

[54] **OSTOMY BAG AND DEODORIZING PACKET THEREFOR**

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[52] U.S. Cl. **128/283**
 [51] Int. Cl. **A61f 5/44**
 [58] Field of Search **128/283**

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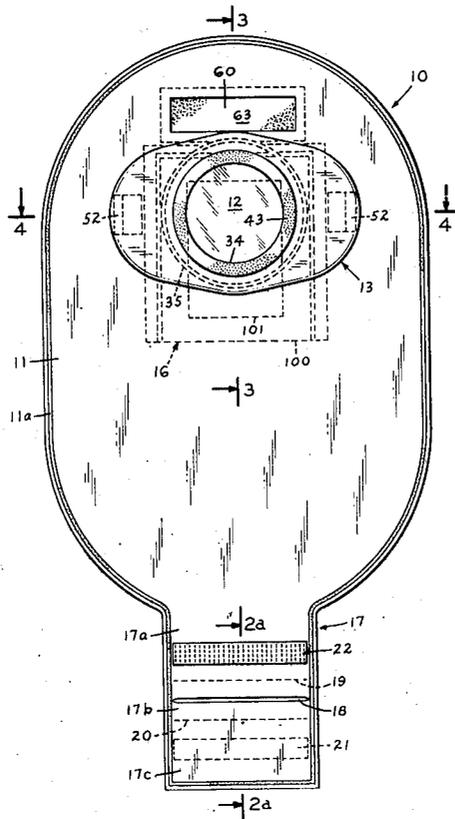
[57] **ABSTRACT**

The ostomy bag comprises a receptacle pouch con-

taining an inlet aperture and means for providing communication between the pouch interior and the ostomy orifice on the surface of the wearer's body. This means comprises (a) a thin, flexible, essentially planar member containing a conduit which provides communication between the pouch inlet aperture and the ostomy orifice; (b) an upwardly projecting rim surrounding the conduit, over which the pouch inlet aperture is fitted; (c) a continuous groove in one surface of the planar member which surrounds the rim and in which the receptacle pouch is mounted, and (d) a recess in the surface of the planar member opposed to the grooved surface, this recess surrounding the conduit and adapted to receive a gasket or suitable means for sealing the ostomy bag to the body. The planar member is provided with means for affixing it to the body by use of a belt.

The ostomy bag contains a gas permeable section in the pouch wall to permit release of intestinal gas from the interior to the exterior of the pouch. The pouch also contains a deodorizing packet affixed to the inner pouch wall. This packet comprises an inner sealed envelope containing a volatile deodorizing composition and an outer sealed envelope which contains the inner sealed envelope. The inner envelope is ruptured to discharge its contents into the inner space between the two envelopes. The outer envelope has microbial barrier properties and is permeable to the vapors emanating from the deodorizing composition. These deodorizing vapors pass through the outer envelope and into the environment surrounding the outer envelope.

24 Claims, 11 Drawing Figures



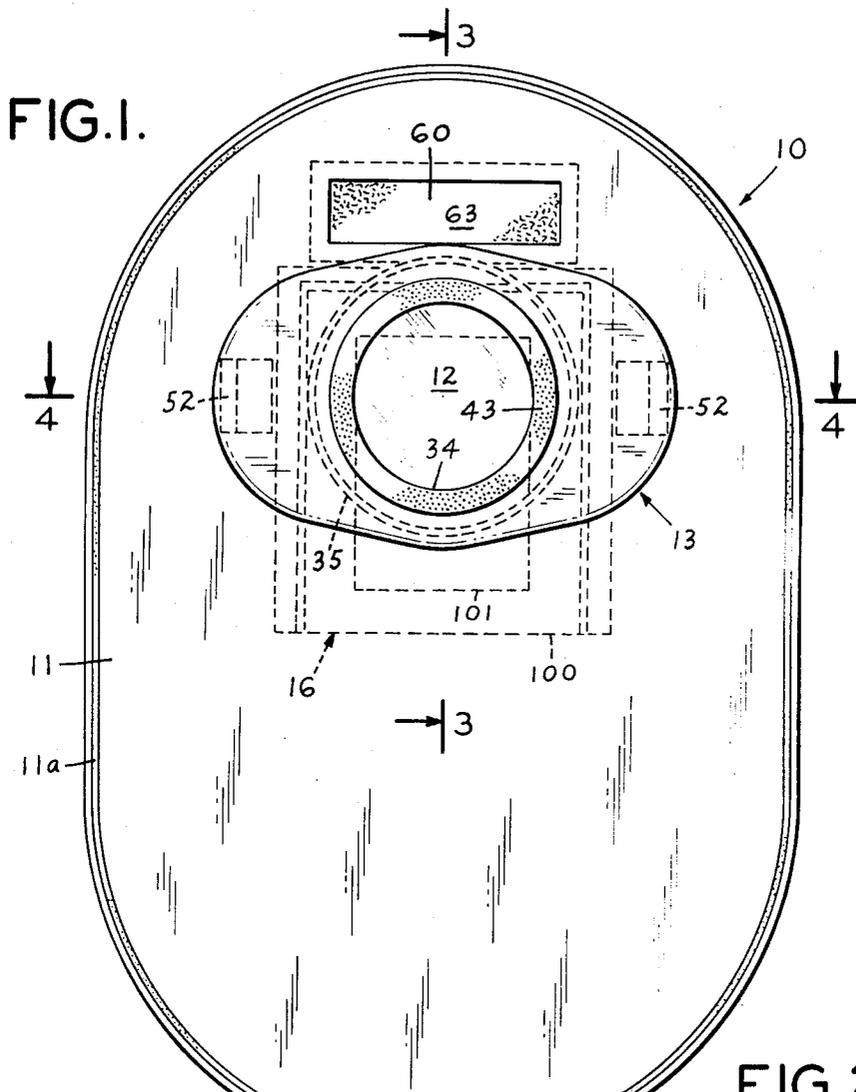


FIG. 2a.

