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(71) Applicant: **COZEY INC.** [CA/CA]; 5770 rue Ferrier,
Mont-Royal, Québec H4P 1M7 (CA).

(72) Inventors: **AUBE, Frederic**; 5770 rue Ferrier, Mont-
Royal, Québec H4P 1M7 (CA). **LEBREUX, Marjorie**;

5770 rue Ferrier, Mont-Royal, Québec H4P 1M7 (CA).
CLABOTS, Evan; 5770 rue Ferrier, Mont-Royal, Québec
H4P 1M7 (CA). **CORDEIRO, Jason**; 5770 rue Ferrier,
Mont-Royal, Québec H4P 1M7 (CA).

(74) Agent: **ROBIC AGENCE PI S.E.C. / ROBIC IP
AGENCY LP**; 630 Rene-Levesque Blvd West, 20th Floor,
Montreal, Québec H3B 1S6 (CA).

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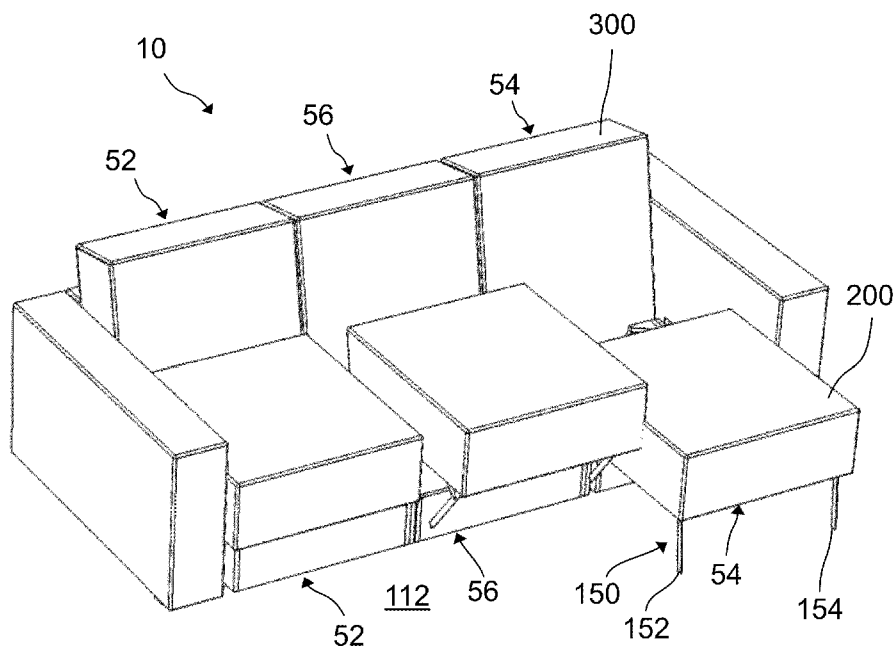


FIG. 2

(57) Abstract: A modular sofa bed assembly configurable between a seating configuration and a sleeping configuration defining a sleeping surface, the modular sofa bed assembly comprising first and second sofa bed modules adapted to be assembled in an adjacent configuration, each of the sofa bed modules including a seat base defining a component support region, a seating component movable between a retracted position wherein the seating component is seated on the component support region of the seat base, and an extended position wherein the seating component extends towards a seat extension side of the seat base, and a backrest component configured to be mounted onto the seat base in an upright disposition when the modular sofa bed assembly is in the seating configuration, and further configured to be seated onto the component support region of the seat base in a horizontal disposition when the seating component is in the extended position.

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MODULAR SOFA BED ASSEMBLY

RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Patent Application Ser. No. 63/612,616, filed December 20, 2023, and entitled MODULAR SOFA BED ASSEMBLY, the contents of which is incorporated in its entirety herein.

TECHNICAL FIELD

[0002] The technical field generally relates to furniture, and more specifically to modular furniture assemblies.

BACKGROUND

[0003] Sofas which convert to a bed, commonly referred to as sofa beds, are well known. Such prior art sofa beds suffer from a number of disadvantages including the difficulty of transitioning the sofa between different configurations. For instance, existing sofa beds are not normally operable by a single person and even if they are, the task can be a cumbersome one.

[0004] Conventional sofa beds also include full size mattresses along with large frames and extension mechanisms configured to accommodate them. These bulky structural elements can make it difficult to move the sofa bed to a different space. Moreover, once the sofa bed is moved, conventional sofa beds can typically only be assembled in a single predetermined configuration, rendering it impossible to adjust the size of the sofa bed to suit the dimensions of the new space.

[0005] Finally, existing sofa beds typically require the use of additional hardware and tools for their assembly, which can make them relatively complex and/or time consuming to assemble.

[0006] In view of the above, there is a need for a sofa bed which would be able to overcome or at least minimize some of the above-discussed prior art concerns.

SUMMARY

[0007] According to one aspect, there is provided a modular sofa bed assembly configurable between a seating configuration and a sleeping configuration defining a sleeping surface, the modular sofa bed assembly comprising:

first and second sofa bed modules adapted to be assembled in an adjacent configuration, each of the first and second sofa bed modules including:

a seat base defining a component support region;

a seating component movable between a retracted position when the modular sofa bed assembly is in the seating configuration wherein the seating component is seated on the component support region of the seat base, and an extended position when the modular sofa bed assembly is in the sleeping configuration, the extended position being laterally offset from the retracted position toward a seat extension side of the seat base to define a first portion of the sleeping surface; and

a backrest component configured to be mounted onto the seat base in an upright disposition when the modular sofa bed assembly is in the seating configuration, and further configured to be seated onto the component support region of the seat base in a horizontal disposition when the seating component is in the extended position to define a second portion of the sleeping surface.

[0008] In certain embodiments, the first and second portions of the sleeping surface are substantially coplanar when the modular sofa bed assembly is in the sleeping configuration.

[0009] In certain embodiments, the seating component of the first sofa bed module adjoins the seating component of the second sofa bed module when the modular sofa bed assembly is in the sleeping configuration.

[0010] In certain embodiments, the backrest component of the first sofa bed module adjoins the backrest component of the second sofa bed module when the modular sofa bed assembly is in the sleeping configuration.

[0011] In certain embodiments, each of the first and second sofa bed modules further comprises an extension mechanism operatively connected to the seat base and the seating component, the extension mechanism being configured to enable a movement of the seating component between the retracted and extended positions.

[0012] In certain embodiments, the extension mechanism of at least one of the first and second sofa bed modules forms a parallelogram linkage configured to retain the corresponding seating component in a substantially horizontal disposition during a transition of the corresponding seating component between the retracted and extended positions.

[0013] In certain embodiments, the seating component is movable between the retracted and extended positions independently of the backrest component.

[0014] In certain embodiments, a rearward portion of the seating component is seated on the component support region of the seat base when the seating component is in the extended position.

[0015] In certain embodiments, the seat base of at least one of the first and second sofa bed modules defines a storage compartment.

[0016] In certain embodiments, the storage compartment is accessible when the modular sofa bed assembly is transitioning between the seating and sleeping configurations, and inaccessible when the modular sofa bed assembly is in either of the seating and sleeping configurations.

[0017] In certain embodiments, the storage compartment is accessible via an opening defined in a side wall of the seat base.

[0018] In certain embodiments, the seating component includes one or more support legs configured to support at least a portion of a weight of the seating component when the modular sofa bed assembly is in the sleeping configuration.

[0019] In certain embodiments, the one or more support legs are auto-deployable when the seating component is in the extended position.

[0020] In certain embodiments, each of the first and second sofa bed modules include a seating connector, the seating connector of the first sofa bed module being connectable to the seating connector of the second sofa bed module to secure the first and second sofa bed modules together.

[0021] In certain embodiments, the seat base includes a backrest retaining feature configured to retain the backrest component in the upright disposition when the modular sofa bed assembly is in the seating configuration.

[0022] In certain embodiments, the backrest retaining feature is a transversally extending recess shaped and dimensioned to receive a lower portion of the backrest component when the modular sofa bed assembly is in the seating configuration.

[0023] In certain embodiments, the transversally extending recess includes a rearwardly inclined bottom support surface.

[0024] In certain embodiments, the seat base includes a first connector, and the backrest component includes a second connector couplable with the first connector of the seat base when the modular sofa bed assembly is in the seating configuration.

[0025] In certain embodiments, the first connector of the seat base is a female connector, and the second connector of the backrest component is a male connector sized for insertion within the female connector.

[0026] In certain embodiments, at least one of the first and second sofa bed modules includes a rear support panel configured to be secured to the corresponding seat base, the rear support panel extending upwardly from the seat base when secured thereto to retain the backrest component in the upright disposition when the modular sofa bed assembly is in the seating configuration.

[0027] In certain embodiments, the backrest component is tapered.

[0028] In certain embodiments, the seat base comprises side walls, the component support region being defined along an upper edge of the walls.

[0029] According to another aspect, there is provided a method of transitioning a modular sofa bed assembly from a seating configuration to a sleeping configuration, the method comprising:

providing a first sofa bed module and a second sofa bed module positioned adjacent to each other, each of the first and second sofa bed modules comprising a seat base, a seating component, and a backrest component;

for each of the first and second sofa bed modules, moving the corresponding seating component from a retracted position wherein the seating component is seated on a portion of a component support region of the corresponding seat base, to an extended position toward a seat extension side of the corresponding seat base to define a first portion of a sleeping surface; and

for each of the first and second sofa bed modules, moving the corresponding backrest component from an upright disposition to a horizontal disposition to define a second portion of the sleeping surface, the backrest component of each of the first and second sofa bed modules being seated, when in the horizontal disposition, on the portion of the component support region of the corresponding seat base upon which the seating component is seated when in the retracted position.

[0030] In certain embodiments, the step of moving the seating component of each of the first and second sofa bed modules is performed before the step of moving the backrest component of each of the first and second sofa bed modules.

[0031] In certain embodiments, the steps of moving the seating and backrest components of the first sofa bed module are performed before the steps of moving the seating and backrest components of the second sofa bed module.

[0032] In certain embodiments, the steps of moving the respective seating components of each of the first and second sofa bed modules comprises maintaining a rearward portion of the seating component seated on the component support region of the corresponding seat base when the seating component is in the extended position.

[0033] In certain embodiments, the step of moving the seating component of the first sofa bed module comprises providing access to a storage compartment defined within the seat base of the first sofa bed module.

[0034] In certain embodiments, the step of moving the backrest component of the first sofa bed module from the upright disposition to the horizontal disposition comprises removing a lower portion of the backrest component from a transversely extending recess defined in the seat base of the first sofa bed module, the transversely extending recess being shaped and dimensioned to receive the lower portion of the backrest component.

[0035] In certain embodiments, the step of moving the seating component of the first sofa bed module comprises downwardly pivoting a pair of support legs to provide a support to the seating component.

[0036] In certain embodiments, the step of moving the seating component of the first sofa bed module comprises telescopically expanding a pair of support legs to provide a support to the seating component.

[0037] In certain embodiments, the step of moving the seating component of the first sofa bed module from the retracted position to the extended position comprises extending an extension mechanism of the first sofa bed module, the extension mechanism being operatively connected to the seating component and the seat base of the first sofa bed module.

[0038] In certain embodiments, the method further comprises retaining the seating component in a substantially horizontal disposition during a transition between the retracted and extended positions.

[0039] According to another aspect, there is provided a modular sofa bed assembly configurable between a seating configuration and a sleeping configuration defining a sleeping surface, the modular sofa bed assembly comprising:

a sofa bed module, the sofa bed module including:

a seat base defining a component support region;

a seating component movable between a retracted position when the modular sofa bed assembly is in the seating configuration wherein the seating component is seated on the component support region of the seat base, and an extended position when the modular sofa bed assembly is in the sleeping configuration, the extended position being laterally offset from the retracted position towards a seat extension side of the seat base to define a first portion of the sleeping surface; and

a backrest component configured to be mounted onto the seat base in an upright disposition when the modular sofa bed assembly is in the seating configuration, and further configured to be seated onto the component support region of the seat base in a horizontal disposition when the seating component is in the extended position to define a second portion of the sleeping surface; and

a footstool adapted to be positioned in an adjacent configuration with the seating component when the seating component is in the extended position, the footstool having a top surface defining a third portion of the sleeping surface.

[0040] In certain embodiments, the sofa bed module is adapted to be assembled with a complementary sofa bed module in an adjacent configuration, the complementary sofa bed module having the same configuration as the sofa bed module.

[0041] In certain embodiments, the first and second portions of the sleeping surface are substantially coplanar when the modular sofa bed assembly is in the sleeping configuration.

[0042] In certain embodiments, the first and third portions of the sleeping surface are substantially coplanar when the modular sofa bed assembly is in the sleeping configuration.

[0043] In certain embodiments, the first, second and third portions of the sleeping surface are arranged in line when the modular sofa bed assembly is in the sleeping configuration.

[0044] In certain embodiments, the seating component is movable between the retracted and extended positions independently of the backrest component.

[0045] In certain embodiments, the seat base of the sofa bed module defines a storage compartment.

[0046] In certain embodiments, the storage compartment is accessible when the modular sofa bed assembly is transitioning between the seating and sleeping configurations, and inaccessible when the modular sofa bed assembly is in either of the seating and sleeping configurations.

[0047] In certain embodiments, the storage compartment is accessible via an opening defined in a side wall of the seat base.

[0048] In certain embodiments, the seating component includes one or more support legs configured to support at least a portion of a weight of the seating component when the modular sofa bed assembly is in the sleeping configuration.

[0049] In certain embodiments, the one or more support legs are auto-deployable when the seating component is in the extended position.

[0050] In certain embodiments, the seating component includes a first connector and the footrest includes a second connector, the first connector of the seating component being connectable to the second connector of the footrest when the modular sofa bed assembly is in the sleeping configuration to secure the sofa bed module and the footrest together

[0051] According to another aspect, there is provided a modular sofa bed assembly configurable between a seating configuration and a sleeping configuration defining a sleeping surface, the modular sofa bed assembly comprising first and second sofa bed modules adapted to be assembled in an adjacent configuration, each of the first and second sofa bed modules including a seat base defining an upper component support region, a seating component configured to be mounted onto the upper component support region of the seat base when the modular sofa bed assembly is in the seating configuration, and further configured to translate towards a seat extension side of the seat base into an extended configuration to define a first portion of the sleeping surface, and a backrest component configured to be mounted onto the seat base in an upright position when the modular sofa bed assembly is in the seating configuration, and further configured to be mounted onto the upper component support region of the seat base when the seating component is in the extended configuration to define a second portion of the sleeping surface.

[0052] In certain embodiments, each of the first and second sofa bed modules further comprises an extension mechanism operatively connected to the seat base and the seating component, the extension mechanism being configured to enable the translation of the seating component.

[0053] In certain embodiments, the extension mechanism of each of the first and second sofa bed modules forms a parallelogram linkage configured to retain the seating surface of the seating component in a horizontal configuration.

[0054] In certain embodiments, the seat base defines a transversely extending recess, the recess being shaped and dimensioned to receive a first end of the backrest component when the modular sofa bed assembly is in the seating configuration.

[0055] In certain embodiments, the backrest component includes a first connector, and the seat base includes a second connector couplable with the first connector when the modular sofa bed assembly is in the seating configuration.

[0056] In certain embodiments, the seating component is configured to translate towards the seat extension side of the seat base independently of the backrest component.

BRIEF DESCRIPTION OF THE DRAWINGS

[0057] FIG. 1 is a top, front perspective view of a modular sofa bed assembly, in accordance with one embodiment, in which the modular sofa bed assembly is in a seating configuration.

[0058] FIG. 2 is a top, front perspective view of the modular sofa bed assembly illustrated in FIG. 1, in which the modular sofa bed assembly is transitioning from the seating configuration to a sleeping configuration.

