

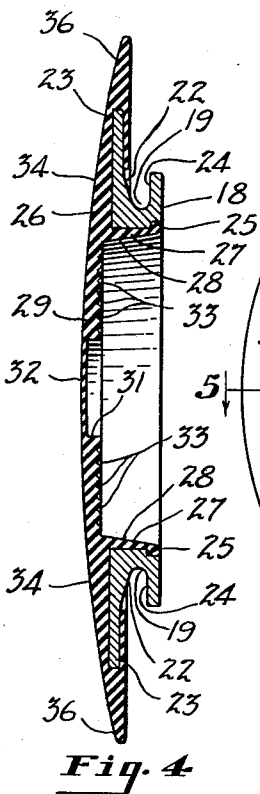
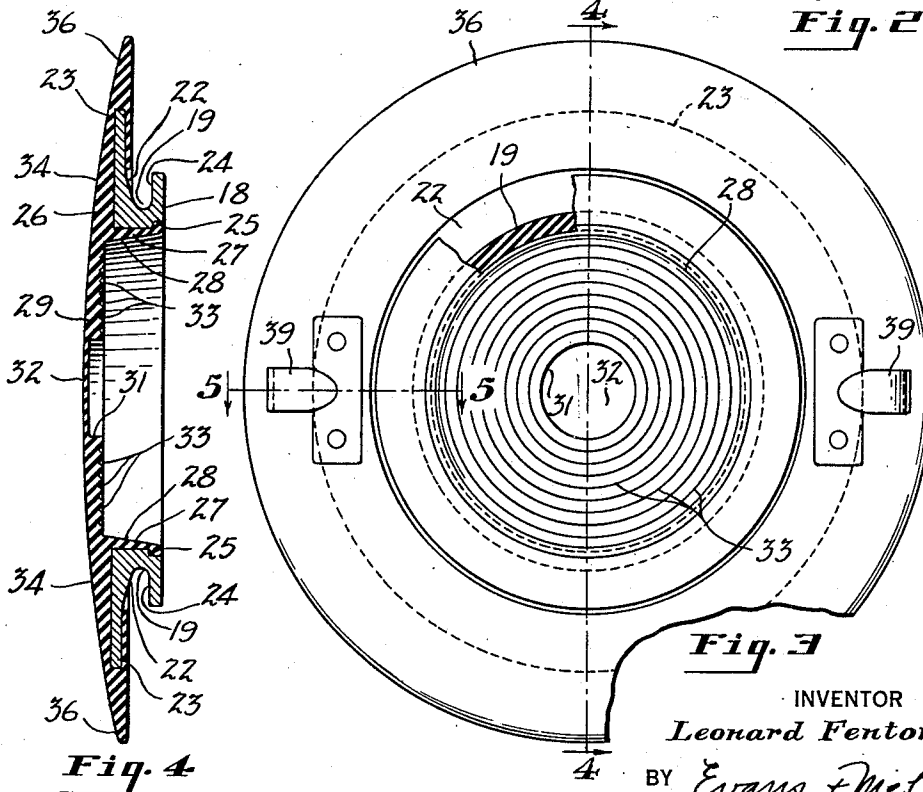
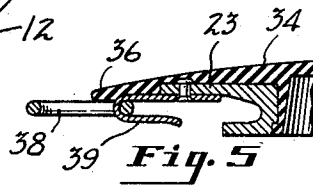
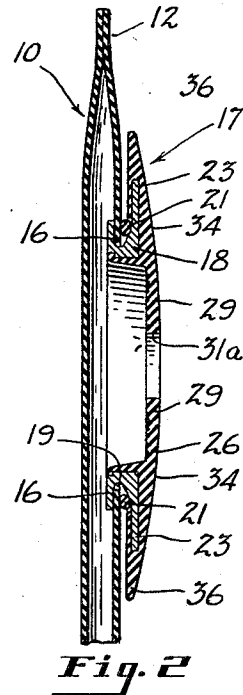
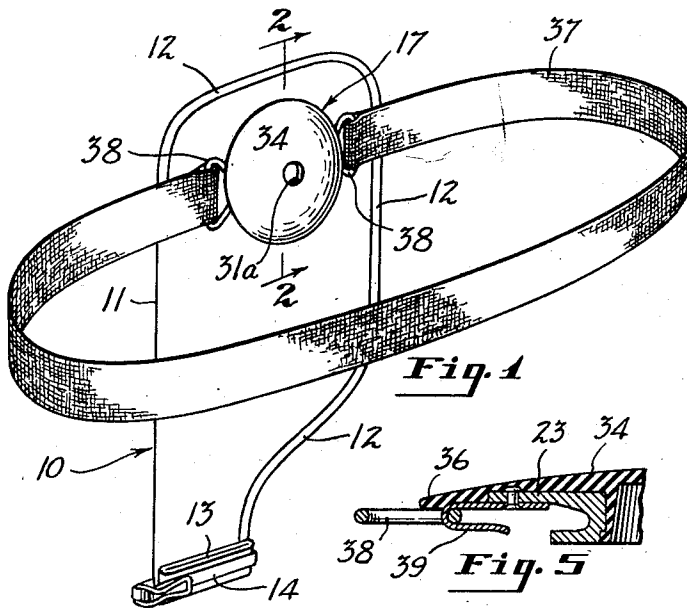
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DEVICES FOR MOUNTING A FECAL POUCH

