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(54) Title: A WEARABLE DEVICE FOR BODY FLUID DISCHARGE

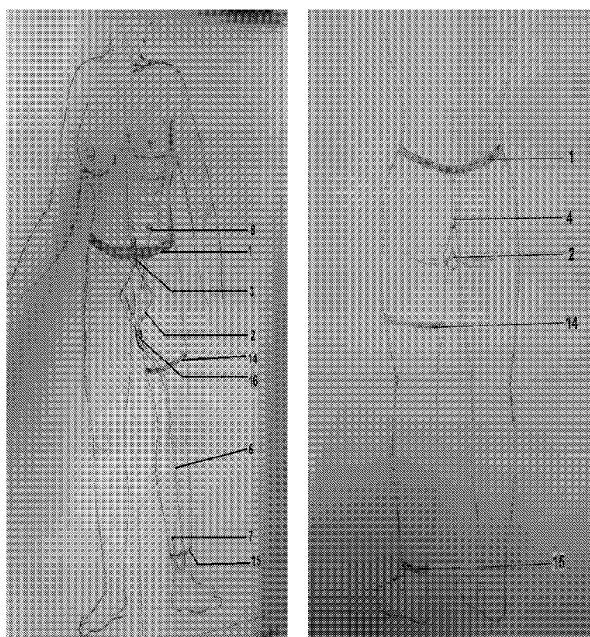


Figure 1

(57) Abstract: The present invention discloses a multipurpose wearable device for body fluid discharge and its method of operation that is suited across all age group and gender. Also the device is reusable, well ventilated, non-invasive, and antimicrobial with a washing provision. The wearable device for body fluid discharges comprises of a belt to be worn around the waist of the wearer; a receptacle connected to the belt with plurality of suspension strap of adjustable length, storage member, a exit pipe, a funnel attached to the receptacle for receiving water and for ventilation. Also, a pressure bellow may be attached to the receptacle to pump in air into the receptacle for drying the interior after washing off feces from the receptacle in case of dysentery.



TITLE: A WEARABLE DEVICE FOR BODY FLUID DISCHARGE**Field of the Invention**

The present invention relates to a sanitary device for discharge of body fluid. More specifically, the present invention relates to a wearable unisex device for discharges of urine, blood, excreta and other such body fluids from a human body.

Background of Invention

People sometimes experience the need to eliminate urine when access to a toilet or other such restroom facility is not readily available. This may occur during travelling, such as in an automobile or airplane, camping, hiking or a variety of other such activities. Further, persons having physical disabilities or health concerns, such as surgical procedures, may not be able to access a restroom or such permanent urinal. Public restrooms are often unsanitary, and person may desire to use a more sanitary elimination device.

Children always need to use the toilet when away from home. When families are out for a walk, having a picnic or a day at the beach finding a public toilet can be difficult. Diapers are generally used to counter such problem. These are however uncomfortable for kids and leads to rashes. Also, these products are quite cost intensive and their disposal causes environmental pollution.

Existing devices for urination and defecation, and including makeshift cans, bottles may be cumbersome and difficult to use. It may be undesirable and difficult to grasp such a device and hold it near the body without leakage or unwanted splashing of the urine during elimination.

In women various body fluids pass through the vaginal canal during the female lifetime, such as blood, vaginal secretion fluids, amniotic fluid, etc. An important organic fluid passing through the vaginal canal is blood either as a result of physiological conditions such as the menstrual period or as a result of pathological conditions such as cervical or endometrial carcinoma or as a result of dysfunctional uterine bleeding. A wide variety of absorbent catamenial devices like sanitary napkins, tampons, menstrual cups have long been known in the art. Sanitary napkins cause rashes and have the chances of staining, or leakage. However, regardless of their absorbency capabilities, tampons, for various reasons, are known to allow leakage of menstrual blood at rather unpredictable time or shortly after insertion, falling short of providing the regulatory effect, which is the very reason for their use.

There is a need of changing these at interval, which is problematic during travel due to lack of enclosed places. Also these involve recurrent cost, which is not affordable to majority of population around the globe and their disposal causes environmental pollution.

Menstrual cups and tampons are devices worn inside the vagina during menstruation to catch menstrual fluid. Some users find menstrual cups to be uncomfortable, difficult to insert and remove. They too need to be emptied at regular interval which is again problematic in unavailability of restroom.

There is a continuing need for a sanitary, reusable, portable, non invasive multipurpose body fluid discharges system that is comfortable to wear, doesn't leak, and is well ventilated, antimicrobial with a washing provision.

Thus, none of the above state of the art device individually or collectively attempts to provide a wearable system for body fluid discharge that is reusable, well ventilated, non invasive, antimicrobial with a washing provision.

