

Description

[0001] This invention relates to a bed assembly and a method of use thereof.

[0002] A conventional bed assembly typically includes a bed frame with a mattress provided thereon. The bed assembly is typically a rigid, stationary structure which remains in a required position within a bedroom. Additional furniture units can be provided adjacent to or in the locality of, the bed assembly if required, such as a bed side table, dressing table, seat and/or the like. These items of furniture are conventionally separate items to the bed assembly and often take up a large amount of space.

[0003] In some situations where bedroom space is limited, it is known to provide a fold up bed which can be moved between a folded position and an erect position. However, only the bed is movable and if other items of furniture are required to be used adjacent the bed, these items of furniture still take up valuable space.

[0004] It is therefore an aim of the present invention to provide a bed assembly which provides a greater utilisation of the available space.

[0005] It is a further aim of the present invention to provide a bed assembly which provides increased functionality compared to conventional bed assemblies.

[0006] It is a yet further aim of the present invention to provide a method of using a bed assembly.

[0007] According to a first aspect of the present invention there is provided a bed assembly, said bed assembly including a bed portion and a further portion attached to the bed portion, and wherein said further portion has a function different to that of the bed.

[0008] In one embodiment the said portion is movable with respect to the bed portion and in a first position has a first function and/or is substantially or partially folded or collapsed, and in at least a second position the further portion has at least a second function and/or is substantially erect or unfolded.

[0009] Thus, in one embodiment the bed assembly of the present invention has the advantage that it provides a bed, in combination with a further portion that can provide a further function and, in one embodiment can be moved to provide at least two different useable positions, at least two different functions and/or that can be moved between a storage or "out-of-use" position to an "in-use" or erect position. In any of the embodiments, the further portion provides the bed assembly with the option of increased functionality whilst minimising the amount of space required in the locality of the bed to provide said increased functionality. This is particularly useful in bedrooms and locations where there is limited free space to provide at least two separate items which would conventionally be required to provide the at least two functions provided by the present invention.

[0010] In one embodiment the position, size, shape and/or function of the bed portion is not changed on moving the further portion between the first and at least sec-

ond positions. Thus, in one example, the bed portion remains in an erect and/or substantially rigid form throughout movement and/or use of the further portion.

[0011] The bed portion typically comprises a mattress and/or at least support means for location of a mattress thereon.

[0012] The support means can include a housing, a base, a frame and/or the like. In one example, the bed frame includes support legs supporting the frame a predetermined distance above a floor surface. Slat members and/or springs can be provided between or associated with the edges of the frame to provide a resilient or flexible support surface for a mattress to be located thereon in use.

[0013] Preferably the further portion protrudes outwardly from the bed portion in the first and/or at least second positions.

[0014] Further preferably the further portion protrudes outwardly from a side wall of the bed portion in the first and/or at least second positions. However, the further portion could protrude from an end of the bed portion, a top or base of said bed portion, or indeed be positioned substantially around the bed portion.

[0015] In one embodiment the wall of the bed portion to which the further portion is attached moves with the further portion if the portion is movable between the first and at least second positions.

[0016] In one embodiment one or more panel or rail means are provided on or associated with the bed portion and the further portion protrudes outwardly from said one or more panel or rail means. For example, the one or more panel or rail means comprise or form part of a head board, side panel, foot board, child safety rail and/or the like.

[0017] In one embodiment the further portion is movable through approximately 90 degrees in moving between first and at least second positions. In an alternative embodiment the further portion or one or more parts of said portion are moved through an angle between 0-360 degrees in moving the same between first and at least second positions.

[0018] Preferably locking means are associated with the further portion to allow the further portion to be retained in the first and/or at least second positions.

[0019] Preferably resilient biasing means are provided on or associated with the locking means to bias the locking means to a locked position. The biasing force of the resilient biasing means typically has to be overcome to allow the locking means to be released from a locked condition, wherein the further portion is retained in position, in an unlocked condition, wherein the further portion is movable between the first and at least second positions.

[0020] In one embodiment a safety cover is provided on, over or is associated with the locking means to prevent accidental movement of the locking means during unintentional use and/or to prevent a child from accessing the locking means for example. The safety cover can

be moved between a covered position, wherein the locking means is substantially covered and/or access to the locking means is substantially limited, and an uncovered position, wherein the locking means is substantially uncovered and/or access to the locking means is allowed.

[0021] Preferably the safety cover is slidably mounted over the locking means to allow movement between the covered and uncovered positions.

[0022] Preferably the locking means includes a locking arm movable between the locked and unlocked positions and said locking arm is slidably mounted in use.

[0023] In one embodiment the further portion has the function of shelving means. The further portion can, in one embodiment have the function of seating means in the at least second position.

[0024] In one embodiment the further portion is in the form of a furniture unit, play apparatus and/or the like.

[0025] Preferably the further portion includes two or more panel members or portions that are movably mounted to allow at least one of the panel members or portions to be moved relative to the other panel member or portion.

[0026] Preferably the one or more panel members or portions are hingedly mounted to each other, thereby allowing the further portion to be moved between a folded and unfolded configuration.

[0027] The furniture unit could take any suitable form, such as for example any or any combination of a desk, vanity unit, shelf unit, seating means, table and/or the like.

[0028] Preferably the bed assembly is in the form of a child's bed assembly.

[0029] According to a second aspect of the present invention there is provided a bed assembly, including a bed portion and further portion positioned in relation to the bed portion and wherein said further portion has a first function or is in the form of a first item of furniture and a second function and/or is in the form of at least a second item of furniture.

[0030] In one embodiment the further portion is movable with respect to the bed portion.

[0031] In a further aspect of the invention, there is provided a bed assembly including a bed portion and a further portion in the form of a play apparatus which extends to at least one side or end of the bed portion.

[0032] In one embodiment, the play apparatus is in the form of a track which passes along at least part of the periphery of the bed portion. In an alternative embodiment, the play apparatus is in the form of a model building such as a dolls house which is located for example at the head end of the bed portion and acts as a head board for the bed portion, or alternatively could act, for example, as a footboard for the assembly.

[0033] According to a yet further aspect of the present invention there is provided a bed assembly, said bed assembly including a bed portion and a further portion attached to the bed portion, and wherein said further portion is movable relative to said bed portion between a first position, wherein the further portion is substantially or partially folded or collapsed, and at least a second position,

wherein the further portion is substantially erect or unfolded.

[0034] According to another aspect of the present invention there is provided a method of using a bed assembly, said bed assembly including a bed portion and a further portion attached to the bed portion, and wherein said method includes the steps of moving the further portion relative to said bed portion between a first position, wherein the further portion has a first function and/or is substantially or partially folded or collapsed, and at least a second position, wherein the further portion has at least a second function and/or is substantially erect or unfolded.

[0035] Embodiments of the present invention will now be described with reference to the following figures, wherein:

Figures 1a-1b illustrate a rear perspective view and a front perspective view of a bed assembly according to an embodiment of the present invention in a first position;

Figures 2a-2b illustrate a rear perspective view and a front perspective view of the bed assembly in figures 1a-1b in a second position;

Figure 3 shows an exploded view of the further portion in figures 1a-2b;

Figures 4a-4e show detailed views of the steps involved in actuating the locking mechanism to move the further portion between the first and second positions;

Figure 5 shows an exploded view of the locking mechanism in figures 4a-4e;

Figure 6 shows an assembled view of the locking mechanism in figures 4a-4e;

Figure 7 shows a perspective view of a bed assembly according to a further embodiment of the present invention in a first position wherein the further portion is in a substantially stored condition;

Figures 8-10 show views of the bed assembly in figure 7 with the further portion movable through different positions to provide a play area function as shown in figure 10;

Figure 11 indicates a further embodiment of the invention; sharing a bed portion and play apparatus in the form of a track; and

Figure 12a and b indicate a yet further embodiment of the invention showing the bed portion and a further portion in the form of play apparatus depicting model building structures.

[0036] Referring firstly to figures 1-6, there is illustrated a bed assembly 2 according to an embodiment of the present invention including a bed portion 4 and a further portion 6 protruding outwardly from a side of bed portion 4. The further portion 6 can be moved relative to the bed portion 4 to provide two different functional items of furniture as will be described in more detail below. The user selects which furniture item they wish to use at any particular time and moves the further portion to form said furniture item accordingly. This has the advantage of providing the option of two furniture items whilst only taking up the space of a single item.

[0037] Bed portion 4 includes a support frame 8 which is located a pre-determined spaced distance above a floor surface in a substantially horizontal orientation by corner supports 10, 12, 14, 16. A mattress 18 is located on top of support frame 8.

[0038] A head board panel 20 is provided at a top end of the bed assembly 2 and a foot board panel 22 is provided at a bottom end of the bed assembly. Two side board panels 24, 26 are provided partially along the sides of bed assembly 2 adjacent head board panel 20.

[0039] In figures 1a-1b, further portion 6 is in the form of a shelf protruding outwardly from side panel 26 and forms a first position. Further portion 6 is hingedly movable through 90 degrees to a seat position, as shown in figures 2a-2b, to form a second position. Hinges 28 connect further portion 6 to support frame 8 to allow the pivotal movement between the first and second positions. The further portion can be formed of any or any combination of suitable materials, such as board (MDF and the like), fabric and/or other materials.