[0059] FIG. 3 is a top, front perspective view of the modular sofa bed assembly illustrated in FIG. 1, in which the modular sofa bed assembly is in the sleeping configuration.

[0060] FIG. 4 is an exploded top, front perspective view of the modular sofa bed assembly illustrated in FIG. 1.

[0061] FIG. 5 is a top, front perspective view of a seat base of the modular sofa bed assembly illustrated in FIG. 1, in accordance with one embodiment.

[0062] FIG. 6 is a side elevation view of the seat base and a backrest component of the modular sofa bed assembly illustrated in FIG. 1, in accordance with one embodiment.

[0063] FIG. 7 is an enlarged fragmentary view thereof.

[0064] FIG. 8 is a top, front perspective view of a seat component of the modular sofa bed assembly illustrated in FIG. 1, in accordance with one embodiment.

[0065] FIG. 9 is an exploded top, front perspective view of the seat component illustrated in FIG. 8.

[0066] FIG. 10A to 10F are a series of side elevation views of a modular sofa bed assembly, in accordance with one embodiment, illustrating a transition of the modular sofa bed assembly from a seating configuration to a sleeping configuration.

[0067] FIG. 11 is a top, front perspective view of a seat base and an extension mechanism of the modular sofa bed assembly illustrated in FIG. 1, in accordance with one embodiment.

[0068] FIG. 12A to 12C are a series of side elevation views of a modular sofa bed assembly, in accordance with one embodiment, in which a seating component and an extension mechanism of the modular sofa bed assembly transition from a retracted configuration to an extended configuration.

[0069] FIG. 13 is a top, front perspective view of a backrest component of the modular sofa bed assembly illustrated in FIG. 1, in accordance with one embodiment.

[0070] FIG. 14 is an exploded top, front perspective view of the backrest component illustrated in FIG. 13.

[0071] FIG. 15 is a top, front perspective view of a modular sofa bed assembly, in accordance with another embodiment, in which the modular sofa bed assembly includes an footstool and a sofa bed module in a seating configuration.

[0072] FIG. 16 is another top, front perspective view of the modular sofa bed assembly illustrated in FIG. 15, with the sofa bed module in the sleeping configuration.

[0073] FIG. 17 is an exploded top, front perspective view of the modular sofa bed illustrated in FIG. 15.

[0074] FIG. 18 is an exploded top, front perspective view of the footstool of the modular sofa bed assembly illustrated in FIG. 15.

[0075] FIG. 19 is an exploded bottom, front perspective view of the footstool of FIG. 18.

[0076] FIG. 20 is a top, front perspective view of a modular sofa bed assembly, in accordance with another embodiment, in which the modular sofa bed assembly includes a plurality of sofa bed modules in a seating configuration.

[0077] FIG. 21 is another top, front perspective view of the modular sofa bed assembly illustrated in FIG. 20, with two of the sofa bed modules in the sleeping configuration.

[0078] FIG. 22 is a top perspective view of a corner module of the modular sofa bed assembly illustrated in FIG. 20.

[0079] FIG. 23 is a top perspective view of a corner module illustrated in FIG. 22, with a seat cushion of the corner module in an elevated position.

DETAILED DESCRIPTION

[0080] Techniques described herein relate to modular sofa-bed assemblies and methods for assembling the same.

[0081] In certain embodiments, it can be desirable to provide a sofa bed having an adjustable size and being easily transitioned between various configurations. The improved sofa bed can be achieved by providing a modular sofa bed assembly including one or more sofa bed modules. In this manner, a size of the modular sofa bed assembly can vary in accordance with the number of sofa bed modules included at the time of installation, or at a later date in accordance with an adjusted number of sofa bed modules. In certain embodiments, the modular sofa bed assembly can transition between a seating configuration in which one or more users can be seated on the sofa bed assembly, and a sleeping configuration, in which the one or more users can lay on the modular sofa bed assembly in a prone or sleeping position. To do this, each of the sofa bed modules can be moved independently as described in more detail below to position the modular sofa bed assembly in one of the seating and sleeping configurations when all the sofa bed modules have been adjusted in a similar manner.

[0082] It will be appreciated that, for simplicity and clarity of illustration, where considered appropriate, reference numerals may be repeated among the figures to indicate corresponding or analogous elements or steps. In addition, numerous specific details are set forth in order to provide a thorough understanding of the exemplary embodiments described herein. However, it will be understood by those of ordinary skill in the art, that the embodiments described herein may be practiced without these specific details. In other instances, well-known methods, procedures and components have not been described in detail so as not to obscure the embodiments described herein. Furthermore, this description is not to be considered as limiting the scope of the embodiments described herein in any way but rather as merely describing the implementation of the various embodiments described herein.

[0083] For the sake of simplicity and clarity, namely so as to not unduly burden the figures with several references numbers, not all figures contain references to all the components and features, and references to some components and features may be found in only one figure, and components and features of the present disclosure which are illustrated in other figures can be easily inferred therefrom. The embodiments, geometrical configurations, materials mentioned and/or dimensions shown in the figures are optional, and are given for exemplification purposes only.

[0084] Moreover, it will be appreciated that positional descriptions such as “above”, “below”, “top”, “bottom”, “forward”, “rearward” “left”, “right” and the like should, unless otherwise indicated, be taken in the context of the figures and correspond to the position and orientation in the modular table assembly and corresponding parts when being used. Positional descriptions should not be considered limiting.

[0085] Various implementations and features of the modular sofa-bed assembly will now be described in greater detail in the following paragraphs.

General description of the modular sofa-bed assembly

[0086] Referring to FIGS. 1 to 4, there is shown a modular sofa bed assembly 10, in accordance with a non-limitative embodiment. In the illustrated embodiment, the sofa bed assembly 10 is a substantially elongated upholstered seat which can be configured in one of a seating configuration suitable to receive one or more users in a seated position, and a sleeping configuration suitable for receiving the one or more users in a prone or sleeping position. In the illustrated embodiment, the sofa bed assembly 10 has opposite first and second long sides 12, 14 and opposite first and second short sides 16, 18.

[0087] The modular sofa bed assembly 10 includes a plurality of sofa bed modules 50 that are assembled together to form the sofa bed assembly 10. In the illustrated embodiment, the sofa bed assembly 10 includes three sofa bed modules 50 that are positioned adjacent to each other. More specifically, the sofa bed modules 50

include first and second end modules 52, 54 which are spaced from each other and a center module 56 which is positioned between the first and second end modules 52, 54. In the illustrated embodiment, the three sofa bed modules 50 are disposed along a longitudinal axis X of the sofa bed assembly 10.

[0088] It is to be understood that the expression “modular” as used herein refers to a construction of the sofa bed assembly 10 using standardized components (*i.e.* the sofa bed modules 50) which can provide a flexibility and a variety with respect to the configuration of the sofa bed assembly 10. In accordance with some embodiments, the sofa bed assembly 10 can be assembled in a first configuration (such as the configuration shown in FIGS. 1 to 4) and, at a later time, reconfigured in a second configuration by adding, removing and/or rearranging the sofa bed modules 50 thereof. Accordingly, as will be demonstrated in the context of various embodiments further below, the illustrated configuration is merely shown as an example, and the sofa bed assembly 10 can be reconfigured in various other configurations.

[0089] In the illustrated embodiment, each of the sofa bed modules 50 includes a seat base 100 configured to support a seating component 200 and a backrest component 300. Notably, each of the seating component 200 and the backrest component 300 can be arranged in one of multiple configurations in accordance with a desired use of the modular sofa bed assembly 10, as will be described in greater detail below. In this manner, each of the seating component 200 and the backrest component 300 can be arranged in a first configuration to provide the modular sofa bed assembly 10 in the seating configuration, and further arranged in a second configuration to provide the sofa bed assembly 10 in the sleeping configuration.

[0090] Referring now to FIGS. 1 to 3, a transition of the modular sofa bed assembly 10 from the seating configuration to the sleeping configuration is shown. Specifically, FIG. 1 illustrates the modular sofa bed assembly 10 in the seating configuration, FIG. 2 illustrates the modular sofa bed assembly 10 in a transitional

state between the seating and sleeping configurations, and FIG. 3 illustrates the modular sofa bed assembly 10 in the sleeping configuration. When in the sleeping configuration, the modular sofa bed assembly 10 defines a substantially planar sleeping surface 11 with each of the seating components 200 and the backrest components 300 of the adjacent sofa bed modules 50 defining a portion of the sleeping surface 11. It will be understood that the surface area of the sleeping surface 11 provided by the modular sofa bed assembly 10 is determined in accordance with the sizes of the seating components 200 and the backrest components 300 of the modular sofa bed assembly 10, and said sleeping surface 11 can thus be enlarged or decreased by adjusting the number of sofa bed modules 50 of the modular sofa bed assembly 10.

[0091] Referring now to FIGS. 5 to 7, an embodiment of the seat base 100 is shown. The seat base 100 can be a structural component of a respective sofa bed module 50 configured to mountingly receive the seating and backrest components 200, 300 while at least partially supporting a weight of a user. In certain embodiments, the seat base 100 includes a bottom panel 102 as well as pairs of side walls 104, 106 which extend substantially vertically from the bottom panel 102. In the illustrated embodiment, the seat base 100 includes a pair of longitudinal side walls 104 which are spaced horizontally from each other, and which extend substantially parallel to each other in a longitudinal direction of the seat base 100. The seat base 100 further includes a pair of transverse side walls 106 which are spaced horizontally from each other and extend between the longitudinal side walls 104 in a transverse direction of the seat base 100. In other embodiments, the seat base 100 can omit the bottom panel 102 and may include one or more reinforcing members (not shown), such as struts or braces, for reinforcing the pairs of longitudinal and transverse side walls 104, 106.

[0092] The seat base 100 can further include a plurality of foot members 170 (shown, for example, in FIGS. 6 and 7) securable to an underside of the bottom panel 102. The foot members 170 can extend downwardly from the underside of the bottom panel 102 to support the sofa bed module 50 above a ground surface

when assembled. In certain embodiments, each of the foot members 170 can include a connection portion connectable to the seat base 100 and a component support region extending away from the connection portion for contacting the ground surface. For instance, in certain embodiments, each of the foot members 170 can include a threaded connector configured to be received in a corresponding threaded bore of the seat base 100. Alternatively, each of the foot members 170 can include a fastener-receiving aperture suitable to receive a fastener for securing the respective foot member 170 to the seat base 100. It will be understood that, in other embodiments, the foot members 170 can be secured to the seat base 100 using any other suitable means including, for instance, fasteners, an adhesive, or the like.

[0093] In certain embodiments, each of the sofa bed modules 50 can include one or more seating connectors 110 used in assembling the sofa bed modules 50 to each other and/or to accessory components of the modular sofa bed assembly 10, such as an armrest 400 (shown, for example, in FIGS. 1 to 4). Examples of other possible accessory components include a side table, a lighting module, or a storage module, among others. In the non-limitative embodiment illustrated in FIG. 5, the seating connectors 110 are secured to the longitudinal side walls 104 of the seat base 100. In this manner, the seating connectors 110 of adjacent ones of the sofa bed modules 50 can be aligned with one another when the modular sofa bed assembly 10 is assembled. In other embodiments, the seating connectors 110 can be secured to any other suitable surface of the seat base 100 (including, for instance, the transverse side walls 106) or any other suitable element of the sofa bed module 50. It is to be understood that the term “seating connector” as used herein, such as the seating connectors 110, is intended to include any coupling mechanism configured to hold together adjacent ones of the seat bases 100 of the modular sofa bed assembly 10 in a side-by-side relationship, or to secure an accessory component thereto. Individual ones of the seating connectors 110 may be referred to as clips or hooking members.

[0094] Still referring to FIGS 5 to 7, the seat base 100 includes a component support region 130 configured to support at least one of the seating component 200 and the backrest component 300 in accordance with the seating or sleeping configuration of the modular sofa bed assembly 10. More specifically, the component support region 130 is configured to support the seating component 200 when the modular sofa bed assembly 10 is in the seating configuration, and the backrest component 300 when the modular sofa bed assembly 10 is in the sleeping configuration, as described in greater detail below. In the illustrated embodiment, the component support region 130 is defined along upper edges of one or more of the longitudinal and transverse side walls 104, 106 of the seat base 100. Accordingly, in certain embodiments, the component support region 130 can be referred to as an upper component support region 130. It will be understood that, in other embodiments, the component support region 130 can be defined along any other portion of the seat base 100 configured to support one of the seating and backrest components 200, 300 and may include, for example, a bracket or the like.

[0095] In certain embodiments, the seat base 100 can define a storage compartment 108 for the storage of items. The storage compartment can be delimited by the pairs of longitudinal and transverse side walls 104, 106, when present. In the illustrated embodiment, the storage compartment 108 includes an accessible open top 109 when neither of the seating component 200 or backrest component 300 is seated on the component support region 130 of the seat base 100 (for instance, when the modular sofa bed assembly 10 is transitioning between the seating and sleeping configurations). In certain embodiments, the storage compartment 108 can define a storage space shaped and dimensioned to store personal belongings therein such as sleeping accessories (including, for instance, pillows, sheets and covers, among others). Accordingly, the storage compartment 108 may be enclosed and the storage space defined thereby may be inaccessible when the modular sofa bed assembly 10 is in one of the seating and sleeping configurations. In other embodiments, the storage compartment 108 may be accessible via an opening defined in one of the side walls (for instance, the transverse side wall 106 extending along the longitudinal side 12 of the modular

sofa bed assembly 10 so as to be accessible from a front side thereof). In such embodiments, the opening defined in one of the side walls may be concealed by a hinged or sliding barrier, among others.

The seating component

[0096] Referring now to FIGS. 8 and 9, an embodiment of the seating component 200 is shown. Broadly, the seating component 200 has a substantially rectangular prismatic shape with a top surface thereof defining a primary surface 230 of the seating component 200 sized to provide a seating surface upon which a user may be seated when the modular sofa bed assembly 10 is in the seating configuration. In certain embodiments, the seating component 200 can include a rigid frame assembly 210 and an upholstery 220 configured to cover at least a top portion of the frame assembly 210. In certain embodiments, the upholstery 220 can be formed of a soft compressible pad 222 and a seat covering 224 made of a fabric (including fabrics made of a natural or synthetic fibers), a synthetic material, leather, or a combination thereof.

[0097] In certain embodiments, the seating component 200 can be movable between a retracted position and an extended position to at least partially transition the modular sofa bed assembly 10 from the seating configuration to the sleeping configuration. In certain embodiments, the seating component 200 can be movably connected to the seat base 100 via an extension mechanism 150, shown in FIGS. 11 and 12A to 12C, operatively connected to the seat base 100 and the seating component 200. The extension mechanism 150 can enable a movement of the seating component 200 relative to the seat base 100 between the retracted and extended positions. In this manner, the seat base 100 forms a stationary frame of the sofa bed module 50 and the seating component 200 can be movable relative to the seat base 100 in accordance with the geometry of the extension mechanism 150. Referring now to FIGS. 10A to 10C, the extension mechanism 150 is configured to enable a movement of the seating component 200 in a substantially horizontal direction (*i.e.*, in a direction substantially parallel to the ground surface)

between the retracted position in which the seating component 200 sits on top of the component support region 130 of the seat base 100 and the extended position in which the seating component 200 is laterally offset from the retracted position towards a seat extension side 112 (shown, for example, in FIGS. 2, 3 and 10A) of the seat base 100 beyond a front edge 113 (shown, for example, in FIG. 1) thereof. In certain embodiments and as shown in FIG. 10B, the seating component 200 can be translated towards the seat extension side 12 without translating or otherwise moving the backrest component 300. In this manner, the seating component 200 can be operated independently of the backrest component 300 when transitioning the modular sofa bed assembly 10 between the sleeping configuration and the seating configuration.

