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Referencia : Expediente No. 00.097.175
Solicitante : CANNON RUBBER LIMITED.
Asunto : Solicitud de patente para:
"PROTECTOR PARA LOS PECHOS"
Fecha de solicitud : 21 de diciembre de 2000

TRAMITE 002 EVENTO 001 ACTUACION 329

1. Yo, Emilio FERRERO, obrando como apoderado de la solicitante en el asunto de la referencia, atentamente, presento con este escrito la copia certificada de la solicitud de patente de Gran Bretaña No. 9930501.3 del 23 de diciembre de 1999, junto con la respectiva traducción de su carátula y reivindicaciones de la cual se reclama prioridad en esta solicitud de patente.

2. Ruego a la Señora Jefe se sirva aceptar este escrito con sus anexos, y se continúe con el trámite de la solicitud.

Bogotá, 15 FEB. 2001
Señora Jefe,


EMILIO FERRERO
T.P.A. No. 31.929

COLO 10870-801-001-3
JJC-ID-30



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Columbia



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INVESTOR IN PEOPLE

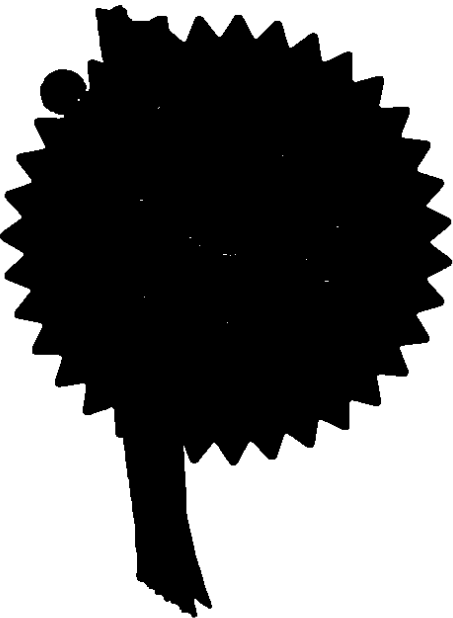
The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

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Signed

Dated 12 December 2008

An Executive Agency of the Department of Trade and Industry

Patents Form 1/77

Patents Act 1977
(Rule 16)



The
Patent
Office

Request for grant of a patent

2025009 5501704-1 2025004
1/77/0 0.00-6210501.3

1/77

The Patent Office

Cardiff Road
Newport
Gwent NP9 1RH

1. Your reference 02 34938

2. Patent application number 9930501.3 23 DEC 1999

3. Full name, address and post code of the or each applicant
Cannon Rubber Limited
Cannon Works
Ashley Road
Tottenham, London N17 9LH

Patents ADP number 7500176001

If the applicant is a corporate body, give the country/state of its incorporation UK

4. Title of the invention BREAST SHIELD

5. Name of your agent VENNER, SHIPLEY & CO

"Address for service" in the United Kingdom to which all correspondence should be sent
20 LITTLE BRITAIN
LONDON
EC1A 7DH

Patents ADP 1669004 ✓

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or each of these earlier applications and the or each application number	Country	Priority application number	Date of filing
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7. If this application is divided or otherwise derived from an earlier UK application, give the number and filing date of the earlier application	Number of earlier application	Date of Filing
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8. Is a statement of inventorship and of right to grant of a patent required in support of this request? YES

Patents Form 1/77

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form

Description 7

Claim(s) 3

Abstract 1

Drawing(s) 3 + 3 *16*

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10. If you are also filing any of the following state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (*Patents Form 7/77*)

Request for preliminary examination and search (*Patents Form 9/77*) 1

Request for substantive examination (*Patents Form 10/77*)

Any other documents

-
11. I/We request the grant of a patent on the basis of this application.

Signature

Date

Verner, Shipley + Co.

