US012091881B1

(12) **United States Patent**
Carroll

(10) **Patent No.: US 12,091,881 B1**
(45) **Date of Patent: Sep. 17, 2024**

(54) **VEHICLE OCCUPANCY REMINDER FLAP FOR EXITING DRIVER**

(71) Applicant: **Debra Carroll**, Pearl River, NY (US)

(72) Inventor: **Debra Carroll**, Pearl River, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **18/643,827**

(22) Filed: **Apr. 23, 2024**

Related U.S. Application Data

(62) Division of application No. 18/038,442, filed as application No. PCT/US2022/022084 on Mar. 28, 2022.

(60) Provisional application No. 63/175,008, filed on Apr. 14, 2021.

(51) **Int. Cl.**

E05B 13/00	(2006.01)
B60J 5/04	(2006.01)
B60R 11/00	(2006.01)

(52) **U.S. Cl.**
CPC ***E05B 13/001*** (2013.01); ***B60J 5/0493*** (2013.01); ***B60R 11/00*** (2013.01); *B60R 2011/0019* (2013.01); *B60R 2011/0049* (2013.01)

(58) **Field of Classification Search**
CPC B60J 5/0493; B60J 5/0495; B60R 13/013; B60R 13/0243; B60R 21/09; B60R 2011/0019; B60R 2011/0049; E05B 13/001
USPC 296/146.1, 152
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,578,547	A	12/1951	Hilger
2,615,754	A	10/1952	Lindenberg
4,118,066	A	10/1978	Ricke
4,236,479	A	12/1980	Walker et al.
4,936,244	A	6/1990	Hansen et al.
5,042,866	A	8/1991	Cody
5,058,523	A	10/1991	Mikkonen et al.
5,129,695	A	7/1992	Norman

(Continued)

FOREIGN PATENT DOCUMENTS

CN	101460691 A	6/2009
CN	105604413 A	5/2016

(Continued)

OTHER PUBLICATIONS

Wang, search report, Apr. 25, 2024, 3 pages, CNIPA, China.

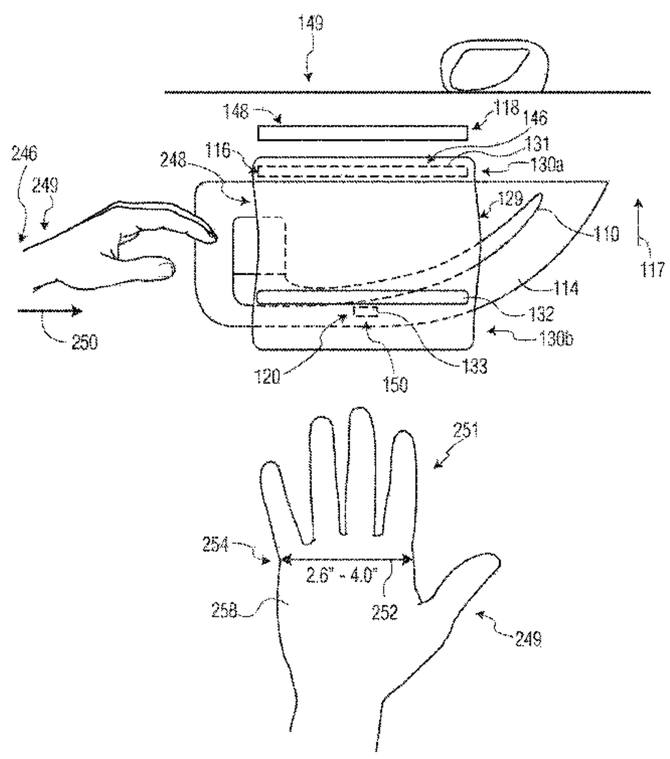
(Continued)

Primary Examiner — Jason S Daniels
(74) *Attorney, Agent, or Firm* — David J. Rosenblum

(57) **ABSTRACT**

For a hanging flexible flap having a top and bottom end for reminding a driver, upon exiting, of the vehicle's occupancy for a vehicle having a driver-side door handle including a lever operable for opening the door, deployment, proceeding from a pre-deployment state in which the flap is in a folded-up configuration such that the bottom end is releasably attached to a second interior-side location vertically above a first interior-side location to which the flap is attached and both locations are vertically above the lever and jointly high enough that the flap does not cover the lever along at least most of the lever's length, includes undoing the releasable attachment; and unfolding the flap, or letting it fall, to hang down covering the lever along at least most of the lever's length. Alternatively, pre-deployment may be in a spring-biased rolled-up configuration, with the flap unrollable down to cover the lever.

5 Claims, 14 Drawing Sheets



(56) **References Cited**

U.S. PATENT DOCUMENTS

5,133,585	A	7/1992	Hassan	
6,523,880	B1	2/2003	Yako	
6,870,472	B2	3/2005	Gift et al.	
6,938,832	B2	9/2005	Sada	
7,108,301	B2	9/2006	Louvel	
7,121,610	B2	10/2006	Nguyen	
7,265,306	B2 *	9/2007	Radu	H01H 9/22 200/333
7,966,109	B2	6/2011	Desjardins	
8,395,511	B2	3/2013	Desjardins	
8,408,156	B2	4/2013	Banda	
8,663,535	B2	3/2014	Larcom et al.	
8,727,397	B1	5/2014	McDonald	
8,892,302	B1	11/2014	McDonald	
2005/0091892	A1	5/2005	Dang	
2005/0099285	A1	5/2005	Prevatt et al.	
2007/0220793	A1 *	9/2007	Mappes	G09F 3/203 40/593
2010/0225487	A1	9/2010	Desjardins	
2014/0300461	A1	10/2014	Stark	
2016/0208516	A1	7/2016	Dearman	
2018/0361927	A1	12/2018	Debowski	
2019/0234122	A1	8/2019	Löw et al.	
2019/0248286	A1	8/2019	Maxwell et al.	
2020/0406749	A1	12/2020	Rozier	
2021/0280377	A1	9/2021	Gauthier	
2024/0044170	A1 *	2/2024	Carroll	B60J 5/0493

FOREIGN PATENT DOCUMENTS

CN	105620354	A	6/2016
CN	107408327	A	11/2017
CN	107839644	A	3/2018
CN	109131074	A	1/2019
CN	208306491		1/2019
DE	4321189	A1	1/1995
WO	2018184069		10/2018

OTHER PUBLICATIONS

Wang, first office action, Apr. 25, 2024, 3 pages, CNIPA, China.
Rosenblum, concise explanation of relevance of Chinese first office action, May 21, 2024, 1 page, US.
Healthline, What's the Average Hand Size for Men, Women, and Children?, 1 page, [retrieved on Jan. 23, 2020]. Retrieved from the Internet <URL: https://www.healthline.com/health/average-hand-size#adults>.
carparts.com, Interior Door Handle Buyer's Guide, 1 page, [retrieved on Feb. 4, 2020]. Retrieved from the Internet <URL: https://www.carparts.com/interior-door-handle>.
carseatangel.com, Car Seat Angel on Board, 1 page, [retrieved on Sep. 28, 2019]. Retrieved from the Internet <URL: https://www.carseatangel.com/Welcome.html>.
amazon.com, Hot Car Reminder Hanger by Eyez See You Baby, 1 page, [retrieved on Sep. 28, 2019]. Retrieved from the Internet <URL: https://www.amazon.com/Hot-Car-Reminder-Window-Hanger/dp/B0763K6C13/ref=sr_1_8?keywords=baby+in+car+reminder&qid=1569647698&sr=8-8>.
Grainger, Flexible Magnets, 1 page, [retrieved on Apr. 23, 2021]. Retrieved from the Internet <URL: https://www.grainger.com/search/hardware/magnets-and-magnetic-strips/flexible-magnets?tv_optin=true&searchQuery=Magnetic+Strips&ef_id=Cj0KCQjw4lmEBhDFARIsAGOTMj8xRvzcj_ocWozGql31x0CDW6sb--A1ijjOn7dyU0FwTjbWjnKJI0QaAiITEALw_wcB%3AG%3As&s_kwcid=AL%212966%213%21254612839877%21b%21%21s%21%21%2Bmagnetic+%2Bstrips&gucid=N%3AN%3APS%3APaid%3AGGL%3ACSM-2296%3AHVSA7Q%.
Durocher, Greg, Safe Ride for 4 Kids, 1 page, Jul. 11, 2019, [retrieved on Sep. 28, 2019]. Retrieved from the Internet <URL: https://saferide4kids.com/blog/hot-car-deaths-need-know/>.
amazon.com, Eyez See You Baby, Look Before You Lock Hot Car Baby Safety Reminder, 1 page, [retrieved on Sep. 28, 2019]. Retrieved from the Internet <URL: https://www.amazon.com/You-Baby-Eyez-See-Fatality/dp/B07DT93HHB/ref=sr_1_7?keywords=baby+in+car+reminder&qid=1569647698&sr=8-7>.
amazon.com, Eyez See You Baby, car safety child sensor spike reminder, 1 page, [retrieved on Sep. 28, 2019]. Retrieved from the Internet <URL: https://www.amazon.com/Pack-Sensory-Reminder-Protect-Fatalities/dp/B07DTCST6L/ref=sr_1_9?keywords=baby+in+car+reminder&qid=1569647698&sr=8-9>.
First4magnets, MagFlex® 12.7mm Wide Flexible Magnetic Tape—Premium Self Adhesive, 1 page, [retrieved on Apr. 23, 2021]. Retrieved from the Internet <URL: https://www.first4magnets.com/self-adhesive-c88>.
MagneticConceptsCorp., Magnetic Tape Self-Adhesive, 1 page, [retrieved on Apr. 23, 2021]. Retrieved from the Internet <URL: https://www.magneticconcepts.com/accessories/magnetic-accessories/magnetic-tape?gclid=Cj0KCQjw4ImEBhDFARIsAGOTMj9Kd4bTmmHGs5NUSgXIGnPxG_Df1wdE6nSluONJCu_KHZwmAAG-XScaAjQ2EALw_wcB>.
Huffington Post, Bologna, Caroline, Middle School Boy's Genius Invention Could Save Babies From Hot Car Fatalities, 1 page, Dec. 6, 2017. [retrieved on Mar. 28, 2023]. Retrieved from the Internet <URL: https://www.huffpost.com/entry/middle-school-boy-invents-way-to-save-babies-from-hot-car-death_n_5529813>.
amazon.com, Bayan Car Front Side Window Sunshades Driver Side Window, 1 page, [retrieved on Mar. 237, 2020. Retrieved from the Internet <URL: https://www.amazon.com/Bayan-Window-Sunshades-Shade-Intended-Sedans-Reduce/dp/B01799J9H4>.
Wall Street Journal, Amid_Rising_Hot-Car_Deaths,_Auto_Makers_Agree_to_Back-Seat_Alerts, 1 page, [retrieved on Jul. 28, 2020 from the Internet].
fabricwholesaledirect.com, ottertex_water_proof_fabric, 1 page, [retrieved on Jan. 30, 2020]. Retrieved from the Internet <URL: https://www.fabricwholesaledirect.com/products/ottertex-solution-dyed-acrylic-waterproof-fabric>.
Velcro.com, How to Care for Velcro® Brand Products and Remove Adhesive, 1 page, [retrieved on Sep. 28, 2019]. Retrieved from the Internet <URL: https://www.velcro.com/support/care-instructions/>.
amazon.com, Eyez See You Baby, heatstroke prevention car door handle reminder, 1 page, [retrieved on Sep. 28, 2019]. Retrieved from the Internet <URL: https://www.amazon.com/Heatstroke-Eyez-See-You-Baby/dp/B07TMRZGKY/ref=sr_1_11?keywords=baby+in+car+reminder&qid=1569647698&sr=8-11>.zd
Velcro.com, velcro_brand_sticky_back_for_auto, 1 page, [retrieved on Sep. 27, 2019]. Retrieved from the Internet <URL: https://www.velcro.com/products/industrial-strength//900101_sticky-back-for-auto/.
Wang, search report, CNIPA, China.

* cited by examiner

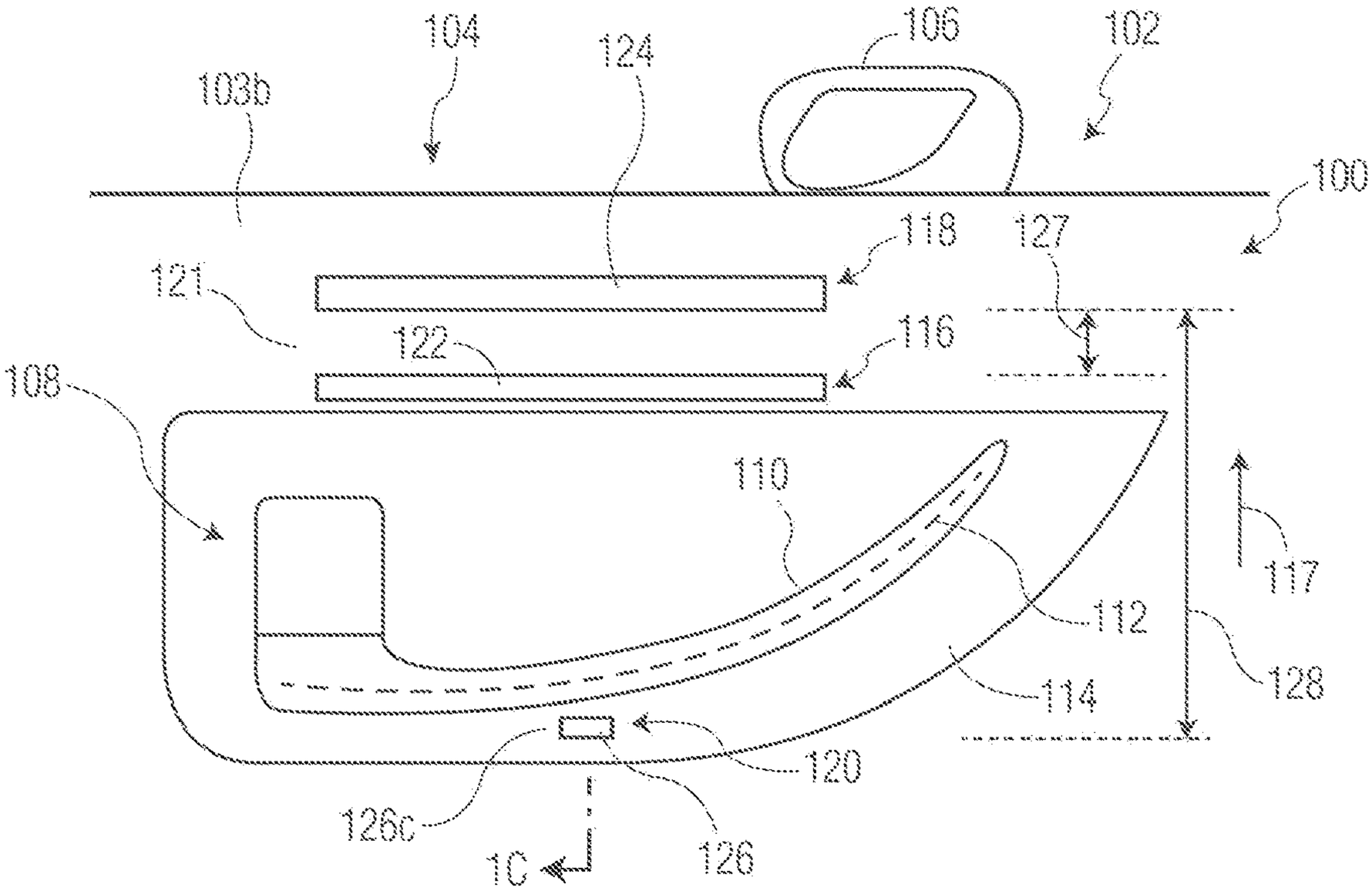


FIG. 1A

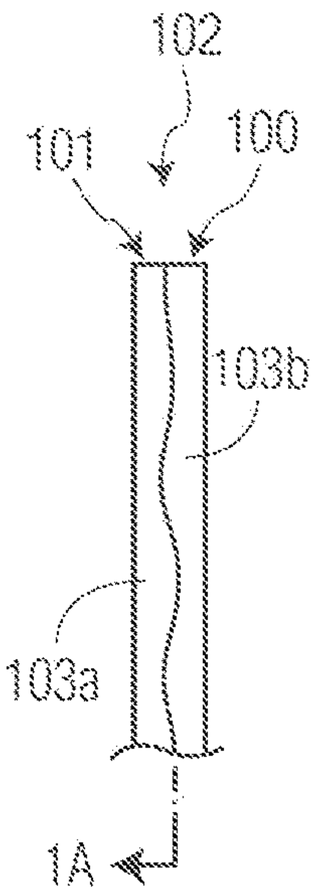


FIG. 1B

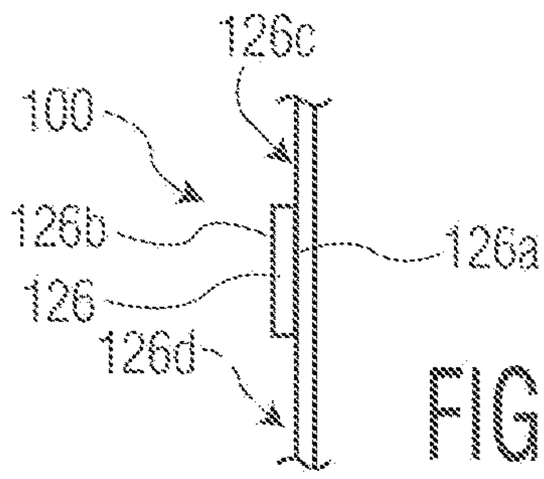


FIG. 1C

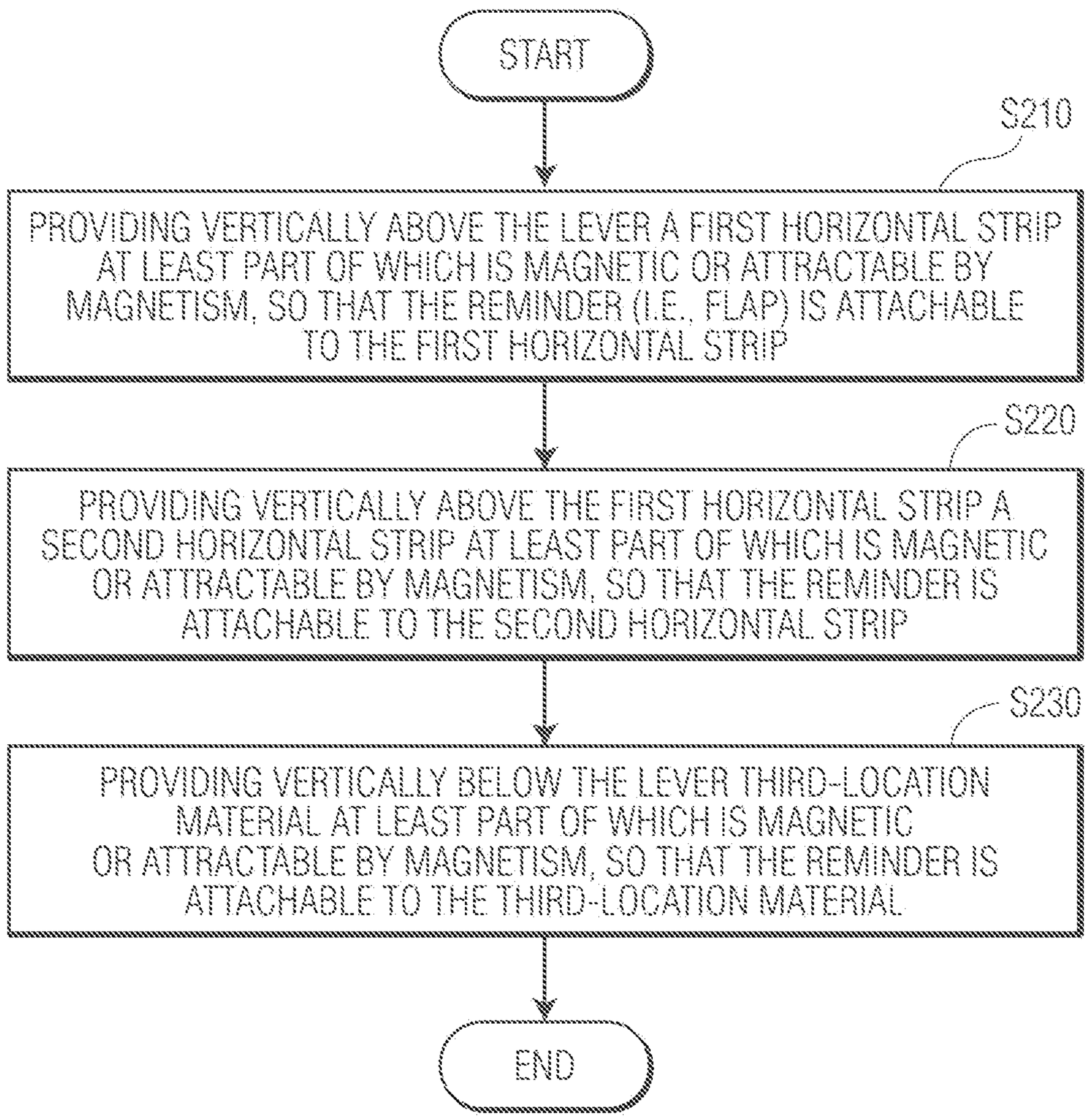

START
S210
PROVIDING VERTICALLY ABOVE THE LEVER A FIRST HORIZONTAL STRIP AT LEAST PART OF WHICH IS MAGNETIC OR ATTRACTABLE BY MAGNETISM, SO THAT THE REMINDER (I.E., FLAP) IS ATTACHABLE TO THE FIRST HORIZONTAL STRIP
S220
PROVIDING VERTICALLY ABOVE THE FIRST HORIZONTAL STRIP A SECOND HORIZONTAL STRIP AT LEAST PART OF WHICH IS MAGNETIC OR ATTRACTABLE BY MAGNETISM, SO THAT THE REMINDER IS ATTACHABLE TO THE SECOND HORIZONTAL STRIP
S230
PROVIDING VERTICALLY BELOW THE LEVER THIRD-LOCATION MATERIAL AT LEAST PART OF WHICH IS MAGNETIC OR ATTRACTABLE BY MAGNETISM, SO THAT THE REMINDER IS ATTACHABLE TO THE THIRD-LOCATION MATERIAL
END

