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[21] Appl. No. 723,450
[22] Filed April 23, 1968
[45] Patented Oct. 6, 1970

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[54] URINARY APPLIANCE
6 Claims, 6 Drawing Figs.

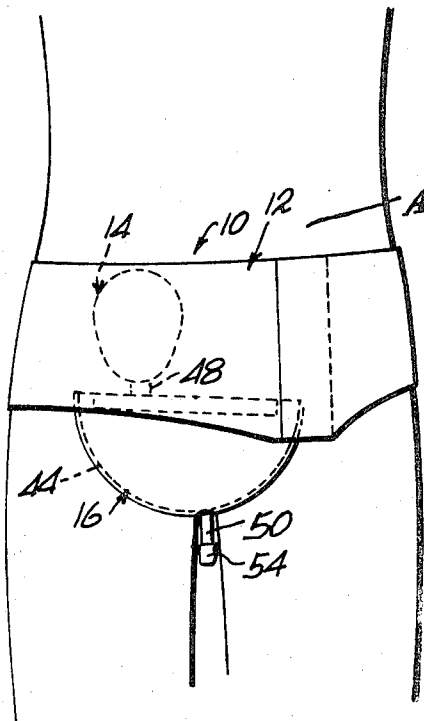
[52] U.S. Cl..... 128/283,
128/295
[51] U.S. Cl..... A61f 5/44
[50] Field of Search..... 128/283,
294, 295

