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(54) **Overflow device for water drain assemblies for drainage systems for roofs**

Überlaufvorrichtung für eine Wasserabflussanordnungen für Abflusssysteme von Gebäudedächern

Dispositif de déversoir pour ensembles d'évacuation d'eau pour systèmes de drainage pour toits de bâtiments

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(73) Proprietor: **VALSIR S.p.A.**
**25078 Vestone (BS) (IT)**

(72) Inventors:
- **Giovannini, Alessandro**
  **25088 Toscolano Maderno (IT)**
- **Zanca, Nicola**
  **25088 Toscolano Maderno (IT)**
- **Piccinelli, Gianmario**
  **25074 Idro (IT)**

(74) Representative: **Bergadano, Mirko et al**
**Studio Torta S.p.A.**
**Via Viotti, 9**
**10121 Torino (IT)**

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## Description

**[0001]** The present invention relates to an overflow device for water drain assemblies, in particular for drainage systems for roofs of buildings, and to a water drain assembly, in particular for drainage systems for roofs of buildings, provided with said overflow device.

**[0002]** In general, a drainage system for roofs of building for draining rain water is made up of collection drain assemblies and a network of pipes.

**[0003]** Normally, the drainage system is sized according to the rainfall expected in the locality where it is installed. It is, however, expedient to provide alongside the main system an emergency system, having the function of preventing overloading of the roof of the building in the event of a rainfall higher than what is expected.

**[0004]** An emergency system can be obtained in various ways, such as, for example:

- by making holes in the parapets that delimit the roof of the building in such a way that an increase in the level of water accumulated on the roof will be discharged outside the building through said holes;
- by providing a secondary rainwater-drainage system, either of a conventional type (without siphon) or with siphon effect, which intervenes when, for example following upon rainfall that is more intense than what is expected, the level of water on the roof exceeds the design level for the main system.

**[0005]** The secondary system can be made up of drain assemblies of the same type as those of the main system, or else of some other type. For example, traditional drain assemblies (exploiting gravity) or siphon drain assemblies (exploiting the siphon action) may be used.

**[0006]** An emergency system with siphon drain assemblies can be obtained in various ways:

- by installing the siphon drain assemblies, of the same type as the drain assemblies used for the main system, at a higher level than the latter (for example, 55 mm above the roof), thus creating purposely designed raised structures made of concrete, wood, sheet metal, or other material forming part of the roof;
- by using drain assemblies sized purposely and exclusively for providing the emergency systems (which are different from the ones used for the main system that operates in normal conditions);
- by using inserts, components, accessories that basically modify the siphon drain assemblies designed for the main system so that they can work with a higher water level and hence are rendered suitable for use in the emergency system.

**[0007]** Clearly, the latter solution avoids the need for design, production, and logistic management of drain assemblies of a different type for the main system and for the secondary system and does not require provision of auxiliary structures (raised structures) on the roof of the building.

**[0008]** Known solutions of this type do not seem, however, fully satisfactory, above all in terms of simplicity of construction and assembly of the accessory, as well as of overall effectiveness of the drain assembly. The addition of an accessory on a drain assembly appropriately designed for providing certain levels of performance can in fact alter the efficiency of the drain assembly itself.

**[0009]** In addition, known accessories enable only raising of the drain assembly by a pre-set height, determined by the size of the accessory, but in general do not allow adjustment in height of the drain assembly. In order to obtain different heights, it is, instead, necessary to use accessories of different dimensions, or else envisage cutting a raised-structure accessory to the desired height.

**[0010]** US2006242913- A1 discloses an adjustable roof drain according to the preamble of claim 1.

**[0011]** An aim of the present invention is to provide a water drain assembly, in particular for drainage systems for roofs of buildings, that will overcome the drawbacks highlighted above.

**[0012]** In particular, an aim of the invention is to provide an overflow device that can be applied to water drain assemblies in a simple and effective way, the device being simple and inexpensive to produce, easy to install, and fully effective not only for raising the level of water entering the drain assembly on which the overflow device is installed, but that will also enable adjustment of said level.

**[0013]** The present invention hence regards an overflow device for water drain assemblies, in particular for drainage systems for roofs of buildings as defined in basic terms in the annexed Claim 1 and, as regards its additional features, in the dependent claims.

**[0014]** The invention moreover regards a water drain assembly, in particular for drainage systems for roofs of buildings, as defined in the annexed Claim 10, said water drain assembly being provided with said overflow device.

**[0015]** The overflow device according to the invention is simple and inexpensive to produce and install, has contained dimensions, and is fully effective. In particular, the overflow device according to the invention can be applied to water drain assemblies in a simple and effective way, without altering the levels of performance of the drain assembly. The overflow device then has a high versatility in so far as it enables raising of the level of water entering the drain assembly and also adjustment of said level.

