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Pacella et al.

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(54) **ADJUSTABLE CHAIR ASSEMBLY**

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A47D 1/00 (2006.01)

(52) **U.S. Cl.**
CPC ***A47D 1/004*** (2013.01); ***A47D 1/0085*** (2017.05)

(58) **Field of Classification Search**
CPC A47D 1/0085; A47D 1/004; A47D 1/006
See application file for complete search history.

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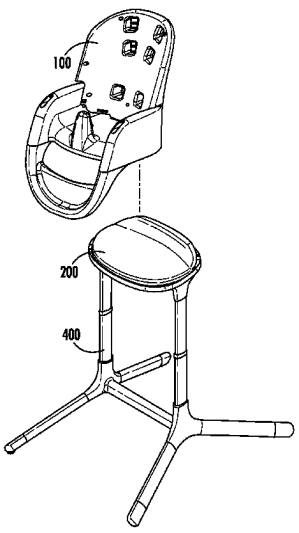
(57) **ABSTRACT**

The present disclosure is directed to an adjustable chair assembly that includes two separate seat assemblies and two separate footrests. The two seat assemblies can be attached to each other in a first state and can be detached from each other in a second state via engagement with an actuator. The adjustable chair assembly can include a plurality of actuator assemblies that can be configured to adjust a recline angle of at least one of the seat assemblies, a height of a frame member, and other aspects of the adjustable chair assembly.

13 Claims, 11 Drawing Sheets



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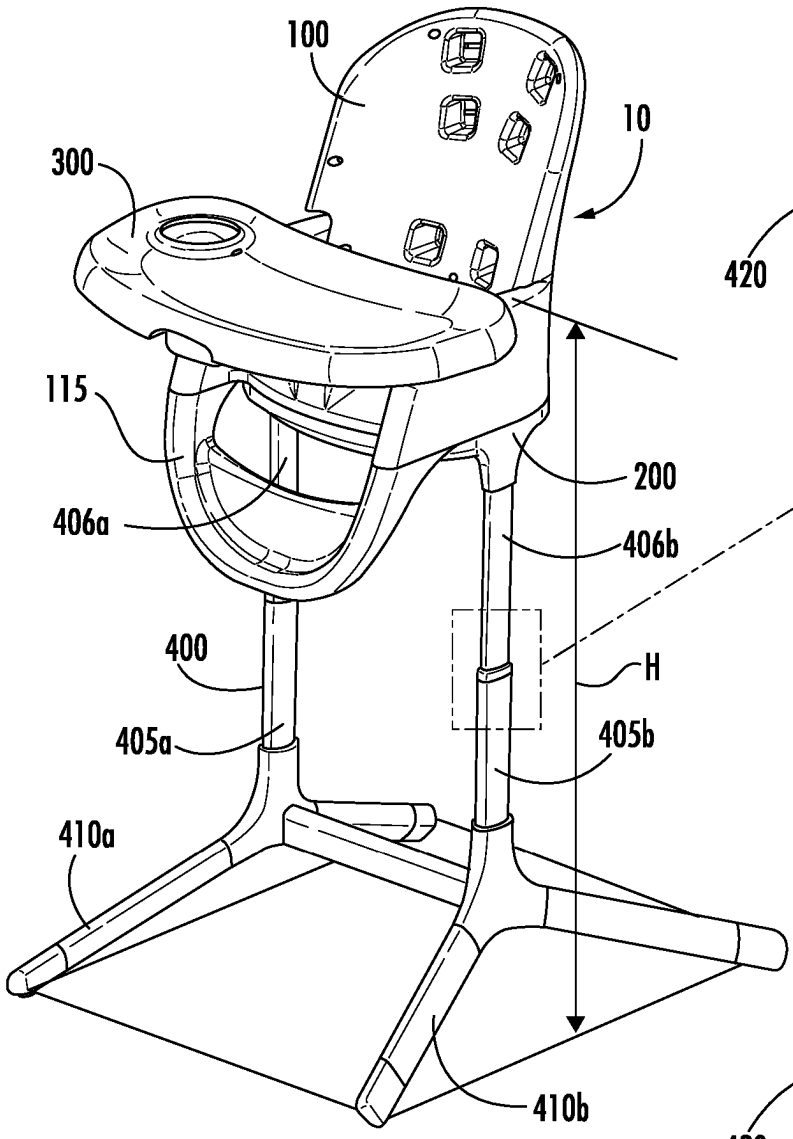


