



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
18.01.2012 Bulletin 2012/03

(51) Int Cl.:
B05B 1/18 (2006.01) **B05B 15/06 (2006.01)**
E03C 1/04 (2006.01) **A47K 3/28 (2006.01)**

(21) Application number: **10425236.6**

(22) Date of filing: **15.07.2010**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR
Designated Extension States:
BA ME RS

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(54) **Shower head**

(57) It is disclosed a flat shower head (1) comprising a base plate (2) having a perforated portion (2a) provided with outlet holes (2b); an upper element (3) adapted to be connected to a water supply and placed close to the perforated portion (2); a gasket (4) surrounding the per-

forated portion (2a) and disposed between the upper element (3) and base plate (2) to define an inner volume (1a) of a substantially constant height; and first releasable connecting means (6) adapted to secure the upper element (3), gasket (4) and base plate (2) to each other.

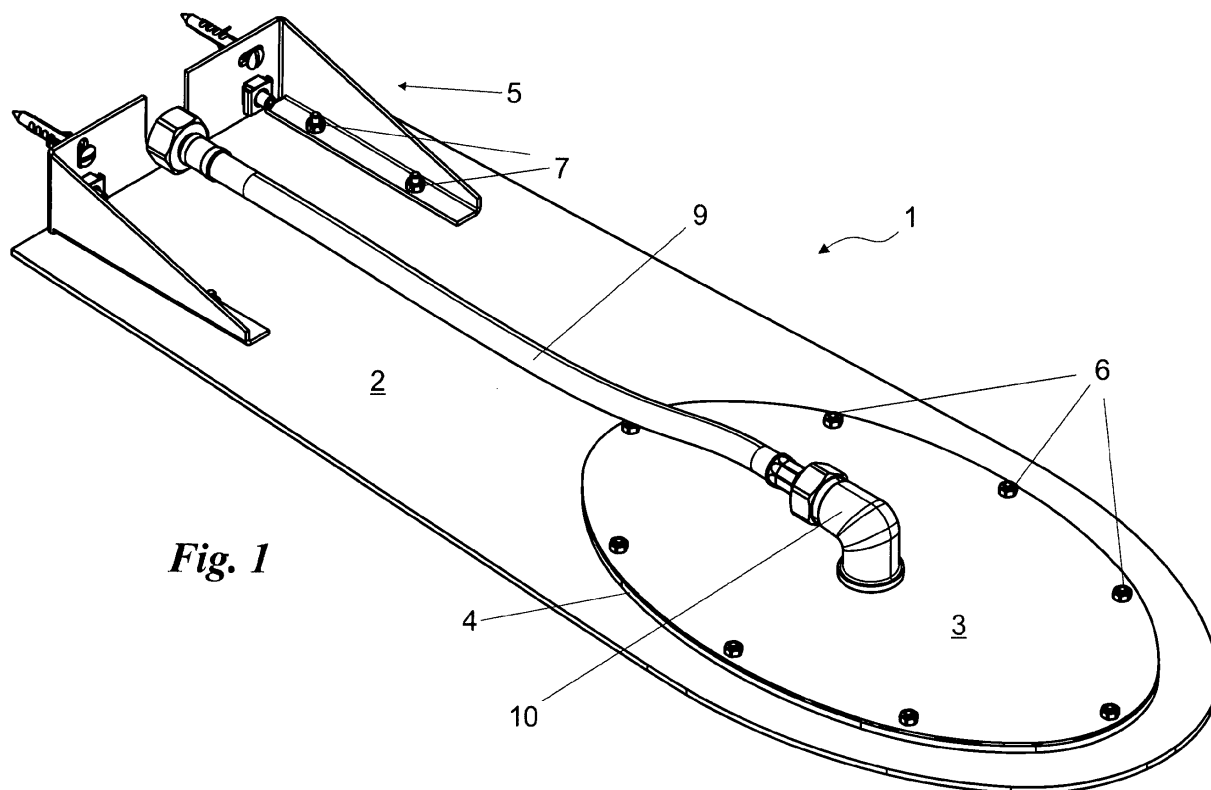


Fig. 1

Description

[0001] The present invention relates to a blowpipe for shower and the like of the type pointed out in the preamble of the first claim.

[0002] It is known that in recent years a quick evolution has occurred in the components constituting a bath and in particular the taps and fittings both for aesthetic and practical reasons.

[0003] One of the items that has been mostly submitted to this change is the blowpipe for shower and in particular the fixed blowpipe, i.e. the blowpipe that cannot be moved by a user. This blowpipe in fact has almost abandoned its classic, usually cylindrical, shape of a hollow body provided with a dispenser, i.e. a disk having a plurality of nozzles from which water comes out, and with a pipe adapted to bring the water to the inside of said hollow body.

[0004] One of the newest and most adopted shapes of blowpipe for shower is that commonly referred to as "sandwich" shape.

[0005] This blowpipe can consist of a body having two plates, a lower one provided with holes, and an upper one having a cavity adapted to enable the water to reach said holes. The plates, substantially having the same shape and extension, are superposed and welded or glued to each other so as to confine a substantially closed inner chamber adapted to allow the water to reach the holes formed in the lower plate without ducts or other similar elements being required.

