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(54) **WHIRLPOOL DEVICE AND TUB**

(57) Whirlpool device, which comprises at least one first support (1) provided with a nozzle (2) suitable to emit a mixed flow (3) of air and water, as well as a second support (12) suitable to be fixed to the first support (1) and to a wall of a whirlpool tub (4), wherein the first support (1) comprises at least two openings (10) and at least two nozzles (2) suitable to emit a mixed flow (3) through

these openings (10), and wherein the second support (12) comprises at least one further opening (17), so that the nozzles (2) can emit the mixed flow (3) also through the opening (17) of the second support (12) when the second support (12) is fixed to the first support (1).

The present description also relates to a whirlpool tub (4) comprising said device.

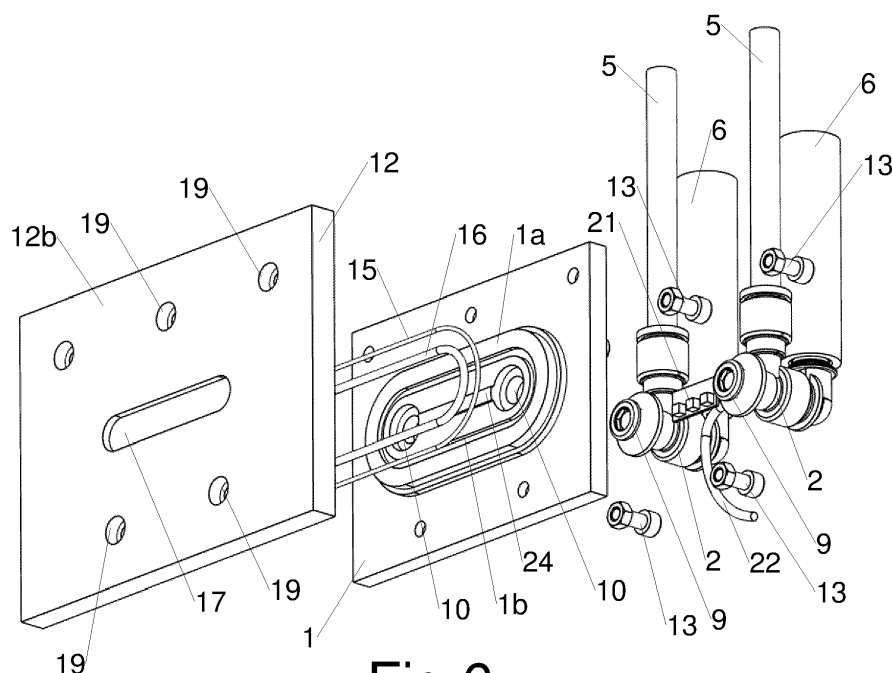


Fig.6

Description

Technical field

[0001] The present description relates to a device for making a whirlpool. The present description also relates to a whirlpool tub comprising this device.

Background of the description

[0002] Figure 8 of WO 2012/017403 describes a whirlpool tub provided with a plurality of devices comprising a single support for a single nozzle suitable to emit a mixed flow of air and water through a slot in the tub. The support is a perforated plate fixed to the tub by screws and is provided with a diffuser which conveys the mixed flow from the nozzle to the tub and which penetrates into the slot without protruding into the tub. This diffuser increases the manufacturing and maintenance costs of the tub and the overall dimensions towards the outside of the tub.

Summary of the description

[0003] The object of the present description is therefore to provide a tub free from such drawbacks. Said object is achieved with a device and a tub, the main characteristics of which are specified in the attached claims, to be considered an integral part of the present description.

[0004] Thanks to its particular structure, the device according to the present description does not require a diffuser to introduce a mixed flow through a slot of a whirlpool tub, so as to reduce the costs and the overall dimensions of the tub with respect to this known device.

[0005] Furthermore, without the diffuser, the slot of the tub can be completely free from any element of the device that protrudes even only partially into the slot, so as to make the appearance of the tub even cleaner.

[0006] Thanks to its particular second support, the device can be applied in an easy, fast and precise way to a tub, with a perfect alignment of the nozzles to the slot of the tub, which is preferably obtained with a particular shape coupling between the first support and the second support.