23 December 1999

-
12. Name and daytime telephone number of person to contact in the United Kingdom

JOHN WOODWARD
0171-600 4212

BREAST SHIELD

This invention relates to a breast shield and more particularly to a shield comprising a flexible membrane stretched over a rigid shell which is capable of collecting lactated milk from a woman's breast. When women are breast feeding, milk often leaks from their breasts between feeds and soaks into their brassiere which is not only unhygienic but it tends to cause their nipples to become cracked and sore as the damp cloth rubs against them.

10

One way of overcoming this problem is for the woman to insert a soft breast pad into her brassiere to absorb any leaked milk but this can quickly become saturated with milk thereby causing further irritation and soreness of the nipple.

15

One prior art solution to overcome this problem is disclosed in US Patent No. 5,032,103 which describes and illustrates a breast shield which comprises a rigid open topped dome-shaped shell with an elastic member which extends across said open top. The elastic member has an opening through which the breast nipple extends into the interior of the shell. The elastic serves as a base or mount for the shell which resiliently spaces the shell from contacting the nipple. As a result, any milk lactating from the nipple can be collected in the shell and kept away from it and also the end of the nipple cannot contact the shell or the woman's clothes. A further feature of the breast shield disclosed in this patent is that it is additionally designed to aid in re-inverting an inverted nipple. To do this, the membrane needs to apply a considerable resilient pressure to the breast to press the nipple out of the breast and into the

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25

shell. This is achieved by making the membrane planar but it has the disadvantage that the part of the membrane around the central hole which receives the nipple is pressed very firmly into contact with the breast when the shell is inserted in the woman's brassiere. As a result of
5 this firm contact, the breast tends to perspire which can cause irritation and become uncomfortable. It is therefore an object of the present invention to provide a breast shield which is more comfortable to wear and applies less pressure to the woman's breast in use.

10 According to the invention therefore there is provided a breast shield for use by a lactating woman comprising a cup-shaped shell having an upper perimeter, an elastic membrane releasably attached to the upper perimeter and stretched across the open end of the shell, the membrane having a contoured central section deformed out of the main plane of
15 the membrane and terminating in an aperture shaped to receive the woman's nipple, said aperture being spaced from the bottom of the cup-shaped shell by a distance such that the end of the woman's nipple cannot contact the shell when inserted in the aperture.

20 In the preferred embodiment, the whole of the elastic membrane which contacts the woman's breast is generally frusto-conical in cross section so that its shape is substantially the same as that of the woman's breast and therefore it applies only a slight resilient pressure thereto when the shield is in position in her brassiere. This makes the membrane much
25 more comfortable to wear.

Preferably a plurality of protuberances are provided around the central aperture to space the membrane from the woman's breast when her

nipple is inserted therein. These protuberances serve to provide an air space between the membrane and the woman's breast which allows air to circulate to discourage perspiration developing at the interface between the woman's breast and the elastic membrane which can cause
5 discomfort.

Preferably the membrane has an inner and outer surface and each protuberance is a moulded projection extending in a direction out of the plane of the membrane away from the inner surface thereof, each
10 protuberance being petal shaped and having a major and minor axis, the major axis of each petal lying on a radius extending from the centre of the aperture. Conveniently, six protuberances are provided around the central hole which are circumferentially equidistantly spaced from each other. Any number of protuberances can however be used and they can
15 be of any shape provided that they space the woman's breast from the outer surface of the membrane. Preferably, each protuberance is hollow but it can be solid if desired.

Preferably the flexible membrane is moulded from silicone but other
20 flexible resilient material such as natural or synthetic rubber can be used.

The periphery of the membrane preferably has a lip formed thereon which cooperates with the periphery of the open ended shell to attach the membrane thereto.

25 In the preferred embodiment a flange extends laterally outwardly from the periphery of the open ended shell, the lip cooperating with said laterally extending flange to attach the membrane thereto.

5
Preferably the perimeter of the shell is curved along its length to adapt the annular point of contact of the shell to the shape of the woman's breast. In the preferred embodiment, the shell perimeter has a pair of
5 diametrically opposed curved recesses along its opposite sides to provide a curved split line.

