

Jan. 8, 1963

E. I. O'BRIEN

3,072,125

CONTINUOUS URINAL FOR FEMALES

Filed July 27, 1959

2 Sheets-Sheet 1

FIG. 1.

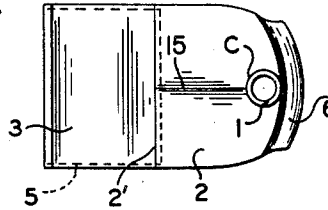


FIG. 2.

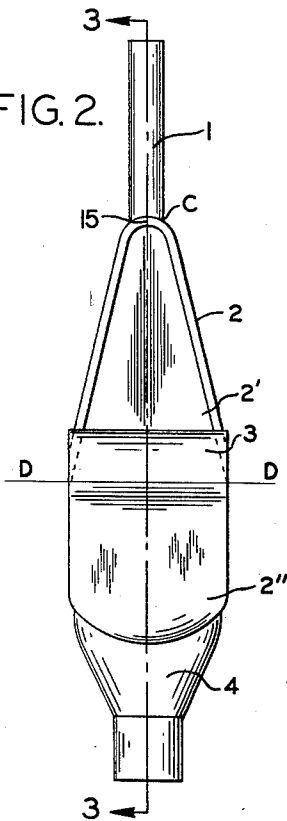


FIG. 3.

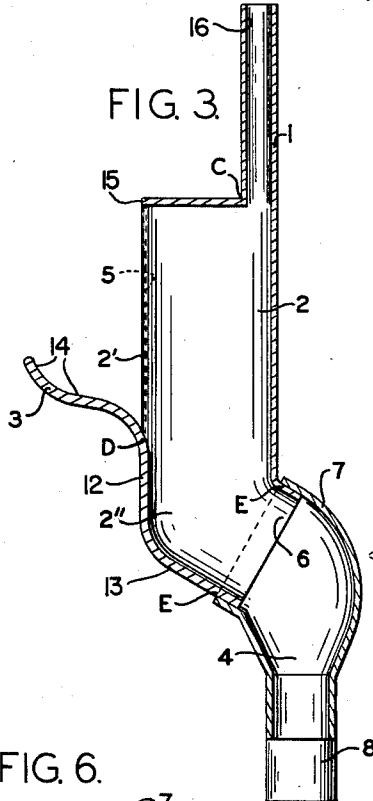


FIG. 4.

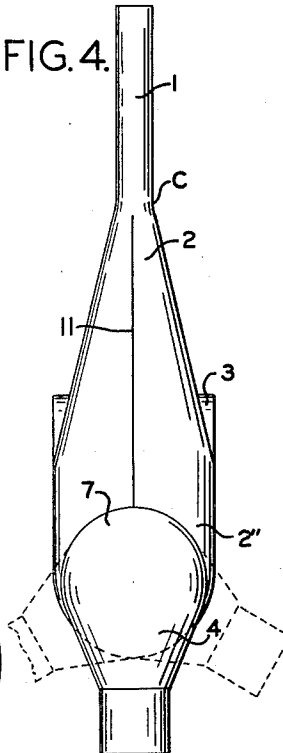


FIG. 5.

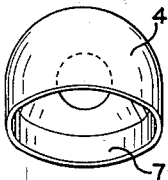
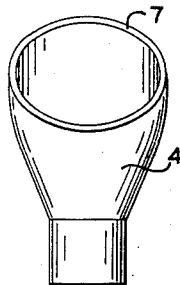


FIG. 6.



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FIG. 7.

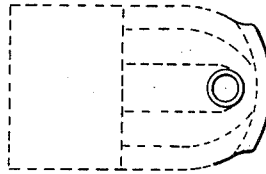


FIG. 10.

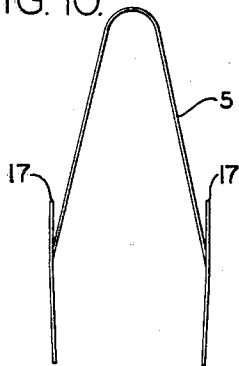


FIG. 8.

