

Feb. 5, 1963

J. H. MASON
SURGICAL APPLIANCE

3,076,458

Filed Dec. 22, 1960

2 Sheets-Sheet 1

FIG. 1.

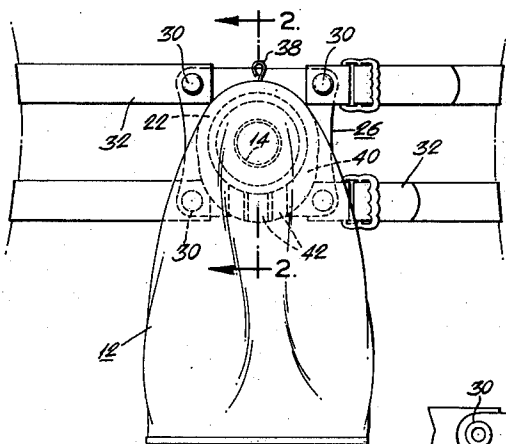


FIG. 2.

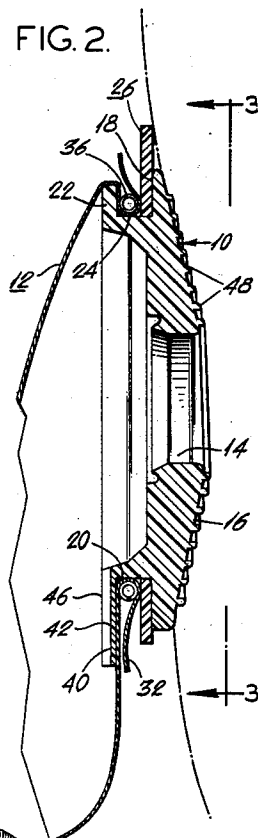


FIG. 3.

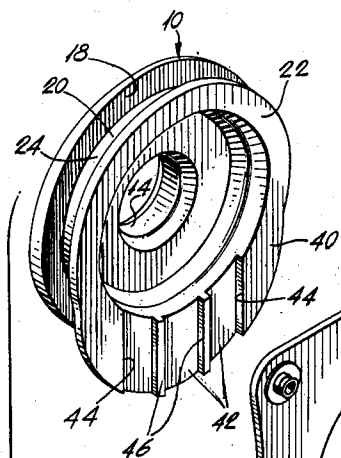
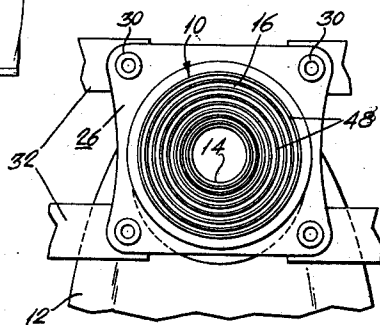
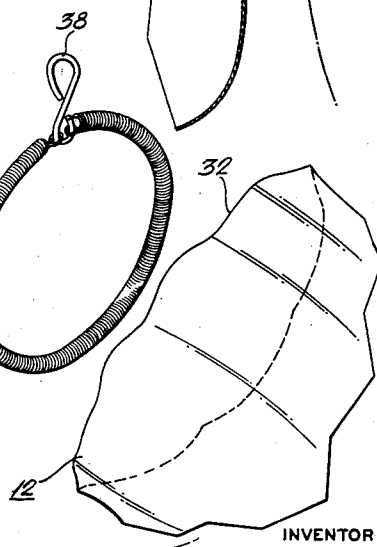


FIG. 4.



INVENTOR:
JAMES H. MASON
BY *Howard & Howard*
ATTYS.

