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(54) **Metallic cabinet assembled from planar elements.**

(57) The invention relates to a metallic cabinet assembled from sheet elements and also extends to all the elements which enable the sheet elements of the metallic cabinet to be reliably connected and fixed.

The metallic cabinet according to the invention has columns (1) bent from a sheet so as to have at least four edges and to be open on one face with a longitudinal slit (2) therein. At least two sheets (3) with bent rims (4) are connected to the longitudinal slits (2) or bent edges (2a) of the columns (1) which two sheets form the boundary surfaces of the metallic cabinet. In these positions of the sheets they are secured to the ends of the columns (1), and to further sheets (5) extending at right angles to the sheets (3) by releasable securing means (6). The cabinets may be provided with doors (8) and they may also be multi-compartmented, with partition walls (9) separating the individual compartments.

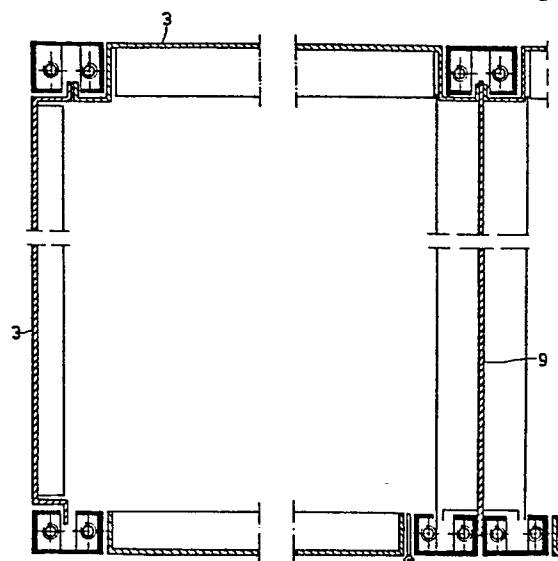


Fig. 6

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"METALLIC CABINET ASSEMBLED FROM
PLANAR ELEMENTS"

The invention concerns a metallic cabinet or locker assembled together from planar or sheet elements and it also extends to all the elements by means of which the planar elements can be securely
5 assembled together to form the metallic cabinet or locker.

Both manufacturers and the transport or haulage firms require technical solutions to the assembly of products whereby the products can be stored
10 between manufacture and actual use in such a manner as to occupy the least amount of "dead" space.

Various technical measures are known for the rapid assembly in situ, and dismantling of bodies having planar boundary elements.

15 Amongst these profiled supporting frames or connecting portions of such frames for supporting planar elements (plates, panels, laminated wood, metal or plastics sheets and their combinations) have come into widespread use where the desired connections
20 are brought about by fitting the various profiles into each other.

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Although there is no disputing the fact that many of these prior proposals are ingenious, they have two main disadvantageous properties. On the one hand, the formation of the profiled elements themselves requires a high degree of technical expertise and investment and on the other hand, if the frame is to be very stiff, then at the locations of interfitting, the parts have to be manufactured to a fine tolerance which makes production difficult.

10 In another trend of development, the arrangement for connecting the elements together involves a recess formed in one side of a tube, at the depth of the thickness of the tube wall, which tube forms part of the frame bounded by planar sheets or
15 plates and this recess is identical with the cross-section of the tube end of another tubular element to be connected to it. The latter has two oppositely facing guide pins which project to the wall of the adjacent tubular element. The arrangement also contains
20 an arcuate leaf spring fitted with pins accommodated in the recesses.

This known apparatus enables finless tubes or tube sections to be rapidly connected together and disconnected from each other. The formation
25 of the matching or engaging parts of the tubes is relatively simple but a disadvantage of this construction is that it can only be realised with tubes bounded by

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planar sheets. This characteristic significantly hinders the adoption on a wide scale of this solution because most of the bodies, bounded by planar sheets, are formed as rigid, indivisible bodies and consequently, the resulting high price will almost certainly prevent this solution from being adopted on a wide scale.