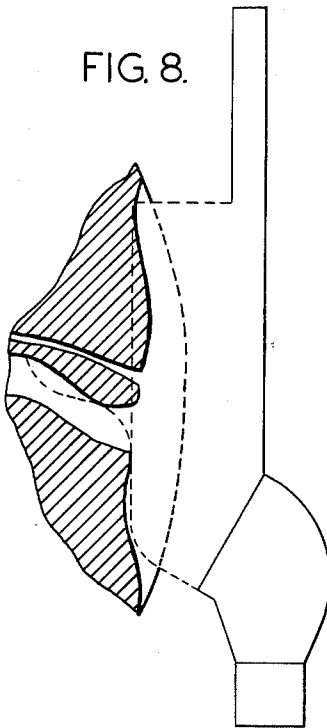


FIG. 9.

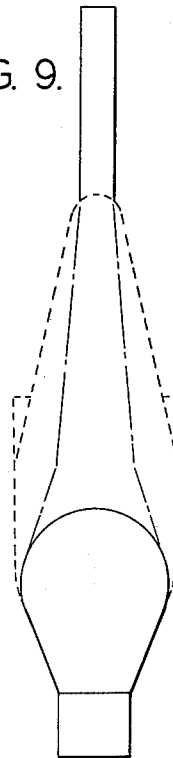


FIG. 11.

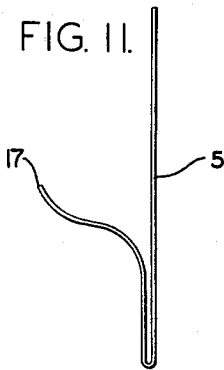


FIG. 12.

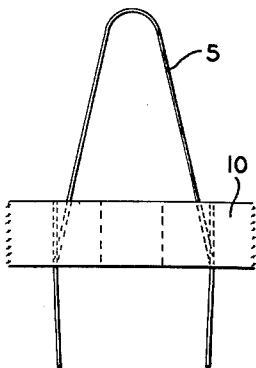
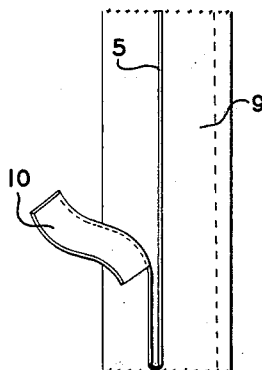


FIG. 13.



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CONTINUOUS URINAL FOR FEMALES

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2 Claims. (Cl. 128—295)

This invention relates to continuous urinals for females and has particular reference to bedfast and/or incontinent persons, especially those so incapacitated as to require constant aid when voiding or cause frequent change of bedding, and/or experience extreme discomfort when moved, placed on a bedpan, or when lying on any extra fold of material.

The primary object of this invention is to provide a device of the character afore-mentioned which is constructed and arranged so it can be attached to the patient for long periods of time, i.e. it can be worn all day and all night without causing discomfort or becoming dislodged under normal conditions. Another object of this invention is to provide a device of the character indicated to eliminate the use of a catheter and minimize the work required to care for an invalid in the home. This is particularly important, in that the patient is free to urinate at will, or in case of incontinence the device will accommodate the drainage while preventing any irritation which may result from constant drainage over the adjacent area.

It is, therefore, an object of this invention to provide a device which is constructed of resilient materials and arranged so it can be readily attached to the adult female by any lay person regardless of skill—or lack of it. It can also be self-attached if the patient is so able.

Various devices now known to the public, all of which may have met with a certain amount of success, require straps, folds of material, or other means of supporting garments to insure efficiency; otherwise, professional assistance is required. On the other hand, because of its minute weight, its unique and novel shape, and because it can be made available in various sizes, this device will operate with the same efficiency at home as it will under professional supervision. In operative practice it has been proven to be thoroughly efficient and, therefore, especially suitable for use by bedfast patients at home.