[0040] In the first shelf position, side panel 26 is provided in a substantially vertical orientation and that is parallel to side panel 24. The shelf includes a top surface 30 which acts as a bed side table and which protrudes outwardly from side panel 26, and two storage compartments or shelf members 32, 34 provided below said top surface. In this embodiment the storage compartments 32, 34 are formed from substantially flexible fabric but could be formed from rigid material and/or the like. Hinges 28 are located at a base of the shelf.

[0041] In the seat position, side panel 26 is moved to a substantially horizontal position. Inner surface of panel 26 has a cushioned seat member 36 attached thereto so that it forms a top surface of the seat when the further portion 6 is in the seat position. Panel 30 now forms an outer side wall to the seat. Storage compartments are moved from the shelf position, wherein the longitudinal axis is substantially vertically orientated, to the seat position, wherein the longitudinal axis is substantially horizontally orientated. Hinges 28 are located at a top of the seat.

[0042] Cushioned seat member 36 can be attached or detachably attached to side panel 26 via any suitable means. In the illustrated embodiment VELCRO strips 40 (hook and loop fastening) are used to detachably attach seat member 36 to inner surface of side panel 26, as

shown in figure 3. Thus, the seat member 36 can be removed when the further portion 6 is in the shelf position if required.

[0043] Figure 3 also illustrates an embodiment of the hinge mechanism that can be used for moving the further portion 6 between the shelf and seat positions. More particularly, each of two spaced apart hinges 28 includes a first collar 42 that is joined to the support frame 8 via rivets. A second outer collar 44 is rotatably mounted on the outer surface of first collar 42. Arm member 46 is joined to collar 44 at an end thereof and is also attached to side panel 26 via suitable attachment means 48 at spaced apart intervals along the longitudinal axis of arm member 46. A further arm member 50 is joined to end 52 of arm member 46 and is provided substantially perpendicular thereto. Arm member 50 is joined to the lower side of surface 30 via suitable attachment means 54. Fabric compartments 32, 34 are provided with loops 56 which fit over arm members 50 to secure the compartments to arm members 50.

[0044] Locking means 38 are provided between the support post 16 and a corner of side panel 26 to maintain further portion 6 in the shelf or first position. Release of the locking means allows movement of further portion 6 to the seat or second position as will be described in more detail below.

[0045] Locking means 38 includes a locking arm 58 having a gripping portion 60 located at an end thereof to allow a user to easily grip the lock to actuate the same. Locking arm 58 is slidably mounted in a channel 62 defined between two housing parts 64, 66. Gripping portion 60 protrudes above a slot 65 defined in a top surface of housing parts 64, 66. Resilient biasing means in the form of one or more springs 68 are provided in channel 62 to resiliently bias arm 58 to a locked position. In the locked position, arm 58 protrudes outwardly of channel end 70 in housing parts 64, 66, as shown in figure 6, and engages in a complementary recess in upright support post 16. In the unlocked position, arm 58 is moved away from end 70 against the resilient biasing force of springs 68 so that arm 58 is released from the recess in support post 16.

[0046] A safety cover 72 is provided over locking mechanism 38 and is slidably movable relative thereto between a covered position, wherein the safety cover substantially covers the locking mechanism as shown in figure 4a, to an uncovered position, wherein the safety cover is moved clear to reveal gripping portion 60 of locking arm 58 as shown in figure 4b. This prevents accidental actuation of the locking mechanism by a child or when a user is asleep in the bed assembly. Resilient biasing means in the form of springs 74 are provided in channels 76 defined on the outer side surfaces of housing parts 64, 66. Springs 74 resiliently bias safety cover 72 to the covered position. Protrusion portions 75 provided on inner side surfaces of cover 72 are slidably mounted in channels 76. A user moves cover 72 to the uncovered position by gripping the outer surface of cover 72 and sliding the same away from support post 16. Gripping

means in the form of ribs 78 are provided on the outer surface of cover 72 to aid the gripping process. Housing parts 64, 66 are joined to either other and to either side of side panel 26 via nuts 80 and bolts 82.

[0047] Referring to figures 7-10, there is illustrated a further embodiment of a bed assembly 100 of the present invention. Bed assembly 100 includes a bed portion 102 and a further portion 104 that is movable between a storage or folded position, as shown in figure 7, to a substantially erect or unfolded position, as shown in figure 10. In the erect or unfolded position, the further portion provides an additional function for the bed assembly that was not possible when in the storage position.

[0048] Bed portion 102 comprises a housing having side walls 106, a top end 108 and a base end 110. The top edges of side walls 106 and base end 110 are provided in the shape resembling the escarpment and turrets of a castle. A top surface 112 of bed portion 102 is slightly recessed between side walls 106 and ends 108, 110 to allow the location of a mattress (not shown) thereon in use.

[0049] Further portion 104 is located adjacent top end 108 of bed portion 102 and protrudes outwardly thereof. In the stored or folded position, further portion 104 has the appearance of a box 113 and can be used to form a head board for the bed assembly.

[0050] Further portion 104 includes a plurality of panel members which are arranged and hingedly connected together in such a manner that the panel members can be unfolded in sequence to form the substantially erect structure shown in figure 10. The substantially structure can be used as a play area for a child and/or the like. In the illustration, the panel members of further portion 104 are formed so as to continue the castle theme of bed portion 102.

[0051] More particularly, outer side panel member 114 is hingedly connected to a base 116 of side wall 106 of bed assembly 100, as shown in figure 7, and can be moved through 90 degrees to form part of a base of the play area, as shown in figure 8. With the box 113 moved to the side of bed portion 102, it can be seen that a recess 118 is defined at head end 108 where box 113 was previously located.

[0052] Top panel 120 of box 113 in figure 7 is moved to form a side wall in figure 8 and side panel 122 forms a top. Front panel 124 in figure 7 remains as a front panel in figure 8 but is offset to the side of bed portion 102.

[0053] Panel 124 is hingedly connected via edge 126 to a base panel 128 and panel 122 is hingedly connected to panel 124 via edge 130. Thus, panel 124 is moved through 90 degrees from an upright position to a base or horizontal position, as shown in figure 9, thereby revealing an interior play area space 132 of box 113.

[0054] Panel 134 is hingedly connected to edge 136 of panel 122 and can then be moved through 90 degrees from an upright position, as shown in figure 9 to a base or horizontal position, as shown in figure 10.

[0055] Thus, panels 128, 124, 122, 134 form a base

of the play area and these panels are in a substantially parallel plane to top surface 112 of bed portion 102 and are located to a side of bed portion 102. Panels 128, 124, 122, 134 can have side walls 138 attached thereto to form side walls of the play area in the fully erect position.

[0056] Any other suitable play structures and/or toy members can be associated with the panels of box 113 to provide play pieces for the play area.

[0057] Although the illustrations in figures 7-10 show the play area to be similar dimensions and/or shape to bed portion 102, it will be appreciated that the play area can be any suitable size, shape and/or design.

[0058] Turning now to figure 11, there is illustrated a further embodiment of the invention in which there is provided a bed assembly 202 which includes a bed portion 204 and a further portion 206. In this embodiment, the further portion 206 comprises a track 208 which passes along three sides 210, 212 and 214 of the bed portion. This therefore forms a track along which another article such as a toy vehicle can be moved by a child and thereby allows the same to be used as a play apparatus. Furthermore, at the foot end 212 of the bed portion 204, there is provided a ramp 216 which can also be used as part of the further portion of the bed assembly.

[0059] Turning now to figure 12, there are illustrated yet further embodiments of the invention in which, in each case, there is provided a bed assembly 302 which comprises a bed portion 304 and a further portion 306. In this case, the further portion 306 acts as the headboard 307 of the bed portion and also can be used as a model building structure in the form of a dolls house 310 or castle 311 respectively in which there is provided a series of cavities or rooms 312, 314 and 316 which can be interconnected by doorways 318 and therefore be used to move articles such as toy characters and/or miniature articles there around.

