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(54) **SPACE SAVING WATER DRAINING SYSTEM DEVELOPED FOR USE IN SANITARY INSTALLATION PRODUCTS AND COMPRISING HIDDEN OVERFLOW SYSTEM**

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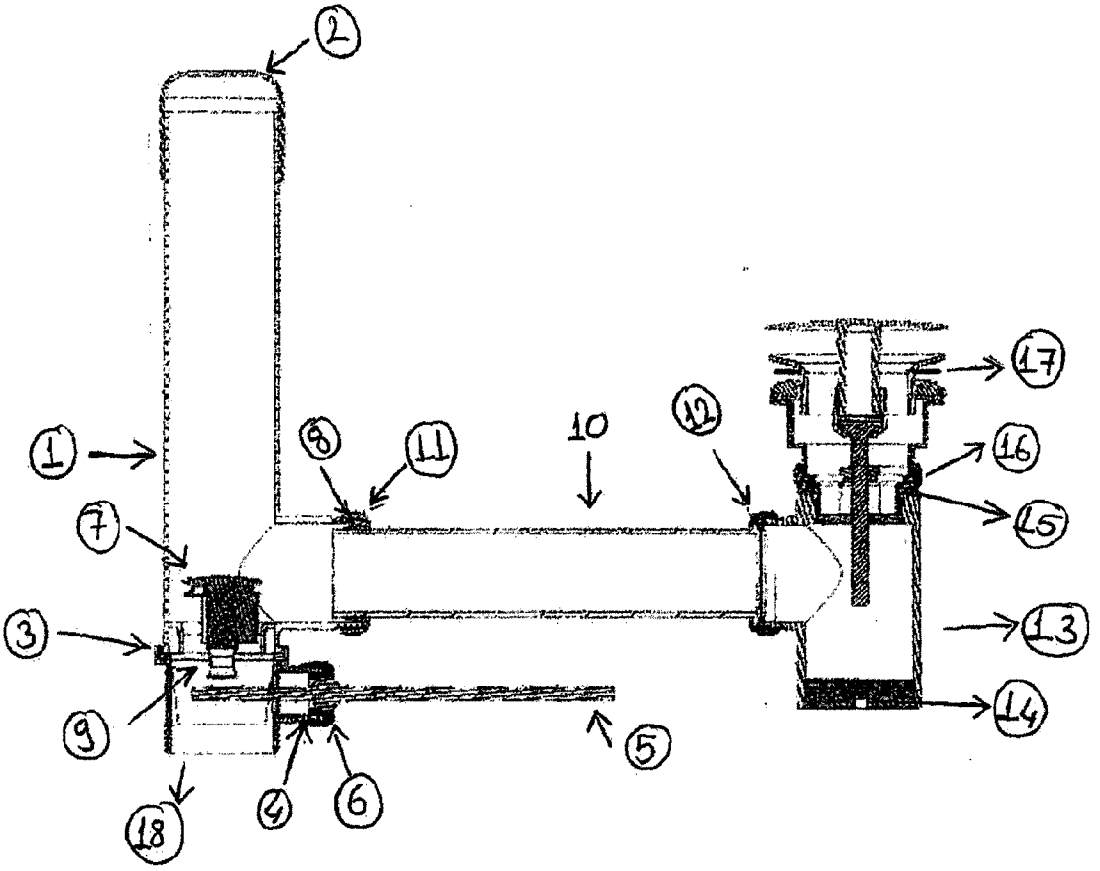
(57) **ABSTRACT**

A draining system is disclosed for use in sanitary installation products such as basins, bathtubs and the like. The system has a hidden overflow system to save space. In the draining system the plug for collecting water in the sanitary installation is positioned above a waste water outlet for the sewage coming from the basin, which outlet may be positioned in a wall. Directly above the plug is the hidden overflow system having an inner and an outer duct, wherein upon closing the plug the water in parallel to the basin rises in the inner duct and, to prevent overflow, upon reaching a predetermined height is directed to the outer duct which leads directly to the waste water outlet.



