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GB	1047947	GB	0760939
GB	0873045	GB	0749041
GB	0871862	GB	0696491
GB	0871820	GB	0637978
GB	0863295	GB	0127374

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(54) Incontinence appliance for male personal wear

(57) A male urinal comprises a cone-like pouch 20 having, in one wall, a penis-receiving aperture 68 and having a urine outlet 84 for connection to a urine collecting vessel. The pouch is of sheet polyurethane material and may be formed from a single piece of such material. The appliance is more comfortable and generally more acceptable to patients than are appliances including cone-like members of rubber.

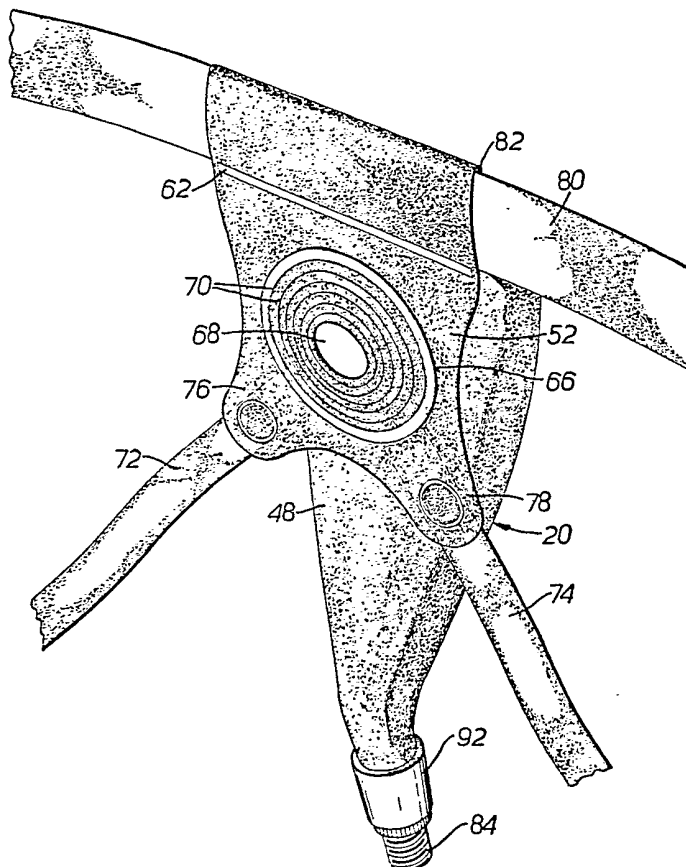


Fig. 1.

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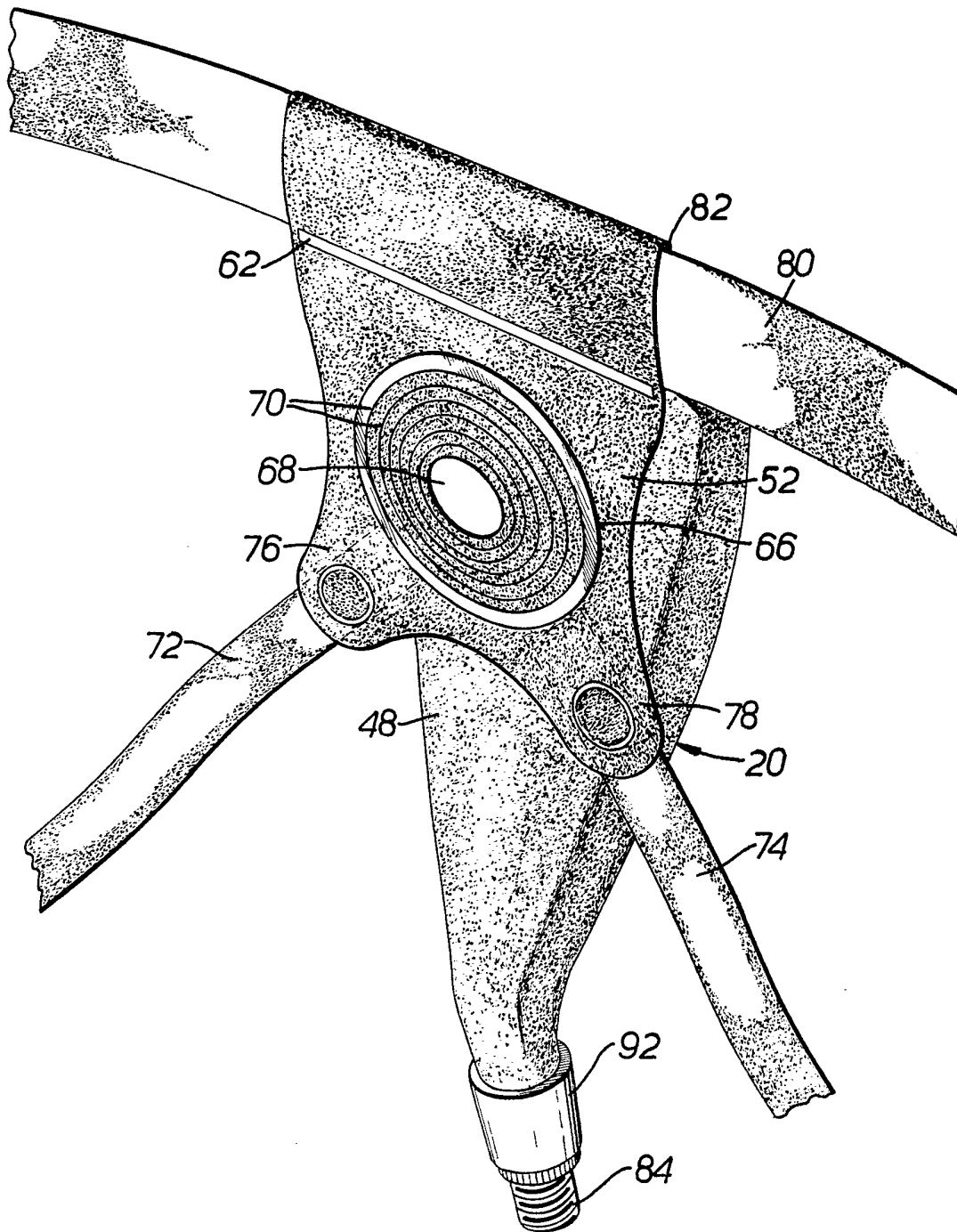


