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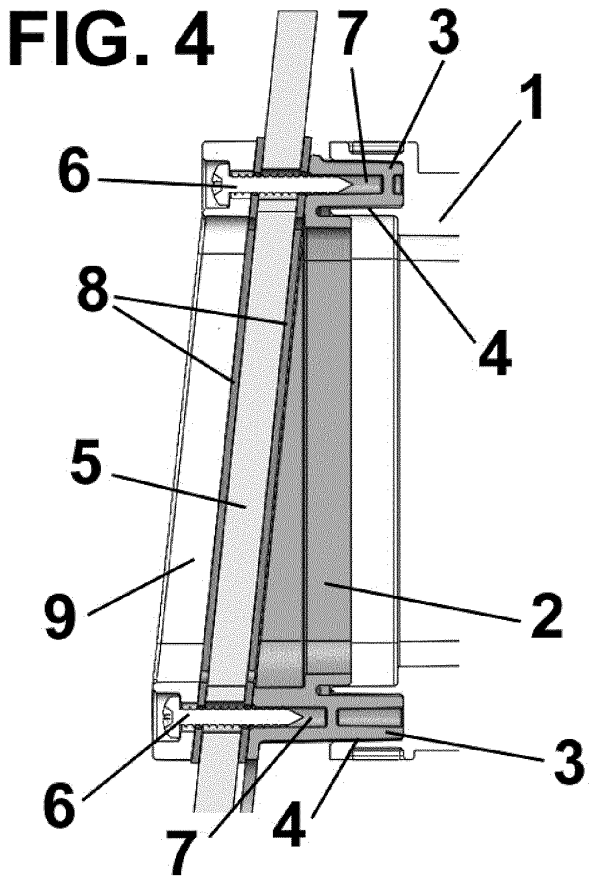
(54) **SUCTION AND FILTERING DEVICE FOR SWIMMING POOLS AND PROCEDURE FOR THE INSTALLATION OF SAID SUCTION AND FILTERING DEVICE**

(57) The suction and filtering device comprises a main body (1) and an additional element (2), which are joined together by means of a fixing element, wherein the main body (1) and the additional element (2) comprise retention means (3, 4) to maintain the relative position between the main body (1) and the additional element (2) during their joining by means of the fixing element.

The installation procedure comprises placing the main body (1) in its mounting position in the swimming pool; placing a fixing element in said main body (1); placing the additional element (2) in its mounting position, the fixing element remaining between the main body (1) and the additional element (2); and maintaining the position of the additional element (2) in contact with the main body (1) so that the fixing element cures, fixing the main body (1) and the additional element (2) to each other.

FIG. 4



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Description

Field of the invention

[0001] The present invention relates to a suction and filtering device for swimming pools and to a procedure for the installation of said suction and filtering device

Background of the invention

[0002] It is known that the use of swimming pools is increasing, both the larger ones installed within sports parks or public or private sports areas, hotels, etc., as well as the smaller pools installed in neighboring communities or even for private use of a single house.

[0003] As a consequence of this, demands regarding cleanliness, convenience, safety and comfort are also increasing. Thus, said requirement also extends as regards devices for suction and filtering of the water from the surface or, in other words, from the sheet of water that is in the upper part.

[0004] These suction and filtering devices are commonly known as "skimmers".

[0005] As has been pointed out, these suction and filtering devices have a very important suction and retention function for residues, although their main function is to suck the water from the surface of the pool for filtration.

[0006] These suction and filtering devices are formed, in a general and schematic way, by a hollow body in the shape of an L inclined or tilted where in its vertical branch of greater length, which is embedded or housed in the wall that surrounds the swimming pool, a suction pump is located and, in the horizontal branch, with access to the swimming pool basin, the suction nozzle through which the water to be filtered passes.

[0007] In addition, at an intermediate point of the pathway between the end of the horizontal branch where the swimming pool water enters and the lower end of the vertical branch through which it is sucked out by the pump, a basket-shaped filter is placed to collect the objects and dirt that had been sucked in such as hair, leaves, etc.

[0008] In this way, the water extracted from the swimming pool and treated in the filtration system, will be sent back to the basin through another conduit after conditioning and/or treatment.

[0009] These suction and filtering devices are widely known today and the assembly and joining of their different plastic components is carried out in the factory, generally using the friction welding technique to ensure that these components are strongly welded and joined together.

[0010] In particular, the aforementioned suction and filtering devices or skimmers are usually intended for both prefabricated pools (among which are, for example, polyester, panel or liner), and concrete pools.

[0011] Thus, in the assembly process, in addition to other parts, the main body must also be joined, depending on whether they are intended to be installed in polyester pools or standard pools, to an adapter flange for the first case, or to the corresponding extensions depending on the separation from the edge of the pool to the skimmer housing in both cases.

