(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 832 796 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
12.09.2007 Bulletin 2007/37

(21) Application number: **07103836.8**

(22) Date of filing: **09.03.2007**

(51) Int Cl.:
F16L 27/12 *(2006.01)* ***E03C 1/12*** *(2006.01)*
E03C 1/14 *(2006.01)* ***E03D 11/14*** *(2006.01)*

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK YU

(30) Priority: **10.03.2006 NL 1031349**

(71) Applicant: **A.A.V.**
3451 PH Vleuten (NL)

(72) Inventor: **Vlieger, Berend**
7431 AB, Diepenveen (NL)

(74) Representative: **Kupecz, Arpad**
Octrooibureau Los en Stigter B.V.
Weteringschans 96
1017 XS Amsterdam (NL)

(54) Drain for a washbasin and connecting block comprising said drain

(57) The invention relates to a drain to be connected to a trap used with a wash basin, which is provided with a horizontal pipe (1,2), of which one end is to be coupled to the trap and of which the other end, via a bend (3'), is coupled with a first vertical pipe (3), wherein a second vertical pipe (4) is provided which, at least partly, runs coaxially with the first vertical pipe (3), and the first vertical pipe (3) is slidable and rotatable in relation to the second vertical pipe (4); the first vertical pipe (3) and the bend (3') are completely enclosed by the second vertical pipe (4). The invention also relates to a connecting block for wash basins, comprising a plate (8) with openings for fastening to a wall, wherein the plate (8) is provided with an outlet opening (10) and that at the side of the plate (8) which during use is facing the wall a drain according to the invention is fastened, with the horizontal pipe (1,2), at the side facing away from the wall, projecting through the outlet opening (10) in the plate (8).

EP 1 832 796 A2

Description

[0001] The invention relates to a drain to be connected to a trap as used with a wash basin, which is provided with a horizontal pipe of which one end is to be coupled to the trap and of which the other end is coupled to a first vertical pipe. The invention also relates to a connecting block provided with such a drain.

[0002] A drain as mentioned above is known and is generally used when fitting wash basins. However, these drains have the drawback that they require precise alignment with the trap of the wash basin. Since the drain is located in the wall, the position of the drain is fixed. The wash basin therefore needs to be placed very accurately to allow the trap to be connected to the drain. If the wash basin is positioned a few millimetres too high or too low, or a few millimetres too much to the left or the right, the connection between the trap and the drain has to be adjusted with the aid of an attachment to enable them to link up with each other. If the wash basin is placed first and the drain is installed later, the same requirement applies with regard to accurate placing. Since such accurate fitting is almost impossible, a coupling attachment will be required in practically all cases. The attachment will be different for each fitting and always needs to be adjusted manually. This is a time-consuming and consequently costly job. Moreover, in many cases the attachment will also not fit exactly and it has been known to happen in practice that the components are occasionally coupled to each other under slight torsional strain. Eventually this torsional strain causes leakages. In the event of any adjustments being desired, in connection with height or dismantlement, replacement may even be necessary.

[0003] The German patent specification DE 102 56 844 A discloses a drain with a permanently fixed vertical element that via a flexible element and an elbow element runs into a horizontal element that needs to be coupled to, for example, a toilet bowl. Between the permanently fixed element and the flexible element a telescopic connection is provided to allow the height of the coupling with for example, the toilet bowl, to be adjusted. The drawback of this is, however, that this drain cannot be concealed in a wall without losing the adjustment possibilities.

[0004] It is an object of the present invention to provide a drain wherein a wash basin and a drain can be conveniently connected to each other so as to fit, without the necessity of manually making parts to measure, and wherein the vertical element of the drain can be incorporated in a wall or shell.