FIG. 1.

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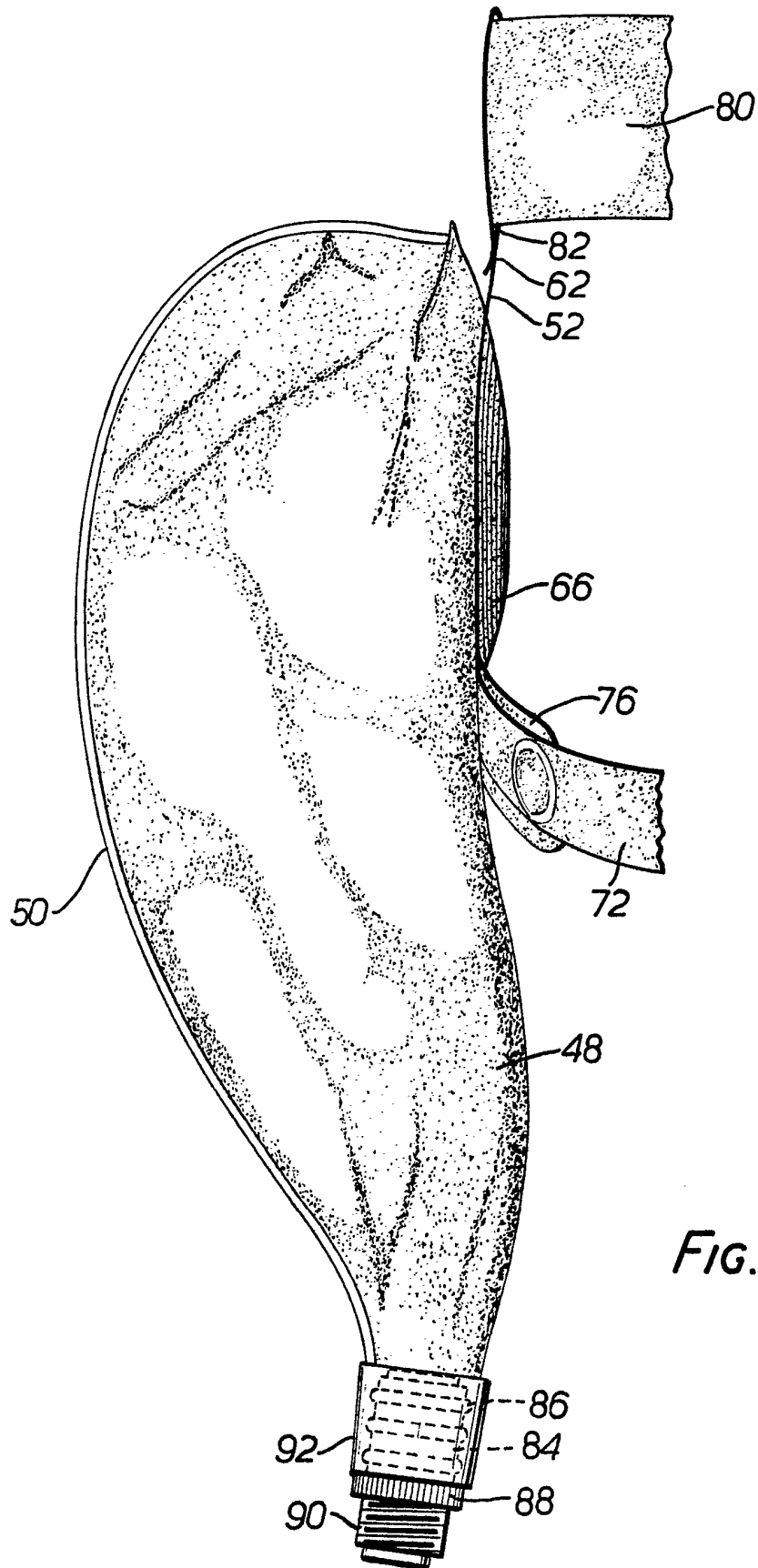


