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GB 2485550 A **FR 002896969 A1**
US 20050028286 A1

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(58) Field of Search:
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 Other: **WPI, EPODOC, Patent Fulltext, INTERNET**

(54) Title of the Invention: **An infant changing aid**
 Abstract Title: **Infant changing aid with baby supports and suspended locator**

(57) An infant dressing table 99 comprising a child receiving mat 2 and a stand (22, figure 3). The mat has head and foot ends 8A, 8B and upper and lower faces. The mat is movable between a first position, where the base 22 and platform 2 are substantially parallel, and a second position, where the mat is supported by the stand with its head end elevated to provide an inclined surface for the baby. One or more supports 4 extend from the upper face of the mat to support the infant and stop the infant moving towards the foot end. A frame 3 extends above the upper face of the mat and includes one or more suspended locator (94, figure 9) for receiving and supporting part of the infant during changing. The supports 4 may be laterally displaceable. The frame 3 may be an arch pivoted to the mat. The suspended locator 94 may be a sling of material or an adjustable ring.

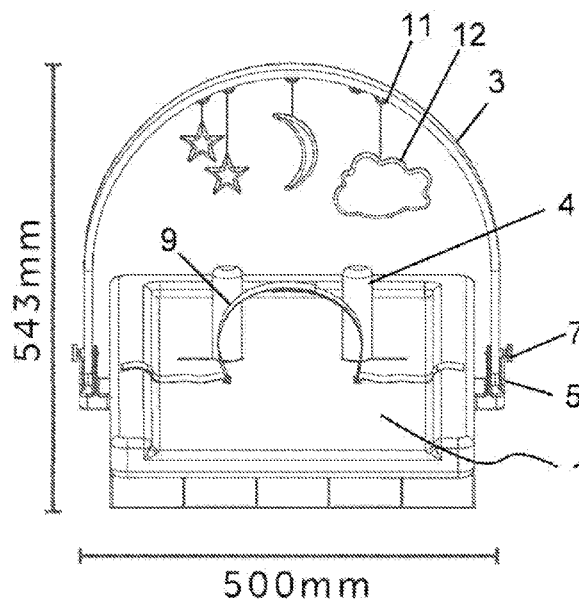


FIG. 5

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13 02 23

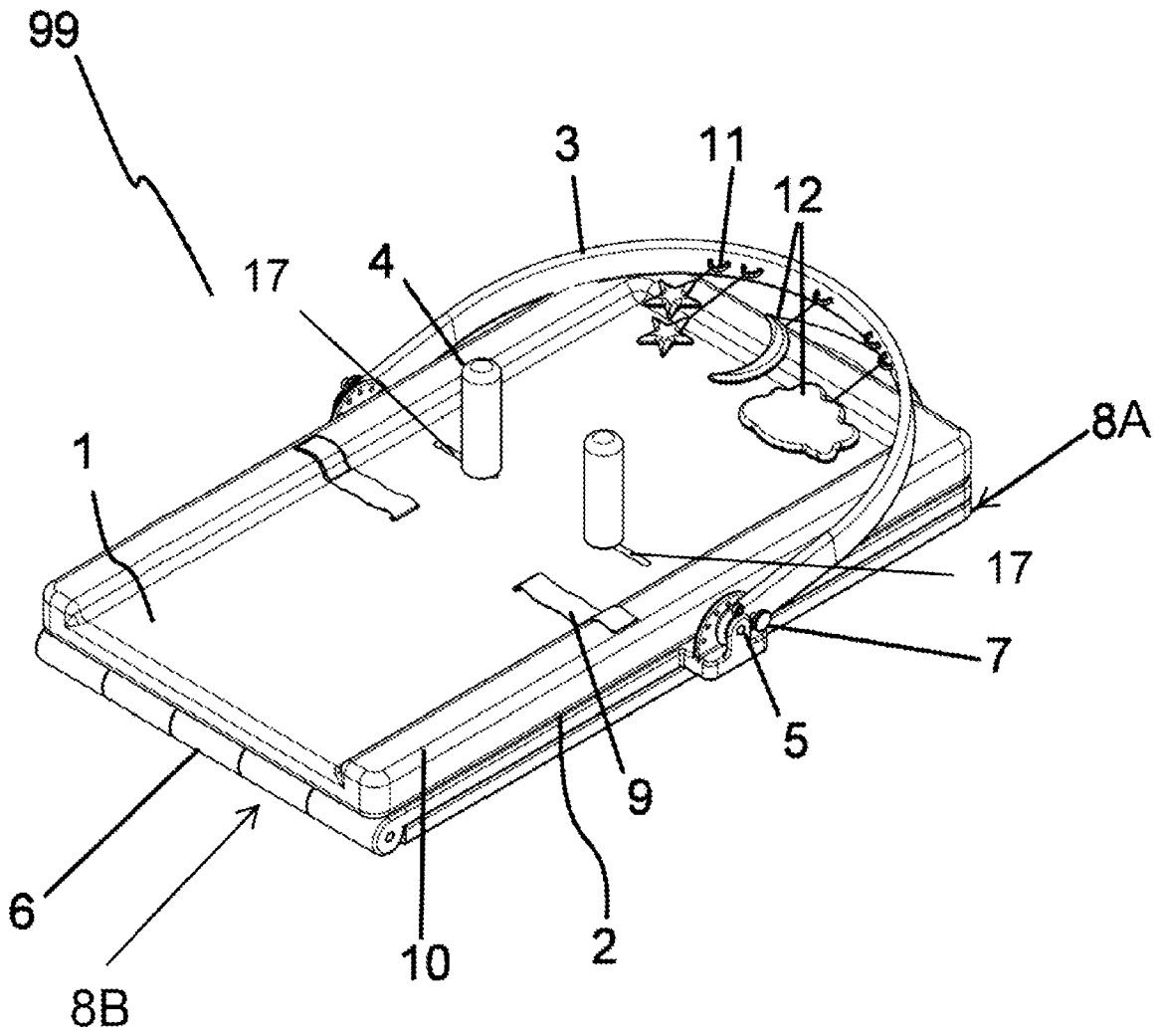


FIG. 1

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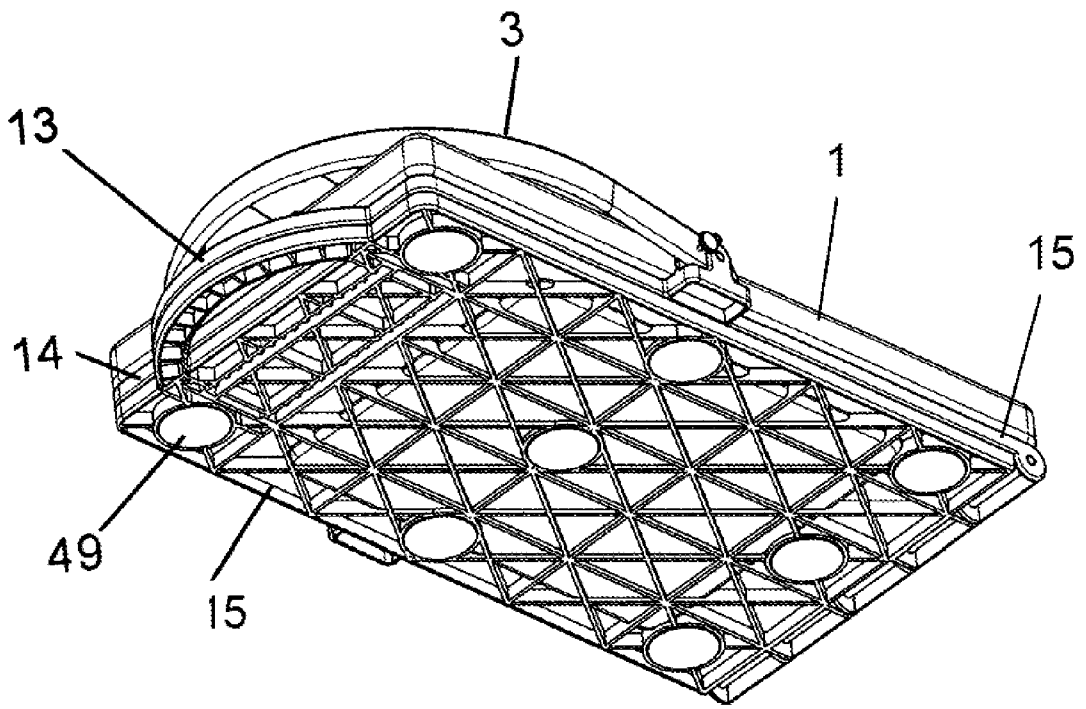