FIG. 2

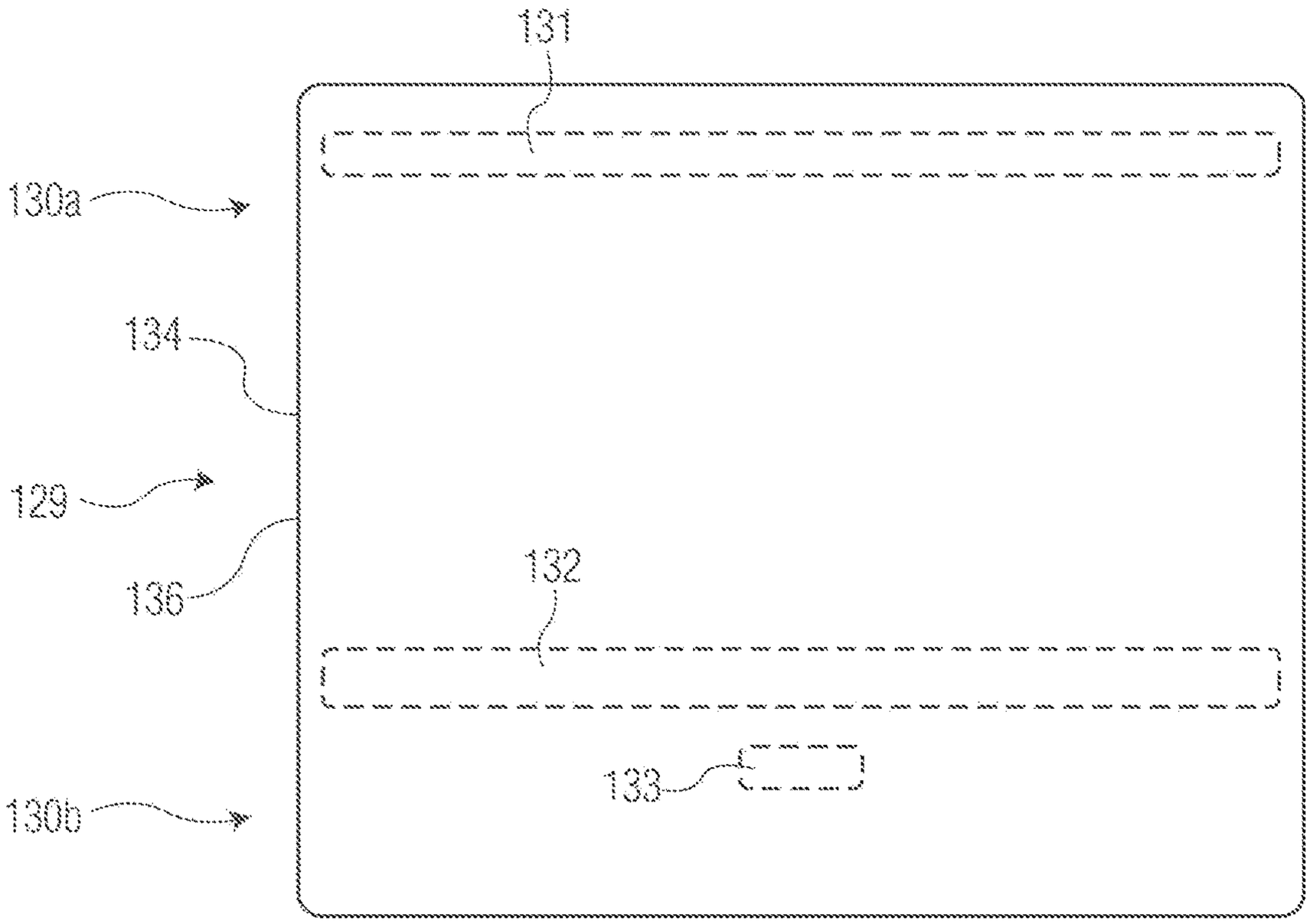

131
130a
134
129
136
132
133
130b

FIG. 3A

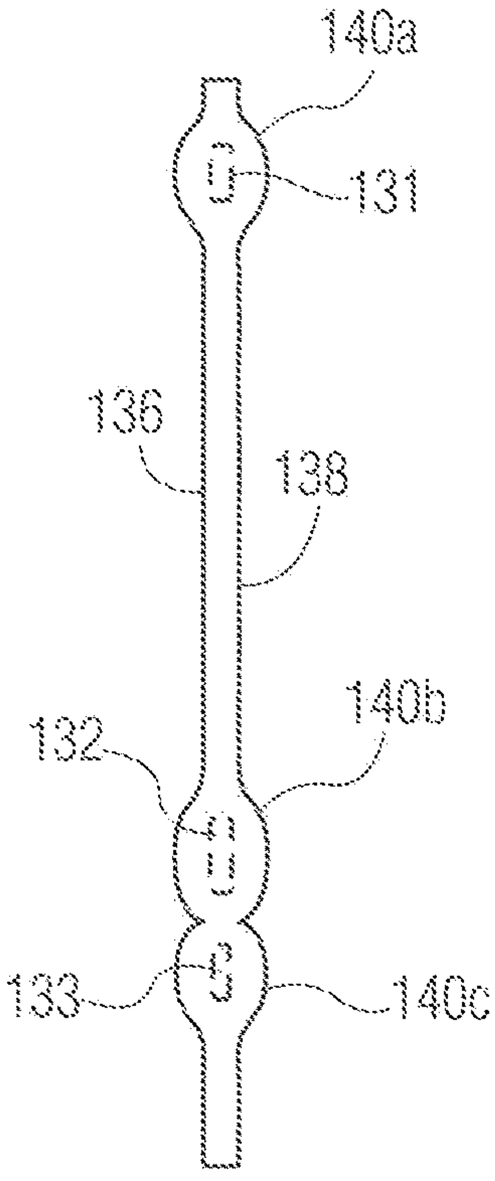

140a
131
136
138
140b
132
133
140c

FIG. 3B

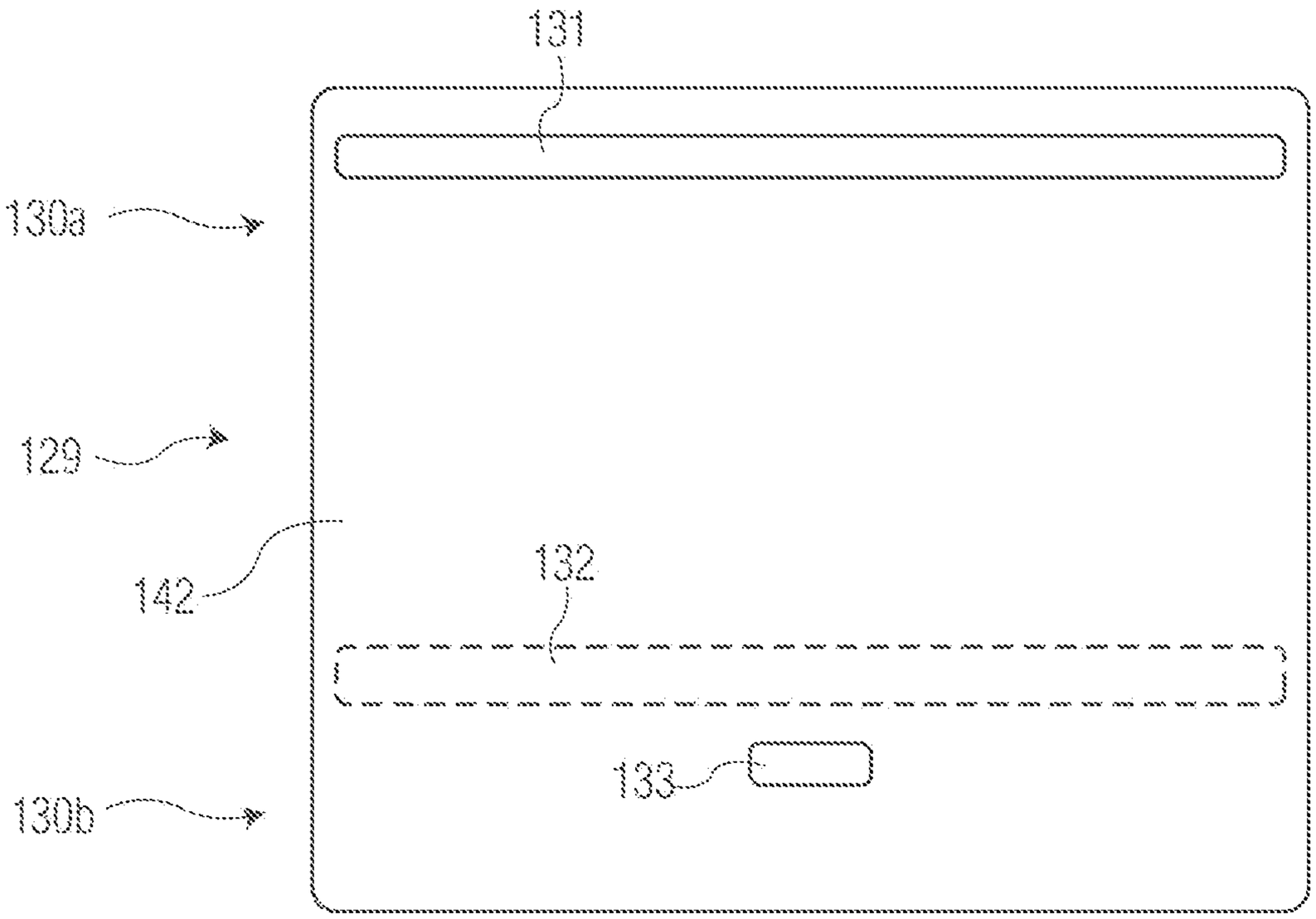


FIG. 4A

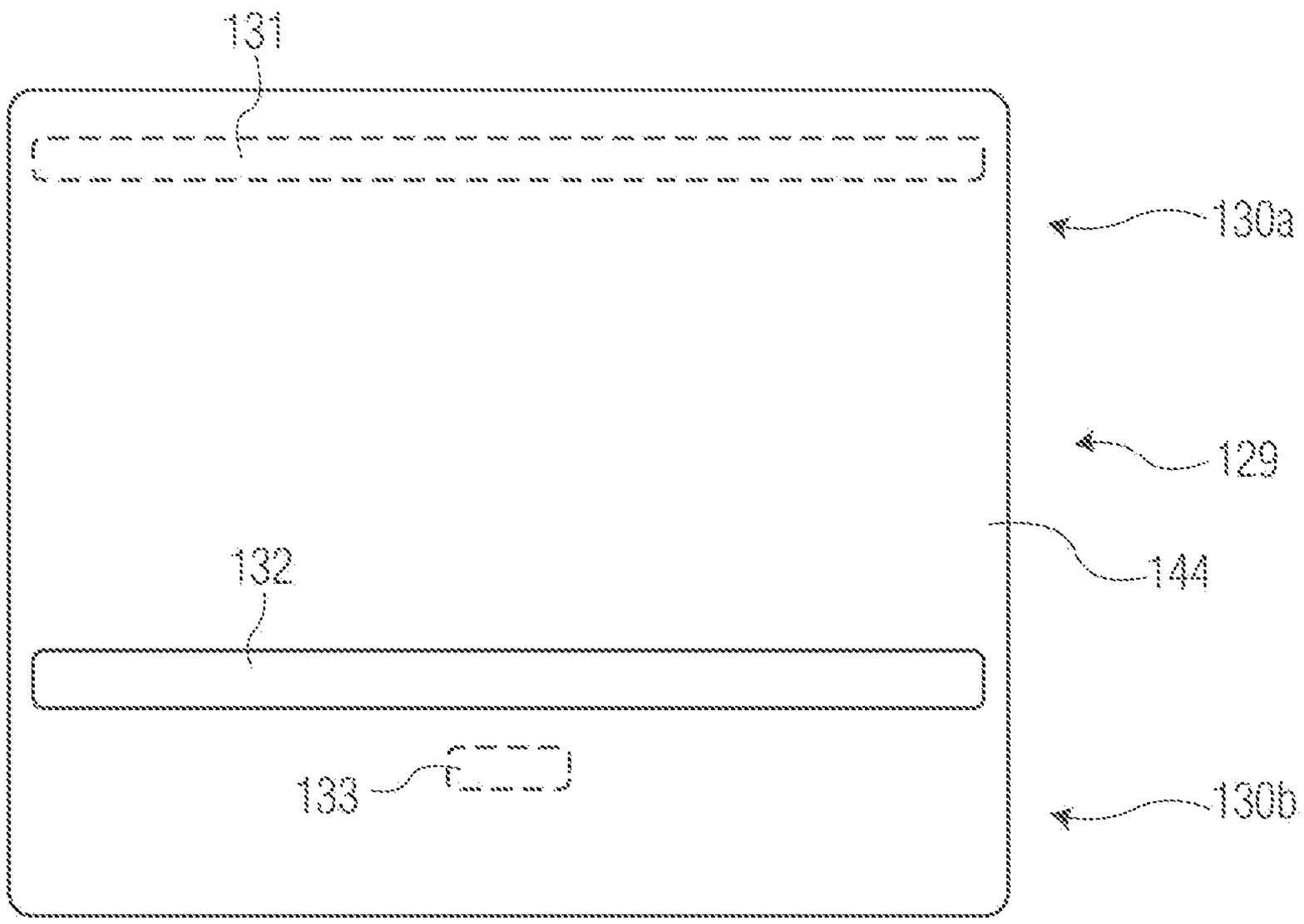


FIG. 4B

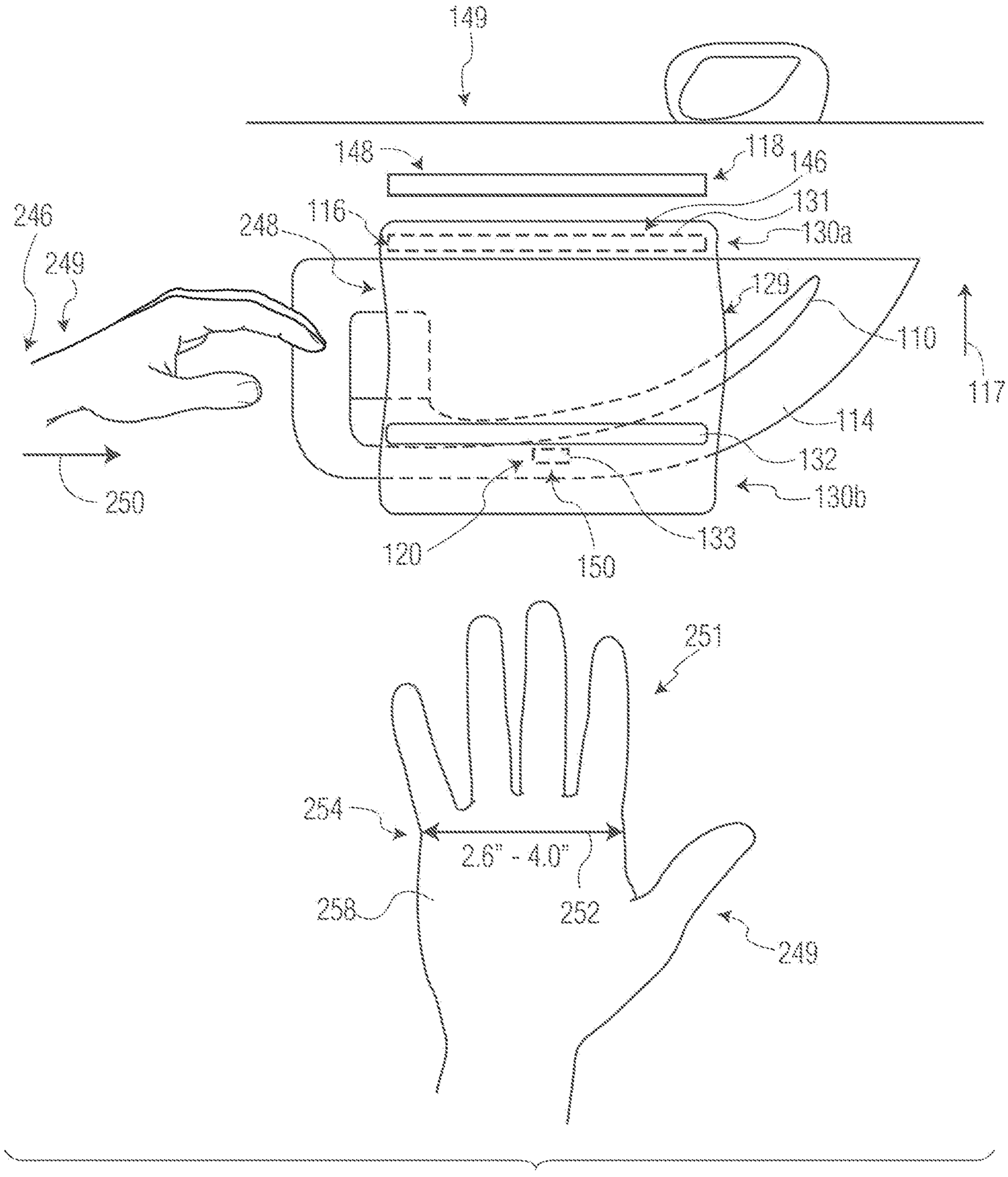

149
148
118
146
131
130a
116
248
246
249
129
110
117
114
132
130b
250
120
150
133
251
254
2.6" - 4.0"
258
252
249

