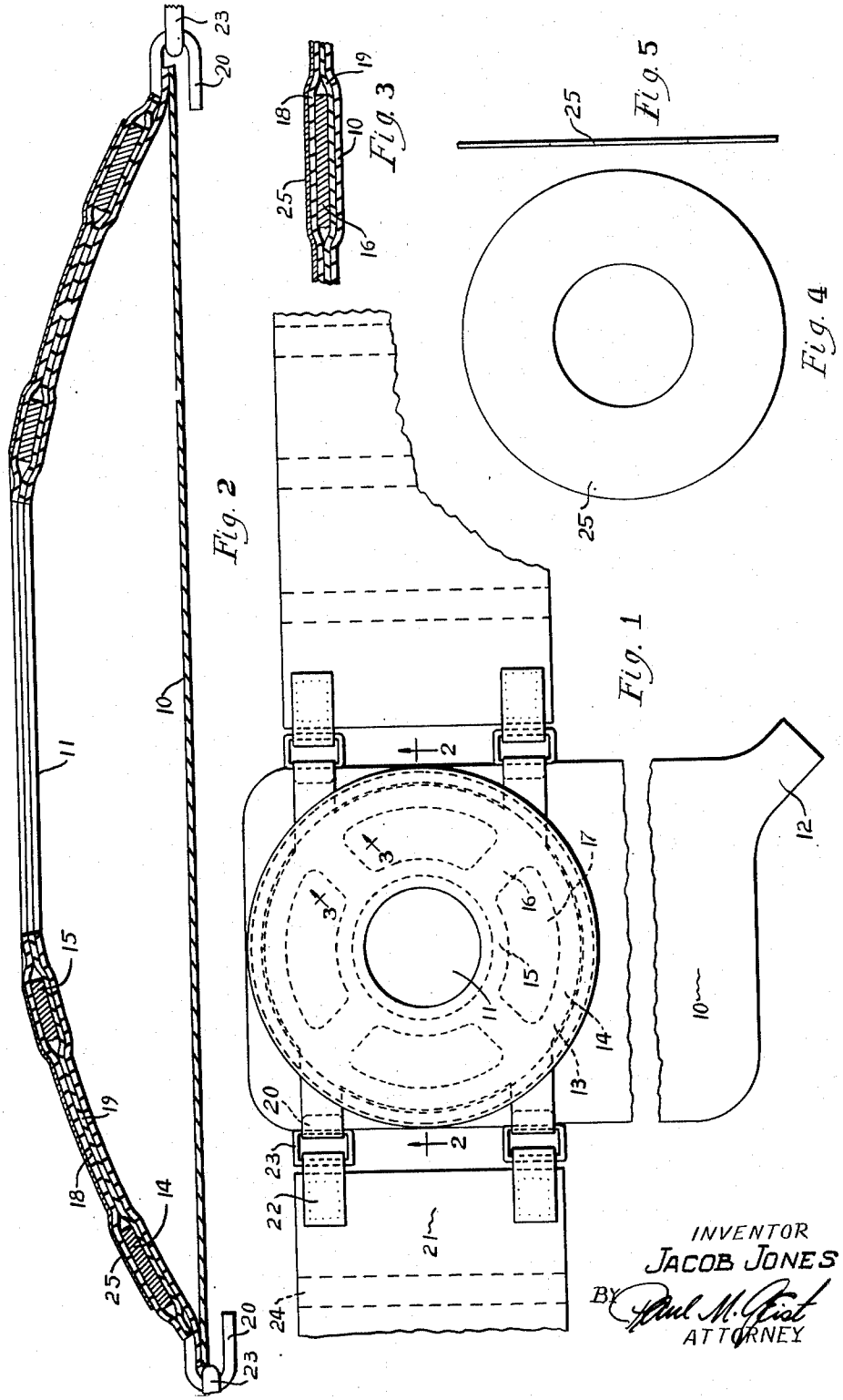
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COLOSTOMY DEVICE

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COLOSTOMY DEVICE

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This invention relates to surgical apparatus, and particularly to a new and improved receptacle or container adapted to be associated with artificial orifices in abdominal walls such as is encountered when a patient is subjected to a colostomy, ileostomy, colectomy, or the like.

