March 8, 1955 W. E. FURR, JR 2,703,576

SURGICAL DEVICE

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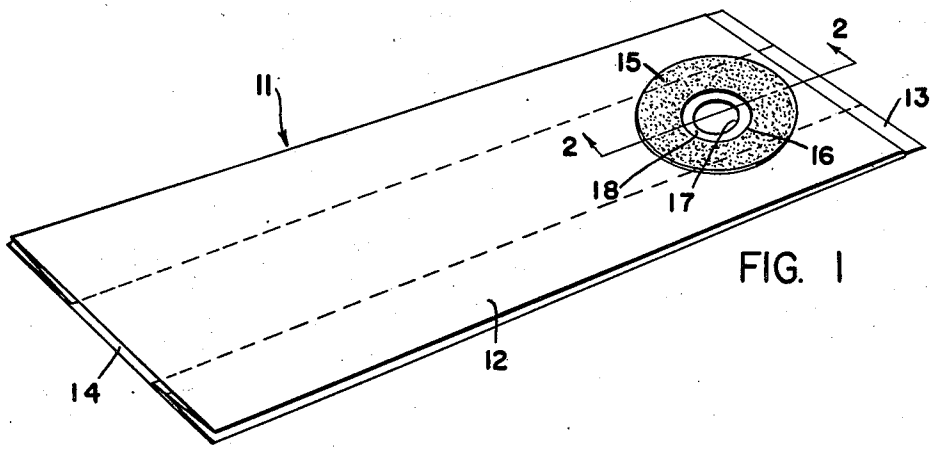

FIG. 1

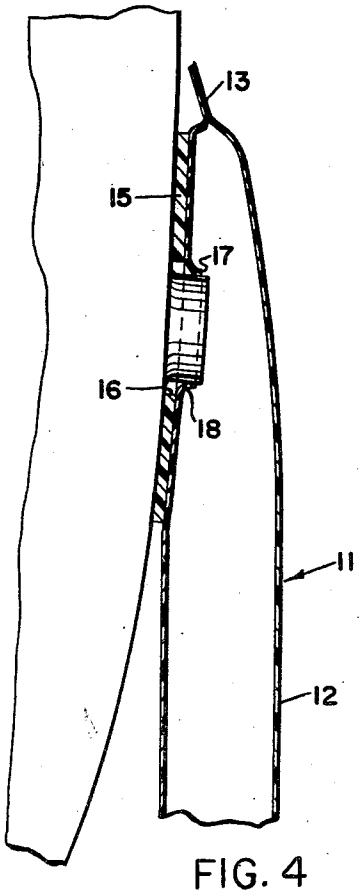

FIG. 4

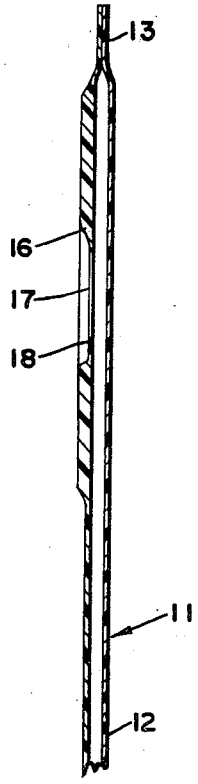

FIG. 3

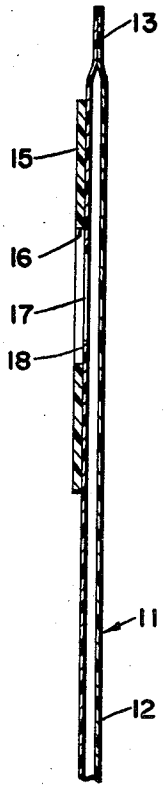

FIG. 2

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SURGICAL DEVICE

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8 Claims. (Cl. 128—283)

The present invention relates to bags or receptacles for use following certain surgical operations such as ileostomies, colostomies and the like, and particularly to bags which are light in weight, easily handled and disposable.

Previously bags have been made of impervious durable material, such as rubber or rubber impregnated fabric, by which the bags could be used repeatedly. According to the present invention the bags are made of relatively thin, impervious plastic sheeting which is light in weight, easily applied or affixed to the body, and, due to the low cost of the materials used and the low cost of manufacture, are disposable after each use. Although it is not necessary for individual use, it is preferred that the bags, for hospital use, be relatively transparent or at least translucent.

As in the case of previously known bags, the present receptacle is provided with an opening near the top portion of the bag so that a short section of the ileum or colon can protrude from the body of the user into the bag. According to the present invention, special means are provided for obtaining a seal between the opening in the bag and the ileum or colon, which also acts as a cushioning element to prevent accidental friction.

The present invention will be described more fully below with particular reference to the drawings in which:

Figure 1 is a perspective view of the bag according to the present invention;

Figure 2 is a cross-section of Figure 1 taken along line 2—2 of that figure;

Figure 3 is a cross-section similar to Figure 2, but illustrates a modification thereof; and

Figure 4 is a partial cross-section of the bag showing its application to and position on the body of a user.

