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EP 0 333 463 B1

Description

This invention relates to panel edge strips to facilitate the edge-to-edge joining of panels and/or the attachment of accessories to panels. The invention has particular but by no means exclusive application to panels, for example desk top panels, in modular furniture systems.

Traditionally, accessories have been attached to the surface ends of furniture by means of clamps, or by direct fastening to the surface, for example through use of nails, or screws or other devices. These forms of attachment are semi-permanent and do not afford the flexibility of being able to readily move accessories from one surface edge position to another. If nails or screws are used, the surface top is left unsightly when, at a later time, the position of an accessory is altered.

Known panels used in modular wall and partition systems have elongate edge pieces attached to planar end surfaces of each panel. These edge pieces have a single slot for interengaging consecutive panels. In other systems, the slot may integrally be formed in the panel end surface.

US-A-4,192,106 discloses modular elements for constructing disassemblable pieces of furniture, such as walls, cabinets and writing tables, the modular elements constituting a kit including the following components: panels; box-like metal sections designed to be applied to at least a pair of the opposite edges of said panels and provided on each of three surfaces thereof with a single longitudinal groove having a longitudinal slot access of a width smaller than that of each of the grooves, while from the remaining fourth surface anchoring means extend outwardly from the section for connecting the section to a panel; column devices for forming a joining and pivoting connection for the panels, each having at its ends, pieces adapted to be received inside the central longitudinal grooves of the said sections, entering through the open end orifices thereof and cooperating means locking said pieces in their engaged position, the column devices housing in the inside a hollow tubular member into which passes a threaded rod having an upper control edge and which at its lower end rests on an adjustable ground-engaging foot; cylindrical rods for the connection of wall panels end to end in coplanar relationship and provided with end pieces adapted to be received inside pairs of the central grooves of adjacent sections; expansion locking screws to be inserted into the front grooves of the section for carrying hooks, beams and the like; hinge devices for the connection of adjacent wall panels at right angles and to allow said panels to be folded one on another; rods passing through the vertical panels from the top to the bottom within the thickness thereof and provided with an upper con-

trol head and with a lower adjustable ground-engaging foot; and bars having shaped end portions for acting as spacers between two parallel panels. In Figure 3 of this US patent, a box-like metal section has a generally planar surface which buts against a planar edge surface of a respective panel 1. The planar surface of the section is provided with toothed pins which are accommodated within recesses in the edge surface of the panel. There is no disclosure or suggestion in this US patent regarding an edge strip having a generally U-shaped configuration.

It is an object of the present invention to provide an improved edge strip for a panel which is adaptable to facilitate the edge-to-edge joining of panels and/or the attachment of accessories, especially in modular furniture systems.

The invention accordingly provides an elongate edge strip for a panel, comprising an elongate front portion and side portions wherein the said front portion and at least one of said side portions each have an undercut groove extending longitudinally of the edge strip and dimensioned to snugly receive longitudinal inserts to engage and secure together registered grooves on adjacent edge strips, characterised in that the said side portions are formed by respective flange portions disposed at the sides of the elongate front portion such that the edge strip is of generally U-shaped configuration.

The front portion of the edge strip preferably has two undercut grooves. These grooves are advantageously of rectangular cross-section, and one or more of the grooves, for example the groove in the flange portion, may conveniently have a channel in its floor to seat fasteners for attaching the edge strip to a panel.

In certain preferred embodiments, the flange portions are integrally connected to the elongate front portion by respective curved webs.

The edge strip preferably comprises a metal extrusion.

The invention also extends to a panel having at least one edge or edge face fitted with an edge strip as aforescribed.

The panel may include at least one further edge or edge face fitted with an elongate strip having respective longitudinal side edges, which strip has a plurality of spaced transversely extending slots or holes opening at one or other of said edges for receiving complementary studs. There may be a margin about each such slot which is inclined with respect to the adjacent face of the elongate strip, whereby the slot is correspondingly inclined. Furthermore, each panel may have, behind the slotted elongate strip, shaped sockets behind and in register with the said slots in order to seat the said studs.