Such operations leave the patient with an artificial opening in the abdominal wall through which body refuse must pass. Many types of colostomy bags have heretofore been proposed, and while some of these achieve a certain degree of success, yet all prior-known colostomy bags provide certain hazards to the wearer which are a constant source of annoyance. Among the disadvantages of prior-known colostomy bags include their inability to provide a connection between the patient's abdominal wall and the container which is not only leak-proof, but capable of withstanding considerable stresses to which it is subjected by the normal activity of the wearer; their inability to provide a support for the bag that will flex with the bodily movements while still retaining a constant pressure on the connector between the patient's body and the bag; and their inability to provide a connection between the body of the wearer and the bag which will resist slipping.

Heretofore it was the common practice with certain colostomy bags to employ an adhesive between the inlet to the bag and the wearer's body. This required carrying two tubes of material, one tube containing a skin preparation to resist the chemical action of the adhesive which was contained in the other tube. The usual procedure in applying certain bags employing such adhesives is to clean the abdominal wall surrounding the artificial opening and apply a coating of the skin preparation from the one tube. The next step is to apply a coat of adhesive from the second tube to a disc fixed to the bag and surrounding the inlet thereto. It is then necessary to wait a predetermined time interval before applying the bag, to permit the adhesive and skin preparation to partially dry. Finally, the disc containing the partially dried adhesive is pressed firmly against the abdominal wall with the bag inlet surrounding the artificial opening, and, an elastic band surrounding the body of the patient is attached to each side of the disc to maintain it in place. Such procedure is not only time-consuming, but requires the patient to lie down during the procedure with the artificial opening uncovered awaiting the partial drying of the adhesive, with the attending discomfiture and trouble should wastes begin flowing

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from the opening before the adhesive is properly conditioned.

The principal object of this invention is to provide a surgical apparatus of the class described which will overcome the above as well as other deficiencies of prior-known containers of this type.

Other objects include the provision of a colostomy bag having means forming a mechanical interlock between the abdominal wall of the patient and the bag; the provision of a colostomy device including an adhesive article of manufacture that cooperates with the bag and the abdominal wall of the patient to provide a leak-proof joint capable of withstanding all stresses subjected to such joints by the normal activity of the wearer; the provision of such a device in which a relatively wide, woven, rubberized fabric is provided with spaced ribs and a plurality of connectors at each end that connect to that portion of the device which is adapted to be attached to the abdomen of the patient; and the provision of such a device in which an outlet is provided for the container in a position to facilitate its ready emptying.

The above, as well as other objects and novel features of the invention will become apparent from the following specification and accompanying drawing, in which:

Figure 1 is an elevational view of a colostomy device to which the principles of the invention have been applied;

Fig. 2 is an enlarged sectional view taken substantially along line 2—2 of Fig. 1;

Fig. 3 is a sectional view taken substantially along line 3—3 of Fig. 1;

Fig. 4 is a plan view of the adhesive element forming part of the invention; and

Fig. 5 is an end view of the element of Fig. 4.

Referring to Fig. 1, the principles of the invention are shown as applied to a colostomy bag 10 having an inlet 11 in one wall and an outlet 12. The inlet 11 is shown as circular, although in practice it may be of any configuration depending upon the form of the artificial opening or openings with which it must cooperate. The outlet 12 is shown on the right-hand side of the bag 10, but may be on either side depending upon the side of the abdomen containing the artificial orifice. The outlet 12 should normally lie inwardly toward the crotch between the legs of the wearer for facilitating emptying of the container 10. The wall of bag or container 10 that includes the inlet 11 is vulcanized or otherwise integrally united to a rubber-covered, per-

forated member or disc 13 which forms part of the connecting means between the bag 10 and the body of the patient. The member 13 includes an outer ring 14 and an inner ring 15, joined by radial spokes or ribs 16. The disc or member 13 is convex outwardly relatively to the bag 10, and the ribs or spokes 16 provide relatively large perforations 17 between the inner and outer rings, all for a purpose to be described later. The member 13 may be made from a sheet metal stamping, a metal wire construction, or it may be made of any material so long as it provides a relatively stiff plate-like disc having relatively large perforations in its surface. In the present embodiment of the invention, the disc is shown as a sheet metal stamping. It is sandwiched between two thin sheets 18 and 19 of flexible material such as rubber or the like that are then vulcanized or otherwise sealed together so that both sheets join throughout substantially the entire area of the perforations 17, as well as over a substantial area about the outer and inner peripheries of the disc 13.