**[0016]** Further characteristics and advantages of the present invention emerge clearly from the ensuing description of a non-limiting example of embodiment thereof, with reference to the figures of the annexed plates of drawings, wherein:

- Figure 1 is a partially exploded schematic view in longitudinal section of a water drain assembly, in particular for siphon-effect drainage systems for roofs

of buildings, provided with an overflow device according to the invention;

- Figure 2 is a perspective view from beneath of a component of the overflow device shown in Figure 1; and
- Figure 3 is a perspective view from above of a further component of the device of Figure 1.

**[0017]** In Figure 1 designated by 1 is a water drain assembly, in particular forming part of a drainage system for roofs of buildings. The system is not illustrated as a whole and comprises, as is known, a plurality of drain assemblies installed generally on the roof of the building, and pipes and collectors of various sizes and shapes, which connect each drain assembly to a main pipe for discharge outside the building.

**[0018]** The drain assembly 1 extends basically along an axis A (which, in use, is substantially vertical) and mainly comprises a base body 2, having an opening 3 for inlet of the water, which communicates with a duct 4 formed inside the body 2, and a lid 5 set above the body 2 and provided with a top grid 6.

**[0019]** In the example illustrated, but not necessarily, the drain assembly 1 is a siphon-effect drain assembly.

**[0020]** The body 2 is a basically tubular body shaped as a whole like a funnel and comprises a bottom tubular portion 8, which is, for example, substantially cylindrical, and is provided inside with the duct 4, and a top inlet flange 9, which is radially external and substantially annular, is provided at the centre with the opening 3, and has an annular top surface 10, optionally inclined and/or flared radially inwards (or having an inclined or flared portion) with respect to the axis A, which conveys the water to the opening 3 and then into the duct 4.

**[0021]** Optionally, as shown in Figure 1, but not necessarily, the flange 9 is formed by two concentric pieces inserted inside one another and joined together, for example via screws.

**[0022]** The lid 5 comprises the grid 6 and, preferably, an anti-vortex disk 12, which is set underneath the grid 6 and is shaped in such a way as to prevent formation of vortices in the water entering the drain assembly 1 and introduction of air in the drain assembly 1. In particular, the disk 12 has a plurality of blades 13, which extend from a bottom face of the disk and convey the water into the body 2 preventing formation of vortices. The blades 13 are arranged radially about the axis A and are angularly spaced apart from one another.

**[0023]** The lid 5 is joined to the body 2 via fixing members 15, for example of a threaded type. In the non-limiting example illustrated, the flange 9 carries screws 16, which extend vertically through respective holes 17 formed in the lid 5 and are blocked by nuts.

**[0024]** The grid 6 is substantially cage-shaped and is set on top of the disk 12 for covering and enclosing the disk 12. The grid 6 is joined to the disk 12 with fixing members 18, for example with a central screw 19 associated to an anti-rotation spider (which couples the grid 6 and the disk 12 so that they are angularly fixed with respect to one another).

**[0025]** According to the invention, the drain assembly 1 is provided with an overflow device 25 comprising a removable overflow accessory component 30, which has the purpose of rendering the drain assembly 1 suitable for use both in a main drainage system (operating in normal conditions, with a level of rainfall within the design limits envisaged) and in a secondary emergency system (operating in the case of rainfall that is higher than what is envisaged for normal operation of the main system). More in general, the overflow device 25 and the component 30 have the purpose of varying the height of the drain assembly 1, and precisely raising the level of entry of the water into the drain assembly 1.

**[0026]** The component 30 is removably inserted between the flange 9 of the body 2 and the lid 5.

**[0027]** The component 30 comprises a lower element 31 and an upper element 32, which are telescopically coupled together along the axis A, and a height-adjustment device 33 for varying the axial height (measured along the axis A) of the component 30, via which the position of the elements 31, 32 with respect to one another along the axis A is varied, and consequently also the axial height of the component 30 (measured along the axis A).

**[0028]** The elements 31, 32 are mobile with respect to one another. More precisely, the elements 31, 32 are able to turn with respect to the axis A and slide axially along the axis A with respect to one another.

**[0029]** With reference also to Figures 2-3, the elements 31, 32 are substantially annular elements that extend about the axis A and are concentric. The elements 31, 32 have respective annular plates 35, 36 facing one another and respective radially external side walls 37, 38, which extend towards one another.

**[0030]** In greater detail, the lower element 31 has a substantially flat annular plate 35, and a radially external side wall 37, which is substantially cylindrical and extends from a radially external peripheral edge of the plate 35. The element 31 comprises a substantially cylindrical central sleeve 41, arranged through the plate 35 in a position corresponding to a radially internal peripheral edge of the plate 35. The sleeve 41 is sized in such a way that it can be inserted through the opening 3 and penetrate into the duct 4.