The invention will now be further described, by way of example, with reference to the accompanying drawings, in which:-

Figure 1 is an isometric view of a panel edge strip according to the first aspect of the invention;

Figure 2 is a cross-section of the edge strip depicted in Figure 1, shown attached to a furniture panel;

Figure 3A, 3B and 3C are respective cross-sectional views depicting the use of edge strips, of the form shown in Figures 1 and 2, to join panels together at different relative angular positions;

Figure 4 is a diagrammatic isometric view showing how two partition panels may be butt-joined by means of edge strips according to the invention;

Figure 5 is a view similar to Figure 1 but further depicts the manner of attaching an accessory to the edge strip;

Figure 6 is an isometric view of an end-cap for the edge strip; and

Figure 7 is a perspective view of a panel fitted with edge strips according to the invention, and also with slotted strips for enhanced versatility.

The panel edge strip 10 illustrated in Figures 1 and 2 comprises an integral metal extrusion formed with an elongate front portion 12 and respective flange portions 14, 16 (hereinafter referred to as flanges) disposed at the sides of the front portion 12 whereby the edge strip is of generally U-shaped configuration. Front portion 12 and flanges 14, 16 each have an undercut groove 18, 20, 22 which extends longitudinally of the edge strip. The grooves are of substantially similar rectangular cross-section with openings 19 defined by opposed inwardly overhanging lips 21, 23. There are actually two grooves 18a, 18b side-by-side in front portion 12 separated by a T-section rib 24. The whole edge strip is symmetrical about a plane containing the web segment 25 of rib 24, and grooves 20, 22 extend to adjacent the free edge face 15 of flanges 14, 16.

Flanges 14, 16 are integrally connected to front portion 12 by respective curved corner webs 26, 27.

Each of the grooves 20, 22 in flanges 14, 16 has a rectangular section channel 28 in its floor to seat fasteners for attaching the edge strip to a panel. Channels 28 are slightly wider than but in register with the opening 19. A C-section rib 32 is provided internally behind rib 24 for a purpose to be described.

Flanges 14, 16 may be 5 to 80mm wide (most conveniently about 25mm), while openings 19 may be 1-60mm wide (most conveniently about 7mm). Lips 21, 23 may overhang by 1-15mm, say about

4mm. Front portion 12 may be 5 to 150mm wide, for example about 55mm wide.

Figure 2 depicts the manner in which the edge strip 10 may be secured to an edge face of a panel 50. The panel is rebated at both faces 34, 35 to accommodate flanges 14, 16 and position the external faces of the flanges 14a, 16a substantially flush with the panel faces. Fasteners, such as the screws illustrated, are driven through from channels 28 so that their heads are seated in the channels.

The manner in which edge strips of the forms shown in Figures 1 and 2 may be coupled together is illustrated in Figures 3A-3C and 4. In essence, undercut grooves 18, 20, 22 are similarly dimensioned to snugly and firmly receive longitudinal inserts 40 of similar uniform cross-section adapted to engage and secure together respective registering grooves on adjacent edge strips. In the case of Figure 3A, two panels 50, 50' are fitted with strips edge 10, 10' and are butt joined to a pair of H-section inserts 40a, 40b passed along grooves 18a, 18b in the front portions 12, 12' of the panel edge strips 10, 10'. Figure 3B depicts a 90° join, while Figure 3C illustrates a mutual angular fixing using a V-shaped coupling insert 41. Inserts 40, 41 are typically extruded in a suitable plastics material e.g. Polyvinyl chloride (PVC).

Figure 4 shows two partition panels in position to be butt-joined, with the inserts 40a, 40b ready to be slid down the opposed grooves. The panels include cable ducts 51 at their lower ends.

The versatility of edge strip 10 is highlighted in Figure 5. An accessory base 60 is fastened to the strip by engagement of a screw 62 through the base 60 into a metal insert 62 slidably carried by groove 20. The position of the accessory can be varied along the groove by loosening the screw and moving the insert along the groove.

Edge strips 12 may be closed at their ends by end caps 70 of the configuration depicted in Figure 6. The end cap 70 engages the edge strip by way of a pair of projecting hollow spigots 72 which are a close matching fit in the cavities 74 (Figure 5) under corner webs 26, 27 (Figure 1) between the adjacent side walls of grooves 20, 22. The external surfaces of the cap are designed to be flush with the corresponding surfaces of the edge strip. The end cap 70 may be secured into the end of the edge strip 12 by a fastener, for example a screw, which engages with C-section rib 32.

