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(54) **NO-FLUSH DIRECT URINE DISPOSAL SYSTEM**

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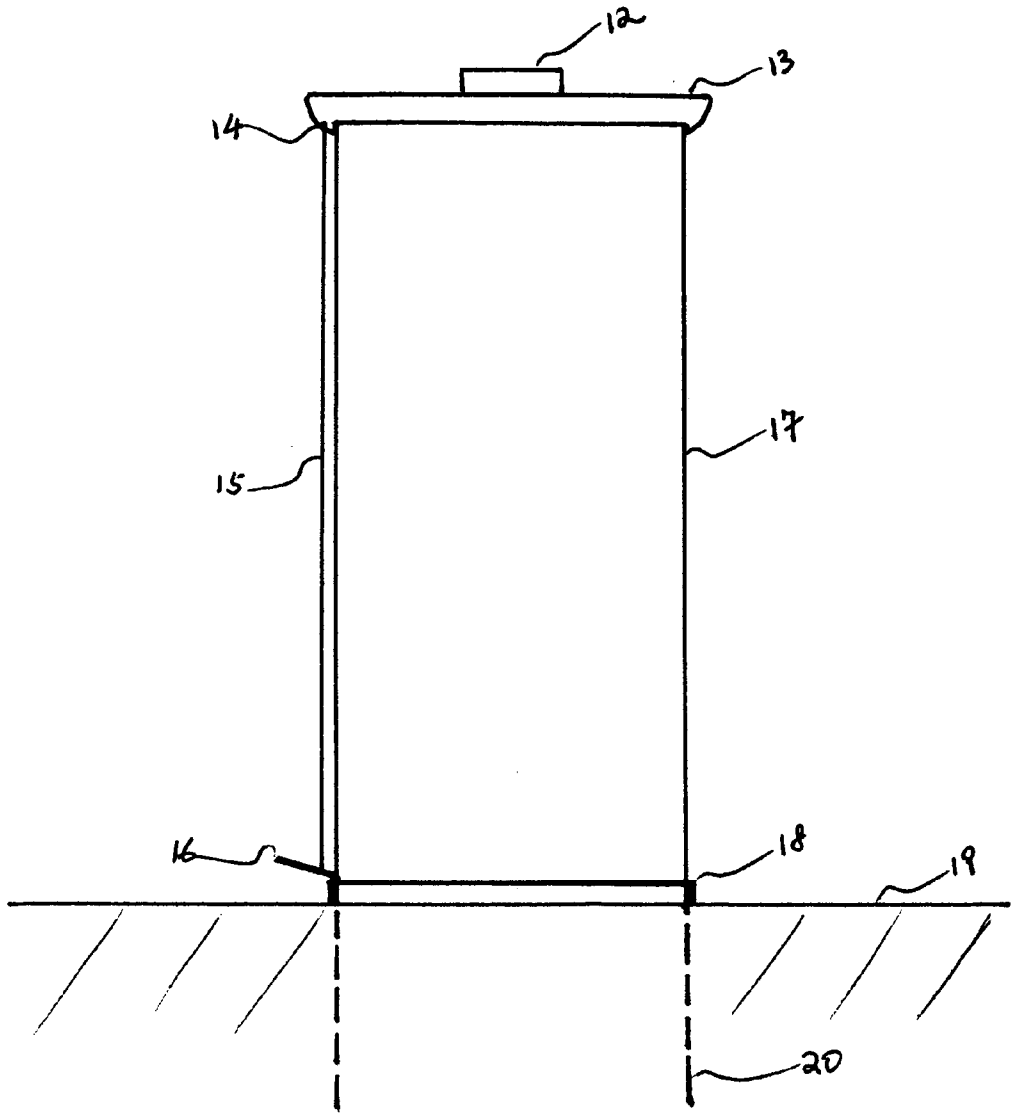
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(57) **ABSTRACT**

An elongated tube (**17**) of about 4 inch in diameter and about 20+ inches long, with the top cover (**13**) that is connected to hinges (**14**), connecting rod (**15**), and foot paddle (**16**). The down tube (**17**) is secured to the floor next to the toilet by connecting coupling (**18**), which is connected to the sewage system via the drainpipe (**20**). The lid of the down tube (**17**) is airtight and can be opened either by stepping on the foot paddle (**16**), or simply lifting the handle (**12**). Bagful of urine detached from the V-cup can be disposed off via the down tube into the drainage system just like dropping garbage into a garbage container.