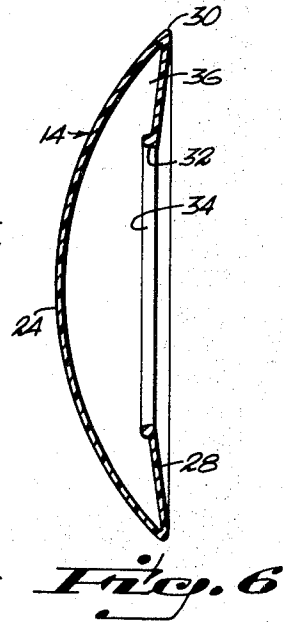
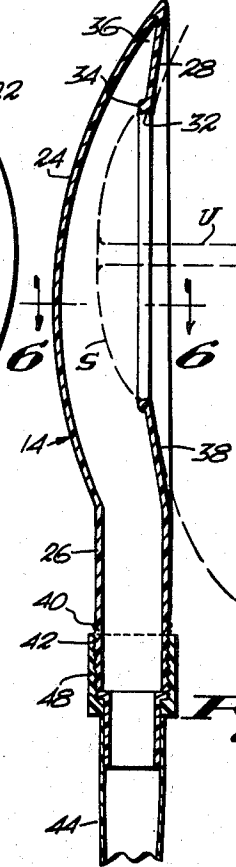
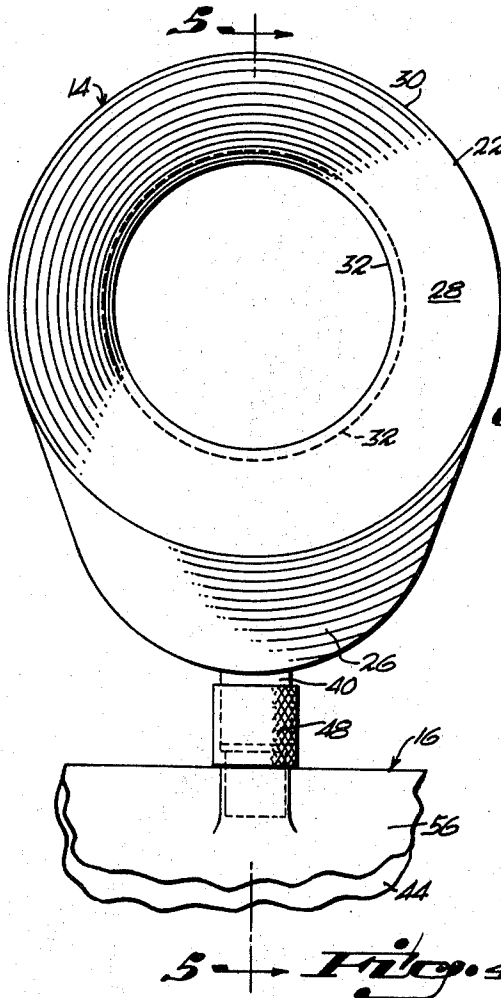
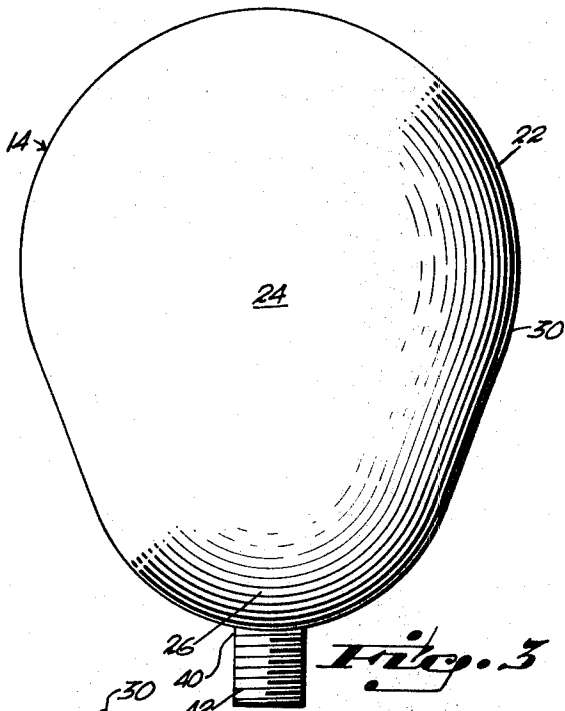
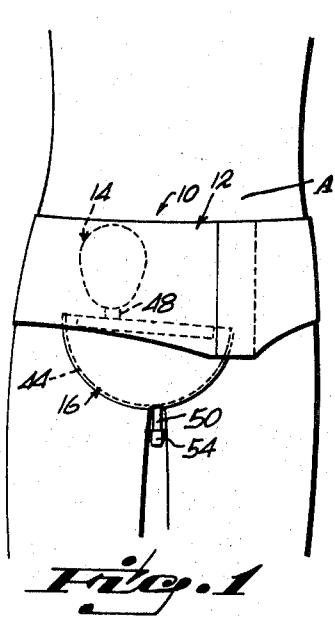
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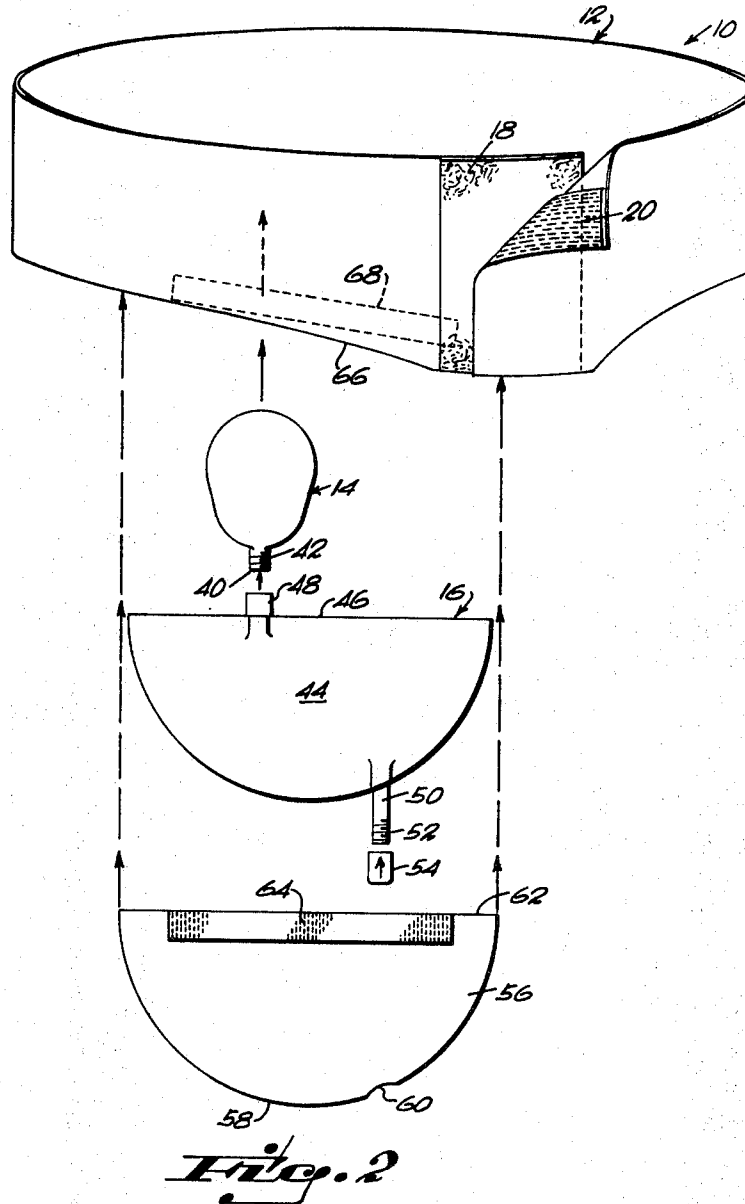
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ABSTRACT: A urinary appliance for use with a stoma of a diverted ureter and including a relatively rigid, shell-like collector juxtapositionable over the stoma for capturing urinal drainage and having a peripheral seal maintained by a wide abdominal belt from which is suspended a pubic-area reservoir communicating with a drainage trap of the collector, and in which filling of the reservoir causes expansion and tends to produce a negative pressure in the collection system to insure drainage from the diverted ureter.