Accordingly there was a long felt need to have a multipurpose wearable device for body fluid discharges that is suited across all age group and gender.

Also the device is reusable, well ventilated, non-invasive, and antimicrobial with a washing provision.

Object of the Invention

It is thus the basic object of the present invention is to provide a wearable device for body fluid discharge that is reusable, non-invasive, well ventilated, antimicrobial with a washing provision.

Another object of the present invention is to provide a wearable device for body fluid discharge that is suited across all age group and gender.

Another object of the present invention is to provide a wearable device for body fluid discharge that has the provision of measuring the amount of body fluid released. Another object of the present invention is to provide a wearable device for body fluid discharge that has the provision of washing the private parts right away after elimination of body fluid.

Another object of the present invention is a cost effective, reusable, wearable device for body fluid discharge.

Another object of the present invention is to provide a wearable device, which can be used to discharge body fluid without putting off garment in open place during emergency.

Another object of the present invention is to provide a wearable device, which can be used to discharge feces during diarrhea or dysentery and subsequent washing and drying after relieving oneself.

Summary of the Invention

The following presents a simplified summary in order to provide a basic understanding of some aspects of the claimed subject matter. This

summary is not an extensive overview. It is not intended to identify key elements or to delineate the scope of the claimed subject matter. Its sole purpose is to present some concepts in a simplified form as a prelude to the more detailed description that is presented later. Thus, according to the basic aspect of the present invention there is provided a wearable device for body fluid discharge comprising,

A belt to be worn around the waist of the wearer;

A receptacle connected to the belt with plurality of suspension strap of adjustable length;

A storage member;

An exit pipe that is fastened to the leg of the wearer;

A funnel attached to the receptacle for receiving water and for ventilation.

In an aspect of the invention there is provided, a wearable device for body fluid discharge, wherein the inlet part of the receptacle is suitably shaped and sized to cover the entire inguinal region of the wearer , while the outlet part of the receptacle is adapted to be connected to the exit pipe or storage member.

In an aspect of the invention there is provided, a wearable device for body fluid discharges, wherein the storage member comprises of a connecting neck, a storage unit and an outlet pipe.

In an aspect of the invention there is provided, a wearable device for body fluid discharge, wherein the outlet part of the receptacle is attached to the connecting neck of the storage member when the wearer is menstruating or secreting any other body fluid due to pathological condition.

In an aspect of the invention there is provided, a wearable device for body fluid discharge, wherein the outlet part of the receptacle is attached to the exit pipe for discharge of urine or fluid stool.

In an aspect of the invention there is provided, a wearable device for body fluid discharge, wherein the exit pipe or outlet pipe ends in a cap, which is opened during relieving the body fluid or during washing.

In an aspect of the invention there is provided, a wearable device for body fluid discharge wherein the length of the exit pipe or outlet pipe is at least up to the toe of the wearer.

In an aspect of the invention there is provided, a wearable device for body fluid discharge wherein a pressure bellow is attached to the receptacle to pump in air into the receptacle for drying the interior after washing off liquid stool from the receptacle in case of dysentery.

In an aspect of the invention there is provided, a method of operation of a wearable device for body fluid discharge comprising:

Wearing the belt and adjusting the suspension strap to press the receptacle tightly to the inguinal region of the wearer to prevent any leakage or spillage;

Attaching the flexible exit pipe to the outlet part of the receptacle;

Optionally, attaching the storage member to the outlet part of the receptacle,

when the wearer is menstruating or secreting any other body fluid due to pathological condition;

Uncapping and uncoiling the exit tube or the outlet pipe, when storage member is being used, and placing it on a drainage system;

Relieving the body fluid;

Pouring water into the funnel to wash off the receptacle;

Pressing the storage member between knees to empty it completely;

Pumping air into the receptacle by pressing the pressure bellow to dry the inguinal region of the wearer in case of relieving liquid stool during diarrhea or dysentery. Readjusting the length of the suspension strap to pull the receptacle away from the body when not in use.

In another aspect of the invention there is provided, method of operation of a wearable device for body fluid discharges as claimed in claim 1 comprising: Wearing the belt and adjusting the suspension strap to press the receptacle tightly to the inguinal region of the wearer to prevent any leakage or spillage;

Attaching the storage member to the outlet part of the receptacle, when the wearer is menstruating or secreting any other body fluid due to pathological condition; Uncapping and uncoiling the outlet pipe and placing it on a drainage system;

Pouring water into the funnel to wash off the receptacle;

Pressing the storage member between knees to empty the body fluid collected in it.

Description of accompanying Drawings:

The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate an embodiment of the invention, and together with the description, serve to explain the principles of the invention.