[0005] This object is achieved with a drain according to claim 1. With such a drain the second vertical pipe is fixed in the wall, for example, bricked in, while maintaining the possibility of vertically moving and turning the first vertical pipe. This makes it possible for the horizontal pipe, which is to be coupled to the trap, to be adjusted accurately to the height of the trap by moving the first vertical pipe. This is in particular of interest with wash basins having a fixed trap and when replacing wash basins. With the drain according to the invention, the first vertical pipe is rotatable so that the end of the horizontal pipe that is to be coupled to the trap moves to the left or the right, depending on the direction of rotation. For example, if the wash basin has been fitted too much to the left or the right in relation to the drain, the end of the horizontal pipe that is to be coupled with the trap can be moved to the left or the right by rotating the first vertical pipe to the left or the right, until it is aligned with the trap. It is thus no longer necessary, for example, to fasten the wash basin extremely accurately in the proper position to fit to the drain by, for example, adjusting an attachment to the correct size, and thus the drain can always be connected to the trap of the wash basin without torsional strain. The occasion may arise that it is desirable to change the height of the wash basin, for example, if it has to be adapted to a taller or shorter user. This drain makes it possible, without the wall in which the drain is fitted needing any alteration. The drain is then simply readjusted to the new position of the wash basin. This applies not only to vertical relocation of the wash basin but also to horizontal relocation or a combination of a horizontal and a vertical relocation is possible, obviously within the limits of the possibilities for adjusting the drain according to the present invention.

[0006] In a preferred embodiment of the invention, a seal is provided between the first and the second vertical pipe. This avoids any unpleasant odours from the drain finding their way into the room in which the wash basin is located. It also prevents drain water leaking from the drain. A seal comprising Teflon or silicones provides a good sealing effect, while at the same time the amount of friction between the first and the second vertical pipe is minimal, allowing them to be moved in relation to each other with little effort and therefore very accurately.

[0007] If it is possible to rotate the first vertical pipe 20° in relation to the second vertical pipe and to slide them approximately 10 cm in relation to each other, there is in practically all cases sufficient freedom of movement for the end of the horizontal pipe that is to be coupled with the trap, to be directly connectable to the trap of the wash basin.

[0008] The fact that the connection of the drain according to the invention to the trap of the wash basin can be aligned so accurately, makes it possible to form a connection in the horizontal pipe using a swivel and a sealing ring. Such a connection is widely used and is especially effective and reliable, but is only functional if the parts to be connected are properly aligned.

[0009] In an advantageous embodiment of the present invention, the first vertical pipe is provided with an air vent. This optimises the fall velocity of the water stream. It makes it possible to choose a pipe with a smaller diameter.

[0010] The present invention also provides for a connecting block in accordance with claim 6. This allows the drain to be installed in a simple manner and to be finished

in an aesthetically sound way without requiring any further work to finish the wall.

[0011] Advantageously, at least one clamp is attached to the second vertical pipe of the connecting block according to the present invention for clamping at least one pipe portion for the supply of water. To this the fitter may attach any piping material he chooses for the supply of cold and/or hot water. It is preferred that per feed pipe two clamps are attached. At least one of these clamps may optionally be provided with a connection for an earth connection.

[0012] In a preferred embodiment of the invention, the connecting block is at the side facing the wall provided with at least one feed pipe portion for the supply of water, provided at both ends with a pipe fitting for coupling to a pipe, wherein one end projects through a feed opening in the plate such that the pipe fitting at that end is just outside the plate. This also makes it possible in a simple and efficient manner to supply cold and/or both cold and hot water.

[0013] In another preferred embodiment, the plate of the connecting block according to the invention is provided with fixing openings for attaching a trap cover. Many wash basins are supplied with a trap cover, to hide the trap from view. By means of said fixing openings the trap cover can be attached quickly and correctly.

[0014] Hereinafter the invention will be further elucidated by way of describing a preferred embodiment of the invention and with reference to the drawing, in which:

Fig. 1 shows a front view of a connecting block for wash basins comprising a drain according to the invention,
Fig. 2 shows a cross-sectional side view of the connecting block of Fig. 1,
Fig. 3 shows a cross-section along the line A-A of Fig. 1, and
Fig. 4 shows the fastening plate with a cover plate of a connecting block according to the invention.