Figure 7 depicts an especially versatile panel 50" fitted at two edge faces 50a with edge strips 10" and at the other two edge faces 50b with slotted strips 80. Opening at the lower longitudinal side edge 81 of strip 80 are a plurality of, in this case four, equi-spaced transversely extending slots 82. These slots are dimensioned to receive respective studs of another furniture component and ex-

tend about half way across the strip. In this manner panel 50" may be supported by the furniture component bearing the studs. It will be noted that edge faces 50b are formed with sockets or notches 50c behind and in register with slots 82" to seat the heads of the studs.

Each slot 82 has a margin which is inclined with respect to the adjacent face of the strip so that the slot is correspondingly inclined. A suitable matching stud has an enlarged slotted head, a threaded shank, and an intermediate unthreaded portion which abuts the surface in which the stud is threaded and is complementary to the slots. This intermediate stud portion is of slightly less width than each slot and the inner end of each slot is curved to match the circumference of the intermediate stud portion.

Claims

1. An elongate edge strip (10) for a panel (50), comprising an elongate front portion (12) and side portions wherein the said front portion and at least one of said side portions each have an undercut groove (18, 20, 22) extending longitudinally of the edge strip and dimensioned to snugly receive longitudinal inserts (40) to engage and secure together registered grooves on adjacent edge strips, characterised in that the said side portions are formed by respective flange portions (14, 16) disposed at the sides of the elongate front portion such that the edge strip is of generally U-shaped configuration.
2. An edge strip according to claim 1 wherein said front portion has two of said undercut grooves (18a, 18b).
3. An edge strip according to claim 1 or 2 wherein said undercut grooves (18, 20, 22) are of rectangular cross-section.
4. An edge strip according to claim 1, 2 or 3 wherein one or more of said grooves has a channel (28) in its floor to seat fasteners for attaching the edge strip to a panel.
5. An edge strip according to any preceding claim wherein said flange portions (14, 16) are integrally connected to said elongate front portion by respective curved webs (26, 27).
6. An edge strip according to any preceding claim comprising a metal extrusion.
7. A panel (50) having at least one edge or edge face (50a) fitted with an edge strip (10) according to any preceding claim.

8. A panel according to claim 7 having another edge or edge face (50b) fitted with an elongate strip (80) having respective longitudinal side edges (81), which strip has a plurality of spaced transversely extending slots or holes (82) opening at one or other of said side edges for receiving complementary studs.
9. A panel according to claim 8 further comprising a margin about each slot (82) which is inclined with respect to the adjacent face of the said elongate strip, whereby said slot is correspondingly inclined.
10. A panel according to claim 8 or 9 wherein said panel has behind said slotted elongate strip, shaped sockets (50c) behind and in register with said slots (82) to seat said studs.
11. A panel according to any one of claims 7 to 10 fitted at at least one further edge or edge face (50b) with an elongate strip (80) having respective longitudinal side edges (81), which elongate strip has a plurality of spaced transversely extending slots or holes (82) opening at one or other of said side edges for receiving complementary studs.
12. A panel according to claim 11 further comprising a margin about each slot (82) which is inclined with respect to the adjacent face of the said elongate strip, whereby said slot is correspondingly inclined.
13. A panel according to claim 11 and 12 wherein said panel has shaped sockets (50c) behind and in register with said slots (82) to seat said studs.

Patentansprüche

1. Länglicher Kantenstreifen (10) für eine Platte (50), mit einem länglichen Vorderabschnitt (12) und Seitenabschnitten, wobei der Vorderabschnitt und zumindest einer der Seitenabschnitte jeweils eine hinterschnittene Vertiefung (18, 20, 22) hat, die sich längs zu dem Kantenstreifen erstreckt und dimensioniert ist, um satt Längseinsätze (40) aufzunehmen, um an ausgerichteten Vertiefungen von benachbarten Kantenstreifen anzugreifen und diese zusammen festzulegen, dadurch gekennzeichnet, daß die Seitenabschnitte durch jeweilige Flanschabschnitte (14, 16) ausgebildet sind, die an den Seiten des länglichen Vorderabschnittes derart angeordnet sind, daß der Kantenstreifen generell U-förmiger Konfiguration ist.

