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(54) Adjustable self-locking support system

Einstellbares Selbstverriegelungshilfssystem

Système support auto-verrouillant réglable

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(73) Proprietor: **Helps, Jim**
Tremain
Cardigan, SA43 1SJ (GB)

(72) Inventor: **Helps, Jim**
Tremain
Cardigan, SA43 1SJ (GB)

(74) Representative: **Evans, Jacqueline Gail Victoria**
Marches Intellectual Property Ltd
Solutions House, Old Monmouth Road
Whitchurch
Ross-on-Wye, Herefordshire
HR9 6DJ (GB)

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EP 2 039 264 B1

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Description

Field of the invention

[0001] The present invention relates to an adjustable and self-locking support system wherein one or more support members are moveable on a planar member and are self-lockable in a position substantially perpendicular to the planar member. The system according to the invention may be used as a shelf for supporting books, CDs, cassettes, files, magazines or the like, wherein one or more support members are moveable along a planar base member and are self-lockable in a position substantially perpendicular to the base member when moved into engagement with the article to be supported so as to hold the articles in position on the base member, or alternatively may be used in an inverted configuration wherein the planar member provides a surface for supporting articles and is itself supported by the support members.

Background to the invention

[0002] Shelves for supporting objects such as books or the like having bookend dividers or support members located at fixed positions along the length of the shelf have long been known. A disadvantage of such systems, however, lies in their inflexibility. Having dividers provided at predetermined positions does not afford an efficient use of space, particularly if articles of differing dimensions need to be supported.

[0003] In order to overcome these disadvantages, shelving systems with movable dividers or bookends have been proposed. Commonly, the shelves in such systems are provided with slots or grooves along which the supporting bookends may move longitudinally until they reach any desired position and are then locked in place.

[0004] Although systems with movable dividers allow for more flexibility in use than the fixed position shelves discussed above and are thus less wasteful of space, the systems described to date present other disadvantages, most notably that the bookend or dividers are typically insertable and removable from the ends of the shelves only and/or that they rely for their operation on the bookend being tilted in the locked position.

[0005] A bookshelf system with a shelf having a longitudinal slot and a moveable, lockable bookend with tenons which fit through the slot and are locked in place by pins passing through the tenons is described in FR 2841110A. In the system as described, when a sideways force is applied to one side of the bookend causing the bookend to tilt from the vertical, frictional forces cause the pin to engage with the underside of the shelf so as to lock the bookend in place. In order for the locking mechanism to operate, therefore, both the books and the bookend must be tilted which is disadvantageous as books or the like are generally desirably shelved in a vertically upright manner.

[0006] US 5,205,420 describes an adjustable, self-locking book rack with a pair of bookends slidably mounted on a base. The base has a longitudinal dovetail groove therein and extending along the length thereof and each bookend has a dovetail depending from its base which is received within the dovetail groove. This dovetail and dovetail groove arrangement provides the locking mechanism. When the bookend is moved into engagement with a book, the lateral pressure of the book causes the top portion of the bookend to be tilted rearwardly, moving the front portion of the bookend upwardly and the rear portion downwardly, locking the bookend to the base. Apart from the requirement for tilting, a further disadvantage of this system is that the bookend is insertable and removable from the ends of the shelf only.

[0007] DE-U-1 884 440 describes a system for supporting one or more articles in a base which has a longitudinal groove extending along the length thereof defined therein. The support member or bookend has a foot (e) with a sole (f) which can either be at right angles to the foot or in the form of a T, the sole preferably having a width which enables it to be inserted through the slot and then rotated into position. The sole acts as a locking element when pressed against the underside of the plane of the base.

[0008] DE-A-1753050 discloses another solution for supporting articles.

[0009] There therefore remains a continuing need for improved adjustable and locking support systems which overcome the deficiencies of the prior art.

Summary of the invention

[0010] According to a first aspect, the present invention provides a support system for supporting one or more articles comprising:-

a planar base member (4) having first(3) and second opposed planar surfaces and an engaging surface (9), the planar base member having a longitudinally extending slot (6) defined therein which extends through the first planar surface (3) of the base member (4) and opens into a longitudinally extending cavity formed within the planar base member; and one or more support members (1), each support member comprising a surface defining a plane of support (10) for the one or more articles, a basal wall (2) substantially perpendicular to said support defining surface, said wall being in contact with the first planar surface of the planar base member, and a linking member (5) depending from the basal wall of the support member and extending through the slot (6) in the planar base member, said linking member comprising a substantially L-shaped stem and having a locking bar (7), of length greater than the width of the slot, for engaging the engaging surface of the planar base member,

wherein

the engaging surface (9) is provided by the wall of the cavity proximal to the first planar surface (3) of the planar base member; and

the locking bar (7) is located at the end of the arm of the L-shaped stem distal to the basal wall of the support member (1) and is arranged substantially perpendicularly thereto, the length of the arm of the L-shaped stem proximal to the basal wall relative to the depth of the slot being such that the locking bar engages the engaging surface of the planar base member when the support member is substantially perpendicular to the planar base member and the length of the arm of the L-shaped stem (11) distal to the basal wall relative to the depth of the slot being such that when, during assembly, the support member (1) is laid flat on the first planar surface (3) of the planar base member (4) with the basal wall (2) from which the linking member depends aligned with the slot, the locking bar extends beyond the distal opening of the slot.

[0011] In another aspect, the invention provides a kit for preparing a support system according to the first aspect comprising:-

a planar base member (4) having first and second opposed planar surfaces and an engaging surface, the planar base member having a longitudinally extending slot(6) defined therein which opens onto said engaging surface;

and

one or more support members (1), each comprising a surface defining a plane of support (10) and a basal wall(2), substantially perpendicular to said support defining surface, having a linking member(5) depending therefrom,

said linking member comprising a substantially L-shaped stem and having a locking bar (7) of length greater than the width of the slot, arranged substantially perpendicularly to said stem, located at the end of the arm of the L-shaped stem (11) distal to the basal wall of the support member,

the length of the arm of the L-shaped stem proximal to the basal wall relative to the depth of the slot being such that the locking bar engages the engaging surface of the planar base member when the support member is substantially perpendicular to the planar base member and the length of the arm of the L-shaped stem (11) distal to the basal wall relative to the depth of the slot being such that when, during assembly, the support member (1) is laid flat on the first planar surface (3) of the planar base member (4) with the basal wall (2) from which the linking member depends aligned with the slot, the locking bar extends beyond the distal opening of the slot.

[0012] The invention also provides a method for con-

structing a support system according to the first aspect.

[0013] By means of the invention, an adjustable, self-locking shelf system is provided which holds the articles to be supported firmly in place, at any desired position along the base of the shelf, in a substantially upright position. Moreover, as the shelf system according to the invention does not require the support members to be introduced or removed from the ends of the shelf, additional support members may readily be introduced at any desired position along the base of the shelf as and when required. The shelf system according to the invention is constructed from a small number of components and can easily and simply be assembled and disassembled. Suitably, the shelf system may be provided in the form of a kit for assembly by the user.

[0014] In a further aspect, the invention provides a support system formed by inverting a shelf support system according to the first aspect such that the second planar surface of the planar base member provides a plane of support for supporting for one or more articles with the first planar surface of planar base member being supported by the support members.

Detailed description of the invention

[0015] The support system according to the invention is suitable for supporting books, CDs, cassettes, files, magazines and any other such like articles which require storage. Any reference herein to books, bookshelves or bookends should be interpreted accordingly and is not intended to be limiting to books alone.

[0016] It will further be appreciated that the shelf support system according to the invention is not restricted for use in the horizontal plane but may also be used when oriented in the vertical plane, with the support members providing a horizontal supporting surface for displaying articles, such as ornaments or plants, for example.

[0017] In such an embodiment, the support member providing the horizontal supporting surface may itself be provided with a longitudinally extending slot defined therein which opens onto an engaging surface into which an additional support member or members may be introduced, the support member providing the horizontal supporting surface thereby itself acting as a planar base member in a multi-shelf system.

[0018] In one embodiment, the system may be inverted to form a support system in which the second opposed planar surface of the planar base member defines the supporting surface for the one or more articles to be supported, the planar base member being supported at its first opposed surface by the supporting members.