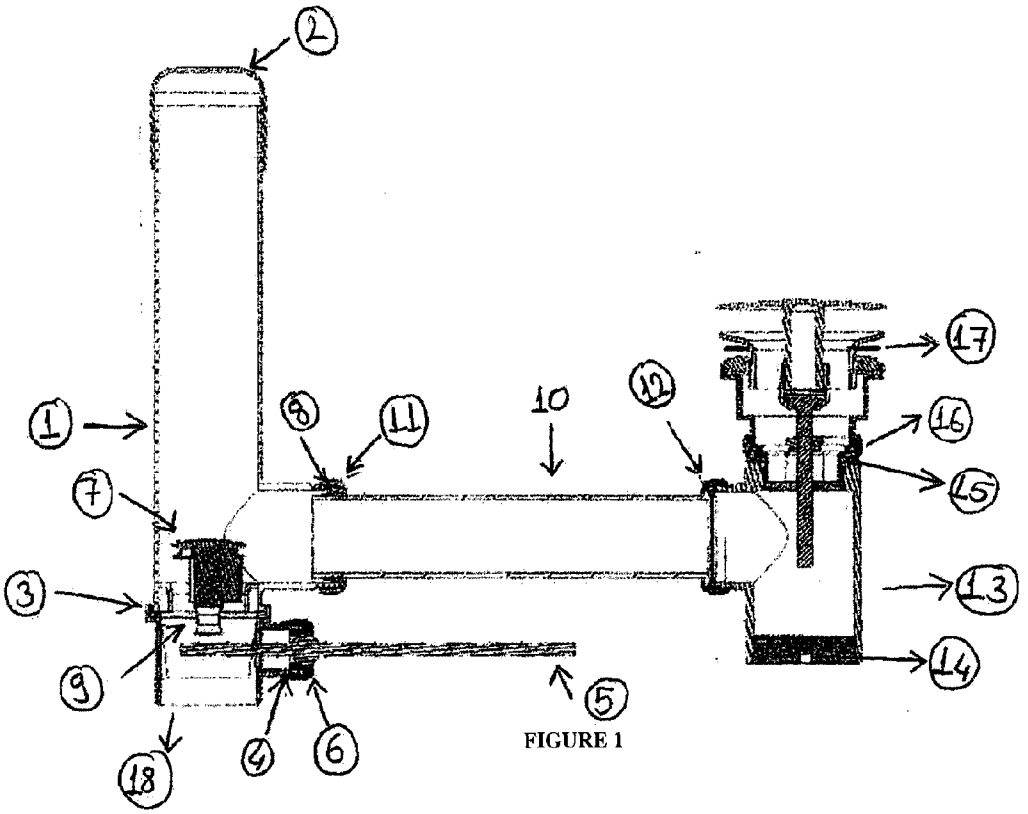


FIGURE 1

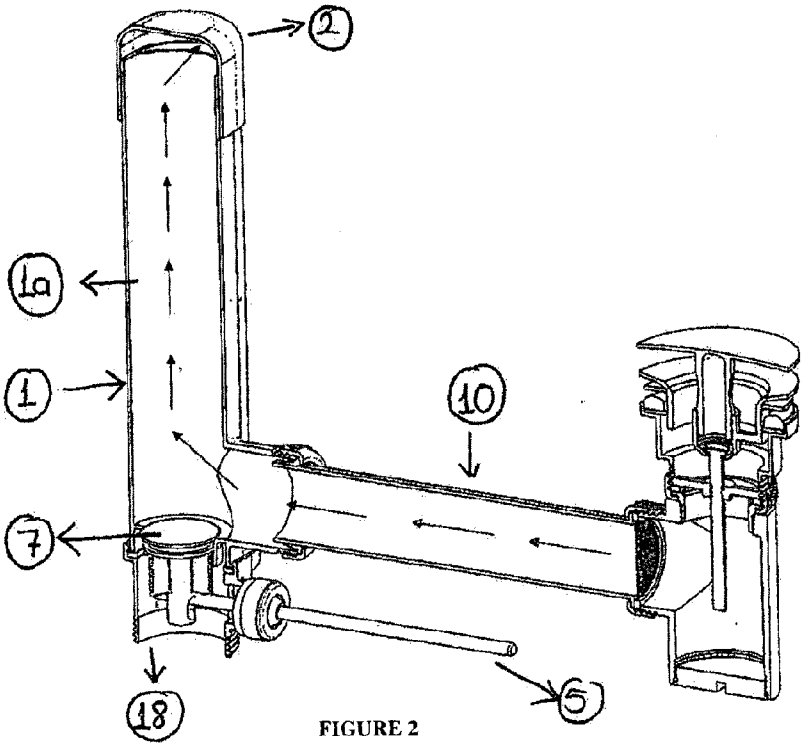


FIGURE 2

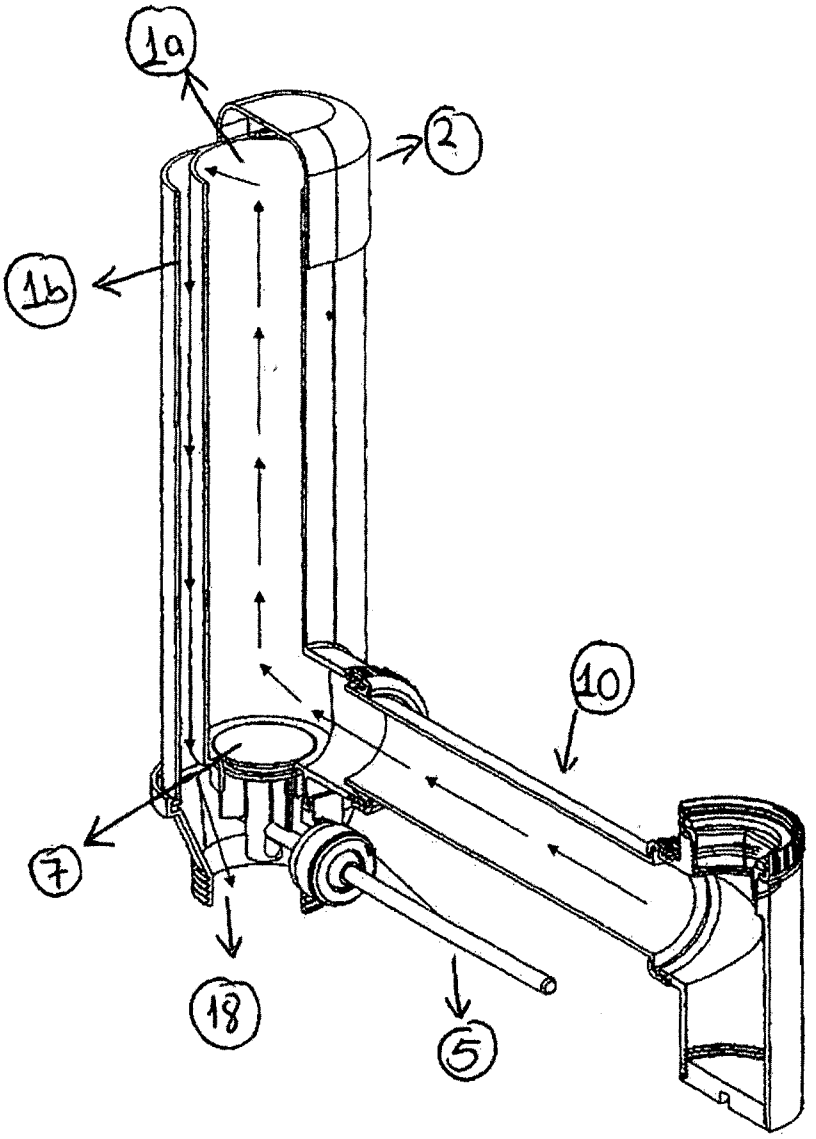


FIGURE 3

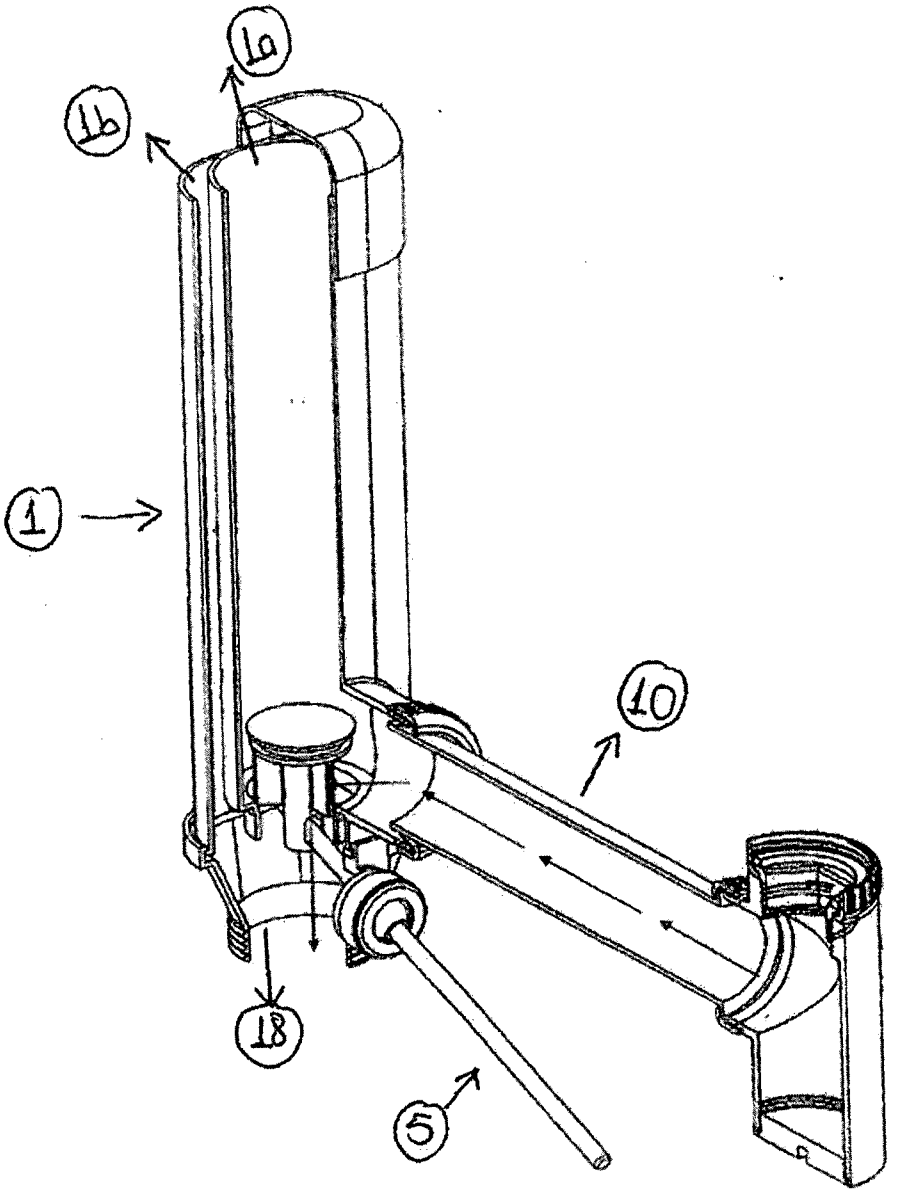


FIGURE 4

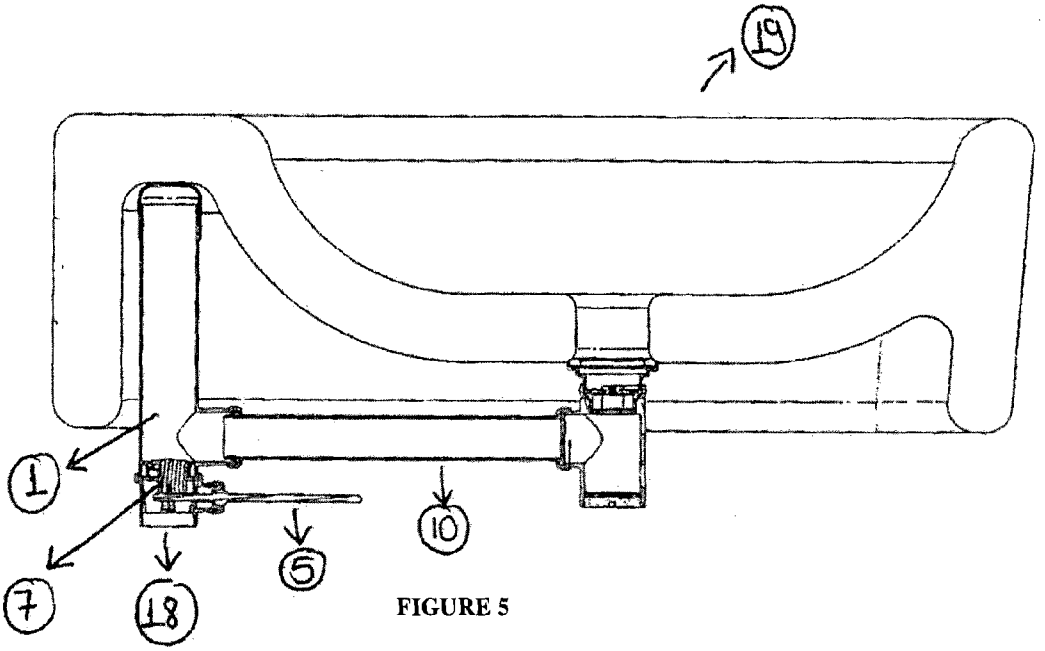


FIGURE 5

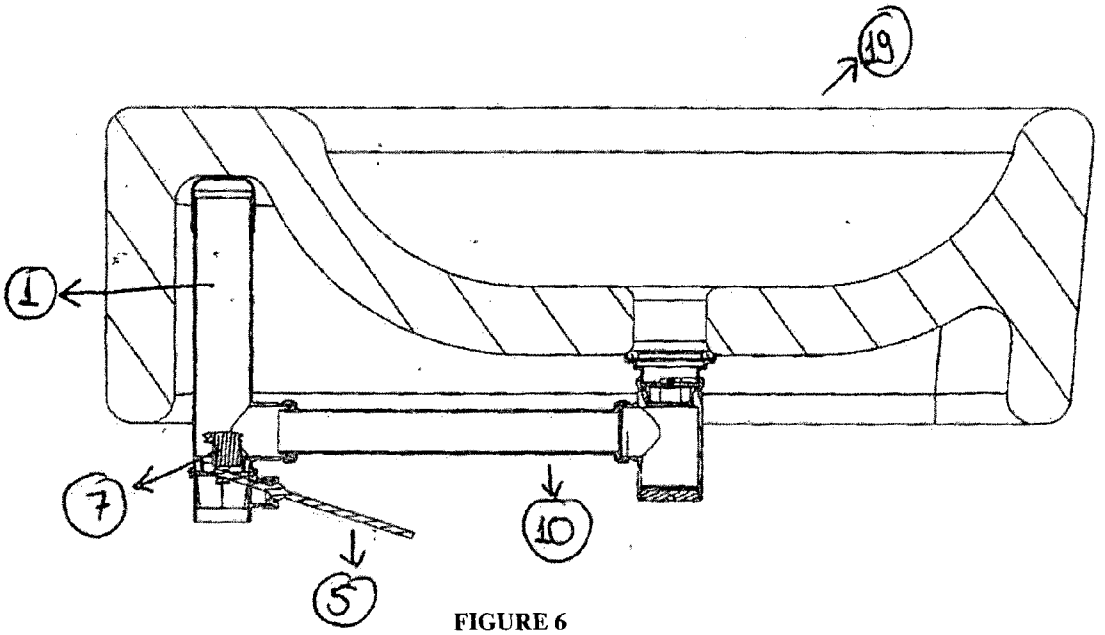


FIGURE 6

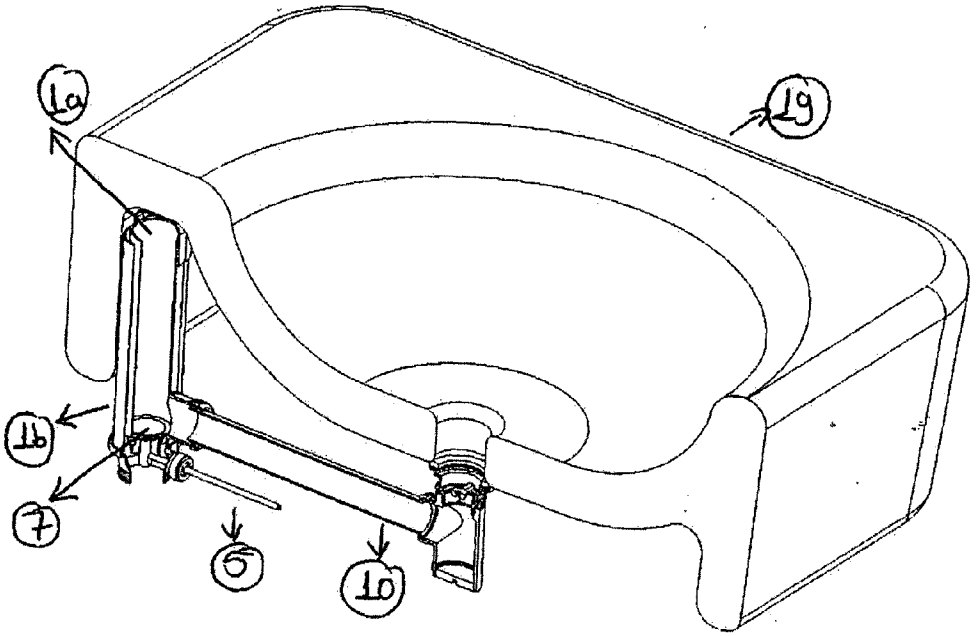


FIGURE 7

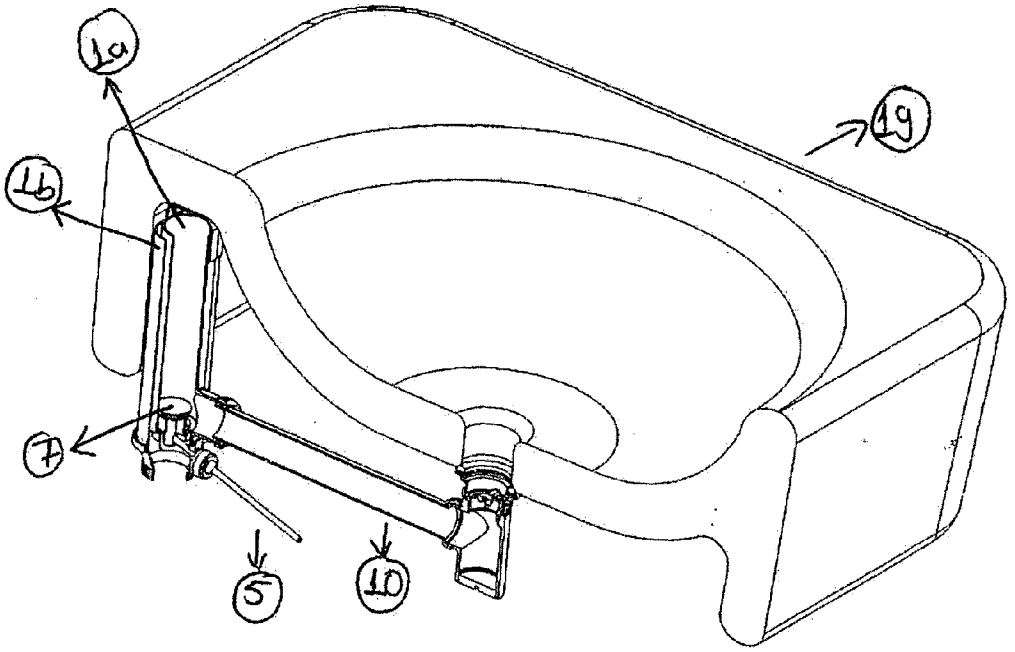


FIGURE 8

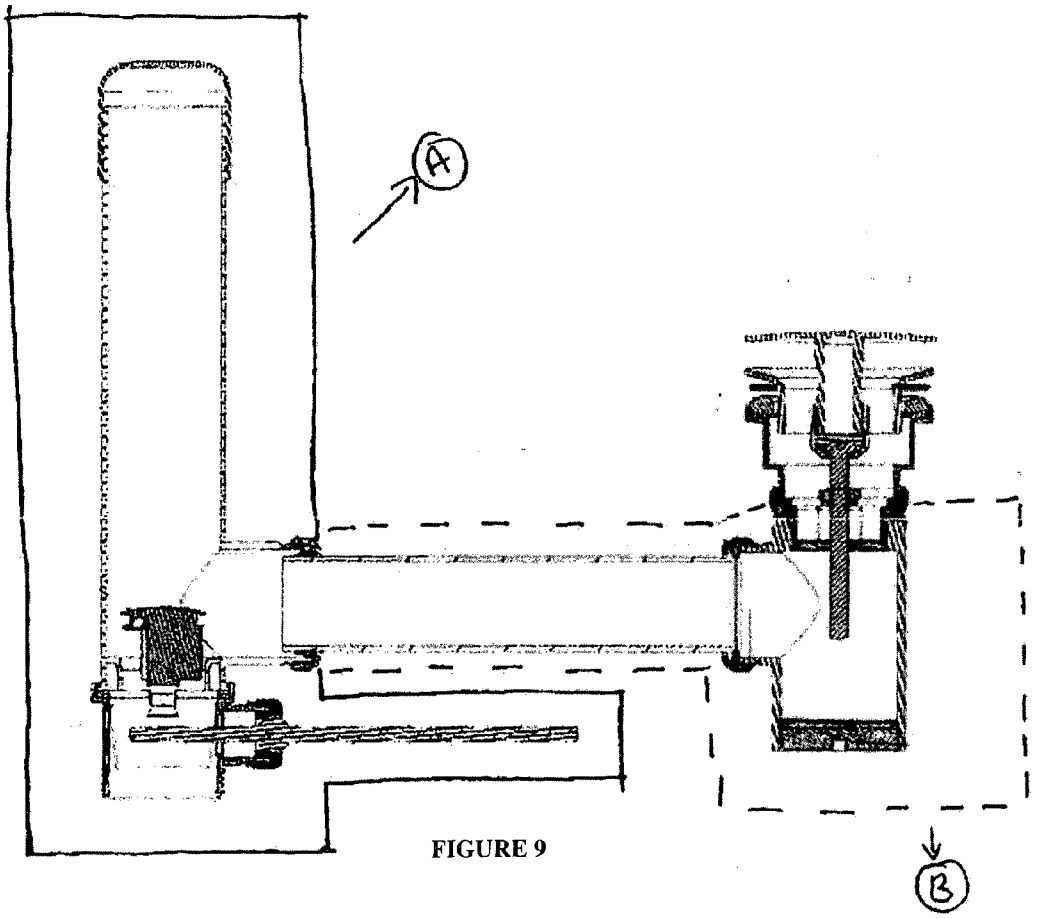


FIGURE 9

SPACE SAVING WATER DRAINING SYSTEM DEVELOPED FOR USE IN SANITARY INSTALLATION PRODUCTS AND COMPRISING HIDDEN OVERFLOW SYSTEM

CROSS-REFERENCE TO RELATED U.S. APPLICATIONS

[0001] Not applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not applicable.

NAMES OF PARTIES TO A JOINT RESEARCH AGREEMENT

[0003] Not applicable.

REFERENCE TO AN APPENDIX SUBMITTED ON COMPACT DISC

[0004] Not applicable.

BACKGROUND OF THE INVENTION

[0005] 1. Field of the Invention

[0006] The present invention relates to the draining system developed for use in sanitary installation products, comprising hidden overflow system with invisible water overflow hole