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DEVICES FOR MOUNTING A FECAL POUCH

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11 Claims. (Cl. 128—283)

This invention relates to medical appliances and particularly to devices for mounting fecal pouches and securing them to the abdomen. While the invention is particularly suited for use as an ileostomy appliance, it is also suitable for use as a colostomy appliance.

The problem of designing an appliance of this character which can be manufactured in standard sizes and worn comfortably by all patients requiring them, without bodily discomfort or danger of accidental dislodgment of the device, has received considerable attention. However, devices of this character heretofore available have had numerous objectionable features. Among these are difficulty in fitting the devices to the patient, discomfort from chafing, undue restriction of bodily movement by the patient while wearing such a device, poor drainage away from the patient's skin where the device is attached, poor adhesion of the pouch supporting device to the patient's skin, and bulkiness of the device causing noticeable bulging of clothing under which it is worn.

The principal objects of the present invention are to provide a device for mounting a fecal pouch which can be easily fitted to the patient, which will be more comfortable for the patient to wear, which will cause a minimum of interference with his normal body movements, which will reduce accidental leakage and provide better drainage away from the patient's skin where the device is applied, which will permit the secure attachment and quick removal of a fecal pouch from the mounting device, which is sufficiently thin so that it will not cause noticeable bulging of the patient's clothing, and which is rugged, durable, and inexpensive to manufacture.

These objectives are accomplished, in accordance with the present invention, by a combination of novel features, including, particularly, a rigid, metal, mounting ring to which the pouch may be detachably but reliably secured; a soft, flexible, rubber-like, body-engaging plate of larger diameter, the ring being secured to the body-engaging plate; a body engaging plate having a thin, outer marginal portion that will flex with the surface of the abdomen to which it is applied; a body-engaging plate having a thin wall inside the rigid mounting ring, the thin wall being adapted to engage the abdomen and to have a central opening therethrough cut to the proper size to fit the patient; and a frusto-conical passageway communicating with the central opening in the body-engaging plate and flaring outwardly and through the rigid mounting ring so as to discharge into the pouch and leave no pocket or groove adjacent the abdomen where fecal matter may accumulate.

The foregoing and other objects, advantages, and features of the invention will be more fully understood from the following detailed description of a preferred embodiment of the invention, and from the accompanying drawing in which:

Figure 1 is a perspective view of an appliance embodying the present invention, including a fecal pouch, my novel pouch supporting device, and a conventional belt for securing the latter in place;

Fig. 2 is a fragmentary vertical section through the appliance of Fig. 1, showing the relationship between the pouch and its support, the plane of the section being indicated by the line 2—2 in Fig. 1;

Fig. 3 is an enlarged elevation of the pouch supporting

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device looking at the pouch attaching side thereof, a portion being broken away for clarity;

Fig. 4 is a similarly enlarged, sectional view of the pouch support, the plane of the section being indicated by the line 4—4 in Fig. 3, and

Fig. 5 is a similarly enlarged, fragmentary, sectional view of the pouch holder, the plane of the section being indicated by the line 5—5 in Fig. 3.

