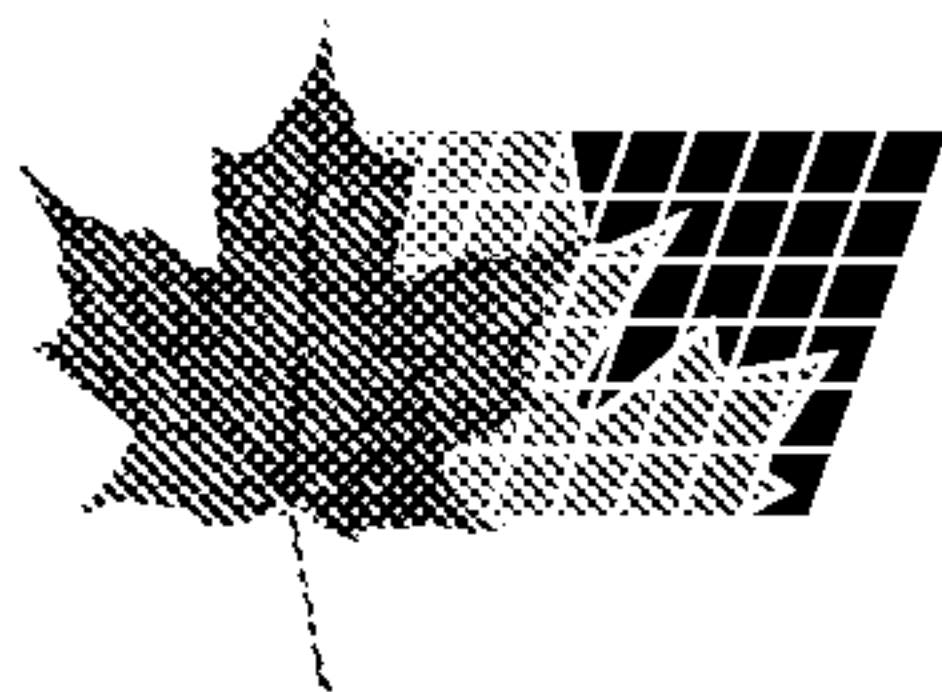




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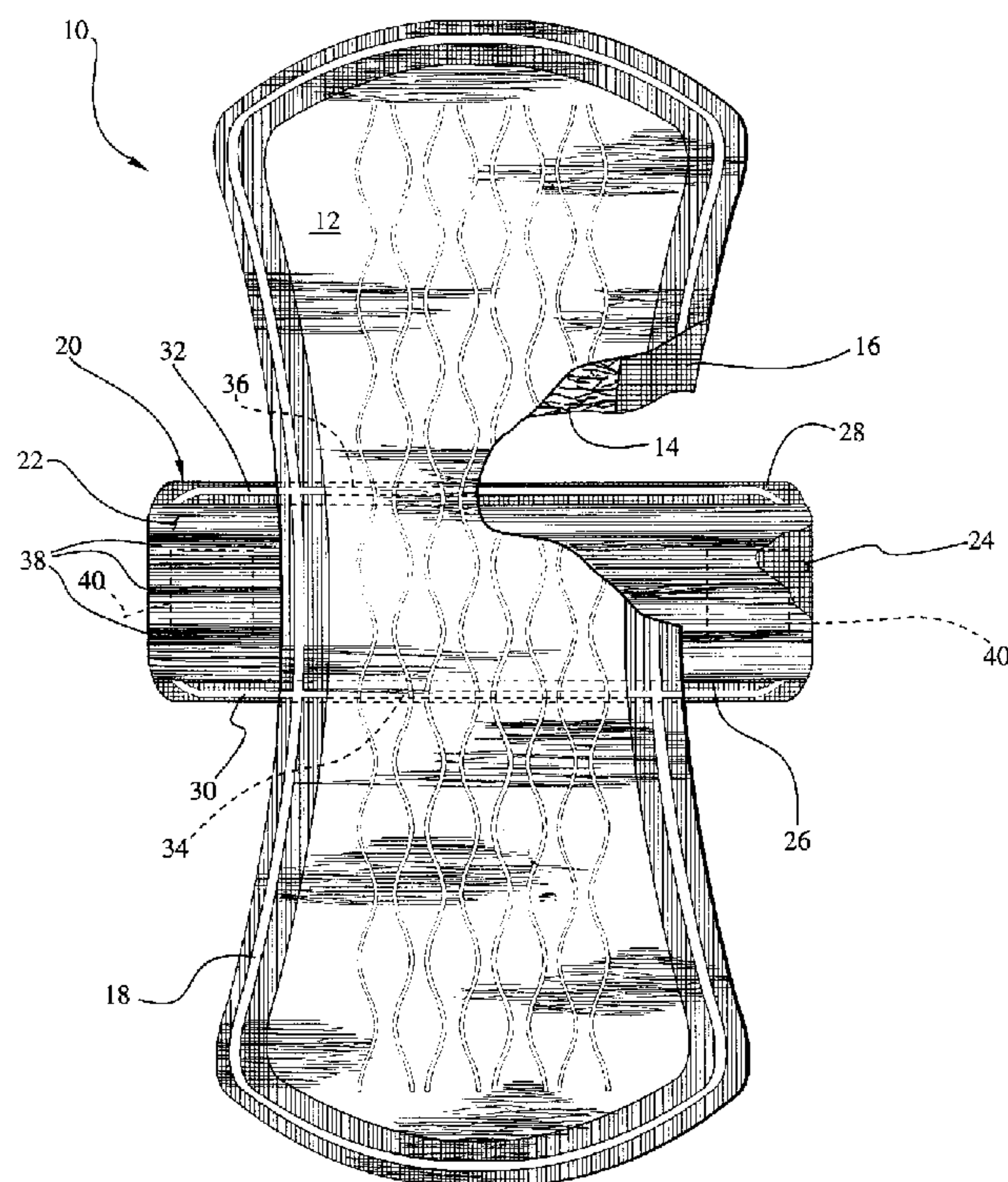
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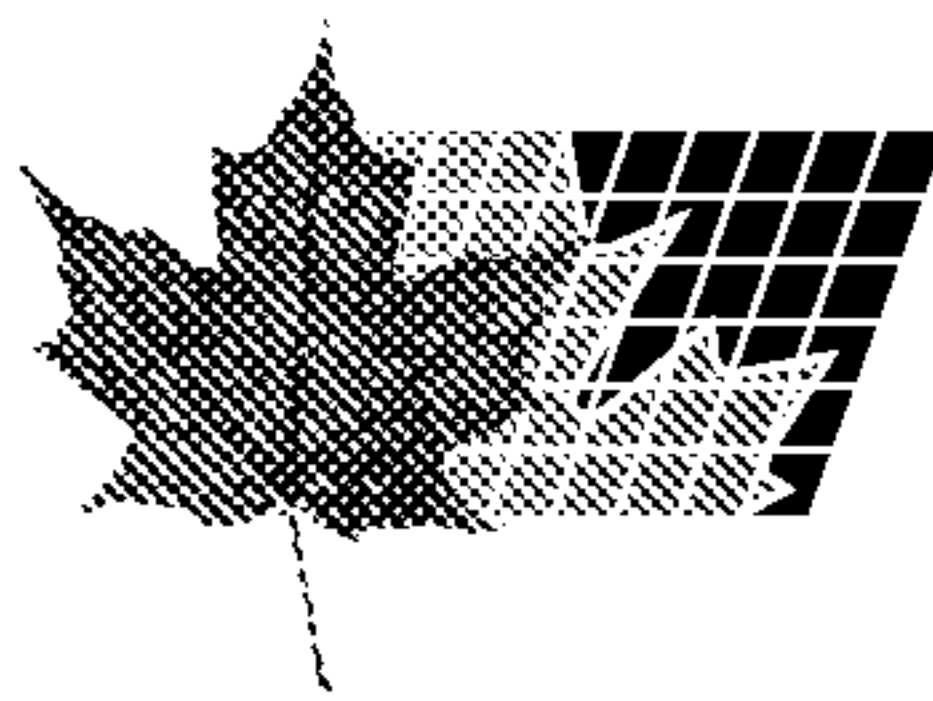
(54) **ARTICLE ABSORBANT JETABLE COMPORTANT UNE
STRUCTURE SECONDAIRE IMPERMEABLE**