[0007] Furthermore, the second support preferably comprises a large flat surface which facilitates its attachment to the tub, especially if adhesives are used, so that the external surface of the tub can remain completely smooth and requires no further processing other than the slots for the mixed flow.

[0008] The device can also be provided with one or more lights arranged between the nozzles, so as to directly illuminate the slot of the tub and thus create an original light effect together with the mixed flow emitted by the nozzles.

Brief description of the drawings

[0009] Further advantages and characteristics of the device and of the tub according to the present description will become evident to those skilled in the art from the following detailed description of some embodiments, to be considered non-limiting examples of the claims, with reference to the attached drawings in which:

- 10 - figure 1 is a rear view of a portion of the tub provided with the device;
- figure 2 is the section II-II of figure 1;
- figure 3 is a front view of the portion of the tub of figure 1;
- 15 - figure 4 is the section IV-IV of figure 1;
- figure 5 is a first axonometric view of the device of figure 1;
- figure 6 is a first exploded view of the device of figure 1;
- 20 - figure 7 is a second axonometric view of the device of figure 1;
- figure 8 is a second exploded view of the device of figure 1.

25 Exemplary embodiments

[0010] Figures 1 to 8 show a first embodiment of the whirlpool device, which comprises at least a first support 1 provided with a nozzle 2 suitable to emit a mixed flow 3 of air and water, for example in a whirlpool tub 4 filled with water. The tub 4 can have various shapes and sizes, and be so large that it can also be considered a small pool. The nozzle 2 comprises for example a hollow body suitable to be connected to at least one air duct 5 (partially shown in the figures) and to at least one water duct 6 (partially shown in the figures) to mix a flow of air 7 with a water flow 8 and emit the mixed flow 3 from at least one mouth 9 of the nozzle 2. The mouth 9 can be screwed to the nozzle 2, for example to fix the nozzle 2 to the first support, so that the first support 1 is arranged between the nozzle 2 and the mouth 9. A portion of the nozzle 2, in particular of its mouth 9, is arranged in at least one opening 10 made in the first support 1. The nozzle 2 and/or the mouth 9 may have perimeter lips which press against a portion of the first support 1 around the opening 10. In particular, the mouth 9 of the nozzle 2 and/or the opening 10 of the first support 1 have a substantially cylindrical or frustoconical shape. In other embodiments, the nozzle 2 and its mouth 9 are made in one piece, in which case the nozzle 2 is fixed to the first support with other fastening means, for example screws.

[0011] The first support 1 comprises at least two openings 10, so that at least two nozzles 2 are fixed to the first support 1. The openings 10 are preferably aligned on the first support 1 along an axis A substantially perpendicular to the longitudinal axes of the mouths 9 of the nozzles 2, namely to the direction of the mixed flow 3 emitted by each nozzle 2. At least one portion of an inner

wall of the tub 4, namely a wall which faces the inside of the tub 4, is visible to the end user and can be submerged by the water of the tub 4, may comprise at least one slot 11, preferably a slot substantially parallel to the axis A, so that the nozzles 2 can be arranged outside the tub 4 and emit the mixed flow 3 through the slot 11 of the tub 4 towards the inside of the tub 4.

[0012] The device also comprises a second support 12 suitable to be fixed to the first support 1 by means of reversible fixing means, such as for example screws 13 screwed into nuts 14 and inserted in holes made in the first support 1 and in the second support 12. The first support 1 preferably comprises at least one protruding portion 1a arranged around the openings 10 and suitable to be arranged in a recessed portion 12a of the second support 12 having a shape substantially complementary to the shape of the protruding portion 1a of the first support 1, so as to achieve a form-fit coupling. One or more gaskets 15, 16 are arranged around the protruding portion 1a and/or in a groove 1b made in the protruding portion 1a, so as to prevent a loss of liquids between the first support 1 and the second support 12 around the openings 10.