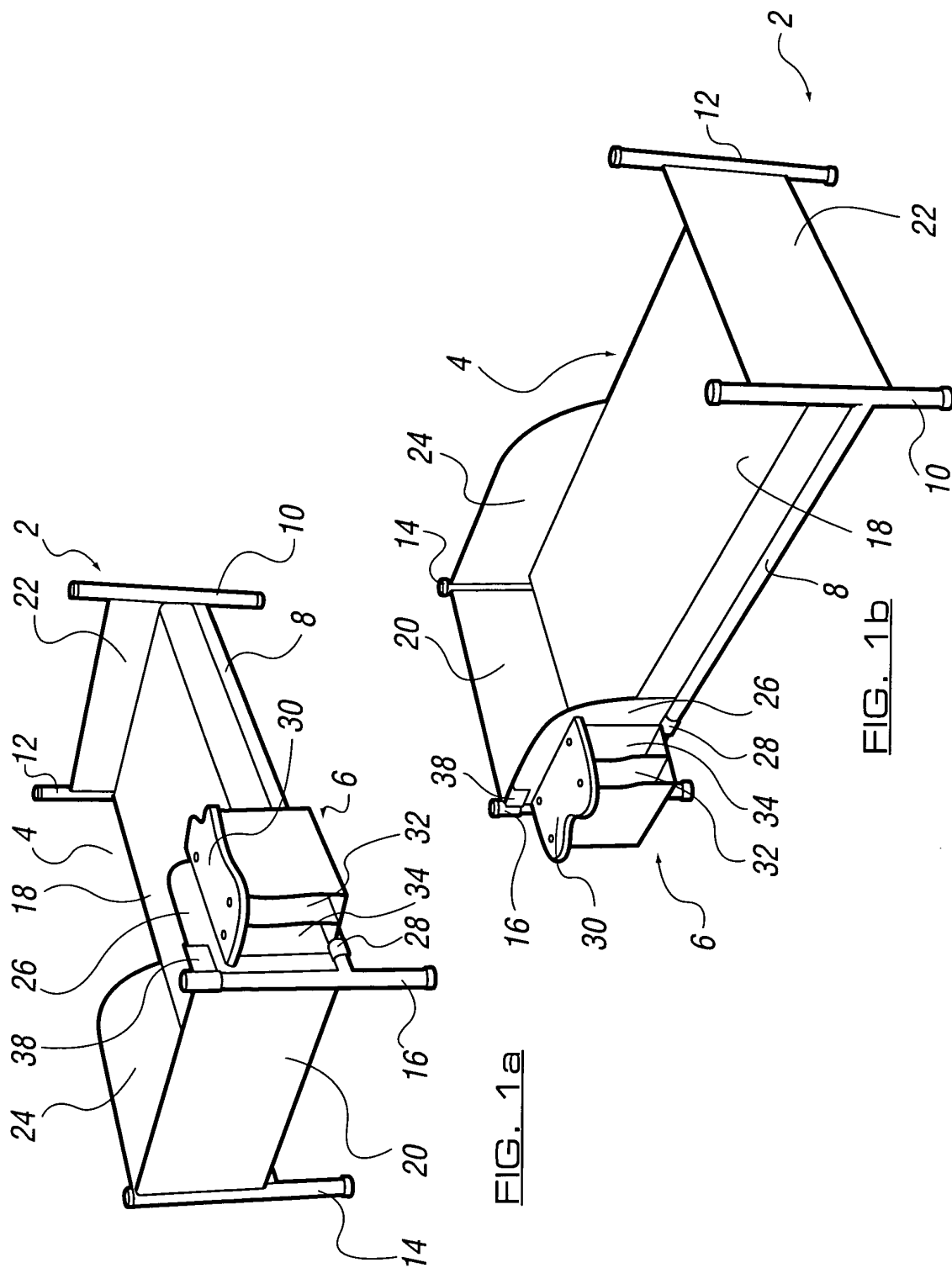
[0060] The components of the bed assembly can be formed from any or any combination of materials, such as plastic, wood, metal, fabric and/or the like.

[0061] The bed portion itself can also be formed from one or more movably mounted panels and/or portions if required to allow the bed portion to be moved between stored/folded and erect/in-use conditions.

Claims

1. A bed assembly, said bed assembly including a bed portion and a further portion attached to the bed portion, and wherein said further portion has a function different to that of the bed.
2. A bed assembly according to claim 1 wherein the further portion is movable relative to said bed portion between a first position, wherein the further portion has a first function and/or is substantially or partially folded or collapsed and at least a second position wherein the further portion has at least a second

- function and/or is substantially erect or unfolded.
3. A bed assembly according to claim 2 wherein the said further portion can be moved to provide at least two different usable positions and/or functions. 5
 4. A bed assembly according to claim 1 wherein the position size, shape and/or function of the bed portion include a mattress and/or at least a support means for location of a mattress thereon and the form of the same is retained. 10
 5. A bed assembly according to claim 1 wherein the further portion protrudes outwardly from the bed portion at at least one end and/or side of the same. 15
 6. A bed assembly according to claim 2 wherein locking means are associated with the further portion to allow the same to be retained in the first and/or second positions. 20
 7. A bed assembly according to claim 6 wherein resilient biasing means are provided on or associated with the locking means to bias the locking means to a locked position. 25
 8. A bed assembly according to claim 6 wherein a safety cover is provided in association with the locking means to prevent accidental movement of the locking means during use of the bed portion and/or to prevent a child from accessing the locking means. 30
 9. A bed assembly according to claim 2 wherein the further portion has a function of shelving means in the first position and seating means in the second position. 35
 10. A bed assembly according to any of the preceding claims wherein the further portion forms a play apparatus. 40
 11. A bed assembly according to claim 10 wherein the play apparatus forms a headboard or footboard for the bed portion. 45
 12. A bed assembly according to claim 10 wherein the play apparatus is in the form of a model building structure and/or a track.
 13. A bed assembly according to claim 12 wherein when the further portion is in the form of a track the same extends around a plurality of sides and/or ends of the bed portion. 50
 14. A bed assembly, said bed assembly including a bed portion and a further portion in the form of play apparatus which extends to at least a side or end of the bed portion. 55
 15. A bed assembly, including a bed portion and further portion positioned in relation to the bed portion and wherein said further portion has a first function or is in the form of a first item of furniture and a second function and/or is in the form of at least a second item of furniture.
 16. A method of using a bed assembly, said bed assembly including a bed portion and a further portion attached to the bed portion and wherein said method includes steps of moving the further portion relative to said bed portion between a first position wherein the further portion has a first function and/or is substantially or partially folded or collapsed and at least a second position wherein the further portion has at least a second function and/or is substantially erect or unfolded.



