Jan. 12, 1960 P. D. GREEN 2,920,625

INFANT'S DIAPER SUBSTITUTE

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Fig. 7

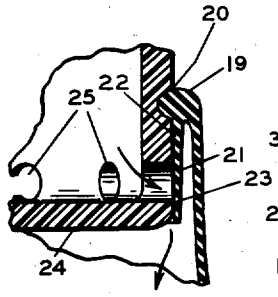


Fig. 5

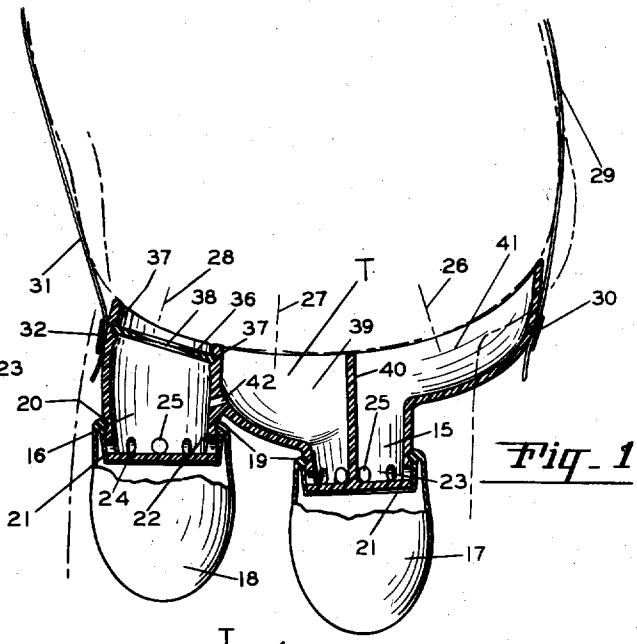


Fig. 1

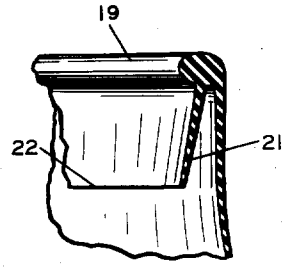


Fig. 6

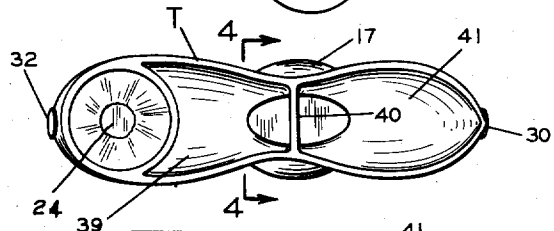


Fig. 3

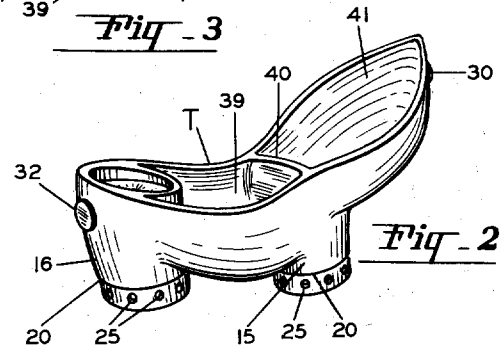


Fig. 2

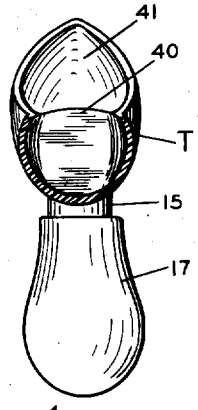


Fig. 4

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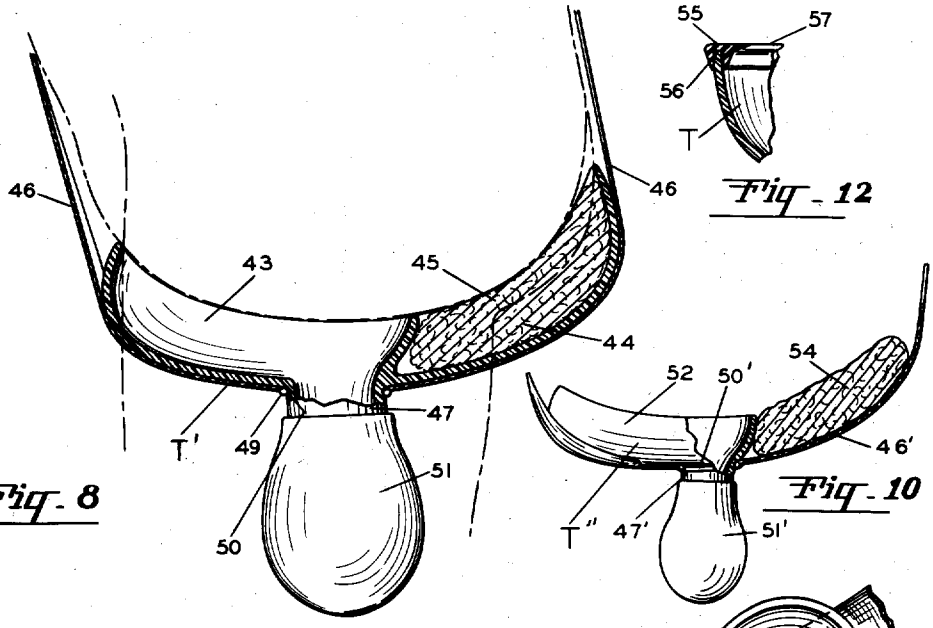


Fig. 8

Fig. 12

Fig. 10

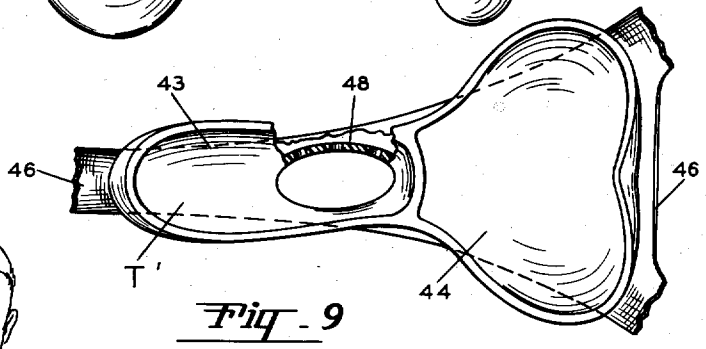


Fig. 9

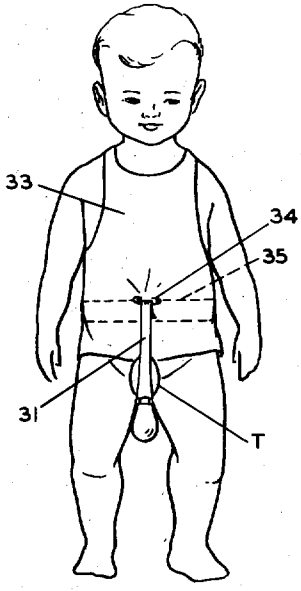


Fig. 13

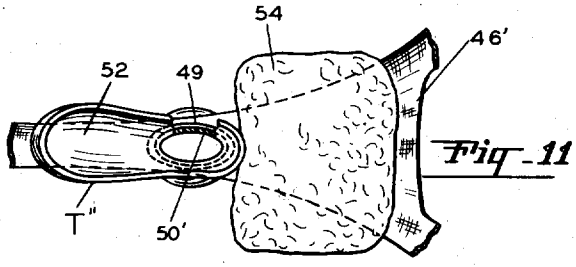


Fig. 11

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INFANT'S DIAPER SUBSTITUTE

Paul D. Green, Dexter, Oreg.

Application August 2, 1957, Serial No. 675,853

4 Claims. (Cl. 128—283)

The present invention relates to an infant's diaper substitute, and more particularly to such an appliance for catching and holding urine and feces, replacing diapers used for infants.

The primary object of the invention is to provide an infant's diaper substitute which can be easily and comfortably applied to the body of an infant to effectively catch and hold the waste material discharged by the infant.

Another object of the invention is to provide an infant's diaper substitute of the class described above that can be emptied, rinsed, cleansed, and sterilized with a minimum of effort.

A further object of the invention is to provide an infant's diaper substitute of the class described above which will hold the waste material without leakage until the appliance is removed from the infant.