FIG. 2.

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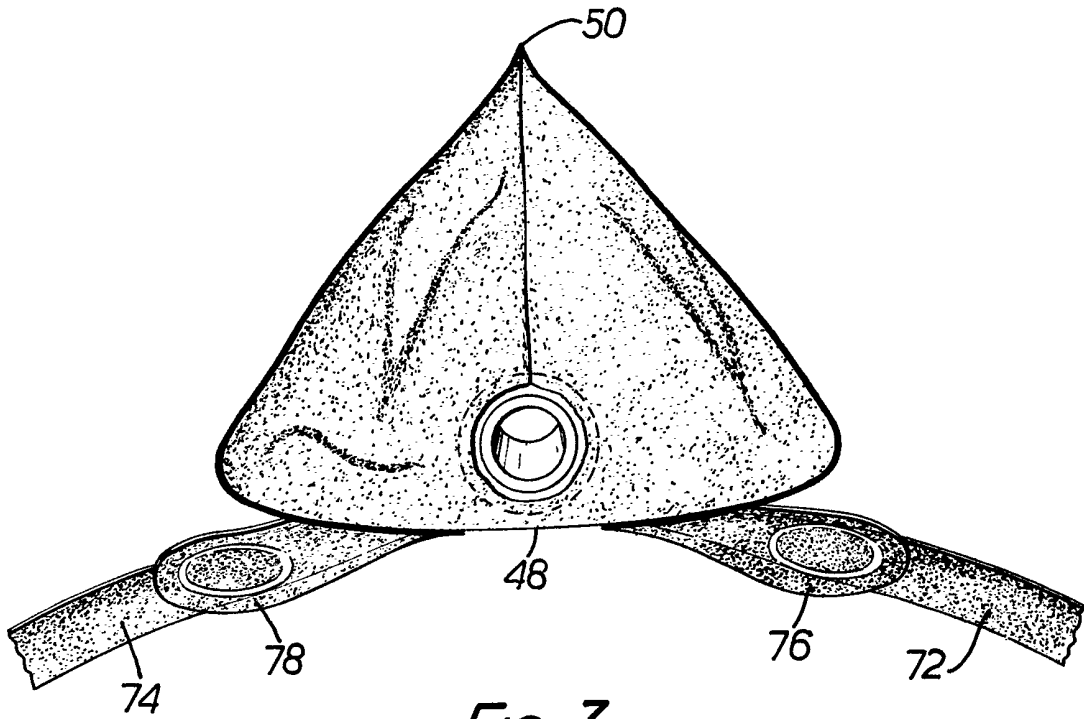


FIG. 3.

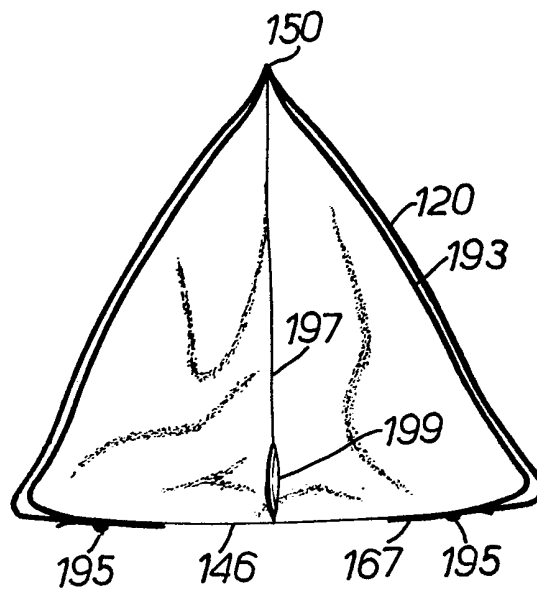


FIG. 9.