An aim of the invention is to produce a metallic cabinet assembled, or assemblable, from planar elements with the use of fittings for fastening these elements together, in which the disadvantages of the known solutions are eliminated or substantially reduced, which can be made from cheap material, (possibly largely from waste material) by means of simple technology, the transport and storage of which in the dismantled state enables the maximum exploitation of the available volume and which furthermore, enables the realisation in the course of their simple assembly, of cabinets or lockers based on a modular system and cabinet "families".

The above aim is sought to be achieved in accordance with the invention by means of a metallic cabinet which is characterised in that it includes columns each bent from a sheet and having at least four edges, each column being open on one face provided with a longitudinal recess or slit; at least two planar sheets forming the boundary surfaces of the metallic cabinet; the planar sheets having bent

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rims which are positioned and located by being fitted into the longitudinal slits or to the bent edges of the metallic cabinet; in this position of the sheets, releasable connections at the ends
5 of the columns are made to further planar sheets, whereby to fix the sheets together.

The technical solution according to our invention may very advantageously be used in cases where a relatively large number of cabinets
10 or lockers have to be disposed in the stores of production plants or commercial stores or even on the carrier surfaces of transport devices. The transportation or storage in the assembled condition requires much dead space and very considerably
15 increases the costs per cabinet.

The cabinets made according to our invention can be assembled together in situ and by means of fixing fittings arranged at corners or edges of the cabinets or lockers.

20 The releasable connections are expediently formed as screw connections or as flanges.

Cabinets with doors may be formed also. Several cabinet compartments may be formed in one member so that each of these compartments has an
25 individual door and the compartments are separated by partitioning walls.

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It has been found that a body of sufficient rigidity can be produced from metallic sheets by forming and bending the sheets several times to form a column to which then self-locking side,
5 roof, and bottom sheets are fixed.

The invention is described, merely by way of example, with reference to the accompanying, purely schematic drawings, wherein:

Figure 1 is a perspective view of a column
10 forming part of a cabinet according to the invention and made from multiply bent sheet material,

Figure 2 is a top plan view of the end of the column shown in Figure 1,

Figure 3 is a section taken along the plane
15 indicated by line A-A in Figure 2,

Figure 4 shows the column end in Figure 2 when bent into its position for assembly,

Figure 5 shows a plane sheet element in end elevation,

20 Figure 5a shows the element of Figure 5 in plan,

Figure 6 is a fragmentary cross-section of a row of assembled-together cabinets containing a number of cubicles or compartments,

25 Figure 7 is a fragmentary longitudinal section of the row of cabinets in Figure 6,

Figure 8 shows a selected range or choice of cabinets or lockers that may be made according to the invention,

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Figure 9 is a cross-section of a two-door cabinet provided with bent edges and flanges, and

Figure 10 shows the cabinet in its knock-down or dismantled form as a unitary package prepared for transport.

The frame or skeleton of the metallic cabinet according to the invention is made up of columns or posts 1 shown in Figures 1 to 4.

These columns or posts 1 are produced from sheet metal or planar plates by multiple bending. Each of the columns 1 has at least four longitudinal edges while one side thereof has a longitudinal recess or slit 2 as a consequence of bending the sheets, the recess or slit 2 being parallel with the edges.

Planar sheets 3 forming the boundary surfaces of the cabinets fit either in the slits 2 or to the bent edges and to this end have suitably formed rims or edges 4 shown in Figures 5, 5a, 6 and 9.

Threaded nuts are secured, e.g. welded, to the ends of the posts 1. The bent sheet ends carrying the threaded nuts, as may be seen in Figure 2, and are bounded by inclined, bent or subsequently welded sheet sides which are subsequently bent to a rectangular configuration as shown in Figure 4.