FIG. 5

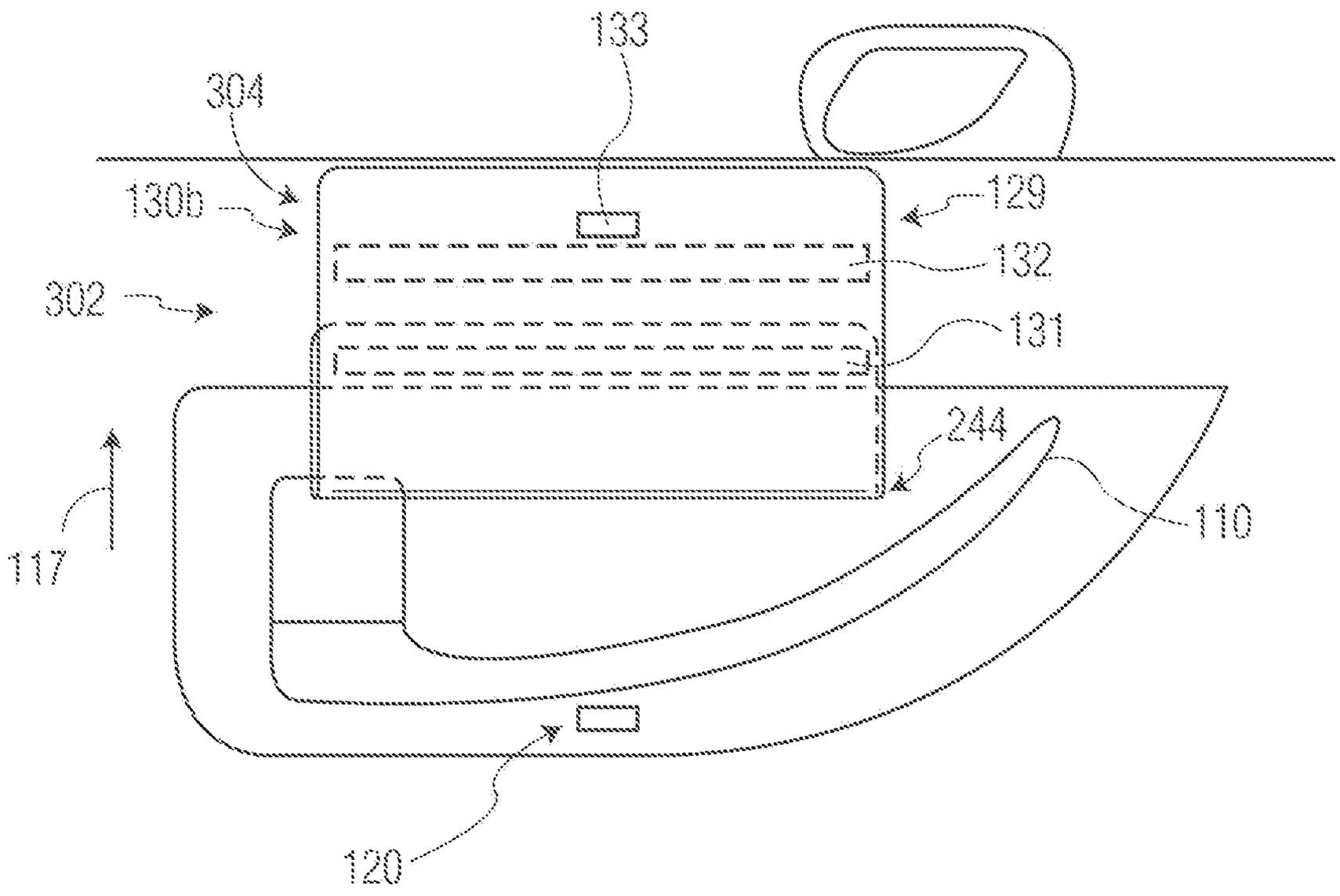


FIG. 6

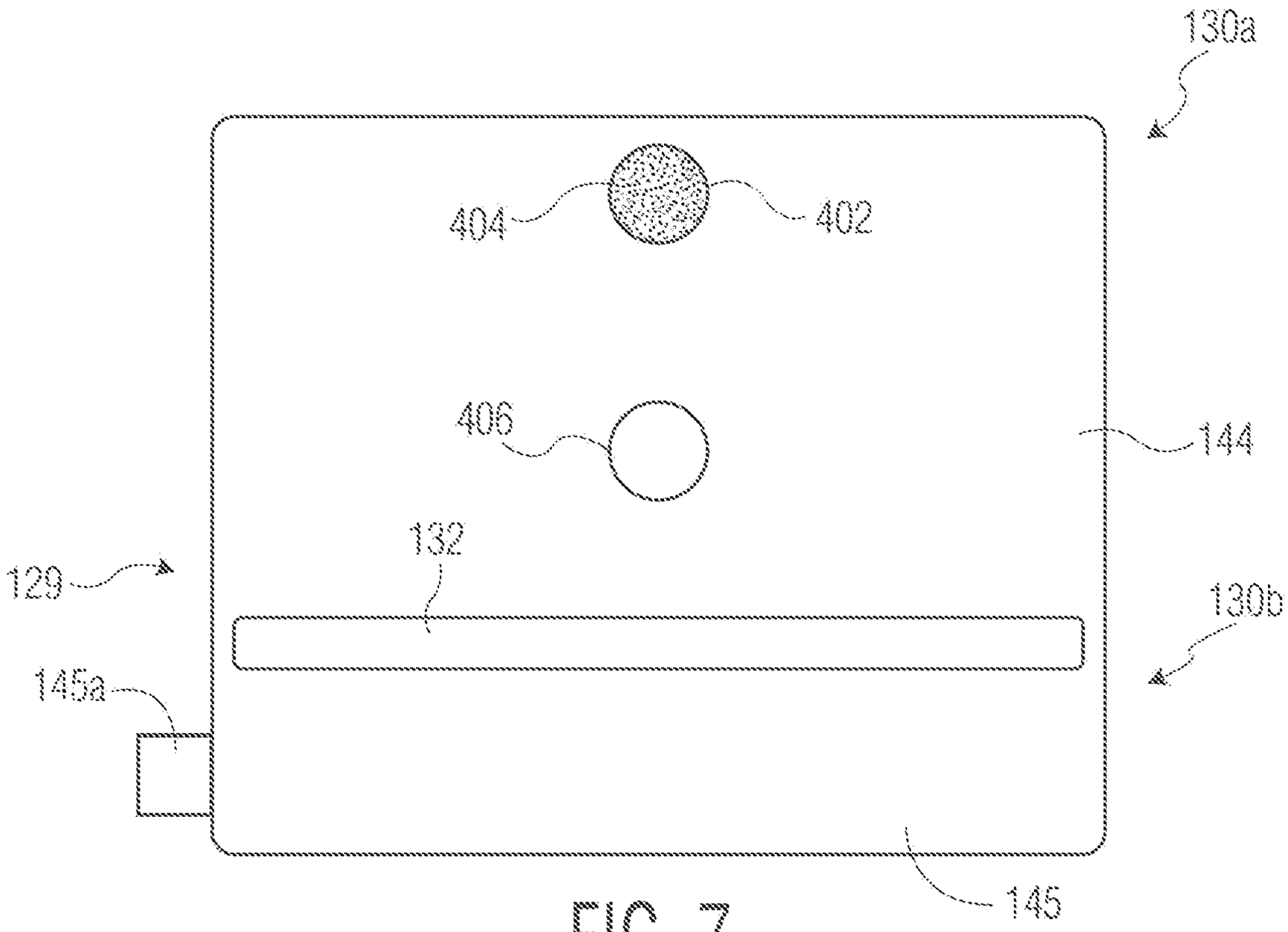

130a
404
402
406
144
132
129
130b
145a
145

FIG. 7

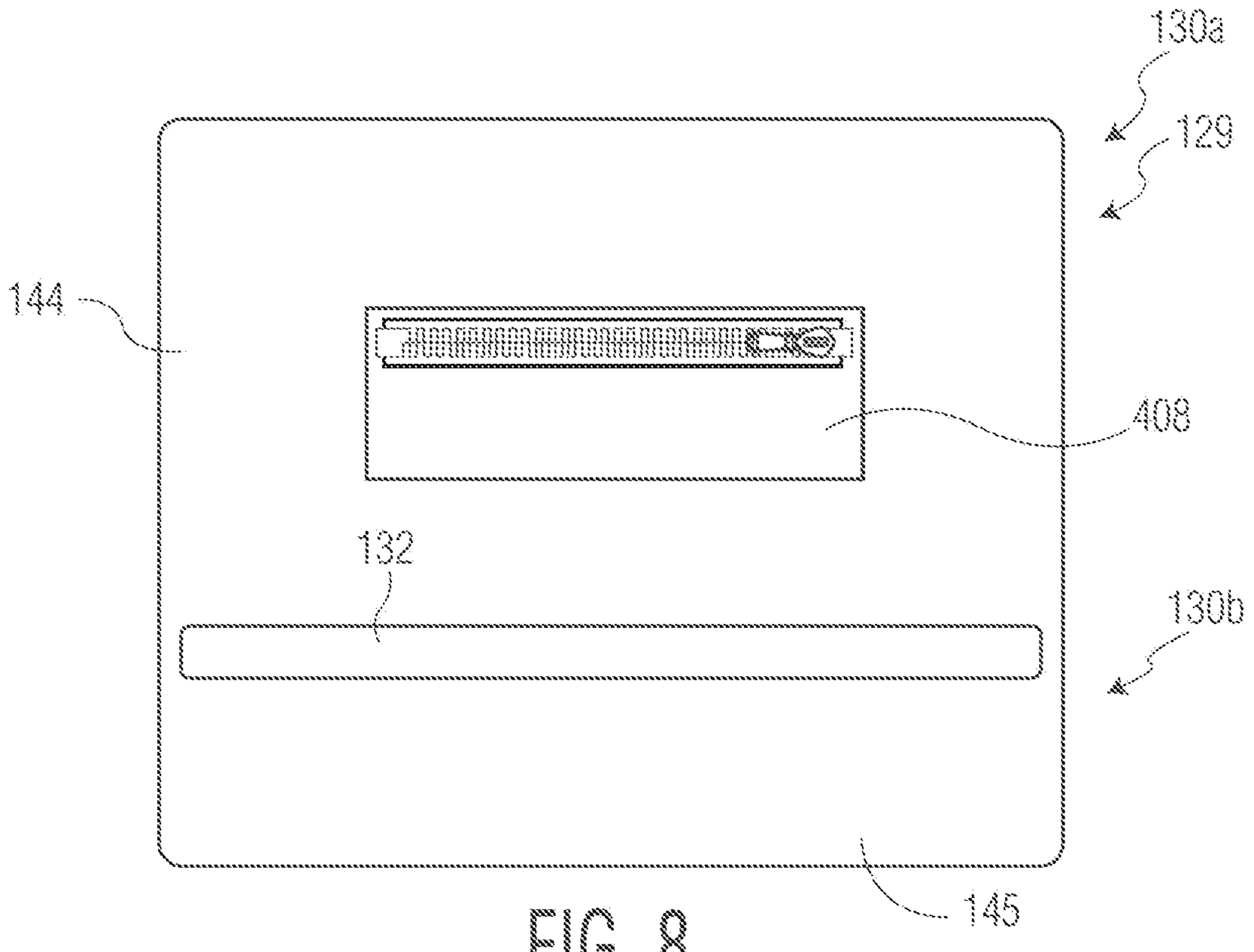

130a
129
144
408
132
130b
145

FIG. 8

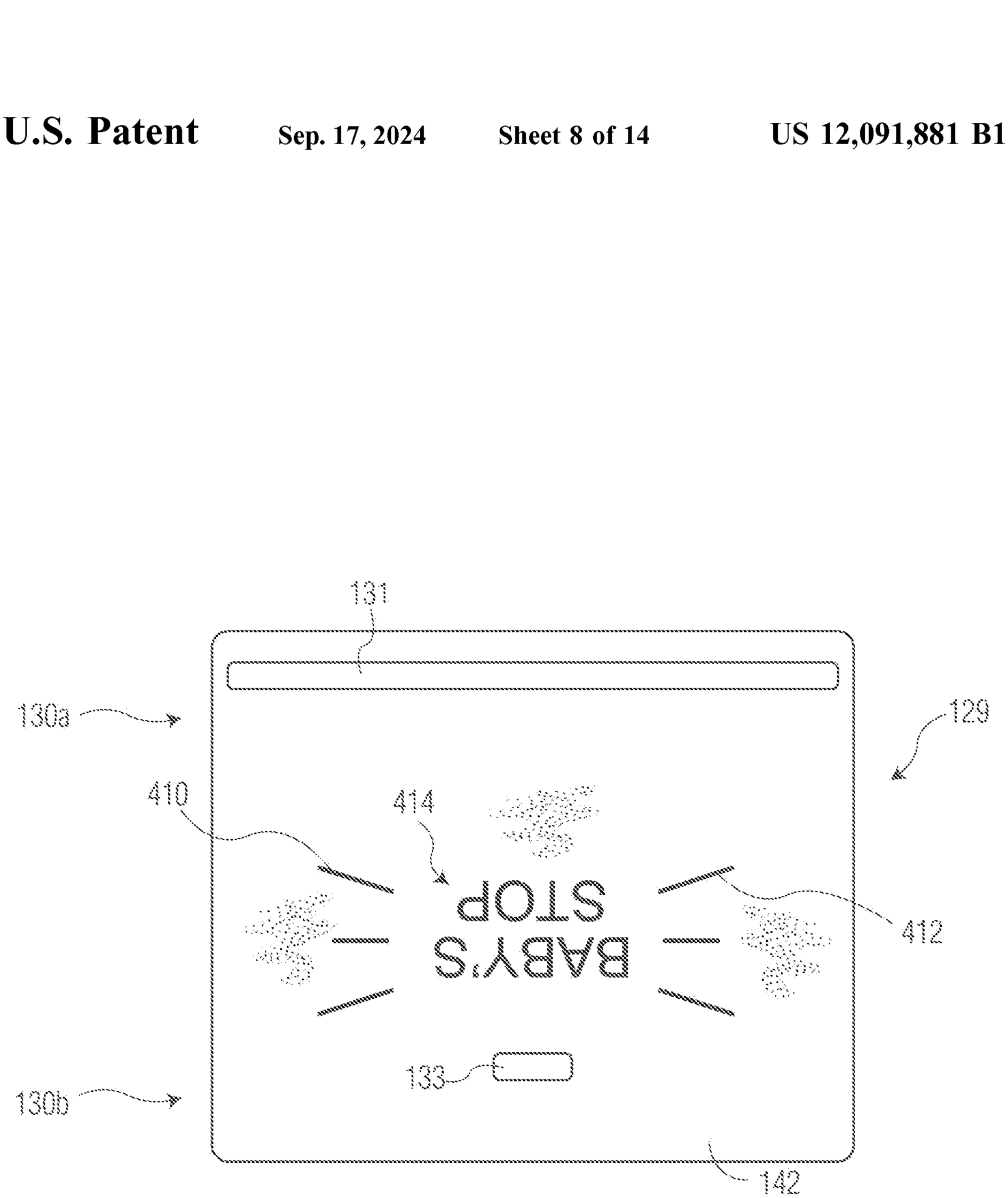


FIG. 9

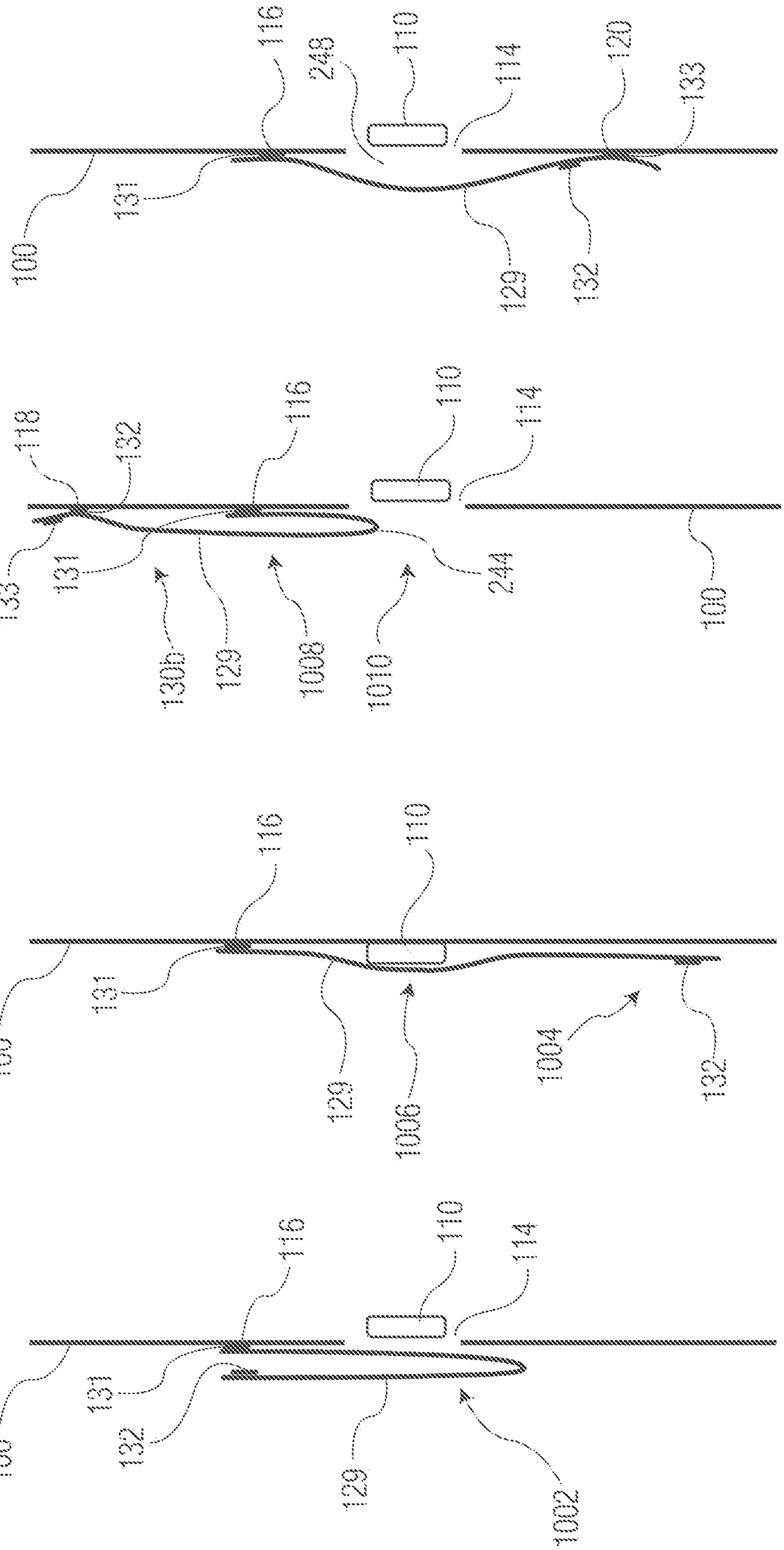


FIG. 10D

FIG. 10C

FIG. 10B

FIG. 10A

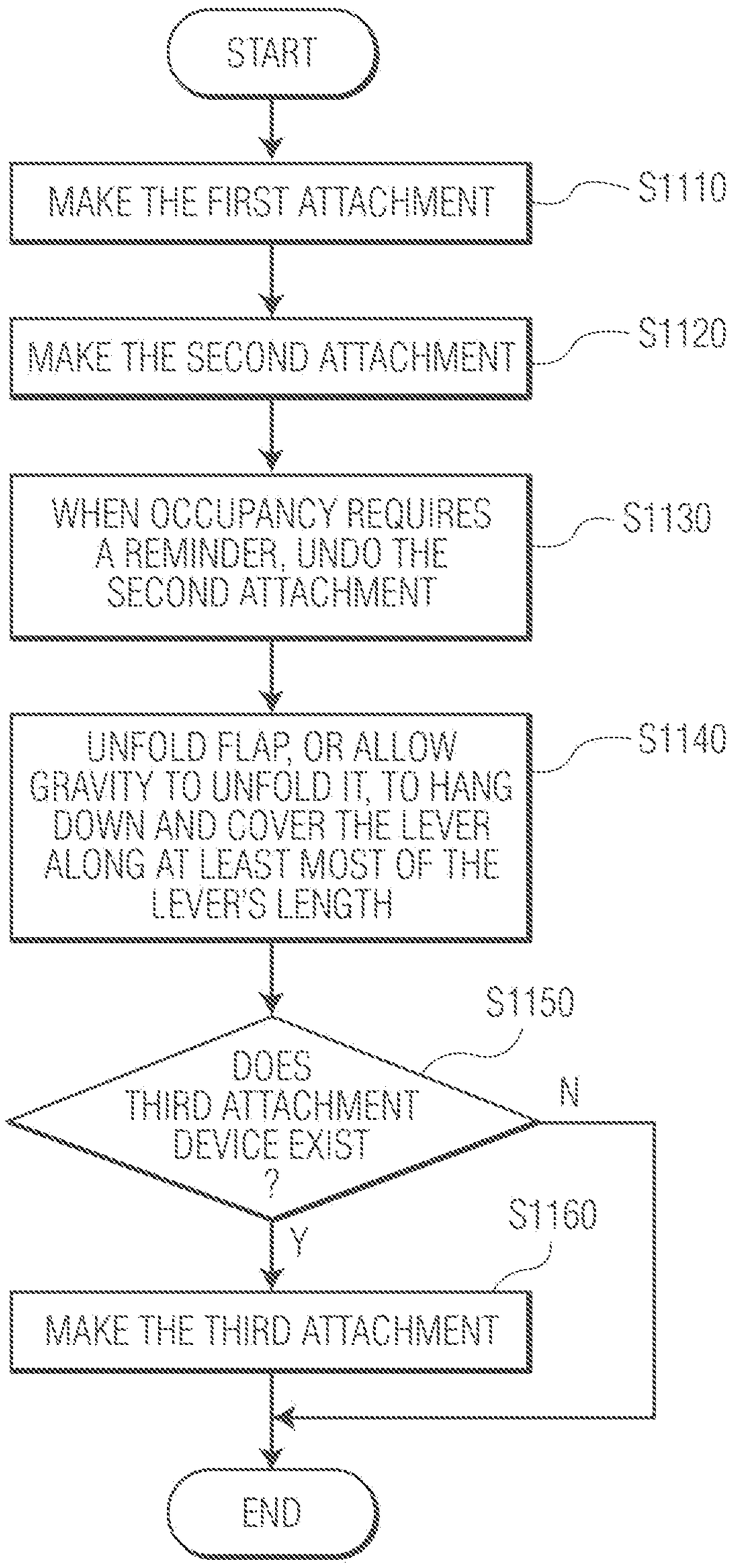

START
MAKE THE FIRST ATTACHMENT
S1110
MAKE THE SECOND ATTACHMENT
S1120
WHEN OCCUPANCY REQUIRES A REMINDER, UNDO THE SECOND ATTACHMENT
S1130
UNFOLD FLAP, OR ALLOW GRAVITY TO UNFOLD IT, TO HANG DOWN AND COVER THE LEVER ALONG AT LEAST MOST OF THE LEVER'S LENGTH
S1140
S1150
DOES THIRD ATTACHMENT DEVICE EXIST ?
N
Y
S1160
MAKE THE THIRD ATTACHMENT
END