Fig. 1 Illustrates front and back view of a preferred wearable device for body fluid discharges in accordance with the present invention

Fig. 2 Illustrates front view of a preferred wearable device for body fluid discharges with storage member, worn when the wearer is menstruating or secreting any other body fluid due to pathological condition

Fig. 3 Illustrates an exploded view of receptacle with storage member

Fig. 4 Illustrates an exploded view of receptacle with pressure bellow and funnel

Detailed description of Invention with reference to Drawings:

An exemplary embodiment of the present invention will be described in reference to the accompanying drawing. Wherever possible, same or similar reference numerals are used in the drawings and the description to refer to the same or like parts or steps. Reference is now drawn from accompanying **figure 1**. As shown in figure 1 the present wearable device for body fluid discharge embodiment comprising,

A belt (1) to be worn around the waist of the wearer;

A receptacle (2) connected to the belt with plurality of suspension strap (3,4) of adjustable length;

An exit pipe (6) that is fastened to the leg of the wearer with plurality of bands (14,15);

A funnel attached (8) to the receptacle (2) for receiving water and for ventilation.

The exit pipe (6) ends in a cap (7), which is opened during relieving the body fluid or during washing.

Reference is now drawn from accompanying **figure 2**. As shown in figure 2 the present wearable device for body fluid discharge, when the wearer is menstruating or secreting any other body fluid due to pathological condition, comprising,

A belt (1) to be worn around the waist of the wearer;

A receptacle (2) connected to the belt with plurality of suspension strap (3,4) of adjustable length;

A storage member (5);

A funnel attached (8) to the receptacle (2) for receiving water and for ventilation.

The outlet pipe ends in a cap (21), which is opened during relieving the body fluid or during washing. The outlet pipe (17) that is fastened to the leg of the wearer with plurality of bands (18, 19);

Reference is now drawn from accompanying **figure 3**. As shown in figure 3, in the present embodiment of a wearable device for body fluid discharge includes a receptacle wherein the inlet part (11) of the receptacle is suitably shaped and sized to cover the entire inguinal region of the wearer, while the outlet part (16) of the receptacle is connected to the connecting neck (9) of the storage member when the wearer is menstruating or secreting any other body fluid due to pathological condition. The storage member comprises of a connecting neck (9), a storage unit (20) and an outlet pipe (17). In accordance with the preferred embodiment of the invention, there is provided a wearable device for body fluid discharge wherein the storage unit (20) of the storage member preferably has measurement markings. This helps to measure the menstrual blood or other body fluid secretions required for various medical diagnostics. Reference is now drawn from accompanying **figure 4**. As shown in figure 4 of the present embodiment of a wearable device for body fluid discharge includes a receptacle (2) wherein a funnel (8) is attached to it, through which the water is poured in, to wash the receptacle and the inguinal region of the wearer after relieving the body fluid. It also serves as the ventilator.

In accordance with the preferred embodiment of the invention, there is provided a wearable device for body fluid discharge wherein a pressure bellow (10) is attached to the receptacle (2) to pump in air into the receptacle (2) for drying the interior after washing off feces from the receptacle in case of dysentery. The exit pipe (6) is attached to the outlet part (16) of the receptacle.

In accordance with the preferred embodiment of the invention, there is provided a method of operation of a wearable device for body fluid discharge comprising: Wearing the belt (1) and adjusting the suspension strap (3,4) to press the receptacle (2) tightly to the inguinal region of the wearer to prevent any leakage or spillage; Attaching the exit pipe (6) to the outlet part (16) of the receptacle;

Optionally, attaching the storage member (5) to the outlet part (16) of the receptacle (2), when the wearer is menstruating or secreting any other body fluid due to pathological condition;

Uncapping and uncoiling the exit tube (6) or the outlet pipe (17), when storage member (5) is being used, and placing it on a drainage system;

Relieving the body fluid;

Pouring water into the funnel (8) to wash off the receptacle (2);

Pressing the storage member (5) between knees to empty it completely;

Pumping air into the receptacle by pressing the pressure bellow (10) to dry the inguinal region of the wearer in case of relieving liquid stool during diarrhea or dysentery.

Readjusting the length of the suspension strap (3,4) to pull the receptacle (2) away from the body when not in use.

In accordance with the preferred embodiment of the invention, there is provided a method of operation of a wearable device for body fluid discharge comprising: Wearing the belt (1) and adjusting the suspension strap (3,4) to press the receptacle (2) tightly to the inguinal region of the wearer to prevent any leakage or spillage; Attaching the storage member (5) to the outlet part (16) of the receptacle (2), when the wearer is menstruating or secreting any other body fluid due to pathological condition;

Uncapping and uncoiling the outlet pipe (17) and placing it on a drainage system;

Pouring water into the funnel (8) to wash off the receptacle;

Pressing the storage member between knees to empty the body fluid collected in it.

