

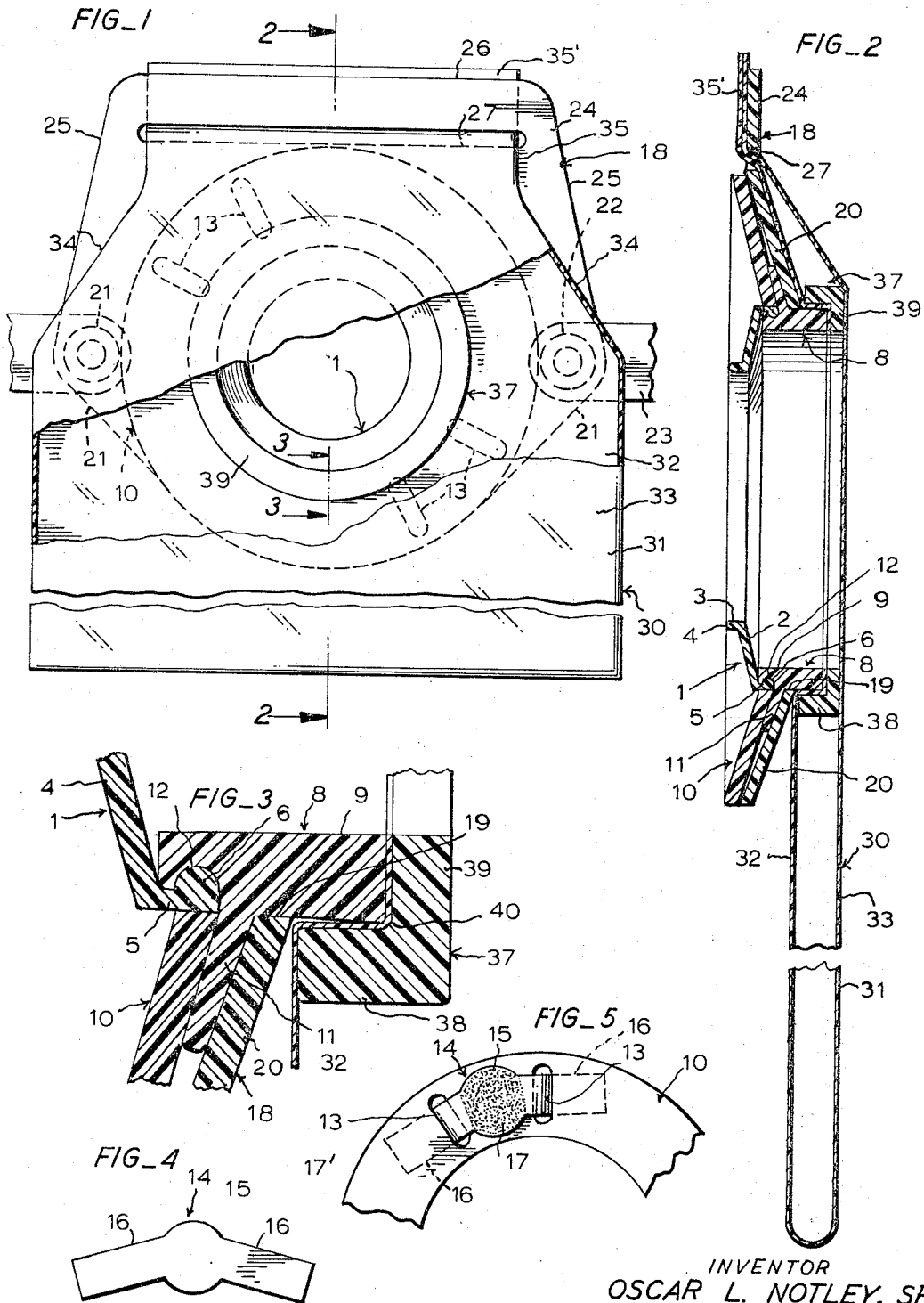
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COLOSTOMY ATTACHMENT AND BAG

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COLOSTOMY ATTACHMENT AND BAG

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This invention relates to an attachment adapted to be secured on the body over a colostomy, and which attachment includes a bag removably carried thereby for receiving drainage from the colon.

