

E. G. ECKENRODE.
DRAINAGE APPLIANCE.
APPLICATION FILED JUNE 11, 1913.

1,229,423.

Patented June 12, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

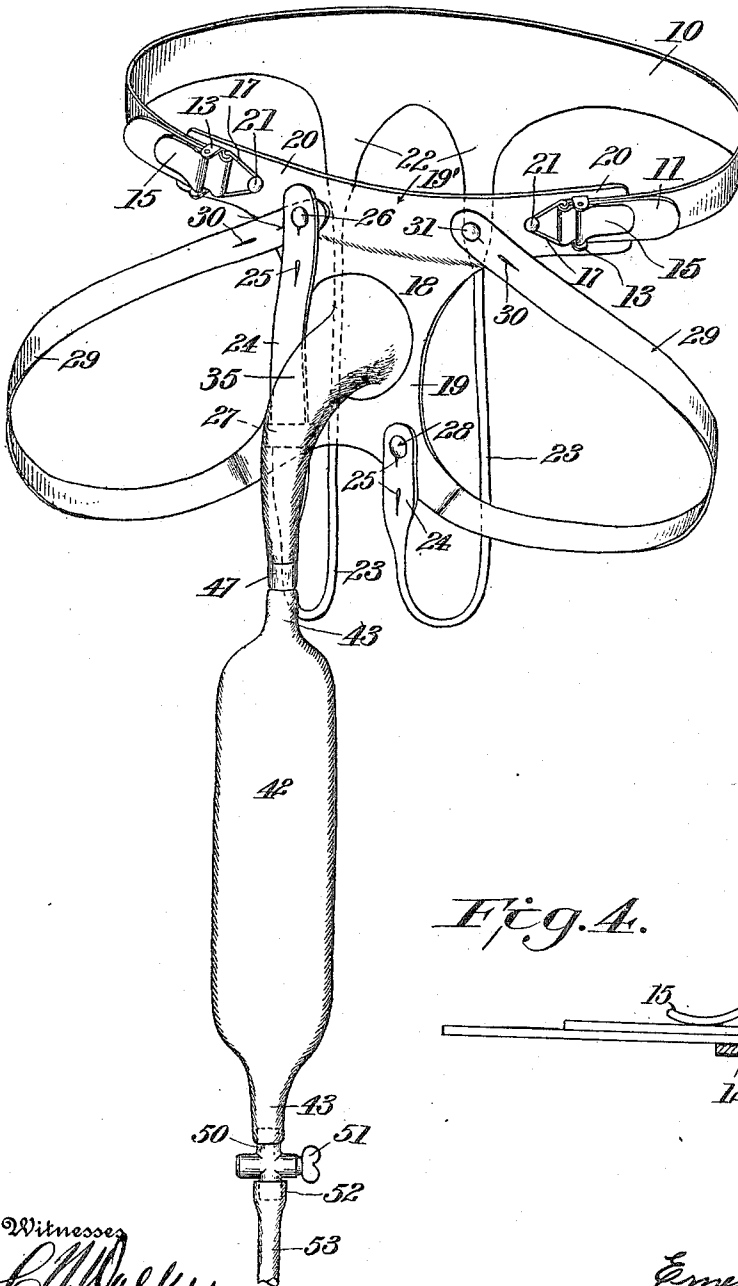
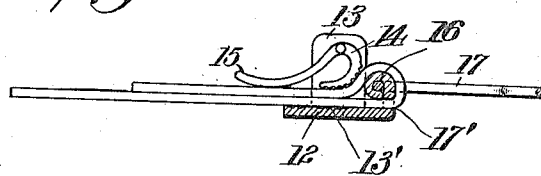


Fig. 4.



