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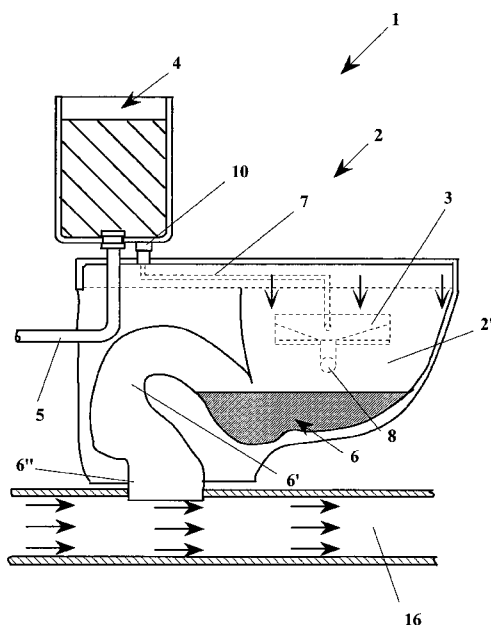
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(54) **Title:** HYGIENIC DEVICE FOR PEOPLE AND ANIMALS

Fig. 1



(57) **Abstract:** The present invention describes a hygienic device that comprises in combination a toilet for human use destined in use to a connection to an external sewerage and a litter. The litter is in fluid communication with the water collecting tank of the toilet and with the same toilet, through for example some tubes, in a way that by activating the tank the water downflows from the litter towards the external sewerage through the toilet.

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TITLE

HYGIENIC DEVICE FOR PEOPLE AND ANIMALS

Technical Field

5 The present invention refers to the technical field of sanitary in general. In particular it refers to the technical field of waters for human use and litters for animals in general, in particular for dogs and cats.

Background Art

10 Since a long time there have been used litters for domestic animals, and in particular the one prevalently destined to a use addressed to dogs and cats. As well known the litters, in use, are filled up with a material of sand shape with the aim to hold and absorb the excrements of the animals.
15 Moreover such type of sands are often treated with chemical agents that generate an emission of fragrances, in order to cover up in the best way and for the longest time possible the bad odors.

 A first technical problem given by the use of such litter
20 of conventional type consists, thus, in the frequent necessity of cleaning the same, and particularly, in the removal of the sand. It is indeed known how the sand, once it is wetted by the excrements, results to be very smelling and unhealthy, especially in very hot periods and when placed in closed
25 environments. It is thus clear how a traditional litter implies a non indifferent commitment other than an additional cost for the purchase of specific sands.

 Moreover it is often frequent the case where the cat or the dog, further to the use of the litter, digs the sand to
30 cover the excrements. All this causes the falling out of the sand from the container other than the fact that a part of the sand remains always trapped between the nail of the animal, who unavoidably strew them along its route.

 With the aim to resolve the above mentioned problems are

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proposed different solutions that imply the fundamental use of an adaptor to be placed on the usual toilets. In such way the domestic animal can be taught to make its needs directly on the toilet that is destined for the human use, rather than in a
5 litter, completely eliminating this way the use of this last one and the above mentioned problems connected to its use. However also in this case are found many additional technical problems.

First of all it does not result hygienic the use of the
10 same toilet both by persons and by domestic animals. Despite the fact that there is the adaptor this does not represent an efficient barrier to possible viruses that are transmissible from the animal to the human. Moreover many persons do not tolerate the use of a toilet destined for their own personal
15 use by domestic animals, especially in the presence of kids.

Moreover the toilet is not usable when used by the domestic animal and vice-versa. All this can create some unpleasant conditions in the case where the animal needs to use the toilet but is impeded because this last one is used by a
20 person. The animal, not having the same human rationality, can involuntarily be forced to find another place, with clear consequences of such case.

Finally it is clear how such adaptor must be placed practically in a permanent manner on top of the toilet seat
25 forcing this way the person to a continuous removal each time he\she wants to use the toilet. Not being predictable the time when the animal will need to use the toilet, it is thus required to place it always in a ready to use condition.

30 Disclosure of Invention

It is therefore the aim of the present invention to give a toilet that resolves the above mentioned inconvenient.

In particular it is the aim of the present invention to give a sanitary appliance that allow to completely eliminate

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the use of adaptors to apply on usual toilets.

It is therefore the aim of the present invention to give a sanitary appliance that allows to the domestic animal to comfortably make its physiological needs without interfering
5 with the human's needs and vice-versa.

It is also the aim of the present invention to give a device that results efficient and functional and that eliminates entirely the need to use the traditional litter's sand without creating any use interference between the person
10 and the animal, as in the case where adaptors are used.

It is also the aim of the present invention to give a sanitary appliance that does not imply the need of particular predispositions for the installation, given that it can be substituted to a pre-existing installation of a simple toilet
15 for human use.

These and other aims are obtained with the realization of such a sanitary device characterized by the fact to comprise in combination a toilet (2; 102; 202; 302) for human use destined in use to a connection to an external drainage system (16) and
20 a litter (3; 103; 203; 303) and where the litter is in communication to said drainage system (16) through the toilet (2; 102; 202; 302).

Such a device that incorporates contemporarily both the usual toilet and the litter resolves the above mentioned
25 inconvenient. The excrements of the animal will directly fall in the sewer, eliminating entirely the need to use specific litter's sand. In such manner, other than cutting down the cost for buying the sands, there is also a great advantage in terms of cleaning frequency of the same litter. Moreover, with such
30 solution, it is totally avoided the use of the same toilet at the same time both by the animal and by the person, thing that happens only the classical adaptors are used. All this allows to resolve the above mentioned problems relative to the hygiene and to the accidental contact to animal's viruses that are

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transmissible to the human. At last, according to such solution, the litter and the toilet can be used simultaneously in an independent way.