[0006] A drawback of these blowpipes is the fact that the jet coming out of the holes is not uniform. This drawback is partly obviated by the presence within said chamber of a dispenser provided with nozzles inserted inside the holes so as to direct the water jet coming out of the blowpipe.

[0007] It is further connected to a waterworks through a duct adapted to bring the water to the upper plate. In particular, usually welded to the upper plate is a suitably shaped connecting element that, in addition to connecting the two aforesaid components, defines a second inner chamber allowing the water to be uniformly distributed among the different nozzles thereby enabling creation of a uniform jet.

[0008] In addition to the above mentioned drawbacks, the above mentioned known art has some important inconveniences.

[0009] In fact these blowpipes, due to their own nature, have very different pressures in the different portions of the inner chamber. These different pressures give rise to great pressure increases in some portions and weak pressures in other portions. Said drawbacks bring about a short duration of the blowpipes due to the continuous deformation caused by the liquid pressure, in particular at the edges of the inner chamber, thus producing a quick deterioration.

[0010] A further important problem of the sandwich blowpipes connected with the poor duration of same is

represented by the impossibility of carrying out maintenance operations thereon.

[0011] These blowpipes are then characterised by a construction complexity giving rise both to high costs and long production times.

[0012] Another problem is represented by the high thickness typical of the blowpipe, so that there is a decay in the aesthetic quality of same.

[0013] Under this situation, the technical task underlying the present invention is to conceive a blowpipe for shower and the like capable of substantially obviating the mentioned drawbacks.

[0014] Within the scope of this technical task it is an important aim of the invention to conceive a blowpipe for shower and the like that is reliable and of long duration.

[0015] In addition, it is an important aim of the invention to conceive a blowpipe for shower and the like having a reduced cost and characterised by reduced production times.

[0016] In particular, the invention aims at conceiving a blowpipe for shower that can be assembled through simple and quick operations.

[0017] Another important aim of the invention is to make a blowpipe on which maintenance operations can be carried out easily.

[0018] A further aim of the invention is to make a blowpipe having high aesthetic features.

[0019] The technical task mentioned and the aims specified are achieved by a blowpipe for shower and the like as claimed in the appended claim 1. Preferred embodiments are highlighted in the sub-claims.

[0020] The features and advantages of the invention are hereinafter clarified by the detailed description of a preferred embodiment of the invention, with reference to the accompanying drawings, in which:

Fig. 1 shows a view of the blowpipe for shower and the like according to the invention;

Fig. 2 is an exploded view of the blowpipe;

Fig. 3 is a view of the section III-III, shown in Fig. 1, of the blowpipe;

Fig. 4 is a view of the section IV-IV, shown in Fig. 1, of the blowpipe;

Fig. 5 shows another blowpipe for shower according to the invention; and

Fig. 6 is a view of the blowpipe seen in Fig. 1, partly disassembled.

[0021] With reference to the mentioned figures, the blowpipe for shower and the like according to the invention is generally identified by reference numeral **1**.

[0022] It briefly comprises a base plate **2** having a perforated portion **2a**; an upper element **3** placed at the perforated portion **2a** and brought into communication for fluid passage with a waterworks, as hereinafter better described; a gasket **4** enclosed between the upper element **3** and the base plate **2** so as to define an inner volume **1a**. The blowpipe **1** can further comprise a fas-

tening block **5** rigidly secured to the base plate **2** and suitable for engagement of the blowpipe **1** with a supporting structure, a wall for example.

[0023] Almost all the elements forming the blowpipe **1** are made of stainless steel. In particular the base plate **2**, in addition to using stainless steel, can be also made of carbon or other material having high aesthetic qualities.

[0024] In greater detail, plate **2** constitutes the base component to which almost all the components of the blowpipe **1** are fixed in a releasable manner, i.e. in a manner adapted to enable easy removal of said connections. In particular, the base plate **2** is secured to the gasket **4** and the upper element **3** by first releasable connecting means **6** and to the fastening block **5** through second releasable connecting means **7**.

[0025] Both the first **6** and second **7** releasable connecting means preferably consist of at least one bolt, i.e. an element made up of a screw and a nut **6b** and **7b**. In particular, the screw is a screw stud **6a** and **7a**.

[0026] The screw studs **6a** and **7a** are advantageously welded to the base plate **2** on the opposite surface relative to the exit surface of the water jet from the blowpipe **1**, as shown in Figs. 3 and 4.

[0027] They are inserted in suitable holes present at least in the upper element **3** and the fastening block **5** to which they are locked through nuts **6b** and **7b**. To make mounting and positioning of the components easier, gasket **4** too is suitably provided with holes into which the screw studs **6a** and **7a** are introduced.

[0028] Alternatively, connection between the fastening block **5** and the base plate **2** can be of the unreleasable type and therefore obtained by welding, for example.

[0029] The base plate **2** preferably has a contoured flat shape with a substantially constant thickness. The perforated portion **2a**, belonging to the base plate **2**, is provided with outlet holes **2b** (Fig. 2) defining the water jet coming out of the blowpipe **1**. This perforated portion **2a** is therefore defined by at least the base plate portion in which said outlet holes **2b** are formed (Fig. 2).