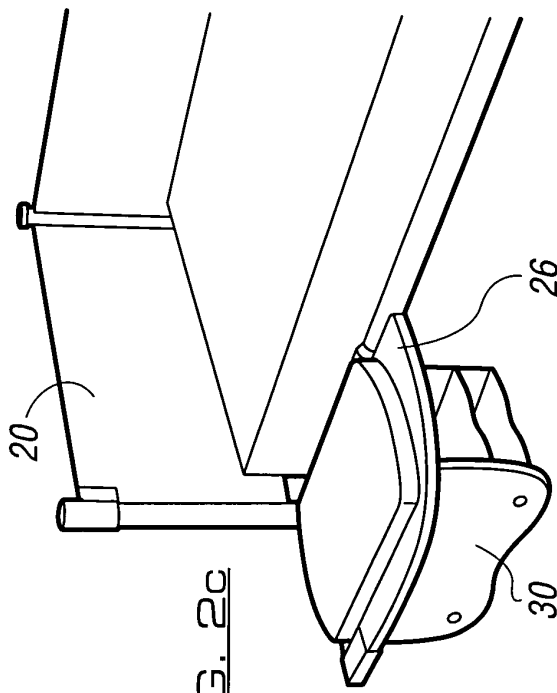


FIG. 2c

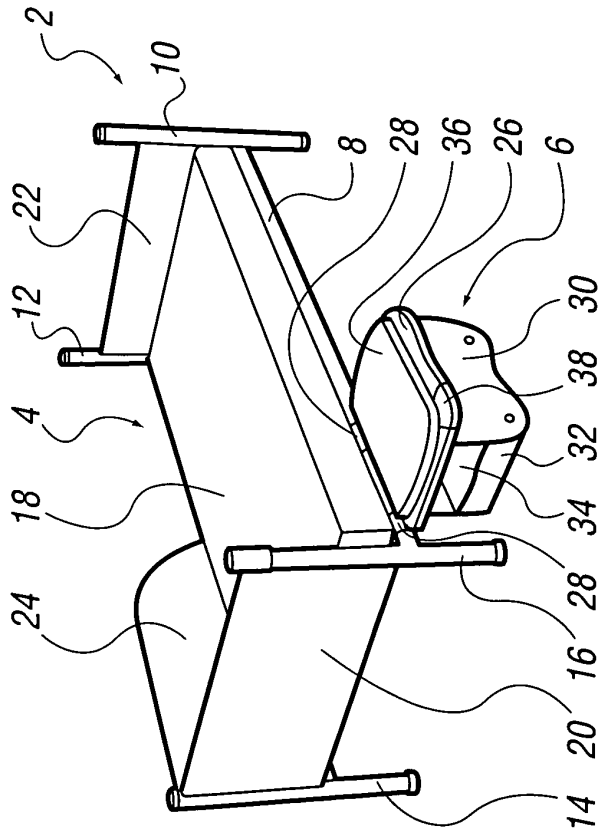


FIG. 2a

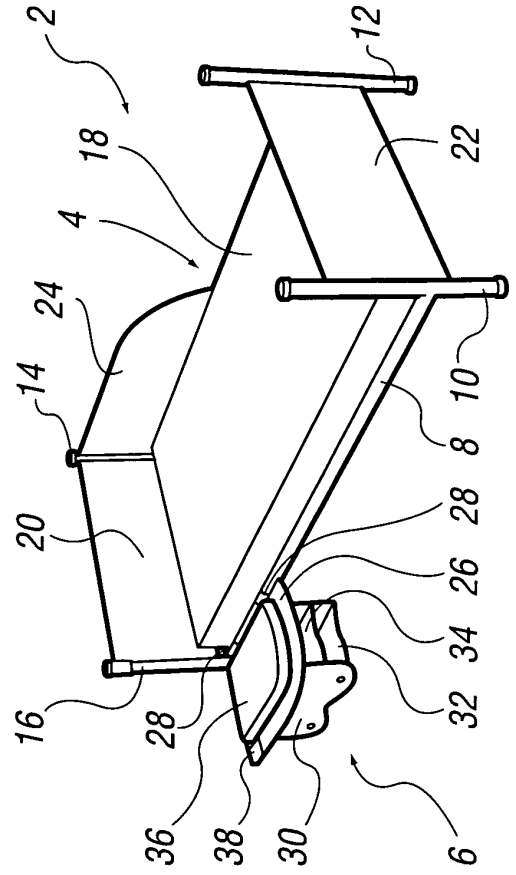


FIG. 2b

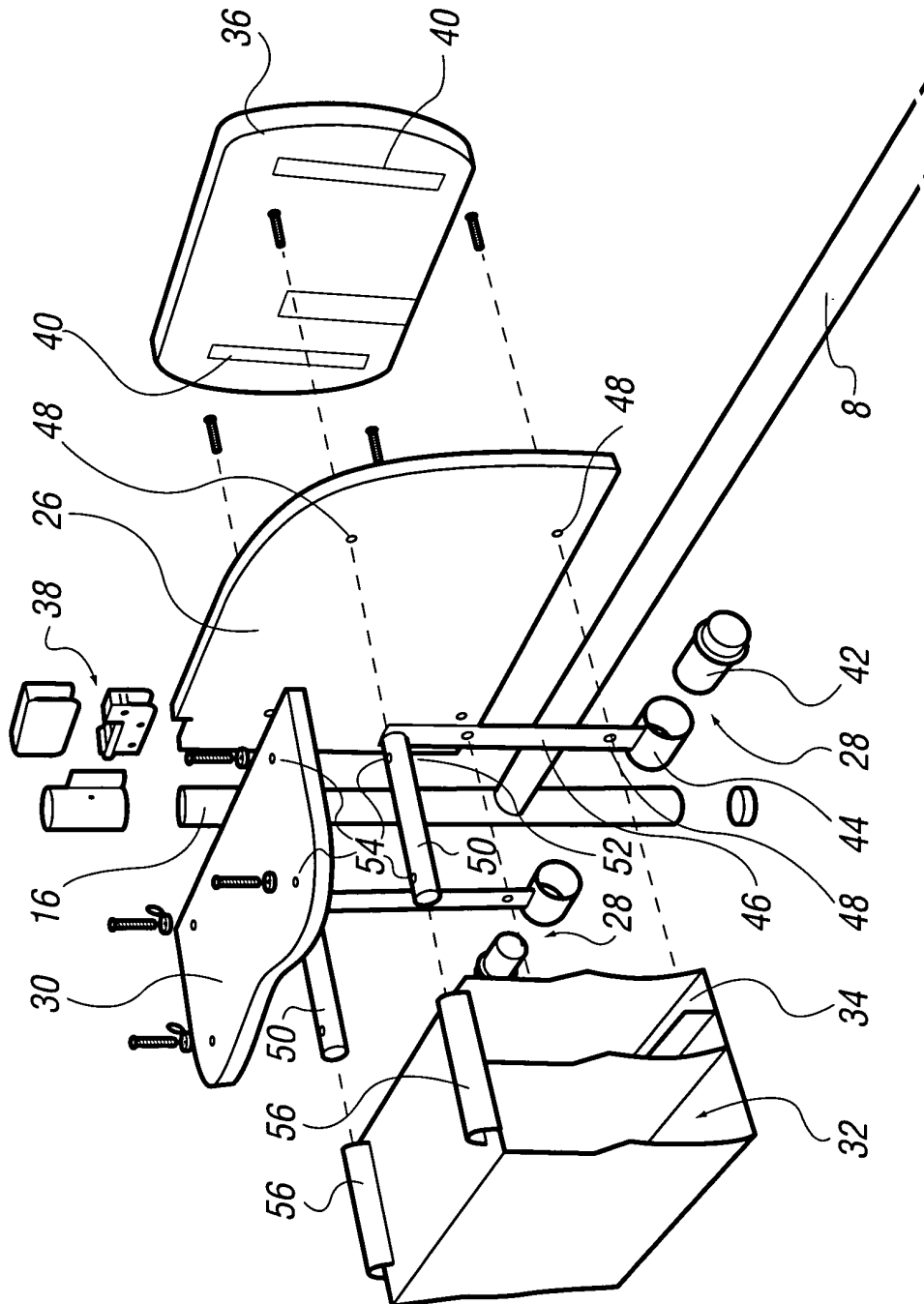


FIG. 3

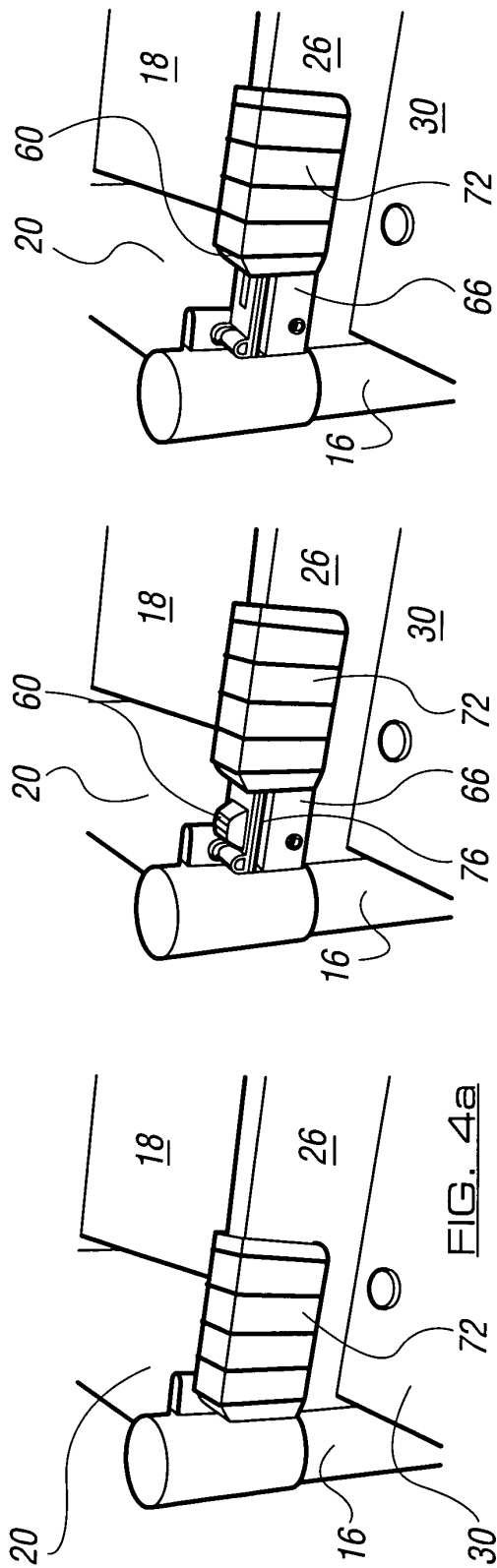
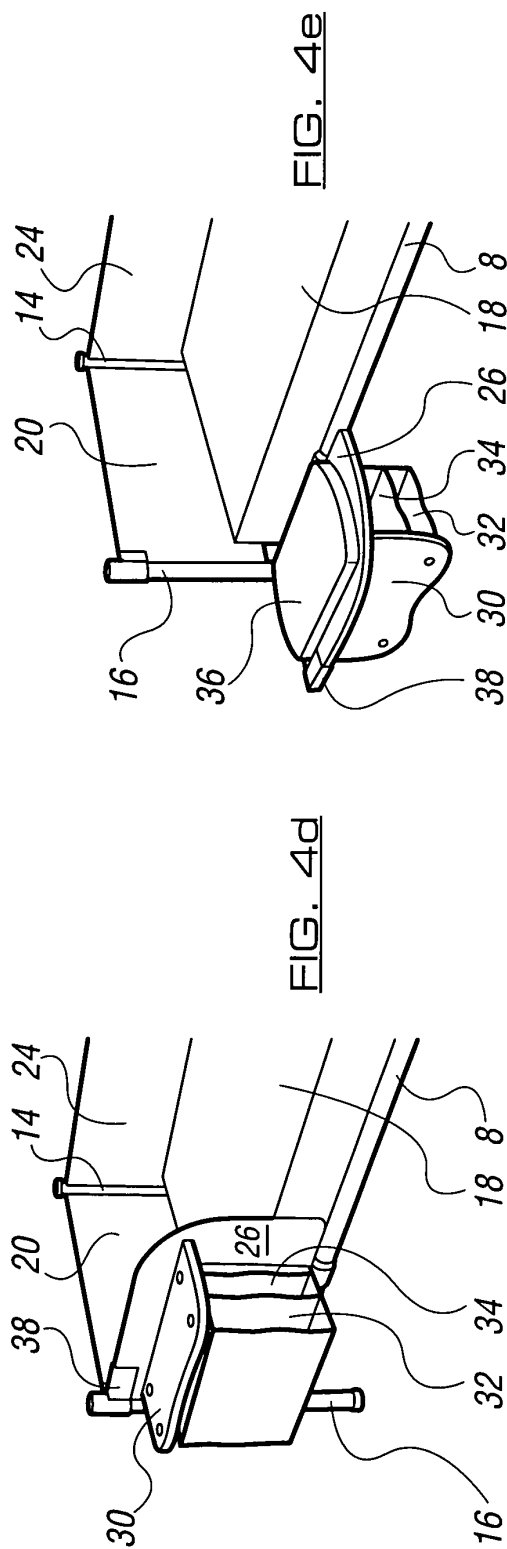


