Sept. 1, 1959 M. PERRY 2,902,036

IRRIGATOR ASSEMBLY

Filed Dec. 20, 1954

FIG. 1

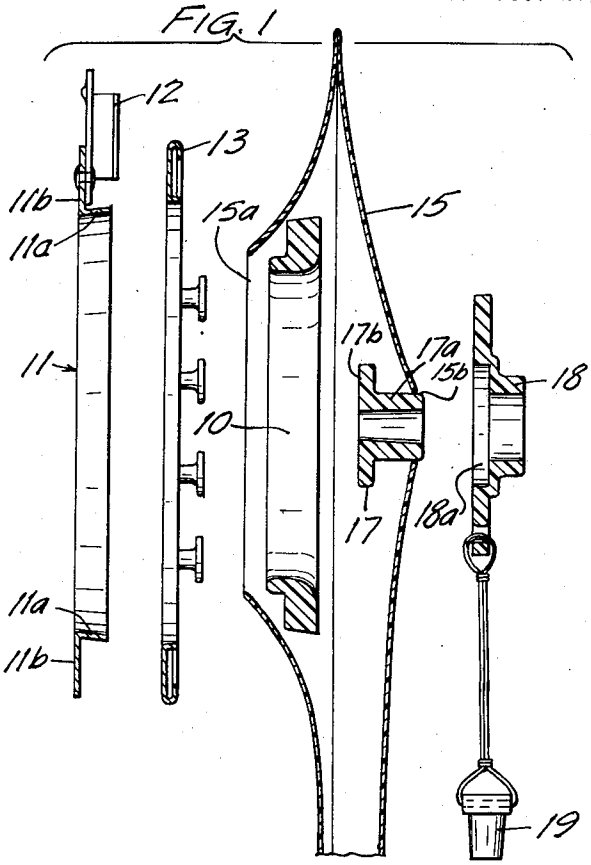


FIG. 2

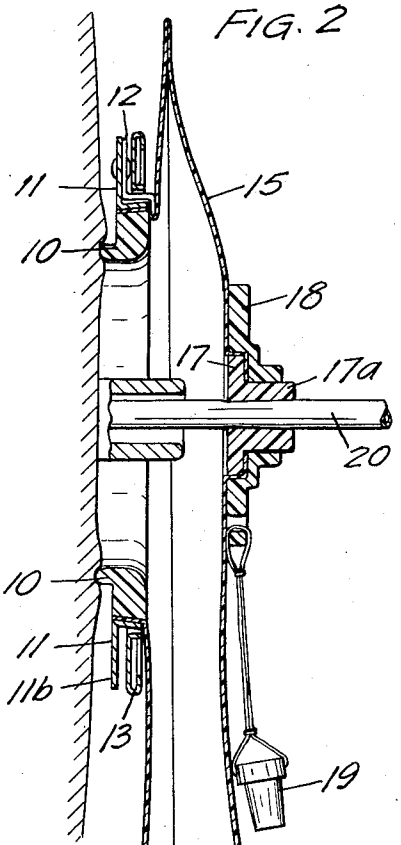


FIG. 4

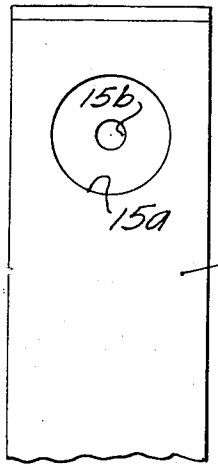
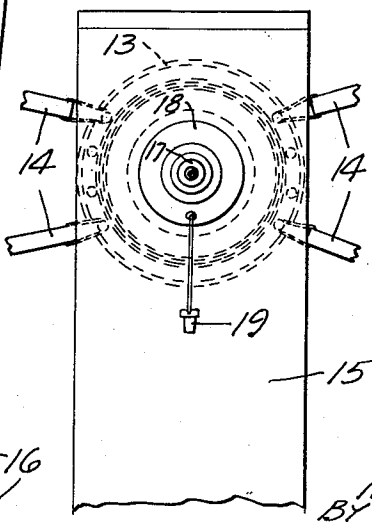
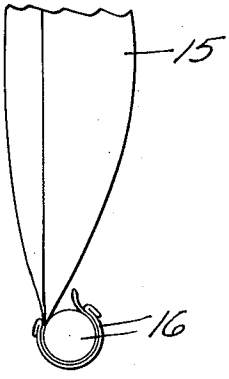


FIG. 3





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IRRIGATOR ASSEMBLY

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7 Claims. (Cl. 128—283)

This invention relates to irrigators and particularly to an irrigator bag permitting the use of a thin flexible disposable bag unit.

