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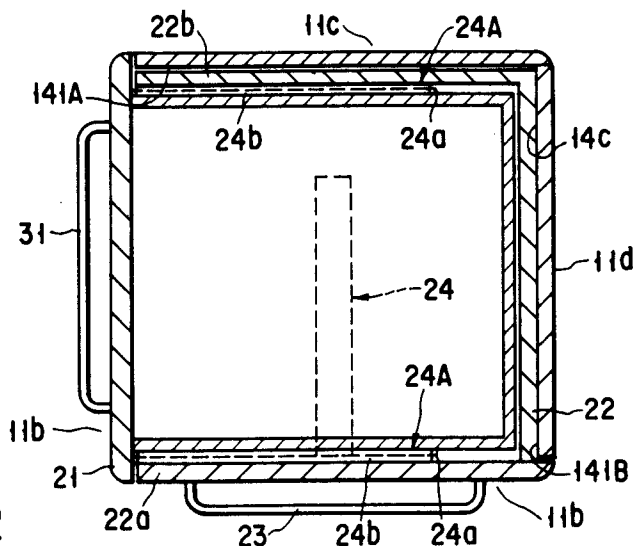
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D-63075 Offenbach (DE)(54) **Storage furniture unit.**

(57) A storage furniture unit of the present invention includes a furniture body having adjacent side faces (11a-11d). The furniture body includes a storage section (14C) having a first opening (141A) and second opening (141B) opened in two different directions at the side faces. A slide member (22) is placed in the storage section (14C) to allow it to be inserted into, and withdrawn from, the storage sec-

tion (14c) via the second opening (141B) and a drawer (21) is placed in the slide member (22) to allow it to be slidably inserted into, and withdrawn from, the slide member via the first opening (141A). As a result, the drawer (21) can be withdrawn, together with the slide member (22), via the second opening (141B) and be independently withdrawn via the first opening (141A).

**FIG. 2****EP 0 680 711 A1**

The present invention relates to a storage furniture unit having a drawer for storing goods, such as a bedside table unit, bed or a chest of drawers.

Generally, the above-mentioned kinds of storage furniture units have a box-type furniture body equipped with a storage section or sections opened at a top side. A top-opened box-like drawer smaller in size than the furniture body is so placed in the storage section as to be slidably withdrawn from the storage section. By the sliding of the drawer into and out of the storage section it is possible to place the goods in the drawer and to take them out of the drawer.

According to the storage furniture unit as set out above, the sliding direction of the drawer is restricted only to the front direction of the furniture body. In the case where the storage furniture unit is placed, for example, on the head board side of a bed with its front panel toward a foot board side of the bed, when a bed user in the bed in a supine position, such as the elderly or ill person, has to use the drawer of the storage furniture unit, then he or she has to raise his or her upper torso and then to twist the upper torso toward the front face side of the furniture body. It has, therefore, been difficult for the physically handicapped or ill person to utilize such a drawer fully.

In the case where the front face of the storage furniture unit is so placed sideways as to face the bed user in the bed in the supine position, he or she can utilize the drawer in a supine position or in his or her upper torso raised position.

If this is done so, then it becomes easy for such a bed user in the bed in a spine position to utilize the drawer fully but it is necessary for other persons, such as a bedside caretaker, to twist their torso toward the front face side of the storage furniture unit or turn their torso sideways. For this reason, the storage furniture unit at the bed side is not convenient and user-friendly. Since the bedside caretaker has to place goods into, and take them out of, the drawer near the head of the bed user, if he or she is asleep in the bed in a supine position, then he or she disturbs his or her sleep due to such an action and there is a risk that the goods picked up from the drawer will drop on a body portion of the bed user.

Since the drawer of a conventional storage furniture unit has its sliding direction restricted to the front face direction of the furniture body, if the storage furniture unit is, for example, a bedside table unit, it cannot be adequately utilized by either a bed patient or a bedside caretaker according to what direction the furniture body is oriented in.

It is accordingly the object of the present invention to provide a user-friendly storage furniture unit whose drawer can be slidably withdrawn in two directions, that is, one sliding direction and the

other direction orthogonal to the one sliding direction.

In one preferred embodiment of the present invention, a storage furniture unit is provided for storing goods, the unit characterized by comprising:

- a furniture body having adjacent side faces;
- a storage section having a first opening and second opening opened in two different directions at the side faces of the furniture body;
- a slide member slidably inserted into, and withdrawn from, the storage section via the second opening; and
- a drawer slidably inserted into, and withdrawn from, the slide member via the first opening.

According to the arrangement above, when the drawer is withdrawn, together with the slide member, via the first opening, the withdrawing direction is the same as that of the slide member. When, on the other hand, the drawer only is withdrawn via the second opening, the withdrawing direction is different from that of the slide member so that it is possible to change the withdrawing direction.

This invention can be more fully understood from the following detailed description when taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a cross-sectional view showing a storage furniture unit according to a first embodiment of the present invention;

FIG. 2 is a cross-sectional view showing part of a storage section of the storage furniture unit of FIG. 1;

FIG. 3 is a perspective view showing a state in which the storage furniture unit is placed on the side of the storage furniture unit;

FIG. 4A is a perspective view showing parts of a slide mechanism in the storage furniture unit, and

FIG. 4B is a cross-sectional view showing the slide mechanism in the storage furniture unit;

FIG. 5A is a perspective view showing a state in which a drawer is independently withdrawn, and

FIG. 5B is a perspective view showing a state in which the drawer, together with a slide member, is withdrawn;

FIG. 6A is a plan view showing a state in which the drawer is independently withdrawn, and

FIG. 6B is a plan view showing a state in which the drawer, together with the slide member, is withdrawn;

FIG. 7 is a perspective view showing a bed base, according to a second embodiment of the invention, which is utilized as a storage furniture unit;

FIG. 8 is a perspective view showing a slide member and drawer according to a third embodiment of the present invention;

FIG. 9 is perspective view showing a slide member and drawer according to a fourth embodiment of the present invention; and

FIG. 10A is a perspective view showing a storage furniture unit according to a fifth embodiment of the present invention with its planer configuration formed as a rectangular configuration and the storage furniture unit placed in space of a given width, and

FIG. 10B is a perspective view showing the storage furniture unit of FIG. 10A placed in space of different width.