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URINARY APPLIANCE

Modern surgical procedures have enabled patients to continue substantially normal lives by redirecting the ureter to an abdominal stoma. The redirected ureter necessitates means for collecting normal bladder drainage. Many devices have been proposed for this purpose. However, due to inadvertent leakage, awkwardness of the appliances, etc., there is still a crying demand for an appliance which is unobtrusive when worn, is efficient in collecting drainage, can be readily maintained in a clean condition, and which minimizes the discomfort of the wearer while permitting him to function in a normal condition.

Primary objects of the present invention are to provide a novel appliance that affords the comfort and efficiency desired by a patient having an abdominal stoma to which a diverted ureter is attached; permit the wearer to function in a manner most closely assuming natural conditions, and more particularly, provides a relatively simple, but unobtrusive urinary collection appliance in which the cooperating parts are readily installed, maintained and are comfortably worn.

These together with other objects and advantages of the invention will become apparent from a consideration of the following description when taken in conjunction with the drawing forming a part hereof, in which:

FIG. 1 is a front elevational view, showing diagrammatically a person's abdomen and showing the appliance installed;

FIG. 2 is an enlarged front elevational view showing the salient components of the appliance separated, and illustrating how they are assembled and installed on an individual;

FIG. 3 is an enlarged elevational view of the collector or receptacle showing the outer surface or that opposite the side engaging the user's abdomen;

FIG. 4 is an elevational view opposite that of FIG. 3, showing the inner side in relation to a fragmentary portion of the reservoir in which urine is collected;

FIG. 5 is a vertical section taken on the plane of line 5-5 of FIG. 4, and showing by phantom lines a fragmentary portion of the abdomen and the stoma with which the appliance cooperates; and

FIG. 6 is a section taken on the plane of line 6-6 of FIG. 5.

Referring to the drawing in detail, and first considering FIG. 1, a portion of a user's abdomen is indicated at A and a diverted ureter U is formed and communicates with the stoma S; see FIG. 5.

Indicated generally at 10 is the urinary appliance which includes an abdominal belt 12, a collector or receptacle 14, and a pubic-area reservoir 16.

The abdominal belt 12 is of sufficient width to afford a comfortable fit without causing excessive pressure on the abdomen, and in effect aids in maintaining the wearer's stomach flat. The belt can be produced from a suitable woven, elastic material, and would be readily launderable. Terminal ends of the belt 12; see FIG. 2, incorporate detachable fastener means 18, 20 such as a Velcro, hooks-and-eyes, grippers, etc., to accommodate and adjust the belt to the waist of the user.

The collector or receptacle 14 comprises a suitably molded body 22 produced from a relatively rigid plastic or the like, and includes an outer, arcuate wall 24 having a tear-drop shape forming a lower trap portion 26. The inner wall 28 diverges from a peripheral sealing edge 30 to a circular opening 32 bounded by a peripheral bead or lip 34. As illustrated in FIG. 5, the stoma S is substantially sealed by the peripheral bead 34, and it will be noted that the inner wall 28 has formed therebeneath a substantially annular groove 36. The lower part 38 of the inner wall 28 forms therewith a trap which includes a nipple element 40 which is externally threaded as indicated at 42; see FIG. 2.