FIG. 2

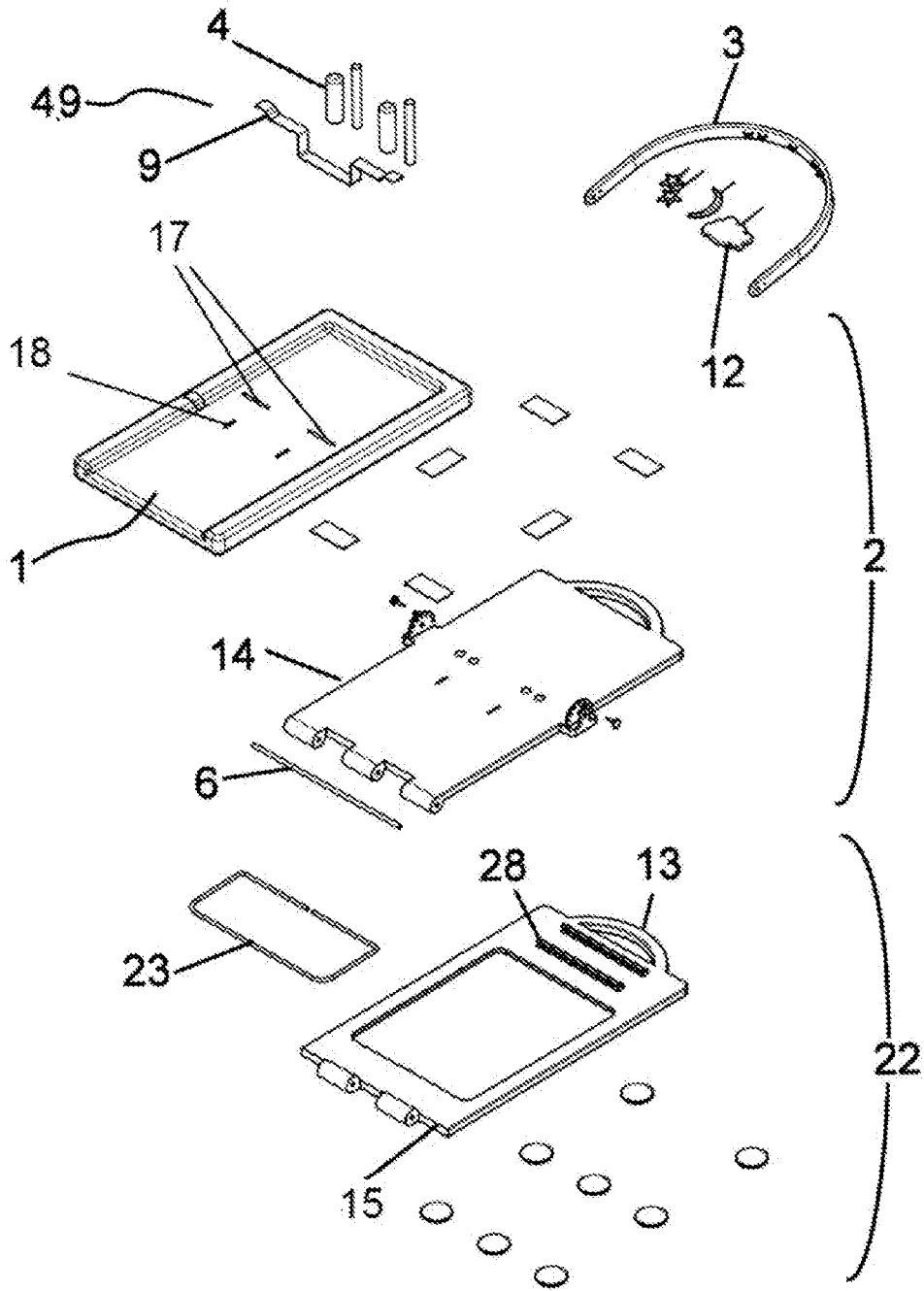


FIG. 3

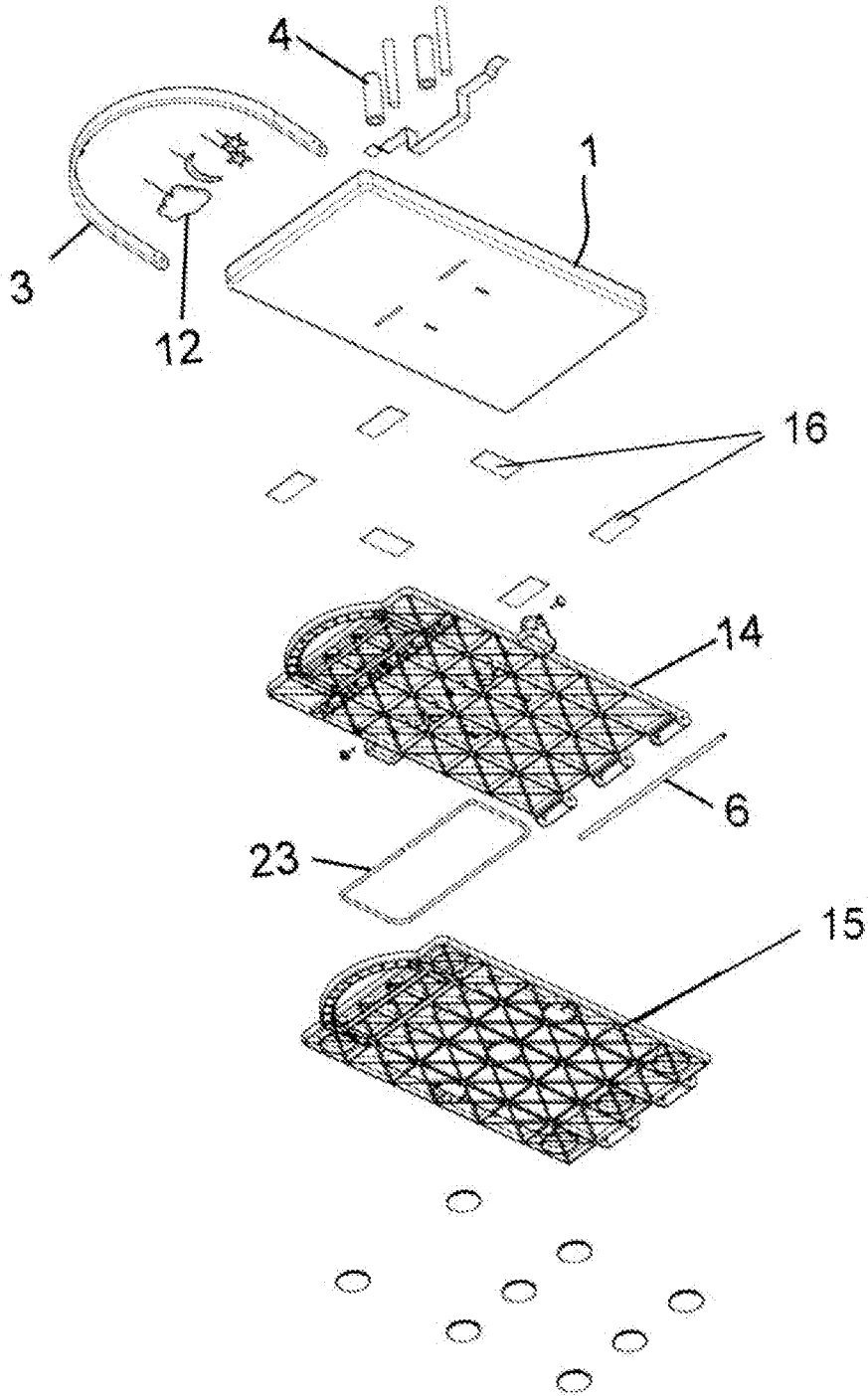


FIG. 4

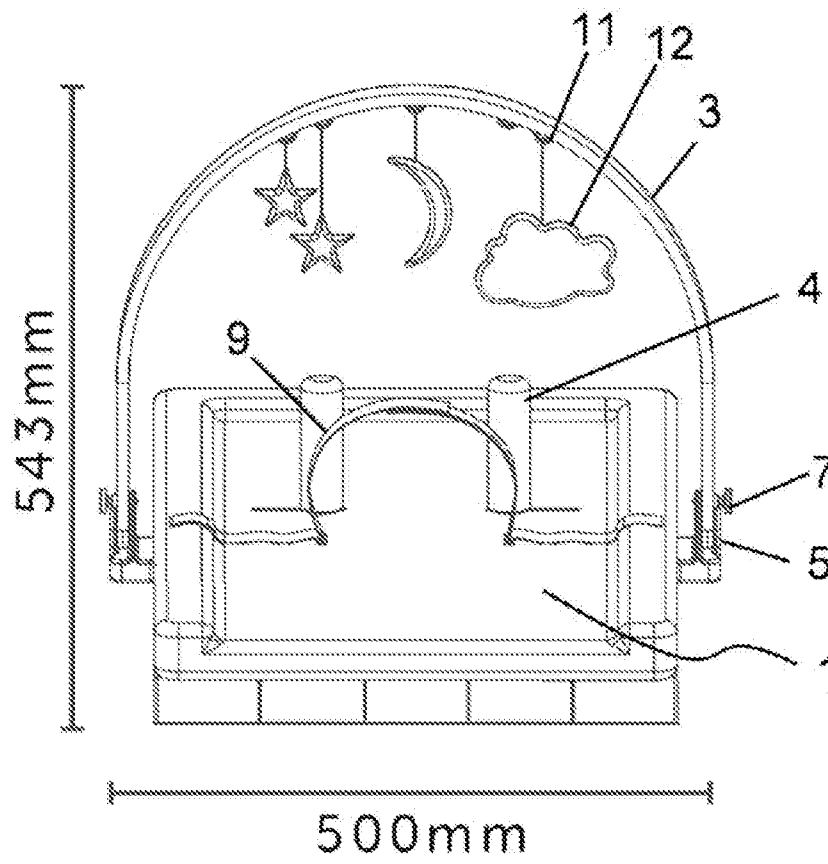


FIG. 5

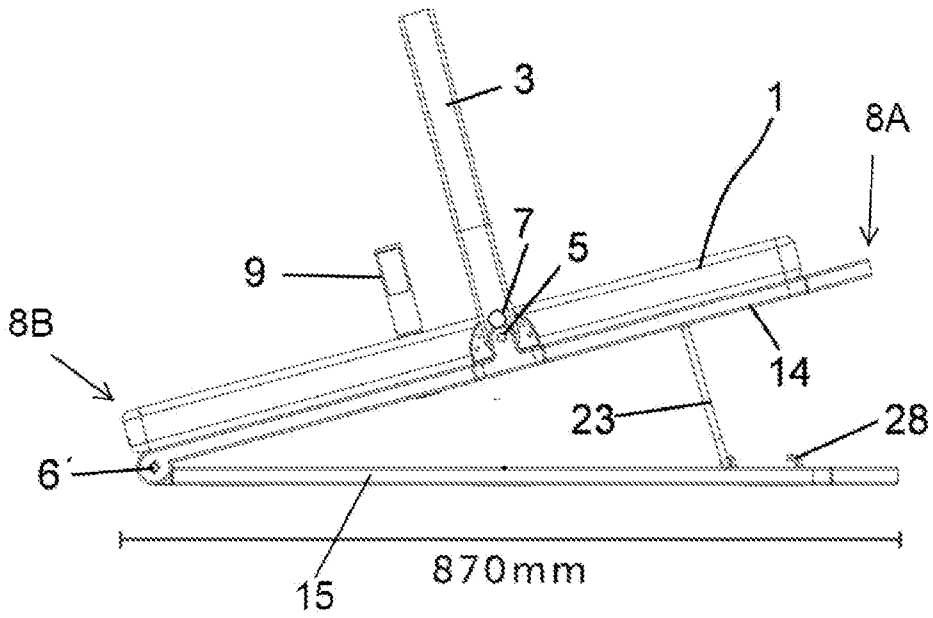


FIG. 6

