

Respuesta a una oposición

Señores
Superintendencia de Industria y Comercio
División de Nuevas Creaciones
E. S. D.

SUPERINTENDENCIA Y COMERCIO
Radicación : 01097691 00000000 Folios 10
Fecha (AMD): 2004-02-17 12:42:36
Trámite : 002 PATENTES 0 1 REGISTRO/ 449 RESPUESTA
Dependencia: 0000 DIVISION DE NUEVAS CREACIONES

Ref: Expediente No. 01-097.691

Solicitud de Patente de Invención denominada
"TOALLA FEMENINA PARA NIÑAS"

Solicitante: Grupo P.L Mabe, S.A. de C.V.

Oposición formulada por Productos Familia S.A.

Darío Cárdenas Navas, identificado como aparece al pie de mi firma y obrando en mi condición de apoderado de la sociedad Grupo P.L. Mabe, S.A. de C.V., solicitante de la Patente de Invención mencionada en la referencia, en respuesta al Oficio No. 10115 notificado por fijación en lista el 20 de Noviembre de 2.003, atentamente procedo a dar respuesta formal a la oposición formulada por la sociedad Productos Familia S.A. contra la solicitud de registro de la Patente de Invención denominada "TOALLA FEMENINA PARA NIÑAS".

Fundamentos de la oposición

Afirma la sociedad opositora Productos Familia S.A. que la Patente de Invención solicitada a registro dentro del expediente de la referencia, denominada "TOALLA FEMENINA PARA NIÑAS", carece de novedad y de altura inventiva por cuanto a la fecha de ser solicitada ya era conocida la invención al hacer parte de la técnica anterior, y adicionalmente cita unas supuestas anterioridades.

Fundamentos de la defensa

No comparto los argumentos expuestos por el opositor debido a los motivos que me permito exponer en este escrito:

1. Como primera medida hay que tener en cuenta que hacer una deducción a escala de medidas de cualquier artículo absorbente no tiene protección, pero en la solicitud en referencia en específico no se están reduciendo las medidas a escala, se le están dando valores específicos tanto en la parte más ancha como en la parte más delgada del cuerpo de la toalla y en qué porcentaje se reduce el núcleo absorbente para hacerlo cómodo y adecuado al cuerpo de una niña de 8 a 12 años y con datos de absorción del mismo. Si se reducen la medidas de una toalla convencional, por lógica se tendría una absorción menor. Por lo que una toalla más chica implicaría menor absorción, mientras que en el caso de la invención en referencia ese punto no se ve afectado porque se han tomado las medidas técnicas necesarias para tal y como se reivindica obtener un 130% de mayor absorción que un pantiprotector convencional.
2. Para mayor información del Despacho me permito exponer a continuación las características que posee tanto la solicitud de Patente en referencia como aquellas que poseen las patentes citadas como supuestas anterioridades por parte de la sociedad opositora:

Características de la Patente "TOALLA FEMENINA PARA NIÑAS"

1. La matriz absorbente es al menos de un 15% a un 20% más corta que la matriz absorbente de una toalla femenina convencional.
2. La matriz absorbente tiene una anchura que varía dentro del rango de 5 cm. a 7.5 cm. en su parte más ancha, donde esa anchura es preferiblemente de 6 cm.
3. La matriz absorbente tiene una anchura que varía dentro del rango de 4 cm. a 5.5 cm. en su parte más delgada.
4. El artículo absorbente tiene una absorción total mínima de alrededor de 70 gramos de solución salina.
5. El artículo absorbente tiene una absorción total aproximada de 130% mayor que la capacidad de absorción total de un pantiprotector.

Características de la patente US 4,950,264 de Procter & Gamble Company

1. La toalla sanitaria tiene una flexo-resistencia de menos de 300 gramos, una capacidad de prueba de 8 gramos y una capacidad total de cerca de 20 gramos.
2. La toalla sanitaria tiene una flexo-resistencia de 250 gramos.
3. La toalla sanitaria tiene una anchura central de 3.7 cm.
4. La toalla sanitaria tiene un calibrador de 2.2 milímetros o menos.
5. La toalla sanitaria tiene un calibrador de 2.6 milímetros.
6. La toalla sanitaria tiene una flexo-resistencia de menos de 175 gramos, una capacidad de prueba de 15 gramos.
7. La toalla sanitaria tiene una flexo-resistencia de 130 gramos.
8. La toalla sanitaria tiene un agente gelificador formado de hidrogel.
9. La base absorbente de la toalla sanitaria tiene como máximo un 85% de su peso de un agente gelificador formado de hidrogel.
10. La toalla sanitaria tiene por lo menos un área de 17 centímetros cuadrados de absorbente gelificador tipo hidrogel.

Características de la patente US 5,609,588 de Kimberly-Clark Corporation

1. Es un artículo absorbente que tiene un eje longitudinal central, de un calibre de cerca de 5 milímetros.
2. El artículo absorbente tiene una longitud y una anchura predeterminada, un eje longitudinal central alineado substancialmente a lo largo del eje longitudinal central del artículo absorbente, unos medios de absorción que tienen la capacidad de absorber por lo menos el 10% de los fluidos corporales.
3. El artículo absorbente tiene una capa substancialmente resistente que abarca una célula cerrada de espuma de polietileno que tiene una anchura al momento de extenderse de 60% a 100% de la anchura total del artículo absorbente; esta capa es capaz de flexionarse hasta un 50%, de tal manera que contiene los fluidos corporales sin derramarlos.
4. El artículo absorbente en su área central es más alta que en las zonas periféricas, esto a manera de ser más cómoda al cuerpo de la usuaria.

5. La espuma de polietileno tiene un grueso de un octavo de pulgada.
6. El artículo absorbente tiene un revestimiento especial que va del lado de la ropa para mayor fijación.

Características de la patente US 5,248,309 de Kimberly-Clark Corporation

1. La toalla sanitaria tiene un eje longitudinal el cual comprende una capa impermeable líquida y un baffle también impermeable líquido con una anchura de aproximadamente 2 pulgadas y capaz de absorber 20 gramos de fluido corporal.
 2. La toalla sanitaria tiene un absorbente entre la capa impermeable y el baffle impermeable.
 3. La toalla sanitaria tiene un superabsorbente formado de un copolímero de ácido poliacrílico y un alcohol de polivinil.
 4. La toalla sanitaria tiene un calibre de 4 milímetros desde el centro hacia las orillas.
3. Una vez expuestas las características de cada una de las patentes citadas como anterioridades por la sociedad opositora, así como aquellas correspondientes a la patente de la referencia, para información del Despacho me permito exponer en los puntos siguientes las diferencias técnicas que presenta la patente solicitada "TOALLA FEMENINA PARA NIÑAS" frente a las otras patentes citadas.
4. En la patente solicitada la matriz es al menos alrededor de entre un 15% y un 20% más corta que una matriz absorbente convencional (reivindicaciones 1 y 2). La sociedad opositora alega que este punto no es novedoso dado que las patentes US 5,248,309 y US 5,609,588 mencionan que una matriz absorbente de una toalla puede variar en tamaño desde un 50% al 75% de la longitud total de la toalla y que la longitud total de la toalla está entre 15 cm y 32 cm. Considerando el 50% de 15 cm obtenemos una longitud de la matriz mayor o igual que 7.5 cm. La comparación no es contra la longitud total de una toalla, sino contra la longitud de la matriz absorbente de una toalla convencional, que de acuerdo a los ejemplos dados

en la presente solicitud de patente es en promedio de 19.4 cm, por lo que, reduciendo de un 15% a un 20% esta longitud se obtiene una longitud para la matriz absorbente de entre 15.5 cm. y 16.5 cm., lo cual no está dentro de lo mencionado en las patentes citadas.

5. El ancho de la matriz de la invención en referencia en su parte más angosta varía de 4 cm. a 5.5 cm. (según reivindicación 5), mientras que en las patentes US5,248,309 y US 5,609,588 no se protege un ancho de 4 cm a 5.5 cm por la parte más angosta de la matriz, proporcionando nuestra invención ventajas técnicas y de comodidad para la usuaria, además de que se establece con dicha medida una diferencia de nuestra solicitud con respecto a los documentos citados como antecedentes.
6. En las patentes US 5,248,309; US 5,609,588 y 4,950,264 se protege una absorción total mínima de alrededor de 70 gramos de fluido corporal, mientras que en la invención de la referencia se protege que la toalla femenina para niñas tiene una capacidad de absorción mínima de alrededor de 70 gramos de solución salina, no de fluido corporal. En la solicitud en referencia la toalla femenina para niñas tiene la capacidad de absorber 70 gramos de solución salina, esto equivale a que la toalla femenina para niñas tiene la capacidad de absorber al menos 14 gramos de fluido corporal, lo cual es diferente a lo difundido en las patentes citadas como antecedentes.
7. La patente US 4,950,264 solamente menciona que hay en el mercado toallas con diferentes capacidades de absorción, dependiendo del tipo de flujo, como pueden ser toallas con capacidad media o alta y pantiprotectores con capacidad de absorción ligera para uso diario, mientras que en la invención en referencia no se señala nada de eso, puesto que va dirigida directamente a una usuaria en específico que es la niña. Lo difundido en esta patente es diferente a lo que se pretende proteger en la solicitud en estudio, ya que precisamente se habla de una toalla femenina, no un pantiprotector, con una capacidad de absorción y dimensiones menores que una toalla femenina, pero mayores que un pantiprotector, ideal para ser utilizada por niñas que empiezan a menstruar.

8. En la presente invención la absorción es 130% mayor que la capacidad de un panti protector considerando lo difundido en las patentes US 5,248,309 y US 5,609,588 con respecto a la capacidad de absorción de un pantiprotector (entre 1 gramo y 15 gramos de fluido corporal flujo menstrual), el 130% de estas cantidades equivaldría a una capacidad de absorción de entre 2.3 gramos y 34.5 gramos para la toalla femenina para niñas. Por lo que limitamos la presente invención a una absorción 100% mayor que la de un pantiprotector, limitándonos a una capacidad de absorción para la toalla femenina para niñas de entre 2 gramos y 30 gramos, estando fuera de lo difundido en las patentes citadas como antecedentes.
9. Por otra parte, las tres patentes citadas corresponden a artículos absorbentes cuya principal función es la de absorber y contener los fluidos corporales tales como el de la menstruación, así como tener una resistencia a la flexión para evitar incomodidad a la usuaria; la solicitud en referencia no hace mención de ninguna flexión. El como se lleve acabo la absorción y la contención es lo que hacen diferentes a las tres patentes, no vemos por que no puede coexistir la solicitud en referencia que no habla de flexo resistencia, pero si resuelve una necesidad de hoy en día con un material superabsorbente y que al asignarle medidas específicas estamos dando comodidad sin tener que hacer referencia a una flexión.
10. De lo anterior se observa que entre otros puntos que diferencian la invención en referencia respecto a los documentos citados como antecedentes, sobresalen el ancho de la matriz utilizada en la toalla sanitaria para niñas cuyas medias en su parte más angosta varían de 4 cm. a 5.5 cm., así como la capacidad de absorción de la toalla femenina para niñas.
11. De acuerdo con lo establecido en los párrafos anteriores y con el fin de marcar aún más las diferencias existentes entre los documentos citados y la invención en referencia, se ha decidido limitar las reivindicaciones para lo cual adjunto el recibo oficial de caja No. 34-11464 (afectación), y quedando como nuevo capítulo reivindicatorio el siguiente:

Nuevo capítulo reivindicatorio

- 1) Un artículo absorbente desechable tal como una toalla femenina que comprende una capa superior permeable, una capa inferior impermeable, una matriz absorbente colocada entre ambas capas superior e inferior y adhesivo para sujetarse en la prenda de la usuaria, caracterizada por que:
 - ✓ • La matriz absorbente es al menos alrededor de 15% más corta que la matriz absorbente de una toalla femenina convencional (de entre 15 cm. y 17.5 cm.).
 - ✓ • La matriz absorbente tiene una anchura que varía en el rango de alrededor 5 cm. a 7.5 cm. en su parte mas ancha.
 - ✓ • La matriz absorbente tiene una anchura que varía en el rango de alrededor de 4 cm. a 5.5 cm. en su parte más angosta.
 - El artículo tiene una capacidad de absorción total de alrededor de 70 gramos de solución salina (ó alrededor de 14 gramos de flujo sintético).
 - ✓ 2) Un artículo absorbente desechable tal como el descrito en la reivindicación 1, caracterizado porque la matriz absorbente es alrededor de 20% más corta que la matriz absorbente de una toalla femenina convencional.
 - 3) Un artículo absorbente desechable tal como el descrito en las reivindicaciones 1 y 2, caracterizado porque tiene una capacidad de absorción total aproximadamente un 100% mayor que la capacidad de absorción total de un pantiprotector.
12. Finalmente, debe el Despacho tener en cuenta que la invención "TOALLA

FEMENINA PARA NIÑAS" viene a solucionar un problema que se da cada vez con más frecuencia en la vida actual, y es el problema que las niñas están reglando a una edad más temprana y sin embargo las toallas femeninas están diseñadas en específico para el cuerpo de la mujer, lo que resulta que si una niña de 8 a 12 años utiliza este tipo de toallas, resultan ser muy largas, anchas e incómodas.

