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(54) **CHILD SUPPORT DEVICE**

(57) A child support device such as a high chair for receiving a child and having a child tray designed to hold feeding items. The support device also includes an auxiliary tray (130, 230, 330) located such that the child cannot see or reach the items located on the tray. For ex-

ample, the caregiver can use the auxiliary tray (130, 230, 330) for food preparation, or to hold personal items safely away from the child. The auxiliary tray (130, 230, 330) can be retracted into a storage position as desired.

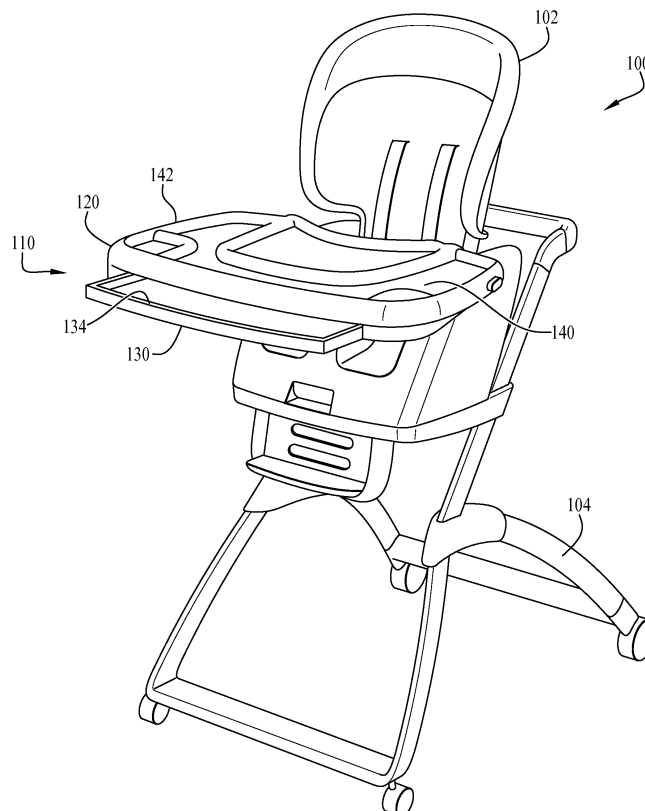


Fig. 1

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Description

Cross-Reference to Related Applications

[0001] This application claims the benefit of U.S. Provisional Patent Application Serial No. 62,152,845 filed April 25, 2015 and U.S. Provisional Patent Application Serial No. 62,215,943 filed September 9, 2015, the entireties of which are hereby incorporated herein by reference for all purposes.

Technical Field

[0002] The present invention relates generally to the field of children's products, and more particularly to a child support device having a tray.

Background

[0003] Conventional high chairs and other child supporting devices generally include a tray and/or a tray liner, which provides a generally flat surface on which food and beverages can be placed. However, trays and tray liners known in the art generally display their contents to the child occupant of the child support device, within reach of said child. As a result, it is widely known that caregivers have difficulties feeding fussy and/or fidgeting children, and conventional high chairs and high chair trays are typically not equipped with features for preventing a child from interfering with the items supported by the tray. As such, a child may grab a cup or dish of food as it is being prepared on the feeding surface of the tray or while the child is being fed, and dump the food and tableware on the ground, himself, the caregiver, etc. Additionally, a child who sees certain food items on a tray may exhibit a resistance to, or preference for, those or other food items, adding yet more difficulties for a caregiver. Moreover, a caregiver may have personal items such as a cell phone or jewelry, etc., that he wishes to remain out of reach of a child seated in the child support device.

[0004] Thus, needs exist for a child supporting device and tray that includes features for hiding items out of view and/or reach of a child occupant. It is to the provision of these needs, among many others, that the present invention is directed.

Summary

[0005] In example embodiments, the present invention provides improved stimulation and entertainment for child support devices. In representative examples, the invention relates to a tray accessory for a child support device. The support device can be for example a high chair, booster seat, jumper, entertainer, rocker, bouncer, or the like. Particular example embodiments of the support device include a support frame configured to rest on a support surface (e.g. a floor or the ground), and a child seat supported above the support surface by the support

frame.

