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E. W. SWEARINGEN

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COLOSTOMY APPLIANCE

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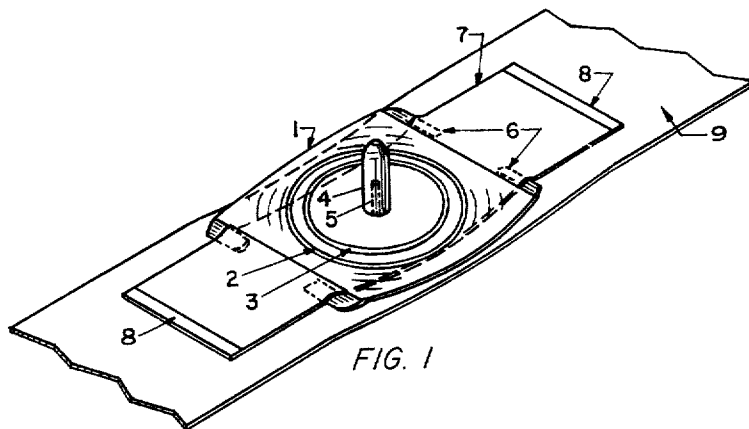


FIG. 1

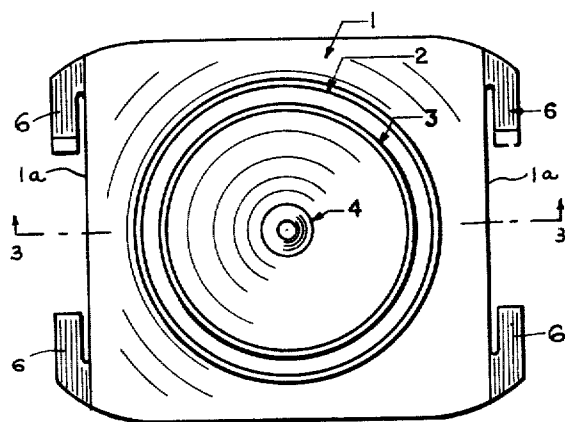


FIG. 2

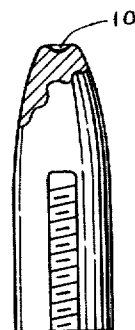


FIG. 4

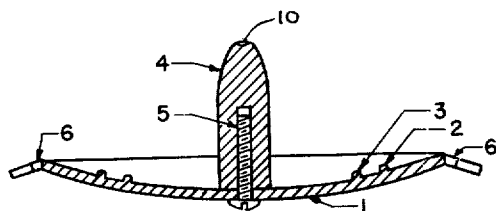


FIG. 3

ERNEST W. SWEARINGEN
INVENTOR.

BY *Dodge and Sons*
ATTORNEYS.

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COLOSTOMY APPLIANCE

Ernest W. Swearingen, Orlando, Fla., assignor to Boyte Colostomy Ease, Inc., a corporation of Florida
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This invention relates to an improved colostomy appliance for sealing an artificial orifice formed in the abdominal wall of a human body.

It is known to provide colostomy appliances of the type having a nipple adapted to extend into the artificial orifice, said nipple being secured to a base plate which is maintained in engagement with the body surface surrounding the orifice by auxiliary supporting means, such as a belt, bandage, vacuum device, or the like. In order to obtain an efficient orifice seal with such devices, the plate must be pressed against the abdominal surface with appreciable force, and this results in considerable discomfort to the user. Furthermore, owing to the slippage which occurs between the base plate and the supporting means during normal movement of the user, it is extremely difficult to avoid irritation of the orifice walls by the nipple.

The object of the present invention is to provide a colostomy appliance which avoids the drawbacks of the known devices and which is characterized by the provision of a concavo-convex base plate upon the concave surface of which is secured a nipple. The free end of the nipple is adapted to extend into the artificial orifice and contains a recess which assists in the orifice sealing. The sealing is further improved by the provision, on the concave surface of the plate, of a pair of narrow annular ribs concentrically arranged about and spaced from the nipple, said ribs being adapted to engage the abdominal surface surrounding the orifice. According to another feature of the invention, the base plate contains a pair of parallel slots which receive a tensioned elastic portion of a supporting belt, said elastic portion cooperating with the slots and the convex surface of the plate to prevent relative sliding movement between the plate and the belt, whereby the sealing device is maintained in position on the abdomen and irritation of the orifice walls is alleviated.

Other objects and advantages of the invention will become apparent from a study of the following specifications when considered in conjunction with the accompanying drawing, in which:

FIG. 1 is a perspective view of the colostomy appliance showing the manner in which the sealing device is connected with the supporting belt;

FIG. 2 is a detailed plan view of the sealing device;

FIG. 3 is a sectional view taken along line 3-3 of FIG. 2; and

FIG. 4 is a partially sectioned view of the recessed nipple.