FIG. 1A

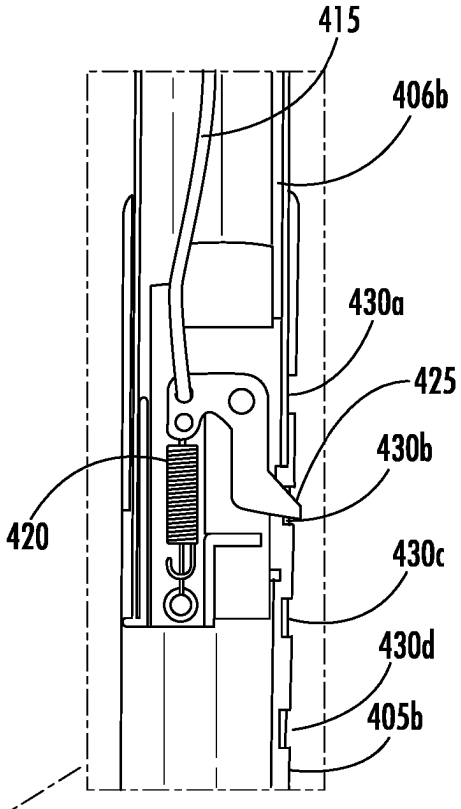


FIG. 1B

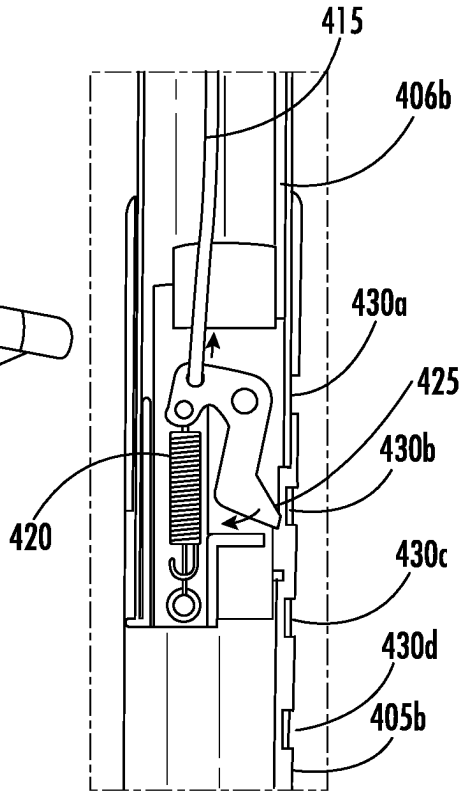


FIG. 1C

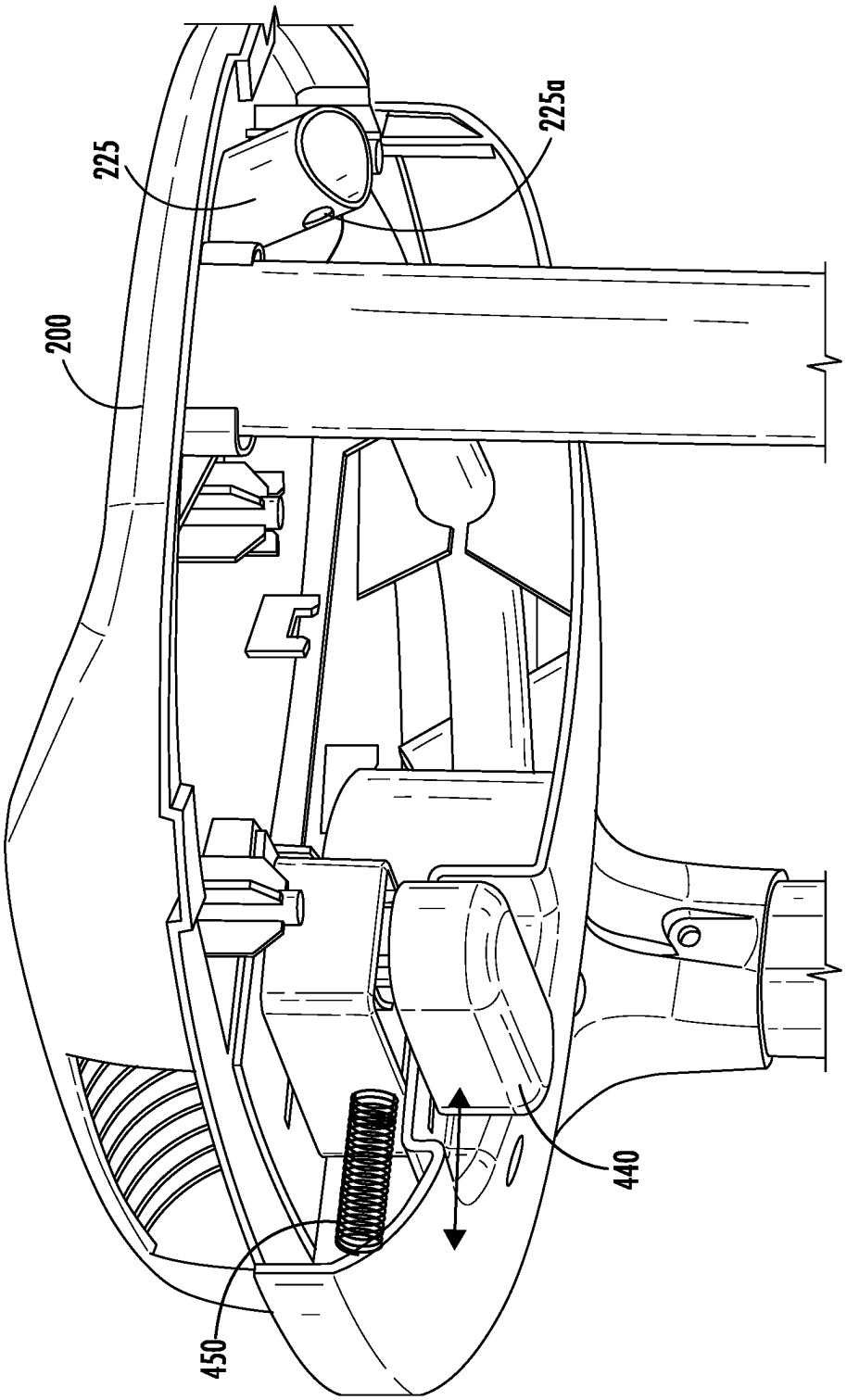


FIG. 2

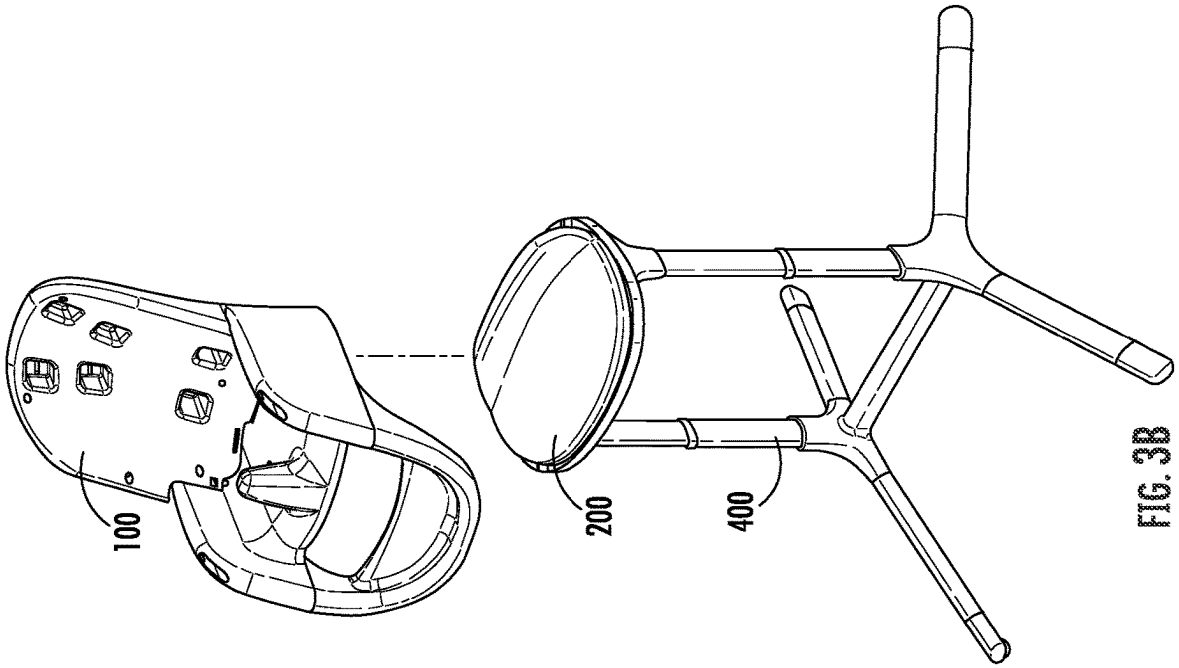


FIG. 3B

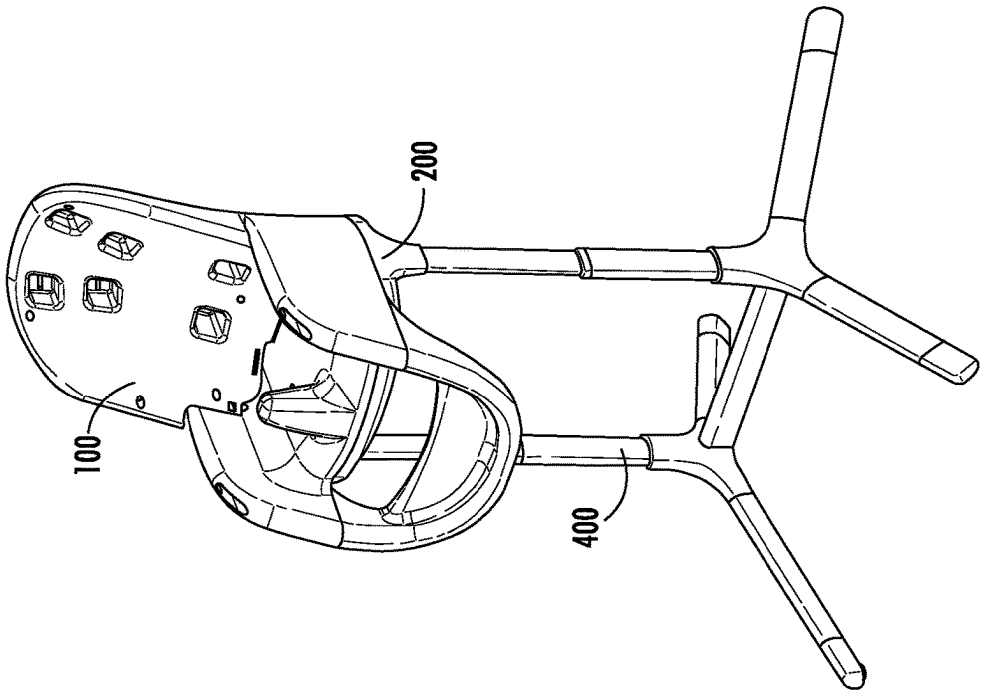


FIG. 3A

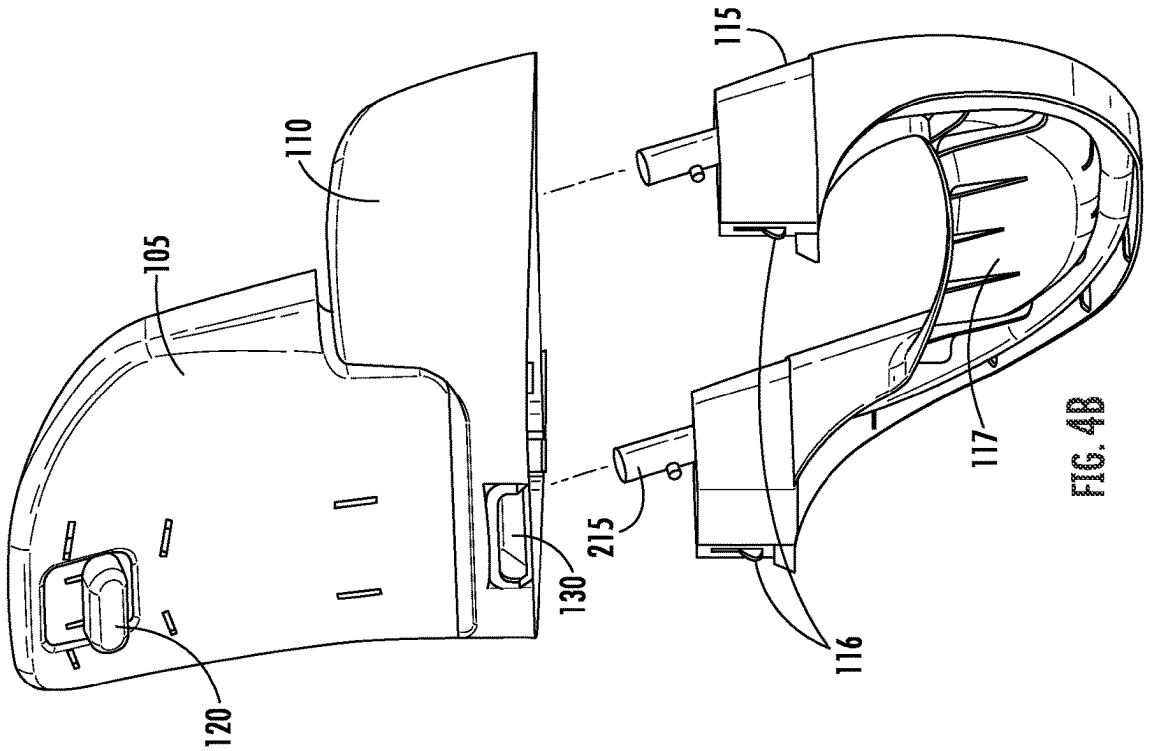


FIG. 4B

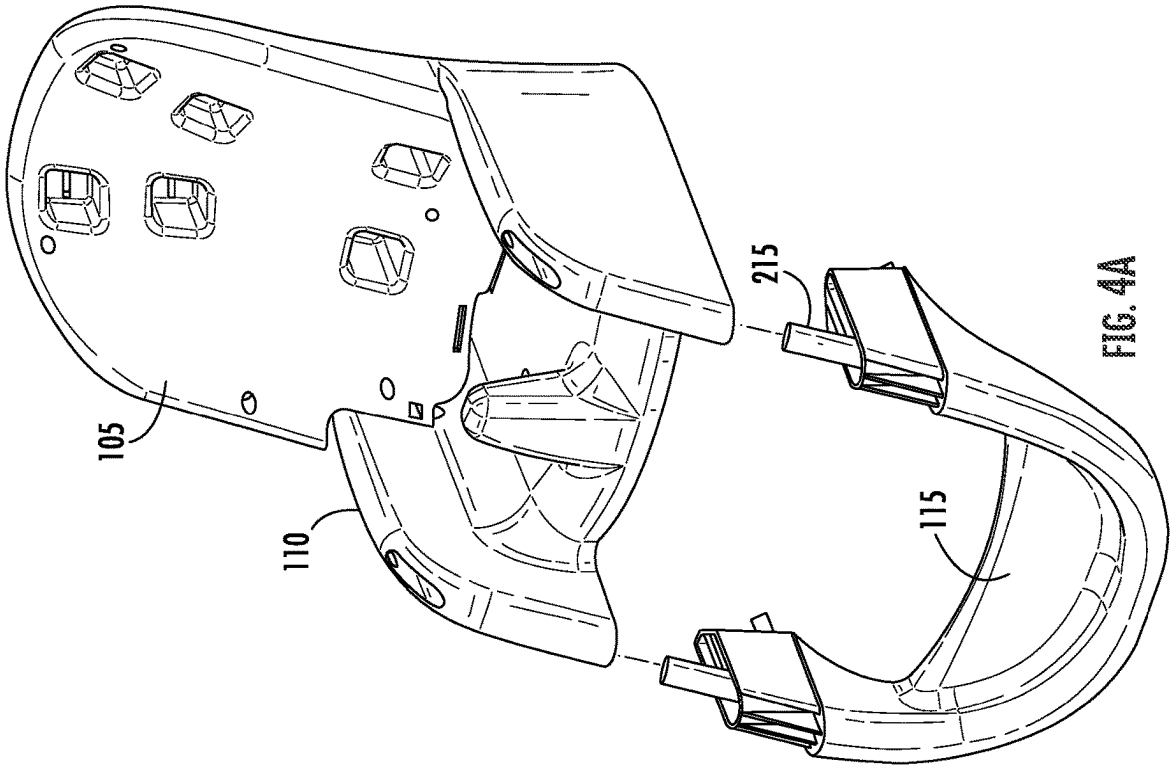


FIG. 4A