[0030] In order to have an optimal water jet coming out of the blowpipe **1**, the assembly of the individual nozzles **8a** is housed within the inner volume **1a** and they constitute a dispenser **8**, i.e. an element adapted to enable the water jet coming out of the blowpipe **1** to be directed. In particular, nozzles **8a** are adapted to direct the water jet, being preferably inserted by friction fit into the holes **2a**, as shown in Figs. 3 and 4.

[0031] Nozzles **8a** are advantageously distinct from each other so as to enable both an easier fitting and a simpler and easier replacement.

[0032] Nozzles **8a** and therefore dispenser **8** represented by the assembly of nozzles **8a**, are made of descaling silicone material, i.e. a material adapted to limit formation of lime deposits that would cause clogging of nozzles **8a**. In particular, nozzles **8a** are made of silicone rubber.

[0033] The shape and sizes of the volume in which

nozzles **8a** are inserted are substantially defined by the upper element **3** and gasket **4** advantageously having such a shape that the inner volume **1a** enclosed by them has an almost constant height, calculated along the perpendicular to the base plate **2** (Figs. 3 and 4).

[0034] The upper element **3** is therefore placed at the perforated portion **2a** and, in detail, it is adapted to cover the portion of the base plate **2** in which the outlet holes **2b** are formed.

[0035] To this aim, the upper element **3**, once it has been fixed to the base plate **2**, is almost parallel to said base plate **2**. In particular, it is of flat shape and, more specifically, the upper element and base plate are both flat.

[0036] The element **3**, to the aim of improving the aesthetic appearance of the blowpipe **2**, has a smaller extension, along the major extension surface of the blowpipe **1** itself, relative to the extension of the base plate **2**. Preferably, when element **3** is placed on the base plate **2**, the outer profile belonging to element **3** is placed to a given distance from the outer profile of the base plate **2** along the major extension surface of the blowpipe **1** itself. In particular, this distance is substantially included between 5 mm and 40 mm.

[0037] The upper element **3**, as previously described, is connected for fluid passage with an outer waterworks not shown in the figure. This connection is made through a duct **9** adapted to bring the water into the inner volume **1a** and a coupling and dispensing means **10** adapted to connect the duct **9** to the upper element **3** (Fig. 1).

[0038] In particular, to carry out said connection for fluid passage, the upper element **3** has a cavity **3a** adapted to enable access of the fluid to the inner volume **1a**. More specifically, in order to have an optimal distribution of the fluid in the inner volume **1a** and therefore an almost homogeneous jet from all nozzles **8a**, preferably the perforated portion **2a**, at said cavity **3a**, has a non-perforated sector **2c**, adapted to prevent the water, as soon as it has entered the inner volume **1a**, from coming out of such a region in a prevalent manner therefore giving rise to a non-optimal jet.

[0039] Duct **9** is preferably a flexible hose and at the two ends has connection means **9a**, preferably of the releasable type, adapted to enable quick and ready connection of duct **9** to the waterworks and to the coupling and dispensing means **10**.

[0040] It is secured to said waterworks at the fastening block **5** having a suitable housing enabling the connection means **9a** to be enclosed at least partly therein, thus improving the aesthetic appearance of the blowpipe **1**.

[0041] The coupling and dispensing means **10** advantageously consists of two portions that can be fastened to each other in a releasable manner, through threading for example. The coupling and dispensing means **10** (Fig. 2) therefore comprises a first portion **10a** forming the coupling means and adapted to be directly secured to the duct **9** and a second portion **10b** forming the dispensing means or dispenser which is suitably shaped and adapt-

ed to be secure to the upper element at cavity 3a.

[0042] In particular, the coupling and dispensing means 10 can contemplate a second gasket **10c** consisting for example of an O-ring or other mechanical static sealing piece that, under compression between the two portions 10a and 10b, prevents water leakage.

[0043] The coupling and dispensing means 10 is of the fixed type, i.e. once connection has been made, it does not allow any relative motion of the base plate 2 relative to duct 9. Alternatively, this coupling and dispensing means 10 is able to allow a relative motion between said two components. In particular, as shown in Fig. 5, the coupling and dispensing means 10 allows a relative rotation between the base plate 2 and duct 9.

[0044] In this particular case, the blowpipe 1 is devoid of the fastening block 5 and its engagement with a supporting structure is obtained through duct 9.

[0045] Gasket 4 when disposed on the base plate 2, surrounds the perforated portion 2a, i.e. has a closed shape the inner profile of which is adapted to enclose the outlet holes 2b to avoid an undesirable water escape from the inner volume 1 a.

[0046] In order to ensure a perfect connection between gasket 4 and the upper element 3, the outer profile of said gasket 4 is substantially coincident with that of the upper element 3. Gasket 4 is further preferably made of a polymeric material and in particular silicone material.

[0047] Manufacture of the blowpipe for shower and the like described above as regards its structure is the following.

[0048] At the beginning the base plate 2 is prepared by welding the screw studs 6a and 7a thereon, nozzles 7a are positioned in holes 3b, the second portion 10b of the coupling and dispensing means 10 is linked to the upper element 3 and then the different components are connected to the base plate 2.