2. Kantenstreifen nach Anspruch 1, wobei der Vorderabschnitt zwei der hinterschnittenen Vertiefungen (18a, 18b) hat.
3. Kantenstreifen nach Anspruch 1 oder 2, wobei die hinterschnittenen Vertiefungen (18, 20, 22) von rechteckigem Querschnitt sind.
4. Kantenstreifen nach Anspruch 1, 2 oder 3, wobei eine oder mehr der Vertiefungen einen Kanal (28) in ihrem Boden hat, um Befestigungselemente zum Anbringen des Kantenstreifens an einer Platte aufzunehmen.
5. Kantenstreifen nach irgendeinem vorhergehenden Anspruch, wobei die Flanschabschnitte (14, 16) einstückig mit dem länglichen Vorderabschnitt durch jeweilige gekrümmte Stege (26, 27) verbunden sind.
6. Kantenstreifen nach irgendeinem vorhergehenden Ansprüche mit einer Metallextrusion.
7. Platte (50) mit zumindest einer Kante oder Kantenstirnfläche (50a), die mit einem Kantenstreifen (10) gemäß irgendeinem der vorhergehenden Ansprüche versehen ist.
8. Platte nach Anspruch 7, wobei eine weitere Kante oder Kantenstirnseite (50b) mit einem länglichen Streifen (80) versehen ist, der jeweilige Längsseitenkanten (81) hat, wobei der Streifen eine Vielzahl von beabstandeten, sich quer erstreckenden Schlitzten oder Löchern (82) hat, die sich bei einer oder einer anderen der Seitenkanten öffnen, und zwar zum Aufnehmen von komplementären Bolzen.
9. Platte nach Anspruch 8, die weiterhin einen Rand um jeden Schlitz (82) aufweist, der bezüglich der benachbarten Stirnseite des länglichen Streifens geneigt ist, wodurch der Schlitz entsprechend geneigt ist.
10. Platte nach Anspruch 8 oder 9, wobei die Platte hinter dem mit Schlitzten versehenen länglichen Streifen geformte Buchsen (50c) hinter und in Ausrichtung mit den Schlitzten (82) hat, um die Bolzen aufzunehmen.
11. Platte nach irgendeinem der Ansprüche 7 bis 10, versehen an zumindest einer weiteren Kante oder Kantenstirnfläche (50b) mit einem länglichen Streifen (80) mit jeweiligen Längsseitenkanten (81), wobei der längliche Streifen eine Vielzahl von beabstandeten, sich quer erstreckenden Schlitzten oder Löchern (82) hat, die sich an einer oder einer anderen der Sei-

tenkanten öffnen, und zwar zum Aufnehmen von komplementären Bolzen.

12. Platte nach Anspruch 11, die weiterhin einen Rand um jenen Schlitz (82) aufweist, der bezüglich der benachbarten Stirnseite des länglichen Streifens geneigt ist, wodurch der Schlitz entsprechend geneigt ist.
13. Platte nach Anspruch 11 und 12, wobei die Platte geformte Buchsen (50c) hinter und in Ausrichtung mit den Schlitzten (82) hat, um die Bolzen aufzunehmen.

Revendications

1. Une bordure allongée (10) pour un panneau (50) comprenant une partie frontale allongée (12) et des parties latérales, dans laquelle ladite partie frontale et au moins une desdites parties latérales comportent chacune une rainure découpée par dessous (18, 20, 22) s'étendant dans le sens longitudinal de la bordure et dimensionnée pour recevoir avec frottement doux des inserts longitudinaux (40) destinés à venir en engagement avec et à fixer ensemble des rainures en coïncidence sur des bordures adjacentes, caractérisée en ce que lesdites parties latérales sont formées par des parties de brides respectives (14, 16) disposées aux côtés de la partie frontale allongée si bien que la bordure est d'une configuration généralement en forme de U.
2. Une bordure selon la revendication 1, dans laquelle ladite partie frontale comporte deux desdites rainures découpées par dessous (18a, 18b).
3. Une bordure selon l'une des revendications 1 ou 2, dans laquelle lesdites rainures découpées par dessous (18, 20, 22) ont une section transversale rectangulaire.
4. Une bordure selon l'une quelconque des revendications 1 à 3, dans laquelle une ou plusieurs desdites rainures comprend un canal (28) dans sa partie de fond pour loger des moyens de fixation pour fixer la bordure à un panneau.
5. Une bordure selon l'une quelconque des revendications 1 à 4, dans laquelle lesdites parties de brides (14, 16) sont reliées intégralement à ladite partie frontale allongée par des entretoises incurvées respectives (26, 27).

