April 2, 1957 M. PERRY 2,787,270

COLOSTOMY AND ILEOSTOMY APPLIANCE

Filed Dec. 20, 1954

FIG. 1

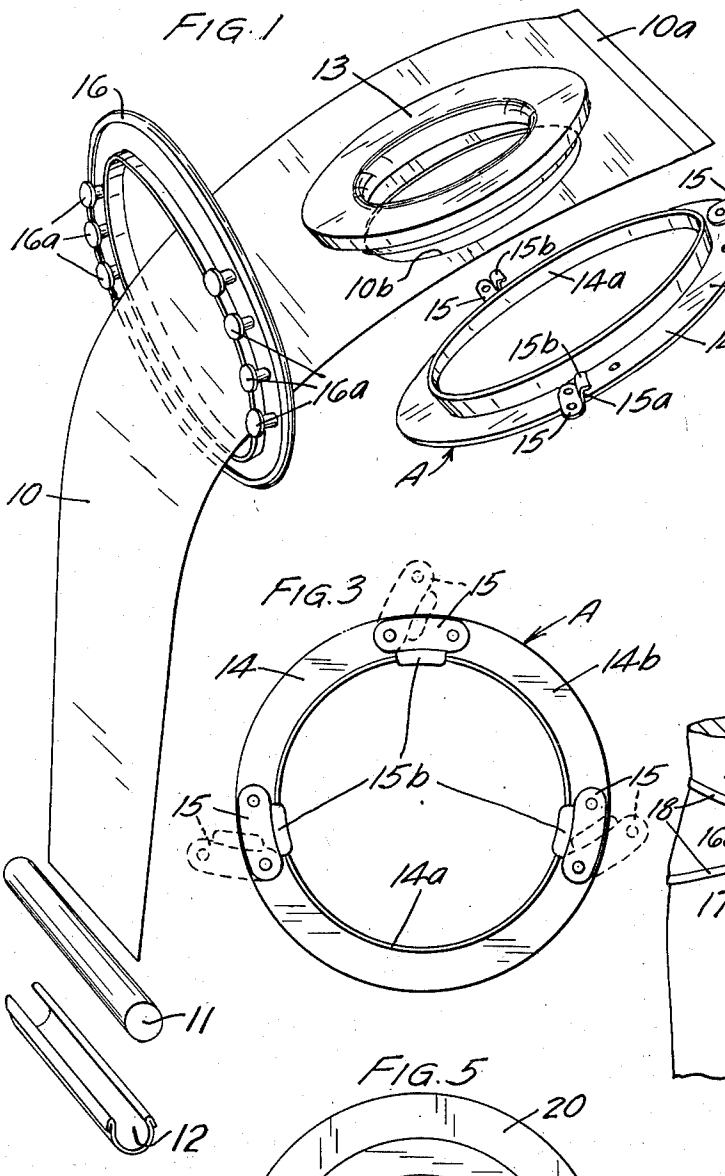


FIG. 2

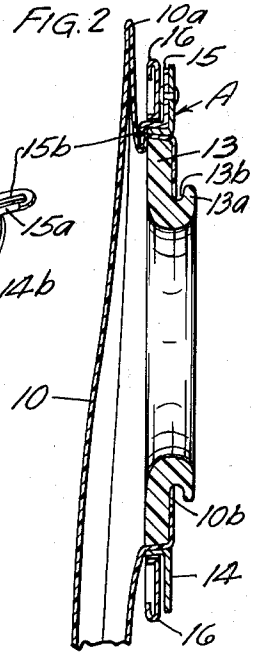


FIG. 3

FIG. 4

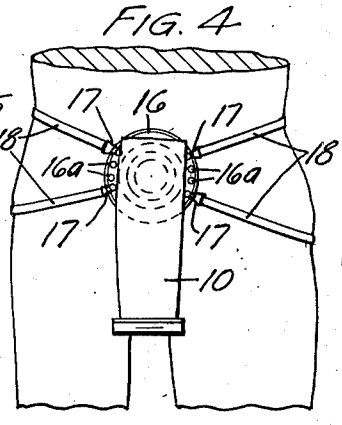


FIG. 5

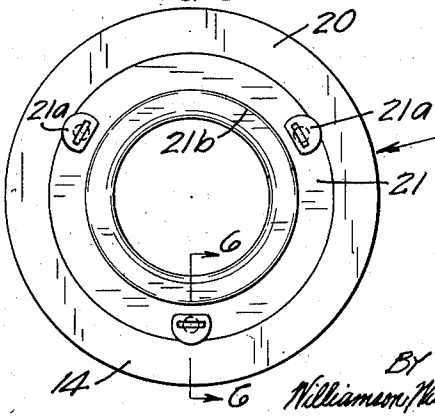


FIG. 6

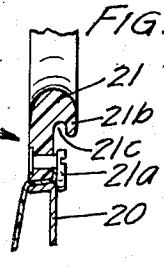
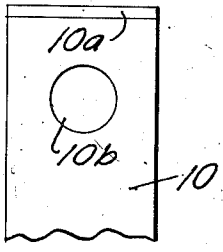