13. En la invención de la referencia no se protege ningún gelificador, ninguna célula cerrada de espuma de polietileno, ni mucho menos un tipo de baffle con resistencia a la flexión; la invención de la solicitud en cuestión tiene características semejantes pero no iguales a simple vista, pero las especificaciones técnicas expuestas y marcadas anteriormente con las patentes de los documentos citados dan la certeza de que el invento en referencia puede coexistir, así como lo hacen tres documentos que hablan de lo mismo pero con características técnicas diferentes.

Petición

En consideración a todo lo anterior solicito a ese Despacho se sirva:

1. Declarar *infundada* la oposición formulada por **Productos Familia S.A.**
2. *Conceder* a nombre de **Grupo P.I. Mabe, S.A. de C.V.** el registro para la Patente de Invención denominada **"TOALLA FEMENINA PARA NIÑAS"**.

Fundamentos de Derecho

Los fundamentos de derecho enunciados el apoderado del opositor no son aplicables por cuanto no existe posibilidad de confusión entre las expresiones en conflicto.

Poder

El Poder a mí conferido por la sociedad solicitante Grupo P.L. Mabe, S.A. de C.V., debidamente notarizado y legalizado, fue presentado dentro de este expediente el día 12 de Febrero de 2.004, junto con el memorial ~~por medio~~ del cual se solicitó expresamente la realización del examen de patentabilidad y se cancelaron los derechos oficiales correspondientes.

Notificaciones

Recibiré notificaciones en la Secretaría de este Despacho o en la siguiente dirección

CARDENAS & CARDENAS
ABOGADOS
PROPIEDAD INTELECTUAL LTDA.
Carrera 7ª. No. 71-52 Torre B Piso 9
Bogotá, D.C.- Colombia

Atentamente,



Darío Cárdenas Navas
C.C. No. 17.066.629 de Bogotá 
T.P. No. 1.250 del Consejo Superior de la Judicatura

153
152

NIT : 800176089-2

SOLICITUD DE PAGOS Y CANCELACION
Radicacion : 0109/691 00550044
Fecha (OMB) : 2004-02-17 12:42:36
Transite : 001 PUNTOES D 1 PUNTOES D 445 PUNTOES D
Dependencia: EN LA DIVISION DE MANEJO DE RECURSOS

RECIBO OFICIAL DE CAJA : 04 - 12,464
FECHA : FEBRERO 17 DE 2004

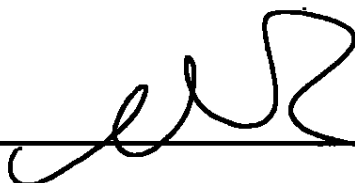
***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PAGO	Vr. PAGO
CARDENAS Y CARDENAS P.I. CONSIGNACION		BANCO POPULAR	050-00110-6	21080533	17/02/2004	8,301,000.00

***** CONCEPTO *****

CANT. RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1 50005-01-06 REGISTRO DE CESION, CAMBIO NOM	13 NOMBRES Y ENSENAS COMERCIALES, MAR	213,000.00
	TOTAL :	213,000.00

SUM: DOSCIENTOS TRECE MIL PESOS

RESPONSABLE : 

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. Ex. 01.097691

**SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISION DE NUEVAS CREACIONES**

2020
Bogotá, D.C., 6 de enero de 2006

Doctor
DARIO CARDENAS NAVAS
Apoderado

Oficio No. ... **266**

ASUNTO	Radicación	01-97691
	Trámite	002
	Evento	001
	Actuación	430
	Folios	022

Como resultado del examen de fondo, realizado con fundamento en el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

1. Documentos estudiados

- Para el presente estudio se tuvo en cuenta el capítulo descriptivo que se encuentra en los folios 5 a 12, el dibujo que se encuentra en el folio 16, el capítulo reivindicatorio que se encuentra en el folio 150 que comprende tres (3) reivindicaciones, el memorial de oposición que se encuentra en los folios 63 a 125 y la respuesta del señor solicitante a dicha oposición que obra en los folios 144 a 152.
- Se considerará la prioridad reivindicada sobre la solicitud de México No. 011277 del 16 de noviembre de 2000.

2. Objeto de la Invención

- La invención propuesta se relaciona con una toalla femenina adecuada para niñas que empiezan su menstruación y están en el rango de edad entre los 8 y los 12 años, con el diseño, el tamaño y la absorbencia adecuadas de modo que sean cómodas y seguras para la usuaria.

En la reivindicación independiente 1 se define un artículo absorbente desechable tal como una toalla femenina que comprende una capa superior permeable, una capa inferior impermeable, una matriz absorbente colocada entre ambas capas superior e inferior y adhesivo para sujetarse en la prenda de la usuaria, caracterizada porque:

- La matriz absorbente es al menos alrededor de 15% más corta que la matriz absorbente de una toalla femenina convencional (de entre 15 cm y 17.5 cm).
- La matriz absorbente tiene una anchura que varía en el rango de alrededor de 4 cm a 5.5 cm en su parte más angosta.
- El artículo tiene una capacidad de absorción total de alrededor de 70 gramos de solución salina (o alrededor de 14 gramos de flujo sintético).

- Se afirma que no se ha considerado que existe una gran cantidad de mujeres que empiezan a menstruar a muy corta edad, siendo niñas realmente, y que no existe en el mercado una toalla femenina adecuada para ellas, puesto que las que existen están diseñadas para el cuerpo de la mujer; sin embargo, a esta temprana edad, las pequeñas aún no tienen cuerpo de mujer. Se podría considerar que, ante esta circunstancia, las niñas podrían empezar a utilizar pantiprotectores en lugar de toallas femeninas; sin embargo, éstos no tienen la absorbencia requerida para un flujo menstrual y no pueden desempeñar cabalmente la función de una toalla femenina.
- El objeto de la invención definido se catalogó como A61F 13/15, según la Clasificación Internacional de Patentes (IPC).

3. Claridad de la solicitud

El artículo 28 de la Decisión 486 de la Comisión de la Comunidad Andina establece "La descripción deberá divulgar la invención de manera suficientemente clara y completa para su comprensión y para que una persona capacitada en la materia técnica correspondiente pueda ejecutarla".

- El capítulo descriptivo comprende intervalos numéricos precedidos por la expresión "alrededor" lo cual no confiere claridad y precisión, y tampoco armoniza con el capítulo reivindicatorio. Por lo tanto, se recomienda eliminar dicha expresión del capítulo descriptivo.
- En conclusión, el capítulo descriptivo no cumpliría con el requisito de claridad de acuerdo con el artículo 28 de la Decisión 486.

El artículo 30 de la Decisión 486 de la Comisión de la Comunidad Andina establece que: "Las reivindicaciones definirán la materia que se desea proteger mediante la patente. Deben ser claras y concisas y estar enteramente sustentadas por la descripción.

Las reivindicaciones podrán ser independientes o dependientes. Una reivindicación será independiente cuando defina la materia que se desea proteger sin referencia a otra reivindicación anterior. Una reivindicación será dependiente cuando defina la materia que se desea proteger refiriéndose a una reivindicación anterior. Una reivindicación que se refiera a dos o más reivindicaciones anteriores se considerará una reivindicación dependiente múltiple".

- El capítulo reivindicatorio contiene intervalos numéricos precedidos por la expresión "alrededor" o "aproximadamente" lo cual no le confiere claridad ni precisión a la invención, ya que dicha expresión conlleva a análisis subjetivos sobre cuán cerca o lejos puede estar un valor respecto a los límites del intervalo. De tal manera que es recomendable eliminar la expresión en cuestión para así presentar los intervalos de manera definida.
- En la reivindicación independiente 1 se menciona que 'la matriz absorbente es al menos alrededor de 15% más corta que la matriz absorbente de una toalla femenina convencional (de entre 15 cm y 17.5 cm)'. No obstante, en la descripción de la solicitud se menciona lo siguiente: 'De acuerdo a las dimensiones dadas, la longitud de la matriz absorbente de la toalla femenina para niñas de la presente invención varía entre alrededor de 16 y 17.5 cm, lo cual implica que es más larga que la matriz de un pantiprotector [...]' (Folio 10, líneas 1 – 4).

Como se puede observar, el intervalo de la reivindicación citada no es el mismo que el explicado en la descripción y no hay ningún sustento en la descripción que permita comprender la razón por la cual el señor solicitante incluyó en las reivindicaciones el intervalo de 15 a 17.5 cm y no el intervalo de

16 a 17.5 cm que sí se encuentra sustentado por la descripción. Dado lo anterior, se recomienda modificar la reivindicación independiente de modo que el intervalo de longitud sea el mismo que se sustenta en la descripción.

- En las reivindicaciones 1 y 3 se incluye un resultado a obtener que es la capacidad de absorción de la toalla sanitaria. Se menciona en la reivindicación independiente 1 que la capacidad de absorción total es de alrededor de 70 gramos de solución salina (o alrededor de 14 gramos de flujo sintético).

En cuanto este punto, no sería posible tener en cuenta esto ya que la capacidad de absorción es el resultado del desempeño e interacción de un conjunto de características técnicas que desafortunadamente no se encuentran definidas dentro del capítulo reivindicatorio estudiado.

De seguro es conocido por el señor solicitante que la capacidad de absorción es una prueba de rutina cuya magnitud resultante depende de características técnicas como son la naturaleza química de los materiales empleados en la matriz absorbente, las propiedades físicas de capilaridad que rigen la absorción, la presencia de más de una capa de matriz, la configuración, los gramos por área de material incluido en la matriz, la incorporación de materiales superabsorbentes, entre otros.

Dado lo anterior, el señor solicitante entenderá la razón por la cual no sería posible considerar un resultado a obtener dentro del estudio de patentabilidad de la invención propuesta, pues si se supusiera aceptado dicho resultado, se entendería que el solicitante estaría esperando proteger con una sola solicitud, todas las toallas sanitarias que presentaran las posibilidades de combinación de las variables antedichas pero que siempre dieran la magnitud de la capacidad de absorción.

Esto muestra que existe un problema en la forma de definir la invención y que en lugar de incluir en la reivindicación independiente la capacidad de absorción como resultado a obtener, sería recomendable incluir el conjunto de características técnicas que al interactuar den dicho resultado. En otras palabras, el señor solicitante debería incluir características de la matriz absorbente como son su naturaleza química, cantidad de materia, gramaje por unidad de área, presencia de superabsorbentes, etc.

Otro problema con definir mediante resultados a obtener es que si dado el caso se encuentra un invento en el estado de la técnica, el cual satisface las demás características enunciadas en la reivindicación independiente, entonces podría objetarse por novedad hasta tanto el señor solicitante establezca la diferencia mediante la medición comparativa de las capacidades de absorción en el invento del arte previo y en el propuesto o mediante argumentación sólida.

- En conclusión, el capítulo reivindicatorio no cumpliría con el requisito de claridad de acuerdo con el artículo 30 de la Decisión 486.

4. Análisis de la oposición presentada

Dado que PRODUCTOS FAMILIA S.A. decidió presentar una oposición, la Oficina realiza las siguientes observaciones:

- Los documentos citados como prueba que son US 5.248.309, US 5.609.588 y US 4.950.264 se encuentran dentro del mismo campo de la invención de la solicitud y se consideran importantes para el presente análisis.
- La descripción inicial que el opositor realiza de los documentos citados como prueba es clara y correcta.