[0012] However, although this assembly of the components in the factory guarantees their correct assembly before handing it over to the installer, it has the disadvantage that the transport of the suction and filtering devices already assembled in the polyester pools is expensive and cumbersome due to their dimensions, which may be considerable depending on the type of pool where they are installed. In addition, its dimensions and particular shape make it especially vulnerable when being subject to blows during transport.

[0013] Finally, the fact that in swimming pools it is necessary to define in advance what dimensions the area should have, it makes it necessary to have specific measurements of the place where it is to be installed, which is sometimes a problem.

Description of the invention

[0014] Therefore, an objective of the present invention is to provide a suction and filtering device for swimming pools and a procedure for its installation that, in polyester pools, may allow the transport of the device at least partially disassembled and that, in general, regardless of the type of pools to which it is directed, may allow the installer himself to carry out the assembly of the components on site in the pool at the site where it is finally installed.

[0015] The aforementioned drawbacks are solved by means of the suction and filtering device and the installation procedure of the invention, presenting other advantages that will be described below.

[0016] According to a first aspect, the present invention relates to a suction and filtering device for swimming pools comprising a main body and an additional element, which are joined together by means of a fixing element, wherein the main body and the additional element comprise retention means for maintaining the relative position between the main body and the additional element during their joining by the fixing element.

[0017] According to a preferred embodiment, the retention means comprise a complementary projection and groove, the fixing element being positioned in the groove.

[0018] Preferably, said projection comprises a flange at one of its ends.

[0019] Furthermore, said projection may comprise a hole for the introduction of a fixing element.

[0020] Advantageously, the fixing element is glue or adhesive.

[0021] According to two alternative embodiments, the additional element is an adapter flange or an extender.

[0022] According to a second aspect, the present invention relates to a procedure for the installation of a suction and filtering device for swimming pools, comprising the following steps:

- providing a main body and an additional element of the suction and filtering device;
- placing a fixing element in said main body;
- placing the additional element in contact with the main body, the fixing element remaining between the main body and the additional element;
- maintaining the position of the additional element in contact with the main body so that the fixing element is cured, fixing the main body and the additional element to each other; and finally
- placing the assembly formed by the main body and the additional element already fixed to each other in their mounting position in the swimming pool;

[0023] Preferably, the fixing element is placed in a groove made in the main body, and by placing the additional element in its mounting position a projection thereof is inserted into the groove of the main body.

[0024] According to two alternative embodiments, the additional element is an adapter flange or an extender.

[0025] Advantageously, the fixing element is glue or adhesive.

[0026] With the suction and filtering device according to the present invention and its installation procedure, no external component is needed, except the fixing element, such as adhesive or glue, to keep the two parts in permanent contact until the fixing element is cured.

[0027] In this way, the user or the installer herself/himself is allowed to carry out the final action of fixing the two parts, representing very significant savings in terms of packaging, logistics and production costs.

Brief description of the drawings

[0028] For a better understanding of what has been stated, some drawings are attached in which, schematically and only as a non-limiting example, a practical case of embodiment is represented.

Figure 1 is a perspective view of the suction and filtering device for swimming pools of the present invention, according to a first embodiment;

Figure 2 is a perspective view of the device of Figure 1, with the adapter flange separated from the main body;

Figure 3 is an enlarged view of a portion of Figure 2;

Figure 4 is a sectional elevation view of the device of Figure 1 with the adapter flange joined to the main body;

Figure 5 is an enlarged view of a portion of Figure 5;

Figure 6 is a perspective view of the suction and filtering device for swimming pools of the present invention, according to a second embodiment;

Figure 7 is a perspective view of the device of Figure 6, with the extender separated from the main body;

Figure 8 is an enlarged view of a portion of Figure 7;

Figure 9 is a rear perspective view of the additional element of Figure 6;

Figure 10 is a detail of a portion of Figure 9;

Figure 11 is a sectional elevation view of the device of Figure 6 with the extender joined to the main body; and

Figure 12 is an enlarged view of a portion of Figure 11.

Description of preferred embodiments

[0029] First of all, it should be noted that the suction and filtering device for swimming pools is known in the swimming pool sector by "skimmer".

[0030] Figures 1 to 5 show a first embodiment of the suction and filtering device for swimming pools according to the present invention, in particular, specially designed for use in polyester swimming pools.

[0031] The device according to the present invention comprises a main body (1) and an additional element (2), which in this embodiment is an adapter flange.

[0032] According to the present invention, the main body (1) and the additional element (2) are provided separately to the user or installer, their joining being made at the time of installation, as will be described below.

[0033] For joining the main body (1) and the additional element (2) retention means are used, formed by a complementary projection (3) and groove (4), and a fixing element, such as adhesive or glue (not represented in the figures).