[0019] In such an inverted construction, the support system functions as a table with the planar member functioning as the table top and the supporting members constituting the table legs, the distance between which can readily be adjusted as desired by means of the adjustable locking mechanism. Such an arrangement may conveniently find application as a raised tray for use by patients

in a hospital bed, for example, with the gap between the supporting members being readily adjustable to comfortably fit around the users legs.

[0020] The planar base member for use according to the invention comprises first and second opposed planar surfaces, an engaging surface and has a longitudinally extending slot defined therein. The planar base member may be any desired shape, suitably, for example, rectangular, and may be intended to be free-standing or mounted on a wall. Alternatively, the planar base member may form part of a larger storage structure such as a book case or the like.

[0021] The planar base member may be made from any material which is conventionally used in shelving systems provided that it is sufficiently strong to bear the weight of the article or articles to be supported. Conveniently, the planar base member may be made from a plastics materials but other materials such as wood, metals or glass may also conveniently be used. If desired, the planar base member may be provided with a retaining lip along one or more of its edges.

Where the planar base member constitutes the supporting surface of a table system such as a raised tray intended for use in bed, it will generally be provided with a retaining lip as discussed above and may also be provided with additional features such as cup holders, which may be integral to the planar member or may be affixed thereto, or a gripping surface to help retain objects on the supporting surface.

[0022] The longitudinally extending slot defined in the planar base member may suitably be formed using standard cutting techniques conventional in the art, the choice of which will depend on the material from which the planar base member is constructed. It will be appreciated that as the shelf system according to the present invention does not require the support member or members to be introduced or removed from the ends of the planar base member, the longitudinally extending slot need not extend along the whole of the length of the base member although in one embodiment it may do so.

[0023] The width of the slot will be chosen such it is sufficiently wide for the locking member depending from the bottom wall of the support member to extend through the slot but is less wide than the length of the locking bar.

[0024] The longitudinally extending slot defined in the planar base member extends through the first planar surface and opens into a longitudinally extending cavity formed within the planar base member, intermediate between the first and second opposed planar surfaces. The engaging surface in this embodiment is provided by the wall of the cavity proximal to the first planar surface of the planar base member.

[0025] Conveniently, in this embodiment, the longitudinally extending cavity within the planar base member comprises first and second opposed walls, said walls being substantially parallel to the first planar surface of the planar base member.

[0026] A shelf support system according to the inven-

tion may comprise a single support member, for example, where the shelf is wall-mounted and a perpendicular wall acts as a second support member, the article or articles being supported between the support member and the wall. In one embodiment, however, the shelf system according to the invention comprises a plurality of support members, especially two.

[0027] As with the planar base member, the one or more supporting members may be made from any material which is conventionally used in shelving systems. Suitably, the supporting member or members may be made from the same materials as the planar base member but the invention also contemplates the use of different materials to manufacture the planar base member and supporting member(s).

[0028] The one or more support members may be of any desired shape, provided that this includes a surface defining a plane of support and basal wall substantially perpendicular to said support defining surface. Where the shelf system comprises a plurality of support members, these may be of the same or different shapes. Conveniently, the one or more support members are rectangular in shape.

[0029] Each supporting member for use according to the invention has a linking member depending from the basal wall thereof. As used herein, where the shelf system is in the horizontal plane, the basal wall is that wall of the support member which is supported on the top or uppermost surface of the planar base member in the assembled construction.

[0030] In one embodiment, the linking member depends from the mid point of the basal wall of the support member.

[0031] The linking member may be attached at one end to the support member by any conventional attaching means such as by adhesive or using screws or nuts and bolts or, in one embodiment, one end of the linking member may be inserted into the basal wall of the support member.

[0032] A support member in which the depending linking member is formed integrally with the support member is also envisaged according to the invention.

[0033] The linking member may suitably be prepared from any material provided that it is sufficiently strong to lockingly engage the support member to the planar base member in operation. Suitably the linking member is made from materials such as steel or brass or other such similarly strong materials.

[0034] The linking member comprises a substantially L-shaped stem and has a locking bar located at the end of the stem distal to the bottom wall of the support member and arranged perpendicularly to the stem. The locking bar may suitably comprise one shoulder arranged perpendicularly to the end of the stem or more preferably comprises two shoulders arranged equally on either side, and perpendicularly, to the end of the stem.

[0035] The linking member, support member and/or planar base member may additionally comprise means,

such as pins, slots or serrations, to increase the frictional engagement between the base member and support member(s) in the locked position. This is of particular importance when the support member is to be deployed in a horizontal position.

[0036] The linking member extends through the slot in the planar base member and the L-shaped configuration of the stem and the perpendicular arrangement of the locking bar around this end of the stem ensures that when the support member is positioned perpendicularly to the planar base member, the locking bar is brought into engagement with the engaging surface of the planar base member. As the length of the locking bar is greater than the width of the slot in the planar base member, the locking bar cannot pass back through the slot when the support member is rotated into position but instead is forced into engagement with the engaging surface of the planar base member thereby locking the support member in position. Tilting the support member away from the perpendicular allows the position of the support member to be adjusted as it causes the locking bar to become disengaged from the planar base member, thereby allowing the support member to slide longitudinally along the top wall of the planar base member.

[0037] The process of attaching a support member to the planar base member is straightforward and comprises the steps of, first, laying the support member on the first planar surface of the planar base member, with the basal wall of the support member aligned with the slot in the planar base member, then pushing the locking bar through the slot, rotating the support member through 90° and finally raising the support to an position where it is perpendicular to the planar base member.

[0038] In order to allow this assembly process to be carried out, the arm of the L-shaped linking member to which the locking bar is attached must be sufficiently long to allow the locking bar to pass beyond the distal opening of the slot when the support member lies flat on the planar base member.

[0039] Further features of the present invention will become apparent from the following non-limiting example. Generally speaking the invention extends to any novel one, or any novel combination, of the features disclosed in this specification (including any accompanying claims and drawings). Moreover unless stated otherwise, any feature disclosed herein may be replaced by an alternative feature serving the same or a similar purpose.

[0040] The present invention will now be further described with reference to the following non-limiting example and with reference to the accompanying illustrative drawings, in which:-

Figure 1 shows an end view of the support member engaged in a locking position with the planar base member;

Figure 2 shows a side view of the support member engaged in a locking position with the planar base

member;

Figure 3 shows a side view of a support member in a tilted position relative to the planar base member;

Figure 4 shows a linking member according to the invention.

Figures 5 and 6 show alternative planar base members for use according to the invention;

Figure 7 shows the first stage in the construction of a shelf system according to the invention with the support member laying on the planar base member, with the basal wall of the support member aligned with the slot in the planar base member;

Figure 8 shows the second stage in the construction of a shelf system according to the invention with the support member rotated through 90°.

Figure 9 shows an alternative embodiment of the arrangement shown in Figure 2 in which the planar base member is serrated to increase the frictional engagement when the support member is engaged in a locking position with the planar base member;

Figure 10 shows a side view of a support member of the embodiment of Figure 9 in a tilted position relative to the planar base member;

Figures 11 and 12 show alternative planar base members for use according to the invention provided with means for increasing the frictional engagement with the support member in the assembled position;

Figure 13 shows an alternative support member for use according to the invention provided at its base with a slot which can lock into a slot in a planar base member as shown in Figure 14.

Figure 15 shows an embodiment in which the construction according to the invention is inverted to form a table system.

[0041] Referring to Figure 1, this shows a support member (1), the basal wall (2) of which is supported on the first, top surface (3) of the planar base member (4). The construction of the planar base member can be seen in Figure 6. A linking member (5) is shown inserted into the basal wall of the support member and extending through the slot (6) in the planar base member beyond the distal opening of the slot. A locking bar (7), which in the embodiment shown comprises two shoulders arranged equally on either side and perpendicularly to the end of the stem of the linking element, is located in a longitudinally extending cavity (8) formed within the planar base member, intermediate between the first and

second opposed planar surfaces. The engaging surface (9) is provided by the wall of the cavity proximal to the first planar surface of the planar base member (4). The support member in the upright position as shown, engages this engaging surface.

[0042] Figure 2 shows a side view of this arrangement. When books or other objects are pushed along the direction Y against the surface (10) of a support member which defines a plane of support for said objects, the locking bar (7) of the linking member (5) is urged into locking engagement with the wall of the cavity proximal to the first planar surface of the planar base member (4). Figure 9 shows an alternative embodiment wherein the locking bar (5) of the linking member (7) interacts with a serration (shown as (12) in Figure 11) provided in the wall to provide increased frictional engagement.

