(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 3 649 878 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
13.05.2020 Bulletin 2020/20

(51) Int Cl.:
A41B 13/10 *(2006.01)*

(21) Application number: **19179943.6**

(22) Date of filing: **13.06.2019**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

(30) Priority: **11.11.2018 US 201862758669 P**
22.12.2018 US 201816231492

(71) Applicant: **Abiie, LLC**
Austin, TX 78749 (US)

(72) Inventor: **Khai Gan, Chuah**
Austin, TX Texas 78749 (US)

(74) Representative: **Hoffmann Eitle**
Patent- und Rechtsanwälte PartmbB
Arabellastraße 30
81925 München (DE)

(54) **BIB FOR SMALL CHILD**

(57) A bib comprising a locking compartment specifically to engage and secure a protruding connector located on the pocket of the bib, with means to secure the bib in a folded position for storage ability, as well as preventing spillage of contaminants.

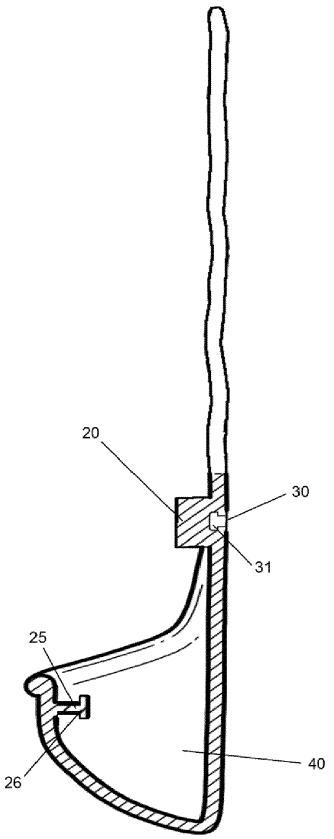

Fig. 5

EP 3 649 878 A1

Description

CROSS-REFERENCE TO RELATED APPLICTIONS

[0001] This application claims priority to U.S. Provisional Applications Serial No. 62758669 filed November 11, 2018.

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0002] This invention relates to foldable bib for babies, where the bib comes with a locking compartment to secure firmly when it is folded.

2. Discussion of Prior Art

[0003] It is common for parents to carry bibs when planning for possible feeding their babies outside of home. The method of storage is important since improper of storage may result in contamination, cleanliness and excess space consumption in the diaper bag. This invention focuses on a foldable bib where the bib can be folded and secured in a folded position to minimize space, while protecting the inner contents from spillage. In order to avoid putting excess weight on the small child, baby bib in general is designed to be in lightweight. For baby bib that comprises of semi-rigid material such as plastic or silicon, the bib is generally heavier than the traditional cloth material. Therefore, to avoid burdening the baby with heavy bib, the thickness of the bib is minimized. The design patent US D698130 discloses a baby's bib in which when folded, the connector snaps onto the edge of the hole on the pocket to secure a folded position. The thickness limitation in overall structure reduces the durability and reliability of the edge of the hole. Over time, the repetitive movements of pulling or twisting causes wear and tear to the hole. In addition, the hole of the bib is located along the pocket of the bib. This may cause unnecessary food or fluid spillage which again causes discomfort to the small child. It would be desirable to be able to provide a reliable locking mechanism for infant's bib that can increase its life cycle while providing a strong locking system that is easy to use and manufacture. In addition, it will alleviate discomfort on small child and unnecessary spillage.

SUMMARY OF INVENTION

[0004] The present invention relates generally to a locking mechanism on bib comprising a locking compartment specifically to engage and secure a protruding connector located on the pocket of the bib, with means to secure the bib in a folded position for storage ability, as well as preventing spillage of contaminants. This is accomplished by designing a standout locking compartment to perform tight encasement in securing the protruding connector. The thickness of locking compartment is independent from bib and can be design in various levels of thickness without affecting the overall structure of the bib. The invention also focuses on the protruded connector being in a position away from body contact with baby to prevent any skin irritation. The locking mechanism eliminates hole on the surface of pocket and hence prevents any spillage of food when in open or folded position.

BRIEF DESCRIPTION OF DRAWING

[0005]

FIG. 1 is a front view of the bib according the invention showing the position of the locking compartment.

FIG. 2 is a perspective view of the bib according to the invention showing the position of the locking compartment.

FIG. 3 is a back view of the bib showing the opening of the locking compartment.

FIG. 4 is a lateral view of the bib, depicting the locking compartment.

FIG. 5 is a lateral view of a vertical cross-section of the invention, showing the locking compartment, the socket, the opening and the protruded tab.

FIG. 6 is a top view of the invention, showing the alignment of the locking compartment and the protruding tab.

