

Description

Technical Field

This invention pertains to waste-containment garments such as disposable briefs for incontinent adults, and diapers. More specifically, it pertains to such garments having structural features which render them highly resistant to leakage even when free liquid (i.e., unabsorbed liquid) is present in the garment.

Background Art

U. S. Patent Re. 26,151 which reissued January 31, 1967 (Originally No. 3,180,335, dated April 27, 1965) to Robert C. Duncan discloses a Disposable Diaper having inwardly folded side flaps, and means to fasten the ends of the inwardly folded edges of the side flaps in position over the face of the absorbent pad of the diaper. This patent further recites: "It is important that the flaps be unsecured in the crotch area so as to permit them to properly function as previously discussed."

U. S. Patent 3,860,003 which issued January 14, 1975 to Kenneth Barclay Buell, the inventor herein, discloses Contractable Side Portions For Disposable Diapers. Such diapers have outwardly extending side flaps, and elastic members "whereby effective elastic side flaps are formed on the integral diaper and the side flaps being compliant and forming effective seals about an infant's leg."

U. S. Patent 4,490,148 which issued December 25, 1984 to Bo Beckstrom discloses a Protector Against Incontinence Or Diaper that has inwardly folded side flaps that are fixed at their ends to the bottom layer, and which side flaps have elasticized free edges. The Beckstrom patent follows the Duncan teaching that such side flaps be unsecured in the crotch area. Indeed, Beckstrom positions the points of fastening the ends of the side flaps to beyond the waistband edges of the absorbent core, and fastens them to underlying portions of the bottom layer: i.e., the backsheet.

See also US-A-4 326,528 whose disclosure corresponds to the pre-characterizing part of claim 1.

While some of the problems of providing leakage resistant waste containment garments have been at least partially ameliorated by garments disclosed in the background patents, none has solved the problems in the manner of or to the extent of the present invention. For example and not by way of intending to limit the present invention, the present invention has addressed the problem of inversion or outwardly folding of inwardly turned side flaps due to frictional engagement with

skin areas of the person on whom the garment is being applied during application of background-art type garments on adult incontinent: particularly bedridden adult incontinent. Accordingly, among other things, the present invention provides a waste containment garment which comprises side-edge-leakage-guard gutters, and means for substantially obviating their inversion during application and use of the garment.

DISCLOSURE OF THE INVENTION

In accordance with the present invention, there is provided a disposable waste containment garment comprising a body member having a rear waistband region, a front waistband region, and a crotch region therebetween and which body member comprises a liquid permeable topsheet, a liquid impervious backsheet, an absorbent core disposed intermediate said topsheet and said backsheet, and two inwardly facing, longitudinally extending, liquid impermeable side-edge-leakage-guard gutters having proximal and distal edges, said gutters being disposed adjacent the longitudinal side edges of said body member, said gutters comprising means for being longitudinally elasticized adjacent said distal edges, wherein said gutters are flexible and extend into the waistband regions of said garment, said garment further comprising securement means arranged so as, in use, to apply laterally directed tension to portions of the proximal edges of said gutters disposed in said waistband regions, said garment also comprising means for substantially obviating inversion of said gutters during application and use of said garment, and being sized and configured with respect to said user to enable said distal edges to contact torso areas of said user throughout the lengths of said distal edges and to substantially preclude said distal edges from encircling the thighs of said user. In one preferred aspect of the invention the means for substantially obviating inversion of the gutters comprises means for securing closed, end portions of the gutters disposed in the waistband regions of the garment and for securing closed only sufficiently long lengths of the gutters in the crotch region of the garment to substantially obviate inversion under normal forces encountered when applying the garment to a user, and leaving the remainder length portions of the gutters freely openable: that is, without securing the distal edges of such remainder lengths of the gutters to underlying structure of the garment. In one aspect of the invention only a short length of each gutter adjacent its distal edge is secured to underlying structure in the central crotch portion of the garment: i.e., in the vicinity of the lateral centerline of the absorbent core. In another aspect of the invention only a short length of

each gutter adjacent its distal edge that is spaced intermediate the central crotch portion and the rear waistband region is secured to underlying structure. And, in a third aspect of the invention, such short lengths in both the central crotch portion and the latter secured portion are secured closed, in addition to the ends of the gutters being closed, while leaving the remainder lengths of the gutters freely openable. Preferably, all of the ends of the gutters are secured closed at about the elevation of where, when the garment is secured on a seated user, the upper portions of the user's thighs intersect the torso of the user; most preferably closed about edge portions of the absorbent core albeit it is not intended to thereby preclude suitable closure by securing the ends of the gutters closed by securing portions of the gutter to adjacent portions of other garment structure such as the backsheet or topsheet.

BRIEF DESCRIPTIONS OF THE DRAWINGS

While the specification concludes with claims which particularly point out and distinctly claim the subject matter regarded as forming the present invention, it is believed the invention will be better understood from the following descriptions taken in conjunction with the accompanying drawings in which identical features in the several views are identically designated and in which:

Figure 1 is a perspective view of a disposable incontinent brief embodiment of the present invention.

Figure 2 is a flat-out, plan view of the disposable incontinent brief shown in Figure 1 with the topsheet thereof facing upwards, and wherein portions have been torn away to more clearly show underlying structure.

Figure 3 is a plan view of the absorbent core of the disposable incontinent brief shown of Figures 1 and 2.

Figures 4, 5 and 6 are sectional views taken along section lines 4-4, 5-5 and 6-6, respectively, of Figure 3.

Figures 7, 8, 9 and 10 are enlarged scale, fragmentary sectional views taken along section lines 7-7, 8-8, 9-9 and 10-10, respectively, of Figure 2, and wherein thicknesses have been exaggerated to more clearly depict the construction.

Figures 9a, 10a and 11a are enlarged scale, fragmentary sectional views of a disposable incontinent brief of the configuration shown in Figures 1 and 2 with the brief secured on a user, the sectional views being taken along sectional lines aligned with section lines 9-9, 10-10 and 11-11 respectively, of Figure 2; and in which views thicknesses have been exaggerated

as in Figures 7 through 10 to more clearly depict the construction.