Referring to the drawing, a fecal pouch 10 of suitable rubber-like material, may be made from a single sheet of such material, folded along a straight side edge 11 and heat sealed about the remainder of its periphery over the marginal portion 12, except for an open lower end 13. This lower end is folded back on itself when the pouch is in use and is held folded by any suitable clasp, such as the conventional form of snap-acting clasp 14. The pouch may be emptied by removing the clasp 14 and may be flushed clean by introducing water into an inlet opening in one side of the pouch as hereinafter described.

The pouch inlet opening referred to is circular and is located in a side wall of the pouch approximately midway between the side edges thereof and a short distance below the upper edge thereof. The edge portion 16 of this circular opening (Fig. 2) is secured to a pouch supporting device embodying the present invention and designated generally by the reference character 17.

The pouch supporting device 17 comprises a rigid, metal ring 18 provided with an axially projecting boss which defines an annular groove 19 (Fig. 4) opening radially outwardly to receive the edge 16 of the inlet opening of the pouch. The groove 19 preferably tapers in width from a relatively wide mouth portion to a relatively narrow bottom portion. An O-ring 21 of elastic, rubber-like material is wedged in the groove 19 about its entire circumference between one side wall 22 of the groove and the edge portion 16 of the pouch inlet opening. This mounting structure is disclosed and claimed in my prior, copending application Serial No. 346,155, filed April 1, 1953.

The flange portion 23 of the metal ring 18 defining the groove side wall 22 is of substantially greater outer diameter than the portion defining the opposite side wall 24 of the groove; and the inner periphery of the metal ring is preferably cut away at 25 to provide a slight offset on the pouch-attaching side of the metal ring. The outer diameter of the flange 23 of the metal ring is selected to give the desired rigidity to a soft, relatively thin and flexible, body-engaging plate 26, which is adhered to and partially envelops the metal ring, as most clearly shown in Figs. 2 and 4.

The body-engaging plate 26 is preferably made of a synthetic rubber, such as neoprene, for maximum resistance to attack by the acids of body perspiration and of fecal matter contacting the same. It may most conveniently be molded about the metal ring with a portion 27 of the rubberlike plate extending axially over the inner periphery of the metal ring and terminating in a thickened annular portion filling the annular offset at 25 to obtain secure anchorage thereto.

The axially extending portion 27 of the rubber-like material flares outwardly toward the offset at 25 to provide a frusto-conical inner surface 28, which promotes free drainage of fluids into the pouch 10. The frusto-conical opening extending into the plate 26 from the pouch-attaching side thereof terminates in a relatively thin wall portion 29 having a centrally disposed, stoma-receiving opening 31 therein (Fig. 4). This opening may in turn terminate in a thinner wall portion 32, adapted to be later cut away, or the plate may be molded without this thinner end wall 32 so that an opening 31a extends completely through the thickness of the plate 26 in this region (Figs. 1 and 2). The diameter of the stoma-receiving

opening 31 or 31a is selected to fit snugly around a stoma of the smallest diameter likely ever to be encountered. If the thin wall 32 is initially formed, it may later be cut out by the manufacturer to provide the complete opening 31a, or it may be left to be cut away by the patient, who will usually require a substantially larger stoma receiving opening in any event.

To enable the patient to easily and accurately provide an enlarged stoma-receiving opening, a number of concentric grooves 33 are formed in that surface of the wall portion 29 of the plate which is opposite the body-engaging face 34 thereof. By measuring his stoma diameter and selecting the groove 33 which is of a greater diameter closest to that of the stoma, and by cutting through the wall portion 29 along the bottom of the selected groove, an opening of proper size may be easily formed to fit the patient. Thus, the pouch-attaching device shown and described need be stocked in only one size and will be suitable for home or professional fitting to practically any patient.