Conveniently, at least one ventilation hole is provided in the top region of the shell.

10

In the preferred embodiment, an indentation is also provided in the periphery of the shell to provide a pouring spout opposite the or each ventilation hole. Conveniently, support means are provided on the outside surface at the bottom of the shell so that the shell can stand
15 freely on a flat surface without any milk collected in the shell spilling therefrom.

A preferred embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

20

Figure 1 is a front view of the shell which forms part of the breast shield of the invention;

Figure 2 is a side view of the shell shown in Figure 1;

Figure 3 is a side view of the shell shown in Figures 1 and 2 but resting
25 on a plane support surface;

Figure 4 is a front view of the elastic membrane which fits on the shell shown in Figures 1-3;

Figure 5 is a side view of the membrane shown in Figure 4;

Figure 6 is a perspective view of the assembled breast shell; and
Figure 7 is a cross section of the breast shield of the invention in use on
a woman's breast.

5 Referring now to the drawings and particularly Figures 1-3, there is
shown a cup-shaped shell 1 which is preferably moulded from a rigid
plastics material. The shell 1 is cup-shaped and has a lateral outwardly
extending flange 2 extending from its upper periphery. One or more
ventilation holes 3 (five are illustrated) are moulded into the top of the
10 shell and a pouring indentation or spout 5 is moulded into the shell
periphery opposite said ventilation holes and partly intrudes into the
laterally extending flange 2. Each opposite side of the flange 2 has a
curved depression 6 formed therein to provide a curved split line for the
shell so that it more closely fits the contours of the woman's breast and
15 is therefore a better fit thereon and more comfortable to wear. A pair of
supports or feet 4 are moulded on the front face of the shell 1.

Referring now to Figures 4 and 5, there is shown a resilient elastic
membrane 10, preferably moulded from silicone rubber, which is circular
20 in shape and has a lip 11 around its periphery with a rebate 12 formed
therein. A central hole 14 is provided in the membrane 10 and the
whole of the section 14A of the membrane is contoured (preferably
frusto-conical in shape) between the annular lip 11 and the central hole
14 to receive the woman's breast although this is not essential. The
25 membrane has an inner surface 20A and an outer surface 20B.

A plurality of hollow moulded protuberances 15 are circumferentially
arranged around the central hole 14 and equidistantly spaced from each

other, each protuberance preferably being petal shaped as illustrated having a major axis and a minor axis. In the illustrated embodiment, the major axes of a pair of opposed petals are diametrically aligned with each other there being six petals arranged around the central hole 14. Any
5 number of petals can however be used. Each petal protrudes inwardly away from the inner surface 20A of the membrane 10 as can be more clearly seen in Figure 5.

The membrane 10 is attached to the rigid shell 1 by fitting the lip 11
10 over the laterally extending flange 2 thereon. The size of the shell 1 is designed to receive a substantial portion of the woman's breast and is intended to centralise about her nipple and areola when inserted within the cup of a nursing brassiere.

15 Referring now to Figure 6, the breast shield of the invention can be seen in position on a woman's breast 9 with her nipple 7 protruding through the central opening 14 in the elastic membrane 10. The petals 15 contact the part of the breast around the areola and providing air pockets 16 therebetween to increase air circulation and stop perspiration and
20 moisture developing which can cause irritation. It will be noted that the shell 1 is spaced from the end of the nipple 7 so it cannot rub against it. Any milk leaking from the nipple is collected at 8 in the bottom of the shell between the membrane 10 and the shell itself. Air circulation within the shell is achieved through the vent holes 3.

25

Referring now to Figure 3, it can be seen that the supports or feet 4 allow the shell 1 to be free-standing on a flat surface with the milk 8 level maintained below the vent holes 3 so it cannot leak out. This

collected milk 8 can be poured from the shell 1 using the pour spout 5 but should not be used for feeding as this is unhygienic. The main purpose of collecting it in the shell is to keep it away from the end of the nipple to prevent the nipple from becoming cracked and sore.