[0049] In particular, arrangement and fastening of gasket 4 and therefore of the upper element 3 at the perforated portion 2a takes place. More specifically, the screw studs 6a are fitted into the suitable holes belonging to said two components and then locking is carried out by means of nuts 6b.

[0050] At the same time duct 9 is joined to the upper element 3 the first portion 10a being locked to the second portion 10b and the fastening block 5 is secured to the base plate by the second releasable connecting means 7. In particular, the second gasket 10c is preferably interposed between portions 10a and 10b. When installed, the blowpipe 1 is secured to the supporting structure, such as a wall, through the fastening block 5 and is connected for fluid passage with the waterworks through duct 9.

[0051] If one component is wished to be replaced, such as one or more nozzles 8a, it is sufficient to remove duct 9 and then the upper element 3, through unscrewing of nuts 6a so as to enable access to nozzles 8a, and if necessary, gasket 4 (Fig. 6).

[0052] In detail, the link created by the first connecting

means 6 is released, i.e. nuts 6b are unscrewed from the screw studs 6a and at least the upper element 3 is then lifted so that there is easy access to the inner volume and replacement of the faulty nozzles can be carried out readily.

[0053] In addition, this operation allows cleaning of nozzles 7a for example, eliminating possible foreign bodies obstructing them.

[0054] The invention achieves important advantages.

[0055] In fact, a first advantage is represented by the fact that maintenance of blowpipe 1 can be carried out very easily due to the almost complete absence of connections obtained by welding or other similar means that would not enable access to the inner volume 1 a.

[0056] In fact, blowpipe 1 is provided with releasable connecting means 6a enabling the link created by it in an independent manner to be released, so that one or more of the components of the blowpipe can be easily replaced or repaired. In particular, the connecting means 6 allows easy replacement of nozzles 8a, which nozzles are the critical component of the blowpipe 1, i.e. the component characterised by frequent breaking and high possibilities of clogging. In particular, this operation is simple and can be carried out also by unqualified staff and therefore by a classic user.

[0057] Another advantage is represented by the high reliability and duration of the blowpipe 1, also ensured by the possibility of intervening directly and exclusively on the damaged components in a simple and quick manner.

[0058] Said advantage is given by the substantially constant height of the inner volume 1a ensuring an almost constant pressure within the inner volume 1a itself. This constant height enables dangerous pressure peaks to be avoided at the edges, which peaks would lead to quick deterioration of the blowpipe 1. This advantage is achieved in a synergetic manner due to the absence of welds and glues inevitably causing sudden dimension changes and consequent variations in the height of volume 1a.

[0059] Another advantage resides in that dispenser 8, as it consists of distinct nozzles 8a, can be easily assembled, and even partial replacement of same is allowed. In addition it is cheaper, since with a single mould all nozzles 8a available in blowpipes 1 of any shape can be obtained.

[0060] In addition, blowpipe 1 has a low price and is characterised by reduced production times due to the simple connections between the different components.

[0061] A further advantage belonging to the blowpipe 1 is the high aesthetic quality of same. In particular, this advantage is due to the fact that the reduced sizes of the upper element 3 relative to the base plate 2 enable it to be hidden to the sight. In detail, since a single plate is required and the sizes of the upper element 3 are reduced the obtained blowpipe for shower and the like has a low thickness.

[0062] In addition, because of the general arrange-

ment and positioning of the releasable connecting means 6 and 7, the visible surface of the blowpipe, i.e. that from which the water jet comes out, is almost devoid of unaesthetic features due to mounting of the blowpipe itself.

[0063] Furthermore, being the shape of the upper element 3 flat, no expensive moulds are required for manufacture of same.

