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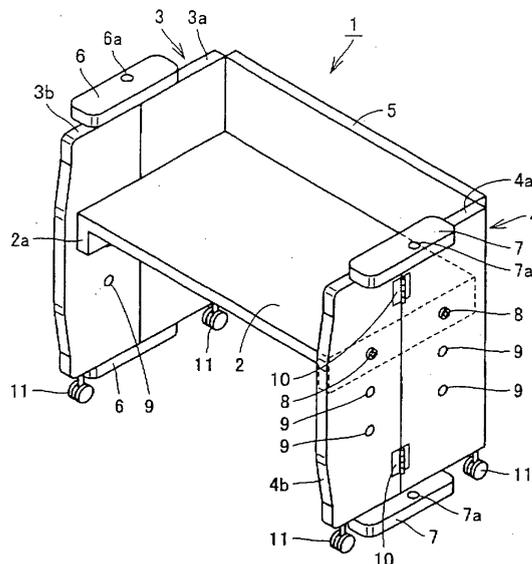
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(54) **BED**

(57) A bed (1) in the form of a baby bed comprises a rectangular floorboard (2) and a surrounding frame for surrounding the floorboard (2). The surrounding frame comprises a head part frame (3) positioned on the head side of a baby put on the floorboard (2), a foot part frame (4) positioned on the foot side, a left side frame (5) positioned on the left side and a right side frame (not shown) positioned on the right side. The head part frame (3) comprises an inner head part frame (3a) turnably connected

to the left side frame (5) through a hinge, and an outer head part frame (3b) turnably connected to the inner head part frame (3a) through a hinge. The foot part (4) frame comprises an inner foot part frame (4a) turnably connected to the left side frame (5) through a hinge, and an outer foot part frame (4b) turnably connected to the inner foot part frame (4a) through a hinge (10). In the form of an adult bed, the left side frame (5), the inner head part frame (3a) and the inner foot part frame (4a) are used as a floorboard.

FIG. 1



Description

TECHNICAL FIELD

[0001] The present invention relates to a bed and more particularly, it relates to a bed that can be switched between a form suitable for a baby bed and a form suitable for an adult bed. Furthermore, it relates to a baby bed in which a transfer operation to a folded state can be easily performed.

BACKGROUND ART

[0002] A baby is put on a baby bed surrounded by a frame until almost one year passes from its birth in general. As the baby is grown up, the baby bed becomes unnecessary.

[0003] Since the baby bed itself is only used for the baby to sleep, it is not damaged so much, so that it has a good chance to be recycled. If the baby who used the baby bed can use this bed after grown up, a sense of appreciation for things can be grown up in the mind. In addition, if the baby bed that is changed in its form can be used after the baby is grown up, since a memory of affection received from a parent in the babyhood can be continued for a long period of time, a warm feeling can be grown up.

[0004] The baby bed that satisfies the above demand is disclosed in Japanese Unexamined Patent Publication No. 2004-41692, for example. According to a baby bed disclosed in this document, a length of a bed floor frame can be adjusted. The length of the bed floor frame is to be short in the baby hood and the length of the bed floor frame is increased as the baby is grown up.

[0005] In the case of the baby bed disclosed in the above document, the baby bed can be used as an adult bed by increasing the length of the bed floor frame. However, a width dimension of the bed is the same in the form of the baby bed and in the form of the adult bed. Therefore, when an adult uses the bed in the form of the adult bed, the width dimension is not enough.

DISCLOSURE OF THE INVENTION

[0006] It is an object of the present invention to provide a bed that can be switched between the form of a baby bed and the form of an adult bed in both length and width dimensions of the bed.

[0007] According to the present invention, a bed can be switched between a form suitable for a baby bed and a form suitable for an adult bed. A floorboard and a surrounding frame for surrounding the floorboard are provided in the form of the baby bed. A part of the surrounding frame is used as a floorboard of the adult bed in the form of the adult bed. The height of the surrounding frame in the form of the baby bed is larger than the width of the bed floorboard in general. Therefore, when a part of the surrounding frame is used as the floorboard of the adult

bed, an enough bed width dimension is provided.

[0008] According to a preferable embodiment, the surrounding frame comprises a head part frame positioned on the head side, a foot part frame positioned on the foot side and a side frame positioned on the side. A part of the head part frame or the foot part frame is used as the floorboard of the adult bed together with the side frame in the form of the adult bed. The length of the side frame is almost the same as the length of the floorboard of the baby bed. Therefore, when a part of the head part frame or the foot part frame is used as the floorboard of the adult bed in addition to the side frame, enough bed height and bed width can be ensured.