DETAILED DESCRIPTION OF THE INVENTION

An exemplary disposable waste containment garment embodiment of the invention is designated incontinent brief 20 in Figure 1, and is shown therein to comprise: a body member 22; two stub-belts 23 and 24 which extend laterally outwardly from the front waistband region 25 of body member 22 and which stub-belts 23 and 24 are opposite end portions of a front half-belt 26; two stub-belts 28 and 29 which extend laterally outwardly from the rear waistband region 30 of body member 22 and which stub-belts 28 and 29 are opposite end portions of a rear half-belt 31; and four tape-tab fasteners designated 33 through 36, two each of which are disposed on distal edges 38 and 39 of stub-belts 28 and 29, respectively (i.e., fasteners 33 and 34 adjacent the ends of distal edge 38 of stub-belt 28, and fasteners 35 and 36 adjacent the ends of distal edge 39 of stub-belt 29). As further shown in Figure 1, body member 22 comprises: a topsheet 40; a backsheet 41; an absorbent core 42 that is enveloped in tissue paper 43 and disposed intermediate topsheet 40 and backsheet 41; and two longitudinally extending side-edge-leakage guard gutters 45 and 46 having distal edges 48 and proximal edges 71. The distal edges 48 are shown to be gathered or contracted by elastic means not shown in Figure 1. Portions of backsheet 41, and tissue paper 43 are visible through a hole torn in topsheet 40 along tear line 44; and a portion of absorbent core 42, including its rear edge 47, is also visible through that hole because a portion of the tissue paper 43 is also torn away along tear line 44a. Additionally, in the embodiment shown in Figure 1, four surface areas of the gutters which are disposed adjacent their distal edges are secured to underlying structure (i.e., the topsheet): two of these are designated central gutter closure zones 51 and 52 which are located in the central crotch region of the garment; and the other two are designated rear-quarter gutter closure zones 53 and 54 which are disposed about midway between zones 51 and 52, respectively, and the closed ends of the gutters disposed in the rear waistband region of the garment.

Basically, without intending to limit the present invention by a brief explanation, the present invention is a waste containment garment that, when provided in adult sizes that are commonly referred to as adult incontinent briefs, are especially useful and leakage resistant when applied to bedridden users. This is so because they have relatively narrow body members that are fitted with inwardly facing side-edge-leakage-guard gutters having

elasticized distal edges. When the garment is properly fitted and secured on a user, the elasticized distal edges of the gutters run through the groin areas, and diverge upwardly over both the abdomen and the hips/lower back of the user. Additionally, when properly fitted and sized, the proximal edges 71 also lie across hip/back and abdominal areas rather than encircling the thighs of the user or overlapping about the sides of the user. The elasticized edges are also precluded by the size and configuration of the body member from encircling the thighs of the user or overlapping around the sides of the user. Importantly, short lengths of the distal edges of the gutters are secured to underlying structure to obviate their inversion during application and use of the garment. In a preferred embodiment, such securement is adjacent the central crotch region of the absorbent core; and, more preferably, further comprises an additional area of such securement in the rear hip regions of the user. Friction between the inwardly turned side flaps or gutters and skin areas of users acts to cause such flaps or gutters to be inverted -- i.e., folded outwardly -- when such garments are being applied to users, and particularly when being applied to bedridden patients by attendants. The present invention substantially obviates such inversion by securing minor length portions of such gutters closed while leaving the remainder length portions freely openable. Such a garment is highly leakage resistant -- particularly for bedridden users lying on their sides -- because the freely openable portions of the gutters act to collect and hold free (unabsorbed) liquid until it is absorbed into the absorbent core of the garment: such liquid usually being at elevations below the adjacent portions of the distal edges of the downside gutter. Accordingly, such a garment can be loosely fitted on a bedridden user for comfort, and still be highly leakage resistant because its elasticized edges do not normally have to function as hydraulic seals. For this reason, such garments are also particularly useful and comfortable when applied to very thin (eg. emaciated) users who sometimes have concave body areas which areas are spanned by but not contacted by portions of the elasticized edges regardless of the degree of tension.

Referring now to Figure 2, incontinent brief 20 of Figure 1 is shown in the flat-out, uncontracted state with its topsheet 40 facing the viewer. In this view, the edge of the absorbent core is indicated by a dashed-line and designated 55; and a thick portion of the absorbent core is indicated by another dashed-line and designated 57. Additionally, in order to clearly show the construction of brief 20, portions of the topsheet 40, the top layer of tissue paper 43, the absorbent core 42, and the back layer of tissue paper 43 are torn away along tear-

lines 61, 62, 63 and 64, respectively; and gutter-forming side edge portions of backsheet 41 are torn away along tear-lines 65 through 70. Also, two strands 74 of elastic are disposed along each side of the brief, which strands have only their ends adhesively secured between two folded layers of backsheet 41 adjacent the ends of the absorbent core. In addition, each end of each gutter is sealed closed for a length Y by securing the gutter-forming edge portion of backsheet 41 to the underlying area of topsheet 40; and each end of each gutter is secured closed for about a length X about an edge portion of the absorbent core 42 with portions of the top layer of tissue paper 43 and topsheet 40 disposed therebetween. Such gutter end sealing and closure are effected by adhesive areas designated 76, portions of two of which are shown exposed and spackled in Figure 2. Two additional areas of adhesive are shown along the right side of brief 20, Figure 2, and are designated 77 and 78. Identical adhesive areas are also provided on the left side of the brief. Adhesive areas 77 and 78 are provided to secure short lengths of the gutters closed to form gutter closure zones 51 through 54, Figure 1. The lengths of the gutters which are not secured closed (i.e., the ends and the gutter closure zones) are deemed to be freely openable gutter portions.

Still referring to Figure 2: the portion of the brief having a length L_{RWR} is designated the rear waistband region; the portion having a length L_{FWR} is designated the front waistband region; and the length L_{CR} is designated the crotch region albeit it is not intended to thereby strictly define such regions of the brief. Additionally, to facilitate further describing brief 20: W_G , Figure 2, is the width of each gutter 45, 46, Figure 1; W_B , Figure 2, is the width of body member 22; W_{SB} is the lateral length of each stub belt; W_{CG} is the length of the closed end of each gutter: i.e., the sum of lengths X and Y as described above.