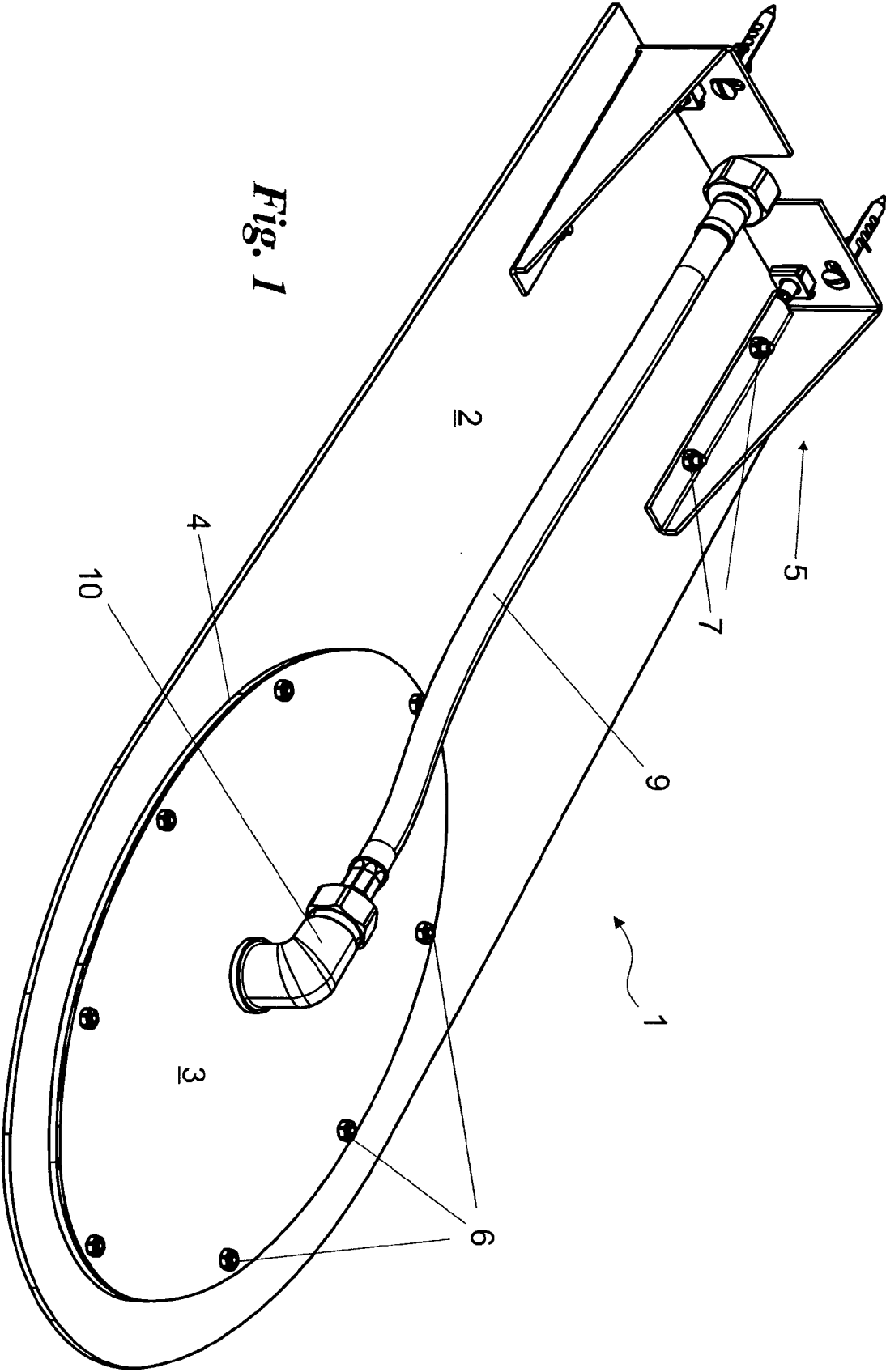
[0064] A not least advantage is represented by the high uniformity of the water jet due to the absence of holes 2b at the cavity 3a. In particular, this advantage is also obtained thanks to the presence of the non-perforated sector 2c placed at the cavity 3a and ensuring that the water coming out of duct 9 is distributed uniformly within the volume 1a.

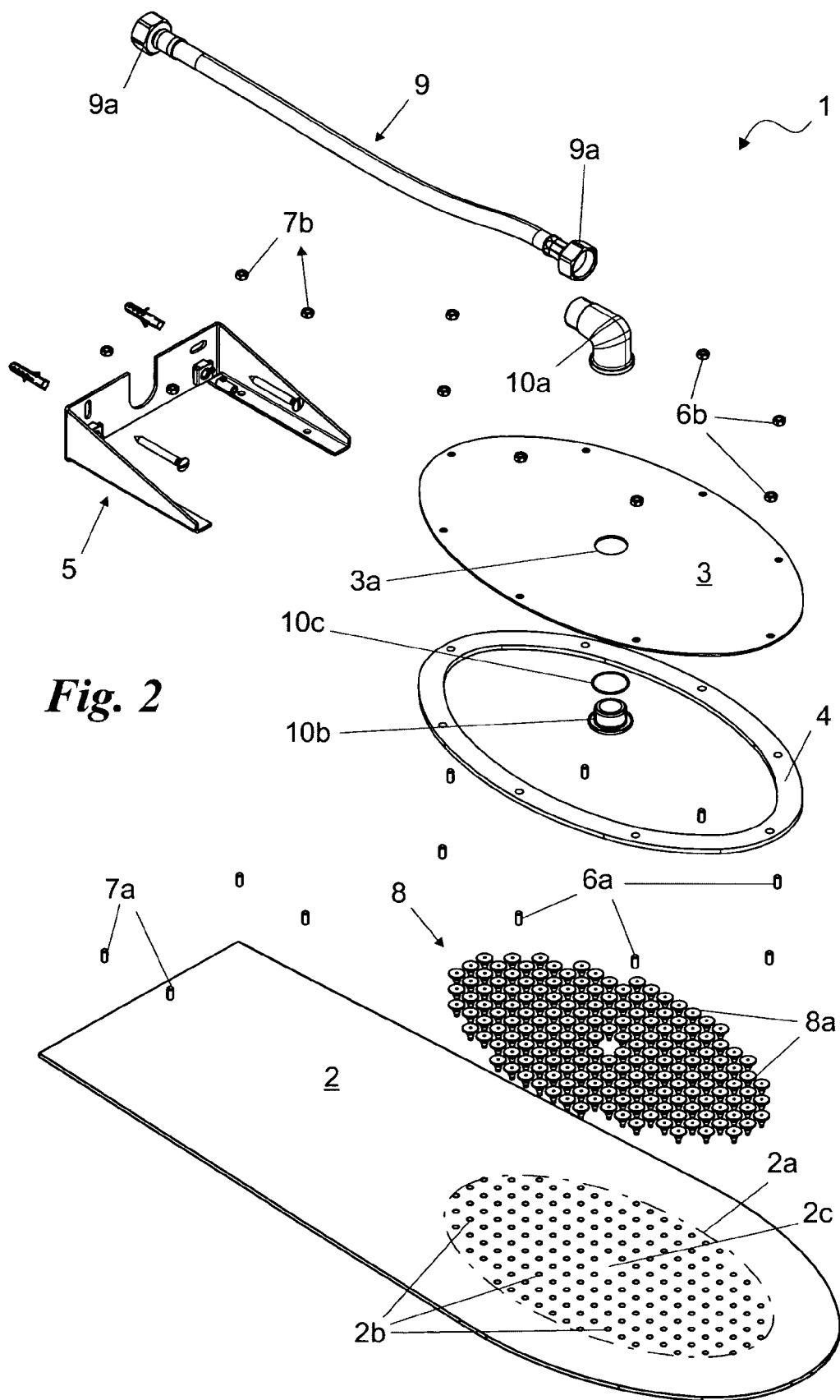
[0065] The invention is susceptible of variations falling within the inventive idea. All of the details can be replaced by equivalent elements and the materials, shapes and sizes can be of any nature and magnitude.

