

June 3, 1958

R. H. COWLES  
COLOSTOMY UNITS  
Filed June 20, 1955

2,837,094

Fig. 1.

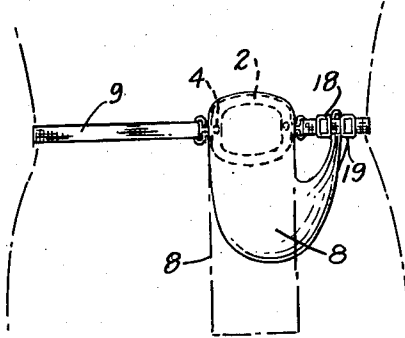


Fig. 2.

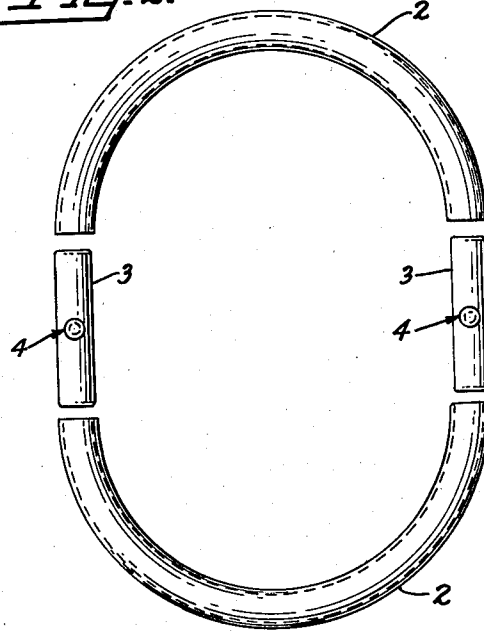


Fig. 3.

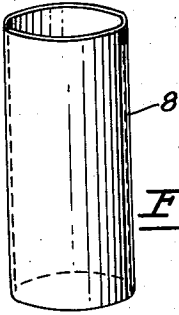


Fig. 4.

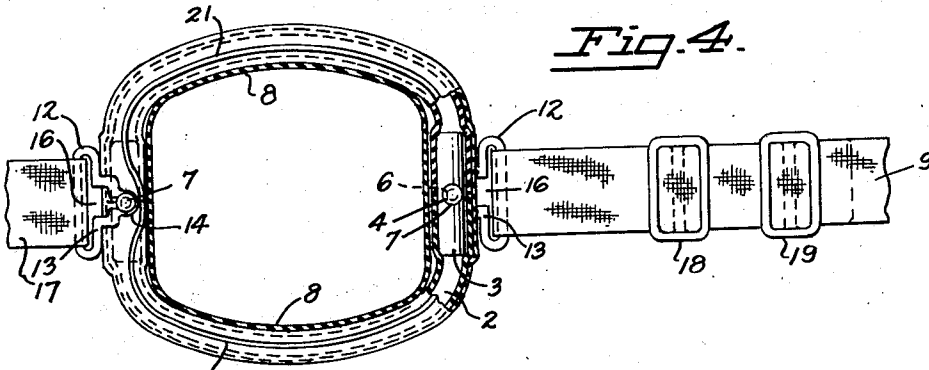
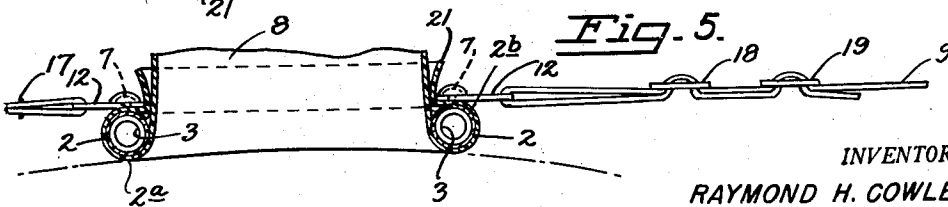


Fig. 5.



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## COLOSTOMY UNITS

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Application June 20, 1955, Serial No. 516,530

14 Claims. (Cl. 128—283)

This invention relates to new and useful improvements in colostomy units.

The invention comprises a deformable ring designed to receive a disposable bag, the same being provided with means for securing said ring and attached bag to a human torso.

A particular object and feature of this invention resides in the comfort afforded the user, coupled with high efficiency of the unit. The ring securing the bag in place is composed of a deformable material, sufficiently pliable to be comfortable against the skin of the user. Stiffeners or equalizers are included in the construction of the ring to prevent collapse of the ring over the colostomy and provide assured protection therearound. Being deformable, the ring contours itself comfortably to the shape of the adjacent body to which it is secured. Also, pressure is evenly distributed throughout the ring, avoiding concentration of pressure at any particular point of contact with the skin of the user. At the same time the stiffeners or equalizers limit distortion or deformation of the ring, maintaining an effective guard around the colostomy. All hard or metallic elements are designed in position to extend away from or avoid contact with the body, and the unit may be secured to the body by an elastic belt which may be comfortably worn and at the same time satisfactorily and securely maintain the ring and attached bag in position.

The deformable quality of said ring is also an aid in the efficiency of the unit in that it contours itself to form a flush abutment or juncture with the body.