One of the objects of the invention is the provision of a colostomy attachment that will not leak when in place on the body, either between the line of seal of the bag holder, which is part of the device or attachment, and the body, or between the bag and the holder.

Another object of the invention is the provision of a device of the above character that is light in weight, and which device is provided with structure that enables it to be attached securely to the body in non-slipping relation without irritation or injury to the skin.

A still further object of the invention is to provision of a colostomy attachment that is readily removable from the body and that includes means for adherently securing it in non-leaking relation to the body at spaced points on the body that are dry, thereby insuring against insecure attachment to the body, and which device includes structure enabling said points of adherency to the body to be frequently changed so there is no injury or irritation of the skin.

An added object is the provision of a colostomy attachment having an improved bag and means for connecting the bag to the attachment.

Another object of the invention is the provision of a colostomy device that is adapted to be securely held on the body against displacement, and a still further object is the provision of a colostomy device that includes means supporting the bag for rotation while the device is held in place, thereby enabling the bag to be swung to one side for an irrigation operation while the person is in bed or lying down.

Also an added object is the provision of a colostomy attachment that provides for slow venting of gas while insuring against leakage of liquid.

Other objects and advantages will appear in the description and in the drawings.

In the drawings FIG. 1 is a front elevational view of the attachment including the bag, but with the front panel of the bag broken away over the attachment so the latter will be shown in full line.

FIG. 2 is an enlarged cross-sectional view taken along line 2—2 of FIG. 1.

FIG. 3 is a greatly enlarged fragmentary cross-sectional view taken along line 3—3 of FIG. 1.

FIG. 4 is an elevational view of one of the adhesive members for adherently securing a portion of the device to the body.

FIG. 5 is a fragmentary plan view of the member of FIG. 4 on the device.

In the detailed description, the words "rear," "rearwardly," "forward" and "forwardly" and words of similar connotation, are used with respect to the side of the attachment that is adapted to face the skin of the wearer when the attachment is in use. For example, a "rearwardly" extending or facing portion is one that projects toward the skin relative to another portion or one that faces the skin, while a "forwardly" extending or facing portion is the opposite.

The attachment illustrated comprises an inner, annular, flexible, resilient and elastic ring or member generally designated 1. Said member includes a main, generally disc-

like body portion 2 having a rearwardly projecting annular flange 3 integral therewith around the inner peripheral edge of the portion 2. This flange terminates in a free rearwardly facing surface 4 that is adapted to engage the wearer around the colostomy when the attachment is on the body.

A forwardly projecting annular flange 5 is integral with the circular outer edge of body portion 2, and a radially inwardly projecting bead 6 is formed on flange 5 along free forwardly facing edge of said flange.

It is to be understood that the ring 1 which includes the body 2, flanges 3, 5 and bead 6, is preferably all of elastic, flexible, relatively soft material, such as silicone rubber, or a plastic having similar characteristics. This material is non-toxic to the skin and is non-absorbent to moisture. Since the rear surface 4 of flange 3 will yieldably engage the skin around the colostomy when the device is on the body, it may be generally called the inner skin engaging ring or member.

A ring holder for the inner skin engaging ring 1 is in two parts, one being an inner cylindrical, tubular piece generally designated 8, and the other being an outer annular, generally disc-like element generally designated 10.

The piece 8 has a cylindrical, radially inwardly facing surface 9 that is coaxial with flanges 2, 5 but substantially greater in diameter than the diameter of flange 3. Said piece 8 is formed with a flange 11, and which flange projects radially outwardly of piece 8, but is inclined transversely thereof slightly rearwardly relative to said piece.

Said piece 8, including flange 11, is preferably rigid and of plastic material having the characteristics of material commonly known to the trade as Lucite.

Flange 11 is integral with piece 8 along a circular line spaced between the annular axially facing end edges of piece 8, but closer to the rear end of piece 8 than to the forward end so as to provide a relatively short cylindrical section between flange 11 and said rear end. Said relatively short section of piece 8 is formed with a radially outwardly opening groove 12 at about the juncture between said rear end section and flange 11. Groove 12 is complementary in cross sectional contour to the cross-sectional contour of bead 6 and said bead is yieldably received in said groove.