Claims

1. A blowpipe (1) for shower and the like comprising a base plate (2) having a perforated portion (2a) provided with outlet holes (2b); an upper element (3) adapted to be connected for fluid passage with a waterworks and placed close to the perforated portion (2); and **characterised in that** it comprises a gasket (4) surrounding said perforated portion (2a) and disposed between said upper element (3) and base plate (2) in such a manner as to define an inner volume (1a) of a substantially constant height, and **in that** it comprises first releasable connecting means (6) adapted to secure said upper element (3), gasket (4) and base plate (2) to each other.
2. A blowpipe (1) as claimed in claim 1, wherein said upper element (3) is flat.
3. A blowpipe (1) as claimed in one or more of the preceding claims, wherein said upper element (3) has an outer profile placed at a distance from the outer profile of said base plate (2).
4. A blowpipe (1) as claimed in one or more of the preceding claims, wherein said outer profile of said upper element (3) is substantially coincident with the outer profile of said gasket (4).
5. A blowpipe (1) as claimed in one or more of the preceding claims, wherein said first releasable connecting means (6) comprises screw studs (6a) welded to said base plate (2).
6. A blowpipe (1) as claimed in one or more of the preceding claims, comprising a plurality of nozzles (8a) distinct from each other and adapted to be inserted in said outlet holes (2b).

7. A blowpipe (1) as claimed in the preceding claim, wherein said nozzles (a) are inserted in said outlet holes (2b) by friction fit.
8. A blowpipe (1) as claimed in one or more of the preceding claims, comprising a fastening block (5) adapted to fix said blowpipe (1) to a supporting structure and wherein said fastening block (5) is connected to said base plate (2) by second releasable connecting means (7).
9. A blowpipe (1) as claimed in one or more of claims 1-7, comprising a fastening block (5) adapted to fix said blowpipe (1) to a supporting structure, and wherein said fastening block (5) is connected to said base plate (2) in an unreleasable manner.
10. A blowpipe (1) as claimed in one or more of the preceding claims, comprising a duct (9) adapted to make said connection for fluid passage between said inner volume (1a) and waterworks, and where said duct (9) is secured in a releasable manner to said upper element (3) through a coupling means (10)