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A further sheet 5 is connected to the upper parts of the columns 1. This sheet 5 is connected to the ends of the columns 1 by screw connections 6 that include the threaded nuts secured to the ends of the columns. The screw connections 6 fix the positions of the sheets 3 and 5 which are oriented or located by the slits 2 in the columns 1 and the rims 4 of the above-mentioned sheets.

One side of the thus formed cabinets is formed as a door 8 connected to the frame by hinges 7. The lower part of the cabinets is provided with per se known feet 10.

By utilising the principle according to the invention the cabinets may be formed in various sizes.

The number of columns 1 may be appropriately multiplied and individual cabinet compartments or cubicles are separated from each other by partitioning walls 9.

The cabinets or lockers according to the invention may also be realised in such a manner that the appropriately bent and rimmed sheets 3 are not fitted to the slits of the columns 1 but rather are fitted to the bent edges 2a of the said columns 1 as seen in Figure 9. In this case the releasable connections are constituted by flanges or lugs formed at the ends of the posts 1.

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Figure 10 shows a unitary package suitable for transportation and illustrating one member of a family of cabinets where the feet, doors, shelves and columns are located between mutually facing sheets 3. In this way, a maximum utilisation of the storage and transport capacity can be achieved since in their Figure 10 condition the cabinets only occupy a fraction of their normal volume/original volume.

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CLAIMS

1. A metallic cabinet assembled from plane sheet elements, and fastening means for securing the elements together, characterised in that it has columns (1) each multiply bent from a sheet, each column having at least four edges and being open along one face thereof which face is provided with a longitudinal slit, the slit (2) or the edges (2a) being adapted for receiving the rims (4) of at least two sheets (3) which form the boundary surfaces of the cabinet, and further sheets (5) extending perpendicularly to sheets (3) and fixed to the ends of the columns (1) by releasable connection means (6) constituting the said fastening means.
2. Apparatus according to claim 1, characterised in that the releasable connecting means are formed as screw connections (6) and/or flanges, the connections having axes parallel to the longitudinal axes of the columns (1).
3. Apparatus according to claim 1 or 2, characterised in that one boundary surface is formed as a door (8) or doors.
4. Apparatus according to any of claims 1 to 3, characterised in that a plurality of compartments or cabinet sections are provided each of which has a separate door (8) and the compartments or sections are separated from each other by partitions (9).