Absorbent core 42, Figure 3, of brief 20, Figure 1, is somewhat hourglass-shaped, has a width designated W_C , and a length L_C . As further shown in Figures 4 through 6, portion 57 of cord 42 is thicker (i.e., thickness T_{CC}) than the remainder of the core (i.e., thickness T_C). Preferably, the core is airfelt albeit it is not intended to thereby limit the present invention. Such a core has a propensity to be folded along the laterally extending end edges of portion 57.

Figure 7 is a fragmentary sectional view along section line 7-7 of Figure 2 and shows -- with exaggerated thicknesses and in enlarged scale -- that core 42 is enveloped in a full wrap of tissue paper 43; that topsheet 40 substantially covers the entirety of core 42 and has its edge secured to an adjacent area of backsheet 41; that backsheet 41 is

U-folded about the edge of the wrapped core to overlie the topsheet 40, and that an edge portion of backsheet 41 is U-folded back on itself to enclose strands 74 of elastic in a tunnel that is sealed by adhesive 79. The juxtaposed areas of the topsheet 40 and the backsheet 41 are adhesively secured together by adhesive 80; and the ends of the strands 74 of elastic are secured in the backsheet-formed-tunnel by adhesive 81. Additionally, a portion of the rear half-belt 31 is shown secured to backsheet 41 so that stub-belt 29 extends laterally outwardly from edge 71.

Figure 8 is a fragmentary, longitudinal sectional view taken along section line 8-8 of Figure 2 which shows -- with exaggerated thicknesses and in enlarged scale -- the construction of brief 20 along a side edge portion thereof. As stated herebefore, all of the plies over length W_{CG} are secured together as with, for example, adhesives; and, to the right of length W_{CG} as shown in Figure 8, the portion of backsheet 41 that is superjacent topsheet 40 is not secured thereto. Thus, it depicts a slightly open freely-openable-portion of gutter 46.

Figure 9 is a fragmentary sectional view along section line 9-9 of Figure 2 and shows -- with exaggerated thicknesses and in enlarged scale -- the edge/gutter construction of body member 22 in the central crotch region where the gutter-forming portion of backsheet 41 is secured to the topsheet 40 by adhesive 77. As previously stated, the strands 74 of elastic are preferably not secured to the adjacent areas of the backsheet through this zone. In this view, it is clear that adhesive 77 is spaced a distance FE from distal edge 48.

Figure 10 is a fragmentary sectional view along section line 10-10 of Figure 2 and shows -- with exaggerated thicknesses and in enlarged scale -- the edge/gutter construction of body member 22 in a freely openable span of gutter: i.e., a span wherein the portion of the backsheet 41 that overlies the topsheet 40 is not secured thereto.

Figure 9a, 10a and 11a are fragmentary lateral sectional views which depict an incontinent brief 20, Figure 1, as it might be shaped when applied to a user, albeit thicknesses of some of the components have been exaggerated for clarity. In particular, Figure 9a depicts gutter 46 facing upward (i.e., cupped downward) and oriented as it would be with the distal edge 48 of the gutter disposed along the left groin of the user, and the outside surface of the gutter extending downward along the inner thigh of the user; and with the absorbent core portion spanning the perineum of the user. In a similar vein, Figure 10a depicts a lateral section disposed rearward from the section of Figure 9a, and shows the gutter 46 standing substantially open: ready to catch and contain free (i.e., unabsorbed) liquid until it can be wicked into and absorbed into adjacent

portions of the absorbent core 42. Additionally, this view clearly shows that the gutter would so contain free liquid whether the user was disposed on his or her side, or erect as when seated or standing. This view also clearly shows that the gutter 46 is partially lined by wicking material: i.e., the plies of tissue paper 43 which are disposed between the liquid pervious topsheet 40 and the liquid impervious backsheet 41. Such wicking-material lining extends throughout the lengths of the gutters and, therefore, the gutters are said to be coherently lined with liquid wicking material.

Figure 11a depicts the lateral section of brief 20 in the lower left back portion of a user. In this view, it is clear that lateral tension in the stub-belt applies lateral tension to the proximal edge 71 of gutter 46; and that gutter 46 is substantially open with its distal edge 48 disposed inboard from proximal edge 71. As stated hereinabove, this geometry provides effective leakage protection even for users who are lying on their sides by providing reservoirs to catch and contain free liquid until it is absorbed into core 42.

Exemplary Embodiment

An exemplary medium-size embodiment of brief 20 that is well suited for users having waist or hip sizes in the range of from twenty-six inches (66 cm) to forty-six inches (117 cm), but more preferably in the range of from twenty-eight inches (71 cm) to forty-four inches (112 cm), is manually constructed as follows albeit it is not intended to thereby limit the present invention.

The backsheet 41 is made from a sheet of polyethylene having a thickness of 0.025 mm (one mil), and which is seventeen inches wide by thirty-one inches long (43 cm by 79 cm). With the backsheet restrained in the flat-out position, strands 74 of elastic are stretched about one-hundred-twenty-five percent, and then only their ends are adhered to the backsheet four inches (10 cm) from each end. They are spaced so that the strands 74 nearest the side edges are spaced one-and-one-eighth inches (3 cm) therefrom; and the inboard strands 74 are spaced three-eighths of an inch (1 cm) center-to-center therefrom. Then, longitudinal edge portions one inch wide (2.5 cm) are U-folded up and inwardly over the elastic strands 74 and the distal edge portions of those longitudinal edge portions are secured throughout their lengths to subjacent areas of the backsheet. The longitudinal edges formed by these U-folds ultimately become the distal edges 48 of the gutters 45 and 46, as previously designated. The backsheet is then ready to have the absorbent core assembly joined with it.

The absorbent core assembly comprises, an absorbent core 42 that is fully enveloped and seal-

ed within tissue paper 43. The plan form of the envelope of tissue paper is preferably rectangular albeit the core 42 preferably is hourglass-shape as shown in the figures. The absorbent core assembly has a width of eleven inches (28 cm) and length of twenty-seven inches (69 cm). It is secured to the backsheet with adhesive or double sided tape or the like so that its ends are two inches (5 cm) from each end of the backsheet, and with equal width side-edge portions (i.e., gutter forming portions) of the backsheet 41 exposed on each side.