For many years it has been a problem to provide an irrigator which would permit the use of a relatively inexpensive disposable bag. This, of course, has many advantages among which is the use of irrigators in hospitals where it is obviously desirable to provide entirely new and prevously unused bag units for each patient.

It is an object of my present invention to provide an irrigator which can be quickly and easily mounted on the body of a wearer and which permits the use of a disposable bag made from inexpensive thin waterproof sheet material.

It is another object to provide an irrigator assembly providing means for reinforcing not only the stoma receiving opening through the bag to permit secure and positive attachment of the bag to the body of a wearer but also for reinforcing an opening in the outer portion of the bag to permit an irrigator tube to be extended therethrough.

It is still a further object to provide a pair of reinforcing and clamping elements for tightly clamping the portion of the outer layer of the bag surrounding an irrigation opening therethrough to permit an irrigator tube to be inserted therethrough and to facilitate replacement and interchangeability of the bags.

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 vertical sectional view of my new irrigator assembly;

Fig. 2 is a vertical sectional view thereof when in assembled position and mounted on the body of a wearer;

Fig. 3 is a front elevational view of the structure shown in Fig. 2; and

Fig. 4 is a rear elevational view of the bag per se.

As illustrated in the accompanying drawings I provide a clamping assembly for converting into an irrigator, a colostomy or ileostomy appliance using a disposable bag made from suitable thin waterproof sheet material such as polyethylene plastic. The polyethylene bag is mounted on the body of the wearer in position to surround and receive from the stoma as shown in Fig. 2. A clamping and mounting assembly generally similar to that disclosed in my copending application Serial No. 476,465, filed December 20, 1954 for United States Letters Patent entitled Improved Colostomy and Ileostomy Appliance and now Patent No. 2,787,270, is provided incorporating clamping elements or rings **10** and **11** wherein an insert ring **10** is received in tightly clamped relation within an outer clamping ring **11**. The ring **11** is of course, provided with an annular flange portion and an outwardly extending substantially cylindrical attachment and clamping portion. The outer periphery of the insert ring **10** and the inner periphery of the clamping ring **11** are slightly tapered to insure a positive clamped fit and the two rings may be positively locked together by suitable clips such as the pivotally mounted clips **12**. A retaining ring **13** to which anchoring belts **14** are connected surrounds the outwardly extending cylindrical portion of the clamping ring **11** and permits rotation thereof while positively holding said ring and insert member clamped therein to the body of the wearer. The bag illustrated is designated by the numeral **15** and is, of course, closed at the top and has a releasable closure assembly **16** for sealing the lower end thereof.

A pair of clamping elements made from any suitable rigid easily cleaned material are provided and are adapted to securely clamp a portion of the outer layer of the bag therebetween as best shown in Figs. 1 and 2. As best shown in Fig. 4, the upper portions of the two layers of the bag have a pair of openings respectively formed therethrough. The opening through the inner layer is designated by the numeral **15***a* and is larger than the opening **15***b* through the outer layer and is only slightly smaller than the outer diameter of the insert member **10**. The two outer clamping members are respectively designated by the numerals **17** and **18**. The inner member **17** has an outwardly extending sleeve element **17***a* and an inwardly disposed clamping flange **17***b* fixed thereabout. The outer member **18** has a passage therethrough adapted to receive the sleeve **17***a* in tight fitting relation with an enlarged recess **18***a* surrounding the inner portion of said passage and having a size to tightly receive and clamp the enlarged flange portion **17***b* of the inner member. The opening **15***b* through the outer layer of the bag **15** is of a size to permit the sleeve **17***a* to be received therethrough but is substantially smaller than the outside diameter of the clamping flange **17***b* so that the marginal portion of the material surrounding said opening may be tightly clamped between both the peripheral and annular portions of the flange **17***b* when said inner member is received within said outer member as shown in Fig. 2. While the marginal portion of the bag material surrounding the opening **15***b* is tightly clamped in sealed relation between the flange portion **17***b* and the wall defining the recess **18***a*, the two clamping members **17** and **18** are secureely held together by the frictional resistance between the outside surface of the sleeve **17***a* and the inside surface of the outer member **18** which defines the sleeve receiving passage. The sleeve **17***a* has a tapered passage formed therethrough to receive the irrigator tube in sealed relation therethrough and is also adapted to receive the tapered plug member **19** to positively seal and close said passage.

The opening through the sleeve portion **17***a* is adapted to receive an irrigator tube such as the catheter **20** which is then inserted into the stoma for irrigation purposes. Fig. 2 shows the outer reinforcing assembly before the same has been pressed inwardly against the stoma to form a seal against the outer end thereof. It is well known that stomas may vary greatly in length and protrusion from the body and it is, therefore, necessary to provide an opening through insert member **10** which is sufficiently large to permit the outer reinforcing member **18** to be received therethrough and pressed tight against the portion of the body of the wearer surrounding the stoma if necessary to provide the required seal around the catheter tube and prevent leakage around the stoma opening. Obviously the inside diameter of the sleeve **17***a* is sufficiently small to form a relatively tight seal fit with the outside diameter of an irrigator tube such as the catheter tube **20**.