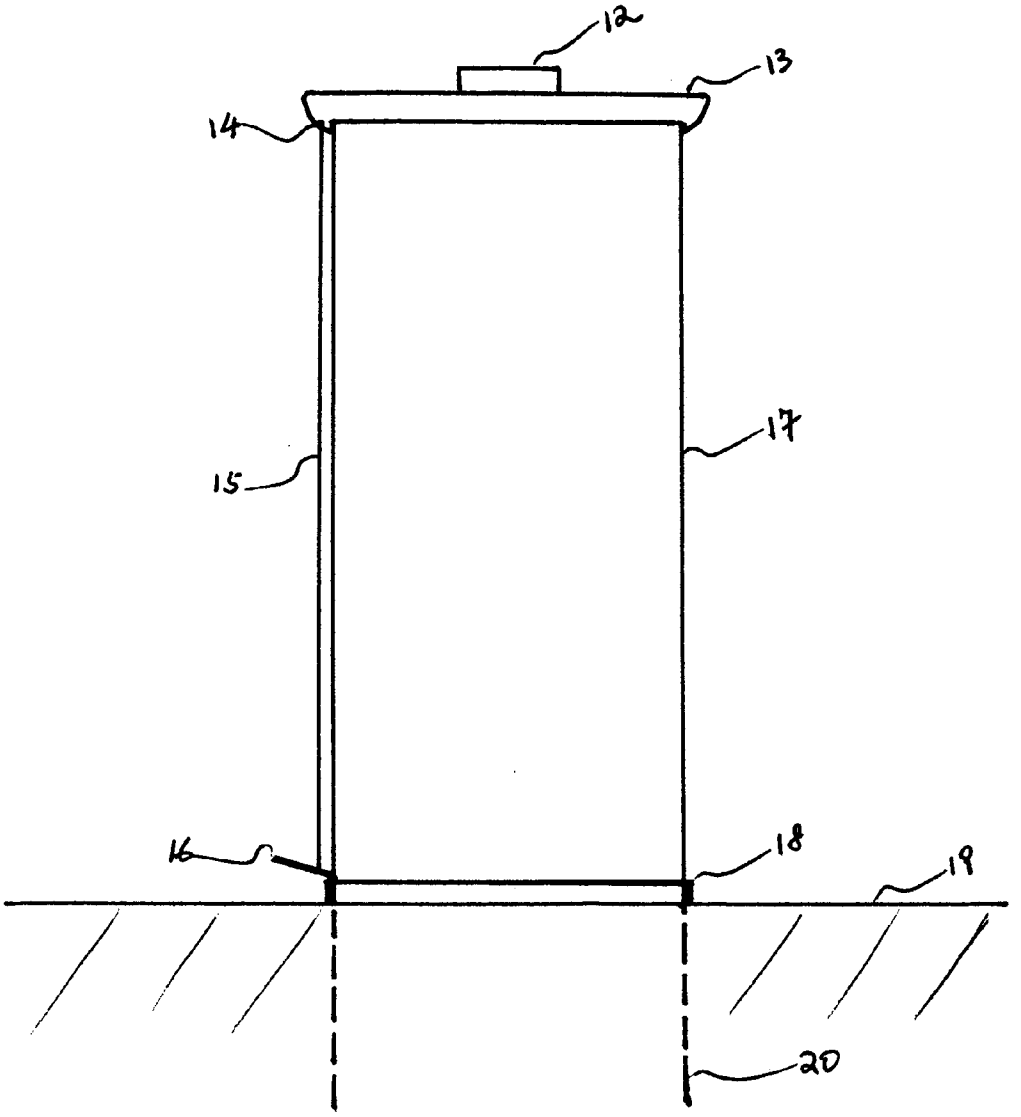


FIG. 1

NO-FLUSH DIRECT URINE DISPOSAL SYSTEM

BACKGROUND

[0001] 1. Field of Invention

[0002] This invention involves a revolutionary method of human liquid waste disposal without the need for flushing. This invention is working in conjunction with my previous V-cup design; which use a V-shaped cup to collect urine from both man and woman, and then disposed of the bagful of urine into the toilet and to be flushed away. The next step is to bypass the toilet system to eliminate flushing altogether. An airtight down tube is created and is connected to the sewage system; bagful of urine can now be carried down the pipe directly into the sewage system without going through the toilet system.