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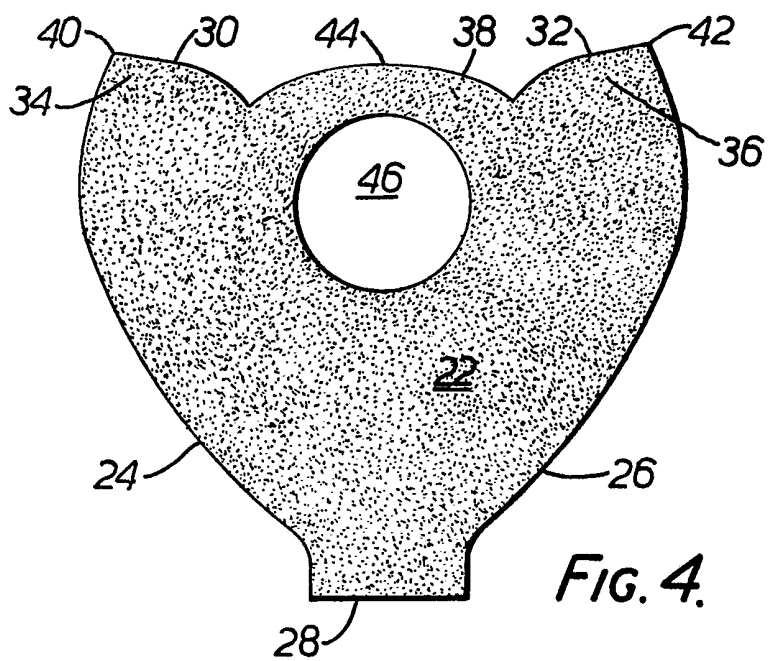


FIG. 4.

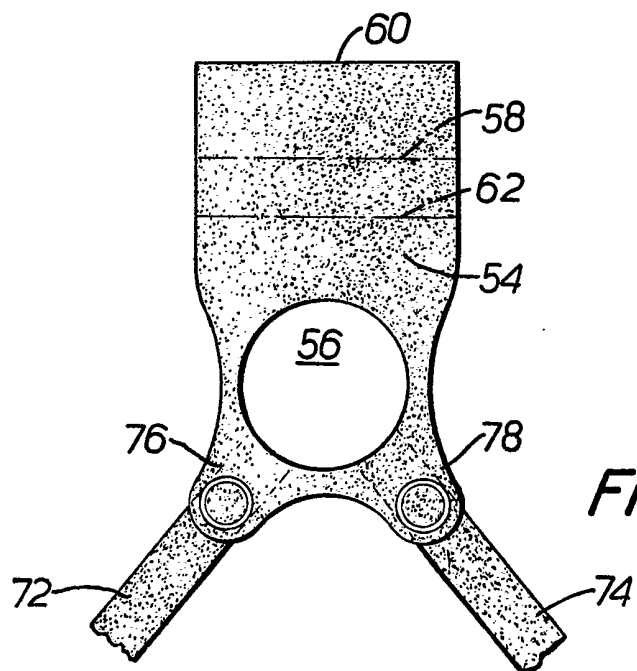


FIG. 5.