The absorbent core assembly is then covered by the topsheet which has a length equal to the length of the backsheet, and a width of twelve inches (30.5 cm). Its edge portions which extend beyond the edges of the absorbent core assembly are then secured to underlying areas of the backsheet. The gutter forming edge portions of the backsheet are then U-folded along the longitudinal edges of the absorbent core assembly; and secured by adhesive in areas 76, Figure 2, in each corner, and the adhesive areas 77 and 78 adjacent each distal edge 48 as previously described. The longitudinal edges formed by these last U-folds are alternatively designated longitudinal side edges or proximal edges 71. This completes the assembly of the body member 22 of brief 20.

The body member 22 of brief 20 is then turned over and the half-belts 26 and 31 are secured thereto in the positions indicated in the drawings. In the exemplary embodiment, the half-belts are two ply laminates: an outer lamina of polyethylene film such as used for the backsheet 41; and an inner lamina of nonwoven polypropylene. Both half-belts have a lateral dimension of twenty-five inches (63.5 cm); and the front half-belt 26 and the rear half-belt 31 have longitudinal lengths (i.e., the heights of the front and rear waistband regions, respectively) of six inches (15 cm) and eight inches (20 cm), respectively. The factory bond ends of adhesive tape-tab fasteners 35 through 38 are secured to the four corners of the back half-belt 31 as shown in Figures 1 and 2 to complete the assembly of brief 20.

While the construction of the exemplary brief 20 has been described as comprising laminated half-belts, four discrete stub belts could obviously be utilized, and they could be made entirely from air permeable material to be breathable. However, it is not intended to limit the present invention to construction having four stub-belts. Additionally, while the above described construction provides gutters having widths W_g , Figure 2, of one-and-one-half inches (4 cm), the preferred range of gutter widths is from three-quarters-of-one-inch (2 cm) to three inches (7.6 cm); and the more preferred range is from one inch (2.5 cm) to two inches (5 cm).

The brief 20, is applied to a user -- for example a bedridden person -- by positioning the rear waistband region 30 under the person's back, and drawing the remainder between the person's legs so that the front waistband region 25 is positioned across the front of the person. The user's-bond ends of the tape fasteners are then secured: preferably to outwardly facing areas of the front stub-belts 23 and 24. In this manner, attachment tension in the stub-belts is positively applied to the proximal edges 71 of the portions of the gutters disposed in the waistband regions of the brief. This, acts in conjunction with the elasticized distal edges 48 of the gutters to provide the gutter dispositions and functions described hereinbefore. When so applied, the distal edges of the gutters extend through the groin regions, and up the lower back and the abdomen of the user; and the proximal edges also lie on the lower back and abdomen of the user. Neither the proximal nor the distal edges encircle the thighs of the user or extend in overlapping relation around the sides of the user.

When such a garment is fitted on a user, the thickness of the region 57 of absorbent core 42, and the fact that the elastic strands 74 are only secured at their ends and extend through tunnels along the distal edges of the gutters, induces folding of the garment along the lateral end edges of region 57; and gathers the portions of the gutter disposed outboard therefrom much more so than adjacent the central crotch region. This is depicted in Figure 1 by depicting highly gathered portions of the distal edges 72 as being scalloped; while not so scalloping the lesser gathered portions. This provides a high degree of elongation-contraction where it is most needed, i.e., in the lower rear hip regions of the wearer when the user's geometry changes significantly as the user sits, walks, etc.

Claims

1. A disposable waste containment garment (20) comprising a body member (22) having a rear waistband region (30), a front waistband region (25), and a crotch region therebetween and which body member comprises a liquid permeable topsheet (40), a liquid impervious backsheet (41), an absorbent core (42) disposed intermediate said topsheet and said backsheet, and two inwardly facing, longitudinally extending, liquid impermeable side-edge-leakage-guard gutters (45,46) having proximal and distal edges (71,48), said gutters (45,46) being disposed adjacent the longitudinal side edges of said body member (22), said gutters comprising means (74) for being longitudinally elasticized adjacent said distal edges (48)



ed within tissue paper 43. The plan form of the envelope of tissue paper is preferably rectangular albeit the core 42 preferably is hourglass-shape as shown in the figures. The absorbent core assembly has a width of eleven inches (28 cm) and length of twenty-seven inches (69 cm). It is secured to the backsheet with adhesive or double sided tape or the like so that its ends are two inches (5 cm) from each end of the backsheet, and with equal width side-edge portions (i.e., gutter forming portions) of the backsheet 41 exposed on each side.

The absorbent core assembly is then covered by the topsheet which has a length equal to the length of the backsheet, and a width of twelve inches (30.5 cm). Its edge portions which extend beyond the edges of the absorbent core assembly are then secured to underlying areas of the backsheet. The gutter forming edge portions of the backsheet are then U-folded along the longitudinal edges of the absorbent core assembly; and secured by adhesive in areas 76, Figure 2, in each corner, and the adhesive areas 77 and 78 adjacent each distal edge 48 as previously described. The longitudinal edges formed by these last U-folds are alternatively designated longitudinal side edges or proximal edges 71. This completes the assembly of the body member 22 of brief 20.

The body member 22 of brief 20 is then turned over and the half-belts 26 and 31 are secured thereto in the positions indicated in the drawings. In the exemplary embodiment, the half-belts are two ply laminates: an outer lamina of polyethylene film such as used for the backsheet 41; and an inner lamina of nonwoven polypropylene. Both half-belts have a lateral dimension of twenty-five inches (63.5 cm); and the front half-belt 26 and the rear half-belt 31 have longitudinal lengths (i.e., the heights of the front and rear waistband regions, respectively) of six inches (15 cm) and eight inches (20 cm), respectively. The factory bond ends of adhesive tape-tab fasteners 35 through 38 are secured to the four corners of the back half-belt 31 as shown in Figures 1 and 2 to complete the assembly of brief 20.

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The brief 20, is applied to a user -- for example a bedridden person -- by positioning the rear waistband region 30 under the person's back, and drawing the remainder between the person's legs so that the front waistband region 25 is positioned across the front of the person. The user's bond ends of the tape fasteners are then secured: preferably to outwardly facing areas of the front stubbelts 23 and 24. In this manner, attachment tension in the stub-belts is positively applied to the proximal edges 71 of the portions of the gutters disposed in the waistband regions of the brief. This, acts in conjunction with the elasticized distal edges 48 of the gutters to provide the gutter dispositions and functions described hereinbefore. When so applied, the distal edges of the gutters extend through the groin regions, and up the lower back and the abdomen of the user; and the proximal edges also lie on the lower back and abdomen of the user. Neither the proximal nor the distal edges encircle the thighs of the user or extend in overlapping relation around the sides of the user.