[0043] In the planar base member shown in Figure 6, the longitudinally extending slot (6) extends along the whole length of the base member. Figure 5 shows an alternative planar base member suitable for use according to the invention in which the slot does not extend along the whole length of the base member.

[0044] Figure 3 illustrates how tilting the support member away from the perpendicular disengages the locking bar from the engaging surface of the planar support member. In this diagram the direction in which the support member must be rotated in order to move it to the perpendicular, locked position, is indicated by the arrow Z. The corresponding arrangement for the embodiment of Figure 9 is shown in Figure 10.

[0045] The steps involved in the construction of a shelf system according to the invention can be seen from Figures 7 and 8.

[0046] Firstly, the support member (1) is laid on the first planar surface of the planar base member (4), with the basal wall of the support member aligned with the slot in the planar base member and the locking bar of the linking member (5) is pushed through the slot, as shown in Figure 7. The construction of the linking member can be seen in Figure 4. The linking member comprises an L-shaped stem and a locking bar (7) and the arm of the L-shaped linking member (11) to which the locking bar is attached is sufficiently long to allow the locking bar to pass beyond the distal opening of the slot when the support member lies flat on the planar base member. The length of the locking bar is greater than the width of the slot in the planar base member.

[0047] In a second step, the support member is rotated through 90°, still lying on the planar base member (as shown in Figure 8), and finally the support member is raised to a position where it is perpendicular to the planar base member. In this position, the locking bar is brought into engagement with the engaging surface of the planar base member. As the length of the locking bar is greater than the width of the slot in the planar base member, the locking bar cannot pass back through the slot when the support member is rotated into position but instead is forced into engagement with the engaging surface of the

planar base member thereby locking the support member in position.

[0048] Embodiments of the arrangements described above in which the planar base member and/or support members are provided with means to increase the frictional engagement between the planar base member and support member are shown in Figures 9 to 14.

Figures 9 to 11 show an embodiment in which the planar base member comprises serrations (12) with which the locking bar of the linking member interacts in the locked position. Figure 12 shows a planar base member (4) provided with a slot (13) into which can be inserted a pin or slot (14) extending from the basal wall of the support member (1) (as shown in Figure 13) to lock the support member in position. The assembled construction is shown in Figure 14.

[0049] Figure 15 shows an inserted construction in which the planar base member (4) forms a table top which is supported on its underneath by support members (1).

Claims

1. A system for supporting one or more articles comprising:- a planar base member (4) having first (3) and second opposed planar surfaces and an engaging surface (9), the planar base member having a longitudinally extending slot (6) defined therein which extends through the first planar surface (3) of the base member (4) and opens into a longitudinally extending cavity formed within the planar base member;
and
one or more support members (1), each support member comprising a surface defining a plane of support (10) for the one or more articles,
a basal wall (2) substantially perpendicular to said support defining surface, said wall being in contact with the first planar surface (3) of the planar base member (4), and
a linking member (5) depending from the basal wall of the support member and extending through the slot (6) in the planar base member,
said linking member (5) comprising a substantially L-shaped stem and having a locking bar (7), of length greater than the width of the slot (6), for engaging the engaging surface (9) of the planar base member,
characterised in that
the engaging surface (9) is provided by the wall of the cavity proximal to the first planar surface (3) of the planar base member; and
the locking bar (7) is located at the end of the arm of the L-shaped stem distal to the basal wall of the support member (1) and is arranged substantially perpendicularly thereto, the length of the arm of the L-shaped stem proximal to the basal wall relative to the depth of the slot being such that the locking bar engages the engaging surface of the planar base

- member when the support member is substantially perpendicular to the planar base member and the length of the arm of the L-shaped stem (11) distal to the basal wall relative to the depth of the slot being such that when, during assembly, the support member (1) is laid flat on the first planar surface (3) of the planar base member (4) with the basal wall (2) from which the linking member depends aligned with the slot, the locking bar extends beyond the distal opening of the slot. 5 10
2. A system according to claim 1, wherein the opposed walls of the longitudinally extending cavity are substantially parallel to the first planar surface(3) of the planar base member. 15
3. A system according to claim 1 or claim 2 comprising a plurality of support members (1).
4. A system according to any preceding claim, wherein the linking member(5) depends from the mid point of the basal wall (2) of the support member. 20
5. A system according to any preceding claim, wherein the locking bar (7) comprises two shoulders arranged equally on either side, and perpendicularly, to the end of the stem of the linking member. 25
6. A system according to any preceding claim, wherein the linking member (5) additionally comprises means for increasing the frictional engagement with the base member in the locked position. 30
7. A system according to claim 6, wherein the means for increasing the frictional engagement with the base member in the locked position comprise pins or serrations (12). 35
8. A system according to claim 1 which is inverted to form a support system in which the second opposed planar surface of the planar base member defines the supporting surface for the one or more articles to be supported, the planar base member being supported at its first opposed surface by the supporting members. 40 45
9. A kit for preparing a support system according to claim 1 comprising:-
- a planar base member (4) having first and second opposed planar surfaces and an engaging surface (9), the planar base member having a longitudinally extending slot (6) defined therein which extends through the first planar surface (3) of the base member (4) and opens into a longitudinally extending cavity formed within the planar base member; the engaging surface (9) being provided by the wall of the cavity proximal 50 55

to the first planar surface(3) of the planar base member;

and

one or more support members (1), each comprising a surface defining a plane of support (10) and a basal wall(2), substantially perpendicular to said support defining surface, having a linking member(5) depending therefrom, said linking member comprising a substantially L-shaped stem and having a locking bar (7) of length greater than the width of the slot, arranged substantially perpendicularly to said stem, located at the end of the arm of the L-shaped stem (11) distal to the basal wall of the support member, the length of the arm of the L-shaped stem proximal to the basal wall relative to the depth of the slot being such that the locking bar engages the engaging surface of the planar base member when the support member is substantially perpendicular to the planar base member and the length of the arm of the L-shaped stem (11) distal to the basal wall relative to the depth of the slot being such that when, during assembly, the support member (1) is laid flat on the first planar surface (3) of the planar base member (4) with the basal wall (2) from which the linking member depends aligned with the slot, the locking bar extends beyond the distal opening of the slot.

10. A method for constructing a support system according to any of claims 1 to 8 comprising the steps of
- (i)laying the one or more support members (1) on the first planar surface (3) of the planar base member (4) with the basal wall of each support member aligned with the slot in the planar base member;
- (ii) inserting the locking bar of the locking member of each support member through the slot;
- (iii) rotating each support member through 90° whilst still laying on the planar base member ;
- and
- (iv)raising each support member to a position where it is substantially perpendicular to the planar base member.

Patentansprüche

1. System zum Stützen eines Gegenstands oder mehrerer Gegenstände, Folgendes umfassend:
- ein planes Basisteil (4) mit einer ersten (3) und zweiten entgegengesetzten planen Fläche und einer Eingriffsfläche (9), wobei das plane Basisteil einen sich längs erstreckenden, darin ausgebildeten Schlitz (6) aufweist, der sich durch

die erste plane Fläche (3) des Basisteils (4) erstreckt und in einen sich längs erstreckenden Hohlraum mündet, der im planen Basisteil gebildet ist;

und

ein oder mehrere Stützteil/e (1), wobei jedes Stützteil eine Fläche umfasst, die eine Stützebene (10) für den einen Gegenstand oder die mehreren Gegenstände bildet, eine zu der die Stütze bildenden Fläche im Wesentlichen senkrechte Basiswand (2), wobei die Wand mit der ersten planen Fläche (3) des planen Basisteils (4) in Kontakt ist, und ein Verbindungsteil (5), das von der Basiswand des Stützteils abhängt und sich durch den Schlitz (6) im planen Basisteil erstreckt, wobei das Verbindungsteil (5) einen im Wesentlichen L-förmigen Schaft umfasst und einen Arretierungsriegel (7) mit einer Länge aufweist, die größer ist als die Breite des Schlitzes (6), um die Eingriffsfläche (9) des planen Basisteils in Eingriff zu halten,

dadurch gekennzeichnet, dass

die Eingriffsfläche (9) durch die zur ersten planen Fläche (3) des planen Basisteils proximale Wand des Hohlraums bereitgestellt wird; und sich der Arretierungsriegel (7) am Ende des Schenkels des L-förmigen Schafts distal zur Basiswand des Stützteils (1) befindet und im Wesentlichen senkrecht dazu angeordnet ist, wobei die Länge des Schenkels des L-förmigen Schafts proximal zur Basiswand in Bezug auf die Tiefe des Schlitzes dergestalt ist, dass der Arretierungsriegel die Eingriffsfläche des planen Basisteils in Eingriff hält, wenn das Stützteil im Wesentlichen senkrecht zum planen Basisteil ist, und die Länge des Schenkels des L-förmigen Schafts (11) distal zur Basiswand in Bezug auf die Tiefe des Schlitzes dergestalt ist, dass, wenn während des Zusammenbaus das Stützteil (1) flach auf der ersten planen Fläche (3) des planen Basisteils (4) liegt, wobei die Basiswand (2), von der das Verbindungsteil abhängt, mit dem Schlitz ausgerichtet ist, sich der Arretierungsriegel über die distale Öffnung des Schlitzes hinaus erstreckt.