Claims

1. A breast shield for fitting to the breast of a lactating woman comprising a cup-shaped shell having an upper perimeter, an elastic
5 membrane releasably attached to said perimeter and stretched across the open end of the shell, the membrane having a contoured central section deformed out of the main plane of the membrane which terminates in an aperture shaped to receive the woman's nipple, said aperture being
10 spaced from the bottom of the cup-shaped shell by a distance such that the end of the woman's nipple cannot contact the shell when inserted in the aperture.
2. A breast shield as claimed in claim 1 wherein the portion of the elastic membrane which contacts the woman's breast is generally frusto-
15 conical in cross section.
3. A breast shield as claimed in claim 1 or claim 2 wherein a plurality of protuberances are provided around the central hole to space the membrane from the woman's breast when her nipple is inserted therein.
20
4. A breast shield as claimed in claim 3 wherein the membrane has an inner and outer surface and each protuberance is a moulded projection extending in a direction out of the plane of the membrane away from the inner surface thereof.
25
5. A breast shield as claimed in claim 4 wherein in each protuberance is petal shaped with a major and minor axis, the major axis of each petal lying on a radius extending from the centre of the aperture.

6. A breast shield as claimed in any of claims 3-5 wherein six protuberances are circumferentially positioned around the central hole and equidistantly spaced from each other.

5

7. A breast shield as claimed in any preceding claim wherein the flexible member is moulded from silicone rubber.

8. A breast shield as claimed in any preceding claim wherein a lip is formed around the periphery of the membrane which cooperates with the periphery of the open ended shell to attach the membrane thereto.

9. A breast shield as claimed in any preceding claim wherein the shell is moulded from a rigid plastics material.

15

10. A breast shield as claimed in claim 9 wherein a flange extends laterally outwardly from the periphery of the open ended shell.

11. A breast shield as claimed in any preceding claim wherein the perimeter of the shell is curved along its length to adapt the annular point of contact of the shell to the shape of the wearer's breast.

12. A breast shield as claimed in claim 11 wherein the shell perimeter has a pair of diametrically curved recesses on its opposite sides to provide a curved split line.

25

13. A breast shield as claimed in any of claims 9-12 wherein at least one ventilation hole is provided in the top region of the shell.

14. A breast shield as claimed in claim 13 wherein an indentation is provided in the periphery of the shell to provide a pouring spout opposite the or each ventilation hole.

15. A breast shield as claimed in any preceding claim wherein support means are provided on the outside surface at the bottom of the shell at a location so that the shell can be free-standing on a flat surface.

16. A breast shield substantially as herein described with reference to the accompanying drawings.

17. A breast shell substantially as herein described with reference to Figures 1-3 and 6 of the accompanying drawings.

18. A membrane for fitting to a breast shell substantially as herein described and illustrated in Figures 4, 5 and 6.

Abstract

A breast shield comprising a rigid cup-shaped shell (1) with an elastic membrane (10) stretched across its open end having a central hole (4) therein
5 to receive a woman's nipple (7). The section of the membrane (20) around the central hole (14) is preferably frusto-conical for increased comfort and has spacers (15) moulded thereon around the hole to space the membrane (10) from the woman's breast (9) for increased air circulation. The central hole (14) spaces the end of the woman's nipple (7) from the inside of the shell (1)
10 to protect the lactating woman's nipple (7) from irritation from her clothing on the shell (1).

(Figure 6)