FIG. 7 is a lateral view of a vertical cross-section of the bib in a folded position.

FIG. 8 is a top view of the bib in a folded position.

FIG. 9 is a perspective view of the bib in a folded position.

FIG. 10 is a perspective view of the bib in unfolded position, showing a handle at the edge of the storage pocket.

DETAILED DESCRIPTION OF INVENTION

[0006] The convertible bib 1 is foldable and can be collapsed down and stored in storage pocket 40. Various items can be stored in storage pocket 40, such as spoon for use during outdoor activities. Fig.1 illustrates a convertible bib 1 having a panel 10 and storage pocket 40. The convertible bib 1 includes a panel 10 having collar appendages 15, 16 that extend and secure around the neck of the infant. The method of having the said collar appendages fastened together is depicted in Fig. 2.

Methods of fastening the appendages typically include various Velcro, buttons, hook and loop, or any other fasteners, as long as it is able to secure the bib around the neck of the infant. Fig. 1 also shows the general location of the locking compartment 20, a vital component of the locking mechanism to secure the bib in a folded position. Further description of the methods to the locking mechanism will be discussed in later paragraphs.

[0007] Fig. 3 is a posterior view of the bib, revealing the opening 30 to the locking compartment 20. The opening 30 consists of an aperture or slit that is stretchable to various sizes and shapes, in order to meet the protruding tab 25, located in the storage pocket 40.

[0008] Fig. 4 is a lateral view showing the locking compartment 20, positioned on the body 1 of the bib. The locking compartment is made of semi-rigid material that is able to stretched, compressed and decompressed, thereby, allowing morphing of its shape and hence achieving interlocking of protruded tab 25 and locking compartment 20.

[0009] Fig. 5 is a cross-section view taken at line A shown in Fig. 1. The locking compartment 20 positioned on the front side body of the bib 1. The inner structure of locking compartment 20 consists of a socket 31 and opening 30. The socket 31 is a hollow structure with means to engage and firmly secure the anchor 26 of the said protruded tab 25 when the bib is the folded position. The said protruded tab 25 is generally located in the storage pocket 40, and is aligned respectively on the same vertical axis of the locking compartment 20 (See Fig. 6). It is to be noted that the shape and size of the socket 31 is determined by the stretchability of the material used to for the locking compartment, with the main purpose to firmly secure the anchor 26 of the protruding tab 25.

[0010] Fig. 7 is a cross-section of a lateral view revealing the bib 1 in a folded position. During the storage operation, the user folds the bib into the storage pocket 40, whereby the panel of the bib 10 is folded into the storage pocket 40 in such a way that the opening 30 is aligned with the protruded tab 25. The user inserts the protruded tab 25 into the locking compartment 20 via the opening 30. When the protruded tab 25 reaches the socket 31, the stretchability and elasticity of the socket 31 engages and secures the anchor 26 of the protruded tab 25. Alternatively, the user may apply pressure such as pinching and bending the locking compartment 20 to expand the inner structures (socket 31 and opening 30) for ease of insertion of the protruded tab 25. By releasing the pressure, the inner structures elastically returning to its initial state which in turn, grabs and secures the anchor 26 of protruded tab 25. The user detaches the protruded tab 25 by again, applying pressure onto the locking compartment 20 which in turn, stretches the inner structures and further releasing the anchor 26, allowing the protruded tab 25 to be pulled out from the locking compartment 20. The protruded tab 25 and its anchor 26 can also be designed to morph their shapes under pressure. The user may apply pressure on the said protruded tab 25 to disengage from socket 31 and release it from the compartment 20 via the opening 30.

[0011] Alternatively, the protruded tab can be placed within the locking compartment 20 with an alternate socket placed in the storage pocket 40 to achieve similar interlocking mechanism.

[0012] Alternatively, the position of protruded tab and locking compartment can be swapped, wherein the locking compartment is placed in the storage pocket 40, and the protruded tab is located on the body of the bib, to achieve similar interlocking mechanism.

[0013] Fig. 8 and Fig. 9 are the top view and perspective view of the bib in fully folded position. While the folded bib generally is in the shape of a "bathtub", it is to be noted that the bib can be manufactured into various shapes. It is to be noted that the entire bib can be manufactured as one piece or as multiple components. The locking compartment 20, protruded tab 25, socket 31, opening 30 and other subsequent components can be manufactured into various sizes, shapes and materials as long as it achieving the said locking effect. The locking compartment 20 can also be made to encase by different resilient materials to achieve a better or optimal locking effect with the protruded tab 25. The protruded tab 29 can further extend to form a handle 89. The said handle 89 is generally located in the vicinity of the protruded tab 29 with means to assist with inserting and removing the protruded tab 29 from the opening 31 of the locking compartment. The handle 89 can be part of the protruded tab 29 or a separate entity. The handle 89 can be manufactured into various sizes, shapes and materials.