The embodiment of this invention which is primarily illustrated in the drawings and which will hereinafter be described in greater detail consists of two main units: namely, the urinal body and the reservoir. The urinal body unit is comprised of the air vent extending vertically from the distal apex, and the body proper which incorporates the body opening through which the urethra drains into the urinal base with the aid of the projecting lip which is adapted for insertion into the vaginal orifice. The device further incorporates connector sections by which the reservoir is attached, these connector sections serving as a locking means to hold the reservoir unit in the required position to accommodate available drainage facilities. The reservoir unit is comprised of the body proper which incorporates the connector section correlative to the connector section on the urinal body unit, and the connector section by which a hose is attached to allow drainage into a suitable container.

This two-part embodiment provides the device with the adaptability of individual fit of the urinal body unit with the selected reservoir determined by the individual intensity of urination, i.e. a healthy person incapacitated as a result of an accident will urinate with more force than the person who is chronically ill, therefore, the former would require a larger reservoir unit.

The embodiment of this device further incorporates the use of a flexible steel wire element that is molded into the peripheral edge of the body opening and lateral edges of the projecting lip for the purpose of re-forming

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the body opening and projecting lip when pressure is applied and then released.

Other advantages of this invention should become apparent upon reading this specification and observing the drawings with the corresponding reference characters, in which drawings:

FIGURE 1 shows the apical portion of the urinal body unit with the position of the air vent, the inside of the projecting lip, the outline of the wire element, and the angled connector section to which the reservoir is attached.

FIG. 2 presents the proximal view showing the body opening, the flattened side of the base, and the terminating edge of the projecting lip.

FIG. 3 is a sectional view taken on line 3—3 of FIG. 2.

FIG. 4 is a distal view showing the air vent, synclinal structure of this surface, and the changeable positions of the reservoir.

FIGS. 5 and 6 are apical and proximal views, respectively, of the reservoir.

FIG. 7 is a sectional view taken on line D—D of FIG. 2.

FIG. 8 shows the urinal as operatively attached to the female.

FIG. 9 shows the urinal partially compressed as required to attach it.

FIGS. 10 and 11 show the shape of the wire element.

FIGS. 12 and 13 show the placement of gauze strips over the wire element. These gauze strips are optional.

It will hereby be noted that the size and shape of the urinal body unit are determined by the natural contours of the urogenital cleft of the female to coincide with the scope of the cleft when the patient is in a dorsal recumbent position, in that the proximal edge of the body opening through which the urethra drains apposes the crease between the labia major and the labia minor with the projecting lip inserted into the vaginal orifice and abutting its anterior wall, thereby positioning the device to completely surround all the parts of the cleft that are enclosed within the labia major anterior to the vaginal orifice. It will further be noted that the scope of the urinal body unit from the body opening to the distal raphe is determined by the depth of the urogenital cleft allowing sufficient space to prevent contact with the clitoris and to promote free passage of air through the air vent into the urinal body. This free passage of air is extremely important to prevent a vacuum and allow constant drainage.

It will be further noted that the proximal and distal views of the urinal body unit present a somewhat pear-shaped outline with the minimal width forming the apex. The tapered apical portion including the body opening approximates two-thirds of the length terminating at the maximum width to form the base line of the projecting lip and the top line of the urinal base. The lateral surfaces are symmetrical in respect to the perpendicular center line of the body opening and these surfaces are synclinal in the relation of the distal raphe to the body opening and uniform through a considerable distance to the top line of the base. The base being obversely formed laterally constitutes the lower one-third of the urinal body unit and being somewhat flattened on the proximal surface narrows slightly to form the cup-like structure from which distally the obtusely down-angled opened forms the connector section to accommodate the reservoir. The reservoir is conic in form with the connector section for the urinal body projecting at an obtuse up-angle from the apex while the lower portion tapers to a minimal diameter to form the hose connector section.