[0034] Said complementary projection (3) and groove (4) are preferably located on the perimeter of the main body (1) and of the additional element (2), thus being their perimeter joining.

[0035] According to the embodiment shown, the projection (3) is located on the additional element (2) and the groove (4) is located on the main body (1).

[0036] The installation procedure of the suction and filtering device for swimming pools according to the present invention is as follows.

[0037] Firstly, the fixing element is placed in the main body (1), in particular, in the groove (4), and then the additional element (2) is placed in contact with the main body (1), so that the projection (3) is inserted into the groove (4).

[0038] This position is maintained without the aid of any additional element for the fixing element to cure, definitively fixing the main body (1) and the additional element (2) to each other.

[0039] Finally, the assembly formed by the main body

(1) and the additional element (2), already fixed to each other, is placed in the position for use in the pool.

[0040] As can be seen in Figures 4 and 5, the suction and filtering device according to the present invention is mounted on a wall (5) of a swimming pool, and for this a fixing element (6) is used, such as a screw, which passes through said wall (5) and is inserted into a hole (7) made in the projection (3) of the additional element (2).

[0041] In addition, some sealing gaskets (8) are placed between the wall (5) of the pool and the additional element (2), and between the wall (5) and a trim (9), which is placed on the inside of the pool.

[0042] As can be seen in these figures, the adapter flange has an inclination, for example, of 6 degrees, to adapt to the construction needs of polyester pools, which for manufacturing / storage reasons need to have a certain inclination on their side faces.

[0043] Figures 6 to 12 show a second embodiment of the suction and filtering device according to the present invention, in this case specially designed for use in so-called standard or panel pools.

[0044] For the sake of simplicity, in this second embodiment the same reference numerals are used as in the first embodiment to identify the same or equivalent elements.

[0045] According to this embodiment, the suction and filtering device also comprises a main body (1) and an additional element (2), which in this case is an extender, which are provided to the user or installer separately, being joined during installation of the pool, as in the previous embodiment.

[0046] It also comprises retention means formed by a complementary projection (3) and groove (4).

[0047] In this embodiment, unlike the previous embodiment, the projection (3) comprises a flange (10) at its distal end, that is, the end furthest from the additional element (2) to better retain or maintain this additional element (2) in its mounting position with the main body (1).

[0048] The installation procedure of the suction and filtering device of this embodiment is the same as that described above, since the fixing element is also placed in the groove (4) and the additional element (2) is placed in contact with the main body. (1), the projection (3) being inserted into the groove (4), the main body (1) being fixed with the additional element (2) when the fixing element is cured.

[0049] In this specific embodiment, some sealing gaskets (8) are also used (although according to other possible embodiments they could not be included for not being necessary) and a trim (9), as can be seen in figure 11.

Claims

1. Suction and filtering device for swimming pools, comprising a main body (1) and an additional element (2), which are joined together by a fixing element, **characterized in that** the main body (1) and the additional element (2) comprise retention means (3, 4) to maintain the relative position between the main body (1) and the additional element (2) during their joining by means of the fixing element.

2. Suction and filtering device for swimming pools according to claim 1, wherein the retention means comprise a complementary projection (3) and groove (4), the fixing element being placed in the groove (4).

3. Suction and filtering device for swimming pools according to claim 2, wherein said projection (3) comprises a flange (10) at one of its ends.

4. Suction and filtering device for swimming pools according to claim 2, wherein said projection (3) comprises a hole (7) for the insertion of a fixing element (6).

5. Suction and filtering device for swimming pools according to claim 1 or 2, wherein the fixing element is glue or adhesive.

6. Suction and filtering device for swimming pools according to claim 1, wherein the additional element (2) is an adapter flange.

7. Suction and filtering device for swimming pools according to claim 1, wherein the additional element (2) is an extender.

8. Procedure for the installation of a suction and filtering device for swimming pools, **characterized in that** it comprises the following steps:

   - providing a main body (1) and an additional element (2) of the suction and filtering device;
   - placing a fixing element in said main body (1);
   - placing the additional element (2) in its mounting position in the swimming pool in contact with the main body (1), the fixing element remaining between the main body (1) and the additional element (2);
   - maintaining the position of the additional element (2) in contact with the main body (1) so that the fixing element cures, fixing the main body (1) and the additional element (2) to each other; and finally.
   - placing the assembly consisting of the main body (1) and the additional element (2) already fixed to each other in the position for use in the swimming pool.

9. Procedure for the installation of a suction and filtering device for swimming pools according to claim 8, wherein the fixing element is placed in a groove (4)

made in the main body (1).

10. Procedure for the installation of a suction and filtering device for swimming pools according to claim 9, wherein when placing the additional element (2) in its mounting position, a projection (3) thereof is inserted into the groove (4) of the main body (1).

11. Procedure for the installation of a suction and filtering device for swimming pools according to claim 8 or 10, wherein the additional element (2) is an adapter flange.