- Las toallas femeninas de las anterioridades citadas y analizadas de manera independiente si contienen revelados los intervalos de las dimensiones propuestas con la invención de la solicitud. Por consiguiente, los porcentajes de reducción de las dimensiones son los mismos.
- Existe un defecto por parte de la oposición respecto a la comparación de la capacidad de absorción total ya que el capítulo reivindicatorio de la solicitud lo presenta en términos de gramos de solución salina y en gramos de flujo sintético, y no en gramos de fluido corporal como lo da a entender el opositor (Folio 66, segundo subtítulo), mientras que en las anterioridades se presenta en términos de gramos de flujo corporal. Sin embargo, es aceptable la afirmación adicional del opositor: *"El hecho que una toalla tenga mayor o menos absorción que otra, es una característica de los medios de absorción, no de la toalla como tal, pues la técnica revela medios superabsorbentes de diferentes aplicaciones, entre ellas para toallas higiénicas. [...]"* (Folio 66, líneas 20 – 24).
- Respecto al estudio de nivel inventivo realizado por el opositor, se enuncia el principio sobre el cual se decide o no efectuar una objeción por nivel inventivo: Si un estudio indica que la novedad es objetable entonces se entiende que si no existe la novedad entonces tampoco existe nivel inventivo. De hecho es suficiente con objetar por novedad.
- La Oficina está de acuerdo con que la solicitud pretendida no cumple con dos de los tres requisitos de patentabilidad, como se demuestra en el numeral 6 de la presente comunicación.

5. Análisis de la respuesta del señor solicitante a la oposición

Dada la defensa que realiza el señor solicitante mediante los argumentos incluidos en el memorial de los folios 144 a 152, la Oficina desea realizar las siguientes anotaciones:

- El señor solicitante plantea el siguiente razonamiento: *"Si se reducen las medidas de una toalla convencional, por lógica se tendría una absorción menor. Por lo que una toalla más chica implicaría menos absorción, mientras que en el caso de la invención en referencia ese punto no se ve afectado porque se han tomado las medidas técnicas necesarias para tal y como se reivindica obtener un 130% de mayor absorción que un pantiprotector convencional"* (Folio 145, párrafo 1).

El razonamiento anterior sería correcto si y solo si el estado de la técnica únicamente se dirigiera a toallas higiénicas convencionales para mujer (pues necesariamente al reducir las medidas se reduciría la absorción) y si la capacidad de absorción únicamente dependiera de las variables dimensionales, cosas que no es cierta ya que una toalla puede tener menos área y dimensiones de longitud y ancho pero tener mayor concentración de superabsorbentes o un material de absorción más eficiente.

Respecto al estado de la técnica, es de anotar que el opositor de la solicitud no incluyó un documento que la Oficina sí tuvo presente para el análisis de novedad y es la patente Norteamericana No. 2.408.508 denominada D1 como se explicará en el siguiente numeral relacionado con la determinación del estado de la técnica. Sin embargo, es necesario adelantar que D1 es un documento cuyo invento también tiene en cuenta las necesidades de usuarias "Junior" y las medidas adecuadas para ellas en tamaños de toallas "Junior" (Columna 3, líneas 65 – 68; Columna 5, líneas 50 – 71).

Dado que el invento de D1 es basado en los estudios detallados de la anatomía de la mujer (como se puede observar al leer la descripción del invento), es lógico que el inventor tuvo presente los requerimientos dimensionales y de absorción de toallas sanitarias con tamaño "Junior". De acuerdo con lo anterior, el razonamiento que expone el señor solicitante no sería correcto. Por el contrario, el razonamiento adecuado teniendo en cuenta D1 sería: Si un inventor desarrolla toallas tamaño "Junior" es razonable deducir que debió detectar una necesidad particular y realizar estudios anatómicos y fisiológicos para mujeres con tallas más pequeñas que las convencionales. Además, la capacidad de absorción no necesariamente se reduciría automáticamente con la disminución de las dimensiones sino que ajustaría dicha capacidad según los requerimientos de dichas tallas y modificando otras variables que además de las dimensiones, inciden en la capacidad de absorción.

- El señor solicitante pasa a realizar un listado de las características de su invención y de cada una de las patentes citadas por el opositor. No obstante, al caracterizar la patente US 5.609.588 no incluye información explícita de la longitud como sí debería haberlo hecho dada la importancia que posee en este estudio (Datos de longitud del documento citado se hallan en la columna 4, líneas 28 – 30)
- Al caracterizar la patente US 5.248.309 no incluye información explícita de las dimensiones de longitud y ancho que sí se encuentran definidas claramente en el documento (Datos de longitud y de ancho del documento citado se hallan en la columna 4, líneas 18 – 20).
- El señor solicitante realiza una discusión de la longitud de la toalla, sin embargo la Oficina consideró relevante el Documento adicional US 2.408.508 para realizar dicho análisis que se puede observar en los numerales siguientes a este.
- En cuanto a la discusión del ancho, es cierto que la variación de ancho representa una ventaja técnica, sin embargo dicha variación de ancho se visualiza mejor con respecto al análisis del invento del documento US 2.408.508 que el opositor no tuvo en cuenta.
- Es acertada la corrección que el señor solicitante realiza sobre la capacidad de absorción que en las reivindicaciones de la solicitud está en gramos de solución salina y en los documentos citados por el opositor está en gramos de fluido corporal. Sin embargo, el señor solicitante aclara una equivalencia entre gramos de solución salina y gramos de fluido corporal, al decir que 70 gramos de solución salina es equivalente a 14 gramos de fluido corporal, pero menciona que tal capacidad es diferente de lo difundido en las patentes citadas como antecedentes.

En este punto es necesario mencionar que un fluido sintético se prepara tratando de asemejarlo al fluido corporal, de tal manera que la magnitud de uno y otro pueden considerarse equivalentes.

- Respecto a las conclusiones expuestas por el señor solicitante, se realizará un análisis en la Determinación del estado de la técnica y más aún en el Estudio de patentabilidad de la presente comunicación.

6. Determinación del estado de la técnica

El artículo 16 de la Decisión 486 de la Comisión establece: "El estado de la técnica comprenderá todo lo que haya sido accesible al público por una descripción escrita u oral, utilización, comercialización o cualquier otro medio antes de la fecha de presentación de la solicitud de patente o, en su caso, de la prioridad reconocida.

Sólo para el efecto de la determinación de la novedad, también se considerará dentro del estado de la técnica, el contenido de una solicitud de patente en trámite ante la oficina nacional competente, cuya fecha de presentación o de prioridad fuese anterior a la fecha de presentación o de prioridad de la solicitud de patente que se estuviese examinando, siempre que dicho contenido esté incluido en la solicitud de fecha anterior cuando ella se publique o hubiese transcurrido el plazo previsto en el artículo 40."

- A pesar de los defectos de claridad detallados en el numeral 3 de la presente comunicación, se consultaron las bases de datos con que cuenta y tiene acceso la entidad, se consideró el 16 de noviembre de 2000 como fecha para investigar el estado de la técnica y se estudiaron los documentos citados por el opositor para determinar su relevancia según el criterio del examinador.
- De acuerdo con lo establecido en el artículo 16 se determinó el estado de la técnica incluidos los documentos citados por el opositor y se tuvieron en cuenta los siguientes antecedentes:

No.	Documento No.	Título	Fecha de Publicación
1	US2408508*	"NONCHAFING CATAMENIAL PAD"	1 de octubre de 1948
2	US5609588	"ARTICLE HAVING A NON-ABSORBENT RESILIENT LAYER"	11 de marzo de 1997

*Documento no citado por el opositor

7. Evaluación de los requisitos de patentabilidad

El artículo 14 de la Decisión 486 de la Comisión de la Comunidad Andina establece: "Los Países Miembros otorgarán patentes para las invenciones, sean de producto o de procedimiento, en todos los campos de la tecnología, siempre que sean nuevas, tengan nivel inventivo y sean susceptibles de aplicación industrial."

En cumplimiento con este artículo, se procedió a evaluar los requisitos de novedad, nivel inventivo y aplicación industrial con el fin de establecer la patentabilidad de la invención reivindicada en la solicitud en estudio.

Evaluación de la Novedad

El artículo 16 de la Decisión 486 de la Comisión de la Comunidad Andina establece: "Una invención se considerará nueva cuando no está comprendida en el estado de la técnica." "El estado de la técnica comprenderá todo lo que haya sido accesible al público por una descripción escrita u oral, utilización, comercialización o cualquier otro medio antes de la fecha de presentación de la solicitud de patente o, en su caso, de la prioridad reconocida.

Sólo para el efecto de la determinación de la novedad, también se considerará dentro del estado de la técnica, el contenido de una solicitud de patente en trámite ante la oficina nacional competente, cuya fecha de presentación o de prioridad fuese anterior a la fecha de presentación o de prioridad de la solicitud de patente que se estuviese examinando, siempre que dicho contenido esté incluido en la solicitud de fecha anterior cuando ella se publique o hubiese transcurrido el plazo previsto en el artículo 40."

Respecto al estado de la técnica:

- En el documento **US2408508** (llamado D1 de aquí en adelante) se divulga una almohadilla catamenial para uso por mujeres durante el período menstrual. La almohadilla revelada es considerablemente más corta que las convencionales y es elaborada de una longitud de acuerdo con la anatomía de la mujer.

En D1 se enseña que la principal ventaja de la invención es la eliminación de la incomodidad percibida por la usuaria y es más económica debido a que se emplea 30% menos del material absorbente requerido en los productos convencionales.

En D1 se divulgan figuras con las dimensiones adecuadas para almohadillas absorbentes que también incluyen un rango satisfactorio para tamaño "Junior" así como para tamaños "Regular y Super".

La figura 3 es una vista dimensionada de la forma preferida de la invención divulgada:



La longitud de la almohadilla de D1 puede estar entre 6 y 7.5 pulgadas que equivale a un intervalo entre 15.24 y 19.05 cm.

La dimensión de la zona más ancha puede estar entre 2.25 y 3 pulgadas que equivale a un intervalo entre 5.71 y 7.62 cm.

La dimensión de la zona más angosta puede estar entre 0.5 y 2 pulgadas que equivale a un intervalo entre 2.54 y 5.08 cm.

En la figura 8 se puede apreciar una comparación entre una almohadilla de la invención (10a) y una convencional (10").



La longitud de la almohadilla convencional se sitúa en 9 pulgadas equivalentes a 22.86 cm mientras que la longitud de la invención en 7 pulgadas es equivalente a 17.78 cm.

El radio mayor es de 1.375 pulgadas equivalente a un ancho de 6.985 cm mientras que el radio menor es de 0.875 pulgadas que equivale a un ancho de 4.44 cm.

- En el documento **US5609588** (llamado D2 de aquí en adelante) se divulga la existencia de un artículo absorbente tal como una toalla sanitaria, que tiene un absorbente y una capa no absorbente resiliente adyacente al absorbente.

En D2 se enseña que las dimensiones del artículo absorbente pueden ser: una longitud entre 150 milímetros (15 cm) a 320 milímetros (32 cm), el ancho puede estar entre 60 mm (6 cm) y 120 mm (12 cm).

En cuanto a la capacidad de absorción se menciona que puede estar entre 20 y 50 g para una toalla higiénica. De hecho se menciona que puede tener una capacidad de recibir por lo menos 30 gramos de fluido corporal.

Respecto a la solicitud en estudio:

- En la reivindicación independiente 1 de la solicitud en estudio se caracteriza el artículo absorbente desechable mediante el intervalo posible de su longitud, el intervalo posible de su anchura tanto en la parte más ancha como en la más angosta y el resultado de la capacidad de absorción. Sin embargo, D1 también revela almohadillas absorbentes con dimensiones que caen dentro de los mismos intervalos de la invención en estudio. En las figuras de D1 se puede observar la afirmación anterior.

Además de lo anterior, D1 también menciona la posibilidad de desarrollar artículos absorbentes desechables de diversos tamaños entre los cuales figuran los tipo "Junior" que son los más pequeños.

La diferencia encontrada en la invención respecto a D1 es que en la primera se incluye el resultado de la capacidad de absorción mientras que en D1 no se menciona nada de ello. No obstante, dicha diferencia corresponde a un resultado de una prueba de rutina. Además, al demostrarse que D1 contiene todos los elementos de la invención de la solicitud y teniendo en cuenta que D1 también contempla tamaños "Junior", de seguro se obtendrían los mismos resultados de absorción si se sometiera a prueba dicho producto del arte previo.

Dado lo anterior y teniendo en cuenta los comentarios y explicaciones realizados en el numeral 3 de la presente comunicación, la toalla de D1 es estructural y dimensionalmente igual a la de la solicitud. Aún cuando no se revele en D1 los resultados de la capacidad de absorción, con toda probabilidad el invento de D1 tendría los mismos valores si se midiera ya que corresponde en todos sus aspectos con el de la propuesta. Por ello existe una objeción de falta de novedad hasta tanto el señor solicitante presente resultados comparativos de la capacidad de absorción de su propuesta con respecto a la de D1 o presente argumentos.