[0013] The second support 12 comprises at least one opening 17, preferably a slot substantially parallel to the axis A, so that the nozzles 2 can emit the mixed flow 3 through the opening 10 of the first support 1, the opening 17 of the second support 12 and then through the slot 11 of the tub 4. The second support 12 is preferably a plate provided with a flat surface 12b which extends for most of the second support 12 and faces the side opposite the first support 1, so that this flat surface 12b can be fixed by at least one adhesive layer 18, in particular a silicone layer surrounding the opening 17, to a flat portion of an outer surface of the inner wall portion of the tub 4, preferably before the first support 1 provided with the nozzles 2 is fixed to the second support 12 by means of the screws 13. For this purpose, the nuts 14 are arranged in a non-rotatable manner in seats 19 made in the second support 12.

[0014] Preferably, the slot 11 of the tub 4 is entirely free from elements projecting from the device, which therefore is entirely arranged outside the external surface of the inner wall portion of the tub 4 to which the second support 12 is applied. The width of the slot 11 is substantially equal to the inner diameter of the nozzle 9 of the nozzles 2.

[0015] The first support 1 preferably comprises at least one seat 20 in which at least one lamp 21 is arranged, in particular one or more LED lights connected to a source of electric energy (not shown in the figures) through at least one electric cable 22, in which the seat 20 is arranged between the openings 10 of the first support 1, in particular along the axis A. The first support 1 is preferably a plate made of completely or partially transparent material, or it may be provided with a window for transmitting the light 23 of the lamp 21 towards the second support 12, in particular towards the opening 17 of the

second support 12. The first support 1 preferably comprises at least one lens 24, in particular having a substantially rectangular shape, arranged between the openings 10 next to the seat 20. The lens 24 is preferably made of a single piece of completely or partially transparent plastic material, which is integrally moulded with the first support 1.

[0016] The first support 1 may also comprise one or more seats 25 which partially house the nozzles 2 and/or the air ducts 5 and/or the water ducts 6, so as to further reduce the overall dimensions of the device towards the outside of the tub 4.

[0017] Variations or additions can be made by those skilled in the art to the embodiments described and illustrated here, remaining within the scope of the following claims. In particular, further embodiments may comprise the technical characteristics of one of the following claims with the addition of one or more technical characteristics described in the text or illustrated in the drawings, taken individually or in any reciprocal combination, including characteristics equivalent to them.

Claims

1. Whirlpool device, which comprises at least one first support (1) provided with a nozzle (2) suitable to emit a mixed flow (3) of air and water, **characterized in that** the device also comprises a second support (12) suitable to be fixed to the first support (1) and to a wall of a whirlpool tub (4), wherein the first support (1) comprises at least two openings (10) and at least two nozzles (2) suitable to emit a mixed flow (3) through these openings (10), and wherein the second support (12) comprises at least one further opening (17), so that the nozzles (2) can emit the mixed flow (3) also through the opening (17) of the second support (12) when the second support (12) is fixed to the first support (1).
2. Whirlpool device according to the preceding claim, wherein the nozzles (2) are provided with at least one mouth (9) for emitting the mixed flow (3), the openings (10) of the first support are arranged along an axis (A) substantially perpendicular to the longitudinal axes of the mouths (9) of the nozzles (2), and the opening (17) of the second support (12) is a slot substantially parallel to this axis (A).
3. Whirlpool device according to one of the preceding claims, wherein the first support (1) comprises at least one protruding portion (1a) which is arranged around the openings (10) of the first support (1) and is suitable to be arranged in a recessed portion (12a) of the second support (12), which has a shape substantially complementary to the shape of the protruding portion (1a) of the first support (1).