[0098] Despite the extension of the seating component 200 beyond the front edge 113 of the seat base 100 when in the extended position, in certain embodiments, a rearward portion 204 (shown in FIG. 10C) of the seating component 200 can remain seated on the component support region 130 of the seat base 100 when the seating component 200 is in the extended position. Specifically, while the seating component 200 extends away from the seat base 100 in the direction of the seat extension side 112, the rearward portion 204 may remain in contact with the seat base 100 such that there is no horizontal spacing between the seat base 100 and the seating component 200 when the seating component is in the extended position.

[0099] In certain embodiments, the retracted and extended positions of the seating component 200 can be defined along the same horizontal plane such that the primary surface 230 remains at the same height relative to the ground surface when the modular sofa bed assembly 10 is in either the seating or sleeping configuration. Alternatively, in other embodiments, the extended position can be laterally and upwardly spaced relative to the retracted position.

[00100] In certain embodiments, as shown in FIG. 11, the extension mechanism 150 can include first and second extension linkages 152, 154, each of

the extension linkages 152, 154 being operatively connected to the seat base 100 and the seating component 200. In certain embodiments, each of the first and second extension linkages 152, 154 can be received within the storage compartment 108 to conceal said extension mechanism 150 when the seating component 200 is in the retracted position. Each of the first and second extension linkages 152, 154 can form a parallelogram linkage or four-bar linkage 155 enabling the seating component 200 to remain substantially horizontal when in the retracted and extended positions, thereby providing a desirable horizontal seating or sleeping surface. In certain embodiments, the parallelogram linkage of the extension linkages 152, 154 can further enable the seating component 200 to remain substantially horizontal when transitioning between the retracted and extended positions (*i.e.*, when the modular sofa bed assembly 10 is in a transitional state) thereby reducing the risk of one or more items disposed on the primary surface 230 of the seating component 200 from falling or sliding off as the seating component 200 transitions between the retracted and extended positions.

[00101] In certain embodiments, the sofa bed module 50 can further include one or more support legs configured to support at least a portion of a weight of the seating component 200 and of a user seated thereon when the seating component 200 is in the extended position. In the non-limitative embodiments shown, each of the sofa bed modules 50 includes a pair of support legs 156 pivotably mounted to the four-bar linkage 155 of the respective first and second extension linkages 152, 154. Referring to FIGS. 12A to 12C, each of the support legs 156 can be pivotably mounted to a respective one of the first and second extension linkages 152, 154 at a distal portion thereof. It is to be understood that the expression “distal portion”, as used herein, is intended to refer to an arbitrary position along a length of the corresponding one of the first and second extension linkages 152, 154 and is not intended to refer to a distal end thereof.

[00102] When the seating component 200 is in the retracted position, the support legs 156 can pivot into a substantially horizontal disposition (*i.e.*, substantially parallel to the ground surface) to fold within the corresponding one of

the first and second extension linkages 152, 154 and to thus be received and concealed within the storage compartment 108 of the seat base 100. When configured in this manner, the extension mechanism 150 can be said to be collapsible. As shown in FIGS. 12B and 12C, when the seating component 200 is transitioned from the retracted configuration to the extended position, the support legs 156 can pivot downwardly from their horizontal disposition towards a substantially upright disposition. Accordingly, when the seating component 200 is in the extended position, the support legs 156 are configured to pivot downwardly to contact the ground surface beneath the seating component 200 and to thereby provide a support to the seating component 200 and any object resting thereon. In other embodiments, the support legs 156 may be telescopic support legs configured to expand when the seating component 200 is in the extended position.

[00103] In certain embodiments, one or more of the support legs 156 can be auto-deployable such that the support legs 156 automatically pivot or extend to interface with the ground surface so as to provide support to the seating component 200.

[00104] It is to be understood that, in other embodiments, the support legs 156 can be secured to another element of the modular sofa bed assembly 10. For instance, in certain embodiments, the support legs 156 can be pivotably mounted to the seating component 200 and, more particularly, to the frame assembly 210 of the seating component 200.

[00105] It is to be further understood that while the embodiments described above include an extension mechanism 150 configured to direct a movement of the seating component 200, in other embodiments, the extension mechanism 150 may be omitted thereby enabling the seating component 200 to move freely between one of any number of positions including, for instance, to enable the seating component 200 to be removed from the seat base 100. In such embodiments, the seating component 200 may thus be freely positioned between the retracted and extended positions.

The backrest component

[00106] As stated above, each of the seat modules 50 further includes a backrest component 300 configured to support a user's back when the modular sofa bed assembly 10 is arranged in the seating configuration, and to define at least a portion of the sleeping surface 11 when the modular sofa bed assembly 10 is in the sleeping configuration. Referring now to FIGS. 13 and 14, a non-limitative embodiment of the backrest component 300 is shown. Broadly, the backrest component 300 has a substantially rectangular prismatic shape defining a primary surface 330 of the backrest component 300 (*i.e.*, a surface of the backrest component 300 positioned to interact with a user or object resting on the modular sofa bed assembly 10 when in either of the seating or sleeping configurations). In certain embodiments, the backrest component 300 can include a frame assembly 310 and an upholstery 320 configured to cover the frame assembly 310 of the backrest component 300. It will be appreciated that, when present, the frame assembly 310 can prevent or reduce a deformation of the backrest component 300 when subjected to a load such as, for instance, when at least partially supporting a weight of a user disposed on the modular sofa bed assembly 10.

[00107] Referring again to FIGS. 1 and 3, the backrest component 300 can be mounted onto the seat base 100 in one of a substantially upright disposition when the modular sofa bed assembly 10 is in the seating configuration (as shown in FIG. 1), and a substantially horizontal disposition when the modular sofa bed assembly 10 is in the sleeping configuration (as shown in FIG. 3). More specifically, the backrest component 300 can be placed in the horizontal disposition to define a portion of the sleeping surface 11 when the modular sofa bed assembly 10 is in the sleeping configuration.

[00108] Referring again to FIGS. 6 and 7, in certain embodiments, the seat base 100 can include a backrest retaining feature 160 defined as a transversally extending recess 162 shaped and dimensioned to receive a lower portion 302 of the backrest component 300 in the upright position. In certain embodiments, the

backrest retaining feature 160 can be configured to retain the backrest component 300 in the substantially upward position when a horizontal component of a force is applied to the backrest component 300 such as, for instance, when a user is seated onto the modular sofa bed assembly 10 with their back resting on the backrest component 300.

[00109] In certain embodiments, a support surface 164 of the backrest retaining feature 160 can be rearwardly inclined with respect to the longitudinal axis of the seat base 100 to position the backrest component 300 in an inclined upright disposition relative to a vertical axis when the modular sofa bed assembly 10 is in the seating configuration. More particularly, the support surface 164 of the backrest retaining feature 160 can be inclined relative to the component support region 130 (*i.e.*, not parallel to the component support region 130) to position the backrest component 300 in an inclined upright disposition relative to the primary surface 230 of the seating component 200 when the modular sofa bed assembly 10 is in the seating configuration.

[00110] In certain embodiments, the seat base 100 can include a first connector 107, and the backrest component 300 can include a second connector 307 couplable with the first connector 107 of the seat base 100 when the modular sofa bed assembly 10 is in the seating configuration. Still referring to FIGS. 6 and 7, in the non-limitative embodiment shown, the seat base 100 includes a first connector 107 shaped as a female connector sized to receive a second connector 307 of the backrest component 300 shaped as a male connector. The first and second connectors 107, 307 may serve to secure the backrest component 300 to the seat base 100 when the modular sofa bed assembly 10 is in the seating configuration. More specifically, in certain embodiments, the first and second connectors 107, 307 may prevent the seating component 300 from rotating away from the upright disposition when the modular sofa bed assembly 10 is in the seating configuration. In the illustrated embodiment, the first connector 107 of the seat base 100 is provided within the transversally extending recess 162 of the seat base and the second connector 307 of the backrest component 300 is provided on

a lateral surface thereof. It will be understood that, in other embodiments, the first and second connectors 107, 307 can be provided on any other suitable surface of the seat base 100 and back rest component, respectively, and the first and second connectors 107, 307 can include any other suitable type of connectors. For instance, in other embodiments, the first connector 107 can include a male connector, and the second connector 307 can include a female connector.

[00111] In certain embodiments, each sofa bed module 50 can further include a rear support panel 500 (shown in FIGS. 3 and 4) configured to be secured to the seat base 100 when the modular sofa bed assembly 10 is assembled. The rear support panel 500 can be secured to the seat base 100 using the seating connectors 110 described above, or any other suitable connecting means. In certain embodiments, the rear support panel 500 can extend upwardly from the seat base 100 when secured thereto so as to provide further lateral support to the backrest component 300 and retain said backrest component 300 in the upright disposition when the modular sofa bed assembly 10 is in the seating configuration.

[00112] Referring now to FIGS. 10D to 10F, a transition of the backrest component 300 from the upright disposition to the horizontal disposition is shown. In particular, the lower portion 302 of the backrest component 300 can be withdrawn from the backrest retaining feature 160 of the seat base 100 by lifting the backrest component 300 from the transversally extending recess 162 in an upwardly direction. In a subsequent step, the backrest component 300 can be positioned onto the seat base 100 in the horizontal disposition. More specifically, the backrest component 300 can be seated onto the component support region 130 in a region previously occupied by the seating component 200 when the modular sofa bed assembly 10 is in the seated configuration, as shown in FIG. 10F.

[00113] In the illustrated embodiment, the backrest component 300 can be shaped and dimensioned to abut the seating component 200 when the modular sofa bed assembly 10 is in the sleeping configuration thereby reducing or

eliminating a lateral spacing between the seating and backrest components 200, 300. Specifically, a height of the backrest component 300 can substantially correspond to a horizontal distance A defined between the seating component 200 and the rear panel 500 (when present) to ensure an interference fit of the backrest component 300 when seated onto component support region 130 of the seat base 100 when the modular sofa bed assembly 10 is in the sleeping configuration.

[00114] In certain embodiments, when the modular sofa bed assembly 10 is in the sleeping configuration, one or more of the seating and backrest components 200, 300 of a given sofa bed module 50 can adjoin the seating and backrest components 200, 300 of an adjoining sofa bed module 50, respectively. For instance, in the embodiment shown in FIG. 3, each of the seating and backrest components 200, 300 of the first end module 52 adjoins the respective seating and backrest components 200, 300 of the center module 56 and, similarly, each of the seating and backrest components 200, 300 of the center module 56 adjoins the respective seating and backrest components 200, 300 of the second end module 54. In this manner, the seating and backrest components 200, 300 of the sofa bed modules 50 can define a substantially continuous sleeping surface 11 (*i.e.*, a sleeping surface 11 devoid of any horizontal spacings between the adjoining seating and backrest components 200, 300 forming a gap.)

[00115] In certain embodiments, the backrest component 300 may be tapered to provide an improved aesthetic appearance of the modular sofa bed assembly 10. In particular, a thickness of an upper portion 304 of the backrest component 300 (shown in FIG. 10F) can be thinner relative to a thickness of the lower portion 302 of the backrest component 300. In such embodiments, the component support region 130 of the seat base 100 can include a rearward stepped or inclined portion configured to maintain the primary surface 330 of the backrest component 300 substantially horizontal when the modular sofa bed assembly 10 is in the sleeping configuration. Notably, the rearward stepped or inclined portion of the seat base 100 can be longitudinally disposed to not interfere with the seating component 200 thereby maintaining the primary surface 230 of

the seating component 200 substantially horizontal when the modular sofa bed assembly 10 is in the seating configuration. For instance, in some embodiments, the rearward stepped or inclined portion of the seat base 100 can be disposed rearward of the backrest retaining feature 160.

[00116] In certain embodiments, the backrest component 300 can be movably connected to the seat base 100 via an extension mechanism (not shown) similar to the extension mechanism 150 described above in relation to the seating component 200. In such embodiments, the extension mechanism can be operatively connected to the seat base 100 and the backrest component 300 to direct a movement of the backrest component 300 between the upright disposition when the modular sofa bed assembly 10 is in the seating configuration, and the substantially horizontal disposition when the modular sofa bed assembly 10 is in the sleeping configuration.

[00117] Referring again to FIG. 3, the modular sofa bed assembly 10 is shown in the sleeping configuration with the seating component 200 of each of the sofa bed modules 50 being in the extended position, and the backrest component 300 of each of the sofa bed modules 50 being mounted in the horizontal disposition onto the component support region 130 of the corresponding seat base 100. Arranged in this configuration, each of the primary surfaces 230, 330 of the respective seating and backrest components 200, 300 defines a portion of the sleeping surface 11. In certain embodiments, each of the primary surfaces 230 and the primary surfaces 330 of the respective seating and backrest components 200, 300 can be coplanar when the modular sofa bed assembly 10 is in the sleeping configuration to define a substantially planar sleeping surface 11. It will be appreciated that a substantially planar sleeping surface 11 may improve comfort.

Alternative configurations of the modular sofa-bed assembly

[00118] Referring now to FIGS. 15 and 16, there is shown a modular sofa bed assembly 20, in accordance with another embodiment, which includes a single sofa bed module 50. The modular sofa bed assembly 20 includes the sofa bed

module 50 connected with a pair of armrest components 400 and a rear panel 500 to form a lounge chair upon which a user can be seated. In the illustrated embodiment, the modular sofa bed assembly 20 further includes a footstool 600 configured to support a user's feet when in a seated position.

[00119] In certain embodiments, the footstool 600 can be a modular footstool. Referring now to FIGS. 18 and 19, the footstool 600 can include a footstool base 620 and an upholstered top 630 configured to be mounted onto the footstool base 620 and defining a footrest surface 632 configured to support the user's feet. In certain embodiments, the footstool base 620 defines a storage volume 622 shaped and dimensioned to store personal belongings.

[00120] As illustrated in FIG. 16, the footstool 600 can be aligned with the seating component 200 and the backrest component 300 when the modular sofa bed assembly 20 is in the sleeping configuration to expand the sleeping surface 11 thereof. More specifically, the footrest surface 632 can be coplanar with the primary surfaces 230, 330 of the seating and backrest components 200, 300 to form part of the sleeping surface 11. In such embodiments, the primary surfaces 230, 330 of the seating and backrest components 200, 300 and the footrest surface 632 can be disposed in a linear fashion to provide a sleeping surface 11 sized to accommodate a length of a user in a horizontal disposition.

[00121] In certain embodiments, each one of the seating component 200 and the footstool 600 includes a connector 208, 608 (FIGS. 17 and 18) disposed on a respective lateral side thereof. In the embodiment shown, the connectors 208, 608 of the respective seating component 200 and the footstool 600 are clip connectors configured to mate together so as to retain the footstool 600 in a fixed position relative to the sofa bed module 50 when the modular sofa bed assembly 10 is in the sleeping configuration. It is understood that, in other embodiments, the connectors 208, 608 can include any other suitable connector type including magnetic connectors, hook and loop fasteners, or the like.

[00122] In certain embodiments, the sofa bed module 50 of the modular sofa bed assembly 20 can be optionally assembled with a complementary sofa bed module 50 of the same configuration. More specifically, in certain embodiments, one or more of the armrest components 400 of the modular sofa bed assembly 20 can be removed (if present) to enable the sofa bed module 50 to be assembled in an adjacent configuration with the complementary sofa bed module 50 to reconfigure the modular sofa bed assembly into a different configuration including for instance, a configuration similar to the modular sofa bed assembly 10 described above.