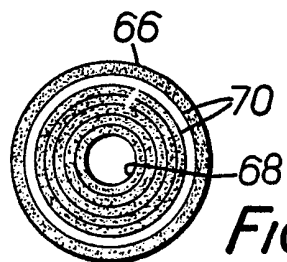
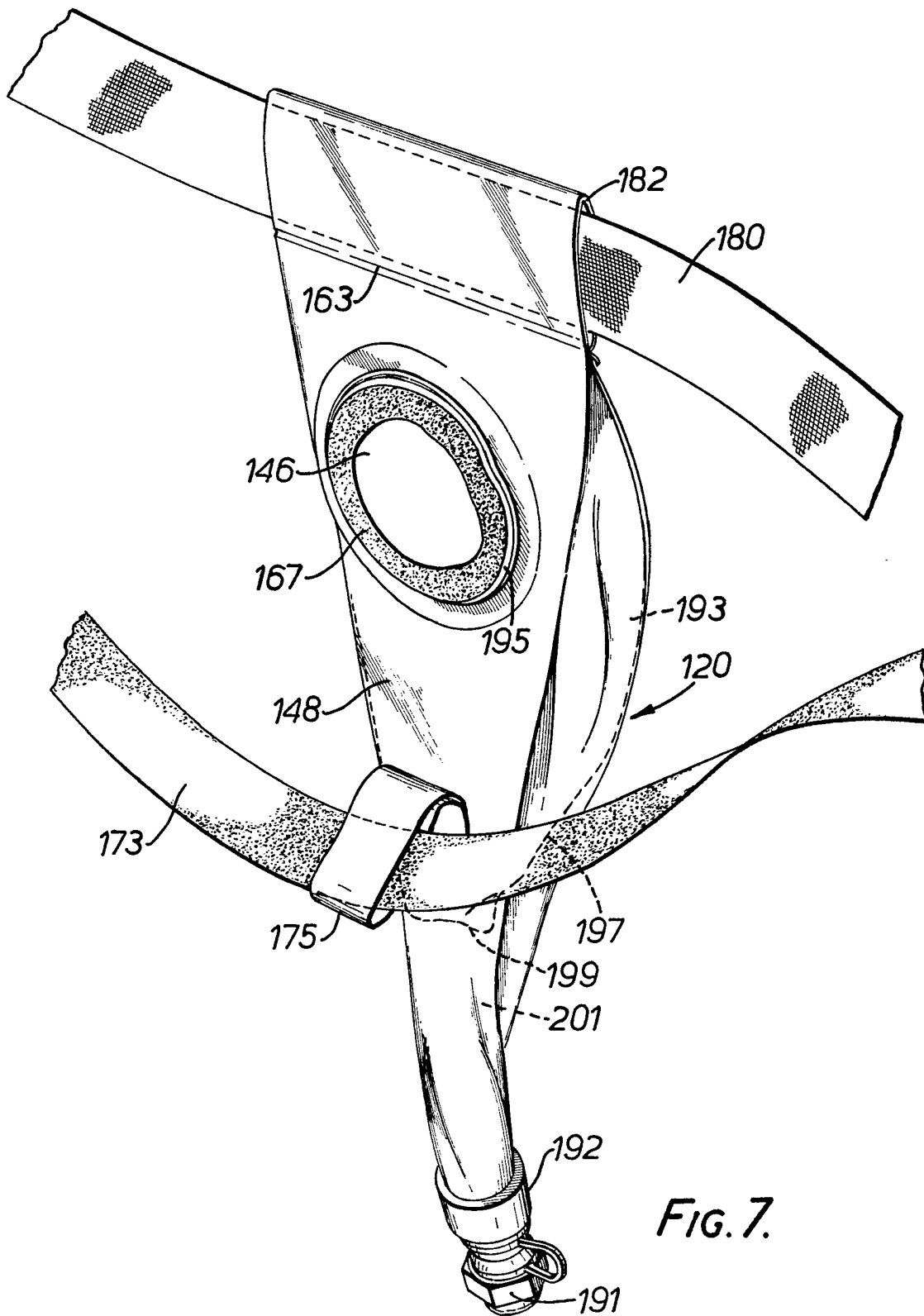


FIG. 6.



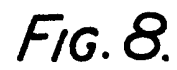


FIG. 8.

SPECIFICATION

Incontinence appliance for male personal wear

The present invention relates to an incontinence appliance, and more particularly to a urinary

incontinence appliance for male personal wear. Urinary incontinence appliances, often referred to as urinals, are worn by people who are unable to control their flow of urine for some reason and also, in some cases, by people who are immobile. They are distinguished from stoma appliances, which are used by patients who have undergone a urinary diversion operation: urinals are used by people who, while being incontinent or immobile, can otherwise discharge their urine in the normal manner.

Male urinals may be considered to fall into three broad types. First, there is the sheath type, in which a sheath fits closely around the penis and either has an open distal end projecting directly into a urine collection bag or has a distal end capable of being connected directly, or *via* tubing, to a urine collection bag. An example of such a sheath-type urinal is described in British Patent Specification No. 760 939 (S. Gaillard).

Secondly, there is the bag-type urinal, in which a substantially flat bag, similar to an ostomy bag, with a hole in the upper section of one wall, is secured to the patient with the penis projecting through the said hole into the bag. Valve means may separate the upper and lower regions of the bag internally to prevent flow-back of urine collected in the bottom of the bag. An example of such a urinal, which is primarily intended for paediatric use, is described in British Patent Specification No. 1 074 344 (Hollister Inc.) and corresponding U.S. Patent No. 3 292 626 (Schneider).

The third type of male urinal is the cone type, in which a substantially cone-like or funnel-like member is worn around the penis, with the smaller, distal, end of the cone-like or funnel-like member connected directly, or *via* tubing, to a urine collection bag. Some urinals of this type additionally include a penis sheath of the type described above (see, for example, British Patent Specification Nos. 871 820, 871 862 and 873 045 — all J. Joyner and J. G. Franklin & Sons Ltd.).

The present invention relates to urinals of the cone type and, more particularly, to the cone-like or funnel-like member itself.

In some urinals of the cone type, the funnel-like member has a substantially open region at its larger, proximal, end (that is to say, in the basal region of the cone, which in use is the upper end of the appliance), whereas in others the funnel-like member is provided at its proximal end with an integral or non-integral flange member, sometimes referred to as a pubic pressure flange, having a central hole for receiving the penis. An example of a cone-type urinal provided at its base with a non-integral flange member and connected to a urine collection bag is illustrated in Fig. 3 of British Patent Specification No. 1 274 374 (Salt & Son Ltd) and another example of a non-integral flange member is described and shown in British Patent Specification

No. 1 019 241 (Downs Bros and Mayer Phelps Ltd).