As previously mentioned, the wall of the bag 10 containing the inlet opening 11 is vulcanized or otherwise integrally joined to the sheet 19 throughout substantially the entire area of the latter and with the inlet 11 of the bag 10 aligned with the opening formed by the inner ring 15 of the rubber-covered disc 13. Hook members 20 are integrally attached to the outer ring 14 of the rubber-covered disc. There are, in the present embodiment, four hooks 20, one at each point about ring 14 where it is attached to a spoke or rib 16.

In order to hold the bag 10, or rather the rubber-covered disc 13 to the body of the patient with a minimum of discomfort, a relatively wide belt 21 of elastic woven material is employed. The belt 21 includes tabs 22 which support ring members 23 at each free end of the belt, so spaced to cooperate with the hooks 20 of the rubber-covered disc 13. Pockets 24 are provided at equally-spaced intervals throughout the length of belt 21 for receiving flexible stiffening ribs, providing in effect a resilient corset-like belt that will readily flex with the bodily movements during normal activity of the patient and still apply equal forces at the four hooks 20, which forces act equally throughout the extent of the rubber-covered disc 13.

In use, the convex side of the rubber-covered disc 13 is pressed against the abdominal wall of the patient. Since the thin layers of rubber covering the perforations 17 of the rubber-covered disc are extremely flexible, the forces applied to the hooks 20 by the belt 21 cause the patient's flesh to bulge into them, thereby forming a mechanical interlock between the rubber-covered disc 13 and the abdominal wall of the patient.

In order to provide a leak-proof connection between the abdominal wall of the patient and the rubber-covered disc 13, which will effectively resist the stresses normally encountered by the activity of the wearer, a separate disposable element 25 is employed. The element 25 may take any form and be of any flexible material so long as it provides a substantial area surrounding the inlet opening 11 to the bag 10. In the embodiment disclosed, it is shown in Figs. 4 and 5 as an annular-shaped piece of flexible material to each side of which is applied an adhesive of the type commonly employed with such articles as surgical adhesive tape, corn plasters, mustard

plasters and the like. A protective gauze cover is applied to the adhesive on each side of the element 25 and the patient may be supplied with quantities of these elements, each of which is disposed of after removal of the container from the body, and a new element 25 employed upon each application of the container to the body.

In applying the colostomy device to the patient, the protective fabric on the one side of the element 25 is removed and the uncovered adhesive side is applied to the rubber-covered disc as shown in Fig. 2, so that its central opening is aligned with the inlet 11 of the bag 10. The element 25 is then firmly pressed against the convex side of the rubber-covered disc 13. The other side of the adhesive element 25 is then uncovered and the convex side of the rubber-covered disc is pressed firmly to the abdominal wall with the artificial opening in the abdomen registering with the inlet 11 of bag 10. The rings 23 of the belt 21 are then connected to the hooks 20, firmly but flexibly holding the rubber-covered disc 13 against the abdominal wall, forcing the flesh into the perforations 17 and providing a leak-proof, mechanically interlocked seal between the bag 10 and the body of the patient.

Although the various features of the improved colostomy bag have been shown and described in detail to fully disclose one embodiment of this invention, it will be evident that numerous changes may be made in such details, and certain features may be used without others, without departing from the principles of the invention.

What is claimed is:

1. A surgical appliance comprising in combination, a container having an inlet adapted to be held in registry with an artificial opening in the abdomen of a patient; a rigid member attached to said container and provided with a central opening in registry with said inlet, said member being provided with a plurality of openings surrounding said central opening; a sheet of flexible material covering said member thereby providing a surface having rigid and resilient areas adapted to form a mechanical interlock between said member and the abdominal wall of said patient; and a resilient belt attached to said member and adapted to surround the body of the patient.