6. Une bordure selon l'une quelconque des revendications 1 à 5, comprenant une pièce d'extrusion en métal.

7. Un panneau (50) ayant au moins un bord ou face de bord (50a) muni d'une bordure (10) selon l'une quelconque des revendications 1 à 6. 5

8. Un panneau selon la revendication 7 ayant un autre bord ou une autre face de bord (50b) muni d'une bordure allongée (80) ayant des bords latéraux longitudinaux respectifs (81), laquelle bordure comporte une pluralité de fentes ou de trous (82) s'étendant transversalement, espacés, débouchant à l'un ou l'autre desdits bords latéraux pour recevoir des goujons complémentaires. 10
15

9. Un panneau selon la revendication 8 comprenant, en outre, une marge autour de chaque fente (82) qui est inclinée par rapport à la face adjacente de ladite bordure allongée si bien que ladite fente est inclinée de façon correspondante. 20
25

10. Un panneau selon l'une des revendications 8 ou 9, dans lequel ledit panneau comporte derrière ladite bordure allongée, entaillée, des logements conformés (50c) placés derrière et en coïncidence avec lesdites fentes (82) pour loger lesdits goujons. 30

11. Un panneau selon l'une quelconque des revendications 7 à 10 muni d'au moins un autre bord ou face de bord (50b) avec une bordure allongée (80) ayant des bords latéraux longitudinaux respectifs (81) laquelle bordure allongée comprend une pluralité de fentes ou trous (82) s'étendant transversalement, espacés, débouchant à l'un ou l'autre desdits bords latéraux pour recevoir des goujons complémentaires. 35
40

12. Un panneau selon la revendication 11 comprenant en outre une marge autour de chaque fente (82) qui est inclinée par rapport à la face adjacente de ladite bordure allongée si bien que ladite fente est inclinée de façon correspondante. 45
50

13. Un panneau selon l'une des revendications 11 ou 12 dans lequel ledit panneau comporte des logements conformés (50c) placés derrière et en coïncidence avec lesdites fentes (82) pour loger lesdits goujons. 55