In at least the large majority of currently available urinals of the cone type, the funnel-like member is of natural or synthetic rubber, optionally having stiffening ribs, as described in, for example, British Patent Specification No. 1 274 374, where the funnel-like member is referred to as a "generally tubular adaptor".

Urinals in which the cone-like or funnel-like member is made of rubber involve relatively complicated manufacturing techniques, often including the moulding of one or more components. The funnel-like member and flange member are often made as two separate members, and although that can make manufacture easier, it tends to increase the bulk of the urinal because of the need to secure the two members together. In any case, urinals of this type tend to be fairly bulky and thus can be uncomfortable to wear, but, on the other hand, they should not be too constricting and should not cause chafing.

A urinal having a funnel-like member said to be of a transparent plastic material is described in British Patent Specification No. 1 047 947 (Sterilon Corporation) but the only material mentioned is "Pilofilm" (Trade Mark) which is in fact rubber hydrochloride, a rubber derivative. That funnel-like member is said to be formed from tubular plastic stock material or from two superposed sheets of stock material sealed together at their edges into tubular form. The member is of generally tetrahedral shape and requires an internal stiffening arm at its base in order to maintain that shape. The stiffening arm tends to project outwardly from the body and the overall shape of that urinal is inconvenient and the urinal has not gained common usage.

Other cone-type urinals of plastics materials are not available presumably because of the difficulty of producing a cone-like or funnel-like member of the desired shape which is sufficiently flexible to be comfortable and yet will retain its shape adequately.

The present invention provides a urinary incontinence appliance for male personal wear comprising an inverted substantially cone-like pouch to be worn around the penis or around the penis and scrotum in order to receive discharged urine and pass it on to a urine collection bag or other vessel, the pouch being substantially formed from substantially liquid-impermeable polyurethane sheet material, and the pouch having in an upper portion of a wall thereof an aperture for sealing engagement around the base of the penis and having at its apex an outlet provided with means for connection to a tube or a urine collection bag.

In the appliance according to the invention, the cone-like pouch is substantially formed from polyurethane sheet material. The sheet material must, of course, be substantially liquid-impermeable, polyurethane sheet material has a good feel and is therefore comfortable to wear. Moreover, it has a low rustle and therefore the presence of the urinal is not betrayed by noises. Also, because the material is resilient, and the pouch can readily be screwed-up into a small

bundle and yet revert immediately to its correct shape on being released. Although polyurethane does have the apparent disadvantage of a relatively low odour barrier (as compared, for example, with polyvinyl chloride), that is of little importance as the pouch is not intended to retain urine but merely to funnel it into a urine collection bag or other vessel, and is outweighed by the important advantages discussed above.

In accordance with the present invention, the cone-like pouch preferably has three walls. The pouch may be substantially formed from a single sheet of polyurethane material, especially a three-sided piece of such material. The sheet may be folded to bring two edges together: those edges may then be sealed together by welding, heat-sealing or other means, to form an edge of the pouch opposed to the wall containing the penis-receiving aperture. The sheet material may also be sealed together along an upper edge of the pouch.

The cone like pouch may be, at least in the vicinity of the penis-receiving aperture, of generally triangular transverse cross-section, preferably of isosceles-triangular transverse cross-section, especially of equilateral-triangular transverse cross-section. The cross-section may be greatest at or toward the upper, proximal, end of the pouch and decrease toward the lower, outlet, distal end of the pouch. Alternatively, the cross-section may be greatest in the central region of the pouch and decrease toward the lower, outlet, distal end while maintaining a substantially equilateral shape, and while changing to an increasingly flattened isosceles shape toward the upper, proximal, end of the pouch. The region where the pouch is of greatest transverse cross-section is preferably nearer to the penis-receiving aperture than to the urine outlet, and is more preferably in the vicinity of the said aperture. In general, the pouch narrows toward the outlet and the angle at the outlet (as viewed from the side of the pouch), more particularly the angle between the sealed edge at the outlet and the opposed wall, is smaller than the corresponding angle at the top of the pouch.

The overall shape of the pouch can be altered by varying the initial shape of the piece of sheet polyurethane material from which it is formed and the manner in which the sheet is folded.

The appliance according to the invention may optionally additionally include a flange member, secured to the pouch around the penis-receiving aperture. The flange is preferably also of sheet plastics material, especially sheet polyurethane material, but alternatively, for example, of sheet polyvinyl chloride material. The flange may have attached thereto, or may be provided with means for attachment of, one or more straps for securing the appliance to the body of the wearer.

Alternatively, such straps may be attached directly to the pouch or the pouch may include means for attachment of such straps. The straps preferably include a waist strap and at least one leg strap.