It will be seen that I have provided a highly efficient yet relatively simple means for converting a colostomy

appliance into an irrigator having a disposable bag made from relatively inexpensive thin flexible sheet material such as the polyethylene plastic bag illustrated. The bag 15 which is shown in the drawing is considerably more flexible than the bag shown in my previously issued United States Patent No. 2,504,872, wherein a rubber bag is disclosed. Obviously it is well known that the rubber bags are considerably more expensive and also that rubber is somewhat more porous than is polyethylene plastic or other suitable inexpensive sheet materials which are now available. However, since these inexpensive sheet materials are not as strong and resilient as rubber, it is necessary to provide a suitable reinforcing assembly around each of the openings made in the bag side walls and after considerable experimentation, I have found that the clamping seal formed by two cooperating members securely anchoring a portion of the sheet material therebetween is the most suitable way of providing this reinforcing. In hospital use, it is, of course, desirable to use a fresh new bag for each patient rather than using a sterilized rubber bag which has previously been used by others and upon such use has become discolored to a substantial extent. With the inexpensive sheet materials such as are presently available, it is obviously possible from the economic standpoint to provide fresh new bags for each individual patient.

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. While other materials may be suitable for the clamping members 17 and 18 as well as the inner insert ring 10, I have found that methyl methacrylate resin provides the best results of any of the materials with which I am familiar since it is relatively hard and unbreakable as well as being capable of being easily cleaned.

What is claimed is:

1. An irrigator comprising a bag made from thin flexible waterproof sheet material having an opening through the inner layer thereof and a second opening through the outer layer thereof in generally opposed relation to the inner opening, mounting means connected to the inner layer of said bag around said inner opening for connecting the bag to the body of a wearer in position to receive through said inner opening from the stoma, tube receiving means surrounding the opening in said outer layer and having clamping connection with the outer layer adjacent the opening periphery, and said tube-receiving means having an aperture to permit an irrigator tube to be inserted therethrough in substantial alignment with the stoma to permit irrigation.

2. An irrigator comprising a bag made from thin flexible waterproof sheet material having a pair of generally opposed openings formed through the upper portion thereof, a pair of cooperating interfitting annular members positively clamped around one of the openings to

define a stoma receiving opening on the inner side of said bag, means interconnecting said members to the body of a wearer, a pair of clamping elements surrounding the other opening and positively clamped to the portion of the material surrounding said aperture, an opening through said clamping means to permit an irrigation tube to be inserted therethrough, the inner surface of one of said members adjacent the stoma receiving opening being constructed to sealingly engage the outer extremity of the stoma to prevent leakage around said tube during the irrigation operation.

3. The structure set forth in claim 2 and the opening defined by the annular members being larger than the dimensions of the exterior clamping elements to permit said elements to be received within said inner members and pressed tightly against the body of the wearer if necessary to form the required seal.

4. An irrigator comprising a bag made from thin highly flexible waterproof material having a pair of generally aligned openings therethrough, reinforcing means clamped to the bag peripherally of both of said openings, attachment means connected with one of said reinforcing means to attach the same to the body of a wearer and the other reinforcing means having an aperture therein to permit an irrigator tube to be inserted therethrough into the person's stoma.

5. An irrigator assembly comprising a bag made from thin flexible waterproof sheet material having an opening through the inner layer thereof and a second opening through the outer layer thereof in generally opposed relation to said inner opening, an annular mounting member having an inwardly projecting peripheral rib constructed to surround the stoma of the wearer in radially spaced relation therefrom, clamping means for sealingly attaching the bag to said mounting member, tensioning means for positively holding said mounting member with the peripheral inwardly protruding portion securely engaging the body of the wearer to form a peripheral seal against the wearer's body, means surrounding the outer opening in said bag to reinforce the same and defining an irrigator tube receiving passage therethrough to sealingly embrace a tube inserted through said passage and permit irrigation.

6. The structure set forth in claim 5 and said clamping means consisting in an annular clamping ring closely surrounding said annular mounting member to sealingly anchor the portion of said bag surrounding the inner opening and positively reinforce the same.

7. The structure set forth in claim 5 and a cooperating female clamping member constructed for cooperation with said reinforcing member to positively clamp the marginal portion of the bag material therebetween and form a peripheral seal therearound.

References Cited in the file of this patent

UNITED STATES PATENTS

2,504,872	Perry	Apr. 18, 1950
2,689,567	Welch	Sept. 21, 1954