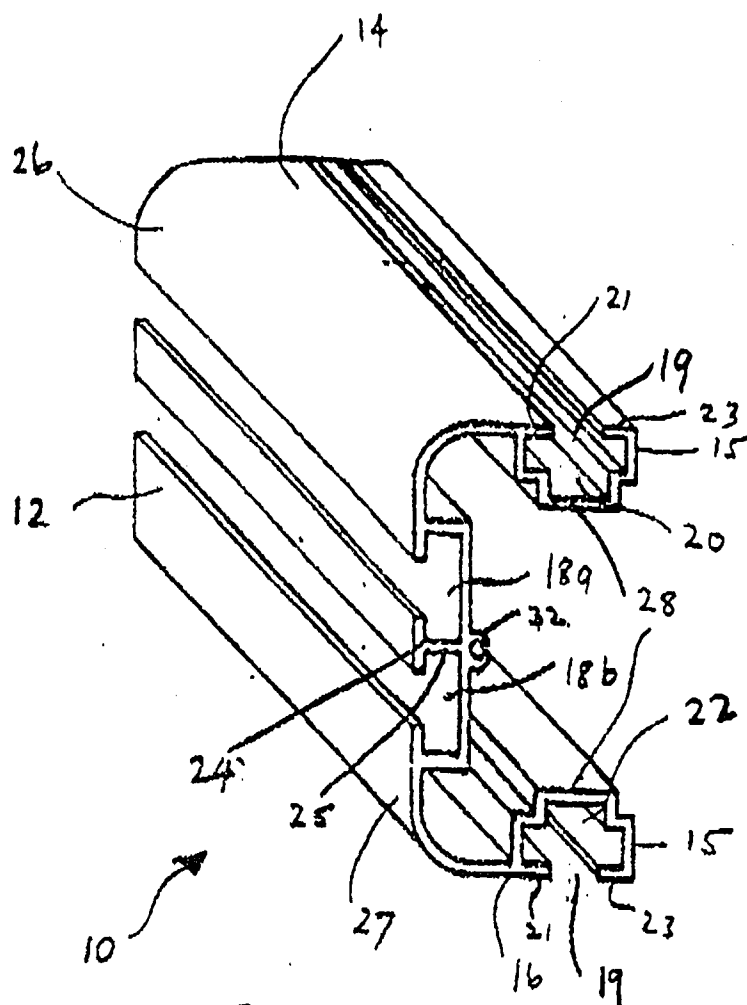


FIG 1

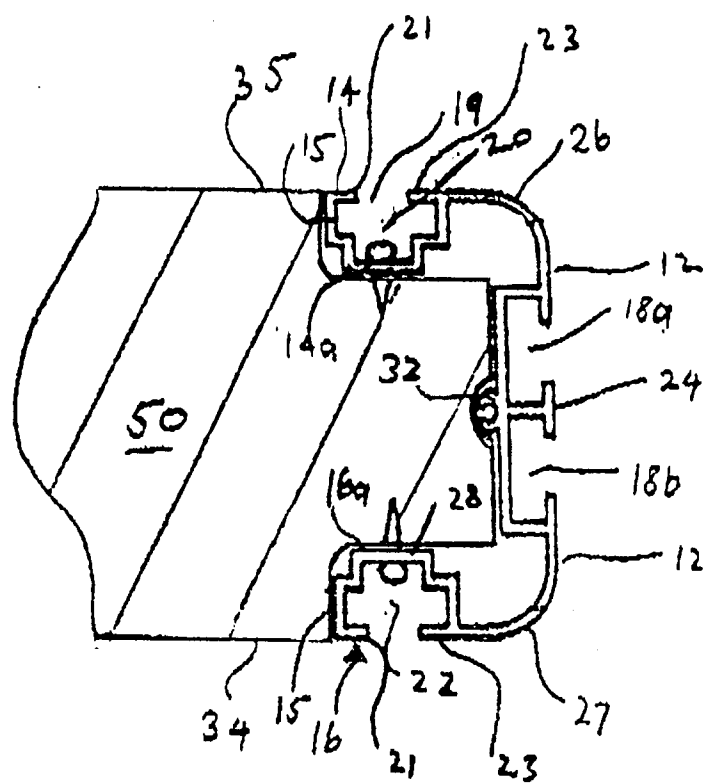