The body-engaging face 34 of the plate 26 is convexly curved and preferably is generally circular in its peripheral outline. The rubberlike material of which the plate 26 is made should be quite soft to provide secure adhesion to the abdomen and maximum comfort for the patient. This plate is sufficiently rigidified by the flange portion 23 of the rigid metal ring to firmly support the weight of the pouch 10 and of fecal matter accumulating therein.

To provide ample surface for securely cementing the face 34 to the patient's body, the outer diameter of the plate 26 is substantially greater than that of the ring flange 23. This provides a relatively thin and flexible, outer marginal portion 36 of the plate 26 which will flex as may be required to permit relatively free, normal body movements with a minimum tendency at any time for this outer portion of the plate to pull away from the patient's skin. In this manner I provide ample body engaging surface on the plate for maximum security without discomfort to the patient and without materially limiting his freedom of movement.

To aid in securing the pouch supporting device 17 in place, a conventional belt 37 with metal end loops 38 may be used. The loops 38 on the belt may be removably attached to the pouch-attaching side of the device by being hooked over metal hooks 39 riveted to the flange 23 of the metal ring as shown in Figs. 3 and 5.

To mount the pouch, the edge portion 16 of the inlet opening therein is stretched as required to position it in the groove 19. The pouch 10 is then threaded through the O-ring 21, and the O-ring is stretched as required to position it in the groove 19 as shown. The size of the O-ring is selected so that it will still be under substantial circumferential tension when so positioned. This causes it to wedge firmly in place in the tapered groove and securely resist withdrawal of the edge portion 16 of the pouch inlet opening.

Once the pouch has been so mounted, it need not be removed from the supporting device for emptying or cleaning. Water may be run through the bag from the stoma receiving opening 31a to the outlet end 13 of the bag with the clip 14 removed. The configuration of the bag promotes thorough flushing out of all fecal matter. When the pouch 10 has become weakened through long use, it may obviously be easily removed and replaced by a new one.

Because only the soft material of the plate 26 comes in contact with the stoma, chafing is reduced to a minimum. The flexibility of this material also tends to resist breaking the adhesive bond with the patient's skin when his body movements cause the skin to become alternately taut and loose in this region at frequent intervals.

The thin wall 29 permits the stoma to project completely therethrough with ample clearance between the stoma and the frusto-conical wall 28. Thus, fecal matter falls clear of the stoma, and the slope of the surface 28

promotes free drainage into the pouch 10. As a result, retention of fecal matter in contact with the outer rim of the stoma, where it would cause irritation and rash, is also minimized.

These various advantages, in addition to those pointed out in the course of the foregoing description, render the device described more comfortable and reliable in all respects than any other with which I am familiar. It also combines the comfort of a soft body-engaging surface with required rigidity for supporting the pouch, thus eliminating any necessity for having the pouch molded integrally with the soft-surfaced supporting structure 17 and permitting the pouch to be replaced at small cost without replacing the relatively expensive supporting device.

As will be appreciated, the particular structure shown and described for illustrative purposes may be modified in many respects while employing some or all of the novel features of the invention. Accordingly, the invention is not intended to be limited to the particular details disclosed, except as may be required by the true spirit and scope of the appended claims.

Having described my invention, I claim:

1. A device for mounting a fecal pouch, comprising a rigid, relatively thick metal ring defining an annular groove opening radially outwardly to receive the edge of an opening in a fecal pouch, and a soft, relatively thin and flexible, body-engaging plate of rubber-like material and generally circular outline covering and coaxially permanently secured to one side surface of said ring, the outer diameter of said plate being sufficiently greater than the maximum diameter of said ring to provide a thin, flexible, annular, body-engaging outer web portion extending radially outwardly a substantial distance beyond said ring, said plate also extending radially inwardly beyond said ring and generally parallel to said one side of the ring to provide a thin, inner, body-engaging web, and said plate having a centrally disposed stoma-receiving opening therethrough of less diameter than the minimum diameter of said ring.