The colostomy appliance comprises a concavo-convex base plate 1 the concave surface of which is provided with a pair of spaced annular ribs 2 and 3 arranged coaxially with respect to and spaced from nipple 4. Plate 1 and nipple 4 are each formed of a suitable rigid material (for example, a transparent synthetic plastic, such as acrylic resin) and are removably connected together by means of screw 5 which extends through an opening in the plate and which is threaded in an axial bore in the nipple. At each end the plate 1 is provided with a pair of opposed inwardly-directed projections 6 which are spaced from the edges 1a of the plate to define slots. As shown in FIG. 1, an elastic belt portion 7, secured at its ends by sewn seams 8 to the supporting belt body 9, is in contiguous engagement with the convex surface of the plate and extends at each end upward through the slots and over the projections 6. The length of the elastic

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portion 7 is slightly less than the length of the portion of belt 9 lying between the seams 8 so that the portion 7 will be tensioned when the belt is fastened about the torso of the user. At its free end the nipple 4 is rounded and is provided with a recess or dimple 10 which assists in sealing the orifice as will be described in greater detail below.

The appliance is assembled by positioning the convex surface of the plate on the surface of elastic portion 7 and by bringing the lateral edges of the portion 7 over projections 6 as shown in FIG. 1. The plate may now be slidably displaced along the portion 7 to a desired position between the seams 8. During use, the nipple 4 is inserted into the artificial orifice and the concave surface of the base plate is brought into contact with the abdominal surface of the user. The ends of the belt are drawn about the torso and are secured together by suitable separable fastener means, not shown. Owing to the unequal lengths of the elastic portion 7 and the portion of the belt body 9 lying between the seams 8, the portion 7 is stretched slightly with the result that inadvertent sliding movement of the plate relative to the belt is resisted by the frictional cooperation which occurs between the tensioned portion 7 and the convex surface of the plate and the upper surfaces of projections 6. Owing to the improved seal obtained by the recessed nipple and the spaced annular rib means, the plate 1 need only be pressed against the abdominal surface with a relatively small force as compared to those forces normally required in conventional colostomy appliances, and consequently the pain and discomfort caused by the use of the device is reduced. Of course, the pressure force of the plate on the abdominal surface may be varied, as desired, in accordance with the overall length and degree of elasticity of the belt body portion 9.

Owing to the removability of the nipple from the base plate, nipples of different sizes may be connected to the plate according to the specific requirements of the user. For nipples having a length of approximately $2\frac{1}{2}$ " and outer diameters ranging from $\frac{3}{8}$ " to $\frac{1}{2}$ ", a recess 10 having a diameter of approximately $\frac{3}{32}$ " and a depth of $\frac{1}{32}$ " has proven to be desirable.

During use, the recess 10 in the end of the nipple becomes filled with secretion from the gastro-intestinal tract, and this secretion in the recess tends to block further secretion from passing out through the orifice and to prevent loud noises from being developed by escaping gas. Although the reason for the blockage of the secretion by the recess 10 is not fully known, it is believed that owing to the contour of the recess and the transverse surface presented thereby, the secretion in the recess builds up in such a manner as to oppose flow of further secretion along the wall of the nipple. Experience has proven that nipples which are recessed in the manner described above present an improved orifice seal over nipples which are merely pointed or rounded at their free ends. Furthermore, as a result of the contact of ribs 2 and 3 with the abdominal surface, an annular seal space is defined about the orifice which serves to muffle the noise of escaping gas and to prevent painful pivotal movement of the nipple relative to the orifice.

While I have illustrated and described the best form and embodiment of the invention now known to me, it will be apparent to those skilled in the art that other changes and modifications may be made in the apparatus described without deviating from the scope of the invention set forth in the following claims.

I claim:

1. A colostomy appliance comprising a rigid concavo-convex plate, a rigid nipple connected with the plate and projecting from the concave surface of the plate in a

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direction generally normal to that surface, the outstanding end of the nipple being solid and rounded and containing a small recess in its extremity, narrow annular ribs on the concave surface of said plate, said ribs being coaxially arranged relative to said nipple and being spaced from each other and from said nipple, said plate containing parallel slots on opposite sides of said ribs, and a supporting belt having an elastic first portion in contiguous engagement with the convex surface of the plate and extending through the slots.

2. A colostomy appliance as defined in claim 1 wherein said nipple is removably connected with said plate and wherein the recess in the nipple has a diameter of approximately $\frac{3}{32}$ " and a depth of approximately $\frac{1}{32}$ ".

3. A colostomy appliance as defined in claim 1 where-

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in said belt includes also a flexible unitary body portion of greater length than that of said first belt portion, said first portion being secured at its ends to said body portion at points on said body portion which are spaced a greater distance than the length of said first portion.

References Cited in the file of this patent

UNITED STATES PATENTS

10	81,510	Jennings	Aug. 25, 1868
	2,243,529	Grossman	May 27, 1941

FOREIGN PATENTS

	147,953	Austria	Dec. 10, 1936
15	854,993	Germany	Nov. 10, 1952