2. System nach Anspruch 1, wobei die entgegengesetzten Wände des sich längs erstreckenden Hohlraums im Wesentlichen parallel zur ersten planen Fläche (3) des planen Basisteils sind.

3. System nach Anspruch 1 oder Anspruch 2, mehrere Stützteile (1) umfassend.

4. System nach jedem vorhergehenden Anspruch, wobei das Verbindungsteil (5) vom Mittelpunkt der Basiswand (2) des Stützteils abhängt.

5. System nach jedem vorhergehenden Anspruch, wobei der Arretierungsriegel (7) zwei Schultern umfasst, die auf jeder Seite gleich und senkrecht zum Ende des Schafts des Verbindungsteils angeordnet sind.

6. System nach jedem vorhergehenden Anspruch, wobei das Verbindungsteil (5) zusätzlich Einrichtungen umfasst, um den Reibschluss mit dem Basisteil in der arretierten Stellung zu verstärken.

7. System nach Anspruch 6, wobei die Einrichtungen zum Verstärken des Reibschlusses mit dem Basisteil in der arretierten Stellung Stifte oder Kerbverzahnungen (12) umfassen.

8. System nach Anspruch 1, das umgekehrt ist, um ein Stützsystem zu bilden, bei dem die zweite entgegengesetzte plane Fläche des planen Basisteils die Stützfläche für den einen zu stützenden Gegenstand oder die mehreren zu stützenden Gegenstände bildet, wobei das plane Basisteil an seiner ersten entgegengesetzten Fläche durch die Stützteile gestützt ist.

9. Bausatz zum Herstellen eines Stützsystems nach Anspruch 1, Folgendes umfassend:

ein planes Basisteil (4) mit einer ersten (3) und zweiten entgegengesetzten planen Fläche und einer Eingriffsfläche (9), wobei das plane Basisteil einen sich längs erstreckenden, darin ausgebildeten Schlitz (6) aufweist, der sich durch die erste plane Fläche (3) des Basisteils (4) erstreckt und in einen sich längs erstreckenden Hohlraum mündet, der im planen Basisteil gebildet ist; wobei die Eingriffsfläche (9) durch die zur ersten planen Fläche (3) des planen Basisteils proximale Wand des Hohlraums bereitgestellt wird;

und

ein oder mehrere Stützteil/e (1), wovon jedes eine Fläche umfasst, die eine Stützebene (10) und eine Basiswand (2) im Wesentlichen senkrecht zu der die Stütze bildenden Fläche mit einem von dieser abhängenden Verbindungsteil (5) umfasst,

wobei das Verbindungsteil einen im Wesentlichen L-förmigen Schaft umfasst und einen Arretierungsriegel (7) mit einer Länge aufweist, die größer ist als die Breite des Schlitzes, der im Wesentlichen senkrecht zum Schaft angeordnet ist und sich am Ende des Schenkels des L-förmigen Schafts (11) distal zur Basiswand des Stützteils befindet, wobei die Länge des Schenkels des L-förmigen Schafts proximal zur Basiswand in Bezug auf die Tiefe des Schlitzes dergestalt ist, dass der Arretierungsriegel die Ein-

griffsfläche des planen Basisteils in Eingriff hält, wenn das Stützteil im Wesentlichen senkrecht zum planen Basisteil ist, und die Länge des Schenkels des L-förmigen Schafts (11) distal zur Basiswand in Bezug auf die Tiefe des Schlitzes dergestalt ist, dass, wenn während des Zusammenbaus das Stützteil (1) flach auf der ersten planen Fläche (3) des planen Basisteils (4) liegt, wobei die Basiswand (2), von der das Verbindungsteil abhängt, mit dem Schlitz ausgerichtet ist, sich der Arretierungsriegel über die distale Öffnung des Schlitzes hinaus erstreckt.

10. Verfahren zum Aufbauen eines Stützsysteams nach einem der Ansprüche 1 bis 8, die folgenden Schritte umfassend:

(i) das eine oder die mehreren Stützteil/e (1) auf die erste plane Fläche (3) des planen Basisteils (4) zu legen, wobei die Basiswand jedes Stützteils mit dem Schlitz im planen Basisteil ausgerichtet ist;
 (ii) den Arretierungsriegel des Arretierungsteils jedes Stützteils durch den Schlitz einzustecken;
 (iii) jedes Stützteil um 90° zu drehen, während es immer noch auf dem planen Basisteil aufliegt; und
 (iv) jedes Stützteil in eine Stellung anzuheben, in der es im Wesentlichen senkrecht zum planen Basisteil ist.

Revendications

1. Système permettant de supporter un ou plusieurs articles comprenant : un élément de base plane (4) présentant des première (3) et deuxième surfaces planes opposées et une surface d'engagement (9), l'élément de base plane ayant une fente (6) s'étendant longitudinalement qui y est définie et qui s'étend à travers la première surface plane (3) de l'élément de base (4) et débouche dans une cavité s'étendant longitudinalement formée à l'intérieur de l'élément de base plane ;
 et
 un ou plusieurs éléments de support (1), chaque élément de support comprenant une surface définissant un plan de support (10) pour le ou les plusieurs articles,
 une paroi basale (2) essentiellement perpendiculaire à ladite surface définissant le support, ladite paroi étant en contact avec la première surface plane (3) de l'élément de base plane (4), et
 un élément de liaison (5) dépendant de la paroi basale de l'élément de support et s'étendant à travers la fente (6) dans l'élément de base plane, ledit élément de liaison (5) comprenant une tige es-

sentiellement en forme de L et ayant une barre de verrouillage (7), dont la longueur est supérieure à la largeur de la fente (6), pour s'engager avec la surface d'engagement (9) de l'élément de base plane,

caractérisé en ce que

la surface d'engagement (9) est fournie par la paroi de la cavité proximale à la première surface plane (3) de l'élément de base plane ; et
 la barre de verrouillage (7) se trouve au niveau de l'extrémité du bras de la tige en forme de L distale par rapport à la paroi basale de l'élément de support (1) et est disposée essentiellement perpendiculairement à celle-ci, la longueur du bras de la tige en forme de L proximale à la paroi basale par rapport à la profondeur de la fente étant telle que la barre de verrouillage s'engage avec la surface d'engagement de l'élément de base plane lorsque l'élément de support est essentiellement perpendiculaire à l'élément de base plane et la longueur du bras de la tige (11) en forme de L distale par rapport à la paroi basale par rapport à la profondeur de la fente étant telle que lorsque, l'élément de support (1), lors de l'assemblage, est posé à plat sur la première surface plane (3) de l'élément de base plane (4) avec la paroi basale (2) de laquelle dépend l'élément de liaison alignée avec la fente, la barre de verrouillage s'étend au-delà de l'ouverture distale de la fente.

2. Système selon la revendication 1, dans lequel les parois opposées de la cavité s'étendant longitudinalement sont essentiellement parallèles à la première surface plane (3) de l'élément de base plane.
3. Système selon la revendication 1 ou 2 comprenant une pluralité d'éléments de support (1).
4. Système selon l'une des revendications précédentes, dans lequel l'élément de liaison (5) dépend du point médian de la paroi basale (2) de l'élément de support.
5. Système selon l'une des revendications précédentes, dans lequel la barre de verrouillage (7) comprend deux épaulements disposés de façon égale sur chaque côté, et perpendiculairement, à l'extrémité de la tige de l'élément de liaison.
6. Système selon l'une des revendications précédentes, dans lequel l'élément de liaison (5) comprend en outre des moyens destinés à augmenter l'engagement par friction avec l'élément de base dans la position verrouillée.
7. Système selon la revendication 6, dans lequel les moyens destinés à augmenter l'engagement par friction avec l'élément de base dans la position verrouillée comprennent des broches ou des dentelures (12).