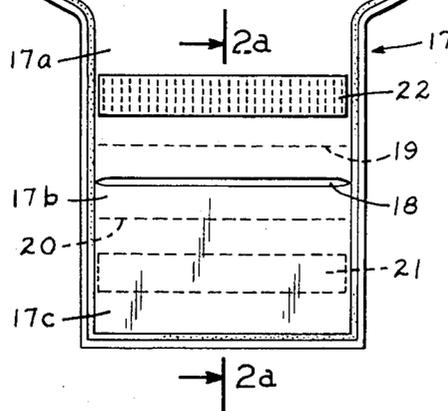
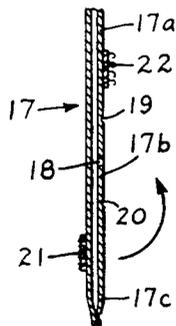


FIG. 2b.

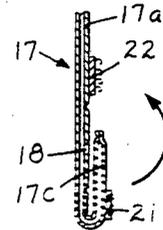


FIG. 2c.

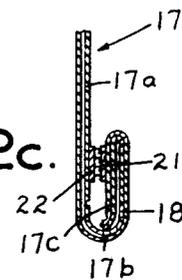


FIG. 3.

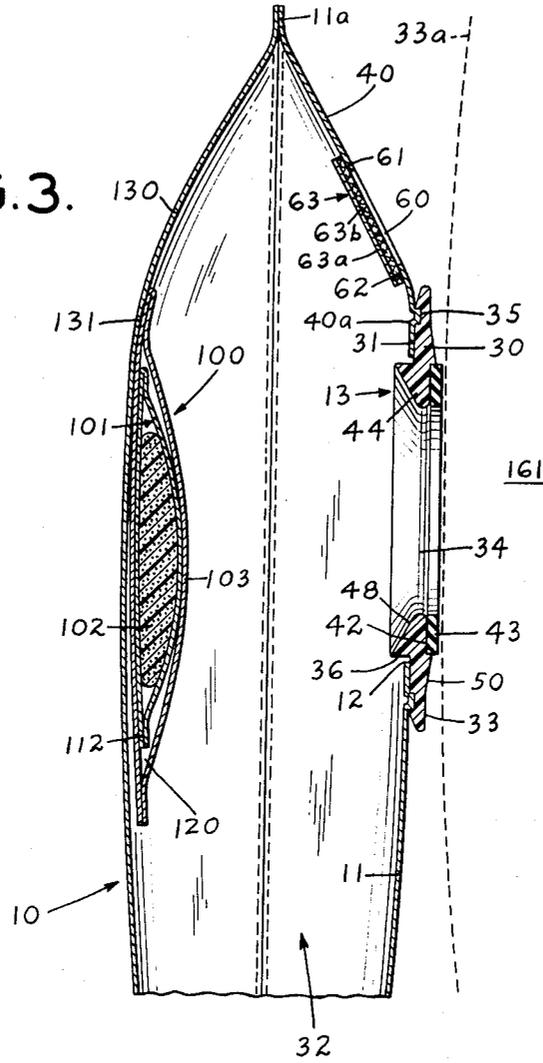


FIG. 4.

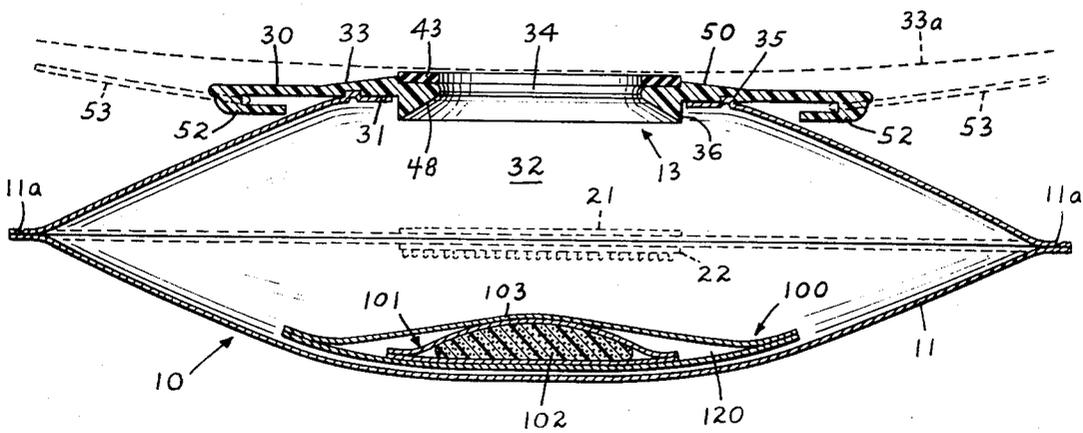


FIG. 5.

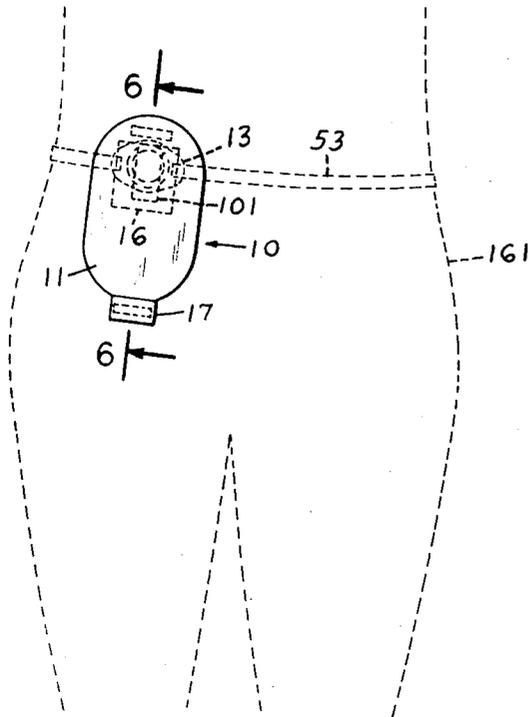


FIG. 6.