Embodiments of the present invention will be explained below with reference to the accompanying drawings.

FIGS. 1 to 6 show a first embodiment of the present invention and FIG. 3 shows a bedside table unit as a piece of furniture placed at the side of a bed 2. The bed 2 has a base 4 with a stopper-equipped caster 3 provided at four corners. A mattress 5 is placed on the upper surface of the base 4. A head board 6 is mounted on one longitudinal end and a foot board 7 is mounted on the other longitudinal end of the base.

The bedside table unit has a furniture body 11. The furniture body 11 is of a hollow box-like configuration, rectangular in cross-section, having four side faces 11a to 11d. The inside of the furniture body is separated by lower and upper partition plates 12 and 13 into three storage section 14a and 14c as shown in FIG. 1. The storage section 14a constituting a lower stage storage section is opened at its front side and a drawer 15 is slidably held in the lower storage section.

The storage section 14b constituting an intermediate stage storage section is opened at its front side and has an opening side opened/closed by an opening/closing door 16 swingably coupled to the furniture body 11 at one width-direction side 11. Guide rails 17a, ..., 17c are provided, in three stages, substantially parallel to one another on both inner side surfaces (only one is shown) of the intermediate stage storage section 14b so as to be located at a predetermined interval in an up/down direction. The guide rails are μ -shaped in cross-section and have corresponding baskets 18 so held with their upper end edges slidably engaged with these rails.

The opening/closing door 16, being opened, can have each basket 18 inserted into, and withdrawn from, the corresponding space.

The storage section 14c constituting an upper stage storage section is opened at a front face 11a of the furniture body 11 and at one side face 11b situated adjacent one width-direction end side of the front end to allow an upper drawer 21 to be slidably moved through a slide member 22.

That is, the upper stage storage section 14c has a first opening 141A opened at the front face 11a of the furniture body 11 and a second opening 141B opened at the side face 11b as shown in FIG.

2. According to this embodiment, the first opening 141A and second opening 141B are made continuous over a range corresponding to the front face 11a and side face 11b of the furniture body 11 and their opening directions are oriented at an angle of 90° with respect to each other.

The slide member 22 assumes as box-like configuration opened at the upper face side and at the one width-direction end side intersecting with a front/back direction in which the drawer is withdrawn, that is, at the front face 11a side of the furniture body 11 and has a handle 23 at the outer face of a front panel 22a. A first slide mechanism 24 as shown in FIGS. 4A and 4B has a movable member 24a fixed along the front/back direction to the bottom surface of the slide member 22.

The movable member 24a formed of a steel sheet, synthetic resin, etc., is substantially μ -shaped and, together with the guide rail 24b, constitutes the first slide mechanism 24. The guide member 24a is so provided as to be slidable through balls 24c. The guide rail 24b is so formed as to have a μ -shaped cross-section of such a size as to allow the movable member 24a to be held therein. The balls 24c are so retained by retaining holes 25a in a retaining plate 25 provided between the guide rail 24b and movable member 24a and having a μ -shaped cross-section.

The guide rail 24b is fixed to a middle portion of the upper surface of the upper partition plate 13, along a sliding direction of the slide member 22, which defines the upper stage storage section 14c. In consequence, the slide member 22 disposed at the upper stage storage section 14c is so provided as to be slidable by the first slide mechanism 24 along the width direction of the furniture body 11.

At a width-direction middle portion of an extreme end (near end) of the movable member 24a of the first slide mechanism 24, a first engaging piece 26 is bent downwardly as shown in FIG. 4A. At a width-direction middle portion of an extreme end (forward end) of the guide rail 24b, a second engaging piece 27 is upwardly raised.

When the slide member 22 is slidably moved in a direction to extend via the second opening 141B of the upper stage storage section 14c, the first engaging piece 26 engages with the second engaging piece 27 at a predetermined extending position, thereby restricting that slide movement.

The upper drawer 21 is disposed within the slide member 22 and is box-like in configuration with the upper side open and a handle 31 at a front face side. A second slide mechanism 24A has the same structure as that of the first slide mechanism

24 as shown in FIG. 2, that is, a movable member 24a and guide rail 24b along which the guide member is slidable. The movable member 24a of the second slide mechanism 24A is fixed along the front/back direction to both outer surfaces of the drawer 21.

The guide rail 24b allows the movable member 24a in the second slide mechanism 24A to be slidably held in an engaged way. The guide rail 24b is provided at the inner surfaces of the front panel 22a and rear panel 22b of the slide member 22. The upper drawer 21 is slidable along a width direction intersecting with the front/back direction of the slide member 22, that is, along the front/back direction of the furniture body 11, to allow it to be inserted and withdrawn via the first opening 141B.

As in the case of the first slide mechanism, the second slide mechanism 24A is so formed as to prevent the movable member 24a from slipping out of the guide member 24b. As a result, the drawer 21 is prevented from slipping out of the slide member 22.

The furniture body 11 has its front face 11a arranged toward the foot board 7 side of the bed 2 as shown in FIG. 3. When any person in bed in a supine position uses the upper drawer 21, he or she raises his or her torso, grips the handle 23 on the front panel 22a of the slide member 22 by hand, and withdraws the slide member 22 toward the direction of the side face 11b of the furniture body 11 as shown in FIG. 5B or FIG. 6B.

By doing so, since the slide member 22 is withdrawn by the first slide mechanism 24 toward the side of the furniture body 11 and, together with the slide member 22, the upper drawer 21 is also withdrawn along the side of the furniture body 11, the bed user utilizes the upper drawer simply by raising his or her upper torso.