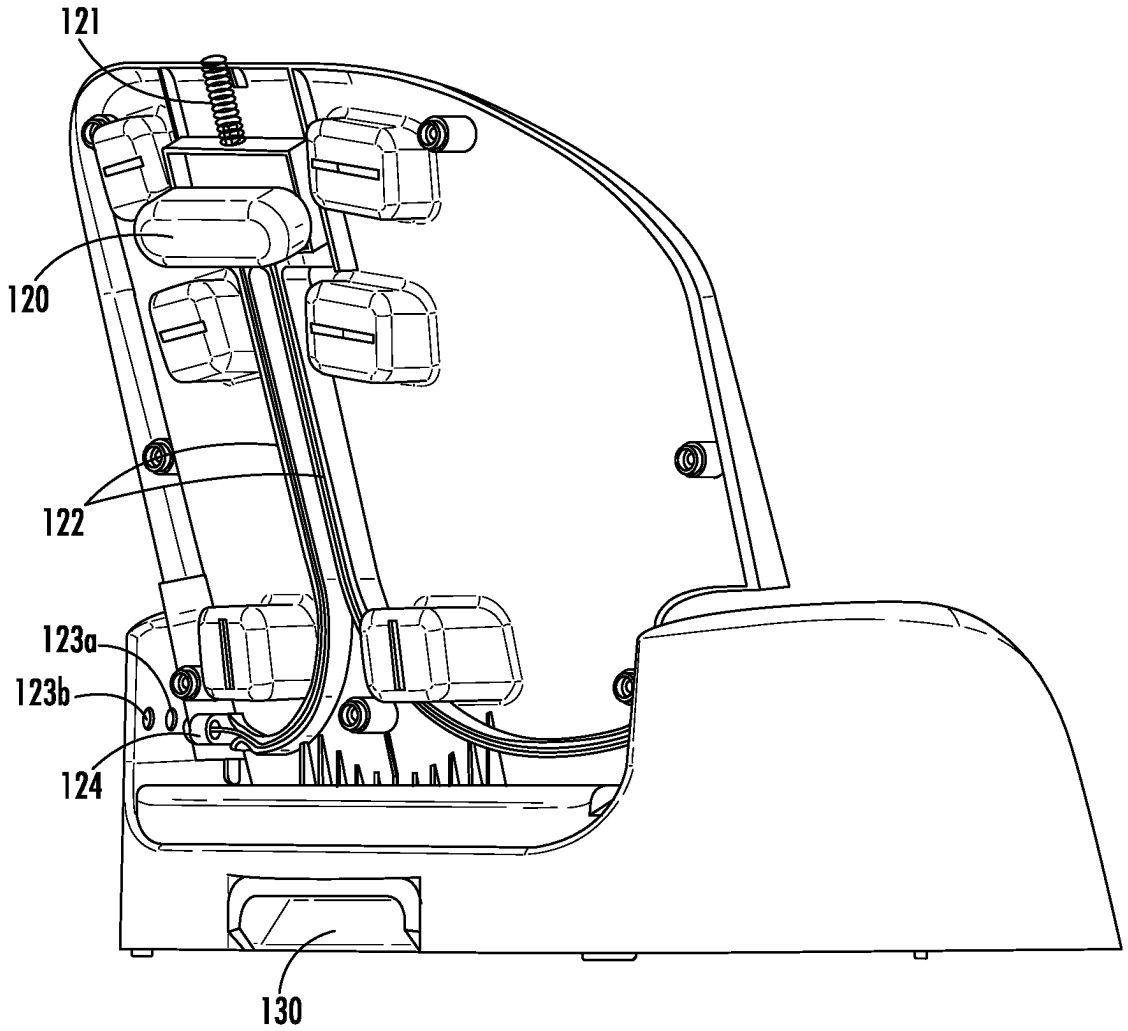


FIG. 5

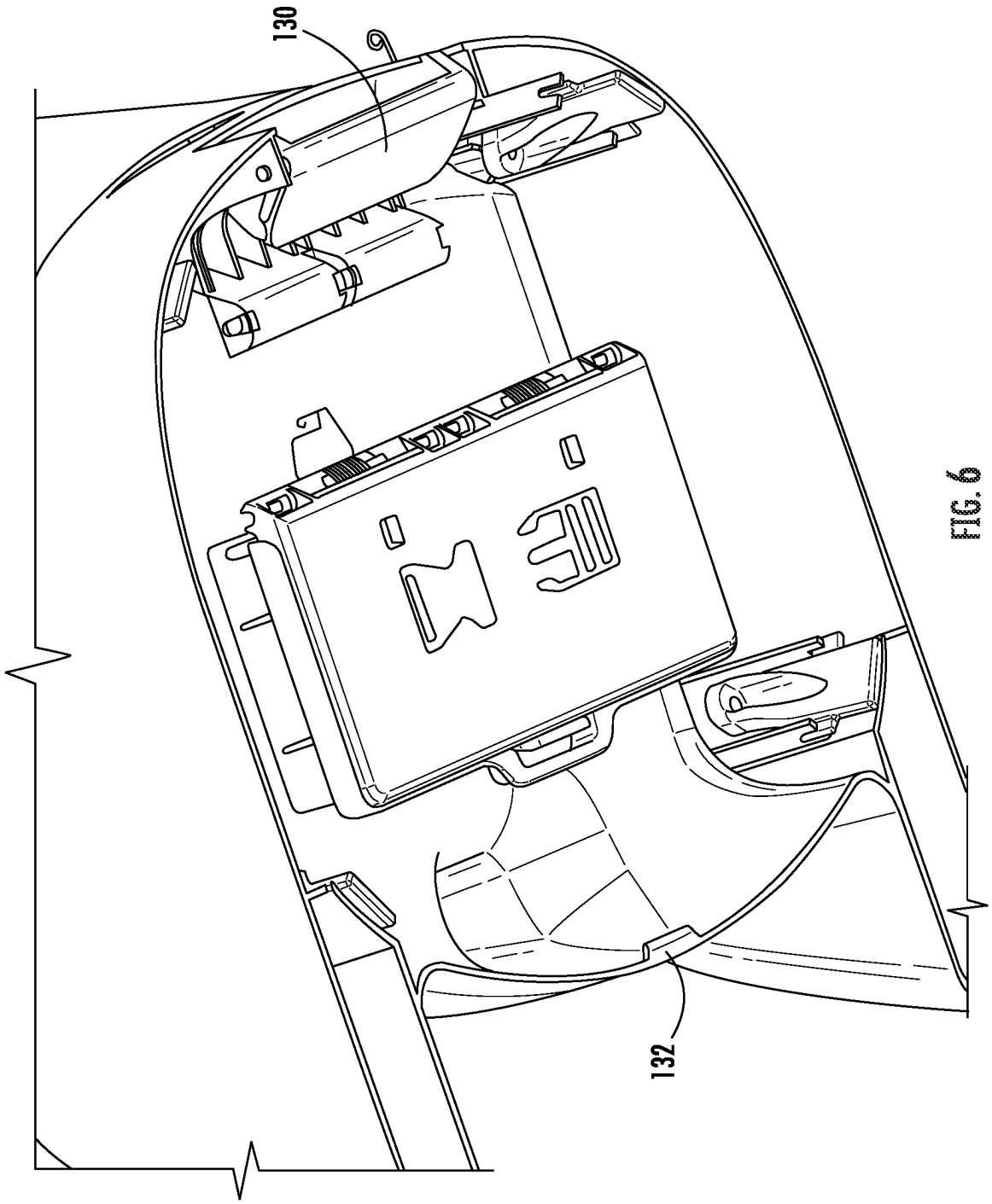


FIG. 6

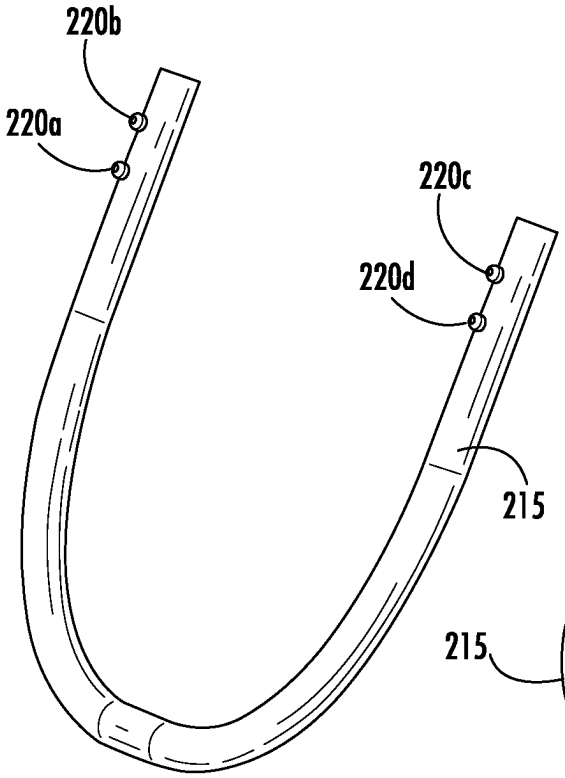


FIG. 7A

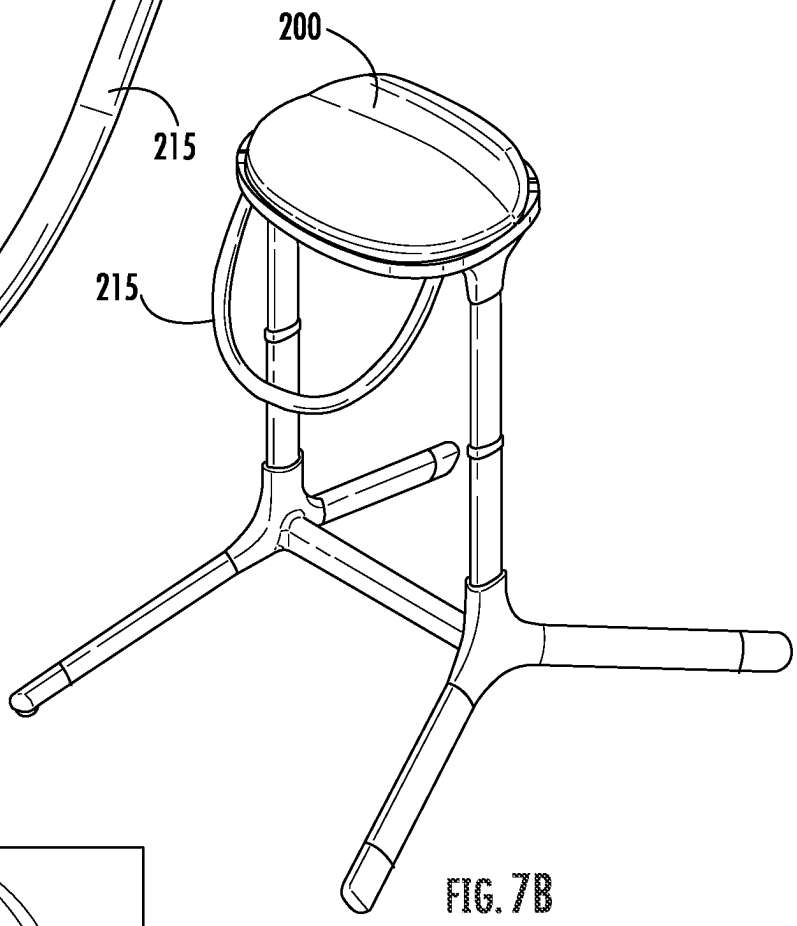


FIG. 7B

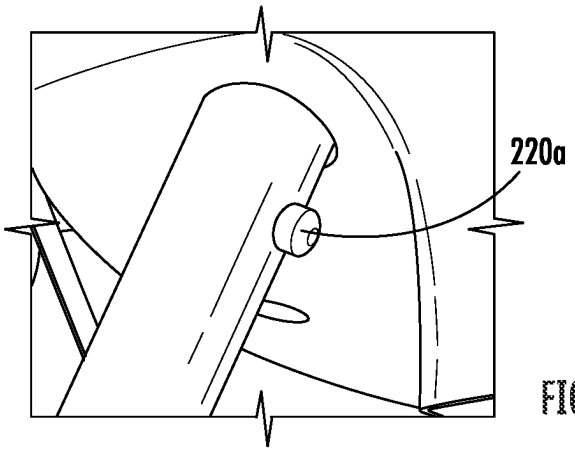


FIG. 7C

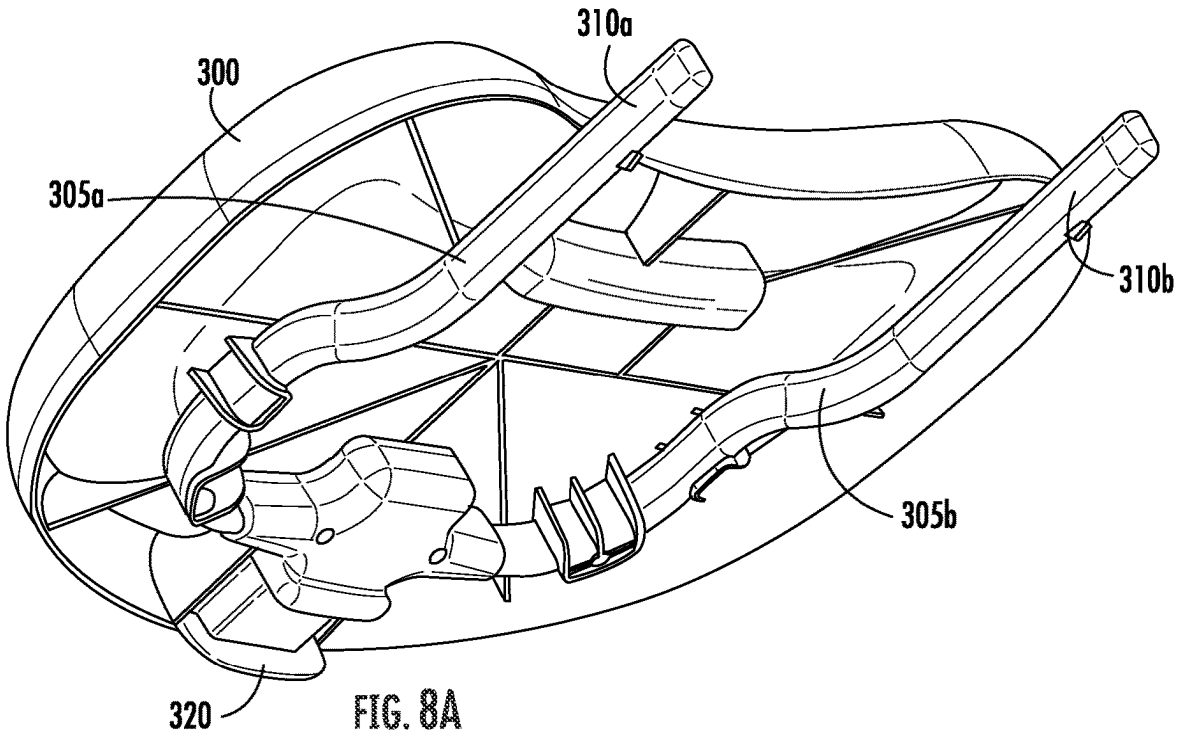


FIG. 8A

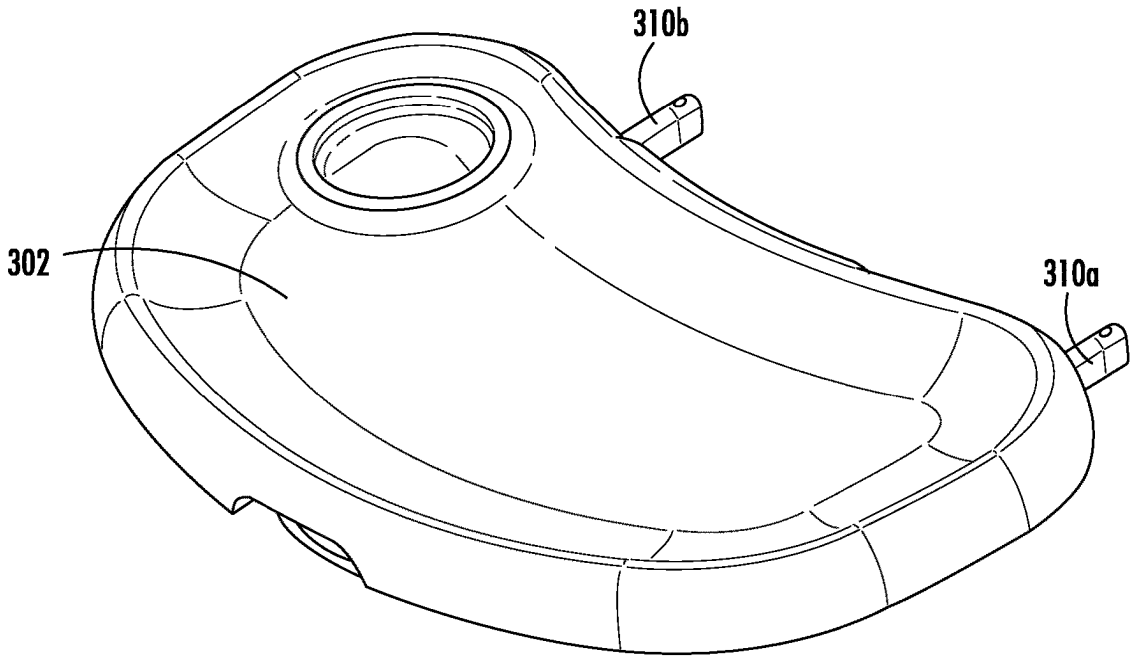


FIG. 8B