8. Système selon la revendication 1 qui est inversé pour former un système de support dans lequel la deuxième surface planeaire opposée de l'élément de base planeaire définit la surface de support pour le ou les plusieurs articles à être supportés, l'élément de base planeaire étant supporté au niveau de sa première surface opposée par les éléments de support. 5
9. Kit permettant de préparer un système de support selon la revendication 1 comprenant : 10
- un élément de base planeaire (4) présentant des première et deuxième surfaces planaires opposées et une surface d'engagement (9), l'élément de base planeaire ayant une fente (6) s'étendant longitudinalement qui y est définie et qui s'étend à travers la première surface planeaire (3) de l'élément de base (4) et s'ouvre dans une cavité s'étendant longitudinalement formée dans l'élément de base planeaire ; la surface d'engagement (9) étant fournie par la paroi de la cavité proximale à la première surface planeaire (3) de l'élément de base planeaire ; et 15
- un ou plusieurs éléments de support (1), comprenant chacun une surface définissant un plan de support (10) et une paroi basale (2), essentiellement perpendiculaire à ladite surface de support, ayant un élément de liaison (5) qui en dépend, 20
- ledit élément de liaison comprenant une tige essentiellement en forme de L et ayant une barre de verrouillage (7) de longueur supérieure à la largeur de la fente, disposée de manière essentiellement perpendiculaire à ladite tige, située au niveau de l'extrémité du bras de la tige (11) en forme de L distale par rapport à la paroi basale de l'élément de support, la longueur du bras de la tige en forme de L proximale à la paroi basale par rapport à la profondeur de la fente étant telle que la barre de verrouillage s'engage avec la surface d'engagement de l'élément de base planeaire lorsque l'élément de support est essentiellement perpendiculaire à l'élément de base planeaire et la longueur du bras de la tige (11) en forme de L distale par rapport à la paroi basale par rapport à la profondeur de la fente étant telle que lorsque, l'élément de support (1), lors de l'assemblage, est posé à plat sur la première surface planeaire (3) de l'élément de base planeaire (4) avec la paroi basale (2) de laquelle dépend l'élément de liaison (2) alignée avec la fente, la barre de verrouillage s'étend au-delà de l'ouverture distale de la fente. 25 30 35 40 45 50
10. Procédé permettant de construire un système de support selon l'une des revendications 1 à 8 comprenant les étapes qui consistent 55

- (i) à poser le ou les plusieurs éléments de support (1) sur la première surface planeaire (3) de l'élément de base planeaire (4) avec la paroi basale de chaque élément de support alignée avec la fente dans l'élément de base planeaire ;
- (ii) à insérer la barre de verrouillage de l'élément de verrouillage de chaque élément de support à travers la fente ;
- (iii) à faire tourner chaque élément de support à 90° tout en le posant sur l'élément de base planeaire ; et
- (iv) à soulever chaque élément de support à une position où il est essentiellement perpendiculaire à l'élément de base planeaire.