When such a garment is fitted on a user, the thickness of the region 57 of absorbent core 42, and the fact that the elastic strands 74 are only secured at their ends and extend through tunnels along the distal edges of the gutters, induces folding of the garment along the lateral end edges of region 57; and gathers the portions of the gutter disposed outboard therefrom much more so than adjacent the central crotch region. This is depicted in Figure 1 by depicting highly gathered portions of the distal edges 72 as being scalloped; while not so scalloping the lesser gathered portions. This provides a high degree of elongation-contraction where it is most needed, i.e., in the lower rear hip regions of the wearer when the user's geometry changes significantly as the user sits, walks, etc.

Claims

1. A disposable waste containment garment (20) comprising a body member (22) having a rear waistband region (30), a front waistband region (25), and a crotch region therebetween and which body member comprises a liquid permeable topsheet (40), a liquid impervious backsheet (41), an absorbent core (42) disposed intermediate said topsheet and said backsheet, and two inwardly facing, longitudinally extending, liquid impermeable side-edge-leakage-guard gutters (45,46) having proximal and distal edges (71,48), said gutters (45,46) being disposed adjacent the longitudinal side edges of said body member (22), said gutters comprising means (74) for being longitudinally elasticized adjacent said distal edges (48)



characterised in that

- said gutters (45,46) are flexible and extend into the waistband regions (25,30) of said garment (20), said garment further comprising securement means (33,34,35,36,23,24,26,28,29,31) arranged so as, in use, to apply laterally directed tension to portions of the proximal edges (71) of said gutters (45,46) disposed in said waistband regions (25,30), said garment also comprising means (76,77,78) for substantially obviating inversion of said gutters (45,46) during application and use of said garment, and being sized and configured with respect to said user to enable said distal edges (48) to contact torso areas of said user throughout the lengths of said distal edges and to substantially preclude said distal edges from encircling the thighs of said user.
2. A disposable waste containment garment according to claim 1 wherein said means for substantially obviating inversion of said gutters (45,46) during application and use of said garment comprises means (76) for securing closed, end portions of said gutters disposed adjacent the waistband regions (25,30) of said garment and for securing closed a first length portion (51,52) of each said gutter in the central crotch region of said garment.
 3. A disposable waste containment garment according to either one of claims 1 & 2 wherein said means for substantially obviating inversion of said gutters during application and use of said garment comprises means (76) for securing closed, end portions of said gutters disposed adjacent the waistband regions (25,30) of said garment and for securing closed a second length portion (53,54) of each said gutter disposed intermediate the central crotch region and its closed end disposed adjacent said rear waistband region (30) of said garment.
 4. A disposable waste containment garment according to any one of claims 1-3 wherein said core (42) is sufficiently resilient and said gutters (45,46) are sufficiently elasticized that, when said garment has been secured on said user, some freely openable length portions of said gutters are biased open.
 5. A disposable waste containment garment according to any one of claims 1-4 wherein said means for securing said garment on said user comprises stub belt members (28,29) disposed at both corners of at least one end (30) of said body member (22) and which stub belts extend laterally outwardly from the proximal edge regions (71) of adjacent portions of said gutters (45,46) which extend between the ends of said garment and the upper thigh elevation of said user, and means (53,34,35,36) for securing distal end portions (38,39) of both said stub belt members (28,29) of one end of said garment to the other end of said garment so that the entire girth of the user is encircled by a composite of tensioned portions of said stub belt members (28,29) and waistband portions (25,30) of said body member (22).
 6. A disposable waste containment garment according to any one of claims 1-6 wherein said stub belt members (23,24,28,29) are disposed at both corners of both ends of said body member.
 7. A waste containment garment according to any one of claims 1-6 wherein said securement means comprises means (33,35 and 34,36) for respectively applying laterally directed tension to proximal edge portions (71) of said gutters (45,46) which are disposed adjacent the waistline of said user, and to proximal edge portions (71) of said gutters (45,46) adjacent both leg-torso junctures of said user.
 8. A disposable waste containment garment according to any one of claims 5-7 wherein said stub belt members comprise air permeable material.
 9. A disposable waste containment garment according to any one of claims 1-8 wherein said gutters are coherently lined at least in part throughout their entire lengths with liquid wicking material.
 10. A disposable waste containment garment according to any one of claims 1-9 wherein the ends of said gutters (45,46) are secured closed about edge portions of said absorbent core (42).
 11. A disposable waste containment garment according to any one of claims 1-10 wherein the ends of said gutters are sealed closed beyond the end edges of said absorbent core.
 12. A disposable waste containment garment according to any one of claims 1-11 wherein said means (74) for elasticizing said gutters (45,46) comprises lengths of elastic material which are attached to the garment structure only in said waistband regions (25,30) of said gutters.



13. A disposable waste containment garment according to any one of claims 1-12 wherein said crotch region of said core (42) is sufficiently more rigid than said waistband regions (25,30) of said core (42) that said elasticized gutters tend to include transverse folds in said garment intermediate said crotch region of said garment and said waistband regions of said garment.

14. A waste containment garment according to any one of claims 1-13 wherein said gutters are formed from longitudinally extending edge portions of said backsheet (41).

15. A disposable waste containment garment according to claim 14 wherein said backsheet (41) has a width sufficiently greater than the width of said topsheet (40) to provide longitudinally extending side-gutter-forming edge portions outboard of the longitudinal side edges of said topsheet (40), said backsheet (41) being U-folded adjacent the longitudinal side edges of said topsheet so that said edge portions overlap longitudinal side edge regions of said topsheet, said edge portions and said side edge regions being secured together in face to face relation only in the waistband regions (25,30) of the garment and at an attachment zone (76) that is disposed adjacent each longitudinal edge of said garment intermediate said waistband regions.

16. A waste containment garment according to any one of claims 1-13 wherein said gutters (45,46) are formed from longitudinally extending edge portions of said topsheet (40) which are liquid impermeable.