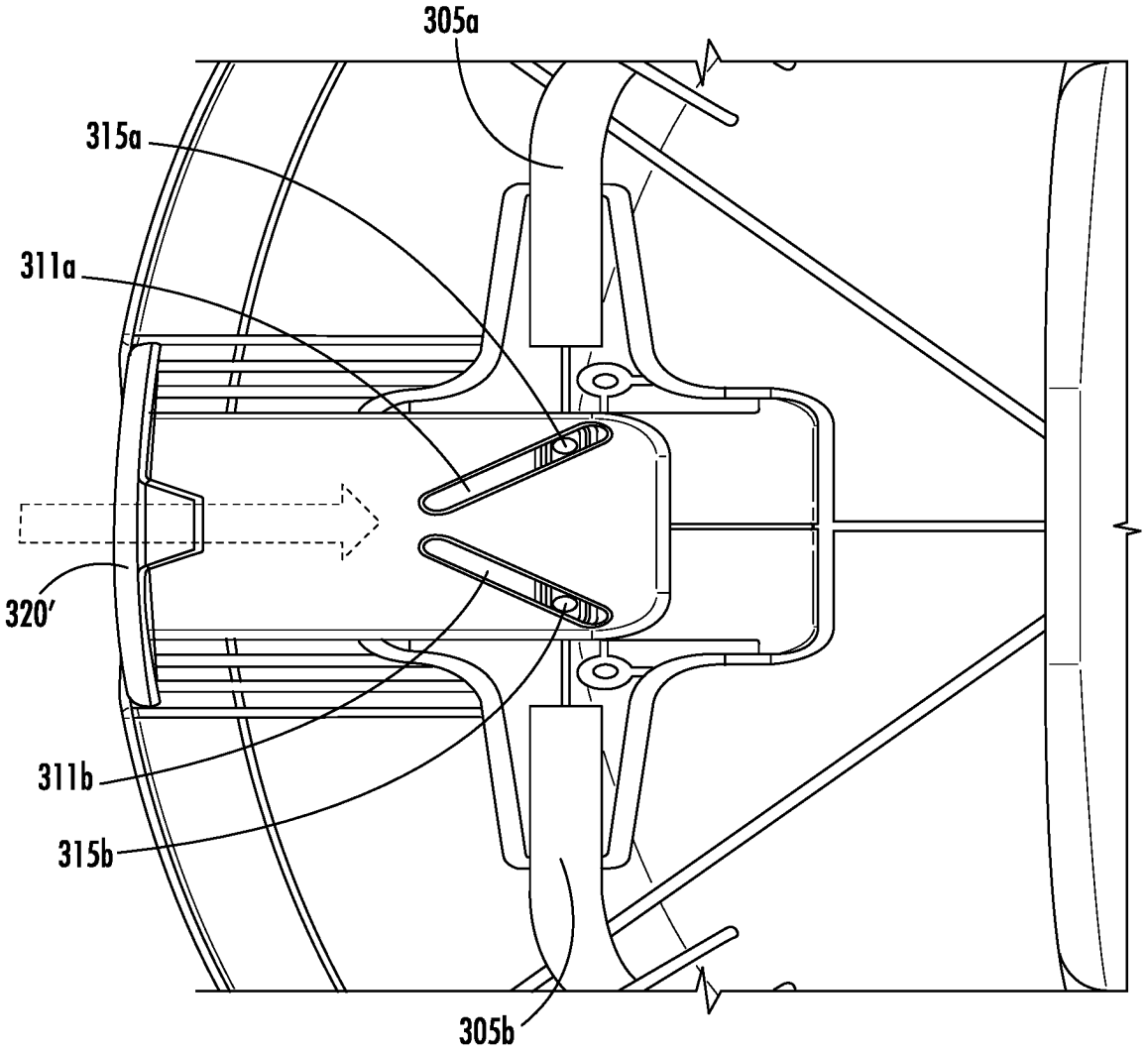
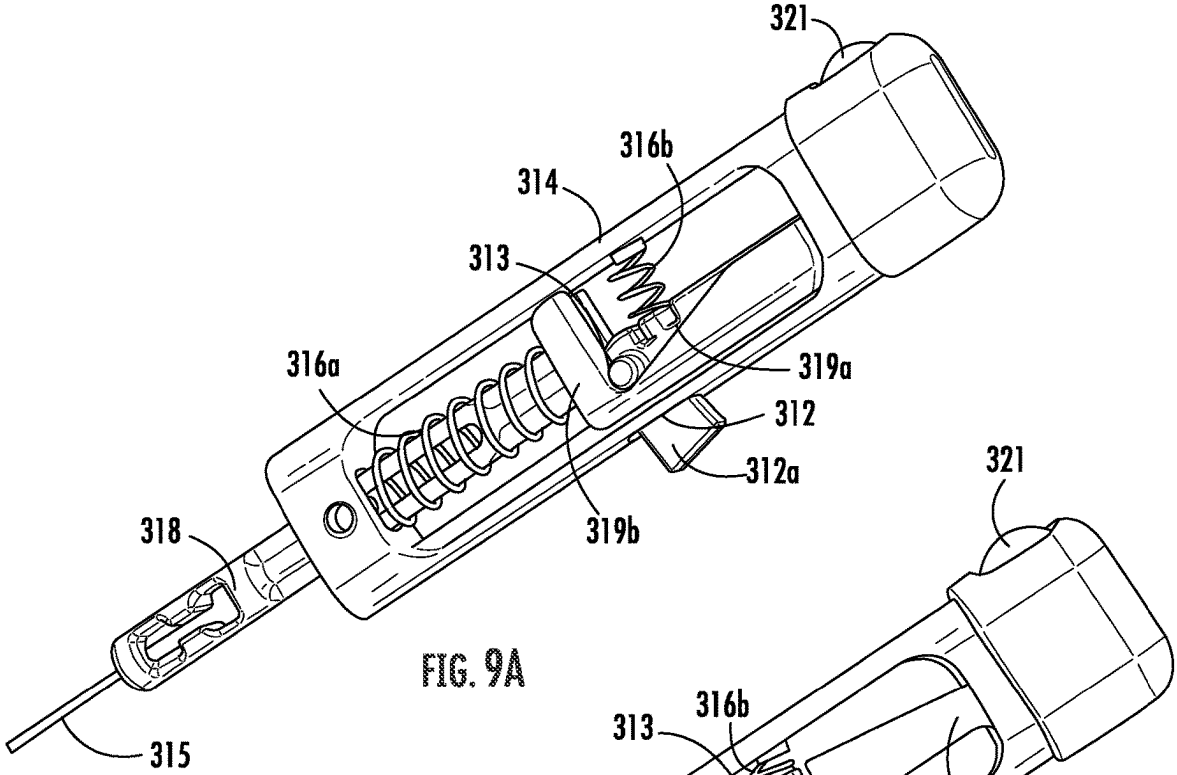


FIG. 8C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316a
319a
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319b
318
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FIG. 9A

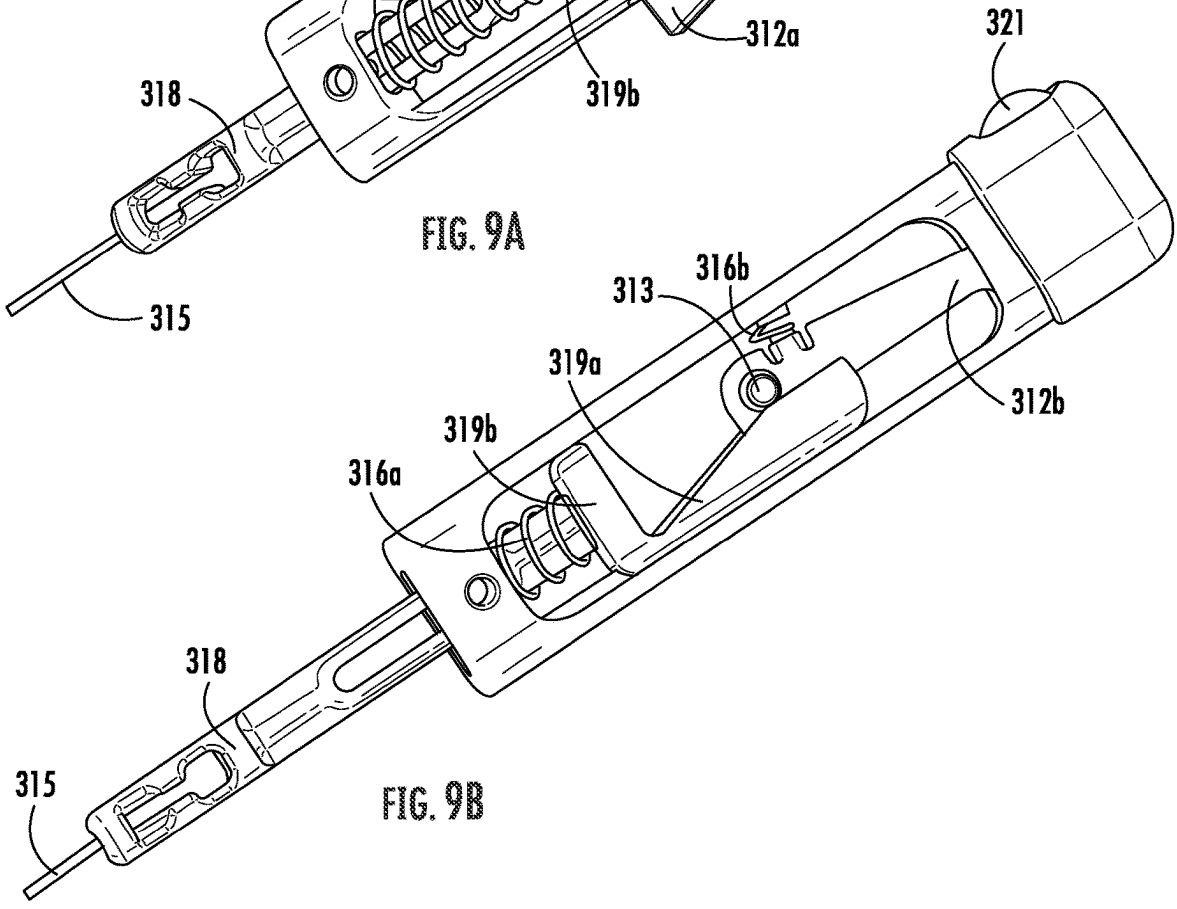
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FIG. 9B