- El señor solicitante observará que existe un documento D2 citado como relevante. El estudio de este documento que es uno de los referidos por el opositor, también cumple con las dimensiones de ancho y largo, además de hacer referencia a la capacidad de absorción.

Aún cuando la capacidad de absorción se mide con diferentes fluidos tanto en D2 como en la solicitud, se aplica el mismo razonamiento realizado al comparar la invención solicitada con respecto a D1. De igual manera, existe una objeción de falta de novedad hasta tanto el señor solicitante presente resultados comparativos de la capacidad de absorción de su propuesta con respecto a la de D2 o presente argumentos.

En este punto es necesario aclarar que el análisis de novedad se realizó con dos documentos pero independientes el uno del otro y nunca se realizó una combinación. Además, la incorporación de un segundo documento en el examen de novedad se decidió exclusivamente para demostrar lo amplia que sigue siendo la definición de la invención de la solicitud, aún cuando el señor solicitante trate de incluir las características de dimensión y resultado de la capacidad de absorción.

- De acuerdo con lo anterior, la invención de la solicitud en estudio se encontraría afectada en el requisito de novedad de acuerdo con el artículo d16 de la Decisión 486.
- Los requisitos de patentabilidad de la presente solicitud se encontrarían afectados así:

No.	Documento	Reivindicaciones Afectadas	Requisito que afecta
1.	US2408508	1 - 3	Novedad
2.	US5609588	1 - 3	Novedad

Se anexan los apartes principales de las anterioridades en el documento adjunto.

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta días contados a partir de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la circular única No. 10 de 2001.



JESUS FERNEL GARCIA GARCIA
Jefe de División de Nuevas Creaciones (E)

El anterior requerimiento fue notificado por fijación en lista, de fecha 12 ENE 2006

CONCEPTO TECNICO No. 002	EXAMINADOR TECNICO Código No. 202042
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UNITED STATES PATENT OFFICE

2,408,508

NONCHAFING CATAMENIAL PAD

John P. Canavan, Neenah, Wis.

Application December 1, 1943, Serial No. 467,491

3 Claims. (Cl. 128-290)

1 This application is a continuation-in-part of my application Serial No. 263,896 filed March 23, 1939, and entitled Nonchafing catamenial pad which in turn is a continuation-in-part of my earlier filed application Serial No. 236,875 filed October 24, 1938, and entitled Catamenial pad.

This invention relates to catamenial pads and more generally to sanitary bandages to be worn by women during the menstrual period or by those subjected to vulva, vaginal, or uterine discharges.

At the present time (and for a great many years in the past) the most common form of sanitary pad or napkin commercially available for use by women during the menstrual period consists of a generally oblong, arcuate ended pad of absorbent material enclosed in a sheet of loosely woven gauze. These pads are of standard dimensions, approximately 9 inches long and 3 inches wide for adult use (the "junior" size being slightly smaller). In view of their configuration and width such pads inherently cause considerable discomfort to the wearer, and very often chafing, due to the fact that they must be worn laterally compressed, or "bunched," or "packed" between the thighs. Moreover, due to their length, they extend rearwardly of the rectum a considerable distance and produce a "wad" at the rectum which creates a source of continuous discomfort, particularly when the wearer is seated. This wad not only causes discomfort, but distorts the natural anatomical relations around the vulva and anus. These disadvantages have long been known and tolerated because they were thought to be inescapable. It is true, that long recognition of the problem has brought forth numerous suggestions and variations in sanitary napkin construction but none of these has been commercially adopted to supplant the well-known, conventional form of catamenial pad.

The above mentioned width and length of conventional catamenial pads and their customary manner of being worn have been predicated upon the belief that it is essential to have a substantial portion of the pad extend rearwardly of the rectum in order to absorb the material discharged from the uterus, etc., it being the common and generally accepted belief that the discharged material travels downwardly and rearwardly through the pad by gravity. I have discovered that, contrary to the foregoing generally accepted belief, the absorbing action of the pad is such that it causes the discharged material to travel forwardly and upwardly by capillary action rather than downwardly and rearwardly by

2 gravity. I have also found by actual tests and the study of the female anatomy that it is unnecessary for the pad to extend beyond the rear end of the perineum or to be of too great a width at this point because of the natural relations. On the basis of this knowledge I have devised a catamenial pad, which is a radical departure from conventional pads now in universal use but which provides the same degree of safety as said conventional pads, and at the same time eliminates all chafing and discomfort due to the excessive bulk of said conventional pads.

According to the principles of the present invention, the absorbent pad is given a predetermined shape such that it substantially conforms in contour with the natural anatomical curves of the body in the region of the female genitalia comprising the thighs, buttocks and perineum parts. Furthermore, the pad is considerably shorter than conventional pads and is made of such length that it is adapted to be worn with its rearmost region terminating at the anal aperture and its forward region terminating at a point slightly beyond the mons Veneris.

The principal advantages of the present invention, obviously, are two-fold. First, all discomfort to the wearer from the pad per se is definitely eliminated, and, secondly, the pad can be manufactured at a substantial saving due to the fact that at least 30% less absorbent material is required. Additional and commercially important advantages arise from the fact that less gauze is required to wrap the absorbent pad, smaller cartons may be used in shipment and the shipping costs themselves materially reduced due to the smaller weight and bulk of the product. Still greater economy can be effected by eliminating the gauze altogether, as will appear more fully hereinafter.

Another novel feature of the present catamenial device is the incorporation therein of a supporting strip of predetermined width which extends longitudinally of the absorbent pad along the lower side thereof and which is adapted to maintain said pad laterally substantially flat and thereby prevent roping and twisting of said pad. In one form of the invention the pad and supporting strip are enclosed in a gauze sheet or envelope, and in accordance with another form of the invention the longitudinal edges of the gauze sheet are so overlapped as to provide in effect a "built in" longitudinal band rendering the use of a separate supporting strip unnecessary.

A further feature of the invention resides in

Improved moistureproofing of certain parts of the catamenial pad.

A still further feature resides in the provision of an improvement in catamenial pads to render such pads non-chafing even during body movements caused by walking that normally results in chafing caused by friction with the natural anatomical curves of the body in the region of the female external genitalia comprising the thighs, buttocks, and peri-anal parts.

The principal object of the present invention is to provide a catamenial pad which will eliminate all discomfort to the wearer.

Another object of the invention is to improve the construction of catamenial pads by providing features that preclude chafing to the wearer.

Another object is to provide a catamenial pad possessed of improved non-chafing features to eliminate frictional edge contact with the natural anatomical curves of the body in the region of the female external genitalia comprising the thighs, buttocks and perineum occurring in the relatively changing positions of the body occasioned in walking and other movements.

Still another object is to provide a catamenial pad with a non-chafing finish affording the wearer increased comfort through the elimination of skin inflammation in the contact regions of the female external genitalia, thighs and perineum.

A further object is the provision of a catamenial pad envelope compositely incorporated with a moistureproof substance to afford smooth non-chafing contact with the adjacent contour of the female parts and thus afford greater physical comfort.

A still further object is the provision of a catamenial pad envelope compositely incorporated with a moistureproof substance that precludes the possible striking through of the menstrual flow under conditions that are sometimes beyond the control of the wearer.

Still a further object is the provision of a sanitary catamenial pad envelope compositely incorporated with an impervious substance to prevent uterine discharge from striking through the absorbent cellular pad which may consist of less material than heretofore thought necessary and is conducive to even greater comfort with increased absorbent effectiveness.

An additional object is to provide a catamenial pad envelope compositely incorporated with a moistureproof substance to prevent menstrual excretion from striking therethrough and provide non-chafing body contacting surfaces conducive to added physical and mental comfort of the wearer.

Other objects and advantages will appear from the following description taken in conjunction with the accompanying drawings in which:

Figure 1 is a diagrammatic, dimensioned, cross-sectional view of the female pelvic region showing the uterus, vaginal canal, etc.;

Figure 2 is an elevational view of the external genitalia;

Figure 3 is a dimensioned, plan view of a preferred form of pad element, the dimensions given being such as to include a satisfactory range for "junior" as well as "regular and super" size pads;

Figure 4 is a diagrammatic view illustrating the manner in which pad elements of the type shown in Figure 3 may be cut from sheet or strip material in mass production;

Figure 5 is a top plan view of a complete catamenial device having non-chafing edges embodying features of the present invention;

Figure 6 is a transverse sectional view taken substantially along line 6-6 of Figure 5;

Figure 7 is a plan view of the catamenial device shown in Figure 5, except for the gauze envelope which is opened to expose the absorbent pad normally confined therein;

Figure 8 is a diagrammatic, dimensioned, view of a commercially feasible absorbent pad element for adult use, shown superimposed upon a conventional pad element to facilitate comparison in size and shape;

Figure 9 is a top plan view of a modified embodiment of the catamenial pad shown in Figure 5 with the bottom gauze sheet of the envelope opened to clarify the showing of a moisture-proof lower region to prevent striking through;

Figure 10 is a transverse sectional view through a pad of the type shown in Figure 9;

Figure 11 is a plan view of a catamenial device having the enclosing gauze sheet so folded along the underside of the pad as to eliminate the use of the supporting strip shown in Figures 5 and 9;

Figure 12 is an exaggerated cross-sectional view of only the gauze sheet of Figure 11 illustrating one manner in which said gauze sheet may be folded to provide a plurality of layers of fabric at the underside of the pad adapted to serve as a substantially non-stretchable supporting band;

Figure 13 is a view similar to Figure 12 illustrating another manner of folding the gauze sheet;

Figure 14 is a dimensioned plan view of a slightly modified form of pad element;

Figure 15 is a view of the lower side of another pad construction embodying the principles of the present invention in which the gauze wrapper is only of slightly greater length than the absorbent pad and in which the supporting strip or band is adhesively secured to the pad;

Figure 16 is an enlarged view of the absorbent pad and gauze wrapper shown in Figure 15;

Figure 17 is an inverted sectional view taken on the line 17-17 of Figure 15 and illustrating by exaggerated thicknesses the relationship of the overlapping edges of the gauze wrapper, and the relative positions of the adhesive material and the supporting strip before the parts are adhesively bonded by heat and pressure;

Figure 18 is a plan view of another embodiment of the invention wherein the gauze wrapper is entirely dispensed with;

Figure 19 is a sectional view taken on the line 19-19 of Figure 18; and

Figure 20 is a view similar to Figure 19 but illustrates a further modification in which the adhesive material is extended around the side edges of the pad to present non-chafing surfaces.

The catamenial structure selected for illustration comprises a preformed pad 10 or a plurality of superposed pads 10. In this instance, three, preferably stamped or otherwise shaped from cellular or other highly absorbent material. In the preferred embodiment, the pad or pads 10 are preferably though not essentially provided with an enlarged forward end region 11 that approximates the width of the standard catamenial pad 10" (Figure 6), the forward end region 11 terminating, in this instance, in a curved edge 12 imparting a semicircular contour which merges into converging side edges 13 and 14. The inclined converging side edges 13 and 14 extend for a distance to define a comparatively smaller rearward end region 15 which, in this instance, terminates in a semicircular rearward end 16. A trapezoidal region 18' connects the end regions

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11 and 13. The rearward regions 15' and 16 are shaped to conform more nearly to the anatomical contour of the external genital region, and avoid undesirable roping, twisting and packing.

In Figure 1, the various portions of the female pelvic region are diagrammatically shown in cross-section and respectively labeled "Uterus," "Vagina canal," "Bladder," "Rectum," "Labia interna," "Labia majora," etc., to illustrate the course of the menstrual flow from where it originates in the uterus. Thus, the flow is downward through the uterus, then downward and forward through the vaginal canal, and then out between the labia onto the pad, where, capillary action normally causes the discharged material to travel upwardly, instead of downwardly, contrary to the previously accepted theories on this subject. Figure 1 also diagrammatically illustrates average dimensions from the rectum to the mons Veneris as determined from many actual measurements of the female vulva. An interesting conclusion from the many measurements made is that the size of the female genitalia does not vary in direct proportion to the size of the individual during the child bearing period of a woman's life. As shown in Figure 1, the over-all distance from the anus or rectum to the mons Veneris over the outer curved surface of the vulva is approximately 5 inches. The distance in a straight line, or in projection, from the anus to the fossa navicularis is about 1 1/4 inches, from the fossa navicularis to the clitoris is about 2 inches, and from the clitoris to the mons Veneris is about 1 1/2 inches. Hence, in constructing pads embodying the principles of the present invention, the pad is made sufficiently in excess of 5 inches, say 6 to 7 1/2 inches, to adequately cover the parts.