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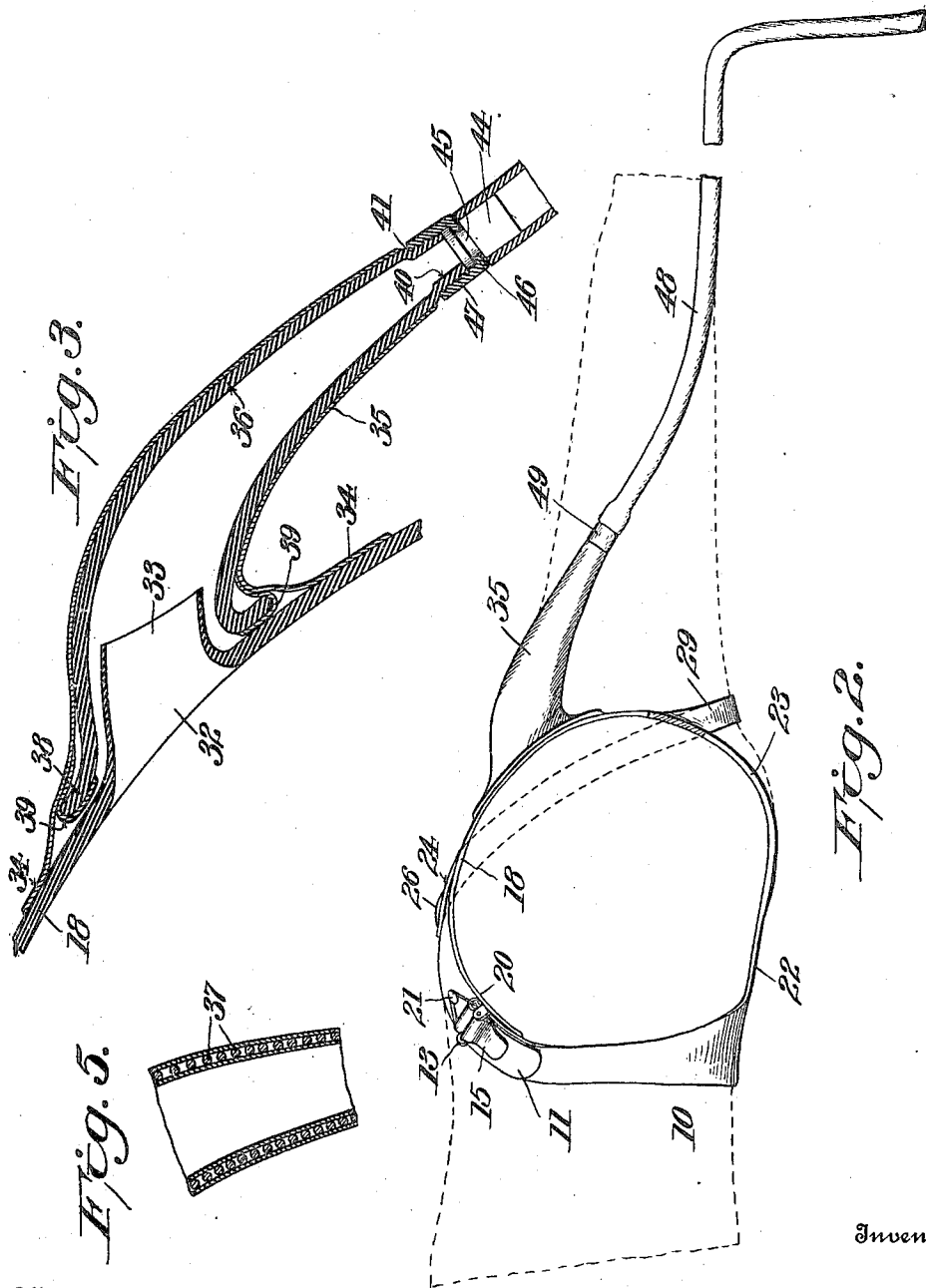
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UNITED STATES PATENT OFFICE.

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DRAINAGE APPLIANCE.

1,229,423.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ERNEST G. ECKENRODE, a citizen of the United States, residing at Baltimore, State of Maryland, have
5 invented certain new and useful Improvements in Drainage Appliances, of which the following is a specification.