FIG. 4c

FIG. 4b

FIG. 4a



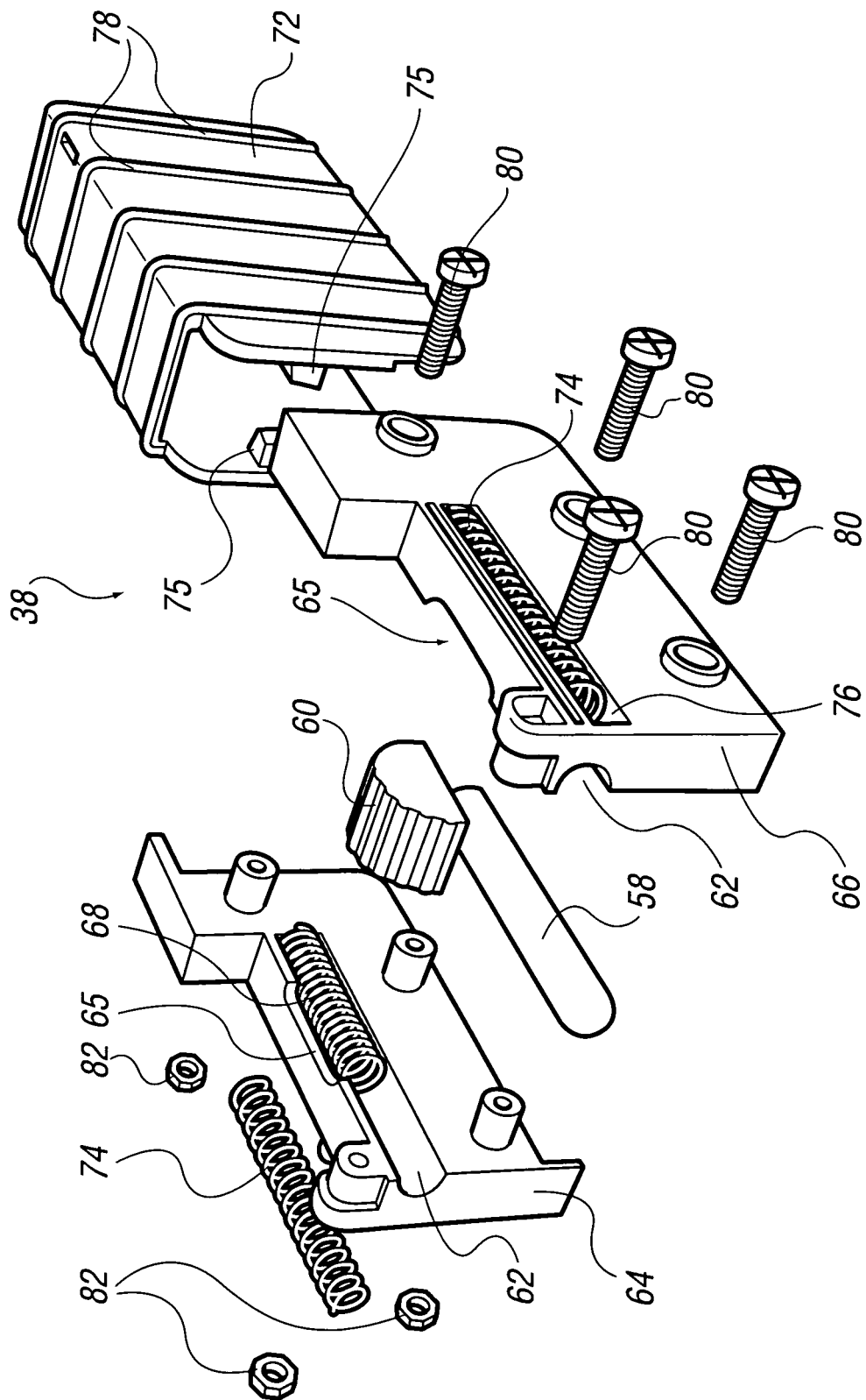
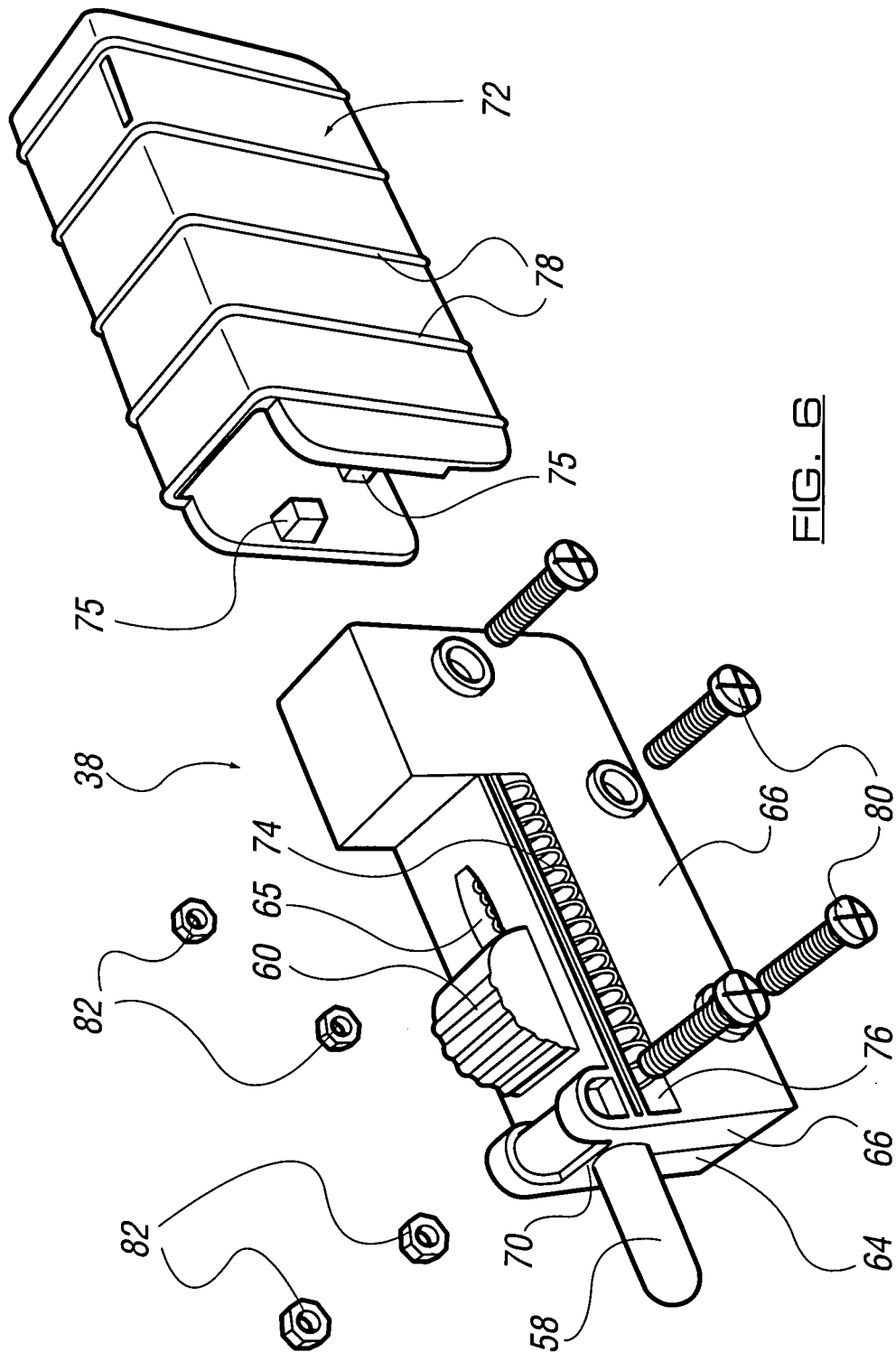