17. A disposable waste containment garment according to any one of claims 1-16 wherein the width of said crotch region of said absorbent core (42) is less than the lateral span intermediate said distal edges (48) when said garment is flat out and uncontracted.

Revendications

1. Un vêtement jetable avec réceptacle pour excréments (20) comprenant un élément de corps (22) ayant une partie de bande de ceinture arrière (30), une partie de bande de ceinture avant (25) et une partie d'entrejambe entre elles, et dont ledit élément de corps comprend une feuille de dessus perméable aux liquides (40), une feuille de fond imperméable aux liquides (41) et une âme absorbante (42) disposée entre ladite feuille de dessus et ladite feuille de

fond, et deux gouttières de protection contre les fuites à bords latéraux, tournés vers l'intérieur, s'étendant longitudinalement, imperméables aux liquides (45, 46) ayant des bords proximaux et distaux (71, 48), lesdites gouttières (45, 46) étant adjacentes aux bords latéraux longitudinaux dudit élément de corps (22), lesdites gouttières comportant un moyen (74) destiné à être élastifié longitudinalement près desdits bords distaux (48),

caractérisé en ce que,

lesdites gouttières (45, 46) sont souples et s'étendent dans les parties de bande de ceinture (25, 30) du vêtement (20), ledit vêtement comportant en outre des moyens de fixation (33, 34, 35, 36, 23, 24, 26, 28, 29, 31) disposés de manière à appliquer, en cours d'utilisation, une traction dirigée latéralement vers les zones des bords proximaux (71) desdites gouttières (45, 46) disposées dans lesdites parties de bande de ceinture (25, 30), ledit vêtement comportant en outre des moyens (76, 77, 78) pour empêcher sensiblement l'inversion desdites gouttières (45, 46) au cours de l'application et de l'utilisation dudit vêtement, et étant dimensionné et configuré par rapport audit utilisateur pour permettre auxdits bords distaux (48) de venir en contact avec les régions du torse dudit utilisateur par l'intermédiaire des longueurs desdits bords distaux et pour empêcher sensiblement lesdits bords distaux d'entourer les cuisses dudit utilisateur.

2. Un vêtement jetable avec réceptacle pour excréments selon la revendication 1, dans lequel lesdits moyens pour empêcher sensiblement l'inversion desdites gouttières (45, 46) au cours de l'application et de l'utilisation dudit vêtement comprennent un moyen (76) pour maintenir fermées les parties d'extrémité desdites gouttières adjacentes aux parties de bande de ceinture (25, 30) dudit vêtement et pour maintenir fermées une première longueur (51, 52) de chacune desdites gouttières dans la partie centrale d'entrejambe dudit vêtement.

3. Un vêtement jetable avec réceptacle pour excréments selon l'une quelconque des revendications 1 et 2, dans lequel lesdits moyens pour empêcher sensiblement l'inversion desdites gouttières au cours de l'application et de l'utilisation dudit vêtement comportent un moyen (76) pour maintenir fermées les parties d'extrémité desdites gouttières adjacentes aux parties de bande de ceinture (25, 30) dudit vêtement et pour maintenir fermée une seconde longueur (53, 54) de chacune desdites gouttières disposées entre la région centrale



- d'entrejambe et son extrémité fermée adjacente à ladite partie de bande de ceinture arrière (30) dudit vêtement.
4. Un vêtement jetable avec réceptacle pour excréments selon l'une quelconque des revendications 1-3, dans lequel ladite âme (42) est suffisamment souple et lesdites gouttières (45, 46) sont suffisamment élastifiées pour que, lorsque ledit vêtement a été fixé sur ledit utilisateur, certaines longueurs desdites gouttières pouvant s'ouvrir librement, aient tendance à s'ouvrir.
 5. Un vêtement jetable avec réceptacle pour excréments selon l'une quelconque des revendications 1-4, dans lequel lesdits moyens pour fixer ledit vêtement sur ledit utilisateur comprennent des éléments de ceinture à bouts (28, 29) disposés aux deux coins d'au moins une extrémité (30) dudit élément de corps (22), lesdits ceintures à bouts s'étendant latéralement vers l'extérieur à partir des parties du bord proximal (71) des parties desdites gouttières (45, 46) qui s'étendent entre les extrémités dudit vêtement et la partie verticale supérieure des cuisses dudit utilisateur, et des moyens (53, 34, 35, 36) pour fixer les parties d'extrémité distales (38, 39) des deux dits éléments de ceinture à bouts (28, 29) de l'une des extrémités dudit vêtement à l'autre extrémité dudit vêtement de telle sorte que la taille toute entière de l'utilisateur est entourée par un combiné des parties tendues desdits éléments de ceinture à bouts (28, 29) et des parties de bande de ceinture (25, 30) dudit élément de corps (22).
 6. Un vêtement jetable avec réceptacle pour excréments selon l'une quelconque des revendications 1-5, dans lequel lesdits éléments de ceinture à bouts (23, 24, 28, 29) sont disposés aux deux coins des deux extrémités dudit élément de corps.
 7. Un vêtement jetable avec réceptacle pour excréments selon l'une quelconque des revendications 1-6, dans lequel lesdits moyens de fixation comprennent des moyens (33, 35 et 34, 36) pour appliquer respectivement une traction dirigée latéralement vers lesdites parties de bord proximal (71) desdites gouttières (45, 46) qui sont adjacentes à la taille dudit utilisateur, et vers les parties de bord proximal (71) desdites gouttières (45, 46) adjacentes aux deux jonctions jambe-torse dudit utilisateur.
 8. Un vêtement jetable avec réceptacle pour excréments selon l'une quelconque des revendications 5-7, dans lequel lesdits éléments de ceinture à bouts sont constituées d'un matériau perméable à l'air.
 9. Un vêtement jetable avec réceptacle pour excréments selon l'une quelconque des revendications 1-8, dans lequel lesdites gouttières sont garnies de façon homogène au moins en partie sur toutes leurs longueurs d'une matière à effet de mèche pour liquides.
 10. Un vêtement jetable avec réceptacle pour excréments selon l'une quelconque des revendications 1-9, dans lequel les extrémités desdites gouttières (45, 46) sont maintenues fermées autour des parties de bord de ladite âme absorbante (42).
 11. Un vêtement jetable avec réceptacle pour excréments selon l'une quelconque des revendications 1-10, dans lequel les extrémités desdites gouttières sont fermées de façon étanche au delà des bords d'extrémité de ladite âme absorbante.
 12. Un vêtement jetable avec réceptacle pour excréments selon l'une quelconque des revendications 1-11, dans lequel lesdits moyens (74) pour élastifier lesdites gouttières (45, 46) comprennent des longueurs de matériau élastique qui sont fixées à ladite structure de vêtement uniquement dans lesdites parties de bande de ceinture (25B, 30) desdites gouttières.
 13. Un vêtement jetable avec réceptacle pour excréments selon l'une quelconque des revendications 1-12, dans lequel ladite partie d'entrejambe de ladite âme (42) est suffisamment plus rigide que lesdites parties de bande de ceinture (25, 30) de ladite âme (42) afin que lesdites gouttières élastifiées aient tendance à renfermer les plis transversaux situés dans ledit vêtement entre ladite partie d'entrejambe et lesdites parties de bande de ceinture dudit vêtement.
 14. Un vêtement jetable avec réceptacle pour excréments selon l'une quelconque des revendications 1-13, dans lequel lesdites gouttières sont formées à partir desdites parties de bord s'étendant longitudinalement de ladite feuille de fond (41).
 15. Un vêtement jetable avec réceptacle pour excréments selon la revendication 14, dans lequel ladite feuille de fond (41) a une largeur