In accordance with the preferred embodiment of the invention, there is provided a wearable device for body fluid discharge wherein the receptacle, the storage member, the exit pipe is made of medical grade silicone to keep it antimicrobial.

In accordance with the preferred embodiment of the invention, there is provided a wearable device for body fluid discharge includes discharging urine in open without removing clothes, in case of no access to bathroom or enclosed place.

In accordance with the preferred embodiment of the invention, there is provided a wearable device for body fluid discharge including discharging urine for patients who is unable to access conventional toilet.

In accordance with the preferred embodiment of the invention, there is provided a wearable device for body fluid discharge including discharging menstrual blood.

In accordance with the preferred embodiment of the invention, there is provided a wearable device for body fluid discharge wherein the body fluid includes any type of involuntary discharges like piles fluid, blood, vaginal discharges.

In accordance with the preferred embodiment of the invention, there is provided a wearable device for body fluid discharge including relieving urine in kids to give them a rash free comfort.

The production cost of each unit of the present wearable device for body fluid discharge is estimated to be very low due to simplicity of its design, multipurpose utility and reusability. As it could replace all the disposable diapers and catamenial devices it becomes quite environment friendly. Also owing to its reusability it eliminates the recurrent cost of buying the catamenial devices and diaper, thus becoming affordable to average income group. Its production is in line with Biswa Bangla and Swachh Bharat initiative of Government of West Bengal and Government of India respectively. It will compensate for the cost of building toilet.

It will readily be apparent that numerous modification and alterations can be made to the processes described in the foregoing examples without departing from the principles underlying the invention, and all such modifications and alterations are intended to be embraced by this application.

We Claims

1. A wearable device for body fluid discharge comprising, A belt to be worn around the waist of the wearer;
A receptacle connected to the belt with plurality of suspension strap of adjustable length;
A storage member;
An exit pipe that is fastened to the leg of the wearer;
A funnel attached to the receptacle for receiving water and for ventilation.
2. A wearable device for body fluid discharge as claimed in claim 1, wherein the inlet part of the receptacle is suitably shaped and sized to cover the entire inguinal region of the wearer , while the outlet part of the receptacle is adapted to be connected to the exit pipe or storage member.
3. A wearable device for body fluid discharge as claimed in claim 1, wherein the storage member comprises of a connecting neck, a storage unit and an outlet pipe.
4. A wearable device for body fluid discharge as claimed in claim 2, wherein the outlet part of the receptacle is attached to the exit pipe for discharges of urine or fluid stool.
5. A wearable device for body fluid discharge as claimed in claim 2, wherein the outlet part of the receptacle is attached to the connecting neck of the storage member when the wearer is menstruating or secreting any other body fluid due to pathological condition.
6. A wearable device for body fluid discharge as claimed in claim 1 wherein the exit pipe or outlet pipe ends in a cap, which is opened during relieving the body fluid or during washing.

7. A wearable device for body fluid discharge as claimed in claim 3 and 4 wherein the length of the exit pipe or outlet pipe is at least up to the toe of the wearer.
8. A wearable device for body fluid discharge as claimed in the claims above wherein a pressure bellow is attached to the receptacle to pump in air into the receptacle for drying the interior after washing off liquid stool from the receptacle in case of dysentery.
9. A method of operation of a wearable device for body fluid discharge as claimed in claim 1 comprising:
Wearing the belt and adjusting the suspension strap to press the receptacle tightly to the inguinal region of the wearer to prevent any leakage or spillage; Attaching the flexible exit pipe to the outlet part of the receptacle;
Optionally, attaching the storage member to the outlet part of the receptacle, when the wearer is menstruating or secreting any other body fluid due to pathological condition;
Uncapping and uncoiling the exit tube or the outlet pipe when storage member is being used and placing it on a drainage system;
Relieving the body fluid;
Pouring water into the funnel to wash off the receptacle;
Pressing the storage member between knees to empty it completely;
Pumping air into the receptacle by pressing the pressure bellow to dry the inguinal region of the wearer in case of relieving liquid stool during diarrhea or dysentery.
Readjusting the length of the suspension strap to pull the receptacle away from the body when not in use.
10. A method of operation of a wearable device for body fluid discharge as claimed in claim 1 comprising:
Wearing the belt and adjusting the suspension strap to press the receptacle tightly to the inguinal region of the wearer to prevent any

leakage or spillage; Attaching the storage member to the outlet part of the receptacle, when the wearer is menstruating or secreting any other body fluid due to pathological condition;

Uncapping and uncoiling the outlet pipe and placing it on a drainage system; Pouring water into the funnel to wash off the receptacle;

Pressing the storage member between knees to empty the body fluid collected in it.