Figure 2

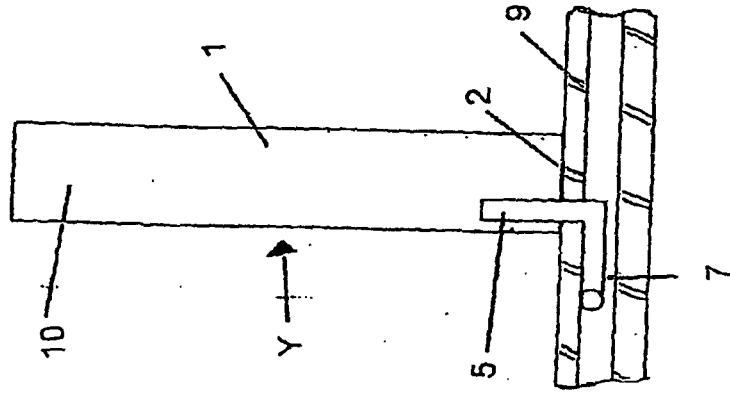


Figure 1

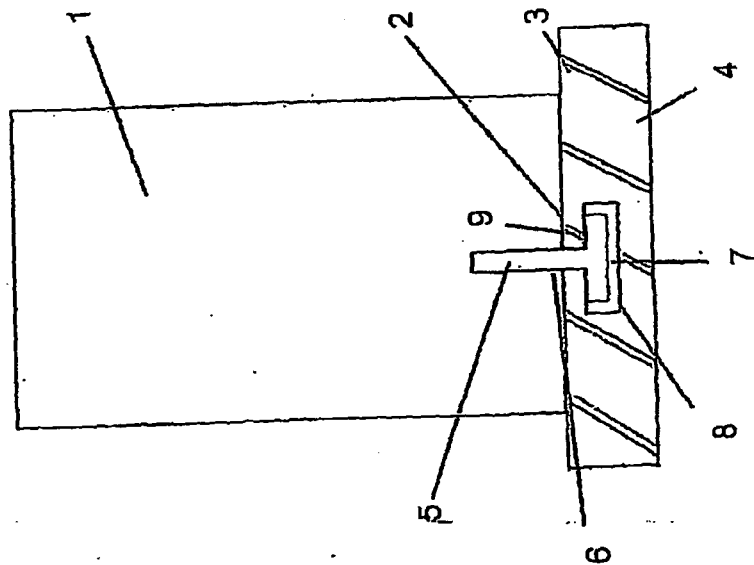


Figure 4

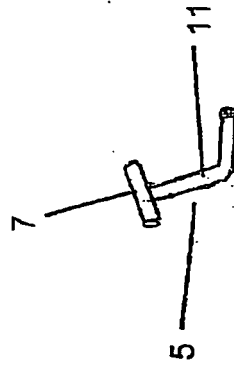


Figure 3

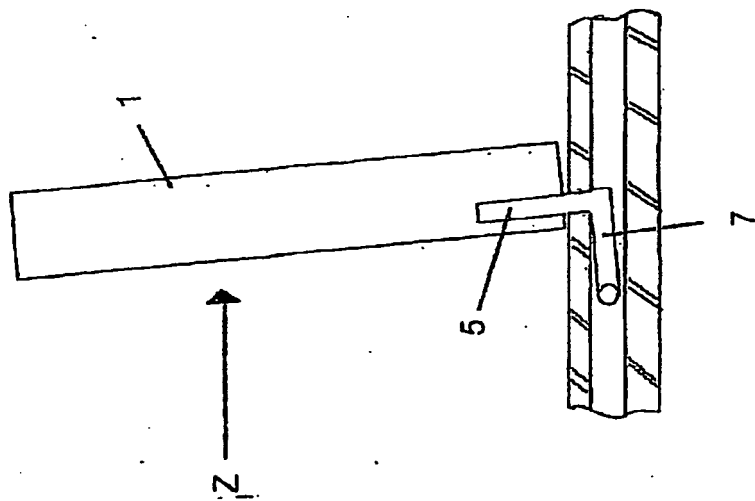


Figure 5

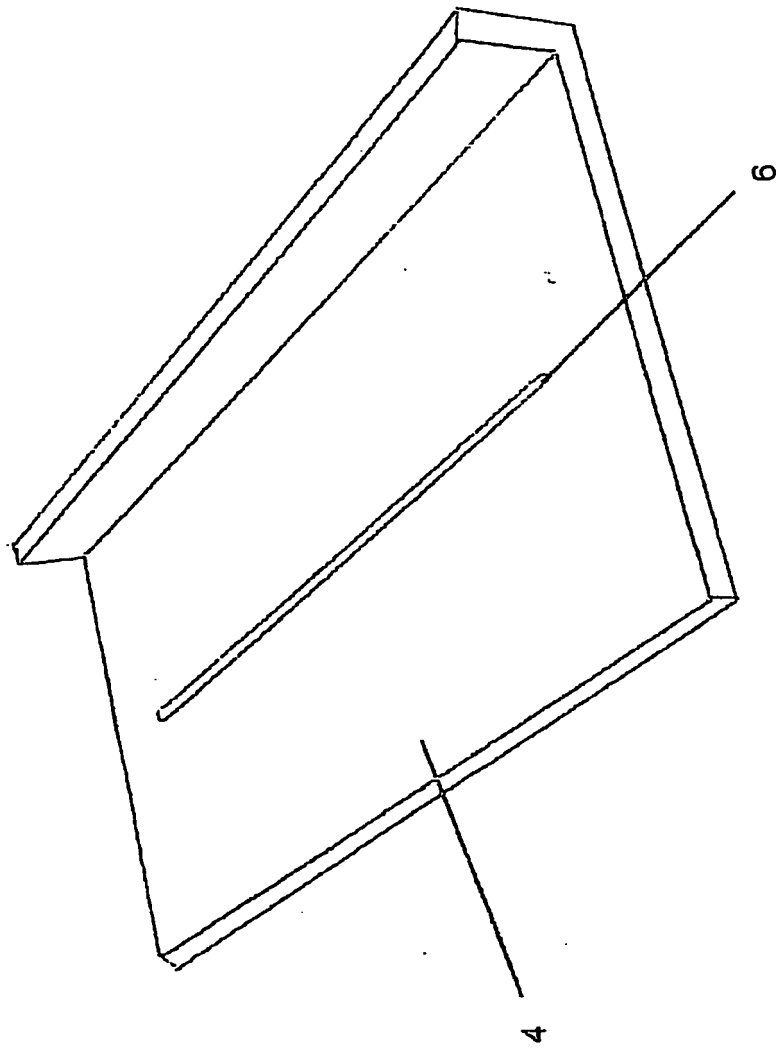