[0006] In one aspect, the present invention relates to a child support for receiving a child and having a child tray coupled thereto, comprising a tray body defining a first substantially planar surface having a shallow recess configured to receive articles intended for a child positioned within the child support device, and a first auxiliary tray moveably coupled to the tray body. The first auxiliary tray is operable to selectively extend from a retracted position, wherein the auxiliary tray is at least partially concealed by the tray body, to an extended position beyond the perimeter of the tray body, wherein the auxiliary tray is positioned substantially out of reach of the child while in the extended position.

[0007] In another aspect, the present invention relates to a high chair having a seat for receiving a child therein, having a first tray proximal the seat and configured for receiving an article for a child, the first tray defining a first surface. The high chair also has a second tray defining a second surface, the second tray also configured for receiving an article for a child and movable between a first position wherein the second tray is at least partially concealed from view by the first tray, and a second position wherein the second tray is at least partially extended beyond the perimeter of the first tray. The first and second surfaces are substantially parallel and the second tray is substantially out of reach of a child seated in the high chair when the second tray is in the second position.

[0008] The tray and/ or tray insert dimensions may be adjusted for customizing trays and inserts to fit commercially available children's support devices of various dimensions.

[0009] These and other aspects, features and advantages of the invention will be understood with reference to the drawing figures and detailed description herein, and will be realized by means of the various elements and combinations particularly pointed out in the appended claims. It is to be understood that both the foregoing general description and the following brief description of the drawings and detailed description of example embodiments of the invention are exemplary and explanatory of preferred embodiments of the invention, and are not restrictive of the invention, as claimed.

Brief Description of the Drawings

[0010]

FIGURE 1 is a perspective view of an example child support device with a tray assembly mounted thereto according to an example embodiment of the present invention, and shows the tray assembly in an expanded configuration.

FIGURE 2 is a perspective view of an example child support device with a tray assembly mounted thereto according to another example embodiment of the present invention, and shows the tray assembly in a

retracted configuration

FIGURE 3 is a perspective view of the child support device of Figure 2, and shows the tray assembly in an expanded configuration.

FIGURE 4 is a perspective view of an example child support device with a tray assembly mounted thereto according to a third example embodiment of the present invention, and shows the tray assembly in an expanded configuration.

FIGURE 5 is a top view of the child support device of Figure 4.

Detailed Description of Example Embodiments

[0011] The present invention may be understood more readily by reference to the following detailed description of example embodiments of the invention taken in connection with the accompanying drawing figures, which form a part of this disclosure. It is to be understood that the invention is not limited to the specific devices, methods, conditions or parameters described and/or shown herein, and that the terminology used herein is for the purpose of describing particular embodiments by way of example only and is not intended to be limiting of the claimed invention. Any and all patents and other publications identified in this specification are incorporated by reference as though fully set forth herein.

[0012] Also, as used in the specification including the appended claims, the singular forms "a," "an," and "the" include the plural, and reference to a particular numerical value includes at least that particular value, unless the context clearly dictates otherwise. Ranges may be expressed herein as from "about" or "approximately" one particular value and/or to "about" or "approximately" another particular value. When such a range is expressed, another embodiment includes from the one particular value and/or to the other particular value. Similarly, when values are expressed as approximations, by use of the antecedent "about," it will be understood that the particular value forms another embodiment.

[0013] With reference now to the drawing figures, wherein like reference numbers represent corresponding parts throughout the several views, Figures 1-5 illustrate several example embodiments of a child support device and tray assembly for use with a child support device. In particular, Figure 1 depicts a child support device 100 and tray assembly 110 mounted thereto. In depicted embodiments, the child support device 100 is a high chair, but could be a stroller, bouncer, jumper, entertainer, rocker, booster seat, or other child support device as desired. The child support device 100 includes a child receptacle (e.g., a seat) 102 for receiving a child therein, which, in example embodiments, is supported by a frame 104. Alternatively, the child support device 100 can sit directly on a table, chair, or other support surface and does not

include a frame 104. As shown, the tray assembly 110 is coupled to the child support device 100 via a conventional engagement mechanism such as clips, buckles, snaps, latches, straps, or any other known conventional fastener. The tray assembly 110 is generally rectangularly shaped in depicted embodiments, but alternate example embodiments can be other shapes, including a kidney shape, a fan shape, an ovoid shape, or any other shape as desired by a user.