provided on the surface of the sanitary installation product as well as space saving siphon system and providing space saving as well as hidden draining of water during use.

[0007] 2. Description of Related Art Including Information Disclosed Under 37 CFR 1.97 and 37 CFR 1.98.

[0008] Currently, in the similar water draining systems working with different principle, used for instance in the washbasins, one of the sanitary installation products, "space saving siphon" systems and "hidden overflow systems" preventing water overflow in the washbasins are not offered together and the systems used occupy extra space under the washbasin. This situation affects the aesthetic appearance as well as causes problems in the sections with limited installation space. Within the scope of the present invention, joining of these two systems used separately in the known applications, i.e. development of the draining system comprising hidden overflow system without water overflow hole provided on the surface of sanitary installation product as well as space saving part at the same time is aimed. In this way, a more aesthetic appearance at the lower part of the washbasin is created as well as space saving is provided.

[0009] A washbasin comprising a hidden overflow system preventing the overflow of water is disclosed in the patent number EP1862602. In this system, as in the other known applications, the valve routing the water is provided in the drain pipe provided in the lower part of the washbasin or inside the siphon body. The system occupies extra space under the washbasin. In the draining system of the patent number EP2045403 comprising a hidden overflow system, the part (4), opening and closing of which is controlled by means of a control rod, setting the path of the water flow thereby, is not provided in the hidden overflow system, i.e. not in the system where water is drained after rising therein and reaching the maximum level through another channel, but in the body provided in the lower part of the washbasin that can be referred to as the siphon body. This is another system that can be given as an example for the current state of the art and it causes occupying extra space under the lower part of the washbasin. Again, in the patent number EP0446177, the plug routing the water in the same manner, is also provided in the system provided in lower part of the washbasin, in the region referred to as siphon body or drain pipe. Again, in the patent number ES2250862, a system routing the water by opening and closing the valve provided in the lower part of the washbasin is disclosed. Also, in the patent number EP1614816, a system in which the system controlling the routing of the water to the hidden overflow system is provided in the lower part of the sanitary installation product is disclosed. In the patent number DE10204683, a system in which the hidden overflow system of the current state of the art is provided in the lower part of the washbasin is disclosed. In all said systems, the system controlling reaching of the water to the outlet by passing through the hidden overflow system or the drain pipe is provided in the siphon system provided in the lower parts of the washbasin. In turn, this situation leads to extra space occupation of the system in the lower part of the washbasin as well as a nice aesthetic appearance is not provided.