Feb. 5, 1963

J. H. MASON
SURGICAL APPLIANCE

3,076,458

Filed Dec. 22, 1960

2 Sheets-Sheet 2

FIG. 5

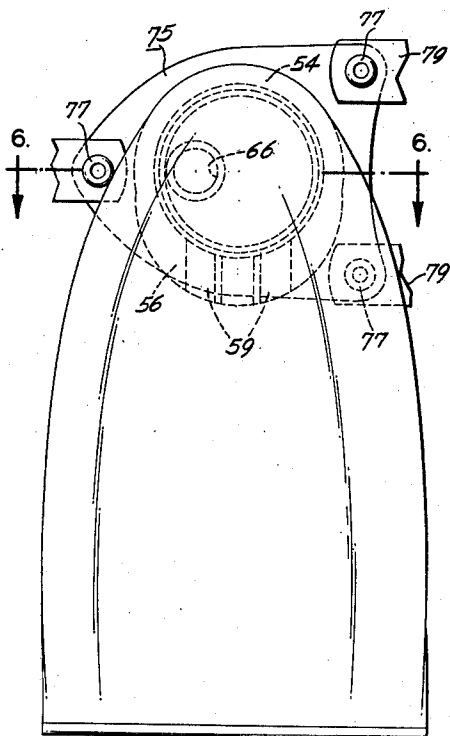


FIG. 6

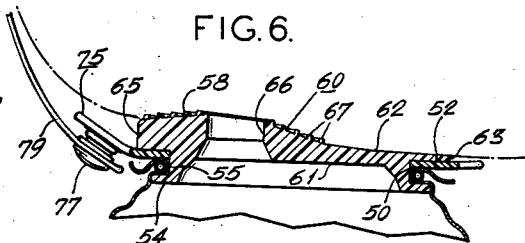


FIG. 8

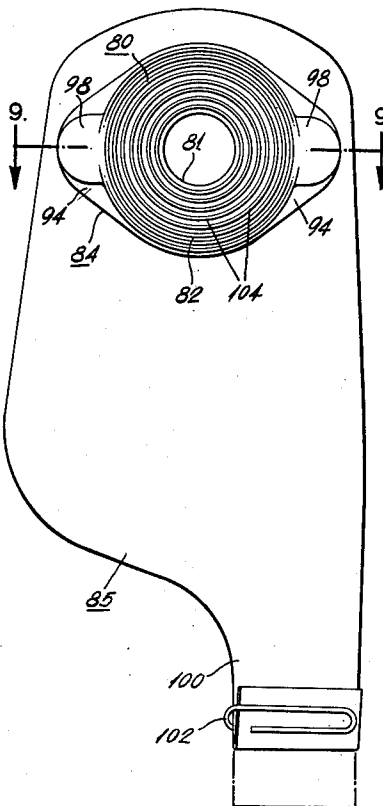


FIG. 7

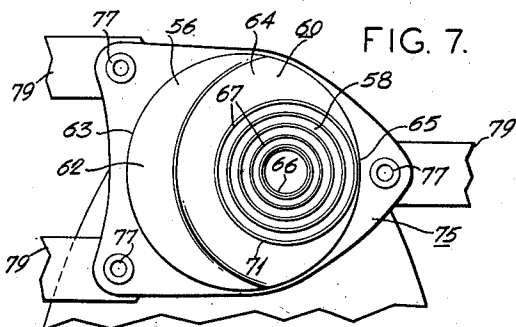
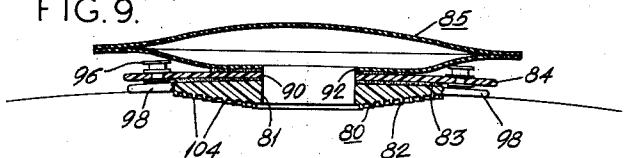


FIG. 9



INVENTOR:
JAMES H. MASON
By *Howson & Howson*
ATTYS.

1

3,076,458 SURGICAL APPLIANCE

James H. Mason, 421 Evans Ave., Willow Grove, Pa.
Filed Dec. 22, 1960, Ser. No. 77,755
4 Claims. (Cl. 128—283)

This invention relates to an improved surgical appliance. More particularly, the present invention relates to an improved enterostomy device of the type shown in my prior Patent No. 2,869,548, issued January 30, 1959. A device of this type is designed to be secured in position over an enterostomy opening formed in the human body to receive excrement or other effluent matter discharged from the body.

An object of the present invention is to provide a device of this kind which is constructed to firmly retain its position on the body and presents a minimum of discomfort to the user.

Another object of the present invention is to provide an enterostomy device which provides an effective seal around the enterostomy opening in the body, thereby eliminating the embarrassment and discomfort caused by seepage.

A further object of the present invention is to provide a device having a body-confronting portion which is contoured to complement the shape of that portion of the body to which it is applied, so that there is no appreciable slippage of the device on the body, notwithstanding normal body movements.