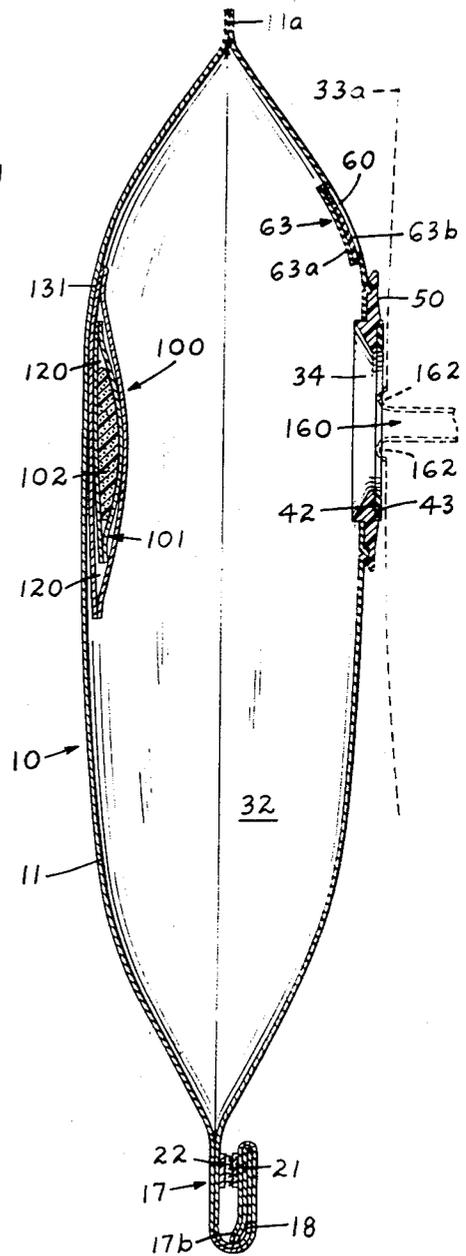


FIG. 7.

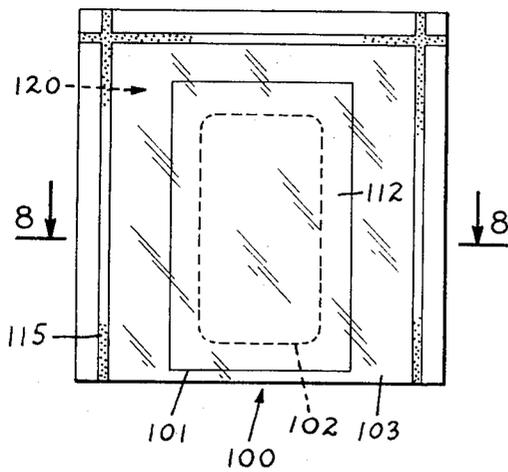


FIG. 8.

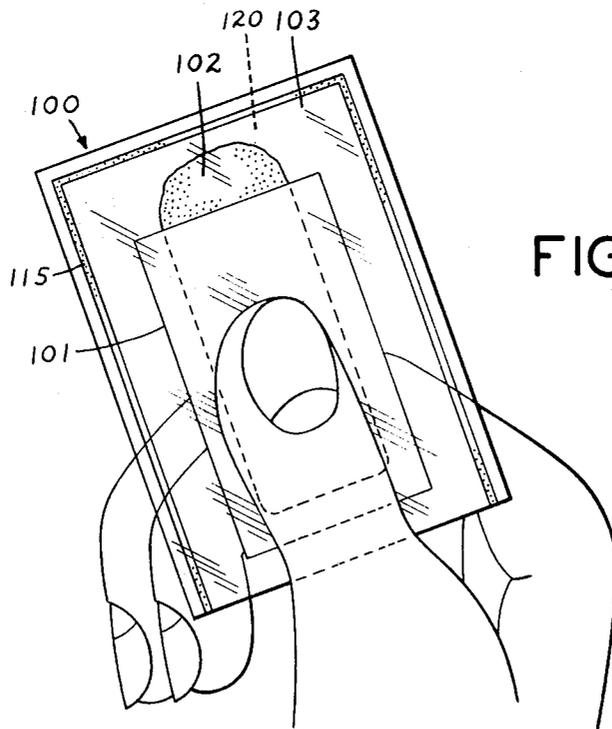
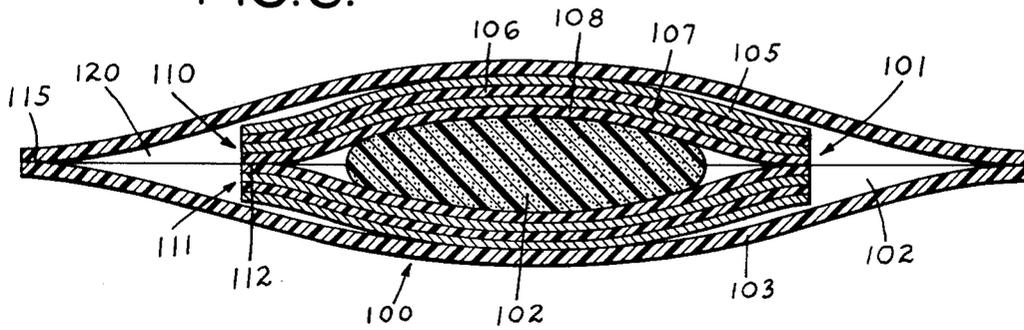


FIG. 9.

OSTOMY BAG AND DEODORIZING PACKET THEREFOR

BACKGROUND OF THE INVENTION

This invention relates to ostomy bags and to deodorizing devices which are eminently suitable for inclusion within the interior of such bags. The term "ostomy" refers to a surgical procedure whereby substantial portions of the intestine are removed and the intestine then re-routed to exit the body by means of an orifice located on the surface of the body, usually in the abdominal portion of the body. Provision must be made for the collection of the fecal matter discharged through this orifice. The common procedure is to affix an ostomy bag to the body in proximity to this orifice so that the fecal matter discharged from the orifice is discharged into the interior of such a bag. Numerous such devices have been heretofore described.

When a substantial portion of the large intestine or colon is removed, the surgical procedure is referred to as a "colostomy." When a substantial portion of the small intestine is removed, the surgical procedure is referred to as an "ileostomy." Both types of surgical procedures require the use of ostomy bags except that, in the case of ileostomies, the fecal matter ordinarily contains a greater quantity of liquid than in the case of a colostomy. Accordingly, an ostomy bag for this usage must be equipped to handle this type of fecal discharge.