With reference to the drawings, the bag **11** comprises a receptacle portion **12** which is sealed at **13** at the top thereof and is adapted to be folded and clamped at the bottom **14** thereof to form a closure. When not in use, the bag is thus open at the bottom but can be readily closed to form a tight closure by folding the sides and bottom of the bag and clamping the folds together by conventional means.

Near the top of the bag, on the side which is to be next to the skin of the user, there is provided an annular ring **15** provided with an opening **16**. This ring **15** may be of a flexible, relatively stiff material different from that of which the receptacle portion **12** is made, in which case the ring is affixed to the bag **12** by any suitable means such as a plastic cement as shown in Figure 2. On the other hand, the ring **15** may be made of the same material as the bag and may be fused thereto as, shown in Figure 3, by heat fusion or by solvent fusion. Also, if desired, the ring **15**, which is thicker than the bag portion **12**, may be made integrally with the bag. Another alternative is to use an annular ring of flexible relatively heavy adhesive tape of elastomeric material, the outer side of which may also be provided with a pressure sensitive adhesive.

In each instance, however, the opening **16** in the center of the annular ring **15** is larger than the opening **17** in the wall of the bag **12**, thus providing an inner flange **18** for purposes described more fully below. Even though the hole **17** in the bag **12** may be provided initially during manufacture, it is generally more suitable to make the hole at the time the bag is fitted or applied to a particular patient. This is desirable so that the hole

will be the correct size, i. e., a little smaller than the protruding section of ileum or colon.

The bag or receptacle **12** is preferably made of any thin, soft, impermeable sheet material, which may be a plastic material such as polyethylene, one of the vinyls, Pliofilm and the like, whereas the ring **15** may be composed of the same material as the bag and formed integrally therewith or of a different material including cellulose acetate. The ring is flexible but relatively stiff as compared to the sott pliable material of the receptacle.

It is desirable that the bag be made of as thin and pliable a material as is consistent with its proposed use, so as to be inconspicuous under clothing and light in weight for comfort of the user. The ring **15**, however, must be of thicker material and of such outside dimension as will support the bag when the ring is adhered to the body over the ileostomy or colostomy. Preferably the ring is flexible so as to conform to the contours of the body when affixed but not particularly pliable so that the weight of the bag will be substantially evenly distributed over the entire surface of the ring.

In one instance, a polyethylene bag having a thickness of 2 mils was suitable when used with a cellulose acetate annular ring having a thickness of 10 mils. Generally speaking, the bag may have a thickness of from about 1½ mils to about 4 mils and the ring, a thickness of from about 10 mils to about 20 mils. In the above example the cellulose acetate ring was cemented to the bag by means of a cement such as common rubber cement.

When the overall dimensions of the bag are 6 inches wide by 14 inches long, a ring having an outside diameter of 3 inches and a hole an inch or an inch and a half in diameter has been found suitable, although these dimensions are not critical. The inner flange **18** may be about 3/16 of an inch wide or larger.

The ring of the appliance is generally provided on its outer or exposed surface with a conventional pressure sensitive adhesive which, to prevent irritation of the skin, may include a medical reagent such as zinc oxide or the like.

With reference to the thin pliable flange **18**, it will be seen that when in use it serves as a cushioning element to protect the section of ileum or colon passing through the opening **17** by preventing, to a large extent, any accidental contact between the less pliable ring **15** and the colon. In addition it serves as an effective seal around the colon, as noted above and as shown in Figure 4.

Although my invention has been described with reference to the accompanying drawings, it will be understood that the description is merely illustrative and that the scope of my invention is defined in the appended claims. Furthermore, it will be understood that those modifications and alterations which would occur to one skilled in the art are not excluded herefrom.

What I claim is:

1. A device of the character described comprising a receptacle having walls composed of impermeable, soft, pliable material, said receptacle being closed at one end and adapted to be closed at the other end, an annular ring of flexible, relatively stiff material disposed on the outer surface of said receptacle near one end thereof, said annular ring having a flat surface of sufficient area to support said receptacle when the ring is removably adhered to a surface, the wall of said receptacle being provided with a hole disposed substantially concentrically with the opening in said annular ring and smaller than said opening so as to provide a soft pliable flange around said hole.

2. A device as claimed in claim 1 wherein the annular ring and receptacle are of different materials, the ring being adhered to the wall of the receptacle.

3. A device as claimed in claim 1 wherein the annular ring and receptacle are formed integrally of the same material.

4. A device as claimed in claim 1 wherein the annular ring has a thickness of from about 2 to 10 times the thickness of the wall of the receptacle.

5. A device as claimed in claim 1 wherein the annular ring and receptacle are composed of impermeable, synthetic resinous materials.

6. A device as claimed in claim 1 wherein the receptacle is composed of polyethylene.

7. A device as claimed in claim 1 wherein the annular ring is composed of cellulose acetate.

8. A device as claimed in claim 1 wherein the annular ring and receptacle are both composed of polyethylene.

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