[00123] Referring now to FIGS. 20 and 21, there is shown a modular sofa bed assembly 30, in accordance with yet another embodiment, which includes a plurality of sofa modules configured in an L arrangement to form a sectional sofa. In the illustrated embodiment, the modular sofa bed assembly 30 includes three sofa bed modules 50 and a corner module 80 positioned adjacent each other. More specifically, the modular sofa bed assembly 30 includes first and second sofa bed modules 57, 58 along with the corner module 80 disposed along a longitudinal axis X' of the modular sofa bed assembly 30. The modular sofa bed assembly 30 further includes a third sofa bed module 59 adjacently connected to the corner module 80 in a transverse direction of the modular sofa bed assembly 30.

[00124] Referring to FIGS. 22 and 23, the corner module 80 is configured to form a corner of the modular sofa bed assembly 30 by providing a backrest along two adjacent sides thereof. Accordingly, the corner module 80 can include a corner base 82 defining first and second backrest supports 83, 84 extending along a longitudinal and a lateral direction of the corner base 82, respectively. In certain embodiments, the corner module 80 can further include backrest cushions 85 configured to be mounted into first and second backrest supports 83, 84, and a seating cushion 86 configured to be mounted onto the corner base 82 with the seating cushion 86 defining a cushion surface 87.

[00125] Referring again to FIG. 21, the modular sofa bed assembly 30 is shown in the sleeping configuration with the seating component 200 of each of the sofa bed modules 57, 58 being in the extended position, and the backrest component 300 of each of the sofa bed modules 57, 58 being mounted in the horizontal disposition onto the component support region 130 of the corresponding seat base 100. Arranged in this configuration, the sleeping surface 11 of the modular sofa bed assembly 30 is defined by each primary surface 230 of the sofa bed modules 57, 58, 59, each primary surface 330 of the sofa bed modules 57, 58, and the cushion surface 87 of the corner module 80.

[00126] It will be understood that the above embodiments are merely provided as examples and that other alternative embodiments may be considered. For example, although the foot connectors and unit connectors are described above as a combination of fasteners and fasteners-receiving holes, the connectors could include any other suitable connector.

[00127] While the above description provides examples of the embodiments, it will be appreciated that some features and/or functions of the described embodiments are susceptible to modification without departing from the spirit and principles of operation of the described embodiments. Accordingly, what has been described above has been intended to be illustrative and non-limiting and it will be understood by persons skilled in the art that other variants and modifications may be made without departing from the scope of the invention as defined in the claims appended hereto.

CLAIMS

1. A modular sofa bed assembly configurable between a seating configuration and a sleeping configuration defining a sleeping surface, the modular sofa bed assembly comprising:

first and second sofa bed modules adapted to be assembled in an adjacent configuration, each of the first and second sofa bed modules including:

a seat base defining a component support region;

a seating component movable between a retracted position when the modular sofa bed assembly is in the seating configuration wherein the seating component is seated on the component support region of the seat base, and an extended position when the modular sofa bed assembly is in the sleeping configuration, the extended position being laterally offset from the retracted position toward a seat extension side of the seat base to define a first portion of the sleeping surface; and

a backrest component configured to be mounted onto the seat base in an upright disposition when the modular sofa bed assembly is in the seating configuration, and further configured to be seated onto the component support region of the seat base in a horizontal disposition when the seating component is in the extended position to define a second portion of the sleeping surface.

2. The modular sofa bed assembly of claim 1, wherein the first and second portions of the sleeping surface are substantially coplanar when the modular sofa bed assembly is in the sleeping configuration.

3. The modular sofa bed assembly of claim 1 or 2, wherein the seating component of the first sofa bed module adjoins the seating component of the second sofa bed module when the modular sofa bed assembly is in the sleeping configuration.

4. The modular sofa bed assembly of any one of claim 1 to 3, wherein the backrest component of the first sofa bed module adjoins the backrest component of the second sofa bed module when the modular sofa bed assembly is in the sleeping configuration.

5. The modular sofa bed assembly of any one of claims 1 to 4, wherein each of the first and second sofa bed modules further comprises an extension mechanism operatively connected to the seat base and the seating component, the extension mechanism being configured to enable a movement of the seating component between the retracted and extended positions.

6. The modular sofa bed assembly of claim 5, wherein the extension mechanism of at least one of the first and second sofa bed modules forms a parallelogram linkage configured to retain the corresponding seating component in a substantially horizontal disposition during a transition of the corresponding seating component between the retracted and extended positions.

7. The modular sofa bed assembly of any one of claims 1 to 6, wherein the seating component is movable between the retracted and extended positions independently of the backrest component.

8. The modular sofa bed assembly of any one of claims 1 to 7, wherein a rearward portion of the seating component is seated on the component support region of the seat base when the seating component is in the extended position.

9. The modular sofa bed assembly of any one of claims 1 to 8, wherein the seat base of at least one of the first and second sofa bed modules defines a storage compartment.

10. The modular sofa bed assembly of claim 9, wherein the storage compartment is accessible when the modular sofa bed assembly is transitioning between the seating and sleeping configurations, and inaccessible when the modular sofa bed assembly is in either of the seating and sleeping configurations.

11. The modular sofa bed assembly of claim 9, wherein the storage compartment is accessible via an opening defined in a side wall of the seat base.

12. The modular sofa bed assembly of any one of claims 1 to 11, wherein the seating component includes one or more support legs configured to support at least a portion of a weight of the seating component when the modular sofa bed assembly is in the sleeping configuration.

13. The modular sofa bed assembly of claim 12, wherein the one or more support legs are auto-deployable when the seating component is in the extended position.

14. The modular sofa bed assembly of any one of claims 1 to 13, wherein each of the first and second sofa bed modules include a seating connector, the seating connector of the first sofa bed module being connectable to the seating connector of the second sofa bed module to secure the first and second sofa bed modules together.

15. The modular sofa bed assembly of any one of claims 1 to 14, wherein the seat base includes a backrest retaining feature configured to retain the backrest component in the upright disposition when the modular sofa bed assembly is in the seating configuration.

16. The modular sofa bed assembly of claim 15, wherein the backrest retaining feature is a transversally extending recess shaped and dimensioned to receive a lower portion of the backrest component when the modular sofa bed assembly is in the seating configuration.

17. The modular sofa bed assembly of claim 16, wherein the transversally extending recess includes a rearwardly inclined bottom support surface.

18. The modular sofa bed assembly of any one of claims 1 to 17, wherein the seat base includes a first connector, and the backrest component includes a

second connector couplable with the first connector of the seat base when the modular sofa bed assembly is in the seating configuration.

19. The modular sofa bed assembly of claim 18, wherein the first connector of the seat base is a female connector, and the second connector of the backrest component is a male connector sized for insertion within the female connector.

20. The modular sofa bed assembly of any one of claims 1 to 19, wherein at least one of the first and second sofa bed modules includes a rear support panel configured to be secured to the corresponding seat base, the rear support panel extending upwardly from the seat base when secured thereto to retain the backrest component in the upright disposition when the modular sofa bed assembly is in the seating configuration.

21. The modular sofa bed assembly of any one of claims 1 to 20, wherein the backrest component is tapered.

22. The modular sofa bed assembly of any one of claims 1 to 20, wherein the seat base comprises side walls, the component support region being defined along an upper edge of the walls.

23. A method of transitioning a modular sofa bed assembly from a seating configuration to a sleeping configuration, the method comprising:

providing a first sofa bed module and a second sofa bed module positioned adjacent to each other, each of the first and second sofa bed modules comprising a seat base, a seating component, and a backrest component;

for each of the first and second sofa bed modules, moving the corresponding seating component from a retracted position wherein the seating component is seated on a portion of a component support region of the corresponding seat base, to an extended position toward a seat extension side of the corresponding seat base to define a first portion of a sleeping surface; and

for each of the first and second sofa bed modules, moving the corresponding backrest component from an upright disposition to a horizontal disposition to define a second portion of the sleeping surface, the backrest component of each of the first and second sofa bed modules being seated, when in the horizontal disposition, on the portion of the component support region of the corresponding seat base upon which the seating component is seated when in the retracted position.

24. The method of claim 23, wherein the step of moving the seating component of each of the first and second sofa bed modules is performed before the step of moving the backrest component of each of the first and second sofa bed modules.

25. The method of claim 23, wherein the steps of moving the seating and backrest components of the first sofa bed module are performed before the steps of moving the seating and backrest components of the second sofa bed module.

26. The method of any one of claims 23 to 25, wherein the steps of moving the seating component of each of the first and second sofa bed modules comprises maintaining a rearward portion of the seating component seated on the component support region of the corresponding seat base when the seating component is in the extended position.

27. The method of any one of claims 23 to 26, wherein the step of moving the seating component of the first sofa bed module comprises providing access to a storage compartment defined within the seat base of the first sofa bed module.

28. The method of any one of claims 23 to 27, wherein the step of moving the backrest component of the first sofa bed module from the upright disposition to the horizontal disposition comprises removing a lower portion of the backrest component from a transversely extending recess defined in the seat base of the first sofa bed module, the transversely extending recess being shaped and dimensioned to receive the lower portion of the backrest component.

29. The method of any one of claims 23 to 28, wherein the step of moving the seating component of the first sofa bed module comprises downwardly pivoting a pair of support legs to provide a support to the seating component.

30. The method of any one of claims 23 to 28, wherein the step of moving the seating component of the first sofa bed module comprises telescopically expanding a pair of support legs to provide a support to the seating component.

31. The method of any one of claims 23 to 30, wherein the step of moving the seating component of the first sofa bed module from the retracted position to the extended position comprises extending an extension mechanism of the first sofa bed module, the extension mechanism being operatively connected to the seating component and the seat base of the first sofa bed module.

32. The method of claim 31 wherein the step of moving the seating component of the first sofa bed module from the retracted position to the extended position comprises retaining the seating component in a substantially horizontal disposition during a transition between the retracted and extended positions.

33. A modular sofa bed assembly configurable between a seating configuration and a sleeping configuration defining a sleeping surface, the modular sofa bed assembly comprising:

a sofa bed module, the sofa bed module including:

a seat base defining a component support region;

a seating component movable between a retracted position when the modular sofa bed assembly is in the seating configuration wherein the seating component is seated on the component support region of the seat base, and an extended position when the modular sofa bed assembly is in the sleeping configuration, the extended position being laterally offset from the retracted position towards a seat extension side of the seat base to define a first portion of the sleeping surface; and

a backrest component configured to be mounted onto the seat base in an upright disposition when the modular sofa bed assembly is in the seating configuration, and further configured to be seated onto the component support region of the seat base in a horizontal disposition when the seating component is in the extended position to define a second portion of the sleeping surface; and

a footstool adapted to be positioned in an adjacent configuration with the seating component when the seating component is in the extended position, the footstool having a top surface defining a third portion of the sleeping surface.

34. The modular sofa bed assembly of claim 33, wherein the sofa bed module is adapted to be assembled with a complementary sofa bed module in an adjacent configuration, the complementary sofa bed module having the same configuration as the sofa bed module.

35. The modular sofa bed assembly of claim 33 or 34, wherein the first and second portions of the sleeping surface are substantially coplanar when the modular sofa bed assembly is in the sleeping configuration.

36. The modular sofa bed assembly of any one of claims 33 to 35, wherein the first and third portions of the sleeping surface are substantially coplanar when the modular sofa bed assembly is in the sleeping configuration.

37. The modular sofa bed assembly of any one of claims 33 to 36, wherein the first, second and third portions of the sleeping surface are arranged in line when the modular sofa bed assembly is in the sleeping configuration.

38. The modular sofa bed assembly of any one of claims 33 to 37, wherein the seating component is movable between the retracted and extended positions independently of the backrest component.

39. The modular sofa bed assembly of any one of claims 33 to 38, wherein the seat base of the sofa bed module defines a storage compartment.

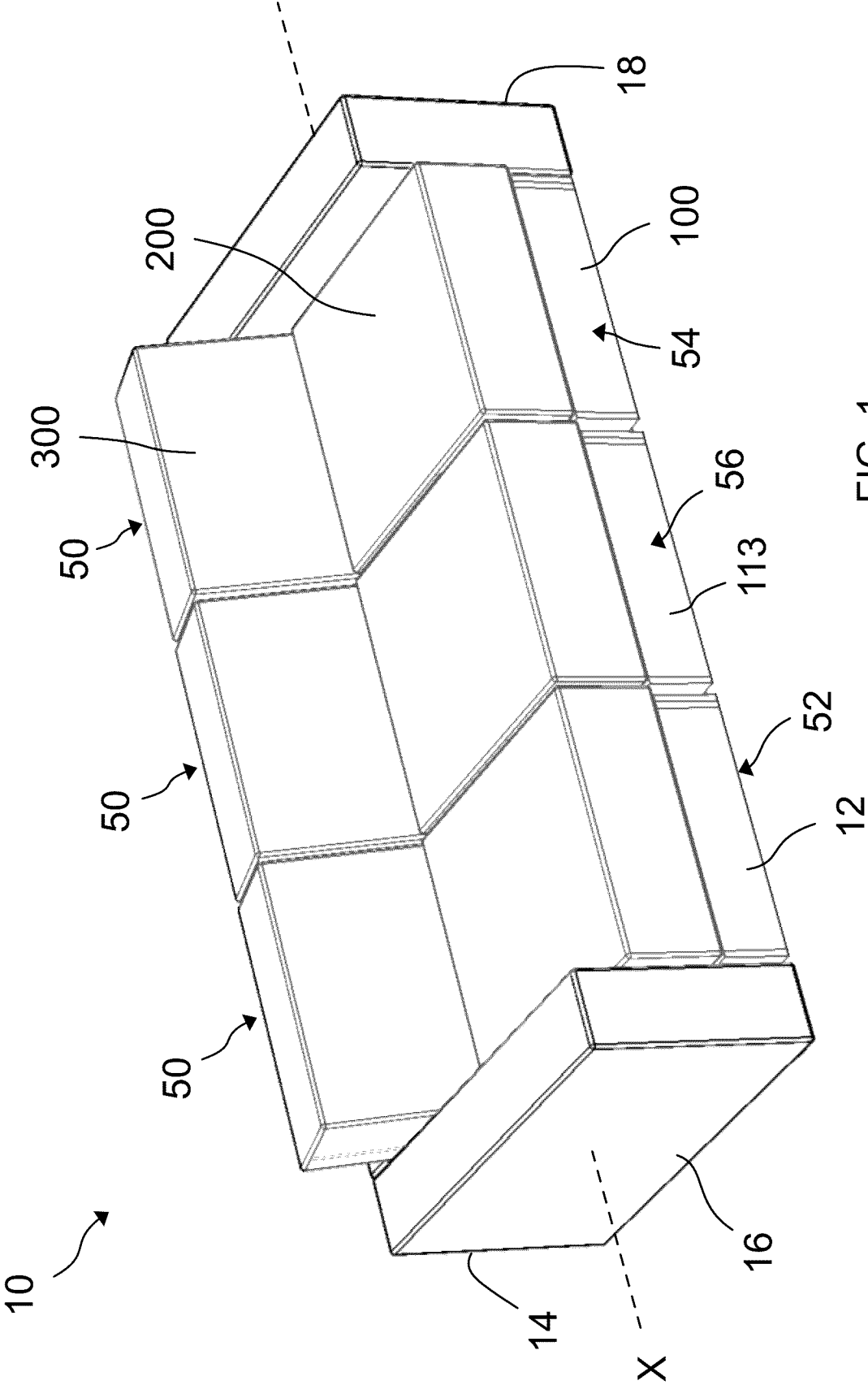
40. The modular sofa bed assembly of claim 39, wherein the storage compartment is accessible when the modular sofa bed assembly is transitioning between the seating and sleeping configurations, and inaccessible when the modular sofa bed assembly is in either of the seating and sleeping configurations.