Referring now to Figure 2, the measurements of the vulva, from side to side, is approximately 1/2 inch in the posterior fanoet, about 1 1/4 inches at the vaginal opening, about 2 1/4 inches at the clitoris, and about 2 inches at the mons Veneris. These measurements are taken from the outer margin of one labia majora to the outer margin of the other, and serve as the basis for determining the width of the rearward region of the absorbent pad.

Upon reference to Figure 3 it will be noted that the wide substantially semicircular front region 11 of the pad 10 may be formed upon a radius of 1 1/4 to 1 1/2 inches so that the width of this portion of the pad may be made anywhere from 2 1/4 to 3 inches. The radius of the substantially semicircular rear region 13 of the pad 10 is indicated as varying from 1/2 to 1 inch so that the width of said rear end region may vary from 1 to 2 inches. The front and rear regions are connected by a substantially trapezoidal region 15'. The over-all dimension of the pad is indicated as 6 to 7 1/2 inches.

The dimensions given include a range which is satisfactory for the "junior" size pad, which may be made by using the lower limits; and the "regular or super" size, which may be made by using the upper limits. However, a pad having dimensions falling within the given ranges is quite satisfactory. Such pad is illustrated in Figure 3 and will be discussed in further detail hereinafter.

Figure 4 illustrates one manner in which the absorbent pad element 10 may be cut in mass production from a long strip of material X, with the only waste occurring at the rounded end

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portions 12 and 13 of the pad. A machine (not shown) is adapted to quickly stamp out the pad elements 10 from the strip X so that the adjacent pads are reversed, that is to say, the wide end region 11 of one pad is adjacent the narrow end region 13 of the next pad, and vice versa.

In order to support the absorbent pad or pads 10 in operative position over the female genitalia between the thighs and buttocks, an elongated supporting strip 17 (Fig. 5) of material possessing appreciably greater tensile strength than the absorbent pad or pads 10 and preferably of moistureproof material, is disposed longitudinally therebeneath and projects therebeyond for a distance sufficient to be looped through or engaged by the forward and rearward end members of the usual or any suitable or standard sanitary belt appliance (not shown) worn for that purpose. The elongated narrow strip 17 may be cut or otherwise shaped from paper, closely woven fabrics, or non-absorbent sheet material such as rubber, Cellophane, Celluloid, treated fabrics or paper and ordinary fabrics impregnated with moistureproof substances such as paraffins, wax, rubber, Celluloid or a combination of these substances. A suitable substance for this purpose is sold by The Menasha Products Co., Menasha, Wisconsin, under the trade name of "Parafilm," the wrapper of which bears the following patent numbers: 2,084,112, 2,084,114, 2,084,115, 2,074,319, 2,075,887, and 2,077,288. The longitudinal supporting strip 17 preferably is of a lesser width than the enlarged forward end 11 of the pads 10 and no greater or approximately equal in width to the rearward end 13. Thus, the strip 17 forms a support underlying the major portion of the area of the pad 10 to prevent roping and twisting of the pad in use. The provision of the longitudinal strip 17 of moistureproof material serves not only to afford added support for absorbent pad or pads 10 in operative position, but also prevents the striking through of uterine discharge to the down side of a fabric envelope 18 serving as a covering therefor.

To this end, a large mesh fabric sheet such as gauze 18 of substantially rectangular configuration, is folded around the pad or pads 10 and their longitudinal supporting strip 17 to constitute an overlapping rectangular envelope therefor. The gauze envelope 18 is, in this instance, commensurate in length with the strip 17 and provides extensions 18' and 18'' adapted to be attached to the usual sanitary belt fastener members (not shown) in conjunction with the ends of the narrow strip 17 so that the envelope 18 serves to maintain the pad or pads 10 together with the strip 17 in their initial assembled relation. The longitudinal side edges 19-20 of the gauze envelope 18 will span the pad or pads 10 along the straight line commensurate with the widest portion thereof to fill and provide utmost lateral resiliency and self conformity with the relatively curved and varying contour of the external female genitalia without causing any roping, twisting, packing or discomfort of any kind to the wearer. This provides an envelope 18 that very nearly conforms to the rearward side of the pad or pads 10 save for slight lateral excess regions 21' and 22 that fold underneath the pad or pads 10 when their envelope 18 is applied in operative position to the perianal region of the female body.

In view of the fact that the pad 10 is to be worn with the rear end region 13 terminating at the anus, the forward gauze extension 18' may

DIMENSIONS

be made shorter than the rear extension 18'. This aids a user unfamiliar with the new type of pad to automatically apply it in the proper manner since the pad 10 will not be properly positioned relative to the vulva if the extension 18' is disposed toward the rear.

An important feature of the supporting strip 17 is that it is more stable than the loose-mesh gauze envelope 18 and, therefore, is not subject to ready distortion as is said envelope. Hence, the supporting strip is thus capable of preventing the roping and twisting, above referred to.

Another important feature of the supporting strip 17 is that it serves to prevent roping of the rear extension 18' in the gluteal fold, the result of which would normally be to produce a cutting effect creating considerable discomfort to the wearer.

It should be appreciated that the thickness of the individual pad 10 or of a plurality of superposed pads 10 can be varied to meet the requirements of absorption and such depends entirely upon the dictates of commercial practice and the capacity of the particular absorbent material that is selected. As has been stated, the area of the pads 10 is substantially reduced in over-all size from standard catamenial pads now almost universally used and this elimination of excess mass is facilitated by resort to the comparatively narrow longitudinal strip 17 of moistureproof material. The moistureproof strip 17 eliminates excessive body in the pads normally thought necessary for support and inherent tensile requirements, and, further, serves to insure against striking through of the menstrual flow and uterine discharges.

In order to eliminate any possible discomfort caused by chafing and dermatitis in that portion of the thighs at the attachment of the abductor muscles on the ischial tuberosity and between the buttocks in the perianal region, the body contacting edges 13-14 of the gauze envelope 18 are provided with a glazed or smooth finish surface regions 23-24. The smooth non-friction edge lining regions 23-24 preferably adhere or constitute a composite part of the gauze 18 to constitute a continuous body contacting ribbon having a rearwardly extending longitudinal median projection defining a central upper lap 25. To this end, the smooth finish ribbon body contacting liner 23-24-25 preferably consists of a moistureproof material that is normally soft, smooth and stable at body temperatures and may advantageously be applied in the form of a composite film of paraffin, rubber, Celluloid, Cellophane or a combination thereof, or any other suitable material, such as "Parafilm," supra, possessed of similar functional characteristics. This smooth, soft and moistureproof liner 23-24-25 may be associated with the gauze envelope 18 by impregnation pressure application or thermally controlled composite processing to fill the voids of the gauze envelope 18 in the edge and upper longitudinal rearward region during or after the fabrication thereof.

It should be noted that the moistureproof liner ribbon 23-24 extends forwardly along the body contacting edge outlines 13-14 of envelope 18 substantially to the forward limit point where side edges 13-14 converge into curved forward end region 11 of the pad or pads 10. The central upper lap 25 of substantially rectangular configuration is, in this instance, formed integrally with edge outlines 13-14 of liner 23-24-25 and extends rearwardly along envelope 18 for an

effective and suitable distance sufficient to cover the usual length of the female perineum. The association of the fabric envelope 18 with the moistureproof liner 23-24-25 may be accomplished simultaneously with the fabrication, manufacturing or formation of the envelope 18 with the pad or pads 10 during a selected or appropriate step in the production thereof. If found advantageous or should commercial practice so dictate, the preformed ribbon-like moistureproof liner 23-24-25 may be applied to the finished gauze enveloped catamenial pad 10 by pressure application in the presence or absence of heat. The extent, outline and location of the friction eliminating surface 23-24-25 may be varied to accomplish maximum comfort and minimum rubbing during body movement.

Referring now to Figure 8, a typical absorbent pad element 10' is shown superimposed upon a conventional pad element 10'' in order to graphically illustrate the tremendous saving in material resulting from the present invention. The conventional pad 10'' is illustrated with arcuate ends cut upon a radius of 1½ inches, the overall length of the pad being 9 inches. The pad 10', which has dimensions that have been shown by numerous actual tests to give highly satisfactory results, is provided with a forward end region 11' having a radius of 1½ inches and a rear end region 12' having a radius of ¾ of an inch, the overall length of the pad being 7 inches.

From simple arithmetic the area of the conventional pad will be found to be 24.06 square inches and the area of the pad 10' will be found to be 15.41 square inches. The difference in these areas is 8.65 square inches, and calculated in percentage, the pad 10' requires 38.4% less material than the conventional pad 10''. Expressed another way, the material required to make 1000 conventional pads 10'' would make 1613 of the pads 10'.

In the modified embodiment shown in Figures 9 and 10, the moistureproof liner 23'-24'-25' is provided with a laterally extending moisture impervious under-flap 26'. The under-flap or moisture impervious surface 26' is of substantially rectangular configuration formed integrally with the side edge surfacing ribbon 24'. The under-flap 26' extends laterally for a distance sufficient to cover the lower side of gauze envelope 18 when the open mesh fabric sheet 18' is folded over to envelop the absorbent pad or pads 10' and their moistureproof longitudinal supporting strip 17' to constitute a rectangular enclosure or envelope therefor.

As in the first described embodiment, a substantially rectangular central upper lap 25' is formed as a rearward longitudinal median extension of the smooth substantially U-shaped edge liners 23'-24', thereby defining a continuous body contacting ribbon 23'-24'-25' and a protective under-flap 26' that insures against moisture striking through the pad or pads 10'. It is clear that the length and lateral extent of the moistureproof and smooth surface liners 23'-24'-25'-26'-26' may vary within a wide range; however, the edge liners 23'-24' extend forwardly to the merger point of the outwardly converging side edges 13'-14' of pad 10 with the forward curved end 11' thereof. Such may be modified to meet the requirements of commercial practice and the best results consistent with their intended purpose.

Figures 11 and 12 illustrate still another modified catamenial pad construction in which the

supporting strip per se is eliminated and the gauze sheet or envelope is so wrapped and folded around the absorbent pad as to provide, for example, four overlapping layers of fabric on the under side thereof which serve as a "built-in" band-like support preventing twisting and roping of the otherwise loosely woven gauze envelope when in use.

As shown, a gauze sheet 28 extends in a single layer 30 over the upper surface of a pad 18^a and has a portion 31 which runs along the lower side of said pad and is folded at 32 to provide a reversely extending flap 33 overlying the portion 31. The gauze wrapper 28 also has a portion 34 adjacent the flap 33 which in turn is folded at 35 to provide a second flap 36. Thus, four layers of fabric 31, 32, 34 and 36 extend along the under side of the pad 18^a, said layers forming in effect an integral band having sufficient tensile strength to prevent any appreciable stretching or distortion of the gauze envelope and thus serve as a substitute for the supporting strip 17. It will be apparent from Figure 11 that the overlapped portions 31, 32, 34 and 36 have a minimum width equal to that of the narrowest or rear end region 18^b of the pad 18^a.

Figure 12 diagrammatically illustrates another manner of folding the gauze sheet 28 wherein the flaps 33 and 36 are folded in interlocking relation.

Figure 14 illustrates an absorbent pad element 18^b having a contour slightly different from the pad element 18 shown in Figure 3, but which, nevertheless, is capable of carrying out the principles of the present invention. In this modified form of pad 18^b, the side edges 18^c and 18^d do not converge throughout the length of the pad, but merely converge from the enlarged forward end region 18^e to an intermediate point indicated by the line 48 and then extend substantially parallel to the rearward extremity of said pad. As illustrated, the front end portion 18^e may be formed on a radius of 1 1/4 to 1 1/2 inches, whereas the rear end region 18^b is formed substantially rectangular and has a width of 1 to 2 inches and a length of 1 1/4 to 2 1/4 inches. The portion of the pad 18^b between the substantially semicircular forward end portion 18^e and the substantially rectangular rear end region 18^b is substantially trapezoidal, and the overall length of the pad may vary from 6 to 7 1/2 inches.

It will be understood that the absorbent pad element 18^b shown in Figure 14 is adapted to be associated with a gauze sheet and supporting strip similar to that shown and described in connection with Figures 5 and 8. Alternatively, the pad 18^b may be employed with a gauze sheet folded about said pad in the manner shown in either Figure 12 or 13.