In the case where the bed user lies asleep or it is not easy for the bed user to raise his or her own torso, if any other person, such as a bedside caretaker, utilizes the upper drawer 21, he or she can grip the handle 31 on the upper drawer 21 on the front panel 11a side of the furniture body 11 and draw the upper drawer 21 toward the front panel 11a direction of the furniture body 11. By doing so, the upper drawer 21 can be slidably moved by the second slide mechanism 24A in a direction of the front panel 11a of the furniture body 11 as shown in FIG. 5A or 6A.

That is, according to the bedside table unit 1 so arranged, the upper drawer 21 can be withdrawn not only in the front direction of the furniture body 11 but also in a direction of the side face 11b adjacent the front face 11a. In the case where the bedside table unit 1 has its front face located toward the foot board 7 side, the upper drawer 21 can be withdrawn not only toward the furniture

body 11 but also toward the direction of the bed 2 and, as the case may be, it is possible to advantageously select one of the two directions in which the upper drawer can be withdrawn.

FIG. 7 shows a second embodiment of the present invention. This embodiment allows a base 32 of a bed 31 to be utilized as a storage furniture unit. The base 32 is of a flat-box-like configuration and has a head board 33 on its one longitudinal end side.

Storage sections 34 are provided in the base 32 and opened at one side face 32a and rear end face 32b of the base 32. The respective storage sections 34 contain slidable drawers 35a ... 35d. Of these storage sections 34, a corner storage section 34 is provided at a corner defined between the rear end side of the side face 32a of the base 32 and one width-direction end of the rear end face 32b and opened at two face sides.

That is, the corner storage section 34 has a first opening 34A opened at the side face 32a and a second opening 34B opened at the rear end face 32b. The drawer 35C is placed in the corner storage section 34 and is slidable through a slide member 36.

The slide member 36 can be freely withdrawn via the first opening 34A at the side face 32a if the base 32 and the drawer 35c can be withdrawn via a second opening 34B at the rear end face 32b of the base 32 in a direction perpendicular to the direction in which the slide member 36 is withdrawn.

As a result, the drawer 35c together with the slide member 36 can be withdrawn from the side face 32a of the base 32 and the drawer 35c can be independently withdrawn from the rear end face 32b of the base 32. It is, therefore, possible to select one of the two withdrawing directions as the case may be.

The slide construction of the slide member 36 relative to the storage section 34 and that of the drawer 35 relative to the side member 36 may be replaced by the first and second slide mechanism 24 and 24A or any other proper means and are not restricted thereto.

FIG. 8 shows a third embodiment of the present invention. This embodiment constitutes a variant comprised of a slide member 41 and drawer 42. In the third embodiment, the slide member 41 and drawer 42 are molded out of a synthetic resin.

That is, the slide member 41 and drawer 42 are comprised of three-sided walls (side walls) 41b, 42b and bottom plates 41a and 42a, respectively, and one-piece molded, respectively. The slide member 41 is opened at one side and has a front pane 43 as indicated by a dash dot line in FIG. 8. The drawer 42 is opened on the front face side and

a front panel 44 is mounted on the front face side as indicated by a dash dot line in FIG. 8.

A surrounding ridge 45 is provided as an inner projection around the side wall 41b of the slide member 41 and one-piece molded. An inwardly recessed groove 46 is provided around the side wall 42b of the drawer 42 and one-piece molded. The drawer 42 is so dimensioned as to be inserted into the slide member 41 with the slide groove 46 of the drawer 42 set in slide engagement with the ridge 45 of the slide member.

Thus the drawer 42 can be withdrawn via one open side of the slide member 41.

An engaging member 47 is one-piece molded, along a front/back direction, on the outer bottom surface of the slide member 41. An engaging recess 49 is provided at the bottom surface of a storage section 48 of the storage furniture unit with the slider member 41 also received in the storage section 48. The engaging member 47 is engaged with the engaging recess 49 and is slidable along the engaging recess 49 in a direction in which the slide member 41 is slidable.

In order to prevent the slide member 41 from being floated from the bottom surface of the storage section 48, a dovetail joint arrangement is adopted between the engaging member 47 and the engaging recess 49.

As a result, the slide member 41 together with the drawer 42 can be withdrawn in a direction as indicated by an arrow X in FIG. 8 and the drawer 42 can be independently withdrawn in a direction as indicated by an arrow Y in FIG. 8.

That is, the slide member 41 and drawer 42 are one-piece-molded out of a synthetic resin with the ridge 45 of the slide member 41 and slide groove 46 being simultaneously so formed as to allow the drawer 42 to be slidably held relative to the slide member 41. Further, the engaging member 47 is one-piece molded on the slide member 41 to allow the slide member 41 to be slidably held along the engaging recess 49 of the storage section 48 in an engaged relation. It is, therefore, possible to obtain a simplified arrangement compared with an arrangement of the slide mechanism 24 in the first embodiment.

FIG. 9 shows a fourth embodiment of the present invention, that is, a variant of a slide member 51 and drawer 52 as in the third embodiment. In the fourth embodiment, the slide member 51 comprises a bottom plate 51a and front panel 51b mounted on the front end of the bottom plate 51a with a first guide rail 53 provided along a width direction on the upper surface of the bottom plate 51a on the rear end side and a second guide rail 54 provided on the inner surface of the front panel 51b along a full width direction.

The drawer 52 has a front panel 55 and has a box-like configuration with a top side opened. The bottom surface of the bottom plate of the drawer 52 is set, on one width-direction side, in slidably contact with the upper surface of the first guide rail and an engaging groove 56 is provided in an outer side surface of the drawer 52 on the other width-direction side and so engaged with the second guide rail 54 as to be slidable along a front/back direction.

As a result, the drawer 52 can be slidably moved in a direction as indicated by an arrow Y in FIG. 9.