One problem encountered by the wearer of an ostomy bag is the undesirable odor emanating from the fecal matter discharged into the bag. At the present time, the most common remedy is to either replace the bag or to remove it and empty its contents. These procedures can greatly inconvenience the wearer. This odor problem is prevalent in other medical devices such as, for example, closed urinary collection systems. There exists therefore, a need for a means of effectively and conveniently removing such odors.

If such a deodorizing means were to be inserted within a receptacle for urinary or fecal matter, it would be desirable that the migration of microbes into or out of the deodorizing device be substantially eliminated so as to not interfere with analyses of the urinary or fecal matter which seek to determine the presence of infection in the body wastes. This is particularly true in urinary collection systems wherein the microbial count is a most effective technique for determining the presence of infection in the urine.

Another problem encountered by the wearer of an ostomy bag is the undesirable inflation of the bag produced by discharge of intestinal gas into the bag. In most presently used ostomy bags, this problem is remedied by puncturing the bag to release the gas. The inconvenience of such a procedure is apparent.

It is an object of this invention, therefore, to provide an ostomy bag which is internally furnished with a deodorizing packet which is conveniently ruptured by the wearer whenever the need for deodorization of the bag contents occurs; the packet remains intact until needed for use.

It is another object of this invention to provide an ostomy bag which automatically releases gas discharged from the intestine to the environment thereby eliminating undesirable inflation of the bag.

It is another object of this invention to provide a novel, reusable and/or disposable ostomy bag with an

improved means for affixing the bag to the body of the wearer.

It is another object of this invention to provide a novel type of deodorizing device which is eminently suitable for inclusion within the interior of the pouch of an ostomy bag and for use in other deodorizing applications such, as for example, in closed urinary collection systems.

It is another object of this invention to provide such a deodorizing device wherein the migration of microbes into or out of the device is substantially eliminated thereby permitting the device to be disposed in close proximity to the odor source without interfering with various medical analyses of the odor source material.

These and other objects of this invention will be apparent to one skilled in the art from a consideration of this disclosure.

SUMMARY OF THE INVENTION

This invention relates to a novel type of ostomy bag which comprises a receptacle pouch containing an inlet aperture and means for providing communication between the pouch interior and the ostomy orifice on the surface of the body of an ostomy patient. This communication is achieved by providing a thin, flexible, essentially planar member having an "inner" and "outer" surface, the "inner" surface being defined as that surface which is in contact with or adjacent to the body surface of the bag wearer when the bag is in use and the "outer" surface being defined as that surface which is in contact with or adjacent to the receptacle pouch.

The thin planar member contains a conduit which is adapted to communicate at one end with the ostomy orifice of the wearer and, at the other end, with the inlet aperture and interior of the receptacle pouch. A rim surrounds this conduit and projects upwardly a small distance from the outer surface. The outer surface also contains a continuous groove which surrounds this rim. The receptacle pouch contains an inlet aperture in one of its surfaces of a slightly larger dimension than that of the rim. This inlet aperture is fitted over the rim, with a portion of the surfaces of the pouch surrounding the aperture being seated within the adjoining continuous groove of the outer surface. The pouch surfaces are attached to the groove by heat-sealing or other suitable adhesive means whereby the flexible planar member is affixed to the receptacle pouch to form the ostomy bag.

The planar member also contains a recess in its inner surface which surrounds the conduit and is adapted to receive therein a gasket or other suitable sealing means for effecting a tight and effective seal between the surface of the body of the wearer and the flexible planar member. A gasket, fabricated from a non-toxic, non-irritating material is inserted into the recess and affixed therein. The outer surface of the planar member is further provided with lugs or other suitable means for affixing a belt to the member in order to support the ostomy bag against the wearers body.

Automatic release of gas discharged from the intestine into the interior of the receptacle pouch is achieved by providing in a wall of the receptacle pouch, a gas permeable but liquid impermeable portion which provides communication between the exterior and interior of the pouch and allows any build-up of gas

pressure within the interior of the pouch to be immediately released to the exterior. This feature eliminates inflation of the pouch resulting from gas pressure. Since the gas permeable portion is not permeable to liquid, there is no danger of discharging contents of the pouch to the exterior through this portion.

To minimize the odors within the receptacle pouch, or the odors of the gas discharged to the exterior through the gas permeable portion of the wall of the pouch, there is provided within the pouch a packet containing a suitable volatile deodorizing composition.

The term "deodorizing" as used herein refers to the removal of unpleasant or offensive odors from air or other gaseous environments by any suitable technique such as, for example, masking, balancing, etc. and is not intended to limit odor removal to any specific mechanism whereby odor causing molecules are rendered undetectable to the sense of smell.

In one such packet, a deodorizing composition, preferably in gel form, is sealed within an inner envelope which has an easily rupturable seal and which is fabricated from a material which is substantially impervious to gas. This inner envelope therefore, prevents the escape of the volatile deodorizing constituents of the deodorizing composition until they are needed. Moreover, the deodorizing contents of the inner envelope are protected from degradation and chemical reaction with reactive gases, such as, for example, oxygen, the moisture found in air, or ethylene oxide in cases where it is desirable to sterilize the deodorizing packet or ostomy bag.

This inner envelope is contained within an outer sealed envelope which is fabricated from a material which is permeable to gas and which possesses microbial barrier properties. The deodorizing effect of the packet does not occur until the inner envelope is ruptured to discharge the deodorizing composition into the inner space between the two envelopes. The vapors emanating from the discharged deodorizing composition pass through the gas permeable outer envelope material and into the environment surrounding the outer envelope.

The deodorizing packet can be used in conjunction with a variety of devices wherein offensive odors occur such as, for example, closed urinary collection systems, incontinent devices, and diaper pails. When used in conjunction with an ostomy bag, it is conveniently affixed to the inner surface of the receptacle pouch, preferably in proximity to the zone where the fecal matter enters the pouch. When deodorizing action is needed, the wearer of the ostomy bag simply exerts mild pressure against the deodorizing packet to rupture the inner envelope seal thereby deodorizing the contents of the receptacle pouch. Since the outer envelope material of the deodorizing packet has microbial barrier properties, the packet can be placed in close proximity with the odorous material without the migration of microbes from the odorous material into the packet or from the interior of the packet into the odorous material. The result is that the presence of the deodorizing packet will not alter microbial counts of the odorous material which are widely used to detect the presence of infection in the odorous material discharged from the body.

