United States Patent [19]

Nolan et al.

[11] **3,804,091**

[45] **Apr. 16, 1974**

[54] **OSTOMY APPLIANCE**

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[22] Filed: **Sept. 18, 1972**

[21] Appl. No.: **290,149**

[52] **U.S. Cl.** **128/283**

[51] **Int. Cl.** **A61f 5/44**

[58] **Field of Search**..... 128/275, 283, DIG. 24, 128/296

[56] **References Cited**

UNITED STATES PATENTS

2,054,535	9/1936	Diack	128/283
2,544,579	3/1951	Ardner	128/283
2,679,248	5/1954	Fullaway	128/283
3,125,093	3/1964	Hutchins	128/283
3,312,221	4/1967	Overment	128/275
3,439,677	4/1969	Bonfils	128/283
3,507,282	4/1970	Burding	128/283
3,658,065	4/1972	Hirsch	128/296

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[57] **ABSTRACT**

An ostomy appliance for controlled venting of gas from the intestinal tract and collection of small amounts of waste material following surgery comprising a flexible fluidtight pouch having a lateral opening adapted to register with an abdominal opening, means for sealing the pouch to the abdomen around the registered openings in the abdomen and in the pouch, vent means in the pouch for exhausting gas, a filter secured to the pouch adjacent the vent means for deodorizing gas exhausted through the vent, and an absorbent pad in the pouch.

3 Claims, 4 Drawing Figures

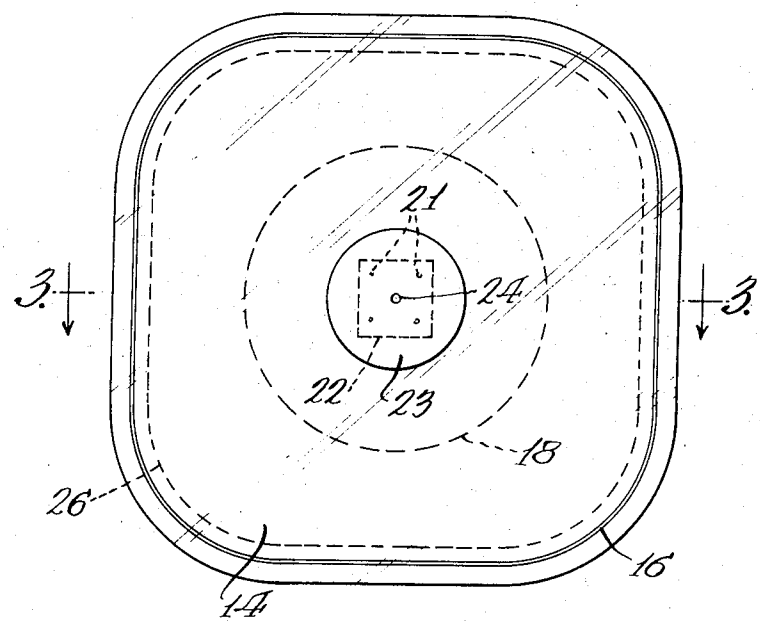


Fig. 1.

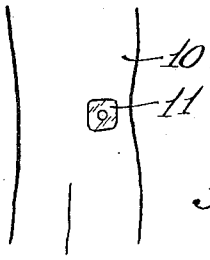


Fig. 2.