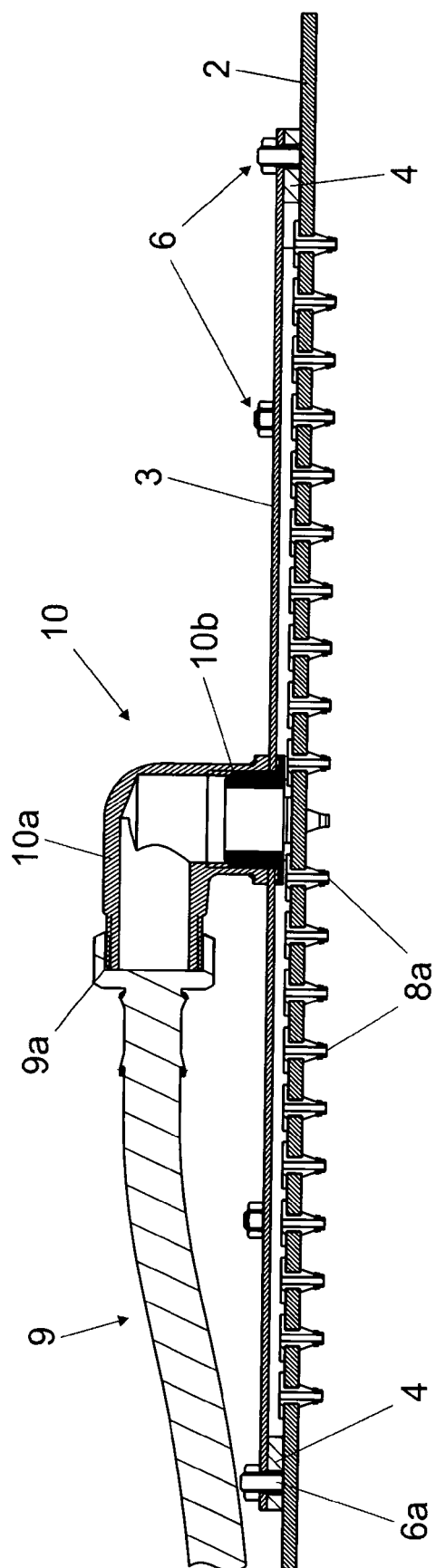


Fig. 3

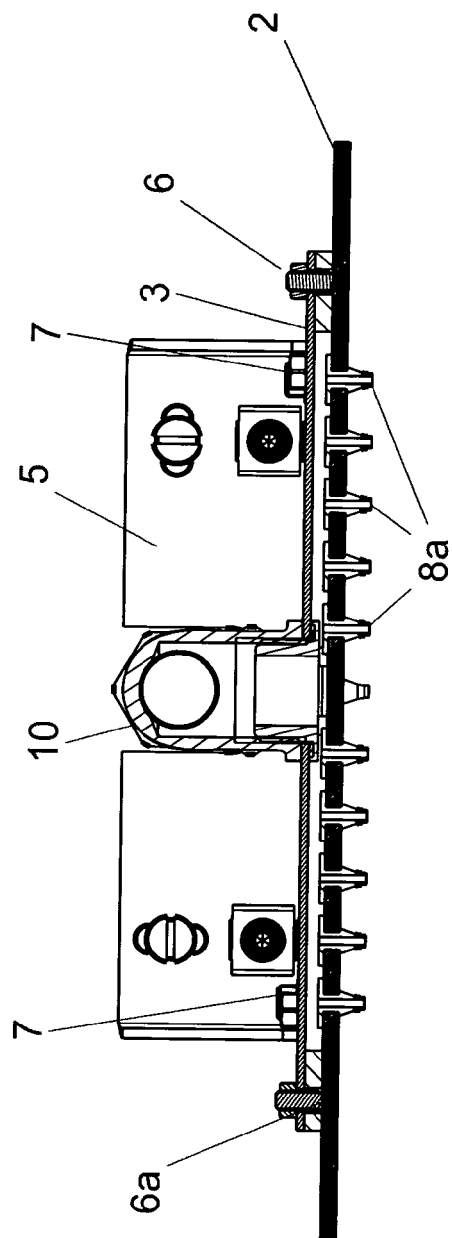


Fig. 4

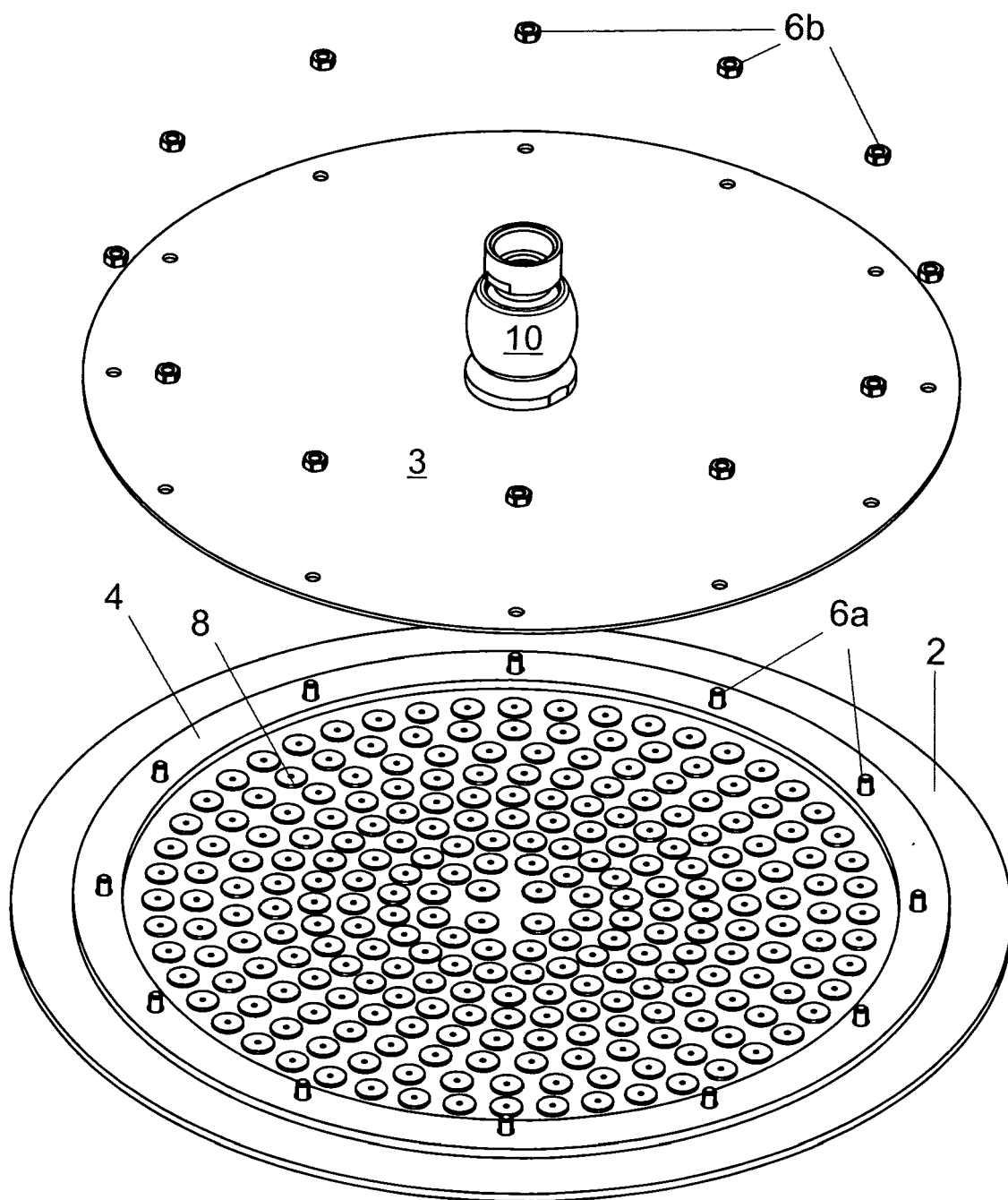