Another object and feature of this invention resides in the simplicity and ease with which the device may be employed. As will hereinafter appear, the device is easily and quickly assembled and secured in place for efficient protection to the user.

A further object of the invention resides in the positive connection of the ring and the bag, assuring complete protection.

It is also an object of this invention to provide a device which may alternatively be used as an aid to irrigation of the colon and also for protection during the normal course of daily events.

Still another object is the provision of a bag or receiver for fecal matter composed of material sufficiently inexpensive to be disposed of after use.

These, and other objects of the invention will appear from an understanding of the following written description of one embodiment of the invention as illustrated in the accompanying drawings wherein:

Fig. 1 shows a human torso in partial outline wearing the device in proper position;

Fig. 2 is an exploded plan view of the deformable ring and showing the relative position of the ring and stiffeners prior to assembly;

Fig. 3 is a perspective view of the tubular bag;

Fig. 4 is a fragmentary plan view showing certain details of the invention; and

Fig. 5 is a substantial cross section of Fig. 4.

Referring now to the drawings in detail, the invention comprises a tubular ring 2 composed of a deformable material as, for example, rubber or analogous plastic materials. The ring 2 is of dimension whereby its diam-

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eter is greater than the greatest distance across the colostomy which it is to cover. To facilitate description the said ring 2 will be referred to as comprising an inner side or wall 2a and an outer side or wall 2b.

As particularly illustrated in Figs. 2 and 4, a pair of columnar bars 3 act as stiffeners or equalizers to limit deformation of ring 2. Each stiffener 3 has a diameter the same as or slightly greater than the internal diameter of said ring 2. Each stiffener 3 is provided with a pin 4 comprising a stem 6 and a blunt head 7. Stiffeners 3 are disposed interiorly of said tubular ring 2 with pins 4 substantially 180° measured on said ring from each other. Pins 4 protrude unidirectionally through the outer side or wall 2b of ring 2 and substantially normal to the plane thereof. As particularly shown in Figs. 2 and 4 stiffeners 3 may be inserted in ring 2 by first forming or cutting said ring to comprise a pair of semicircles. Said bars 3 are then induced in the open ends of the semicircular sections of ring 2 and secured in place by a suitable cement.

The bag 8 comprises a tubular member, open at its ends, and composed of a waterproof and relatively inexpensive material. Polyethylene is particularly recommended as a suitable composition for the bag 8. Like materials may be satisfactorily employed. The diameter of tubular member or bag 8 is slightly smaller than the external diameter of ring 2 to facilitate a firm connection of the two.

Belt 9 is composed of elastic material and cut to a length somewhat longer than a given human waist which it is to surround.

A pair of identical clasps 12 each comprise a belt receiving yoke 13 and a pin receiving yoke 14. The pin receiving yoke 14 is separated from the belt receiving yoke 13 by an open space 16 of sufficient dimension to receive the head 7 of pin 4. Said open space 16 communicates with the narrowed opening of pin receiving yoke 14 whereby the head 7 of pin 4 may be inserted through opening 16 and removably slid into secured position at the closed end of pin receiving yoke 14. The ends of the belt 9 are each passed through a belt receiving yoke and turned back. One turned back end of belt 9 is secured, as by stitching 17, to the obverse surface of belt 9. The other turned back end of belt 9 is secured fast in belt receiving yoke 13 by a pair of standard slip buckles 18 and 19, the latter being spaced from each other.

The device is assembled and worn as follows:

The tubular bag 8 is drawn through ring 2 passing from outer side 2b to inner side 2a of ring 2 sufficiently far to turn a sleeve or cuff 21 over ring 2 and pins 4, as illustrated in Fig. 1. Ring 2 with accompanying bag 8 is next positioned over the colostomy with inner side 2a or ring 2 next to the skin of the user, and separated therefrom by the top of cuff 21. Belt 9 is passed around the waist of the user and clasps 12 are each slipped or secured to a pin 4. In this manner pins 4 are each removably secured in a pin receiving yoke 14 of a clasp 12, and cuff 21 of bag 8 is cinched therebetween, positively securing ring 2 and bag 8 in position. Belt 9 is adjusted to a comfortable and firm tightness by lengthening or shortening the turned back end of belt 9 in slip buckle 18.

The deformable ring contours itself comfortably and snugly against the adjacent skin of the user, and a flush juncture is formed there between. At the same time stiffeners 3 limit distortion or deformation of ring 2 caused by pulling of belt 9 and is limited within suitable confines to maintain an effective guard around the colostomy.

Being thus assembled the device may serve either of two purposes: It may assist the patient or user in irrigation of the colon; it may also be used as a comfortable

safety measure against unpleasant accidents during the normal course of the day.

When employed as an aid to irrigation the user's physician will ordinarily give specific directions. Generally, the device is used as an aid to irrigation by permitting tubular bag 8 to depend into a toilet bowl, the patient either sitting on or standing adjacent the same. A catheter is then inserted in the colostomy according to physician's directions. Tubular bag 8 channels all waste material into the toilet. When irrigation is completed, tubular bag 8 is removed from ring 2 by removing clasps 12 from pins 4. The bag 8 may be sheared to relatively small pieces and may then be flushed down the bowl.