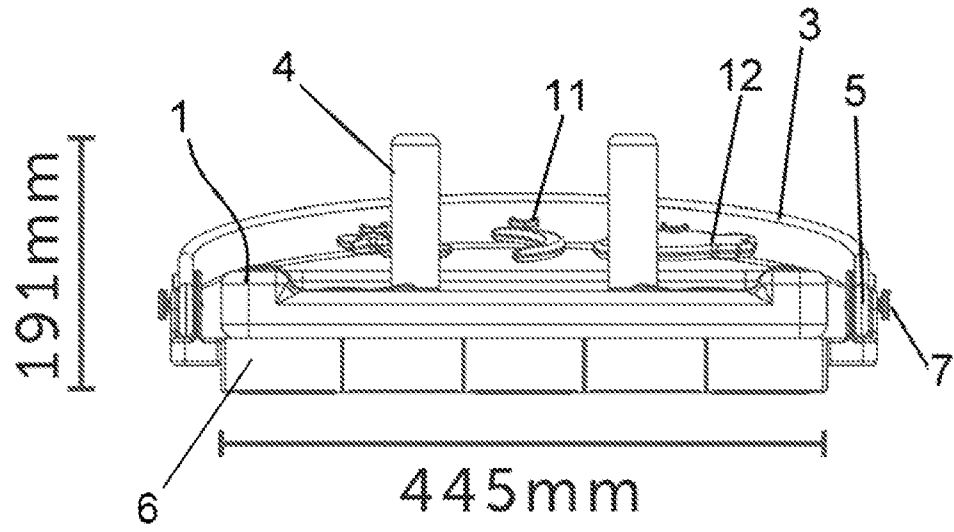


FIG. 7

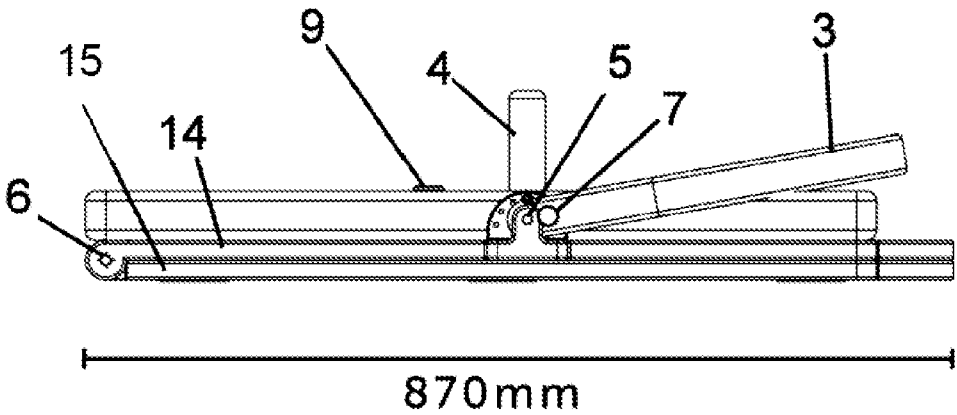


FIG. 8

13 02 23

9/11

13 02 23

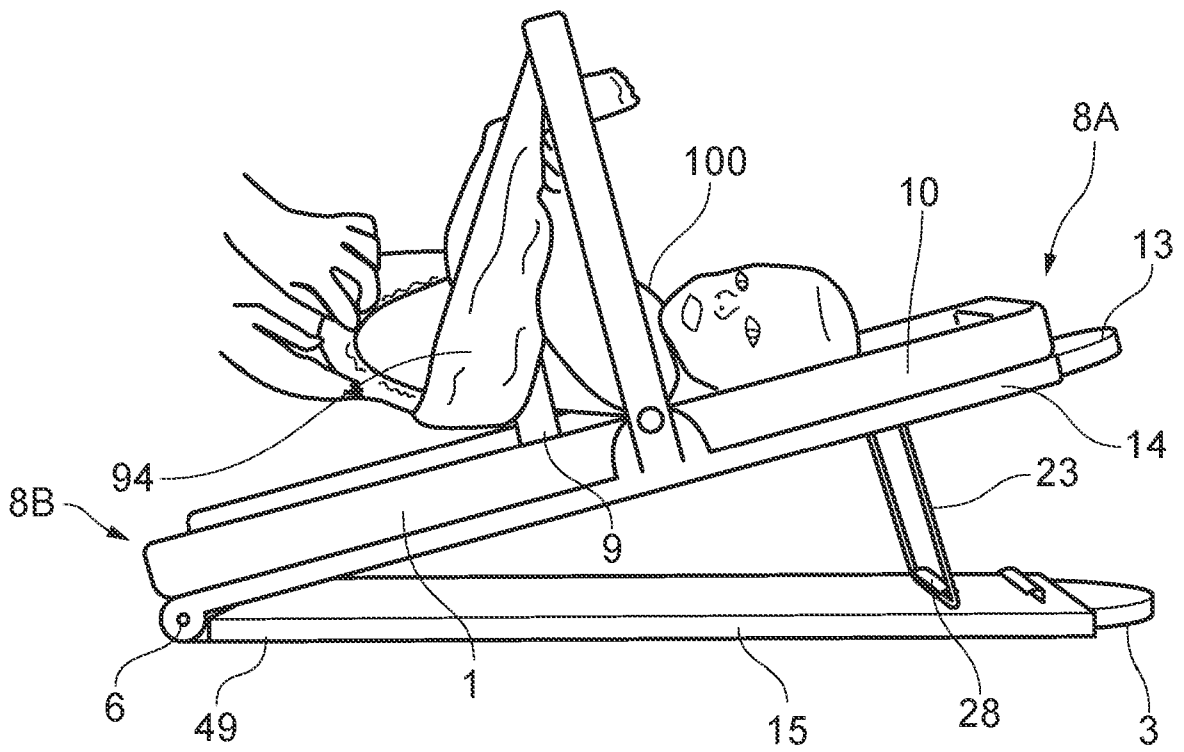


FIG. 9

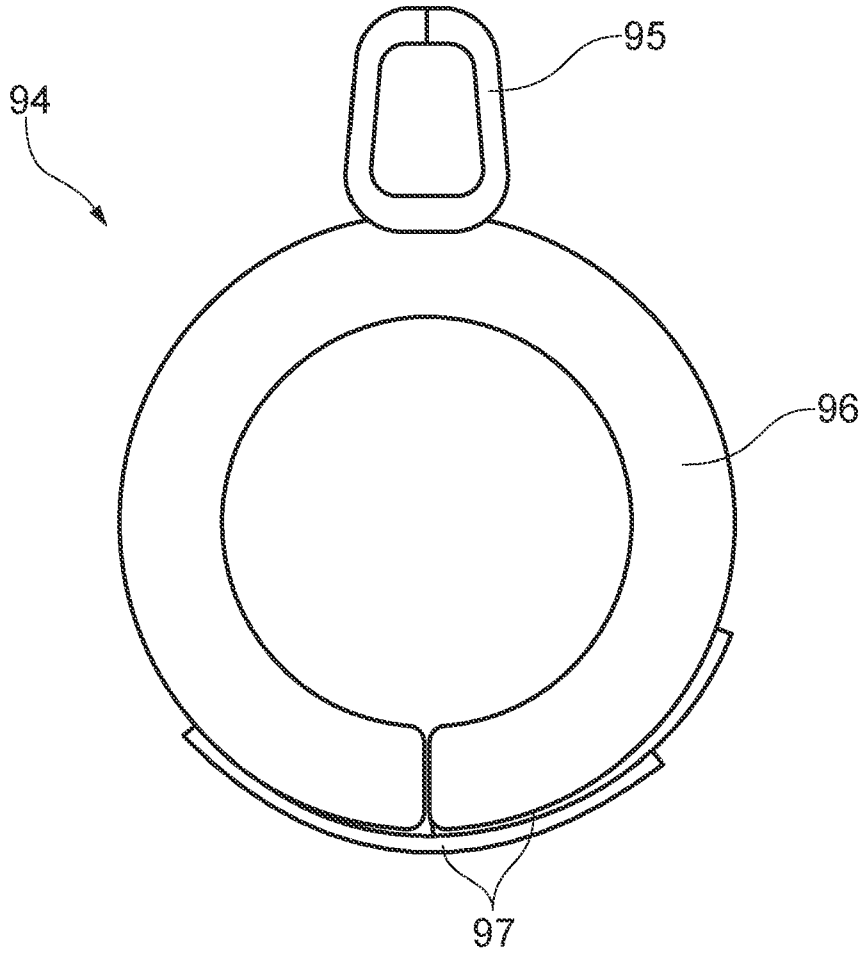


FIG. 10