[0009] According to one embodiment, the head part frame comprises an inner head part frame turnably connected to the side frame through a hinge and an outer head part frame turnably connected to the inner head part frame through a hinge. The foot part frame comprises an inner foot part frame turnably connected to the side frame through a hinge and an outer foot part frame turnably connected to the inner foot part frame through a hinge. In this embodiment, the side frame, the inner head part frame and the inner foot part frame are used as the floorboard of the adult bed. Furthermore preferably, the outer head part frame and the outer foot part frame become a frame member on the head side and a frame member on the foot side in the form of the adult bed.

[0010] In the above embodiment, preferably, a pair of head part projection members projecting and extending to the upper and lower end surfaces of the inner foot part frame is fixedly mounted on the upper and lower end surfaces of the outer head part frame. Also, a pair of foot part projection members projecting and extending to the upper and lower end surfaces of the inner foot part frame is fixedly mounted on the upper and lower end surfaces of the outer foot part frame. The pair of head part projection members and the pair of foot part projection members become legs for supporting the floorboard of the adult bed in a lifted state in the form of the adult bed.

[0011] In addition, in the above embodiment, preferably, the inner head part frame and the inner foot part frame can be inwardly turned from a state in which they extend in the same plane as that of the side frame to a state in which they are bent and overlap with the side frame, and the outer head part frame and the outer foot part frame can be outwardly turned from a state in which they extend in the same plane as the inner head part frame and the inner foot part frame to a state in which they are bent and overlap with them, respectively. According to this constitution, since the folded bed can be small, space can be effectively used at the time of transportation and storage.

[0012] According to another embodiment, the head part frame comprises an inner head part frame fixed to the side frame, and an outer head part frame turnably connected to the inner head part frame through a hinge. The foot part frame is turnably connected to the side frame through a hinge. In this embodiment, the side frame

and the foot part frame are used as a floorboard of the adult bed.

[0013] In the above embodiment, preferably, the outer head part frame can be turned from a state in which it extends in the same plane as that of the inner head part frame to a state in which it is bent outward and overlaps with the inner head part frame. In addition, the foot part frame can be turned from a state in which it is bent from the side frame at 90 degrees to a state in which it extends in almost the same plane as that of the side frame. The inner head part frame becomes a leg for supporting the floorboard of the adult bed in a lifted state and the outer head part frame becomes a frame member on the head side in the form of the adult bed.

[0014] Furthermore preferably, the foot part frame comprises a bending wall extending in parallel with the side frame so as to be opposed to it in the form of the baby bed. In this case, the bending wall becomes a leg for supporting a floorboard of the adult bed in a lifted state in the form of the adult bed.

[0015] As a preferably embodiment, the floorboard in the form of the baby bed has a leg projecting downward at its head side end and its foot end side, and the floorboard is arranged so as to support the back surface of the floorboard of the adult bed comprising a part of the surrounding frame from beneath in the form of the adult bed.

[0016] A baby bed according to the present invention comprises a rectangular floorboard and a surrounding frame for surrounding the floorboard. The surrounding frame comprises a head part frame positioned on the head side, a foot part frame positioned on the foot side, and a side frame positioned on the side. The head part frame comprises an inner head part frame turnably connected to the side frame through a hinge, and an outer head part frame turnably connected to the inner head part frame through a hinge. The foot part frame comprises an inner foot part frame turnably connected to the side frame through a hinge, and an outer foot part frame turnably connected to the inner foot part through a hinge. According to the baby bed comprising the above constitution, a transfer operation to the folded state can be easily performed and the folded bed can be small in size.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017]

Fig. 1 is a perspective view showing one embodiment of a bed in the form of a baby bed;

Fig. 2 is a perspective view showing a configuration in the course of moving to the form of an adult bed;

Fig. 3 is a perspective view showing one embodiment of the bed in the form of the adult bed;

Fig. 4 is a side view showing one embodiment of the bed in the form of the adult bed;

Fig. 5 is a side view showing one embodiment of the bed in a folded state;

Fig. 6 is a perspective view showing another embodiment of a bed in the form of a baby bed;

Fig. 7 is a perspective view showing a configuration in the course of moving to the form of an adult bed; and

Fig. 8 is a side view showing another embodiment of the bed in the form of the adult bed.