[0014] Referring to Fig. 1, the tray assembly 110 comprises a base tray 120 and an auxiliary tray 130. Optionally, the tray assembly 110 can also include a tray liner 140 adapted to interface with and fit over the base tray 120. For example, in this particular embodiment the tray liner 140 includes a peripheral lip portion 142 which fits over and removably couples with a corresponding peripheral lip portion of the base tray. In commercial embodiments, the optional tray liner 140 is frictionally coupled to the base tray 120, but can alternatively be coupled with known fasteners. In still other embodiments, the base tray 120 could nest via any other conventional retaining mechanism, and/or the tray liner 140 could nest within the base tray as desired.

[0015] The base tray 120 and optional tray liner 140 are preferably made from a polymer material (plastics) such as, but not limited to, a polycarbonate, a polystyrene, a polyethylene, an acrylonitrile butadiene styrene, or a combination thereof, which will not deform or significantly degrade under temperature and dampness conditions typically found in a conventional household or commercial automatic dishwashing machine, typically around 200 degrees F. In other embodiments, these tray components can be made of silicone, wood or metal, or any substantially rigid material suitable for use in a children's product. The upper surfaces of the base tray 120 and tray liner 140 can include ridges, lips, dividers, undulations or other textures, but both generally provide a substantially flat planar surface as depicted in the drawing figures.

[0016] The auxiliary tray 130 is preferably made of a polymer material such as, but not limited to, a silicone, polypropylene, ethylene vinyl acetate, thermoplastic rubber, a polycarbonate, a polystyrene, a polyethylene, an acrylonitrile butadiene styrene, or a combination thereof, which will not permanently deform or significantly degrade under temperature and dampness conditions typically found in a conventional dishwashing machine. As shown in Figure 1, the auxiliary tray 130 is configured to be coupled to the base tray 120. In other alternative embodiments, the auxiliary tray 130 can rest on or be coupled to the tray liner 140, the child receptacle 102, or the frame 104 of the child support device 100. In preferred embodiments, the auxiliary tray 130 is removably coupled to the base tray 120, and can be decoupled for use independently of the tray assembly 110 and/or child support device 100. More particularly, the auxiliary tray 130 can be positioned below the base tray 120 in a drawer-like configuration and permits a user to slide the auxiliary

tray into and out of view. Optionally, the auxiliary tray 130 can include a separate base component and/or fasteners such as, but not limited to, clips, hook and loop fasteners, or suction cups for use with a conventional dining table or other surface. Preferably, as shown in FIG. 1, the auxiliary tray 130 is located at a distal end of the tray assembly 110 or otherwise situated such that a child occupant of the child support device 100 cannot access the auxiliary tray 130. When positioned distal from the child occupant, the auxiliary tray 130 provides a safe place for a caregiver to place items out of view and/or reach of a child. Optionally, the auxiliary tray 130 can be removed from the base tray 120, for example, so that a caregiver can prepare food and/or drink at a different location (e.g., a kitchen counter) before recoupling it to the child support device 100. Preferably, as shown in Figure 1, the auxiliary tray 130 is adapted to store in or against the base tray 120. For example, the auxiliary tray 130 can slidably engage with a track on the underside of the base tray 120, as shown, similar to a drawer. As such, the tray assembly 110 can have an expanded configuration (exposed) with the auxiliary tray 130 pulled out for use, and can have a collapsed configuration (hidden) with the auxiliary tray 130 in a storage position. In alternate embodiments, the auxiliary tray 130 can be pivotally coupled to the base tray 120, or otherwise coupled, and can be provided with a latching mechanism, as desired. Optionally, the auxiliary tray 130 can include accessories such as cupholders, bottle holders, additional compartments, etc., as desired by a user. As shown in Figures 1-5, the auxiliary tray 130 is configured to be slightly lower in height than the base tray 120, such that a child occupant of the child support device 100 cannot see or reach the items on the tray. In other embodiments, the auxiliary tray 130 can be coplanar with the base tray 110 but distal from the child enough that the child cannot reach the items on the auxiliary tray 130. In use, the auxiliary tray provides a "caregiver-only" space that is easily accessible to a caregiver, but not accessible to a child occupant of the child support device 100.