At the bottom portion of a storage section 56 with the drawer 52, together with the slide member 51, received therein, a guide rail 24b in the same slide mechanism 24B as the first slide mechanism 24 in the first embodiment is provided along a slide direction of the slide member 51. A movable member 24a is provided along a front/back direction on the outer surface of the bottom plate 51a of the slide member 51 and so engaged with the guide rail 24b as to be slidable.

As a result, the slide member 51 can be slidably moved along the front/back direction as indicated by an arrow X in FIG. 9 and the drawer 52 can be slidably moved in the direction as indicated by the arrow X in FIG. 9 together with the slide member 51 and independently in a direction as indicated by an arrow Y in FIG. 9.

In the embodiment of FIG. 9, the position to which the slide is extended in the slide direction when the drawer 52 is independently withdrawn is restricted by the engagement of a rear panel 52a of the drawer 52 with a stopper 57 depending from the upper area of the storage section 56.

FIGS. 10A and 10B show a fifth embodiment of the present invention. In the fifth embodiment, a storage furniture unit 61 has a rectangular unit whose planar configuration is longer along one direction than the other. The furniture unit 61 is placed in space 64, for example, between a wall surface 62 in a room and a thing 63, such as other pieces of furniture.

The storage furniture unit 61 has a furniture body 65 and a storage section 66 is provided with adjacent two side faces opened at the upper area of the furniture body 65. In the storage section 66 a drawer 67 is so received as to be slidable through a slide member 68.

The drawer 67 can be independently withdrawn in a direction as indicated by an arrow Y in FIG. 10A and a slide member 68 can be withdrawn in a direction as indicated by an arrow X in FIG. 10A. In the furniture body 65, a front face 65a constitutes a side face capable of independently withdrawing the drawer 67 and the width dimension of the front face 65a is so dimensioned as to be greater than a

front/back direction orthogonal to the width direction.

In the case where the storage furniture unit 61 is to be placed in the space 64, comparison is made between the width dimension of the space 64 on one hand and the width- and front/back-direction dimensions of the storage furniture unit 61 on the other. When the width dimension of the space 64 is greater than the dimension of the storage furniture unit 61, it is only necessary to locate the width direction of the storage furniture unit 61 along the width direction of the space 64. When, on the other hand, the width dimension of the space 64 is smaller than that of the storage furniture unit 61 but greater than the front/back direction of the storage furniture unit, it is only necessary to locate the front/back direction of the storage furniture unit 61 along the width direction of the space 64 as shown in FIG. 10B.

In either case, the drawer 67 can be withdrawn by an independent withdrawing operation and, together with the slide member 68, can be withdrawn by a withdrawing operation. This is quite very convenient. That is, it is possible to place the storage furniture unit 61 in accordance with the width dimension of the space 64 created in a room and hence to utilize such space to advantage.

The present invention cannot be restricted to the above-mentioned embodiments and various changes or modifications of the present invention can be made without departing from the spirit and scope of the present invention. Although the furniture body has been explained as being a hollow parallelepiped of a rectangular cross-section, it may be so made as to have a hollow cylindrical body of a circular cross-section, a hollow trigonal prism of a triangular cross-section and a hollow polygonal prism of a pentagonal or higher angles and sides. That is, the furniture body may have any proper cross-section so long as it has first and second openings opened in two different directions.

Claims

1. A storage furniture unit for storing goods, characterized by comprising:
 - a furniture body (11) having adjacent side faces (11a - 11d);
 - a storage section (14c) having a first opening (141A) and second opening (141B) opened in two different directions at the side faces (11a, 11b) of the furniture body (11);
 - a slide member (22) slidably inserted into, and withdrawn from, the storage section (14c) via the second opening (141b); and
 - a drawer (21) slidably inserted into, and withdrawn from, the slide member (22) via the first opening (141A).
2. A storage furniture unit for storing goods, characterized by comprising:
 - a furniture body (11) having mutually adjacent four side faces (11a - 11b);
 - a storage section (14c) provided in the furniture body (11) and opened at adjacent two of the four side faces (11a, 11b) of the furniture body (11);
 - a slide member (22) slidably inserted into, and withdrawn from, the storage section (14c) via one of the adjacent two of the four side faces (11a, 11b) of the furniture body (11); and
 - a drawer (21) provided in the slide member (22) and slidably inserted into, and withdrawn from, the slide member (22) via the other of the two side faces (11a, 11b) of the four side faces (11a - 11d) of the furniture body (11).
3. The storage furniture unit according to claim 2, characterized in that the slide member (22) is formed as a box-like member opened at a top side and at one side face and drawer (21) is formed as a box-like member opened at a top side and having such a size as to be held in the slide member (22), the drawer (21) being capable of being inserted into, and withdrawn from, the slide member (22) via said one side face opened.
4. The storage furniture unit according to claim 3, characterized in that the slide member (14) and drawer (42), each, have a bottom plate (41a, 42a) and surrounding wall (41b, 42b), the bottom plate and surrounding wall being one piece molded out of a synthetic resin.
5. The storage furniture unit according to claim 4, characterized in that a surrounding ridge (45) is formed as a projection on an inner surrounding wall (41b) of the slide member (41) and an engaging recess (46) is provided in an outer surrounding surface of the drawer (42) to be set in slidable engagement with the surrounding ridge (45) of the slide member (41).
6. The storage furniture unit according to claim 2, characterized by further comprising a first slide mechanism (24) comprising a guide rail (24b) mounted on one of the storage section (14c) and slide member (22) and a movable member (24a) mounted on the other of the storage section (14c) and slide member (22) to allow the guide rail (24b) to be slidable through balls (24c).
7. The storage furniture unit according to claim 2, characterized by further comprising a second

slide mechanism (24A) comprising a guide rail (24b) mounted on one of the slide member (22) and drawer (21) and a movable member (24a) mounted on the other of the slide member (22) and drawer (21) to allow the guide rail to be slidably moved through balls (24c). 5