BEST MODE FOR CARRYING OUT THE INVENTION

[0018] Figs. 1 to 5 show a bed according to one embodiment of the present invention. Fig. 1 shows a bed 1 in the form suitable for a baby bed, and Figs. 3 and 4 show the bed 1 in the form suitable for an adult bed. It is to be noted that the term "adult" in this specification does not mean only an adult but also includes a child such as a primary school student, a junior high school and a senior high school student.

[0019] The basic constitution of the bed 1 will be described with reference to Fig. 1. The bed 1 in the form of the baby bed comprises a rectangular floorboard 2 and a surrounding frame surrounding the rectangular floorboard 2. Although the surrounding frame has a latticed configuration in general, it has a simple flat plate configuration in the drawing as a matter of convenience.

[0020] The surrounding frame comprises a head part frame 3 positioned on the head side of the baby on the floorboard 2, a foot part frame 4 positioned on the foot side, a left side frame 5 positioned on the left and a right side frame (not shown) positioned on the right. The right side frame (not shown) is provided such that it can be slid vertically or removed. Casters 11 are mounted on four corner parts in the bottom of the baby bed for moving. The caster 11 is detachably provided and it is removed in the form of the adult bed.

[0021] The floorboard 2 has legs 2a protruding downward at a head end and a foot end thereof. In order to adjust the height of the floorboard 2, each of the head part frame 3 and the foot part frame 4 has a plurality of holes 9 provided so as to be spaced vertically. In an illustrated state, the height of the floorboard 2 is fixed by four screws 8 (two in the head part frame 3 and two in the foot part frame 4) fit in the holes positioned uppermost. For the baby at a few months of age, the floorboard 2 is fixed at a high position because the baby can be easily nursed and there is almost no risk of falling down. Meanwhile, as the baby is grown up, since the baby starts to move actively, the floorboard 2 is positioned at a low position in view of preventing the baby from falling down.

[0022] When the baby bed becomes unnecessary after the baby has been grown up, it can be used as a desk for the child by removing the right side frame as shown in Fig. 1.

[0023] The head part frame 3 includes an inner head part frame 3a that is turnably connected to the left side frame 5 through a hinge (not shown), and an outer head part frame 3b that is turnably connected to the inner head part frame 3a through a hinge (not shown). The foot part

frame 4 includes an inner foot part frame 4a that is turnably connected to the left side frame 5 through a hinge (not shown), and an outer foot part frame 4b that is turnably connected to the inner foot part frame 4a through a hinge 10. Thus, since each frame can be turnably connected through the hinge, it can be easily changed into the above forms and folded down.

[0024] As shown in the drawing, a pair of head part projection members 6 is fixed and mounted on upper and lower end surfaces of the outer head part frame 3b. The pair of head part projection members 6 extends and projects to upper and lower end surfaces of the inner head part frame 3a. In addition, each projection member 6 has a hole 6a in which the screw 8 fits.

[0025] A pair of foot part projection members 7 is fixed and mounted on upper and lower end surfaces of the outer foot part frame 4b. The pair of foot part projection members 7 extends and projects to the upper and lower end surfaces of the inner foot part frame 4a. In addition, each foot part projection member 7 has a hole 7a in which the screw 8 fits.

[0026] Fig. 2 shows a state in which the outer head part frame 3b and the inner head part frame 3a are bent and a state in which the outer foot part frame 4b and the inner foot part frame 4a are bent. The inner head part frame 3a and the inner foot part frame 4a can be turned from a state in which they extend in the same plane as the left side frame 5 (refer to Fig. 4) to a state in which they are turned inside to overlap with the left side frame 5 (refer to Fig. 5). In addition, the outer head part frame 3b and the outer foot part frame 4b can be turned from a state in which they extend in the same plane with the inner head part frame 3a and inner foot part frame 4a, respectively (refer to Fig. 1) to a state in which they are turned outside to overlap with them (refer to Fig. 5).

[0027] According to the form of the baby bed shown in Fig. 1, since the head part frame 3 and the foot part frame 4 are fixed to the rectangular floorboard 2 by the screws 8, the configuration of the surrounding frame comprising the head part frame 3, the foot part frame 4, the left side frame 5 and the right side frame (not shown) is fixed.

[0028] When the form of baby bed shown in Fig. 1 is changed to the form of the adult bed shown in Figs. 3 and 4, the four screws 8 are removed and the floorboard 2 and the right side frame (not shown) are separated. In addition, the four casters are also removed. Fig. 2 shows this state.