2. A device for mounting a fecal pouch, comprising a rigid, relatively thick metal ring defining an annular groove opening radially outwardly to receive the edge of an opening in a fecal pouch, one side wall of said groove being of substantially greater outer diameter than the other, and a soft, relatively thin and flexible, body-engaging plate of rubber-like material and generally circular outline covering and coaxially secured permanently to one side surface of said ring and at least partially enveloping said one side wall of said groove, the outer diameter of said plate being sufficiently greater than the outer diameter of said one side wall to provide a thin, flexible, annular, body-engaging outer web portion extending radially outwardly a substantial distance beyond said ring, said plate also extending radially inwardly beyond said ring and generally parallel to said one side of the ring to provide a thin, inner, body-engaging web, and said plate having a centrally disposed stoma-receiving opening therethrough of less diameter than the minimum diameter of said ring.

3. A device for mounting a fecal pouch, comprising a rigid, relatively thick metal ring defining an annular groove opening radially outwardly to receive the edge of an opening in a fecal pouch, and a soft, relatively thin and flexible, body-engaging plate of rubber-like material and generally circular outline covering and coaxially secured permanently to one side surface of said ring, the outer diameter of said plate being sufficiently greater than the maximum diameter of said ring to provide a thin, flexible, annular, body-engaging outer web portion extending radially outwardly a substantial distance beyond said ring, said plate also extending radially inwardly beyond said ring and generally parallel to said one side of the ring to provide a thin, inner, body-engaging web, and said plate having a centrally disposed stoma-receiving opening therethrough of less diameter than the minimum diameter of said ring.

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ing opening therethrough of less diameter than the maximum diameter of said ring, and the axial thickness of said plate between its outer periphery and the innermost periphery of said ring being less than the axial thickness of said ring.

4. A device for mounting a fecal pouch, comprising a rigid, metal ring defining an annular groove opening radially outwardly to receive the edge of an opening in a fecal pouch, and a soft, relatively thin and flexible, body-engaging plate of rubber-like material and generally circular outline covering and coaxially secured to one side of said ring, the outer diameter of said plate being substantially greater than the maximum diameter of said ring, said plate having a centrally disposed stoma-receiving opening therethrough of less diameter than the minimum diameter of said ring, the axial thickness of said plate between its outer periphery and the innermost periphery of said ring being less than the axial thickness of said ring, and said plate having a generally convex body-engaging surface and tapering in thickness to a relatively thin and flexible, peripheral portion beyond the outer periphery of said ring.

5. A device for mounting a fecal pouch, comprising a rigid, metal ring defining an annular groove opening radially outwardly to receive the edge of an opening in a fecal pouch, one side wall of said groove being of substantially greater outer diameter than the other, and a soft, relatively thin and flexible, body-engaging plate of rubber-like material and generally circular outline coaxially secured to and at least partially enveloping said one side wall of said groove, the outer diameter of said plate being substantially greater than the outer diameter of said one side wall, said plate having a centrally disposed stoma-receiving opening therethrough of less diameter than the minimum diameter of said ring, and said plate having a generally convex body-engaging surface and tapering in thickness to a relatively thin and flexible, peripheral portion extending radially beyond the outer periphery of said one side wall of said ring.

6. A device for mounting a fecal pouch, comprising a plate having a body-engaging face and an oppositely directed face, and a centrally disposed drainage opening extending into said plate from said oppositely directed face thereof, said drainage opening having a frusto-conical peripheral wall diverging outwardly toward said oppositely directed face and a relatively thin body-engaging end wall at the body-engaging side of the plate extending radially inwardly from said frusto-conical inner surface at the small end thereof, said end wall having a plurality of concentric, circular grooves centrally formed in the inner surface thereof as guides for cutting a stoma-receiving opening of a selected diameter therethrough, and means on said oppositely directed face for securing the periphery of a pouch opening thereto and around said drainage opening.