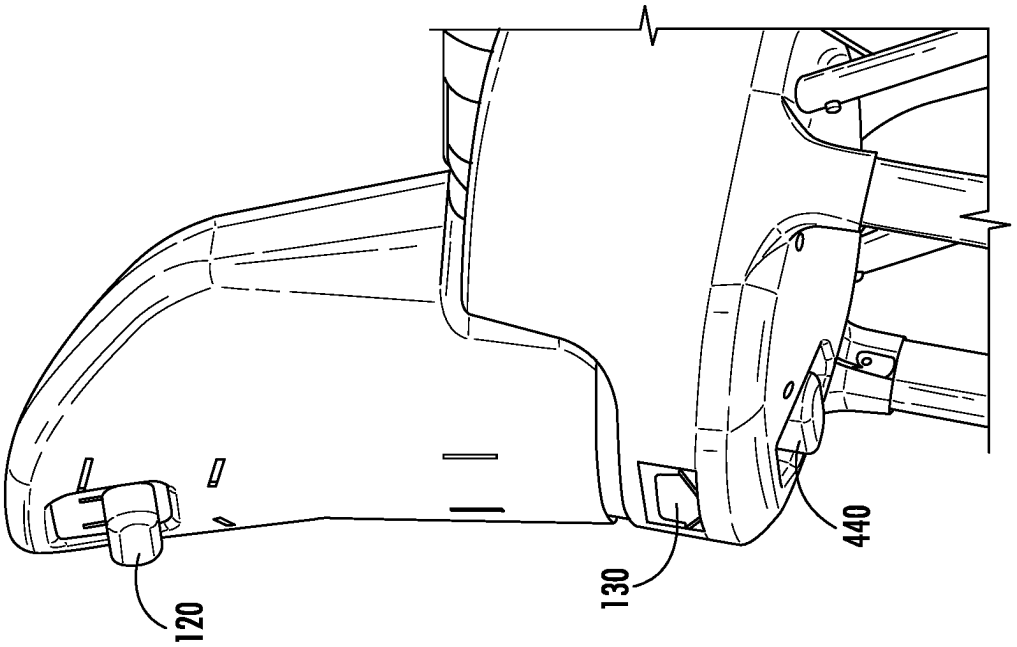

FIG. 10

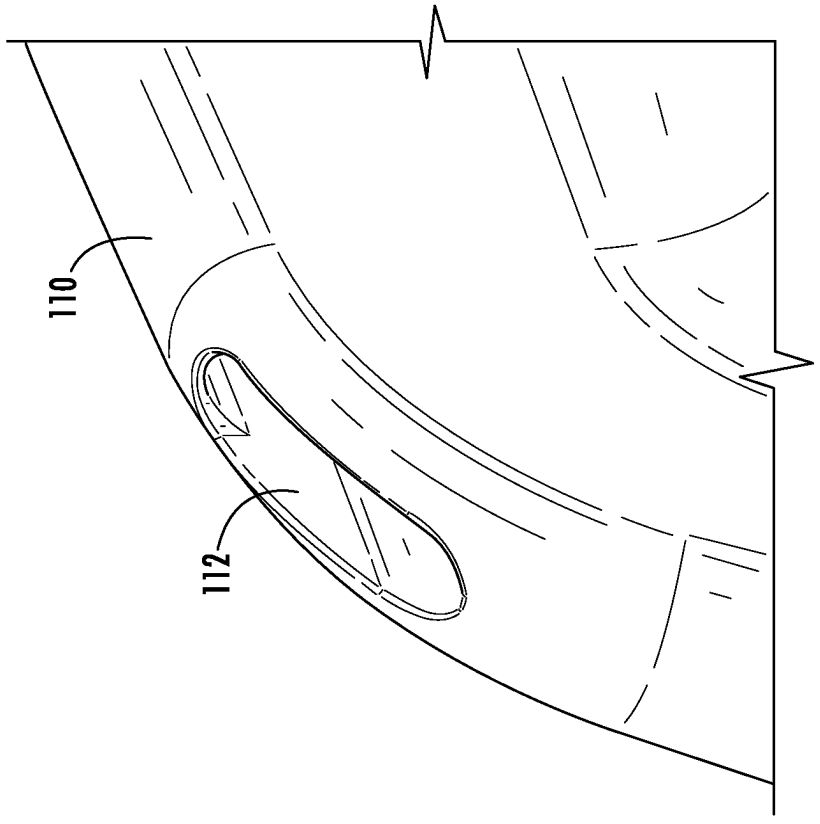

FIG. 9C

ADJUSTABLE CHAIR ASSEMBLY

CROSS-REFERENCE TO RELATED APPLICATION

This application claims priority to U.S. Provisional Patent Application No. 63/237,070, filed on Aug. 25, 2021, the disclosure of which is hereby incorporated by reference as if set forth in its entirety herein.