**[0031]** The plate 35 has a substantially plane bottom surface 42, which rests in use on the surface 10 of the flange 9. The surface 42 is provided with a circumferential groove 43 that houses an axial seal ring 44 co-operating with the surface 10.

**[0032]** The annular plate 36 of the upper element 32 is optionally shaped in such a way as to reproduce the surface 10 of the flange 9. In any case, the plate 36 has a top annular surface 45, optionally inclined radially inwards with respect to the axis A, which replaces the surface 10 of the flange 9 in the function of conveying the water into the drain assembly 1.

**[0033]** The side wall 38 of the plate 36 of the upper

element 32 is substantially cylindrical and is set radially external around the wall 37 of the lower element 31. The element 32 comprises a substantially cylindrical central sleeve 46, which extends from a radially internal peripheral edge of the plate 36 downwards and is inserted into the sleeve 41 of the element 31. The sleeve 46 is provided with a radial seal ring 47, housed, for example, in an annular groove 48 formed on an external lateral surface of the sleeve 46 and co-operating with an internal lateral surface of the sleeve 41.

**[0034]** The elements 31, 32 are coupled together and define an internal annular chamber 49, delimited by the plates 35, 36 and by the walls 37, 38 and set around a central through duct 50, which extends along the axis A and is formed by the sleeves 41, 46.

**[0035]** The height-adjustment device 33 comprises supporting members 51, 52 carried by the elements 31, 32 and co-operating for supporting the two elements 31, 32 axially in a position selected from among a plurality of pre-set positions, corresponding to respective different axial heights of the component 30.

**[0036]** In particular, the supporting members 51, 52 are defined, respectively, by at least one series of steps 53 formed on one of the elements 31, 32 and having different axial heights (measured parallel to the axis A), and by at least one abutment step 54, formed on the other one of the elements 31, 32 and co-operating axially in contrast with a selected one of the steps 53.

**[0037]** In the non-limiting example illustrated, the device 33 comprises two sets of steps 53, 54, which are formed on respective elements 31, 32 and extend towards one another from the plates 35, 36.

**[0038]** Each of the elements 31, 32 has steps 53, 54 having different heights (measured along the axis A starting from the plates 35, 36) and arranged circumferentially alongside one another along the walls 37, 38 within the chamber 49 delimited by the two elements 31, 32 coupled together.

**[0039]** Each element 31, 32 has at least one series (and preferably at least two series) of two or more steps 53, 54 (three steps, in the example illustrated) having increasing heights.

**[0040]** In the example illustrated, each element 31, 32 has three equal series of steps 53, 54 (each formed, for example, by three steps); the series are formed by equal steps 53, 54 and are angularly staggered along the respective walls 37, 38.

**[0041]** The steps 53 of each series of the lower element 31 have heights that increase in a pre-set direction (for example, the counterclockwise direction), whereas the steps 54 of each series of the upper element 32 have heights that increase in an opposite direction (for example, the clockwise direction).

**[0042]** The steps 53, 54 of the two elements 31, 32 are shaped in such a way that the steps 53 of the element 31 engage respective steps 54 of the other element 32 in a plurality of pre-set positions, which correspond to as many positions of the elements 31, 32 with respect to one another and precisely to different axial heights (along the axis A) of the component 30.

**[0043]** The steps 53, 54 of the two elements 31, 32 can be coupled in different ways, corresponding to respective heights of the component 30. In particular, the steps 53, 54 are shaped so as to support axially the elements 31, 32 with respect to one another in a plurality of pre-set positions, in which the surfaces 42, 45 are at respective pre-set distances from one another and hence the component 30 has different heights.

**[0044]** In greater detail, the steps 54 of the upper element 32 rest on the steps 53 of the lower element 31. If the highest steps 54 of the upper element 32 engage (rest on) the lowest steps 53 of the lower element 31, then the two elements 31, 32 are in a first position with respect to one another where the distance between the surfaces 42, 45, and hence also the overall height of the component 30, are minimum.

**[0045]** By displacing the elements 31, 32 with respect to one another (in particular, via rotation about the axis A and translation along the axis A) and bringing the steps 54 of the upper element 32 to engage other steps 53 of the lower element 31, the axial distance between the elements 31, 32 is modified, and hence also the height of the component 30.

**[0046]** When the highest step 54 of the upper element 32 is coupled to the intermediate step 53 of the lower element 31, the component 30 has an intermediate height. When the highest step 54 of the upper element 32 engages the highest step 53 of the lower element 31, the component 30 has the maximum height.

**[0047]** Clearly, the elements 31, 32 can be provided with a different number of steps 53, 54 with respect to what has been described herein purely by way of example.

**[0048]** Once the elements 31, 32 are coupled in the position corresponding to the desired height of the component 30, the elements 31, 32 are fixed together and, preferably, to the base body 2 via fixing members 55, for example threaded fixing members 55.

