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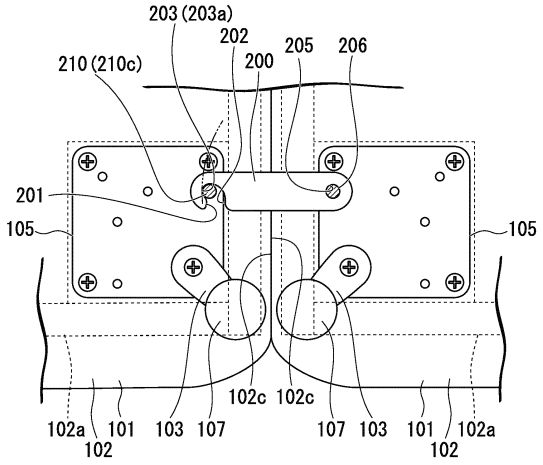
(54) FURNITURE SYSTEM

(57) A furniture system includes multiple furniture items (101) which are disposed to be adjacent to each other and a connection plate (200) which connects the multiple furniture items (101) to each other. At least one of two furniture items (101) adjacent to each other includes an elastically deformable cushion portion (102c) on an outer surface thereof facing the other of the two furniture items (101) adjacent to each other. The connection plate (200) includes connection portions (201, 205) which are connected to each of furniture items (101) on both end portions of the connection plate, and the connection portion (201) of at least a first end portion of the connection plate (200) can engage with and disengage from the furniture items (101) in a state where the cushion portion (102c) is compressively deformed in a direction in which the two furniture items (101) adjacent to each other approach each other, and an engagement state of the connection portion (201) with respect to the furniture items (101) is maintained in a state where the compressively deformed cushion portion (102c) is deformed in a direction in which the cushion portion returns to the original shape.

FIG. 21



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Description

Technical Field

[0001] The present invention relates to a furniture system which includes multiple furniture items such as sofas.

[0002] Priority is claimed on Japanese Patent Application No. 2014-017383, filed January 31, 2014, the content of which is incorporated herein by reference.

Background Art

[0003] Multiple furniture items such as sofas may be arranged and installed on a floor (for example, refer to Patent Document 1). In addition, in a case where a table or a cabinet is installed so as to be adjacent to sofas or the like, furniture items of multiple kinds may be arranged and installed.

[0004] For example, in a case of a sofa, the surface of the sofa is covered with a soft cushion. If a user sits on the sofa, the cushion is deformed such that it bulges outside when the cushion is pressed from the upper portion thereof. Accordingly, in a case where other sofas or furniture items are installed to be adjacent to the sofa without a gap therebetween, the adjacent other sofas or furniture items are pressed in a longitudinal direction by the outwardly bulged cushion, and the positions thereof may deviate.

[0005] Therefore, a method is used, in which a plate is provided on the lower surface of a sitting portion of a sofa, and the sofa and other sofas or furniture items are connected to each other by bolt-tightening a connection metal fitting to the plate.

[0006] In addition, Patent Document 1 discloses a configuration in which a belt-shaped connection member is provided on one sofa, and a connected member to which the connection member is locked is provided on another sofa.

Citation List

Patent Literature

[0007] [Patent Document 1] Japanese Unexamined Patent Application, First Publication No. 2013-94405

Summary of Invention

Technical Problem

[0008] However, bolt-tightening the connection metal fitting takes much labor.

[0009] In addition, in a furniture item such as a sofa, there may not be a sufficient gap below the lower surface of the sitting portion, and it may be difficult to bolt-tighten the connection metal fitting to the lower surface of the sitting portion. If a furniture item such as a sofa is dropped down sideways or is vertically inverted, a bolt-fastening operation is easily performed. However, in a case where the furniture item is heavy or the furniture item may be damaged if the furniture item is vertically inverted, it may be difficult to make the furniture item drop down sideways or to vertically invert the furniture item.

[0010] In addition, in the case where the connection member is locked to the connected member like in Patent Document 1, when the positions of the sofas have deviated, the locking between the connection member and the connected member may be released.

[0011] Accordingly, an object of the present invention is to provide a furniture system in which furniture items may be connected easily and reliably and positional deviation of the furniture items is prevented.

Solution to Problem

[0012] The present invention adopts the following means in order to solve the above-described problems.

[0013] According to an aspect of the present invention, a furniture system includes: multiple furniture items which are disposed to be adjacent to each other; and a connection member which connects the multiple furniture items to each other, in which at least one of two furniture items adjacent to each other includes an elastically deformable cushion portion on an outer surface thereof facing the other of the two furniture items adjacent to each other, the connection member includes connection portions which are connected to each of the furniture items on both end portions of the connection member, and the connection portion of at least a first end portion of the connection member can engage with and disengage from the furniture items in a state where the cushion portion is compressively deformed in a direction in which the two furniture items adjacent to each other approach each other, and an engagement state of the connection portion with respect to the furniture items is maintained in a state where the compressively deformed cushion portion is deformed in a direction in which the cushion portion returns to the original shape.

[0014] In the furniture system, in order to connect the two furniture items adjacent to each other with the connection member, the two furniture items adjacent to each other are pressed in a direction in which the two furniture items approach each other and the cushion portion is compressively deformed. Accordingly, the connection portion of at least a first end portion of the connection member can engage with the furniture item.

[0015] In this way, after the connection portion of the connection member engages with the furniture item, pressing between the furniture items is released. Therefore, the compressively deformed cushion portion is deformed in the direction in which the cushion portion returns to the original shape. As a result, the engagement state of the connection portion with respect to the furniture items is maintained. Accordingly, the two furniture items are connected to each other.

[0016] In addition, in order to release the connection

between the two furniture items, the two furniture items adjacent to each other are pressed in a direction in which the two furniture items approach each other and the cushion portion is compressively deformed. Accordingly, the connection portion of at least the first end portion of the connection member can be disengaged from one of the furniture item.

[0017] In this way, it is possible to connect the furniture items to each other without performing a bolt fastening operation.

[0018] In addition, an engagement member with which the connection member engages may be provided on one of the furniture items adjacent to each other, the connection portion may include an insertion portion into which the engagement member is inserted in a state where the cushion portion is compressively deformed in the direction in which the two furniture items adjacent to each other approach each other, and an engagement portion which is formed to be continuous to the insertion portion, is open with respect to the insertion portion in a direction in which the furniture items are separated from each other, and engages with the engagement member.

[0019] According to this configuration, the engagement member can be inserted into the insertion portion in the state where the cushion portion is compressively deformed in the direction in which the two furniture items adjacent to each other approach each other. Accordingly, the connection member can engage with and disengage from one of the furniture item.

[0020] Moreover, if the compressively deformed cushion portion is deformed in the direction in which the cushion portion returns to the original shape, the engagement member engages with the engagement portion, which is open in the direction in which the furniture items are separated from each other, rather than with the insertion portion. Accordingly, the engagement state of the connection member with respect to one of the furniture items is maintained.

[0021] In addition, a second end portion of the connection member may be rotatably connected to the other of the furniture items which is adjacent thereof.

[0022] According to this configuration, it is possible to connect the two furniture items adjacent to each other by rotating the connection member.

[0023] In addition, in a state where the connection between the furniture items is released, since the connection member is connected to the other of the two furniture items which is adjacent thereof, it is not necessary to prepare a separate connection member.

[0024] The engagement member may include a displacement allowance portion which engages with the furniture item in a state where the connection member can be displaced in a height direction of the furniture item.

[0025] According to this configuration, even in a case where the height levels of the furniture items adjacent to each other are different from each other due to unevenness of a floor surface, it is possible to connect the furniture items to each other with the connection member.

[0026] The furniture item may include a furniture main body, and a leg portion by which the furniture main body stands on a floor surface, and the connection member may be disposed on a lower surface of the furniture main body.

[0027] According to this configuration, a gap exists between the lower portion of the furniture main body supported by the leg portion and the floor surface. Therefore, the connection operation of the furniture items with the connection member can be easily performed by allowing a hand to enter the gap between the furniture main body and the floor surface.

[0028] The connection member may be disposed on a base portion of the leg portion.

[0029] Accordingly, it is possible to cause the furniture items adjacent to each other to approach each other by gripping the leg portions of both furniture items. Therefore, it is possible to easily perform the connection operation between the furniture items with the connection member.

[0030] At least one of the furniture items adjacent to each other may be a sofa.

[0031] Accordingly, it is possible to easily and reliably connect a sofa in which the outer surface has the cushion portion to other sofas or other furniture items.

Advantageous Effects of Invention

[0032] According to the furniture system of the present invention, it is possible to easily and reliably connect furniture items to each other and prevent positional deviation of the furniture items.

Brief Description of Drawings

[0033]

FIG. 1 is a front view showing a sofa system according to the present embodiment.

FIG. 2 is a bottom view of the sofa system.

FIG. 3 is a side view of a sofa configuring the sofa system.

FIG. 4 is a perspective deployment view showing a configuration of a panel body in the present embodiment.

FIG. 5 is a half sectional view in an intermediate portion in a plate thickness direction of the panel body.

FIG. 6 is a top view showing an end portion of the panel body.

FIG. 7 is a sectional view showing a structure of a linear portion of the panel body.

FIG. 8 is a sectional view showing a structure of a corner portion of the panel body.

FIG. 9A is a sectional view showing a cushion material which is provided along a surface of a panel base material and in which a skin material is not mounted.

FIG. 9B is a sectional view showing the cushion ma-

terial which is provided along the surface of the panel base material and in which a skin material is mounted.

FIG. 10 is a side view showing a connection portion of the panel body with respect to the upper portion of a back rest plate of the sofa.

FIG. 11 is a sectional view showing a structure of a connection portion between the sofa and the panel body.

FIG. 12 is a perspective view of an appliance upper connection bracket which connects the sofa and the panel body.

FIG. 13 is a perspective view of an appliance lower connection bracket which connects the sofa and the panel body.

FIG. 14 is a perspective view showing an example of a connection structure in a support leg body which is provided on a corner of the lower portion of the panel body.

FIG. 15 is a sectional view showing a connection structure of the lower portions of the panel bodies.

FIG. 16 is a perspective view showing an example of a connection structure of the upper portions of the panel bodies.

FIG. 17 is a front view showing a connection portion of the leg portions on the front portions of the sofas adjacent to each other.

FIG. 18 is a plan view showing a connection plate.

FIG. 19 is a side view showing an engagement member.

FIG. 20A is a view showing a flow when the leg portions of the sofas adjacent to each other are connected to each other, and is a view showing a state before the connection plate is rotated.

FIG. 20B is a view showing a flow when the leg portions of the sofas adjacent to each other are connected to each other, and is a view showing a state immediately before a connection portion of the connection plate engages with the engagement member.

FIG. 21 is a view showing a state where the connection portion of the connection plate engages with the engagement member so as to connect the sofas to each other.

FIG. 22 is a plan view showing a modification example of the connection plate.

FIG. 23 is a view showing a modification example of a lower connection member which connects the panel bodies to each other.

Description of Embodiments

[0034] Hereinafter, embodiments for embodying a furniture system according to the present invention are described with reference to the accompanying drawings.

[0035] FIG. 1 is a front view showing a sofa system according to the present embodiment. FIG. 2 is a bottom view showing the sofa system. FIG. 3 is a side view of a sofa configuring the sofa system.

[0036] As shown in FIGS. 1 to 3, a sofa system (furniture system) 100 includes multiple sofas (furniture items) 101 which are disposed to be adjacent to each other, and a connection plate (connection member) 200 which connects the sofas 101 adjacent to each other.

(Sofa)

[0037] Each sofa 101 includes a seat surface portion (furniture main body) 102 on which a user sits, leg portions 103 which supports the seat surface portion 102, and a backrest portion 104 which is provided on first end side of the seat surface portion 102.

[0038] The seat surface portion 102 includes a frame 102a which is formed in a rectangular shape in a plan view below the seat surface portion 102, and a cushion portion 102c which is provided so as to cover the frame 102a and is formed in a rectangular parallelepiped having an approximately square shape in a plan view, for example. Here, the cushion portion 102c is provided to cover the outer surfaces in four directions around the frame 102a. The cushion portion 102c is formed of an elastically deformable material such as urethane foam, and is covered with a skin material or the like.

[0039] The leg portions 103 are provided on four corners of the lower surface of the seat surface portion 102. Each of the leg portions 103 includes a base plate 105 which is fixed to the lower surface of the seat surface portion 102, a support leg 106 which extends from the base plate 105 toward the lower portion, and an adjuster 107 for adjusting a height level which is provided on the lower end portion of the support leg 106.

[0040] The backrest portion 104 includes a back rest plate 108 which is provided on the rear portion of the sofa 101, and a back rest cushion 109 which is disposed on the seat surface portion 102.

[0041] The back rest plate 108 is integrally fixed to the rear surface of the seat surface portion 102.

[0042] The back rest cushion 109 may be fixed to the seat surface portion 102 or the back rest plate 108, or may be placed on only the seat surface portion 102.

[0043] In addition, a panel body 11 is mounted on the rear surface of the back rest plate 108.

(Panel Body)

[0044] FIG. 4 is a perspective deployment view showing the configuration of the panel body in the present embodiment. FIG. 5 is a half sectional view in an intermediate portion in a plate thickness direction of the panel body. FIG. 6 is a top view showing an end portion of the panel body. FIG. 7 is a sectional view showing a structure of a linear portion of the panel body. FIG. 8 is a sectional view showing a structure of a corner portion of the panel body.

[0045] As shown in FIG. 4, the panel body 11 includes a panel base material (base material) 12, cushion mate-

rials (flexible materials) 13 which are provided on both surfaces of the panel base material 12, skin materials 14 which cover the panel base material 12 and the cushion materials 13, and fixing members 30.

[0046] The panel body 11 is formed in a flat plate shape, an approximate L shape in which an intermediate portion is bent or curved when viewed in a plan view or in a side view, an approximate C shape in a plan view in which the entirety is curved, or the like according to the shape of an installed appliance or the like. Hereinafter, a case where the panel body 11 is formed in a flat plate shape is described.

(Panel Base Material)

[0047] The panel base material 12 includes a panel-shaped core material 15, a frame 20 which is provided along the outer circumferential portion of the core material 15, and a base sheet 18 which is provided so as to cover both surfaces of the core material 15 and the frame 20.

[0048] For example, the core material 15 is formed of a paper based material, a resin base material, a wood based material, or the like. Preferably, the core material 15 is as lightweight as possible. Accordingly, in the present embodiment, the core material 15 is formed of a paper based material, multiple holes 15h penetrating the core material 15 in a plate thickness direction are disposed in parallel, and for example, the core material 15 has a honeycomb structure in which multiple holes 15h having hexagonal cross-sections are combined in a staggered manner.

(Frame)

[0049] As shown in FIGS. 4 and 5, the frame 20 is provided on the outer circumferential portion of the core material 15. The frame 20 includes frame materials 21 A, 21 B, 21 C, and 21 D which are provided along four sides of the core material 15. Each of the frame materials 21A, 21B, 21C, and 21D is formed of a metal based material, a resin based material, or the like.

[0050] The frame materials 21A and 21B extend in a vertical direction along two sides facing each other in the core material 15 and are provided on both sides in the width direction of the panel body 11. The frame materials 21C and 21 D extends in a horizontal direction so as to be orthogonal to the frame materials 21A and 21B and are provided on both sides in the vertical direction of the panel body 11. The frame materials 21 A and 21 B and the frame materials 21C and 21 D are joined to each other via L-shaped brackets 22 by bolts 23, welding, bonding, or the like. The frame 20 having a rectangular shape as a whole is formed by the frame materials 21A, 21B, 21C, and 21D.

[0051] As shown in FIGS. 6 to 8, each of the frame materials 21A, 21B, 21C, and 21D is formed in an approximately U-shaped cross-section which includes a base portion 21e which faces an outer circumferential end surface 15a of the inner circumferential side core material 15 of the frame 20, and side wall portions 21f which rises from both sides in the width direction of the base portion 21 e toward the outer circumferential side of the frame 20. Accordingly, a groove 25 is formed in a portion which is surrounded by the base portion 21e, and both side wall portions 21f and 21f.

[0052] Meanwhile, the panel base material 12 is continuous along the outer circumferential end portion thereof, and includes the groove 25 which is recessed toward the inner portion of the panel base material 12.

[0053] Here, as shown in FIG. 5, in the L-shaped bracket 22, a first plate portion 22a which is provided on the end portion of the frame material 21A or 21B along the frame material 21 A or 21B, a second plate portion 22b which is orthogonal to the first plate portion 22a and is provided on the end portion of the frame material 21C or 21D along the frame material 21C or 21 D, and a rib portion 22c which is provided on the inside in the bending direction of the L-shaped bracket 22 along the first plate portion 22a and the second plate portion 22b are integrally formed.

[0054] Female screw portions 29 are formed on the first plate portion 22a and the second plate portion 22b of the L-shaped bracket 22. In addition, through holes 28 are formed on each of the base portion 21e of the frame material 21A or 21B along the first plate portion 22a of the bracket 22 and the base portion 21e of the frame material 21C or 21D along the second plate portion 22b at positions facing the female screw portions 29. The female screw portions 29 and the through holes 28 are optional member attachment portions which attach various optional members exemplified below.

[0055] The rib portion 22c is orthogonal to the first plate portion 22a and the second plate portion 22b from the first plate portion 22a and the second plate portion 22b and is formed so as to protrude toward the inner circumferential side of the panel body 11. The rib portions 22c is formed on each of both sides in the width direction of the first plate portion 22a and the second plate portion 22b, that is, each of a first surface side and a second surface side of the panel body 11.