TECHNICAL FIELD

The present disclosure generally relates to an adjustable chair assembly, and is specifically directed to an adjustable chair assembly with two separate chair assemblies or modes.

BACKGROUND

Chair assemblies for infants, toddlers, and juveniles are well known. One such chair assembly is a highchair, which is generally configured to be used in a dining area. It is desirable to provide chair assemblies that can be used with standard height kitchen or dining tables, as well as chair assemblies that can be used with taller dining surfaces, such as kitchen islands or counters.

Some known highchairs provide the ability to support children of varying sizes, such as infants, toddlers, and juveniles or youths. These known highchairs typically include a single footrest for the various modes of use for children of varying sizes. This can be undesirable due to the single footrest being more suitable for one mode over the other.

Other known highchairs provide the ability to remove one seat assembly from another seat assembly. These types of highchairs require users to engage a pair of actuators (i.e. using two hands) in order to remove one seat assembly from another seat assembly. This is also undesirable because users may be holding other items while trying to engage with the highchair.

Accordingly, it would be desirable to provide an improved chair assembly that is easily actuated to convert between various modes or states, and also provides more adjustment or flexibility aspects.

SUMMARY

The present disclosure is directed to an adjustable chair assembly. In one aspect, the adjustable chair assembly includes a first seat assembly, a first footrest, a second seat assembly, and a second footrest that is different than the first footrest. The first and second seat assemblies are configured to be transitioned between a first state in which the first and second seat assemblies are attached to each other, and a second state in which the first and second seat assemblies are detached from each other. A seat release actuator is configured to detach the first and second seat assemblies from each other to transition from the first state to the second state. In one aspect, the seat release actuator comprises a single handle.

Additional embodiments are described below and in the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing Summary and the following Detailed Description will be better understood when read in conjunction with the appended drawings, which illustrate a preferred embodiment of the disclosure. In the drawings:

FIG. **1**A is a perspective view of an adjustable chair assembly according to one aspect.

FIG. **1**B is a magnified view of a height adjustment feature of the adjustable chair assembly of FIG. **1**A in a first state.

FIG. **1**C is a magnified view of a height adjustment feature of the adjustable chair assembly of FIG. **1**A in a second state.

FIG. **2** is a cutaway perspective view of a portion of the height adjustment feature of the adjustable chair assembly.

FIG. **3**A is a perspective view of the adjustable chair assembly with the first and second seat assemblies attached to each other.

FIG. **3**B is a perspective view of the adjustable chair assembly of FIG. **3**A with the first seat assembly detached from the second seat assembly.

FIG. **4**A is a perspective view of the first seat assembly in a partially disassembled state.

FIG. **4**B is another perspective view of the first seat assembly of FIG. **4**A.

FIG. **5** is a rear perspective view of an actuator assembly for the first seat assembly.

FIG. **6** is a perspective view of an underside of the first seat assembly illustrating another actuator assembly.

FIG. **7**A is a perspective view of a footrest for the second seat assembly in a detached state.

FIG. **7**B is a perspective view of the footrest attached to the second seat assembly.

FIG. **7**C is a magnified view of a portion of the second footrest of FIGS. **7**A and **7**B.

FIG. **8**A is a perspective view of an underside of a tray assembly.

FIG. **8**B is a perspective view of a top surface of the tray assembly.

FIG. **8**C is a bottom view of a tray actuator assembly according to one aspect.

FIG. **9**A is a side view of a latch assembly for the tray assembly.

FIG. **9**B is another side view of the latch assembly for the tray assembly.

FIG. **9**C is a perspective view of a receptacle associated with the latch assembly.

FIG. **10** is a rear perspective view of the adjustable chair assembly.

DETAILED DESCRIPTION

Certain terminology is used in the following description for convenience only and is not limiting. The words "front," "rear," "upper" and "lower" designate directions in the drawings to which reference is made. The words "inwardly" and "outwardly" refer to directions toward and away from the parts referenced in the drawings. A reference to a list of items that are cited as "at least one of a, b, or c" (where a, b, and c represent the items being listed) means any single one of the items a, b, or c, or combinations thereof. This terminology includes the words specifically noted above, derivatives thereof and words of similar import.

As shown in FIG. **1**A, an adjustable chair assembly **10** is disclosed herein that generally includes a first seat assembly **100**, a second seat assembly **200**, a tray assembly **300**, and a frame assembly **400**.

In one aspect, the first seat assembly **100** is configured to support a child of a first size or first age, and the second seat assembly **200** is configured to support a child of a second

size or second age. For example, the first seat assembly **100** can be a booster seat that is generally dimensioned or adapted to support a toddler. The second seat assembly **200** can dimensioned or adapted to support an older or larger child. In this aspect, the second seat assembly **200** can be configured as a youth seat, and may be a stool. One of ordinary skill in the art would understand that either of the first or second seat assemblies **100**, **200** could be dimensioned or sized to support children of varying ages, sizes, heights, etc. Although not specifically shown, restraints can be included for either one of the first or second seat assemblies **100**, **200**.

The adjustable chair assembly **10** generally provides varying levels of adjustability and adaptability. For example, the first and second seat assemblies **100**, **200** can each be configured to be selectively detached from a remainder of the adjustable chair assembly **10**. Additionally, the adjustable chair assembly **10** can generally have a height adjustment feature such that the adjustable chair assembly **10** is configured to be used at a plurality of heights. For example, the adjustable chair assembly **10** can be configured to be used with tables of standard height (i.e. preferably 26-30 inches, more preferably 28-30 inches, and most preferably about 28.5 inches) in a lower height adjustment setting, or to be used with taller tables, such as kitchen islands (i.e. preferably 34-38 inches, more preferably 35-37 inches, and most preferably about 36.5 inches) in an upper height adjustment setting. The heights disclosed herein are measured from a floor or ground surface to a top of an armrest defined by the first seat assembly **100**. One of ordinary skill in the art would understand that the height adjustment feature could be configured to adjust to any height.

As disclosed in more detail herein, a plurality of actuators are provided with the adjustable chair assembly **10** for adjusting a variety of aspects of the adjustable chair assembly **10** and/or for detaching one component from another of the adjustable chair assembly **10**. Each of the actuators disclosed herein are configured to be engaged with a single hand of a user. This configuration generally makes it easier and simpler for a user to adjust or modify aspects of the adjustable chair assembly **10**.

As shown in FIG. **1**A, the frame assembly **400** is generally configured to provide a ground support for the first and second seat assemblies **100**, **200**. The frame assembly **400** includes at least one leg or support. In one aspect, the frame assembly **400** includes a pair of legs. In another arrangement, the frame assembly **400** can include a single leg, or more than two legs.

A first leg of the pair of legs can be comprised of two sections **405***a*, **406***a* that are configured to be adjustable relative to each other, such as via a telescoping arrangement. A second leg of the pair of legs can be comprised of two sections **405***b*, **406***b* that are configured to be adjustable relative to each other, such as via a telescoping arrangement. Based on this arrangement, a height (H) of the frame assembly **400** can be adjusted. The frame assembly **400** can include a ground support element, i.e. feet for the legs. In one aspect, the ground support element comprises two ground supports **410***a*, **410***b*. The ground supports **410***a*, **410***b* can each include a fork-like shape including a pair of supports, in one aspect. One of ordinary skill in the art would understand that the configuration of the ground supports **410***a*, **410***b* can vary.

As shown in more detail in FIGS. **1**B and **1**C, the frame assembly **400** includes a height adjustment feature that is configured to adjust a height of the frame assembly **400**. The height adjustment feature can have a variety of configurations. In one aspect, the height adjustment feature includes a control element **415** (i.e. cable, lever, rod, linkage, etc.) that is configured to be engaged by an actuator **440** (i.e. a handle, lever, etc.), as shown in FIG. **2**. Pulling the actuator **440**, as shown in FIG. **2**, causes the control element **415** to be pulled upward, in one aspect, as is shown in FIG. **1**C. The control element **415** is configured to selectively move or displace a locking element, such as a latch or pawl **425**. One end or portion of the latch **425** is dimensioned to be received within a selective one of a plurality of height adjustment openings **430***a*, **430***b*, **430***c*, and **430***d*. The latch **425** is shown within height adjustment opening **430***b* in FIG. **1**B, and is shown pivoted out of contact with the height adjustment openings in FIG. **1**C in order to adjust the height. In one aspect, the height adjustment openings **430***a*, **430***b*, **430***c*, and **430***d* are formed in a bottom portion, i.e. elements **405***a* or **405***b*, of the frame support. In another aspect, the height adjustment openings **430***a*, **430***b*, **430***c*, **430***d* are formed in an upper portion, i.e. elements **406***a* or **406***b*, of the frame support. The bottom portion **405***a*, **405***b* of the frame and the upper portion **406***a*, **406***b* of the frame can be configured to be slidable relative to each other. The latch **425** is configured to selectively lock the bottom portion **405***a*, **405***b* of the frame with the upper portion **406***a*, **406***b* of the frame to fix the height of the frame assembly **400**. In one aspect, a biasing element **420** is provided to bias the latch **425** into a locked position and within a selective one of the height adjustment openings **430***a*, **430***b*, **430***c*, **430***d*. Although a telescoping arrangement is shown in FIGS. **1**A-**1**C, one of ordinary skill in the art would understand that various types of height adjustment mechanisms and configurations could be used.