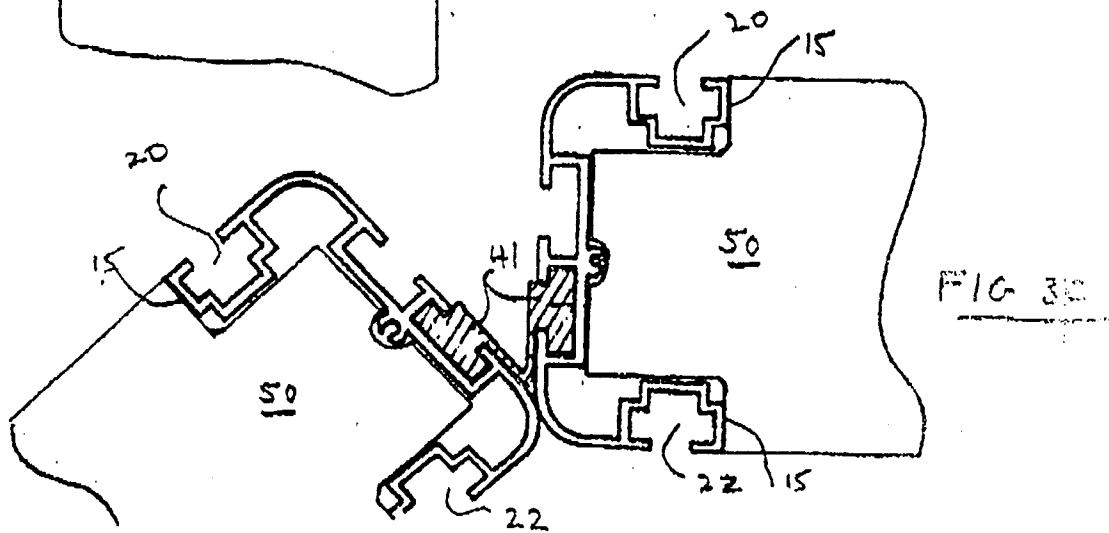
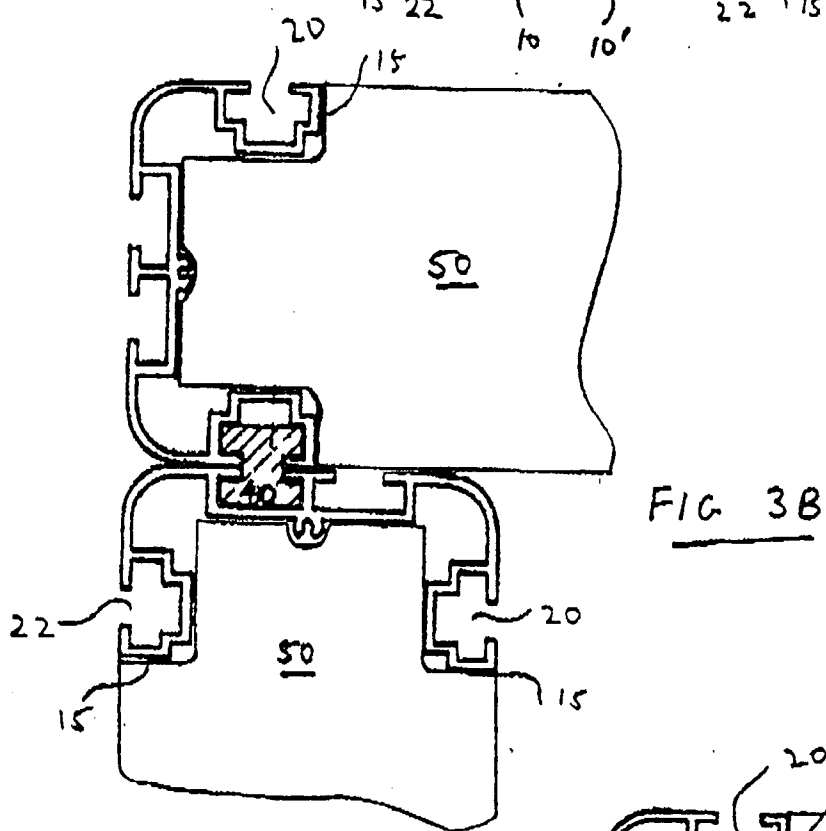
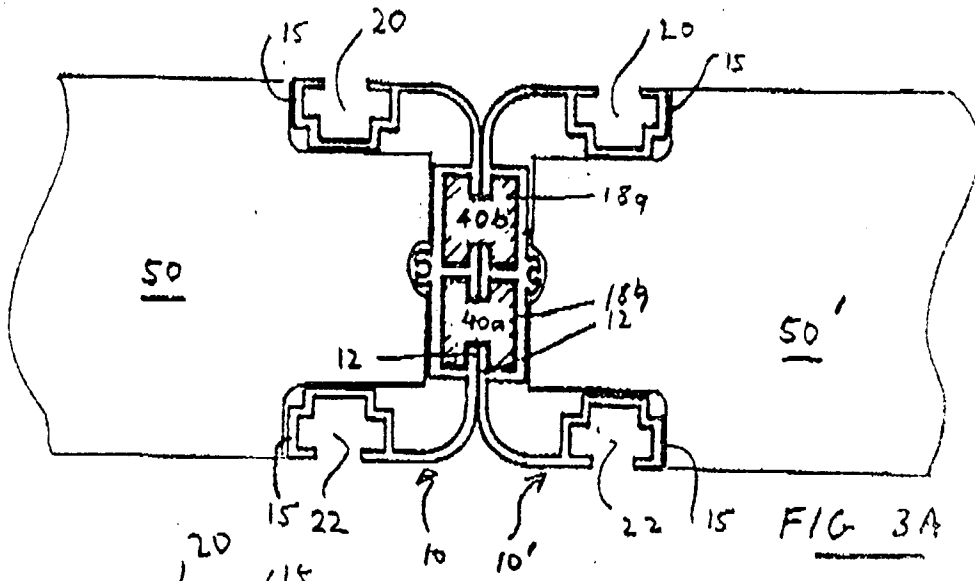