(54) **DISPOSABLE ABSORBENT PRODUCT WITH SECONDARY
LIQUID-CONTAINMENT STRUCTURE**



(57) Produit absorbant jetable, comme les serviettes hygiéniques ou les coussinets d'incontinence urinaire, constitué d'une couche perméable aux liquides, d'une partie centrale absorbante ainsi que d'une couche imperméable visant à empêcher que les liquides retenus dans la partie centrale absorbante n'entrent en contact avec les sous-vêtements ou la peau de l'utilisateur. Une seconde structure de rétention des liquides, visant à intercepter les liquides s'écoulant au-delà des bords latéraux du produit absorbant, est fixée sous la couche imperméable. Cette structure de rétention comprend une bande transversale en matériel absorbant, tel qu'un

(57) A disposable absorbent product such as a sanitary napkin or an urinary pad including a liquid-permeable cover layer, and absorbent core and a liquid-impervious layer for preventing body exudate entrapped in the absorbent core from contacting the wearer's undergarment or skin. A secondary liquid containment structure for intercepting body exudate leaking past the side edges of the absorbent product is mounted underneath the liquid-impervious layer. The containment structure includes a transversely extending strip of absorbent material such as non-woven fabric, having longitudinal end portions forming



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non-tissé, ayant des extrémités longitudinales formant des zones de réception des liquides. Le centre de la bande absorbante constitue une couche de retenue visant à recevoir les liquides répandus dans les zones de réception. De préférence, les extrémités longitudinales de la bande sont suffisamment longues pour former des rabats pouvant être pliés près des bords du sous-vêtement, afin de stabiliser le produit absorbant contre la région périnéale de l'utilisateur. Le produit peut aussi, selon une autre version, avoir des rabats de positionnement intégrés dans la structure secondaire de rétention des liquides. Chaque rabat de positionnement comprend une couche de matière poreuse comprise dans une couche imperméable sur tous les côtés, à l'exception d'une bordure latérale adjacente au bord latéral du produit absorbant jetable. La bordure latérale du rabat de positionnement constitue une zone de réception des liquides pouvant intercepter les liquides qui s'écouleraient au-delà des bords du produit absorbant jetable.

liquid-acquisition zones. The central portion of the absorbent strip constitutes a reservoir layer for collecting the body exudate discharged on the liquid-acquisition zones. In a preferred embodiment, the longitudinal end portions of the strip are sufficiently long to form tabs capable of being folded about the edges of the undergarment for stabilizing the absorbent product against the perineal region of the wearer. In a variant, the positioning tabs incorporate the secondary liquid-containment structure. Each positioning tab includes a layer of porous material enclosed on all sides by a liquid-impermeable layer except at a side edge portion that is adjacent to the side edge of the disposable absorbent product. The side edge portion of the positioning tab constitutes a liquid-acquisition zone capable of intercepting body exudate leaking past the edge of the disposable absorbent product.



ABSTRACT

1
2 A disposable absorbent product such as a sanitary
3 napkin or an urinary pad including a liquid-permeable
4 cover layer, and absorbent core and a liquid-impervious
5 layer for preventing body exudate entrapped in the
6 absorbent core from contacting the wearer's undergarment
7 or skin. A secondary liquid containment structure for
8 intercepting body exudate leaking past the side edges of
9 the absorbent product is mounted underneath the
10 liquid-impervious layer. The containment structure
11 includes a transversely extending strip of absorbent
12 material such as non-woven fabric, having longitudinal
13 end portions forming liquid-acquisition zones. The
14 central portion of the absorbent strip constitutes a
15 reservoir layer for collecting the body exudate
16 discharged on the liquid-acquisition zones. In a
17 preferred embodiment, the longitudinal end portions of
18 the strip are sufficiently long to form tabs capable of
19 being folded about the edges of the undergarment for
20 stabilizing the absorbent product against the perineal
21 region of the wearer. In a variant, the positioning tabs
22 incorporate the secondary liquid-containment structure.
23 Each positioning tab includes a layer of porous material
24 enclosed on all sides by a liquid-impermeable layer
25 except at a side edge portion that is adjacent to the
26 side edge of the disposable absorbent product. The side
27 edge portion of the positioning tab constitutes a liquid-
28 acquisition zone capable of intercepting body exudate
29 leaking past the edge of the disposable absorbent
30 product.
31

1

2 **TITLE: DISPOSABLE ABSORBENT PRODUCT WITH SECONDARY**
3 **LIQUID-CONTAINMENT STRUCTURE**

4

5 **FIELD OF THE INVENTION**

6

7 The invention relates to the art of manufacturing
8 structures for absorbing body exudate. More specifically,
9 the invention relates to a disposable absorbent product
10 including a secondary liquid-containment structure for
11 intercepting stray liquid droplets that may be leaking
12 past the side edges of the absorbent product.