Advantageously it is comprised a tank (4) for containing
5 the clean flush water in communication with the litter (3; 103; 203; 303) and the toilet (2; 102; 202; 302).

In such manner, acting on the tank, it is possible to flow clean water for the sewer from the tank within the litter and the toilet.

Advantageously the tank (4) comprises a first compartment
10 (14) and a second compartment (15), the first compartment being of containment for the water destined in use to the discharge of the toilet while the second compartment being of containment for the water destined in use to the discharge towards the
15 litter.

Such solution allows a great water saving, activating when needed only the interested part.

Advantageously the fluid communication of the tank (4) with the toilet (2; 102; 202; 302) is realized through a pipe (10)
20 interposed between the first compartment (14) and the toilet, while the fluid communication between the tank and the litter is realized through a pipe (7) interposed between the second compartment (15) and the same litter.

According to a possible embodiment of the invention the
25 communication between the litter (3; 303) and the toilet (2; 302) is realized through a pipe (8; 308) interposed between the litter and the toilet.

According to a possible pattern realization, the pipe (8; 308) can comprise a siphon portion (308') converging downstream
30 the siphon of the toilet.

In such case then the litter comprises its own siphon.

Alternatively the pipe (8) can converge in an exit hole (8') in correspondence of the toilet (2).

In such case the hole will result upstream of the siphon of

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the toilet and thus the pipe (8) will not need its own siphon.

Some constructive solutions, independently from the fact that they comprise a litter with its own siphon or not, are constituted by a litter (103; 203; 303) directly obtained from
5 the toilet (102; 202; 302).

In such case it is eliminated the use of a connection pipe between the litter and the toilet.

For example such solution can be obtained by adapting the toilet in such a way to comprise an additional bowl placed side
10 by side at a convenient height, for example 13 centimetres from the ground.

Alternatively the shape of the toilet (202) is configured in such a way to define substantially in correspondence of its seat edge the litter (203).

15 In all the proposed solutions, the litter (3; 103; 203; 303) is placed side by side to the toilet (2; 102; 202; 302) and at a height respect to the ground comprised between the above mentioned 13 centimeters.

It is also possible to comprise a connection bracket to
20 connect and support the litter to the toilet.

Obviously solutions where the litter is for example placed behind or in front of the toile can be realized without having for this reason move apart from the present inventive concept.

Brief description of the drawings

25 Further features and advantages according to the present sanitary device, according to the invention, will be clearer with the description of one of its embodiment that follows, made to illustrate but not limit, with reference to the annexed drawings, in which:

- 30 - Figure 1 represents a lateral view of the device 1 according to the invention;
- Figure 2 represents a front view of the sanitary device 1 according to the invention;
- Figure 3 shows on the other hand a top view of the device 1;

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- Figure 4 shows a second embodiment of the invention where the litter is integrally obtained from the toilet;
- Figure 5 shows a third embodiment of the invention where the litter is integrally obtained from the toilet in correspondence
5 of the upper edge of the seat.
- Figures from 6 to 8 show solutions where the litter is connected downstream of the siphon of the toilet through its own siphon.

Description of some pattern realizations.

10 With reference to the annexed drawings (only for simplicity the numeration refers in the specific to figure 1), a toilet 2 for human use comprises a bowl 2' for the collection of organic wastes, a waste pipe 6 and a clear water collection tank 4 for the waste pipe. The waste pipe 6 is constituted by a first
15 portion 6', commonly called siphon and usually shaped according to an S shape in order to prevent the sewer gasses to enter the house. The S shape of the siphon is indeed such to trap a certain quantity of water creating this way a plug that prevents the ascent of the odors from the external drainage
20 system or collection tank 16 to which the waste pipe 6 of the toilet conveys. A second portion 6'' of pipe fitting downstream of the siphon can then be eventually comprised with the aim to realize an easy connection to the external drainage system 16. The direction of the horizontal arrows in the sewer 16
25 indicated an hypothetical direction of the down flow. Only as an example the waste pipe 6, converging towards the sewer pipes or collection 16 is entering in the pavement, even if solutions with the waste pipe converging towards the wall can be commonly used. The tank 4 for the containment of clean flushing water is
30 then as usual placed above the toilet and supplied with a normal connection to an external pipe 5 destined in use for its refilling, each time it is requested. A plurality of arrows in correspondence of the upper edge of the bowl 2' indicate the normal down flow of the water that converges from the tank 4

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towards the waste pipe 6 through the bowl 2'.

According thus to a first embodiment of the invention, the undertaken figure 1 describes a lateral view of a sanitary device 1 comprising in combination a toilet for the human use 2, as described above, and a litter 3 for domestic animals, as for example cats and dogs. In the figure the litter 3 has been sectioned in a thin line as it is placed laterally respect to the toilet, on the opposite site of the view. However, as it will result clearer from the present description, different positioning respect to the toilet can be chosen without having for this reason move apart from the present inventive concept.

As better highlighted thus in the front view of figure 2, the toilet is therefore connected to the litter 3 by means of a bracket 9 or similar applied in correspondence of the side of the toilet. Alternatively it can be comprised a connection of L type bracket or simply a bracket that starts indifferently from the base of the toilet or from the ground. Opportune means connect then the tank to the litter and the litter to the toilet. In particular, a first independent pipeline 7, for example a simple tube, is placed between the tank 4 and the litter 3, allowing this way a first fluid connection between the two above mentioned elements and, consequently, the down flow of clean water from the tank towards the litter. A second pipeline 8 is on the other hand placed between the litter and the toilet in such a way to realize a second fluid connection between the litter 3 and the waste pipe 6 through the bowl 2' of the toilet such to allow the scavenging of sewages. The positioning height h of the litter can be variable and such to allow to the animal to get on easily. Just as an example figure 2 sets a useful height that is around 13 centimetres from the ground.