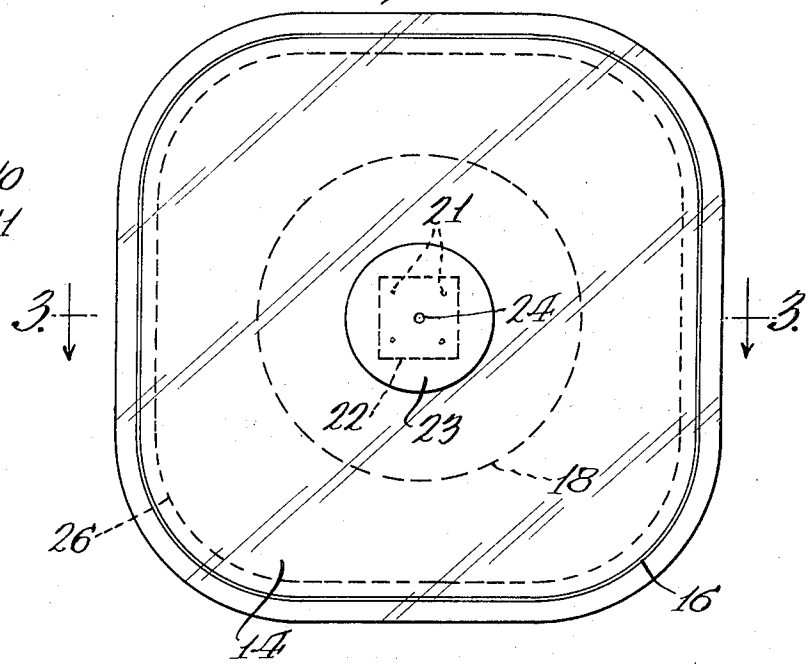


Fig. 3

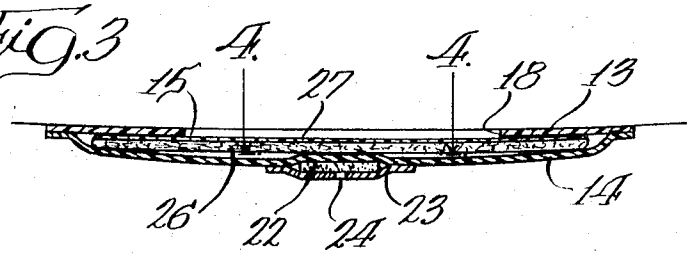
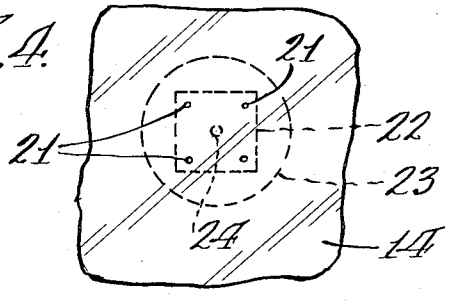


Fig. 4.



OSTOMY APPLIANCE

BACKGROUND OF THE INVENTION

This invention relates to an ostomy appliance in the form of a pouch with a vent device for exhausting gas from an abdominal opening following surgery. Certain abdominal surgery procedures, such as a colostomy, a cecostomy and an ileostomy, result in an opening in the abdominal wall, sometimes referred to as a stoma, which permits drainage from the intestinal tract. Following such surgery, the patient is sometimes unable to control the drainage of liquids and solids and the exhaust of gas, as a result of which various drainage and collection appliances have been used.

In some instances, it has been conventional to utilize a drainage collection pouch together with means for sealing the pouch to the abdomen around the abdominal opening, so that the pouch is constantly in position to collect liquid and solid drainage at all times. For example, U.S. Pat. No. 3,302,647 relates to a drainage collection pouch with means for sealing the pouch to the abdomen. Also, the prior application of Nolan et al for U.S. Letters Patent Ser. No. 181,961, filed Sept. 20, 1971, and assigned to the assignee of this application, relates to drainage collection pouches provided with vent means for exhausting gases.