4. Whirlpool device according to one of the preceding claims, wherein the second support (12) is a plate provided with a flat surface (12b) which extends across most of the second support (12) and faces the side opposite to the first support (1). 5
5. Whirlpool device according to one of the preceding claims, wherein the first support (1) comprises at least one seat (20) for at least one lamp (21), wherein the seat (20) is arranged between the openings (10) of the first support (1). 10
6. Whirlpool device according to the preceding claim, wherein the first support (1) is a plate made of a completely or partially transparent material or is provided with a window for transmitting towards the second support (12) the light (23) of the lamp (21) arranged in the seat (20) of the first support (1). 15
7. Whirlpool device according to the preceding claim, wherein the first support (1) comprises at least one lens (24) arranged between the openings (10) of the first support (1) beside the seat (20). 20
8. Whirlpool device according to one of the preceding claims, wherein the first support (1) comprises one or more seats (25) which partially house the nozzles (2) and/or ducts (5, 6) connected to the nozzles (2). 25
9. Tub (4) comprising at least one whirlpool device according to one of the preceding claims. 30
10. Tub (4) according to the preceding claim, wherein the device is fixed to the external surface of a portion of an inner wall of the tub (4) comprising at least one slot (11), so that the nozzles (2) of the device are arranged outside the tub (4) and are suitable to emit the mixed flow (3) through this slot (11) towards the inside of the tub (4). 35
11. Tub (4) according to the preceding claim, wherein the slot (11) of the tub (4) is entirely free from elements projecting from the device. 40
12. Tub (4) according to one of claims 9 to 11, wherein the second support (12) of the device is fixed by at least one adhesive layer (18) to an external surface of the tub (4). 45

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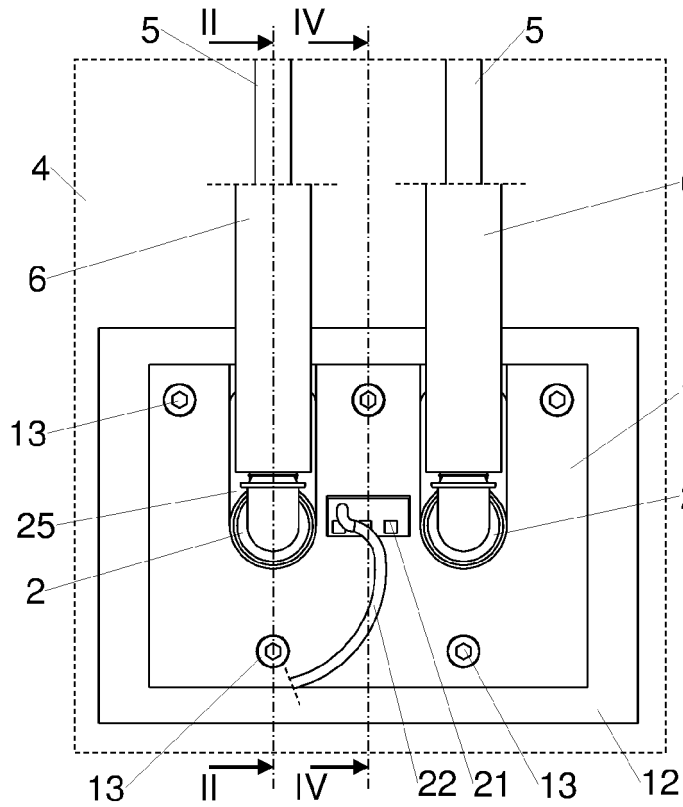