[0014] As an alternate to the preferred embodiment, the locking compartment 20 can be made hollow to further encase and secure a locking device (not shown). The locking device interact with protruded tab; both can be in forms of, but not limited to, buckle, buttons, fastener, connectors; and may or may not consists of the similar material as the locking compartment 20.

[0015] The protruded tab and locking compartment can be placed anywhere on the bib and it is to be noted that there could be one or more than one locking compartments or protruded tabs at any location and may or may not to be aligned with each other. This allows the bib to be folded in various sizes and shapes, in order to accommodate the amount of storage space the user desires.

Claims

1. A convertible bib comprising:

a) a panel; and

b) a storage pocket wherein the said storage pocket comprises at least one locking compartment and at least one protruded tab, and said at least one locking compartment further comprises at least one opening and at least one

socket.

2. The convertible bib according to claim 1, wherein the said at least one locking compartment further secure the at least one protruded tab to form a locking mechanism when the bib is folded.

3. The convertible bib according to claim 1 or 2, wherein the said at least one locking compartment is hollow.

4. The convertible bib according to one of the preceding claims, wherein the said at least one protruded tab further comprises at least one handle.

5. The convertible bib according to one of the preceding claims, wherein the said storage pocket further comprises at least one handle.

6. A convertible bib comprising:
a storage pocket; wherein the said body comprises at least one locking compartment and at least one protruded tab.

7. The convertible bib according to claim 6, wherein the said at least one locking compartment further secure the at least one protruded tab to form a locking mechanism when the bib is folded.

8. The convertible bib according to claim 6 or 7, wherein the said at least one locking compartment further comprises at least one opening.

9. The convertible bib according to one of claims 6 to 8, wherein the said at least one locking compartment further comprises at least one locking device.

10. The convertible bib according to one of claims 6 to 9, wherein the said storage pocket further comprises at least one handle.

11. A convertible bib comprising:
a body; wherein the said body comprises at least one locking compartment.

12. The convertible bib according to claim 11, wherein the said at least one locking compartment further secure the at least one protruded tab to form a locking mechanism when the bib is folded.

13. The convertible bib according to claim 11 or 12, wherein the said at least one locking compartment further comprises at least one opening.

14. The convertible bib according to one of claims 11 to 13, wherein the said at least one locking compartment further comprises at least one locking device.

15. The convertible bib according to one of claims 11 to 14, wherein the said body further comprises at least one socket.