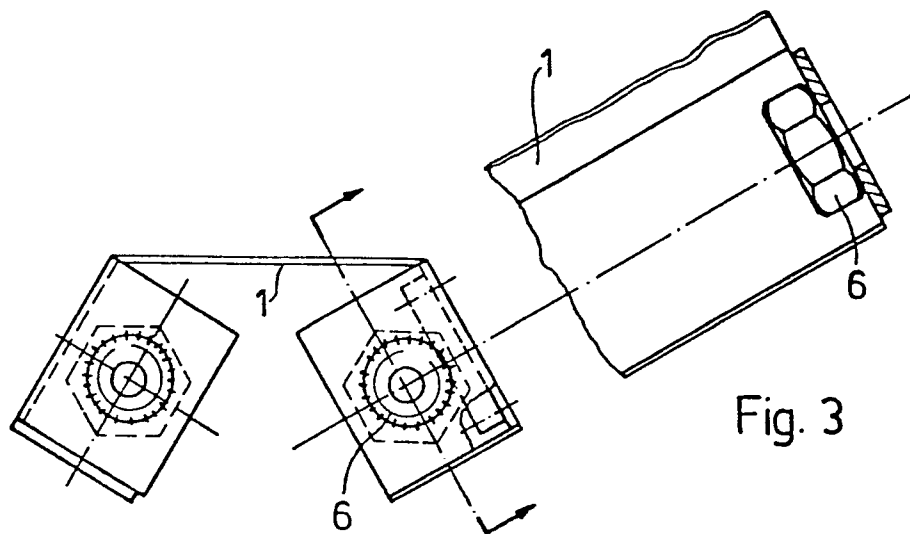


Fig. 3

Fig. 2

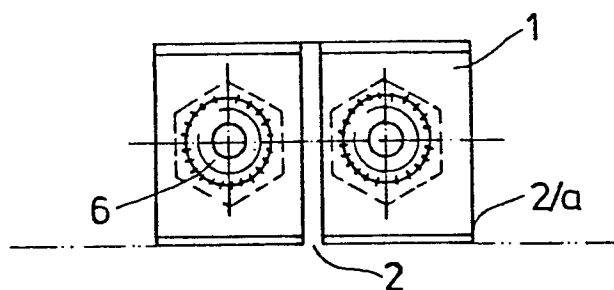


Fig. 4

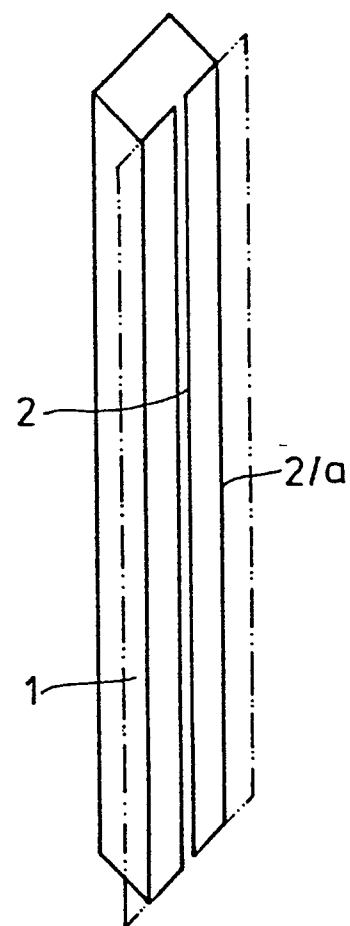


Fig. 1

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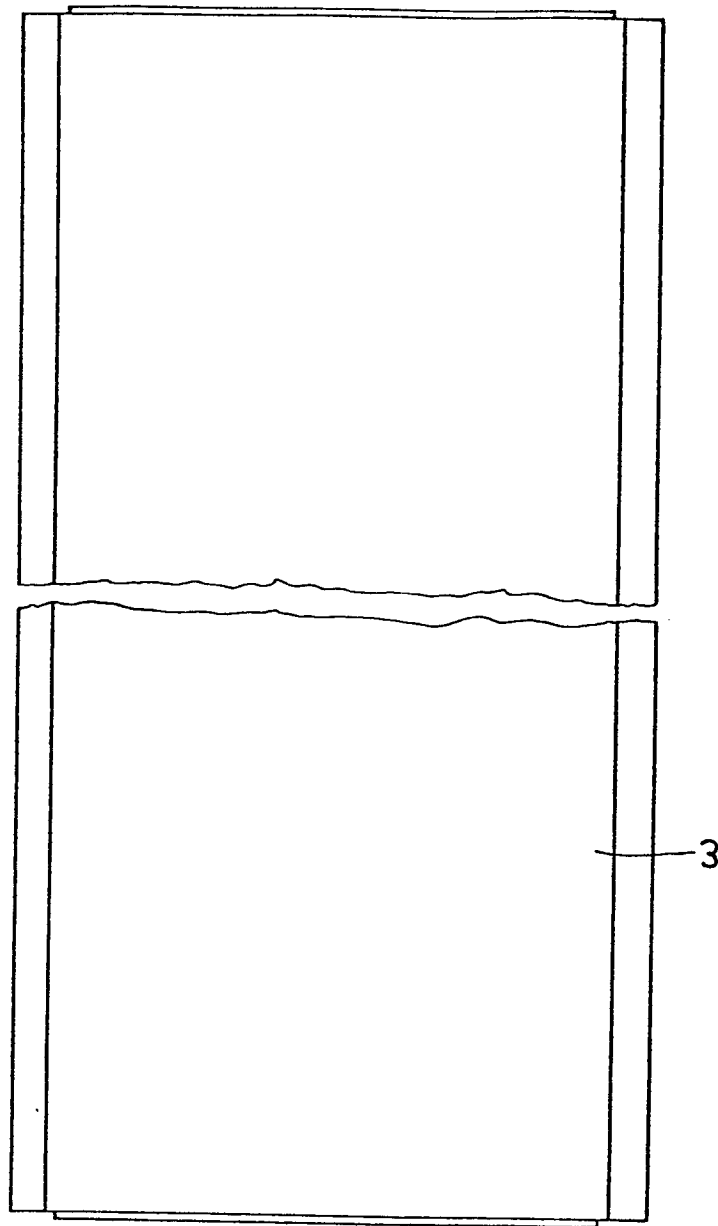