The ostomy bag, deodorizing packet, and combination of deodorizing packet and ostomy bag of this in-

vention are more fully described hereinbelow in conjunction with the attached drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevational view of a preferred embodiment of an ostomy bag of this invention, said ostomy bag being provided with a deodorizing packet and ventilating aperture for releasing gas from the interior to the exterior of the ostomy bag pouch.

FIG. 2a is a sectional view taken along the line 2a—2a of FIG. 1 and illustrates the ostomy bag with its bottom in the open position for discharge of the contents of the bag.

FIGS. 2b and 2c show sequentially the closing of the opening at the bottom of the ostomy bag to retain fecal matter within the pouch during use of the bag.

FIG. 3 is a sectional view taken along the line 3—3 of FIG. 1, with the bag in a slightly expanded position.

FIG. 4 is a sectional view taken along the line 4—4 of FIG. 1, with the bag in a slightly expanded position.

FIG. 5 is a schematic diagram showing the mounting of the ostomy bag of FIG. 1 onto the wearer's body by means of a support belt.

FIG. 6 is a sectional view taken along the line 6—6 of FIG. 5 and serves to illustrate the connection of the ostomy bag to the ostomy orifice on the surface of the wearer's body.

FIG. 7 is a plan view of a preferred embodiment of a deodorizing packet of this invention.

FIG. 8 is a sectional view taken along the line 8—8 of FIG. 7.

FIG. 9 is a schematic view illustrating the rupturing of the seal of the inner envelope under the exertion of mild thumb pressure to thereby discharge the contents of the inner envelope into the inner space between the inner and outer envelope.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The Ostomy Bag

Referring to FIG. 1, it is seen that the ostomy bag 10 of this invention comprises a receptacle pouch 11 which contains in its upper portion a circular inlet aperture 12. Affixed to pouch 11 is a thin, flexible, essentially planar, unitary member 13 containing therein a circular conduit 34 which provides communication between the interior of pouch 11 and the ostomy orifice on the surface of the body of the wearer.

Pouch 11 can be fabricated from a variety of suitable materials such as, for example, vinyl type plastics, polyethylene, and polypropylene. The thickness of pouch 11 is not significant but preferably is sufficiently thin to allow the pouch to adopt the contour of the wearer's body. The pouch material is preferably non-irritating to the skin and should, of course, possess sufficient strength and impermeability to hold the fecal matter deposited therein. A pouch prepared from 8-mil thick vinyl plastic has been found quite suitable. Pouch 11 is conveniently fabricated from two sheets of vinyl plastic which are joined together about their periphery by heat seal 11a.

The planar connecting member 13 can be fabricated from any one of a number of suitable materials such as, for example, Delrin resin, polyethylene, polypropylene, or other plastics. The material selected is preferably of

a smooth texture and is non-irritating to the skin. Resins of the Delrin type are preferred. These materials are generally linear polyoxymethylene type acetal resins made by the polymerization of formaldehyde and are characterized by high strength and solvent resistance.

The ostomy bags of this invention can be used as disposable items or they can be reused as discussed in greater detail hereinbelow.

Bag 10 can optionally be provided with a gas permeable portion 63 in one of the surfaces of pouch 11 whereby gas can escape from the interior to the exterior of bag 10. Bag 10 can also optionally be provided with a deodorizing packet 16 which is contained within the interior of the pouch 11 and is preferably affixed to an inner surface of pouch 11 as discussed in greater detail hereinbelow.

The lower constricted portion 17 of pouch 11 is provided with a slit 18 which provides communication between the interior and exterior of pouch 11. Slit 18 makes it extremely convenient to clean out the interior of pouch 11 when it becomes desirable to reuse the ostomy bag. In such a case, the bag is simply disconnected from the wearer and flushed out through slit 18 preferably with the aid of a water or other fluid rinse injected through aperture 12.

The bag shown in FIG. 1 will have slit 18 closed prior to its being used. One means for quickly opening and closing slit 18 is depicted in FIGS. 2a through 2c. A closure of the Velcro type, such as for example, that described in U.S. Pat. No. 3,203,551, said patent incorporated herein by reference, is very suitable for this purpose. The constricted portion of pouch 17 is conveniently broken down into three separate portions 17a, 17b and 17c, said portions separated from each other by folds 19 and 20. Portion 17c has affixed thereto on one side a strip 21 of a pile portion of a typical Velcro closure. Portion 17a has affixed thereto a strip 22 of the mating hooked portion of a typical Velcro closure, strip 22 being affixed to a surface of portion 17a opposed to that surface of portion 17c to which strip 21 is affixed. To effectively close slit 18, portion 17c is folded upwardly against the surface of portion 17b along fold 20 as shown most clearly in FIG. 2b. Portions 17b and 17c are next folded upwardly against the surface of portion 17a along fold 19 causing the hooks of strip 22 to engage the pile of strip 21 to effect a secure closure of slit 18. To open the bag, the reverse sequence to that shown in FIGS. 2a through 2b is followed.

FIGS. 3 and 4 provide detailed views of the thin, essentially planar connecting member 13 which provides communication between the interior of pouch 11 and the ostomy orifice on the surface of the wearer's body. Referring to these Figures, it is seen that member 13 comprises a thin, essentially planar portion 30 having an outer surface 31 which is adjacent to pouch 11 and an inner surface 33 which is adjacent to the surface 33a of the body of the wearer, surface 33a being shown by a dotted line in FIGS. 3 and 4.