The annular outer disc-like element 10 of the ring holder has a radially inwardly facing cylindrical surface that is adapted to form a snug fit over flange 5 for releasably holding the flange 5 and bead 6 in sealing relation with piece 8 when said element is fitted over said flange 5. Element 10 is preferably made of relatively rigid plastic material such as the one commonly known in the trade as Teflon, which material has no tendency to adhere or stick to the skin even under long periods of time when it is tightly held against the skin. It is also non-toxic and completely resistant to attack by skin and body secretions.

The forwardly facing surface of the inner marginal portion of element 10 is in face to face engagement with said flange 11 when the element 10 is seated so as to hold the bead 6 in groove 12 as well as to insure moisture proof connection.

The radially outer edge of the element 10 preferably extends to substantially the same plane in which the rear end surface 4 of flange 5 on the inner ring is disposed when the attachment is not in use on the body of a person.

The annular element 10 is formed with a pair of radially extending slots 13 at two opposite sides of the central opening in said element (FIGS. 1, 5). An adhesive member 14 is held in a position between the slots of

each pair and against the surface of element 10 that faces rearwardly. Each member 14 is replaceable, being in the form of a strip of adhesive tape having an enlarged central portion 15 and a pair of extensions 16 extending angularly relative to each other from opposite sides of said central portions (FIGS. 4, 5). One side of said strip carries a layer of ever-tacky pressure sensitive adhesive, as indicated at 17 in FIG. 5, which layer may be thicker on the central portion 15 than on the extensions, if desired. A protective removable cover for the adhesive layer, as indicated at 17' in FIG. 4 may cover the adhesive layer. Cover 17' is stripped from the adhesive layer when the attachment is to be used, and the extensions 16 are then passed through the slots 13 of each pair so that the exposed adhesive will face rearwardly relative to element 10. A pressure sensitive layer of adhesive on the extensions 16 are then pressed against the forward surface of the member 10, thus firmly, but releasably securing the central portion 15 in a position against the rear face of element 10 for engaging the skin of the wearer.

Flange 11, as seen in FIGS. 2, 3, is inclined in the same direction as the element 10, but the opposite surfaces of said flange preferably extend convergently in a direction radially outwardly of piece 8.

A relatively rigid plate, generally designated 18, and preferably of a polyethylene plastic is against the forward side of flange 11 and is formed with a central circular opening 19 into which opening the rear end portion of piece 8 is snugly but rotatably fitted, and an annular portion 20 of plate 18 around said opening 19 is inclined in the same direction and to approximately the same degree as the forward surface of flange 11. When assembled, the rear inclined face of plate 18 is in engaging relation with the forward surface of the flange 11. The width of annular portion 20 radially thereof at any point therearound is approximately the same as the width of element 10 in the same dimension. Flange 11 projects radially outwardly of piece 8 only a fraction of the distance that member 10 and annular portion 20 project, and as the opposite sides of flange 11 extend convergently in a radially outward direction relative to piece 8, it is seen that the annular portion 20 and element 10 will be closer together at their outer edges than at their inner edges, and they may be substantially in engagement with each other at their outer edges.

The use hereafter of the words "upper," "upwardly," "lower" and "downwardly" and words of similar meaning relate to positions or directions when the attached is in a generally vertical position on a wearer, which is a normal position of the attachment when it is in use.

The lower edge of the annular portion 20 is circularly extending and is substantially even with the lower circularly extending edge of plate 18, but said plate is widened progressively in an upward direction to provide a pair of oppositely outwardly projecting coplanar extensions 21 (FIG. 1) at diametrically opposite points on plate 18 relative to its central opening 19. These extensions each carry one of a conventional pair 22 of male and female snap elements, the other snap element of each pair being carried on one end of a conventional elastic belt 23.

Above the coplanar extensions 21 the material of plate 18 continues upwardly integral with said extensions and with portion 20 and coplanar with said extensions to provide an upper bag engaging section 24. The opposite side edges 25 of said section 24 extend convergently in an upward direction to the opposite ends of a horizontally extending upper edge 26, the corners at the junctures between said edges being rounded.