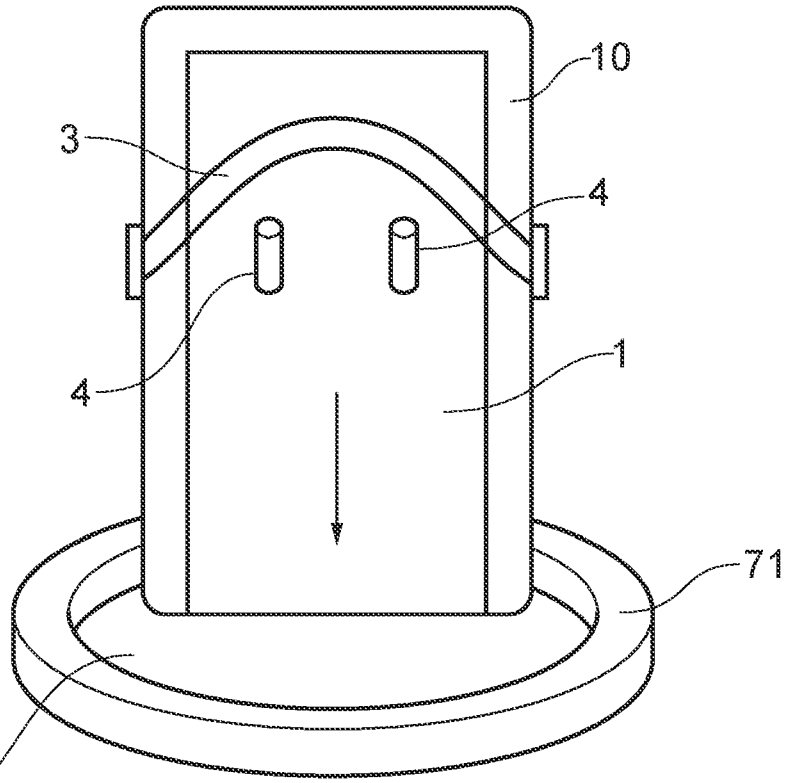


FIG. 11A

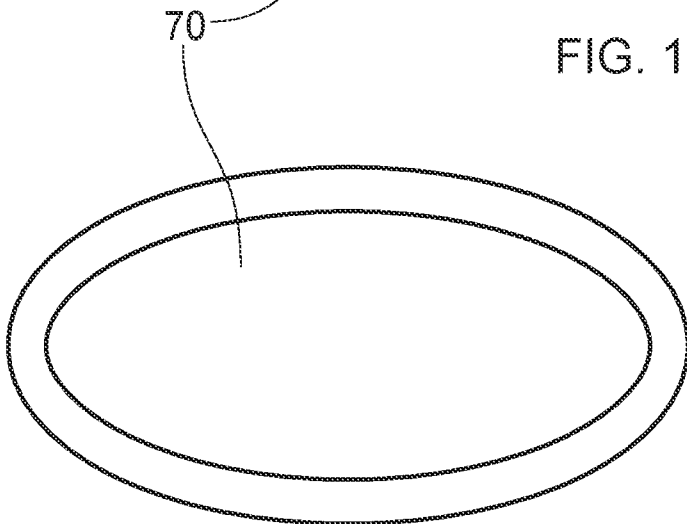


FIG. 11B

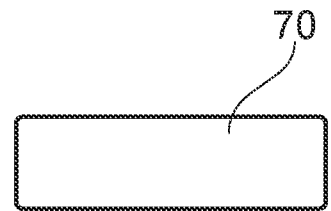


FIG. 11C

AN INFANT CHANGING AID

Field of the Invention

5 The present invention relates to an infant changing aid, in particular an infant changing aid for providing a space or surface to attend to an infant, for example changing a nappy or diaper; more particularly but not exclusively an inclined surface for a user or carer.