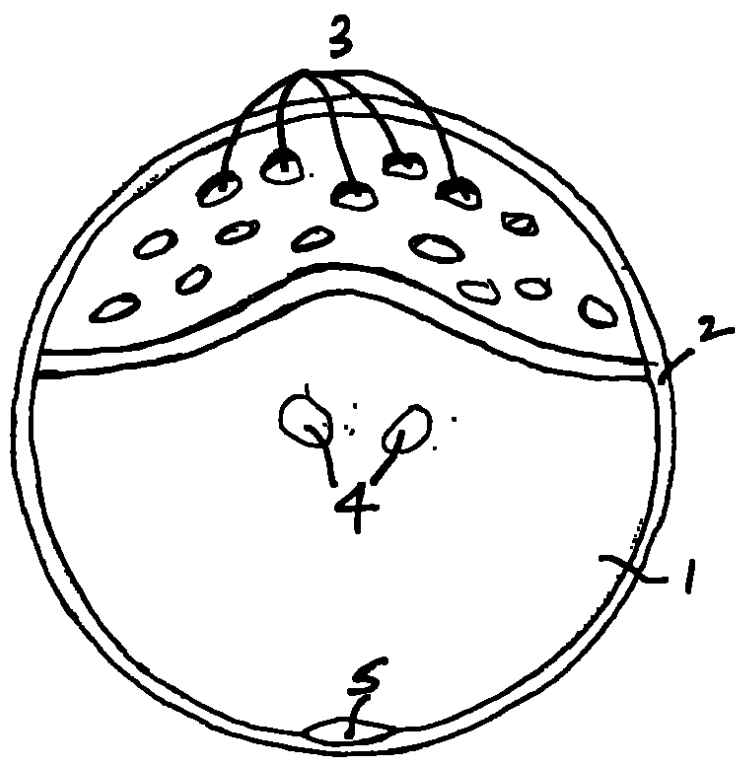


FIG 1

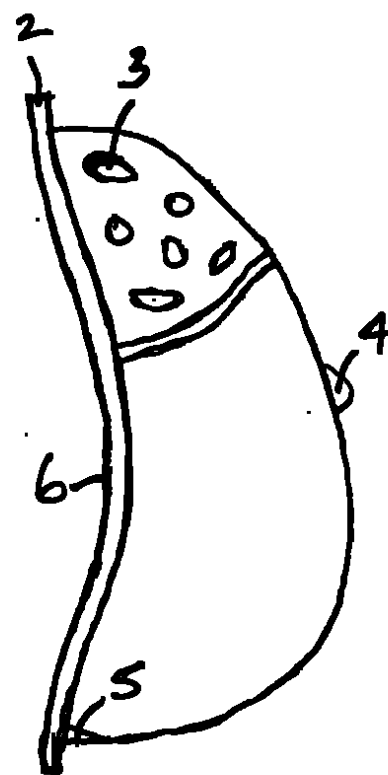


FIG 2

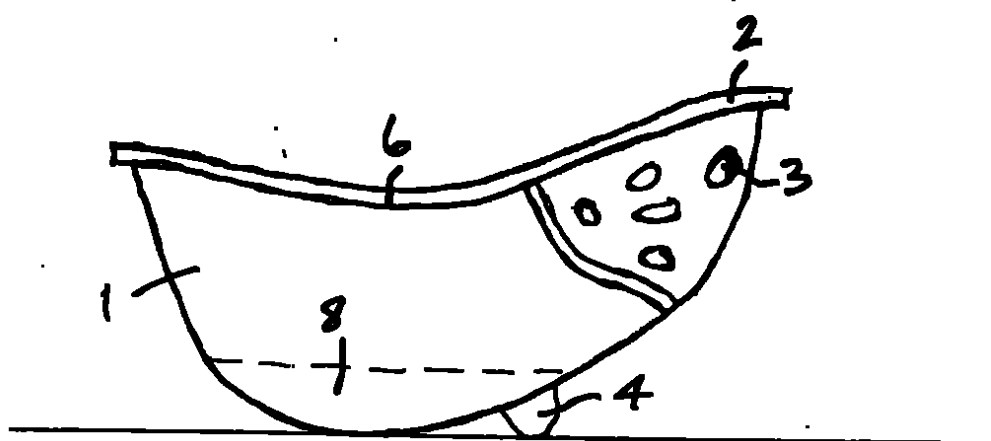


FIG 3

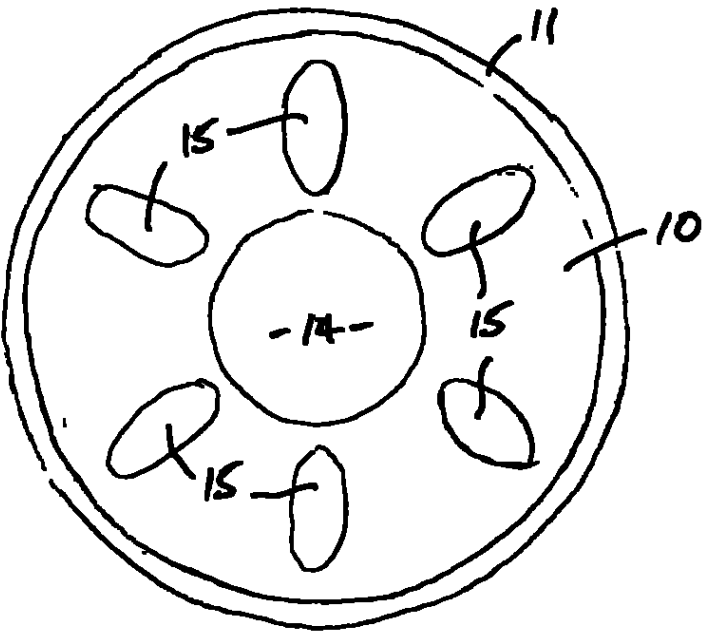


FIG 4

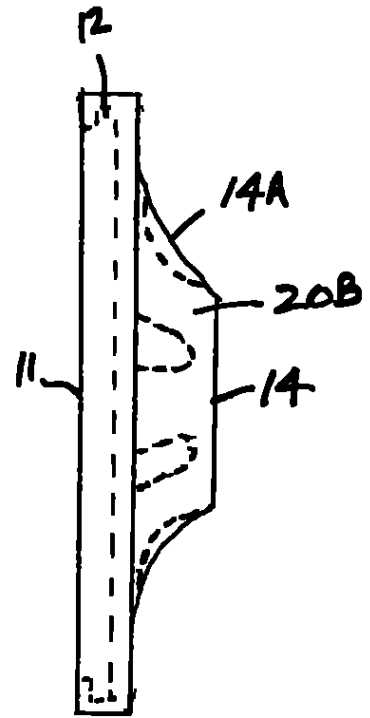


FIG 5

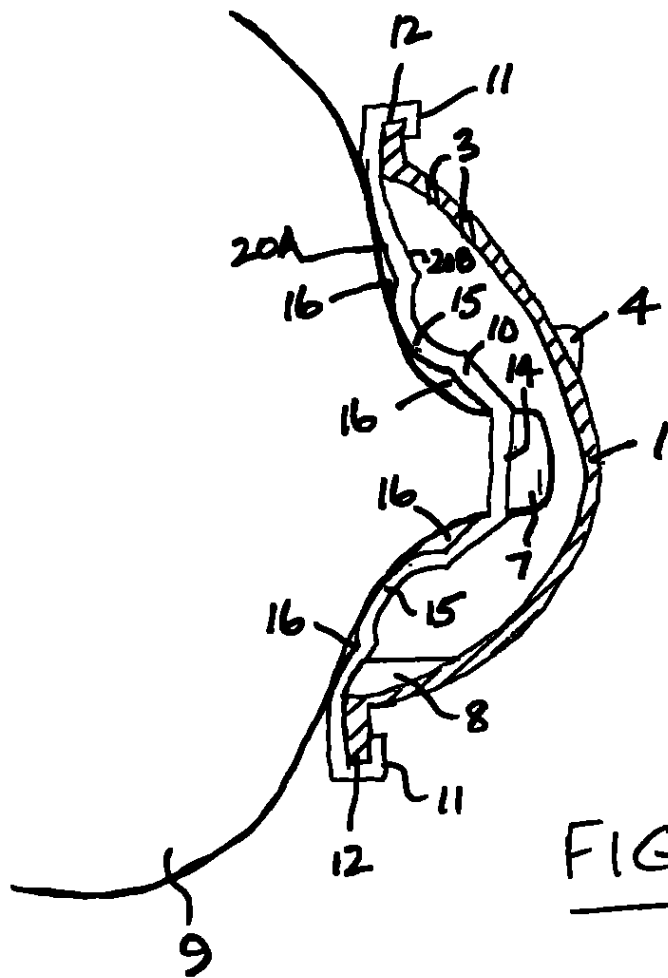


FIG 7

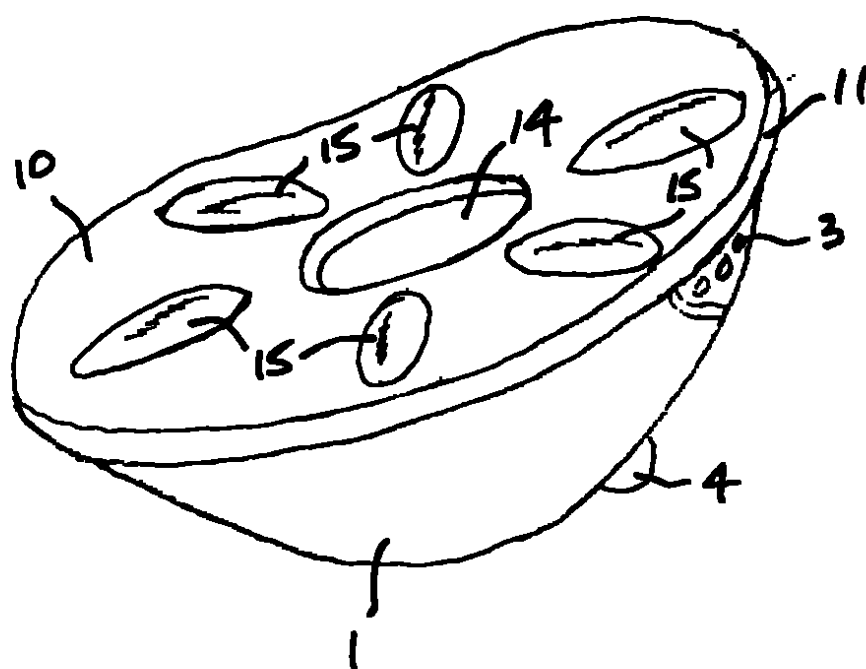


FIG 6

TRADUCCION: Se traduce la carátula y las reivindicaciones anexas a una copia de la solicitud de patente inglesa No. 9930501.3 escrita en inglés para el invento denominado: **PROTECTOR PARA LOS PECHOS.**

La Oficina de Patentes de
Inglaterra Oficina de Patentes
Concepto House Cardiff
Road Newport South
Wales NP10 8QQ

Yo, el abajo firmante, estando debidamente autorizado y de conformidad con la sección 74(1) y (4) del Acta de regulación y Contratación Externa 1994, para firmar y expedir certificados en nombre del Contralor General, certifico por el presente, que el documento anexo a este es una copia fiel de los documentos que se presentaron originalmente en relación con la solicitud de la Patente identificada aquí. De acuerdo con la Reglamentación de Patentes de 1982, (Doble registro de Compañías), si una compañía mencionada en este certificado y cualquier documento que lo acompañe, ha registrado bajo el Acta de Sociedades de 1980 con el mismo nombre con el que fue registrada inmediatamente antes del doble registro, salvo para la substitución o la inclusión, la última parte del nombre, las palabras "compañía pública limitada" o sus equivalentes en Galés, se refieren al nombre de la compañía en este certificado y todo documento que lo acompañe deberá ser tratados como referencias al nombre con el cual fue registrado así dos veces.

De acuerdo con el Reglamento, las palabras, "compañía pública limitada" pueden reemplazarse por c.p.l., cpl, C.P.L., o PLC.

El doble registro bajo el Acta de Compañías no constituye una entidad legal nueva, sino simplemente somete la compañía a algunos reglamentos legales adicionales de la compañía.