41. The modular sofa bed assembly of claim 39, wherein the storage compartment is accessible via an opening defined in a side wall of the seat base.

42. The modular sofa bed assembly of any one of claims 33 to 41, wherein the seating component includes one or more support legs configured to support at least a portion of a weight of the seating component when the modular sofa bed assembly is in the sleeping configuration.

43. The modular sofa bed assembly of claim 42, wherein the one or more support legs are auto-deployable when the seating component is in the extended position.

44. The modular sofa bed assembly of any one of claims 33 to 43, wherein the seating component includes a first connector and the footrest includes a second connector, the first connector of the seating component being connectable to the second connector of the footrest when the modular sofa bed assembly is in the sleeping configuration to secure the sofa bed module and the footrest together.



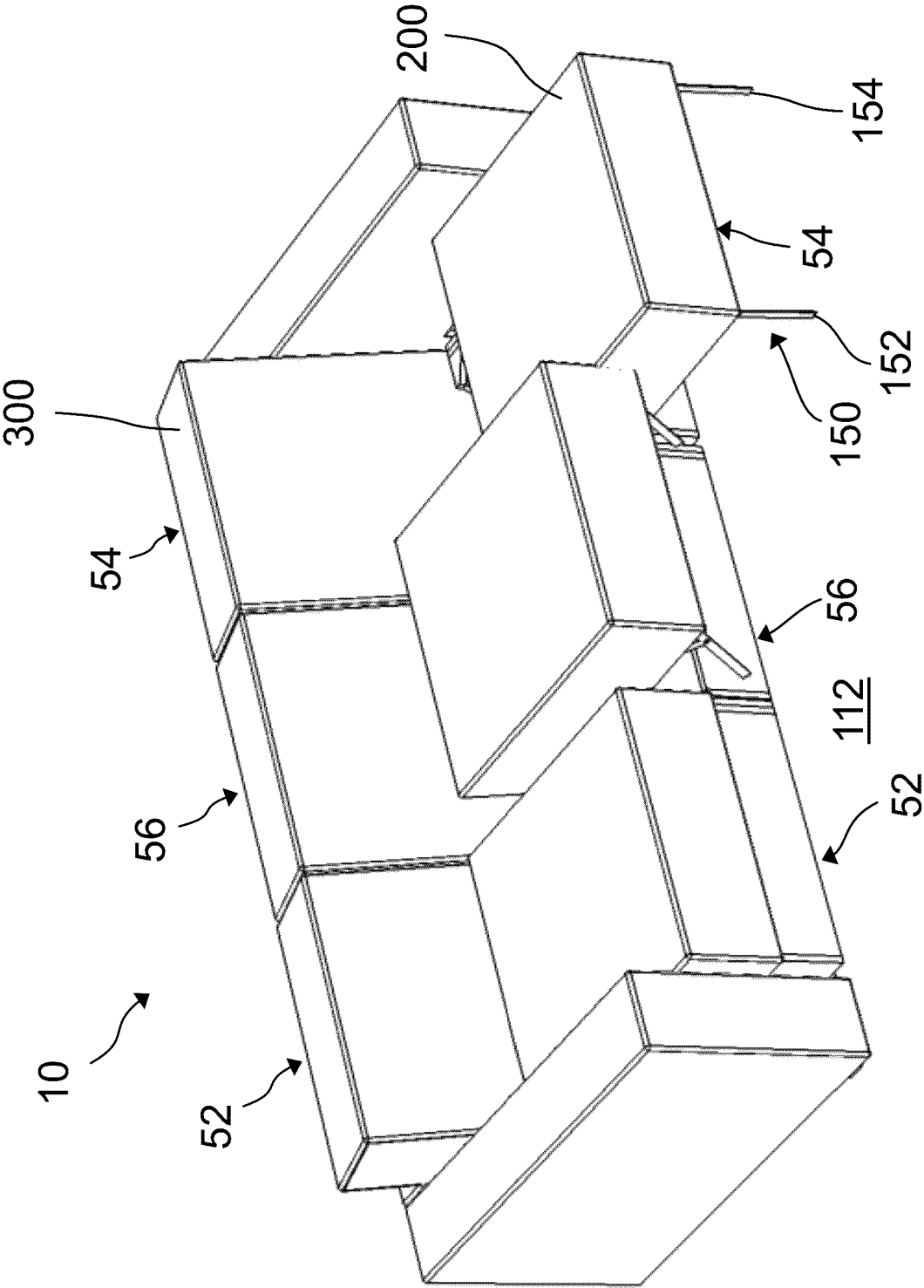


FIG. 2

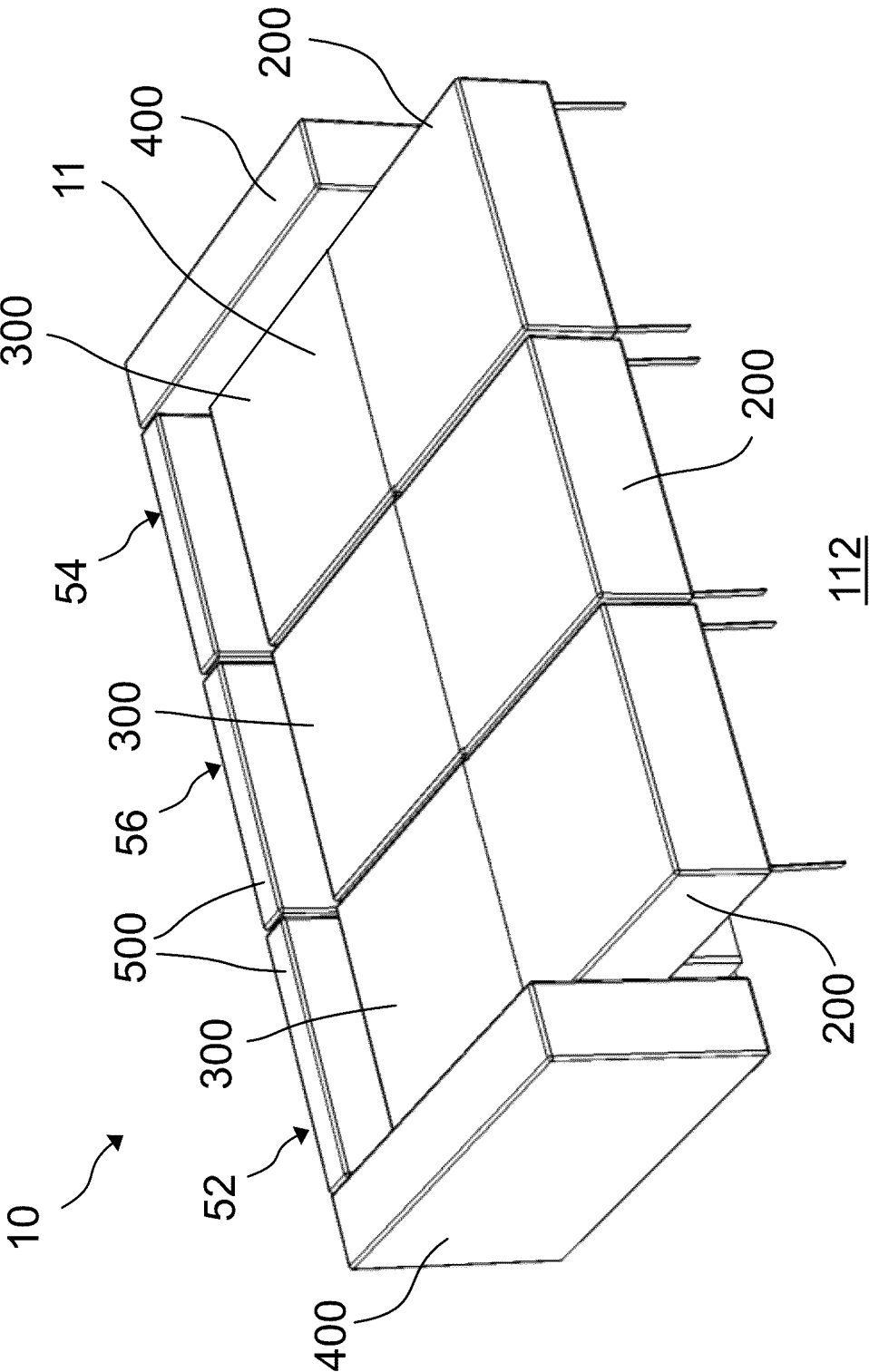
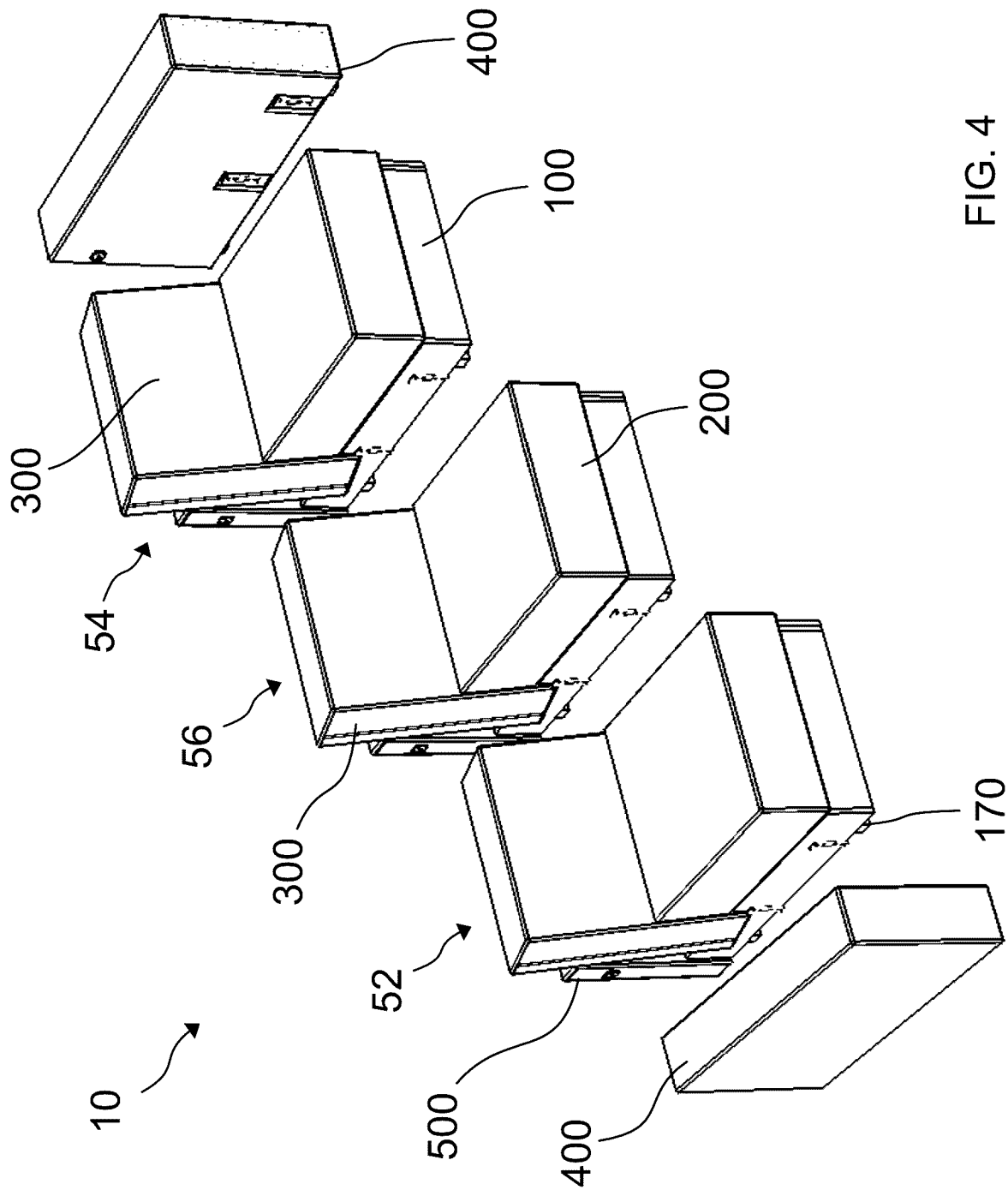
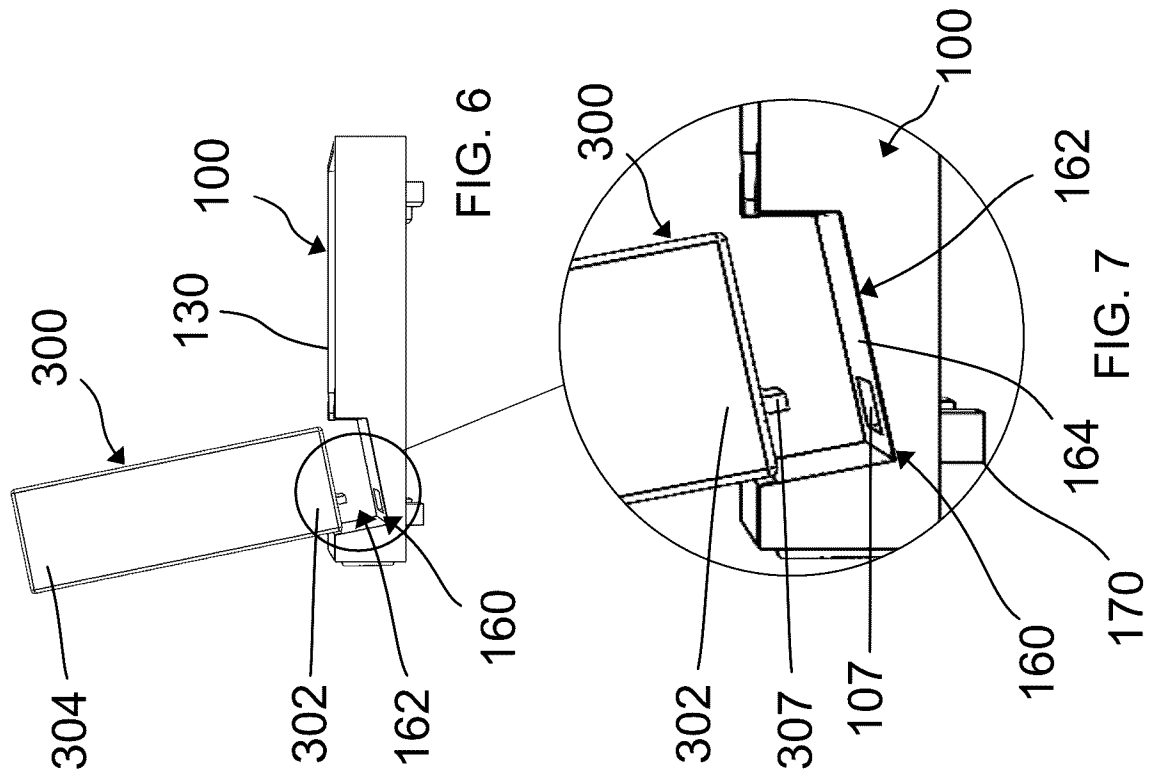
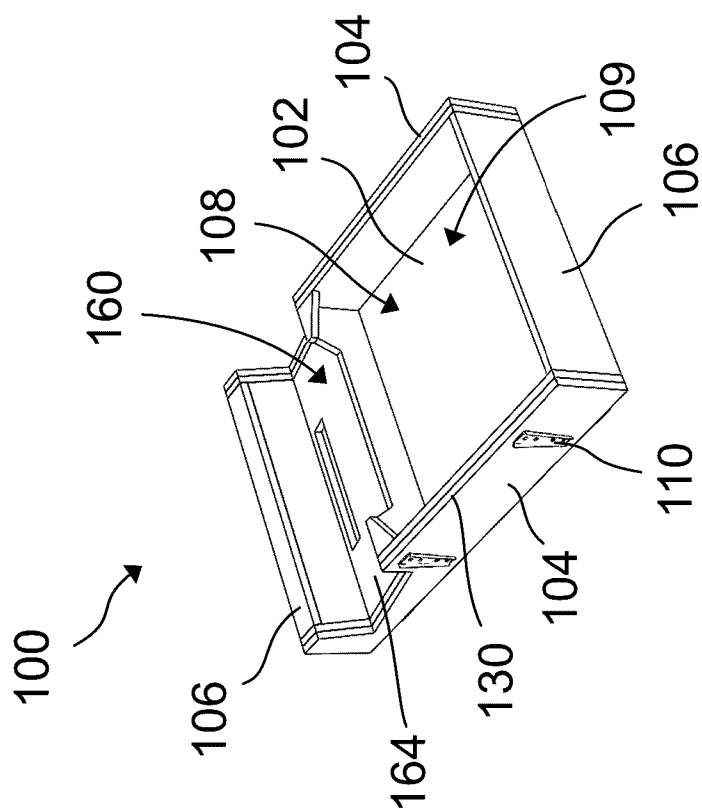