FIG. 11

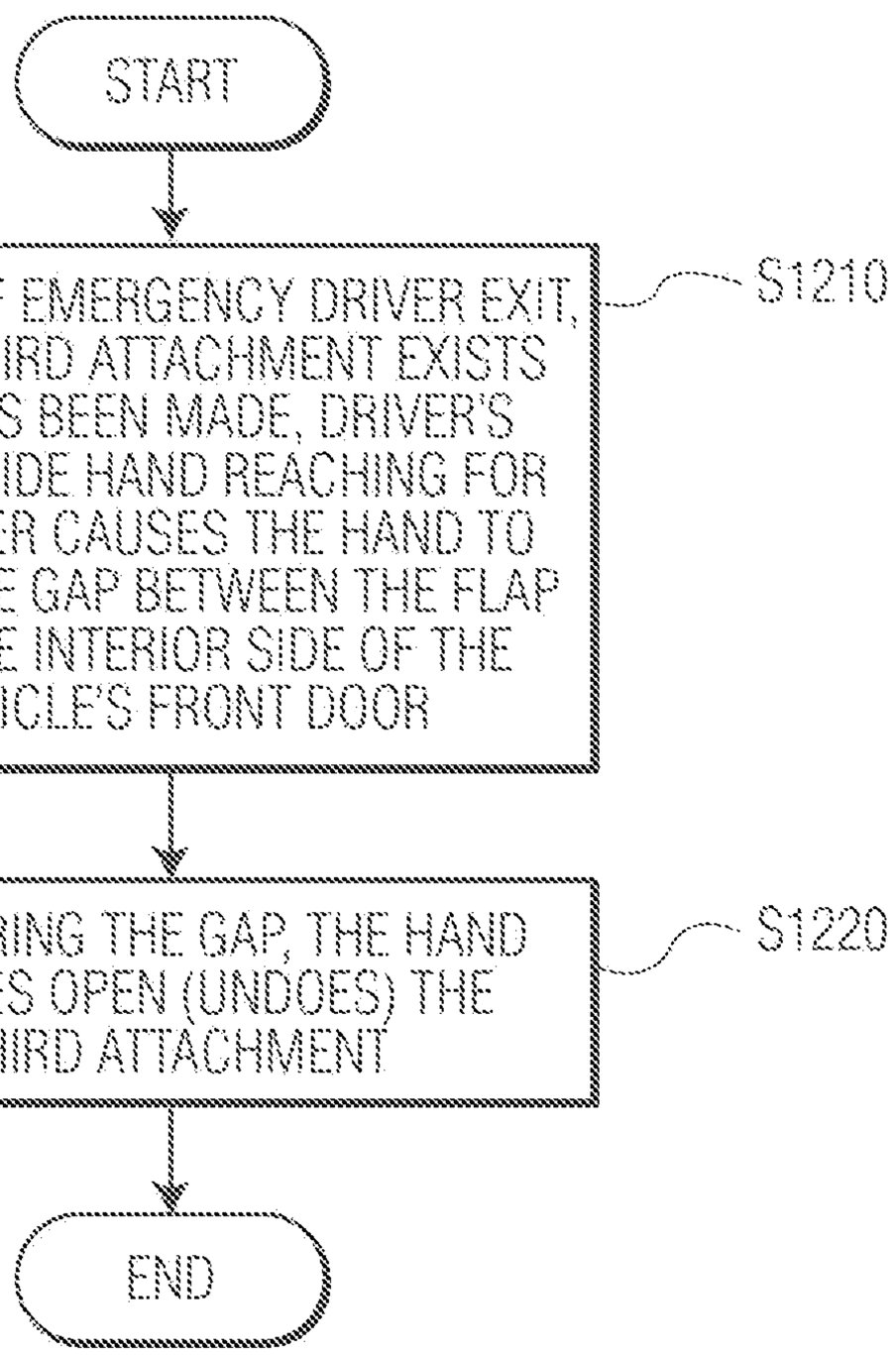

START
IN CASE OF EMERGENCY DRIVER EXIT, IF THE THIRD ATTACHMENT EXISTS AND HAS BEEN MADE, DRIVER'S DRIVER-SIDE HAND REACHING FOR THE LEVER CAUSES THE HAND TO ENTER THE GAP BETWEEN THE FLAP AND THE INTERIOR SIDE OF THE VEHICLE'S FRONT DOOR
S1210
IN ENTERING THE GAP, THE HAND WEDGES OPEN (UNDOES) THE THIRD ATTACHMENT
S1220
END

FIG. 12

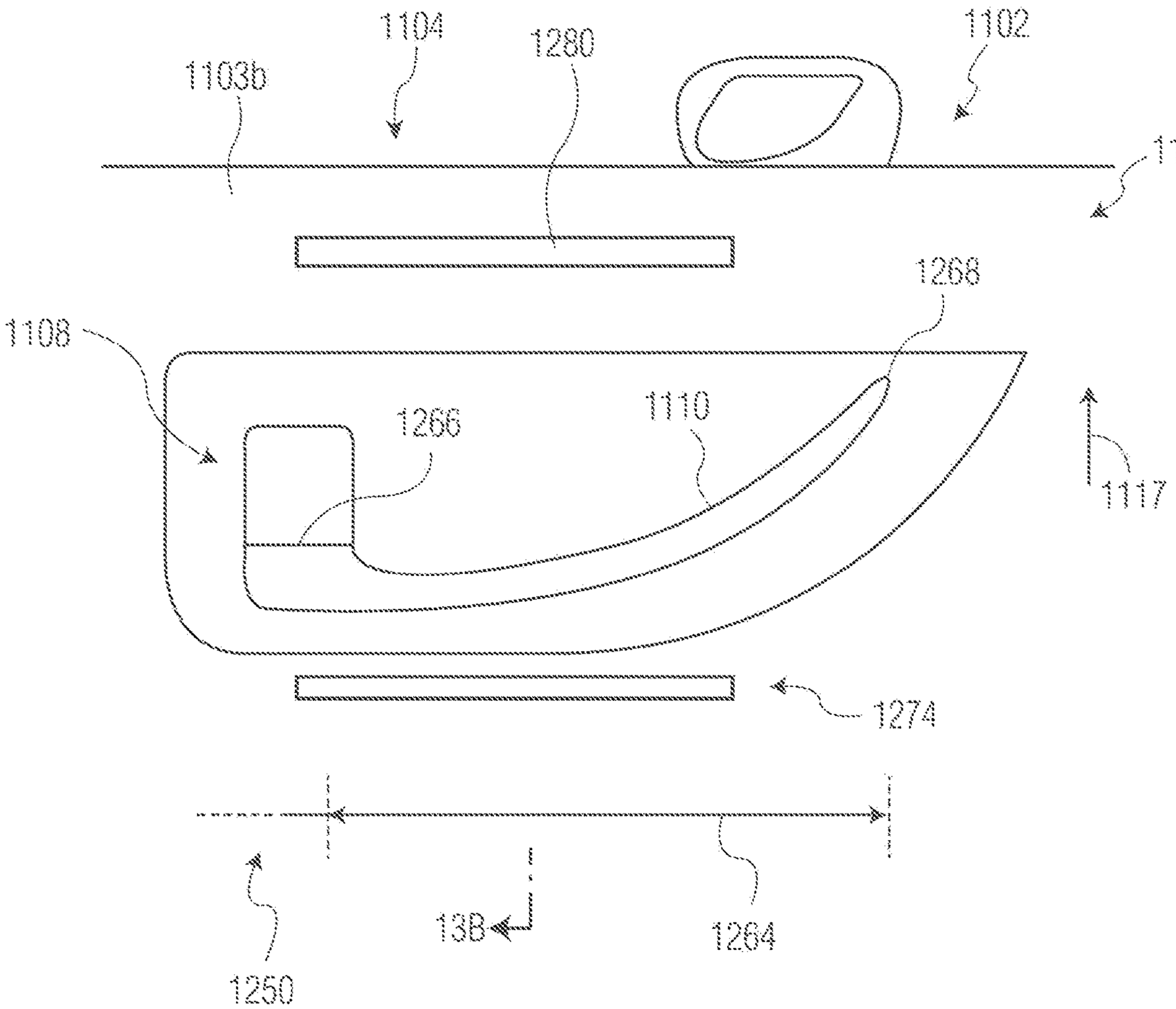

1104
1280
1102
1103b
1100
1268
1108
1266
1110
1117
1274
1250
13B
1264

FIG. 13A

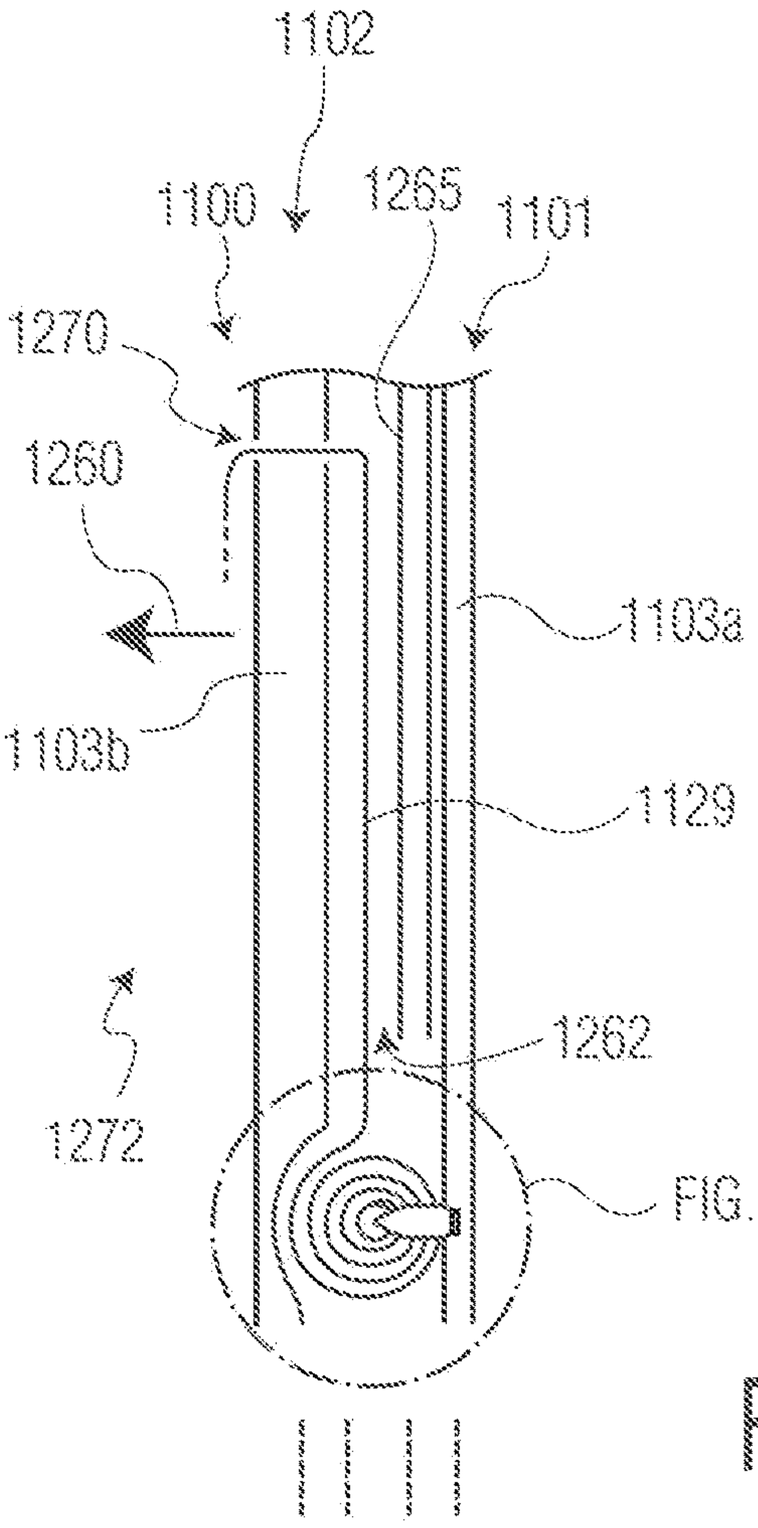


FIG. 13B

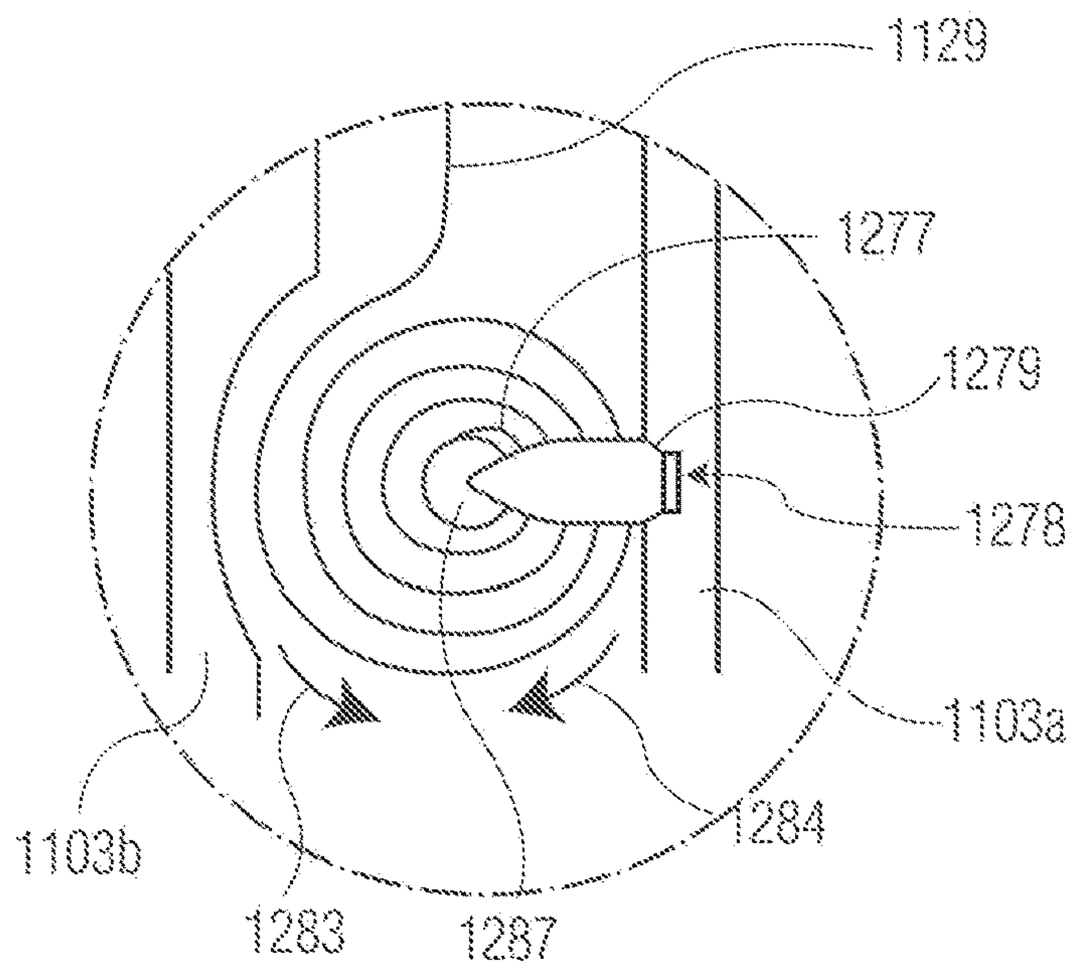


FIG. 13C

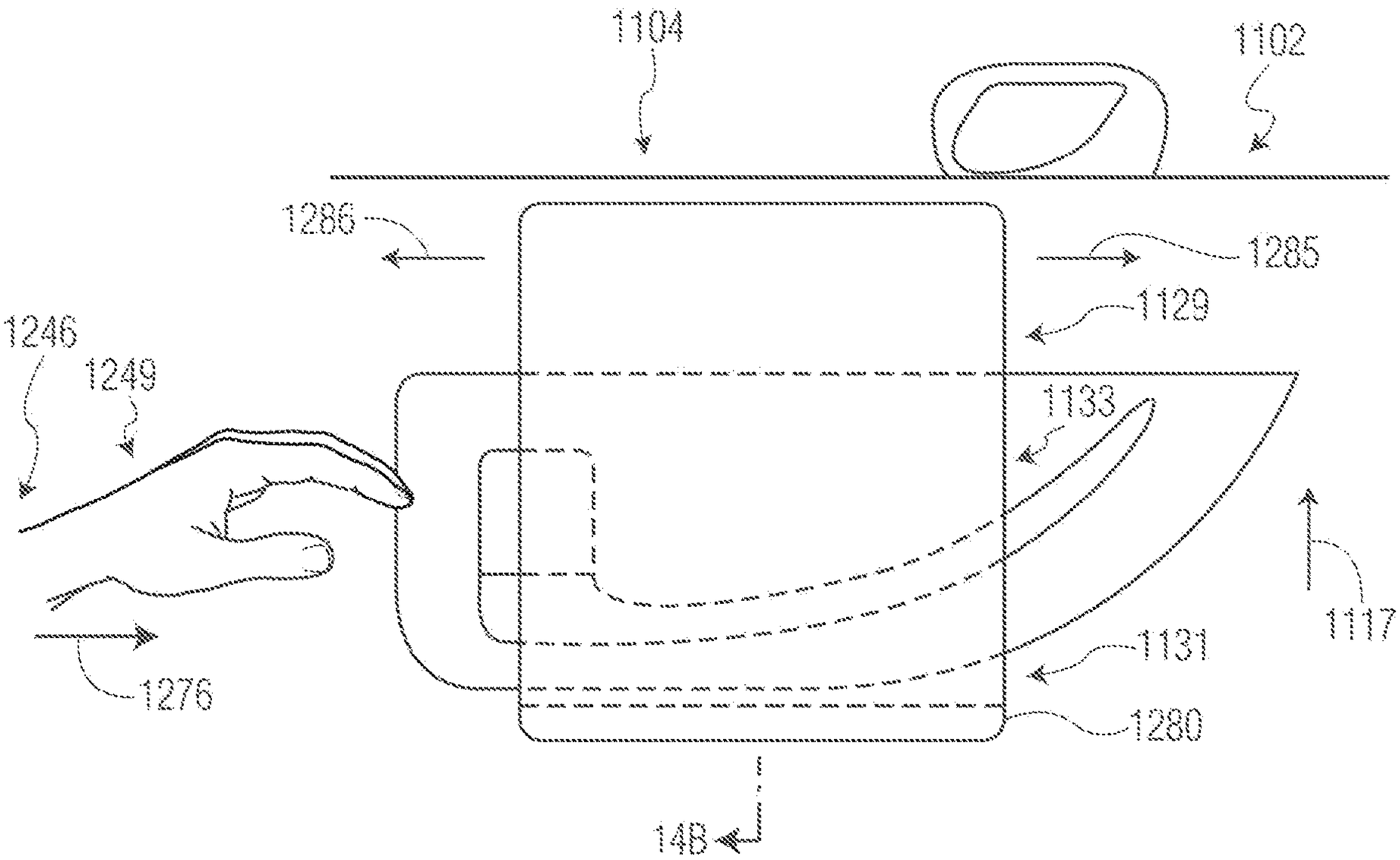


FIG. 14A

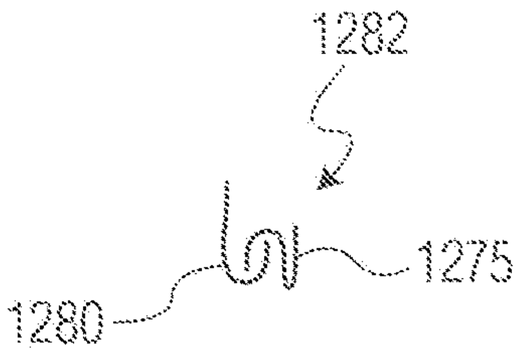


FIG. 14B

VEHICLE OCCUPANCY REMINDER FLAP FOR EXITING DRIVER

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a Divisional Patent Application of the U.S. National Stage Patent application Ser. No. 18/038,442 filed on May 23, 2023 which claims priority from the International Patent Application PCT/2022/022084 filed on Mar. 28, 2022 and from the U.S. Provisional Patent Application No. 63/175,008 filed on Apr. 14, 2021. This application claims the benefit of all the other above-mentioned applications.