Following irrigation and for protection during the day the device is fitted on the user as above described. In addition the depending end of bag 8 is drawn together and passed through the two segments of belt 9 and slip buckle 19 is employed to cinch the enclosed end of bag 8 in secured position. The user may then dress and proceed about his affairs with comfort and assurance of protection.

What is claimed is:

1. As a support in a colostomy unit a deformable ring composed of flexible material, and means to prevent said deformable ring from collapsing upon exertion of diametrically opposed forces within selected opposite sectors of said ring, said last named means extending throughout two opposed segments of said ring each of a length substantially less than one-half the circumference of said ring.

2. As a support in a colostomy unit a deformable ring composed of flexible material, means to prevent said deformable ring from collapsing upon exertion of diametrically opposed forces within selected opposite sectors of said ring, said last named means extending throughout two opposed segments of said ring each of a length substantially less than one-half the circumference of said ring, means to attach said ring to a human torso, and means to attach removably a colostomy bag to said ring.

3. As a support in a colostomy unit a deformable tubular ring composed of flexible material and a pair of relatively rigid bars disposed interiorly of said ring and positioned diametrically opposite one another, said bars provided with diametrically opposed projecting elements.

4. In a colostomy unit the combination comprising a deformable ring; means limiting deformation of said ring within predetermined limits; said last named means extending throughout two opposed segments of said ring each of a length substantially less than one-half the circumference of said ring and a tubular member open at its ends and removably secured at one end to said ring.

5. In a colostomy unit the combination comprising a deformable tubular ring; a pair of relatively rigid bars disposed interiorly of said ring and positioned diametrically opposite one another; means to secure said ring to a human torso; and means to attach a colostomy bag to said ring.

6. In a colostomy unit the combination comprising a deformable tubular ring formed of flexible material; means to limit deformation of said ring; said last named means extending throughout two opposed segments of said ring each of a length substantially less than one-half the circumference of said ring; means comprising a belt to secure said ring to a human torso; and means to attach a colostomy bag to said ring.

7. The combination of claim 6 and wherein said last named means comprise pins on said means to limit deformation and wherein the means to limit deformation of said ring comprises a pair of rigid members disposed within said tubular member and spaced from one another approximately 180°, said members each provided with a projecting element, said belt attached removably at opposite ends to said pins.

8. In a colostomy unit the combination comprising a deformable ring; means limiting deformation of said ring within predetermined limits; a tubular member open at its ends and removably secured at one end to said ring; a belt removably secured to said ring; a pair of slip buckles carried by the belt, one of said buckles and said belt arranged to receive and hold closed the other end of said tubular member.

9. In a colostomy unit the combination comprising a deformable tubular ring formed of flexible material; a pair of relatively rigid bars disposed interiorly of said ring and positioned diametrically opposite one another; a tubular member open at its ends and having one end removably secured to said ring; a belt removably secured to said ring; a pair of slip buckles carried by the belt, said belt and at least one of said buckles arranged to receive and close the other end of said tubular member.

10. In a colostomy unit the combination comprising a deformable ring; means limiting deformation of said ring within predetermined limits; a pair of projecting members; said members secured to said ring and projecting unidirectionally from said ring substantially normal to the top surface thereof and spaced from each other substantially 180° on said ring; a belt; each end of said belt removably secured to a projecting member; and a tubular member open at its ends; one end of said tubular member passing through said ring and turned back to form a cuff therearound; said projecting members comprising means to attach removably said tubular member to said ring.

11. In a colostomy unit the combination comprising a deformable tubular ring composed of flexible material; a pair of relatively rigid bars disposed interiorly of said ring diametrically opposite each other; each said bar provided with a pin; said pins extending unidirectionally from said ring and substantially normal to the top surface thereof; a tubular member open at its ends; one end of said tubular member passing through said ring and turned back to form a cuff therearound; and a belt removably secured to said pins; the cuffed end of said tubular member being locked removably to said ring by said belt and pins.

12. The combination according to claim 10 in which said belt comprises means for closing the other end of said tubular ring.

13. The combination according to claim 11 in which said belt comprises means for closing the other end of said tubular ring.

14. In a colostomy unit the combination comprising a deformable tubular ring; a pair of relatively rigid bars, each said bar provided with a projecting pin located substantially at the center thereof; said bars disposed interiorly of said tubular ring with said pins substantially 180° from each other extending unidirectionally from said ring substantially normal to the top surface thereof; a tubular member open at its ends and having a diameter greater than said ring; one end of said tubular member passed through said ring and turned back to form a cuff around said ring and over said pins; a belt; a pair of clasps; one of said clasps secured to one end of said belt and provided with a yoke wherein a pin may be removably secured locking the cuffed end of said tubular member therein; the other clasp provided with a yoke wherein the other pin may be removably secured additionally locking said cuff and a second yoke to slidably receive said belt therein; and a pair of slip buckles slidably mounted on said belt; at least one said buckle and belt arranged to receive and secure the other end of said tubular member to said belt.

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