7. A device for mounting a fecal pouch, comprising a generally circular body-engaging plate of relatively thin and flexible, rubber-like material, said plate having a centrally disposed, integrally formed, annular portion of greater axial thickness projecting from one side thereof and defining a central frusto-conical drainage opening diverging in the direction faced by said one side of the plate, said plate including a thin body-engaging web extending radially inwardly from the periphery of said frusto-conical drainage opening at the small end thereof to form an inner, flexible, annular wall adapted to closely encircle a stoma projecting therethrough, and a ring of relatively rigid material surrounding said annular portion and permanently fixed and adhered to said plate, said ring being provided with integral means for attaching the periphery of a pouch opening directly thereto.

8. A device for mounting a fecal pouch, comprising a generally circular plate of relatively thin and flexible, rubber-like material, said plate having a body-engaging face and a centrally disposed, integrally formed, annular

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portion of greater axial thickness projecting from the opposite side thereof and defining a frusto-conical drainage opening diverging away from said body-engaging face, said plate including a thin body-engaging web extending radially inwardly from the periphery of said frusto-conical drainage opening at the small end thereof to form an inner, flexible, annular wall adapted to closely encircle a stoma projecting therethrough, and a ring of relatively rigid material permanently secured to and at least partially embedded in said plate on said opposite side thereof and surrounding said annular portion, said ring being provided with integral means for gripping a pouch about an opening therein.

9. A device for mounting a fecal pouch, comprising a generally circular plate of relatively thin and flexible, rubber-like material, said plate having a body-engaging face and a centrally disposed, integrally formed, annular portion of greater axial thickness projecting from the opposite side thereof and defining a frusto-conical drainage opening diverging away from said body-engaging face, said plate including a thin body-engaging web extending radially inwardly from the periphery of said frusto-conical drainage opening at the small end thereof to form an inner, flexible, annular wall adapted to closely encircle a stoma projecting therethrough, a ring of relatively rigid material secured to said plate on said opposite side thereof and surrounding said annular portion, said ring being provided with means for gripping a pouch about an opening therein, and having a flange extending radially outwardly from said annular portion toward, but substantially short of, the outer periphery of said plate, said flange being embedded in the body of said plate.

10. A device for mounting a fecal pouch, comprising a rigid metal ring of substantial axial thickness providing a rigid, annular, pouch attaching boss, a relatively thin body-engaging plate of soft, flexible, rubber-like material secured to and covering one side surface of said ring and extending radially outwardly beyond said ring to provide a thin, flexible, peripheral, body-engaging web, said plate also extending radially inwardly beyond said ring and generally parallel to said one side of said ring as a relatively thin inner web to provide a flexible body-engaging surface inwardly of said ring that is adapted to closely encircle a stoma, said web, on its side opposite its body-engaging surface, having a plurality of concentric grooves formed therein as guides for cutting a stoma-receiving opening of any of a range of diameters less than the inner diameter of said ring.

11. A device for mounting a fecal pouch, comprising a rigid metal ring of substantial axial thickness for supporting the pouch, a relatively thin body-engaging plate of soft, flexible, rubber-like material permanently secured to one side surface of said ring, said plate extending radially inwardly beyond said ring and generally parallel to said one side as a relatively thin inner web to provide a flexible body-engaging surface inwardly of said ring that is adapted to closely encircle a stoma, said web, on its side opposite its body-engaging surface, having a plurality of concentric grooves formed therein as guides for cutting a stoma-receiving opening of any of a range of diameters less than the inner diameter of said ring, the inner surface of said ring diverging outwardly as a frustcone from said inner web adjacent said one side surface to the opposite side surface thereof to facilitate outward drainage from within said ring.

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U. S. DEPARTMENT OF COMMERCE
PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 2,818,069

December 31, 1957

Leonard Fenton

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 5, lines 1 and 2, for "maximum" read -- minimum --.

Signed and sealed this 4th day of March 1958.

(SEAL)

Attest:

KARL H. AXLINE

Attesting Officer

ROBERT C. WATSON
Commissioner of Patents