FIELD OF THE INVENTION

The present invention relates to reminding a driver exiting a vehicle about any remaining passengers and, more particularly, to mechanical methods and devices for reminding.

BACKGROUND

Tragically, every year babies and toddlers are inadvertently forgotten in their car seats when the driver exits the car, resulting in deaths due to prolonged exposure to hot or cold temperatures. For example, a parent may be dropping off a number of children at different stops. Due to some distraction, the parent could exit the vehicle mistakenly under the impression that the task has been done, i.e., that all stops have been made, while the reality is that, for example, the just-completed "last" stop on the route is not the final stop. The parent could go to work or go home, and upon arrival exit the vehicle unaware that one child is still silently sitting or sleeping in his/her car seat. Likewise, in the case of a single child passenger, a preoccupied driver may forget a child upon arriving at the destination if, for example, the driver visits that destination at times unaccompanied by the child.

Two additional concerns are the security of a child seen to be alone in a car and the child's possible emotional duress.

Overwhelmingly, drivers do not believe it will ever happen to them—that they will leave a child or elderly person behind. But deaths are mounting. Many known reminding devices are electrical, complex to manufacture, costly, and expensive to retrofit to existing vehicles. One proposed solution is a door sensor/alarm reminder. If you close your back door before heading out, travel, turn off the ignition, and leave by the driver-side front door, right away or shortly afterward an alarm or beep will sound unless and until the same back door is opened. As discussed below, intermediate stops on the way to the destination could be problematic. Another idea being considered is (the possibly additional feature of) a motion detector which needs to detect sufficient child and/or driver motion near the child seat before the alarm stops, although this is more expensive to implement and, as an electrical solution, is not totally reliable.

Some rigidly-constructed mechanical reminding devices swing in the moving vehicle and have the disadvantage that they can physically distract the driver while he or she is driving. Also, when the reminding event is over or if the car is often used when there is no child occupant, it is unclear where the reminding device is to be kept without risking that it gets forgotten or misplaced, and without it becoming an inconvenience or annoyance. There exist reminding devices that block, or slow down, the driver from opening his or her door in an emergency that requires the occupants to exit the vehicle. Still other devices are of a type that the driver becomes easily accustomed to its presence without having to focus attention away from his or her thoughts. So, the device becomes less effective as a reminder.

SUMMARY

As suggested above, an overall solution to the problem of leaving behind vulnerable individuals in a car is yet to be established.

For the door sensor/alarm reminder, it is not clear that this would be practical for multi-stop trips. For example, before filling up with gasoline at the gas station, the driver typically turns off the ignition for safety. The driver often then exits to approach the gas pump, arrange for payment, select the gasoline type, lift the fuel transfer nozzle, insert it into the gas tank, etc. An alarm upon the driver's exit would be undesirable. Also, it is not clear what to do about it once the alarm sounds. One seemingly cumbersome solution would be to go through the motions of opening and closing the passenger back door, which could be the way to reset the reminder alarm for the remainder of the trip.

The motion detector described herein above is, as mentioned, relatively expensive.

In addition, existing electrical facilities, as a partial or standalone solution, can contribute to draining charge from the vehicle's battery and may face reliability issues such as electrical malfunction, the possible need for manual reset after vehicle maintenance, and replacement of a spent reminder-function-dedicated battery.

To address one or more of these concerns, what is needed is a low-cost, mechanical, effective, convenient solution that does not distract the driver while he or she is driving a vehicle, e.g., motor vehicle, and that is non-obstructive to the driver during an emergency exit from the vehicle. Proposed herein is a hanging flexible flap that interferes with but does not block manual access by a vehicle driver to the interior door handle. The flap with a single hand movement folds away "in-place" after use, but still visually serves as a reminder to reset it as an "exit interference" reminder.

In an exemplary aspect, a method for reminding a driver upon exiting the vehicle of the vehicle's occupancy pertains to a vehicle having a driver-side door designed to be opened by the driver, for instance a driver-side front door for a vehicle with three other side doors. The door has a frame and, assembled over the frame, a panel, covering, or "skin." The panel includes parts, such as plastic door moldings, on the interior side of the door. An interior door handle for exiting the vehicle is operatively connected to the door frame for opening the door although the handle is manually accessible by the driver from inside the vehicle. More generally, the driver-side door has an interior side and, on the interior side, a door handle manually accessible to the driver from inside the vehicle. The door handle includes a lever operable for opening the door for the exiting. The lever has both a pivot point at a fulcrum, and an effort endpoint. The method uses a hanging flexible flap having a top end and a bottom end. The method proceeds from a pre-deployment state in which the flap is in a folded-up configuration such that: a) the bottom end is releasably attached to a second location on the interior side that is vertically above a first location to which the flap is attached on the interior side; and b) both locations are vertically above the lever and jointly high enough to cause a fold line in the flap to be high enough that the flap does not cover the lever along at least most of the lever's length. The method includes deploying, based on the vehicle's occupancy, the flap by, starting from the

pre-deployment state, undoing the releasable attachment. The method further includes then unfolding the flap, or allowing the flap to by gravity unfold, to hang down so as to cover the lever along at least most of the lever's length. The driver is thereby, upon exiting the vehicle, provided with a tactile and visual reminder of the vehicle's occupancy.

In a sub-aspect, the deploying can include releasably attaching the bottom end to the interior side at a third location which is vertically below the lever.

In a further sub-aspect, the flap to be deployed includes first, second, and third attachment devices for respective attachment to the first, second and third locations. The flap may be configured as to dimension, placement of the first and third attachment devices, flexibility of the flap between first and third attachment devices, and case with which the third attachment device is separable from the third location in comparison to case with which the first attachment device is separable if at all from the first location, so as to cause the following. The flap while attached to the interior side at the first and third locations interferes with, but does not prevent, manual access by the driver for the operating of the lever. Prevention is avoided by virtue of laxness in the flap providing a flap-to-interior-side gap into which a driver-side hand of a driver can, by motion along the interior side, at least partially enter as the hand approaches the lever. The attachment at the third location can be at least partially undone by wedging force of the hand moving toward the lever for the operating of the lever. The hand has a breadth in the range 2.6 to 4.0 inches across an area where the fingers of the driver-side hand join the palm of that hand.

In another aspect, a hanging flexible flap is designed for a vehicle having a driver-side door designed to be opened by the driver. The door has an interior side and, manually accessible on the interior side, a door handle. The door handle includes a lever operable for opening the door for exiting the vehicle. The flap has a top end and a bottom end. The flap includes: a first attachment device disposed at the top end; a second attachment device disposed at the bottom end; and, in contact with the first and second attachment devices, a flexible body. Each of the first and second attachment devices is configured for attaching the flap to the interior side. The flap is dimensioned, configured as to placement of the first and second attachment devices, and sufficiently flexible between the first and second attachment devices: both to, with the attachment of the flap by said first attachment device to said interior side being at a first location on said interior side which is vertically above the lever, be folded up, and hang down to cover the lever along at least most of the lever's length; and that folding up, by the bottom end, the flap covering the lever to uncover the lever and then releasably attaching the second attachment device to a second location on the interior side which is vertically above the first location folds the flap up sufficiently such that the lever is not covered by the flap along at least most of the lever's length.

In a sub-aspect, the flap may further include, at the bottom end, a third attachment device configured to releasably attach to the door at a third location on the interior side which is vertically below the lever.

In a further-dependent sub-aspect, the first and third attachment devices can be configured such that the attachment by the interior side to the third attachment device at the third location is weaker than the attachment by the interior side to the first attachment device at the first location. What the first, second, and third attachment devices attach to at their respective times of attachment is considered to be the interior side (of the driver-side door designed to be opened by the driver). The interior side thus includes any mounting pre-existing at that time to respectively the first, second, or third location. An example at the first location would be a metal strip that has been mounted to the door panel and which is designed for magnetic attachment to the flap.

In a different sub-aspect, the flap has, as two oppositely-facing sides: a first attaching side that, with the first attachment device attached to the interior side at the first location, faces at the top end the interior side; and a second attaching side which at the bottom end is made to face the interior side when, with the attachment of the first attachment device to the interior side at the first location being retained, the second attachment device is, with the flap being folded up sufficiently to allow the attachment at the second location, attached to the interior side at the second location.

In a still further sub-aspect, the flap can further include, on the second attaching side, a container and a lid mutually releasably attachable and configured for sealingly enclosing scented material. The container and the lid may be positioned so that they are: a) releasably co-joinable upon the sufficient folding up; and b) mutually releasable in the covering of the lever along at least most of the lever's length.

In an alternative or supplemental sub-aspect, the flap can have a zippered pocket on the second attaching side.

As yet another alternative or supplemental sub-aspect, the first attaching side of the flap may include a fluorescent substance, a phosphorescent substance, or both a fluorescent substance and a phosphorescent substance.

In another aspect, a driver-side door of a vehicle is designed to be opened by the driver. The door has an interior side having an outer surface. The door comprises a vehicle door frame and, assembled on the vehicle door frame, a vehicle door panel on the interior side. The door handle is manually accessible on the interior side to the driver and operatively connected to the vehicle door frame for opening the door. The door handle includes a lever operable by the driver for opening the door to exit the vehicle. The door further includes, as part of the interior side, at a location vertically above the lever, a first horizontal strip of material. It also includes, as part of the interior side, vertically above the first horizontal strip of material, a second horizontal strip of material. It further includes, as part of the interior side, vertically below the lever, third-location material having two opposite sides, one of two opposite sides facing away from the driver. The other of the two opposite sides is a flat surface facing the driver and oriented substantially parallel to or substantially flush with a surrounding portion of the outer surface of the interior side. At least part of the third-location material is either magnetic or attractable by magnetism. For any of the first and second horizontal strips and the third-location material, one of two opposite sides may be facing away from the driver, the other of the two opposite sides being a flat surface facing the driver and oriented substantially parallel to or substantially flush with a surrounding portion of the outer surface of the interior side. An intervening gap between the first and second horizontal strips of material is a first separating distance that is no more than 4 inches.

In a sub-aspect of this, a reminder-equipped door includes the aforementioned door and further includes a hanging flexible flap non-resilient to bending. The flap has a top end and a bottom end, and is attached, at the top end, to the first horizontal strip of material. The hanging flexible flap is, at the bottom end with the attachment at the top end being retained, attachable alternately: to assume a pre-deployment state, to the second horizontal strip of material; and, in being

deployed as a reminder to the driver upon the driver exiting the vehicle, to the third-location material.

In an alternative or supplementary sub-aspect, at least part of the first horizontal strip of material is either magnetic or attractable by magnetism, and at least part of the second horizontal strip of material is either magnetic or attractable by magnetism.

In another alternative or supplementary sub-aspect, the first horizontal strip of material, the second horizontal strip of material, and the third-location material are located such that, between any two of the three, any intervening gap is a second separating-distance that is no more than 8 inches.

A vehicle having the driver-side door, in any of the above variations, is likewise proposed herein.

In an associated aspect, the flexibility of the flap can be such that the folding up creates, in the flap, a fold line and lifts the fold line in the flap vertically upward. The term "fold line" does not imply that the flap has a V-shaped crease defining the fold line. Instead, the fold line is, more generally, the line formed by the vertically lowest points of the flap. Typically, the cross-section near the bottom of fold of the folded flap would be U-shaped. For a U-shaped cross-section, the vertically lowest points of the U-shaped cross-sectional slices collectively form the fold line. The joint height which is an average height of the first and second locations is, when respective flap attachments exist thereto, high enough that the fold line is sufficiently high that the flap does not cover the lever along at least most of the lever's length. The flap can include material that, at the fold line, is flexible and non-resilient to bending. The fold line moves vertically upward when the flap is folded up—relatedly, at least a region of the flap having vertical extent may be supple and non-resilient to bending. Conversely, the fold line moves vertically downward while the flap is unfolded or allowed by gravity to unfold.

In another version of a reminder-equipped door, a driver-side door is designed to be opened by the driver, the door having: an interior side that faces inwardly the driver; an exterior side; and a flap passageway disposed between both sides. The door includes: a vehicle door frame; a vehicle door panel on the interior side and assembled on the vehicle door frame; and, operatively connected to the vehicle door frame, a door handle manually accessible on the interior side to the driver for opening the door. The door handle includes a lever that has a horizontal extent and that is operable by the driver for opening the door to exit the vehicle. The lever has both a pivot point at a fulcrum, and an effort endpoint. The flap passageway has, vertically above the lever, an opening into a passenger compartment of the vehicle. The interior side has a flap-retaining site disposed vertically below the lever. The door further includes a hanging flexible flap for hanging down over the lever to, horizontally, at least partially cover, and thereby impede the driver's manual access to, the lever—this serves as a reminder to the driver upon the driver exiting the vehicle. The flap has an internal end and an external end and, between the internal and external ends, a flexible portion. The flap is, at the internal end, fixed to an anchor that keeps the flap at least partially within the flap passageway. The flap has, at the external end, a retaining device for releasably engaging the flap at the flap-retaining site. The flap is horizontally dimensioned to, when releasably engaged by the retaining device, cover at least most of the horizontal extent of the lever but not to, in total taking into account both sides, overextend the lever horizontally by more than 50 percent. The horizontal extent is equal to the horizontal distance between the pivot point and the effort endpoint. The vehicle having the driver-side door is likewise proposed herein.

In an aspect of this version, the flap is retractable into the flap passageway for storage and is, for vertical extension, drawable from the flap passageway for the covering of the lever.

In a further aspect, the anchor includes a revolvable spindle around which the flap winds during the retraction and from which the flap unwinds during the vertical extension.

In a different aspect, the horizontal overextension if any is, in total taking into account both sides, no more than 25 percent.

In yet another aspect, the horizontal overextension if any is, in total taking into account both sides, no more than 10 percent.

A vehicle having this version of the driver-side door, in any of the above variations, is likewise proposed herein.

Various ones of the aspects are contemplated as combinable at least as per the claims herein below.

Details of the novel vehicle occupancy reminder method and apparatus are set forth further below, with the aid of drawings, which are not drawn to scale.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1**A is a schematic view at a small perspective angle of exemplary mountings attachable to a hanging flexible flap in accordance with aspects of what is proposed herein;

FIG. **1**B is a conceptual depiction of a vehicle door frame and a vehicle door panel assembled on the vehicle door frame;

FIG. **1**C is an enlarged side view of third-location material and a surrounding portion of the interior side of a vehicle in accordance with aspects of what is proposed herein;

FIG. **2** is a flow chart of an exemplary method of preparing a vehicle for attachment of a magnetic-attachment embodiment of the hanging flexible flap in accordance with aspects of what is proposed herein;

FIG. **3**A is a front view of an exemplary hanging flexible flap attachable to a vehicle interior by magnetism in accordance with aspects of what is proposed herein;

FIG. **3**B is an enlarged side-view of the hanging flexible flap of FIG. **3**A;

FIG. **4**A is a schematic drawing of the first attaching side of an exemplary hanging flexible flap, the flap being attachable to a vehicle interior by a hook and loop fastener in accordance with aspects of what is proposed herein;

FIG. **4**B is a schematic drawing of the second attaching side of an exemplary hanging flexible flap, the flap attachable to a vehicle interior by a hook and loop fastener in accordance with aspects of what is proposed herein;

FIG. **5** is the image of FIG. **1**A at a small perspective angle, including, in addition, an exemplary deployed hanging flexible flap attachable by hook and loop fastener, further including the hand of the exiting driver, that hand reaching in a motion that will undo the deployment, in accordance with aspects of what is proposed herein;

FIG. **6** is a schematic view at a small perspective angle of the hanging flexible flap of FIG. **5** in a pre-deployment state in accordance with aspects of what is proposed herein;

FIG. **7** is a schematic view of the second attaching side of an exemplary hanging flexible flap enhanced for, when deployed, releasing scent in accordance with aspects of what is proposed herein;

FIG. **8** is a schematic view of the second attaching side of an exemplary hanging flexible flap enhanced by being provided with a zippered pocket in accordance with aspects of what is proposed herein;

FIG. **9** is a schematic view of the first attaching side of an exemplary hanging flexible flap enhanced by providing luminescent material in accordance with aspects of what is proposed herein;

FIGS. **10**A, **10**B, **10**C, and **10**D are side views of the driver-side front door's interior side with a hanging flexible flap attached in various configurations in accordance with aspects of what is proposed herein;

FIG. **11** is a flow chart on an example of preparing for deployment of a hanging flexible flap and deploying in accordance with aspects of what is proposed herein;

FIG. **12** is a flow chart on exemplary methods of using a hanging flexible flap in accordance with aspects of what is proposed herein;

FIG. **13**A is a schematic view at a small perspective angle of a vehicle door designed for extension and retraction of a hanging flexible flap with the flap in a pre-deployment state in accordance with aspects of what is proposed herein;

FIG. **13**B is a side view of the vehicle door and flap of FIG. **13**A;

FIG. **13**C is a partial, expanded view of the retracted part of the flap of FIG. **13**B that is wound around a revolvable spindle;

FIG. **14**A is the image of FIG. **13**A, except that the flap has now been deployed, the image including, in addition, the hand of the exiting driver reaching for, but being impeded from accessing, the vehicle handle's lever; and

FIG. **14**B is a partial side view of the image of FIG. **14**A.

DETAILED DESCRIPTION

FIG. **1**A shows, by way of illustrative and non-limitative example, an aspect of what is proposed herein, in the context of the interior side **100**, as opposed to the exterior side **101**, of a driver-side front door **102** of a vehicle, for example a car or other motor vehicle for carrying at least one passenger, such as a truck. As seen from FIGS. **1**A and **1**B, the door **102** has a frame **103***a* and, assembled over the frame **103***a*, a panel **103***b*, covering or "skin", as conceptually depicted in FIG. **1**A. The panel **103***b* includes parts, such as plastic door moldings, on the interior side **100** of the door **102**. Although not shown in the conceptual depiction of FIG. **1**B, structures such as a retracted door window exist in gaps between the frame **103***a* and the panel **103***b*. An interior door handle for exiting the vehicle **104** is mechanically attached to the door frame **103***a* although manually accessible to the driver from inside the vehicle **104**. More generally, the driver-side door **102** has an interior side **100** and, on the interior side **100**, a door handle manually accessible to the driver from inside the vehicle **104**. The door **102** is designed to be opened by the driver. In this case, the driver side is on the left for someone facing forward, although the description herein applies analogously to vehicles **104** having the steering wheel on the right. A driver-side side mirror **106** is mounted externally. Everything else depicted in FIG. **1**A is interior. An interior door handle **108** manually accessible on the interior side **100** to the driver includes a lever **110** having a length **112** which is represented in FIG. **1**A by the length along the broken line indicated by the lead line from reference number **112**. In this example, the lever **110** pulls inwardly into the vehicle **104** to open the door **102**. The interior door handle **108** is disposed within a recessed compartment **114** of the interior side **100**. A first location **116** on the interior side **100** vertically above **117** the lever **110**, and a second location **118** on the interior side **100** vertically above **117** the first location **116**, serve as points of attachment to a hanging flexible flap. Here, the word "point" is used loosely in the sense of an area, region, or site.