FIG. 7



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COLOSTOMY AND ILEOSTOMY APPLIANCE

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8 Claims. (Cl. 128—283)

This invention relates generally to colostomy and ileostomy appliances and specifically to a simplified appliance facilitating the use of a disposable flexible bag.

The invention herein disclosed is closely related to my copending U. S. application, S. N. 245,822, filed September 10, 1951, now Patent No. 2,721,553, and my previously issued U. S. Patent No. 2,684,675, granted July 27, 1954, and is believed to be an improvement over both of my earlier structures.

My present invention incorporates the advantages of both of my above identified inventions by combining the simplicity of the structure disclosed in said patent with the numerous advantages of the structure disclosed in said application.

It is an object of my present invention to provide a novel and improved colostomy appliance which is particularly adapted for inexpensive manufacture and facilitates the use of a disposable bag of thin sheet material and which can be quickly and easily removed from the supporting belt assembly to facilitate changing of the disposable bag unit.

It is another object of my present invention to provide a colostomy and ileostomy appliance incorporating a disposable inexpensive bag of thin sheet material with an opening formed therein to receive from the stoma of a wearer and provided with a pair of clamping elements surrounding said opening in tightly clamped sealed relation around the marginal edge portion thereof to permit adjustable attachment to the body of the wearer by a retaining ring adjustably mounted on one of said clamping elements.

It is still a further object to provide a device of the class described wherein the same may be adjustably mounted on the body of the wearer and securely retained in operative position by an easily removable belt mounting member which retains the belt assembly on the wearer even when the bag assembly has been removed therefrom.

It is still another object to provide a pair of clamping elements adapted to sealingly clamp a portion of a disposable bag of thin waterproof sheet material therebetween with means for locking said elements in clamped together position with said bag and receiving a separate belt mounting member which can be easily and quickly removed therefrom to facilitate changing of the bag without removal of the belt assembly.

These and other objects and advantages of my invention will more fully appear from the following description made in connection with the accompanying drawings wherein like reference characters refer to the same or similar parts throughout the several views, and in which:

Fig. 1 is an exploded perspective view of my improved appliance;

Fig. 2 is a central vertical sectional view thereof;

Fig. 3 is a front elevational view showing one form of my new clamping ring;

Fig. 4 is a front elevational view of my new device mounted on the body of a wearer;

Fig. 5 is a front elevational view of an alternative form of mounting ring and insert assembly;

Fig. 6 is a fragmentary vertical sectional view taken substantially along the line 6—6 of Fig. 5; and

Fig. 7 is a front elevational view of the bag per se.

As illustrated in the accompanying drawings I provide a flexible bag **10** made from any suitable thin waterproof sheet material such as polyethylene tubing which is sealingly closed across the upper end **10***a* thereof. One side of the bag **10** has an opening **10***b* formed therethrough and the lower end of the bag is open with a resilient roll **11** and spring clip **12** for closing the same.