[0015] Fig. 1 and Fig. 2 show a front view and a cross-sectional side view, respectively, of a connecting block for wash basins comprising a drain according to the invention. The drain according to the invention comprises a horizontal pipe consisting of two parts 1, 2 and two vertical pipes 3, 4. Via a bend 3', the first part 1 of the horizontal pipe opens out into the first vertical pipe 3, and the second part of the horizontal pipe opens out into the trap (not shown). The bend 3' may be part of the first vertical pipe 3 or of the first part 1 of the horizontal pipe, or it may constitute a separate component. The bend 3' comprises an air vent 19. This optimizes the fall velocity of the water stream. The first part 1 and the second part 2 of the horizontal pipe are coupled together by means of a swivel 5 and sealing ring 6. The first vertical pipe 3 and the second vertical pipe 4 have a common axis and are able to rotate in relation to each other around said axis and to slide in the axial direction. Between the outer wall of the vertical pipe 3 and the inner wall of the pipe 4 two Teflon or silicone rings 7 are provided to allow these movements to take place with little friction, while these rings 7 also serve to seal the space between the two vertical pipes 3, 4. The assembly of horizontal pipe parts 1, 2 and the first vertical pipe 3 is now able to move up and down vertically in the second vertical pipe 4. This allows the height of the second part of the horizontal pipe 2 to be adapted very precisely to the height of the trap. As the first vertical pipe 3 is also rotatable in the second vertical pipe 4, the position of the end of the second part of the horizontal pipe 2 can in the horizontal plane also be adapted accurately to the position of the trap. This provides excellent coupling between the drain and the trap, without torsional strain, and it is not necessary to spend much time and attention to the accurate positioning of the wash basin in relation to the drain or vice versa, nor is it necessary to carry out time-consuming adaptations. The first vertical pipe 3 and the bend 3' are completely enclosed by the second vertical pipe 4. This means that the drain may be permanently incorporated in a wall, while nevertheless maintaining complete freedom of positioning, as described above.

[0016] A dotted line in Fig. 1 indicates the mounting plate 8 of the connecting block according to the invention. The plane of the drawing in Fig. 1 is situated directly behind said mounting plate 8 and for this reason the connecting plate 8 in Fig. 1 is indicated as a dotted line. The second vertical pipe 4 is attached to this plate by means of fastening strips 9, see Fig. 2 and Fig. 3. The plate is further provided with an opening 10 through which, when the plate is mounted into the wall, the first portion of the horizontal pipe 1 projects out of the wall. Opening 10 restricts the movement of the first portion of the horizontal pipe 1. Opening 10 is dimensioned such that the first portion of the horizontal pipe 1 can be moved approximately 10 cm upwards and/or downwards and can swivel over an angle of approximately 20°. In practice, this is amply sufficient movability for a wash basin to be mounted in a simple and uncomplicated manner. At the wall side of the plate 8 feed pipes 11 and 12 are fastened with the aid of two clamps 18, for the supply of hot and cold water, respectively. The clamps 18 are fastened to fastening strips 9 and are provided with connections for an earth contact (not shown). At their upper side, feed pipes 11 and 12 are provided with an elbow through which they pass horizontally via respective openings in the mounting plate 8, finishing at the front side of mounting plate 8 in pipe fitting 13. The pipe fittings 13 can then be coupled to the hot and cold water supply of the tap (taps) of the wash basin. This manner of fastening also provides a neat finish of the cold and hot water supply. At the upstream end, the feed pipe may be provided with a clamp coupling as shown in Fig. 1 at pipe 12 or with a soldered socket, as shown in Fig. 1 at pipe 11.

[0017] The plate 8 is provided with openings 14 for fastening the plate 8, and thus the connecting block, to the wall. Plate 8 is further provided with openings 15 to

allow, if desired, a trap cover to be fastened thereto.

[0018] Fig. 4 shows an embodiment of mounting plate 8, with a cover plate 16 mounted thereon. In Fig. 4, cover plate 16 is indicated as a dotted line. To adjust the position of the first portion of the horizontal pipe 1 in opening 10, cover plate 16 is provided with break lines 17 such that, depending on the desired position of the first portion of the horizontal pipe 1, strips can be removed from cover plate 16.

[0019] The invention is explained above by way of exemplary preferred embodiments, which merely serve to explain and not to limit the invention. The invention may be modified in numerous ways without departing from the scope of the invention as determined by the appended claims.