[0056] The rib portion 22c functions as not only a reinforced member which increases bending strength of the first plate portion 22a and the second plate portion 22b but also functions as a pressing member of corners of the core material 15. Accordingly, the core material 15 is interposed between the rib portions 22c which are provided on the first surface side and the second surface side of the panel base material 12. That is, in the panel base material 12, the core material 15 can be held inside the frame 20 by providing the brackets 22 on the four corners.

[0057] As shown in FIGS. 7 and 8, the sheet-shaped base sheets 18 are provided on both surfaces of the core material 15 so as to cover the frame 20 and the core material 15. For example, the base sheet 18 is formed

of cardboard or the like. External dimensions of the base sheet 18 are greater than those of the core material 15, and the outer circumferential portion 18a of the base sheet 18 is bonded to the surface 20f of the frame 20 by a bonding agent or the like.

(Cushion Material)

[0058] The cushion material 13 is provided along the base sheet 18 which forms the surface of the panel base material 12. The cushion material 13 is provided so as to the entire core material 15 via the base sheet 18. In addition, the cushion material 13 is provided such that an outer circumferential end portion 13s of the cushion material 13 covers a side wall portion 21f of each of the frame materials 21A, 21B, 21C, and 21D which configure the frame 20. That is, the cushion material 13 is provided so as to cover the core material 15 and the frame 20.

[0059] For example, the cushion material 13 is formed of a material having flexibility and elasticity such as a foamed urethane material.

[0060] FIGS. 9A and 9B are sectional views showing the cushion material 13 which is provided along the surface of the panel base material 12, FIG. 9A is a sectional view of the cushion material 13 in a state where a skin material 14 is not mounted, and FIG. 9B is a sectional view of a cushion material 13 in a state where the skin material 14 is mounted.

[0061] As shown in FIG. 4, multiple through holes 16 are formed in the cushion material 13. For example, each of the through holes 16 is formed in an elliptical shape which has a vertical direction as a longitudinal direction. In addition, the multiple through holes 16 are arranged on an outer surface 13f of the cushion material 13 at intervals therebetween in the vertical direction and the horizontal direction orthogonal to the vertical direction.

[0062] As shown in FIGS. 7, 9A, and 9B, each through hole 16 is formed to penetrate the cushion material 13 in the thickness direction of the cushion material 13 from the outer surface 13f facing the side opposite to the panel base material 12 in the cushion material 13 to an opposing surface 13g facing the panel base material 12 side. As shown in FIG. 9A, each through hole 16 is formed such that an inner circumferential surface 16f of the through hole 16 is orthogonal to the outer surface 13f. Accordingly, corners 16v are formed on the circumferential edges of the through holes 16.

[0063] By providing the cushion material 13 having the through holes 16 formed as described above on the surface of the panel base material 12, uneven shapes having the corners 16v are formed on the surface of the panel base material 12.

(Skin Material)

[0064] As shown in FIGS. 7, 9A, and 9B, the skin material 14 is provided to cover the entire cushion material 13. The skin material 14 is bonded along the outer surface 13f of the cushion material 13, the inner circumferential surface 16f orthogonal to the outer surface 13f in the through hole 16, and an exposed surface 18f of the base sheet 18 exposed to the bottom portion of the through hole 16. In this way, since the skin material 14 is provided along the multiple through holes 16 formed in the cushion material 13, multiple elliptical (uneven portions) recess portions 17 are formed on the surface of the panel body 11. In addition, in each recess portion 17, the skin material 14 is bonded to the base sheet 18 which forms the surface of the panel base material 12 via the through hole 16.

[0065] Here, for example, the skin material 14 is formed of an elastically deformable material such as polyester, and covers the cushion material 13 and the panel base material 12 in an extended state. In the cushion material 13, the corner 16v which protrudes toward the outside in the circumferential edge of the through hole 16 on the outer surface 13f is pressed toward the inside by the skin material 14. Accordingly, the cushion material 13 is elastically deformed in a compression direction in the corner 16v, and the corner 16v of the through hole 16 has an arc-shaped cross section.

[0066] In addition, as shown in FIGS. 7 and 8, external dimensions of the cushion material 13 and the skin material 14 are greater than the external dimension of the panel base material 12. In addition, the outer circumferential end portions 13e and 14e of the cushion material 13 and the skin material 14 wrap around the outer circumferential edge portion of the panel base material 12, that is, the side wall portion 21f of each of the frame materials 21A, 21B, 21C, and 21D, and are rolled inside the groove 25. The cushion material 13 is compressed by the skin material 14 by the portion of the side wall portion 21f of each of the frame materials 21A, 21B, 21C, and 21D wrapped around by the outer circumferential end portions 13e and 14e of the cushion material 13 and the skin material 14. Accordingly, the panel body 11 is formed such that the thickness thereof gradually decreases toward the outer circumferential end portion 11s. In addition, the panel body 11 is roundly formed in an arc shape by the portion of the side wall portion 21f of each of the frame materials 21A, 21B, 21C, and 21D wrapped around by the cushion material 13 and the skin material 14 in the outer circumferential end portion 11s.

[0067] The cushion material 13 and the skin material 14 configure a skin structure.

(Fixing Member)

[0068] The fixing member 30 is fitted into the groove 25. The outer circumferential end portions 13e and 14e of the cushion material 13 and the skin material 14 rolled into the groove 25 are interposed between the inner circumferential surface of the groove 25 and the outer circumferential surface of the fixing member 30 by the fixing member 30. Accordingly, the outer circumferential end portions 13e and 14e of the cushion material 13 and the

skin material 14 are fixed to the side wall portion 21f of the frame 20.

[0069] Here, as shown in FIG. 4, the fixing member 30 includes linear portion fixing members 30S which are disposed on linear portions 12S of the outer circumferential portion of the rectangular panel base material 12, and corner portion fixing members 30C which are disposed on corner portions 12C of the outer circumferential portion of the rectangular panel base material 12.

[0070] As shown in FIG. 7, each of the linear portion fixing members 30S includes side plate portions 31 and 31 in which sectional shapes thereof orthogonal to the direction in which the linear portion fixing member 30S is continuous are parallel to each other, and a connection plate portion 32 which integrally connects the side plate portions 31 and 31 to each other.

[0071] The outer circumferential end portions 13e and 14e of the cushion material 13 and the skin material 14 are interposed between the side wall portions 21f configuring the groove 25 of the frame 20 by the side plate portions 31 and 31. Accordingly, the gap between the side plate portions 31 and 31 is formed to be smaller than the gap of the side wall portions 21f and 21f of the groove 25 by predetermined dimensions. The side plate portions 31 and 31 are formed such that distal end portions 31a and 31 a come into contact with the base portion 21e of the groove 25 when the linear portion fixing member 30S is fitted into the groove 25.

[0072] The connection plate portion 32 is formed to be offset in a direction of being further separated from the base portion 21e of the groove 25 relative to the distal end portions 31 a and 31 a of the side plate portions 31 and 31. Accordingly, the linear portion fixing member 30S has an approximately H-shaped cross section formed by the side plate portions 31 and 31 and the connection plate portion 32. In addition, in a state where the linear portion fixing member 30S is fitted into the groove 25, a space S1 is formed in a portion which is surrounded by the distal end portions 31a and 31a sides of the side plate portions 31 and 31, the connection plate portion 32, and the base portion 21e of the groove 25. The space S1 functions as an accommodation space which can accommodate surplus portions of the outer circumferential end portions 13e and 14e of the cushion material 13 and the skin material 14 rolled into the groove 25, that is, distal end portions (not shown) rather than the portions which come into contact with the base portion 21e of the frame 20 in the outer circumferential end portions 13e and 14e.

[0073] In addition, protrusions 33 and 33 are formed on sides facing the side wall portions 21f and 21f of the groove 25 in the side plate portions 31 and 31. The protrusions 33 and 33 are bitten into the outer circumferential end portions 13e and 14e of the cushion material 13 and the skin material 14 which are interposed between the side plate portions 31 and 31 and the side wall portions 21f and 21f. Accordingly, the linear portion fixing member 30S prevents the cushion material 13 and the skin material 14 from being extracted from the groove 25.

[0074] In addition, in the side plate portions 31 and 31, protrusion pieces 34 and 34 which protrude inside from the side plate portions 31 and 31 are formed on sides further separated from the base portion 21e of the groove 25 relative to the connection plate portion 32. In addition, a holding groove 35 is formed, which is surround by the protrusion pieces 34 and 34, the side plate portions 31 and 31, and the connection plate portion 32 and serves as an optional member attachment portion.

[0075] As shown in FIG. 5, the corner portion fixing member 30C which is disposed on the upper corner portion of the panel body 11 is formed in an approximately L shape which includes a first linear portion 38A which vertically extends, and a second linear portion 38B which is bent from the upper end of the first linear portion 38A and horizontally extends.

[0076] The first linear portion 38A is fitted into the groove 25 on the upper end portion of the frame material 21A or the frame material 21B which vertically extends. The second linear portion 38B is formed so as to be continuous from one end of the first linear portion 38A, and is fitted into the groove 25 on both end portions of the frame material 21C or the frame material 21 D. In this way, the groove 25 is continuously formed on the upper surface and both side surfaces of the base material 21, and the corner portion fixing member 30C is provided on the portion in which the upper surface groove 25 and both side surface grooves 25 are continuous to each other.

[0077] As shown in FIG. 8, each of the first linear portion 38A and the second linear portion 38B includes side plate portions 36 and 36 in which sectional shapes thereof orthogonal to the directions in which the first and second linear portions 38A and 38B are continuous are parallel to each other, and a connection plate portion 37 which integrally connects the side plate portions 36 and 36 to each other.

[0078] The outer circumferential end portions 13e and 14e of the cushion material 13 and the skin material 14 are interposed between the side wall portions 21 f and 21f configuring the groove 25 of the frame 20 by the side plate portions 36 and 36. Accordingly, the gap between the side plate portions 36 and 36 is formed to be smaller than the gap of the side wall portions 21f and 21f of the groove 25 by predetermined dimensions. The side plate portions 36 and 36 are formed such that distal end portions 36a and 36a come into contact with the base portion 21e of the groove 25 when the corner portion fixing member 30C is fitted into the groove 25.

[0079] Herein, in the side plate portions 36 and 36, protrusion portions 36t and 36t are formed on the sides facing the side wall portions 21f and 21f of the groove 25. The outer circumferential end portions 13e and 14e of the cushion material 13 and the skin material 14 are interposed between the side plate portions 31 and 31 and the side wall portions 21f and 21f by the protrusion portions 36t and 36t.

[0080] The connection plate portion 37 is formed to be

offset in a direction of being further separated from the base portion 21e of the groove 25 relative to the distal end portions 36a and 36a of the side plate portions 36 and 36. Accordingly, the corner portion fixing member 30C has an approximately H-shaped cross section formed by the side plate portions 36 and 36 and the connection plate portion 37. In addition, in a state where the linear portion fixing member 30S is fitted into the groove 25, a space S2 is formed in a portion which is surrounded by the distal end portions 36a and 36a sides of the side plate portions 36 and 36, the connection plate portion 37, and the base portion 21e of the groove 25. The space S2 functions as an accommodation space which can accommodate surplus portions of the outer circumferential end portions 13e and 14e of the cushion material 13 and the skin material 14 rolled into the groove 25, that is, distal end portions (not shown) rather than the portions which come into contact with the base portion 21e of the frame 20 in the outer circumferential end portions 13e and 14e. In addition, here, the connection plate portion 37 is closer to the base portion 21e in the linear portion fixing member 30S relative to the connection plate portion 32, and thus, the space S2 is formed to be smaller than the space S 1.

[0081] As shown in FIG. 5, the corner portion fixing member 30C is fixed to the groove 25 by a corner cap 40. The corner cap 40 is formed in an approximately L shape which includes a first linear portion 41 A, and a second linear portion 41 B which is continuous to one end of the first linear portion 41A and extends so as to be orthogonal to the first linear portion 41A. As shown in FIG. 8, the first linear portion 41A and the second linear portion 41B are inserted into a portion between the side plate portions 36 and 36 with respect to the first linear portion 38A and the second linear portion 38B of the corner portion fixing member 30C, and come into contact with the connection plate portion 37.

[0082] In addition, as shown in FIG. 5, a protrusion piece 43 is formed on the lower end portion of the first linear portion 41A so as to protrude toward the lower portion. The protrusion piece 43 is inserted into the holding groove 35 (refer to FIG. 7) between the connection plate portion 32 and the protrusion piece 34 on the upper end portion of the linear portion fixing member 30S.

[0083] In addition, as shown in FIG. 5, a bolt insertion hole 44 into which a bolt 45 is inserted is formed on the second linear portion 41B. The corner cap 40, the corner portion fixing member 30C, the frame material 21C, and the second plate portion 22b of the bracket 22 are integrally fastened to each other by the bolt 45 inserted into the bolt insertion hole 44.

(Support Leg Body)

[0084] As shown in FIG. 5, as described above, each support leg body 50 is provided on each corner portion of both end portions of the lower portion of the panel body 11. Since the support leg body 50 is in contact with a floor surface, the panel body 11 is erected on the floor surface.

[0085] The support leg body 50 integrally includes a lower support portion 51 which is accommodated in the groove 25 by a lower end portion 12P of the panel base material 12, a side support portion 52 which extends upward from the one end of the lower support portion 51 and is accommodated in the groove 25 by a side lower end portion 12Q of the panel base material 12, and a support leg portion 53 which further extends downward relative to the lower support portion 51.

[0086] The lower support portion 51 comes into contact with the base portion 21e which forms the lower surface of the groove 25 on the lower end portion of the frame 20 and is fixed to the base portion 21e. In addition, the side support portion 52 comes into contact with the base portion 21 e which forms the bottom surface of the groove 25 on the side end portion of the frame 20 and is fixed to the base portion 21e.

[0087] Bolt insertion holes 54 into which bolts 48 are inserted are formed in the lower support portion 51 and the side support portion 52. The bolts 48 which are inserted into the bolt insertion holes 54 are screwed into the female screw portions 29 and the through holes 28. Accordingly, the support leg body 50 is fixed to the panel body 11.

[0088] The support leg portion 53 extends further downward relative to the lower support portion 51, and a height adjustment screw 49 can be screwed into the lower end portion of the support leg portion 53.

(Connection Structure between Sofa and Panel Body)

[0089] FIG. 10 is a side view showing a connection portion of the panel body 11 with respect to the upper portion of the back rest plate 108 of the sofa. FIG. 11 is a sectional view showing a structure of a connection portion between the sofa 101 and the panel body 11. FIG. 12 is a perspective view of an appliance upper connection bracket 171 which connects the sofa 101 and the panel body 11. FIG. 13 is a perspective view of an appliance lower connection bracket 181 which connects the sofa 101 and the panel body 11.

[0090] As shown in FIGS. 3, 10 to 12, the appliance upper connection bracket 171 which connects the panel body 11 and the upper portion of the sofa 101 can be mounted on the upper portion of the panel body 11.

[0091] The appliance upper connection bracket 171 includes a lock portion 172 which is attached to the end portion in the width direction of the panel body 11, and a side wall portion 173 which is bent from the end portion of the lock portion 172 and extends along the side plate portion 31 of the linear portion fixing member 30S provided in the groove 25 of the panel body 11. The appliance upper connection bracket 171 includes an outer wall portion 174 which is bent from the end portion of the side wall portion 173 and extends along the outer circumferential end portion 11s of the panel body 11, and a

holding wall portion 175 which is bent from the end portion of the outer wall portion 174 and is disposed along the skin material 14 of the panel body 11. The appliance upper connection bracket 171 includes an upper wall portion 176 which is disposed along the upper end of the back rest plate 108 of the sofa 101, and a front wall portion 177 which is disposed along the front surface of the back rest plate 108 from the end portion of the upper wall portion 176.

[0092] A through hole 172A is formed on the lock portion 172 of the appliance upper connection bracket 171.

[0093] A bolt 179, which is inserted from the through hole 172A, is screwed with a base portion 178 which is provided inside the holding groove 35 of the linear portion fixing member 30S fixed to the frame material 21A (or frame material 21B) of the panel body 11 and in which a female screw is formed. In this way, in a state where the appliance upper connection bracket 171 is attached to the panel body 11, the upper portion of the back rest plate 108 of the sofa 101 is interposed between the holding wall portion 175 and the front wall portion 177 of the appliance upper connection bracket 171.

[0094] At this time, the cushion material 13P of the side, on which the outer wall portion 174 of the appliance upper connection bracket 171 is disposed in the panel body 11, is pressed by the outer wall portion 174. Accordingly, the width dimension of the cushion material 13P of the side on which the appliance upper connection bracket 171 is disposed is smaller than the width dimension of the cushion material 13Q of the side on which the appliance upper connection bracket 171 is not disposed. In addition, the end portion of the cushion material 13Q is flush with the end surface of the outer wall portion 174 of the appliance upper connection bracket 171 which is disposed along the cushion material 13P.

[0095] As shown in FIGS. 3 and 13, the upper portion of the sofa 101 and the lower portion of the panel body 11 are connected to each other via the appliance lower connection bracket 181.