With reference to figure 3, that represents a top view of the invention, it is highlighted the pipe 7 which converges inside the litter through for example a connection hole 7'

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obtained in correspondence of a side of the same litter. The base of the litter, opportunely of a concaved shape, to facilitate the collection of the sewages, comprises a hole 13 for the down flow through the pipe 8 towards the waste pipe 6, and from there obviously towards the external sewerage 16. For such aim, the pipe converges thus to a passing hole 8' obtained in the bowl of the toilet. The directions of the arrows in correspondence of the hole 7' and of the hole 8' indicate respectively the flow of the clean water that from the tank 4 falls in the litter and the consequently sewage one that from the litter falls in the waste pipe 6 through the bowl.

Still as described in figure 3, the tank 4 can be realized in two compartments that are independent from each other. A first compartment 14 of containment for the water destined in use to the discharge of the toilet for human use while the second compartment 15 being destined in use to the discharge towards the litter. For such aim both the first and the second compartment of the tank comprise independent flush handles 11 and 12. In such manner it is possible to activate the two compartments in an absolutely independent manner, with a great water saving.

It is anyway clear how it is possible also a simpler constructive realization where the tank is practically single such that the waste pipe gets activated contemporarily both towards the litter and the toilet.

A second embodiment of the invention is described in figure 4. The numeration, exclusively for clarity, has been incremented of a hundred in order to distinguish it from the first solution (except for pipe 7). In this case the litter 103 is obtained directly from the body of the toilet 102 in correspondence of the side, without thus the need of the help of connection brackets. The top view clearly shows the realization of a sole piece. In such manner it is avoided the use of a pipe 8 as in the first solution, the water can

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directly flow from the hole 107' towards the drain hole 108' obtained in the toilet's bowl through the same litter.

A third preferred solution of the invention, look at figure 5, comprises a toilet 202 where, similarly to the second solution, the litter is obtained through the conformation of the toilet. But in such case the shape of the toilet is configured in correspondence substantially of its seat's edge in such a way to define the litter 203. In such case then the sole hole 207' allows the water from the tank to down flow directly in the waste pipe 6 through the bowl 202' of the toilet. Such configuration is particularly advantageous in terms of cleaning. The conventional cleaning of the inside of the toilet implies also the cleaning of the litter.

In figure 6 is described a fourth possible preferred solution of the invention. This results entirely equivalent to the first one except from the fact that the litter 303 is supplied in this case of its own siphon 308'. According to such solution it is not thus required a hole at the level of the toilet's bowl (as in the first described solution) but the connection happens downstream of the toilet's siphon 306'. Similarly (look at figure 8), also in the case of the second described solution it is possible to comprise a pipe with its own siphon 308' that pipes the sewage water of the litter downstream of the toilet's siphon. Also in this case it is avoided the realization of the hole 108' in the bowl.

Similarly, figure 7 shows a further solution with waste pipe of the toilet in correspondence of the wall and combined with the litter (eventually also integrated with the bowl) supplied with its own siphon 308'. The siphon 308' converges downstream of the toilet's siphon 306.

In use, thus, the domestic animal has always the possibility to use its litter for its needs. The owner can thus easily provide to the discharge of the organic wastes contained in the litter directly through the external sewerage through

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the toilet.

The above mentioned description of a specific realization pattern is able to show the invention from the conceptual point of view in a way that others, by using the prior art, can
5 modify and/or adapt in different applications such specific realization pattern without further researches and without moving apart from the present inventive concept and, thus, it is intended that such adaptations and amendments will be considered equivalent to the specific pattern realization. The
10 means and material to realize the different described functions can be of various type without moving apart from the inventive concept. It is intended that the expressions or the used terminology have only the aim of describing and for this reason are not limiting.