12. Procedure for the installation of a suction and filtering device for swimming pools according to claim 8 or 10, wherein the additional element (2) is an extender.

13. Procedure for the installation of a suction and filtering device for swimming pools according to claim 8 or 9, wherein the fixing element is adhesive or glue.

FIG. 1

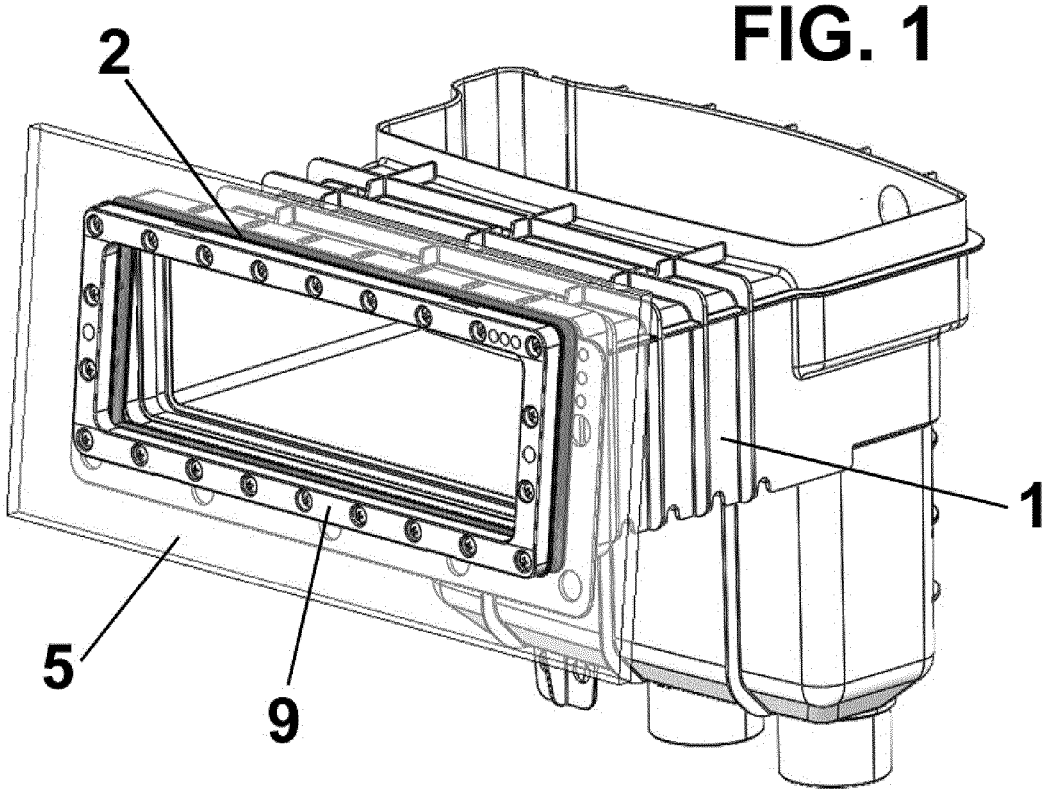


FIG. 2

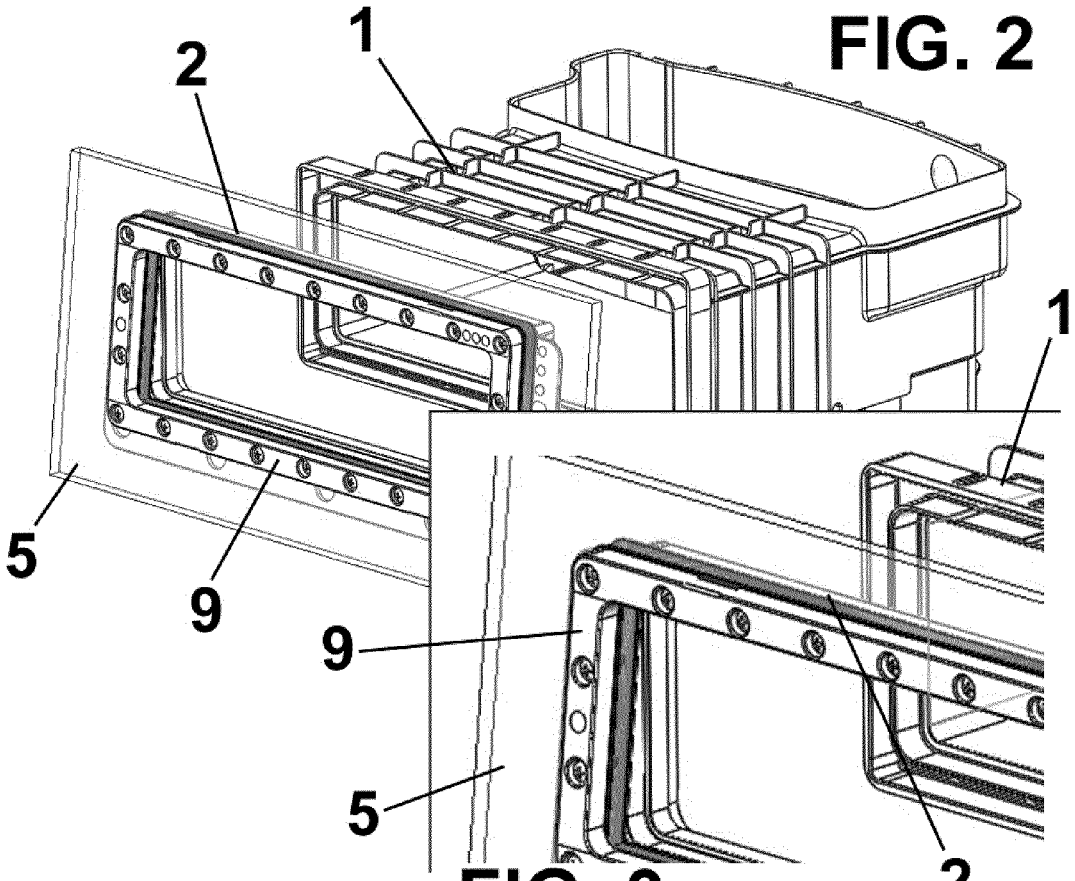


FIG. 3

FIG. 4

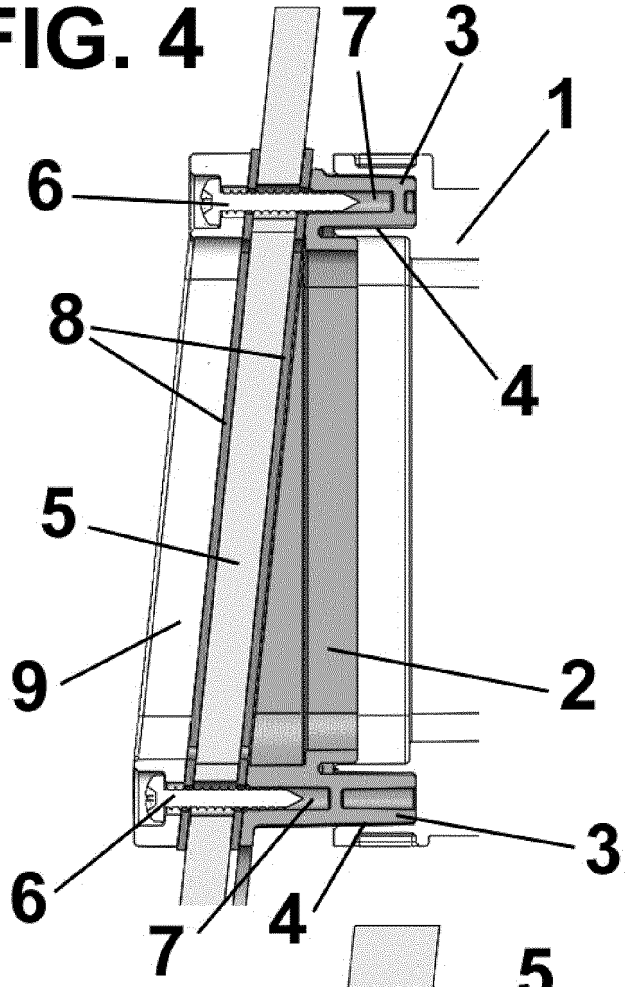


FIG. 5

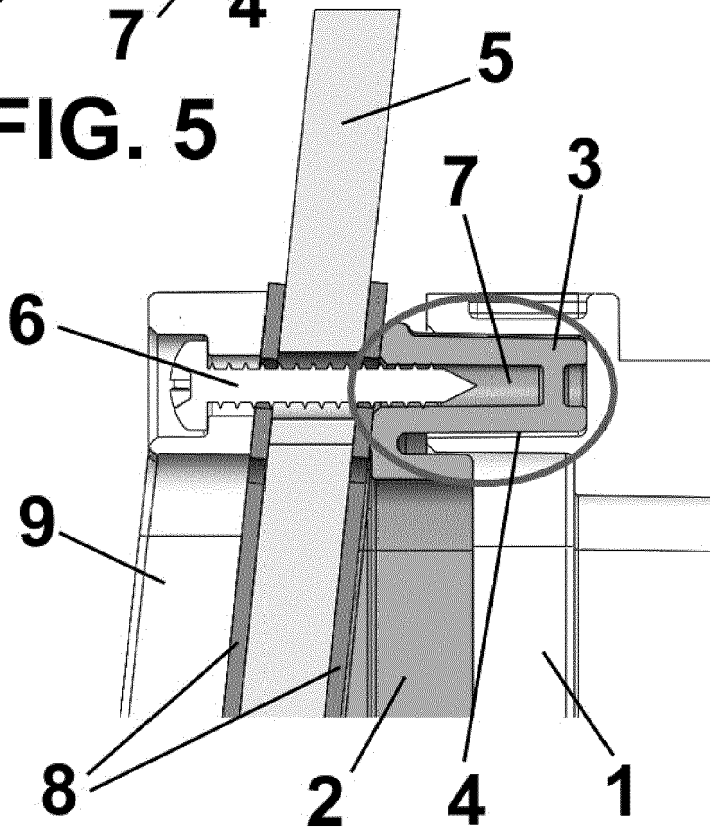


FIG. 6

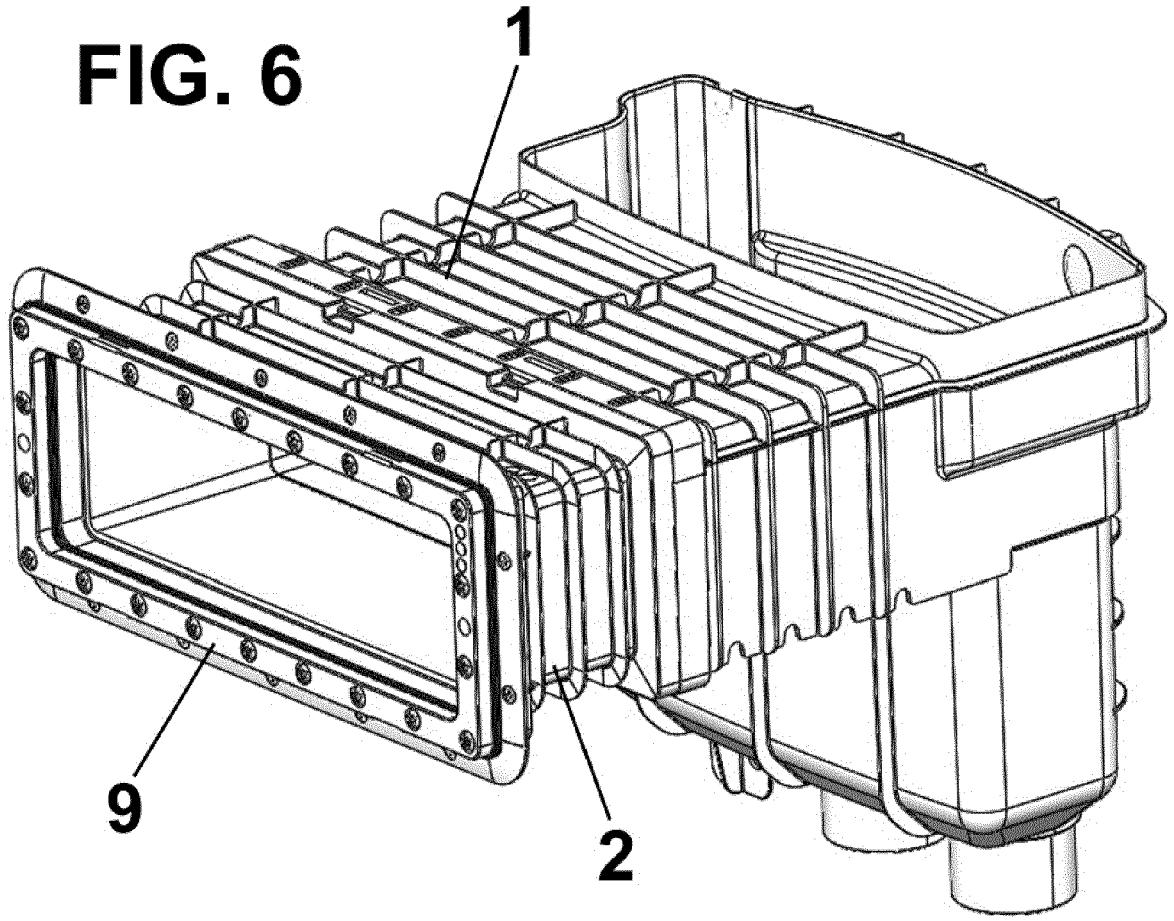


FIG. 7