Figures 15, 16 and 17 illustrate another embodiment of the invention by means of which a maximum of saving in both pad material and in the gauze wrapper can be effected. In this form of the invention an absorbent pad 18^c is enclosed in an abbreviated loop mesh gauze sheet or wrapper 18^c, which preferably does not extend more than half an inch beyond the ends 18^c and 18^d of said pad. The gauze sheet 18^c has longitudinal edge portions 40 and 41 which overlap on the underside of the pad, as is best illustrated in Figure 17. A flat longitudinal supporting strip or band 17^c of relatively stiffer weave and greater tensile strength than the wrapper 18^c is disposed adjacent the overlapped portions 40 and 41 of the gauze wrapper. A strip of "Parafilm" 42, which

may be of the same length as the pad 18^c, is interposed between the supporting strip 17^c and the overlapped edges 40 and 41 of the gauze wrapper 18^c, as shown in Figure 17. The pad 18^c, wrapper 18^c and supporting strip 17^c are all bonded together by the strip of "Parafilm" 42 upon the application of heat and pressure, it being understood that the heated "Parafilm" will permeate said gauze wrapper and form a direct bond between said pad and supporting strip, thereby effecting a slight change in the relation of the parts shown in Figure 17. In this manner, the wrapper 18^c is positively maintained about the pad 18^c and the wrapped pad is secured in predetermined assembled relation to the supporting strip 17^c.

The supporting strip 17^c, as in the previous constructions, may be made of water resistant material, or not, as desired, but in the instant modification need not of itself be moisture-proof inasmuch as the strip of "Parafilm" 42 serves the further purpose of moisture proofing said supporting strip and thereby prevent striking through. Also, as in the previous constructions, the side edges of the wrapped pad may be made non-chafing and moisture resistant, if desired. It will be noted from Figure 15 that the strip 17^c is preferably not wider than the narrow end 18^b of the pad 18^c and that said supporting strip extends rearwardly a greater distance from said pad than forwardly, whereby to aid in properly positioning the rear end of said pad so that it does not extend rearwardly beyond the anus.

Alternatively, the supporting strip 17^c obviously may be disposed in contact with the pad 18^c; the strip of "Parafilm" 42 placed in contact with the supporting strip 17^c; and the edge portions 40 and 41 of the gauze wrapper overlapped upon the strip of "Parafilm," and all of the parts secured together in predetermined assembled relation by heat and pressure, without departing from the principles of the present invention.

It is believed that the saving in wrapping material effected by the construction shown in Figures 15 to 17 will be manifest when the fact is considered that the wrapping on the conventional Kotex pad is approximately 10 1/2 inches long and 9 1/4 inches wide and has an area of 188.06 square inches; whereas the gauze sheet or wrapper 18^c at most will not be longer than 8 1/2 inches and not more than about 7 inches wide, the area of such sheet being 59 3/4 square inches. Considering the material employed in the supporting strip 17^c, such strip may be made about 10 1/4 inches long at most and about 2 inches wide, and thus have an area of 39 square inches. When this is added to the area of the material of the gauze sheet 18^c a total area of 99 1/4 square inches of material is needed, compared with the 188.06 square inches of material in the conventional pad. In other words, the present invention, even when employing the maximum amount of fabric, requires less than one-half of the material now employed in the wrapper of conventional pads. The vast amount of material saved by the abbreviated absorbent pad element per se has already been emphasized. When the saving in material of both the wrapper and pad element are combined, the economy effected is obviously enormous.

Figures 18 and 19 illustrate still another embodiment of the invention in which even greater saving is effected by the total elimination of the gauze sheet or wrapper. This further saving is effected by employing an absorbent pad 18^d of mate-

rial which will not disintegrate in the presence of moisture, such as, for example the absorbent cotton felt disclosed in copending application, Serial No. 457,456 filed on September 5, 1942 and entitled Absorbent felt. In view of the fact that said cotton felt will not disintegrate in the presence of moisture, as is the case with the cellulose cotton now used in conventional pads, no wrapper is needed to hold the pad together while in use.

As is best shown in Figure 18, a flat supporting strip or band 17, whose width is approximately equal to that of the narrowest portion of the pad 16, is adhesively bonded to the underside of said pad by a strip of "Parafilm" 43 which need be no longer than the length of said pad. The strip of "Parafilm" 43 will effect bonding of the pad 16 and the supporting strip 17 in the desired predetermined relation upon application of heat and pressure, as aforesaid. However, in addition to bonding the pad 16 and strip 17 together, the strip of "Parafilm" 43 serves also as a moisture proofing medium to prevent striking through. The edges of the pad 16 may be provided with a suitable non-chafing coating, if desired, or the strip of "Parafilm" 43 may be extended around the side edges of the pad as indicated at 44 in Figure 20 for this purpose.

The structures described herein are designed not only to give maximum protection and comfort, but also conform to modern manufacturing methods, create an appreciable saving in material, accomplish a definite economy in manufacture, and provide maximum absorption in the region where such is required without the usual chafing and striking through defects of known catamenial pads. Then, too, the "built-in" band or the separate center longitudinal strip which extends for the entire length of the pad including its gauze envelope, serves to prevent chafing due to roping or "bunching" of the pad, adds security to the user, discourages striking through of any moisture to the lower side of the gauze envelope, increases invisibility when worn beneath scant clothing, prevents the hair on the vulva from becoming entangled in the gauze covering the pad, prevents roping of the gauze extensions and thereby eliminates undesirable cutting or chafing in the gluteal fold, increases the security of fastening and holding the pad or pads in position, and minimizes the size and thickness of the pad or pads.

Catamenial pads have a tendency to move forwardly during the act of walking, and the provision of a center supporting strip with the selected outline of the pad or pads 16--16' prevents such forward displacement. The additional feature of a smooth, glazed coating or covering of moisture proof material on the lateral edge and rearward portion of the pad, affords non-chafing contact with the upper regions of the wearer's thighs and perineum, results in a tremendous improvement in comfort by the elimination of chafing and consequent dermatitis or skin inflammation.

Then, too, the feature of sealing the under-side of the pad or pads throughout the absorption area with a moistureproof composition prevents the striking through of moisture which is annoying, uncomfortable and often results in uncontrolled soiling of adjacent articles of clothing. Furthermore the moisture is prevented from striking through the lateral sides of the pad which often inflames the skin and results in a most unsanitary condition.

Various changes may be made in the embodi-

ments of the invention herein specifically described without departing from the invention or sacrificing any of the advantages or features thereof, and nothing herein shall be construed as limitation upon the invention, its structural embodiment or concept as to the whole or any part thereof except as defined in the amended claims. Moreover, it will be understood that certain of the features disclosed herein may be advantageously incorporated in conventional pad manufacture, and hence, the invention is not to be construed as limited to the specific constructions illustrated herein as operative examples of the invention.

I claim:

1. A catamenial device comprising: a pad of predetermined shape including a body of absorbent material of substantially uniform thickness having a narrow rear end region, a relatively wider front end region, and an intermediate region of non-uniform width connecting said front and rear regions and providing converging side edges between said front and rear regions, said intermediate and rear end regions being sized and shaped to fit against and conform to the anatomical contour of the external genitalia and the adjacent parts of the inner thighs of the wearer without any substantial lateral compression of said absorbent pad, the over-all length of said absorbent pad being such as to extend from the anus to a point slightly beyond the mons Veneris; and an open mesh gauze sheet of substantially greater length than said absorbent pad enclosing said pad and providing extensions extending rearwardly and forwardly of the ends of said pad adapted to be secured to a suitable sanitary belt, one thickness of said gauze sheet overlying the upper surface of said absorbent pad; the side edges of said sheet being folded in overlapping relation along the lower surface of said pad to provide more than two thicknesses of fabric, said overlapped portions being of a width approximately equal to the narrow rear end region of said absorbent pad and serving as a band-like support underlying the major portion of the area of said pad to prevent roping and twisting of said pad in use and to further provide a rearward gauze extension which will not rope and produce a cutting effect in the gluteal fold, said pad being adapted to be worn with the narrow rear end region terminating at the anus, whereby the usual bunching and packing rearwardly of the anus is eliminated and the discomfort to the wearer incident thereto is avoided.

2. A catamenial device comprising: a pad of predetermined shape including a body of absorbent material of substantially uniform thickness having a substantially semicircular forward end region formed on a radius of about 1 1/4 to 1 1/2 inches, a substantially semicircular rear end region formed on a radius of about 1/2 to one inch, and a substantially trapezoidal region connecting said substantially semicircular end regions, said absorbent pad having an over-all length of about 6 to 7 1/2 inches, said overall length of said pad being such as to extend from the anus to a point slightly beyond the mons Veneris; and an open mesh gauze sheet of substantially greater length than said absorbent pad enclosing said pad and providing extensions extending rearwardly and forwardly of the ends of said pad adapted to be secured to a suitable sanitary belt, one thickness of said gauze sheet overlying the upper surface of said absorbent pad, the side

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edges of said sheet being folded in overlapping relation along the lower surface of said pad to provide four thicknesses of fabric, said overlapped portions having a width of 1 to 2 inches, but in any event being of a width approximately equal to the diameter of the narrow rear end region of said absorbent pad, said overlapped portions serving as a band-like support underlying the major portion of the area of said pad to prevent roping and twisting of said pad in use and to further provide a rearward gauge extension which will not rope and produce a cutting effect in the gluteal fold, said pad being adapted to be worn with the narrow rear end region termi-

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nating at the anus, whereby the usual bunching and packing rearwardly of the anus is eliminated and the discomfort to the wearer incident thereto is avoided.

5 2. A catamenial device comprising: an absorbent pad of substantially uniform thickness; and means providing a longitudinal band-like support along the underside of said pad comprising a gauze envelope having reversely folded edge portions providing overlapping layers of fabric of substantial width arranged medially of the side edges of said pad.

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Oct. 1, 1946.

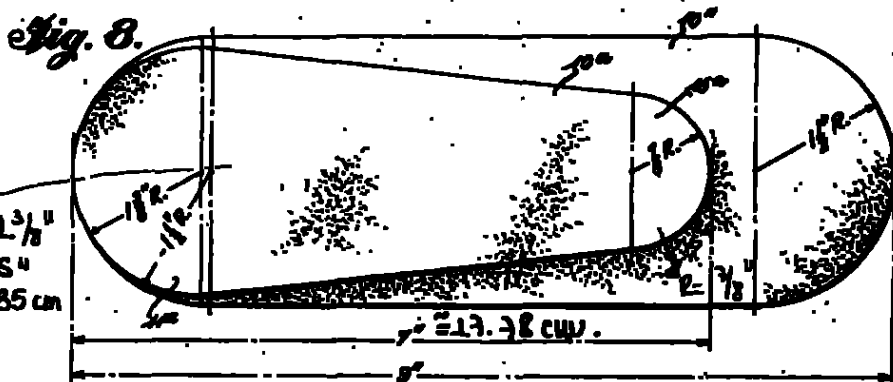
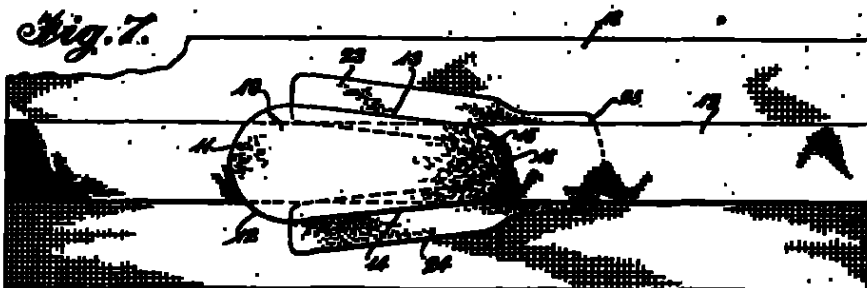
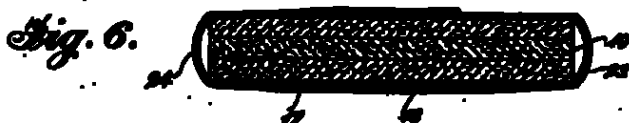
J. P. CANAVAN

2,408,508

NON-CHAFING CATANEMIAL PAD

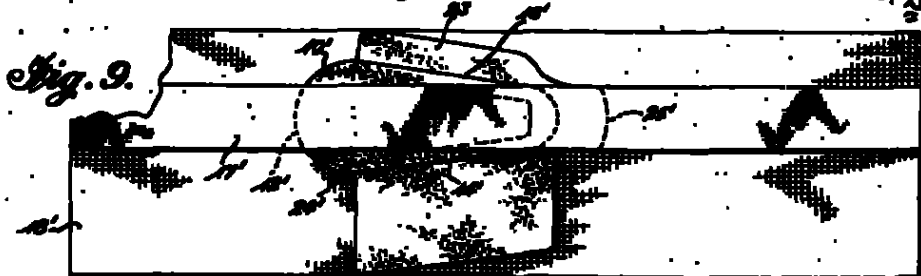
Filed Dec. 1, 1942

4 Sheets-Sheet 2



$R = 1\frac{3}{8}"$
 $\frac{1}{2}$ Ancho = 1.375"
 Ancho = 6.985 cm

$R = 1\frac{3}{8}"$
 $\frac{1}{2}$ ancho = 0.875"
 ancho = 2.20 cm x 2
 Ancho = 4.44 cm.