Figure 6

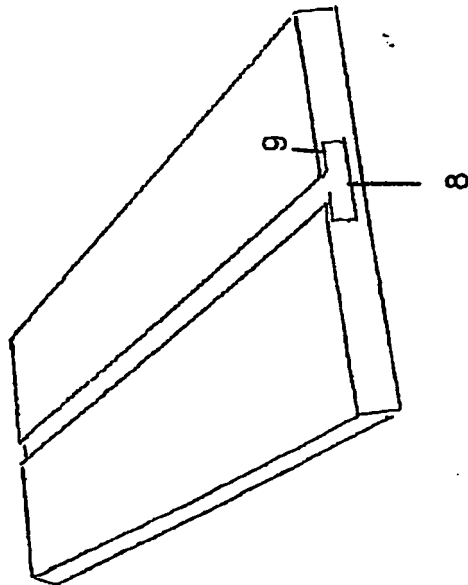


Figure 7

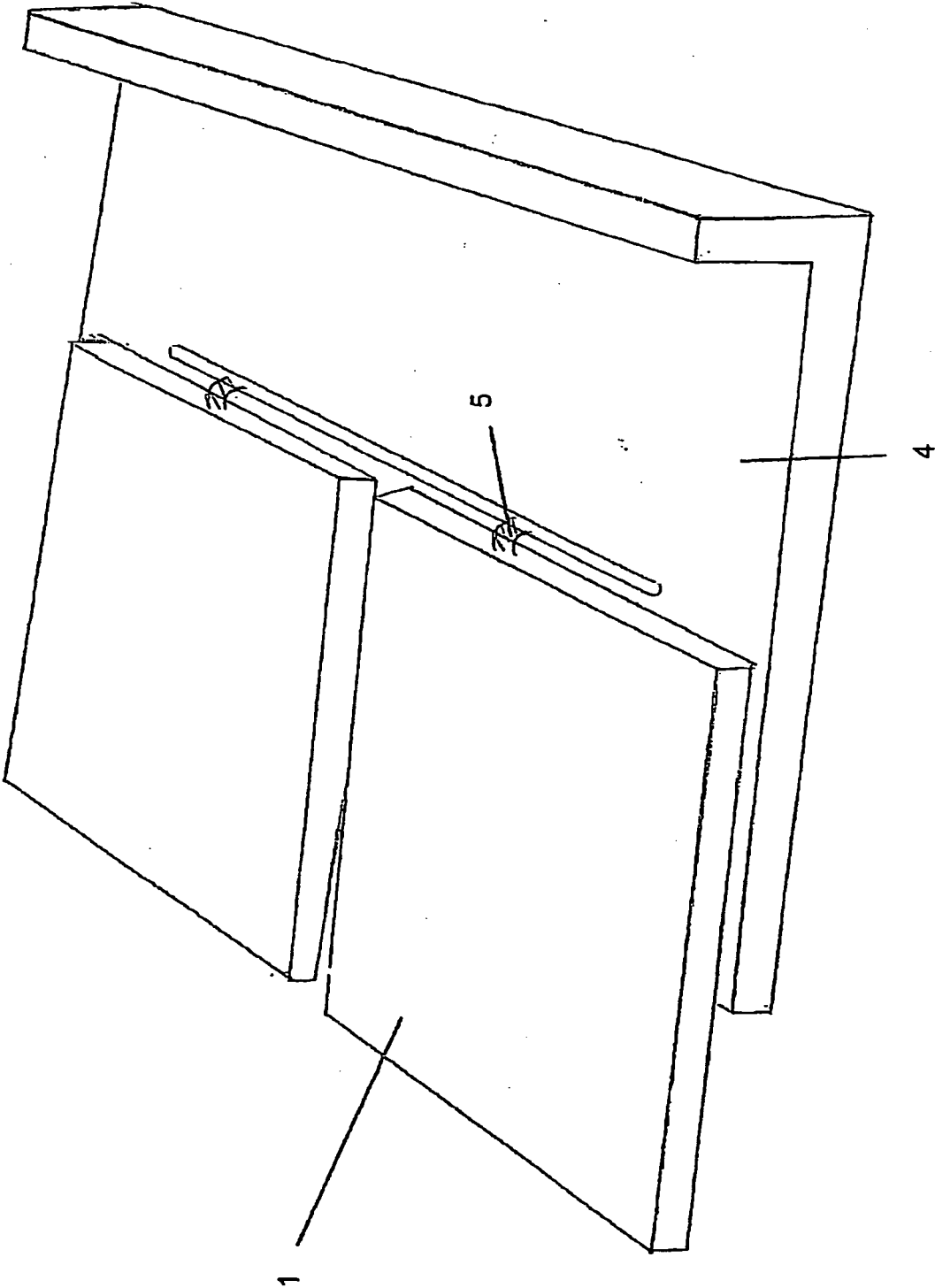


Figure 8

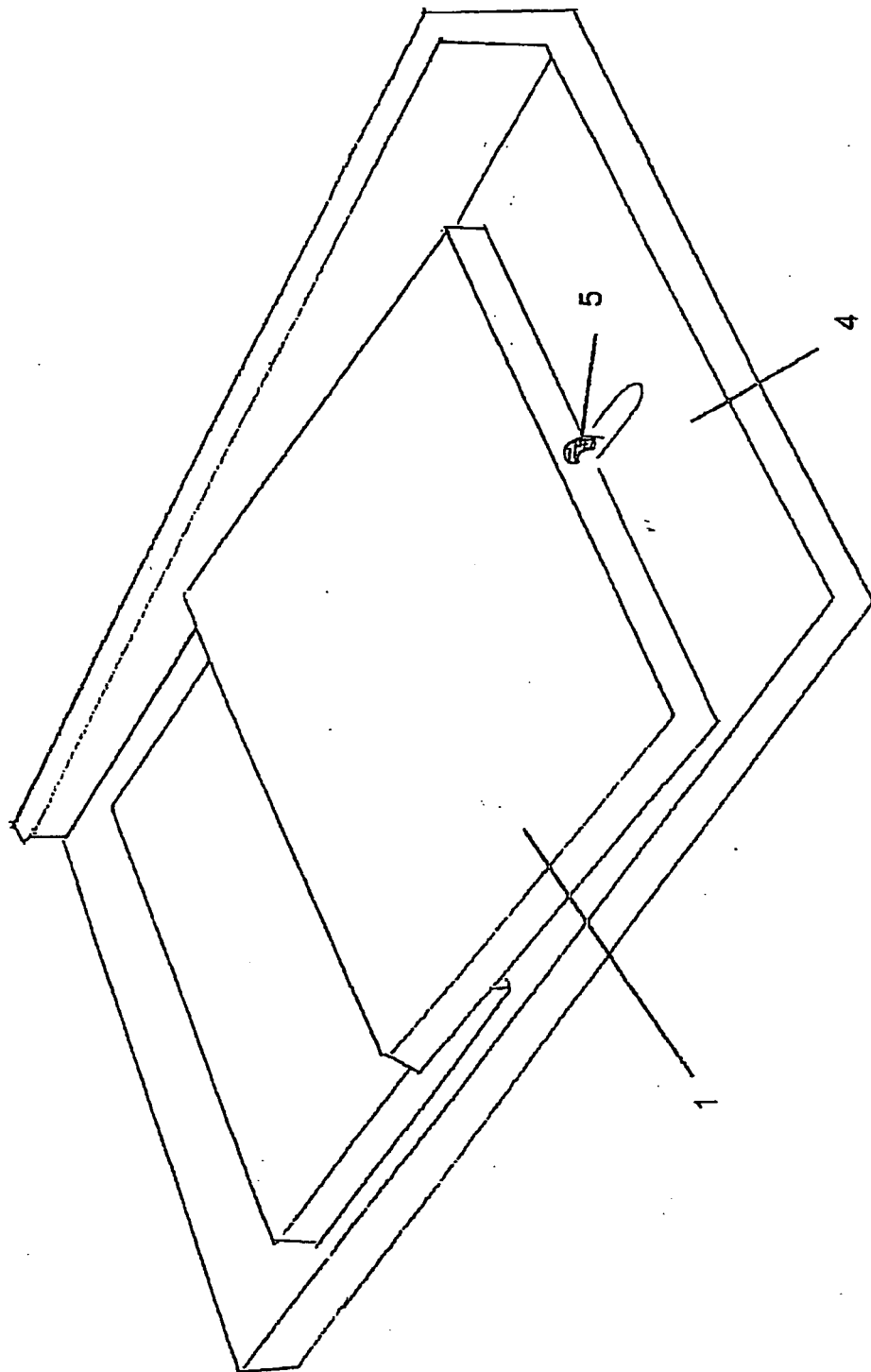


Figure 10

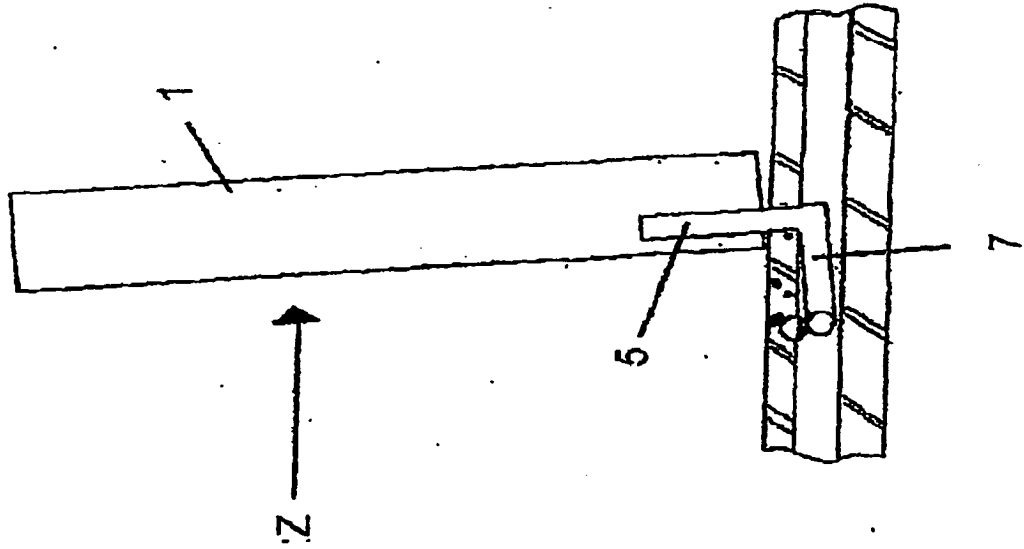
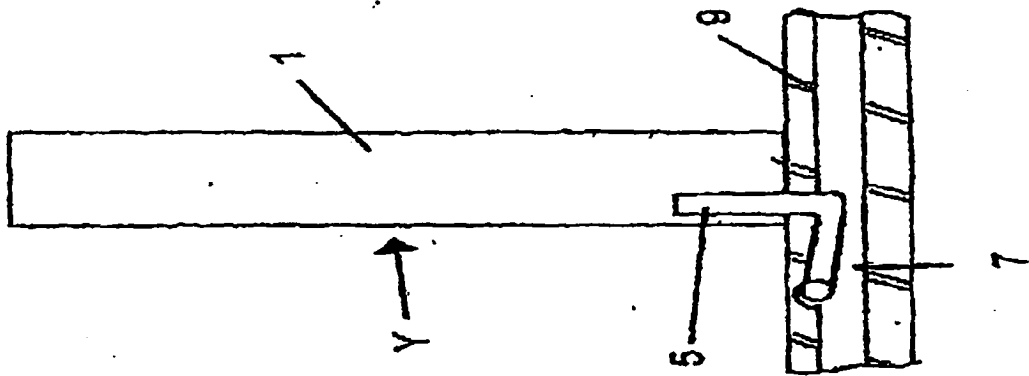