Member 13 contains a circular conduit 34 which provides communication between the interior 32 of pouch 11 and the ostomy orifice 160 (see FIG. 6) on the surface of the wearer's body. The outer surface 31 of member 13 is provided with an annular groove 35

which circumscribes the base of an unflanged rim integral with member 13 36 which, in turn, projects upwardly from outer surface 31 to surround circular conduit 34. Surface 40 of pouch 11 is provided with a circular aperture 12. Rim 36 of member 13 is inserted within aperture 12 with those portions 40a of pouch surfaces 40 which are adjacent to aperture 12 coming to rest on outer surface 31 of member 13 and, more particularly, on top of continuous annular groove 35 in the outer surface 31 of member 13. Member 13 is affixed to surface 40 of pouch 11 by heat-sealing surfaces 40a to member 13 in groove 35. Member 40 may be similarly affixed to member 13 in groove 35 by means of any suitable adhesive.

The inner surface 33 of member 13 is provided with an annular recess 42 which surrounds conduit 34 at one end and is adapted to receive a gasket 43 which provides an effective seal between member 13 and surface 33a of the wearer's body. Gasket 43 can be fabricated from any of numerous suitable materials and is preferably fabricated from a non-toxic, non-irritating, non-allergenic material whose properties are not adversely effected by contact with the fecal matter, such as, for example, karaya gum, flexible polyurethane sponge, or flexible polyurethane sponge which is impregnated with karaya gum. The geometric configuration of the gasket is selected to conform with that of recess 42 and is an O-ring in the case where recess 42 is circular.

The inner walls 44 of rim 36 preferably taper inwardly towards conduit 34 to create a diverging portion 48 of conduit 34 for the fecal matter entering the interior 32 of pouch 11.

The outer surface 33 of member 13 is preferably provided with a centrally located annular tapered portion 50 which rises upwardly from inner surface 33 and terminates upon reaching annular recess 42. This taper aids in providing an effective seal between member 13 and the wearer's body.

Referring to FIG. 4, it is seen that member 13 is provided at each end with lugs 52 which are integral with member 13 and which are adapted to engage a belt 53 whereby the ostomy bag can be appropriately positioned against the wearer's body and firmly retained in that position. The pressure exerted by belt 53 causes a slight compression of gasket 43 to thereby effect a good seal between member 13 and the outer surface 33a of the wearer's body.

Referring particularly to FIG. 3, it is seen that surface 40 of pouch 11 is provided with a small aperture 60 of a generally rectangular configuration (see FIG. 1). Mounted across aperture 60 and secured to the interior of inner surface 40 at points 61 and 62 is a gas permeable member 63, the function of which is to permit the automatic release of gas discharged from the ostomy orifice into the interior 32 of pouch 11 to the exterior of the pouch. This prevents undesirable build-up of gas within the interior 32 of pouch 11.

The material from which member 63 is fabricated must, of course, be permeable to gases and additionally should provide a microbial barrier to retain germs and undesirable organisms within the interior 32 of pouch 11. Moreover, it is preferable that the material of member 63 have substantial hydrophobic properties in order to maintain the ventilation properties of member 63 intact if member 63 should be contacted with liquid

as can occur, for example, in the case of an ileostomy wherein the fecal matter discharged into pouch 11 can contain substantial amounts of liquid matter. Member 63 is fabricated from a substantially liquid permeable material in order to retain such liquid matter within pouch 11. One preferably material out of numerous suitable materials for fabricating member 63 is a laminate comprising a first layer of gas permeable Teflon 63a which is affixed to a second backing layer 63b of a spun fiber, with the spun fiber layer 63b preferably being in contact with the interior of inner surfaces 40 of pouch 11 and affixed thereto. Such a material is available commercially from the Pall Corporation under the designation TV-20A40. Member 63 is preferably positioned away from the receptacle area of pouch 11 to prevent its becoming blocked with fecal matter and thereby destroying its ventilation properties.

The Deodorizing Packet

To provide effective deodorization within the interior 32 of pouch 11 and to deodorize the gases released through permeable member 63 prior to their leaving the interior 32 of pouch 11, it is desirable to position a disinfecting packet 100 within the interior 32 of pouch 11. A particularly suitable disinfecting packet is shown in FIGS. 7 through 9, wherein the packet 100 is shown in isolation from the ostomy bag for purposes of clarity. Referring to FIG. 7, it is seen that packet 100 comprises a sealed inner envelope 101 which contains therein a deodorizing composition 102 having as its active ingredient one or more volatile deodorizing constituents. Inner envelope 101 is sealed within an outer envelope 103.

In general, any of a number of suitable deodorizing compositions can be packaged within inner envelope 101. For example, various solid or pelletized compositions, liquid compositions, and gel compositions can be employed. Numerous such compositions have been heretofore described. A preferred deodorizing formulation comprises the various air-treating gels described in detail in U.S. Pat. No. 2,691,615, said patent incorporated herein by reference. These gels generally comprise from about 96 to 99 percent by weight of an aqueous medium, with from about 1 to 10 percent by weight of this aqueous medium comprising a plurality of volatile deodorizing components which are compatible and uniformly dispersible with water and which normally volatilize at different rates at room temperature. These gels introduce a uniform quality vapor mixture into the air. The gel further comprises from about 1 to 4 percent of an aqueous gelling agent, the amount of which is present in proportion to the aqueous medium being such that the gel is firm and substantially devoid of syneresis.

Typical liquid mediums include aqueous-alcoholic mediums and aqueous-aldehyde mediums and especially liquid mediums wherein the alcohols are aliphatic monohydric alcohols and the aldehydes are aliphatic aldehydes containing from two to 20 carbon atoms. Among the volatile substances which may be employed are compounds such as acetaldehyde, paraldehyde, beta-hexyl acrolein, caproaldehyde, acetals, halogenated acetals and phenylacetaldehyde. Alcohols such as ethyl alcohol can also be employed. A preferred deodorizing gel is available commercially

from Air-Kem, Inc. (Carlstadt, N.J.) under the tradename "Solidaire." Different formulations can be employed to counteract different types of odors, as is known in the art. One suitable formulation includes pine oil, acetaldehyde and chlorophyll.

The volatile deodorizing constituents of the gel are generally present in amounts ranging from about 0.03 to 0.5 percent by weight and preferably from about 0.1 to about 0.25 percent by weight. Chlorophyll can also be added to the gel, preferably in amounts ranging from about 0.1 to 0.4 percent by weight, and typically about 0.2 percent by weight.