Referring now more particularly to the drawings, it will be observed in FIGS. 1, 2, 3, and 4 that the embodiment of the urinal body unit 2 incorporates the air vent 1 as a

slender cylindrical tube extending vertically from the apex distally at C. The length of this air vent 1 is essentially sufficient to avert any encumbrance by the labia major. The tapered apical portion of the urinal body 2 which approximates two-thirds of the length includes the parabolical body opening 2' forming its proximal surface and terminates at its maximum at line D—D. Line D—D further denotes the base line of the projecting lip 3 and the top line of the base 2". The base 2" being obversely formed laterally approximates the lower one-third of the length with the flattened side 12 denoting the proximal surface and tapering somewhat distally, as designated by reference character 13, to terminate at E—E to form an integral part of the obtusely-angled connector section 6, as shown in FIG. 3. The connector sections 6, 7, and 8 will hereinafter be described more fully. The projecting lip 3 beginning at line D—D on the proximal surface and forming the lower boundary of the body opening 2' presents a concavo-convex equilateral structure extending obliquely vertically from the flattened side 12 of the base 2" distally to the body opening 2' with the end slightly reverse-curved, as indicated by 14, to form a cupping edge and terminating at an oblique angle to the body opening 2', as in FIG. 3. This projecting lip 3 terminates longitudinally in a vertical plane.

It will be observed that the reservoir unit 4 presents a conic form with the connector section 7, correlative to the connector section 6 on the urinal body 2, extending at an obtuse upward angle from the rounded apex, as shown in FIGS. 5 and 6, and the lower portion tapering to a minimal diameter to form the connector section 8 by which a suitable hose is attached to allow drainage into a container placed on the floor or fastened to the side of the bed. The primary function of the reservoir unit 4 is to convey the urine from the urinal body unit 2 to the hose and yet restrictively control the discharge force; therefore, the reservoir unit 4 is a necessity to accommodate the intensity of urination and avert the dislodging of the urinal body unit 2. Although the reservoir 4 may be integral with the urinal body 2, if so desired, the complete drain unit including the hose is necessarily on a steady decline to assure complete drainage.

It will be understood that the connector section 6 on the urinal body 2 extending distally at an obtuse down-angle is correlative to the connector section 7 on the reservoir 4, and when these sections are equipped with any one of several suitable connecting methods, the device is provided with the ability to lock the reservoir into the predetermined position necessary to accommodate available drainage facilities, these changeable positions being shown by the broken lines in FIG. 4. The working model, for example and not by way of limitation, has the reservoir unit cemented to the urinal body unit at the required angle and the hose connection to the reservoir by way of a glass tube connector.

Beginning at the medial line 15 of the apex, it will be noted that the lateral surfaces are isometric in relation to the longitudinal axis of the proximal surface and the distal raphe as designated by line 3—3 of FIG. 2 and reference character 11 of FIG. 4, respectively. In relation to the body opening 2' and the flattened side 12 of the base 2", these surfaces are parallel through a considerable distance and then become synclinal to the distal raphe 11, as shown in FIG. 7. More specifically, any horizontal intersection of the urinal body 2 from the rounded apex to the line D—D shows the structure to be a definite U-shape with a variation in width only. The above-described synclinal structure is particularly important, in that, it provides the urinal with a sufficient air passage 16 to prevent a vacuum and further provides the scope essential, as shown in Fig. 8, to prevent contact with the clitoris, thereby averting irritation to the same.

The distal raphe 11, as indicated on FIG. 4, denotes the aperture on the manually constructed element which allows the urinal body 2 to be removed from the mold-

ing form. This aperture is firmly sealed to form the raphe 11, thereby forming the medial line of the afore-mentioned U-shape of any given horizontal intersection of the tapered apical portion.