13

14 **BACKGROUND OF THE INVENTION**

15

16 Experimental procedures conducted on sanitary napkin
17 designs have demonstrates that product failures can often
18 be traced to the inability of the cover layer that
19 contacts the perineal region of the wearer to capture on
20 contact the discharge of body exudate. If liquid is
21 allowed to remain on the cover layer for an extended
22 period of time droplets are likely to run-off on the
23 surface of the cover layer and leak past the edge of the
24 sanitary napkin. The precise point of leakage depends
25 primarily upon the posture of the wearer; when she lies
26 horizontally, the gravitational forces induce the liquid
27 to travel longitudinally on the sanitary napkin and to
28 accumulate on the rear longitudinal end portion. To avoid
29 saturation and overflow leakage at that area, products
30 with improved absorbency at the critical site have been
31 developed during the past recent years. An example is the
32 sanitary napkin available from Johnson & Johnson Inc.

1 under the trade designation STAYFREE PRIMA* Ultra
2 Thin/Long Maxi. This product features a long body that
3 progressively widens toward the rear so as to offer an
4 increased liquid-acquisition surface area.

5

6 In contrast, sanitary napkins designed primarily for
7 daytime leak mostly at the sides because the posture of
8 the wearer is such that the liquid has a propensity to
9 accumulate in the central area of the napkin that is
10 reduced in width due to compressive loading exerted by
11 the thighs. As a consequence, a much smaller surface area
12 is made available to the liquid for penetrating the
13 absorbent structure.

14

15 In theory, the incidence of product failure at the
16 side edges could be reduced by increasing the width of
17 the sanitary napkin. However, this solution is marginal
18 at best because the added material will negatively
19 affects the comfort potential of the product by creating
20 undue pressure against the thighs. In addition,
21 regardless on any comfort issues, the width increase is
22 unlikely to

23 bring about any material improvement in leakage
24 protection because the lateral compression by the thighs
25 would still reduce by a great measure the effective
26 liquid-acquisition surface area.

27

28 OBJECTIVE AND STATEMENT OF THE INVENTION

29

30 An object of the invention is a disposable absorbent
31 product as a sanitary napkin or an urinary pad, among
32 others, offering an enhanced protection against leakage

* registered trade-mark

1 at the side edges.

2

3 As embodied and broadly described herein, the
4 invention provides a disposable absorbent product having
5 two opposed longitudinal sides, said disposable absorbent
6 product comprising:

7 - an absorbent core;

8 - a liquid-impervious layer underneath said
9 absorbent core;

10 - a positioning tab laterally projecting from a
11 longitudinal side of said disposable absorbent product,
12 the positioning tab being foldable about an edge of an
13 undergarment in a crotch portion thereof;

14 - said positioning tab constituting a secondary
15 liquid-containment structure that includes:

16 a) a reservoir element including an upper
17 surface and a lower surface, at least a portion of said
18 upper surface facing toward said liquid-impervious layer
19 when the positioning tab is in a folded condition about
20 an edge of an undergarment, said lower surface being
21 opposite said upper surface;

22 b) a liquid-acquisition zone adjacent to a side
23 edge of said disposable absorbent product, said liquid-
24 acquisition zone being in fluid-communicative
25 relationship with said reservoir element;

26 c) a liquid-impermeable layer on said upper
27 surface and a liquid-impermeable layer on said lower
28 surface.

29

30 The advantages of this absorbent structure are
31 immediately apparent. Droplets of menstrual liquid that
32 leak past the side edges of the sanitary napkin are

1 collected by the liquid-acquisition zones and then
2 transferred to the reservoir elements for permanent
3 storage. Accordingly, the incidence of failure of the
4 sanitary napkin is significantly diminished.

5
6
7 The expression "liquid-acquisition zones located in
8 adjacency to a side edge..." appearing in the
9 specification and claims is intended to mean that the
10 liquid-acquisition zones are positioned close enough to
11 the side edges so as to intercept body exudate that may
12 leak past the side edges. The liquid-acquisition zones
13 may project beyond the side edges to catch falling drops
14 of body exudate. For applications designed to handle body
15 exudate of more viscous nature, such as menstrual liquid,
16 the liquid-acquisition zones may be flush with the side
17 edges or slightly recessed from the side edges. Note that
18 most viscous liquids develop a strong interfacial tension
19 with the supporting substrate. Consequently, a menstrual
20 liquid runoff on the cover layer of a sanitary napkin
21 will have a tendency to accumulate on the side edge or
22 immediately underneath (on the liquid-impervious layer),
23 rather than immediately dripping off. Thus, a slightly
24 recessed liquid-acquisition zone will still establish
25 contact with the escaping liquid.

26
27 In the most preferred embodiment each positioning
28 tab includes a layer of sphagnum moss material enclosed
29 on all sides by a liquid-impermeable layer except at a
30 side edge portion located immediately below and flush
31 with the side edge of the disposable absorbent product.
32 The exposed side edge portion of the sphagnum moss layer

1 constitutes a narrow elongated liquid-acquisition zone
2 capable of intercepting droplets of menstrual liquid. The
3 liquid-impermeable envelope of the positioning tab
4 prevents the menstrual liquid entrapped in the sphagnum
5 moss material from staining the user's undergarment and
6 from contacting the user's skin. Longitudinally extending
7 densification lines are provided on the layer of sphagnum
8 moss material to create areas of reduced pore size that
9 induce liquid to migrate deeply within the positioning
10 tab.

11

12 As embodied and broadly described herein the
13 invention further provides a disposable absorbent product
14 having opposite longitudinal sides, said disposable
15 absorbent product comprising:

16 - an absorbent core;

17 - a liquid-impervious layer underneath said
18 absorbent core;

19 - a positioning tab projecting laterally from a
20 longitudinal side of the disposable absorbent product,
21 said positioning tab being foldable about edges of an
22 undergarment in a crotch portion thereof to enhance
23 stability of said disposable absorbent product;

24 - said positioning tab constituting a secondary
25 liquid-containment structure that includes:

26 a) a reservoir element;

27 b) a liquid-acquisition zone adjacent to a
28 longitudinal side of said disposable absorbent product,
29 said liquid-acquisition zone being in fluid-communicative
30 relationship with said reservoir element;

31 c) said liquid-acquisition zone being formed

1 solely at a side edge portion of a the positioning tab.

2

3

4

5

6 **BRIEF DESCRIPTION OF THE DRAWINGS**

7

8 - Figure 1 is a fragmentary top plan view of a
9 sanitary napkin in accordance with the invention;

10

11 - Figure 2 is a fragmentary top plan view of a
12 sanitary napkin in accordance with a variant;

13

14 - Figure 3 a top plan view of a sanitary napkin in
15 accordance with a further variant;

16

17 - Figure 4 is a vertical cross-sectional view of a
18 sanitary napkin in accordance with a variant;

19

20 - Figure 5 is a vertical cross-sectional view of a
21 positioning tab of the sanitary napkin shown in Figure 4;
22 and

23

24 - Figure 6 is a bottom plan view of the sanitary
25 napkin shown in Figure 4, illustrating the densification
26 lines on the positioning tabs that create areas of
27 preferential wicking.