This invention relates to surgical appliances and has special reference to a drainage
10 appliance adapted to be worn by persons suffering from certain diseases such as diabetes, prostatitis, incontinency, paralysis, and the like.

One object of the invention is to improve
15 the general construction of devices of this character.

A second object of the invention is to provide an improved and novel means of supporting such a device on the body of the
20 user so that no metal or hard parts may come in contact with the body.

A third object of the invention is to provide a novel construction which will prevent collapse of the inlet end of the drainage
25 passage common in such devices.

A fourth object of the invention is to provide means in such a device which will prevent the drainage tube from being closed by
twisting.

30 With the above and other objects in view the invention consists in general of certain novel details of construction and combination of parts hereinafter fully described, illustrated in the accompanying drawings,
35 and specifically claimed.

In the accompanying drawings, like characters of reference indicate like parts in the several views, and:—

40 Figure 1 is a perspective view of the device as preferably arranged when the wearer is moving about.

Fig. 2 is a perspective view of the device as used when the wearer is reclining in bed.

45 Fig. 3 is an enlarged detail section taken longitudinally through the neck of the device.

Fig. 4 is an enlarged detail section of a certain adjusting buckle used herewith.

50 Fig. 5 is a section showing a portion of a modified form of reinforcing tube used herewith.

In carrying out the objects of the invention there may be employed a number of different embodiments as will be readily understood but in the embodiment shown in the accompanying drawings there is provided certain means for supporting the de-

vice on the wearer's body wherein is provided a waist band 10 of any preferred material, such as soft elastic rubber or canvas
60 coated with rubber. This waist band is arranged to extend partly around the waist of the wearer and terminates at the front in spaced ends 11 which are held by certain adjusting devices now to be described. Each
65 of these adjusting devices consists of a plate 12, of metal or other rigid substance, whereon are formed ears 13. Pivoted to these ears is a plate which is bent intermediate its ends to provide angularly disposed portions 14 one of which is provided
70 with a finger piece 15 so that it may be rotated about its pivotal axis. This plate is so bent and arranged that its shorter end is curved and roughened and acts as a clamp
75 in connection with the roughened portion 13' of the plate 13 when in the position shown in Fig. 1 but when the finger piece is raised sufficiently this short end will move
80 away from the plate 13. Furthermore the arrangement is such that the clamp will substantially lock when in the position shown in said figure since any releasing
movement will be resisted to the tendency to more tightly compress the material held
85 between the short end and the plate 12. One end of the plate 12 is bent to form a tube 16 and in this tube is received one side of the triangular attaching loop 17. Adjacent the
90 tube the plate is slotted as at 17'.

Each of the ends 11 is led through a respective slot 17', passed through the loop 17 attached to said plate and then led back between itself and the pivoted clamp. By this means the attaching loops 17 may be prop-
95 erly positioned on said ends.

At 18 there is provided a body piece preferably of soft rubber which is roughly rectangular in outline although the sides 19
100 are concave so as to more comfortably fit the wearer. The upper part of this body piece is thickened as at 19' to form a continuation of the strap 10. From the upper corners of this body 18 project the wings 20
105 whereon are mounted headed studs 21 arranged to be engaged by the loops 17 and it is to be particularly noted that these wings are wider than the plates 12 so that no part of said plates can touch the wearer's
110 body.