[0029] From the state shown in Fig. 2, an inner surface of the left side frame 5 is brought so as to be opposed to a floor surface and the inner head part frame 3a and the inner foot part frame 4a are brought to extend in the same plane as that of the left side frame 5. As shown in Figs. 3 and 4, since the inner head part frame 3a and the inner foot part frame 4a abut on both end surfaces of the left side frame 5 without any space when extend in the same plane as the left side frame 5, they do not turned any more.

[0030] As shown in Figs. 3 and 4, the outer head part

frame 3b and the outer foot part frame 4b are turned by 90 degrees with respect to the inner head part frame 3a and inner foot part frame 4a, respectively. This state is fixed by fitting the four screws 8 which were used to fix the floorboard 2, in the holes 6a of the head part projection members 6 and the holes 7a of the foot part projection members 7. More specifically, the pair of head part projection members 6 fixed to the outer head part frame 3b, and the inner head part frame 3a are fixed by the two screws 8, and the pair of foot part projection members 7 fixed to the outer foot part frame 4b, and the inner foot part frame 4a are fixed by the two screws 8.

[0031] As shown in Figs. 3 and 4, in the form of the adult bed, the pair of head part projection members 6 and the pair of foot part projection members 7 serve as legs to support the floorboard of the adult bed in a state the floorboard is lifted from the floor surface. The floorboard of the adult bed comprises the left side frame 5, the inner head part frame 3a and the inner foot part frame 4a. In addition, the outer head part frame 3b and the outer foot part frame 4b become a head side frame member and a foot side frame member, respectively. The floorboard 2 used in the form of the baby bed is used to support the horizontally extending floorboard of the adult bed from beneath and keep the horizontal state of the floorboard stable in the form of the adult bed. The leg 2a of the floorboard 2 has a length so as to provide such function.

[0032] Fig. 5 shows a bed in a folded state when it is transported or stored in a storage. As shown in the drawing, the inner head part frame 3a overlaps with the left side frame 5 and the outer head part frame 3b overlaps with the inner head part frame 3a. Similarly, the inner foot part frame 4a overlaps with the left side frame 5 and the outer foot part frame 4b overlaps with the inner foot part frame 4a. In addition, the floorboard 2 and the right side frame (not shown) overlap with the folded structure. Since this folded bed is relatively small, space can be effectively used at the time of transportation and storage.

[0033] Figs. 6 to 8 shows a bed according to another embodiment of the present invention. An illustrated bed 20 can be switched between a form suitable for a baby bed shown in Fig. 6 and a form suitable for an adult bed shown in Fig. 8.

[0034] The bed 20 in the form suitable for the baby bed comprises a floorboard 21 and a surrounding frame surrounding the floorboard 21. The surrounding frame comprises a head part frame 22 positioned on the head side of the baby put on the floorboard 21, a foot part frame 24 positioned on the foot side, a right side frame 23 positioned on the right side and a left side frame (not shown) positioned on the left side. The floorboard 21 is fixed and supported by the head part frame 22 and the foot part frame 24 at a predetermined height. The left side frame that is not shown is provided so that it can be moved vertically or detached.

[0035] As shown in the drawing, the head part frame 22 comprises an inner head part frame 22a bending from

the end of the right side frame 23 at right angles and extending, and an outer head part frame 22b turnably connected to the inner head part frame 22a through a hinge 25. The bending angle between the inner head part frame 22a and the right side frame 23 is fixed.

[0036] The hoot part frame 24 is turnably connected to the right side frame 23 through a hinge (not shown). According to the illustrated embodiment, the foot part frame 24 includes a bending wall 24a extending in parallel with the right side frame 23 so as to be opposed to it, at its end part.

[0037] The outer head frame 22b can be turned from a state in which it extends on the same plane as the inner head part frame 22a (Fig. 6) to a state in which it is bent outward to be overlapped with the inner head part frame 22a (Fig. 8). The foot part frame 24 can be turned from a state in which it is bent from the right side frame 23 at 90 degrees (Fig. 6) to a state in which it extends in almost the same plane as the right side frame 23 (Fig. 8).

[0038] When the form of the baby bed shown in Fig. 6 is switched to the form of the adult bed shown in Fig. 8, the screw 26 is taken out to remove the floorboard 21, and the left side frame (not shown) is also removed. Fig. 7 shows a middle state of the expansion.

[0039] In the form of the adult bed shown in Fig. 8, the right side frame 23 and the foot part frame 24 extend in the same plane and used as a floorboard. The bending wall 24a of the foot part frame 24 and the inner head part frame 22a become legs for supporting the floorboard of the adult bed in lifted state. The outer head part frame 22b becomes a frame member on the head side. The lifted state of this outer head part frame 22b is maintained by appropriate fixing means.