[0096] The appliance lower connection bracket 181 includes a support wall portion 182 which is fixed to the base plate 105 of the leg portion 103 attached to the lower surface of the seat surface portion 102 of the sofa 101 by the bolt (not shown), and a bending wall portion 183 which is bent downward from the end portion of the support wall portion 182. The appliance lower connection bracket 181 includes a vertical wall portion 184 which is bent from the end portion of the bending wall portion 183 and is disposed along the skin material 14 of the panel body 11, a lower wall portion 185 which is bent from the lower end of the vertical wall portion 184 and extends toward the bent panel body 11 side, and a lock portion 186 which extends upward from the end portion of the lower wall portion 185. A rib 186A, which has a width corresponding to the gap between the side plate portions 31 and 31 of the linear portion fixing member 30S of the lower end portion of the panel body 11, is formed on the lock portion 186.

[0097] The lock portion 186 of the appliance lower connection bracket 181 is inserted into the portion between the side plate portions 31 and 31 of the linear portion fixing member 30S of the lower end portion of the panel body 11so as to be locked.

[0098] In this way, the panel body 11 is mounted to the rear of the back rest plate 108 via the appliance upper connection bracket 171 and the appliance lower connection bracket 181.

(Connection between Sofas)

[0099] Next, in the above-described sofa system 100, in the sofas 101 and 101 adjacent to each other, all the leg portions 103 and 103, and all the panel bodies 11 and 11 of the sofas 101 are connected to each other according to the following manner.

(Connection between Panel Body Lower Portions by Support Leg Bodies)

[0100] FIG. 14 is a perspective view showing an example of a connection structure in a support leg bodies 50 which are provided on corners of the lower portions of the panel bodies 11. FIG. 15 is a sectional view showing a connection structure of the lower portions of the panel bodies 11 and 11.

[0101] As shown in FIGS. 14 and 15, one end of a lower connection member 55 for connecting the panel body 11 and another panel body 11 disposed to be adjacent to the panel body can be locked to the support leg body 50. Accordingly, a bulged portion 56 which is bulged further downward relative to the lower support portion 51 is integrally formed in the support leg body 50.

[0102] In the bulged portion 56, a slit 57 into which one end of the plate-shaped lower connection member 55 can be inserted is formed on the intermediate portion of the support leg body 50 along the thickness direction of the panel body 11.

[0103] The slit 57 is open to the side surface 56a and the lower surface 56b on the side of the bulged portion 56 adjacent to another panel body 11.

[0104] As shown in FIG. 15, an insertion recess portion 57a, into which a protrusion portion 58A of the lower connection member 55 described below is inserted, is formed on the upper portion of the slit 57 to be recessed upward. In addition, in the upper portion of the slit 57, a protrusion portion 57b which is adjacent to the insertion recess portion 57a and protrudes downward is formed on the side surface 56a side of the bulged portion 56.

[0105] In addition, in the bulged portion 56, a locking hole 56h for locking the lower connection member 55 inserted into the slit 57 is formed to penetrate the panel body 11 in the thickness direction of the panel body 11.

[0106] Through holes 55h are formed on both end portions of the lower connection member 55. In addition, the protrusion portions 58A protruding upward are formed on both end portions of the lower connection member

55. Moreover, in the lower connection member 55, a center protrusion portion 58B protruding upward is formed between the protrusion portions 58A and 58A of both end portions. In addition, engagement recess portions 58C which is recessed downward are formed between the center protrusion portion 58B and both protrusion portions 58A.

[0107] In the protrusion portion 57b and the engagement recess portion 58C, the side surface 56a side of the bulged portion 56 and the center protrusion portion 58B side become vertical surfaces 57f and 58f which vertically extend, and the opposite sides becomes inclined surfaces 57g and 58g which are separated from the vertical surfaces 57f and 58f toward the upper portion. Accordingly, each of the protrusion portions 57b and the engagement recess portions 58C has a taper shape in which the width dimension gradually decreases toward the lower portion.

[0108] By fitting the protrusion portions 57b of the slits 57 into the engagement recess portions 58C, the lower connection member 55 and the support leg bodies 50 easily positioned in the direction in which the panel bodies 11 and 11 are adjacent to each other.

[0109] In order to connect the panel bodies 11 and 11 adjacent to each other, both end portions of the lower connection member 55 in which through holes 55h are formed are inserted into the slits 57 of the support leg bodies 50. The protrusion portions 57b of the support leg bodies 50 which are provided on both panel bodies 11 are fitted into the engagement recess portions 58C on both end portions of the lower connection member 55. Here, each of the protrusion portions 57b and the engagement recess portions 58C has a taper shape in which the width dimension gradually decreases toward the lower portion. Accordingly, the protrusion portions 57b are inserted into the engagement recess portions 58C, and thus, the lower connection member 55 and the support leg bodies 50 easily positioned in the direction in which the panel bodies 11 and 11 are adjacent to each other. Therefore, the through holes 55h formed on both end portions of the lower connection member 55 communicate with the locking holes 56h of the support leg bodies 50. Thus, the connection bolts 59 are inserted into the through holes 55h and the locking holes 56h so as to be fastened. Accordingly, the lower end portions of the panel bodies 11 and 11 are connected to each other by the lower connection member 55.

(Connection between Panel Body Upper Portions)

[0110] FIG. 16 is a perspective view showing an example of the connection structure of the upper portions of the panel bodies 11 and 11.

[0111] As shown in FIG 16, it is possible to connect the upper end portions of the panel bodies 11 and 11 adjacent to each other by an upper connection member 61 serving as an optional member.

[0112] Instead of the corner caps 40, the upper connection member 61 is attached to the corner portion fixing member 30C. Bolt insertion holes 62 are formed on both end portions 61 a and 61a of the upper connection member 61.

[0113] In addition, a gap regulation portion 63 is formed so as to protrude downward on the lower surface side of an intermediate portion 61b of the upper connection member 61, and the gap regulation portion 63 regulates the gap between the corner portion fixing members 30C and 30C disposed on the upper portions of the panel bodies 11 and 11 adjacent to each other. The gap regulation portion 63 is inserted into the portion between the corner portion fixing members 30C and 30C which are disposed on the upper portions of the panel bodies 11 and 11 adjacent to each other, and thus, it is possible to regulate the gap between the panel bodies 11 and 11.

[0114] In order to connect the upper end portions of the panel bodies 11 and 11 to each other with the upper connection member 61, the following manner is performed.

[0115] First, the upper connection member 61 is placed on the corner portion fixing members 30C and 30C which are disposed on the upper portions of the panel bodies 11 and 11 adjacent to each other. At this time, the lower surfaces of both end portions 61 a and 61a of the upper connection member 61 are inserted into the portion between the side plate portions 36 and 36 with respect to the second linear portion 38B of the corner portion fixing member 30C, and come into contact with the connection plate portions 37. In addition, since the gap regulation portion 63 can be inserted into the portion between the corner portion fixing members 30C and 30C disposed on the upper portions of the panel bodies 11 and 11 adjacent to each other, it is possible to regulate the gap between the panel bodies 11 and 11. More specifically, since the connection plate portions 37 of the first linear portions 38A of the corner portion fixing members 30C come into contact with both side surfaces 63a and 63a of the gap regulation portion 63, it is possible to appropriately position the gap between the panel bodies 11 and 11. In this state, bolts 64 inserted into the bolt insertion holes 62 are fastened to the female screw portions 29 through the through holes 28, and thus, the upper connection member 61, the corner portion fixing members 30C, the frame material 21C (refer to FIG. 5), and the second plate portions 22b (refer to FIG. 5) of the bracket 22 are integrally fixed. Accordingly, the upper end portions of the panel bodies 11 and 11 adjacent to each other are connected to each other.

(Connection between Leg Portions on Front Portion of Sofa)

[0116] FIG. 17 is a front view showing a connection portion of the leg portions 103 and 103 on the front portions of the sofas 101 and 101 adjacent to each other. FIG. 18 is a plane view showing a connection plate 200.

[0117] FIG. 19 is a side view showing an engagement

member 210. FIGS. 20A and 20B is a view showing a flow when the leg portions 103 and 103 of the sofas 101 and 101 adjacent to each other are connected to each other, FIG. 20A is a view showing a state before the connection plate 200 is rotated, and FIG. 20B is a view showing a state immediately before a connection portion 201 of the connection plate 200 engages with the engagement member 210. FIG. 21 is a view showing a state where the connection portion 201 of the connection plate 200 engages with the engagement member 210 so as to connect the sofas 101 and 101 to each other.

[0118] As shown in FIG. 17, in the soft system 100, in the sofas 101 and 101 adjacent to each other, the leg portions 103 and 103 provided on the front end sides of the seat surface portions 102 are connected to each other by the connection plate 200.

[0119] As shown in FIG. 18, the connection plate 200 is formed of an elliptical metal plate.

[0120] The connection plate 200 includes the connection portion 201 and a connection hole (connection portion) 205 serving as connection portions connected to the sofas 101 on both end portions of the connection plate 200. The connection portion 201 is formed on the first end portion of the connection plate 200 and is connected to one sofa 101. The connection hole 205 is formed to penetrate the connection plate 200 on the second end portion of the connection plate 200, and is rotatably connected to the other sofa 101.

[0121] The connection portion 201 includes an insertion portion 202 which is open to a side 200s extending in the longitudinal direction of the connection plate 200, and an engagement portion 203 which is formed so as to be continuous to the insertion portion 202.

[0122] The insertion portion 202 has an opening width which is greater than an outer diameter of a shaft portion 210c (refer to FIG. 17) described below of the engagement member 210. The insertion portion 202 extends along a lateral direction of the connection plate 200 from the side 200s of the connection plate 200.

[0123] The engagement portion 203 is formed in the intermediate portion in the lateral direction of the connection plate 200. The engagement portion 203 has an inner diameter which is greater than the shaft portion 210c of the engagement member 210. The engagement portion 203 is formed so as to be offset toward the side separated from the connection hole 205 with respect to the insertion portion 202. Accordingly, in the engagement portion 203, an engagement recess portion 203a is formed, which is enlarged toward the side separated from the connection hole 205 with respect to the insertion portion 202.

[0124] As shown in FIG. 17, by fastening a screw 206 penetrating the connection hole 205 to the base plate 105 of the leg portion 103, the connection plate 200 is rotatable in the inner surface along the lower surface 102f of the seat surface portion 102 with the screw 206 as a center.

[0125] The engagement member 210 which engages with the connection plate 200 is provided on one of the sofas 101 adjacent to each other. As shown in FIG. 19, the engagement member 210 is a so-called stepped screw, and includes a screw head portion 210a which is provided on a first end side, a male screw portion 210b which is provided on a second end side, and a shaft portion 210c which is formed between the screw head portion 210a and the male screw portion 210b and has an grater outer diameter than that of the male screw portion 210b.

[0126] As shown in FIG. 17, in the engagement member 210, the male screw portion 210b is screwed into the base plate 105 of the leg portion 103 which is provided on the lower surface of the seat surface portion 102 of the sofa 101. Accordingly, the shaft portion 210c of the engagement member 210 comes into contact with the base plate 105, and the screw head portion 210a is positioned at a gap below the base plate 105 by the length in the axial direction of the shaft portion 210c.

[0127] In the connection plate 200, the shaft portion (displacement allowance portion) 210c of the engagement member 210 enters the insertion portion 202 of the connection portion 201 and engages with the engagement portion 203, and thus, the sofas 101 and 101 adjacent to each other are connected to each other.

[0128] Here, the engagement member 210 can be inserted into the insertion portion 202 of the connection portion 201 in a state where the cushion portion 102c is compressively deformed in the direction in which two sofas 101 and 101 adjacent to each other approach each other.

[0129] Accordingly, in the sofa system 100, in order to connect the sofas 101 and 101 adjacent to each other with the connection plate 200, as shown in FIGS. 20A and 20B, the connection member 200 rotates about the screw 206, and the shaft portion 210c of the engagement member 210 is received into the connection portion 201. At this time, even in a state where the sofas 101 and 101 only come into contact with each other, as shown in FIG. 20B, the insertion portion 202 of the connection portion 201 interferes with the shaft portion 210c of the engagement member 210. Accordingly, as shown in FIG. 21, the cushion portions 102c are compressively deformed in the direction in which two sofas 101 and 101 adjacent to each other approach each other. Preferably, the cushion portions 102c are pressed in the direction two sofas 101 and 101 adjacent to each other approach each other. Therefore, the engagement member 210 can be inserted into the engagement portion 203 through the insertion portion 202 of the connection portion 201 on the first end portion of the connection plate 200.

[0130] In addition, after the connection portion 201 of the connection plate 200 engages with the sofa 101, the pressing between sofas 101 and 101 is released. Accordingly, the cushion portions 102c are deformed in a direction in which the cushion portions 102c return to the original shapes by repulsive forces of the compressively deformed cushion portions 102c. As a result, the engagement member 210 engages with the engagement recess

portion 203a of the engagement portion 203 of the connection portion 201. Accordingly, in the connection portion 201 on first end side of the connection plate 200, the engagement state with respect to the sofa 101 is maintained. In this way, two sofas 101 and 101 adjacent to each other are connected.

[0131] In addition, as shown in FIG. 20B, in order to release the connection between the two sofas 101 and 101 performed by the connection plate 200, the cushion portions 102c which are pressed in the direction in which the two sofas 101 and 101 adjacent to each other approach each other are compressively deformed. Accordingly, the shaft portion 210c of the engagement member 210 is displaced from the state of entering the engagement recess portion 203a of the engagement portion 203 so as to engage with the engagement portion 203 to a position at which the shaft portion 210c communicates with the insertion portion 202. In this state, as shown in FIG. 20A, if the connection plate 200 rotates about the connection hole 205, the shaft portion 210c of the engagement member 210 is extracted from the insertion portion 202. In this way, it is possible to disengage the connection portion 201 on the first end portion of the connection plate 200 from the sofas 101.

[0132] Here, as shown in FIG. 17, the length in the axial direction of the shaft portion 210c of the engagement member 210 is set so as to be greater than the thickness of the connection plate 200. Accordingly, the connection portion 201 of the connection plate 200 can engage with the shaft portion 210c of the engagement member 210 in a state capable of being displaced in the height direction of the sofa 101.

[0133] As described above, in the sofa system 100, the sofas 101 and 101 adjacent to each other are connected by the connection plate 200. In addition, the connection portion 201 on the first end portion of the connection plate 200 can engage with and disengage from the sofa 101 in the state where the cushion portions 102c are compressively deformed in the direction in which the two sofas 101 and 101 adjacent to each other approach each other, and the engagement state of the connection portion 201 with respect to the sofa 101 is maintained in which the compressively deformed cushion portions 102c are deformed in the direction in which the cushion portions 102c return to the original shapes.

[0134] Accordingly, in the case where the two sofas 101 and 101 adjacent to each other are connected to each other by the connection plate 200, it is possible to allow the connection portion 201 to engage with the sofa 101 in the state where the cushion portion 102c is compressively deformed in the direction in which the two sofas 101 and 101 adjacent to each other approach each other. In addition, after the connection portion 201 engages with the sofa 101, the pressing between the sofas 101 and 101 is released. Accordingly, the compressively deformed cushion portions 102c are deformed in the direction in which the cushion portions 102c return to the original shapes, and the engagement state of the connection portion 201 with respect to the sofa 101 is maintained. Therefore, the two sofas 101 and 101 are connected to each other.

[0135] In addition, in order to release the connection between the two sofas 101 and 101, if the two sofas 101 and 101 adjacent to each other are pressed in the direction in which the sofas 101 and 101 approach each other and the cushion portion 102c is compressively deformed, it is possible to disengage the connection portion 201 of the connection plate 200 from the sofa 101.

[0136] In this way, it is possible to easily and reliably connect the sofas 101 and 101 to each other and prevent the positional deviation of the sofa 101.

[0137] Moreover, the engagement member 210 with which the connection plate 200 engages is provided in one of the sofas 101 adjacent to each other, and the connection portion 201 includes the insertion portion 202 into which the engagement member 210 is inserted in the state where the cushion portions 102c are compressively deformed in the direction in which the two sofas 101 and 101 adjacent to each other approach each other, and the engagement portion 203 which is formed so as to be continuous to the insertion portion 202, is further enlarged in the direction, in which the cushion portions 102c returns to the original shapes, relative to the insertion portion 202, and with which the engagement member 210 engages.

[0138] According to this configuration, since the engagement member 210 is inserted into the insertion portion 202 in the state where the cushion portions 102c are compressively deformed in the direction in which the two sofas 101 and 101 adjacent to each other approach each other, the connection portion 201 can engage with and disengage from one of the sofa 101.

[0139] In addition, if the compressively deformed cushion portions 102c are deformed in the direction in which the cushion portions 102c return to the original shapes, the engagement member 210 engages with the engagement portion 203 which is further enlarged in the direction in which the cushion portions 102c return to the original shapes relative to the insertion portion 202. Accordingly, the engagement state with respect to one of the sofa 101 is maintained.

[0140] In addition, the connection hole 205 on the second end portion of the connection plate 200 is rotatably connected to the other of the sofas 101 which is adjacent thereof.

[0141] According to this configuration, by rotating the connection plate 200, it is possible to easily connect the two sofas 101 and 101 adjacent to each other.

[0142] In addition, even in the state where the connection between the sofas 101 and 101 is released, since the connection plate 200 is connected to the other of the sofas 101 which is adjacent thereof, it is not necessary to prepare the separate connection plate 200.

[0143] In addition, in the engagement member 210, the shaft portion 210c has a constant length in the vertical direction, and the connection plate 200 engages with the

shaft portion 210c in the state where the connection plate 200 can be displaced in the height direction of the sofa 101. According to this configuration, even in a case where the height levels of the sofas 101 and 101 adjacent to each other are different from each other due to unevenness of the floor surface, it is possible to connect sofas 101 and 101 to each other by the connection plate 200.