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United States Patent [19]
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[45] Date of Patent: Mar. 11, 1997

[54] ARTICLE HAVING A NON-ABSORBENT
RESILIENT LAYER

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[21] Appl. No.: 255,840

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Related U.S. Application Data

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doned.

[51] Int. Cl.⁶ _____ A61F 13/15; B32B 7/12

[32] U.S. Cl. _____ 604/369; 604/378; 604/387;
428/337; 428/332

[58] Field of Search _____ 604/358, 365,
604/366, 368-370, 372-387, 389-390;
2/78 C, 401; 428/332, 337

[56] References Cited

U.S. PATENT DOCUMENTS

Re. 32,649	4/1988	Branch et al.	604/368
2,295,439	9/1942	Voigtman	128/284
2,564,689	8/1951	Harwood et al.	128/290
2,587,459	2/1952	Peattie	128/290
2,731,014	1/1956	Hollingsworth	128/290
2,900,980	8/1959	Harwood	128/290
3,088,462	5/1963	Muto	128/290
3,461,872	8/1969	McConnell et al.	128/287

(List continued on next page.)

FOREIGN PATENT DOCUMENTS

0163807A1	12/1985	European Pat. Off.
0248584A2	12/1987	European Pat. Off.
0293208A1	11/1988	European Pat. Off.
0298348	1/1989	European Pat. Off.

0339461A1	11/1989	European Pat. Off.
0359301A2	3/1990	European Pat. Off.
0148835	6/1981	German Dem. Rep. _____ 2401
40-36391	12/1965	Japan
46-12554	5/1971	Japan
2168612	6/1986	United Kingdom
WO91/00719	1/1991	WIPO

OTHER PUBLICATIONS

Rubber Technology, 2nd ed., Maurice Morton, ed., 1973 pp.
518-520, 568.

Handbook of Plastics and Elastomers, Harper ed., 1975, pp.
1-3-1-4, 1-106-107 1-111-112, 3-114, 3-69, 3-70,
3-72, 3-76, 7-30, 7-35, 7-52.

Websters New International Dictionary, Unabridged, "elas-
tic", p. 824.

Grant & Hack's Chemical dictionary, "resilience", p. 503,
elastomer, p. 201.

American Society for Testing Material (ASTM), Publica-
tions D 3575-84; D 3574-86; D 1054-87; and D 4032-82.
Encyclopedia of Polymer Science and Engineering, vol. 3,
pp. 6 and 7, John Wiley and Sons, New York, New York
1985.

Technical Association of the Pulp and Paper Industry
(TAPPI), Method T 543 pm-84.

Primary Examiner—John G. Weiss

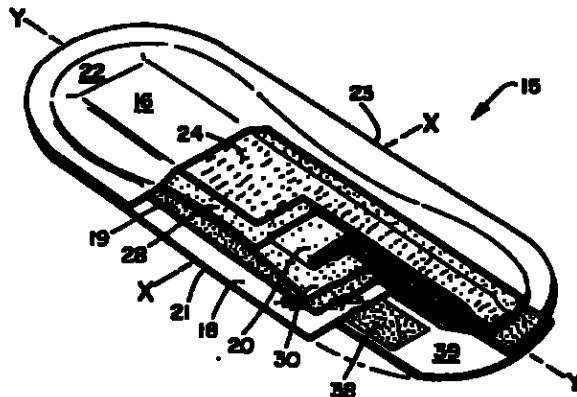
Assistant Examiner—K. M. Reichle

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[57] ABSTRACT

An absorbent article, such as a sanitary napkin, has an
absorbent and a substantially non-absorbent resilient layer
adjacent to the absorbent. The absorbent is sufficiently stiff
to resist twisting of the absorbent article during use. The
resilient layer is sufficiently resilient to resist bunching
during use. As a result, the absorbent article resists both
twisting and bunching. The absorbent article has zones
which vary in caliper, stiffness and absorbency. A central
absorbent zone is thickest in caliper, more absorbent than the
other zones and is stiffer than the other zones. An adjacent
zone is less thick in caliper, less absorbent and less stiff. A
peripheral zone, located near the outer side edges, is least
thick in caliper, least absorbent and least stiff.

24 Claims, 9 Drawing Sheets



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means may have a width of less than 2.5 inches (63.5 millimeters). Alternately, it may have a width of less than 60 percent of the total width of the body-facing side of the sanitary napkin. The sanitary napkin may have a caliper or thickness of less than about 5 millimeters (mm.).

One object of this invention is to provide an absorbent article which resists twisting and bunching during use. Another object of this invention is to provide a thin sanitary napkin which has a central longitudinal absorbent zone which is more absorbent and stiffer than adjacent zones, in combination with a resilient layer that is substantially non-absorbent. Still another object of the present invention is to provide an absorbent article that has zones that vary in caliper, stiffness and absorbency. A central absorbent zone is thickest in caliper, is more absorbent than any of the other zones and is the stiffest of any of the other zones. An adjacent zone, which is adjacent to the absorbent zone is less thick in caliper, less absorbent and less stiff. A peripheral zone, located near the outer side edges, is still less thick in caliper, less absorbent and less stiff.

The invention further includes a method for achieving improved performance in a sanitary napkin, including the steps of: providing a substantially resilient layer substantially aligned along the central, longitudinal axis of the napkin to resist bunching, providing a stiffening means substantially aligned along the central, longitudinal axis of said napkin and adapted to resist twisting of said napkin, arranging the substantially resilient layer so that its width extends across at least 60% of the total width of the body-facing surface of the napkin, and selecting for the stiffening means a material having comparatively high absorbent capacity and adapted to absorb fluid adjacent to the central, longitudinal axis of the napkin and thereby reduce flow of fluid toward the outer side edges of the napkin to reduce leakage of fluid at the outer side edges of the napkin. The method may also include the step of selecting for the substantially resilient layer a material that is substantially non-absorbent to further reduce leakage at the outer side edges of the napkin.

We have found that the combination of elements in absorbent articles of the invention described herein, such as sanitary napkins, provides products having unexpectedly good results and achieves a good balance between comfort to the user when worn, high absorbency and other good performance characteristics and reasonable cost. The products have a softness and thinness around the edges that enhance comfort. The products also resist twisting, bunching and leakage.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a first embodiment of the invention, with a portion broken away to show internal components.

FIG. 2 is a schematic illustration of a cross-sectional view of FIG. 1 along the lines X—X.

FIG. 3 is a schematic illustration of a cross-sectional view of FIG. 1 along the lines Y—Y.

FIG. 4 is a perspective view of a second embodiment of the invention.

FIG. 5 is a perspective view of a third embodiment of the invention with a portion broken away to show internal components.

FIG. 6 is a schematic illustration of a cross-sectional view of FIG. 5 along the lines X—X.

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FIG. 7 is a schematic illustration of a cross-sectional view of FIG. 5 along the lines Y—Y.

FIG. 8 is a perspective view of a fourth embodiment of the invention.

FIG. 9 is a top plan view of the third embodiment shown in FIG. 5, showing segments in the machine direction for the central absorbent zone and the adjacent zones.

FIG. 10 is also a top plan view of the third embodiment shown in FIG. 5, showing segments in the transverse direction for the central absorbent zone and the adjacent zones.

FIG. 11 is also a top plan view of the third embodiment shown in FIG. 5, showing segments in the machine direction in the central absorbent zone and in the peripheral zones.

FIG. 12 is a top plan view of the first embodiment shown in FIG. 1, showing segments in both the machine direction and the transverse direction.

FIG. 13 is a top plan view of the first embodiment shown in FIG. 1.

DETAILED DESCRIPTION

The absorbent article may be a sanitary napkin which is designed to be worn by a female to absorb body fluids such as menses, blood, urine, and other excrements, such as those discharged during a menstrual period.

First Embodiment

Referring to FIGS. 1, 2, and 3, a first embodiment of the sanitary napkin 15 is about 150 millimeter (mm.) to 320 mm. long, about 60 mm. to 120 mm. wide and has rounded ends. The sanitary napkin 15 is relatively thin and has a caliper or thickness of less than about 5 millimeters, more desirably less than about 4 millimeters, and most desirably less than about 3 millimeters. The sanitary napkin 15 has a body-facing side 16, a garment-facing side 17, a substantially liquid-impermeable backing sheet or baffle 18, a substantially nonabsorbent, resilient layer 19 and an absorbent means 20.

The resilient layer 19 is made of one or more layers of a flexible, closed cell, polyethylene foam material. An example of a foam used in this embodiment may be purchased from Sealed Air Corporation, 7110 Santa Fe Drive, Hodgkins, Ill. 60525 U.S.A. The grade specification is: "CELL-AIR®" Foam, CA-30, thickness of 1/8 inch, density of 1.2 pounds per cubic foot, width of 60 inches, on rolls having a linear length of 2000 feet. Ametek Microfoam Division, Brandwine Four Building, Routes 1 and 202, Chadds Ford, Pa. 19317 U.S.A., produces a light weight polypropylene foam that is also suitable for this embodiment. The foam is called "MICROFOAM".

The resilient layer 19 is located adjacent to and on the body-facing side of the baffle 18. The absorbent means 20 is located on the opposite side of the resilient layer 19 from the baffle 18. The absorbent means 20 is substantially aligned along the central longitudinal axis Y—Y of the sanitary napkin 15. The resilient layer 19 has a width greater than the width of the absorbent means 20. The resilient layer 19 has a length equal to, and desirably greater than, the absorbent means 20. The resilient layer 19 has a length of at least 60% of the length of the napkin 15.

The baffle 18 is designed to face the inner surface, generally the crotch portion, of an undergarment (not shown). The baffle 18 blocks the passage of body fluids and other liquids. The baffle 18 can be made from micro-embossed polymeric films such as polyethylene or polypropylene, or it can be made from bicomponent films. A preferred material is polyethylene film.

The absorbent means 20 has an overall length that extends at least about 50%, and desirably at least about 75%, of the length of the napkin 15. The absorbent means 20 has a width of less than about 2.5 inches (63.5 mm.), desirably less than about 2 inches (50.8 mm.), more desirably between about 0.5 and 2.0 inches (12.7 mm. and 50.8 mm.), and most desirably about 1.25 inches (31.8 mm.) or 1.50 inches (38.1 mm.) when measured across the central transverse axis Y—Y of the napkin 15. Desirably, the absorbent means 20 has a width which is less than about 60% of the total width of the body-facing side of the sanitary napkin 15 when measured across the narrowest portion of the napkin 15. The total width of the sanitary napkin 15 is measured along an axis, such as axis X—X in FIG. 1, transverse to the longitudinal axis Y—Y of sanitary napkin 15. The total width of the sanitary napkin 15 is the distance from one outer side edge 21 to the opposite outer side edge 23 of the body-facing side of the napkin. Desirably, the width of the napkin spans the width of the labia majora of the user. The absorbent means 20 has sufficient stiffness to enable the sanitary napkin 15 to resist twisting and "roping", as a result of its stiffness. The absorbent means 20 does not extend the full width of the sanitary napkin 15 in order to enhance comfort to the wearer. Arranging the absorbent means 20 substantially in the center, that is, in substantial alignment with the central longitudinal axis Y—Y of the sanitary napkin 15, provides the advantage of placing the absorbent means 20 close to the source of fluid.

The resilient layer 19 has sufficient resilience to resist bunching of the sanitary napkin 15. The combination of the resilient layer 19 and the absorbent means 20 resists both twisting and bunching. The resilient layer 19 is not as stiff as the absorbent means 20 and, for that reason, is arranged to be wider than the absorbent means 20. Desirably the width of the resilient layer 19 is in the range of 60% to 100% of the total width of the sanitary napkin 15.

The absorbent means 20 constitutes the significant absorbing portion of the napkin 15 and has the capability of absorbing at least about 80%, desirably about 90%, and most desirably about 95% of the body fluid deposited on the napkin 15. In terms of amount of body fluid, the absorbent means 20 can absorb at least 10 grams, desirably about 20 grams, and most desirably, about 30 grams or more of body fluid. Thus, the absorbent means 20 is both the primary absorbent and a stiffening means.