8. The storage furniture unit according to claim 2, characterized in that the storage furniture unit is comprised of a bed (31) having box-like base (32), the base (32) having at least a side face (32a) and rear end face (32b) with a storage section (34) defined at a corner section between the side face (32a) and the rear end face (32b). 10 15

9. The storage furniture unit according to claim 1, characterized in that the furniture body (61) is rectangular in a planar configuration. 20

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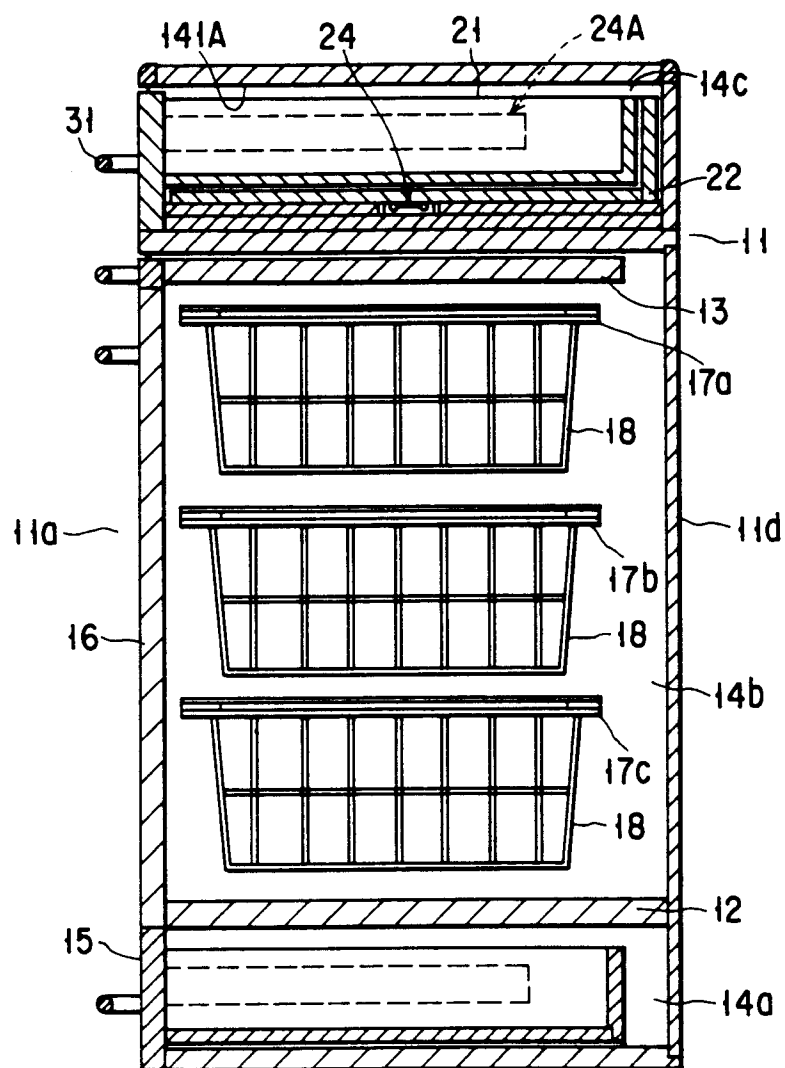