It will be hereby noted that FIGS. 10 and 11 show the unique shape of the wire element 5 which is used in the peripheral edge of the body opening 2' and the lateral edges of the projecting lip 3 with the ends 17 forming the terminating corners of the projecting lip 3. FIGS. 12 and 13 show the placement of the gauze strips, designated by reference characters 9 and 10, over the wire element 5. The wire element 5 serves as an insert and a reinforcement, though its function is not essentially to reinforce but to re-form the body opening 2' and the projecting lip 3 when pressure is applied and then released, for example and not by way of limitation, when the urinal body unit 2 is partially compressed for initial application to the patient, as in FIG. 9, and then released, the wire element 5 holds the urinal snugly against the labia major.

It should be understood that, since there are several conventional connecting and locking methods which are well known to the public, and numerous wire elements used for reinforcement of various devices, and furthermore, since the use of a reservoir unit is common practice, these procedures as such are no part of this invention. The above-mentioned procedures are relative to this invention only through the combination of known methods and materials used in the process of developing the unique and novel structure shown in the drawings; therefore, I claim:

1. A continuous urinal for females comprising a urinal body and a reservoir, said urinal body having a hollow elongated form with the proximal and distal surfaces presenting a somewhat pear-shaped outline laterally to coincide with the urogenital cleft of the female patient when she is in a dorsal recumbent position, the minimal width of this pear-shaped outline forming the vertex of a parabola-shaped body opening and the apex of the urinal body unit which is rounded to coincide with the front angle of the prepuce in the female urogenital cleft, the apical portion of said elongated form tapering to the maximum width two-thirds of the length from the median of the apex and terminating at the top line of the base of the body unit, a lip projecting from the lower boundary of said body opening, said parabola-shaped body opening being formed in the proximal surface of the tapered apical portion and its peripheral edge including said projecting lip being inserted in the vaginal orifice to completely surround all parts of the urogenital cleft which are enclosed within the labia major anterior to the vaginal orifice, said projecting lip being a concavo-convex equilateral structure extending obliquely vertically and terminating in a vertical plane and distally to the body opening, said base comprising approximately the lower one-third of the length of the urinal body unit and being obversely formed laterally with the proximal side of said base being flattened and then tapering somewhat distally to terminate with its synclinal lateral and distal surfaces in the form of an obtusely down-angled connector section to which said reservoir is attached, said reservoir being conic in shape and integrally incorporating an obtusely up-angled connector section, correlative to the connector section on the urinal body unit, extending from its rounded apex, the lower portion of said reservoir tapering to a minimal diameter to form the connector section by which a suitable hose may be connected to allow drainage into a container placed on the floor or fastened to the side of the bed, said urinal body integrally incorporating an air vent which is a slender cylindrical tube extending vertically from the distal apex and being of sufficient length to avert any encumbrance of the labia, said urinal body incorporating a flexible steel wire element having the unique shape required to be molded into the peripheral edge of the body opening and the lateral

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edges of the projecting lip with the soldered ends of the wire terminating in the ending corners of the projecting lip.

2. A continuous urinal for females constructed of resilient material and comprising an elongated urinal body unit provided with a parabolic body opening in the proximal surface thereof, a lip projecting from the lower boundary of said body opening and a base portion below said body opening, the peripheral edge of said body opening being adapted to appose the crease between the labia major and the labia minor to completely circumscribe the front angle of the prepuce and with the aid of said projecting lip to completely surround all the parts of the urogenital cleft enclosed within the labia major anterior to the vaginal orifice, the proximal side of said base portion being flattened and said projecting lip extending obliquely vertically from said flattened side of said base portion and having a concavo-convex shape to form a cupping edge and be adjustably inserted into the vaginal ori-

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fice with its terminating edge abutting the anterior wall of the vagina so that no pressure is applied to the urethra, said peripheral edge of said body opening and the lateral edges of said projecting lip incorporating a flexible steel wire element of the character essential to hold the device snugly within the labia major and the projecting lip within the scope of the vaginal orifice, said wire element obviating complete collapsibility when pressure is applied.

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