A variety of gelling agents can be employed, such as, for example, gelatin, pectin, agar-agar, gums such as karaya and gum tragacanth, starch, and calcium alginate. The gelling agent is typically present in an amount of about 1.5 percent.

The deodorizing gel compositions can be dyed with anyone of a variety of suitable colors to create a pleasing aesthetic effect.

Inner envelope 101 is fabricated from a material which is substantially impermeable to gas. This effectively prevents degradation of the deodorizing composition contained within the envelope resulting from exposure to reactive gases such as air, moisture, or in the case where the packet is to be sterilized, ethylene oxide. Moreover, it retains the volatile deodorizing constituents of the composition within envelope 101 until needed for use.

A particularly suitable material for the fabrication of envelope 101 is the four-layered laminate shown most clearly in FIG. 8. This laminate comprises an outer layer 105 of pouch paper, a first inner layer 106 of polyethylene, a second inner layer 107 of aluminum foil, and an innermost layer 108 of polyethylene. Such a laminate is available commercially from several sources. For example, it is available from the St. Regis Paper Co. under the name "Dreamwhip Pouch Stock."

The function of polyethylene layer 106 is to bind paper layer 105 to aluminum foil layer 107. Gas impermeability is imparted to envelope 101 by the aluminum foil layer 107. The function of innermost polyethylene layer 108 is to provide a means for joining the two layers 110 and 111 of the laminate together about their periphery by heat seal 112. Seal 112 is prepared in accordance with known techniques so that it will easily rupture when pressure is exerted upon the contents 102 of envelope 101.

Outer envelope 103 is fabricated from a material which is permeable to gas such as, for example, films of polyvinyl chloride, polyethylene, polypropylene. Moreover, envelope 103 is preferably fabricated from a material having microbial barrier properties. Such a material substantially prevents migration of microbes either into or out of the deodorizing packet. This feature is important in applications where it becomes important to make a microbial count on the urinary or fecal matter in order to determine the presence of infection. If microbes could escape into the deodorizing packet or if foreign microbes were introduced from the deodorizing packet, the true microbial count of the urinary or fecal matter could be substantially altered.

Outer envelope 103 is typically prepared from two layers of a suitable material which are joined together along their peripheries by heat seal 115. As can be seen

in FIG. 7, both inner envelope 101 and outer envelope 103 are only heat-sealed about three of the four edges. The remaining edge is simply a fold in the sheet material used to fabricate the envelopes. A preferred material is commercially available polyvinyl chloride film having a thickness of three-fourths to 1 inch.

To activate the deodorizing packet, it is only necessary to exert a mild pressure with the thumb, as seen in FIG. 9, upon the contents 102 of inner envelope 101. This causes seal 112 to readily rupture and discharge the contents 102 of envelope 101 into the inner space 120 (see FIG. 8) between envelopes 101 and 103. The vapors from the deodorizing composition 102 fill inner space 120 and pass through gas permeable outer envelope 103 and into the environment surrounding envelope 103 to thereby deodorize the environment.

Referring again to FIG. 3, the deodorizing packet 100 illustrated in FIGS. 7 through 9 is shown attached to the interior of surface 130 of pouch 11 by means of a heat-seal 131 or other suitable adhesive. When deodorizing action is required within the interior 32 of pouch 11, it becomes a simple expedient for the wearer of ostomy bag 10 to exert a slight pressure against the contents 102 of inner envelope 101 to rupture the seal 112 of envelope 101, discharging the deodorizing composition into the inner space 120 of packet 100. The volatile deodorizing vapors then pass through gas permeable outer envelope 103 and fill up the interior 32 of pouch 11 to thereby deodorize the contents of the pouch. Packet 100 is preferably positioned in close proximity to the zone of entrance of the fecal matter into pouch 11.

The use of the ostomy bag of this invention is best seen in FIGS. 5 and 6 wherein it is shown attached to the wearer's body. Referring to FIG. 6, it is seen that the ostomy orifice 160 on the surface 33a of the wearer's body 161 communicates with conduit 34 of member 13 so that the fecal matter discharged from orifice 160 passes through conduit 34 and into the interior 32 of pouch 11. One end of conduit 34 circumscribes the stoma 162 which defines the periphery of ostomy orifice 160. The spilling of fecal matter against adjoining surface 33a of the body is prevented by sealing gaskets 43 which are mounted in recess 42 and which are compressed slightly by the force exerted against connecting member 13 by belt 53.

Gas discharged into the interior 32 of pouch 11 from orifice 160 is automatically vented to the exterior of pouch 11 through gas permeable member 63. Deodorizing packet 100 which is affixed to interior surface of pouch 11 can be activated at any time by the wearer simply exerting a sufficient force against the contents 102 of inner envelope 101 to rupture seal 112.

The bag can be cleaned and reused by simply disconnecting it from the body and opening slit 18 at the bottom thereof in a manner directly opposite to that shown in FIGS. 2a through 2c for closing slit 18. The fecal matter can be flushed out through slit 18 with the aid of a water flush. If desired, ostomy bag 10 can then be sterilized prior to reuse by the use of ethylene oxide gas or other suitable sterilization techniques.

The specific structure described hereinabove and in the attached drawings is illustrative only and such modifications and alterations thereof as would be apparent to one skilled in the art are contemplated to fall

within the scope and spirit of the claims appended hereto.

I claim:

1. An ostomy bag comprising:

1. a receptacle pouch containing an inlet aperture;
2. means for providing communication between the interior of said pouch and an ostomy orifice on the surface of the body, said means comprising a unitary, flexible, essentially planar member having an inner and outer surface, said inner surface being adjacent the body surface in proximity to the ostomy orifice, said planar member containing:
 - i. a conduit adapted to provide communication between the ostomy orifice and the inlet aperture of the receptacle pouch;
 - ii. an unflanged rim integral with said planar member projecting upwardly from said outer surface and surrounding said conduit, said inlet aperture of said receptacle pouch fitting over said unflanged rim;
 - iii. a continuous groove formed in said outer surface, said groove surrounding the base of said rim and having positioned therein, in attached relationship, a portion of the receptacle pouch surrounding said inlet aperture;
 - iv. a recess in said inner surface surrounding said conduit adapted to receive gasket sealing means, therein; and
 - v. means for connecting support belt means to said planar member, said means being integral with said planar member.