Further details of preferred ways of producing the pouch from sheet plastics material are described in our copending British Patent Application No.

82.27762, published as Specification No. 2 106 395 A, from which the present application is divided.

Two incontinence appliances according to the invention will now be described, by way of example only, with reference to the accompanying drawings, in which

Fig. 1 is a rear perspective view of a first incontinence appliance according to the invention;

Fig. 2 is a side view of the appliance shown in Fig. 1;

Fig. 3 is an end view from below of the appliance shown in Figs. 1 and 2;

Figs. 4 to 6 are plane views of sheet blanks from which the appliance shown in Figs. 1 to 3 may be formed;

Fig. 7 is a rear perspective view of a second incontinence appliance according to the invention;

Fig. 8 is a side view, partly in cross-section, of the appliance shown in Fig. 7; and

Fig. 9 is a transverse cross-sectional view of the appliance shown in Figs. 7 and 8.

The first appliance, shown in Figs. 1 to 3, comprises a generally three-walled cone-like pouch 20, which has been formed from a generally three-sided, and more particularly cat's-head-shaped blank 22 of substantially liquid impermeable polyurethane material as shown in Fig. 4. In forming the bag the two long edges 24, 26 of the blank 22 have been brought together and heat-sealed, while leaving a circular outlet defined by the straight edge 28. The edges 30, 32 of the two ears 34, 36 have then been heat-sealed to the edge 38 so that the points 40, 42 of the two ears 34, 36 meet at the centre-point 44 of the edge 38. The resulting three-walled cone-like, funnel-like, or inverted pyramidal-like, pouch 20 is of substantially equilateral-triangular transverse cross-section (as may be seen from Fig. 3) throughout at least the major part of its length, with the part of maximum cross-section being toward the upper end of the pouch 20 in the region of the aperture 46 located in the wall 48 opposed to the heat-sealed edge 50 formed by the joining of the edges 24, 26.

A flange member 52, formed from a blank 54 (as shown in Fig. 5) having an aperture 56, by folding the top of the blank 54 along the line 58 and heat-sealing the edge 60 along the line 62, is secured to the rear wall 48 of the pouch 20 with the apertures 46, 56 coinciding, by heat-sealing the two members together around the edges of the apertures 46, 56.

A third, disc-shaped, blank 66 (as shown in Fig. 6) having a central aperture 68 and annular rings 70 is placed in the aperture 46, 56 and heat-sealed thereto around its edges. The blank 66 could alternatively be formed integrally with the blank 22 or the blank 54.

Leg straps 72, 74 are secured, by heat-sealing, to the ears 76, 78 of the flange member 52 and a waist strap 80 is loosely held within the fold 82 of the flange member 52.

A tubular outlet member 84 having ribs 86, a flange 88 and an external screw-thread 90 is located in the outlet at the bottom of the pouch 20 with the edge 28 abutting the flange 88. It is held in position by means of a collar 92 with the pouch walls gripped

between the ribs 86 and the inner wall of the collar 92. The inlet of a urine collection bag, or one end of a piece of tubing leading to a urine collection bag, may be secured to the tubular outlet member 84, and thus to the pouch, by means of the screw-thread 90. (The type of outlet member and the method of securing it to the pouch 20 are, of course, not important and may be varied as desired.)

The pouch is worn with the waist strap 80 secured around the waist and leg straps 72, 74 passing between the legs and secured to the waist strap behind the wearer's back. The disc member 66 may be cut around a ring 70 to provide a central aperture 68 of the desired size for receiving the penis.

Alternatively, the disc member 66 may be omitted entirely and the apertures 46, 56 may be preformed to the desired size. As a further alternative, a central hole with a plurality of outwardly extending slits (in a star-like manner) may be provided to facilitate the cutting by the wearer of a hole of the desired size.

The entire incontinence appliance (including the leg straps 72, 74 and the waist strap 80) may be of polyurethane sheet material, except for the tubular outlet member 84 and the collar 92, which may be of polypropylene or high-density polyethylene, for example.

The second appliance, shown in Figs. 7 to 9, also comprises a generally three-walled cone-like pouch 120, which has been formed from polyurethane sheet material in a manner similar to that in which the pouch 20 of the appliance shown in Figs. 1 to 3 was formed. The pouch 120 is of substantially equilateral-triangular transverse cross-section (as may best be seen from Fig. 9) in its region of maximum cross-section, which is somewhat lower down the pouch than is the case with the first appliance (as may be seen by a comparison of Figs. 2 and 8), but, although the region of greatest cross-section is, in fact, below the region of the aperture 146 located in the wall 148 opposed to the heat-sealed edge 150, it is nearer to the aperture 146 than to the urine outlet. In its upper region, the pouch 120 is of substantially isosceles-triangular transverse cross-section.