2. A surgical appliance comprising in combination, a container having an inlet adapted to be held in registry with an artificial opening in the abdominal wall of a patient; a rigid convex frame member attached to said container, and provided with a central opening in registry with inlet, said member being provided with a plurality of relatively large openings surrounding said central opening; a sheet of flexible material covering said member thereby providing a convex surface having rigid and resilient areas, whereby said convex surface will contact the abdominal wall of the patient when said surgical appliance is applied thereto; and a resilient belt attached to said frame member, adapted to surround the body of the patient for forcing the convex face of the frame member into intimate contact with the abdominal wall of the patient, thereby causing portions of the patient's flesh to force said resilient areas away from the convex surface including said rigid areas to thereby form a mechanical interlock between the patient's abdominal wall and said frame member.

3. A surgical appliance comprising in com-

bination, a container having an inlet adapted to be held in registry with an artificial opening in the abdominal wall of a patient; a frame member having a concave inner surface, a convex outer surface and provided with relatively large openings throughout its surface including a central opening adapted to register with the inlet of said container; a resilient covering for said frame member that covers said relatively large openings to provide resilient areas therein, and attached to said container on the concave surface of said frame member with its central opening registering with said container inlet; and a resilient belt attached to each side of said frame member.

4. A surgical appliance comprising in combination, a container including an inlet adapted to be held in registry with an artificial opening in the abdominal wall of a patient; and a disposable element having an opening therethrough, said element being provided with an adhesive on opposite faces, being adhesively attached to said container and adapted to be adhesively attached to the abdominal wall of a patient.

5. A seal for use with a colostomy bag having an inlet and adapted to be located between the area surrounding the inlet to the bag and the abdominal wall of a patient to provide a watertight seal that is replaceable upon successive applications of said bag to the abdominal wall of said patient, comprising a sheet of flexible material having an opening therethrough for registry with the inlet of said colostomy bag, and having a coating of adhesive on opposed faces thereof.

6. A surgical appliance comprising in combination, a container including an inlet adapted to be held in registry with an artificial opening in the abdominal wall of a patient, and an outlet adapted to facilitate emptying said container while the same is attached to the patient; and a disposable sheet of relatively thin, flexible material having an opening therethrough for registry with the inlet of said container, said sheet having a coating of adhesive on opposed faces thereof, being adhesively attached to said container and adapted to be adhesively attached to the abdominal wall of a patient.

7. A surgical appliance comprising in combination, a container having an inlet adapted to be held in registry with an artificial opening in the abdomen of a patient; a member attached to said container, surrounding said inlet and including means adapted to form a mechanical interlock between said member and the abdominal wall of said patient; a disposable sheet of flexible material having an adhesive on opposed faces, being adhesively attached to said container and adapted to be adhesively attached to the abdomen of a patient; and a resilient belt attached to said member and adapted to surround the body of the patient.

8. A surgical appliance comprising in combination, a container having an inlet adapted to be held in registry with an artificial opening in the abdominal wall of a patient; a frame member providing openings of substantial area attached to said container and surrounding said inlet; a disposable sheet of flexible material having an adhesive on opposed faces, being adhesively attached to said frame member and adapted to be adhesively attached to the abdominal wall of a patient; and a resilient belt adapted to surround the body of the patient and connected to said frame member.

9. A surgical appliance comprising in combination, a container having an inlet adapted to be held in registry with an artificial opening in the abdominal wall of a patient; a frame member having a convex surface and provided with relatively large openings in its surface, said frame member having a central opening and being attached to said container with said central opening in registry with said inlet such that said convex surface will contact the abdominal wall of the patient when said surgical appliance is applied thereto; a disposable sheet of flexible material having an adhesive on opposed faces, being adhesively attached to said frame member and adapted to be adhesively attached to the abdominal wall of a patient; and a resilient belt adapted to surround the body of the patient and connected to said frame member.

10. A surgical appliance comprising in combination, a container having an inlet adapted to be held in registry with an artificial opening in the abdominal wall of a patient; a frame member having a concave inner surface, a convex outer surface and provided with relatively large openings throughout its surface including a central opening adapted to register with the inlet of said container; a resilient covering for said frame member and attached to said container on the concave surface of said frame member with its central opening registering with said container inlet; a disposable sheet of flexible material having an adhesive on opposed faces, being adhesively attached to the resilient material on the convex surface of said frame member and adapted to be adhesively attached to the abdominal wall of a patient; and a resilient belt attached to each side of said frame member.