Depending from the back of the band 10 is a pair of spaced straps 22 preferably of elastic rubber. These straps where they join the body band 10 have broad flat ends but

their central portions are rounded as at 23 and each strap terminates in a flat end 24 provided with one or more button hole slots 25. For the purpose of showing two means of attaching these straps to the body piece 18 there is shown at the upper corner of one side of this body piece 18 a button on which the strap on that side may be buttoned after being led through a keeper loop 27 at the bottom corner of the same side of said body piece. On the lower corner of the other side there is provided a button 28 and the strap on this side is buttoned thereon without being led through a keeper loop. It is obvious that either of these arrangements may be used on both sides so that the device will be symmetrical in this respect. Extending from the lower corners of the body piece 18 are leg straps 29 which have their ends provided with button hole slots 30 by means of which these straps may be secured respectively to the button 26 and to a button 31 secured to the remaining upper corner of the body piece 18. By means of these various straps the device may be fitted comfortably yet securely to the wearer and by reason of the peculiar pivotal connection of the ends 11 with the body 18 the body 18 may be properly positioned without twisting of the body band 10. Also, by this pivotal connection freedom of movement is permitted the wearer.

The body piece 18 is preferably made of soft rubber and at its center is provided with an opening 32 from the edge of which depends a flange 33 of thin flexible rubber possessing such a degree of elasticity that it will fit closely to the part of the wearer received therein. This flange forms what is preferably termed the inner neck. Secured to the body piece 18, by any suitable means such as cementing, vulcanizing or the like, is the flange 34 of a curved, funnel shaped member 35 which is preferably formed of flexible soft rubber and which is termed hereinafter the pouch. As ordinarily constructed this pouch is apt to collapse with the result that drainage is prevented and the wearer develops sores. In the present invention, however, means is provided for holding this pouch distended and also for keeping it in proper curved shape. The means employed may be various but as typical of such means there is provided a curved funnel shaped member 36 which fits within the pouch and is made from some rigid material such as hard rubber. It is to be noted that other material may be used, as for instance, soft rubber having a reinforcing wire 37 embedded therein. For convenience this member 36 is termed the reinforcing tube and this tube is provided at its upper end with an outwardly extending flange 38 to which is cemented one edge of a ring 39 of flexible rubber, the other edge of said ring

being cemented to the pouch 35. By this means the tube 36 is flexibly attached to the body piece 18 and at the same time leakage is prevented between the pouch and the tube 36.

At the lower end of the tube 36 is a reduced extension 40, there being a shoulder 41 between said extension and the body of the tube and the extension being threaded exteriorly.

In the arrangement shown in Fig. 1 there is provided a flexible water proof bag 42 of rubber or the like and at each end of this bag is a reduced neck 43. In the upper neck 43 is secured a rigid nipple 44 having a groove 45 extending around its periphery. This groove 45 receives the internal flange 46 of a threaded coupling member 47 which is screwed on the extension 40.

In Fig. 2 a drainage tube 48 is shown connected to the reinforcing tube by a swivel coupling 49, exactly similar in all respects to the coupling just described and therefore not deemed necessary to be specifically shown or described.

The lower neck 43 is fitted with a connection 50 wherein is a turncock 51 and this connection is threaded to receive the swivel coupling 52 of a tube 53 which may extend down the leg of the wearer so that the bag 42 may be emptied from time to time in an unobtrusive manner by turning the turncock 51.

It is to be especially noted that by means of the shoulder 41 the swivel is prevented from jamming and that this swivel connection leaves the several parts free for independent rotation so that no part will close by twisting as the wearer moves. By this arrangement free and unobstructed drainage is at all times provided.

When the wearer is in bed, as in Fig. 2 the drainage tube may be extended over the foot of the bed and in this case the proper inclination is given the tube by raising the wearer's body as shown in said figure.

It is to be noted that under ordinary circumstances the beds commonly used are so arranged that no elevating of the upper part of the bed is necessary to permit working of the apparatus. If however the elevation is not sufficient the same may be attained by raising the head of the bed by placing pillows or the like below the mattress and the springs or by placing a plank across the bed rails beneath the springs.

It is further to be noted that in place of a soft elastic rubber for the body belt there may be substituted other materials such as a canvas webbing impregnated with rubber on both sides. It is also to be noted that the ends of the various straps, these straps being preferably made of elastic rubber are reinforced in the well known manner by molding the strips of canvas webbing in the rub-

ber so that the strip is covered on all parts by rubber. In this connection, too, the backs or bases of the buttons are protected from contact with the skin by placing them between two thicknesses of the rubber in the manner usual in protecting such bases.