**[0049]** For example, the fixing members 55 comprise screws 56 (just one of which is shown in Figure 1), each of which is set through a pair of aligned holes 57, 58 (shown in Figures 2, 3) formed in the two elements 31, 32 respectively.

**[0050]** Clearly, the elements 31, 32 have holes 57, 58 arranged so as to define pairs of aligned holes in each of the pre- defined positions of the elements 31, 32.

**[0051]** Advantageously, the fixing members 55 not only connect the elements 31, 32 together, but also engage the flange 9 of the body 2 so as to fix the component 30 to the body 2.

**[0052]** According to a preferred embodiment, the fixing members 55 comprise prolongation accessories 59 that are fitted on the screws 16 already provided for fixing the body 2 to the lid 5.

**[0053]** Finally, it is understood that modifications and variations may be made to the overflow device and to

the drain assembly described and illustrated herein, without thereby departing from the scope of the invention, as defined in the annexed claims.

## Claims

1. An overflow device (25) for water drain assemblies, in particular for drainage systems for roofs of buildings, comprising a removable overflow accessory component (30), extending substantially along an axis (A) and mountable on a water drain assembly (1) for varying the height of the drain assembly (1) and raising the level of the water entering the drain assembly (1); the component (30) comprising a lower element (31) and an upper element (32), telescopically coupled together along the axis (A), and a height-adjustment device (33) for varying the position of the elements (31, 32) with respect to one another along the axis (A) and consequently the axial height of the component (30); the height-adjustment device (33) comprising supporting members (51, 52) carried by the elements (31, 32) and co-operating for supporting the two elements (31, 32) axially in a position selected from among a plurality of pre-set positions, corresponding to respective different axial heights of the component (30); wherein the supporting members (51, 52) of the height-adjustable device (33) are defined, respectively, by two sets of steps (53, 54), which are formed on respective elements (31, 32) and extend towards one another for co-operating axially in contrast with one another; **characterized in that** each of the elements (31, 32) has steps (53, 54) that have different heights and said steps (53, 54) are arranged circumferentially alongside one another along respective side walls (37, 38) of the elements (31, 32) within a chamber (49) delimited by the two elements (31, 32) coupled together.

2. The device according to Claim 1, wherein each element (31, 32) has at least one series and preferably at least two series of two or more steps (53, 54) having increasing heights.

3. The device according to Claim 2, wherein the steps (53, 54) of the two elements (31, 32) have, in each series, heights that increase in opposite directions.

4. The device according to any one of the preceding Claims, wherein each element (31, 32) has three equal series of steps (53, 54), the series being formed by equal steps (53, 54) and being angularly staggered.

5. The device according to any one of the preceding Claims, comprising fixing members (55) for fixing the elements (31, 32) with respect to one another in the position selected from among the plurality of pre-set positions.

6. The device according to Claim 5, wherein the fixing members (55) comprise screws (56), each of which is set through a pair of aligned holes (57, 58) formed in the two elements (31, 32), respectively; the elements (31, 32) having holes (57, 58) arranged so as to define pairs of holes aligned in each of the preset positions of the elements (31, 32).

7. The device according to any one of the preceding claims, wherein the elements (31, 32) are substantially annular concentric elements and have respective central sleeves (41, 46) inserted telescopically inside one another and defining a central through duct (50).

8. The device according to Claim 7, wherein a radial seal ring (47) is radially set between the sleeves (41, 46).

9. The device according to any one of the preceding claims, wherein the lower element (31) has a bottom surface (42) provided with a circumferential groove (43), which houses an axial seal ring (44).

10. A water drain assembly (1), in particular for drainage systems for roofs of buildings, **characterized by** comprising an overflow device (25) according to any one of the preceding claims.

11. The drain assembly according to Claim 10, comprising a base body (2), having a substantially annular top inlet flange (9) provided centrally with an opening (3) for inlet of the water, which communicates with a duct (4) formed inside the body (2), and a lid (5) set on the body (2) and provided with a top grid (6); and wherein the component (30) is removably inserted between the flange (9) of the body (2) and the lid (5).

12. The drain assembly according to Claim 11, wherein fixing members (55) connect the elements (31, 32) together and engage also the flange (9) of the body (2) so as to fix the component (30) to the body (2).