10 Background

Many people find it problematic to attend to infants when they require nappy or diaper changes.

15 In particular a carer may find it difficult to maintain the infant in position, particularly whilst attending to various items, such as cleaning the infant and replacing the diaper, particularly as this requires lifting the infant's lower body.

Two hands are usually required when changing nappies and carers are unable to
20 leave the infant, with peace of mind for the infant's safety, for example if a doorbell rings or the carer has forgotten a spare nappy or cream, The carer is therefore unable to leave the infant unattended without risk of injury.

Additionally or alternatively the infant may become bored and may prefer having an elevated head so that they can view other views.

25

Additionally or alternatively infant reflux is a common issue when trying to change a nappy after feeding, namely a backwards flow of the contents of the stomach into the oesophagus also causing a burning sensation for the infant.

30 Prior Art

EP 2 457 470 (KIM) discloses a device for aiding in infant care, comprising: an upper body support unit supporting an upper body of an infant; a lower body support unit supporting a lower body of the infant with the legs of the infant being spread apart;
35 and a stanchion connecting the upper body support unit to the lower body support unit.

US 2011 0 000 023 (KENNEDY) discloses a diaper changing apparatus for use with a baby comprises: a. a lateral restraining member having a first front sloped portion facing the baby and a bottom portion; b. a first means for fastening affixed to said bottom portion; c. a plurality of base members having a second front sloped portion facing the baby and a top portion; d. a second means for fastening affixed to said top portion; and e. wherein upon attachment of said lateral restraining member to said plurality of base members, said first front sloped portion and said second front sloped portion form a planar surface with an angle selected between 25 to 75 degrees.

10

WO 9 517 118 (BOWMAN) discloses an infant reflux restraint apparatus, according to the present invention, with a wedge shaped support member for readily positioning an infant on a support surface to thereby support an infant in a reclined position. A pair of side strips are secured to the wedge shaped support member and are positioned on an upper surface thereof. The pair of side strips are spaced apart in a generally parallel relationship and a sufficient amount so that an infant can be positioned therebetween.

The present invention arose in order to overcome problems suffered by existing devices.

20

Summary of the Invention

According to the present invention there is provided an infant changing aid comprising: an infant receiving mat and a stand; the mat having a first head end and a second foot end and an upper face and lower face; the mat arranged to move from a first position where the stand and mat are substantially parallel, to a second position where the mat is supported by the stand with the first end of the mat elevated to provide an inclined surface for the infant; wherein the mat further includes one or more supports extending from the upper face of the mat to support the infant and stop the infant moving towards the second end of the mat; and a frame member extending above the upper face of the mat that includes one or more suspended locator that receives and supports part of the infant during changing.

30

Due to the optional inclined orientation of the mat when in use, gravity assists to hold the infant in place along with the supports and suspended locator(s), making for a more comfortable experience for both the infant and the carer.

- 5 Traditional changing tables are often provided at height and therefore there it is possible for an infant to roll off and hurt themselves. The present invention supports and locates the infant to prevent the risk of falling from or leaving the mat.

- Advantageously, inclination also enables the infant to have their nappy changed immediately after eating with less risk of reflux because the infant is not completely flat during changing which reduces the chance of reflux.
- 10

In these ways the present invention mitigates several risks associated with nappy changing by securing the infant in a preferred position for changing.

- 15 It is appreciated that the aid is intended for use by infants which may include a child from birth until an age where nappy changing is no longer required to be completed on a mat, typically up to around two years old.

- 20 In use the upper face of the mat receives the infant. Preferably the upper face of the mat is padded and waterproof for comfort and ease of cleaning. Preferably edges of the mat are raised to prevent an infant from wriggling off the mat, thereby improving safety.

- 25 Preferred embodiments of the infant changing aid include two substantially rigid supports extending upwards from the upper face of the mat. In this way the supports may be envisaged to be used to be placed under the arms of infant, for example under the infants armpits to be next to the infant's torso, so as to prevent the infant sliding down the mat towards the second end. This provides a simple way to locate the infant and to the carer more freedom and peace of mind during use.
- 30

Preferably the substantially rigid supports may be covered in a soft outer layer, such as a resiliently deformable foam padding, or cushioned fabric for optimal comfort to the child.

35

In some embodiments the one or more supports are displaceable laterally on the upper face, so as to accommodate different size infants/children. For example a first end of the supports may be located in a channel along which the support can slide and be fixed at a desired location.

5

It may be envisaged that in some embodiments the supports may be located substantially centrally between the first and second ends of the mat. In some embodiments the position of the supports in relation to the first and second end of the mat can also be changed to reflect length of the infant. For example the slots may be
10 position closer to the first head end for a longer (taller) infant.

In some embodiments the infant changing aid includes a swaddling means or a belt that may be placed around the infant to aid in stopping the infant sliding down the mat under gravity and/or from moving away from the mat due to their own activity.

15 The swaddling means or belt is adapted to conformably restrain the infant in a way that is similar to another device such as when in a pram, pushchair or when swaddled in a cot.

Preferably the swaddling means, or belt is adjustable so that it can be fitted to the
20 infant for example the swaddling may be secured by hook and loop portions such as Velcro (RTM) at the desired position. Ideally the swaddling or belt material may be soft and wipeable to be comfortable around the infant and easy to clean.

The changing aid has a frame member that in use extends over at least part of the
25 mat. Typically the frame member is an arch over the mat or is an arm that arches over at least part of the mat.

The frame member provides a location for suspending one or more suspended locators that may be used to support and hold an infant's, feet, legs or back so that
30 the infant is supported and changing is possible.

It is appreciated that the frame member may also support a means to provide visual stimulus for the infant during changing, such as toys, mobiles or one or more light. For example in some embodiments the frame member may comprise one or more
35 hooks, apertures and/or hangers. In this way in addition or the alternative to the infant being in an inclined position which allows the infant to interact more freely with

the environment around them, the infant is further able to be physically entertained making for an enjoyable experience, for both the carer and the infant.

5 In some embodiments of the infant changing aid the frame member is arranged to pivot with respect to the mat. In this way the frame member may be envisaged to be moved around the mat, so as to move to one or more positions depending on location and size of the infant and position of the carer, as well as to aid with storage in which the frame member is folded against or alongside the mat.

10 In use the frame member may be envisaged to extend above the mat's upper face providing an arch over the infant in use, for example in some embodiments extending from side to side of the mat, up and over where the infant is located.

15 Preferably the frame member may be envisaged to support the infant at least in part, for example the lower part of the infant, by means of one or more suspended locator that is suspended from the frame member.