From a first point of attachment on the interior side **100** of the driver-side door **102**, the flap can hang down to cover, and thereby momentarily interfere with, the driver's exit from the vehicle **104**. Thus, the flap is deployed as a reminder, to the driver of infants, toddlers, or elderly in the back seat(s) or otherwise, of the vehicle's occupancy. When the reminder is not needed, as when there are no child or elderly passengers, the flap can be conveniently stowed away somewhat but not to the point where it is out of sight and easily forgotten when next it needs to be used as a reminder. In particular, a simple hand movement folds the flap from the bottom up so that, while retaining the first point of attachment, the flap is now also attached at a second point of attachment to the interior side **100**, this second point residing vertically above **117** the first point of attachment. In this folded-up configuration, free access by the driver to the lever **110** is available. To put the reminder again into effect, the flap can easily be unfolded by manually undoing the second connection with a simple tug and immediately restoring the deployment. The deployment can include "buttoning down" the flap at a third point of attachment to the interior side **100**, this third point residing not only below the above-mentioned points of attachment, but below the lever **110**. The flap, as a consequence, cannot now wander to and fro, brushing against the driver's arm during the trip, for instance when the vehicle **104** is turning.

As just mentioned, a third point of attachment to the hanging flexible flap may exist at a third location **120** on the interior side **100** vertically below the lever **110**. Although the third location **120** is shown to be within the recessed compartment **114**, the location **120** may be located vertically below the recessed compartment **114**. Optionally, the recessed compartment **114** may not be a feature of the vehicle **104** having the third point of attachment. Likewise, the placements in FIG. **1**A of the first and second locations **116**, **118**, relative to the recessed compartment **114** which may or may not exist, are merely examples. Also, different portions **121** of the interior side **100** may be differently shaped, for instance as level, concave, or convex outer surfaces, and/or differently oriented such as vertically, horizontally, or in between vertically and horizontally.

The hanging flexible flap is, as described herein above, designed to be attached to the interior side **100**, at any given time, at one or two from among the first, second, and third locations **116**, **118**, **120** on the interior side **100**. For example, the hanging flexible flap could be a generally rectangular piece of material, one side of the rectangle being at the "top end", with the "bottom end" being located at the opposite side of the rectangle. The hanging flexible flap may include first, second, and third attachment devices each of which is located at its respective "end", i.e., either the top end or the bottom end. The first attachment device when attached to the interior side **100** can be attached to the first location **116**, the second attachment device when attached to the interior side **100** can be attached to the second location **118**, and the third attachment device when attached to the interior side **100** can be attached to the third location **120**. Hereinafter, the attachments (i.e., of the first, second, and third attachment devices respectively) at respectively the first through third locations **116**, **118**, **120** will be referred to at times as correspondingly the "first attachment", "second attachment", and "third attachment." Also, what the first,

second, and third attachment devices attach to at their respective times of attachment is considered to be the interior side **100**. The latter thus includes any mounting pre-existing at that time at respectively the first, second, or third location **116**, **118**, **120**. An example of such a mounting is a horizontal strip which is discussed further herein below in connection with reference numerals **122**, **124**, **126**.

The methods of attachment of the hanging flexible flap at each of the first, second, and third locations **116**, **118**, **120** in the instant embodiment rely on magnetism, although alternative methods of attachment will be discussed further herein below.

First, the interior side **100** may be prepared so that the attachments to the flap can be made. Referring now to FIGS. **1**A, **1**C, and **2**, mounted to the first location **116** is a first horizontal strip **122** of material. For the embodiment shown in FIG. **1**A, at least part of the first horizontal strip **122** is, as in the case of ferromagnetic matter for example, either magnetic or attractable by magnetism. The strip **122** can be cut from a roll of magnetic tape or can be more rigid as in a strip of metal plate. If the strip **122** does not have an adhesive backing, it can be provided with one appropriate to the material composition of the interior side **100** where the strip **122** is mounted. By virtue of the strip **122** being mounted to the interior side **100** at one of the three locations **116**, **118**, **120**, the strip **122** is part of the interior side **100**. Via a first attachment device, the flap is attachable to the interior side **100**. That attachment of the flap is through the first horizontal strip **122** of material. A second horizontal strip **124** of material is mounted to the second location **118**. As in the case of at least part of the first horizontal strip **122**, at least part of the second horizontal strip **124** is either magnetic or attractable by magnetism. Via a second attachment device, the flap is attachable to the interior side **100** by means of the second horizontal strip **124** of material. Mounted to the third location **120** as part of the interior side **100**, and disposed sideways and vertically below the lever **110**, is third-location material **126** at least part of which is either magnetic or attractable by magnetism. Via a third attachment device, the flap is attachable to the interior side **100** by means of the third-location material **126**. Typically, the flap would be attached to the interior side **100** via both the first and third attachment devices (in a deployed state), or via the first and second attachment devices (in a pre-deployment state), as will be discussed in detail further herein below. The flap would, for example, be manually manipulated to alternate between the two states according to the current reminding needs, or current lack thereof, of the driver.

For any of the first and second horizontal strips **122**, **124** and the third-location material **126**, it can be positioned, at least as the driver views it, flat against the immediately surrounding area of interior side **100**. Thus, for any of the first and second horizontal strips **122**, **124** and the third-location material **126**, and with reference to FIG. **1**C, one **126***a* of two opposite sides may be facing away from the driver, the other of the two opposite sides being a flat surface **126***b* facing the driver and oriented like a surrounding portion **126***c* of the outer surface **126***d* of the interior side **100**. For example, the driver-facing flat surface **126***b* could be oriented substantially parallel to or substantially flush with the surrounding portion **126***c* of the interior side **100**. The surrounding portion **126***c* may be area of the outer surface **126***d* that immediately adjoins the first horizontal strip **122**, the second horizontal strip **124**, or the third-location material **126**, as the case may be. The immediately-adjoining surrounding portion **126***c* may be curved slightly (with a radius of curvature of 8 or more inches) as seen in FIG. **1**C. This slight curvature may exist if, for instance, the third location **120** is located within a slightly-curved recessed compartment **114** of the interior side **100**. It could be said in such a case that parallelism between a slightly curved surface and a flat one "substantially" exists. Likewise, two flat surfaces could be substantially parallel. In the FIG. **1**C embodiment shown in particular, the driver-facing flat surface **126***b* is oriented substantially parallel to the surrounding portion **126***c*. Although, the third-location material **126** could instead be embedded so that the driver-facing flat surface **126***b* is substantially flush with, rather than substantially parallel to, the surrounding portion **126***c*.

As seen in FIG. **1**A, the third-location material **126** may, in comparison with the first and second horizontal strips **122**, **124**, have much shorter horizontal span. The overall (horizontal and vertical) span of the third-location material **126** can be much less than that of either of the first and second horizontal strips **122**, **124**, thereby affording a weaker attachment at the third location **120** than at either the first or second locations **116**, **118**. This is because the third attachment is not relied upon to support the weight of the flap. Because the third attachment is weaker, its undoing requires less force. This facilitates the driver's emergency exit from the vehicle **104**. It also facilitates transition from the deployed state to the pre-deployment state. As noted further herein below, the short vertical span of the second attachment (at the second horizontal strip **124**) facilitates the opposite transition—from the pre-deployment state to the deployment state. The first and second horizontal strips **122**, **124** may for example each be 7 by 7/10 inches and 1/10 of an inch thick, with the third-location material **126** being 7/10 by 7/10 inches and 1/10 of an inch thick.

It is preferable that the magnetic attraction between the first horizontal strip **122** of material and the first attachment device of the flap be strong, because, as discussed further herein below, the attachment at the first location **116** normally would not be undone frequently if at all. This attachment can be of a more permanent nature, using permanent glue for example. Also, even if the first attachment device is separable from the first location **116**, the attachment may be designed to be stronger than at the other locations **118**, **120**, via the use of industrial-strength rather than regular-strength hook and loop fasteners, for example. It is preferable that the first horizontal strip **122** be securely mounted onto the interior side **100** if not integral with it.

Although the first attachment, which is an attachment of the first attachment device to the interior side **100** at the first location **116**, typically is rarely if ever undone, the attachment at the second location **118** might be undone each time the hanging flexible flap is deployed (i.e., is manipulated to sufficiently cover the lever **110** to thereby serve as a reminder to the driver upon his/her exiting the vehicle **104**). It is therefore practical that the magnetic attraction at the second attachment can be weaker than at the first attachment, provided this second attachment holds throughout the time the hanging flexible flap is in a pre-deployment state. Thus, a magnet causing the second attachment can be thinner than a magnet causing the first attachment.

The third attachment is undone frequently, as in the case of the second attachment. It is therefore practical that the magnetic attraction making the third attachment can be weaker than for the first attachment, provided this third attachment holds throughout the time the hanging flexible flap remains deployed.

The type of adhesive to use for adhesion of the interior side **100** to each of the strips **122**, **124** and the third-location

material **126** can be tailored to the relative strength of the magnetic pull in releasing the respective attachment.

As an alternative to adhesive, the corresponding surfaces on the interior side **100** may already be magnetic or attractable by magnetism without any mounting having occurred. For example, the interior side **100** adjacent to the first, second and/or third location **116**, **118**, **120** may have an outer surface, i.e., the surrounding portion **126***c*, that includes hard plastic or another polymer. In that case, any of the first and second horizontal strips **122**, **124** and the third-location material **126** may emerge from the outer surface as a surface portion, or "strip", substantially flush with the outer surface.

Also, as an alternative to using magnetism as a basis for the first, second, and third attachments, other forms of attachment, such as friction-based ones, can instead be employed. Attachment can be, for instance, by snaps, or by VELCRO®-brand hook and loop fasteners. VELCRO® is a registered trademark of Velcro BVBA. For this latter attachment mechanism, an array of hooks may be mounted to one thin polymer surface with the hooks extending outward from the surface. A matching array of loops may be mounted to a second such surface with the loops extending outward from the second such surface. By bringing together the hooks and loops, the two surfaces can be joined, and are separable by manually peeling away the hooks from the loops or vice versa. The attachment methods need not all be uniform. Thus, the first attachment could be magnetic or by strong or permanent or semi-permanent adhesive, with the second and third attachments by hook and loop fasteners.

In case of hook and loop fastening in making any of first, second, and third attachments, the hook array or the matching loop array could, by its adhesive backing if configured with such, be mounted to the second location **118** thus making the mounted array part of the interior side **100**. The other of the hook array and loop array can by its adhesive backing or by sewing around the array's perimeter be mounted to the hanging flexible flap.

More generally, the interior side **100** is attachable, by any known and suitable methods of attachment, at each of the three locations **116**, **118**, **120** to the corresponding first and second horizontal strips **122**, **124** and the third-location material **126**, these latter structures being implemented with, for example, magnetic or magnetically attractable material or with hook-and-loop fastening.

Likewise, these latter structures are respectively attachable to the first, second, and third attachment devices by any known and suitable methods of attachment.

Although a car is mentioned above as an example of a vehicle **104**, the intended scope of the invention is not limited to a car. The vehicle **104** may be, for instance, a truck, or a boat or airplane having a cabin with a lever-opened door. The vehicle **104** may be, for example, a motor vehicle or a vehicle pulled by gravity along a smooth, icy, down-sloping surface.

Also, the vehicle **104** need not have more than two side doors, nor even multiple doors. The vehicle **104** could, for instance, be a two-door coupe. The coupe could have passenger seats in a row behind the driver. Moreover, the passenger to the side of the driver in a two-seat car may be an elderly person, or it may be a baby whether it should be in the front row or not. The passenger would or could be the beneficiary of a reminder. The vehicle **104** could have more than two rows of seats.

A hanging flexible flap for any of the above-described vehicles **104** comes within the intended scope of the present invention.

FIG. **2** presents a particular method of preparing a vehicle **104** for utilizing the flap configured for attachment by magnetic attraction. The method includes providing on the interior side **100** at the first location **116** vertically above **117** the lever **110** a first horizontal strip **122** of material, at least part of the first horizontal strip **122** being either magnetic or attractable by magnetism (step S**210**). Upon attachment of the first horizontal strip **122**, the interior side **100** includes the first horizontal strip **122**. More specifically, an outer surface of the first horizontal strip **122**, that outer surface facing the driver, is, at the site of the first horizontal strip **122**, due to its mounting at that site (i.e., the first location **116**) an outer surface of the interior side **100**. The area of the first horizontal strip **122** (projected to the viewer in FIG. **1**A) matches that of the first location **116**. Via the mounted first horizontal strip **122**, the flap is attachable to the interior side **100**, so that the reminder (i.e., flap) is attachable to the first horizontal strip **122**. The method further includes providing, on the interior side **100** vertically above **117** the first horizontal strip **122** a second horizontal strip **124** of material, at least part of the second horizontal strip **124** being either magnetic or attractable by magnetism (step S**220**). Likewise, the second horizontal strip **124** is, as a consequence of its attachment at the second location **118**, part of the interior side **100**. Likewise, the area of the second horizontal strip **124** matches that of the second location **118**, and, via the mounted second horizontal strip **124**, the flap is attachable to the interior side **100** so that the reminder (i.e., flap) is attachable to the second horizontal strip **124**. A further step is providing, on the interior side **100** vertically below the lever **110**, third-location material **126**. At least part of the third-location material **126** is either magnetic or attractable by magnetism, for magnetic attraction to the material residing at the bottom end of the flap (step S**230**). Likewise, the third-location material **126** is, as a consequence of its attachment at the third location **120**, part of the interior side **100**. Also, the area of the third-location material **126** matches that of the third location **120**. Via the mounted third-location material **126**, the flap is attachable to the interior side **100** so that the reminder (i.e., flap) is attachable to the third-location material **126**. The first and second horizontal strips **122**, **124** and the third-location material **126** are accordingly in the present embodiment located respectively at the first, second, and third locations **116**, **118**, **120**. In the present embodiment, an intervening gap, i.e., the shortest connecting straight line, between the first and second horizontal strips **122**, **124** of material is a first separating-distance **127** that is no more than 4 inches. In the present embodiment, the first horizontal strip **122** of material, the second horizontal strip **124** of material, and the third-location material **126** are located such that any intervening gap between any two of the three is a second separating-distance **128** that is no more than 8 inches. In other embodiments, the limits of 4 and 8 inches may be different, 5 and 9 inches for example. The second separating-distance **128** is likewise the shortest connecting straight-line.

FIG. **3**A shows an exemplary hanging flexible flap **129** having a top end **130***a*, a bottom end **130***b* and, in contact with both the first and second attachment devices **131**, **132** that are disposed respectively at the two ends **130***a*, **130***b*, a flexible body **134**. This version of the flap **129** is composed of two layers **136**, **138** as seen in FIG. **3**B, the side view. The two layers **136**, **138** are joined to form three pockets **140***a*, **140***b*, **140***c*. The first pocket **140***a* houses a first attachment device **131**. The second pocket **140***b* houses a second attachment device **132**. The third pocket **140***c* houses a third attachment device **133**. The third attachment device **133** may

have a flat surface to magnetically mate with the driver-facing flat surface **126***b* of the third-location material **126** on the interior side **100** of the driver-side front door **102** (shown in FIGS. **1**A and **1**C). The attachment devices **131-133** are represented in FIGS. **3**A and **3**B by broken lines since they are within and thus hidden by their respective pockets **140***a-c* from that view. Here and going forward in the specification, when hidden lines are hidden by the flap **129**, it is assumed that the flap **129** is not transparent, although it is not required that the flap **129** be non-transparent. Although the two layers **136**, **138** are, for purposes of illustration, depicted in FIG. **3**B as apart, they are closely adjacent, except where the pockets **140***a-c* are formed.

In this version of the flap **129**, as seen in FIGS. **3**A and **3**B, for each of the attachment devices **131-133**, at least part of the device is magnetic or attractable by magnetism. If a particular attachment device **131-133** is magnetic, the structure on the interior side **100** that the device **131-133** attaches to is attractable by magnetism, and vice versa. Thus, for example, the first attachment device **131** is attachable to the first horizontal strip **122** of material, because one of device **131** and strip **122** is magnetic and the other is attractable by magnetism.

The layers **136**, **138** of the flap **129** may each be made individually or collectively of cloth, fabric, or a textile. Some examples would be polyester fabric such as Ottertex® acrylic waterproof canvas fabric; a blend of 90% cotton and 10% spandex such as embossed scuba pin fabric manufactured by Fabric Wholesale Direct; and a blend of 75% polyester, 17% nylon, and 8% spandex such as cabaret stretch mesh manufactured by Fabric Wholesale Direct. Although flexible, the material providing the flap **129** with its flexibility for the covering and uncovering of the lever **110**, and for making the second and third attachments, may be non-resilient between the first and second attachment devices **131**, **132** and between the first and third attachment devices **131**, **133**. Yet, the material could in some ways be resilient—it may, for example, be supple and not resilient to being bent, e.g., folded, yet be resilient to some stretching. A rubber band, for example, is, as long as its elastic limit is not exceeded, resilient to stretching. Although it is not necessarily resilient to bending. Resilience is defined herein as the ability of a material to absorb energy when it is deformed elastically and release that energy upon unloading. Elastic deformation is defined herein as a reversible deformation in which the elastic force is equated to the external force that causes deformation. The layers **136**, **138** are each thin enough, for example between 0.5 and 1.5 millimeters, so that magnetic attraction to the first and second horizontal strips **122**, **124** and to the third-location material **126** is effective in holding the flap **129** to the interior side **100**. Also, the feel of flap **129**, particularly if the flap **129** contains natural material, is different from the feel of the hard plastic or metal lever **110**, which enhances the tactile reminder. The suppleness of the material, which includes its non-resilience to bending, also has a different feel and thus enhances the tactile aspect of the reminder.

The attachment devices **131-133** need not uniformly be magnets nor be uniformly attractable by magnetism; instead, the attachment devices **131-133** can differ from each other in this respect. Thus, one attachment device could be magnetic while another attachment device is not magnetic but attractable by magnetism. Nor do the attachment devices **131-133** have to be uniformly of the same kind functionally, e.g., one or more could be based on magnetism and remaining ones could be implemented as hook and loop fasteners. Thus, by way of example, the flap **129** is made up of layers **136**, **138**, and at least one of the first and second attachment devices **131**, **132** is enclosed between the layers **136**, **138**. Thus, both the first and second attachment devices **131**, **132** are enclosed between the layers **136**, **138**, or one of the two attachment devices **131**, **132** is between the layers **136**, **138**. In the latter case, the other one of the two attachment devices **131**, **132** could be attached to the outside of the flap. Specifically, it could be attached onto a particular one of the two oppositely-facing (i.e., "flip") sides of the flap **129**. The term "flip side" does not herein connote that either side of the two oppositely-facing sides is more important than the other.

For simplicity of illustration on how the flap **129** is used and without loss of generality, for the example embodiments in FIGS. **4**A, **4**B, and **5**, the first, second, and third attachments are by hook and loop fastener rather than by magnetic material. Instead of a double-layered flap **129**, a hook array or a matching loop array could be attached onto a single-layer flap **129**, the single-layer thickness being for example between 0.5 and 1.5 millimeters. Thus, in FIGS. **4**A, **4**B, and **5**, the hook array or loop array may be visible depending on which of the two oppositely-facing sides of the flap **129** is shown, and that visible structure will be outlined in FIGS. **4**A, **4**B, and **5** by a solid, rather than broken, line.

FIG. **4**A shows a first attaching side **142** of the flap **129** that has two oppositely-facing (i.e., "flip") sides. The first attaching side **142** faces at the top end **130***a* the interior side **100** (seen in FIG. **1**A) when the first attachment device **131** is attached to the first location **116**. When the flap **129** is in a deployed state (i.e., deployed as a reminder as in FIG. **5**), and thus the first attachment device **131** is attached to the first location **116**, the first attaching side **142** faces at the bottom end **130***b* (and in all area between the bottom and top ends **130***a*, **130***b*) the interior side **100**. The first and third attachment devices **131**, **133** are mounted on the first attaching side **142** in the embodiment shown in FIG. **4**A.