28

29 Identical or similar components throughout the
30 drawings are designated by the same reference numerals.

31

32 **DESCRIPTION OF PREFERRED EMBODIMENTS**

1 The present invention provides a disposable
2 absorbent product such as a sanitary napkin or a urinary
3 pad, among others, featuring a secondary liquid
4 containment structure for intercepting small amounts of
5 body exudate that may leak past the side edges of the
6 disposable absorbent product and cause stains on the
7 wearer's undergarment.

8
9 Figure 1 illustrates a sanitary napkin embodying the
10 principles of this invention. The sanitary napkin is
11 designated comprehensively by the reference numeral 10
12 and comprises a liquid-permeable cover layer 12 that in
13 use contacts the perineal region of the wearer. The cover
14 layer 12 is made of a fibrous material, such as a non-
15 woven fabric. Alternatively, an apertured polymeric film
16 can be used. Underneath the cover layer 12 is provided an
17 absorbent core 14 designed to collect the discharge of
18 body exudate delivered on the cover layer 12. The
19 absorbent core 14 may be of any suitable construction
20 designed to meet the absorbency requirements of the
21 sanitary napkin 10. Most preferably, the absorbent core
22 14 is a multi-layered structure comprising an upper
23 transfer layer in an intimate fluid communicative
24 relationship with a lower reservoir layer. The transfer
25 layer is a highly porous structure capable of fast liquid
26 acquisition, thus enabling the sanitary napkin 10 to
27 capture on contact a discharge of body exudate. On the
28 other hand, the reservoir layer has a much finer porosity
29 so the liquid temporarily held in the transfer layer is
30 induced to migrate in the reservoir layer under the
31 effect of capillary attraction, where it is permanently
32 stored.

1 Underneath the absorbent core 14 is provided a
2 liquid-impervious layer 16 made of polymeric film such as
3 polyethylene. The purpose of the liquid-impervious layer
4 16 is to prevent body exudate entrapped in the absorbent
5 core 14 from egressing the garment facing surface the
6 sanitary napkin 10.

7
8 The cover layer 12 and the liquid-impervious layer
9 16 are joined to one another for the purpose of
10 completely enclosing the absorbent core 14. Most
11 preferably, the joint is made by thermally bonding the
12 cover layer 12 and the liquid-impervious layer 16 along
13 a continuous seal line 18 that extends slightly inwardly
14 of the peripheral edge of the sanitary napkin 10.

15
16 The sanitary napkin 10 is characterized by a
17 secondary liquid-containment structure 20 provided to
18 capture stray droplets of menstrual liquid that leak past
19 the side edges of the napkin 10 and may, if allowed to
20 escape, stain the undergarment of the wearer. The liquid
21 containment structure 20 includes an elongated strip 22
22 of fibrous material extending underneath the liquid-
23 impervious layer 16. The material of choice for
24 manufacturing the absorbent strip 22 is a non-woven
25 fabric made of natural or synthetic fibers that are
26 preferably hydrophilic, such as cellulose fibers, rayon
27 fibers or cotton fibers. It is also possible to use an
28 apertured polymeric film rather than a fibrous medium.

29
30 The absorbent strip 22 is laminated with a barrier
31 layer 24 made of suitable liquid-impervious material.
32 Polyethylene is a suitable material. The barrier layer 24

1 is co-extensive with the absorbent strip 22 to prevent
2 the liquid in storage therein from entering in contact
3 with the user's undergarments. In a preferred mode of
4 construction, the longitudinal extremities of the barrier
5 layer 24 are folded over the absorbent strip 22,
6 providing two longitudinally extending narrow bands 26
7 and 28 in overlaying relationship with the absorbent
8 strip 22. Continuous heat-seal lines 30 and 32 unite the
9 barrier layer 24 and the absorbent strip 22 in a
10 functional whole. It will be apparent that the
11 heat-sealing operation requires the presence in the
12 absorbent strip 22 of material that can be reduced to a
13 plastic state by the application of heat, such as low
14 melt polymeric fibers or thermoplastic binder. Such
15 thermobondable component also has the advantage of
16 consolidating the fibrous network by establishing a
17 multiplicity of internal inter-fiber bonds during the
18 heat-sealing operation.

19

20 The secondary liquid-containment structure 20 is
21 secured to the liquid-impervious layer 16 by by bonding
22 means such as transversely extending heat-seal lines 34,
23 36 (with respect to the longitudinal axis of the sanitary
24 napkin 10) that are coincident with the heat-seal lines
25 30 and 32. Alternatively, adhesive, ultrasonic bonding
26 or any other suitable method could be used. In a most
27 preferred embodiment the a heat-seal lines 30, 32 and 34,
28 36 are formed in a single operation so as to
29 simultaneously bond the barrier layer 24 to the absorbent
30 strip 22 and the entire liquid-containment structure 20
31 the liquid-impervious layer 16.

32

1 The above described arrangement has the effect of
2 separating the absorbent strip 22 in two functional
3 elements namely a reservoir zone that extends underneath
4 the sanitary napkin 10 and a pair of liquid-acquisition
5 zones located in the vicinity of the respective side
6 edges of the sanitary napkin 10. It will be apparent that
7 the reservoir zone functions as an independent and self-
8 contained absorbent component, totally isolated from the
9 main absorbent core 14 by the liquid-impervious layer 16.

10

11 Note the presence of an uninterrupted capillary path
12 from each liquid-acquisition zone toward the reservoir
13 zone that allows liquid collected by either one of the
14 liquid-acquisition zones to migrate toward the reservoir
15 zone where it is confined between two layers of
16 impervious material (the liquid impervious layer 16 and
17 the barrier layer 24) so as to remain isolated from the
18 user's undergarment and skin. The pattern of heat-sealing
19 lines used for joining the liquid-containment structure
20 20 to the liquid-impervious layer 16 is of importance
21 with regard to the integrity of this capillary pathway.
22 For instance, a continuous seal line that extends
23 transversally with relation to the liquid-absorbent strip
24 22 should be avoided because it may have the effect of
25 creating a barrier to the migration of liquid toward the
26 reservoir zone. The most preferred sealing pattern
27 includes a pair of bonding sites, such as the heat-seal
28 lines 32, 34 that are in a spaced apart relationship.
29 With this arrangement, liquid absorbed by the liquid--
30 acquisition zones is transferred to the reservoir layer
31 by migrating between the bonding sites.

32

1 To induce the liquid collected by the liquid-
2 acquisition zones to travel longitudinally on the strip
3 22 and thus migrate toward the reservoir zone,
4 longitudinal densification lines 38 are provided on the
5 absorbent strip 22. The densification lines 38 are
6 essentially strip-like areas where the fibrous matrix has
7 been mechanically compacted to create a network of
8 reduced pore size that provides a preferential liquid
9 pathway.