[0144] Moreover, the sofa 101 includes the seat surface portion 102, and the leg portion 103 by which the seat surface portion 102 stands on the floor surface, and the connection plate 200 is provided on the lower surface of the seat surface portion 102.

[0145] According to this configuration, a gap exists between the lower portion of the seat surface portion 102 supported by the leg portion 103 and the floor surface. Therefore, the connection operation between the sofas 101 and 101 with the connection plate 200 can be easily performed by allowing a hand to enter the gap between the seat surface portion 102 and the floor surface.

[0146] In addition, the connection member 200 is disposed on the base portion of the leg portion 103. Accordingly, it is possible to approach the sofas 101 and 101 adjacent to each other by gripping both leg portions 103 and 103. Therefore, it is possible to easily perform the connection operation between the sofas 101 and 101 with the connection plate 200.

[0147] Moreover, the seat surface portions 102 and 102 of the sofas 101 and 101 adjacent to each other are connected to each other by the connection plate 200 in the state where the cushion portions 102c and 102c are pressed to each other.

[0148] Accordingly, the seat surface portions 102 and 102 come into close contact with each other without deviation therebetween, and it is possible to improve the appearance.

[0149] Moreover, since the seat surface portions 102 and 102 come into close contact with each other, it is possible to prevent an article or the like from falling on the gap between the seat surface portions 102 and 102.

[0150] In addition, in the above-described sofa system 100, the panel bodies 11 and 11 mounted on the back rest plates 108 and 108 are connected to each other between the sofas 101 and 101 adjacent to each other.

[0151] Accordingly, it is possible to connect the rear portions of the sofas 101 and 101 to each other.

[0152] Here, according to the above-described panel body 11, the skin material 14 covering the panel base material 12 and the cushion material 13 wraps around the outer circumferential edge portion of the panel base material 12 on the outer circumferential portion of the panel body 11 and is rolled into the groove 25. Therefore, the outer circumferential portion of the panel body 11 is covered with the skin material 14 in the state where the panel base material 12 is not exposed.

[0153] In addition, since the skin material 14 is fixed into the groove 25 by the fixing member 30, it is possible to prevent the fixing member 30 from being exposed to the outer circumferential portion of the panel body 11.

[0154] Accordingly, the outline of the panel body 11 can be a soft and systematic impression.

(Other Embodiments)

[0155] The furniture system of the present invention is not limited to the embodiment described above with reference to the drawings, and various modification examples are considered within the technical scope thereof.

[0156] For example, in the connection plate 200, the connection portion 201 is formed on the first end portion, and the connection hole 205 is formed on the second end portion. However, the present invention is not limited to this. As shown in FIG. 22, the connection portions 201 may be formed on both end portions of the connection plate 200.

[0157] Moreover, in the present embodiment, the connection portion 201 of the connection plate 200 engages with the engagement member 210. However, the engagement member 210 may have any configuration. The connection plate 200 engages with the shaft portion 210c having a constant length in the vertical direction in the state where the connection plate 200 can be displaced in the height direction of the sofa 101. However, the present invention is not limited to this. For example, the shaft portion 210c may have the same thickness as the thickness of the connection plate 200.

[0158] In addition, the connection plate 200 dose not engage with the engagement member 210 which is screwed into the base plate 105 of the leg portion 103, and the connection portion 201 of the connection plate 200 may engage with the support leg 106 of the leg portion 103.

[0159] Moreover, in the present embodiment, the panel bodies 11 and 11 are connected to each other by the upper connection member 61 and the lower connection member 55. However, the present invention is not limited to this. For example, the panel bodies 11 are not connected to each other, similarly to the front portion of the sofa, in the leg portions 103 of the rear portions of the sofas 101, the sofas 101 and 101 adjacent to each other may be connected to each other by the connection plate 200.

[0160] Moreover, as shown in FIG. 23, similarly to the connection plate 200, the connection portion 201 may be provided on at least one end of the lower connection member 55 by which the panel bodies 11 and 11 are connected to each other, the connection portion 201 can engage with and disengage from the connection bolt 59 of the panel body 11 in the state where the cushion material 13 is compressively deformed in the direction in which two panel bodies 11 and 11 adjacent to each other approach each other, and the engagement state of the panel body 11 with respect to the connection bolt 59 is maintained in the state where the compressively deformed cushion materials 13 are deformed in the direction in which the cushion materials 13 return to the original shapes.

[0161] In addition, the sofa 101 may have any configuration. In the present embodiment, the backrest portion 104 includes the back rest plate 108 and the back rest cushion 109 and the panel body 11 is mounted on the back rest plate 108. However, the present invention is not limited to this. For example, the panel body 11 or the back rest cushion 109 is not provided, and the backrest portion extending upward from the rear end portion of the seat surface portion 102 may be integrally formed with the seat surface portion 102.

[0162] For example, in the above-described embodiment, the configuration of the panel body 11 is described. However, the panel body 11 may have any configuration. The panel base material 12 is formed of the core material 15, the frame 20, and the base sheet 18. However, the present invention is not limited to this. For example, a panel formed of a resin material or the like may be used as the panel base material 12 as it is as long as it can secure necessary strength as a single unit.

[0163] In addition, in the present embodiment, the cushion material 13 and the skin material 14 are provided. However, the cushion material 13 and the skin material 14 are not essential components.

[0164] In addition, in the above-described embodiment, the sofa system 100 in which the sofas 101 and 101 are connected to each other is exemplified. However, the present invention is not limited to this. The similar configurations can be applied to the portion by which the sofa 101 and other furniture items such as a side table or cabinet are connected to each other.

[0165] In addition, the present invention can be applied to a connection as long as it is the connection between furniture items.

[0166] Moreover, the configurations described in the above-described embodiments can be appropriately selected or appropriately changed to other configurations as long as it does not depart from the gist of the present invention.

Industrial Applicability

[0167] According to the furniture system of the present invention, it is possible to easily and reliably connect furniture items to each other and prevent positional deviation of the furniture items.

Reference Signs List

[0168]

11: panel body
11s: outer circumferential end portion
12: panel base material
13: cushion material
14: skin material
20: frame
20f: surface
55: lower connection member
59: connection bolt
61: upper connection member
100: sofa system (furniture system)
101: sofa (furniture)
102: seat surface portion (furniture main body)
102a: frame
102c: cushion portion
102f: lower surface
103: leg portion
104: backrest portion
105: base plate
106: support leg
107: adjuster
109: cushion
200: connection plate (connection member)
201: connection portion
202: insertion portion
203: engagement portion
203a: engagement recess portion
205: connection hole (connection portion)
210: engagement member
210c: shaft portion (displacement allowance portion)

Claims

1. A furniture system, comprising:

multiple furniture items which are disposed to be adjacent to each other; and
a connection member which connects the multiple furniture items to each other,
wherein at least one of two furniture items adjacent to each other includes an elastically deformable cushion portion on an outer surface thereof facing the other of the two furniture items adjacent to each other,
wherein the connection member includes connection portions which are connected to each of the furniture items on both end portions of the connection member, and
wherein the connection portion of at least a first end portion of the connection member can engage with and disengage from the furniture items in a state where the cushion portion is compressively deformed in a direction in which the two furniture items adjacent to each other approach each other, and an engagement state of the connection portion with respect to the furniture items is maintained in a state where the compressively deformed cushion portion is deformed in a direction in which the cushion portion returns to the original shape.

2. The furniture system according to claim 1,
wherein an engagement member with which the connection member engages is provided on one of the furniture items adjacent to each other,

wherein the connection portion includes an insertion portion into which the engagement member is inserted in a state where the cushion portion is compressively deformed in the direction in which the two furniture items adjacent to each other approach each other, and
an engagement portion which is formed to be continuous to the insertion portion, is open with respect to the insertion portion in a direction in which the furniture items are separated from each other, and engages with the engagement member.

3. The furniture system according to claim 2,
wherein a second end portion of the connection member is rotatably connected to the other of the furniture items which is adjacent thereof.

4. The furniture system according to claim 2 or 3,
wherein the engagement member includes a displacement allowance portion which engages with the furniture item in a state where the connection member can be displaced in a height direction of the furniture item.

5. The furniture system according to any one of claims 1 to 4,
wherein the furniture item includes a furniture main body, and a leg portion by which the furniture main body stands on a floor surface, and
wherein the connection member is disposed on a lower surface of the furniture main body.

6. The furniture system according to claim 5,
wherein the connection member is disposed on a base portion of the leg portion.

7. The furniture system according to any one of claims 1 to 6,
wherein at least one of the furniture items adjacent to each other is a sofa.

FIG. 1

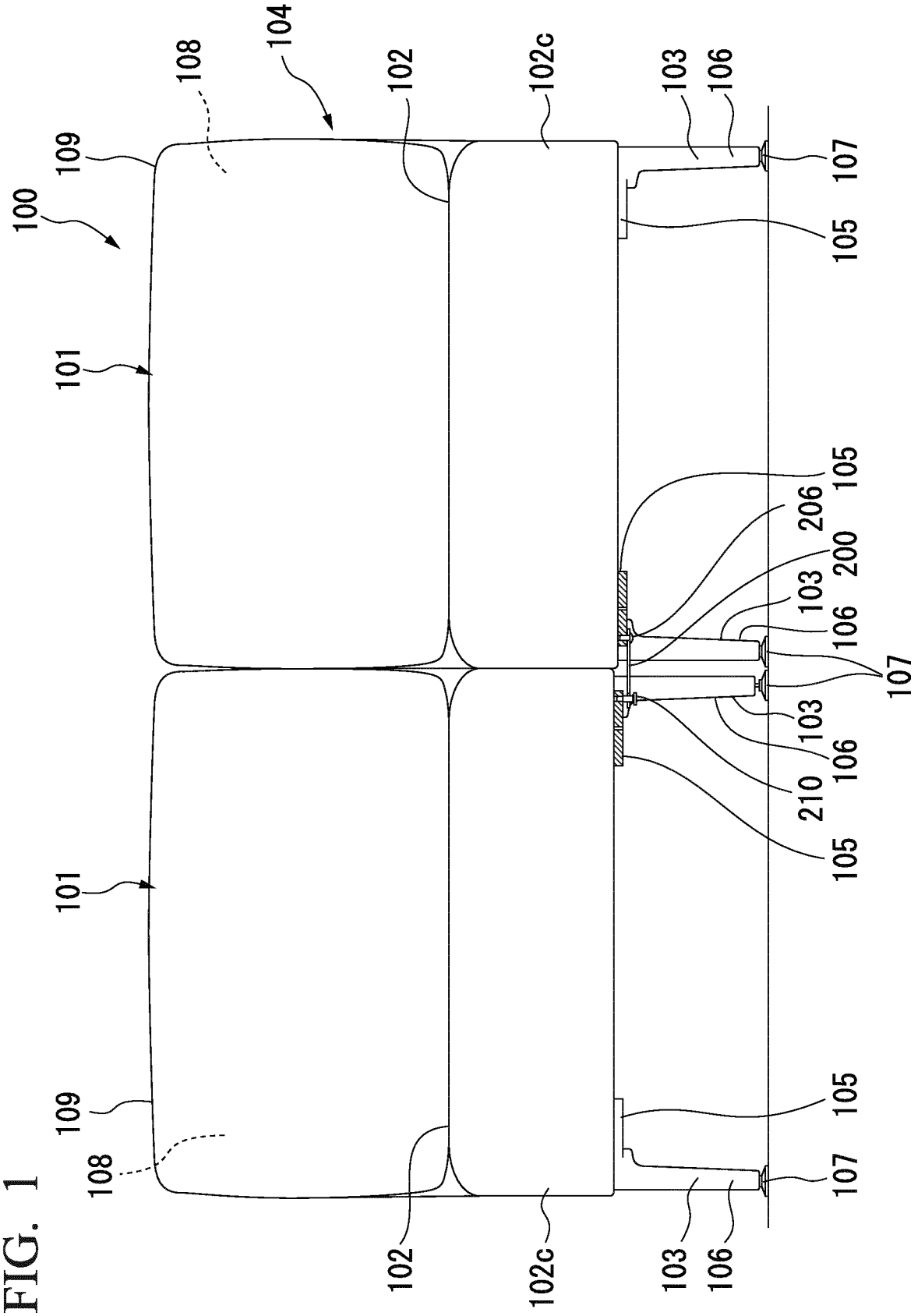


FIG. 2

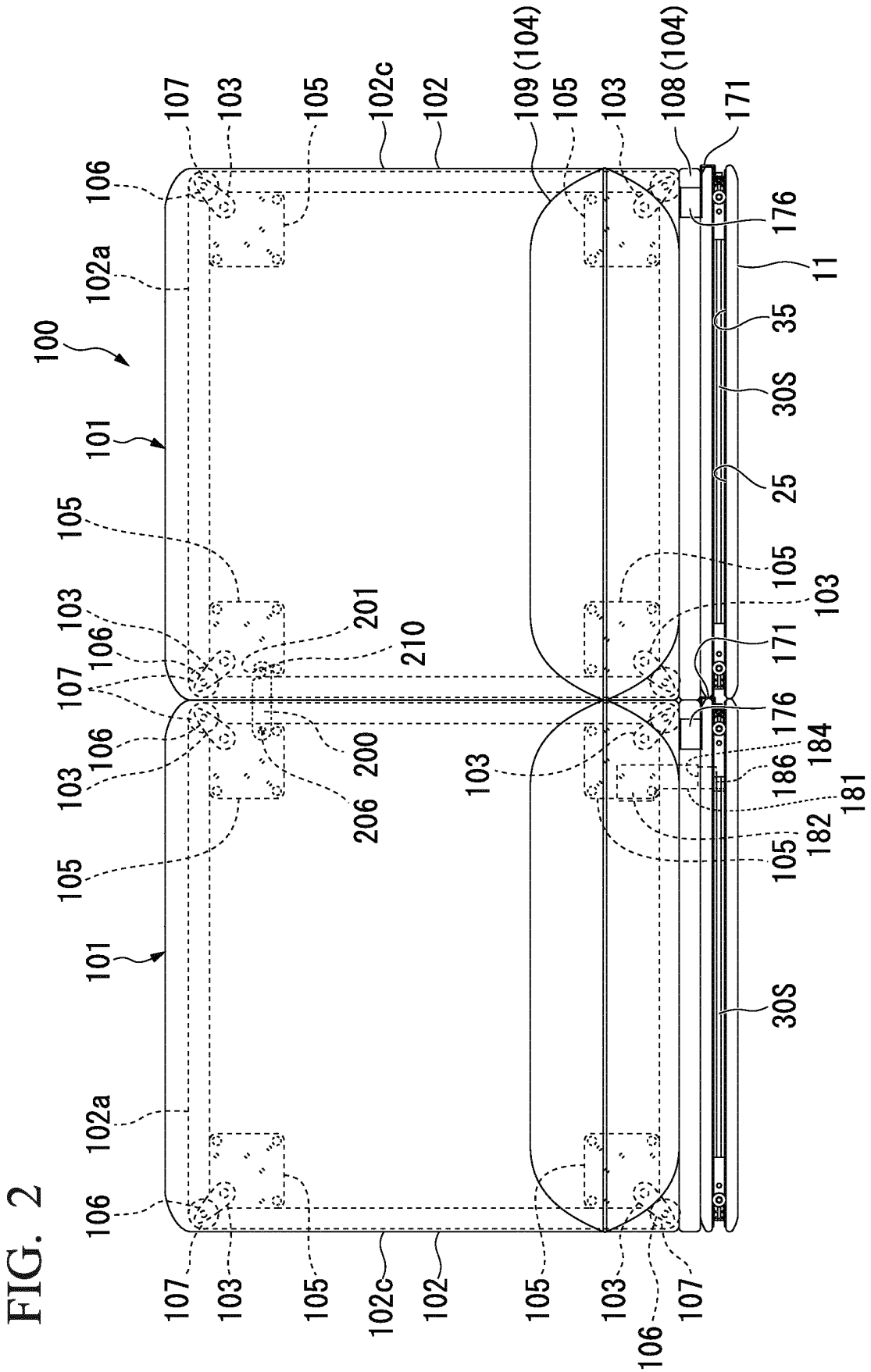

100
101
102a
102c
102
103
105
106
107
109 (104)
108 (104)
171
176
11
35
30S
25
201
210
200
206
184
186
181
182