[0017] The base tray 120 or tray insert 140 can optionally be provided with additional accessories, such as snap-in or clip-on toys and/or feeding dishes, such as plates or bowls. Alternatively, such accessories can be integrally formed with the tray assembly 110. Generally, the depicted example embodiments are similar except for the distinctions discussed herein and the depicted embodiments in the drawing figures are numbered similarly such that reference number 200 refers to a component that is similar to components 100, 300, X00, etc. 210 refers to a component that is similar to components 110, 310, etc., and so on and so forth throughout the drawing figures.

[0018] Each depicted example embodiment will now be discussed with more specificity. For instance, Figure 1 depicts one example embodiment of a child support device 100 and tray assembly 110 according to the present invention. As discussed above, the present in-

vention as depicted in Figure 1 comprises a base tray 120, an auxiliary tray 130, and an optional tray liner 140. As shown, the auxiliary tray 130 has a generally flat upper surface 132 configured to receive articles thereon. The auxiliary tray 130 is situated and configured to support items out of a child's reach and/or, preferably, out of a child's line of sight. The auxiliary tray 130 is adapted to be stored within the base tray 120. In preferred embodiments, the auxiliary tray 130 spans substantially the entire width of the base tray 120. In alternate embodiments, the auxiliary tray 130 can have a width smaller or larger than the width of the base tray 120, as desired. The depth of the auxiliary tray 130 is preferably 5mm to 100mm, or more preferably 10mm to 80mm, or yet more preferably 15mm to 60mm. In these preferred ranges, the auxiliary tray 130 is of sufficient depth to provide a sturdy surface suitable for receiving articles, but not so deep as to interfere with the legs or torso of a child seated in the child receptacle 102. The auxiliary tray 130 further includes a peripheral lip 134 to prevent items from rolling or sliding off the tray.

[0019] Figures 2-3 show a second example embodiment of a tray assembly 210 for a child support device 200. The tray assembly 210 is similar to the tray assembly of Figure 1, wherein the tray assembly 210 comprises a base tray 220, an auxiliary tray 230, and an optional tray liner 240. In this embodiment, the auxiliary tray 230 can include more than one platform as seen in Figure 3. For instance, the auxiliary tray 230 can have two platforms 236 each adapted to receive articles out of reach and/or sight of a child occupant. Optionally, the auxiliary tray 230 can be spring-loaded to pop out into an expanded configuration when a caregiver pushes the tray in. This allows for ease of use, for example, for one-handed expansion when a caregiver is holding articles. In other alternate embodiments, the auxiliary tray 230 can swivel out along a pivoting axis. In yet other alternate embodiments, the auxiliary tray 230 can be integrally formed with the base tray 220 or the tray liner 240.

[0020] Figures 4-5 show yet another example embodiment of a tray assembly 310 having an auxiliary tray 330. In this embodiment, the tray assembly 310 includes a base tray 320, an auxiliary tray 330, and an optional tray liner 340. The auxiliary tray 330 can comprise a platform that clips or snaps onto a base tray 320. In particular, as best seen in Figure 4, the auxiliary tray 330 can be coupled to the peripheral sides of the base tray 320 to ensure that the auxiliary tray is positioned away from a child positioned in the child support device 300 and substantially out of the child's view.

[0021] Generally in use, a child is positioned in the seat of a child support device according to any of the disclosed embodiments of the present invention. The child may be fed by a caregiver or feed himself from the tray. The caregiver may conceal articles out of reach and/or sight of a child seated in the child support device by positioning such articles on the auxiliary tray.

[0022] While the invention has been described with ref-

erence to preferred and example embodiments, it will be understood by those skilled in the art that a variety of modifications, additions and deletions are within the scope of the invention, as defined by the following claims.

[0023] For the avoidance of doubt, the present application extends to the subject-matter described in the following numbered paragraphs (referred to as "Para" or "Paras"):

1. A child support device for receiving a child and having a child tray coupled thereto, comprising:

a tray body defining a first substantially planar surface having a shallow recess configured to receive articles intended for a child positioned within the child support device;

a first auxiliary tray moveably coupled to the tray body and operable to selectively extend from a retracted position, wherein the auxiliary tray is at least partially concealed by the tray body, to an extended position beyond the perimeter of the tray body, wherein the auxiliary tray is positioned substantially out of reach of the child while in the extended position.

2. The child support device of Para 1, wherein the first auxiliary tray defines a second substantially planar surface for receiving articles intended for the child.