It is obvious that the bag opening **10***b* must be rigidly reinforced therearound in order that the same may be tightly pressed against the body of the wearer to receive from a stoma therethrough and to eliminate possible leakage between the opening and the body of the wearer. In the form shown a pair of generally annular clamping elements **13** and **14** are provided for this purpose. The clamping element **13** constitutes a generally annular inwardly disposed insert ring which is positioned within the bag co-axially of the bag opening **10***b* as best shown in Fig. 2. This inner element or insert ring **13** is made from any suitable easily cleaned stiff material such as methyl methacrylate resin. This plastic type of material has been found to be more comfortable for the wearer than metallic rings or the like, but since the same is slightly yieldable and resilient, positive clamping means must be provided to securely interlock said elements **13** and **14**. The outer clamping element **14** has a substantially cylindrical segment **14***a* extending outwardly from the inner periphery of an annular flange portion **14***b*. Said segment **14***a* is tapered from the outer free edge inwardly toward the annular portion of ring **14** and is of a diameter to tightly receive in sealed clamped relation the outer periphery of the insert member **13** with the portion of the bag surrounding the opening **10***b* tightly interposed therebetween. The periphery of the insert **13** is tapered inwardly to cooperate with and be received in tightly registered relation within the slightly tapered segment **14***a* as best shown in Fig. 2. This taper, of course, limits the inward shifting movement of the insert relative to the retaining ring but due to the resiliency of the bag material and the smooth surface of the segment **14***a* and the peripheral edge of the insert **13**, some positive means for locking the two members in clamped position must be provided. One form of such locking device designated by the letter A, is illustrated in Figs. 1, 2 and 3, wherein three locking clips **15** are pivotally mounted in peripherally spaced relation on the annular flange portion **14***b* of element **14**. These clips **15** may be swung outwardly into released position as shown by the dotted lines of Fig. 3 to permit the clamping ring **14** to be received over the insert element **13** when the same is positioned within the bag and thereafter said clips are swung into locking position to positively hold the insert member and retaining ring together. Each of said clips has an outstanding portion **15***a* which extends outwardly from the outer face of annular flange **14***b* approximately the same distance as the cylindrical segment and the retaining portion **15***b* of said clip is adapted to overlie the outer marginal edge portion of insert **13** as best shown in Fig. 2, and positively retain said insert in sealed clamping position. It should be noted that the three clips **14** are not equally spaced apart. This is clearly shown in Fig. 3. This is important to prevent downwardly directed pressure on the bag from causing the bag to tear by engagement thereof against the end portions of the two lower clips. By positioning the two lower clips immedi-

ately below the horizontal diameter of the clamping element 14, most of the downwardly directed pressure on the bag will be carried by the upper periphery of the substantially cylindrical segment 14*a* and only an absolute minimum force will be on the portions of the bag engaged by the clamping portions 15*b* of said clips. The clips 15 are held in clamping position by small cooperating center punch depressions in said clip which are received in similar recesses in said flange 14*b* as best shown in Fig. 1. The upstanding portion 15*a* of each of said clips is disposed adjacent the outside surface of the segment 14*a* as best shown by the full line positions in Fig. 3 to provide a substantially cylindrical outer surface. After the two clamping elements 13 and 14 have been secured together into the position shown in Fig. 2, a belt mounting retaining ring 16 of annular shape receives the bag assembly therethrough and the inside diameter thereof is sufficiently large to journal the outwardly extending flange 14*a* with the clips 15 closed thereagainst and permit adjustable rotational movement of the bag with respect to said retaining ring 16 in order to facilitate adjusting the angle at which the bag depends from the supporting retaining ring according to the comfort of the wearer and depending on whether the wearer is in prone position or in upright position. The retaining ring, of course, has a plurality of knobs 16*a* which are adapted to receive cooperating fasteners 17 of the two belts 18 as best shown in Fig. 4. In order to remove the bag assembly including the clamping rings 13 and 14 from the retaining ring 16, the top of said retaining ring is pulled out away from the wearer's body and said bag assembly pulled upwardly therethrough. After removal of the bag assembly, said bag may be readily cleaned or replaced as desired by the wearer and returned to operative position without removal of the belts 18.

An alternative form of my clamping elements is illustrated in Figs. 5 and 6 and is designated by the letter B. An annular mounting element 20, similar in all respects to mounting element 14 except that no clips 15 are mounted thereon, is provided in form B of my invention. An insert member 21, similar in all respects to insert 13 except that said insert 21 is provided with eccentrically mounted locking cams 21*a* journaled on the inner surface thereof.

Retaining engagement with the inside surface of the annular flange of clamping element 20 around the inner periphery thereof to cooperate with the tapered fit between elements 20 and 21 and positively prevent relative movement therebetween. Th clips 15 in form A of my invention are mounted on the outside of flange ring 14*b* and engage the outer edge portion of the insert 13 while the eccentric locks 21*a* are mounted on the inside surface of the insert member 21 and engage in inside surface of the flange of clamping element 20 as best shown in Fig. 6.