20 The suspended locators are attached to the frame member so as to hang down towards the infant when in use. Typically the infant's legs are received by the locator in order to elevate their lower body from the mat to facilitate easy changing and cleaning.

25 The locator may be a ring structure or a sling for receiving the feet and or legs of an infant so that changing is permitted.

30 In a preferred embodiment the suspended locator is an adjustable padded ring that has an attachment means for securing the ring to the frame member so that the padded ring is suspended from the frame member. A user is then able to lift the infant's feet and lower legs to pass them through the aperture of the ring and adjust the ring to support and hold the infant's feet/legs or supports the back of an infant so that the carer is able to use both hands for changing the infant.

35 In some embodiments of the aid a lower face of the stand has a grip surface or grip regions for securely locating the aid on a surface. For example in some embodiments the lower face of the stand may include grip feet, such as rubber pads to ensure the aid remains fixed in place during use.

In some embodiments of the infant changing aid the stand comprises a basal part and at least one leg part to adjust the mat from a flat to an inclined orientation. The basal part may be envisaged to comprise a planar part that is substantially parallel
5 the mat in the first position and upon which the at least one leg part is located. The at least one leg part may provide one or more rigid leg that supports the first head end of the mat above the basal part.

10 Preferably the basal part is connected to the mat, or a rigid base region of the mat by means of a hinge so that the mat pivots about the hinge with respect to the basal part, enabling a range of inclinations. This may enable easy movement between positions, as well as providing a secure and easy to transport configuration. In some
15 embodiments the hinge may be locked open in a selection of positions or locked closed.

In some embodiments of the infant changing aid the mat is supported by the stand in a plurality of positions with the first end of the mat elevated to different heights with respect to the surface on which it is placed. For example the basal part, or a rear
20 face of the mat may include a plurality of catch positions for the leg so as to alter angle of inclination of the mat. Such positions may be held in place by gravity or by a locking means. It is appreciated that the mat may be arranged without inclination depending on carer preference and best orientation for the infant. For example a flat
25 orientation may be preferred for new-borns.

25 In some embodiments of the infant changing aid the mat comprises a padded section and a rigid portion. In this way the padded section may be envisaged to be provided in a wipe-clean padded format common to infant beds or changing mats, providing
30 easy comfort and cleanliness as known in the art. The rigid portion may provide a surface for the padded section and a region for receiving and engaging with the stand as described above. For example to include a hinge to connect to the basal part and/or to receive one or more leg.

In some embodiments of the infant changing aid the padded section is wholly
35 displaceable from the rigid portion. In this way the padded section may be cleaned easily and/or replaced. For example the padded section may be attached to the

rigid portion by press studs or hook and loop means. The padded section may accordingly comprise holes or slots for passage of the infant supports.

5 In a preferred embodiment the infant changing aid includes a tray for collecting leaked fluid, for example if the infant urinates during changing and cleaning, or leaked cleaning fluid, such as water. The tray may be provided at a lower foot end of the mat in use so that fluid drains from the mat into the tray where it is collected.

10 In some embodiments the tray may be integrated with the mat, for example the tray may extend from a lower end of the mat providing a collection region with raised edges to collect fluid.

15 In some embodiments the tray may be a separate part of the aid that is arranged beneath at least part of the mat to ensure effective collection of leaked fluid.

20 In further aspects of the present invention there is provided a method of using the infant changing aid as described above to facilitate the changing of an infant nappy comprising the steps of: deploying the mat so that it is inclined; arranging the infant on the mat to be supported by the supports so that the upper part of an infant is held against gravity onto the inclined mat and supporting the lower part of the infant from a suspended locator that is hung from the frame support to permit changing.

25 A preferred embodiment of the invention will now be described by way of example only and with reference to the Figures in which:

25

Brief Description of Figures

30 Figure 1 shows an isometric view of an embodiment of the infant changing aid according to the present invention, in a first position;

30

Figure 2 shows a reverse isometric view of the embodiment of the infant changing aid as shown in Figure 1;

35 Figure 3 shows an exploded isometric view of the embodiment of the infant changing aid shown in Figure 1;

Figure 4 shows a reverse exploded isometric view of the embodiment of the infant changing aid shown in Figure 1;

5 Figure 5 shows a front view of the embodiment of the infant changing aid shown in Figure 1 in a second position;

Figure 6 shows a side view of the embodiment of the infant changing aid shown in Figure 1 in a second position;

10 Figure 7 shows a front view of the embodiment of the infant changing aid shown in Figure 1 in a first position;

Figure 8 shows a side view of the embodiment of the infant changing aid shown in Figure 1 in a first position;

15 Figure 9 shows a sketch of a side view of the embodiment of the infant changing aid shown in Figure 1 in use;

Figure 10 shows a second embodiment of a suspended locator; and

20 Figure 11 shows an example of a tray.

Detailed Description of Figures

25 With reference to the figures there is shown a first embodiment of the infant changing aid 99 comprising: a mat 2 and a stand 22, the mat 2 having a first head end 8A and a second foot end 8B and an upper face with a padded section 1 and lower face.

30 The mat 2 is arranged to move from a first position as shown in Figure 1 where the stand 22 and mat 2 are substantially parallel to a second position as shown in Figure 6 where the mat 2 is supported by the stand 22 with the first end 8A of the mat elevated.

35 The mat 2 has a frame member 3 extending over the mat 2 defining an arch from which suspended locators 94 can be arranged, along with other items such as mobiles 12.

An upper face of the mat 2 has two supports 4 that project outwards. An infant is arranged on the mat 2 so that their underarm receives the supports 4 to help position the infant and to stop the infant moving towards the second foot end 8B of the mat.

5

In particular reference to the pictured first embodiment 99 the mat 2 is rectangular with a removable padded section 1 and a rigid portion 14 (see Figure 2). The rigid portion 14 is provided by a plastic moulded plate, which is connected by a hinge 6 to a basal part 15 of the stand 22. The rigid portion 14 includes the leg part 23 of the stand 22, which depends from the lower face of the rigid portion 14.

The rigid portion 14 and basal stand part 15 include matching handles 13 which extend from the head end (upper end) 8A and allow the infant changing aid to be easily carried when in the first position when the mat 2 is parallel to the basal part 15 and with the frame member 3 hinged down, as shown in Figure 1.

The basal part 15 of the stand 22 includes a plurality of lateral catches 28 (see Figure 6) for the leg part 23 so as to alter the inclination of the mat 2 to the stand's 22 basal part 15 and elevation of the head end 8A, providing a plurality of positions.

20

The mat 2 includes a topmost padded section 1 provided with a wipe-clean plastic cover over foam padding, in a manner known in the art. The padded section 1 attaches to the rigid portion 14 using tabs 16 of hook and loop fabric such as Velcro (RTM) (see Figure 4). The padded section 1 has raised sides 10 around three edges, leaving the second foot end 8B open.

