are accommodated in a watertight receptacle (14) that is formed in the body (2) of the shower head.

4. The shower head according to claim 2, **characterized in that** said electric motor (8) is of the direct-current type and has an actuation shaft (15), to which said eccentric mass (9) is fixed rigidly.

5. The shower head according to one or more of the preceding claims, **characterized in that** said electric motor (8) is arranged so that its axis is substantially perpendicular to said dispensing surface (4).

6. The shower head according to one or more of the preceding claims, **characterized in that** said electric motor (8) is arranged so that its axis is substantially parallel to said dispensing surface (4).

7. The shower head according to one or more of the

preceding claims, **characterized in that** said electric power supply means (12) comprise at least one replaceable battery.

8. The shower head according to one or more of the preceding claims, **characterized in that** said electric power supply means (12) comprise at least one rechargeable battery.

9. The shower head according to one or more of the preceding claims, **characterized in that** said device (13) for adjusting the massaging vibration comprises a switch that can be operated by the user.

10. The shower head according to one or more of the preceding claims, **characterized in that** said device (13) for adjusting the massaging vibration comprises an integrated circuit that is adapted to vary precisely and continuously the rotation rate of said electric motor (8).

11. The shower head according to one or more of the preceding claims, **characterized in that** said dispensing surface (4) is provided with a plurality of protrusions and studs (17) adapted for massaging.

12. The shower head according to one or more of the preceding claims, **characterized in that** said protrusions (17) are constituted by rotating balls.

13. The shower head according to one or more of the preceding claims, **characterized in that** said protrusions (17) are constituted by spring-loaded balls.

Amended claims in accordance with Rule 86(2) EPC.

1. A shower head with massaging effect, of the type that is connected to a flexible water supply hose and forms at least one dispensing surface (4) provided with a plurality of nozzles (5), the shower head comprising electrically-operated vibrating means (7) that are operable at any time by the user regardless of the dispensing of water and of it's flow rate and are adapted to generate a massaging vibration that can be transmitted to the body of the user substantially by direct contact with said dispensing surface (4) and wherein said messaging vibration is adjustable at the user's discretion.

2. The shower head according to claim 1, **characterized in that** said electrically-operated vibrating means (7) comprise at least one electric motor (8) for actuating at least one eccentric mass (9), which is connected functionally to electric power supply means (12) and to a device (13) for adjusting the massaging vibration at the user's discretion.

3. The shower head according to claims 1 and 2, **characterized in that** said electrically-operated means (12) are accommodated in a watertight receptacle (14) that is formed in the body (2) of the shower head.

4. The shower head according to claim 2, **characterized in that** said electric motor (8) is of the direct-current type and has an actuation shaft (15), to which said eccentric mass (9) is fixed rigidly.

5. The shower head according to one or more of the preceding claims, **characterized in that** said electric motor (8) is arranged so that its axis is substantially perpendicular to said dispensing surface (4).

6. The shower head according to one or more of the preceding claims, **characterized in that** said electric motor (8) is arranged so that its axis is substantially parallel to said dispensing surface (4).

7. The shower head according to one or more of the preceding claims, **characterized in that** said electric power supply means (12) comprise at least one replaceable battery.

8. The shower head according to one or more of the preceding claims, **characterized in that** said electric power supply means (12) comprise at least one rechargeable battery.

9. The shower head according to one or more of the preceding claims, **characterized in that** said device (13) for adjusting the massaging vibration comprises a switch that can be operated by the user.

10. The shower head according to one or more of the preceding claims, **characterized in that** said device (13) for adjusting the massaging vibration comprises an integrated circuit that is adapted to vary precisely and continuously the rotation rate of said electric motor (8).

11. The shower head according to one or more of the preceding claims, **characterized in that** said dispensing surface (4) is provided with a plurality of protrusions and studs (17) adapted for massaging.

12. The shower head according to one or more of the preceding claims, **characterized in that** said protrusions (17) are constituted by rotating balls.

13. The shower head according to one or more of the preceding claims, **characterized in that** said protrusions (17) are constituted by spring-loaded balls.