On the body-facing side 16 of the sanitary napkin 15, there is a cover layer 22 on the outside of the sanitary napkin 15. Inside the cover layer 22 and adjacent to it, there is a transfer layer 24. There is construction adhesive 26 between the transfer layer 24 and the cover layer 22. In FIGS. 2 and 3, the construction adhesive 26 is represented by a series of dots in various locations and between various layers or components in the sanitary napkin 15.

The cover layer 22 is liquid-permeable and is designed to contact the body of the wearer. It can be constructed of a woven or non-woven, natural or synthetic material which is easily penetrated by body fluid. Suitable materials include bonded carded webs of polyester, polypropylene, nylon, or other heat-bondable fibers. Other polyolefins such as copolymers of polypropylene and polyethylene, linear low-density polyethylene, finely-perforated film webs and net material also work well. A preferred material is a spunbonded polypropylene, non-apertured web which contains about 1 to 6% titanium dioxide pigment to give it a clean white appearance. A white uniform spunbonded material is desirable because the color exhibits good masking properties to hide menses which has passed through it and the material

has sufficient strength to resist being torn. U.S. Pat. Nos. 4,801,494 issued to Datta et al. and 4,908,026 issued to Sublennik et al. describe various cover materials which can be used with the sanitary napkin 15. The description in the two patents is incorporated herein by reference and made a part hereof.

The liquid-permeable cover layer 22 can also contain a plurality of apertures formed therein and the apertures can be arranged along the longitudinal center line Y—Y, if desired. The apertures will increase the rate at which body fluids can penetrate down into the absorbent means 20. The cover layer 22 may also be treated with a surfactant to make it more hydrophilic. The surfactant may include topical additions or internally applied materials such as polyalkoxenes.

The transfer layer 24 is made of an absorbent nonwoven polypropylene meltblown web which facilitates movement of body fluid downward and outward from the cover 22 to distant areas of the central absorbent means 20. In the alternative, the transfer layer 24 may be made of an absorbent nonwoven polypropylene spunbond web or other material having similar properties. Desirably, the transfer layer 24 is aligned along the central longitudinal axis Y—Y of the sanitary napkin 15 and is sized and configured to correspond to the shape and dimensions of the central absorbent means 20. Desirably also, the transfer layer 24 is slightly longer than the absorbent means 20. A description of a transfer layer is taught in U.S. Pat. No. 4,798,603 issued to Meyer et al. and assigned to the present assignee. This patent is incorporated by reference and made a part hereof.

The transfer layer 24 has a width approximately equal to the absorbent means 20. The cover layer 22 has a width approximately equal to the width of the sanitary napkin 15 and the cover layer 22 extends out to the periphery of the sanitary napkin 15. A first tissue layer 28 is located between the transfer layer 24 and the absorbent means 20. The first tissue layer 28 has a width greater than the width of the transfer layer 24 and greater than the width of the absorbent means 20. During use, menses or other body fluid first contacts the cover layer 22, then reaches the transfer layer 24, then reaches the first tissue layer 28 and then reaches the absorbent means 20.

The body-facing side of the transfer layer 24 has adhesive 26 over substantially the entire surface of the body-facing side of the transfer layer 24. The garment-facing side of the transfer layer 24 does not have adhesive over the entire surface of the garment-facing side. Instead, the garment-facing side of the transfer layer 24 has a single line of adhesive 26 in the middle of the transfer layer 24, between the transfer layer 24 and the first tissue layer 28.

The cover layer 22 has a body-facing side and a garment-facing side. The garment-facing side of the cover layer 22 has adhesive over its entire surface. As a result, there is adhesive 26 between the transfer layer 24 and the cover layer 22. In addition, there is adhesive 26 between the cover layer 22 and the first tissue layer 28. There is no adhesive between the first tissue layer 28 and the absorbent means 20.

The absorbent means 20 has a body-facing side and a garment-facing side. On the garment-facing side of the absorbent means 20, and between it and the resilient layer 19, there is a second tissue layer 30. The second tissue layer 30 has a width approximately equal to the width of the first tissue layer 28. Both tissue layers have a width which is greater than the width of the absorbent means 20 and, desirably, greater than two times the width of the absorbent means 20. There is adhesive 26 between the garment-facing side of the absorbent means 20 and the second tissue layer 30.

aligned with the vaginal opening. A peel strip 39 is releasably attached to the garment adhesive strips 36 and 38 and prevents the adhesive from becoming contaminated prior to attachment to the undergarment. The peel strip 39 can be a white Kraft paper coated on one side so that it can be released from a hot melt adhesive. The peel strip 39 is designed to be removed by the ultimate consumer just prior to placement of the sanitary napkin 15 in the undergarment.

Second Embodiment

Referring to FIG. 4, a second embodiment of the invention is a sanitary napkin 40 that has two tabs 42 and 44, one tab arranged on each side of a sanitary napkin 40. In other respects, the sanitary napkin 40 is similar to the sanitary napkin 15 illustrated in FIGS. 1, 2 and 3. The tabs 42 and 44 are intended to be folded around the undergarment of the user and to increase the attachment of the sanitary napkin 40 to the garment.

Third Embodiment

Referring to FIGS. 5, 6, and 7, a third embodiment of the sanitary napkin 50 is also about 150 mm. to 320 mm. long, about 60 mm. to 120 mm. wide. The sanitary napkin 50 is relatively thin and has a caliper or thickness of less than about 5 millimeters, more desirably less than about 4 millimeters, and most desirably less than about 3 millimeters. The sanitary napkin 50 has a body-facing side 52, a garment-facing side 54, a substantially liquid-impermeable backing sheet or baffle 56, a substantially nonabsorbent, resilient layer 58 and an absorbent means 60.

The resilient layer 58 is made of a flexible, closed cell polyethylene foam material. It is the same type of foam material as used in the first embodiment and is available from the same sources as identified for the first embodiment. The resilient layer 58 is located adjacent to the baffle 56. The absorbent means 60 is located on the opposite side of the resilient layer 58 from the baffle 56. The absorbent means 60 is substantially aligned along the central longitudinal axis Y—Y of the sanitary napkin 50. The resilient layer 58 has a width greater than the width of the absorbent means 60. The resilient layer 58 has a length equal to, and desirably greater than, the absorbent means 60. The resilient layer 58 has a length of at least 60% of the length of the napkin 50.

The baffle 56 is designed to face the inner surface, generally the crotch portion, of an undergarment (not shown). The baffle 56 permits the passage of air or vapor out of the sanitary napkin 50 while blocking the passage of body fluids and liquids. The baffle 56 can be made from micro-embossed polymeric films such as polyethylene or polypropylene, or it can be made from bicomponent films. A preferred material is polyethylene film.

The absorbent means 60 has an overall length which extends at least about 50%, and desirably at least about 75%, of the length of the napkin 15. The absorbent means 60 has a width of less than about 2.5 inches (63.5 mm.), desirably less than about 2 inches (50.8 mm.), more desirably between about 0.5 and 2.0 inches (12.7 mm. and 50.8 mm.), and most desirably about 1.25 inches (31.8 mm.) or 1.50 inches (38.1 mm.) when measured across the central transverse axis Y—Y of the napkin 50. Desirably, the absorbent means 60 has a width which is less than about 60% of the total width of the body-facing side of the sanitary napkin 50 when measured across the narrowest portion of the napkin 50. The total width of the sanitary napkin 50 is measured along an axis, such as axis X—X in FIG. 5, transverse to the longitudinal axis Y—Y of sanitary napkin 50. The total width of the sanitary napkin is the distance from one outer side edge 61 to the opposite outer side edge 63 of the body-facing side of the napkin. Desirably, the width of the

napkin spans the width of the labia majora of the user. Arranging the absorbent means 60 substantially in the center, that is, in substantial alignment with the central longitudinal axis Y—Y of the sanitary napkin 50, provides the advantage of placing the absorbent means 60 close to the source of fluid.

The absorbent means 60 has sufficient stiffness to enable the sanitary napkin 50 to resist twisting and "roping", as a result of its stiffness. The absorbent means 60 does not extend the full width of the sanitary napkin 50 in order to enhance comfort to the wearer. The resilient layer 58 has sufficient resilience to resist bunching of the sanitary napkin 50. The combination of the resilient layer 58 and the absorbent means 60 resists both twisting and bunching. The resilient layer 58 is not as stiff as the absorbent means 60 and, for that reason, is arranged to be wider than the absorbent means 60. Desirably the width of the resilient layer 58 is in the range of 60% to 100% of the total width of the sanitary napkin 50.

The absorbent means 60 constitutes the significant absorbing portion of the napkin 50 and has the capability of absorbing at least about 80%, preferably about 90%, and most preferably about 95% of the body fluid deposited on the napkin 50. In terms of amount of body fluid, the absorbent means 60 can absorb at least 10 grams, desirably about 20 grams, and most desirably, about 30 grams or more of body fluid. Thus, the absorbent means 60 is both the primary absorbent and a stiffening means.

On the body-facing side 52 of the sanitary napkin 50, there is a bicomponent cover 62 on the outside of the sanitary napkin 50. Under the cover 62 and adjacent to the cover 62, there is a transfer layer 66. There is no construction adhesive between the transfer layer 66 and the cover 62. In FIGS. 6 and 7, the construction adhesive 65 is represented by a series of dots in various locations and between various layers or components in the sanitary napkin 50.

The bicomponent cover 62 is similar to a bicomponent cover described in U.S. patent application Ser. No. 731,583, now U.S. Pat. No. 5,415,640 filed in the name of Robert E. Kirby et al., entitled "A Bodyside Cover for an Absorbent Article" and assigned to the same assignee as this Patent Application. The bicomponent cover 62 is constructed of two different and distinct materials. The first material 67 of the cover 62 desirably contains a plurality of apertures formed therethrough, while the second material 69 of the cover 62 is desirably nonapertured. The first material 67 is positioned along the central longitudinal axis Y—Y of the sanitary napkin 50 and constitutes the primary fluid-receiving region of the bicomponent cover 62. The sanitary napkin 50 is positioned such that discharge of body fluid from the vaginal orifice is in direct alignment with the upper surface of the first material 67.

In FIG. 6, the second material 69 overlaps a portion of the longitudinal side edges of the first material 67 and is bonded along the side edges by a line of adhesive 65. The second material 69 can be bonded to the first material 67 by a mechanical attachment, an adhesive, an ultrasonic bond, a thermal bond, a pressure bond or a combination of both heat and pressure. Other means of attaching the two materials together can also be used. It should be noted that the first material 67 can be bonded to the second material 69 before the apertures are formed in the first material 67 or vice versa. The bicomponent cover 62 can be constructed off-line and then assembled into the sanitary napkin 50, or it can be constructed in-line.

The second material 69 is secured to the first material 67 and forms a secondary fluid-receiving region of the bicomponent cover 62.

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

RADICACIÓN: 1-97691

EDICTO No. 9400

**LA SECRETARÍA GENERAL AD-HOC
HACE SABER:**

Que esta Superintendencia profirió Resolución No. 14288 de 31-MAY-2006. Que el contenido de la parte resolutive es como sigue: El Superintendente de Industria y Comercio.

RESUELVE

ARTICULO PRIMERO: Negar el privilegio de patente de invención para la solicitud correspondiente a "TOALLA FEMENINA PARA NIÑAS".

ARTICULO SEGUNDO: Notificar personalmente el contenido de la presente resolución a los doctores Darío Cárdenas Navas, o a quien haga sus veces, en su calidad de apoderado del Grupo P.I. Mabe, S.A. de C.V., y Mauricio Jaramillo Campuzano, en su calidad de apoderado de la sociedad opositora Productos Familia S.A., entregándoles copia de la misma, advirtiéndoles que contra ella procede el recurso de reposición interpuesto ante el Superintendente de Industria y Comercio, al momento de la notificación o dentro de los 5 días hábiles siguientes a ella.

NOTIFÍQUESE Y CUMPLASE

Dada en Bogotá, D.C., a los **31 MAY 2006**

LA SUPERINTENDENTE DE INDUSTRIA Y COMERCIO (E),



MARIA TERESA PINEDA BUENAVENTURA

Para notificar a los interesados, se fija el presente EDICTO en lugar visible al público en la SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO, por el término de (10) diez días hábiles contados a partir de las 8:30 a.m. de hoy.

Secretaría General Ad-Hoc 20-JUN-2006 Este edicto se desfiló hoy 05-JUL-2006 a las cinco (5:00 p.m.)
Secretaría General Ad-Hoc
EDICTO No. 9400