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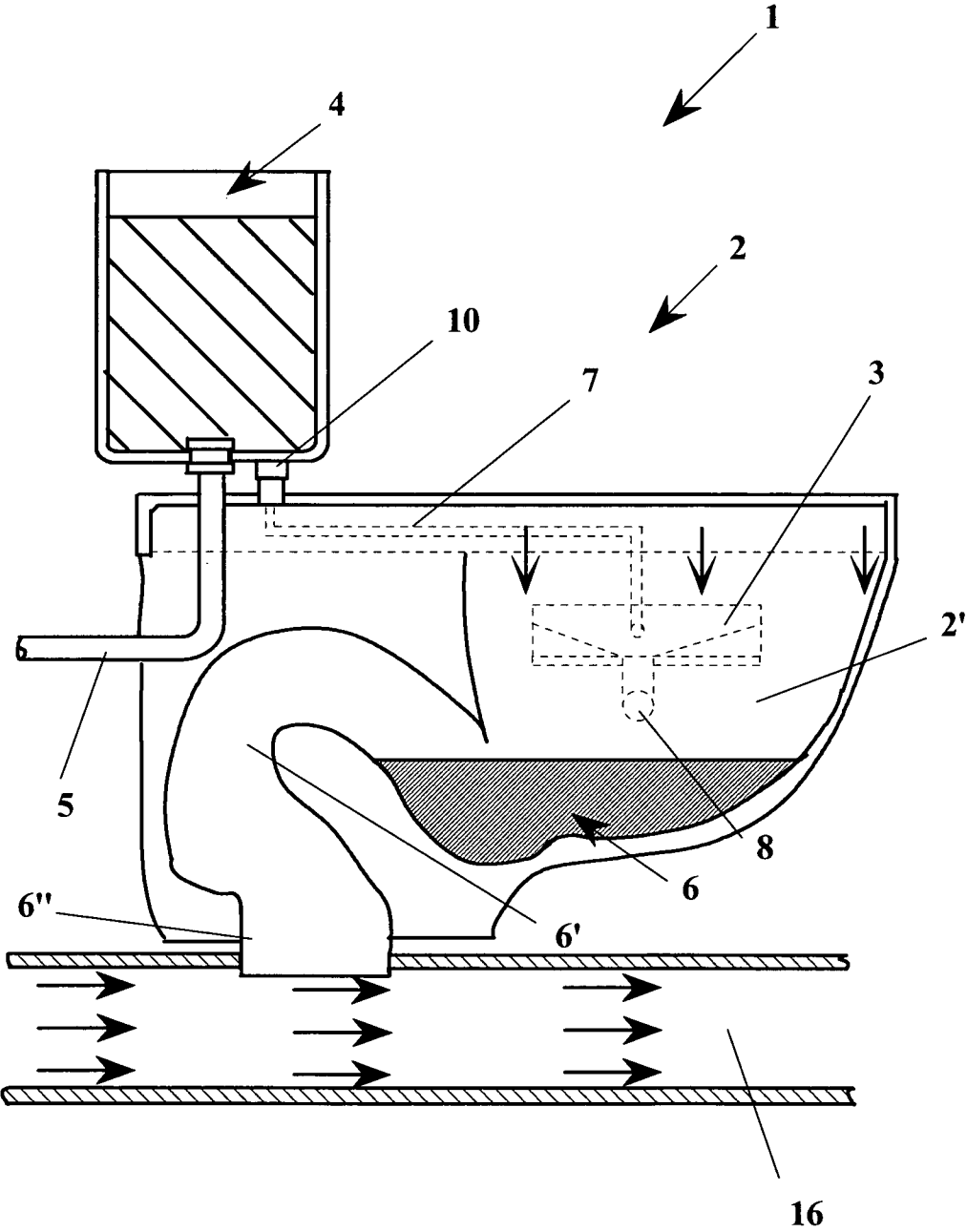
CLAIMS

- 5
1. Sanitary device **characterized by the fact** to comprise in combination a toilet (2; 102; 202; 302) for human use destined in use to a connection to an external drainage system (16) and a litter (3; 103; 203; 303) and where the litter is in communication to said external drainage system (16) through the toilet (2; 102; 202; 302).
- 10
2. Sanitary device, according to claim 1, where it is comprised a tank (4) for containing the clean flush water in fluid communication with said litter (3; 103; 203; 303) and said toilet (2; 102; 202; 302).
- 15
3. Sanitary device, according to claim 2, where said tank (4) comprises a first compartment (14) and a second compartment (15), said first compartment being of containment for the water destined in use to the discharge of the toilet while said second compartment being of containment for the water
20
destined in use to the discharge towards the litter.
- 25
4. Sanitary device, according to claim 3, where said fluid communication of the tank (4) with said toilet (2; 102; 202; 302) is realized through a pipe (10) interposed between said first compartment (14) and said toilet and said fluid communication between said tank and said litter is realized through a pipe (7) interposed between said second compartment (15) and said litter.
- 30
5. Sanitary device, according to one or more of the previous claims, where said communication between said litter (3; 303) and said toilet (2; 302) is realized through a pipe (8; 308) interposed between the litter and the toilet.

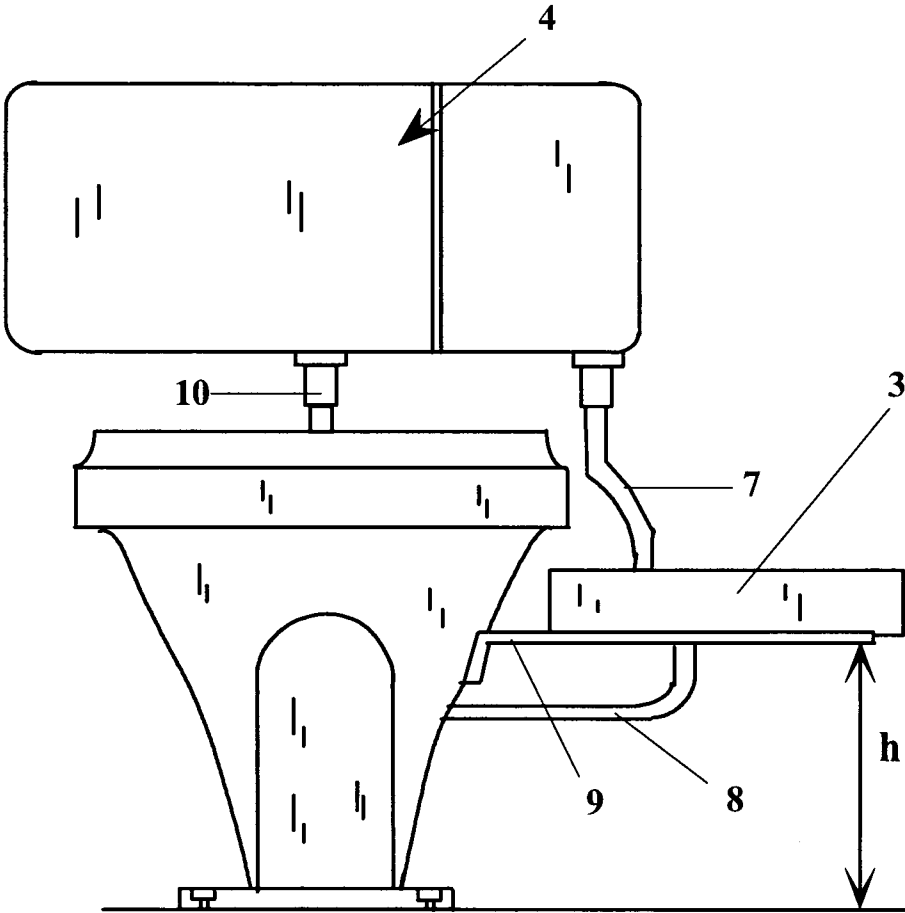
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- 5
6. Sanitary device, according to claim 5, where said pipe (8; 308) comprises a siphon portion (308') converging downstream of the toilet's siphon.
 7. Sanitary device, according to claim 5, where said pipe (8) converges into an exit hole (8') in correspondence of the toilet's bowl (2).
 - 10 8. Sanitary device, according to one or more of the previous claims, where the litter (103; 203; 303) is directly obtained from the toilet (102; 202; 302).
 - 15 9. Sanitary device, according to claim 8, where the shape of the toilet (202) is configured in such a way to define substantially in correspondence of its seat edge said litter (203).
 - 20 10. Sanitary device, according to one or more of the previous claims, where said litter (3; 103; 203; 303) is placed side by side to the toilet (2; 102; 202; 302) at a height respect to the ground comprised between 13 centimeters.
 - 25 11. Sanitary device, according to one or more of the previous claims, where it is comprised a connection bracket to connect the litter to the toilet.
- 30