Still another object of the present invention is to provide a device of the above type which is of relatively simplified construction, and which is economical to manufacture and assemble.

These and other objects of the present invention and the various details of the construction and operation thereof are hereinafter more fully set forth with reference to the accompanying drawings, in which:

FIG. 1 is a view of an embodiment of enterostomy device made in accordance with the present invention, in position on the human body;

FIG. 2 is an enlarged sectional view thereof, taken on line 2—2 of FIG. 1;

FIG. 3 is a view of the device taken on line 3—3 of FIG. 2;

FIG. 4 is an exploded perspective view, illustrating the parts comprising the device;

FIG. 5 is a fragmentary view similar to FIG. 1 of another embodiment of enterostomy device made in accordance with the present invention;

FIG. 6 is an enlarged sectional view on line 6—6 of FIG. 5;

FIG. 7 is a view showing the body-confronting side of the device;

FIG. 8 is a view similar to FIG. 7 of still another embodiment of enterostomy device in accordance with the present invention; and

FIG. 9 is a sectional view on the line 9—9 of FIG. 8.

Referring now to the drawings, the primary elements of the device consist of an annular member adapted to be secured to the torso, with its central opening surrounding an enterostomy opening, a bag, of polyethylene plastic or the like, secured to the annular member in registry with the central opening to receive excrement or other effluent matter from the enterostomy opening, and connections and associated parts for securing these members to each other and to the torso.

In the embodiment of the invention illustrated in FIGS. 1 to 4, inclusive, of the drawings, the annular member 10 is generally disc-like, having a circular central opening 14 therein extending substantially normal to the rear face 18 of the annular member. The annular member 10 has a tubular neck 20 projecting rear-

2

wardly of the rear face 18 adjacent its outer periphery and terminating at its outer end in a radial, outwardly-extending flange 22 to provide an annular groove 24 between the flange 22 and rear face 18. As best shown in FIG. 4, the flange 22 has an enlarged or elongated portion 40 at the lower side of the device. A generally square strap-supporting member 26, having an opening 28 therein, is mounted in the groove 24 about the neck 20, as illustrated in FIG. 2. The supporting member 26 is provided with releasable connectors 30, in the present instance snap fasteners mounted at its corner portions, for attachment to a belt 32 which is worn about the waist of the user to support the device in place on the torso, as illustrated in FIG. 1.

The annular member 10 and strap support 26 may be formed of any suitable flexible and resilient material, such as synthetic rubber, an acrylic resin, or other material capable of providing the necessary flexibility while resisting chemical deterioration. The opening 28 in the strap-support 26 is slightly larger than the outer diameter of the neck 20, so that it may be installed in the position illustrated in FIG. 2, surrounding the neck, the flexibility of the flange 22 permitting it to be bent to facilitate this installation. The upper end 32 of the flexible bag 12 is secured about the neck 20 by means of an elastic annulus, which may be in the form of a tension coil spring 36 bent into an annulus and having its opposite ends secured to each other through a handle 38. It will be seen that by bringing the upper end of the bag into position surrounding the flange 22, as illustrated in FIG. 2, and thereafter securing the coil spring in place in the groove 24 by manipulation of its handle 38, the bag 12 may be secured in fluid-tight relationship to the annular member 10.

In order to insure that the folds of the bag 12 may not be closed against each other so as to prevent passage of effluents to the lower end of the bag, the lower side of the enlarged portion 40 of the flange 22 is grooved, as illustrated in FIG. 4, to provide one or more downwardly-extending drainage channels 42 on the outer side of the lower portion 40 of the flange 22. It will be seen that the projecting side walls 44 of the channels and the ridges 46 intermediate these channels 42 tend to maintain the channels open by preventing the opposing side of the bag 12 from entering the channels 42.