## Patentansprüche

1. Überlaufvorrichtung (25) für Wasserabflussanordnungen, insbesondere für Abflusssysteme für Gebäudedächer, die eine entfernbare Überlaufzubehörkomponente (30) umfasst, die sich im Wesentlichen entlang einer Achse (A) erstreckt und auf einer Wasserabflussanordnung (1) zum Variieren der Höhe der Abflussanordnung (1) und Erhöhen des Pegels des Wassers, das in die Abflussanordnung (1)

eintritt, montierbar ist; wobei die Komponente (30) ein unteres Element (31) und ein oberes Element (32), die teleskopisch entlang der Achse (A) gekoppelt sind, und eine Höheneinstellvorrichtung (33) zum Variieren der Position der Elemente (31, 32) in Bezug aufeinander entlang der Achse (A) und folglich der axialen Höhe der Komponente (30) umfasst; wobei die Höheneinstellvorrichtung (33) Halteelemente (51, 52) umfasst, die von den Elementen (31, 32) getragen werden und zum axialen Halten der zwei Elemente (31, 32) in einer Position zusammenwirken, die aus einer Vielzahl vorher festgelegter Positionen ausgewählt ist, welche jeweiligen verschiedenen Axialhöhen der Komponenten (30) entsprechen; wobei die Halteelemente (51, 52) der Höheneinstellvorrichtung (33) jeweils durch zwei Sätze von Abschnitten bzw. Stufen (53, 54) definiert sind, die auf jeweiligen Elementen (31, 32) ausgebildet sind und sich aufeinander zu erstrecken, um axial entgegengesetzt zueinander zusammenzuwirken; **dadurch gekennzeichnet, dass** jedes der Elemente (31, 32) Stufen (53, 54) hat, die verschiedene Höhen haben und wobei die Stufen (53, 54) dem Umfang nach längs voneinander entlang jeweiliger Seitenwände (37, 38) der Elemente (31, 32) innerhalb einer Kammer (49) angeordnet sind, die durch die zwei miteinander gekoppelten Elemente (31, 32) begrenzt ist.

**2.** Vorrichtung nach Anspruch 1, wobei jedes Element (31, 32) wenigstens eine Reihe und vorzugsweise wenigstens zwei Reihen aus zwei oder mehr Stufen (53, 54) mit zunehmenden Höhen hat.

**3.** Vorrichtung nach Anspruch 2, wobei die Stufen (53, 54) der zwei Elemente (31, 32) in jeder Reihe Höhen haben, die in entgegengesetzte Richtungen zunehmen.

**4.** Vorrichtung nach jedem der vorhergehenden Ansprüche, wobei jedes Element (31, 32) drei gleich große Reihen von Stufen (53, 54) hat, wobei die Reihe durch gleich große Stufen (53, 54) ausgebildet ist und winkelig versetzt ist.

**5.** Vorrichtung nach einem der vorhergehenden Ansprüche, die Befestigungselemente (55) zum Befestigen der Elemente (31, 32) in der Position, die aus der Vielzahl vorher festgelegter Positionen ausgewählt wird, in Bezug aufeinander umfasst.

**6.** Vorrichtung nach Anspruch 5, wobei die Befestigungselemente (55) Schrauben (56) umfassen, von denen jede durch ein Paar ausgerichteter Löcher (57, 58) festgelegt ist, die jeweils in den zwei Elementen (31, 32) ausgebildet sind; wobei die Elemente (31, 32) Löcher (57, 58) haben, die derart angeordnet sind, dass sie Paare von Löchern definieren, die in jeder der vorher festgelegten Positionen der Elemente (31, 32) ausgerichtet sind.

**7.** Vorrichtung nach einem der vorhergehenden Ansprüche, wobei die Elemente (31, 32) im Wesentlichen ringförmige konzentrische Elemente sind und jeweilige mittlere Hülsen (41, 46) haben, die teleskopisch ineinander eingesetzt sind und einen zentralen Durchgangskanal (50) definieren.

**8.** Vorrichtung nach Anspruch 7, wobei ein radialer Dichtungsring (47) radial zwischen den Hülsen (41, 46) festgelegt ist.

**9.** Vorrichtung nach einem der vorhergehenden Ansprüche, wobei das untere Element (31) eine untere Oberfläche (42) hat, die mit einer Umfangsnut (43) versehen ist, die einen axialen Dichtungsring (44) aufnimmt.

**10.** Wasserabflussanordnung (1), insbesondere für Abflusssysteme für Gebäudedächer, **dadurch gekennzeichnet, dass** sie eine Überlaufvorrichtung (25) nach einem der vorhergehenden Ansprüche umfasst.

**11.** Abflusssystem nach Anspruch 10, das einen Grundkörper (2) umfasst, der einen im Wesentlichen ringförmigen oberen Einlassflansch (9), der zentral mit einer Öffnung (3) für den Einlass des Wassers versehen ist, der mit einem Kanal (4) in Verbindung steht, der im Inneren des Körpers (2) ausgebildet ist, und einen Deckel (5) hat, der auf dem Körper (2) eingerichtet ist und mit einem oberen Gitter (6) versehen ist; und wobei die Komponente (30) entfernbar zwischen dem Flansch (9) des Körpers (2) und dem Deckel (5) eingesetzt ist.