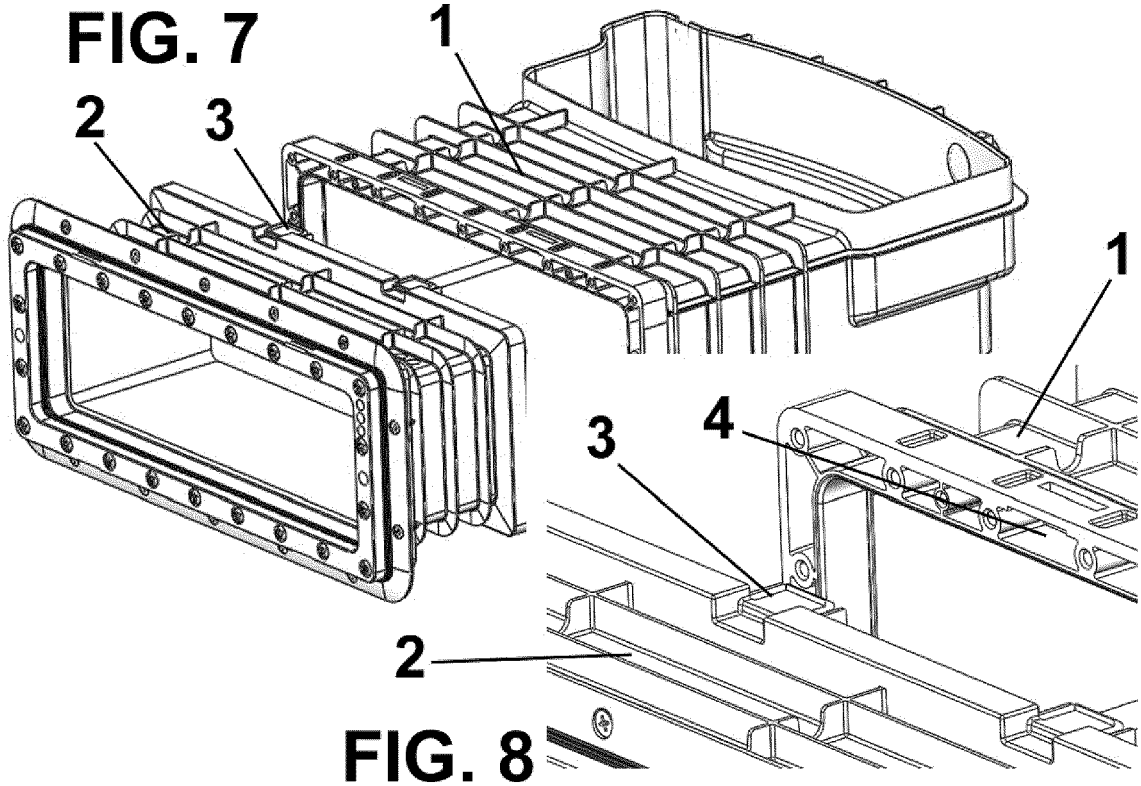


FIG. 8

FIG. 9

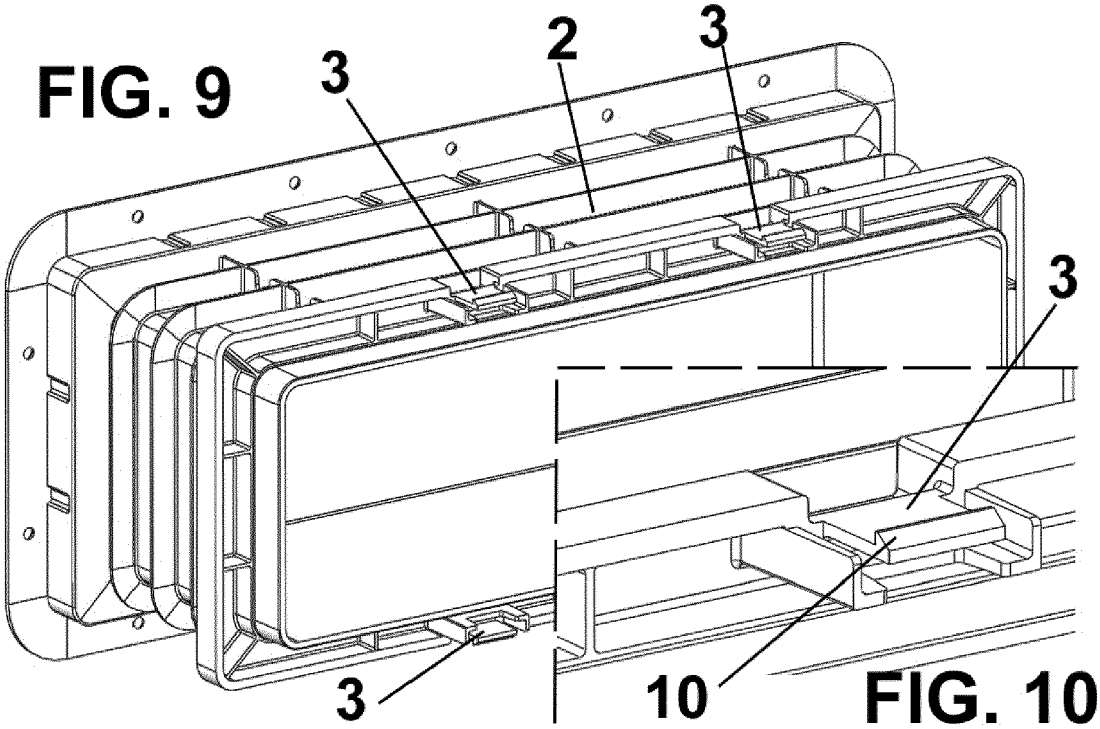


FIG. 10

FIG. 11

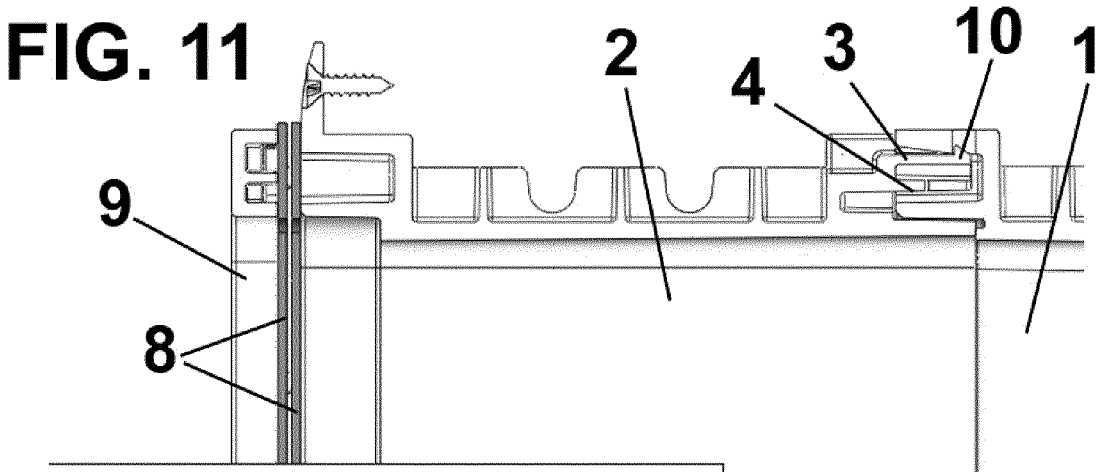
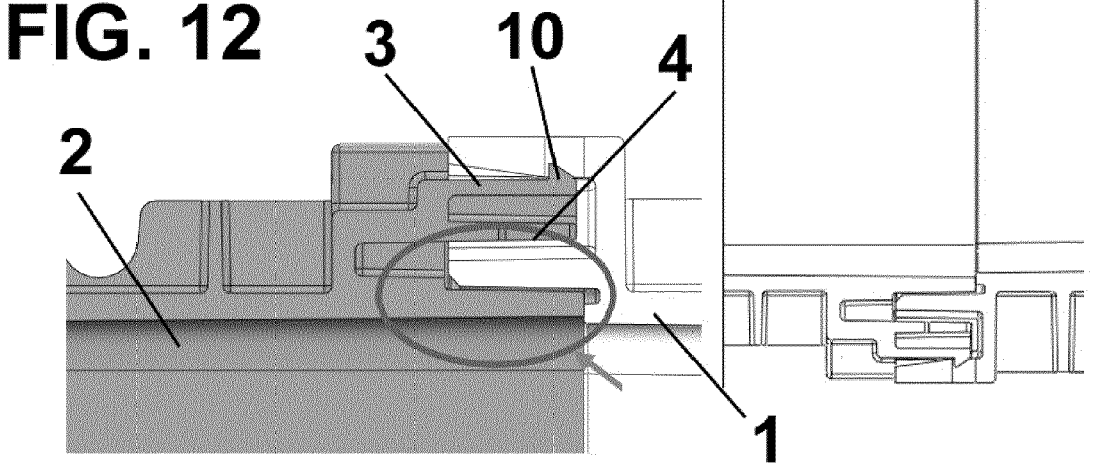


FIG. 12



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EUROPEAN SEARCH REPORT

Application Number
EP 21 38 2626

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 2 072 716 B1 (GATECH [FR]) 18 August 2010 (2010-08-18)	1,5-8, 11-13	INV. E04H4/12
A	* figures 1-6 *	2-4,9,10	
X	DE 200 13 461 U1 (WTS KERESKEDELMI ES SZOLGALTAT [HU]) 30 November 2000 (2000-11-30)	1,5-8, 11-13	
A	* figure 1 *	2-4,9,10	
X	DE 21 55 164 A1 (WEST, R.) 10 May 1972 (1972-05-10)	1,5-8, 11-13	
A	* figures 2,3,5,6 *	2-4,9,10	

TECHNICAL FIELDS SEARCHED (IPC)

E04H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	25 November 2021	Decker, Robert

CATEGORY OF CITED DOCUMENTS

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