3. The child support device of Para 1, wherein the first auxiliary tray is substantially out of sight of the child while in the extended position.

4. The child support device of Para 1, wherein the first auxiliary tray is slidably coupled to the tray body.

5. The child support device of any preceding Para, wherein the first auxiliary tray is substantially contained within the tray body while in the retracted position.

6. The child support device of any preceding Para, wherein the first auxiliary tray is pivotably coupled to the child support device.

7. The child support device of any preceding Para, further comprising a second auxiliary tray.

8. A high chair having a seat for receiving a child therein comprising:

a first tray proximal the seat and configured for receiving an article for a child, the first tray defining a first surface;

a second tray defining a second surface, the

second tray also configured for receiving an article for a child and movable between a first position wherein the second tray is at least partially concealed from view by the first tray, and a second position wherein the second tray is at least partially extended beyond the perimeter of the first tray;

wherein the first and second surfaces are substantially parallel and wherein the second tray is substantially out of reach of a child seated in the high chair when the second tray is in the second position.

9. The high chair of Para 8, wherein the second tray is slidably coupled to the first tray.

10. The high chair of Para 8 or 9, further comprising a third tray configured for receiving an article for a child and movable between a third position wherein the third tray is at least partially concealed from view by the first tray, and a fourth position wherein the third tray is at least partially extended beyond the perimeter of the first tray.

11. The high chair of any of Paras 8-10, wherein the second tray is pivotably coupled to the first tray.

12. The high chair of any of Paras 8-11, wherein the second tray is substantially contained within the first tray while in the first position.

13. The high chair of any of Paras 8-12, wherein the first tray further comprises a first shallow recess.

14. The high chair of any of Paras 8-13, wherein the article is a piece of food, a food container, a beverage, or a beverage container.

15. The high chair of Para 13 or 14, wherein the first shallow recess is configured for receiving food.

16. The high chair of Para 15, further comprising a second shallow recess configured for receiving a beverage container.

Claims

1. A child tray coupled or arranged to be coupled to a child support device for receiving a child, the child tray comprising:

a tray body defining a first substantially planar surface having a shallow recess configured to receive articles intended for a child positioned within the child support device; and
a first auxiliary tray moveably coupled to the tray

- body and operable to selectively extend from a retracted position in which the auxiliary tray is at least partially concealed by the tray body, to an extended position beyond the perimeter of the tray body in which the auxiliary tray is positioned substantially out of reach of the child while in the extended position.
2. The child tray of claim 1, wherein the first auxiliary tray defines a second substantially planar surface for receiving articles intended for the child. 10
 3. The child tray of claim 1 or 2, wherein the first auxiliary tray is substantially out of sight of the child while in the extended position. 15
 4. The child tray of any preceding claim, wherein the first auxiliary tray is slidably coupled to the tray body.
 5. The child tray of any preceding claim, wherein the first auxiliary tray is substantially contained within the tray body while in the retracted position. 20
 6. The child tray of any preceding claim, wherein the first auxiliary tray is pivotably coupled or arranged to be pivotably coupled to the child support device. 25
 7. The child tray of any preceding claim, further comprising a second auxiliary tray. 30
 8. The child tray of any preceding claim, wherein the first auxiliary tray is pivotably coupled to the tray body.
 9. The child tray of any preceding claim, wherein the first auxiliary tray is substantially contained within the tray body while in the retracted position. 35
 10. The child tray of any preceding claim, wherein the tray body further comprises a first shallow recess. 40
 11. The child tray of claim 10, wherein the first shallow recess is configured for receiving food.
 12. The child tray of claim 10 or 11, wherein the tray body further comprises a second shallow recess configured for receiving a beverage container. 45
 13. The high chair of any preceding claim, further comprising a second auxiliary tray configured for receiving an article for a child and movable between a position in which the second auxiliary tray is at least partially concealed from view by the tray body, and a position in which the second auxiliary tray is at least partially extended beyond the perimeter of the tray body. 50 55
 14. A child support device, such as a high chair, comprising a child tray in accordance with any preceding claim coupled thereto.
 15. A high chair having a seat for receiving a child therein, comprising:
 - a child tray in accordance with any preceding claim;
 - wherein the tray body defines a first surface and is proximal to the seat and is configured for receiving an article for a child, the first tray defining a first surface;
 - wherein the first auxiliary tray defines a second surface and is configured for receiving an article for a child; and
 - wherein the first and second surfaces are substantially parallel and wherein the second tray is substantially out of reach of a child seated in the high chair when the second tray is in the extended position.