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Fig. 1

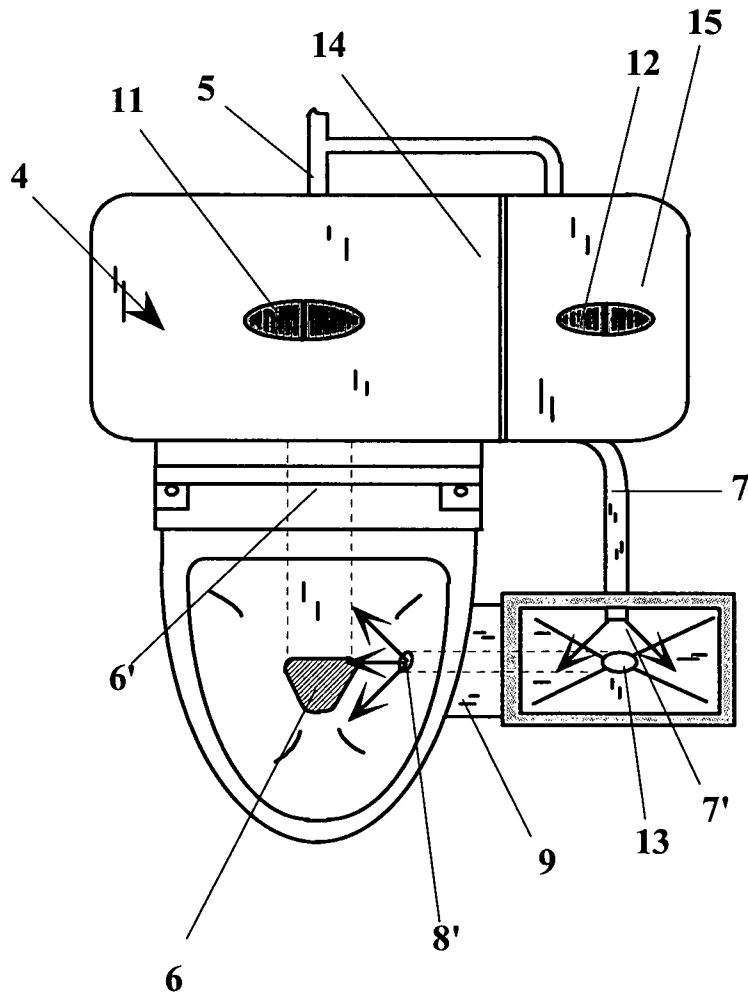


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Fig. 2



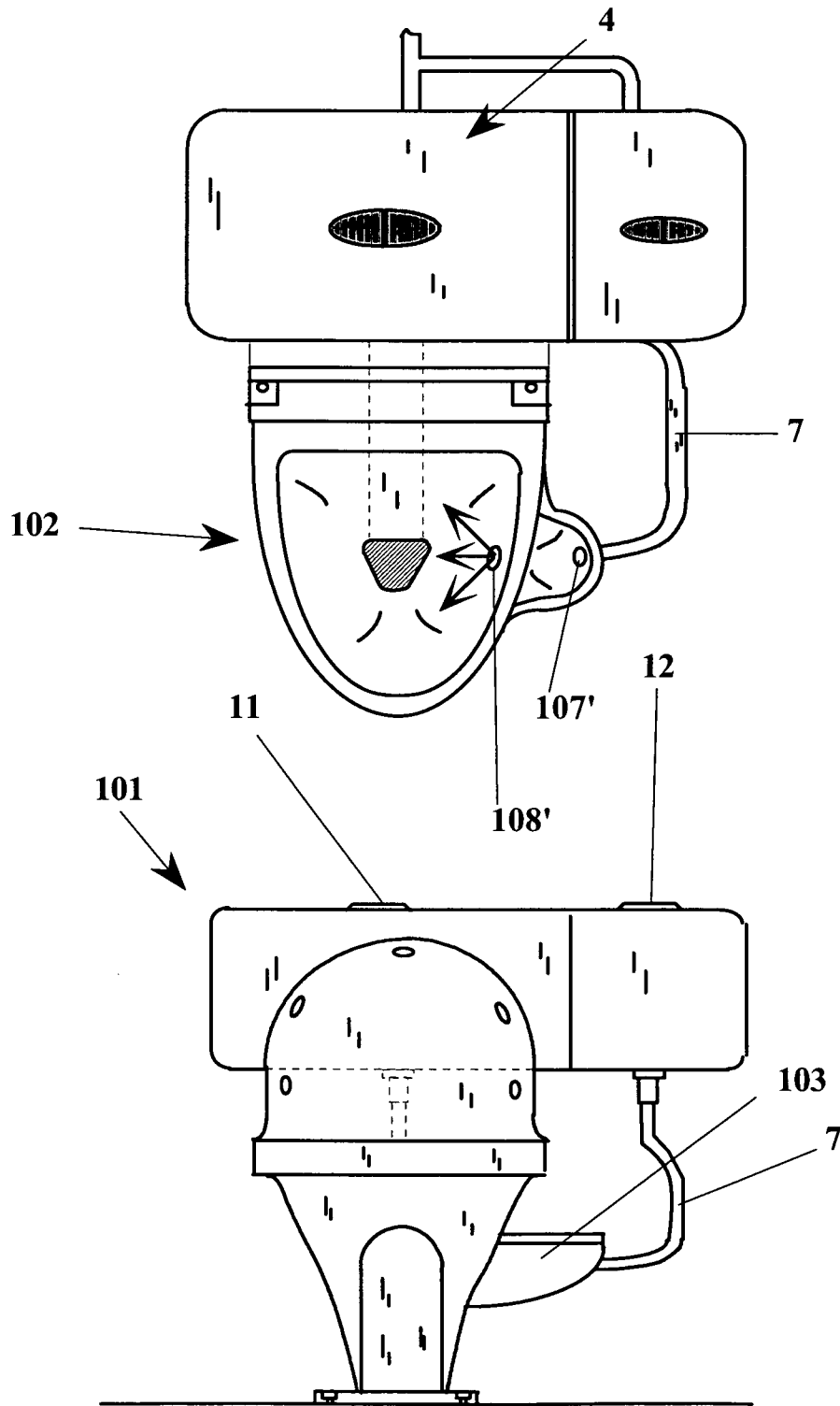
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Fig. 3