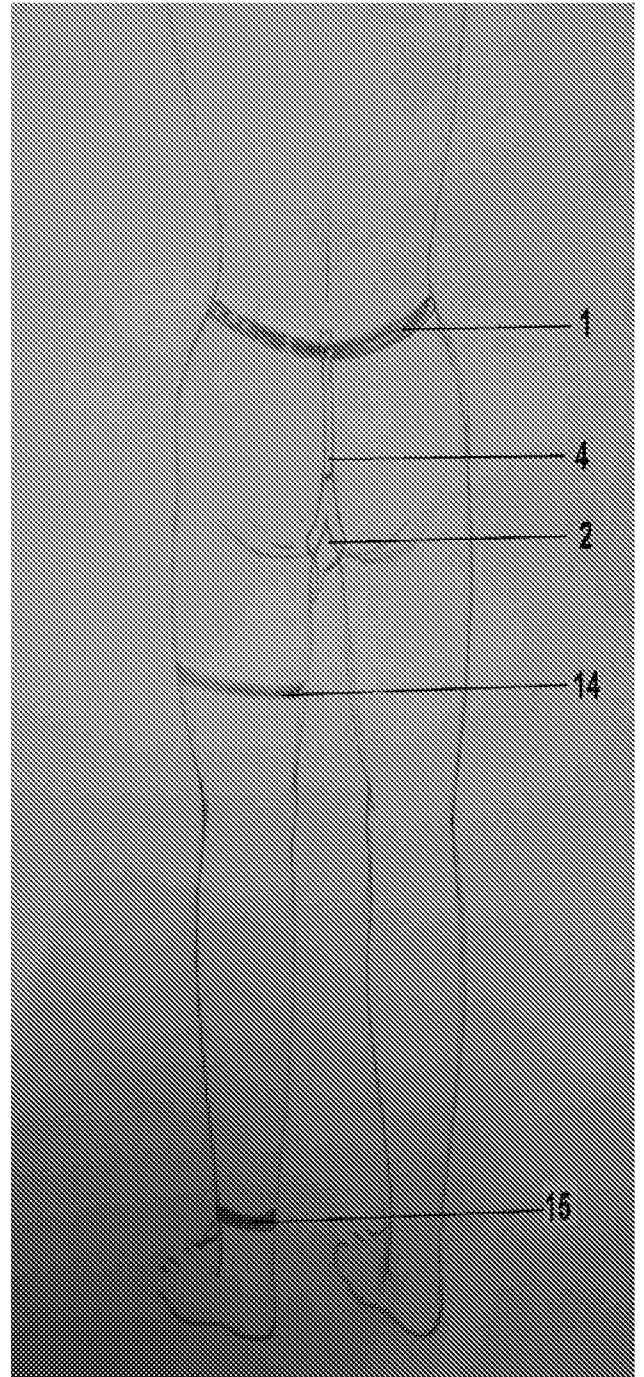
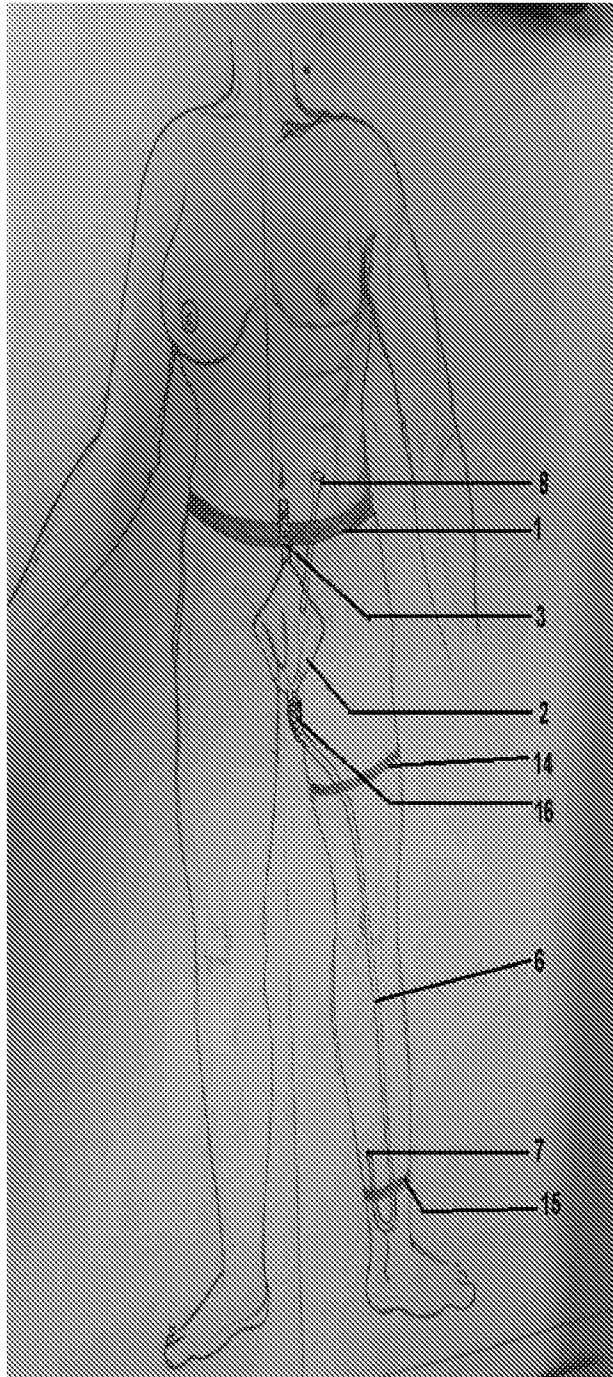