FIG. 5

FIG. 6

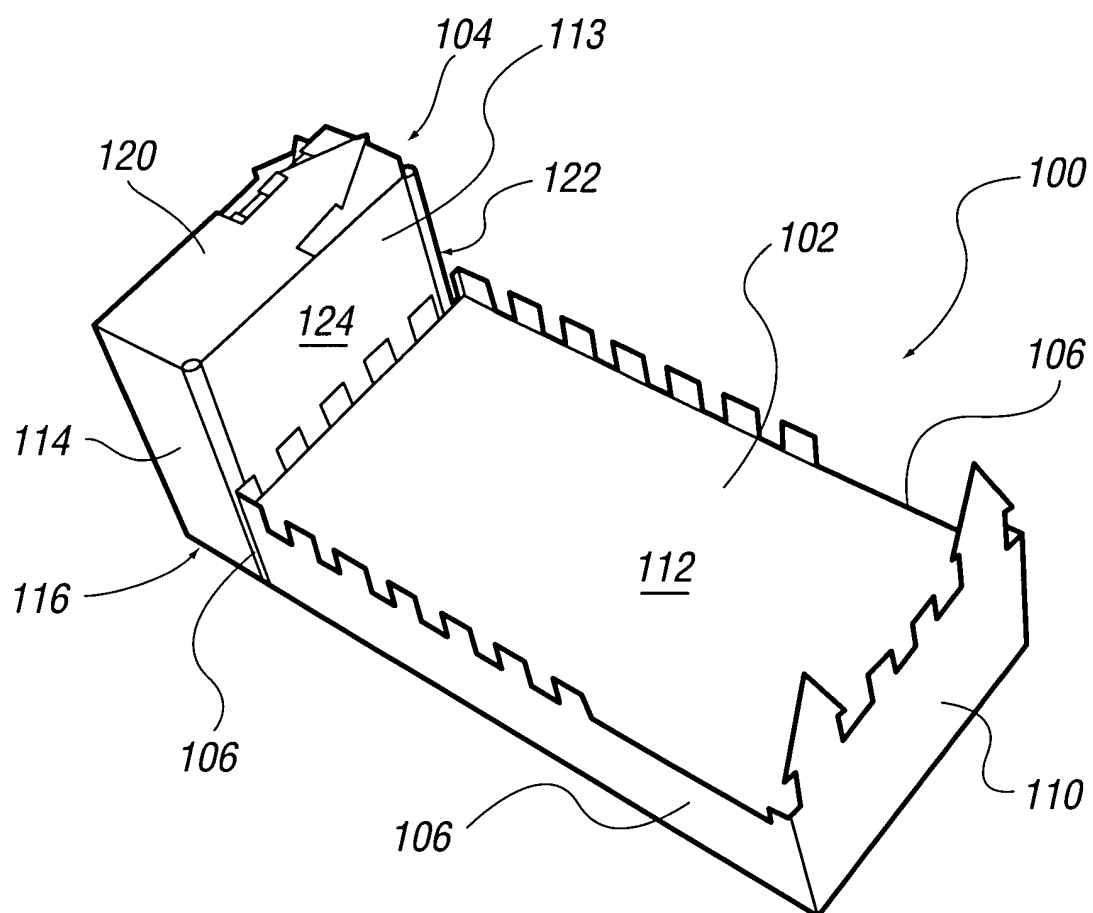


FIG. 7

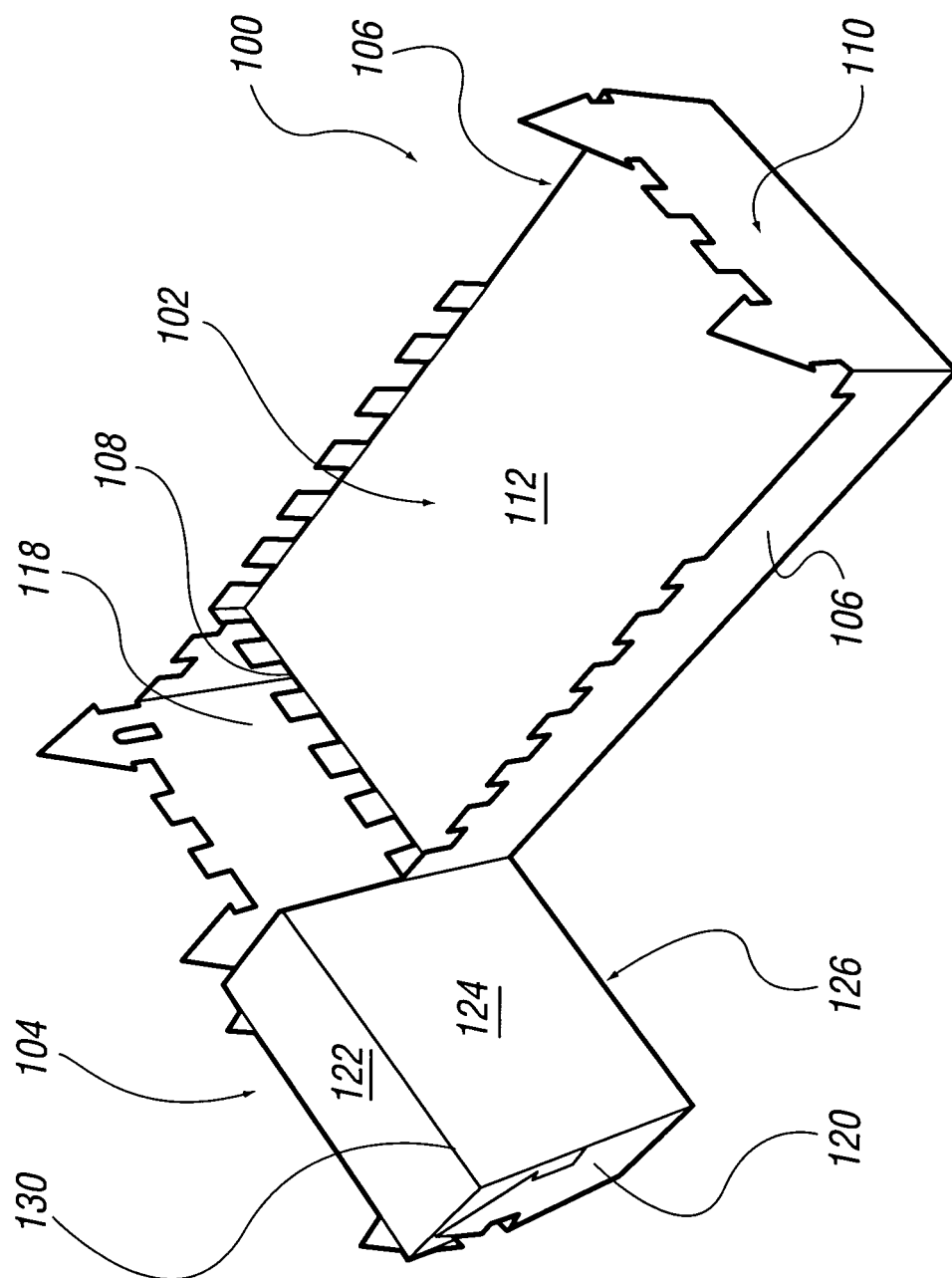
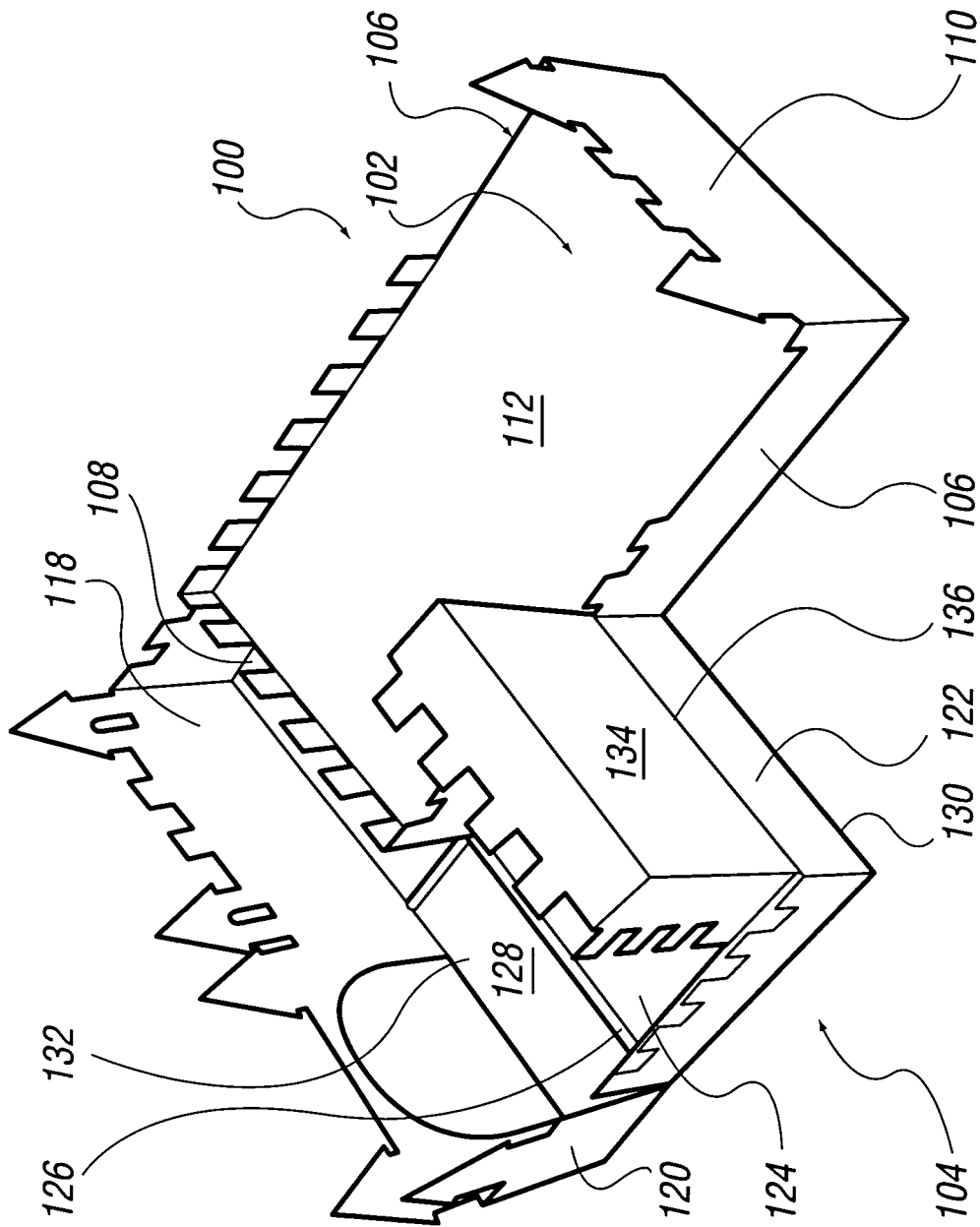