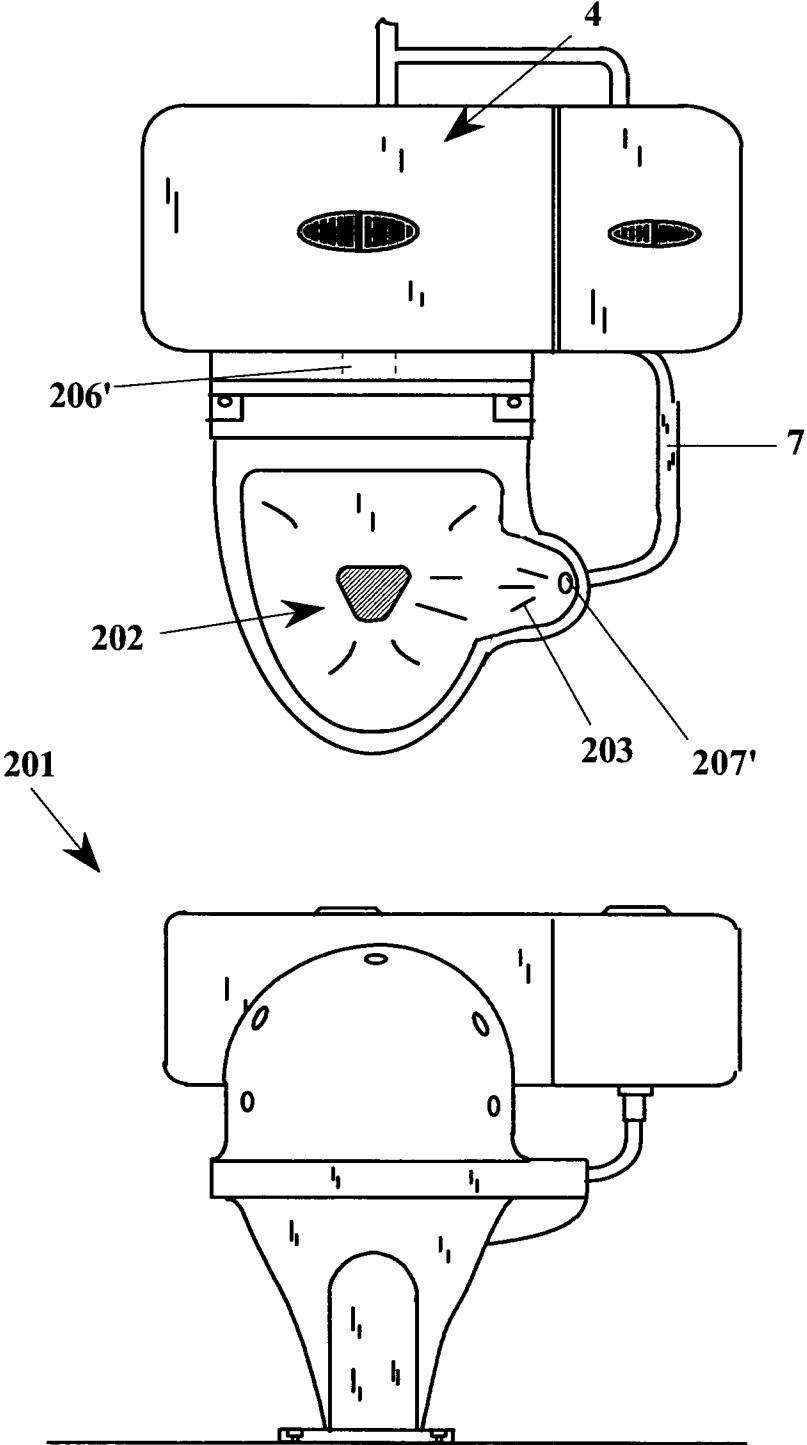


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Fig. 4

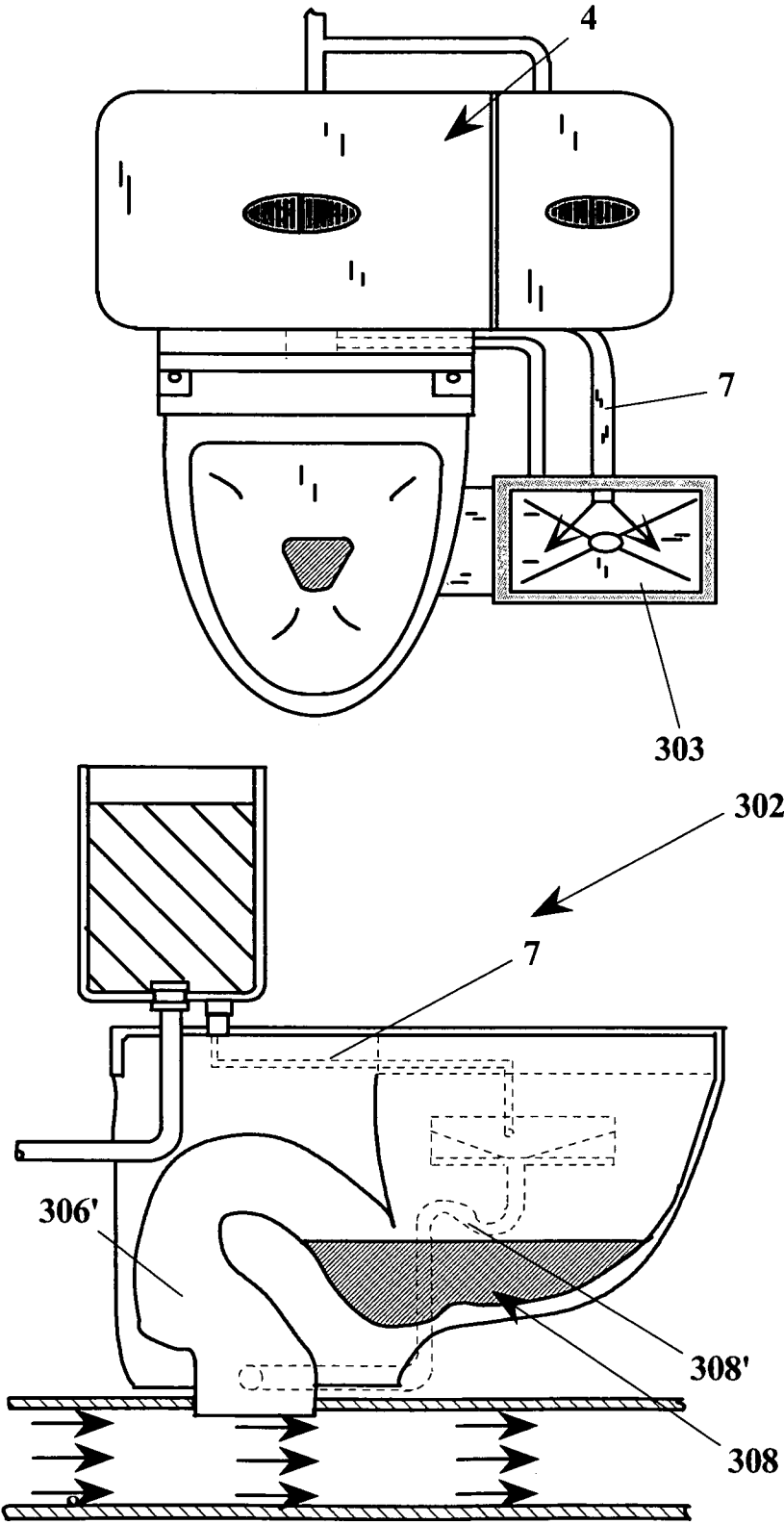