FIG. 3





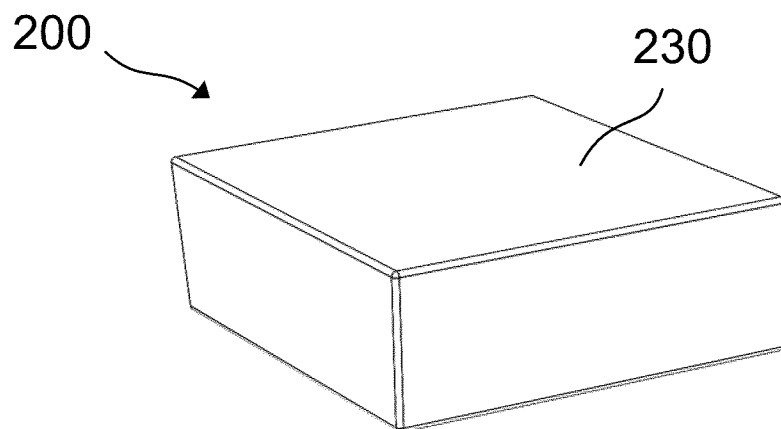


FIG. 8

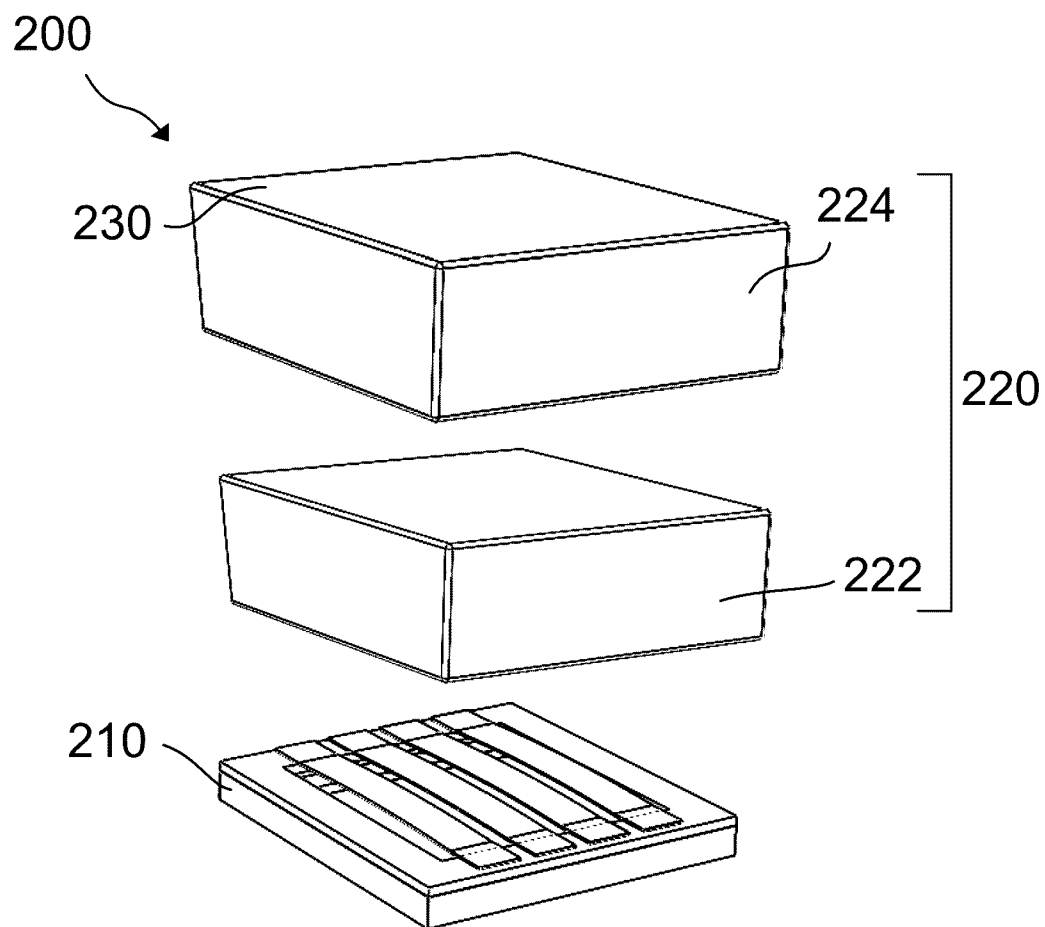


FIG. 9

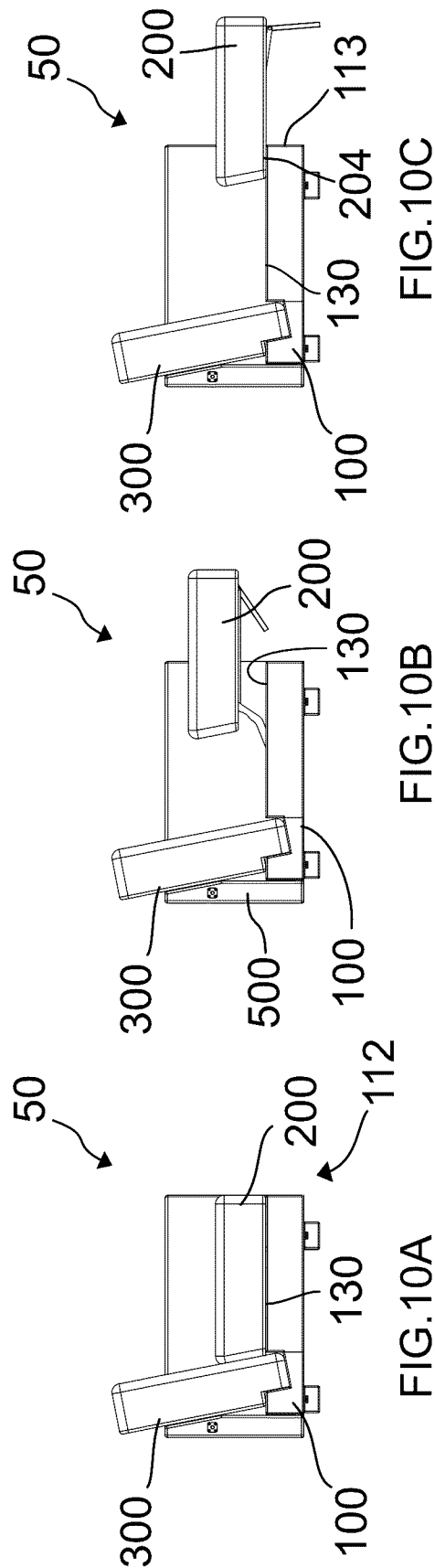


FIG. 10C

FIG. 10B

FIG. 10A

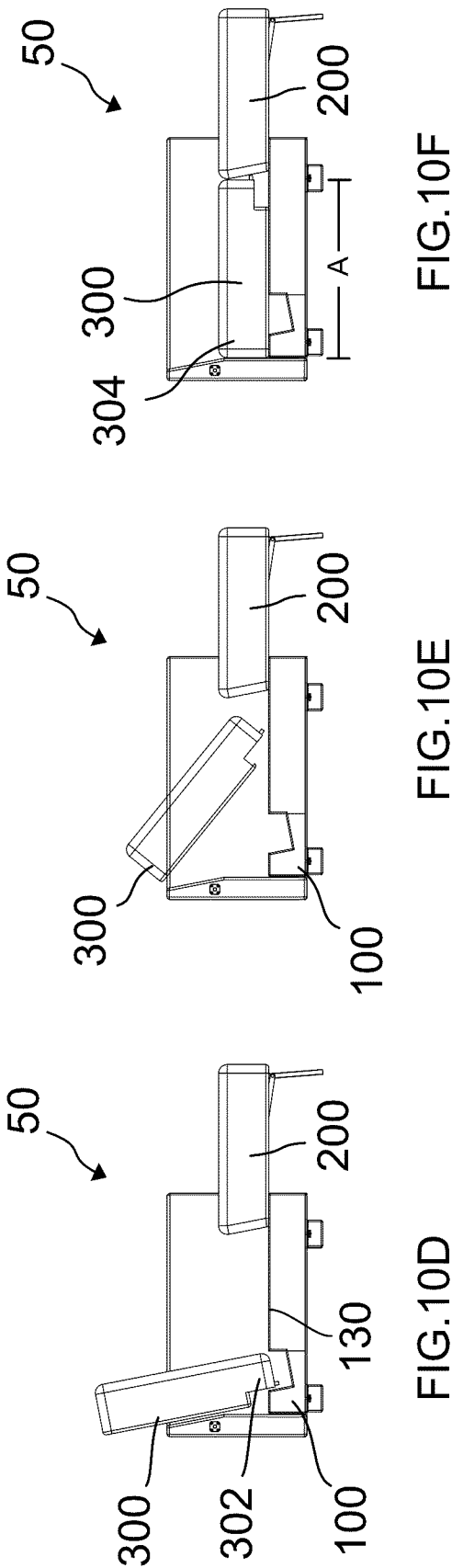
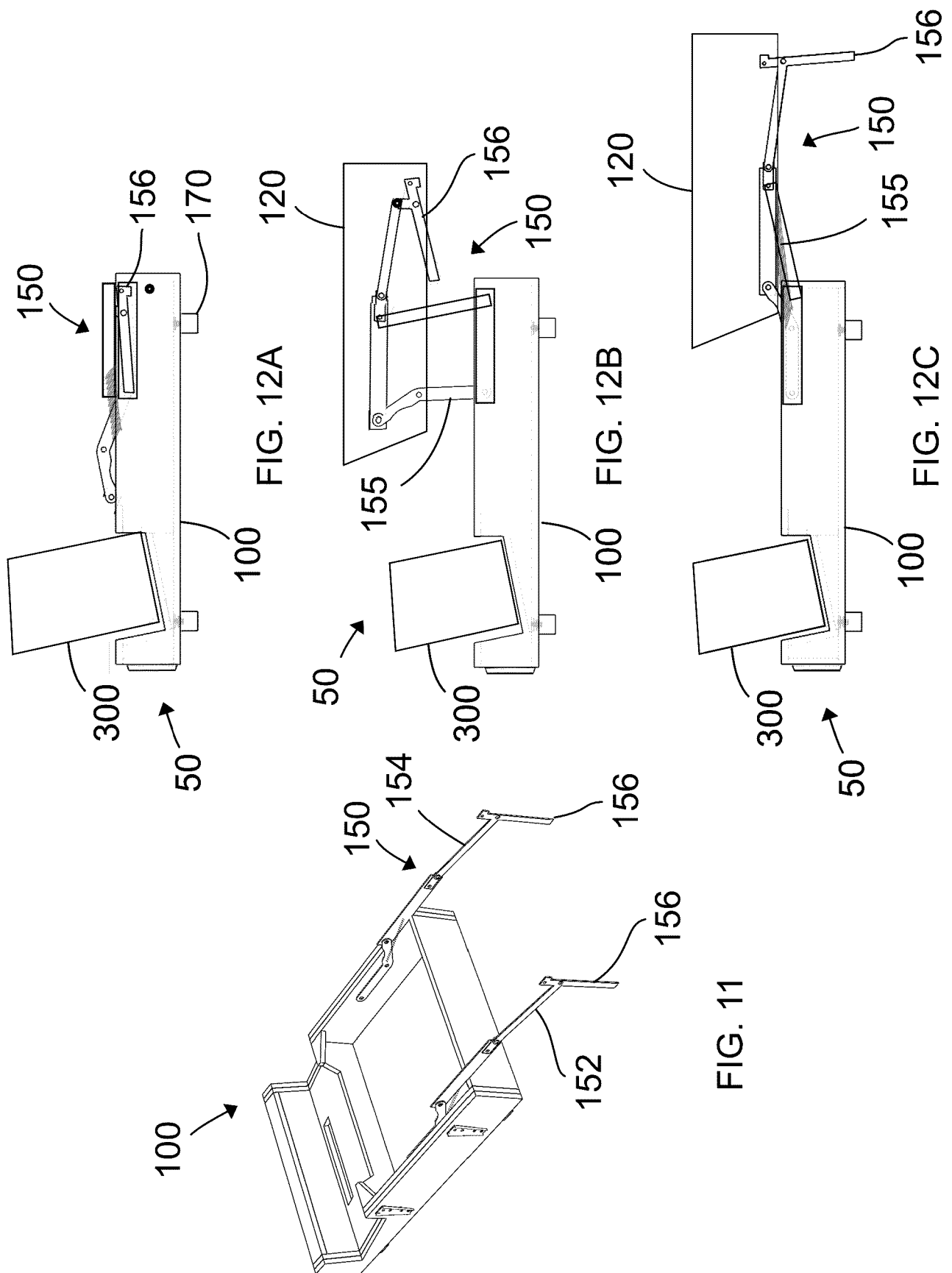