FIG. 1

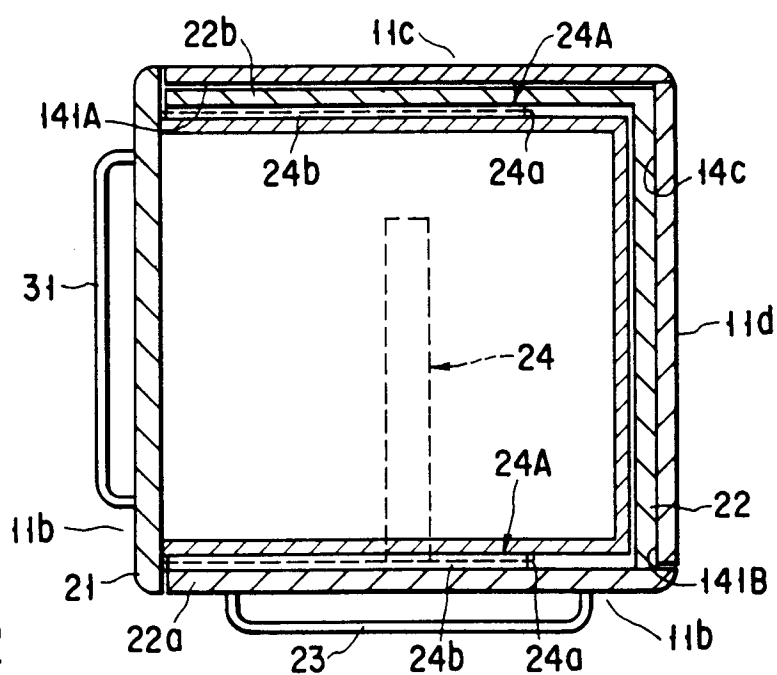


FIG. 2

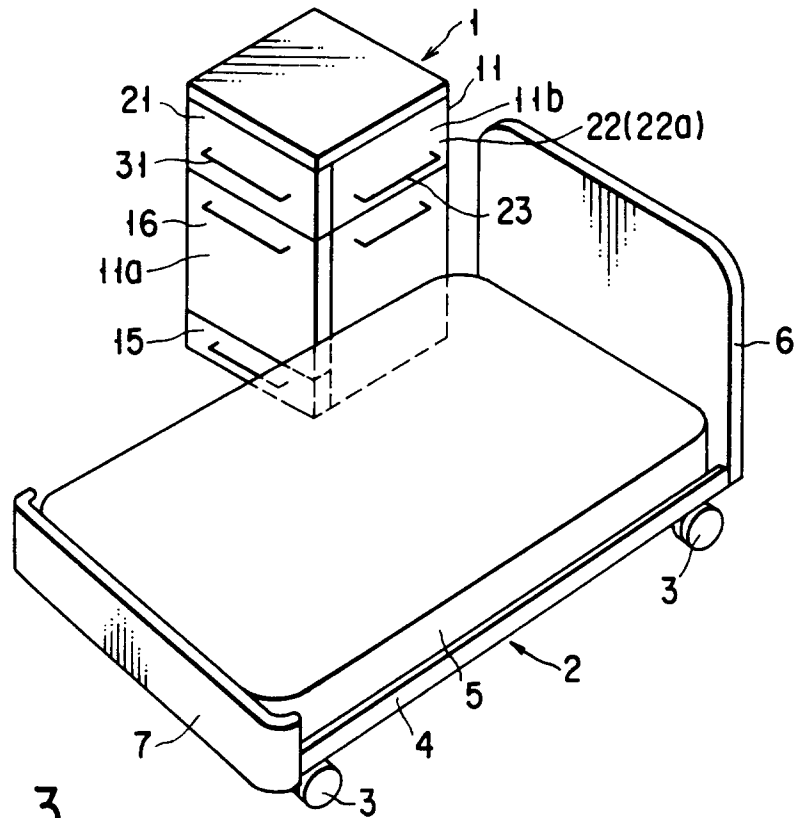


FIG. 3

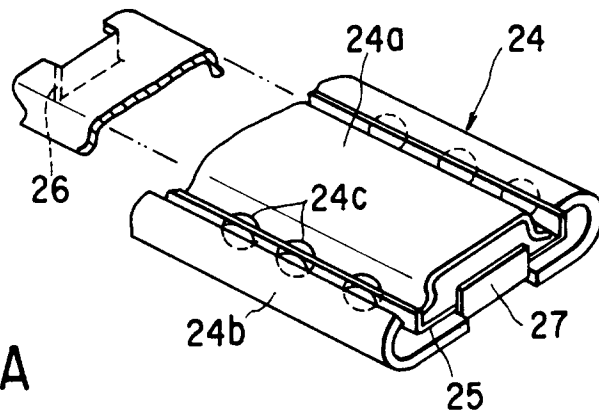


FIG. 4A

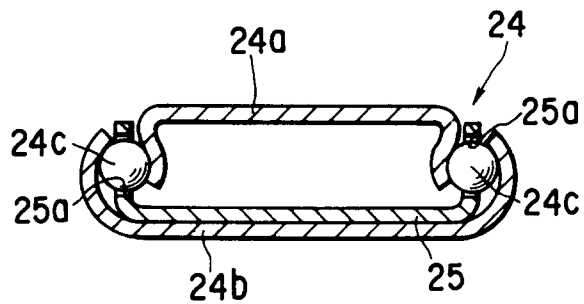


FIG. 4B

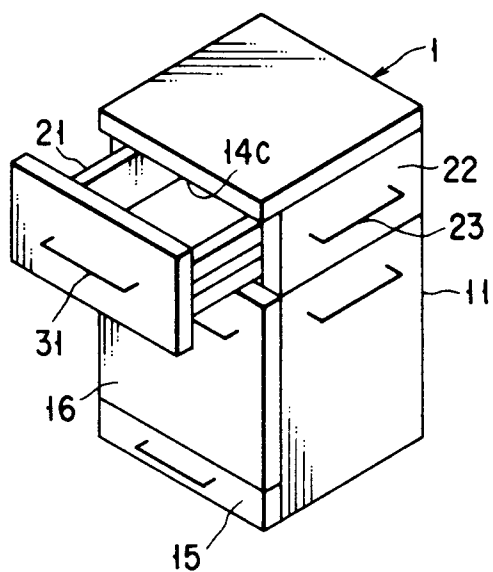