As shown in FIG. **2**, the actuator **440** can be provided on an underside of the second seat assembly **200**. One of ordinary skill in the art would understand that the actuator **440** for height adjustment of the frame assembly **400** can be located in any location of the adjustable chair assembly **10**. A biasing element **450** can be provided that generally forces the actuator **440** to a non-engaged or non-actuated position, i.e. a position in which the control element **415** is not pulled or tensioned. In one aspect, the biasing element **450** can be a spring, such as a coil spring or a flat spring, a resilient material, or any other component that is configured to generally urge the actuator **440** to an initial or non-actuated position. In one aspect, the actuator **440** is arranged on a rear or back side of the second seat assembly **200**. As shown in FIG. **2**, a single actuator **440** is provided. The single actuator **440** is configured to tension or pull control elements **415** arranged in the supports of the frame assembly **400**, such that a user only has to use one hand to adjust a height of the frame assembly **400**. In another configuration, the height adjustment feature can include an actuator formed on a lower region of the frame assembly **400**, such that a user can selective engage the actuator with their foot. The height adjustment actuator could alternatively be provided on one of the legs of the frame assembly **400**.

As shown in FIGS. **4**A and **4**B, the first seat assembly **100** can include multiple components or sections that are configured to be separated from each other. In one aspect, the first seat assembly **100** can include a first portion or seat back portion **105**, a second portion or seat portion **110**, and a third portion or footrest **115**. One of ordinary skill in the art would understand that the first seat assembly **100** can be formed as a single unitary component, or could be formed from fewer or more components than illustrated.

In one aspect, the footrest **115** is a first footrest **115** and the second seat assembly **200** includes a second footrest **215**.

As shown in FIGS. **4**A, and **4**B, the second footrest **215** is configured to at least be partially received within the first footrest **115**. In one aspect, the first footrest **115** is formed as a plastic shell, and the second footrest **215** is formed as a bar or rod support and is formed from metal. One of ordinary skill in the art would understand that the materials forming the footrests **115**, **215** can vary.

As shown in FIG. **4**B, the second footrest **215** can be stowed inside of a receptacle defined by the first footrest **115** such that the second footrest **215** is hidden when stowed. Based on this arrangement, removal of the first footrest **115** also causes removal of the second footrest **215** from a remainder of the assembly **10**. The second footrest **215** can then be removably coupled to the second seat assembly **200** when it is separated from the first footrest **115**. The first footrest **115** can define a cavity **117** on a rearward face of the first footrest **115**. The first footrest **115** can include at least one retention element, such as a clip or fingers, configured to selectively receive and retain the second footrest **215**. Removal of the second footrest **215** from the first footrest **115** can require slight pressure or pulling by a user. In another aspect, a locking element can be configured to secure the first footrest **115** to the second footrest **215**. Other configurations for storing or stowing the second footrest **215** can be used.

In one aspect, a connection arrangement can be provided between a portion of the first footrest **115** and the seat portion **110**. For example, fasteners **116**, such as latches, tabs, protrusions or other types of fasteners or securing elements, can be provided on a first one of the first footrest **115** or the seat portion **110** that are configured to be received within a corresponding pocket, opening, or other type of receptacle on a second one of the first footrest **115** or the seat portion **110**. Connections between the first footrest **115** and the seat portion **110** can vary, as one of ordinary skill in the art would understand based on this disclosure. Alternatively, the first footrest **115** can be connected to the seat back **105**. In order to access the second footrest **215**, the first footrest **115** can be removed such that a user can freely access and pull the second footrest **215** out of the first footrest **115**.

As shown in FIGS. **4**A and **4**B, with the footrest **115** removed, the first seat assembly **100** can function or operate as a standalone booster seat that only includes the seat portion **110** and the seat back **105**. Optionally, the seat back **105** could be removed from the seat portion **110** such that the seat portion **110** is a standalone seat device. One of ordinary skill in the art would understand that either of these configurations can sit on a floor surface, chair surface, or any other type of surface. Restraints can be provided to secure the first seat assembly **100** to a support structure, such as a chair.

As shown in FIG. **4**B, the first seat assembly **100** can include at least two actuators **120**, **130**. In one aspect, a first actuator **120** of the first seat assembly **100** is configured to adjust an angle or position of the first portion **105** (i.e. seat back) relative to the second portion **110** (i.e. seat portion). In one aspect, a second actuator **130** of the first seat assembly **100** is configured to selectively release the first seat assembly **100** relative to the second seat assembly **200**. In one aspect, the first actuator **120** of the first seat assembly **100** is provided in an upper region of the first seat assembly **100**, and the second actuator **130** is provided in a lower region of the first seat assembly **100**. One of ordinary skill in the art would understand that the exact position of the first and second actuators **120**, **130** can vary. In one aspect, the first actuator **120** is a seat back recline actuator, and the second actuator **130** is a removal latch or actuator.

As shown in more detail in FIG. **5**, the first actuator **120** can be configured to tension or pull control elements **122**, such as cables. One of ordinary skill in the art would understand that other types of control elements, such as linkages, rods, bars, etc., can be used. The control elements **122** can be attached at terminal ends to locking elements **124**, such as plungers or latch pins. The locking elements **124** can be configured to be selectively engaged within a respective opening **123***a*, **123***b*. In one aspect, the openings **123***a*, **123***b* are angular reclining openings. A user can pull the first actuator **120** and then manually adjust an incline angle of the first portion **105** relative to the second portion **110** based on the locking elements **124** engaging with a selected one of the openings **123***a*, **123***b*.

A biasing element **121** can be provided that is configured to force the first actuator **120** into a non-engaged or non-actuated position. Each of these components associated with the first actuator **120** can be housed within a cavity defined by a shell of the first seat assembly **100**. One of ordinary skill in the art would understand that various configurations could be used to provide the ability to adjust one portion of the first seat assembly **100** relative to another.

As shown in FIG. **6**, a retention feature is provided that is generally configured to secure the first and second seat assemblies **100**, **200**. As shown in FIG. **6**, the second actuator **130** can be configured to cooperate with a retention element **132** (i.e. a retainer, pocket, clip, protrusion, projection, etc.) such that the first and second seat assemblies **100**, **200** are selectively secured or attached to one another. A user can engage, i.e. pull or displace, the second actuator **130** such that the first seat assembly **100** can be removed or detached from the second seat assembly **200**. Engaging the second actuator **130** can cause either the first or second seat assemblies **100**, **200** to move relative to each other and disengage the first or second seat assemblies **100**, **200** relative to the retention element **132**. In one aspect, the retention element **132** is a protrusion for a toe-in attachment arrangement between the first and second seat assemblies **100**, **200**. Based on this configuration, the second actuator **130** provides an arrangement in which a user can use a single hand to detach the first seat assembly **100** from the second seat assembly **200**. In one aspect, a first state corresponds to a condition in which the first and second seat assemblies **100**, **200** are secured with each other, and a second state corresponds to a condition in which the first and second seat assemblies **100**, **200** are detached from each other. One of ordinary skill in the art would understand that other types of interfaces and structures can be used to provide the ability to connect the first and second seat assemblies **100**, **200**. In one aspect, latches can be provided that selectively retract or extend based on engagement with the actuator **130**. In another aspect, a slot or groove can be provided in one of the first or second seat assemblies **100**, **200** and the other one of the first or second seat assemblies **100**, **200** can be dimensioned to slide therein. In one aspect, the actuator **130** can be omitted and detachment between the first and second seat assemblies **100**, **200** can require a user pulling one of the first or second seat assemblies **100**, **200** relative to each other, preferably at a predetermined angle. In this configuration, relatively simple retention features, such as flexible fingers or snap-fit elements, may be provided on one of the first or second seat assemblies **100**, **200**.

FIGS. **7**A-**7**C illustrate additional details of the second footrest **215** and the second seat assembly **200**. The second footrest **215** can be formed as a generally U-shaped bar, rod, or pipe, in one aspect. One of ordinary skill in the art would understand that the second footrest **215** can be formed

according to a variety of different shapes, profiles, or configurations. As shown in FIG. **7**A, the second footrest **215** includes two pairs of couplers **220***a*, **220***b* and **220***c*, **220***d*. In one aspect, an upper one of the couplers **220***b*, **220***c* are configured to be selectively secured within a corresponding receptacle defined on an underside of the second seat assembly **200** or any other portion of the assembly **10**. FIG. **2** illustrates at least one post **225** defined by the second seat assembly **200** that defines a receptacle **225***a* configured to receive at least one of the couplers **220***a*-**220***d*. The receptacles for the couplers **220***a*, **220***b*, **220***c*, **220***d* can alternatively be defined on the frame assembly **400**. In one aspect, the couplers **220***a*, **220***b*, **220***c*, **220***d* are snap buttons that are outwardly biased. A user can manually depress the snap buttons to be retracted inside of the frame of the second footrest **215**.

In one aspect, a lower one of the couplers **220***a*, **220***d* can remain exposed (i.e. visible to a user) on the underside of the second seat assembly **200**. In one aspect, the first pair of couplers **220***a*, **220***b* are linked with each other, and the second pair of couplers **220***c*, **220***d* are linked with each other. A user can slide the terminal or free ends of the second footrest **215** into receptacles on the underside of the second seat assembly **200** such that the upper one of the couplers **220***b*, **220***c* lock into place. To remove the second footrest **215**, a user can depress the lower one of the couplers **220***a*, **220***d* such that the upper one of the couplers **220***b*, **220***c* retract and the second footrest **215** can be pulled downward and away from the second seat assembly **200**. One of ordinary skill in the art would understand that this configuration could be reversed such that the second footrest **215** defines receptacles and the underside of the second seat assembly **200** defines retractable couplers. FIG. **7**C illustrates the second footrest **215** engaged with the second seat assembly **200**, wherein the coupler **220***b* is inside of the second seat assembly **200** to retain the second footrest **215**, and the coupler **220***a* remains exposed and accessible to a user to remove the second footrest **215** from the second seat assembly **200**. In one aspect, the second footrest **215** can have a single connection point with the rest of the assembly **10** instead of having two free ends. Various configurations for attaching the second footrest **215** to the assembly **10** can be used.