It will be seen that I have provided a relatively simple yet highly efficient colostomy appliance particularly adapted for inexpensive construction and to facilitate use of a disposable bag made of thin flexible sheet material. The clamping elements 13 and 14 of form A of my invention and clamping elements 20 and 21 of form B of my invention positively clamp in sealed relation the portion of one layer of the bag 10 surrounding the opening 10*b* to form an easily handled, substantially unitary bag assembly which is conveniently retained on the body of the wearer by the ring 16 which journals said assembly and permits adjustment of the angle at which the bag depends therefrom, the belts 18 securely anchor the ring 16 in the desired position on the body of the wearer. As has been previously stated, the entire bag assembly may be easily and quickly removed from the retaining ring 16 and supporting belt structure for cleaning and replacing of the bag. In form A of my invention, the clips 15 may be easily and quickly shifted into releasing position without requiring the use of any special tools, however,

the eccentric elements 21*a* of form B of my invention are slotted and obviously require the use of a small turning element such as a dime or screw driver to supply the necessary turning leverage. The insert member is provided with an inwardly extending circular bead designated in form A of my invention as 13*a* and in form B of my invention as 21*b* which forms a groove respectively designated by the reference characters 13*b* and 21*c* of said insert members 13 and 21 which groove is adapted to receive and retain a beaded sleeve (not shown) such as the sleeve 22 disclosed in my Patent No. 2,684,676, issued July 27, 1954. It should be noted that this sleeve may be used either with or without the cementing disc 19 shown in said patent. It is obvious that the present invention is greatly simplified in construction and use with relation to my previously identified copending application while incorporating all of the advantages thereof.

It will, of course, be understood that various changes may be made in the form, details, arrangement, and proportions of the parts without departing from the scope of my invention which generally stated consists in the matter set forth in the appended claims.

What is claimed is:

1. A colostomy and ileostomy appliance comprising a disposable bag made from thin flexible waterproof sheet material with a sealed top and sides and provided with an opening in one side wall thereof, a generally annular bag mounting and clamping element having a substantially cylindrical clamping segment extending outwardly from the inner side thereof, an annular clamping insert element having outer peripheral sides to tightly fit within the substantially cylindrical clamping segment of said annular element when a layer of bag material is interposed therebetween, said insert member being concentrically arranged within said bag with respect to said opening therein and being of a slightly larger diameter than said opening to permit the layer of bag material surrounding said opening to be tightly clamped in sealed relation between said segment and the outer periphery of said insert, said segment being tightly clamped over said insert peripherally with the bag layer disposed therebetween to form a bag assembly, a retaining ring journaled on the outwardly extending segment to permit rotative adjustment of the bag upon the wearer, and including means for attaching a belt to said retaining ring.

2. The structure set forth in claim 1 and releasable means for positively retaining said annular insert and said clamping element in interfitted relation.

3. A colostomy and ileostomy appliance comprising a disposable bag made from thin flexible waterproof sheet material with a sealed top and side wall portions, one of said side walls having an opening therethrough, an insert element having an outer periphery slightly larger than said opening, a bag mounting and clamping element tightly receiving the outer periphery of said insert element with the portion of the bag layer surrounding said opening interposed therebetween to tightly receive and clamp the same in sealed relation between said elements to thus provide a bag assembly, and means releasably attachable to the bag mounting and clamping element for attaching said bag assembly to the body of the wearer, but permit removal of said bag assembly as a unit without removal of the body attachment means.

4. A colostomy and ileostomy appliance comprising a bag made from thin flexible waterproof sheet material with a sealed top and side wall portion and provided with a generally circular opening through the upper portion of one side wall thereof, a generally annular bag mounting and clamping element having a substantially cylindrical clamping segment tapered slightly from the outer periphery thereof to the inner periphery thereof, an annular clamping insert having the outer periphery thereof cooperatively tapered with respect to said clamping segment and securely clamp in sealed relation therein with the portion of the bag surrounding said opening interposed therebetween, a plurality of interlocking members co-

operatively associated with said clamping elements for releasably locking the same in clamped position.

5. The structure set forth in claim 4 and said locking members comprising a plurality of clips pivotally mounted on said mounting and clamping element and swingable into interlocking position for engagement with the outer surface of the peripheral portion of said insert element to positively prevent separation of the two elements until said clip members are swung into released position.

6. The structure set forth in claim 4 and said mounting and clamping element having a generally flat annular flange portion disposed generally normal to said cylindrical segment, and said interlocking members comprising three clips pivotally mounted on the outer face of said flange of said mounting and clamping element in peripherally spaced relation thereon with the lowermost clips being positioned immediately adjacent a horizontal plane through the diameter of said clamping element to

prevent tearing of the bag material clamped between said elements.

7. The structure set forth in claim 4 and said locking means being carried by the inner face of said insert element for positive engagement with the inner surface of said mounting and clamping element to hold the two elements in tightly clamped relation but being releasable to permit separation of said two elements to permit changing of the bag.

8. The structure set forth in claim 7 wherein said interlocking means comprising a plurality of pivotally mounted eccentrics spaced around the inner side of said insert.

References Cited in the file of this patent

UNITED STATES PATENTS

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