The pubic-area reservoir 16 comprises two general components, an expansible, relatively flat sack or bag 44 which is semicircular, as seen in FIG. 2, and which is sealed about its peripheral edges. The semicircular shape will conveniently conform to the user's pubic-area at the crotch as illustrated in FIG. 1, for example. Integral with bag 44 and generally at the upper edge 46, slightly offset from the center is a nipple or

sleeve 48 which is internally threaded for detachable connection to nipple 40 of the collector 14. Integral with the sack or bag 44 and offset to the opposite side thereof is an outlet tube 50 which is terminally threaded at 52 for removably receiving a closure cap 54 thereon. The offsetting of the outlet tube 50 will dispose this tube generally between the legs of a user; see FIG. 1, and accordingly the user may empty or relieve the accumulation in the bag in a relatively normal manner with a minimum of discomfort and/or embarrassment.

The other component of the reservoir 16 comprises a supporting and covering bag 56 of a readily launderable material, i.e. cotton, linen, etc., which is semicircular as seen in FIG. 2, and which is sealed along its lower edge 58. The edge 58 has formed therein, and in offset relation to the center a hole 60 which accommodates the outlet tube 50 therethrough. The upper edge 62 of the covering bag 56 is unsealed and permits insertion of the flat sack or bag 44 therein. Fixed to outer surface of the bag 56 is suitable detachable fastener means 64 such as Velcro, snap fasteners, etc., which generally parallels the edge 62.

Fixed to the inner surface of the belt 12 and extending a substantial length of the lower edge 66 is a cooperating detachable fastener means 68 also of Velcro, etc. In this manner, the weight of the reservoir, when filled with liquid, is supported by the belt 12, and relatively little tension is applied to the connected nipples 40 and 48.

Considering FIG. 2, the sack 44 is attached by means of nipple 48 to nipple 40 of the collector 14. The sack 44 is encased in bag 56 and the collector 14 is positioned over the stoma S as illustrated in FIG. 5. The fastener means 68 is attached to fastener means 64, and the belt 12 is secured about the user's waist whereby the stoma S protrudes into the opening 32 of the collector and the peripheral edge 30 of the collector generally seals about the lip of the stoma. Suitable drainage tubes can be attached to the outlet tube 50 when the user is sleeping to provide continuous drainage if desired.

Even when a user is lying down, the draining urine will flow out of the stoma, over the edge of bead 34 of the collector and into the peripheral groove 36; note inwardly converging wall 28 traps the discharge. Further, as the bag or sack 56 expands as it becomes filled with liquid, a slight negative pressure is created in the ostensibly closed system. This vacuum or negative pressure aids to draw the discharging liquid out of the diverted ureter, and thus leakage and/or soiling from vent valves and the like are eliminated.

The invention is only limited to what is set forth in the appended claims, and various changes will become apparent by those skilled in the art and within the context of the description of the exemplary embodiment.

I claim:

1. A urinary appliance for use with an abdominal stoma comprising:

an abdominal belt including means for adjustably mounting the belt about a user's waist;

said belt including fastener means adjacent the lower edge thereof;

a collector comprising a hollow, shell-like element removably received beneath said belt and having spaced inner and outer walls defining a peripheral sealing edge for engaging a user's abdomen, said inner wall including an opening for receiving an abdominal stoma therein, said inner and outer walls terminating in an outlet nipple for receiving liquids draining from the stoma;

pubic-area reservoir means comprising a relatively flat bag having an upper nipple detachably connected to said collector outlet nipple;

said bag including a lower outlet tube for draining said reservoir bag;

said reservoir means comprising a support bag removably receiving said reservoir bag and having an opening through which said lower outlet tube extends; and

said support bag including fastener means detachably engagable with the fastening means on said abdominal belt

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whereby the weight of said reservoir means is supported by said belt.

2. The structure as claimed in claim 1 in which said reservoir bag and support bag are relatively flat and are generally semicircular for generally conforming to the pubic-area of a user.

3. The structure as claimed in claim 1 in which said reservoir bag and support bag are relatively flat, said bag nipple and lower outlet tube being offset relative to each other whereby said outlet tube will be disposed as at the crotch of a user in the general pubic-area.

4. The structure as claimed in claim 1 in which said collector inner wall converges inwardly from said peripheral sealing

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edge and forming an inner substantially annular catch groove surrounding the inner wall opening.

5. The structure as claimed in claim 1 in which said collector comprises a lower trap portion formed by said inner and outer walls and terminally communicating with the outlet nipple of said collector.

6. The structure as claimed in claim 1 in which said collector comprises a relatively rigid element, said lower outlet tube of said reservoir means including closure cap means whereby a partial vacuum is caused in the appliance when in use for tending to draw liquids into said reservoir means.

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