FIG. 8

Fig. 9

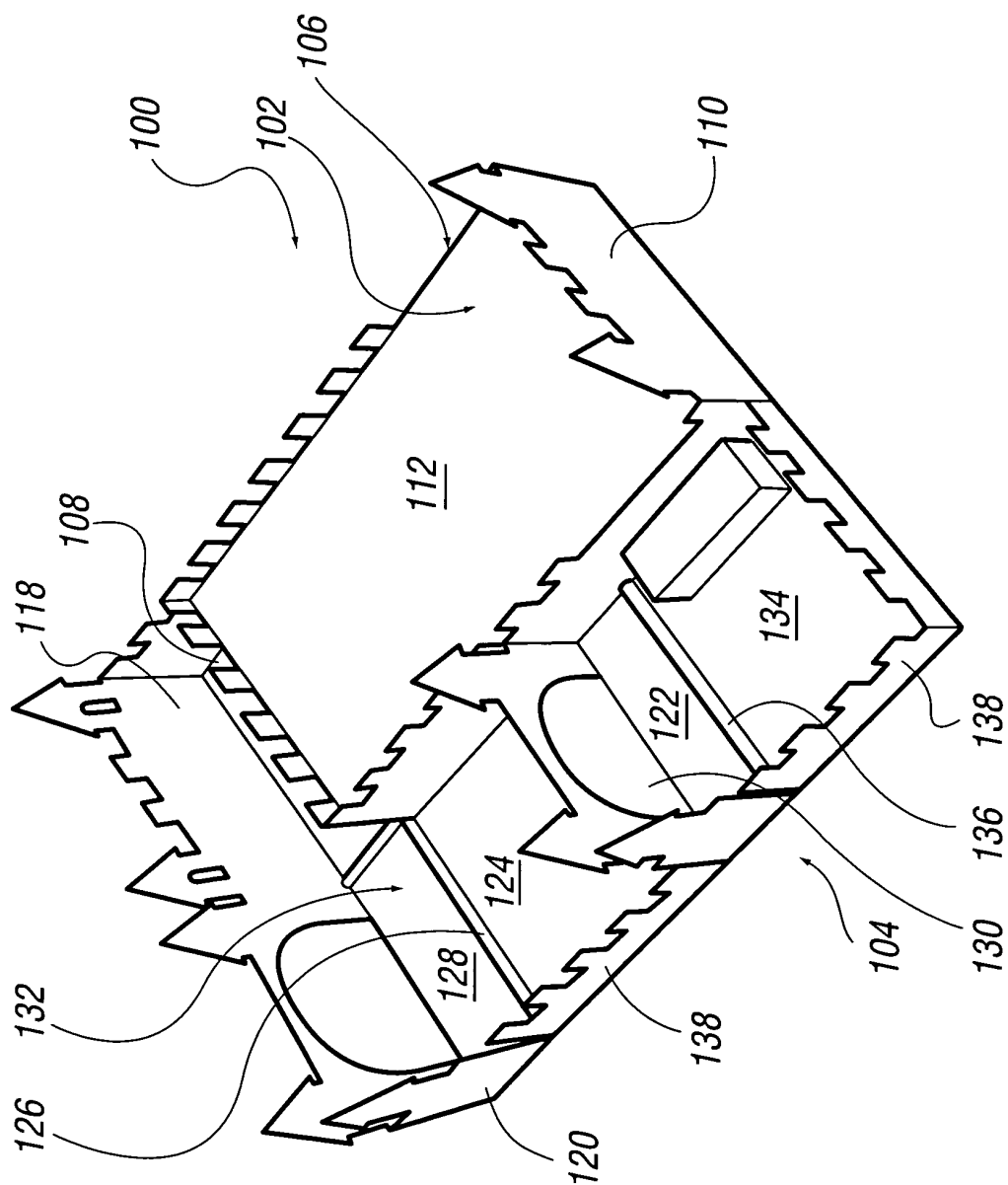
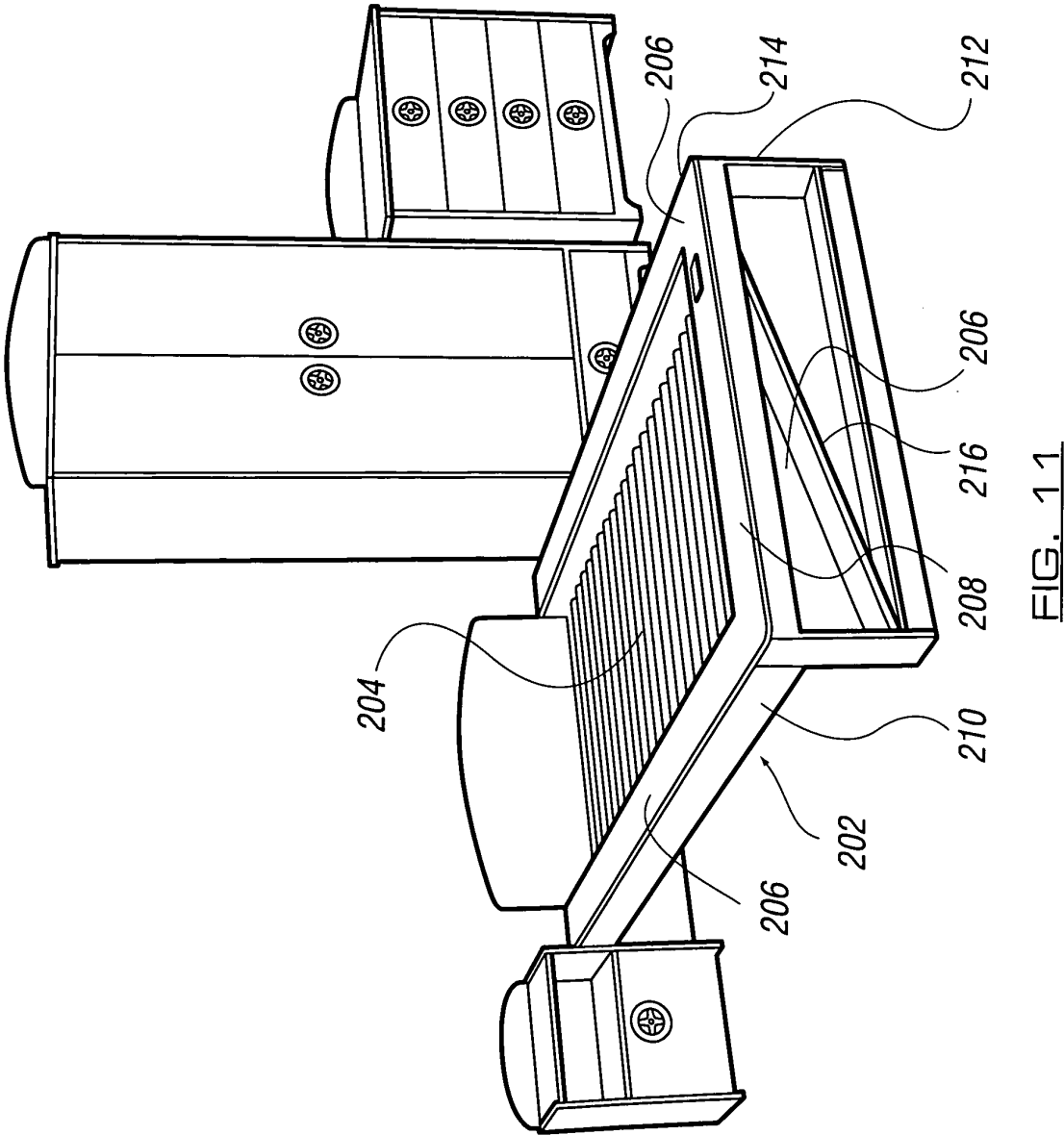