Fig. 5a



Fig. 5

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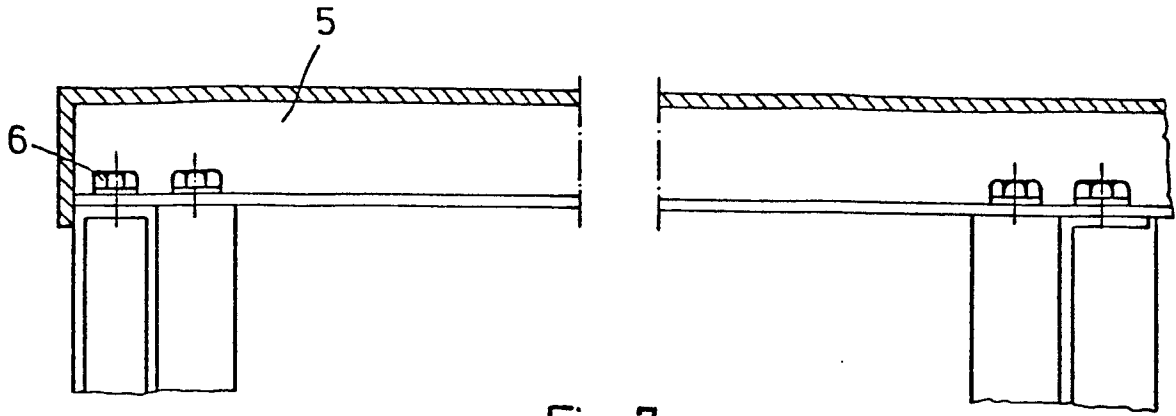