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Fig. 5



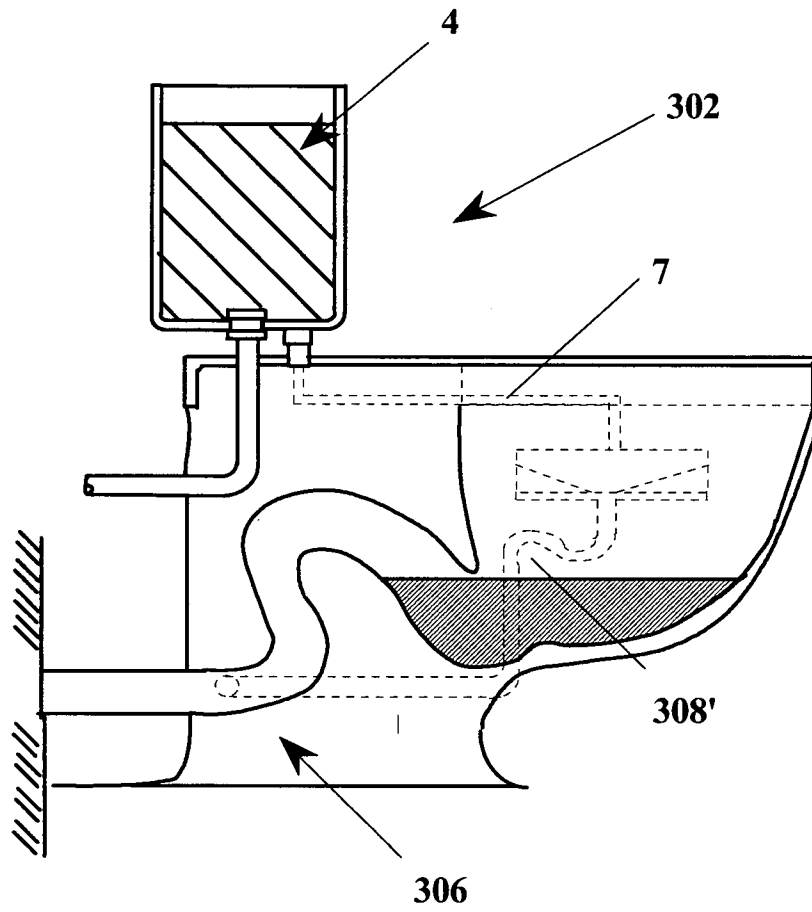
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Fig. 6