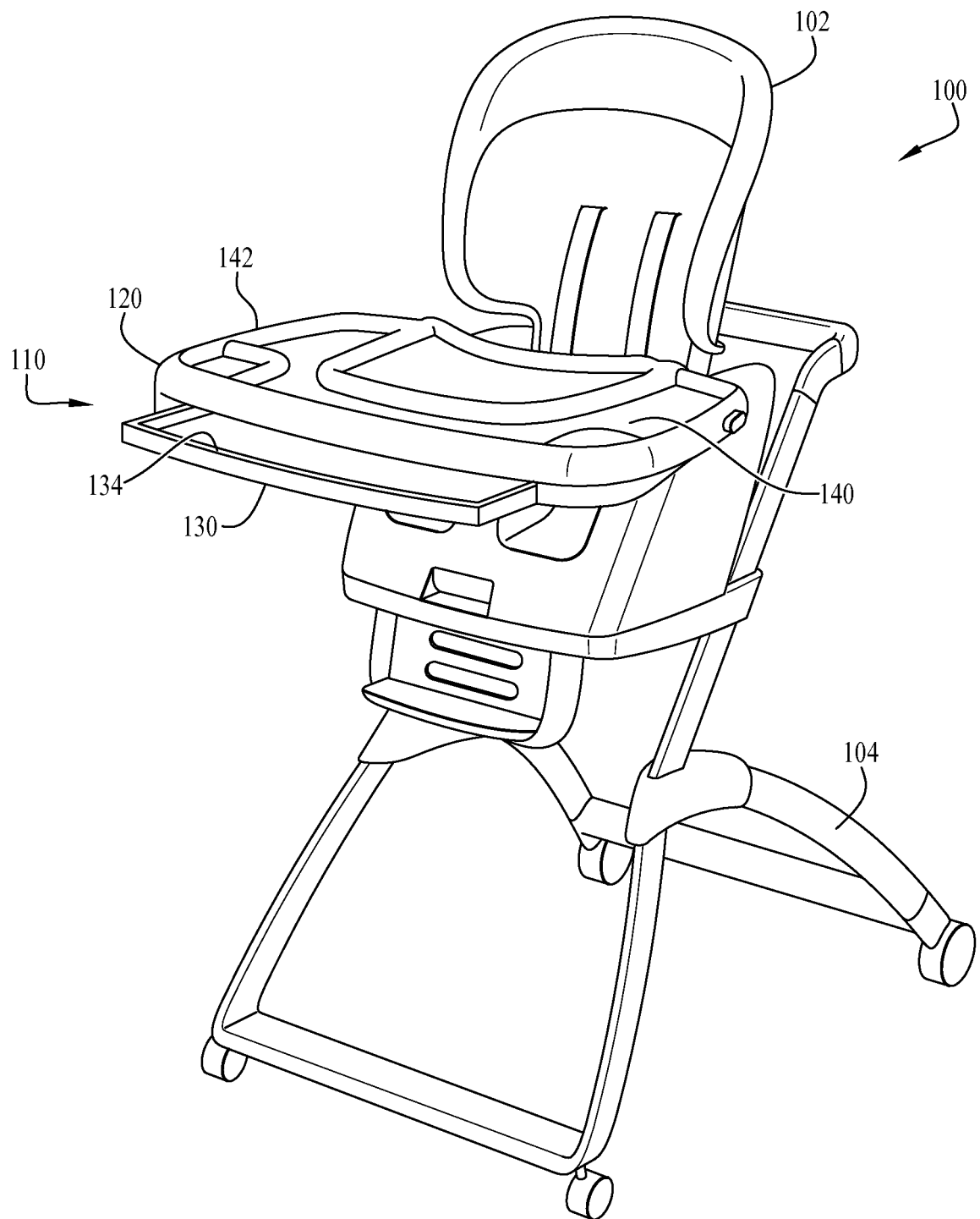


Fig. 1

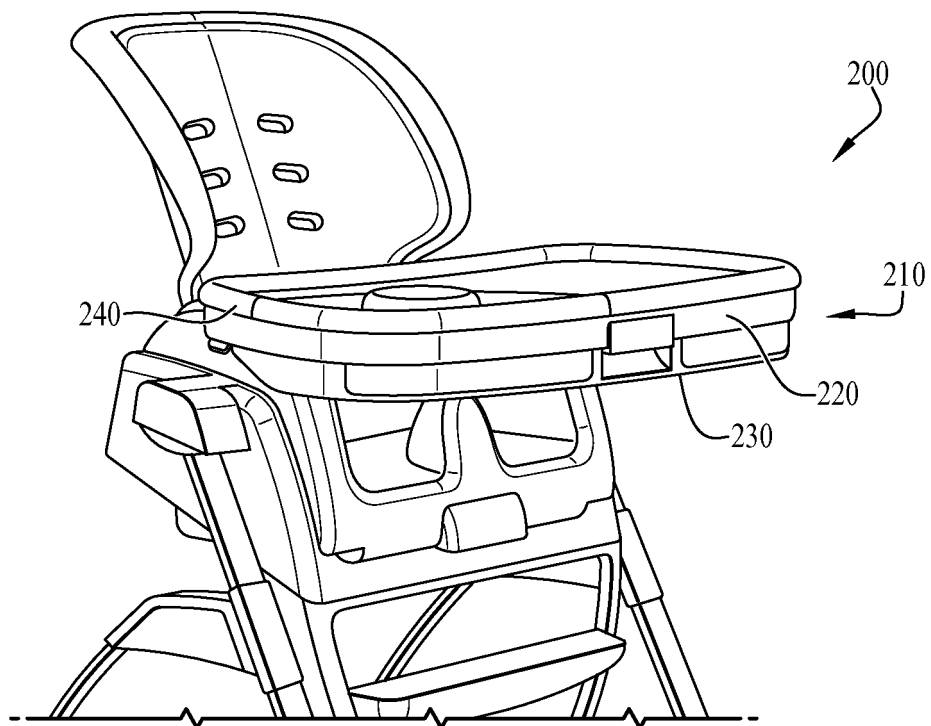


Fig. 2

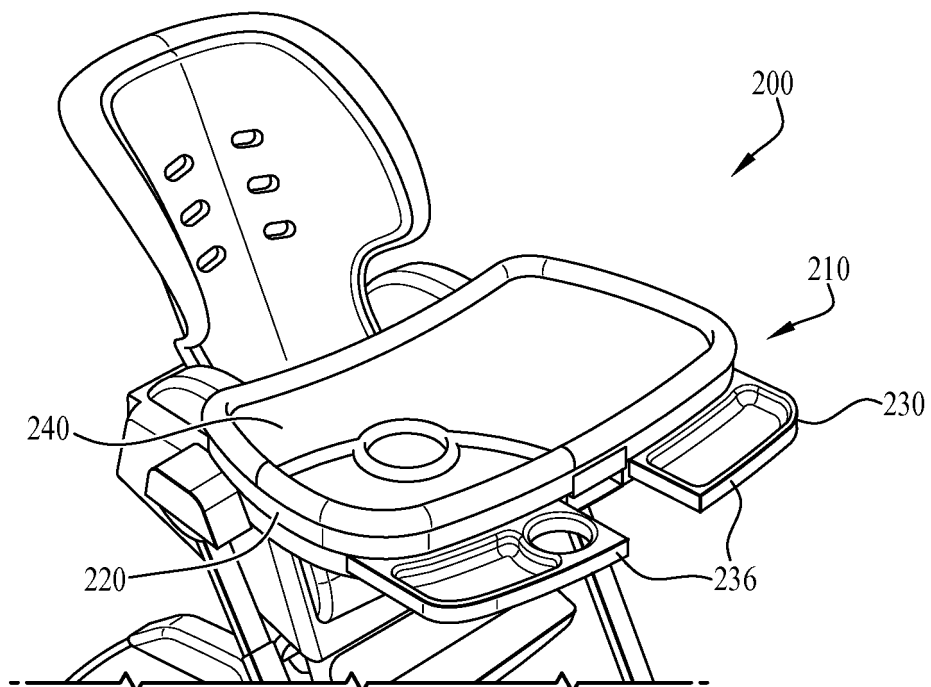


Fig. 3

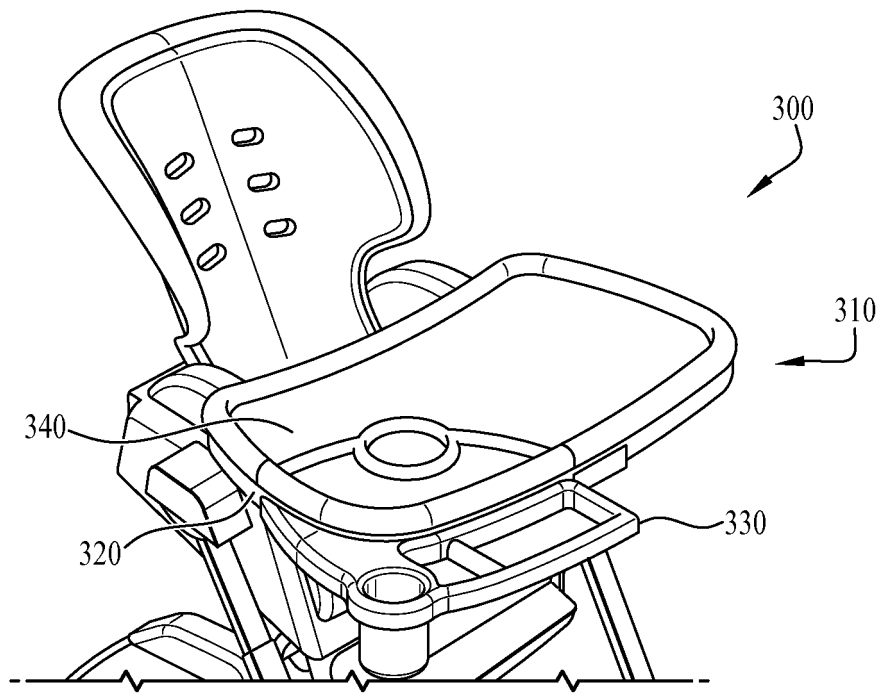


Fig. 4