In a colostomy operation, a portion of the large intestine, known as the colon, remains intact and often functions as a storage unit for body wastes, much as the entire colon did before surgery. In some instances, a practice is followed by which such a patient is regularly irrigated as by enema to remove the major portion of liquid and solid drainage. Often, such procedure obviates the need for relatively large drainage collection devices for the reason that between irrigations there is only a relatively minor discharge to be collected. However, even if there is little or no drainage of liquids or solids, there may be gaseous discharge. Since some of the gas may have objectionable odor, it is important that the gaseous discharge be controlled. Usually, it is not practical to collect gas in an air-tight collection pouch, because the gas tends to inflate the pouch, as a result of which there may be an undesirable bulge or the buildup of pressure may loosen the appliance and force it away from the patient's abdomen. Accordingly, it is desirable to provide means for venting a collection pouch utilized for controlling gaseous discharge. In view of objectionable odors, it is desirable to control the venting.

SUMMARY OF THE INVENTION

The present invention relates to an ostomy appliance for controlled venting of gas and containment of small amounts of waste discharge from an intestinal tract following surgery including a fluid-tight pouch with an entrance opening adapted to register with an abdominal opening, means on the pouch around the entrance opening for sealing the pouch to the abdomen, a vent aperture in the pouch for exhausting gas from the pouch, and an absorbent pad is utilized in the pouch for absorbing wet drainage.

In the preferred embodiment, an absorbent pad comprises multiple layers of absorbent material such as sheer crepe-like paper with a pervious covering layer of thin polyethylene which prevents adhesion of the absorbent pad to the mucous surface of the patient's anatomy.

In order to avoid objectionable odor, a deodorizing filter is associated with the gas vent in the preferred embodiment.

Preferably, the filter comprises a disc of matted fibers and granular activated carbon disposed on the outer surface of the pouch, and the filter is held in place by an apertured cover having an outer perimeter sealed or otherwise secured to the pouch.

In the preferred embodiment illustrated, the pouch comprises a pair of overlying panels of flexible plastic material secured together at the perimeter thereof symmetrically about the entrance opening and comprising first and second opposed walls respectively containing the entrance opening and the vent aperture. As shown, vent apertures in the pouch and the filter cover are laterally displaced from each other so that the gas follows a tortuous path radially through the filter so as to be adequately deodorized.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a fragmentary view of the abdominal section of a human torso, showing an ostomy appliance embodying the present invention positioned in place for use;

FIG. **2** is an enlarged outside elevational view of the ostomy appliance;

FIG. **3** is a transverse sectional view of the appliance, taken at about the line **3—3** of FIG. **2**; and

FIG. **4** is a fragmentary rear view of the front wall of the pouch taken at about the line **4—4** of FIG. **3**.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings in more detail, FIG. **1** illustrates a portion of a human torso **10** with an ostomy appliance **11** of the character under consideration herein. As illustrated, the appliance is in the form of a pouch, and provision is made for sealing the pouch to the abdomen to prevent leakage of fluid and uncontrolled discharge of gas and also to support the pouch.

In the illustrated embodiment, the pouch **11** comprises a pair of generally square panels of generally similar configuration at the outer perimeter, including a substantially flat inner panel **13** adapted to be disposed adjacent the patient's body, and an outer panel **14** having a dish-shaped cross section, as seen best in FIG. **3**, for purposes of providing an interior chamber **15** having a significant depth in a front-to-rear direction. The panels are of relatively lightweight flexible plastic material which is impervious to liquid and gas and which is usually transparent. The outer perimeters of the overlying panels are secured together as by heat-sealing indicated at **16** in order to form a fluid-tight pouch which is generally flat, but capable of distension.

The panel **13** includes a generally circular opening **18** adapted to be placed in register with an abdominal opening for admitting gas or drainage to the pouch. In order to seal the pouch to the abdomen to prevent leakage and support the pouch, the panel **13** has a suitable adhesive coating on the exposed surface around the opening **18** adapted to releasably adhere the pouch to the abdomen. The adhesive preparation on the flange may be similar to that described in the aforementioned U. S. Pat. No. 3,302,647 adapted to minimize irritation to the skin of the patient. Preferably, the adhesive coating is covered with a conventional releasable sheet (not shown) adapted to protect the adhesive until the pouch

is ready for use. While the panels **13** and **14** are illustrated as generally square in configuration, it should be understood that other shapes may be utilized if desired.