**12.** Abflussanordnung nach Anspruch 11, wobei Befestigungselemente (55) die Elemente (31, 32) miteinander verbinden und auch in den Flansch (9) des Körpers (2) eingreifen, um die Komponente (30) an dem Körper (2) zu befestigen.

**Revendications**

**1.** Dispositif de déversoir (25) pour ensembles d'évacuation d'eau, en particulier pour des systèmes de drainage pour toits de bâtiments, comprenant un composant accessoire de déversoir amovible (30), qui s'étend essentiellement le long d'un axe (A) et pouvant être monté sur un ensemble d'évacuation d'eau (1) pour varier la hauteur de l'ensemble d'évacuation (1) et élever le niveau de l'eau qui rentre dans l'ensemble d'évacuation (1) ; le composant (30) comprenant un élément inférieur (31) et un élément supérieur (32), couplés entre eux de manière

télescopique le long de l'axe (A), et un dispositif de réglage en hauteur (33) pour varier la position des éléments (31, 32) l'un par rapport à l'autre le long de l'axe (A) et par conséquent la hauteur axiale du composant (30) ; le dispositif de réglage en hauteur (33) comprenant des éléments de support (51, 52) portés par les éléments (31, 32) et coopérant pour supporter les deux éléments (31, 32) axialement dans une position sélectionnée parmi une pluralité de positions préétablies, correspondant à différentes hauteurs axiales respectives du composant (30) ; où les éléments de support (51, 52) du dispositif de réglage en hauteur (33) sont définis, respectivement, par deux ensembles de paliers (53, 54), qui sont formés sur des éléments respectifs (31, 32) et s'étendent l'un vers l'autre pour coopérer axialement en contraste l'un avec l'autre ; **caractérisé en ce que** chacun des éléments (31, 32) a des paliers (53, 54) qui ont des hauteurs différentes et lesdits paliers (53, 54) sont disposés de manière circonférentielle l'un à côté de l'autre le long de parois latérales respectives (37, 38) des éléments (31, 32) à l'intérieur d'une chambre (49) délimitée par les deux éléments (31, 32) couplés ensemble.

**2.** Dispositif selon la revendication 1, dans lequel chaque l'élément (31, 32) comporte au moins une série, préférablement au moins deux séries, de deux paliers ou plus (53, 54) ayant des hauteurs croissantes.

**3.** Dispositif selon la revendication 2, dans lequel les paliers (53, 54) des deux éléments (31, 32) ont, dans chaque série, des hauteurs qui augmentent dans des directions opposées.

**4.** Dispositif selon l'une quelconque des revendications précédentes, dans lequel chaque élément (31, 32) présente trois séries égales de paliers (53, 54), les séries étant formées par des paliers égaux (53, 54) et étant angulairement décalées.

**5.** Dispositif selon l'une quelconque des revendications précédentes, comprenant des éléments de fixation (55) pour fixer les éléments (31, 32) l'un par rapport à l'autre dans la position sélectionnée parmi la pluralité de positions préétablies.

**6.** Dispositif selon la revendication 5, dans lequel les éléments de fixation (55) comprennent des vis (56), chacune desquelles étant fixée à travers une paire de trous alignés (57, 58) formés dans les deux éléments (31, 32), respectivement ; les éléments (31, 32) ayant des trous (57, 58) disposés de manière à définir des paires de trous alignés dans chacune des positions préétablies des éléments (31, 32).

**7.** Dispositif selon l'une quelconque des revendications précédentes, dans lequel les éléments (31, 32) sont essentiellement des éléments concentriques annulaires et ont des manchons centraux respectifs (41, 46) insérés de manière télescopique l'un à l'intérieur de l'autre et définissant un conduit traversant central (50).

**8.** Dispositif selon la revendication 7, dans lequel une bague d'étanchéité radiale (47) est radialement fixée entre les manchons (41, 46).

**9.** Dispositif selon l'une quelconque des revendications précédentes, dans lequel l'élément inférieur (31) a une surface inférieure (42) pourvue d'une rainure circonférentielle (43), qui loge une bague d'étanchéité axiale (44).

**10.** Ensemble d'évacuation d'eau (1), en particulier pour des systèmes de drainage pour toits de bâtiments, **caractérisé par** le fait de comprendre un dispositif de déversoir (25) selon l'une quelconque des revendications précédentes.

**11.** Ensemble d'évacuation selon la revendication 10, comprenant un corps de base (2), ayant une bride d'entrée supérieure essentiellement annulaire (9) prévue au centre avec une ouverture (3) pour l'entrée de l'eau, qui communique avec un conduit (4) formé à l'intérieur du corps (2), et un couvercle (5) fixé sur le corps (2) et pourvu d'une grille supérieure (6) ; et où le composant (30) est inséré de manière amovible entre la bride (9) du corps (2) et le couvercle (5).