In accordance with the present invention, the body-confronting face 16 of the annular member is provided with at least one projection or rib which serves to maintain the device firmly in place when applied to the torso in the manner shown in FIGS. 1 and 2. In the present instance, the projections consist of a plurality of continuous circular ribs 48 projecting outwardly from the front face 16 of the annular member 10. These ribs are spaced apart radially, and are concentric with the opening 14, forming a series of circular projections of progressively greater diameter from the circular opening 14 to the outer periphery of the annular member 10. These ribs provide a greater surface area in contact with the torso, and also serve as gripping or holding members by embedding themselves in the skin and thereby establishing a resistance to movement of the device on the torso. When the continuous projections or ribs are embedded in the skin surrounding the enterostomy opening, there is formed a plurality of annular seals radially outwardly of the enterostomy opening. These seals present a labyrinth seal against flow of excrement outwardly, thereby preventing leakage of effluent and the embarrassment and discomfort to the user resulting from such leakage. As a further aid in maintaining the device firmly in place on the torso and also to prevent seepage, the body-confronting face tapers toward the opening 14

3

to provide a face of generally conical form. In this manner, as shown in FIG. 2, the pressure exerted by the annular member 10 against the torso is greatest at the portion immediately surrounding the opening 14, and decreases progressively radially outwardly toward the outer periphery of the annular member.

Another feature of the present invention is the provision of a device which is shaped to complement the body contour at the enterostomy opening for more positive retention of the device in place on the torso and for greater comfort to the wearer. The position of the enterostomy opening and the body contour at the enterostomy opening determine the shape of the device. In the present instance, the device is designed for application to a part of the torso where the body contour slopes inwardly. To complement this contour, the body-confronting face 16 is disposed at an angle to the rear face 18, the width of the annular member being greater at the bottom than at the top thereof. (See FIG. 2.) The effect of disposing the front face at an angle is to position the device so that the direction of the force exerted by each of the straps 32 to hold the device in place on the torso is substantially in the same direction, thereby precluding cocking of the device. In this manner the device is supported on the torso in an approximately vertical position, and the tendency thereof to slide downwardly on the body contour is resisted.

In the embodiment of the invention shown in FIGS. 5 to 7, inclusive the device is designed to be used where the enterostomy opening is located to the side of the torso, close to the hip bone, where the body contour curves to the side, as shown in FIG. 6. The primary elements of this embodiment of the invention consist of an annular member adapted to be secured to the torso with its opening surrounding an enterostomy opening, a bag of polyethylene, or the like, secured to the annular member in registry with the opening therein to receive excrement or effluent matter from the enterostomy opening and connections and associated parts for securing these members to each other and to the torso. The annular member 60 has a tubular neck 50 projecting rearwardly of the rear face 52 adjacent its outer periphery, and terminates at its outer end in a radial, outwardly-extending flange 54 to provide an annular groove 55 between the flange 54 and the rear face 52. As shown in FIG. 5, the flange 54 has an elongated portion 56 at the lower side of the device, which is grooved to provide one or more downwardly-extending drainage channels 59 on the outer side of the lower portion of the flange 54. The channels 59 serve the same function as the drainage channels 42 of the previously-described embodiment. The general arrangement of the parts of the device and the manner of connecting them to each other are the same as in the previously described embodiment. The configuration of the body-confronting front face 58 of the annular member 60, however, differs from the front face 16 of the previously-described embodiment. As best shown in FIG. 7, the outer periphery of the front face 58 is generally circular, having a crescent-shaped portion 62 at one side which inclines slightly at an angle from one side edge 63 thereof with respect to the rear face 61, and an oval-shaped portion 64 merging with the portion 62, and which inclines in the same direction as the portion 62 at a slightly greater angle. The wall of the front face 58 is therefore of lesser thickness at the one side edge 63 than at its diametrically opposed side edge 65, as shown in FIG. 6. An opening 66 is provided in the oval-shaped portion which is offset from the center thereof toward the side 65. A plurality of annular ribs 67 projecting from the front face concentric with the opening 66 and radially spaced apart, extend from the opening 66 radially outwardly, so that the outermost rib 71 lies adjacent the side edge 65 of the front face 58. (See FIG. 7). The portion of the front face 58 included

4

by the circular ribs 67 tapers outwardly from the merger with the oval-shaped portion 64 adjacent the outermost rib 71 toward the opening 66.

For this embodiment of the invention, the fastening means comprises a strap-supporting member 75 of generally triangular shape, which is secured to the device in the same manner as the strap-holder of the previously-described embodiment. The strap-supporting member 75 is provided with releasable connectors 77, in the present instance snap-fasteners, mounted at its corner portion for attachment to a belt 79 which is worn about the waist of the user to support the device in place on the torso.