10
11 In the embodiment illustrated in Figure 1 the
12 longitudinal end portions of the liquid-containment
13 structure 20 are extended to a significant degree beyond
14 the side edges of the sanitary napkin 10 to form tab
15 structures that can be folded about the edges of the
16 undergarment to stabilize the sanitary napkin 10 against
17 the perineal region of the wearer. At this end, adhesive
18 zones 40 (shown in dotted lines) are provided on the
19 barrier layer 24 to releasably bond the longitudinal end
20 portions of the absorbent strip 22 that are in a folded
21 condition to the garment facing surface of the wearer's
22 underpants. In this embodiment, the liquid-containment
23 structure 20 provides a structural function by enhancing
24 the stability of the sanitary napkin 10 in addition to
25 the leakage protection feature.

26
27 Figure 2 illustrates a variant of the sanitary
28 napkin 10. The difference with the previously described
29 embodiment resides in that the liquid-containment
30 structure is significantly reduced in length and no
31 longer provides a stabilization activity. Here, the
32 absorbent strip 22' extends beyond the side edges of the

1 sanitary napkin by a short distance, in the order of a
2 few millimeters. In a further variant the longitudinal
3 extremities of the absorbent strip 22' may be flush with
4 the side edges of the sanitary napkin, as shown in Figure
5 3, or even slightly recessed (not shown in the drawings).
6 It should be pointed out that the liquid-containment
7 structure is not intended to be a high capacity device as
8 in practice it will be required to handle but a few
9 droplets of menstrual liquid at a time. Since menstrual
10 liquid is a highly viscous media it develops a
11 comparatively high interfacial tension with the
12 supporting substrate. Accordingly, when a drop of
13 menstrual liquid that travels in a transverse direction
14 on the cover layer 12 reaches the side edge of the
15 sanitary napkin the interfacial tension will prevent it
16 from freely dropping off. Rather, the drop will have a
17 tendency to remain suspended from the side edge which
18 then brings it in contact with the liquid acquisition
19 zone even when the liquid-acquisition zone is in a
20 somewhat recessed condition with relation to the side
21 edge.

22

23 Figure 4 illustrates in cross-section a further
24 variant of a sanitary napkin constructed in accordance
25 with the present invention. The sanitary napkin 50
26 includes a secondary liquid-containment structure 52
27 integrated in the positioning tabs 54 provided to secure
28 the sanitary napkin to the undergarment of the user. Each
29 positioning tab 54 includes a layer of absorbent material
30 56 containing sphagnum moss, cellulosic fibers, rayon
31 fibers or combinations thereof with sphagnum moss being
32 the material of choice. The absorbent layer 56 is a

1 sheet-like structure including an upper surface facing
2 the barrier layer 24 and a lower surface that is opposite
3 to the upper surface. The upper and the lower surfaces
4 are connected by a peripheral region including
5 longitudinal edge portions 58 and side edge portions 60
6 and 62. The side edge portion 60 is flush with the side
7 edge of the sanitary napkin 50 and it is located
8 immediately below the napkin edge to intercept droplets
9 of menstrual liquid, as it will be described later.

10

11 The absorbent layer 56 is enclosed by a liquid-
12 impermeable layer 64 on all sides except at the side edge
13 60. In one preferred embodiment, the liquid-impermeable
14 layer 64 is formed by a polymeric film wrapped around the
15 layer 56 of absorbent material. The wrapping operation is
16 such that the edges of the polymeric film meet at the
17 upper surface of the absorbent layer 56 where they are
18 secured to one another by means of adhesives, heat bond
19 or by any other suitable manner. The end portion of the
20 polymeric wrap 64 projects slightly beyond the inner side
21 edge 62 so they can be sealed to one another, thus
22 forming an end closure. The wrap of polymeric film 64
23 covers the entire surface of the absorbent layer 56
24 except the side edge portion 60 that constitutes a
25 liquid-acquisition zone. This is the only point where
26 liquid can enter the positioning tab. The remaining
27 surfaces of the absorbent layer 56 are isolated by the
28 polymeric wrap 64 that prevents liquid entrapped in the
29 absorbent material from contacting the user's skin or
30 soiling the undergarment.

1 The positioning tabs 54 are secured to the barrier
2 layer 24 by adhesive strips 66 located near the side
3 edges of the sanitary napkin 50. The adhesive strips 66
4 bond the barrier layer 24 to the polymeric wrap 64. This
5 is the preferred mode of attachment since the capillary
6 continuum between the liquid-acquisition zone and the
7 remaining portion of the absorbent layer 56, that
8 constitutes a reservoir element where liquid can be
9 stored, is isolated from the adhesive substance by the
10 polymeric film. It is undesirable to allow adhesive to
11 contact the absorbent layer 56 because it can impede the
12 flow of liquid from the liquid-acquisition zone toward
13 the reservoir element.

14

15 As in the case of the previous embodiment, the
16 liquid absorbent layer 56 can be provided with
17 longitudinally extending densification lines 68. The
18 densification lines 68 are strip-like areas where the
19 porous matrix has been mechanically compacted to create
20 a network of reduced pore size providing a preferential
21 liquid pathway. The densification lines 68 are preferably
22 formed on the absorbent layer 56 before it is wrapped by
23 the polymeric film 64. It could also be considered to
24 form the densification lines 68 after the wrapping
25 operation is effected, in other words the mechanical
26 pressure required to effect the localized compression is
27 applied through the polymeric film. In such case,
28 however, a polymeric film having a sufficient strength
29 should be selected in order to avoid damages caused by
30 the compaction equipment.

1 To enable the positioning tabs 54 to bond with the
2 garment facing surface of the user's underpants adhesive
3 zones 70 are formed on the upper surface (the surface
4 facing the barrier layer 24). The adhesive zones 70 are
5 covered with a layer of release paper that protects the
6 adhesive material while the product is in storage.

7
8 To secure the sanitary napkin 50 to the undergarment
9 the user is required to grasp the positioning tabs 54 and
10 to pivot them outwardly about a hinge line that is
11 constituted by the adhesive strips 66. It is understood
12 that prior to this operation any release paper covering
13 adhesive-coated regions on the barrier layer 24 or on the
14 positioning tabs 54 must be removed. When the sanitary
15 napkin has been placed on the undergarment the
16 positioning tabs are folded about the edges of the
17 undergarment and pressed against its outer surface so the
18 adhesive zones 70 can bond with it. In this position, the
19 side edge 60 of each positioning tab, forming a liquid-
20 acquisition zone is nearly vertical, as shown in figure
21 4, or acquires an oblique configuration particularly when
22 the undergarment is thick and has a tendency to keep the
23 positioning tabs 54 at a certain angle with respect to
24 the barrier layer 24. Such oblique configuration is
25 actually preferred in terms of ability of the liquid-
26 acquisition zones to intercept droplets of menstrual
27 liquid because a larger absorbent surfaces is presented
28 to the incoming liquid.