Having thus described the invention, what is claimed as new is:—

1. In a drainage appliance, a body piece provided with a pouch, a supporting band having its ends pivotally connected to said body piece, and means swiveled to said pouch to carry off drainage therefrom.

2. In a drainage appliance, a body piece provided with a pouch, and means swiveled to said pouch to carry off drainage therefrom.

3. In a drainage appliance, a body piece provided with a pouch, a receptacle swiveled to said pouch, and a drainage tube swiveled to the lower end of said receptacle.

4. In a drainage appliance, a body piece provided with a centrally disposed opening having a flange depending therefrom to form an inner neck, a pouch secured to said body piece in spaced relation to the inner neck, and reinforcing means arranged within the pouch and extending substantially the length of the latter to hold the pouch in distended position.

5. In a drainage appliance, a body piece provided with a centrally disposed opening having a flange depending therefrom to form an inner neck, a pouch secured to said body piece in spaced relation to the inner neck, and reinforcing means arranged to hold the pouch in distended position, and a flexible connection between the upper end of said reinforcing means and the pouch.

6. In a drainage appliance, a body piece, and a non-collapsible pouch attached thereto.

7. In a drainage appliance, a body piece, and a non-collapsible pouch flexibly attached thereto.

8. A drainage appliance provided with a non-collapsible pouch, and a drainage tube swiveled thereto.

9. In a drainage appliance, a flexible pouch, and a hard rubber reinforcing tube fitted within said pouch and extending substantially from end to end thereof.

10. In a drainage appliance, a flexible pouch, and a reinforcing member fitted within said pouch and extending substantially from end to end thereof, and a flexible connection attached to said pouch and tube.

11. In a drainage appliance, a body piece, a flexible pouch provided at its upper end with a flange attached to said body piece, a rigid reinforcing tube located within said pouch and provided at its upper end with a flange, and a flexible ring hermetically attached at one edge to the inside of the

pouch and at the other edge to the flange of said tube.

12. In a drainage appliance, a body piece, a flexible pouch provided at its upper end with a flange attached to said body piece, a rigid reinforcing tube located within said pouch and provided at its upper end with a flange, a flexible ring hermetically attached at one edge to the inside of the pouch and at the other edge to the flange of said tube, and a flexible neck within the pouch and spaced therefrom.

13. In a device of the character described, a body piece, a waist band, pivotal securing means between the body piece and the waist band, straps depending from the waist band at the rear thereof and intermediate the ends of the waist band and engaging the lower end of the body piece, and leg straps, extending from the lower end of the body piece on opposite sides thereof and engaging the body piece near the upper end thereof.

14. A drainage appliance including in combination a body piece having a central aperture, a receptacle secured to said body piece, said receptacle being larger at one end than at the other end with its larger end in registration with the opening in the body piece, reinforcing means for the walls of said receptacle to prevent collapse of the walls under ordinary pressures and a tube connected with the smaller end of said receptacle.

15. In a device of the character described, a pouch, a reinforcing element for the walls of said pouch to prevent collapse thereof under pressure incidental to its use and a drainage tube connected to said pouch.

16. In a device of the character described, a body piece having a central aperture provided with an upstanding flange, a funnel shaped receptacle provided at its larger end with a laterally extending flange and engaging the body portion around the upstanding flange of the aperture therein, with said upstanding flange projecting within said receptacle and a soft rubber inclosure for said receptacle secured at its upper end to the body portion and to the receptacle.

17. In a drainage appliance a pouch, reinforcing means within the pouch extending from end to end of the latter to prevent collapse of its walls under pressure, a drainage tube, and a swiveled connection between the discharge end of the pouch and the drainage tube.

In testimony whereof I affix my signature in presence of two witnesses.

ERNEST G. ECKENRODE.

Witnesses:

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AMELIA I. RIEDEL.