This device, as noted above, is designed for use on a part of the torso where the body contour curves to the side. The annular ribs 67 and taper of the front face included by the ribs serve to retain the device firmly on the torso and prevent seepage, for the reasons discussed previously. Moreover, since the front face is also inclined from side to side, it complements the shape of the torso, as shown in FIG. 6, and thereby resists the tendency to slip toward the curved side of the torso.

Still another embodiment of enterostomy device made in accordance with the present invention, as shown in FIGS. 8 and 9 of the drawings, is for use on a portion of the torso that is substantially flat. The device comprises an annular member 80, generally circular in form, having a central opening 81 extending substantially normal to opposed front and rear faces 82 and 83, respectively, of the annular member, a disc-like strap-supporting member 84 secured to the rear face 83 of the annular member 80 by a suitable adhesive, and a bag 85 fastened by means of an adhesive substance to the strap-support 84. The strap support 84 and the bag 85 are provided with openings 90 and 92, respectively, which register with the opening 81 in the annular member 80 so that the bag may receive effluent matter discharged from the body. The support member 84 is provided with laterally-extending lugs or ears 94 mounting snap-fasteners or equivalent detachable connections 96 for detachably receiving a belt worn about the waist of the user. The annular member 80 has laterally-extending ears 98 which overlie the fasteners 96 on the support 84 and protect the body of the user from contacting the fasteners. The annular member and holder may be formed, as in the previous embodiments, of any suitable resilient material which also resists chemical deterioration.

The bag is made of a relatively thin, flexible material, and, as illustrated in FIG. 8, has a drainage spout 100 extending from the bottom thereof, which is kept closed while the device is in use by reversely folding the tip thereof and applying a clip fastener 102 thereto.

In the embodiment of the invention of FIGS. 8 and 9, the body-confronting face 82 has a plurality of ribs or projections 104 thereon, concentric with the opening 81, similar in arrangement to the ribs of the previously-described embodiments. The front face 82 is also tapered toward the central opening, and is of uniform width about its peripheral edge. This embodiment is intended for use on a substantially flat part of the torso. The taper of the front face 82 localizes the maximum pressure exerted by the device against the body to the area immediately surrounding the enterostomy opening, so that a continuous contact is maintained during normal movements of the torso, thereby precluding slippage and leakage. The annular ribs 104 grip the skin and serve additionally to prevent slippage and leakage.

While particular embodiments of the present invention have been illustrated and described herein, it is not intended to limit the invention to such a disclosure, but changes and modifications may be incorporated and embodied therein within the scope of the following claims:

I claim:

1. In an enterostomy device adapted to be positioned over an opening in the human torso to receive effluent

5

matter discharged therefrom, the combination comprising an annular member having a rear face, a body-confronting front face engaging the torso, said annular member being of a predetermined thickness at one section adjacent the peripheral edge thereof and being of reduced cross section at a diametrically opposed section adjacent the peripheral edge whereby said front face is disposed at an angle to said rear face, and an opening therethrough surrounding the opening in the torso, a flexible bag having an open end portion secured to said rear face in registry with said opening to receive effluent discharged from the body through the opening of said annular member, and means defining at least one rib in said front face projecting outwardly therefrom to anchor the device in place on the torso.

2. A device according to claim 1, wherein said rib is annular in form and including a plurality of additional annular ribs projecting outwardly from said front face,

6

said ribs being radially spaced apart and concentric with the opening in said annular member.

3. A device according to claim 2, wherein said front face tapers toward said opening.

4. A device according to claim 2, wherein said opening in said annular member is disposed centrally of the front face, and wherein said plurality of ribs on said front face extend from said central opening to the outer periphery of said front face.

References Cited in the file of this patent

UNITED STATES PATENTS

2,048,392	Koenig	July 21, 1936
2,554,840	Perry	May 29, 1951
2,584,540	Botvin et al.	Feb. 5, 1952
2,703,576	Furr	Mar. 8, 1955
2,818,069	Fenton	Dec. 31, 1957
2,869,548	Mason	Jan. 20, 1959