The tray assembly **300** can also be configured to be removable from a remainder of the assembly **10**. Additional aspects of the tray assembly **300** are illustrated in FIGS. **8**A-**9**B. The tray assembly **300** can generally include a support surface **302** on an upper side. An underside of the tray assembly **300** can include an actuator **320** and a pair of arms **305***a*, **305***b* including latch assemblies **310***a*, **310***b*. In one aspect, the pair of arms **305***a*, **305***b* are formed as metal tubes. As shown in FIG. **8**A, the metal tubes can have a bent profile such that at least a portion of the metal tubes engages directly against a bottom surface of the tray and provides structural support for the tray. Other configurations or profiles for the metal tubes can be used, as one of ordinary skill in the art would appreciate from this disclosure.

In one aspect, the actuator **320** is arranged in a middle region on the underside of the tray assembly **300**. The actuator **320** could alternatively be provided on lateral sides of the tray assembly **300**, or any other area of the tray assembly **300**. Alternatively, the actuator **320** could be integrated with another part of the assembly **10** entirely, such as the first or second seat assemblies **100**, **200** or the frame assembly **400**.

The actuator **320** can be configured to be engaged by a user with a single hand. In one aspect, the actuator **320** includes a handle and is configured to be pulled outward in order to selectively actuate the latch assemblies **310***a*, **310***b*. In another aspect, shown in FIG. **8**C, the actuator **320'** includes a handle and defines at least one slot **311***a*, **311***b* configured to receive an end of a control element **315***a*, **315***b*, such as a control cable. The at least one slot can include a pair of slots **311***a*, **311***b* that have an angled profile. Based on this configuration, as the handle of the actuator **320'** is pushed inward (i.e. the direction indicated by the arrow in FIG. **8**C), the control elements **315***a*, **315***b* are pulled towards each other based on the angled orientation of the slots **311***a*, **311***b*. In other words, the linearly inward displacement of the actuator **320'** is translated to tensioning or pulling of the control elements **315***a*, **315***b* due to the slots **311***a*, **311***b*. As the control elements **315***a*, **315***b* are pulled, the latch assemblies **310***a*, **310***b* are engaged or actuated. One of ordinary skill in the art would understand that either of the actuators **320**, **320'** can be used with the latch assemblies **310***a*, **310***b*, which are described in more detail herein.

As shown in FIGS. **9**A and **9**B, the latch assemblies **310***a*, **310***b* can include locking elements or latches **312** that are configured to be selectively engaged or locked with receptacles **112** (shown in FIG. **9**C) defined by the first seat assembly **100**. Specifically, a first end **312***a* of the latch **312** can be configured to be received within a portion of the first seat assembly **100**. The latch assemblies **310***a*, **310***b* can include a housing **314** that is generally configured to selectively receive the latch **312** as the latch **312** is retracted based on a user engaging the actuator **320**. The latch **312** can include another end **312***b* that is pivotally attached to the latch housing **314**.

In one aspect, a pair of control elements **315**, such as cables, extend from the actuator **320** and through the pair of arms **305***a*, **305***b*. The control elements **315** are configured to attach to a respective pair of plungers **318**. The pair of plungers **318** are generally configured to be linearly displaced based on a user tensioning or pulling the control elements **315** via the actuator **320**. Although the control elements **315** are illustrated as cables, one of ordinary skill in the art would understand that other linkages, connections, or structures can be used to generally provide some correlation between movement of the actuator **320** and at least a portion of the latch assemblies **310***a*, **310***b*.

In an initial state shown in FIG. **9**A, the plunger **318** is in a first position that corresponds to the latch **312** being in an extended state. The plunger **318** can include an engagement surface **319***a* configured to engage a portion of the latch **312**. In one aspect, the plunger **318** includes a plunger head **319***b* that defines the engagement surface **319***a*. In particular, the engagement surface **319***a* can include a ramped surface and the latch **312** can include a pin or post **313** that is configured to ride along the engagement surface **319***a* as the plunger head **319***b* is displaced.

As shown in FIGS. **9**A and **9**B, a biasing element **316***a* is generally arranged between a portion of the latch housing **314** and a portion of the plunger **318**. The biasing element **316***a* is generally configured to bias the plunger head **319***b* towards a medial area of the latch housing **314**. In one aspect, the biasing element **316***a* can be configured to drive the latch **312** to an extended position (i.e. locked state relative to the first seat assembly **100**). Another biasing element **316***b*, such as a spring, can be arranged between a surface of the housing **314** and the latch **312**. In one aspect, the biasing element **316***b* is configured to bias or force the

latch **312** to an extended position. The biasing elements **316***a*, **316***b* can generally be configured to be perpendicular to each other, in one aspect.

FIG. **9**B corresponds to an engaged or actuated state in which the actuator **320** is being engaged. In this state, the plunger **318** is pulled outward relative to the latch housing **314**, causing the plunger head **319***b* to pull against the biasing element **316***a*. This movement causes the pin **313** to ride upward along the engagement surface **319***a* and thereby retracts the latch **312**.

As shown in FIGS. **9**A and **9**B, at least one roller **321** can be provided that is configured to guide against an internal surface defined by the receptacles **112** in the first seat assembly **100**. Other types of bearing surfaces or rolling surfaces and configurations can be used.

While one configuration of the actuator **320** and latch assemblies **310***a*, **310***b* are illustrated in FIGS. **8**A-**9**B, one of ordinary skill in the art would understand that various other types of configurations can be provided. For example, the control elements **315** may be modified or omitted and/or various other types of engagement interfaces can be provided within the latch housing **314**. In one aspect, the tray assembly **300** may be attached to the assembly **10** using a hook and retention element, in which a user must tilt the tray assembly **300** upwards or at some angle in order to release the hook from the retention element.

In one aspect, the adjustable chair assembly provides at least two different seats that are dimensioned to accommodate children of different sizes, and the adjustable chair assembly is configured to provide an adjustable height feature such that the adjustable chair assembly can be arranged at varying heights. Footrests for the two different seats are removably attached to the adjustable chair assembly such that a user can quickly and easily detach the footrests. The footrests can be used independently of one another. In one aspect, one of the footrests nests inside of the other footrest when not in use.

The adjustable chair assembly **10** includes a plurality of actuators. In one aspect, the actuator **440** can be considered a height adjustment actuator that is configured to generally adjust a height of the frame **400**. The actuator **120** can be considered a seat adjustment actuator that is generally configured to adjust one portion of the first seat assembly **100** relative to another portion of the first seat assembly **100**. The actuator **130** can be considered a seat release actuator that is generally configured to release or detach the first and second seat assemblies **100**, **200** relative to each other. The actuator **320** can be considered a tray release actuator that is configured to release the tray assembly **300** relative to the adjustable chair assembly **10**, and particularly from the first seat assembly **100**. FIG. **10** illustrates the seat adjustment actuator **120**, the seat release actuator **130**, and the height adjustment actuator **440** as being on a single side, i.e. a rear side, of the adjustable chair assembly **10**. One of ordinary skill in the art would understand that the position of these actuators can vary.

A method of adjusting at least one aspect of an adjustable chair assembly is also disclosed herein. In one aspect, the method includes engaging an actuator to selectively detach a first seat assembly from a second seat assembly. This step can include engaging the actuator with a single hand, and the actuator can be formed as a single handle or lever, in one aspect. The method can include adjusting various other aspects of the assembly, such as adjusting a height of the assembly or adjusting an angle of a seat back of one of the first or second seat assemblies. The method can include adjusting various aspects of the adjustable chair assembly using control elements that include cables.

Although the adjustable chair assembly **10** is illustrated as a highchair in the drawings, one of ordinary skill in the art would understand that any one or more of the features or aspects disclosed herein can be implemented with chairs of various configurations and arrangements that are not highchairs.

Having thus described the present embodiments in detail, it is to be appreciated and will be apparent to those skilled in the art that many physical changes, only a few of which are exemplified in the detailed description of the disclosure, could be made without altering the inventive concepts and principles embodied therein.

It is also to be appreciated that numerous embodiments incorporating only part of the preferred embodiment are possible which do not alter, with respect to those parts, the inventive concepts and principles embodied therein.

The present embodiment and optional configurations are therefore to be considered in all respects as exemplary and/or illustrative and not restrictive, the scope of the disclosure being indicated by the appended claims rather than by the foregoing description, and all alternate embodiments and changes to this embodiment which come within the meaning and range of equivalency of said claims are therefore to be embraced therein.

The invention claimed is:

1. An adjustable chair assembly comprising:

a first seat assembly;

a first footrest;

a second seat assembly;

a second footrest configured to be used independently of the first footrest, wherein the second footrest is configured to nest inside of a cavity defined by the first footrest when the first footrest is in use and the second footrest is not in use,

wherein the first and second seat assemblies are configured to be transitioned between a first state in which the first and second seat assemblies are attached to each other, and a second state in which the first and second seat assemblies are detached from each other; and

a seat release actuator configured to detach the first and second seat assemblies from each other to transition from the first state to the second state.

2. The adjustable chair assembly according to claim **1**, wherein the seat release actuator comprises a single handle.

3. The adjustable chair assembly according to claim **2**, further comprising a retention element, wherein the seat release actuator is arranged on a first side of the first seat assembly and the retention element is arranged on a second side of the first seat assembly that is opposite from the first side.

4. The adjustable chair assembly according to claim **1**, further comprising a frame assembly configured to support the first and second seat assemblies, and a height adjustment actuator configured to adjust a height of the frame assembly.

5. The adjustable chair assembly according to claim **1**, wherein the first seat assembly further comprises a seat adjustment actuator configured to adjust at least one first portion of the first seat assembly relative to at least one second portion of the first seat assembly.

6. The adjustable chair assembly according to claim **5**, wherein the seat adjustment actuator is configured to adjust an angle of a seat back of the first seat assembly relative to a seat portion of the first seat assembly.

7. The adjustable chair assembly according to claim 1, wherein the cavity is defined on a rearward face of the first footrest.

8. The adjustable chair assembly according to claim 1, wherein the first footrest is detachable from the first seat assembly.

9. The adjustable chair assembly according to claim 8, wherein removal of the first footrest from the first seat assembly causes the second footrest to also be removed from the first seat assembly.

10. The adjustable chair assembly according to claim 1, wherein the second footrest is configured to be removably attached to the second seat assembly.

11. The adjustable chair assembly according to claim 1, wherein the second footrest includes at least one coupler configured to attach the second footrest to the second seat assembly.

12. The adjustable chair assembly according to claim 11, wherein the at least one coupler includes at least one first coupler configured to be engaged within the second seat assembly to secure the second footrest, and at least one second coupler configured to be exposed when the second footrest is secured to the second seat assembly.

13. The adjustable chair assembly according to claim 12, wherein the at least one first coupler is linked with the at least one second coupler, such that displacement of the at least one second coupler causes the at least one first coupler to also be displaced.

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