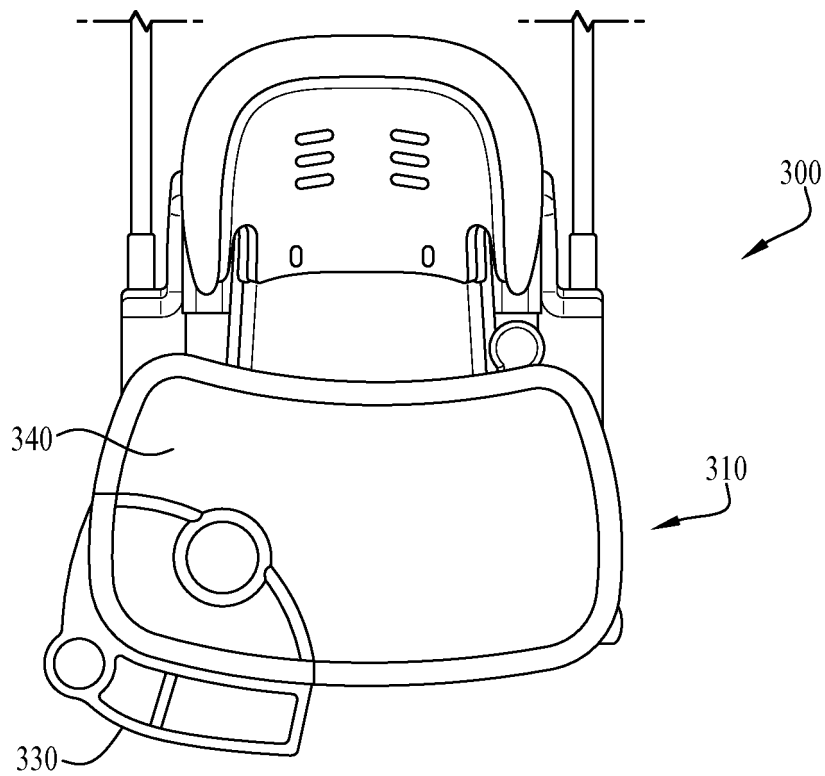


Fig. 5



EUROPEAN SEARCH REPORT

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Place of search The Hague		Date of completion of the search 22 August 2016	Examiner Amghar, Norddin
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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REFERENCES CITED IN THE DESCRIPTION

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