FIG. 10



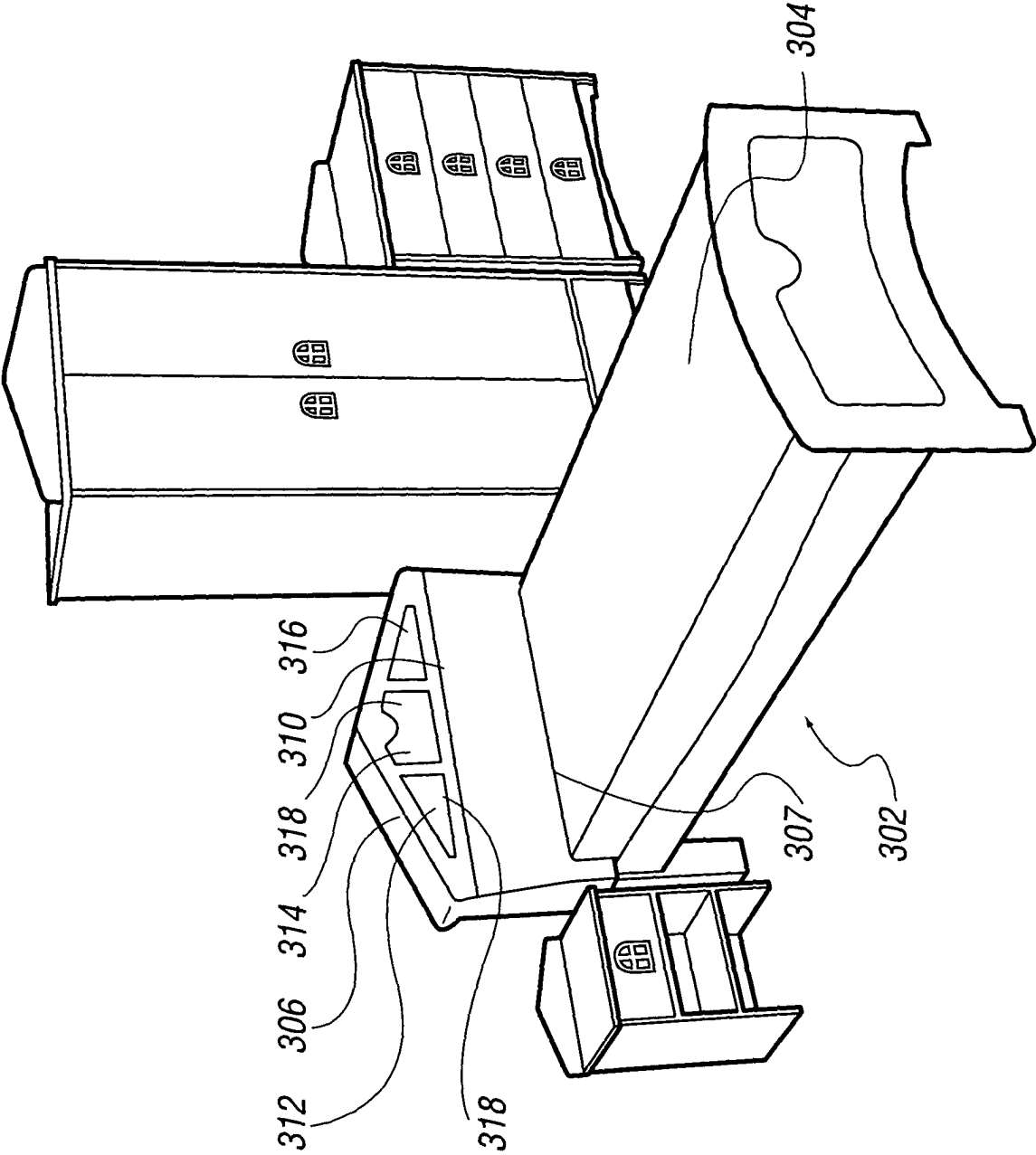
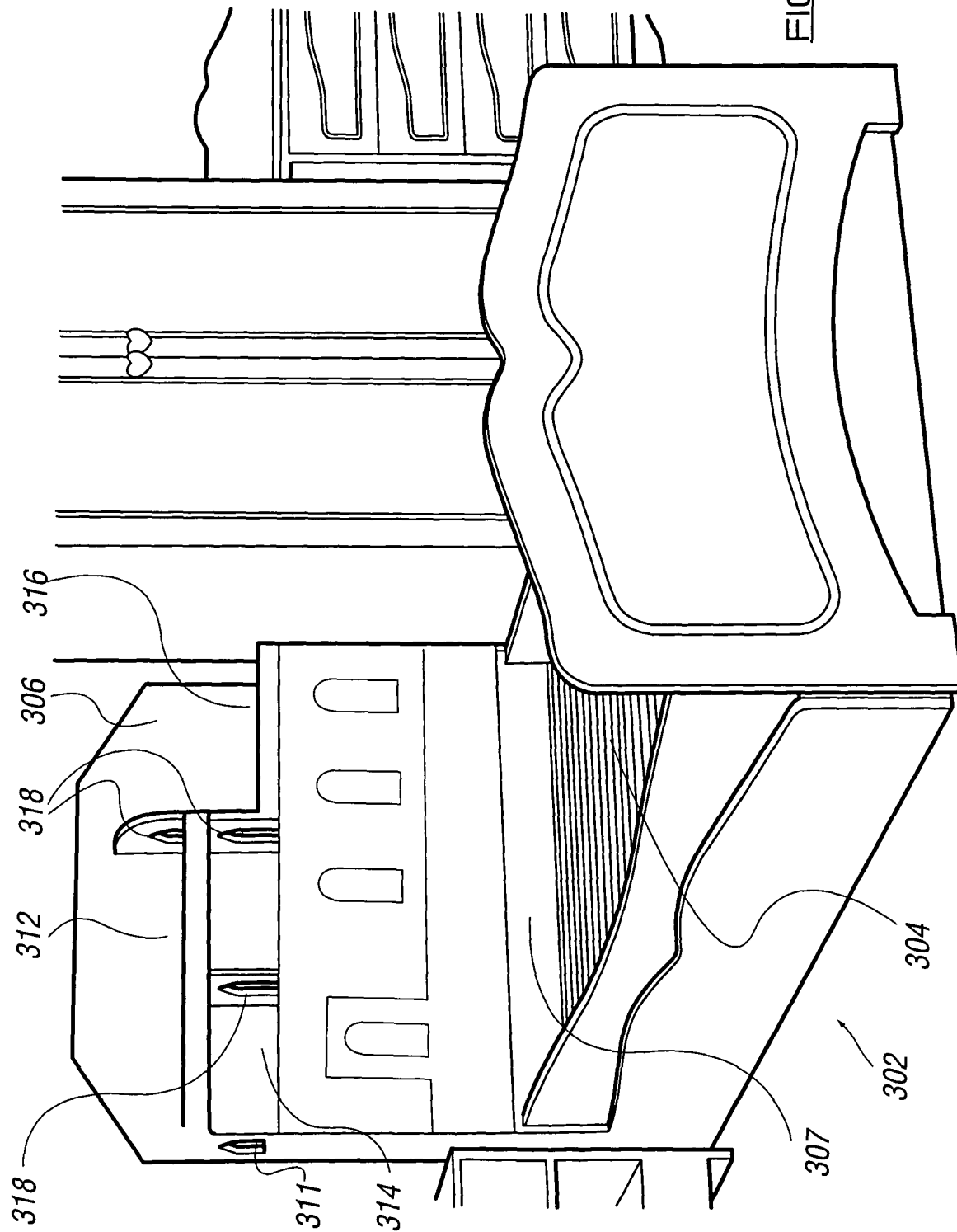


FIG. 12a





EUROPEAN SEARCH REPORT

Application Number
EP 10 17 2088

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	CH 334 565 A (SCHMUTZ) 15 December 1958 (1958-12-15) * figures *	1-5,9,10	INV. A47C19/22 A47D7/00 A47C17/86 A61G7/05
X	US 2005/034637 A1 (HEIMBROCK) 17 February 2005 (2005-02-17) * figures *	1-7, 10-12	
X	DE 89 01 126 U1 (FEMIRA-WERKE GUSSMANN GMBH & CO KG) 16 March 1989 (1989-03-16) * figures *	1,10-15	
X	AT 370 602 B (KAPSAMER KG JOKA WERKE JOHANN) 25 April 1983 (1983-04-25) * figures *	1-5,10, 14,15	
X A	JP 6 030827 A (SANWA SHUTTER CORP) 8 February 1994 (1994-02-08) * figures *	1-7,10, 14,15 8	
X	US 5 172 435 A (GRIFFIN ET AL) 22 December 1992 (1992-12-22) * figures *	1-7, 10-12, 14,15	TECHNICAL FIELDS SEARCHED (IPC) A47C A47D A47B A61G
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 11 November 2010	Examiner Kis, Pál
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 10 17 2088

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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11-11-2010

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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