FIG. 10F

FIG. 10E

FIG. 10D



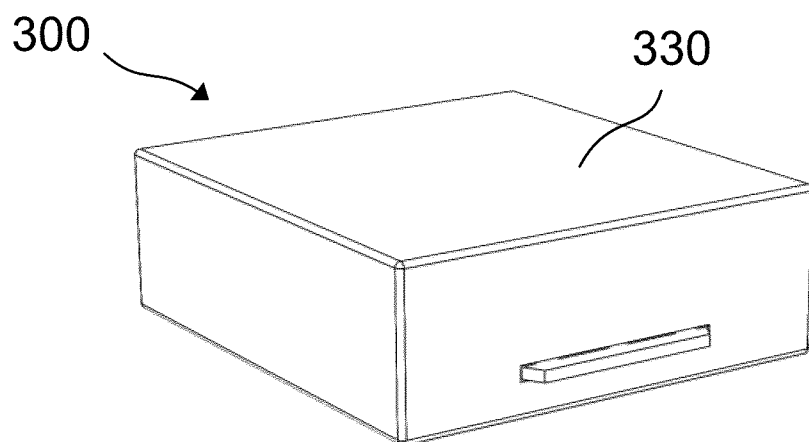


FIG. 13

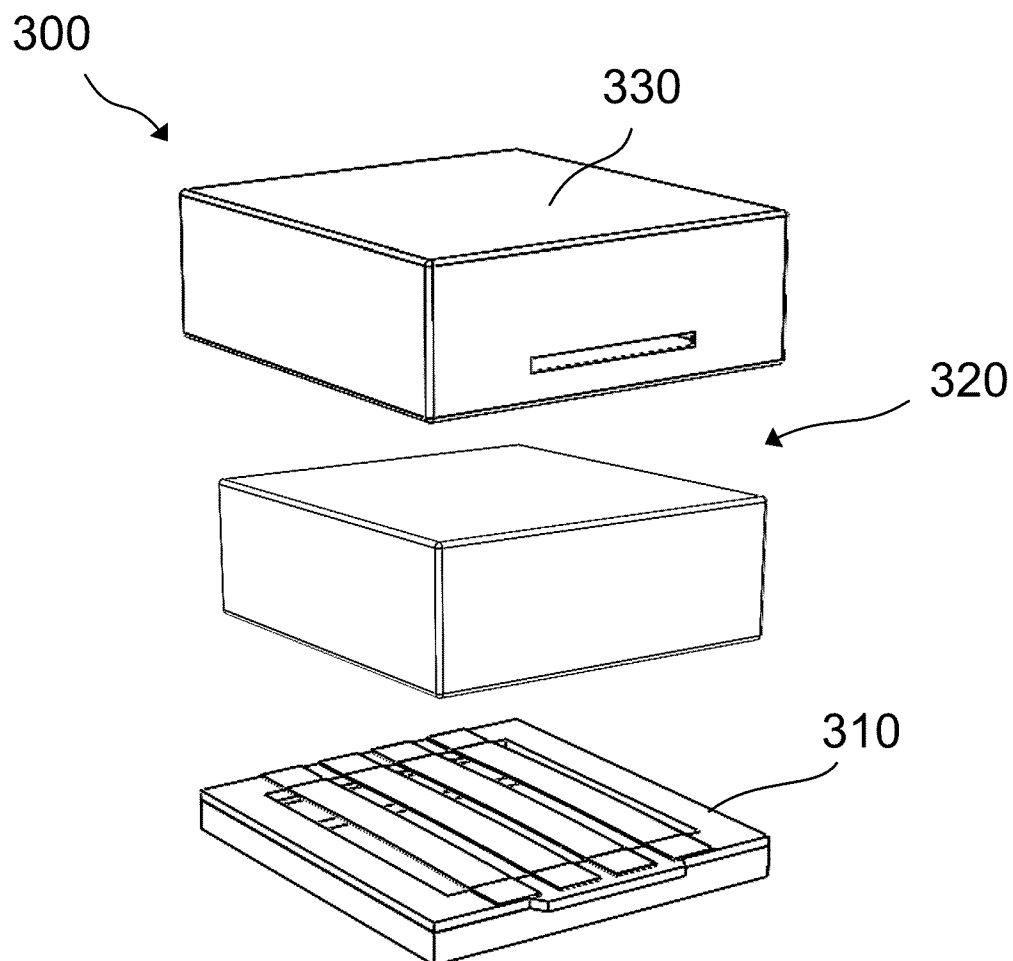


FIG. 14

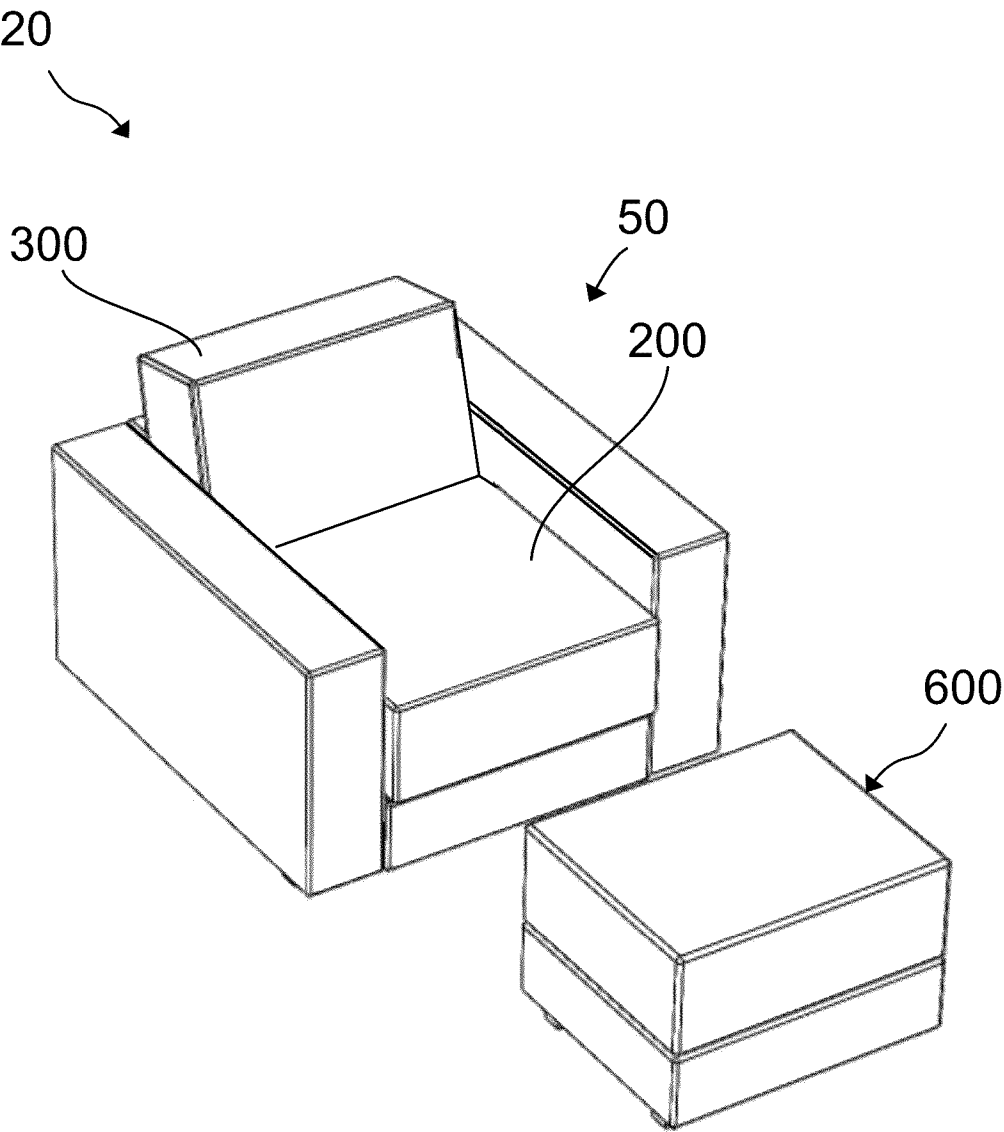


FIG. 15

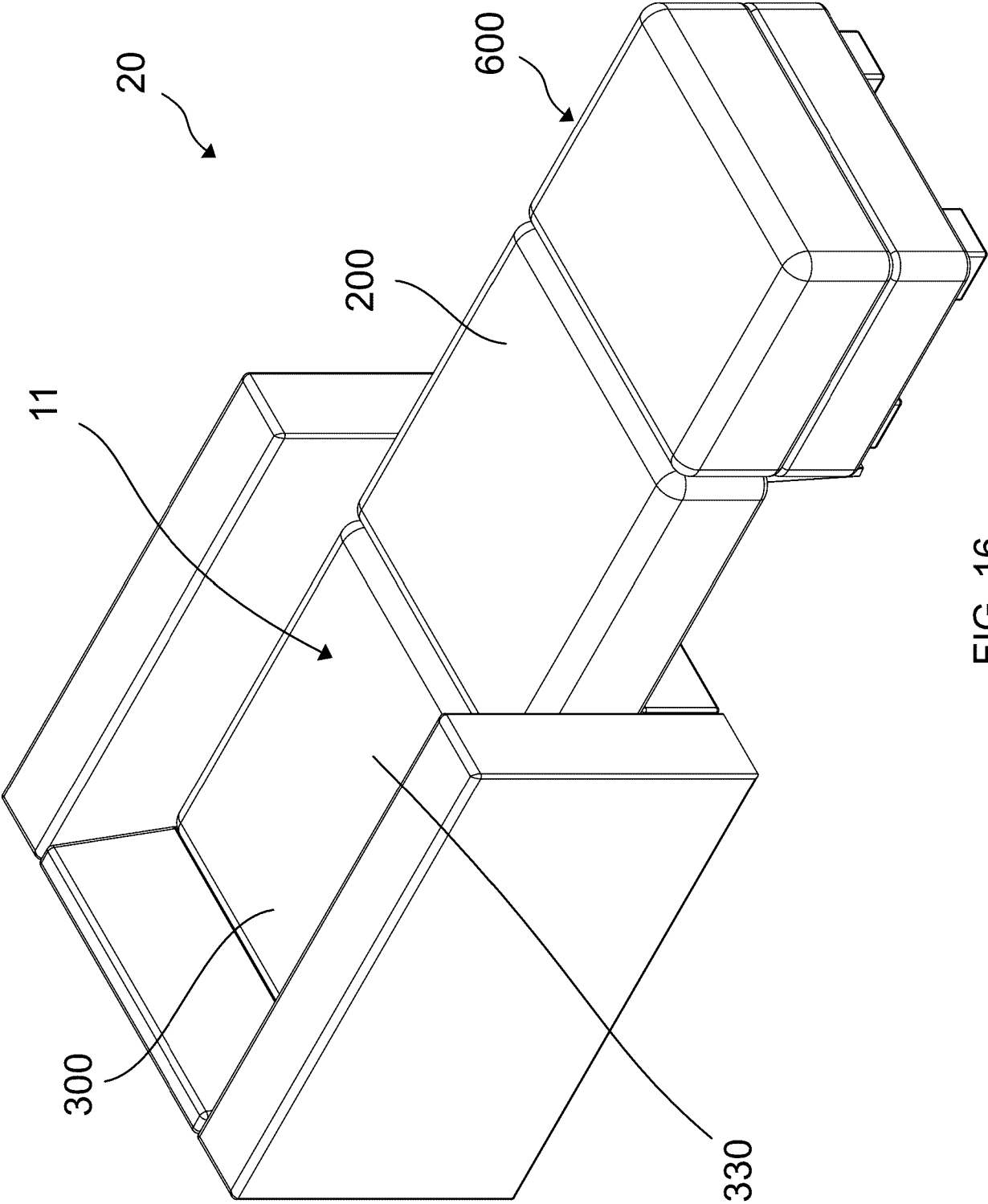


FIG. 16

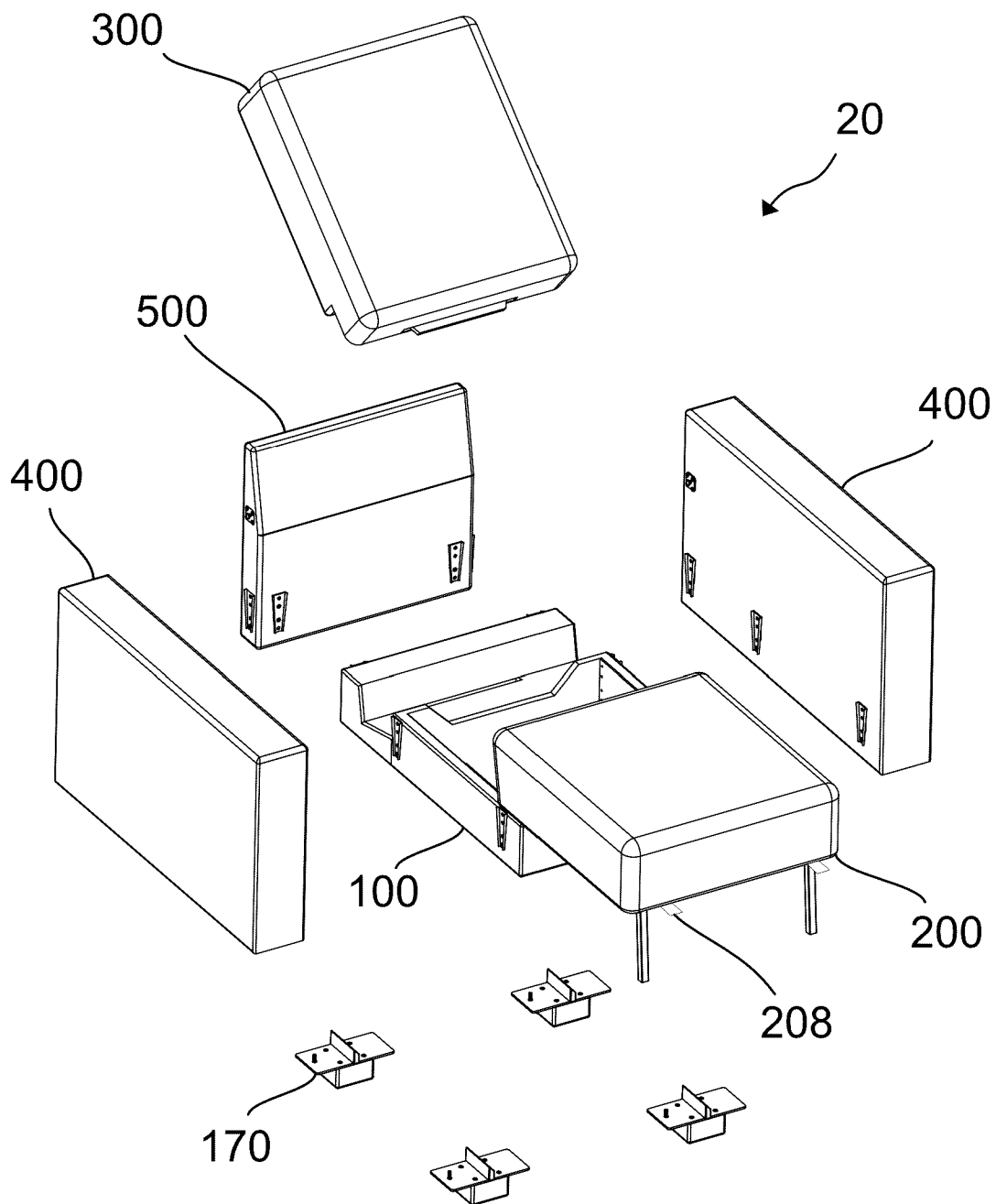


FIG. 17

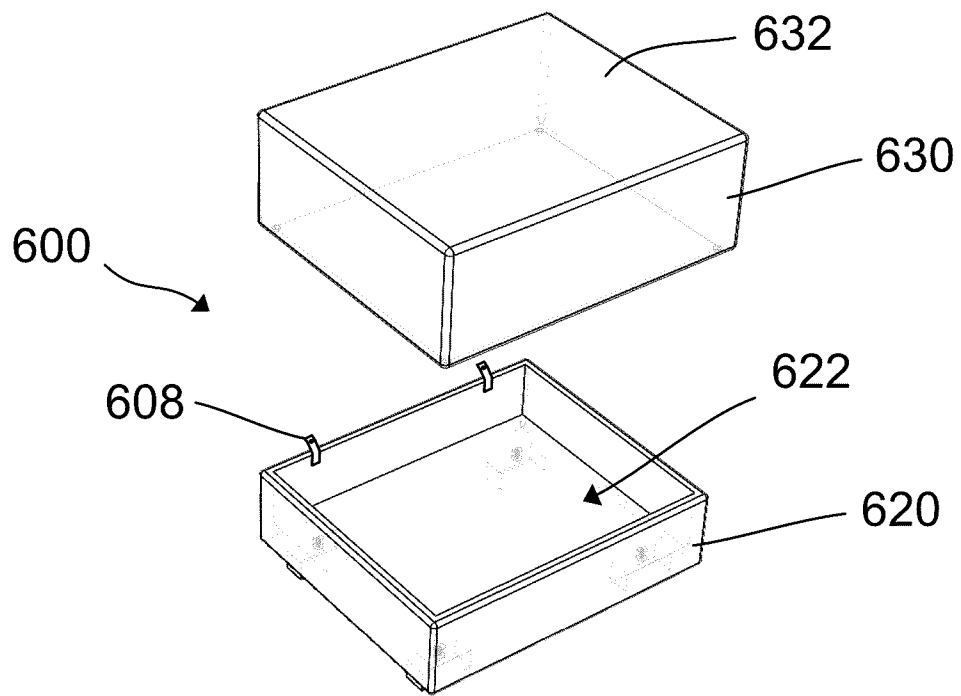


FIG. 18

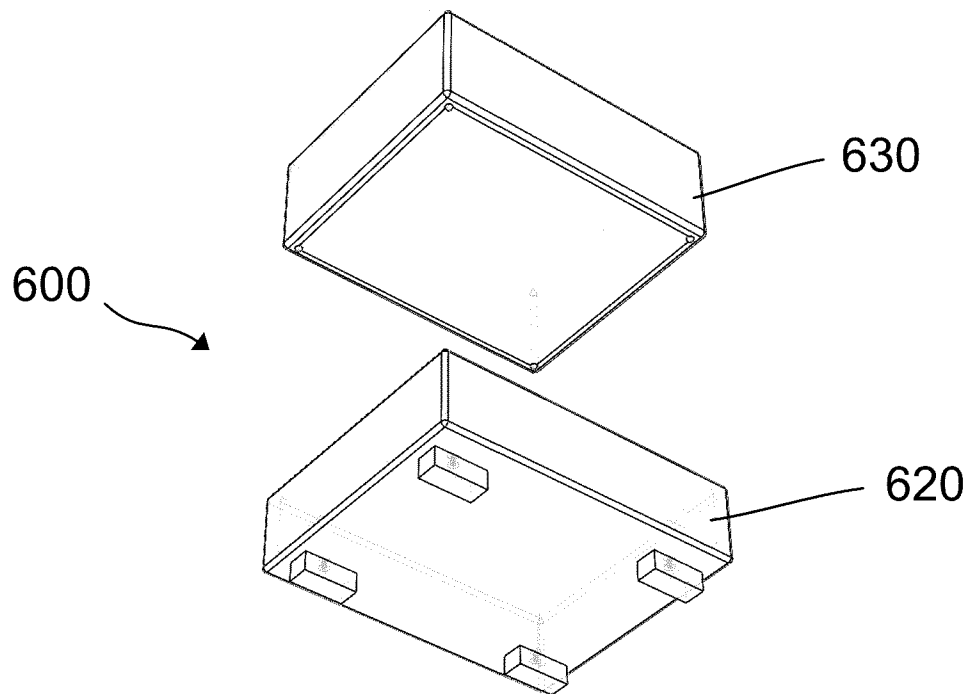


FIG. 19

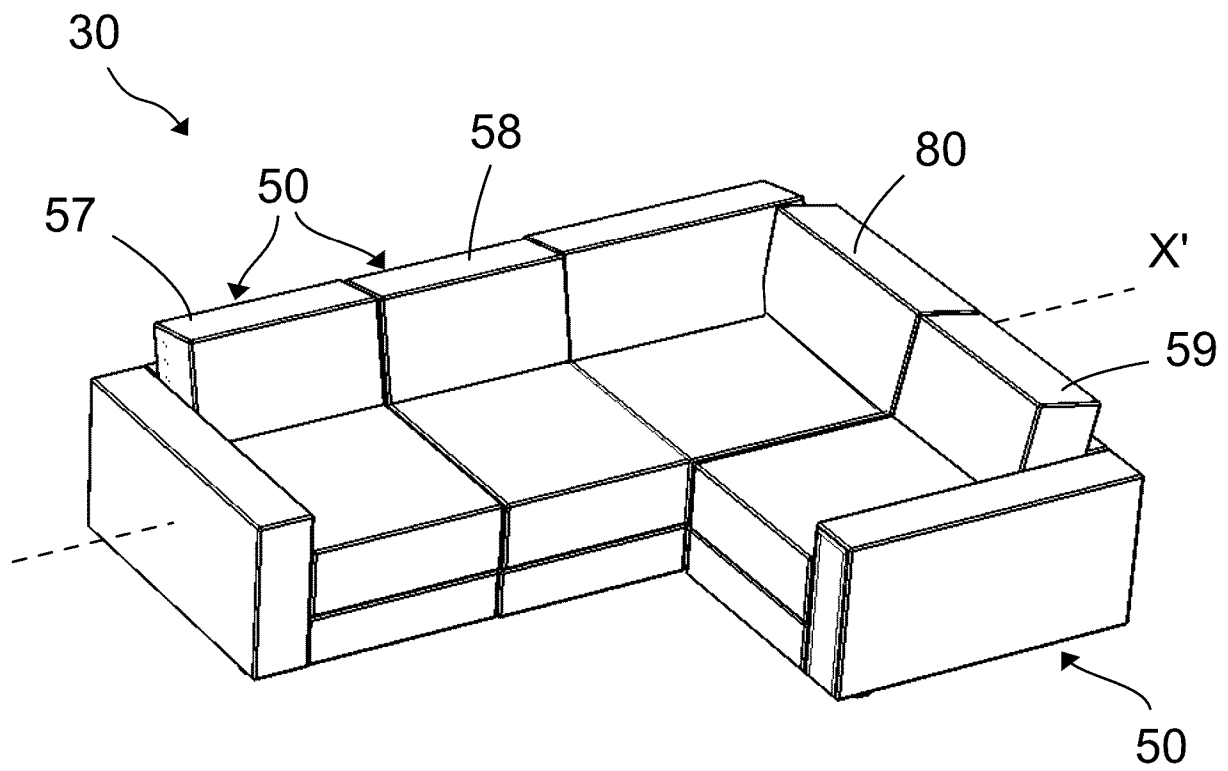


FIG. 20

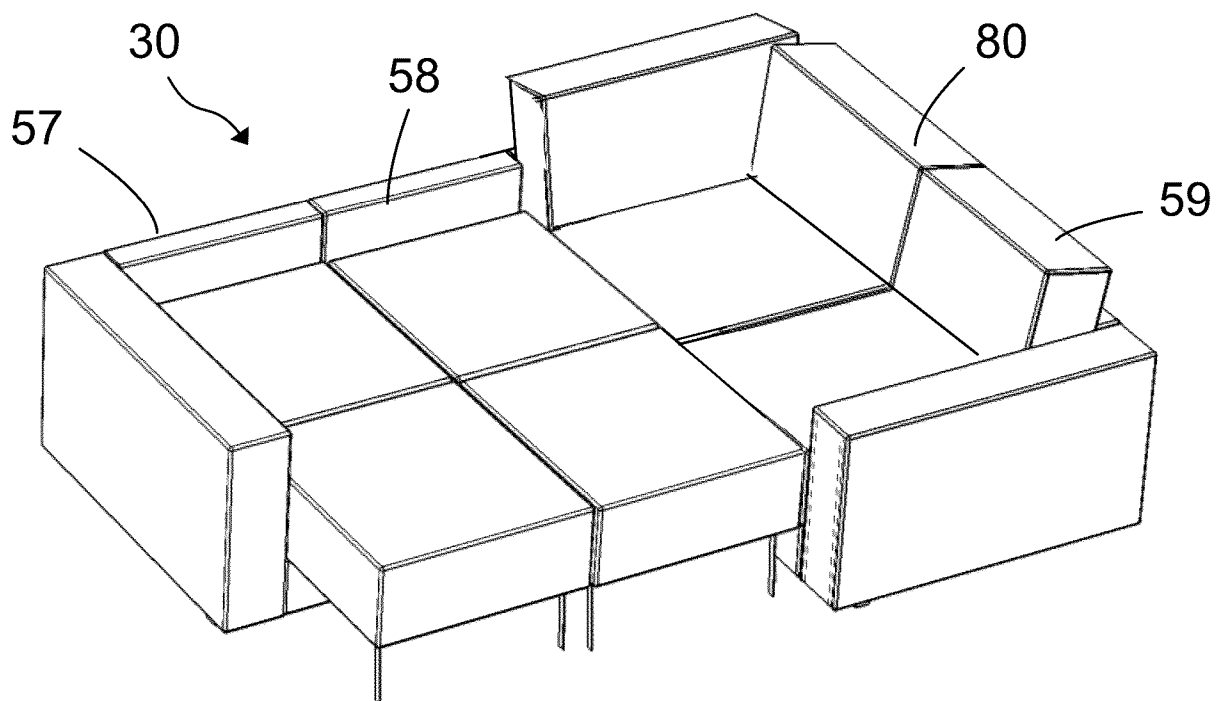


FIG. 21

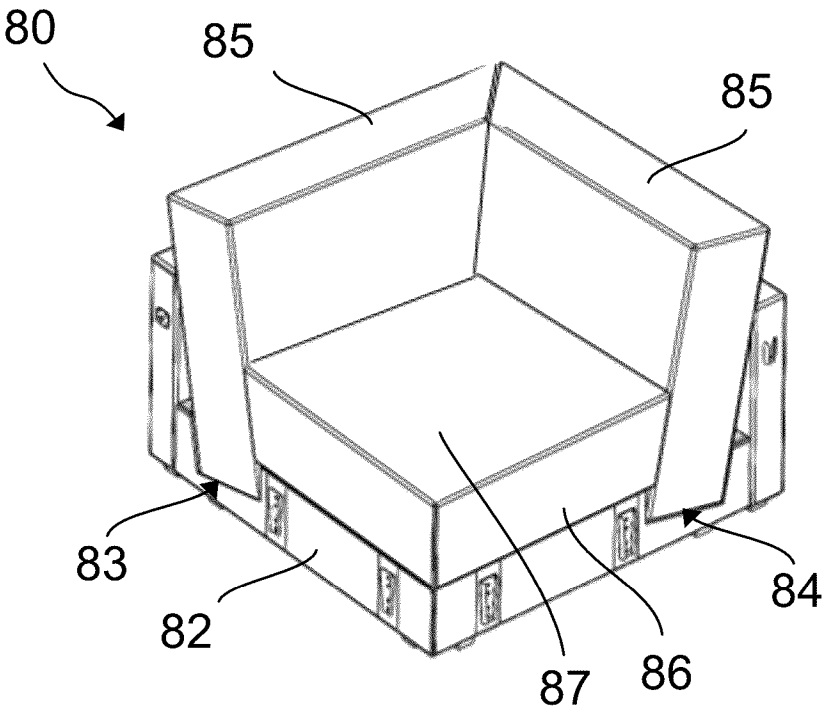


FIG. 22

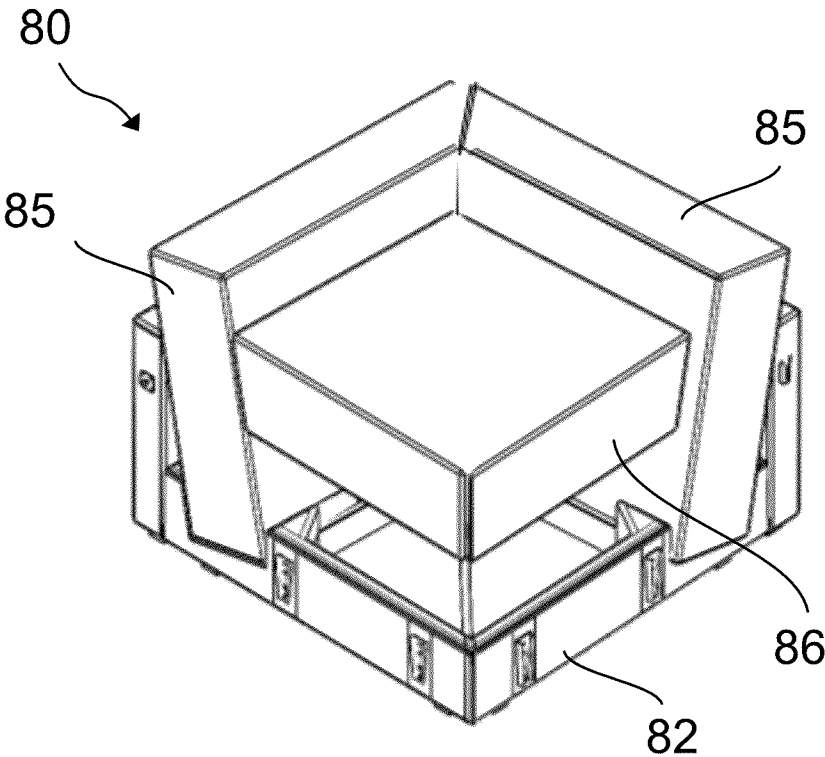


FIG. 23

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CA2024/051709

A. CLASSIFICATION OF SUBJECT MATTER

IPC: **A47C 17/175** (2006.01), **A47C 17/34** (2006.01)

CPC: A47C 17/34 (2013.01), A47C 17/1756 (2013.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: **A47C 17/175** (2006.01), **A47C 17/34** (2006.01), CPC: A47C 17/34 (2013.01), A47C 17/1756 (2013.01)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

CIB / IPC : A47C17/17, A47C17/16

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)

Questel Orbit (fampat); Keywords (modul+, foot+ or +stool)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CN207707617U LU 10 August (2018-08-10) *whole document*	1-4, 7-15, 20, 22 , 23-27, 29-30
Y	US2087574 KAUFER 20 July 1937 (1937-07-20) *whole document*	1-4, 7-15, 20, 22 , 23-27, 29-30
Y	US4321716A SHROCK 30 March 1982 (1982-03-30) *whole document*	5-6
Y	US2793685A SPITZ 28 May 1957 (1957-05-28) *whole document*	16, 18-19, 21, 28

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* "A" "D" "E" "L" "O" "P"	Special categories of cited documents: document defining the general state of the art which is not considered to be of particular relevance document cited by the applicant in the international application earlier application or patent but published on or after the international filing date document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) document referring to an oral disclosure, use, exhibition or other means document published prior to the international filing date but later than the priority date claimed	"T" "X" "Y" "&"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art document member of the same patent family