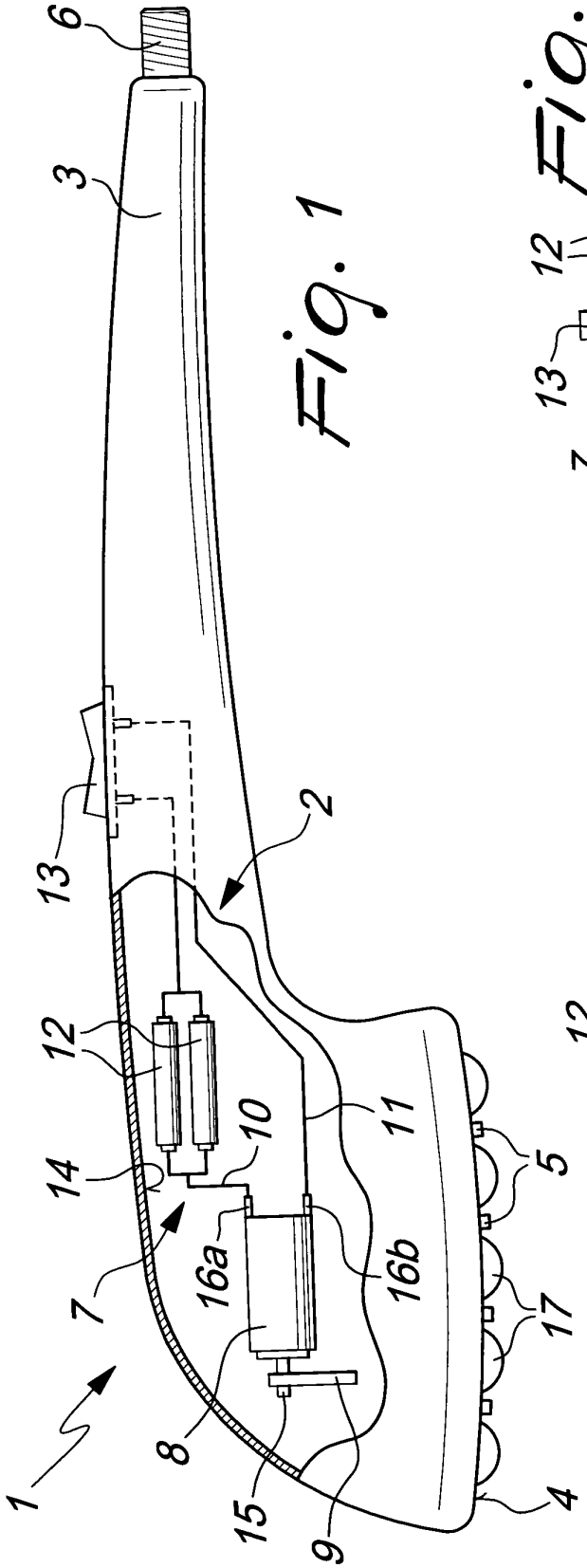

Fig. 1

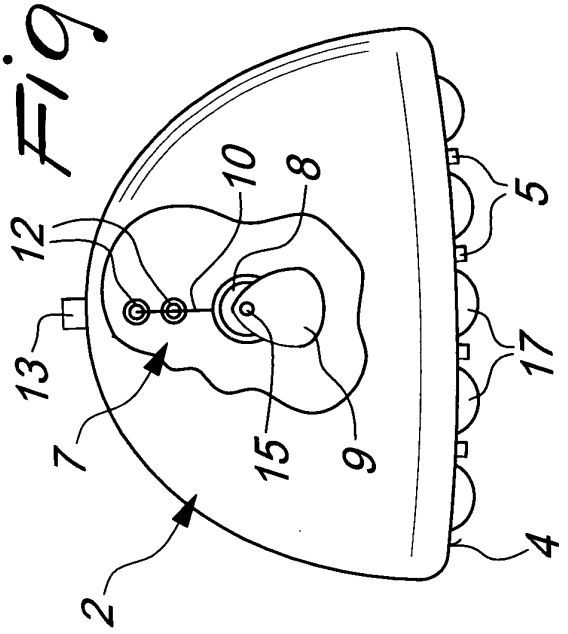

Fig. 2

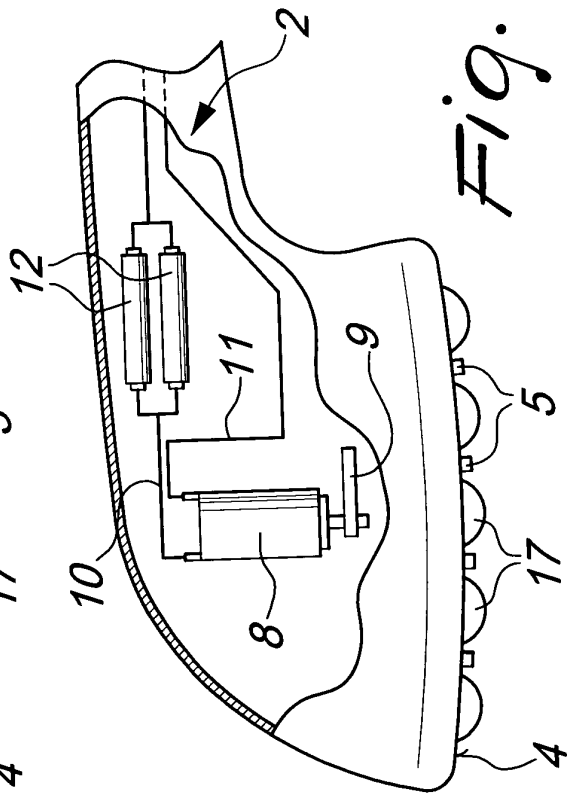

Fig. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 04 42 5525

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	PATENT ABSTRACTS OF JAPAN vol. 2003, no. 12, 5 December 2003 (2003-12-05) & JP 2004 113728 A (HATORI MASAKI), 15 April 2004 (2004-04-15)	1-11	A61H15/00
Y	* abstract; figures *	12,13	

Y	WO 87/00425 A1 (BATTALIA, ANTHONY) 29 January 1987 (1987-01-29) * figures *	12,13	

A	US 3 924 808 A (COOLEY, JR. ET AL) 9 December 1975 (1975-12-09) * the whole document *	1	

A	PATENT ABSTRACTS OF JAPAN vol. 2002, no. 06, 4 June 2002 (2002-06-04) & JP 2002 035071 A (INAX CORP), 5 February 2002 (2002-02-05) * abstract; figures *	12	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

A61H
B05B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	31 January 2005	Knoflacher, N

CATEGORY OF CITED DOCUMENTS

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31-01-2005

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