11. A surgical appliance comprising in combination, a container having an inlet adapted to be held in registry with an artificial opening in the abdomen of a patient; a rigid member attached to said container and provided with a central opening in registry with said inlet, said member being provided with a plurality of openings surrounding said central opening; a sheet of flexible material covering said member thereby providing a surface having rigid and resilient areas adapted to form a mechanical interlock between said member and the abdominal wall of said patient; a relatively wide elastic belt including spaced stiffening ribs throughout its length; and means for attaching the free ends of said belt to said member in a manner to provide equal distribution of forces to said member.

12. A surgical appliance comprising in combination, a container having an inlet adapted to be held in registry with an artificial opening in the abdominal wall of a patient; a rigid convex frame member attached to said container, and provided with a central opening in registry with inlet, said member being provided with a plurality of relatively large openings surrounding said central opening; a sheet of flexible material covering said member thereby providing a convex surface having rigid and resilient areas, whereby said convex surface will contact the abdominal wall of the patient when said surgical appliance is applied thereto; a relatively wide elastic belt including spaced stiffening ribs throughout its length; and means for attaching the free ends of said belt to said frame member in a manner to provide equal distribution of forces to said frame member thereby forcing the convex face of said frame member into intimate contact with the abdominal wall of the patient,

whereby portions of the patient's flesh force said resilient areas away from the convex surface including said rigid areas to thereby form a mechanical interlock between the patient's abdominal wall and said frame member.

13. A surgical appliance comprising in combination, a container including an inlet adapted to be held in registry with an artificial opening in the abdominal wall of a patient; a disposable element having an opening therethrough, said element being provided with an adhesive on opposite faces, and being adhesively attached to said container and adapted to be adhesively attached to the abdominal wall of a patient; a relatively wide elastic belt having spaced ribs throughout its length; and means for attaching the free ends of said belt to the inlet of said container.

14. A surgical appliance comprising in combination, a container having an inlet adapted to be held in registry with an artificial opening in the abdomen of a patient; a member attached to said container, surrounding said inlet and including means adapted to form a mechanical interlock between said member and the abdominal wall of said patient; a disposable sheet of flexible material having an adhesive on opposed faces, said sheet being adhesively attached to said container and adapted to be adhesively attached to the abdomen of a patient; a relatively wide elastic belt having spaced ribs throughout its length; and means for attaching the free ends of said belt to said member in a manner to provide substantially equal distribution of forces to said member.

15. A surgical appliance comprising in combination, a container having an inlet adapted to be held in registry with an artificial opening in the abdominal wall of a patient; a frame member providing openings of substantial area attached to said container and surrounding said inlet; a disposable sheet of flexible material having an adhesive on opposed faces, being adhesively attached to said frame member and adapted to be adhesively attached to the abdominal wall of a patient; a relatively wide elastic belt having spaced ribs throughout its length; and means for attaching the free end of said belt to said frame member in a manner to provide substantially equal distribution of forces to said frame member.

16. A surgical appliance comprising in combination, a container having an inlet adapted to be held in registry with an artificial opening in the abdominal wall of a patient; a frame member having a convex surface and provided with relatively large openings in its surface, said frame member having a central opening and being attached to said container with said central opening in registry with said inlet such that said convex surface will contact the abdominal wall of the patient when said surgical appliance is applied thereto; a disposable sheet of flexible material having an adhesive on opposed faces, being adhesively attached to said frame member and adapted to be adhesively attached to the abdominal wall of a patient; a relatively wide elastic belt having spaced ribs throughout its length; and means for attaching the free ends of said belt to said frame member including four connectors substantially equally spaced about said frame member to thereby provide substantially equal distribution of forces to said frame member.

17. A surgical appliance comprising in combination, a container having an inlet adapted to be held in registry with an artificial opening in the abdominal wall of a patient; a frame member having a concave inner surface, a convex outer surface and provided with relatively large openings throughout its surface including a central opening adapted to register with the inlet of said container; a resilient covering for said frame member and attached to said container on the concave surface of said frame member with its central opening registering with said container inlet; a disposable sheet of flexible material having an adhesive on opposed faces, being adhesively attached to the resilient material on the convex surface of said frame member and adapted to be adhesively attached to the abdominal wall of a patient; a relatively wide elastic belt having spaced ribs throughout its length; and means for attaching the free ends of said belt to said frame member including four connectors substantially equally spaced about said frame member to thereby provide substantially equal distribution of forces to said frame member.

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