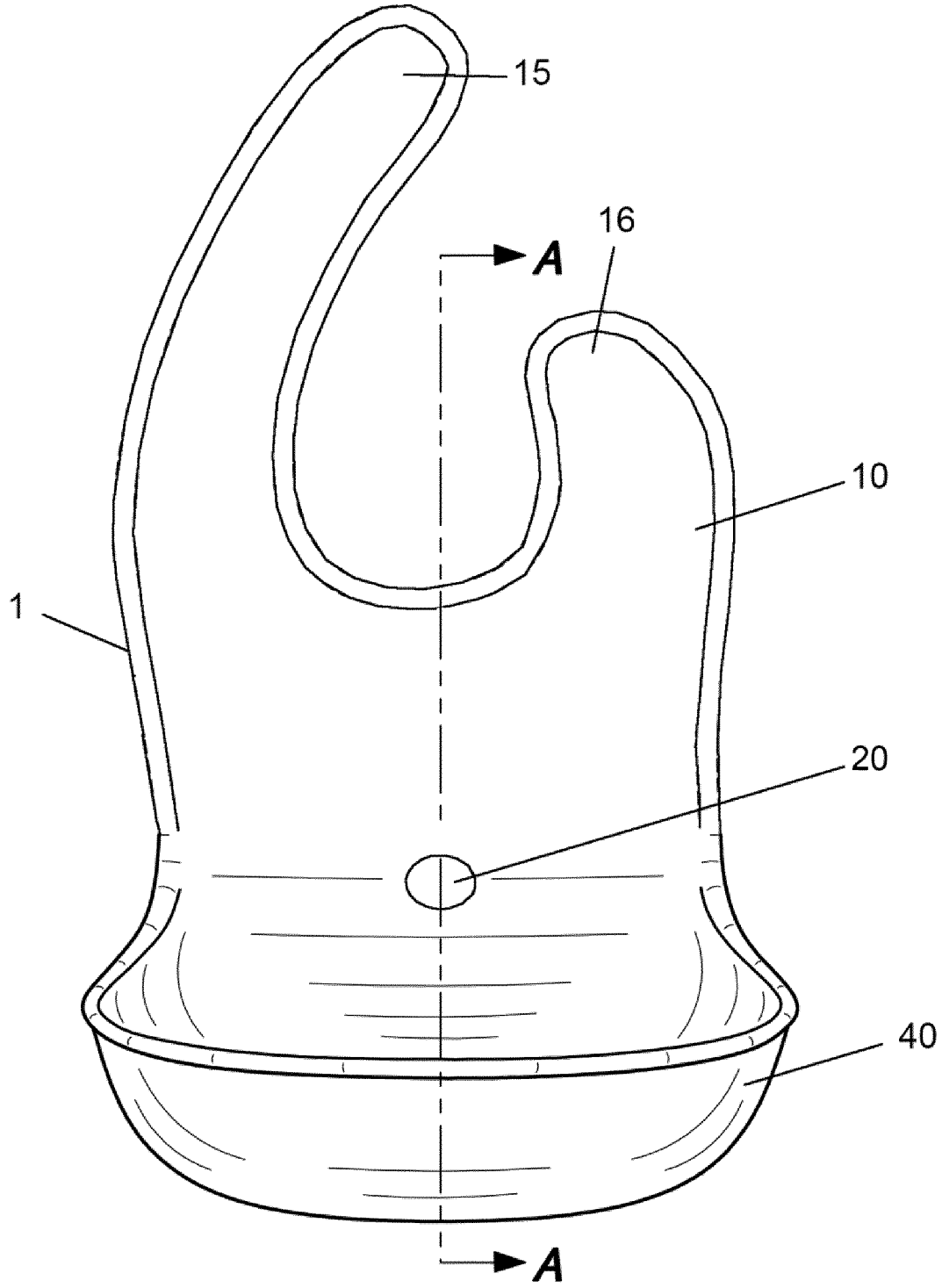

Fig. 1

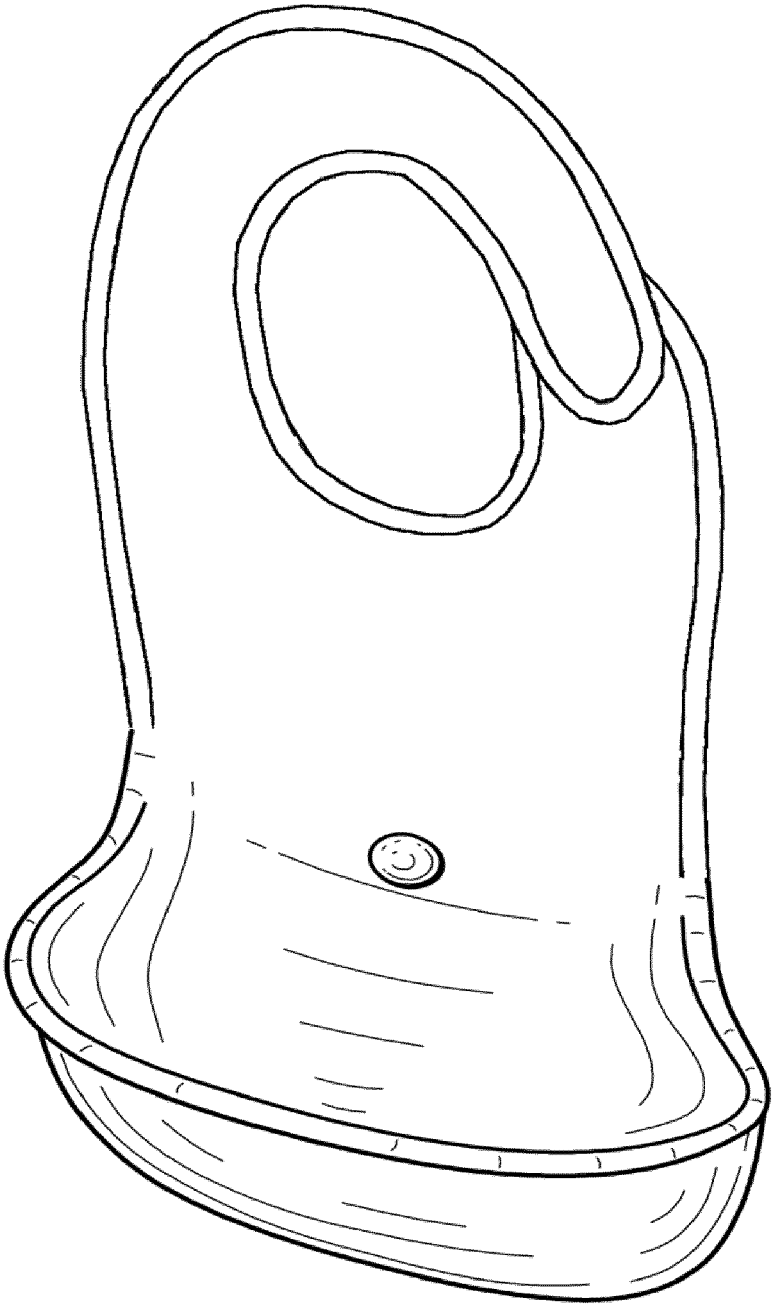

Fig. 2

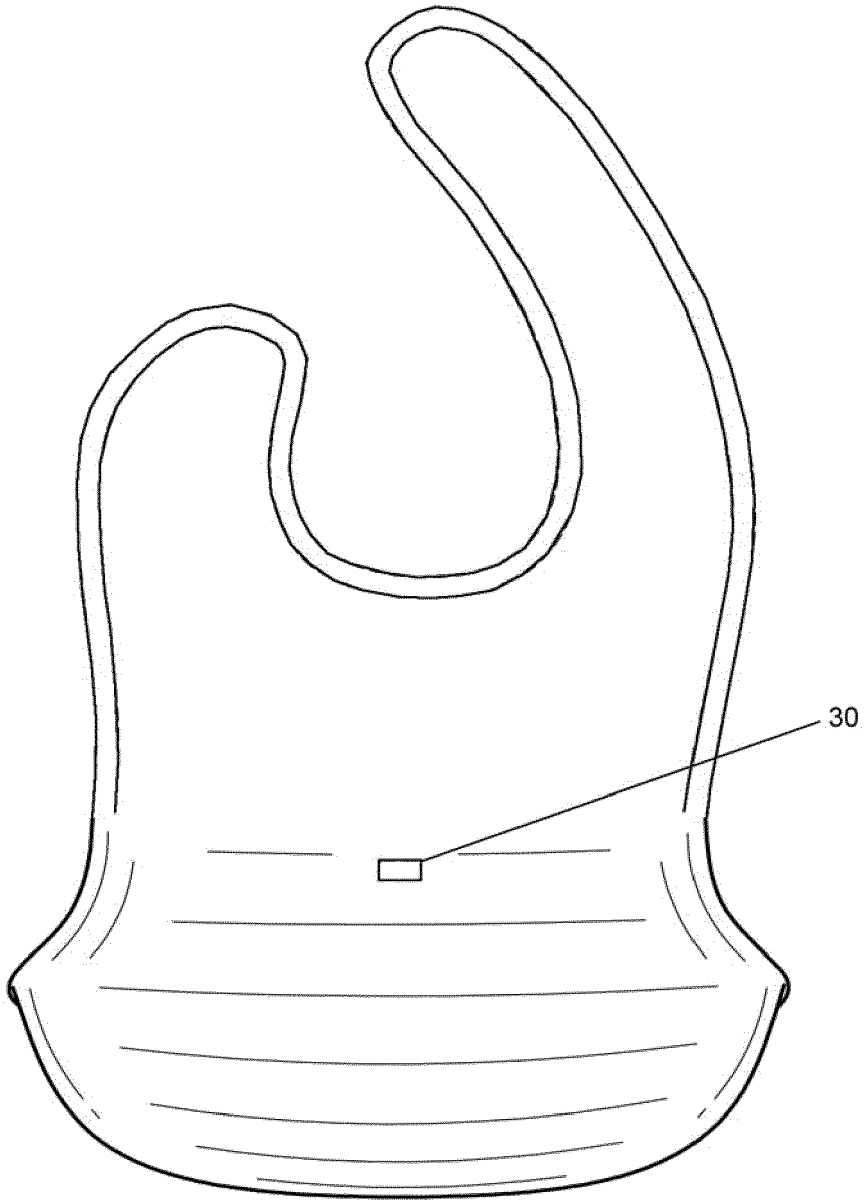

Fig. 3

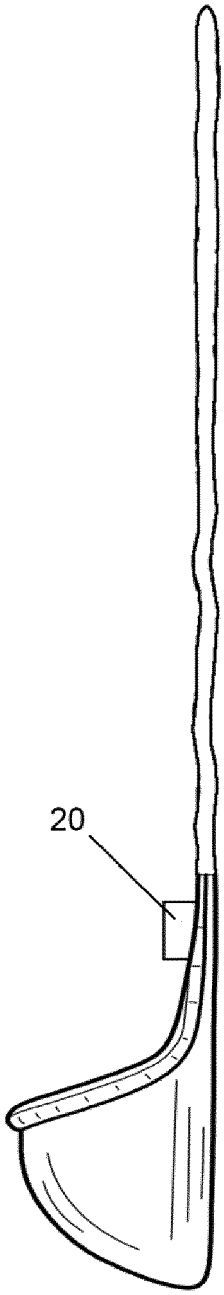

Fig. 4

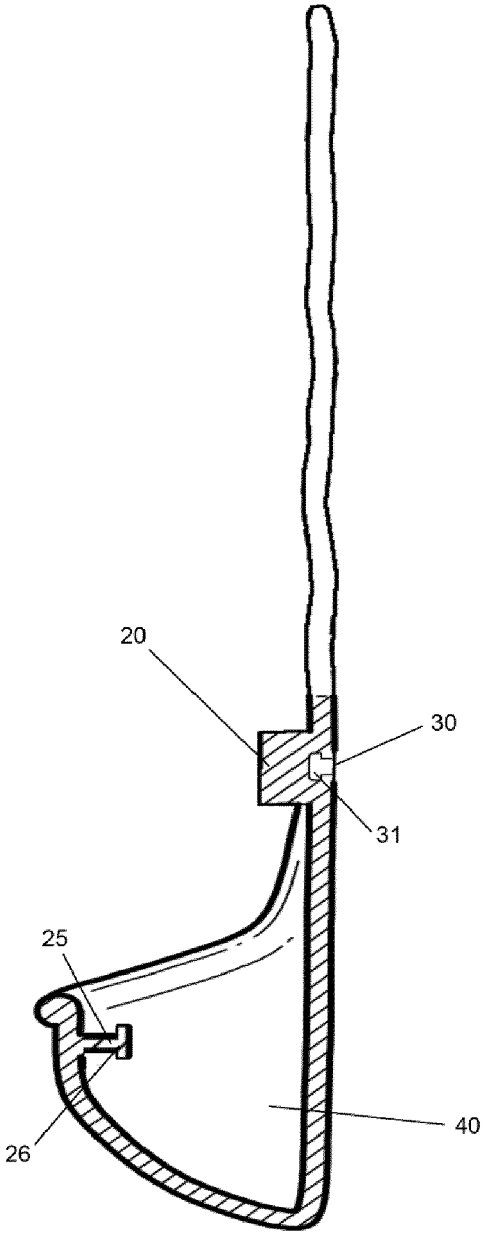

Fig. 5

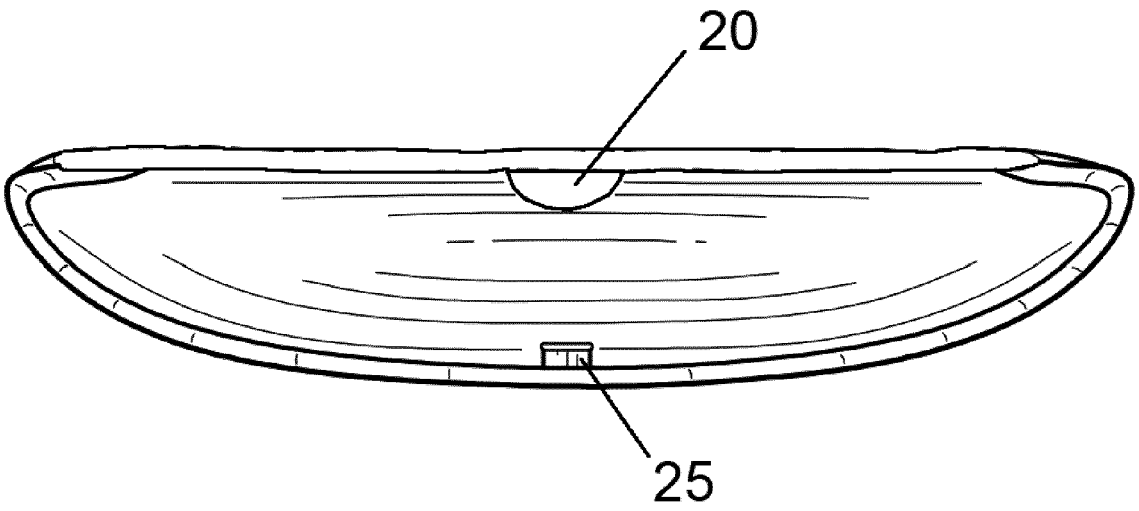

Fig. 6

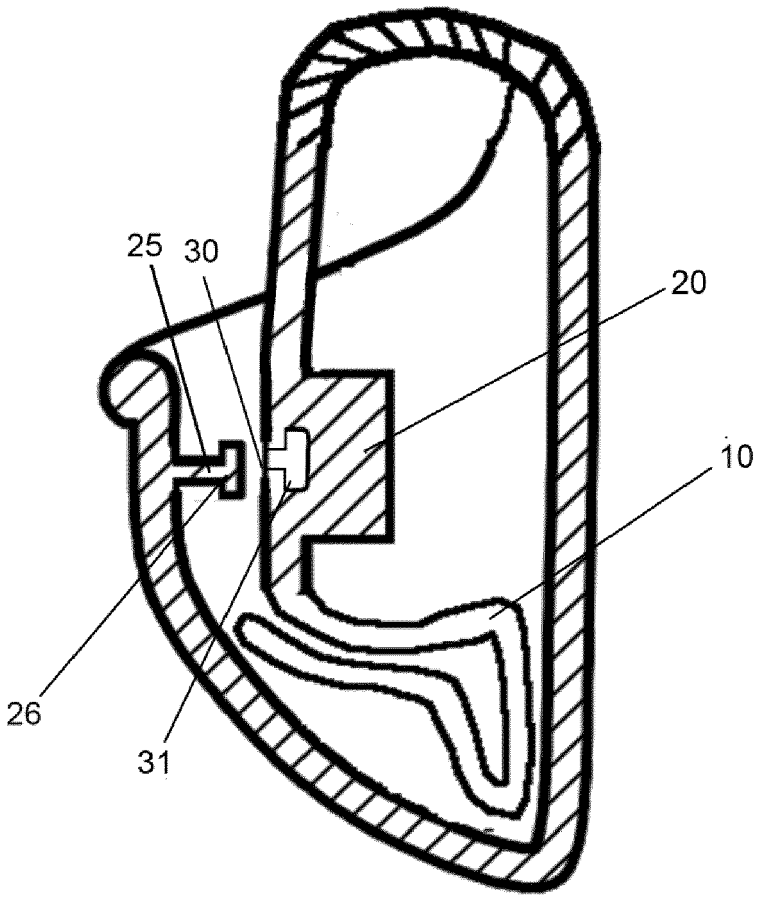