Section 24 is formed with a horizontally extending slot 27 that is above the annular portion 20 and approximately even with the upper circular edge of plate 10.

The bag for use with the attachment, and that comprises part of the colostomy attachment, is best shown

in FIG. 1. Said bag is preferably of a flexible, relatively thin plastic material, such as polyethylene, and is generally designated 30. Said bag comprises a lower enlarged portion 31 that may be substantially rectangular in outline when the bag is generally flat, providing an inner side 32 and an outer side 33 (FIGS. 1, 2).

The horizontal width of bag 30 from its lower end to a height substantially even with a horizontal line extending through extensions or snap elements 22 may be substantially uniform, and slightly wider than the maximum width of the plate 18. The horizontal length of slot 27 is approximately equal to the outside diameter of the element 10, which is substantially less than the width of the lower portion 31 of bag 30.

The side edges 34 of the upper portion of bag 30 extend convergently toward each other from the points that are at about the same level as the extensions 21 on plate 18 to the slot 27, where the edges become parallel, as at 35, to provide a mouth for the bag that is of almost the same width as the length of slot 27, and which mouth freely extends through slot 27 to the rear side of the upper section 24 of plate 18 so that a portion of said mouth will be held between the section 24 and the body of the wearer, and a sufficient portion of the mouth section of the bag will preferably project above slot 27 to prevent it from being accidentally pulled out of the slot.

The bag 30 is preferably made flat so that opposite sides 32, 33 are identical, and to install or attach the bag to the remainder of the attachment, the upper portion of the bag is first positioned across the forward end of the bore in the central, tubular piece 8 so that the mouth portion 35' of the bag will extend through and past slot 27 the desired distance. When the bag is in this position it will be in the position shown in FIG. 1 and the inner layer of the bag will extend across the forward end of the cylindrical bore or passageway in piece 8.

When in this position, an annular collar generally designated 37 (FIGS. 2, 3) having a cylindrical portion 38 is forced rearwardly over the forward end section of the inner tubular piece 8 so that the material of the bag will be squeezed between the inner surface of said portion 38 and the outer surface of said forward end section of piece 8. A radially inwardly projecting flange integral with portion 38 at the forward end thereof will extend over the forward end surface of said piece 8 and against the material of the bag, said forward end surface and the side of the flange 39 adjacent therewith being preferably complementary so that the portion of the inner layer 32 of the bag will be tightly held between said surfaces.

It is particularly pertinent to note that the outer surface of the forward end section of the piece 8 is tapered radially inwardly a small amount or at about a one degree angle relative to the inner surface of the portion 38 of collar 37, and said portion 38 may terminate slightly short of plate 18.

By this structure a liquid tight seal occurs between the inner layer 32 of bag 30 at the point 40 (FIG. 3) where the layer 32 extends around the outer corner of the piece 18 at the juncture between portion 38 and flange 39 of collar 37. The relief provided between the adjacent surfaces of portion 38 and piece 8 for the inner layer 32 of bag 30 insures against leakage past collar 37 by reason of the formation of puckers in material 32 between said surfaces.

After the collar 37 is in a position securing the inner layer 32 across the forward end of the bore in the piece 8, the part of the inner layer so extending across said bore is cut away by any suitable means. One such means may be a cylinder having fine cutting teeth on one axially facing edge, to provide a cutting edge that rotatably fits within the flange 39. A slight rotation of such a cutter will quickly sever the bag material of the inner layer where it extends across the end of piece 8.

When the portions 15 of members 14 are secured to piece 10 between slots 13, and the protective cover 17'

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is removed, the device may quickly be secured against the body with the inner ring or members 1 spaced around the colostomy and with flange 3 in yieldable sealing contact with the skin. The snap elements at the ends of the elastic belt 23 are then secured to the snap elements on extensions 21 of plate 18 with the belt adjusted to provide sufficient tension when surrounding the body, to hold the attachment snugly against the body. The yieldable engagement between surface 4 of flange 3 and the skin becomes automatic when the element 10 and adhesive 17 are held against the skin.