FIG. 5A

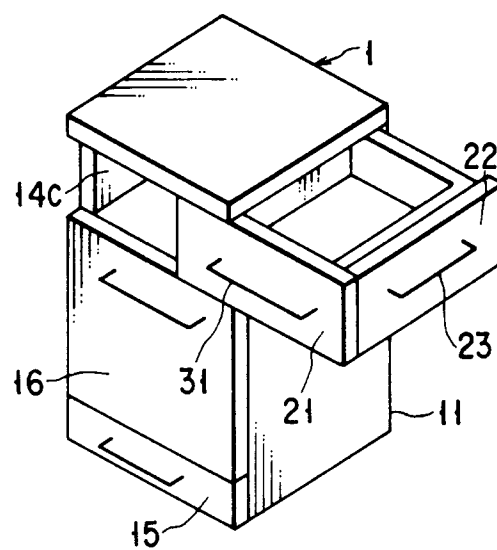


FIG. 5B

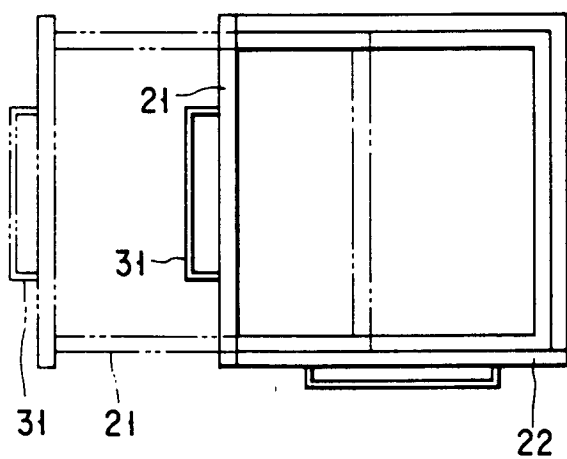


FIG. 6A

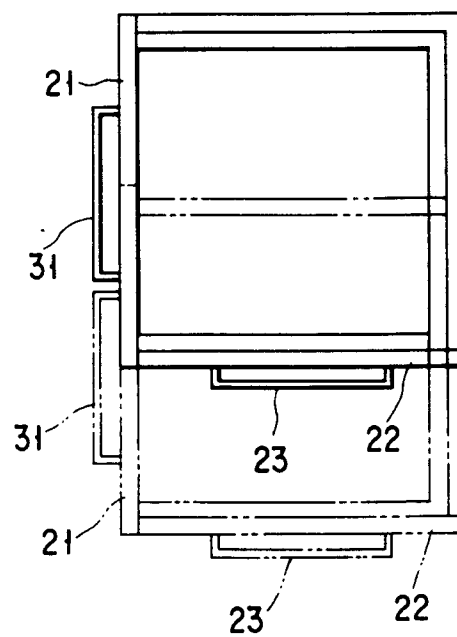
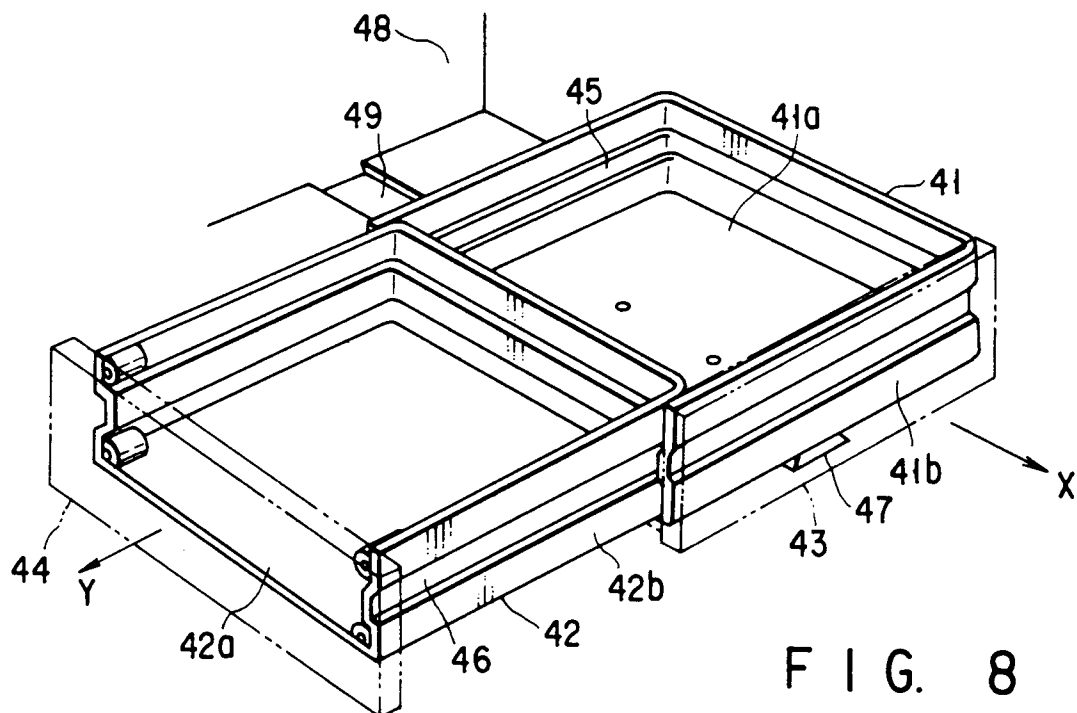
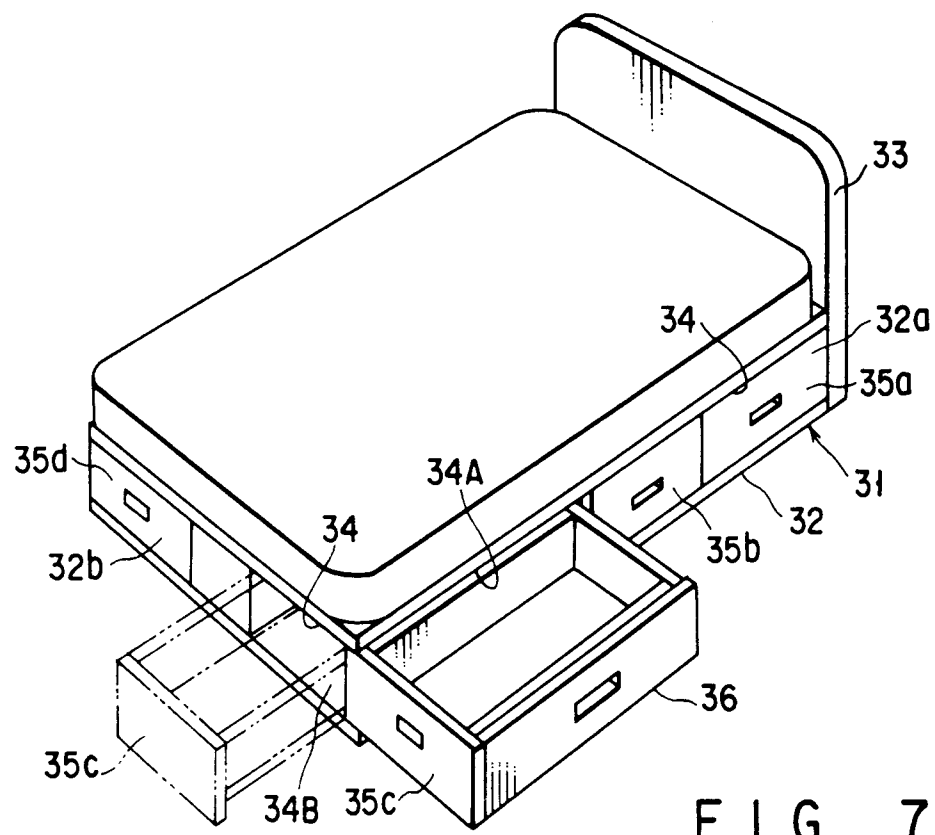