25

The padded section 1 also has and has two lateral slots 17 for the supports 4 and two belt holes 18 for the belt 9 (see Figure 3).

The slots 18 allow passage of two padded supports 4 extending orthogonally from screw threaded sockets in the rigid portion 14. There are two sets of two such sockets, laterally spaced, so as to allow lateral displacement of the supports 4 to allow width of the supports 4 to be altered to match the under arm spacing of the infant.

35

A belt 9 is provided in use, below the supports 4 so as to be slightly closer to the foot end 8B of the mat 2. In total the belt 9 and the supports 4 provide means to stop the infant from sliding down the mat 2 when the mat 2 is inclined and the head end 8A elevated. The supports 4 and the belt 9 also help prevent the infant from leaving the mat as the infant is secured in place if the carer leaves momentarily.

The arched frame member 3 is hinged at pivots 5 to either side of the rigid party 14 of the mat 2. The pivots 5 extend upwards from the rigid portion 14 of the mat 2, and include sprung locking pins 7, to allow the locking of the hinge 6 in a plurality of orientations of the frame member 3 with respect to the mat 2 and rigid part 14.

The frame member 3 is an arcuate rigid part formed in plastic, with a plurality of hanger hooks 11 on a lower face that are substantially central, so as to allow hanging of mobiles 12.

Advantageously the pictured embodiment of the infant changing aid provides a lightweight embodiment that is also easily transportable, easy to store, carry and clean.

Figure 9 shows the changing aid in use with an infant 100. The present invention provides the following safety, comfort and user benefits:

4 - Adjustable arm supports to ensure the infant is held securely

9 - Comfortable adjustable wipeable fabric belt around the infant's torso

94 - Support sling elevates the lower back and feet of the infant

1, 2, 14 - Inclined mat ensures the infant is in the correct position to utilise the arm supports and also prevent reflux

10 - The high sides on the edge of the mat ensures the infant cannot roll off the mat

49 - Rubber feet on the frame of the mat cannot slide during changing.

Figure 10 shows an example of a suspended locator 94 comprising an attachment means 95 in the form of a connector that is received about the frame member 3 and an adjustable ring 96 that is connected to the connector so as to be suspended from the frame member 3.

35

The adjustable ring is a padded length of a material joined together by hook and loop means 97 so as to permit the circumference of the closed ring to be varied. In use the infants lower legs are arranged through the adjustable ring 94 and the hook and loop means are fastened to secure the infants lower legs or torso in the adjustable ring so that a carer can use their hands solely for changing.

Figure 11 shows an example of a tray 70 that is provided at a lower end of the mat 2 in order to collect leaked fluid. The tray 70 has raised edges 71 to capture fluid. Preferably the raised edges are at least 20mm high. In the pictured embodiment the lower end of the mat is resting upon tray 70, thereby securing the tray 70 in position. The tray 70 can be easily removed, emptied and then repositioned.

Figures 6, 7 and 8 include some preferred dimensions of the invention in which the total width of the aid is 500mm, the width of the at the second end of the mat at the hinge is 445mm (not including the pivots of the frame member), the height of the aid including the frame member deployed is 543mm and the height of the aid including the frame member stowed in 191mm, and where the total length of the aid is 870mm. These dimensions are only an example of the dimensions to which the aid may be made, and it is appreciated that the aid may be made in a variety of different dimensions.

The invention has been described by way of examples only and it will be appreciated that variation may be made to the above-mentioned embodiments without departing from the scope of invention as defined by the claims.

Claims

1. An infant changing aid comprising: an infant receiving mat and a stand; the mat having a first head end and a second foot end and an upper face and lower face; the mat arranged to move from a first position where the stand and mat are substantially parallel, to a second position where the mat is supported by the stand with the first end of the mat elevated to provide an inclined surface for the infant; wherein the mat further includes one or more supports extending from the upper face of the mat to support the infant and stop the infant moving towards the second end of the mat; and a frame member extending above the upper face of the mat that includes one or more suspended locator for receiving and supporting part of the infant during changing.
5
2. An infant changing aid according to claim 1 comprising two rigid supports extending from the upper face of the mat.
10
3. An infant changing aid according to claim 1 or 2 wherein the one or more supports is displaceable laterally on the upper face of the mat.
15
4. An infant changing aid according to any preceding claim including a swaddling means or belt.
20
5. An infant changing aid according to any preceding claim wherein the frame member is an arch arranged over the mat.
25
6. An infant changing aid according to claim 5 wherein the frame member is arranged on at least one pivot in order to pivot with respect to the mat.
30
7. An infant changing aid according to any preceding claim wherein the stand comprises a basal part and a leg part to enable the mat to be supported between the first and second positions.
35
8. An infant changing aid according to claim 7 wherein the leg part is arranged to pivot with respect to the basal part.

9. An infant changing aid according to any preceding claim wherein the mat is supported by the stand in a plurality of inclined positions with the first end of the mat elevated to different heights.
- 5 10. An infant changing aid according to any preceding claim wherein the mat comprises a padded section and a rigid portion.
11. An infant changing aid according to claim 10 wherein the padded section is wholly displaceable from the rigid portion.
- 10 12. An infant changing aid according to any preceding claim wherein the mat is connected to the stand by at least one hinge.
13. An infant changing aid according to any preceding claim wherein the suspended locator is a sling of material.
- 15 14. An infant changing aid according to any of claims 1 to 12 wherein the suspended locator is an adjustable ring.
- 20 15. An infant changing aid according to any preceding claim including a tray for collecting leaked fluid.
16. An infant changing aid according to claim 15 wherein the tray is integrated with the mat.
- 25 17. An infant changing aid according to claim 15 or 16 wherein the tray is displaceable.

30

35



Application No: GB2217496.5

Examiner: Mr Patrick Lucas

Claims searched: 1-17

Date of search: 4 May 2023

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
A	n/a	US 2005/0028286 A1 (SMART) See figures 2-5 and paragraphs [0063] to [0068].
A	n/a	FR 2896969 A1 (FREITAS) See especially figures 9, 13 and 14.
A	n/a	GB 2485550 A (EAST COAST NURSERY) See figures 1-5 and 11-15.

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^X :

Worldwide search of patent documents classified in the following areas of the IPC

A47D; A61F

The following online and other databases have been used in the preparation of this search report

WPI, EPODOC, Patent Fulltext, INTERNET

International Classification:

Subclass	Subgroup	Valid From
A47D	0005/00	01/01/2006
A47D	0015/00	01/01/2006