Figure 1

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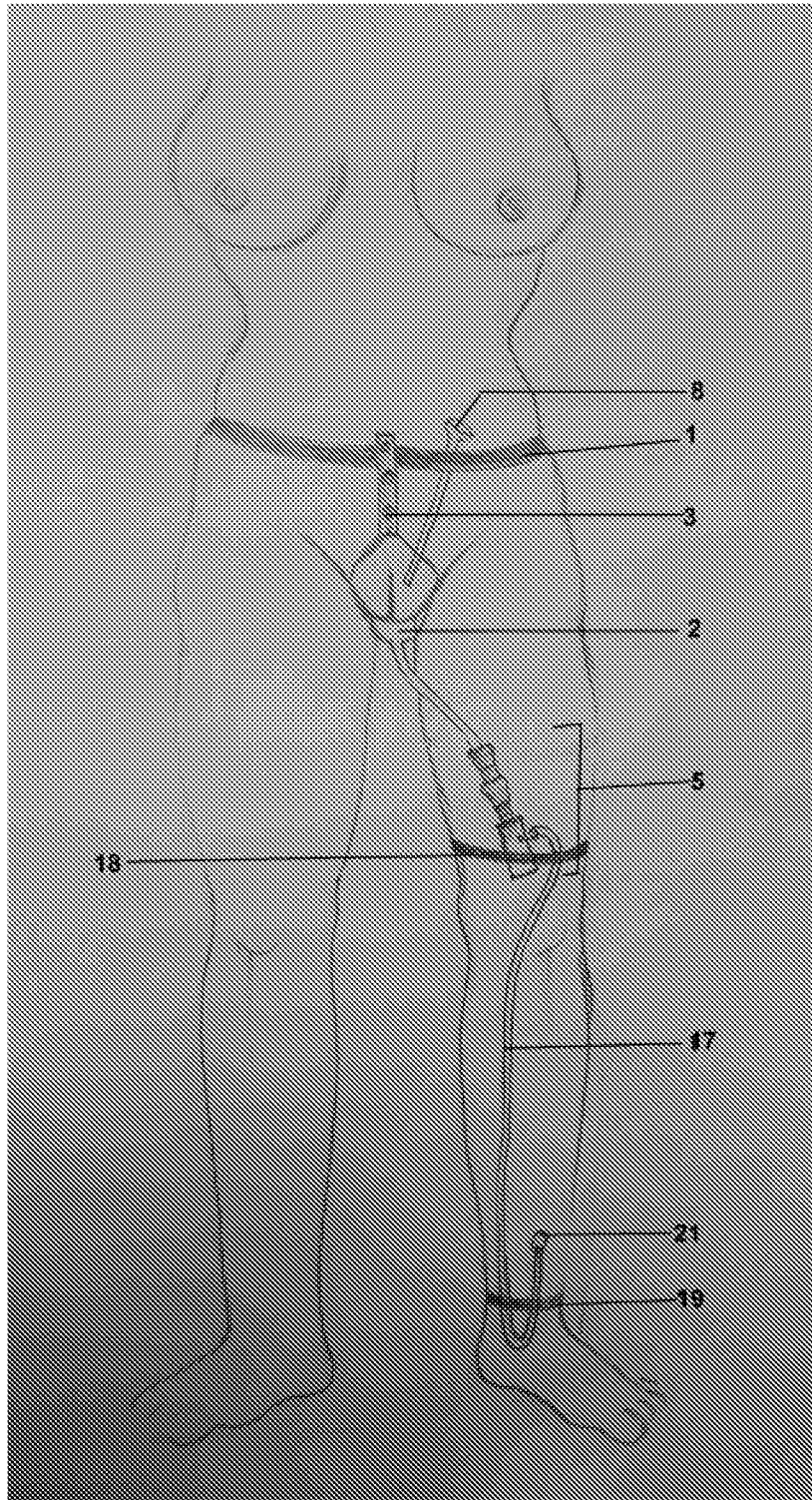