In order to provide for exhaust of gas from the interior of the pouch, the outer panel wall **14** is provided with a plurality of vent apertures **21**, four as illustrated, in association with a filter **22** secured to either surface of the panel **14** by means of a cover **23.** As illustrated, the filter **22** is secured to the outer surface of the panel **14** and comprises a square filter disc comprised of matted fibers and granular activated carbon in a commercially available form. While the preferred embodiment, as illustrated, includes such a disc, it should be understood that the filter could also consist of granular activated carbon encapsulated in plastic film or other suitable material. The activated carbon functions to deodorize the gas passing from the interior of the bag through the vent apertures **21.** Gas is exhausted from the filter through a central aperture **24** in the cover **23.** The plastic material in the panels **13** and **14** of the pouch is impervious to gas and therefore forms an odor barrier. The cover **23** holding the filter in place on the pouch is also impervious to gas. In order to ensure that the gas passes through as much activated carbon as possible, the aperture or apertures in the cover **23** are laterally displaced from the apertures **21** in the pouch panel **14.** In this manner, the gas enters the filter disc adjacent the perimeter of the filter and travels radially to the center of the cover **23** for exhaust through the aperture **24.** The cover **23** is somewhat larger than the filter **22,** and the outer periphery of the cover is suitably secured to the wall **14** of the pouch as by adhesive or heat-sealing. The filter **22** may be of material similar to that described in the aforementioned application Ser. No. 181,961.

In order to absorb any wet drainage received in the pouch from the abdominal opening, the interior chamber **15** contains a soft flexible absorbent pad **26** of such configuration that it substantially fits the interior of the pouch. The absorbent pad may comprise a plurality of layers of very soft absorbent material such as gauze or paper which adhere to each other loosely. Preferably, the layer of the pad **26** which faces the opening **18** is a thin, soft and pliable layer or coating of release material such as polyethylene as at **27.** It should be understood, however, that the layer does not need to be polyethylene but could consist of other release coating material such as a teflon or wax coating, and that it can be either pervious or impervious. The layer **27** has the capacity of resisting adherence to any protruding portion of the anatomy of the patient which may extend beyond the abdominal opening. The pad **26** is intended to absorb limited discharge contemplated in the patient utilizing the pouch.

It should be understood that the pouch in its preferred form is compact and is intended for use by patients whose colonic discharge is well regulated, as by irrigation, and who therefore have little or no wet drainage. The limited space in the pouch provides for limited storage of drainage, and the absorbent pad holds such drainage as appears.

We claim:

1. An ostomy appliance for venting gas from an abdominal opening following surgery, comprising:

a. a fluid-tight pouch including a pair of overlying panels of plastic material secured together at the perimeter thereof and respectively comprising first and second opposed walls of the pouch,

b. said first wall having a centrally located entrance opening adapted to register with an abdominal opening, and said second wall having vent means for exhausting gas from the pouch,

c. an adhesive coating on the outer surface of the first wall around the entrance opening for sealing the pouch to the abdomen,

d. a filter disc of matted fibers and charcoal particles over the vent means on the second wall of the pouch,

e. an impervious cover over the filter including an outer perimeter secured to the second wall of the pouch and vent means laterally displaced from the vent means in the second wall, and

f. an absorbent pad in the pouch for absorbing drainage including a layer on one surface of material pervious to drainage and resistant to adhesion to mucous or moist tissue of patient anatomy.

2. An ostomy appliance as defined in claim **1,** wherein the absorbent pad comprises a plurality of layers of absorbent material and a layer on one surface of material which is resistant to adhesion to mucous or moist tissue of patient anatomy.

3. An ostomy appliance as defined in claim **1,** wherein the panel forming the first wall of the pouch is substantially flat, and the panel forming the second wall is dished.

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