FIG. 3

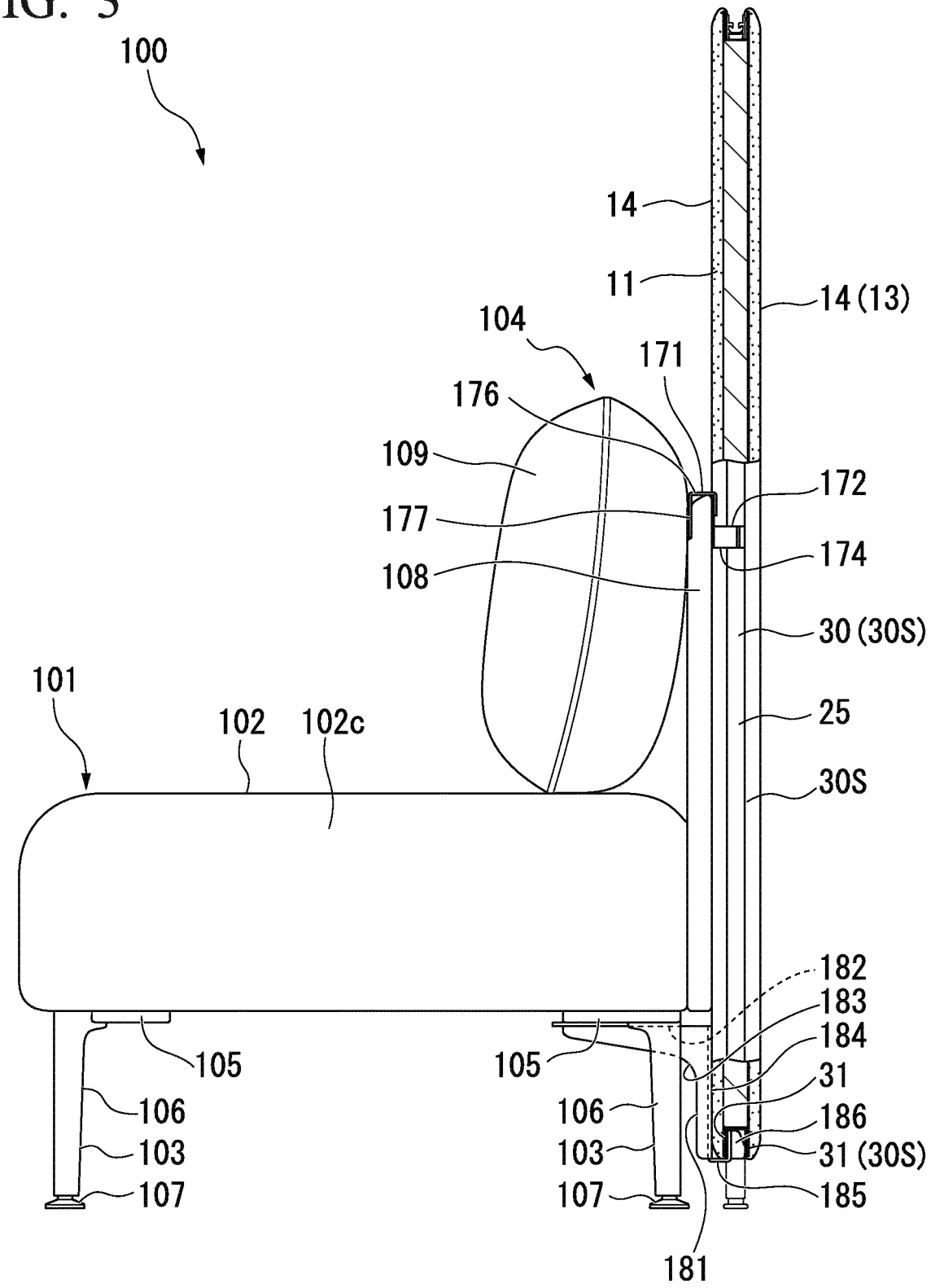

100
14
11
14 (13)
104
171
176
109
172
177
174
108
30 (30S)
101
102
102c
25
30S
182
183
184
105
105
31
106
106
186
103
103
31 (30S)
107
107
185
181

FIG. 4

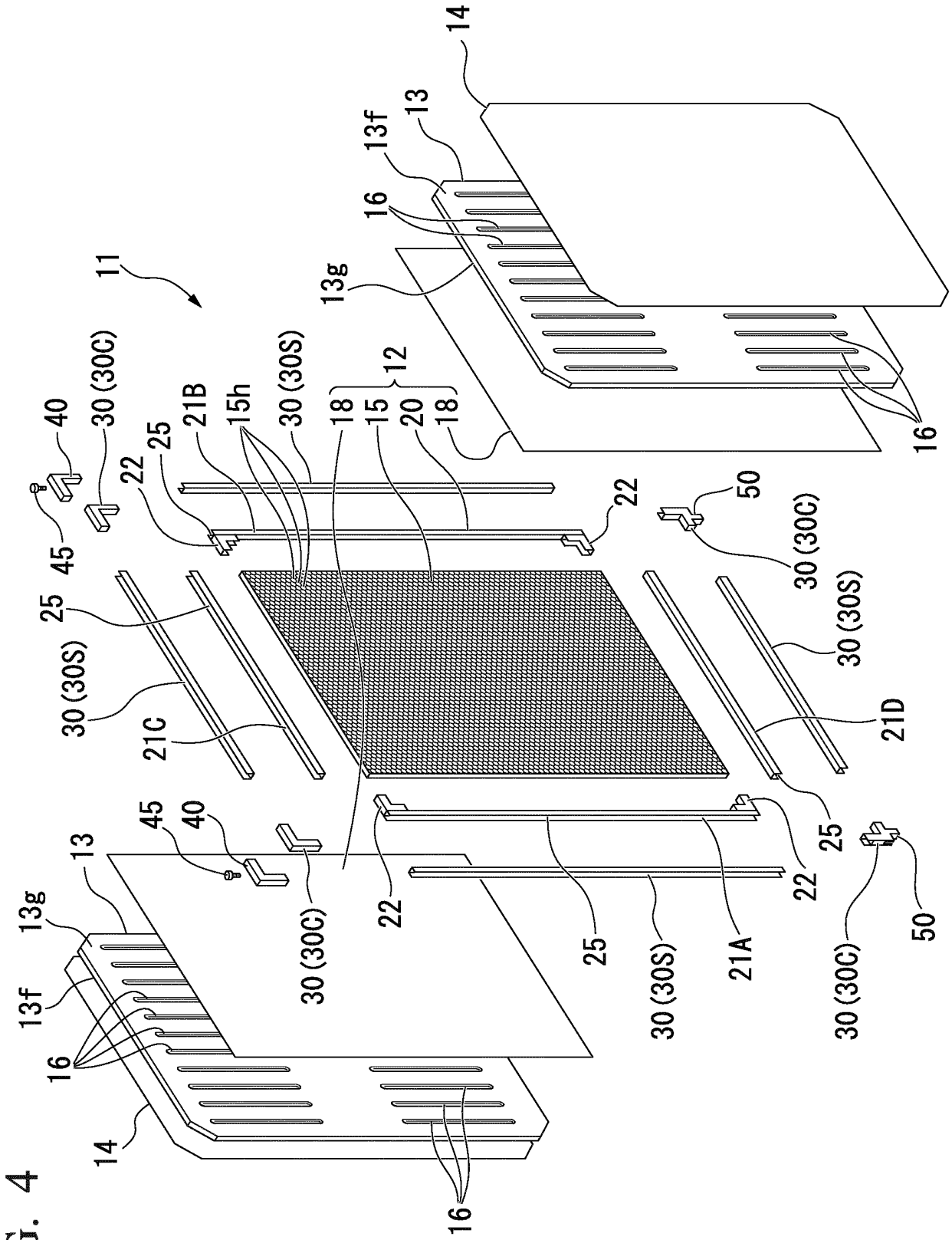
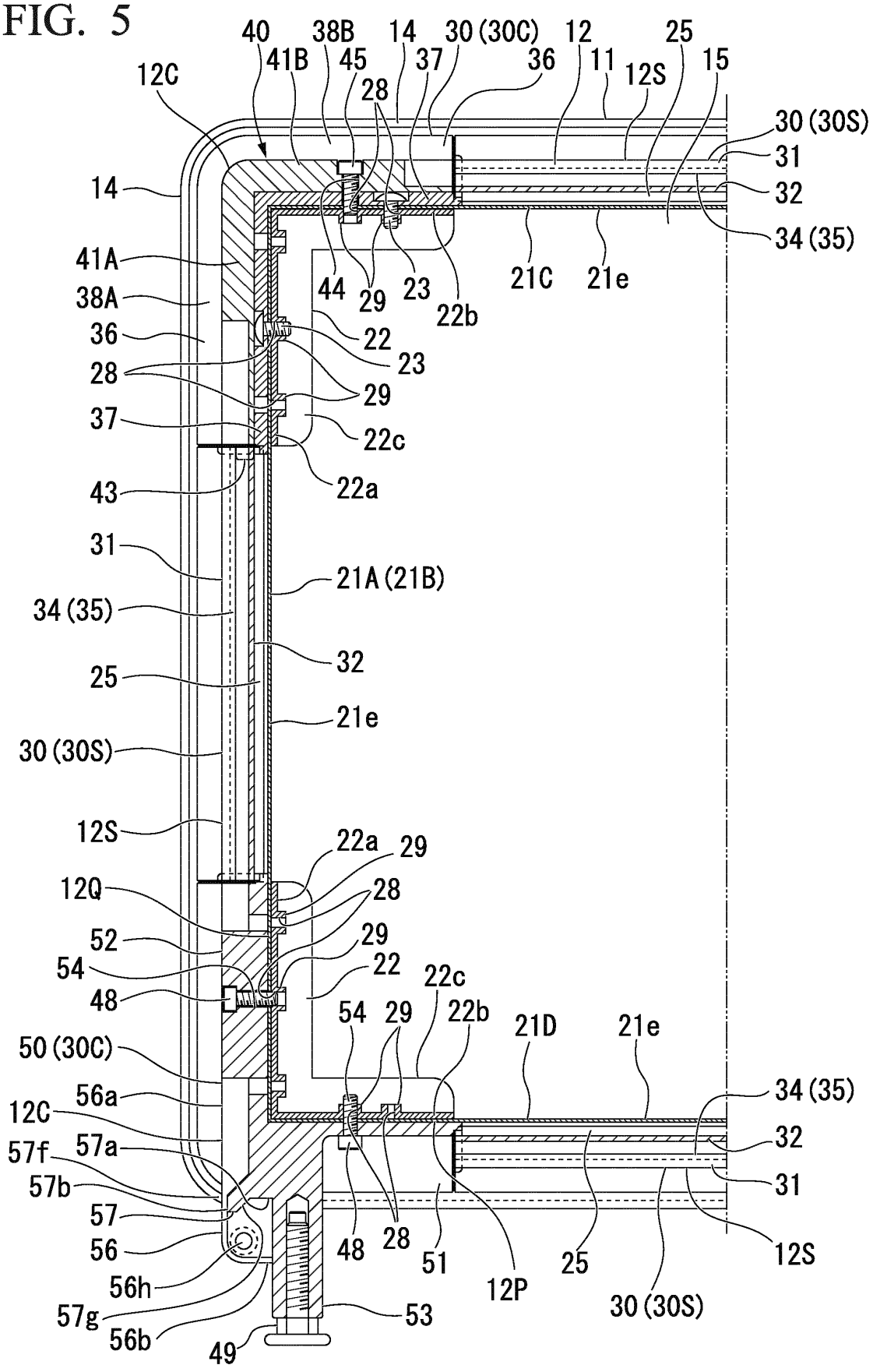

11
14
13
13f
16
13g
12
18
15
20
15h
21B
25
22
30 (30S)
30 (30C)
40
45
50
21C
21D
21A

FIG. 5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38B
14
30 (30C)
12
25
41B
45
37
36
11
12S
15
12C
28
30 (30S)
31
14
32
34 (35)
41A
44
29
23
21C
21e
22b
38A
22
36
23
28
29
37
22c
22a
43
31
21A (21B)
34 (35)
32
25
21e
30 (30S)
12S
22a
29
12Q
28
52
29
54
22
22c
48
54
29
22b
21D
21e
50 (30C)
56a
34 (35)
12C
57f
57a
32
57b
31
57
56
48
28
51
12P
25
12S
56h
57g
56b
53
30 (30S)
49

FIG. 6

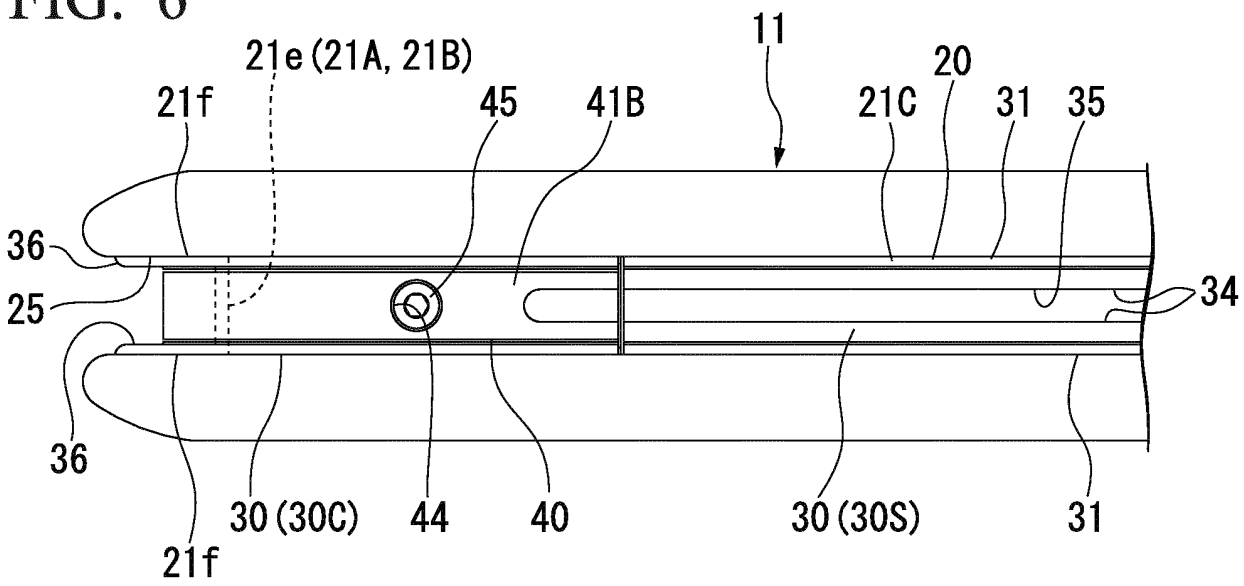
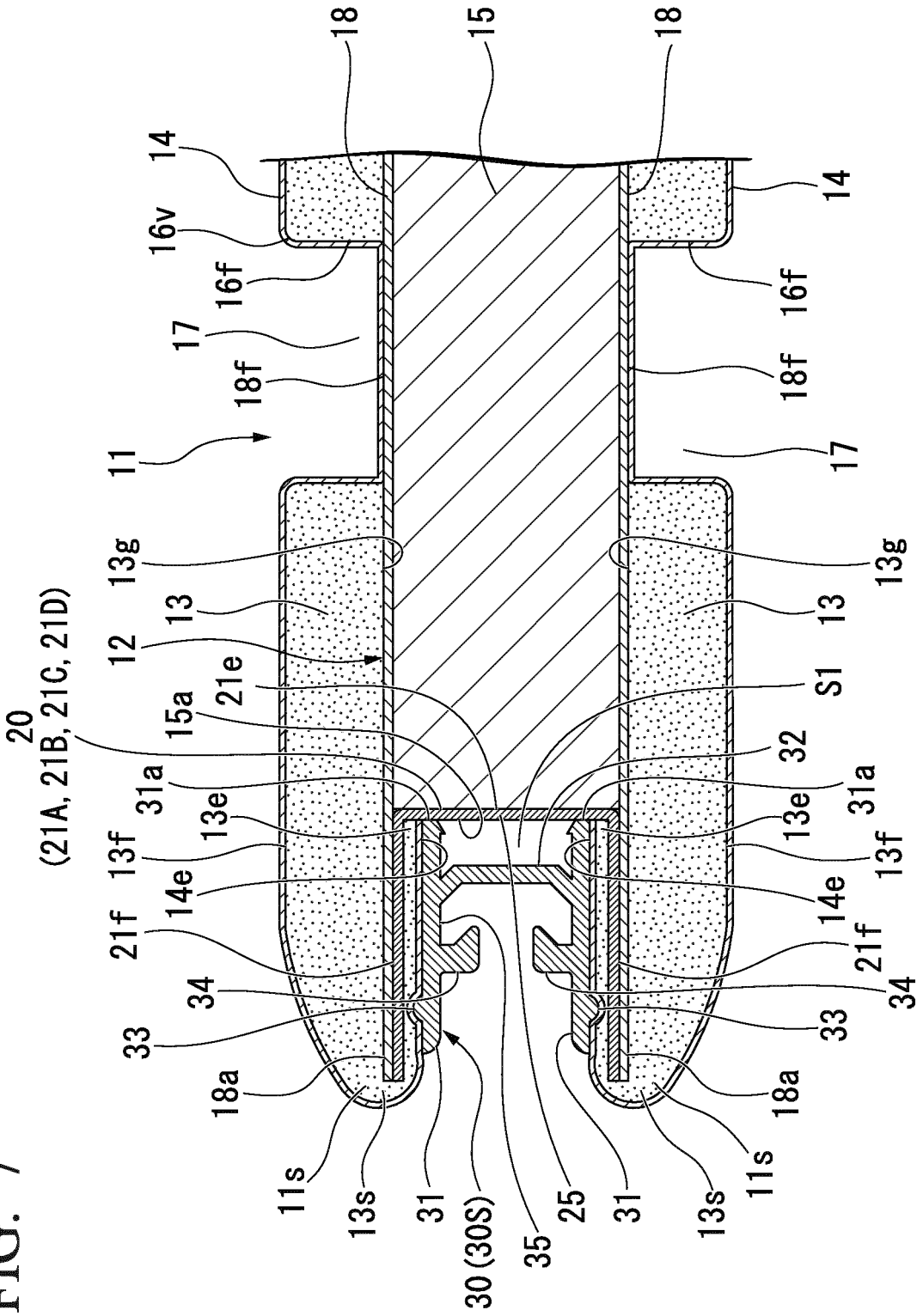

11
21e (21A, 21B)
20
21f
45
41B
21C
31
35
36
25
34
36
30 (30C)
44
40
30 (30S)
31
21f