[0040] The floorboard 21 in the form of the baby bed is arranged under the floorboard in the form of the adult bed and it is used for supporting the floorboard stably from beneath.

[0041] The present invention focuses on the structure of the baby bed itself also. That is, as shown in Figs. 1, 2 and 5, the baby bed 1 according to the present invention comprises the rectangular floorboard 2 and the surrounding frame which surrounds the rectangular floorboard 2. The surrounding frame includes the head part frame 3 positioned on the head side, the foot side frame 4 positioned on the foot side, and the side frame 5 positioned on the side. The head part frame 3 includes the inner head part frame 3a turnably connected to the side frame 5 through the hinge, and the outer head part frame 3b turnably connected to the inner head part frame 3a through the hinge. The foot part frame 4 includes the inner foot part frame 4a turnably connected to the side frame 5 through the hinge and the outer foot part frame 4b turnably connected to the inner foot part frame 4a through the hinge. According to the baby bed having the above constitution, its folding operation can be easily performed and the size in the folded state can be small.

[0042] In addition, the terms "head part", "foot part", "right", and "left" are used to show a relative positional

relation as a matter of convenience.

[0043] Thus, although the embodiments of the present invention has been described with reference to the drawings, the present invention is not limited to the above embodiment. Various kinds of modifications and variations can be added to the illustrated embodiment within the same and equivalent scope of the present invention.

INDUSTRIAL APPLICABILITY

[0044] The present invention can be advantageously applied to a bed which can serve as a baby bed and an adult bed. Furthermore, the present invention can be advantageously applied to a baby bed in which a folding operation is simple.

Claims

1. A bed that can be switched between a form suitable for a baby bed and a form suitable for an adult bed, **characterized in that** a floorboard and a surrounding frame for surrounding the floorboard are provided in the form of the baby bed, and a part of said surrounding frame is used as a floorboard of the adult bed in the form of the adult bed.
2. The bed according to claim 1, wherein said surrounding frame comprises a head part frame positioned on the head side, a foot part frame positioned on the foot side and a side frame positioned on the side, and a part of said head part frame or said foot part frame is used as the floorboard of the adult bed together with said side frame in the form of the adult bed.
3. The bed according to claim 2, wherein said head part frame comprises an inner head part frame turnably connected to said side frame through a hinge and an outer head part frame turnably connected said inner head part frame through a hinge, said foot part frame comprises an inner foot part frame turnably connected to said side frame through a hinge and an outer foot part frame turnably connected to said inner foot part frame through a hinge, and said side frame, said inner head part frame and said inner foot part frame are used as the floorboard of the adult bed.
4. The bed according to claim 3, wherein said outer head part frame and said outer foot part frame become a frame member on the head side and a frame member on the foot side, respectively in the form of the adult bed.
5. The bed according to claim 3, wherein a pair of head part projection members projecting and extending to the upper and lower end surfaces of said inner foot

- part frame is fixedly mounted on the upper and lower end surfaces of said outer head part frame, a pair of foot part projection members projecting and extending to the upper and lower end surfaces of said inner foot part frame is fixedly mounted on the upper and lower end surfaces of said outer foot part frame, and said pair of head part projection members and said pair of foot part projection members become legs for supporting the floorboard of the adult bed in a lifted state in the form of the adult bed.
6. The bed according to claim 3, wherein said inner head part frame and said inner foot part frame can be inwardly turned from a state in which they extend in the same plane as that of said side frame to a state in which they are bent and overlap with said side frame, and said outer head part frame and said outer foot part frame can be outwardly turned from a state in which they extend in the same plane as said inner head part frame and said inner foot part frame to a state in which they are bent and overlap with them, respectively.
7. The bed according to claim 2, wherein said head part frame comprises an inner head part frame fixed to said side frame, and an outer head part frame turnably connected to said inner head part frame through a hinge, said foot part frame is turnably connected to said side frame through a hinge, and said side frame and said foot part frame are used as a floorboard of the adult bed.
8. The bed according to claim 7, wherein said outer head part frame can be turned from a state in which it extends in the same plane as that of said inner head part frame to a state in which it is bent outward and overlaps with said inner head part frame, said foot part frame can be turned from a state in which it is bent from said side frame at 90 degrees to a state in which it extends in almost the same plane as that of said side frame, and said inner head part frame becomes a leg for supporting the floorboard of the adult bed in a lifted state and said outer head part frame becomes a frame member on the head side in the form of the adult bed.
9. The bed according to claim 7, wherein said foot part frame comprises a bending wall extending in parallel with said side frame so as to be opposed to it in the form of the baby bed, and said bending wall becomes a leg for supporting a floorboard of the adult bed in a lifted state in the form of the adult bed.
10. The bed according to claim 1, wherein said floorboard in the form of the baby bed has a leg projecting downward at its head side end and its foot end side, and the floorboard is arranged so as to support the back surface of the floorboard of the adult bed comprising a part of said surrounding frame from beneath in the form of the adult bed.
11. A baby bed comprising a rectangular floorboard and a surrounding frame for surrounding the floorboard, wherein said surrounding frame comprises a head part frame positioned on the head side, a foot part frame positioned on the foot side, and a side frame positioned on the side, said head part frame comprises an inner head part frame turnably connected to said side frame through a hinge, and an outer head part frame turnably connected to said inner head part frame through a hinge, and said foot part frame comprises an inner foot part frame turnably connected to said side frame through a hinge, and an outer foot part frame turnably connected to said inner foot part through a hinge.