29

30

1
2 The scope of the present invention is not limited by
3 the description, examples and suggestive uses herein, as
4 modifications can be made without departing from the
5 spirit of the invention. For example, while the
6 embodiments of the tabbed absorbent products described
7 herein use a pair of positioning tabs, it could be
8 envisaged to provide the product with a single tab
9 projecting from one longitudinal side thereof. Thus, it
10 is intended that the present application covers the
11 modifications and variations of this invention provided
12 that they come within the scope of the appended claims
13 and their equivalents.
14

1
2
3 I CLAIM:
4
5

6 1. A disposable absorbent product having two opposed
7 longitudinal sides, said disposable absorbent product
8 comprising:

9 - an absorbent core;

10 - a liquid-impervious layer underneath said
11 absorbent core;

12 - a positioning tab laterally projecting from a
13 longitudinal side of said disposable absorbent product,
14 the positioning tab being foldable about an edge of an
15 undergarment in a crotch portion thereof;

16 - said positioning tab constituting a secondary
17 liquid-containment structure that includes:

18 a) a reservoir element including an upper
19 surface and a lower surface, at least a portion of said
20 upper surface facing toward said liquid-impervious layer
21 when the positioning tab is in a folded condition about
22 an edge of an undergarment, said lower surface being
23 opposite said upper surface;

24 b) a liquid-acquisition zone adjacent to a side
25 edge of said disposable absorbent product, said liquid-
26 acquisition zone being in fluid-communicative
27 relationship with said reservoir element;

28 c) a liquid-impermeable layer on said upper
29 surface and a liquid-impermeable layer on said lower
30 surface.
31

32 2. A disposable absorbent product as defined in claim

1 1, wherein said liquid-acquisition zone is positioned
2 underneath said liquid-impervious layer.

3

4 3. A disposable absorbent product as defined in claim
5 1, wherein said liquid-acquisition zone is generally
6 flush with the longitudinal side of the disposable
7 absorbent product when the positioning tab is folded
8 toward said liquid-impervious layer.

9

10 4. A disposable absorbent product as defined in claim
11 1, comprising a capillary continuum between said liquid-
12 acquisition zone and said reservoir element.

13

14 5. A disposable absorbent product as defined in claim
15 1, wherein said positioning tab comprises a layer of
16 porous material, an end portion of said layer of porous
17 material constituting the liquid-acquisition zone, an
18 area of said layer of porous material contiguous with
19 said end portion constituting said reservoir element.

20

21 6. A disposable absorbent product as defined in claim
22 5, wherein said layer of porous material extends
23 generally transversally to a longitudinal axis of said
24 disposable absorbent product.

25

26 7. A disposable absorbent product as defined in claim
27 5, wherein said layer of porous material includes a
28 localized area of reduced average pore size extending
29 from the liquid-acquisition zone toward said reservoir
30 element, said localized area of reduced average pore size
31 manifesting a high capillary attraction to induce liquid

1 captured by the liquid-acquisition zone to migrate toward
2 said reservoir element.

3

4 8. A disposable absorbent product as defined in claim
5 7, wherein said layer of porous material includes a
6 densified region forming said localized area of reduced
7 average pore size.

8

9 9. A disposable absorbent product as defined in claim
10 8, comprising a plurality of densified regions extending
11 longitudinally on said layer of porous material.

12

13 10. A disposable absorbent product as defined in claim
14 5, wherein said layer of porous material includes
15 material selected from the group consisting of sphagnum
16 moss, cellulosic fibers, rayon fibers, cotton fibers and
17 combinations thereof.

18

19 11. A disposable absorbent product as defined in claim
20 5, wherein said liquid-impermeable layer on said upper
21 surface and said liquid-impermeable layer on said lower
22 surface enclose said porous material on all sides except
23 at said liquid-acquisition zone.

24

25 12. A disposable absorbent product as defined in claim
26 1, wherein said liquid-impermeable layer on said upper
27 surface is bonded to said liquid-impermeable layer.

28

29 13. A disposable absorbent product as defined in claim
30 12, wherein the bond between said liquid-impermeable

1 layer on said upper surface and said liquid-impervious
2 layer constitutes a hinge allowing the positioning tab to
3 pivot relative said liquid-impervious layer.
4

5 14. A disposable absorbent product as defined in claim
6 1, wherein said disposable absorbent product is selected
7 from the group consisting of sanitary napkin and urinary
8 pad.
9

10 15. A disposable absorbent product having opposite
11 longitudinal sides, said disposable absorbent product
12 comprising:

13 - an absorbent core;

14 - a liquid-impervious layer underneath said
15 absorbent core;

16 - a positioning tab projecting laterally from a
17 longitudinal side of the disposable absorbent product,
18 said positioning tab being foldable about edges of an
19 undergarment in a crotch portion thereof to enhance
20 stability of said disposable absorbent product;

21 - said positioning tab constituting a secondary
22 liquid-containment structure that includes:

23 a) a reservoir element;

24 b) a liquid-acquisition zone adjacent to a
25 longitudinal side of said disposable absorbent product,
26 said liquid-acquisition zone being in fluid-communicative
27 relationship with said reservoir element;

28 c) said liquid-acquisition zone being formed
29 solely at a side edge portion of a the positioning tab.
30

1 16. A disposable absorbent product as defined in claim
2 15, wherein said reservoir element includes an upper
3 surface and a lower surface, at least a portion of said
4 upper surface facing toward said liquid-impervious layer
5 when the positioning tab is in a folded condition about
6 an edge of an undergarment, said lower surface being
7 opposite said upper surface, said positioning tab further
8 including a liquid-impermeable layer on said upper
9 surface and a liquid-impermeable layer on said lower
10 surface.

11

12 17. A disposable absorbent product as defined in claim
13 16, wherein said liquid-acquisition zone is positioned
14 underneath said liquid-impervious layer.

15

16 18. A disposable absorbent product as defined in claim
17 15, wherein each liquid-acquisition zone is generally
18 flush with a longitudinal side of the disposable
19 absorbent product when the positioning tab is folded
20 against said liquid-impervious layer.

21

22 19. A disposable absorbent product as defined in claim
23 15, comprising a capillary continuum between said liquid-
24 acquisition zone and said reservoir element.

25

26 20. A disposable absorbent product as defined in claim
27 15, wherein said positioning tab comprises a layer of
28 porous material, an end portion of said layer of porous
29 material constituting the liquid-acquisition zone, an
30 area of said layer of porous material contiguous with

1 said end portion constituting said reservoir element.