Claims

1. A drain to be connected to a trap used with a wash basin, which is provided with a horizontal pipe (1,2), of which one end is to be coupled to the trap and of which the other end, via a bend (3'), is coupled with a first vertical pipe (3), and the drain is provided with a second vertical pipe (4) which, at least partly, runs coaxially with the first vertical pipe (3), and the first vertical pipe (3) is rotatable and slidable in the second vertical pipe (4), **characterized in that** the first vertical pipe (3) and the bend (3') are completely enclosed by the second vertical pipe (4).

2. A drain according to claim 1, **characterised in that** a seal (7) is provided between the first (3) and the second vertical pipe (4).

3. A drain according to claim 1, **characterised in that** the seal (7) comprises Teflon or silicones.

4. A drain according to one of the claims 1 to 3, **characterised in that** the first (3) and the second vertical pipe (4) are rotatable in relation to each other over an angle of 20°.

5. A drain according to one of the claims 1 to 4, **characterised in that** the first (3) and the second vertical pipe (4) are movable in relation to each other over a distance of approximately 10 cm.

6. A drain according to one of the claims 1 to 5, **characterised in that** the horizontal pipe (1, 2) is comprised of a first part (1), of which an end is coupled to the first vertical pipe (3), and a second part (2) to be coupled to the first part (1), of which one end is to be coupled to the trap.

7. A drain according to claim 5, **characterised in that** the first part (1) and the second part of the horizontal pipe (2) are to be coupled together by means of a sealing ring (6) and a swivel (5).

8. A drain according to one of the claims 1 to 7, **characterised in that** the first vertical pipe (3) is provided with an air vent (19).

9. A connecting block for wash basins, comprising a plate (8) with openings for fastening to a wall, **characterised in that** the plate (8) is provided with an outlet opening (10) and **in that** to the side of the plate (8) which during use is facing the wall a drain according to one of the claims 1 to 8 is fastened, with the horizontal pipe (1, 2), at the side facing away from the wall, projecting through the outlet opening (10) in the plate (8).

10. A connecting block according to claim 9, **characterised in that** at least one clamp (18) is attached to the second vertical pipe for clamping at least one pipe portion (11, 12) for the supply of water.

11. A connecting block according to claim 10, **characterised in that** at least one clamp (18) is provided for a connection to an earth connection.

12. A connecting block according to one of the claims 9 to 11, **characterised in that** the connecting block is at the side facing the wall provided with at least one feed pipe portion (11, 12) for the supply of water, provided at both ends with a pipe fitting for coupling to a pipe, wherein one end projects through a feed opening in the plate (8) such that the pipe fitting (13) at that end is just outside the plate (8).

13. A connecting block according to one of the claims 8 to 12, **characterised in that** the plate (8) is provided with fixing openings (15) for attaching a trap cover.