Figure 9



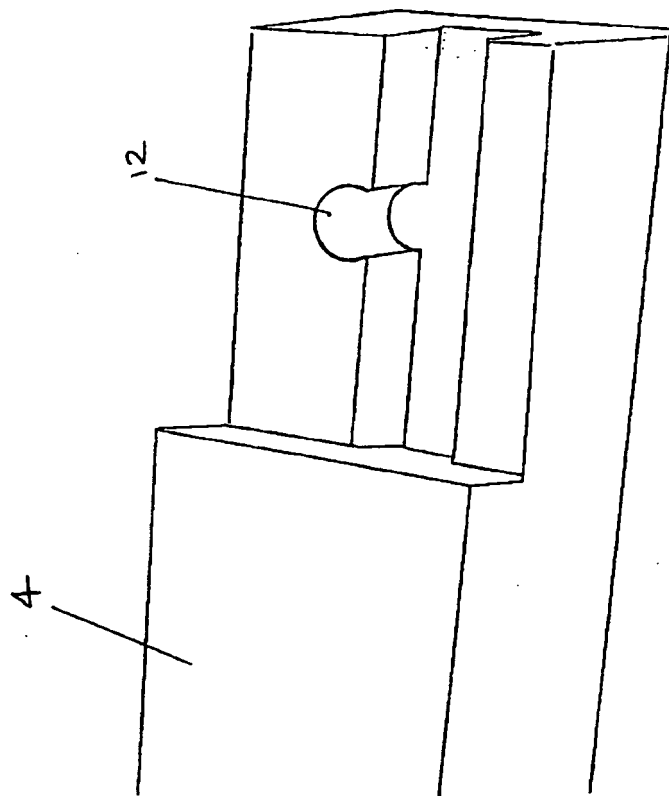


Figure 11

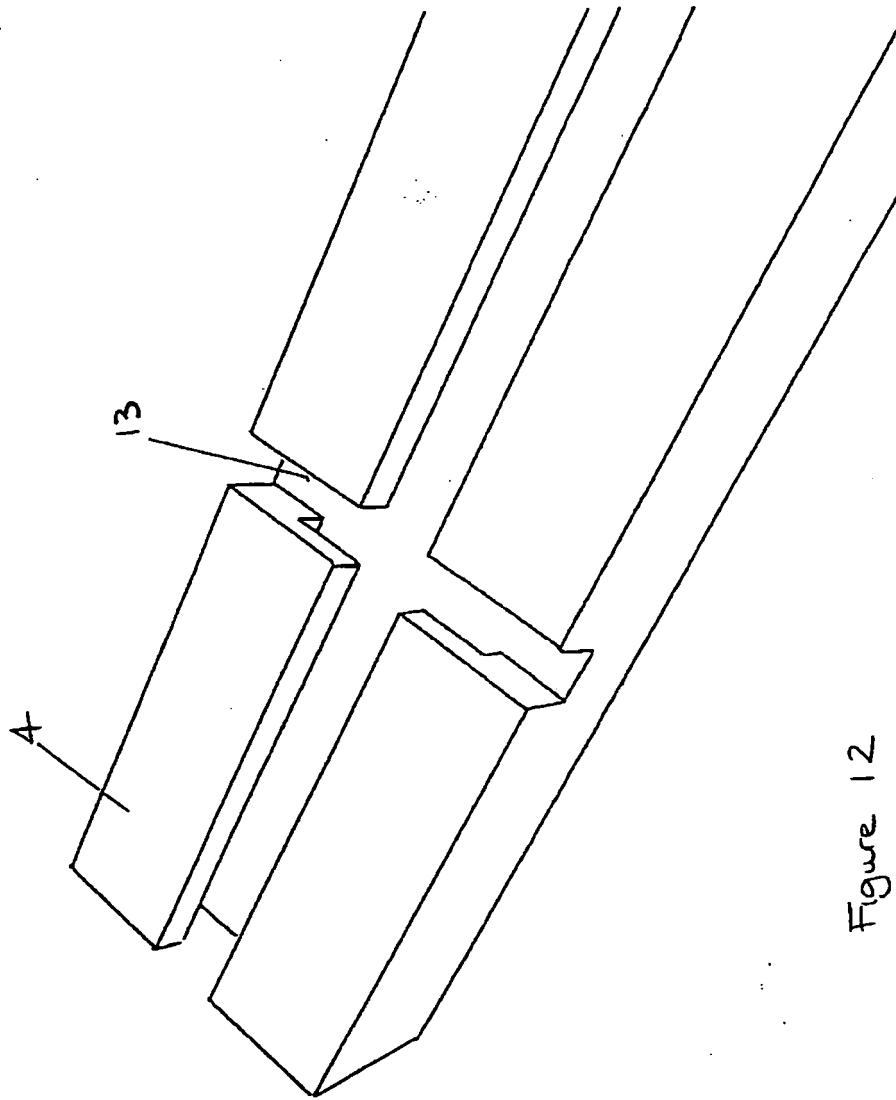


Figure 12

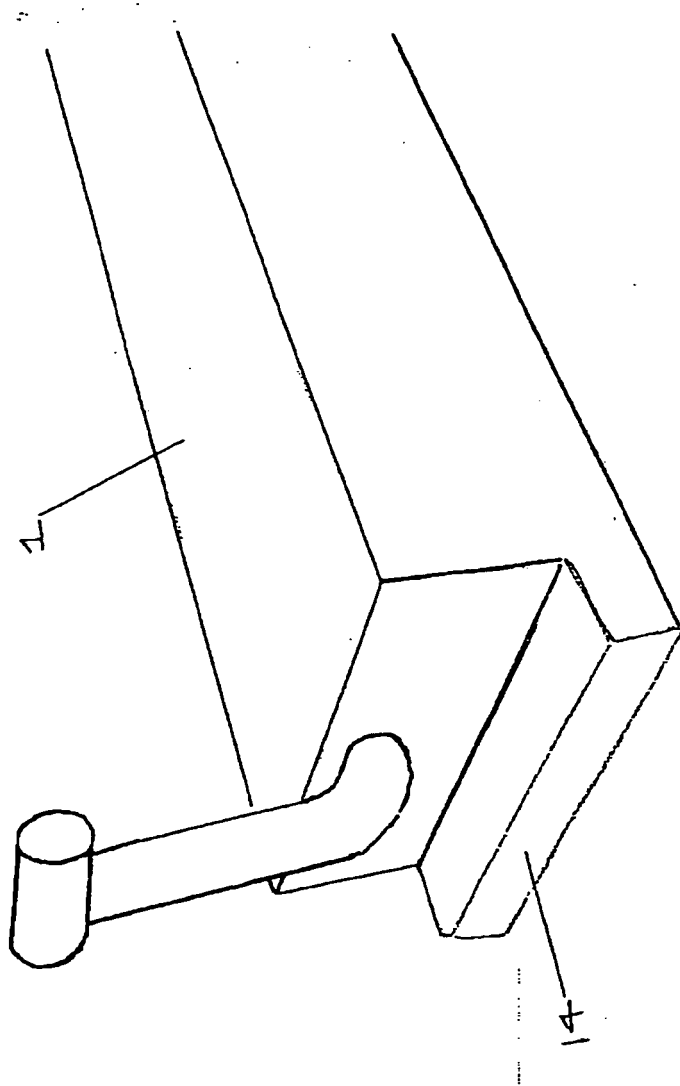


Figure 13

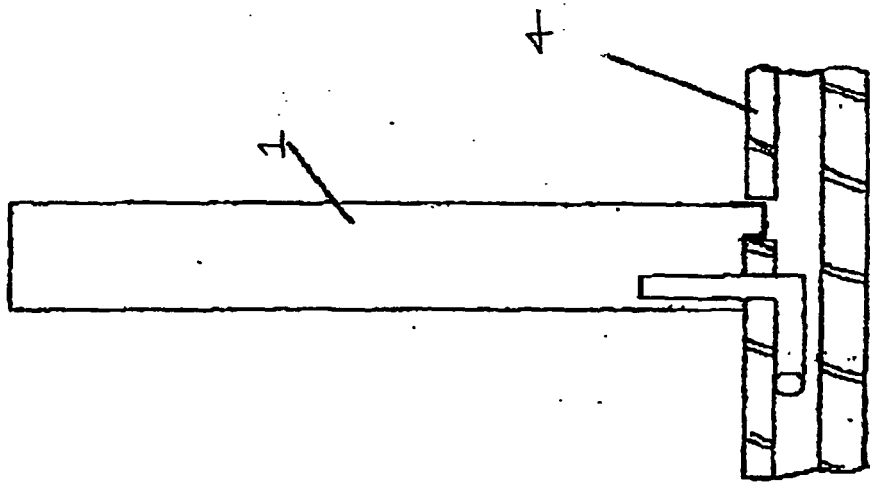
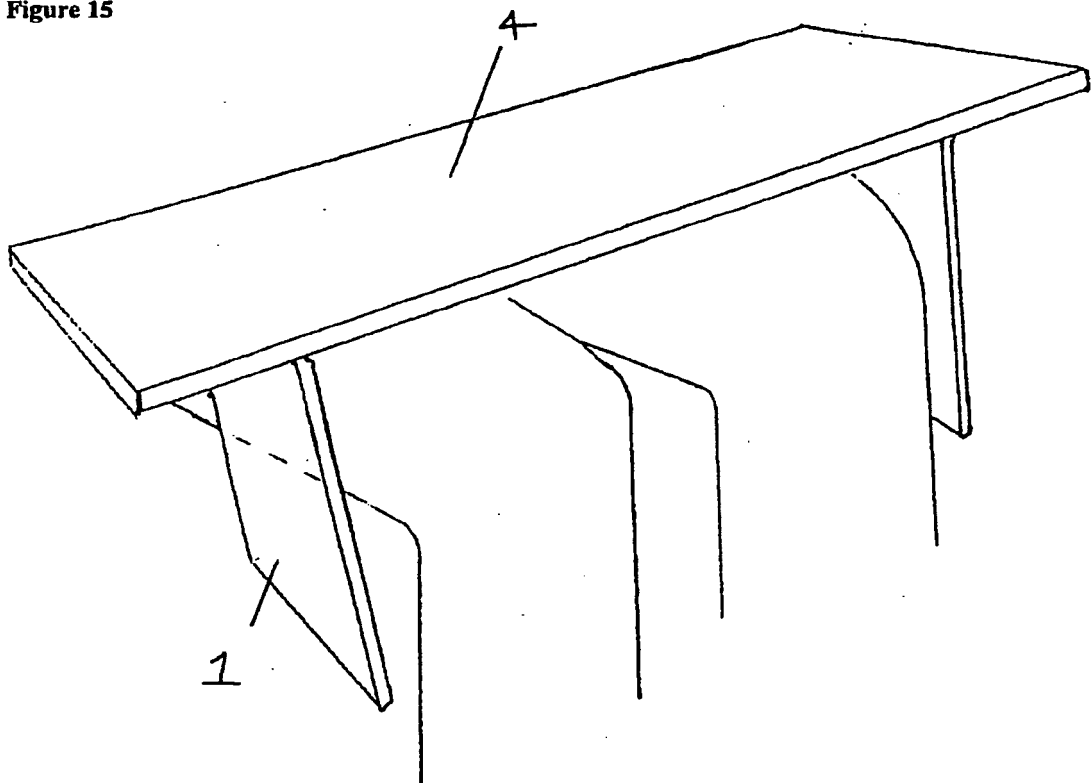


Figure 14

Figure 15



REFERENCES CITED IN THE DESCRIPTION

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