Fig. 5

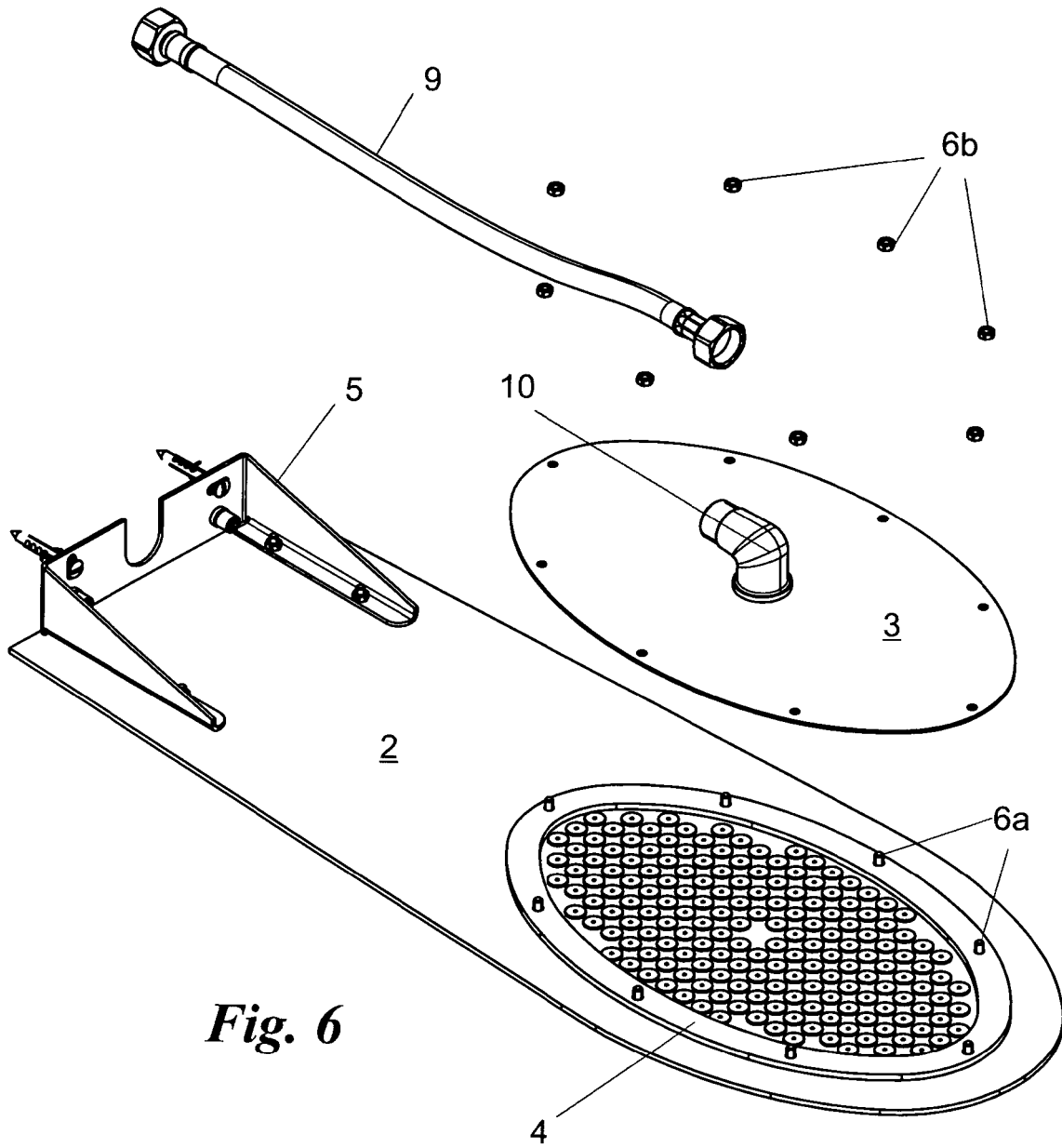


Fig. 6



EUROPEAN SEARCH REPORT

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