Another important feature of the invention is the fact that plate 18 is rotatable relative to the remainder of the attachment including the bag supporting tubular piece 8.

Heretofore where adhesive tape or ever-tacky pressure sensitive adhesive is employed to hold the attachment properly relative of the colostomy, a severe skin rash develops due to the repeated removal and replacement of the adhesive from and to the same skin area.

By the present invention it is merely necessary to slightly rotate the element 10 that carries the adhesive, relative to plate 18, to periodically change the points of adherent attachment to the skin. These changes may be made as frequently as desired or as frequently as may be necessary in order to prevent the discomfort due to soreness of the skin or injury thereto.

Another advantage of the present mode of attachment, in combination with the inner ring or member 1 is that the adhesive is not relied upon in itself to prevent leakage, as is common in other colostomy attachments, hence the adhesive may be secured to the skin at points where the skin is dry; namely, the points above the portion of the skin that is below the colostomy.

A still further advantage of the rotary bag support is that it enables the attachment to be used in an irrigating step when the person is lying down. In such step an open-ended elongated tube of the same structure as bag 30, except that it is longer and the bottom end is open, is used, and the bag including all other parts associated therewith, except plate 18, may be rotated relative to plate 18 so the tube will hang down into a receptacle for conducting the discharge including the irrigating medium to the receptacle. The irrigating nozzle under this arrangement would extend through the upper open end of the bag and into the central opening in member 1 and tubular piece 8. Thus the belt may hold the attachment on the body of the person in the manner described, but the assembly on plate 18 may be rotated relative to the plate 18, and reattached to the body, so that the bag or tube (not shown) may extend downwardly. Of course in the irrigating step, the wearer may manually hold the device in position instead of using the adhesive.

The entire weight of the attachment, including the bag, but exclusive of the belt, is very light, being only 47 grams, all of the material used is resistant to injury of all kinds and is easily and readily cleaned and sterilized.

The shape of the bag is important, such as the provision of a reduced diameter neck 35 above the openings in inner ring 1 and the tubular piece 8, since it eliminates the use of a bulky bag and furthermore the reduced diameter neck 35 may more readily be threaded through opening 27. By this manner of securing the neck 35 closed, it is obvious that gas may be slowly vented through the neck without objectionably impairing it as a closure when there is no gas to be vented.

The adhesive and manner of holding the adhesive layers on the skin positively insures against slippage of the attachment. It should be noted that the skin around the colostomy when in contact with the adhesive members 14 will extend into the annular element 10 to hold the flange 3 in yieldable contact with the skin around the colostomy.

Element 10 and the inner ring or member 1 may be said to be shallow frusto-conical members and the same

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is true of the portion 20 on plate 18. Thus these are concentric shallow frusto-conical members having concentric central openings communicating at one side of the attachment with the colostomy and at the opposite side with the receptacle or bag suspended from one of said members, and which latter member is rotatable relative to the remaining pair.

While I have shown and described preferred structure for carrying out the invention, it will be apparent that the invention is capable of variation and modification from the form shown, so that the scope thereof should be limited only by the scope of the claims appended hereto.

I claim:

1. A colostomy attachment comprising:

- (a) an inner annular member having a first opening centrally formed therein, said inner member being adapted to engage the skin of a person around a colostomy with the latter communicating with said opening;
- (b) an outer member having a second opening formed therein;
- (c) means for securing said outer member and said inner member together with said first and said second openings coaxial and with said inner member projecting radially outwardly of said outer member;
- (d) means on said outer member for securing a bag thereon stationary relative thereto with the interior of said bag in communication with said first and second openings;
- (e) adhesive means on said inner member for releasably and adherently engaging said skin of said person at fixed spaced points around such colostomy and means on said inner member for releasably securing said adhesive means thereto at said spaced points;
- (f) said inner member being rotatable relative to said outer member about the axis of said inner member whereby said points of engagement between said adhesive means and said skin may be varied to prevent irritation of the skin due to excessively long engagement of said adhesive means with the skin at the same points;
- (g) said inner member including a ring of soft, elastic, moisture proof material around the said opening in said inner member projecting radially inwardly relative to the sides thereof and axially outwardly of said opening adapted to yieldably engage said skin along a line around said colostomy when said adhesive means is in adherent releasable holding relation to said skin.