2

3 21. A disposable absorbent product as defined in claim
4 20, wherein said layer of porous material extends
5 generally transversally to a longitudinal axis of said
6 disposable absorbent product.

7

8 22. A disposable absorbent product as defined in claim
9 20, wherein said layer of porous material includes a
10 localized area of reduced average pore size extending
11 from the liquid-acquisition zone toward said reservoir
12 element, said localized area of reduced average pore size
13 manifesting a high capillary attraction to induce liquid
14 captured by the liquid-acquisition zone to migrate toward
15 said reservoir element.

16

17 23. A disposable absorbent product as defined in claim
18 22, wherein said layer of porous material includes a
19 densified region forming said localized area of reduced
20 average pore size.

21

22 24. A disposable absorbent product as defined in claim
23 23, comprising a plurality of densified regions extending
24 longitudinally on said layer of porous material.

25

26 25. A disposable absorbent product as defined in claim
27 20, wherein said layer of porous material includes
28 material selected from the group consisting of sphagnum
29 moss, cellulosic fibers, rayon fibers, cotton fibers and
30 combinations thereof.

1 26. A disposable absorbent product as defined in claim
2 20, wherein said positioning tab includes a liquid-
3 impermeable layer enclosing said porous material on all
4 sides except at said liquid-acquisition zone.

5

6 27. A disposable absorbent product as defined in claim
7 16, wherein said liquid-impermeable layer on said upper
8 surface is bonded to said liquid-impervious layer.

9

10 28. A disposable absorbent product as defined in claim
11 27, wherein the bond between said liquid-impermeable
12 layer on said upper surface and said liquid-impervious
13 layer constitutes a hinge allowing the positioning tab to
14 pivot relative said liquid-impervious layer.

15

16 29. A disposable absorbent product as defined in claim
17 15, wherein said disposable absorbent product is selected
18 from the group consisting of sanitary napkin, urinary
19 pad.

20

21

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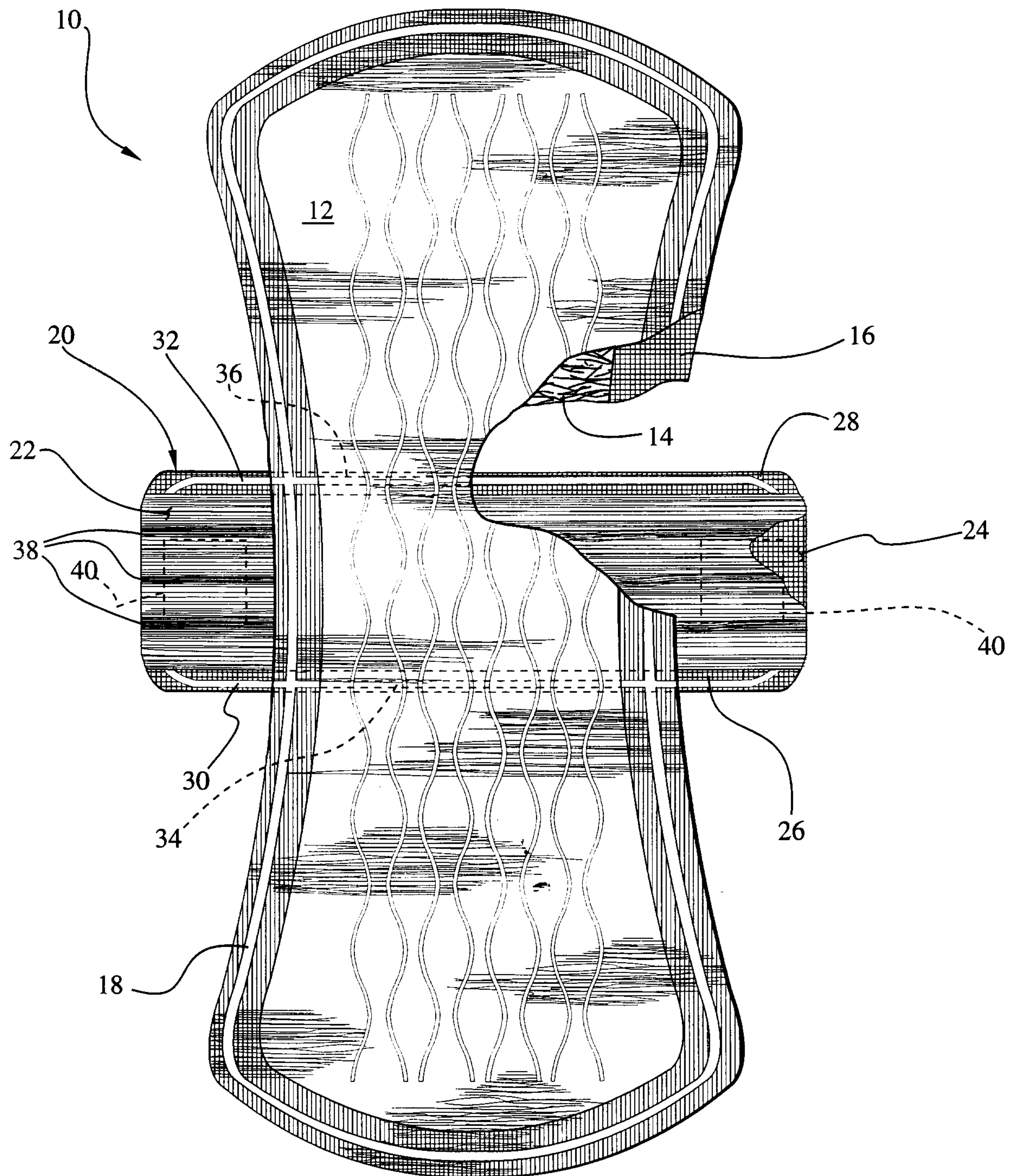