[0003] 2. Description of Prior Art

[0004] The method of collecting and disposing of urine from both man and woman are the same for many years. All toilet design are based on the principle of gravity, the difference between the various designs would be the shapes and sizes. The control of flushing water down the toilet bowl is an important element in design to ensure a quite, and yet clean and strong flush every time. The latest domestic version has two switches: smaller volume for flushing urine and the other for regular use. Most people are afraid of contamination when they have to touch the handle bar in a public toilet; so, today we have automatic flushing to ensure cleanliness. There are other variations, which include a pear shape sink built into the floor where woman has to kneel down and man can still standup and shoot. This type of in ground toilet bowl design is still available in many public facilities today for its low cost and simplicity to clean. Then there are also various types of smaller urine basin designed especially for man, mostly in public places; they are cheaper to make, use less space, and use less water to flush than a standard toilet. All these prior arts are designed as a fixture, attached to a wall, collecting urine directly from human, and eventually flush it down to the drainage system. There are special stainless steel toilets designed for commercial airliners that use vacuum suction power to collect human waste into the aircraft septic tank for later ground disposal. For outdoor and temporary basis, there are public cubical toilet which is highly mobile, but lack of everything else especially cleaning water. Then there are the toilet training bowls for infants, mostly in a round plastics container. There are also utensils uses in hospitals for patients to urinate in bed; they are mostly made of stainless steel for sanitary reason. All these mobile urine collectors are basically bulky, need to be clean after each use, and need space for storage when not in use. Using the traditional toilet system has many problems:

[0005] a) The toilet is possibly the most contaminated area in any establishment. Discovery Channel's "myth-buster" program proved that contaminations spread over everywhere near the toilet area and go as far as the adjacent walls of the toilet itself.

[0006] b) A normal adult goes to toilet to urinate about 5/6 times a day, each flush uses up to 1.6 gallon of drinking water. Seniors and people with frequent urge to urinate could go twice or more times. The consumption of flushing water down the drain is simply massive.

[0007] c) From research it shows the volume of urine collected per each bathroom visit can vary from 5 oz to 20 oz. However, traditional toilet design cannot differentiate and flush at the maximum of 1.6 gallon each time.

[0008] d) Even with the latest toilet design, using 1 gallon of fresh water to flush down 5 oz of urine is extremely wasteful.

[0009] e) In theory, the current toilet design is full of defects; it consumes too much fresh water and is subject to contamination after each usage.

[0010] There are no prior arts designed for disposal of urine without flushing. There are no prior arts to have a special apparatus designed specifically for the single purpose of dropping urine directly into the sewage system without the need for flushing.

OBJECTS AND ADVANTAGES

[0011] There are two main objectives for my invention. One is to provide a simple solution to dispose of the liquid waste of the V-cup. The other is to keep maintenance and clean up a minimum. The advantages are:

[0012] a) A simple down tube design is very cheap to produce, extremely reliable, no maintenance, and there is no need for flushing water either.

[0013] b) The basic model has only three simple moving parts; the top cover, the connector to the foot paddle and the foot paddle itself. Top cover opened by foot paddle achieves the highest standard of hygiene when use.

[0014] c) Can be installed by any plumber to any existing public lavatory, or domestic bathrooms with ease.

[0015] d) Exterior coated with porcelain or ceramic that matches harmoniously with the appearance of the rest of the utilities in the bathroom.

[0016] e) No flushing means saving in precious fresh water resources; if we can save an average of ten gallon of flushing water per person per day; the world would save about 60 billion gallon of flushing water each day.

[0017] f) By incorporating the V-cup and "no-flush" down tube system; commercial airliners may carry hundreds of gallons of fresh water less per each long haul flight.

[0018] g) Once the "no-flush" down tube is installed, the frequency for flushing the toilet could be reduced by as much as 80%, which means a cleaner and less contaminated toilet at all times.

DRAWINGS FIGURES

[0019] FIG. **1** shows the down tube with lid and foot paddle.

REFERENCE NUMERALS IN DRAWINGS

[0020]

12 Handle of the cover	13 Lid/cover of the down tube
14 Hinges	15 Connecting rod
16 Foot paddle	17 Down tube
18 Connecting coupling	19 Floor surface
20 Connecting drainpipes	

Description—FIG. 1

[0021] The "no-flush" down tube is a pipe of about **4** inches in diameter and about 20+ inches long. It is a freestanding cylinder structure sitting next to the toilet seat.