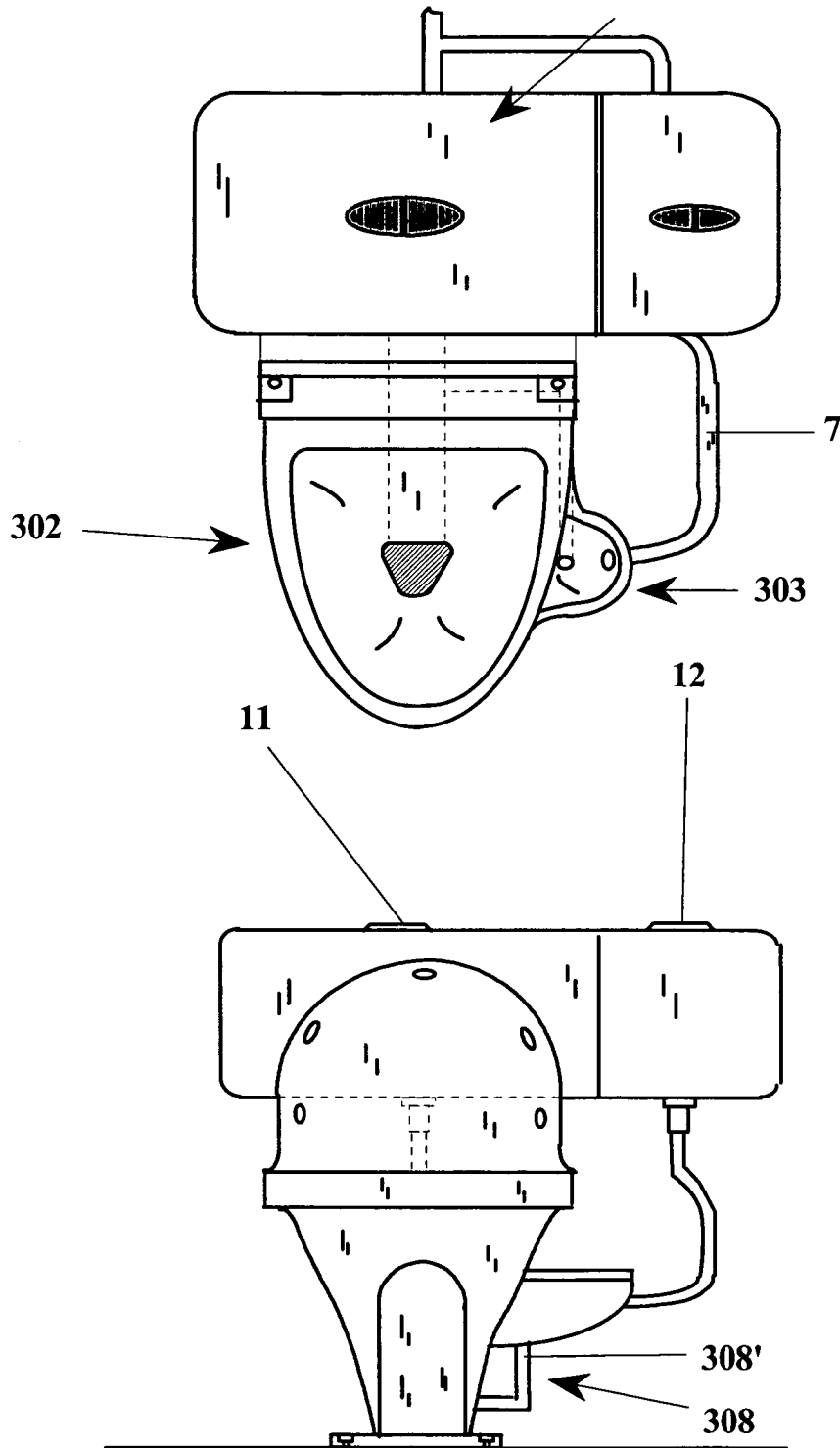


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Fig. 7



- 8/8 -
Fig. 8



INTERNATIONAL SEARCH REPORT

International application No
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INV. E03D11/02 A01K1/01

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
E03D A01K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 27 41 562 A1 (BREIDENBACH HERBERT) 29 March 1979 (1979-03-29) the whole document	1
A	US 2004/098799 A1 (ABNEY ERNEST [US]) 27 May 2004 (2004-05-27) the whole document	1-2, 5, 8-9

 Further documents are listed in the continuation of Box C. See patent family annex.

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Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IT2009/000276

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 2741562	A1	29-03-1979	NONE
US 2004098799	A1	27-05-2004	NONE