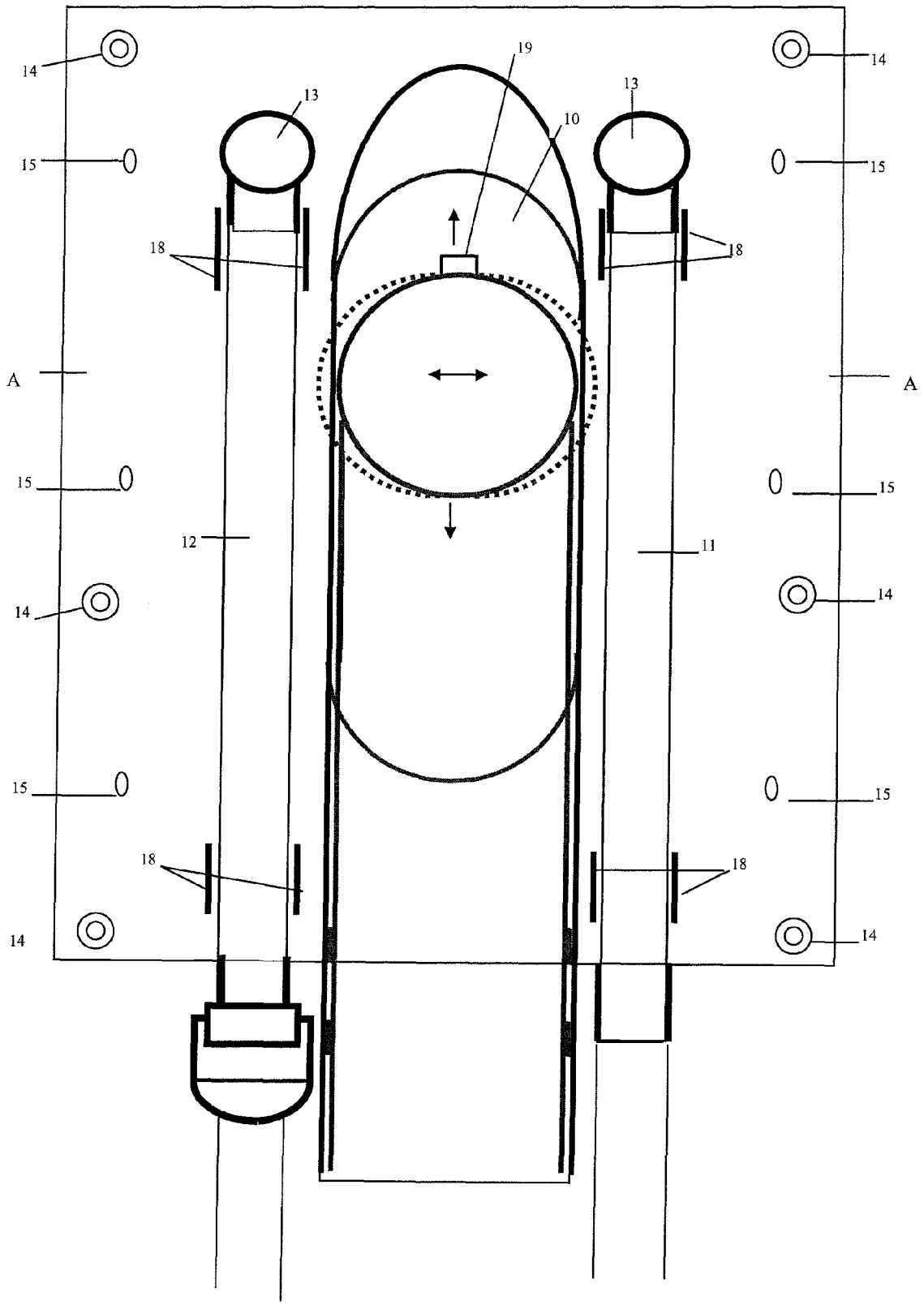

FIG. 1

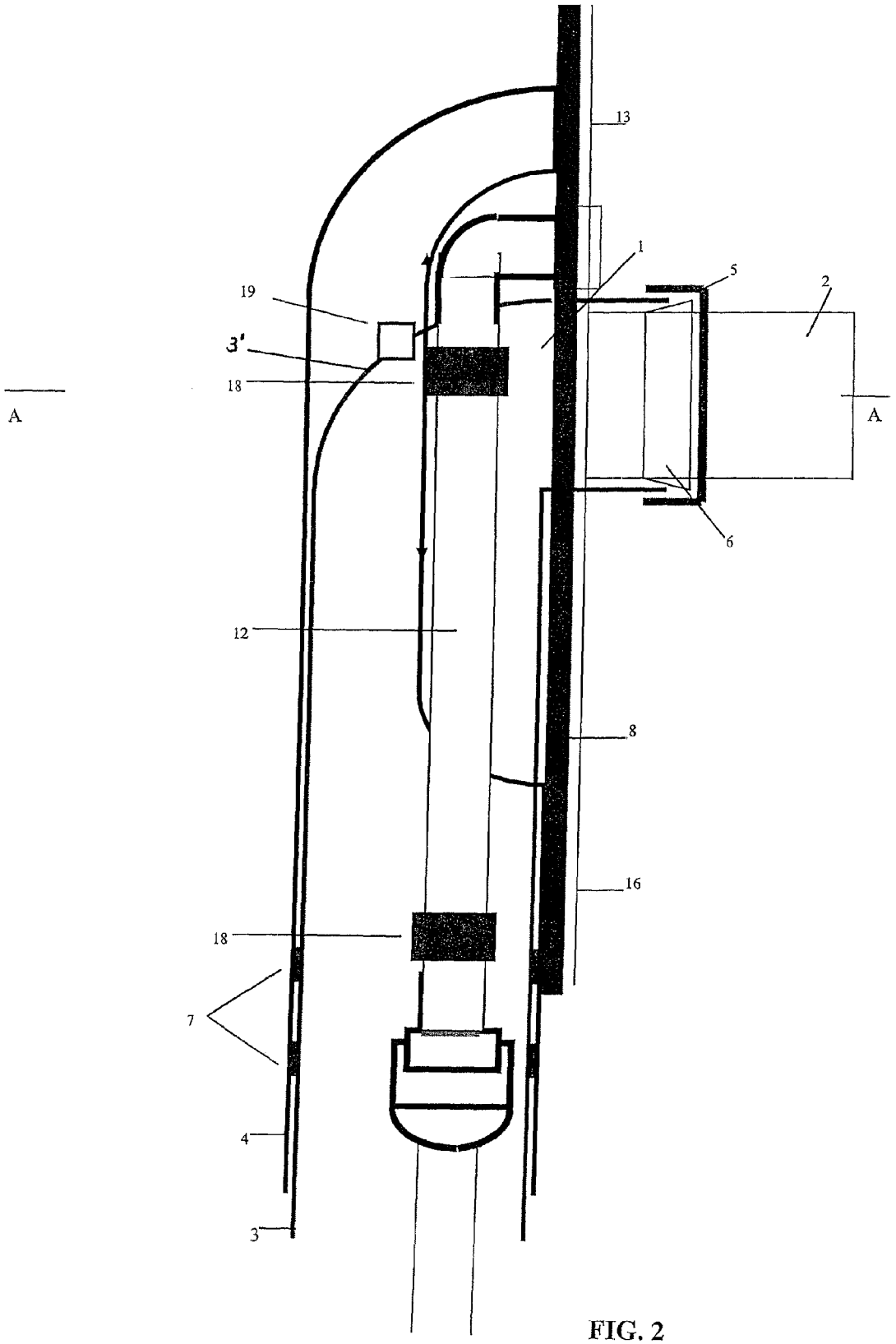