FIG. 7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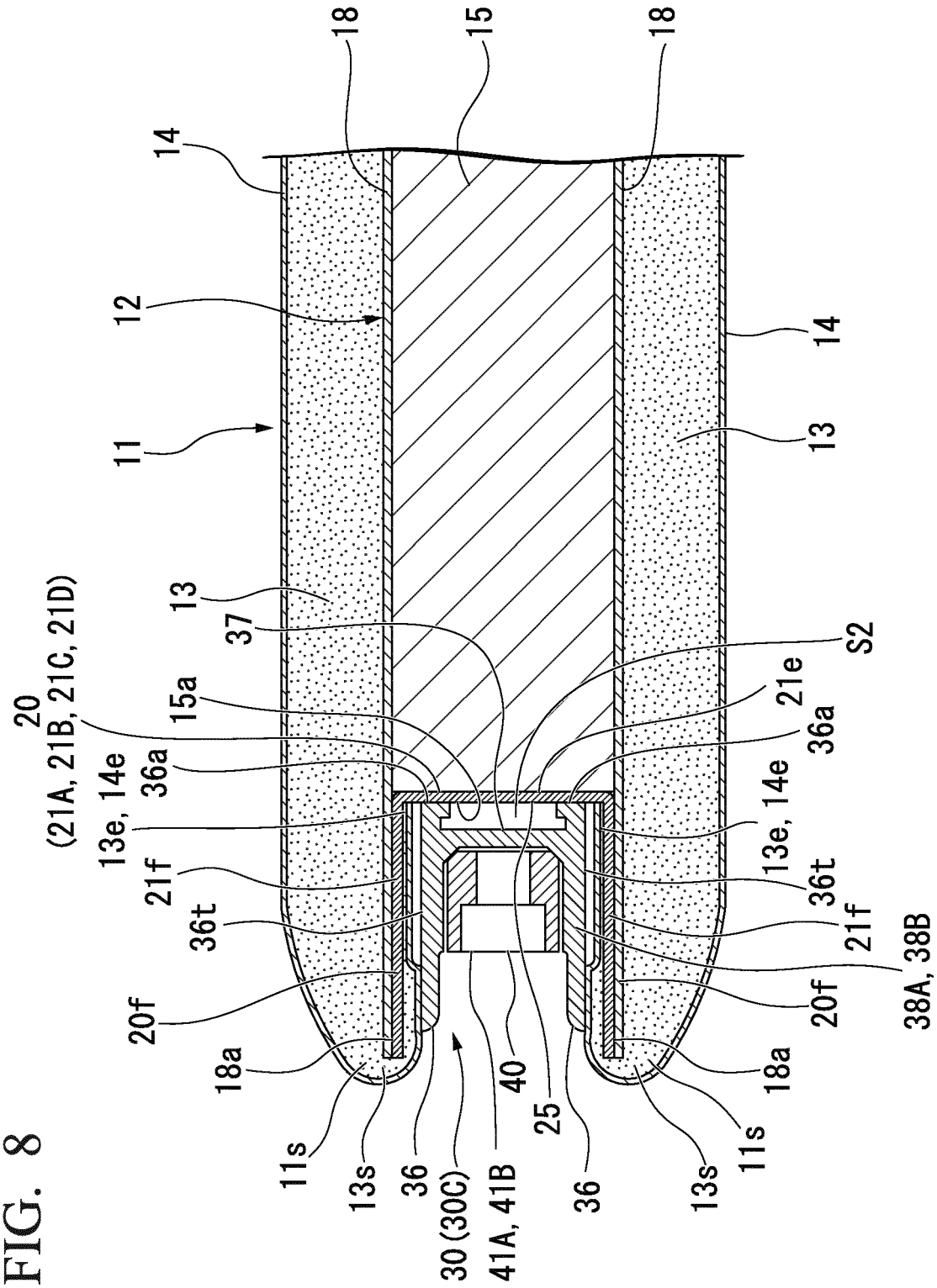
15
18
14
16v
16f
17
18f
11
13g
12
13
21e
15a
20
(21A, 21B, 21C, 21D)
31a
13e
13f
14e
21f
34
33
18a
11s
13s
31
30 (30S)
35
25
S1
32
14
16f
17
18f
13g
13
31a
13e
13f
14e
21f
34
33
18a
11s
13s
31

FIG. 8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15
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14
12
14
11
13
13
37
S2
20
(21A, 21B, 21C, 21D)
15a
21e
36a
36a
13e, 14e
13e, 14e
21f
36t
36t
21f
20f
38A, 38B
20f
18a
18a
11s
11s
13s
13s
36
36
30 (30C)
41A, 41B
40
25

FIG. 9A

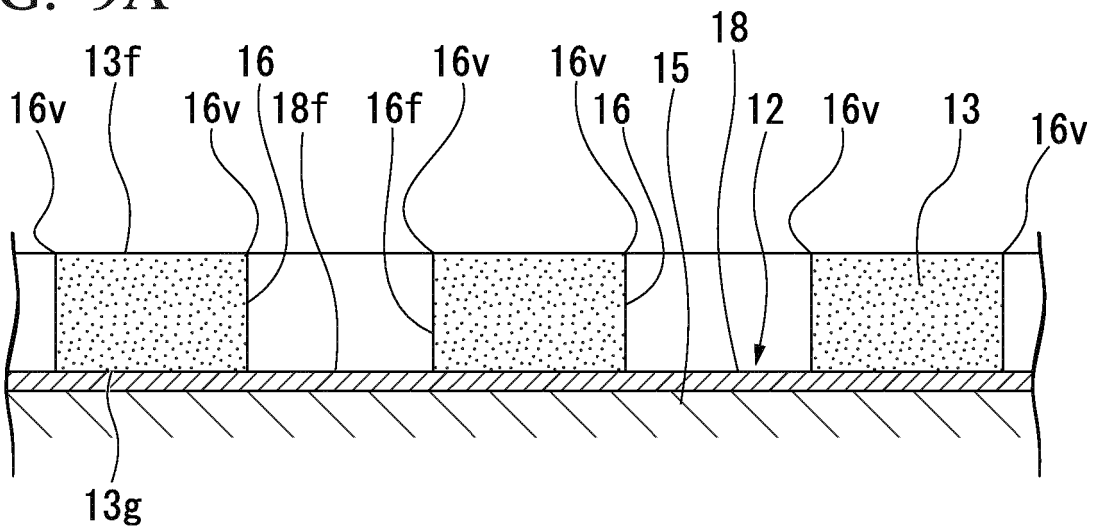

18
13f
16
16v
16v
15
16v
16v
16v
18f
16f
16
12
16v
13
16v
13g

FIG. 9B

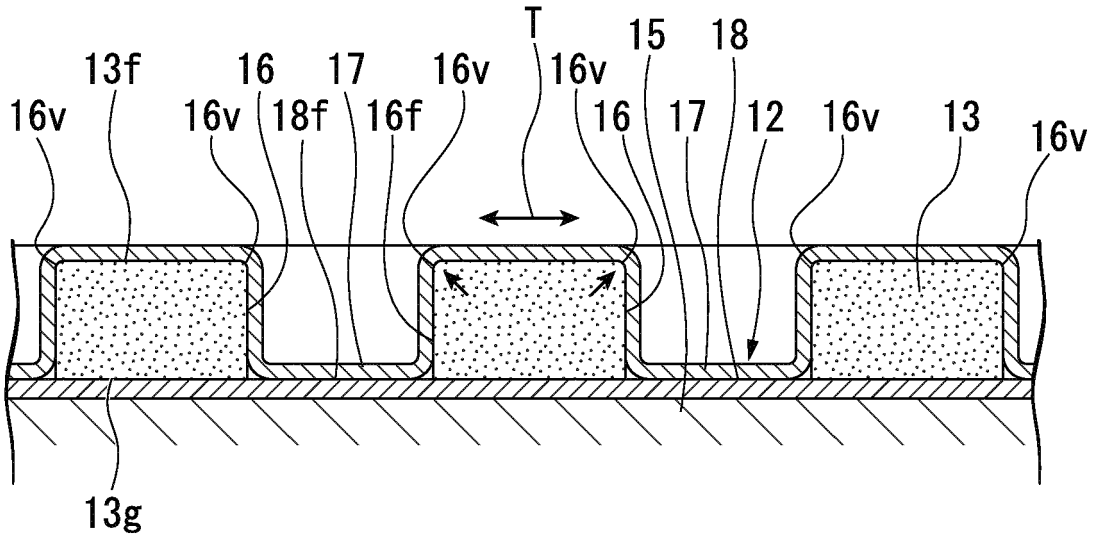

T
15
18
13f
16
17
16v
16v
16v
16v
18f
16f
16
17
12
16v
13
16v
13g

FIG. 10

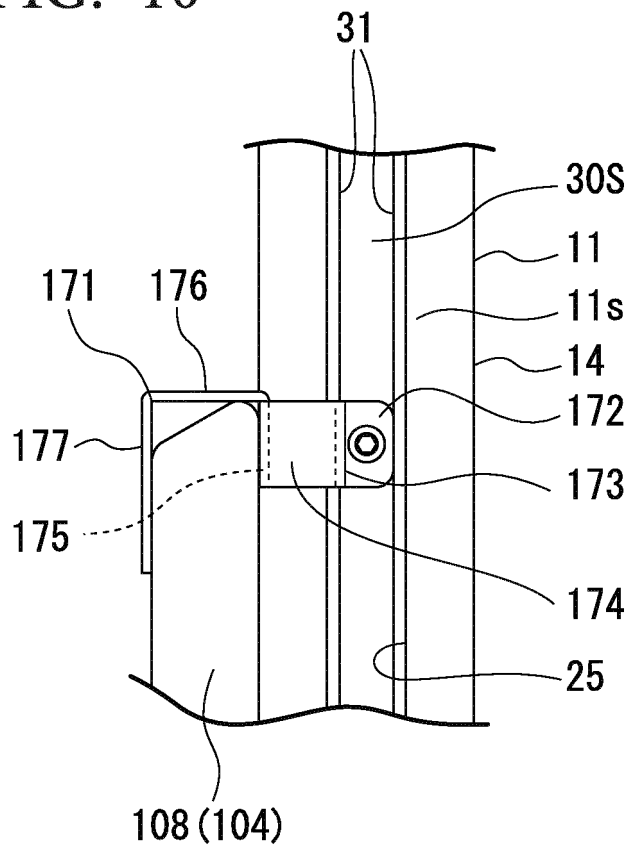


FIG. 11

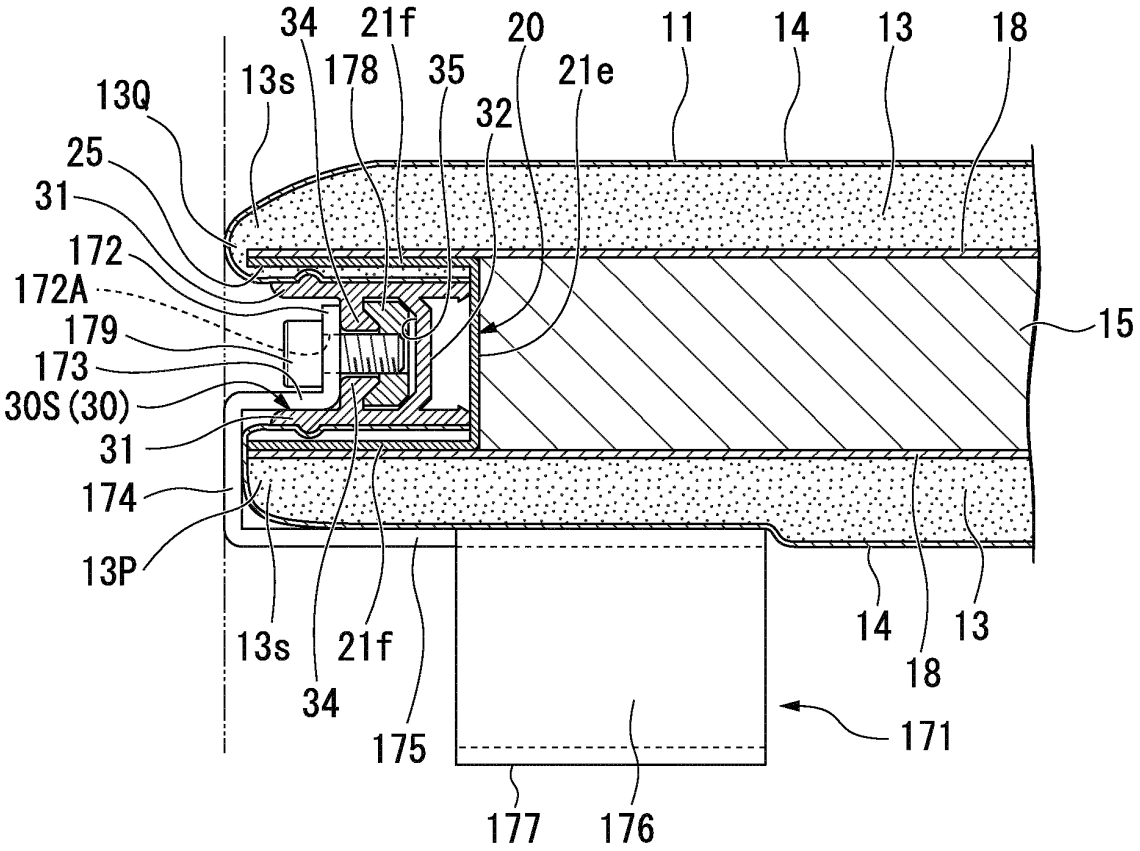
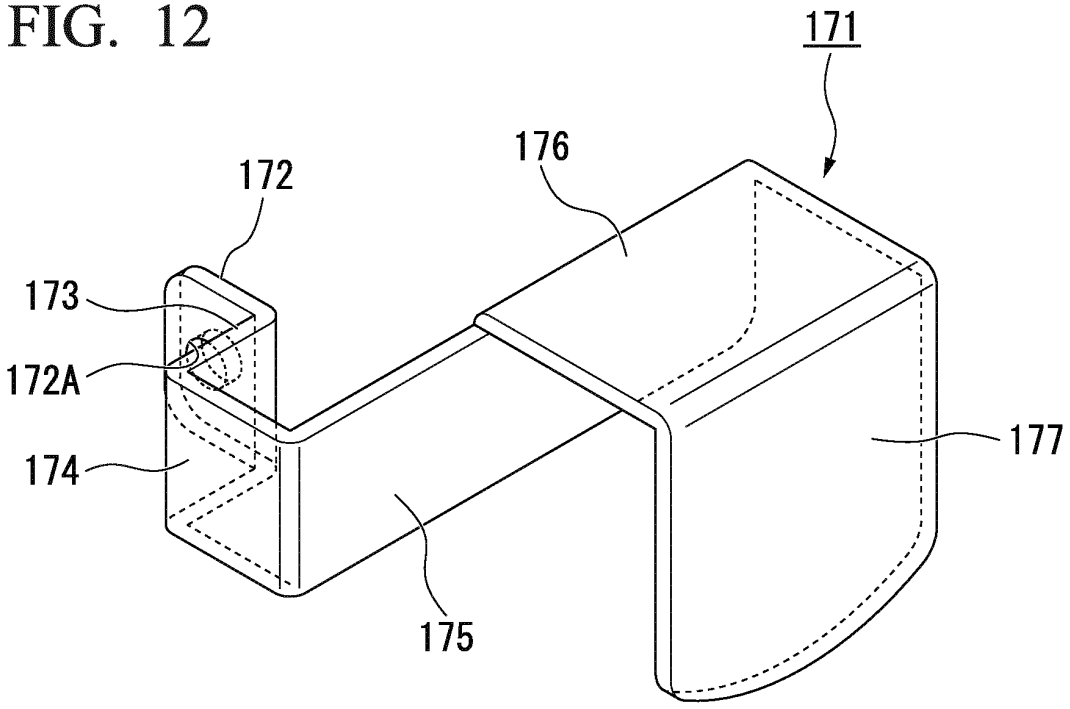

34
21f
20
11
14
13
18
13s
178
35
21e
13Q
32
25
31
172
172A
179
173
30S (30)
31
174
13P
15
13s
21f
34
175
14
13
18
171
177
176