Fig. 7

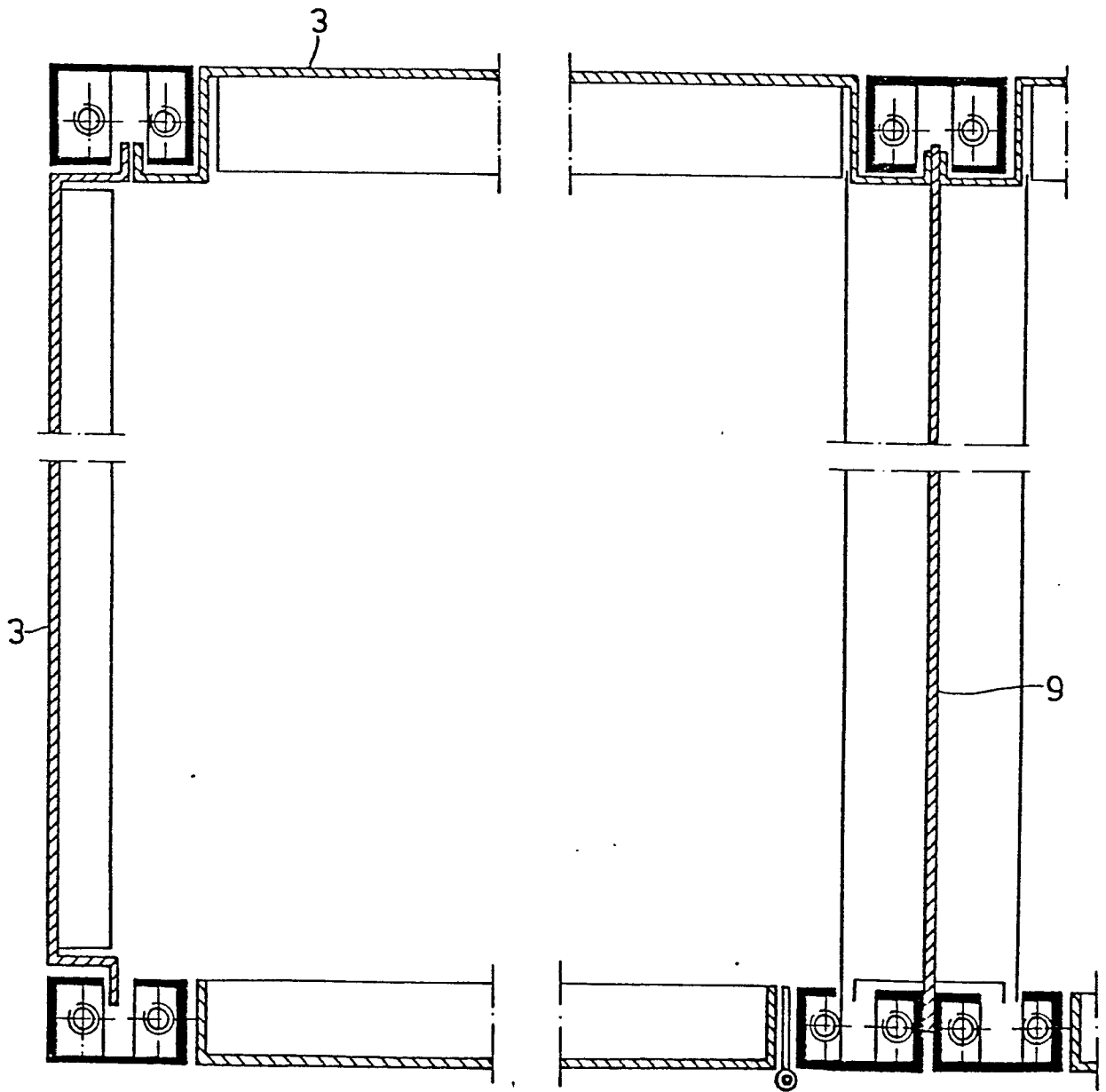


Fig. 6

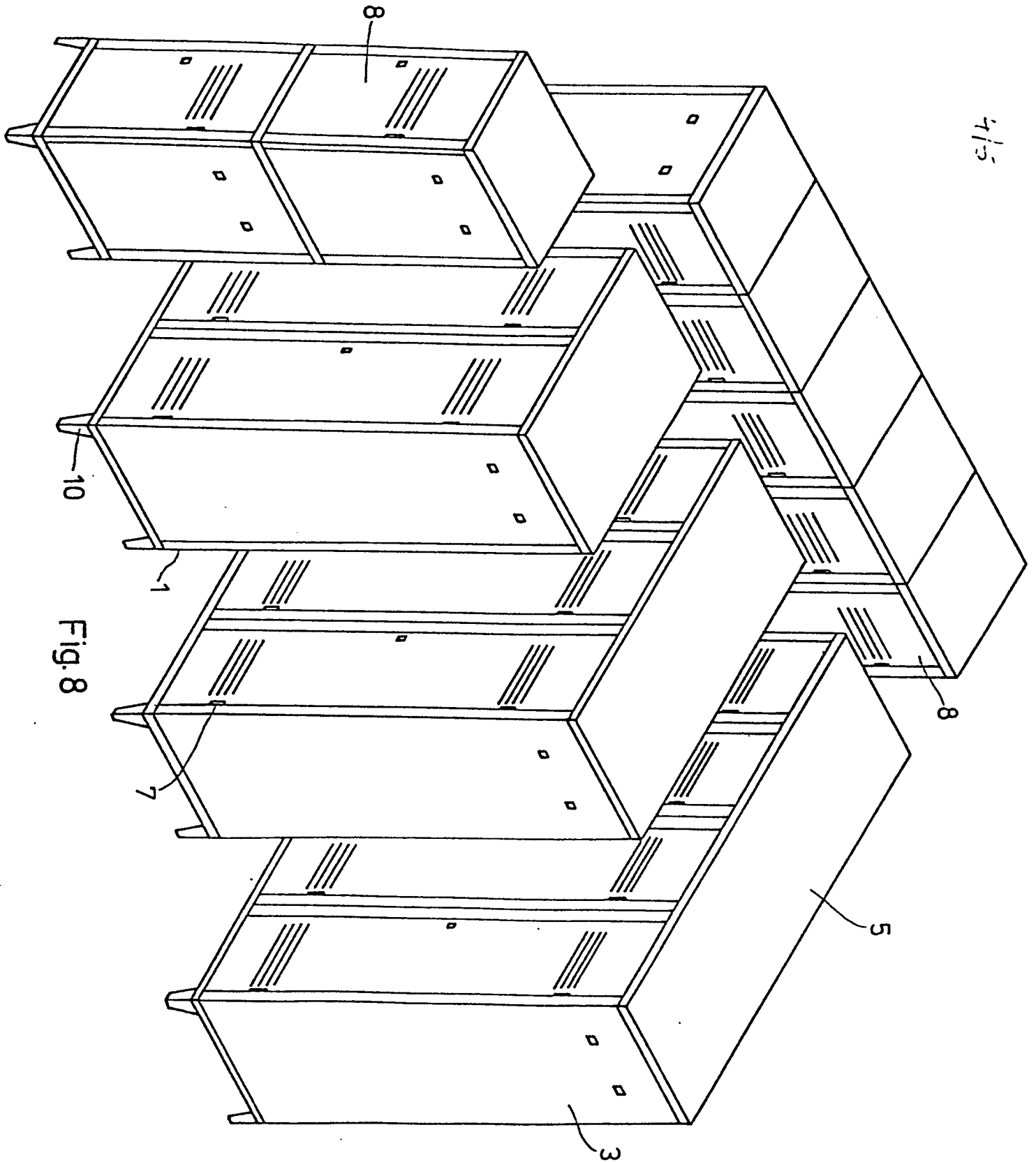


Fig. 8

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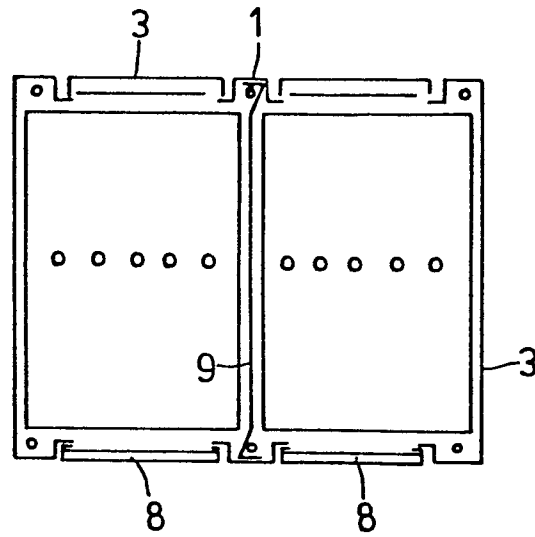