Fig.1

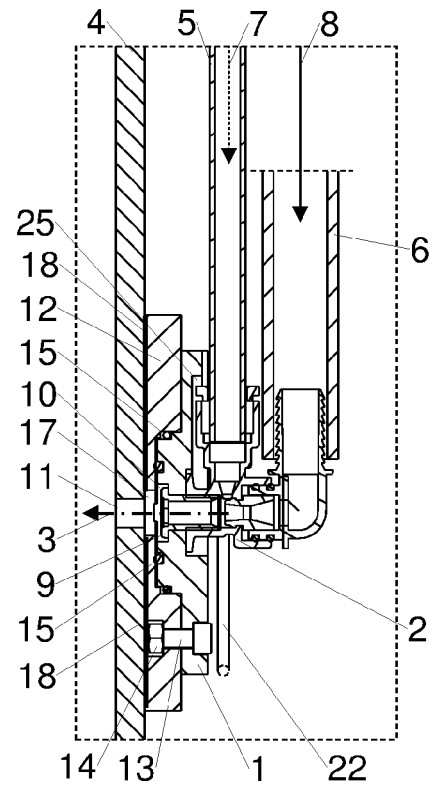


Fig.2

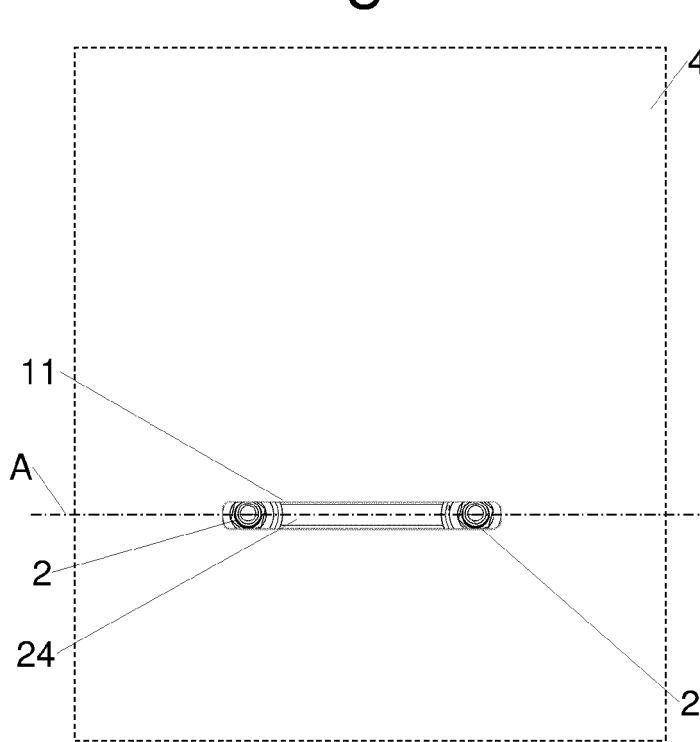


Fig.3

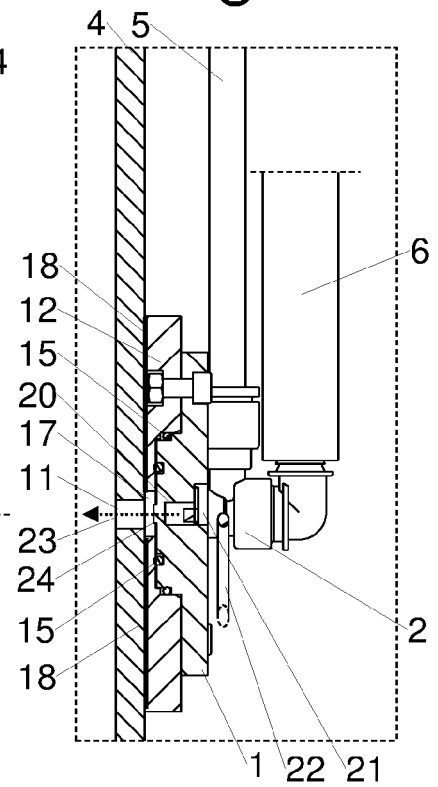


Fig.4