Fig.1

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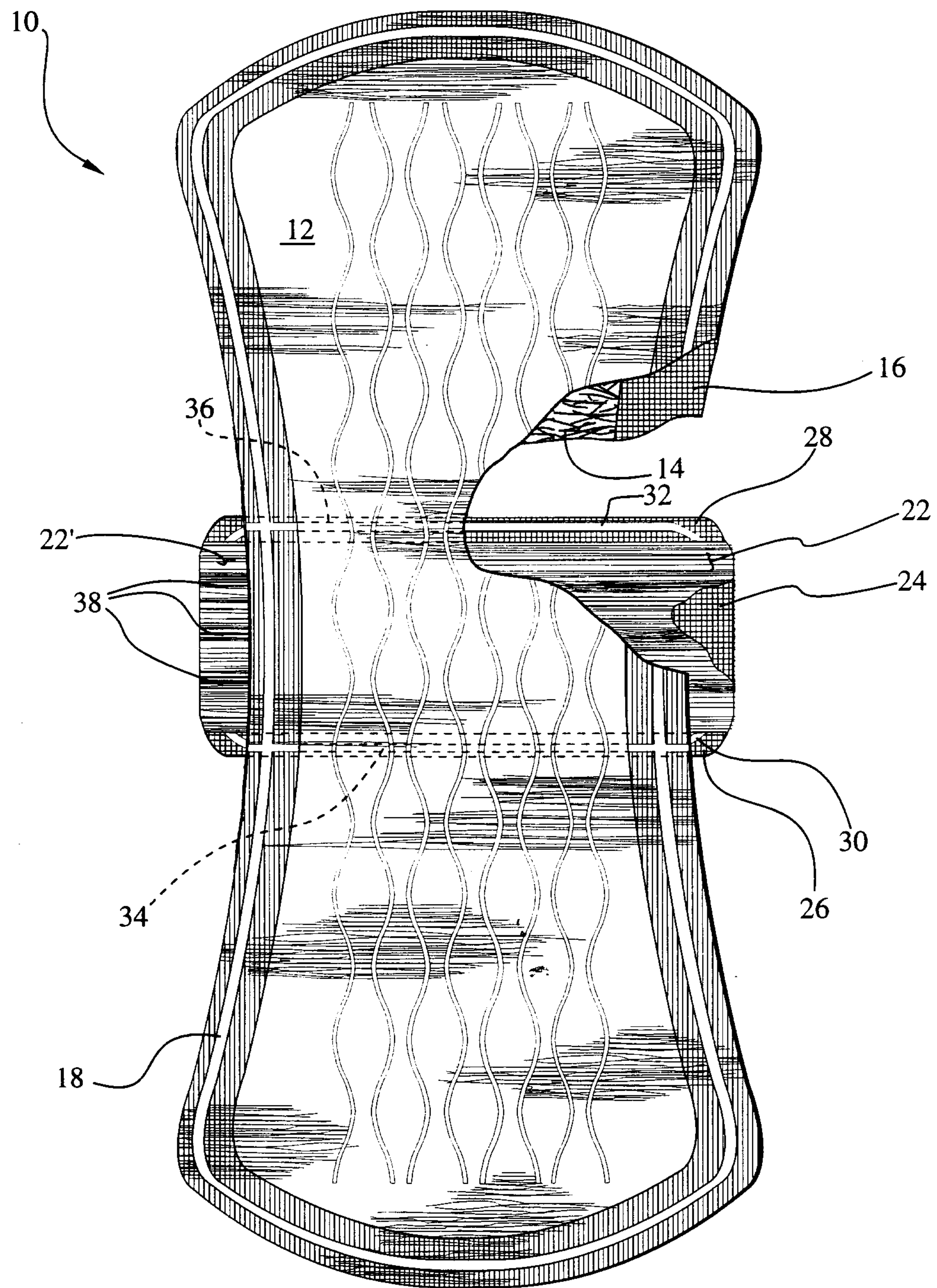


Fig.2

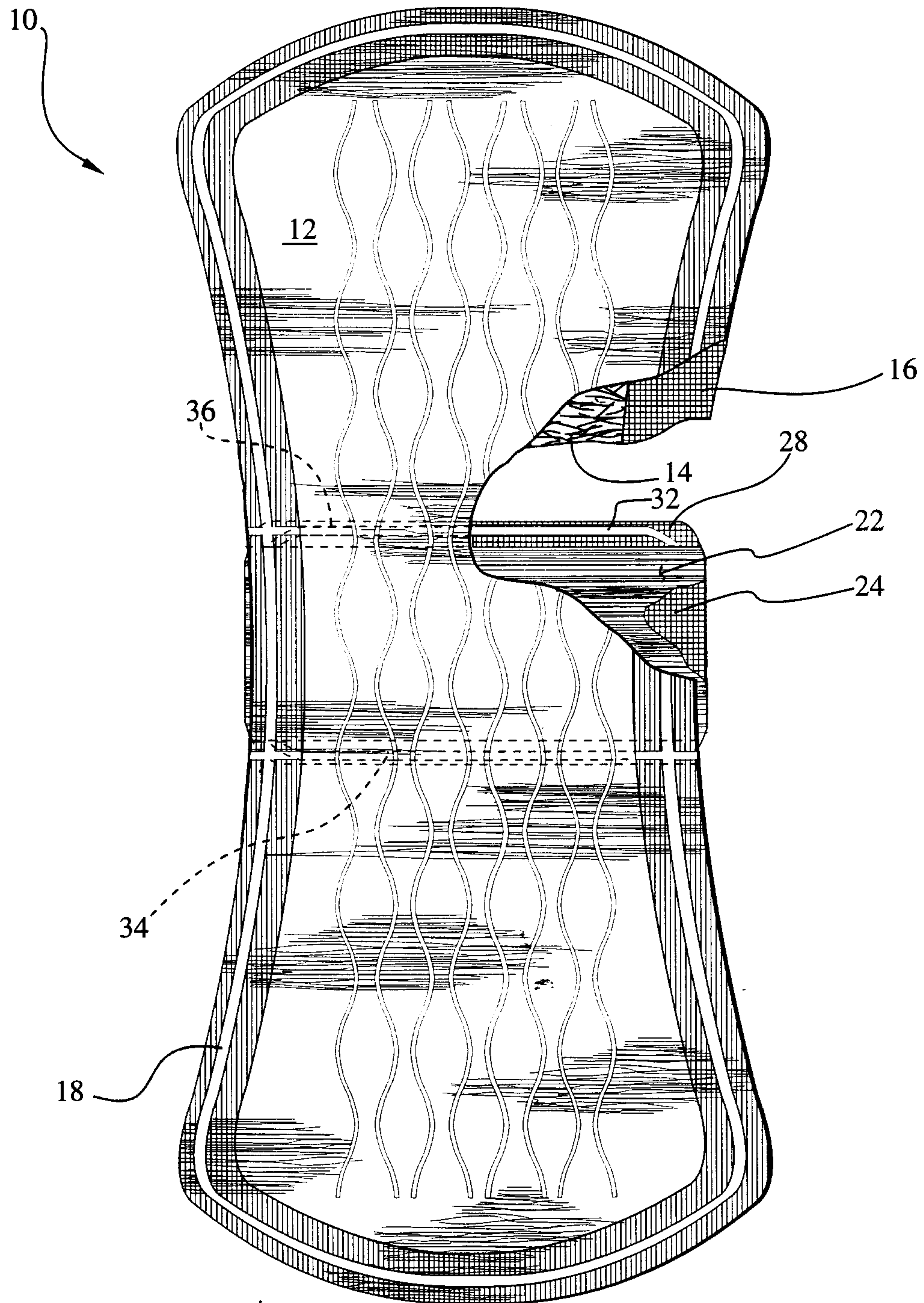


Fig.3



Fig 4