FIG. 2

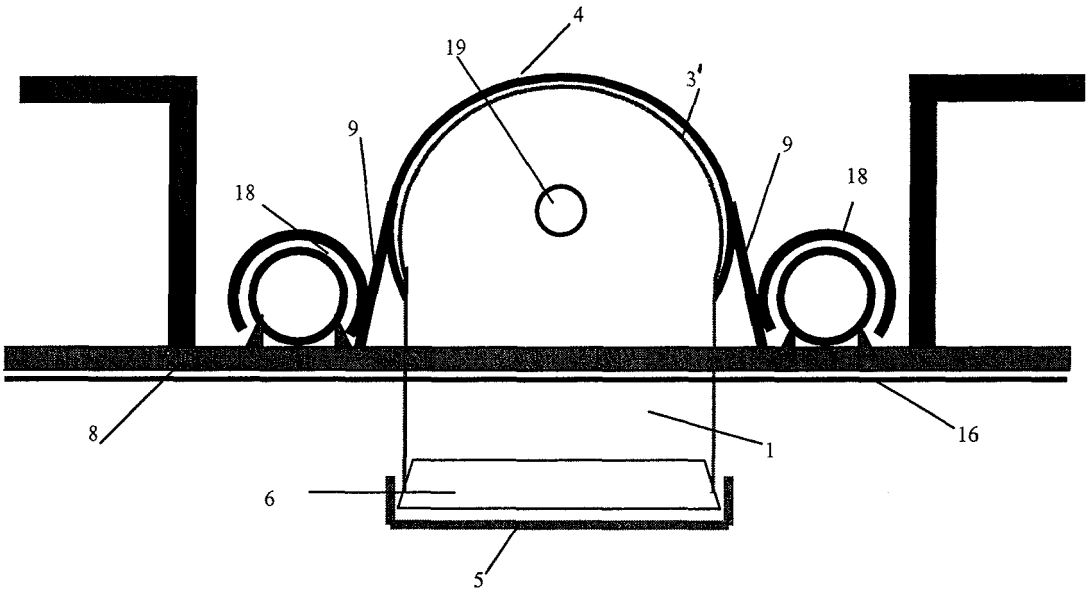

FIG. 3

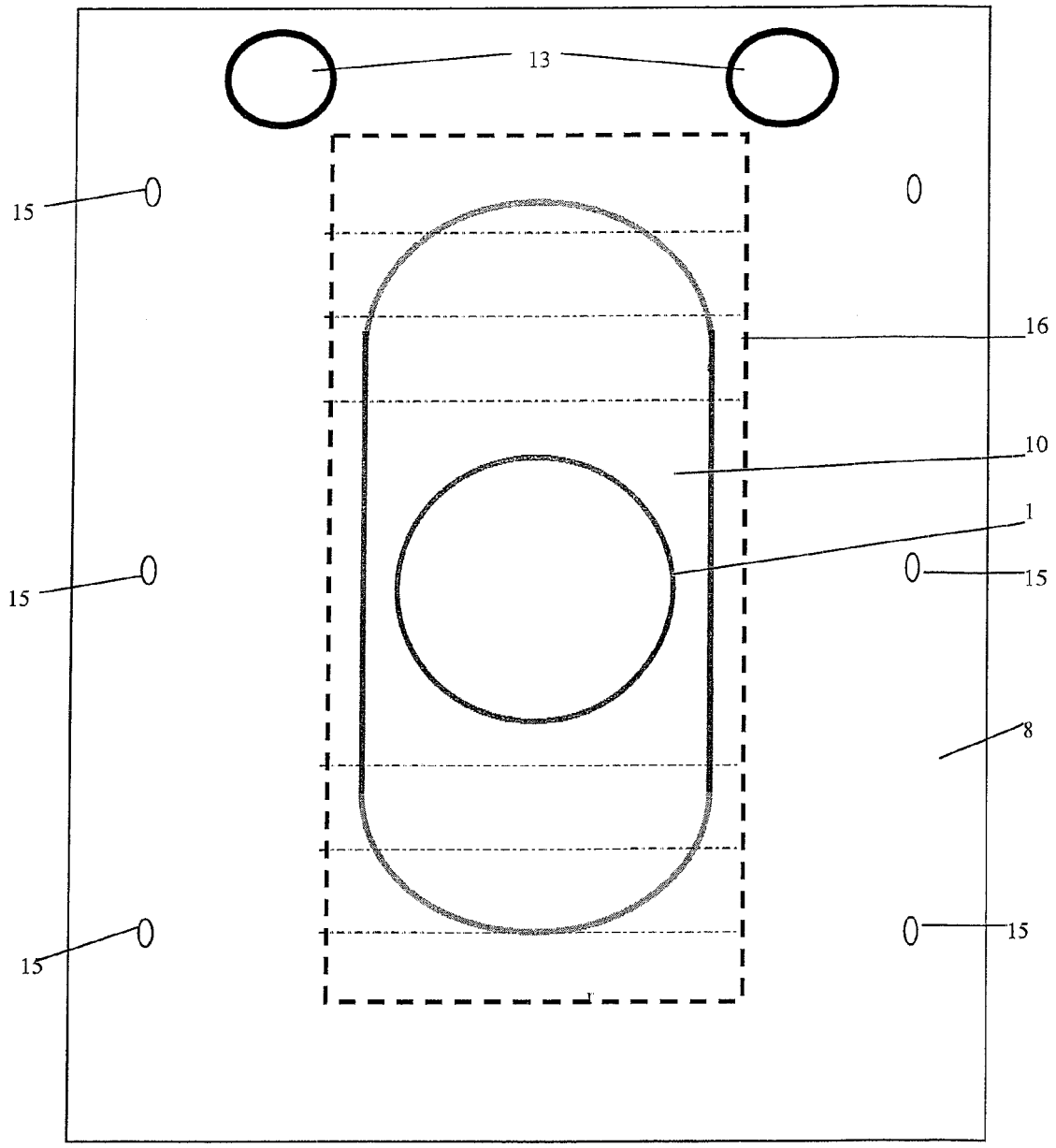

FIG. 4

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- DE 10256844 A **[0003]**