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Date of the actual completion of the international search
17 March 2025 (17-03-2025)Date of mailing of the international search report
22 April 2025 (22-04-2025)Name and mailing address of the ISA/CA
Canadian Intellectual Property Office
Place du Portage I, C114 - 1st Floor, Box PCT
50 Victoria Street
Gatineau, Quebec K1A 0C9
Facsimile No.: 819-953-2476

Authorized officer

Jarret Diggins (819) 639-7846

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CA2024/051709

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US2003167566A1, INAGAKI 11 September 2003 (200-09-11) *whole document*	31-32
A	ES1075781U, 02 December 2011 (02-12-2011) *footstools*	33-44

INTERNATIONAL SEARCH REPORTInternational application No.
PCT/CA2024/051709**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of the first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claim Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Group A: Claims 1-32 are directed towards adjacent modular sofa beds having laterally offset seating components.

Group B: Claims 33-44 are directed towards sofa beds having laterally offset seating components with a footstool adapted to be positioned against the shifted seating component to make a 3rd portion of a bed.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claim Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claim Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CA2024/051709

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s)	Publication Date
CN207707617U	10 August 2018 (10-08-2018)	None	
US2087574A	20 July 1937 (20-07-1937)	None	
US4321716A	30 March 1982 (30-03-1982)	None	
US2793685A	28 May 1957 (28-05-1957)	None	
US2003167566A1	11 September 2003 (11-09-2003)	US6848127B2 CN1442103A CN1223299C EP1342436A2 EP1342436A3 JP2003259939A KR20030074029A	01 February 2005 (01-02-2005) 17 September 2003 (17-09-2003) 19 October 2005 (19-10-2005) 10 September 2003 (10-09-2003) 10 December 2003 (10-12-2003) 16 September 2003 (16-09-2003) 19 September 2003 (19-09-2003)
ES1075781U	02 December 2011 (02-12-2011)	ES1075781Y	29 February 2012 (29-02-2012)