[0010] In the document numbered NL 1 032 117 C2 discloses a water draining system however it does not include any plug positioned in the joining point of siphon pipe, waste water outlet and the water rising duct therefore the construction is different. In the documents numbered DE202008015030, EP1267005 and U.S. Pat. No. 267,156 a water draining system has been mentioned and the structures do not include any plug to determine the route of the water.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. **1**: Space saving hidden draining system according to the present invention.

[0012] FIG. **2**: View illustrating the water outlet path in the space saving hidden draining system according to the present invention, in the case where the control plug opens the mouth of the inner duct for water inlet in the water rising and draining pipe by closing the outlet path to the waste water outlet.

[0013] FIG. **3**: Detailed view illustrating the water outlet path in the case where the control plug opens the inner duct for water inlet in the water rising and draining pipe by closing the outlet path to the waste water outlet.

[0014] FIG. **4**: Detailed view illustrating the water outlet path in the case where the control plug opens the waste water outlet to water inlet by closing the inner duct of the water rising and draining pipe for water inlet.

[0015] FIG. **5**: View illustrating the case where the plug closes the waste water outlet to water inlet in the application of the space saving hidden draining system according to the present invention in the lower part of the washbasin.

[0016] FIG. **6**: View illustrating the case where the plug opens the waste water outlet to water inlet in the application of the space saving hidden draining system according to the present invention in the lower part of the washbasin.

[0017] FIG. **7**: Detailed view illustrating the case where the plug closes the waste water outlet to water inlet in the application of the space saving hidden draining system according to the present invention in the lower part of the washbasin.

[0018] FIG. **8**: Detailed view illustrating the case where the plug opens the waste water outlet to water inlet in the application of the space saving hidden draining system according to the present invention in the lower part of the washbasin.

[0019] FIG. **9**: View illustrating the space saving part and the hidden overflow system of the space saving hidden draining system according to the present invention.

REFERENCES

[0020] **1**—Water rising and draining pipe

[0021] **1***a*: Inner duct in which the water accumulates and rises up to the same level as the water accumulated in the sanitary installation product/washbasin

[0022] **1***b*: Outer duct (pipe) draining the water provided in the water rising duct after reaching the maximum level in order to prevent overflow of the water accumulated in the sanitary installation product

[0023] **2**—Cover preventing outflow of the water rising in the water rising pipe (**1***a*) during flowing thereof to the draining portion (**1***b*)

[0024] **3**—Siphon control body

[0025] **4**—Sealing element

[0026] **5**—Siphon control rod

[0027] **6**—Siphon control rod cover

[0028] **7**—Control plug

[0029] **8**—Sealing element

[0030] **9**—Sealing element

[0031] **10**—Siphon pipe

[0032] **11**—Connection element

[0033] **12**—Sealing Element

[0034] **13**—Siphon body

[0035] **14**—Lower plug

[0036] **15**—Connection piece

[0037] **16**—Sealing Element

[0038] **17**—Filter

[0039] **18**—Waste water outlet

[0040] **19**—Sanitary installation product (washbasin)

[0041] A: Hidden overflow system with invisible water overflow hole provided on the surface of the sanitary installation product

[0042] B: Space saving part

DETAILED DESCRIPTION OF THE INVENTION

[0043] The present invention relates to the draining system developed for use in sanitary installation products, comprising hidden overflow system with invisible water overflow hole provided on the surface of the sanitary installation product as well as space saving part and providing space saving as well as hidden draining of water during use.

[0044] The system according to the present invention relates to a water draining system comprising hidden overflow system with invisible water overflow hole provided on the surface of sanitary installation product as well as space saving part and thus, providing space saving during use. Said system developed within the scope of the description and the drawings herein will be described for use in the washbasins, wherein use of said systems in the other sanitary installation products such as bath tubs, bidets, etc. is also possible.

[0045] Installation of the draining system parts developed within the scope of the present invention can also be realized as built-in. Thus, extra space can be provided under the washbasin. The part (**7**) referred to as control plug and routing the water is positioned in the lower part of the washbasin inside the system that can be referred to as the siphon body in the systems of the present state of the art comprising the hidden overflow systems, whereas in the system developed within the scope of the present invention, the plug (**7**) is positioned in the hidden overflow system comprising the parts in which water will rise when water accumulation is required inside the sanitary installation product and comprising the parts which can be mounted as built-in optionally and so it does not occupy extra space under the washbasin as in the case of the systems used in the present state of the art.

[0046] The space saving water draining system developed within the scope of the present invention and providing hidden draining of water comprises two sections: hidden overflow system (A) provided without overflow hole on the surface of the sanitary installation product and space saving part (B).