**12.** Ensemble d'évacuation selon la revendication 11, dans lequel des éléments de fixation (55) relient les éléments (31, 32) ensemble et s'engagent également avec la bride (9) du corps (2) de manière à fixer le composant (30) au corps (2).

FIG. 1

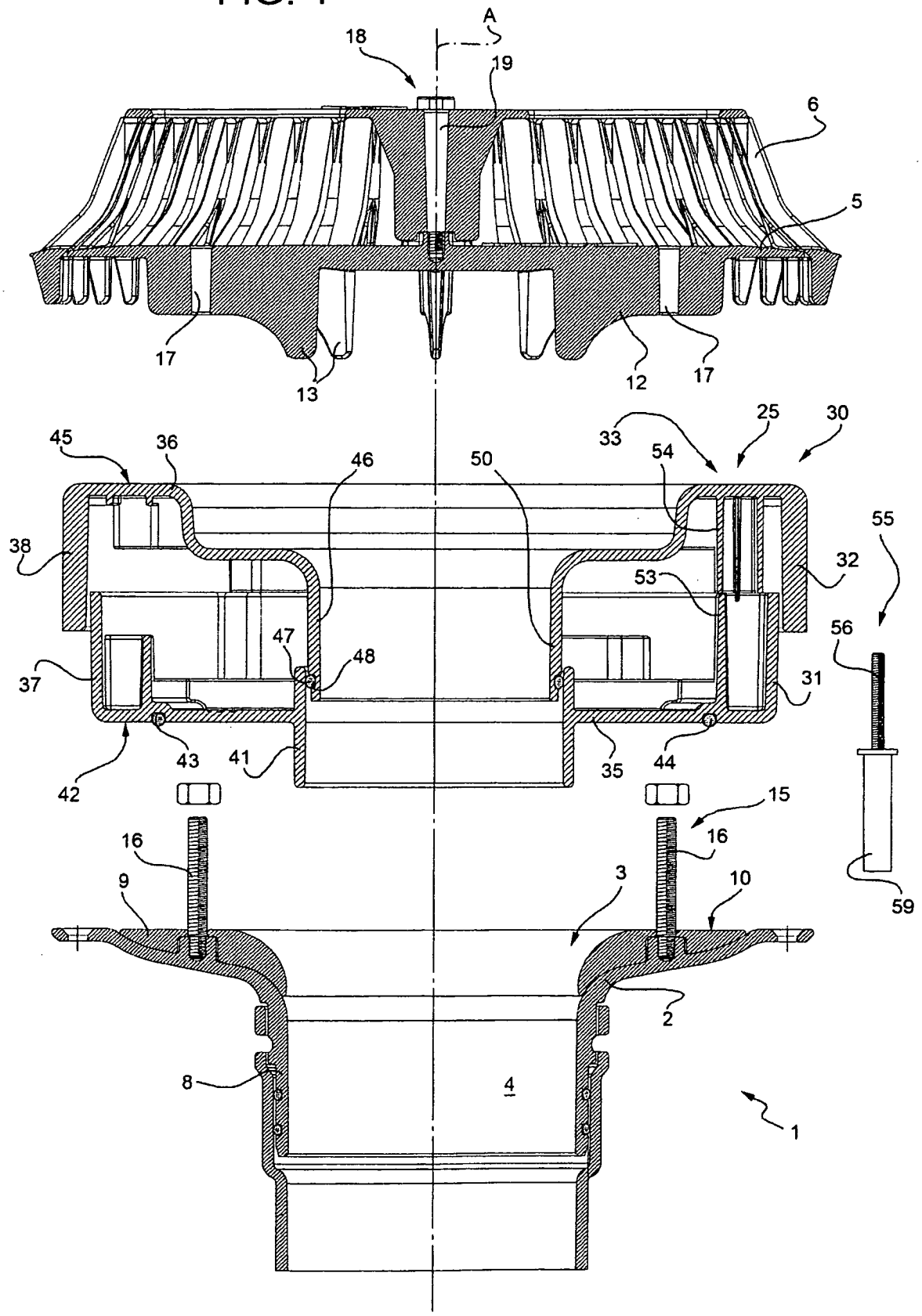