Figure 2

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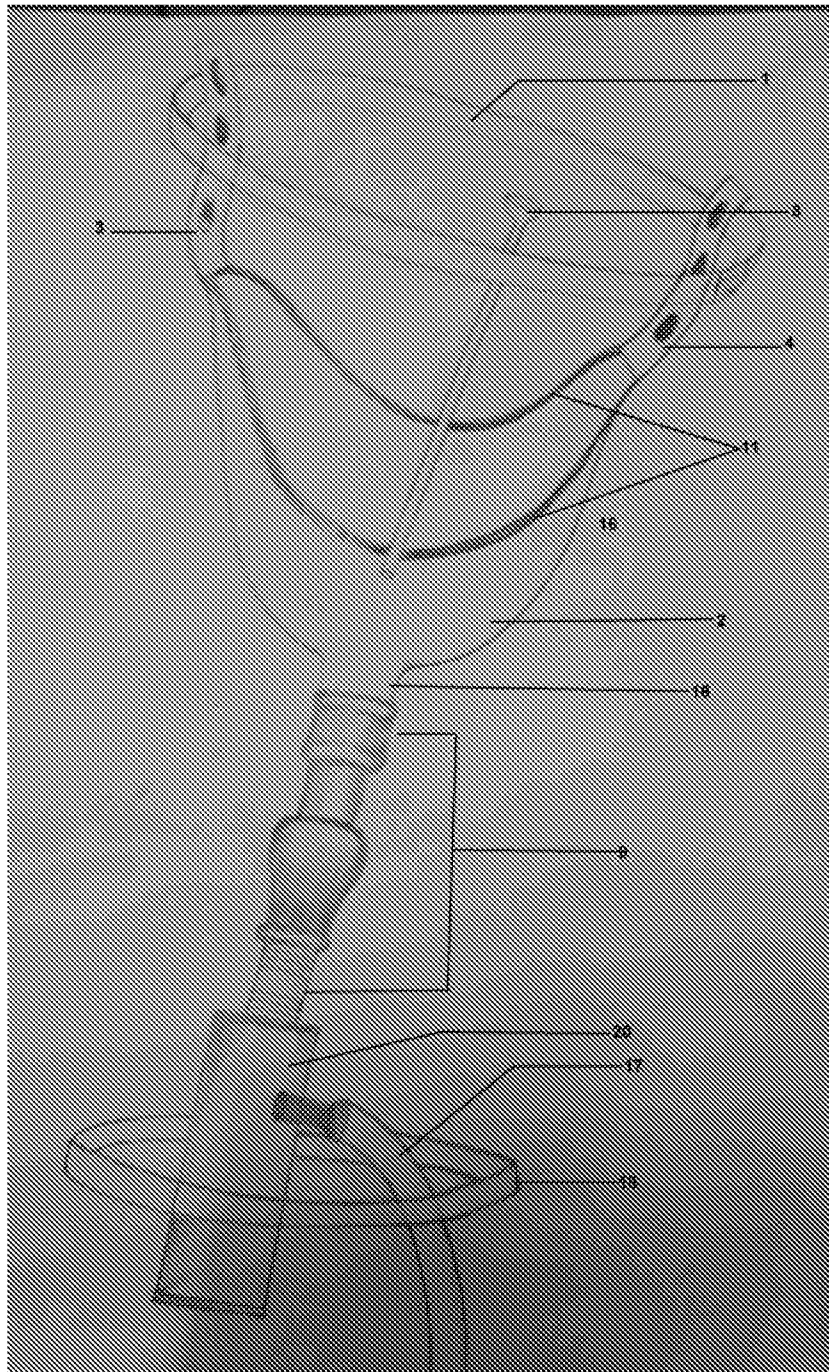