FIG. **4**B shows the second attaching (i.e., flip) side **144** of the flap **129**. To prepare the flap **129** for use in reminding (and to stow it away in-place until it is needed as a reminder), the flap **129** is put into a pre-deployment state **302** (as seen in FIG. **6**). In particular, while the first attachment is retained, the flap **129** is folded up from the bottom end **130***b* of the flap **129** and then attached, by the bottom end **130***b*, to the second location **118**, the latter being shown in FIG. **1**A. In the resulting pre-deployment state **302**, the second attaching side **144** faces, at the bottom end **130***b*, the interior side **100**. In particular then, the pre-deployment state **302** is achieved when the following happens. With the first attachment being retained, the second attachment device **132** is attached to the second location **118** (seen in FIG. **1**A), the latter occurring with the flap **129** being folded up sufficiently (as seen in FIG. **6**) to allow the attachment at the second location **118**. The degree of flexibility of the flap **129** allows putting the flap **129** conveniently out of the way in the pre-deployment state **302**, a state in which the flap **129** may remain until there exists an upcoming need for an exit reminder about vehicle occupancy. Yet, as will be discussed herein below in connection with FIG. **9**, the flap **129** while in the pre-deployment state **302** serves as a visible reminder to deploy when the deployment will soon be needed.

FIG. **5** shows a reminder-equipped door **149** portraying the flap **129** within the environment of FIG. **1**A. FIG. **5** shows a deployed state of the flap **129**. If there were no third attachment device **133**, flap **129** would be considered deployed when both the first attachment exists and the flap **129** is sufficiently lowered. Ordinarily, the flap **129** is in the pre-deployment state **302** immediately before being

deployed. In particular, and with reference to FIG. **6**, in the pre-deployment state **302** the flap **129** is in a folded-up configuration **304**, i.e., attached to the first location **116** (shown in FIG. **1**A), but folded up to make the second attachment, i.e., perform the attaching of the second attachment device **132** to the interior side **100** at the second location **118**.

For the pre-deployment state **302** of FIG. **6**, and with reference again to FIG. **5**, both the first and second locations **116**, **118** are vertically above **117** the lever **110** and jointly high enough (i.e., at a sufficiently high average height) that the flap **129** does not cover the lever **110** along at least most of the lever's length **112**, the latter being shown in FIG. **1**A. Here, the term "jointly" is used, because vertically raising either the first location **116**, the second location **118** or both locations **116**, **118** vertically raises the fold line. In particular and for example, vertically raising just one of the two locations **116**, **118** by a given amount, raises the fold line by half that amount. The "height" is the vertical distance of the center of area of the first or second location above a reference point common to both locations. The "average" is the sum of the two heights divided by two.

Conversely, in being deployed, the flap **129** is generally, first, detached from the second location **118** (unless, for example, perhaps if the flap **129** is being initially installed in the vehicle **104**). After being detached from the second location **118**, the flap **129** is then either manually unfolded, or permitted by force of gravity to be lowered out of a fold, to hang down so that the lever **110** is covered by the flap **129** at least along most of the lever's length **112**, as seen from FIGS. **1**A and **5**. At this point, i.e., starting from this moment, the flap **129** would be deemed to be "deployed" if there is no third location **120**. If there is a third location **120**, as there is in FIG. **5**, the flap **129** is considered deployed after the additional step of the third attachment being made. The best view of the shape of the flap **129** when deployed is provided in FIG. **10**D. It is noted, however, that if there exists a third location **120** and a third attachment device **133** and if the third attachment is not made, this would not prevent the flap **129** from serving effectively as a reminder although the flap **129** is not regarded herein as "deployed."

Referring again to FIG. **6**, an exemplary folded-up configuration **304** shields from the driver's view the first and second attachment devices **131**, **132**; whereas, by contrast, the third attachment device **133** is visible to the driver. The fold line **244** of the folded-up configuration **304** is noted in FIG. **6**.

Upon deployment as shown in FIG. **5**, the third attachment device **133** represented in FIG. **5** by a broken-line outline is no longer visible to the driver **246**. Instead, it is attached directly (since it is hook array or loop array) to the other of the hook or loop array mounted to form part of the interior side **100** at the third location **120**. Likewise, the first attachment device **131** remains non-visible to the driver **246**, as seen in FIG. **5**, and instead is joined to its counterpart hook array or loop array that is mounted to form part of the interior side **100** at the first location **116**. What is visible to the driver **246**, and thus demarcated by a solid line in FIG. **5**, is the second attachment device **132**, and likewise its counterpart hook or loop array mounted to form part of the interior side **100** at the second location **118**.

As best seen from comparing FIG. **1**A to FIG. **5**, the first and second horizontal strips **122**, **124** may horizontally span most of if not all of the width of the hanging flexible flap **129**; whereas, vertically (i.e., from the top end **130***a* to the bottom end **130***b* as seen in FIG. **3**A) their individual spans are much (e.g., more than 9 times) shorter. Due to the relatively short vertical span, deployment requires relatively little pulling force against the second attachment. Also, as to both the first and second attachments, the relatively short vertical span provides more flexibility in the design of the flap **129**. This includes the overall proportioning of and attachment device placements for the flap **129** during its design phase, given that the available space on the interior side **100** located above the lever **110** varies with the particular vehicle's year, make and model.

The second attachment device **132** shown in the figures resides vertically between the first and third attachment devices **131**, **133**. A reason for this design is so that space available on the interior side **100** over the lever **110** for placing the second location **118** is sufficient. Such an ordering of attachment devices **131**-**133** may also create extra slack resulting in a wider flap-to-interior-side gap **248**. Depending on the pre-existing or contemplated width of the gap **248**, making it wider would potentially facilitate an emergency exit from the vehicle **104** by the driver **246** outlined in FIG. **12** and explained in detail further herein below.

Alternatively, if for instance adequate space over the lever **110** for placing the second location **118** exists and space below the lever **110** for placing the third location **120** is limited, the relative vertical positions of the second and third attachment devices **132**, **133**, could, from a design standpoint, be swapped as to their respective vertical positions on the flap **129**. This would be done while keeping each attachment device **132**, **133** on the same side of the flap **129**, in the case of a VELCRO fastener implementation. The second and third locations **118**, **120** may be vertically shifted correspondingly, regardless of type of implementation (e.g., VELCRO, magnetic).

Hereafter, the **131**, **132**, **133** ordering of attachment devices will be assumed.

The flap **129** is dimensioned, configured as to placement of the first and second attachment devices **131**, **132**, and sufficiently flexible between the first and second attachment devices **131**, **132** to allow the following. With the flap **129** being attached by the first attachment device **131** to the interior side **100** at a first location **116** which is vertically above **117** the lever **110**, the flap **129** can be folded up.

In addition, the flap **129** is dimensioned, configured as to placement of the first and second attachment devices **131**, **132**, and sufficiently flexible between the first and second attachment devices **131**, **132** to allow the following. With the flap **129** attached by the first attachment device **131** to the interior side **100** at a first location **116** on the interior side **100** which is vertically above **117** the lever **110**, the flap **129** can hang down to cover the lever **110** along at least most of the lever's length **112**.

The flap **129** is also, with reference to FIG. **6**, dimensioned, configured as to placement of the first and second attachment devices **131**, **132**, and sufficiently flexible between the first and second attachment devices **131**, **132** so as to result in the following. Folding up, by the bottom end **130***b*, the flap **129** covering the lever **110** to uncover the lever **110** and then releasably attaching the bottom end **130***b* to the second location **118** folds the flap **129** up sufficiently such that the lever **110** is not covered along at least most of the lever's length **112**. The folding up creates the fold line **244** and lifts it vertically upward. This lack of coverage of the lever **110** is as a result of the first and second locations **116**, **118** being jointly high enough that the flap **129** does not cover the lever **110** along at least most of the lever's length **112**. The joint height (or equivalently the "average height") is, with the second attachment device **132** attached to the

second location **118**, high enough that the fold line **244** is sufficiently high that the flap **129** does not cover the lever **110** along at least most of the lever's length **112**. The flap **129** includes, in the current embodiment, material that, at least at the fold line **244**, is flexible and non-resilient to bending. Because the fold line **244** is raised during the transition between deployment and pre-deployment, the transition causes the fold line **244** to shift on the flap **129** vertically upward. Conversely, the fold line **244** moves vertically downward while the flap **129** is unfolded or allowed by gravity to unfold. Non-resilience to bending is a property that may pertain to the flap **129**, at least to a region thereof over which the fold line **244** shifts.

The flap **129** may be, for example, 6 inches by 7 inches. Or, more generally, it could be between 3 and 8 inches vertically and between 3 and 8 inches horizontally. Its dimensionality will, to meet the above configuration, within limits vary with the size and shape of features of the interior side **100** in proximity of the lever **110** for the particular vehicle **104**. Although the flap **129** may be generally rectangular, its shape is not limited to that of a rectangle or in any way whatsoever.

The makeup of the flap **129** is such that the flap **129** includes, for example, cloth, fabric, or a textile that individually or collectively provide the sufficient flexibility for the both the covering the lever **110** along at least most of the lever's length **112** and the folding up of the flap **129** sufficiently to make the second attachment. From among the cloth, fabric or textile individually or collectively providing the sufficient flexibility is a natural substance and/or an artificial substance (such as a polymer) and/or a water-resistant or water-proof material. Thus, for example, if the flap **129** includes cloth and fabric that can be jointly credited with providing the sufficient flexibility, it may be the case that that cloth and/or fabric, which may or may not be only a part of the total cloth and/or fabric of the flap **129**, is a natural substance. More generally, the flap **129** can be made up of, or partially made up of, any substance, provided the flexibility criteria are met.

The flap **129** which may include first, second, and third attachment devices **131-133** for respective attachment to the first, second and third locations **116**, **118**, **120** can further be configured as to dimension, placement of the third attachment device **133**, flexibility between the first and third attachment devices **131**, **133**, and ease with which the third attachment device **133** is separable from the third location **120** in comparison to case with which the first attachment device **131** is separable if at all from the first location **116**. In particular, the configuring may be such that the flap **129** while attached to the interior side **100** at the first and third locations **116**, **120** interferes with, but does not prevent, manual access by the driver **246** for the operating of the lever **110**. This result comes about because laxness in the flap **129** provides a flap-to-interior-side gap **248** (shown in FIG. **5**) into which a driver-side hand **249** of a driver **246** can, by motion **250** along the interior side **100** (best seen in FIGS. **1**A and **1**B), at least partially enter as the hand **249** approaches the lever **110**. As the driver-side hand **249** proceeds forward in its motion **250** along the interior side **100** into the flap-to-interior-side gap **248**, the tips of the fingers **251** roughly equate functionally to the thin-edge end of a wedge that widens and wedges open the flap-to-interior-side gap **248**. The widening is to an extent that the attachment at the third location **120** is at least partially undone by the wedging force of the hand **249** moving toward the lever **110** in order to operate the lever **110**. The hand **249** hypothetically cited here for this criterion has a breadth **252** in the range 2.6 to 4.0 inches across an area **254** where the fingers **251** of the hand **249** join the palm **258** of the hand **249**. A large majority of human hands of adults have breadths **252** that come within the above-specified range. To hasten the undoing of the attachment at the third location **120** in case of emergency, the first and third attachment devices **116**, **120** may be configured such that the attachment by the interior side **100** to the third attachment device **133** at the third location **120** is weaker than the attachment by the interior side **100** to the first attachment device **131** at the first location **116**.

The first attachment device **131** may define at the first location **116**, when attached to the first location **116**, a first area **146** (as seen in FIG. **5**) of actual attachment, i.e., the areal extent within which actual attachment occurs. The second attachment device **132** may define at the second location **118**, when attached to the second location **118**, a second area **148** of actual attachment. The third attachment device **133** may define at the third location **120**, when attached to the third location **120**, a third area **150** of actual attachment, wherein the third arca **150** of actual attachment is smaller than the first area **146** of actual attachment. In this context, there might exist, around the periphery of the attachment, regions in which one or the other of the attachment device **131**, **133** and corresponding location **116**, **120** overextends the other so that in such regions no actual attachment occurs. Such regions are excluded from what is considered the respective area of actual attachment. Here, the region of overextension has attachment ability such as from a hook array portion, a loop array portion, magnetic material and/or material attractable by magnetism. However, the region of overextension has no mating surface of the attachment device **131**, **133**, or of location **116**, **120**, as the case may be, to mate with so as to form an attachment attributable to that region of overextension.

As seen in the figures, the third area **150** of actual attachment may be, for example, ⅙ or ⅐ of the size of the first area **146** of actual attachment.

Other factors other than or in addition to area of actual attachment may be relevant. If, for instance, the friction-based attachments are via hook and loop fasteners at the first and third locations **116**, **120**, the fasteners at the first location **116** may be industrial strength; whereas the fasteners at the third location **120** may be regular strength.

Or, if the attachments are magnetic at the first and third locations **116**, **120**, the magnet at the first location **116** may for example be thicker than the magnet at the third location **120**.

Because the third attachment is weaker than the first, in the FIG. **5** embodiment, the wedging force of the hand **249** entering the flap-to-interior-side gap **248** will tend to undo the third attachment, at least to the extent of providing manual access to the lever **110**, without undoing the first attachment which is intended to typically be permanent or semi-permanent. The wedging force of the hand **249** could, for example, partially or fully peel away a hook and loop fastening or pivot a magnet to weaken or break a magnetic-attraction based attachment. For either attachment method, the ease with which the separation is made will depend in part on the area over which the attachment at the third location **120** is made. It could depend also on the type of attachment, e.g., a regular as opposed to an industrial-strength hook and loop fastening or a thin as opposed to a thicker magnet.

Reaching into the flap-to-interior-side gap **248** therefore peels away the small-area third attachment which, if magnetic, is easily undone due to the relative weakness of the

magnetic attraction in comparison to the stronger first attachment. The flap **129** therefore would typically interfere, but only for a brief moment, enough to command the driver's attention, or would at least, visually or tactilely, get the driver's attention or be noticed by the driver **246**.

Yet, due to the brevity of that potential interference, safety is not compromised in case the passengers need to leave immediately in an emergency.

There is, moreover, no separate article to displace or stow away. Instead, the driver **246** either upon exiting the vehicle **104**, or any time up until when he or she returns to the vehicle **104** with any remaining kids and is ready to leave, merely resets the in-place flap **129** conveniently to the deployed state using a simple, brief hand-movement.

In fact, if no third attachment exists or is utilized, the flap **129** may already have been in the deployed state from the moment the driver **246** exited the vehicle **104**. This is because, knowing he or she would return soon with the remaining kids, the driver **246** therefore refrained from, i.e., bypassed, putting the flap **129** in the pre-deployment state **302**.

Bypassing pre-deployment, as just described, is not recommended. The flap **129** is more effective if the driver **246** goes through the motion each time he or she returns to the driver seat of re-deploying the flap **129**. Re-deployment at the outset of the trip, rather than beforehand, contributes to preventing the tactile and visual reminder, i.e., flap **129**, from becoming routine to the point where it might fail to get the driver's attention upon his or her exit from the vehicle **104**.

If, on the other hand, a third attachment device **133** exists and is utilized, the flap **129** may, likewise although it is not the recommended protocol, be re-deployed immediately after operating the lever **110** when exiting the vehicle **104**, the driver **246** knowing he or she would return soon with the remaining kids, the driver **246** therefore refraining from putting the flap **129** in the pre-deployment state **302**.

Particularly at the point when the driver **246** is seated and ready to leave, the driver **246** may be incentivized to deploy the flap **129** in part in order to release a pleasant scent into the vehicle **104**. This is discussed immediately herein below. The deployment would proceed from the pre-deployment state **302**, which is the recommended course, as discussed herein above.

With reference to the sample embodiment in FIG. **7**, the flap **129** includes toward its top end **130***a* a shallow container **402** mounted on the second attaching side **144**. The container **402** is designed to contain a scented material **404**, such as cotton or gauze that has absorbed perfume, air freshener, or other scented liquid. Further toward the bottom end **130***b*, a lid **406** is mounted on the same second attaching side **144**. Alternatively, the locations of the container **402** and the lid **406** could be reversed, i.e., with the lid **406** at or nearer the top end **130***a*. The container **402** and the lid **406** are placed relative to each other so that, in the folded-up configuration **304**, the lid **406** is aligned to be manually pressed in so as to seal the container **402** with the lid **406**, the lid **406** albeit being loosely fitted so that it can be easily removed (i.e., in deploying the flap **129**, the lid **406** is easily manually separated from the container **402**). Deploying the flap **129**, starting from the pre-deployment state **302**, releases the scent, thereby rewarding the driver **246** and other occupants of the vehicle **104** for remembering to deploy the flap **129**. The container **402** and the lid **406** may both be made of plastic or a light metal such as aluminum and can be attached to the second attaching side **144** by permanent adhesive. The container **402** and the lid **406** may be positioned so that they are: a) releasably co-joinable upon the sufficient folding up; and b) mutually releasable in the covering of the lever **110** along at least most of the lever's length **112**. The cotton or gauze in the container **402** can easily be replenished with perfume, car air freshener liquid, etc.

An end portion **145**, which may include a graspable tab **145***a* as seen in FIG. **7**, can exist at the very end of the bottom end **130***b* of the flap **129**. The end portion **145** makes deployment of the flap **129** from the pre-deployment state **302** (shown in FIG. **6**) easier. By manually grasping the end portion **145**, the second attachment (or third attachment) can easily be undone. The tab **145***a* can be located vertically at and/or below the level of the third attachment device **133**, the latter being best seen in FIGS. **4**A and **4**B. Locating the tab **145***a* at this level allows the driver **246** to better direct the pulling force in manually undoing the third attachment. The tab **145***a* can be laterally disposed on the side of the flap **129** rearmost with respect to the vehicle **104**; alternatively, the tab **145***a* could be located on the other side of the flap **129**, or tabs could exist on both sides. Any of these tabs **145***a* may have on it an icon or picture (not shown). This visual design can exist on the tab's side that is visible in FIG. **7**, or on the opposite side as would be visible to the driver **246** in the pre-deployment state **302**. The tab **145***a* can be sewed on or otherwise affixed. If no end portion **145** exists, the flap **129** can be grasped from the side at the bottom end **130***b*.

For the FIG. **7** embodiment, the amount of scented liquid maintained in the container **402** typically would be enough to appeal to and therefore remind the driver **246**, and yet not so much as to overwhelm him or her with the scent.

As another incentivizing feature, the child passengers may be "recruited" in getting the flap **129** deployed. As seen from the example shown in FIG. **8**, a zippered pocket **408** is attached to the second attaching side **144**. The zippered pocket **408** may be mounted onto the flexible body **134** (which may be for example one- or two-layered and is best seen in FIG. **3**A) of the flap **129**. Working on the same principle, the flap **129** is deployed to get the reward. Often, one of the last acts before heading out in the vehicle **104** is to buckle in the children and open the driver-side front door **102**. If the children are typically or regularly given a pacifier or other treat, or sticker, stored in the zippered pocket **408** at this time, they may when not right away receiving the treat or sticker remind the driver **246**. The driver **246** will therefore remember, in proceeding to fulfill their request, to deploy the flap **129**. The zippered pocket **408** need not be oriented vertically. It could instead be slanted, for instance. Nor is it necessarily designed to hold the above-mentioned items. It could hold, for example, a seat belt cutter, a medical card, a spare key, or a house key. The zippered pocket **408** can be opened conveniently with the same hand that deploys the flap **129**. Other forms of opening and closing a pocket, such as by snaps, may be used instead of a zipper. Also, a pouch may be implemented instead of the zippered pocket **408**. The pouch might have a flap for closing the pouch.

As a further way to remind the driver **246** to deploy, the first attaching side **142** can contain, to attract the attention of the driver **246**, a fluorescent substance, a phosphorescent substance, or both a fluorescent substance and a phosphorescent substance, as seen in the sample embodiment of FIG. **9**. For simplicity of demonstration, the hidden lines are not shown in FIG. **9**. To the surface on the first attaching side **142** a substance may be applied. Examples include paint that is phosphorescent **410** or fluorescent **412**, invisible ink which contains chemical compounds that are fluorescent **412**, and phosphorescent flakes or chips either of which can

be glued onto the flap **129**. Non-toxic fluorescent and phosphorescent substances are available. The first attaching side **142** is hidden once the flap **129** is deployed but is visible to attract attention when the flap **129** is in the pre-deployment state **302**. A caption **414** or picture on the first attaching side **142** may be added to draw the attention of the occupants of the vehicle **104** to the flap **129** in the pre-deployment state **302**. In the pre-deployment state **302**, the flap **129** is in a folded-up configuration **304**. Therefore, the caption **414**, if it were to be shown in FIG. **9** as an upside-down version of "BABY'S STOP", would, in the pre-deployment state **302** be upright so that "BABY'S STOP" would be easily readable. Correspondingly, phosphorescent **410** and fluorescent **412** material if used would typically be placed on a portion of the flap **129** that is located above the fold line **244** (best seen in FIG. **6**) while the flap **129** is in the pre-deployment state **302** and which is therefore visible by the driver **246** at that time.