This appliance has no separate rear flange member, as does the first appliance, but includes a folded flange 182 formed integrally with the pouch 120, a single heat-sealed edge 163 constituting the upper edge of the pouch 120 and the lower edge of the folded flange 182, which loosely holds an elasticated fabric waist strap 180. A leg strap 173 is loosely held within a loop 175 of polyvinyl chloride sheet material, which is heat-sealed to the wall 148 at 177.

This appliance includes an internal pouch 193, also of sheet polyurethane located within the upper two-thirds region of the pouch 120, with its three walls adjacent to the walls of the pouch 120 (as may best be seen in Figs. 8 and 9), the internal pouch 193 being secured to the pouch 120 along the part of the edge 150 that is common to both pouches and at 195 around the aperture 146. The lower edge 197 of the pouch 193 contains a slot-like aperture 199, which serves as a valve to permit the flow of urine from the internal pouch 193 to the pouch 120, while

hindering its flow in the reverse direction.

The second appliance also includes an annular polyurethane flange 167 around the aperture 146, which is also heat-sealed to the pouches 120, 193 at 195, to provide a snug fit around the penis of the wearer of the appliance.

A tubular outlet member 184 is located at the bottom of the pouch 120 and held in position by means of a collar 192 in a manner similar to that in which the outlet member of the first appliance is held in place. A screw-cap 191 is provided to close the outlet.

This appliance may, if desired, be worn for short periods without a separate urine collection bag, the urine collecting in the region 201 below the internal pouch 193, the outlet member 184 being closed by the screw-cap 191.

It will be apparent that various modifications may be made to both the appliances described and, in particular, features shown in one appliance may be replaced or supplemented by features from the other appliance.

The present invention enables a cone-type male urinal to be constructed simply and inexpensively from sheet polyurethane material. It may be constructed considerably more cheaply than may urinals of rubber, and is sufficiently inexpensive to be semi-disposable. It is also less bulky, lighter and more flexible, and generally more comfortable to wear, than are rubber appliances. Finally, it is of more 'modern' appearance and feel and thus more acceptable to patients.

Our British Patent Application No. 82.27762 mentioned above describes and claims a urinary incontinence appliance for male personal wear comprising an inverted substantially cone-like pouch to be worn around the penis or around the penis and scrotum in order to receive discharged urine and pass it on to a urine collection bag or other vessel, the pouch having three walls and having in an upper portion of one of said walls in an aperture for sealing engagement around the base of the penis, the pouch having at its apex an outlet provided with means for connection to a tube or a urine collection bag, and the pouch being substantially formed from a generally three-sided piece of substantially liquid-impermeable sheet plastics material with the said outlet being formed at the convergence of two of said sides, with two edges of the said piece being sealed together to form an edge of the pouch opposed to the wall containing the said aperture, and with the said three walls also being sealed together along an upper edge of the pouch.

CLAIMS

1. A urinary incontinence appliance for male personal wear comprising an inverted substantially cone-like pouch to be worn around the penis or around the penis and scrotum in order to receive discharged urine and pass it on to a urine collection bag or other vessel, the pouch being substantially formed from substantially liquid-impermeable polyurethane sheet material, and the pouch having in an upper portion of a wall thereof an aperture for

sealing engagement around the base of the penis and having at its apex an outlet provided with means for connection to a tube or a urine collection bag.

5 2. An appliance as claimed in claim 1, wherein the pouch has three walls.

3. An appliance as claimed in claim 1 or claim 2, wherein the pouch is so formed from said sheet material that two edges of the said sheet material are sealed together to form an edge of the pouch opposed to the wall containing the said aperture.

10 4. An appliance as claimed in claim 3, wherein the sheet material is also sealed together along an upper edge of the pouch.

15 5. An appliance as claimed in any one of claims 1 to 4, wherein, at least in the vicinity of the said aperture, the pouch is of substantially triangular cross-section.

20 6. An appliance as claimed in claim 5, wherein, at least in the vicinity of the said aperture, the pouch is of substantially equilateral triangular cross-section.

7. An appliance as claimed in any one of claims 1 to 6, wherein the pouch has attached to it, or includes a means for attachment of, one or more straps for securing the appliance to the body of the wearer.

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8. An appliance as claimed in any one of the claims 1 to 6, which additionally comprises a flange of sheet plastics material secured to the pouch around the said aperture, the said flange having attached thereto, or being provided with means for attachment of, one or more straps for securing the appliance to the body of the wearer.

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9. An appliance as claimed in claim 7 or claim 8, wherein the said straps include a waist strap and at least one leg strap.

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10. An appliance as claimed in claim 1 substantially as described herein with reference to and as shown in Figs. 1 to 3.

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11. An appliance as claimed in claim 1 substantially as described herein with reference to and as shown in Figs. 7 to 9.