Figure 3

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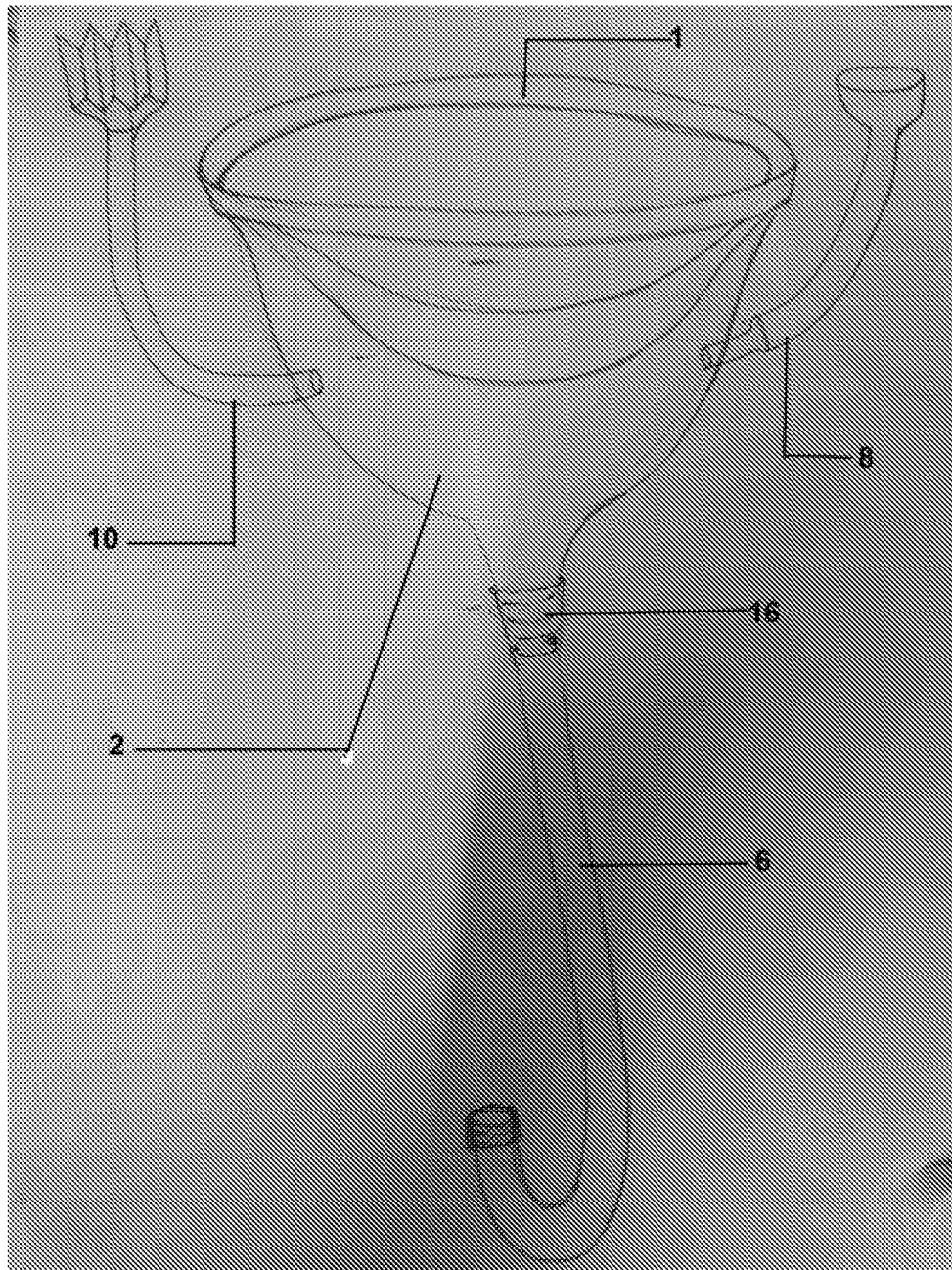


Figure 4

INTERNATIONAL SEARCH REPORT

International application No
PCT/IN2018/050897

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61F5/451 A61F5/442
ADD.

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)

A61F

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 practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 107 847 384 A (PARK HEON GYU) 27 March 2018 (2018-03-27)	1-9
Y	paragraph [0002] paragraph [0044] paragraph [0049] paragraph [0052] - paragraph [0054] paragraph [0058] - paragraph [0066] paragraph [0068] - paragraph [0071] paragraph [0083] - paragraph [0096]; figures 1-9	10
X	----- US 2016/199213 A1 (MOKRANE MOHAMED [DZ]) 14 July 2016 (2016-07-14) paragraph [0018] paragraph [0025] paragraph [0029] - paragraph [0031] paragraph [0036] - paragraph [0040]; figures 1-6 ----- -/-	1,2,4,5, 10



Further documents are listed in the continuation of Box C.



See patent family annex.

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Jansson Godoy, Nina

INTERNATIONAL SEARCH REPORT

International application No
PCT/IN2018/050897

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2016/051395 A1 (UGARTE M D ROLAND RENE [US]) 25 February 2016 (2016-02-25) paragraph [0033] paragraph [0038] - paragraph [0040] paragraph [0042] - paragraph [0044]; figures 1-6 -----	10

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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