FIG. 6B



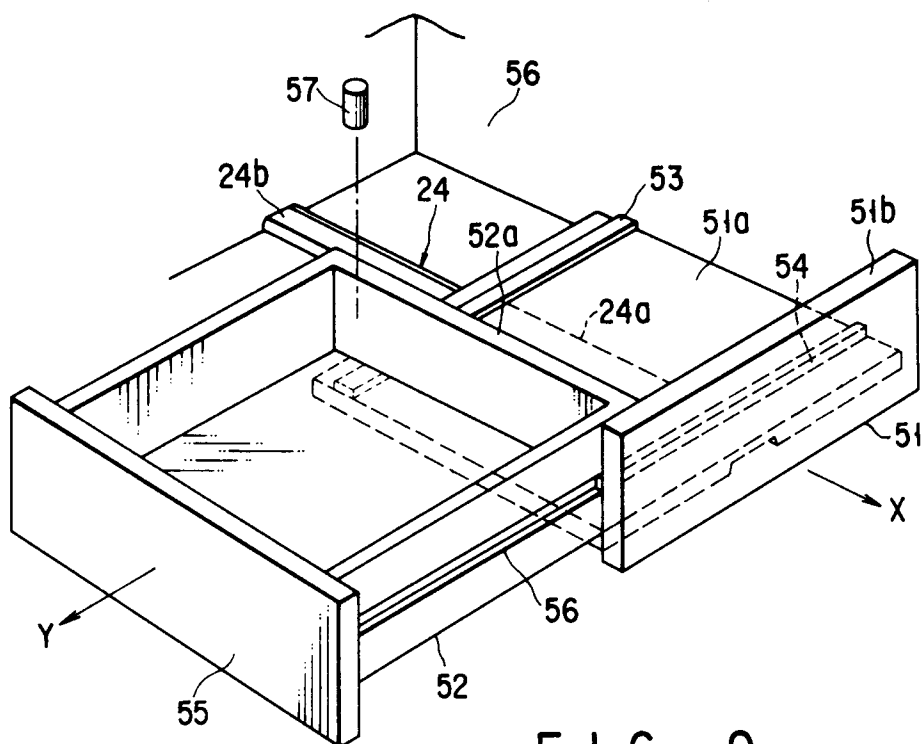


FIG. 9

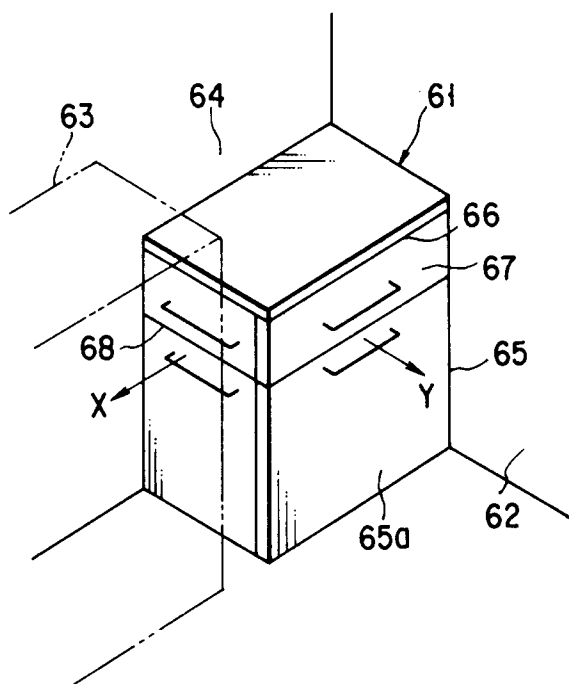
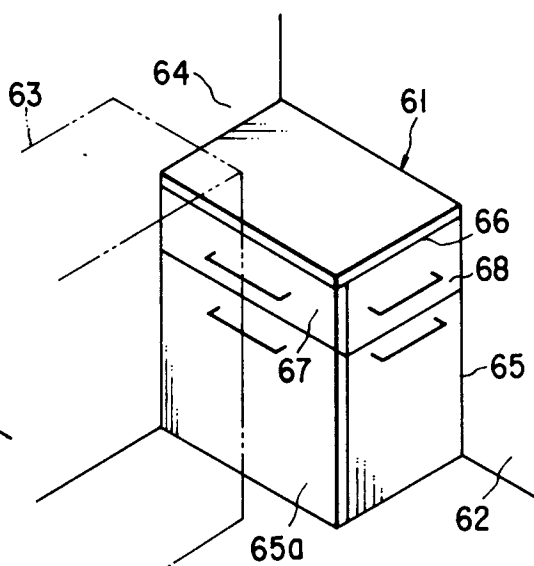


FIG. 10A



F I G. 10B



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

DOCUMENTS CONSIDERED TO BE RELEVANT			EP 95106777.6
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 6)
X	CH - A - 117 314 (GAUTSCHI) * Totality *	1, 2, 9	A 47 B 67/04 A 47 B 88/00
Y	--	3-5, 7	
A	GB - A - 289 824 (ARON BROTHERS LIMITED) * Totality *	1, 2, 9	
Y	--	3	
A	DE - B - 2 054 400 (LI & C. ARNOLD) * Column 3, lines 15-30; column 5, lines 15-29; column 6, lines 3-19; fig. 6-8 *	1-3	
Y	--	4	
Y	US - A - 2 539 963 (MOBERG) * Column 2, lines 16-22; fig. 1, 3 *	5	
Y	DE - A - 3 730 342 (DÜPREE) * Column 5, lines 8-17, 55-67; fig. 1, 2 *	7	
A	US - A - 1 992 106 (WEE) * Totality *	1-3, 6, 7	
A	DE - U - 9 402 397 (PAIDIWERK HEINRICH RENKL- -GMBH & CO. KG) * Totality *	1, 2	
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 23-06-1995	Examiner VELINSKY-HUBER
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