2. The ostomy bag of claim 1 wherein the inner walls of said rim taper inwardly towards said conduit to provide divergence at one end of said conduit.

3. The ostomy bag of claim 2 wherein said conduit is of a circular configuration and wherein said rim, groove, and recess are of an annular configuration.

4. The ostomy bag of claim 3 further including gasket means disposed in said annular recess.

5. The ostomy bag of claim 4 wherein said gasket means is an O-ring fabricated from karaya gum.

6. The ostomy bag of claim 4 wherein said gasket means is an O-ring fabricated from a polyurethane sponge which is impregnated with karaya gum.

7. The ostomy bag of claim 4 wherein the inner surface of said planar member contains a centrally located annular taper surrounding said conduit, said taper rising upwardly from said inner surface and terminating upon reaching said annular recess.

8. The ostomy bag of claim 1 wherein said pouch contains therein a portion which is gas permeable and liquid impermeable, said portion providing communication between the interior and exterior of the pouch to provide for automatic release of gas to the exterior of the pouch.

9. The ostomy bag of claim 1 wherein said bag has affixed to the inner surface of said pouch a deodorizing packet comprising:

1. an inner sealed envelope containing therein a composition comprising a volatile deodorizing agent, said inner envelope having a rupturable seal and being fabricated from a material which is substantially gas impermeable, and
2. an outer sealed envelope containing therein said inner sealed envelope, said outer sealed envelope

being fabricated from a material which is permeable to gas, whereby, upon rupture of the inner envelope seal, the volatile deodorizing agent released from the inner envelope permeates the outer envelope into the environment surrounding said packet.

10. The ostomy bag of claim 9 wherein the outer envelope of the deodorizing packet is fabricated from a material also having microbial barrier properties.

11. The ostomy bag of claim 10 wherein said composition comprises a gel adapted for introducing into air a uniform quality vapor mixture, said gel comprising from about 96 to 99 percent of an aqueous medium, said aqueous medium containing from about 1 to 10 percent of a plurality of volatile deodorizing agents which are compatible and uniformly dispersible in water, and which normally volatilize at different rates at room temperature, and from about 1 to 4 percent of an aqueous gelling agent, the amount of gelling agent present in proportion to the aqueous medium being such that the gel is firm and substantially devoid of syneresis.

12. The ostomy bag of claim 1 further including an opening in the bottom of said pouch, and means for opening and closing said opening.

13. An ostomy bag comprising:

- 1. a receptacle pouch containing an inlet aperture;
- 2. means for providing communication between the interior of the pouch and an ostomy orifice on the surface of the body;
- 3. a gas permeable but liquid impermeable portion in the surface of said pouch; and
- 4. a deodorizing packet attached to the inner surface of said pouch, said packet comprising:
 - i. an inner sealed envelope containing therein a composition comprising a volatile deodorizing agent, said inner envelope having a rupturable seal and being fabricated from a material which is substantially gas impermeable, and
 - ii. an outer sealed envelope containing therein said inner sealed envelope, said outer sealed envelope being fabricated from a material which is permeable to gas whereby, upon rupture of the inner envelope seal, the volatile deodorizing agent released from the inner envelope permeates the outer envelope into the environment surrounding said packet.

14. The ostomy bag of claim 13 wherein the outer envelope of the deodorizing packet is fabricated from a material also having microbial barrier properties.

15. The ostomy bag of claim 13 wherein said means for providing communication between the interior of the pouch and the ostomy orifice comprises an essentially planar flexible member having an inner and outer surface said inner surface being adjacent the body surface in proximity to the ostomy orifice, said planar

member containing:

- 1. a conduit adapted to provide communication between the ostomy orifice and the inlet aperture of said receptacle pouch;
- 2. a rim projecting upwardly from said outer surface and surrounding said conduit, said inlet aperture of said receptacle pouch fitting over said rim;
- 3. a continuous groove in said outer surface, said groove surrounding said rim and having affixed therein a portion of said receptacle pouch surrounding said inlet aperture;
- 4. a recess in said inner surface surrounding said conduit and adapted to receive gasket sealing means therein, and
- 5. means for connecting support belt means to said planar member.

16. The ostomy bag of claim 15 wherein said composition comprises a gel adapted for introducing into air a uniform quality vapor mixture, said gel comprising from about 96 to 99 percent of an aqueous medium, said aqueous medium containing from about 1 to 10 percent of a plurality of volatile deodorizing agents which are compatible and uniformly dispersible in water, and which normally volatilize at different rates at room temperature, and from about 1 to 4 percent of an aqueous gelling agent, the amount of gelling agent present in proportion to the aqueous medium being such that the gel is firm and substantially devoid of syneresis.

17. The ostomy bag of claim 15 wherein said inner envelope is fabricated from a laminate, said laminate comprising an outer layer of pouch paper, a first inner layer of polyethylene, a second inner layer of aluminum foil, and a third innermost layer of polyethylene.

18. The ostomy bag of claim 17 wherein said outer envelope is fabricated from a polyvinyl chloride film.

19. The ostomy bag of claim 18 wherein the liquid medium is an aqueous-alcoholic medium.

20. The ostomy bag of claim 19 wherein the amount of volatile deodorizing agents ranges from about 0.1 to about 0.25 percent.

21. The ostomy bag of claim 16 further including an opening in the bottom of said pouch, and means for opening and closing said opening.

22. The ostomy bag of claim 16 further including gasket means disposed in said recess, said gasket means being non-irritating to skin.

23. The ostomy bag of claim 22 wherein said gasket means is an O-ring fabricated from karaya gum.

24. The ostomy bag of claim 20 wherein said conduit is of circular configuration and wherein the inner surface of said planar member contains a centrally located annular taper surrounding said conduit, said taper rising upwardly from said inner surface and terminating upon reaching said annular recess.

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