Fig. 7

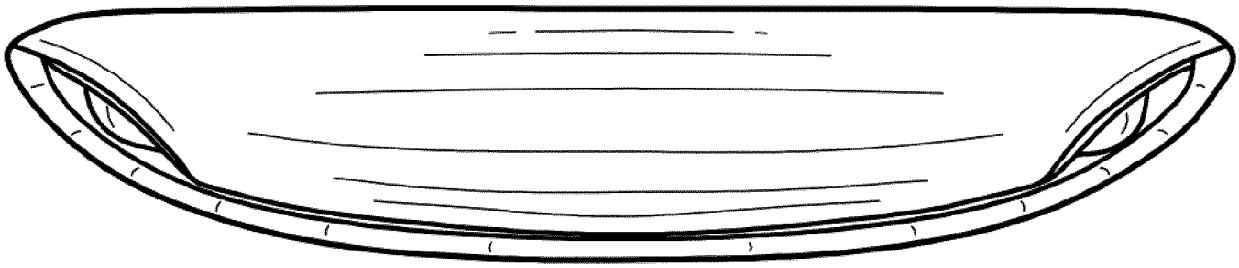

Fig. 8

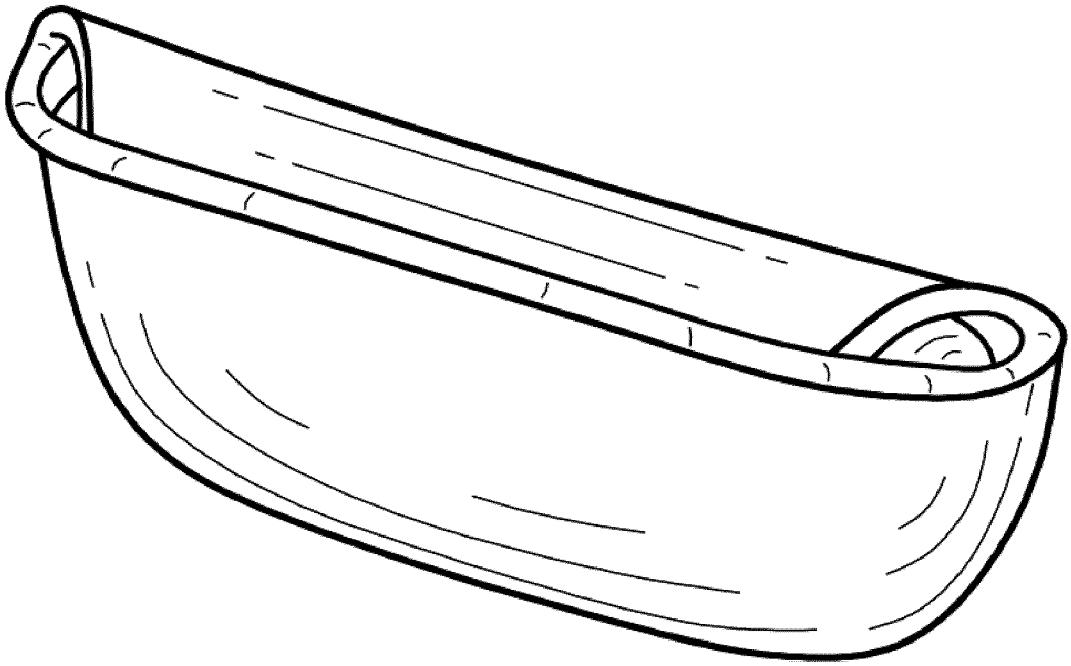

Fig. 9

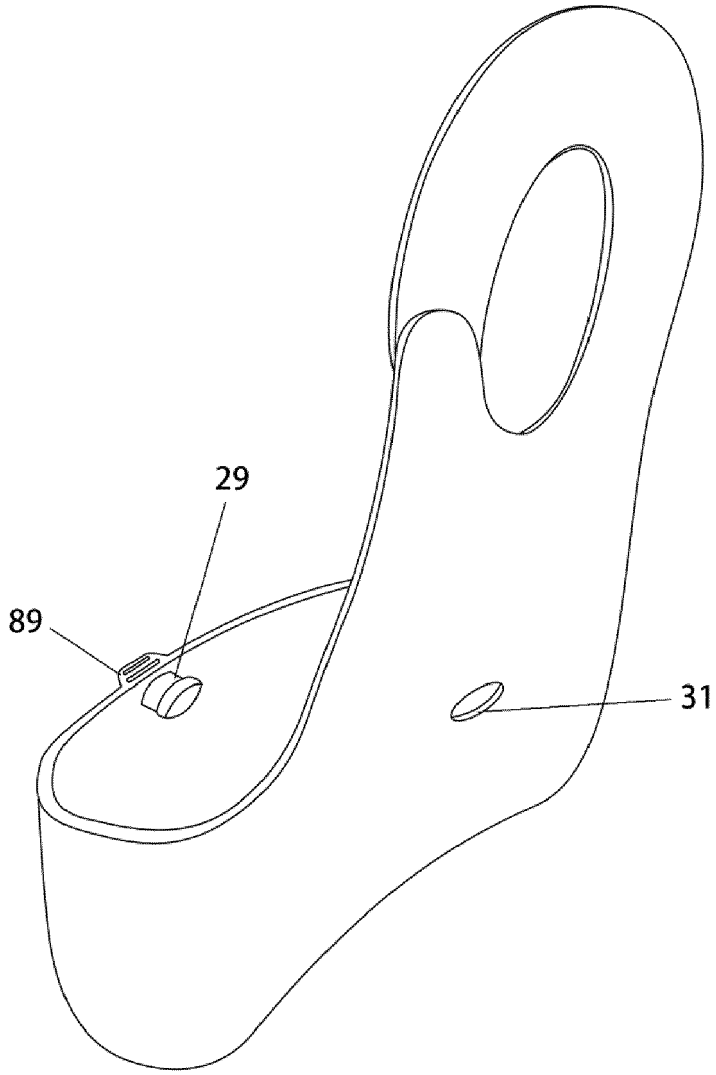

Fig. 10

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 19 17 9943

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2008/020197 A1 (BROTHER MAX LTD [GB]; GOLD JONATHAN MORRIS [GB] ET AL.) 21 February 2008 (2008-02-21) * abstract; figures 10, 11 *	1-15	INV. A41B13/10
X	GB 2 440 900 A (CATALYST DEVELOPMENTS [GB]; BROTHER MAX LTD [GB]) 20 February 2008 (2008-02-20) * abstract; figures 3, 4 *	1-15	
X	US 2014/250557 A1 (AMRIKHAS CAROLINE [US]) 11 September 2014 (2014-09-11) * paragraphs [0022] - [0024], [0029]; figures 4, 10-12 *	1,3-15	
X	US 2012/047618 A1 (PHILLIPS TONI LYONS [US]) 1 March 2012 (2012-03-01) * paragraphs [0066], [0067]; claim 8; figures 14-19 *	1-15	

TECHNICAL FIELDS SEARCHED (IPC)

A41B
A41D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	9 October 2019	Monné, Eric

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 19 17 9943

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

09-10-2019

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2008020197 A1	21-02-2008	NONE	
GB 2440900 A	20-02-2008	NONE	
US 2014250557 A1	11-09-2014	NONE	
US 2012047618 A1	01-03-2012	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 62758669 A **[0001]**
- US D698130 S **[0003]**