2. In a structure as defined in claim 1:

- (g) a flexible, relatively thin bag of moisture proof material having an open mouth at one end thereof and lateral sidewalls extending to said mouth;
- (h) an inlet formed in one of said lateral sidewalls adjacent to said mouth;
- (i) said means on said outer member for securing a bag thereon including means for securing said one of said sidewalls to said outer member with said inlet in a position in registration with and in communication with said first and said second openings, and for releasably holding the marginal portion of said one of said sidewalls around said inlet in sealing relation to said outer member around said second opening.

3. In a construction as defined in claim 2:

- (j) said bag having a neck portion around the mouth thereof; and
- (k) a slot formed in said second member adjacent to one side of said second opening through which said neck releasably extends for releasably holding said neck portion flat with opposite sides thereof substantially together.

4. In a construction as defined in claim 3:
- (l) said neck portion being of restricted width relative to the width of the remainder of said bag, and in a position between said outer member and the skin of the wearer when said inner member is in engagement with said skin; and
 - (m) means connected with said outer member for extending around the body of such person for holding said outer member on such person with the said neck of said bag flattened against said skin to thereby releasably hold said mouth closed.
5. A colostomy attachment comprising:
- (a) a central cylindrical tubular piece 8 open at its opposite ends providing a through central passage-way;
 - (b) a ring of shallow, frusto-conical shape and of soft, resilient, moisture proof material providing a relatively large radially outer peripheral diameter at one end thereof and a relatively small radially inner diameter at the opposite end;
 - (c) means for securing the larger diameter end of said ring to one end of said tubular piece with its smaller diameter end concentric with said piece and projecting axially outwardly of said one end of said tubular piece for yieldably engaging the skin of a person around such colostomy;
 - (d) supporting means rotatably connected with said tubular piece and positioned radially outwardly of the latter for releasably supporting and holding said tubular piece on the body of such person with said inner diameter and of said shallow, frusto-conical ring in yieldable engagement with the skin around said colostomy.
6. In a colostomy attachment as defined in claim 5:
- (e) said supporting means including a relatively rigid disc-like member having a central opening within which the end of said tubular piece opposite to said one end thereof is rotatably supported, and an adhesive on said member at spaced points for adhering said member to said skin.
7. In a colostomy attachment as defined in claim 5:
- (f) a vertically disposed bag of moisture proof, flexible material having two opposite sides and a neck portion at its upper end having an upwardly opening mouth, said neck portion having two opposite sides in upward continuation of said opposite sides of said bag;
 - (g) an opening formed in one of said sides of said bag adjacent to said neck portion and bag securing means for releasably securing the marginal portion of said one of said sides around said opening to the end of said tubular piece that is opposite to said ring

- (h) and means for holding said mouth closed.
8. In a colostomy attachment as defined in claim 7:
- (h) said means for holding said neck portion closed comprising a relatively flat upward extension on said supporting means formed with a slot through which said neck portion extends for holding said two opposite sides of said neck portion together.
9. In a colostomy attachment as defined in claim 5:
- (e) a vertically disposed bag of moisture proof resilient material having two opposite sides and an open mouth at its upper end;
 - (f) a circular opening formed in one of said sides of said bag spaced a substantial distance below said mouth,
 - (g) an annular collar on the opposite end of said tubular piece that is opposite to said one end thereof having a cylindrical portion formed with a radially inwardly facing surface in opposed relation to the radially outwardly facing surface of said tubular piece at said opposite end of the latter, and said collar having a radially inwardly projecting flange extending over the axially outwardly facing surface of said tubular piece at said opposite end thereof,
 - (h) the marginal portion of said one side of said bag around said opening being tightly held between said flange and said axially facing surface on said tubular piece at the juncture between said flange and said cylindrical portion of said collar, and said radially inwardly facing surface on said collar and the radially outwardly facing surface on said tubular piece that is opposed thereto extending slightly divergently in a direction away from said juncture to prevent objectionable wrinkling of said marginal portion along said juncture and leakage of moisture therepast due to such wrinkling.

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