suffisamment plus grande que ladite feuille de dessus (40) pour ménager des parties de bord formant gouttière latérale s'étendant longitudinalement à l'extérieur des bords latéraux longitudinaux de ladite feuille de dessus (40), ladite feuille de fond (41) étant repliée en U près des bords latéraux longitudinaux de ladite feuille de dessus de manière que lesdites parties de bord recouvrent les parties latérales longitudinales de ladite feuille de dessus, lesdites parties de bord et lesdites parties latérales étant fixées face contre face uniquement dans les parties de bande de ceinture (25,30) du vêtement et sur une zone de fixation (76) qui est adjacente à chaque bord longitudinal dudit vêtement entre lesdites parties de bande de ceinture.

16. Un vêtement jetable avec réceptacle pour excréments selon l'une quelconque des revendications 1-13, dans lequel lesdites gouttières (45, 46) sont formées à partir desdites parties de bords s'étendant longitudinalement de ladite feuille de dessus (40) qui sont imperméables aux liquides.

17. Un vêtement jetable avec réceptacle pour excréments selon l'une quelconque des revendications 1-16, dans lequel la largeur de ladite partie d'entrejambe de ladite âme absorbante (42) est inférieure à la dimension latérale située entre lesdits bords distaux (48) lorsque ledit vêtement est à plat et non contracté.

Patentansprüche

1. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück (20), welches einen Hauptbauteil (22) mit einem hinteren Taillenbandbereich (30), einem vorderen Taillenbandbereich (25) und einem Schrittbereich dazwischen aufweist und welcher Hauptbauteil ein flüssigkeitsdurchlässiges Deckblatt (40), ein flüssigkeitsundurchlässiges Rückseitenblatt (41), einen absorbierenden Kern (42), welcher zwischen dem genannten Deckblatt und dem genannten Rückseitenblatt angeordnet ist, und zwei einwärts gerichtet gegenüberliegende, sich der Länge nach erstreckende, flüssigkeitsundurchlässige Seitenrand-Ausrinn-Hohlkehlen (45, 46) mit proximalen und distalen Rändern (71, 48) umfaßt, wobei die genannten Hohlkehlen (45, 46) anliegend an die Längsseitenränder des genannten Hauptbauteiles (22) angeordnet sind, wobei die genannten Hohlkehlen Mittel (74) aufweisen, um anliegend an die genannten distalen Ränder (48) der Länge nach elastifiziert zu sein,

dadurch gekennzeichnet, daß die genannten Hohlkehlen (45, 46) biegsam sind und sich in die Taillenbandbereiche (25, 30) des genannten Kleidungsstückes (20) erstrecken, wobei das genannte Kleidungsstück weiters Befestigungseinrichtungen (33, 34, 35, 36, 23, 24, 26, 28, 29, 31) aufweist, welche so angeordnet sind, um beim Gebrauch seitlich gerichteten Zug auf Abschnitte der proximalen Ränder (71) der genannten Hohlkehlen (45, 46), welche (Abschnitte) in den genannten Taillenbandbereichen (25, 30) angeordnet sind, aufzubringen, wobei das genannte Kleidungsstück auch Mittel (76, 77, 78) zum verlässlichen Verhindern der Inversion der genannten Hohlkehlen (45, 46) während des Anbringens und der Verwendung des genannten Kleidungsstückes aufweist und im Hinblick auf den genannten Verwender bemessen und gestaltet ist, um die genannten distalen Ränder (48) zu befähigen, Rumpfbereichen des genannten Verwenders über die Längen der genannten distalen Ränder hin zu berühren und um im wesentlichen die genannten distalen Ränder am Umschließen der Schenkel des genannten Verwenders zu hindern.

2. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück nach Anspruch 1, bei welchem das genannte Mittel, um verlässlich die Inversion der genannten Hohlkehlen (45, 46) während des Anbringens und der Verwendung des genannten Kleidungsstückes zu verhindern, Mittel (76) zum Geschlossenhalten von an die Taillenbandbereiche (25, 30) des genannten Kleidungsstückes anliegend angeordneten Endabschnitten der genannten Hohlkehlen und zum Geschlossenhalten eines ersten Längenabschnittes (51, 52) einer jeden genannten Hohlkehle im zentralen Schrittbereich des genannten Kleidungsstückes aufweist.

3. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück nach einem der Ansprüche 1 und 2, bei welchem das genannte Mittel zum verlässlichen Verhindern der Inversion der genannten Hohlkehlen während des Anbringens und Gebrauches des genannten Kleidungsstückes Mittel (76) zum Geschlossenhalten von an die Taillenbandbereiche (25, 30) des genannten Kleidungsstückes anliegend angeordneten Endabschnitten der genannten Hohlkehlen und zum Geschlossenhalten eines zweiten Längenabschnittes (53, 54) jeder genannten Hohlkehle aufweist, welcher zwischen dem zentralen Schrittbereich und deren geschlossenem Ende, welches anliegend an den genannten



hinteren Taillenbandbereich (30) des genannten Kleidungsstückes angeordnet ist, positioniert ist.

4. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück nach einem der Ansprüche 1 bis 3, bei welchem der genannte Kern (42) hinreichend biegsam ist und die genannten Hohlkehlen (45, 46) hinreichend elastifiziert sind, daß, wenn das genannte Kleidungsstück am genannten Verwender befestigt worden ist, einige frei öffnende Längenabschnitte der genannten Hohlkehlen schräggestellt offen sind.
5. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück nach einem der Ansprüche 1 bis 4, bei welchem das genannte Mittel zum Befestigen des genannten Kleidungsstückes am genannten Verwender stummelartige Gürtelglieder (28, 29), welche an beiden Eckpunkten von mindestens einem Ende (30) des genannten Hauptbauteiles (22) angeordnet sind und welche Gürtelstummel sich von den proximalen Randbereichen (71) angrenzender Abschnitte der genannten Hohlkehlen (45, 46) seitlich auswärts erstrecken, welche sich zwischen den Enden des genannten Kleidungsstückes und der Oberschenkelerhebung des genannten Verwenders erstrecken, und Mittel (33, 34, 35, 36) aufweist, um distale Endabschnitte (38, 39) beider genannter stummelartiger Gürtelglieder (28, 29) eines Endes des genannten Kleidungsstückes am anderen Ende des genannten Kleidungsstückes zu befestigen, sodaß der gesamte Umfang des Verwenders durch eine Zusammensetzung von unter Zug befindlichen Abschnitten der genannten stummelartigen Gürtelglieder (28, 29) und Taillenbandabschnitte (25, 30) des genannten Hauptbauteiles (22) umgürtet ist.
6. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück nach einem der Ansprüche 1 bis 6 (richtig: 1 bis 5), bei welchem die genannten stummelartigen Gürtelglieder (23, 24, 28, 29) an beiden Eckpunkten beider Enden des genannten Hauptbauteiles angeordnet sind.
7. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück nach einem der Ansprüche 1 bis 6, bei welchem das genannte Befestigungsmittel Mittel (33, 35 und 34, 36) zum jeweiligen Aufbringen von seitlich gerichtetem Zug auf proximale Randabschnitte (71) der genannten Hohlkehlen (45, 46), welche benachbart zur Taillenslinie des genannten Verwenders angeordnet sind, und auf proximale Randabschnitte (71) der genannten Hohlkehlen (45, 46), welche an-

grenzend an beide Bein-Rumpf-Verbindungsstellen des genannten Verwenders sind, aufweist.

8. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück nach einem der Ansprüche 5 bis 7, bei welchem die genannten stummelartigen Gürtelglieder luftdurchlässiges Material enthalten.
9. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück nach einem der Ansprüche 1 bis 8, bei welchem die genannten Hohlkehlen mindestens zum Teil über ihre Gesamtlänge mit flüssigkeitssaugendem Material zusammenhängend ausgefüllt sind.
10. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück nach einem der Ansprüche 1 bis 9, bei welchem die Enden der genannten Hohlkehlen (45, 46) geschlossen um Randabschnitte des genannten absorbierenden Kernes (42) befestigt sind.
11. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück nach einem der Ansprüche 1 bis 10, bei welchem die Enden der genannten Hohlkehlen über die Endränder des genannten absorbierenden Kernes hinaus geschlossen abgedichtet sind.
12. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück nach einem der Ansprüche 1 bis 11, bei welchem das genannte Mittel (74) zum Elastischmachen der genannten Hohlkehlen (45, 46) Längen von elastischem Material enthält, welche nur in den genannten Taillenbandbereichen (25, 30) der genannten Hohlkehlen an der Kleidungsstückstruktur befestigt sind.
13. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück nach einem der Ansprüche 1 bis 12, bei welchem der genannte Schrittbereich des genannten Kernes (42) hinreichend steifer ist als die genannten Taillenbandbereiche (25, 30) des genannten Kernes (42), sodaß die genannten elastifizierten Hohlkehlen tendieren, Quersalten im genannten Kleidungsstück zwischen dem genannten Schrittbereich des genannten Kleidungsstückes und den genannten Taillenbandbereichen des genannten Kleidungsstückes zu enthalten.
14. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück nach einem der Ansprüche 1 bis 13, bei welchem die genannten Hohlkehlen aus sich länglich erstreckenden Randabschnitten des genannten Rückseitenblattes (41) gebildet

sind.

15. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück nach Anspruch 14, bei welchem das genannte Rückseitenblatt (41) eine Breite hinreichend größer als die Breite des genannten Deckblattes (40) aufweist, um sich der Länge nach erstreckende Seitenhohlkehlenformende Randabschnitte außerhalb der Längsseitenränder des genannten Deckblattes (40) zu ergeben, wobei das genannte Rückseitenblatt (41) angrenzend an die Längsseitenränder des genannten Deckblattes U-förmig gefaltet ist, sodaß die genannten Randabschnitte Längsseitenrandbereiche des genannten Deckblattes überlappen, wobei die genannten Randabschnitte und die genannten Seitenrandbereiche in Gegenüberstellung nur in den Taillenbandbereichen (25, 30) des Kleidungsstückes und an einer Befestigungszone (78), welche anliegend an jeden Längsrand des genannten Kleidungsstückes zwischen den genannten Taillenbandbereichen angeordnet ist, aneinander befestigt sind.
16. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück nach einem der Ansprüche 1 bis 13, bei welchem die genannten Hohlkehlen (45, 46) von sich der Länge nach erstreckenden Randabschnitten des genannten Deckblattes (40), welche flüssigkeitsundurchlässig sind, gebildet sind.
17. Ein wegwerfbares Ausscheidungshalte-Kleidungsstück nach einem der Ansprüche 1 bis 16, bei welchem die Breite des genannten Schrittbereiches des genannten absorbierenden Kernes (42) geringer als die seitliche Spanne zwischen den genannten distalen Rändern (48) ist, wenn das genannte Kleidungsstück ausgebreitet und nicht zusammengezogen ist.