A still further object of the invention is to provide an infant's diaper substitute of the class described above which will maintain the urine out of contact with the body of the infant until disposed of.

Another object of the invention is to provide an infant's diaper substitute of this general character which is inexpensive to manufacture, simple to use, and which is durable in service.

Other objects and advantages will become apparent in the following specification when considered in the light of the attached drawings, in which:

Figure 1 is a vertical sectional view of the invention illustrated in applied position on the body of an infant, shown in broken lines.

Figure 2 is a perspective view of the invention.

Figure 3 is a top plan view of the device.

Figure 4 is a transverse sectional view taken along the line 4—4 of Figure 3, looking in the direction of the arrows.

Figure 5 is an enlarged fragmentary detailed sectional view of a portion of the device.

Figure 6 is an enlarged fragmentary sectional view of the urine receiving bag.

Figure 7 is a perspective view of a sealing valve used with the device, shown partially broken away and in section for convenience of illustration.

Figure 8 is a vertical sectional view of a modified form of the invention.

Figure 9 is a plan view of the structure shown in Figure 8, partially broken away and in section for convenience of illustration.

Figure 10 is a side elevation, partially broken away and in section, of a second modified form of the invention.

Figure 11 is a plan view of the structure shown in Figure 10, partially broken away and in section for convenience of illustration.

Figure 12 is a detailed sectional view illustrating the seal structure.

Figure 13 is a perspective view of the device applied to an infant.

Referring now to the drawings in detail wherein like reference characters indicate like parts throughout the several figures, and referring particularly to Figures 1 through 7 wherein a preferred form of the invention is illustrated, the reference character T indicates generally an infant's diaper substitute constructed in accordance with the invention.

The device T has a generally trough-like formation and is adapted to be positioned between the legs of the user.

The trough T is provided with a pair of spaced generally cylindrical sumps **15** and **16** arranged in depending relation to the trough T. The sumps **15** and **16** are provided, respectively, with urine receiving bags **17** and **18** formed of any suitable material such as plastic, rubber, or the like.

The urine bags **17** and **18** have open upper ends encompassing the lower ends of the sumps **15** and **16**, and are each provided with a resilient bead **19** extending annularly about the open upper end thereof.

The sumps **15** and **16** are each provided with an annular groove **20** extending circumferentially thereabout above the lower edges thereof. The bead **19** of the urine bags **17** and **18** are, respectively, seated in the grooves **20** on the sumps **15** and **16** to hold the urine bags **17** and **18** in tight contact with the sumps **15** and **16**. An annular downwardly tapering lip **21** depends from the beads **19** in contact with the outer face **22** of the lower end portion **23** of each of the sumps **15** and **16**.

The lower end portions **23** of the sumps **15** and **16** adjacent the bottom wall **24** thereof are provided with a plurality of radially extending holes **25** which are normally closed by the annular lip **21**. Urine collecting in the sumps **15** and **16** passes through the holes **25** and downwardly between the lip **21** and the outer surface **22** of the sumps **15** and **16**.

In the event that urine contained within the bags **17** and **18** tends to flow back into the sumps **15** and **16**, the annular lip **21** serves as a check valve to retain the urine in the bags **17** and **18**.

Referring now to Figure 1, a broken line **26** indicates the position of the rectum of the user of the device with the broken line **27** representing the position of the urine passage of the female and the broken line **28** representing the position of the penis of the male.

The device T is held in position on the body of the user by a hanger strap **29** secured to a button **30** integrally formed on the rear of the trough T. A strap **31** is secured to a button **32** integrally formed on the forward end of the trough T and the straps **29**, **31** are secured to a garment **33** of the user by means of safety pins **34**, as best illustrated in Figure 13. The broken line **35** in Figure 13 indicates the position of a belt which may be used to support the straps **31**, **29** when desired.

In the use and operation of the preferred form of the invention, as illustrated in Figures 1 through 7, a flexible disk **36** is mounted in an internal groove **37** in the upper end of the sump **16** to adapt the appliance T for use by males. The disk **36** has a central opening **38** formed therein through which the penis of the male extends so as to seal the sump **16**, maintaining the contents thereof out of contact with the body of the user. The flexible disk **36** is formed of highly flexible material and tapers toward the center opening **38** to prevent any possible injury to the user.