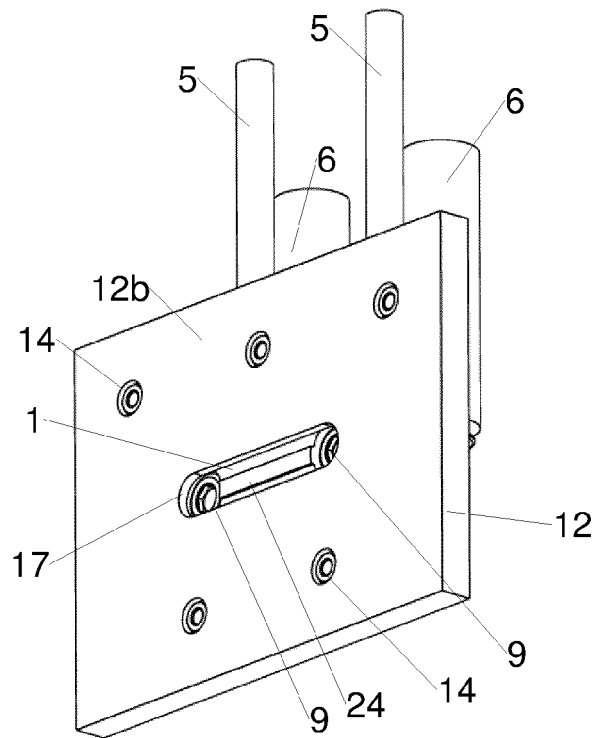


Fig.5

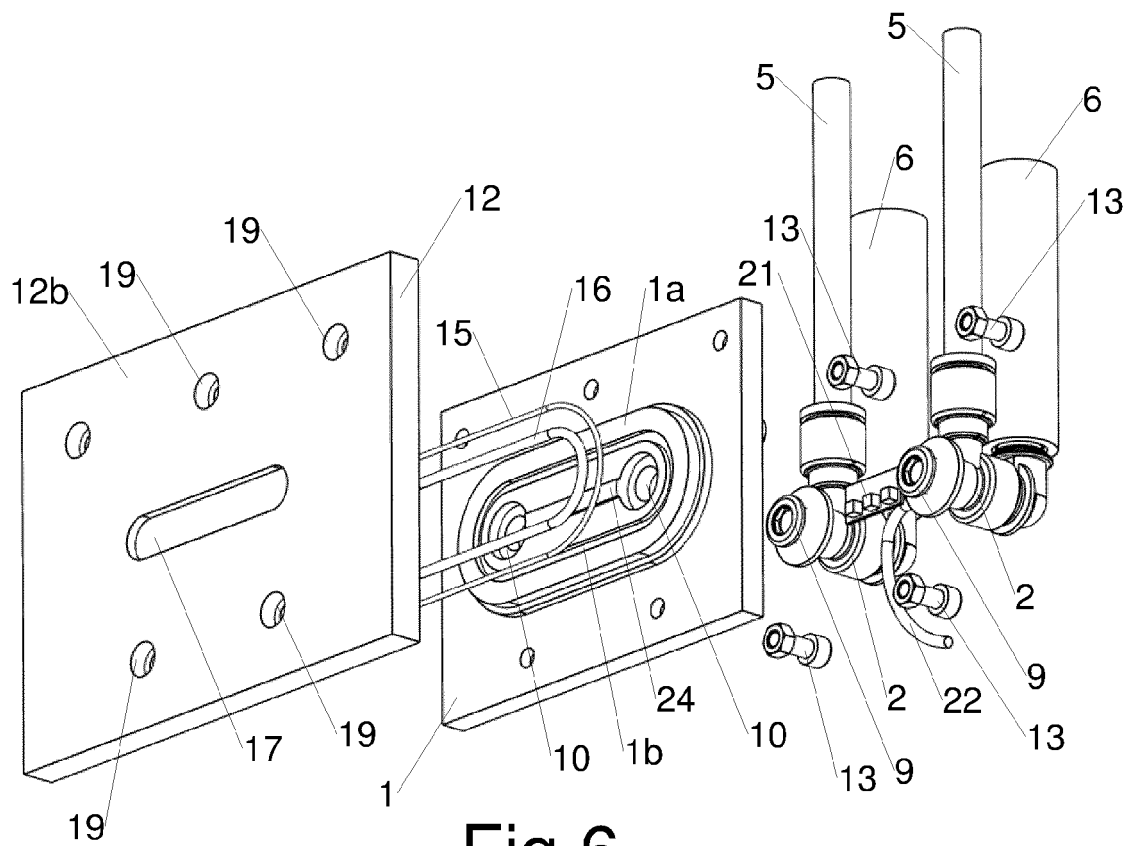


Fig.6

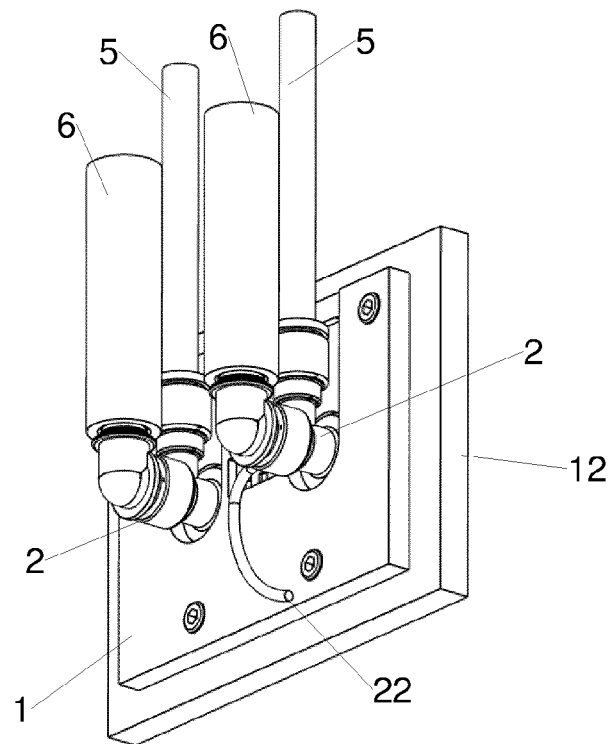


Fig.7