Any one or more of embodiments represented in FIGS. **7** through **9** are combinable. For example, the zippered pocket **408** could be placed more to the left to make room for a rightwardly shifted container **402** and lid **406**.

Initially, and with reference to FIG. **10**A, the flap **129** may be dimensioned, configured as to placement of the first and second attachment devices **131**, **132**, and sufficiently flexible between the first and second attachment devices **131**, **132** to allow the following. With the attachment of the flap **129** by the first attachment device **131** to the interior side **100** being at a first location **116** on the interior side **100** which is vertically above **117** the lever **110**, the flap **129** can be folded up **1002**. As an example, the lever **110** can be mounted within the recessed compartment **114**. The attachment devices **131**, **132** are portrayed as VELCRO brand strips, but could be magnetic or attractable by magnetism.

In addition, the flap **129** is dimensioned, configured as to placement of the first and second attachment devices **131**, **132**, and sufficiently flexible between the first and second attachment devices **131**, **132** to allow the following. As depicted in FIG. **10**B, with the attachment of the flap **129** by the first attachment device **131** to the interior side **100** being at a first location **116** on the interior side **100** which is vertically above **117** the lever **110**, the flap **129** can hang down **1004** to cover **1006** the lever **110** along at least most of the lever's length **112**. The flap **129** may bulge internally into the vehicle **104** around the lever **110** if the lever **110**, rather than residing in a recessed compartment **114**, projects into the vehicle's interior.

The flap **129** is also dimensioned, configured as to placement of the first and second attachment devices **131**, **132**, and sufficiently flexible between the first and second attachment devices **131**, **132** so as to result in the following as shown in FIG. **10**C. Folding up **1008**, by the bottom end **130***b*, the flap **129** covering the lever **110** to uncover **1010** the lever **110** and then releasably attaching the bottom end **130***b* to the second location **118** folds the flap **129** up sufficiently such that the lever **110** is not covered along at least most of the lever's length **112** (best seen in FIG. **1**A). The folding up **1008** creates the fold line **244** (as shown in FIG. **6**) and lifts it vertically upward.

The configuring of the flap **129** can be done based on a pre-positioning of the first and second locations **116**, **118** and, if the third location **120** exists, the third location **120** which is shown in FIG. **1**A. Such a pre-positioning that sets the locations **116**, **118**, **120** is demonstrated herein above in connection with FIG. **2**. Alternatively, the configuring of the flap **129** can be done in conjunction with positioning the first and second locations **116**, **118** and, if the third location **120** exists, the third location **120**. The configuring, whether done in conjunction with or after the positioning (or "setting") of the locations **116**, **118**, **120**, can consider the shape, size, and orientation of outer surfaces of the interior side **100**.

If a third attachment is to exist, as seen from FIG. **10**D which provides a side view of the shape of the flap **129** as deployed in FIG. **5**, the flap **129** may still further be configured at this initial stage as to size, placement of the third attachment device **133**, flexibility of the flap **129** between the first and third attachment devices **131**, **133**, and case with which the third attachment device **133** is separable from the third location **120** in comparison to case with which the first attachment device **131** is separable if at all from the first location **116**. This still further configuring may be such that the flap **129** while attached at the first and third locations **116**, **120** interferes with, but does not prevent, manual access by the driver **246**, shown in FIG. **5**, for operating the lever **110** when the driver **246** is about to exit the vehicle **104**. The manual access afforded by the flap-to-interior-side gap **248** is discussed in further detail herein above.

Any of the individual or concurrent considerations as to flexibility can point toward use of, for instance, a supple flap non-resilient to bending.

The attachment devices **131-133** themselves can also be configured as to relative strength of attachment to the interior side **100**, as discussed herein above.

An example of a method of using the flap **129** includes, as shown in FIG. **11**, making the first attachment (step **S1110**), i.e., by attaching the first attachment device **131** to the first location **116**. The second attachment, which like the third attachment is releasable, is made (step **S1120**). It is possible to make the second attachment before the first attachment is made. It is also possible when initially attaching the flap **129** for use in the vehicle **104** to forego pre-deployment, so that the flap **129** is not folded up when you intend to deploy for the first time. Pre-deployment may be foregone also, as mentioned herein above in an exemplary embodiment, upon departing the vehicle **104** knowing that you will return with the remaining kids who need to be dropped off at one or more destinations. In any event, when occupancy warrants a reminder, the second attachment is undone (step **S1130**). The reminder is warranted when, for example, you have one or more children or elderly to take to, or drop off at, the upcoming destination, and especially if this is the first destination of the trip. After undoing the second attachment, the flap **129** is unfolded, or gravity is allowed to unfold it, to hang down and cover the lever **110** along at least most of the lever's length **112** (step **S1140**). If a third attachment device **133** exists (step **S1150**), the third attachment is made (step **S1160**). Therefore, the flap **129** is now deployed, whether or not a third attachment device **133** exists. The flap **129** may be re-deployed as the driver **246** exits the vehicle **104**, because the driver **246** expects to be reminded about one or more passengers when he or she next heads out and arrives at a destination. Or the flap **129** can be, for instance and as recommended herein above, re-deployed as the standard next step after buckling in one or more children in their child seat(s). That is, after each stop for example, the parent returns with the remaining kids, buckles them in, and then re-deploys the flap **129**.

In case of an emergency exit from the vehicle **104** by the driver **246**, if the third attachment exists and has been made, driver's driver-side hand **249**, as shown in FIG. **5**, reaching for the lever **110** causes the hand **249** to enter the flap-to-interior-side gap **248** between the flap **129** and the interior side **100** of the vehicle's front door. Therefore, as seen in FIG. **12**, if the third attachment exists and has been made, the

innovative flap **129** does not, during emergency exit, prevent or for more than a brief moment slow down the exit (step S**1210**). In entering the flap-to-interior-side gap **248**, the hand **249** may wedge open (i.e., undo) at least in part the third attachment (step S**1220**). The flap **129** therefore reminds the driver **246** to check for occupancy.

The instant invention provides a simple and efficient way of addressing the gas station stop enroute situation mentioned further above. In accordance with an aspect of the present invention, when you stop enroute for gas and get out to fill up the gas tank, you will undo the second attachment, but you are unlikely to put the flap **129** in a pre-deployment state **302**. Therefore, the flap **129** will still, even if you do not re-deploy, hang over and tactilely and visually block the lever **110** for the rest of your trip. That is, the flap **129** will still carry out its reminder function with a significant degree of effectiveness. What is more, there is, at the gas station stop, no door alarm, rush to disable the alarm, or any extra opening and closing of passenger doors.

There are times, too, when you, in starting out on your trip, open the back door not for passengers but to load the car with something you want to take with you on the trip. When you arrive at your destination, you would likely want to avoid having a strictly door sensor/alarm reminder sound an inconvenient alarm unless you intend to unload from the back immediately.

With the motion detector, there are, as mentioned above, the issues of possible electrical malfunction, a spent system-dedicated battery, and remembering to re-set the system after retrieving the car from the shop after maintenance. It also is more expensive than the flap **129**. For the above reasons, even if an electronic approach were to gain acceptance, one would be well-advised to use a manual reminder such as the flap **129** with the electronic system possibly serving as a backup.

Advantageously, the flap **129** is a low-cost, mechanical, effective, and convenient solution. With the "in-place", resettable flap **129**, no decision need be made about where in the vehicle **104** to place a reminder for next time so that you do not forget it and yet it is not inconveniently in the way for all of the times you do not need a reminder. The flap **129**, by virtue of the third attachment, does not distract the driver **246** while he or she is driving by, for example, moving back and forth against the driver's arm, and, even without the third attachment, the flexible fabric is less noticeable and less likely to distract than existing devices. Nor does the flap **129** obstruct the driver **246** during his/her emergency exit from the vehicle **104**. The flap **129** with a single hand-movement folds away "in-place" after use, but still visually serves as a reminder to reset it as an "exit interference" reminder.

For those who prefer a reminding device that better blends into the décor of the vehicle's passenger compartment (although an eye-catching baby-reminder tag can be attached), there is another version of a reminder-equipped driver-side door. In this version, the hanging flexible flap, of plastic or fabric for example, in a pre-deployment state is visible merely as a graspable ridge, made of plastic or aluminum for example, adjoining and just underneath the inside window sill of the driver-side front door. The ridge is a retaining device. It is attached to and can retain the flap in a deployed state. In this context, the ridge can manually be pulled down vertically below the lever, thereby drawing the flexible flap into position for deployment. Conversely, the ridge can, when the flap is in a pre-deployment state, retain the flap for easy manual access, as will be become clear from the discussion below.

More specifically and with reference to FIGS. **13**A, **13**B, **13**C, **14**A and **14**B, a vehicle **1104** includes a reminder-equipped door **1102** that has an interior side **1100** and an exterior side **1101**, the reminder-equipped door **1102** including: a vehicle door frame **1103***a*; a vehicle door panel **1103***b* on the interior side **1100** and assembled on the vehicle door frame **1103***a*; and a door handle **1108** manually accessible on the interior side **1100** to the driver **1246** (as seen in FIG. **14**A) and operatively connected to the vehicle door frame **1103***a* for opening the door **1102**. Typically, the connection is a mechanical one to a part of the vehicle door frame **1103***a* that grasps the vehicle frame when the door **1102** closes and that disengages from the vehicle frame by virtue of leverage applied via a lever **1110** which is part of the door handle **1108**.

The door **1102** further includes a hanging flexible flap **1129** (best seen in FIG. **14**A) for hanging down over the lever **1110** to, horizontally **1260**, at least partially cover, and thereby impede the driver's manual access **1276** to, the lever **1110**—this serves as a reminder to the driver **1246** upon the driver **1246** exiting the vehicle **1104**.

The flap **1129** may be retractable into a flap passageway **1262** for storage and may, for vertical extension, be drawable from the flap passageway **1262** for the covering of the lever **1110**. For this purpose, the flap passageway **1262** has, vertically above **1117** the lever **1110**, an opening **1270** such as a slit into a passenger compartment **1272** of the vehicle **1104**. The interior side **1100** has a flap-retaining site **1274** disposed vertically below the lever **1110**.

The flap **1129** has an internal end **1277** (as seen in the expanded view provided in FIG. **13**C) and an external end **1131** (shown in FIG. **14**A) and, between the internal and external ends, **1277**, **1131**, a flexible portion **1133**.

The flap **1129** is, at the internal end **1277**, fixed to an anchor **1278**. The anchor **1278** can include a revolvable spindle **1287** around which the flap **1129** winds **1283** during the retraction and from which the flap **1129** unwinds **1284** during the vertical extension.

In the embodiment depicted, the anchor **1278** includes a horizontal bracket **1279** fixed to the vehicle door frame **1103***a*; a fixed axis (not shown) supported on both ends by the horizontal bracket **1279**; and, surrounding the fixed axis, the revolvable spindle **1287**. Part of the retracted portion of the flap **1129** is wound around the revolvable spindle **1287** which is biased to retract the flap **1129**. The anchor **1278** keeps the flap **1129** at least partially within the flap passageway **1262**. A retracted portion **1265** of a vehicle door window (retracting mechanism not shown) may be disposed within the flap passageway **1262**. The flap **1129** has, at the external end **1131** (shown in FIG. **14**A), a retaining device **1280** for releasably engaging **1282** the flap **1129** at the flap-retaining site **1274**. The flap-retaining site **1274** may have for this purpose, as seen in FIG. **14**B, a hook **1275** which can engage the flap **1129** via the retaining device **1280**. Disengaging the hook **1275** may entail initially pulling down slightly on the flap **1129**. The flap **1129** can be said to be "deployed" when releasably engaged **1282** in this manner. The flap **1129** may be dimensioned long enough to, when deployed, still be pulled out a bit more from the opening **1270**. This gives the flap a little slack if, in an emergency, the driver **1246** reaches within the clearance (i.e., flap-to-interior side gap) between the flap **1129** and the interior side **1100** to grab the lever **1110** for making an emergency exit. The driver-side hand **1249** of the driver **1246** squeezing into the clearance causes the flap **1129** to be pulled further out from the opening **1270**. Keeping the horizontal **1260** width of the flap **1129** relatively small also

helps in this situation to ease the driver's manual access **1276** in an emergency. Undoing the engagement allows the flap **1129** to retract.

The revolvable spindle **1287** can be configured as a spring biased roller used in many roller shades. The internally-mounted spring (not shown) causes the retraction. In particular and as an example, a helical torsion spring may reside concentrically between the revolvable spindle **1287** and the fixed axis. It can have one end attached to the revolvable spindle **1287** and the other end attached to the fixed axis. Unwinding **1284** the flap **1129** from the revolvable spindle **1287** twists the spring thereby biasing the spring to exert force for rewinding the flap **1129**. This force rewinds the flap **1129** if the force is unopposed as by countervailing manual force by the driver **1246** in holding or pulling the retaining device **1280** or by the holding force provided by the hook **1275**.

The spring bias force can be kept small by adjusting the size of the spring or its material for example, so that the flap **1129** is, when held by the hook **1275**, relatively loose thereby allowing the driver's hand **1249** to wedge into the resulting flap-to-interior-side gap during an emergency exit. To ease the driver's manual access **1276**, horizontal over-extension **1250** if any of the flap **1129** can also be minimized.

As an alternative to using the revolvable spindle **1287** and retracting the flap **1129**, the flexible portion **1133** can be pushed (as by the driver **1246** manually via the retaining device **1280**) through the opening **1270**, provided the flexible portion **1133** rather than being entirely supple has a sufficient amount of stiffness. A flexible plastic with sufficient stiffness would be an example. In this case, the flap passageway **1262** would be designed with sufficient volume to take up the flap **1129**. This might involve sufficient width if the flap folds in a zigzagging manner.

To achieve a pre-deployment state (as seen in FIG. **13**A), the retaining device **1280** returns to its starting location, for example adjoining and just below the window sill. The retaining device **1280** retains the flap **1129** in the deployed state (as seen in FIGS. **14**A and **14**B), and in the pre-deployment state (as seen in FIG. **13**A) by keeping the flap **1129** from retracting completely within the vehicle door **1102**. A short banner decorated as with the caption **414** (as seen in FIG. **9**) may be attached to hang from the retaining device **1280** as a reminder to deploy. The banner could be made of cloth for example.

The lever **1110** has both a pivot point **1266** at a fulcrum, and an effort endpoint **1268**, i.e., the point on the lever **1110** at which the driver **1246** could directly apply force for the maximum leverage. The lever **1110** has a horizontal extent **1264** which is equal to the horizontal **1260** distance between the pivot point **1266** and the effort endpoint **1268**.

The flap **1129** is horizontally **1260** dimensioned to, when releasably engaged at the flap-retaining site **1274**, cover at least most of, with reference to FIG. **13**A, the horizontal extent **1264** of the lever **1110** but not to, in total taking into account both sides (i.e., the front side **1285** and the rear side **1286**), overextend the lever **1110** horizontally **1260** by more than 50 percent. Horizontal overextension **1250** if any of the flap **1129** may be, in total taking into account both sides **1285**, **1286**, no more than 25 percent. Or it may, for example, be no more than 10%.

Minimizing the horizontal overextension **1250**, if any, is another factor, along with minimizing spring bias, that facilitates the driver's emergency exit from the vehicle **1104**. Firstly, horizontal overextension **1250** may contribute to spring bias, because spring bias force is needed all along the width of the flap **1129**. Second, horizontal overextension **1250**, if lessened on the rear side **1286**, makes emergency exit easier, because the driver's manual access **1276** is from the rear side **1286**. Covering, on the rear side **1286**, the lever **1110** along less than its horizontal extent **1264** likewise makes emergency exit easier for the same reason.

For a hanging flexible flap having a top and bottom end for reminding a driver, upon exiting, of the vehicle's occupancy for a vehicle having a driver-side door handle including a lever operable for opening the door, deployment, proceeding from a pre-deployment state in which the flap is in a folded-up configuration such that: a) the bottom end is releasably attached to a second interior-side location vertically above a first interior-side location to which the flap is attached; and b) both locations are vertically above the lever and jointly high enough that the flap does not cover the lever along at least most of the lever's length, includes undoing the releasable attachment; and then unfolding the flap, or letting it fall, to hang down so as to cover the lever along at least most of the lever's length. Alternatively, pre-deployment may be in a spring-biased rolled-up configuration, with the flap unrollable down to releasably engage a hook so as to remain in position, covering at least most of the lever's horizontal extent.

While the invention has been illustrated and described in detail in the drawings and foregoing description, such illustration and description are to be considered illustrative and exemplary and not restrictive; the invention is not limited to the disclosed embodiments. For example, the embodiment of FIG. **9** may use reflective tape or other reflective substance on the first attaching side **142** of the hanging flexible flap **129** to make the flap **129** while in the pre-deployment state **302** more conspicuous. Also, the hanging flexible flap **129** serving as reminder to the driver **246** exiting the vehicle **104** may be used to remind the driver **246** to turn off the headlights, or about something else, and is not limited to reminding the driver **246** about occupancy. In addition, as a further example, the hanging flexible flap **129** may serve as a backup to an electrical baby-reminder system, or vice versa. In particular, consider such a system that uses a hand-approach sensor near the lever **110**, and a backseat weight-support sensor. The sensor(s) may at the moment the driver **246** exits be inactive due to, for instance, an electrical short, a spent reminder-function-dedicated battery, or forgetting to reset the sensor(s) after vehicle servicing. Or the sensor(s) may intentionally have been temporarily inactivated due to the need for system repair or adjustment.

Other variations of the disclosed embodiments can be understood and effected by those skilled in the art in practicing the claimed invention, from a study of the drawings, the disclosure, and the appended claims. In the claims, the word "comprising" does not exclude other elements or steps, and the indefinite article "a" or "an" does not exclude a plurality. The word "exemplary" is used to mean "serving as an example, instance or illustration." Any embodiment described as "exemplary" is not necessarily to be construed as preferred or advantageous over other embodiments and/or to exclude the incorporation of features from other embodiments.

The mere fact that certain measures are recited in mutually different dependent claims does not indicate that a combination of these measures cannot be used to advantage.

What is claimed is:

1. A driver-side door of a vehicle, the door designed to be opened by a driver of the vehicle, wherein the door has an interior side having an outer surface, the door comprising:

a vehicle door frame;

a vehicle door panel on said interior side and assembled on the vehicle door frame;

a door handle manually accessible on said interior side to the driver and operatively connected to the vehicle door frame for opening the door, the door handle including a lever operable by the driver for opening the door to exit the vehicle;

as part of said interior side, a first horizontal strip of material, said first horizontal strip of material being disposed at a location vertically above the lever;

as part of said interior side, a second horizontal strip of material, said second horizontal strip of material being disposed at a location vertically above the first horizontal strip of material; and

as part of the interior side, vertically below the lever, third-location material having opposite sides, one of two opposite sides facing away from the driver, the other of the two opposite sides being a flat surface facing the driver and oriented substantially parallel to or substantially flush with a surrounding portion of the outer surface of the interior side, at least part of the third-location material being either magnetic or attractable by magnetism,

wherein an intervening gap which is the shortest connecting straight line between the first and second horizontal strips of material is a first separating-distance that is no more than 4 inches.

2. The driver-side door of claim **1**, wherein at least part of the first horizontal strip of material is either magnetic or attractable by magnetism; and wherein at least part of the second horizontal strip of material is either magnetic or attractable by magnetism.

3. The driver-side door of claim **1**, wherein the first horizontal strip of material, the second horizontal strip of material, and the third-location material are located such that, between any two of the three, any intervening gap which is the shortest connecting straight line is a second separating-distance that is no more than 8 inches.

4. A reminder-equipped driver-side door comprising:

the driver-side door according to claim **1**; and

a hanging flexible flap non-resilient to bending and having a top end and a bottom end;

wherein the hanging flexible flap is, at said top end, attached to the first horizontal strip of material, and wherein the hanging flexible flap is, at said bottom end with the attachment at said top end being retained, attachable alternately: to assume a pre-deployment state, to the second horizontal strip of material; and, in being deployed as a reminder to the driver upon the driver exiting the vehicle, to the third-location material.

5. A vehicle comprising the driver-side door of claim **1**.

* * * * *