In the use of the device T by a male, the testicles are positioned in a compartment **39** rearwardly of the sump **16**. A partition **40** extends transversely of the trough T and the sump **15**, separating the compartment **39** from a second compartment **41** arranged beneath the rectal opening for receiving fecal matter discharged therefrom. Liquid material in the fecal matter drains through the

openings 25 in the sump 15 and is collected in the bag 17.

In the use of the device T by females, urine enters the compartment 39 and is collected in the bag 17 past the lip 21. A port 42 connects the compartment 39 with the sump 16 to provide an overflow connection therebetween to accommodate excesses in urine discharge.

The device T and the urine bags 17 and 18 are formed of flexible material so that they will conform to the body and maintain a seal therewith during movement of the user.

Referring now to Figures 8 and 9, a modified form of the invention is illustrated wherein the trough T' is formed with a pair of compartments 43, 44 with the compartment 43 positioned to receive urine from both the male and female, and the compartment 44 carries an absorbent material 45 for receiving the fecal matter. A continuous truss 46 supports the appliance T' by having the sump 47 thereof extend through an opening 48 formed in the truss 46. The opening 48 is provided with an annular bead 49 extending thereabout which is seated in an annular groove 50 formed in the sump 47 at the base thereof. The truss 46 is supported from the body of the user by any desired arrangement.

The sump 47 and urine bag 51 are constructed identically to the sump 16 and urine bag 18 so that urine collecting in the compartment 43 will pass into the urine bag 51 where it will remain until removed.

A second modified form of the invention is illustrated in Figures 10 and 11 wherein a trough T'' is provided with a single compartment 52 for receiving urine only. The trough T'' is supported by a truss 46' identical to the truss 46. A sump 47' identical to the sump 47 has an annular groove 50' for sealing engagement with the truss 46'. A urine bag 51' identical to the urine bag 51 is supported on the sump 47'. An absorbent pad 54 is supported on the truss 46' in position for catching and holding the fecal material discharged from the user.

In Figure 12, a further modified portion of the invention is illustrated wherein the trough T has a sealing gasket 55 of generally U-shape engaged over the upper edge 56 thereof. The gasket 55 has a feather edge 57 extending inwardly therefrom for engaging the body of the user to assist in sealing the trough T to prevent liquids from passing between the upper edge 56 of the trough T and the body of the user.

The troughs T, T', and T'' may be readily removed from the body of the user by detaching the straps 29, 31 or trusses 46, 46', and can be disassembled for emptying and cleaning without the use of special tools.

In applying and removing the device from the body of a female, no particular assembly problems are involved, however, in the case of applying the device to a male, the flexible disk 36 is removed from the groove 37 within the sump 16 and has the opening 38 thereof engaged over the penis. When the trough T is brought up beneath the body of the user the operator can reach with his fingers between the body of the user and the upper edge of the trough T, forcing the disk 36 into the groove 37, after which the connection of the straps 29 and 31 can be made in the usual manner.

While the invention has been described with particular reference to its use by infants, it is well adapted when constructed in proper sizes to be used by adults who have lost control of their elimination processes.

Having thus described the preferred embodiments of the invention, it should be understood that numerous structural modifications and adaptations may be resorted to without departing from the scope of the appended claims.

What is claimed is:

1. An infant's diaper substitute comprising an elongated flexible trough, means supporting said trough in position to collect waste materials from the body, a sump integrally formed on said trough, said sump having a plurality of discharge openings at the lower end thereof, a flexible urine bag detachably secured to and depending from said sump and encompassing said openings, and an annular flexible check valve integrally formed with the upper edge of said bag depending therefrom within said bag and engaging over the outer ends of said openings to permit flow outwardly only therefrom.

2. A device as claimed in claim 1 wherein said sump is provided with an annular groove extending thereabout and said urine bag is provided with an integral annular bead at the upper end thereof engaging in said groove with said check valve integrally depending from said bead.

3. A device as claimed in claim 1 wherein a flexible sealing ring is positioned in the upper end of said sump with said sealing ring having a penis receiving opening extending centrally therethrough.

4. A device as claimed in claim 3 wherein said sealing ring engages in an annular groove formed internally of said sump, and said ring tapers inwardly toward said opening.

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