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FIG. 2

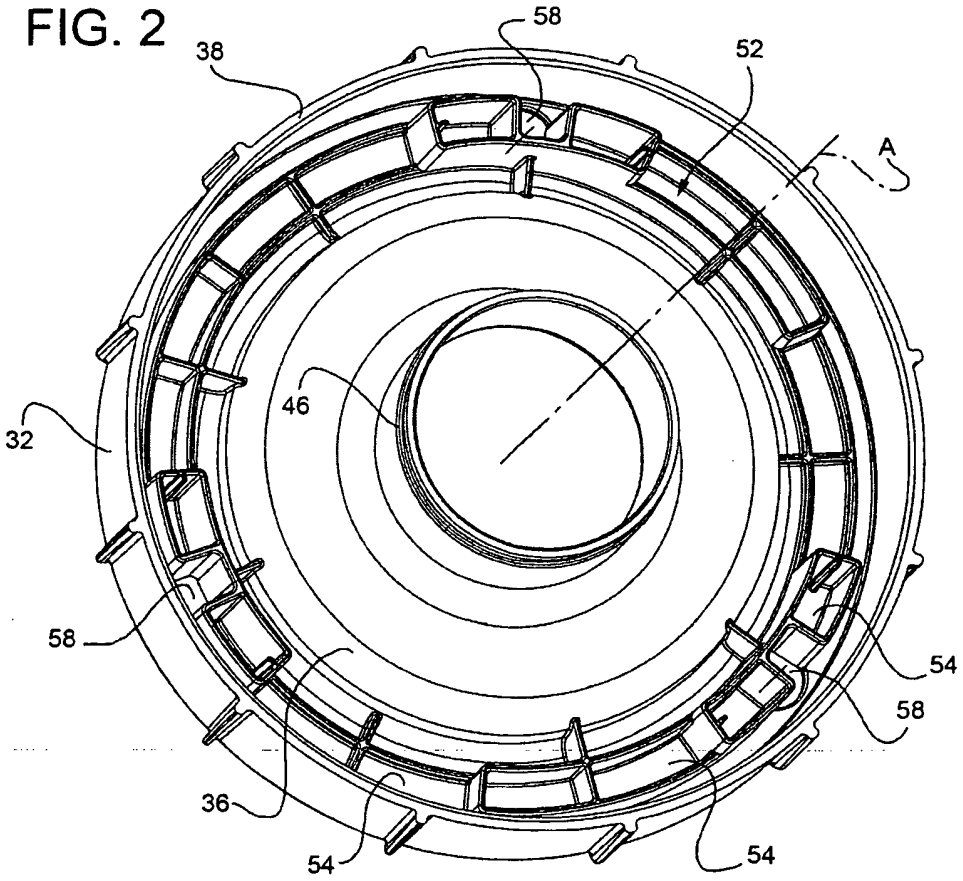
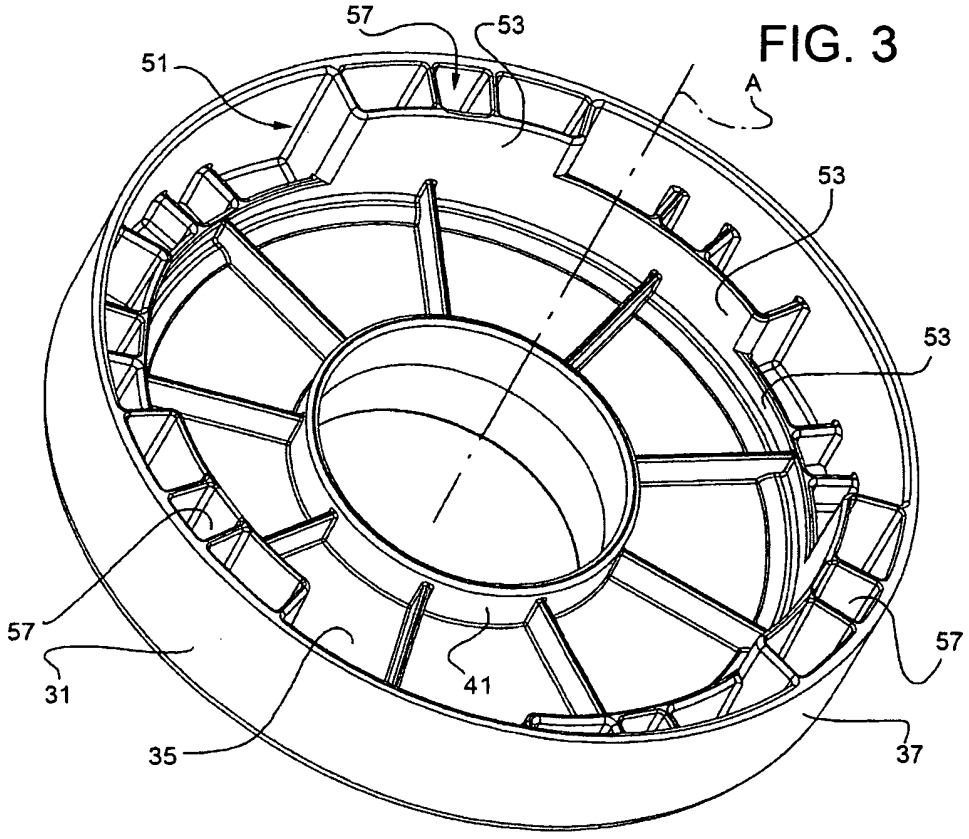



FIG. 3



## REFERENCES CITED IN THE DESCRIPTION

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### Patent documents cited in the description


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