The exterior surface is coated with porcelain to match the surface of other utilities in the bathroom. It is connected to the sewage system by a connecting drainpipe coming out from the floor. This invention is working in conjunction with my prior invention of the "V-cup"; a cup that would be able to collect urine from both sexes, and to be disposed off later by flushing down the toilet. The "no-flush" down tube would be my second invention to enhance the efficiency by direct disposal into the sewage system. After urine is collected in the V-cup, the collapsible inner layer would be pulled out of the V-cup, the bagful of urine now collected would be disposed off into the down tube instead. FIG. **1** shows the drawing of a cylinder shape down tube **17**, connected to the sewage system and fixed to the toilet floor via a connecting coupling **18** to the connecting drainpipe **20**. There is a handle **12** on top of lid **13**, and is connected to connecting rod **15** by hinges **14**. At the bottom of the connecting rod **15** there is a foot paddle **16**. There are two methods of opening the top cover, either by hand lifting the handle **12** or by foot stepping on the foot paddle **16**. The foot paddle operation of the down tube is very similar in principle to a foot operated garbage disposal container; by using the foot paddle to control the opening and closing of the top cover. The major difference is that the down tube has an open bottom connected to the sewage system and is completely sealed when the top cover is closed. The purpose of an airtight cover is to ensure that the sewage smell would not spread out once it is closed. Once the disposable bag is inside the tube, gravitational force would be enough to carry it down the drainage system. The opening and closing of the top cover takes place in a time frame of about **3** seconds, so the amount of bad odor leaking out from the drainage would be minimal.

Operation—FIG. 1

[0022] After collecting urine with the V-cup, the inner layer is pulled out of the cup and ready for disposal. FIG. **1** shows the detail drawings of the "no-flush" down tube **17**. There are two ways of opening the top cover **13**, either by lifting the handle **12** or by stepping on the foot paddle **16**. Once the lid is opened, simply drop the bagful of urine into the down tube **17** and close the top cover **13**. If operate correctly, the whole sequence of opening the top cover, dropping the bag and closing the top should take place in about 3 seconds.

SUMMARY, RAMIFICATIONS, AND SCOPE

[0023] Traditional toilets carry the main function of disposing solid waste by using large volume of flushing water to carry the waste down the drain. When come to dispose of liquid waste, the same procedure is extremely wasteful of our natural resources. My invention is to create a better way for liquid waste disposal.

[0024] it is simple and can be produced very cheaply.

[0025] it relies on natural gravitational force to carry waste down the drainage.

[0026] it saves tons of fresh water.

[0027] it is very easy to install by anyone with basic plumbing knowledge.

[0028] it takes up tiny floor space in a bathroom and yet it has huge functionality.

[0029] it requires no aftermath clean up and no maintenance as well.

[0030] it is very simple to use, as easy as flushing the toilet.

[0031] it is timesavings as well.

[0032] it has achieved the highest standard of hygiene by simplicity.

[0033] Although the description above contains many specifications, these should not be construed as limiting the scope of the invention but as merely providing illustrations of some of the presently preferred embodiments of this invention. For example, instead of manual control, an electronic motion sensor to open and close the lid automatically would be great convenience for many. The inner wall of the down tube could be coated with super slippery and non-sticky materials to ensure that dirt do not stay or accumulate inside the down tube. Vacuum suction power to be added to keep the smell of the sewage from spreading whenever the lid is opened. Multi razor blades to be inserted into the inner bottom part of the down tube to ensure the bagful of urine will break apart evenly when travel down the tube. To connect the drainpipe from the sink to the bottom part of the down tube; so every time we wash our hands the waste water would be recycled as flushing water to keep the down tube fresh and clean.

[0034] Thus the scope of the invention should be determined by the appended claims and their legal equivalents, rather than by the examples given.

I claim:

1) In a container in the shape of an elongated tube with a top lid covering at one end and a flat open bottom at the other end to be connected to the sewage system.

2) The container in claim **1** wherein said body is an elongated cylinder tube measured 4 inches in diameter and about 20+ inches in length.

3) The container in claim **1** wherein said body has a top lid controlled by a hinge and a connecting rod to a foot paddle.

4) The container in claim **1** wherein said body is made of either plastic or steel.

5) The container in claim **1** wherein said body has an exterior surface coated with porcelain that matches the surface of other bathroom utensils.

6) The container in claim **1** wherein said body is connected to the sewage system and is secured to the floor through a connecting coupling.

7) The container in claim **1** wherein said body is designed to dispose off human liquid waste directly into the sewage system.

8) A container in the shape of an elongated tube with a top lid covering at one end and a flat open bottom at the other end to be connected to the sewage system.

9) The container in claim **8** wherein said body is an elongated cylinder tube measured **4** inches in diameter and about 20+ inches in length.

10) The container in claim **8** wherein said body has a top lid controlled by a hinge and a connecting rod to a foot paddle.

11) The container in claim **8** wherein said body is made of either plastic or steel.

12) The container in claim **8** wherein said body has an exterior surface coated with porcelain that matches the surface of other bathroom utensils.

13) The container in claim **8** wherein said body is connected to the sewage system and is secured to the floor through a connecting coupling.

14) The container in claim **8** wherein said body is designed to dispose off human liquid waste directly into the sewage system.

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