[0047] The draining system according to the present invention comprises the following: water rising and draining pipe (**1**) which is a two nested duct piece and comprising the inner duct (pipe) (**1***a*) in which the water can be accumulated therein and can rise up to the level of the water accumulated in the sanitary installation product in the case when the mouth/path to the waste water outlet (**18**) is closed by pulling the control plug (**7**) down and the outer duct (**1***b*) nested with said channel and draining the water accumulated in the inner duct (**1***a*) when said water reaches the maximum level in order to prevent overflowing of the water accumulated in the sanitary installation product; cover (**2**) preventing the outflow of the water rising in the water rising and draining pipe (**1***a*) during flowing thereof to the outer duct (**1***b*) draining the water when it reaches to the maximum level upon rising; siphon control body (**3**) bearing the components connected thereto; at least one sealing element (**4**) used in the connection of the siphon control rod (**5**) with the outlet pipe (**18**); siphon control rod (**5**) connected with plug (**7**) and enabling upward-downward movement of the control plug (**7**); siphon control rod cover (**6**) connecting the siphon control rod to the control body (**3**); control plug (**7**) routing the water; at least one sealing element (**8**) provided in the region where the siphon pipe (**10**) is connected with the water rising and draining pipe (**1**); at least one sealing element (**9**) provided between the siphon control body (**3**) and the water rising and draining pipe (**1**); siphon pipe (**10**) which is in connection with the pipe system (**1**) and conveying the water coming from the sanitary installation product to the inner duct (**1**) of the pipe system (**1**) of hidden overflow system (A) or to the waste water outlet (**18**) directly; connection element (**11**) between hidden overflow system (A) and space saving part (B); at least one sealing element (**12**) providing sealing between the siphon body (**13**) and the siphon pipe (**10**); siphon body (**13**) enabling conveying of water and is in connection with the sanitary installation product (**19**); lower plug (**14**) positioned in lower part of the siphon body (**13**) and which can be demounted for cleaning the dirt accumulated inside the siphon body (**13**) other than the water, thereby, enabling cleaning of the inner part; connection piece (**15**) enabling connection with the filter (**17**); at least one sealing element (**16**) providing sealing of the filter (**17**); and filter (**17**) pieces used in the installation of the washbasins.

[0048] Among said pieces, the pieces (**1**, **1***a*, **1***b*, **2**, **3**, **4**, **5**, **6**, **7**, **8**, **9**, **11**, **18**) are provided in the hidden overflow system section (A) and the remaining pieces are provided in the space saving part (B) (FIG. **9**).

[0049] In the system according to the present invention, water rising and draining pipe (**1**) is a duct system where the duct (**1***a*) in which the water rises and the duct (**1***b*) draining the water are nested. The water rising and draining pipe (**1**) has a height same as the sanitary installation product or

slightly lower than that of the sanitary installation product. The control plug (**7**) provided in the hidden overflow system is positioned at the joining point of the siphon pipe (**10**) through which the water coming from the sanitary installation product is conveyed to the waste water outlet (**18**) or to the water rising duct (**1***a*) depending on the position of the plug (**7**), outlet pipe (**18**) through which the water is drained in the case that the plug (**7**) closes the water rising duct (**1***a*) to the water inlet and the inner duct (**1***a*) of the water rising and draining pipe (**1**) in which the water rises in the case that the plug (**7**) closes the waste water outlet (**18**), wherein said plug (**7**) sets the water path from this point depending on its position and routes the water either directly to the water outlet (**18**) or to the inner portion of the (**1***a*) water rising and draining pipe (**1**) depending on the position thereof, then, after the water reaches the maximum level in this section, to the outer portion (**1***b*) of the pipe (**1**) from said section (**1***a*) and then, to the water outlet (**18**).

[0050] The system developed within the scope of the present invention occupies less space than the current draining systems. In the draining system according to the present invention installed to the sanitary installation product, water accumulation in the washbasin/sanitary installation product can be provided by means of using the control rod (**5**). In said sanitary installation product, when water accumulation is required, the control plug (**7**) is moved downward upon pushing the siphon control rod (**5**) upward and the path to the waste water outlet (**18**) is closed to the water inlet as shown in FIG. **3**. In this case, reaching of the water to the waste water outlet (**18**) is prevented and water accumulation in the sanitary installation product is provided. However, for instance, in the event that the tap is left open, there is risk of water overflow in the washbasins of the sanitary installation products provided without overflow hole. In order to prevent this, systems referred to as hidden overflow systems are used. In the system according to the present invention, the inner duct (**1***a*) in which the water will rise in the water rising and draining pipe (**1**) will be opened for water inlet by closing the path to the waste water outlet (**18**) upon downward movement of the plug (**7**), thus, the water coming from siphon pipe (**10**) will rise inside the inner duct (**1***a*) in the water rising and draining pipe (**1**) and when the water rising in said channel (**1***a*) reaches the upper level of the sanitary installation product/washbasin, i.e. the maximum level of the duct (**1***a*), then it will flow towards the outer duct (**1***b*) and be poured into said duct, as seen in FIG. **3**, the water flowing downwards through said duct (**1***b*) will flow towards the waste water outlet (**18**) by passing through the piece (**9**). Thus, passing the upper level of the sanitary installation product and overflow of the water accumulated in the sanitary installation product/washbasin will be prevented. A cover (**2**) is provided in this section to prevent outflow of the water during the passage of the water provided inside the inner duct (**1***a*) to the outer duct (**1***b*). When water accumulation in the sanitary installation product/washbasin is not required, the control plug (**7**) is moved in the upward direction by pulling the control rod (**5**) downward and in this case the mouth of the rising duct (**1***a*) is closed to the water inlet and the waste water outlet (**18**) is opened for water inlet. In this case, the water coming from siphon pipe (**10**) directly passes through the piece (**9**) without rising in the water rising duct (**1***a*) and reaches the outlet (**18**) through which the waste water is drained (FIG. **4**).

[0051] In the system according to the present invention, the piece (**1**), a nested duct system comprising the duct (**1***a*) in which the water rises and the duct (**1***b*) through which the water is drained, the cover (**2**) and the siphon control body (**3**) pieces can be installed as built-in, i.e. into the wall, thus, more space than that of the current state of the art systems is provided under the sanitary installation product/washbasin.

[0052] A lower plug (**14**) that can be mounted and demounted is provided in the lower part of the siphon body (**13**) in order to enable cleaning of the inner part. The sealing elements (**4**, **8**, **9**, **12**, **16**,) provided at certain locations in the system are preferably gaskets.

[0053] Space saving part and hidden overflow system with invisible water overflow hole provided on the surface of the sanitary installation product are brought together thanks to the system developed within the scope of the present invention and space saving is provided as well as an aesthetic appearance is achieved by the use of the system saving space as well as providing hidden draining of water.