FIG. 12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173
172A
174
177
175

FIG. 13

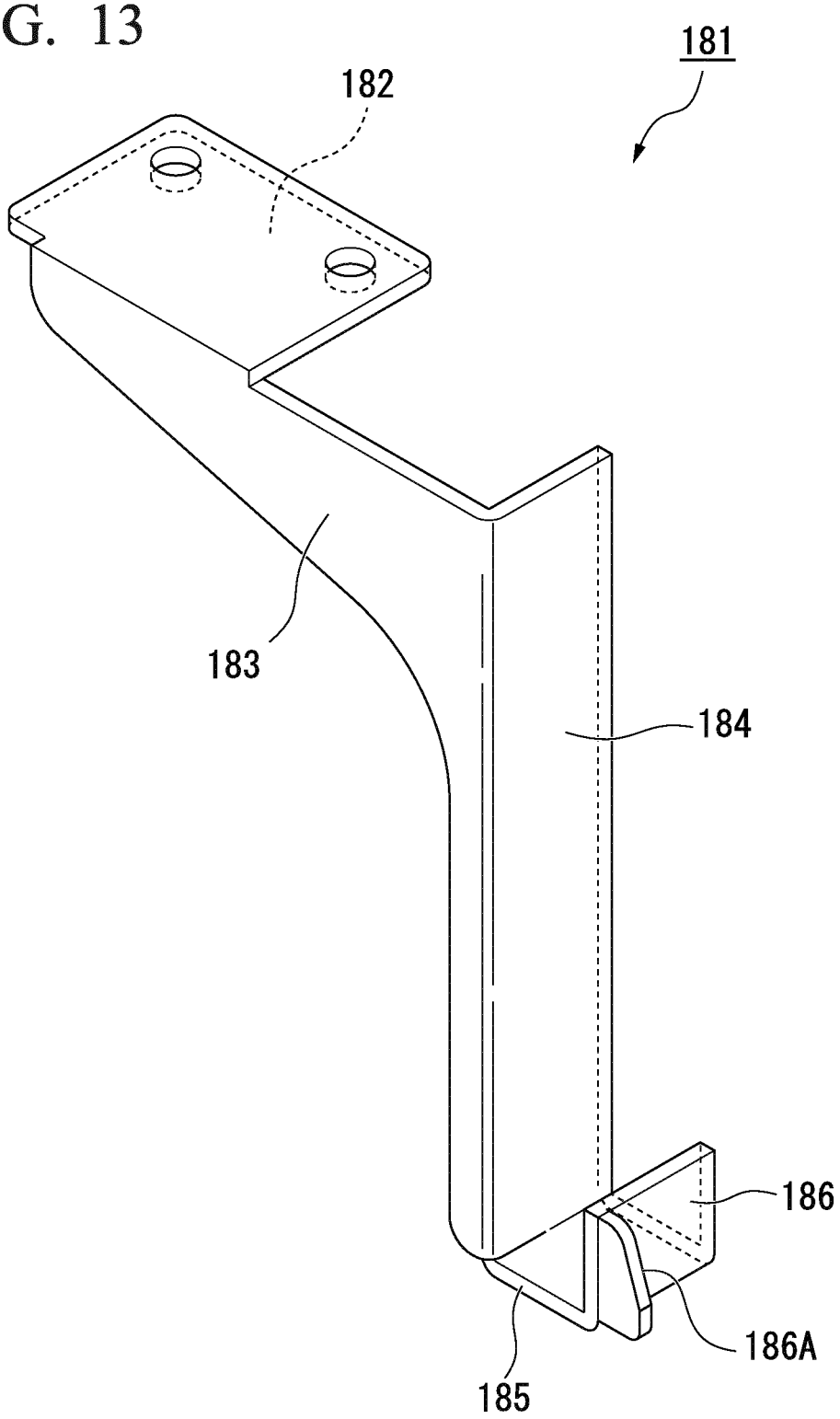
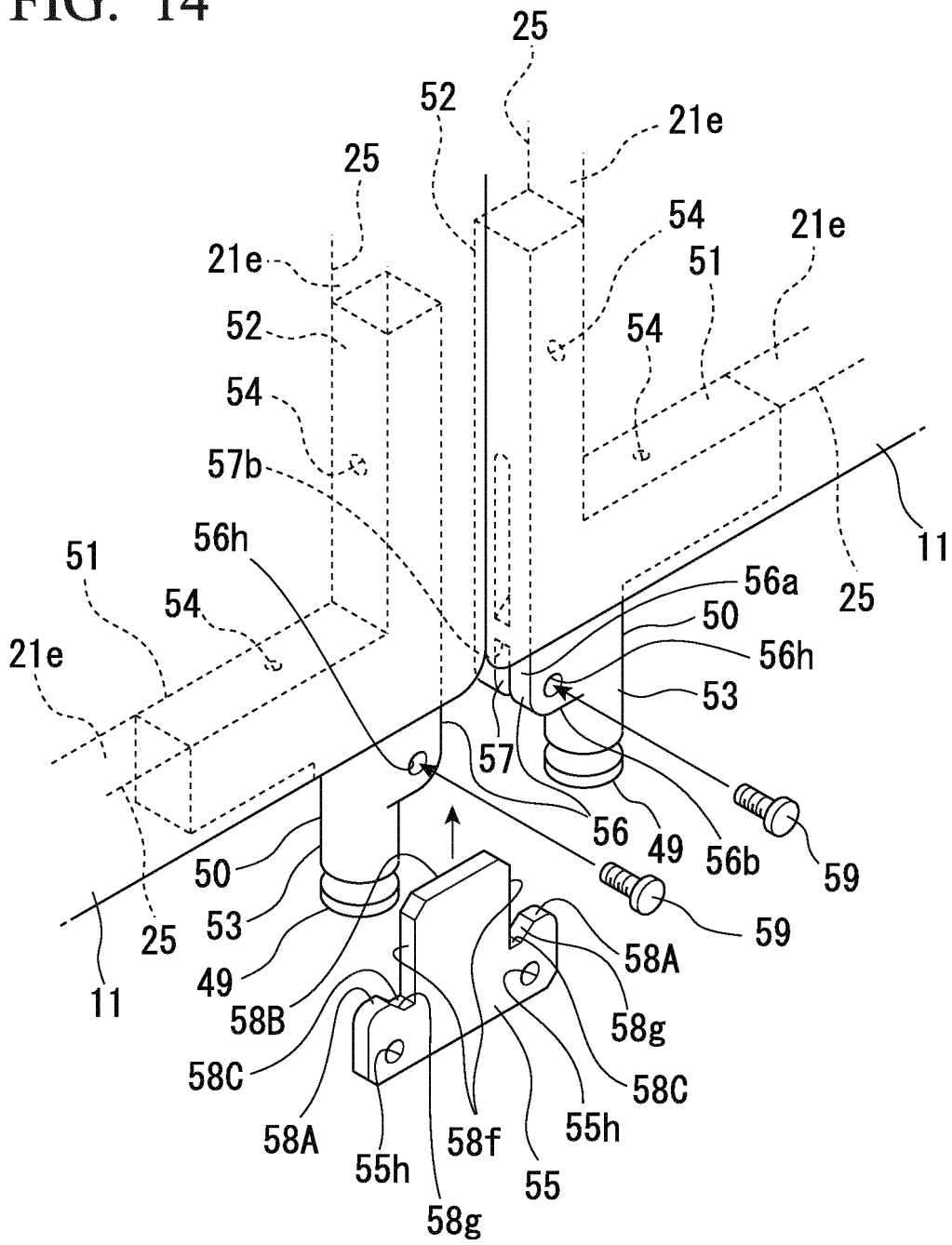


FIG. 14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52
21e
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21e
21e
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54
54
57b
56h
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51
56a
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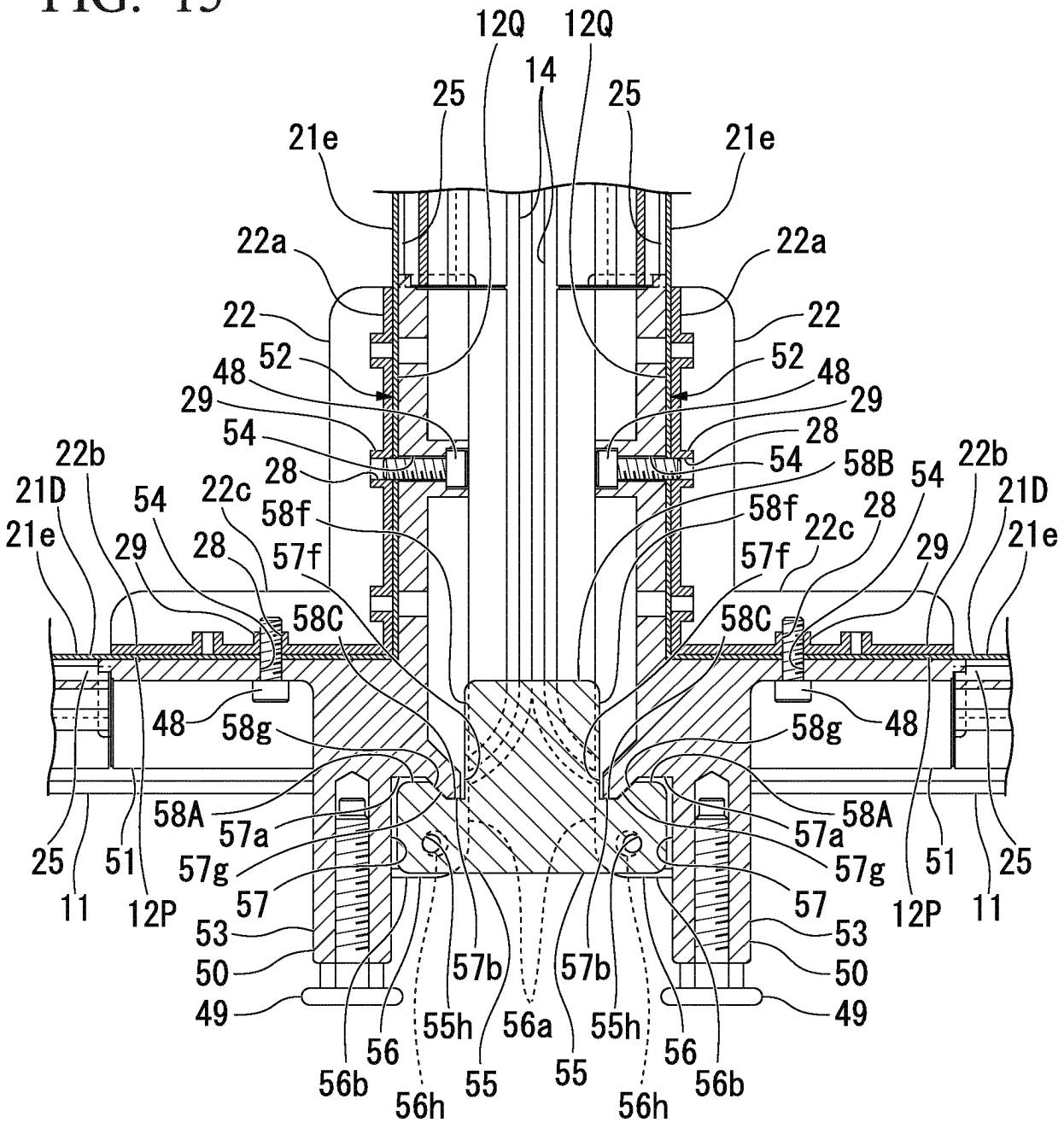
25
50
21e
56h
53
57
56
49
56b
59
50
59
53
25
58A
49
11
58B
58g
58C
58C
58A
55h
58f
55h
55
58g

FIG. 15


12Q
12Q
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25
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21e
22a
22a
22
22
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48
29
29
54
28
28
54
58B
22b
21D
54
22c
58f
58f
28
22c
22b
21D
21e
29
28
57f
57f
29
21e
58C
58C
48
48
58g
58g
58A
58A
57a
57a
25
51
57g
57g
51
25
11
12P
57
57
12P
11
53
53
50
50
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57b
57b
55h
56a
55h
56
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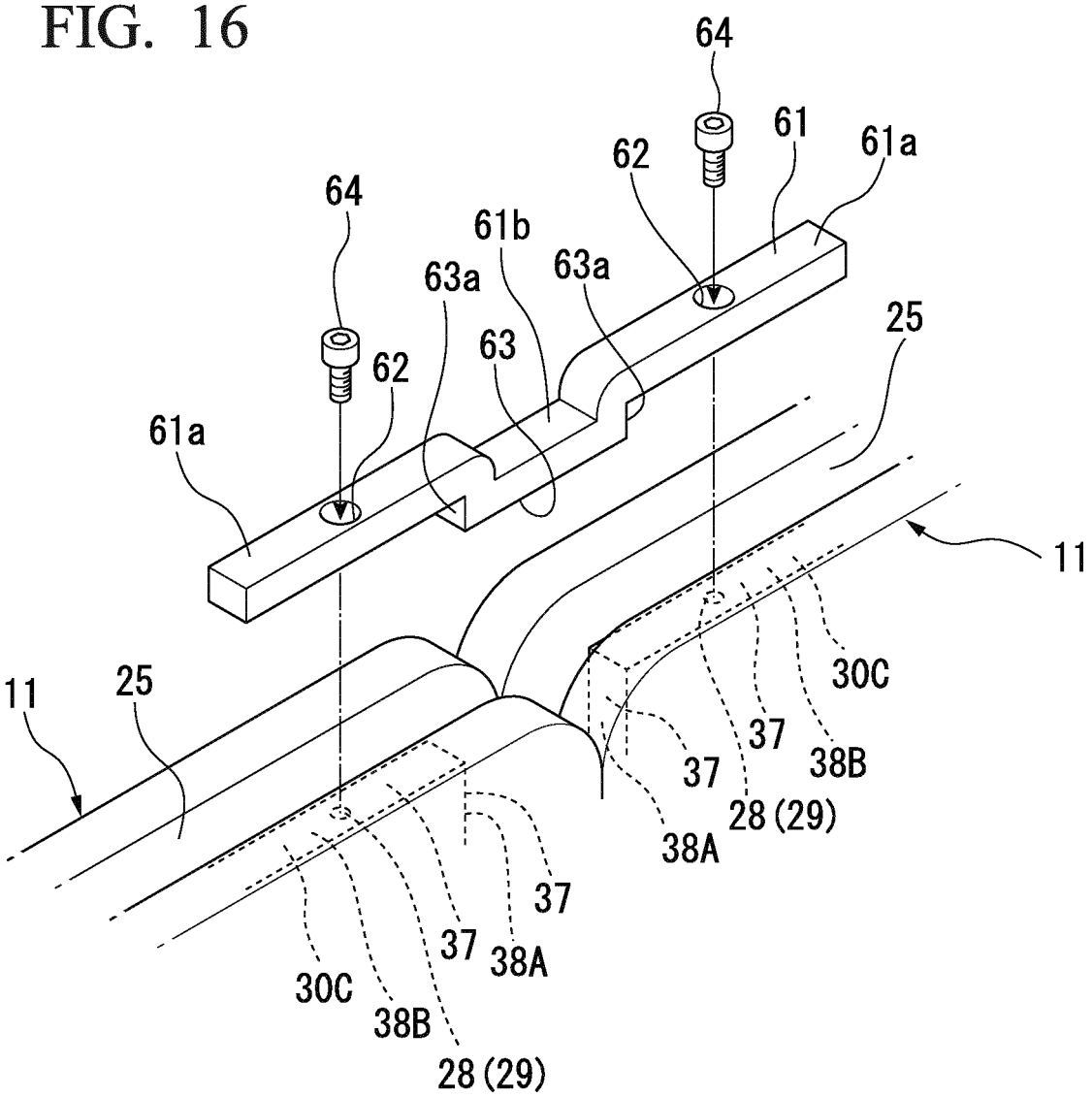
56b
56b
55
55
56h
56h

FIG. 16


64
61
61a
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64
61b
63a
63a
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62
25
61a
11
11
25
30C
37
37
38B
38A
28 (29)
37
37
38A
30C
38B
28 (29)

FIG. 17

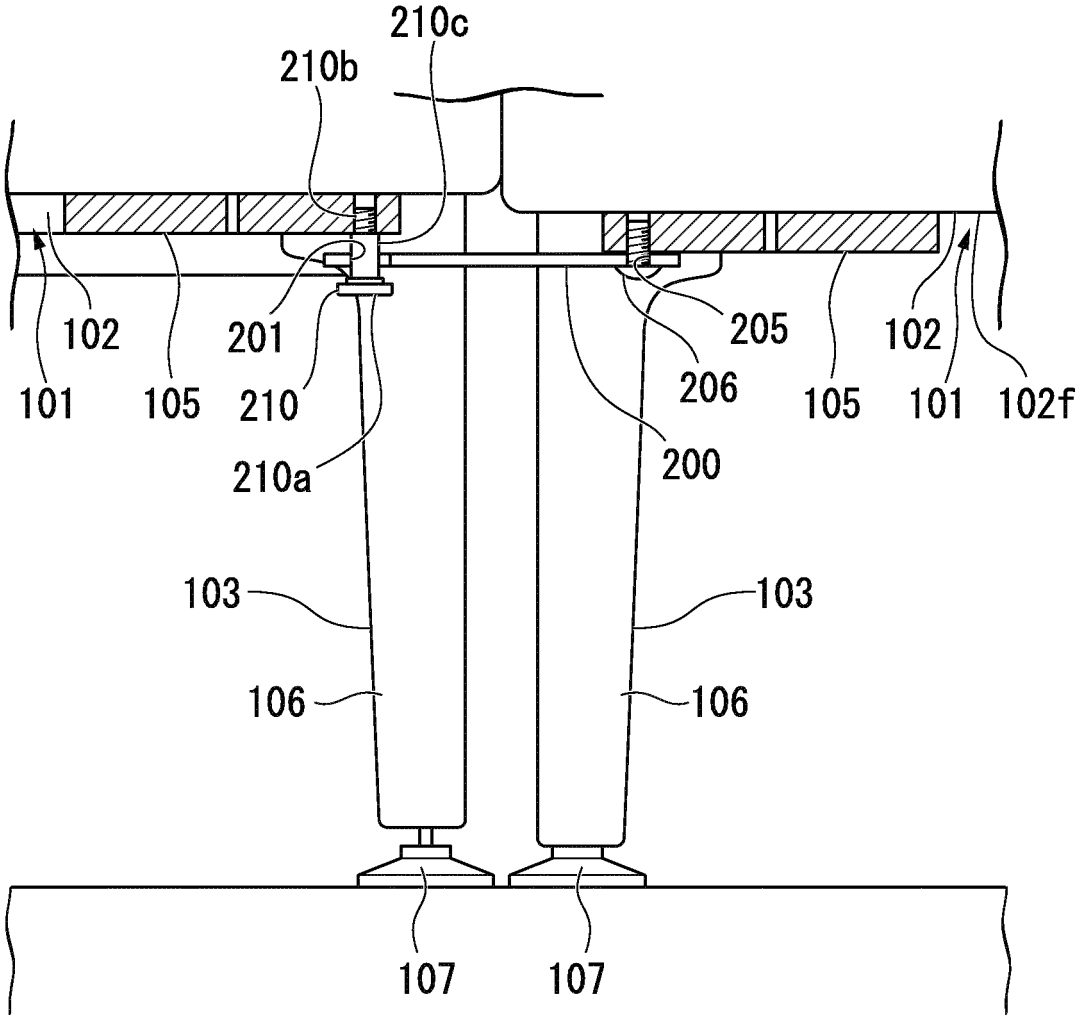

210c
210b
102
101
105
201
210
210a
205
206
200
105
102
101
102f
103
106
103
106
107
107