Firmado : (Ilegible)

Fechado: 12 de diciembre de 2000

Agencia Administrativa del Departamento de Comercio e Industria

REIVINDICACIONES

1. Un protector de pecho para ajustarse al pecho de una mujer lactante que comprende una concha en forma de copa que tiene un perímetro superior, una membrana elástica sujeta de manera liberable a dicho perímetro y estirada a través del extremo abierto de la concha, la membrana tiene una sección central contorneada deformada por el plano principal de la membrana que termina en una abertura formada para recibir el pezón de la mujer, dicha abertura está espaciada a partir del fondo de la concha en forma de copa en una distancia tal que el extremo del pezón de la mujer no puede estar en contacto con la concha cuando está insertado en la abertura.
2. Un protector de pecho según la reivindicación 1 en donde la porción de la membrana elástica que está en contacto con el pecho de la mujer generalmente tiene una sección transversal frustocónica.

3. El protector de pecho según la reivindicación 1 o la reivindicación 2 en donde una pluralidad de protuberancias se han suministrado alrededor del agujero central para dar espacio a la membrana desde el pecho de la mujer cuando su pezón ha sido insertado allí.
4. El protector de pecho según la reivindicación 3, en donde la membrana tiene una superficie interior y una exterior y cada protuberancia es una proyección moldeada que se extiende en una dirección hacia fuera del plano de la membrana lejos de la superficie interior de la misma.
5. El protector de pecho según la reivindicación 4 en donde cada protuberancia tiene una forma de pétalo con un eje mayor y un eje menor, el eje mayor de cada pétalo descansa en un radio que se extiende desde el centro de la abertura.
6. Un protector de pecho según una cualquiera de las reivindicaciones 3 a 5 en donde seis protuberancias son posicionadas circunferencialmente alrededor del agujero

central y espaciada equidistantemente una de otra.

7. Un protector de pecho según se reivindicó en cualquiera de las reivindicaciones precedentes en donde el miembro flexible está moldeado a partir de caucho de sílica.
8. Un protector de pecho según se reivindicó en cualquiera de las reivindicaciones precedentes en donde un labio se ha formado alrededor de la periferia de la membrana el cual coopera con la periferia de la concha de extremo abierto para sujetar la membrana a ella.
9. Un protector de pecho según se reivindicó en cualquiera de las reivindicaciones precedentes en donde la concha es moldeada a partir de un material plástico rígido.
10. Un protector de pecho según la reivindicación 9 en donde el reborde se extiende lateralmente hacia fuera desde la periferia de la concha con extremo abierto.

11.El protector de pecho según se reivindicó en una cualquiera de las reivindicaciones precedentes en donde el perímetro de la concha es curvado a lo largo de su longitud para adaptar el punto anular de contacto de al concha a la forma del pecho del usuario.

12.El protector de pecho según la reivindicación 11 en donde el perímetro de la concha tiene un par de recesos curvados diametralmente sobre los lados opuestos para suministrar una línea de partición curvada.

13.El protector de pecho según una cualquiera de las reivindicaciones 9 a 12 en donde por lo menos un agujero de ventilación se ha suministrado sobre la región superior de la concha.

14.Un protector de pecho según la reivindicación 13 en donde una indentación se ha suministrado en el perímetro de la concha para suministrar una boquilla de vertedero opuesta o en cada agujero de ventilación.

15. Un protector de pecho según se reivindicó en cualquiera de las reivindicaciones precedentes en donde medios de soporte se han suministrado sobre la superficie exterior del fondo de la concha en una localización tal que la concha puede soportarse libremente sobre una superficie plana.

16. Un protector de pecho sustancialmente descrito aquí con referencia a los dibujos adjuntos.

17. Una concha para pecho sustancialmente como se describió aquí con referencia a las figuras 1 a 3 y 6 de los dibujos adjuntos.

18. Una membrana para ajuste de una concha de pecho sustancialmente según se describió aquí y se ilustró en las figuras 4, 5 y 6.