Fig. 9

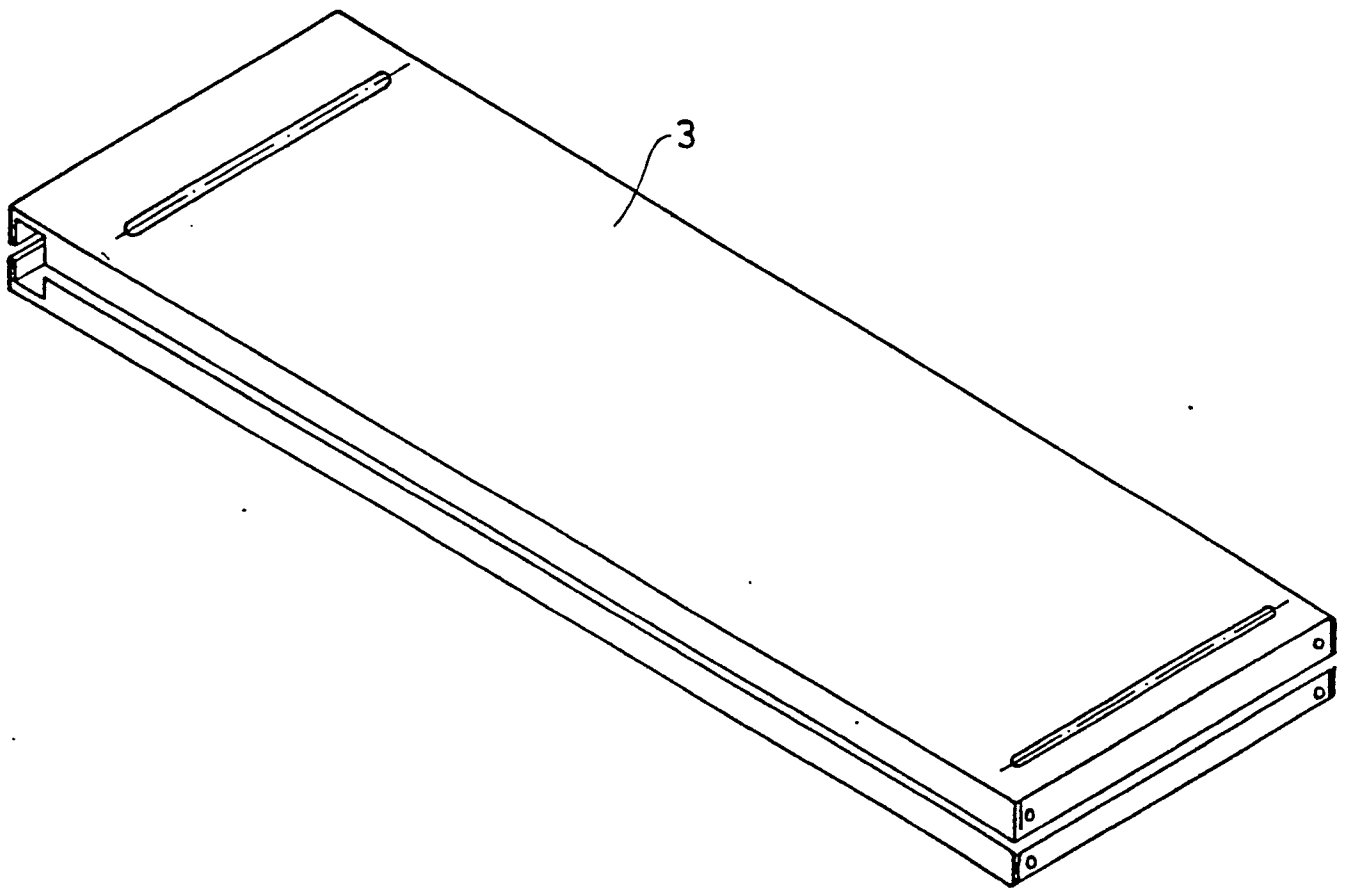


Fig. 10