FIG. 18

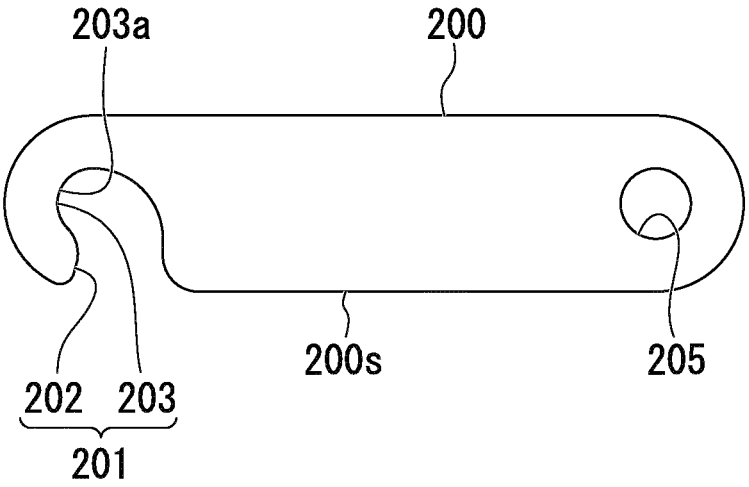


FIG. 19

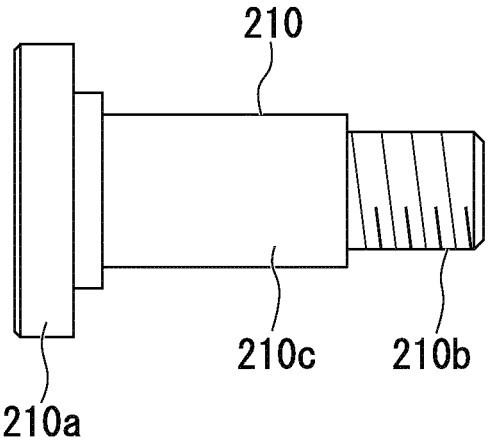


FIG. 20A

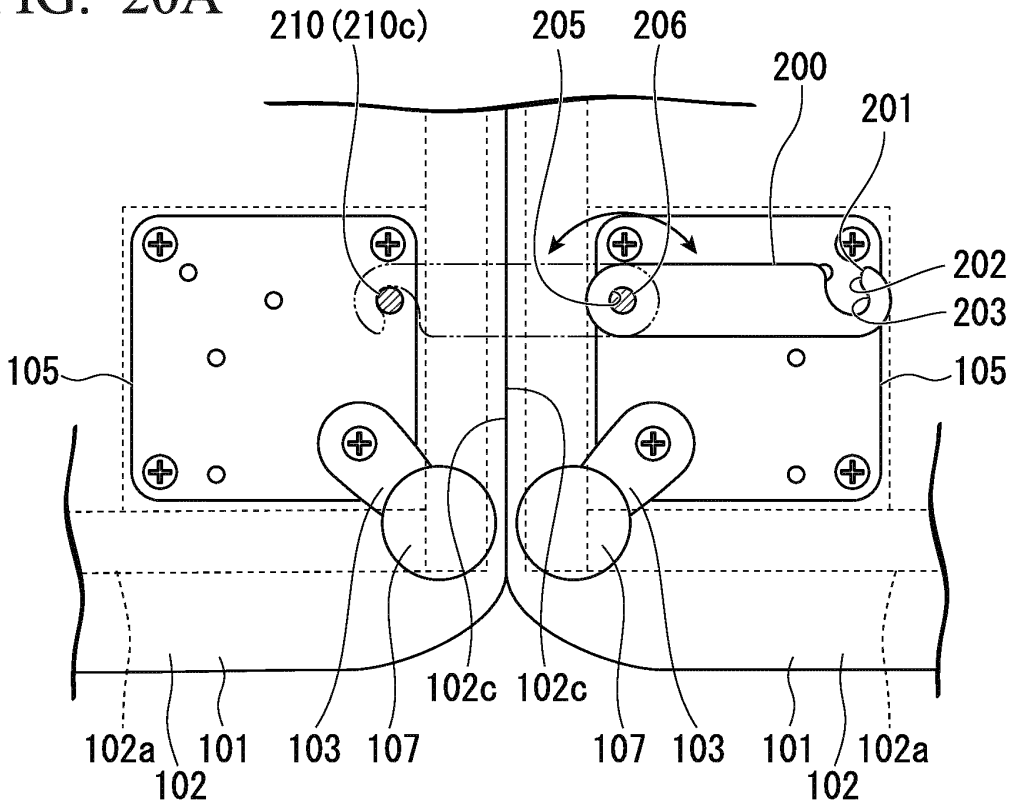


FIG. 20B

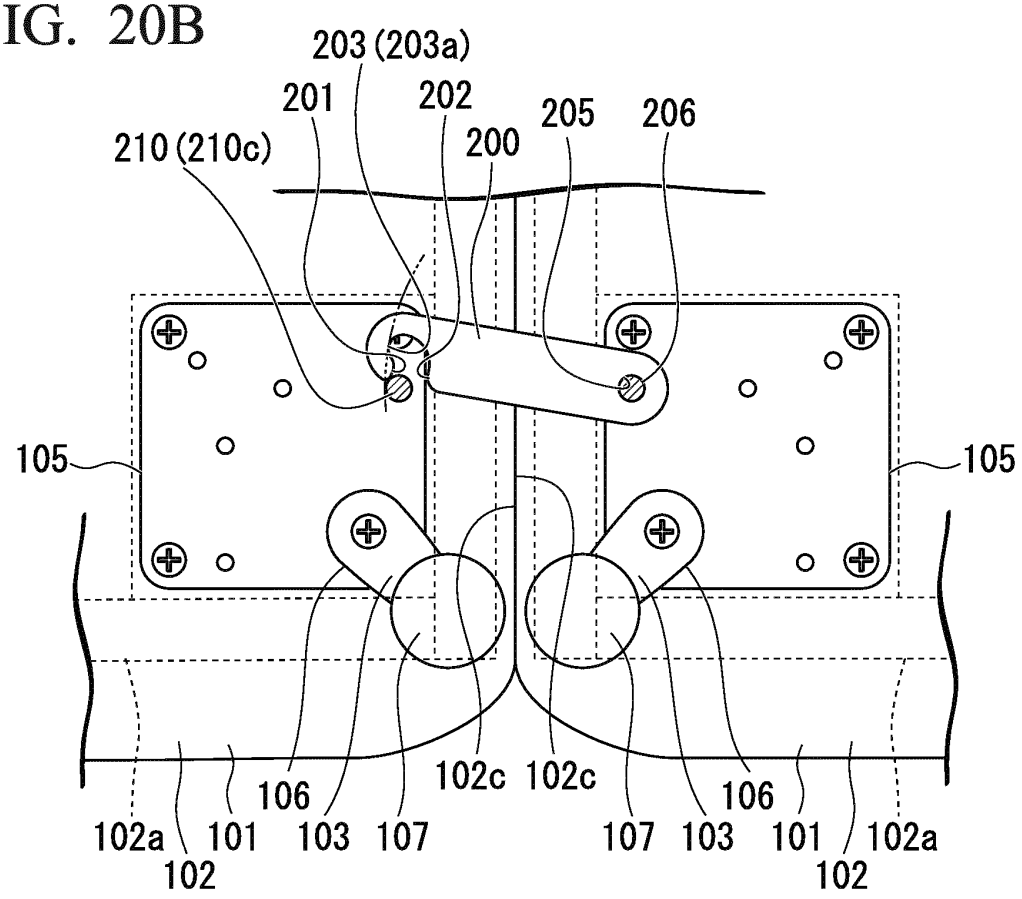


FIG. 21

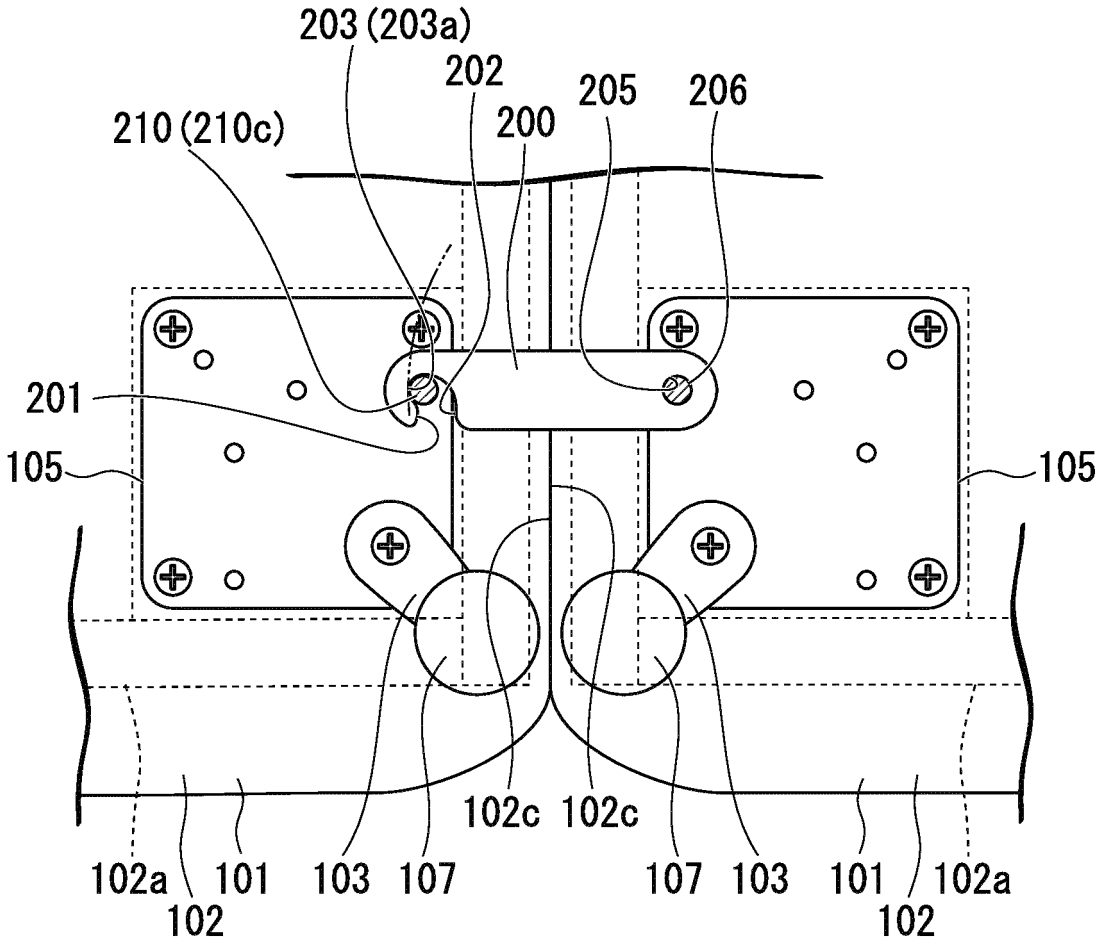

203 (203a)
202
205
206
210 (210c)
200
201
105
105
102c
102c
102a
101
103
107
107
103
101
102a
102
102

FIG. 22

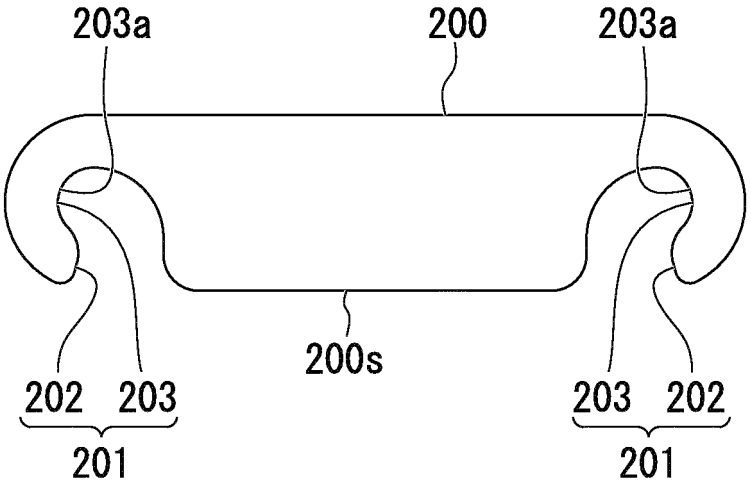
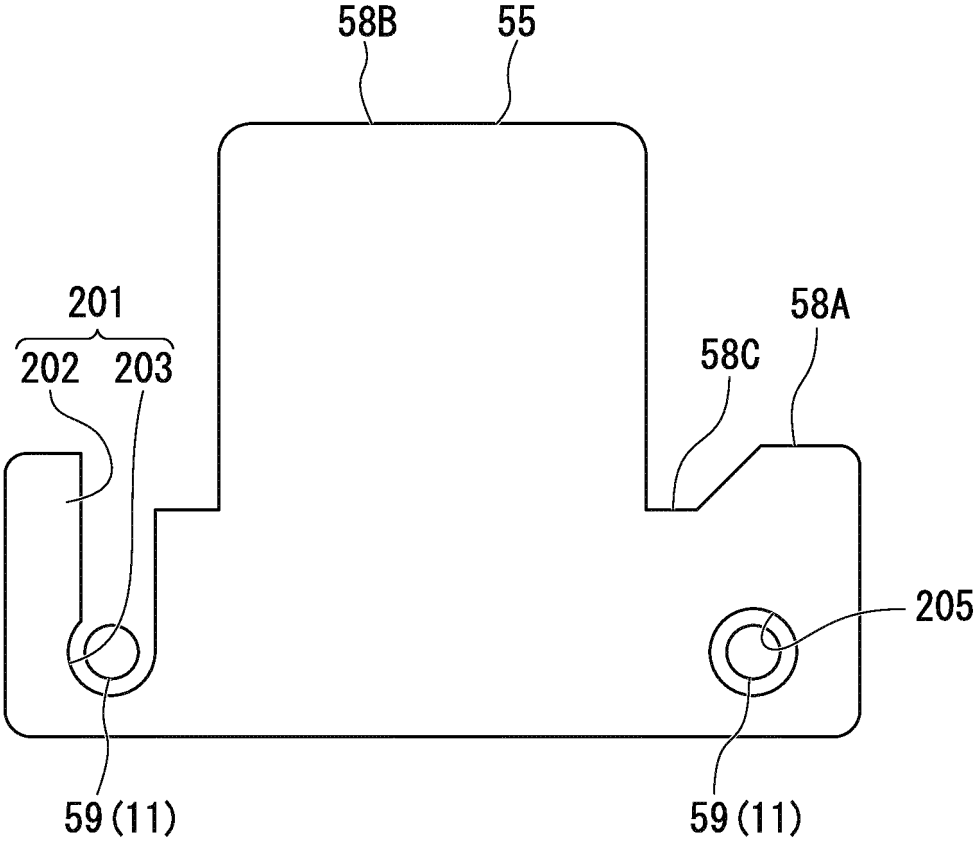

203a
200
203a
200s
202
203
203
202
201
201

FIG. 23


58B
55
201
202
203
58C
58A
205
59 (11)
59 (11)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2015/052155

A. CLASSIFICATION OF SUBJECT MATTER
A47C1/124(2006.01)i, *A47B87/00*(2006.01)i, *A47B97/00*(2006.01)i

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)
A47C1/124, A47B87/00, A47B97/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2015
Kokai Jitsuyo Shinan Koho 1971-2015 Toroku Jitsuyo Shinan Koho 1994-2015

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 47421/1986(Laid-open No. 157461/1987) (Kabushiki Kaisha Arflex Japan), 06 October 1987 (06.10.1987), specification, page 8, line 15 to page 12, line 4; fig. 1 to 5 (Family: none)	1,7 2,3,5,6 4
Y	JP 3085398 U (Toshihiko HASEGAWA), 26 April 2002 (26.04.2002), paragraph [0021]; fig. 4 (Family: none)	2,3,5,6

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

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"E" earlier application or patent but published on or after the international filing date
"L" 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)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" 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
"X" 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
"Y" 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

Date of the actual completion of the international search	Date of mailing of the international search report
13 March 2015 (13.03.15)	24 March 2015 (24.03.15)
Name and mailing address of the ISA/ Japan Patent Office 3-4-3,Kasumigaseki,Chiyoda-ku, Tokyo 100-8915,Japan	Authorized officer Telephone No.

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2015/052155

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 025353/1980(Laid-open No. 128058/1981) (Maruni Wood Industry Inc.), 29 September 1981 (29.09.1981), specification, page 1, line 20 to page 2, line 15; fig. 1 to 3 (Family: none)	5,6

Form PCT/ISA/210 (continuation of second sheet) (July 2009)

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Patent documents cited in the description

- JP 2014017383 A **[0002]**
- JP 2013094405 A **[0007]**