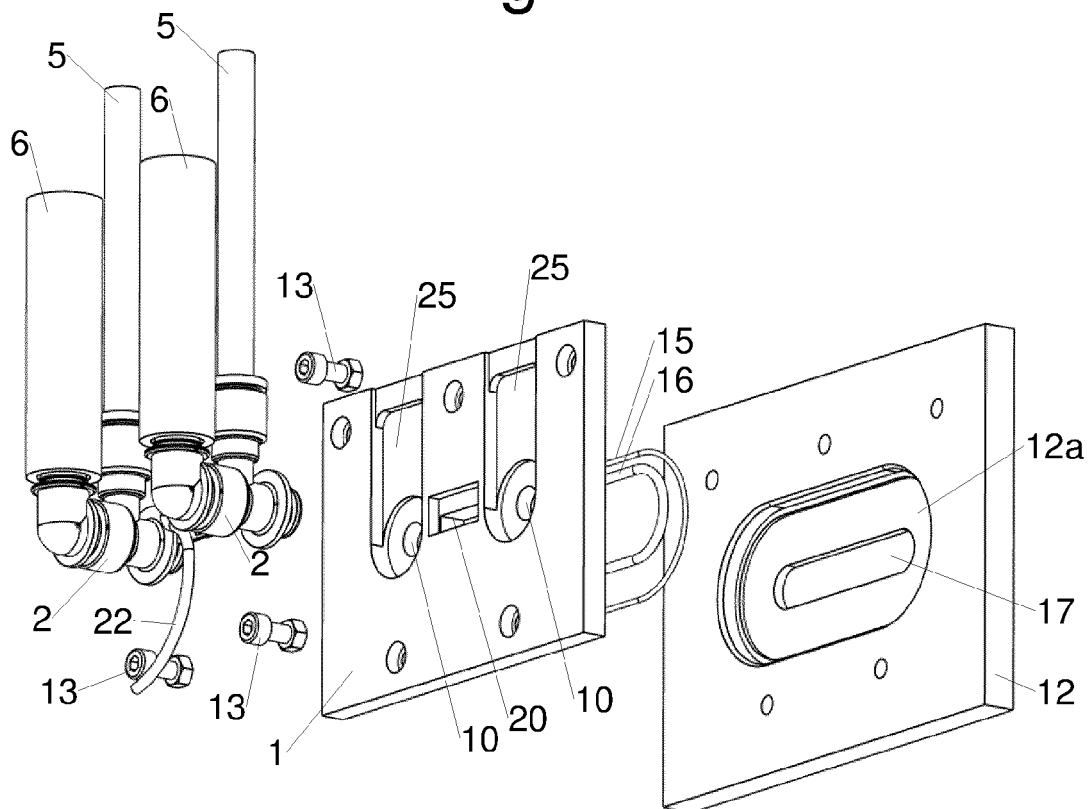


Fig.8



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Application Number

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