1. Water draining system developed to be used in sanitary installation products, characterized in that it comprises the following two systems together: the hidden overflow system (A) comprising the overflow hole that is not visible on the surface of the sanitary installation product (**19**) and space saving siphon system (B) and characterized in that it comprises;

- waste water outlet (**18**),
- pipe system (**1**) positioned in the hidden overflow system (A) in which the water rises and through which the water is drained in the case that the waste water outlet (**18**) is closed and which (**1**) is a nested two duct system comprising inner duct (**1***a*) in which the water rises and is accumulated in the case where the waste water outlet (**18**) is closed and outer duct (**1***b*) through which the water flowing in the downward direction is conveyed to the waste water outlet (**18**),
- siphon pipe (**10**) positioned in space saving siphon system (B) which is in connection with the pipe system (**1**) and conveying the water coming from the sanitary installation product to the inner duct (**1***a*) of the pipe system (**1**) of hidden overflow system (A) or to the waste water outlet (**18**) directly,
- cover (**2**) preventing the outflow of the water during flowing from the inner duct (**1***a*) to the outer duct (**1***b*) which draining the water,
- siphon control body (**3**) positioned in the hidden overflow system (A),
- control plug (**7**) is positioned in the hidden overflow system (A) and in the joining point of the siphon pipe (**10**), waste water outlet (**18**) and the water rising duct (**1***a*) and is movable in downward-upward direction and routing the water coming from the siphon pipe (**10**) to the waste water outlet (**18**) or to the water rising duct (**1***a*) with its movement,
- siphon control rod (**5**) connected with the plug (**7**) used to provide movement of the control plug (**7**),
- control rod cover (**6**) connecting the siphon control rod (**5**) to the control body (**3**),
- connection element (**11**) between hidden overflow system (A) and space saving siphon system (B),
- siphon body (**13**) which is positioned in space saving siphon system (B) and in connection with the sanitary installation product (**19**) and enabling conveying the water,
- lower plug (**14**) positioned on lower part of the siphon body (**13**),

connection element (**15**) enabling connection with the filter (**17**),

2. Water draining system according to claim **1**, wherein the control plug (**7**) positioned inside the hidden overflow system (A) and in the joining point of the siphon pipe (**10**), waste water outlet (**18**) and the water rising duct (**1***a*) so as to route the water either directly to the waste water outlet (**18**) or first to the water rising duct (**1***a*) and then to the draining duct (**1***b*) and to the waste water outlet (**18**) by setting the water path from the joining point of the siphon pipe (**10**), waste water outlet (**18**) and the water rising duct (**1***a*) such that said plug (**7**) moves in the upward direction upon pulling the control rod (**5**) downward and closes the mouth of the water rising duct (**1***a*) to the water inlet in which the water in the hidden overflow system can be accumulated and rise up to the same level as the water accumulated in the sanitary installation product by opening the path/mouth of waste water outlet (**18**) for the water inlet coming from the siphon pipe (**10**); and such that said plug (**7**) moves in the downward direction upon pushing the control rod (**5**) in the upward direction and opens the path/mouth of the water rising duct (**1***a*) provided in the hidden overflow system by closing the mouth/path of the waste water outlet (**18**).

3. Water draining system according to claim **1**, wherein the water rising and draining pipe (**1**), the cover (**2**) and the siphon control body (**3**) and the body parts thereof can be mounted as built-in into the wall.

4. Water draining system according to claim **1**; characterized in that the pipe system (**1**) has a height same as the sanitary installation product or slightly lower than that of the sanitary installation product.

5. Water draining system according to the claim **1**, wherein it comprises at least one sealing element (**9**) provided between the siphon control body (**3**) and the water rising and draining pipe (**1**).

6. Water draining system according to the claim **1**, wherein it comprises at least one sealing element (**16**) in order to provide sealing between the siphon body (**13**) and the filter (**17**).

7. Water draining system according to the claim **1**, wherein it comprises at least one sealing element (**12**) in order to provide sealing between the siphon body (**13**) and the siphon pipe (**10**).

8. Water draining system according to the claim **1**, wherein it comprises at least one sealing element (**8**) provided between the siphon pipe (**10**) and the water rising and draining pipe (**1**).

9. Water draining system according to the claim **1**, wherein it comprises at least one sealing element (**4**) provided in the connection section of the siphon control rod (**5**) with the outlet pipe (**18**).

10. Water draining system according to claim **5**, wherein the sealing element (**9**) is gasket.

11. Water draining system according to claim **6**, wherein the sealing element (**16**) is gasket.

12. Water draining system according to claim **7**, wherein the sealing element (**12**) is gasket.

13. Water draining system according to claim **8**, wherein the sealing element (**8**) is gasket.

14. Water draining system according to claim **9**, wherein the sealing element (**4**) is gasket.

15. Water draining system according to claim **1**; wherein connection element (**11**) is a nut.

16. A method for accumulation of water in the sanitary installation product (**19**) by means of using the water draining system according to the preceding claims, wherein it comprises the following steps:

pushing of the control rod (**5**) upward and movement of the plug (**7**) in the downward direction

opening of the mouth of the inner duct (**1***a*) to the water inlet in which the water coming from the siphon pipe (**10**) will rise in the water rising and draining pipe (**1**) by closing the path to the waste water outlet (**18**) upon downward movement of the control plug (**7**)

rising of the water coming from the sanitary installation product and passing through the siphon pipe (**10**) inside the rising duct (**1***a*) up to the same level as the water that will accumulate in the sanitary installation product (**19**)

passage of the water which has reached to the maximum level of the duct (**1***a*) to the outer duct (**1***b*)

draining of the water flowing downward from the outer duct (**1***b*) to the waste water outlet (**18**), thus, level of the water accumulated inside the sanitary installation product remains constant and the water does not overflow.

17. A method for preventing accumulation of water in the sanitary installation product (**19**) by means of using the water draining system according to the preceding claims when water accumulation in the sanitary installation product is not required, wherein it comprises the following steps:

pulling of the control rod downward and movement of the plug (**7**) in the upward direction

closing of the mouth of the inner duct (**1***a*) in the water rising and draining pipe to the water inlet and opening of the waste water outlet (**18**) to water inlet upon upward movement of the control plug (**7**)

draining of the water passing through the sanitary installation product and then, the siphon pipe (**10**) through the waste water outlet (**18**)

* * * * *