FIG. 3

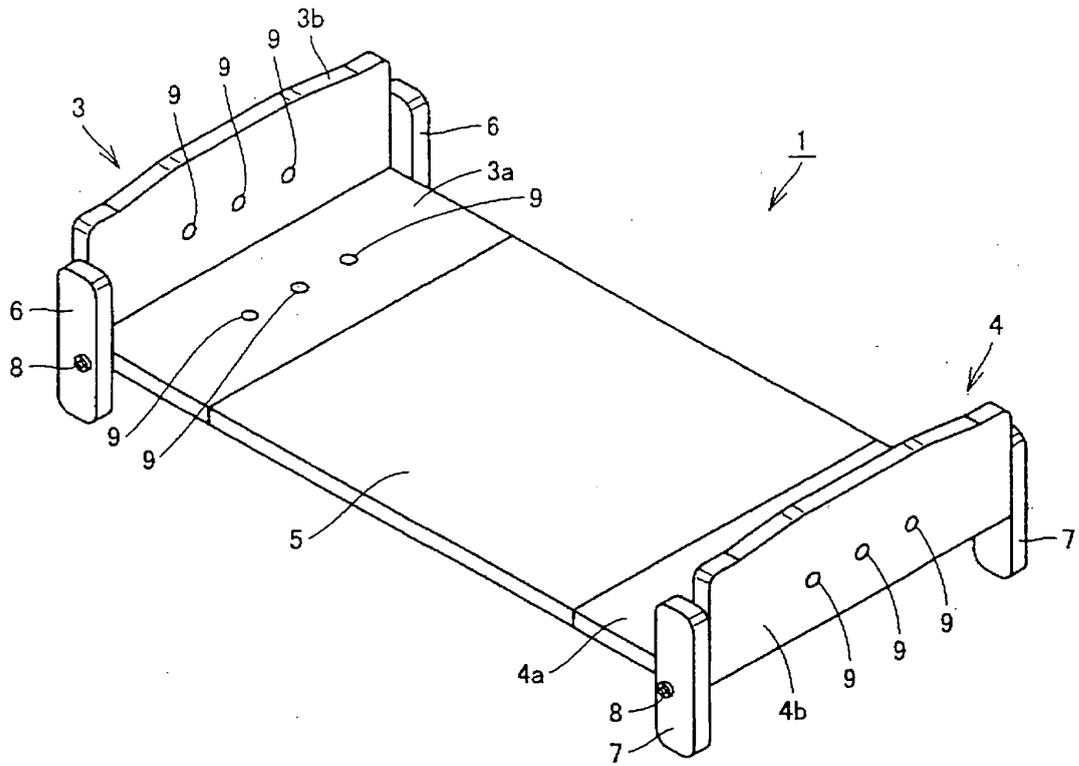


FIG. 4

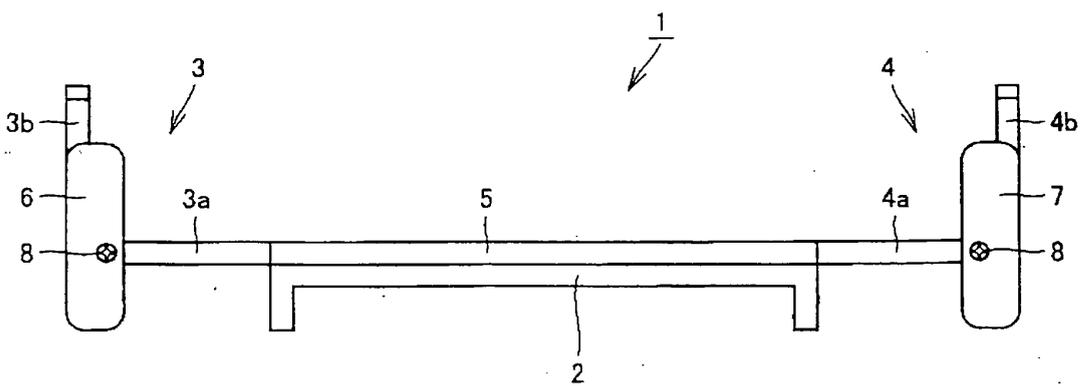


FIG. 5

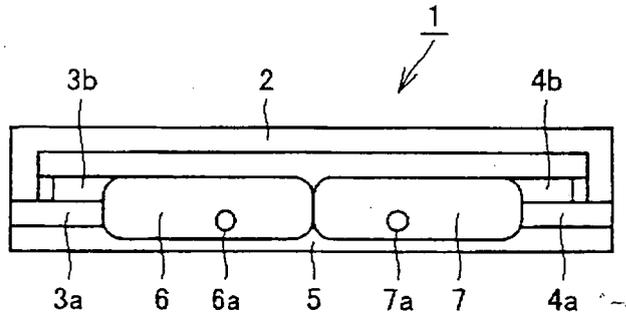


FIG. 6

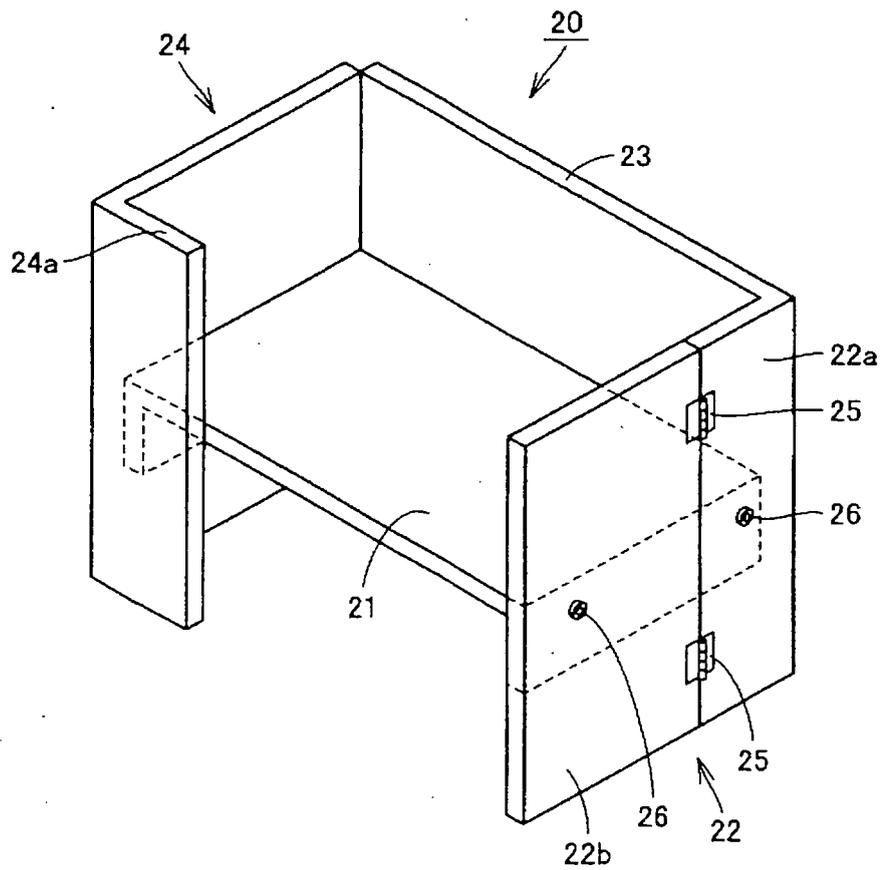


FIG. 7

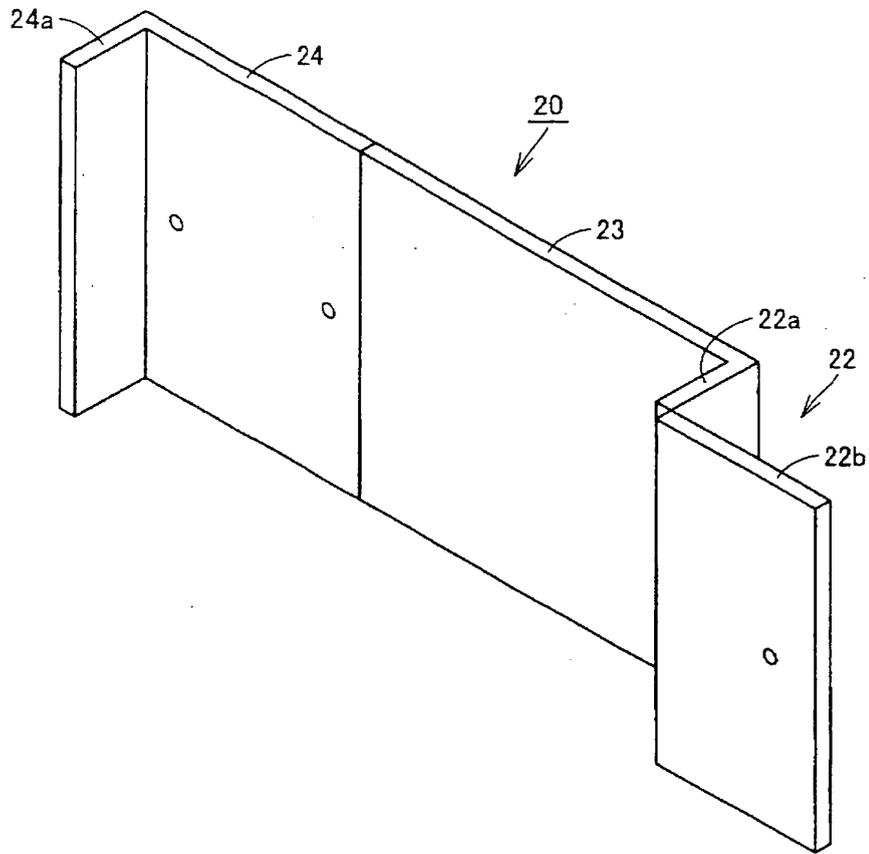
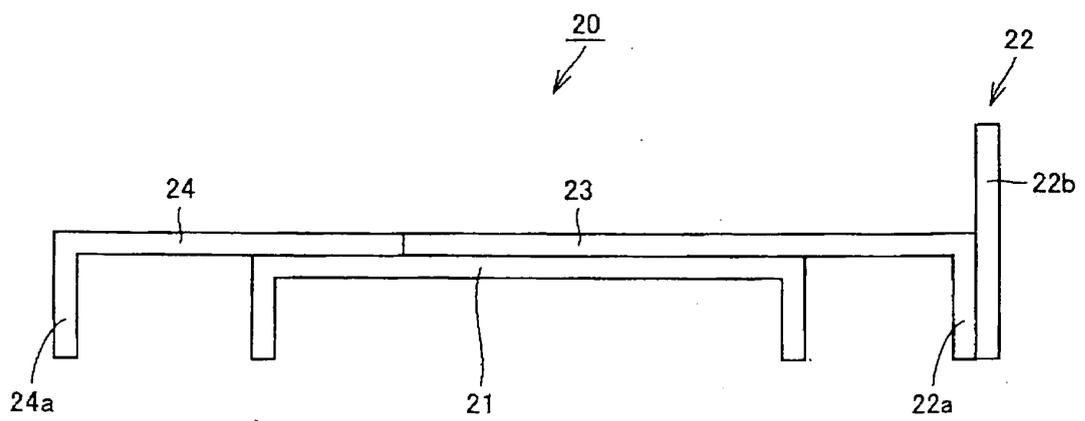


FIG. 8



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/009520

A. CLASSIFICATION OF SUBJECT MATTER Int.Cl. ⁷ A47D7/01, A47C19/04		
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) Int.Cl. ⁷ A47D7/01, A47C19/04, A47D7/00		
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 1996-2005 Kokai Jitsuyo Shinan Koho 1971-2005 Toroku Jitsuyo Shinan Koho 1994-2005		
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	JP 59-29962 U (Ishizaki Kagu Kabushiki Kaisha), 24 February, 1984 (24.02.84), Figs. 1 to 2 (Family: none)	1
X	JP 2001-190366 A (Combi Corp.), 17 July, 2001 (17.07.01), Figs. 1, 4 (Family: none)	11
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