FIG 2



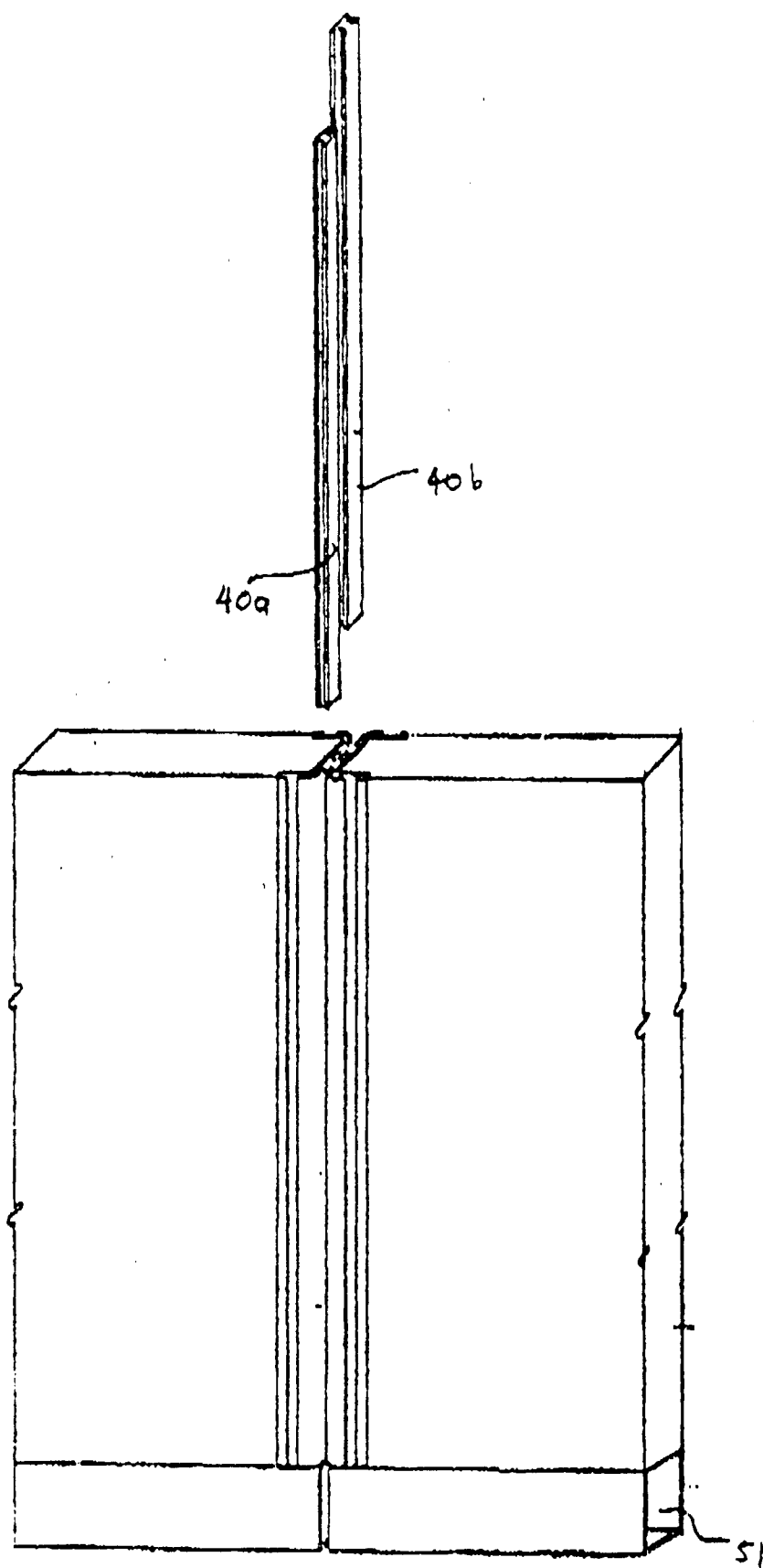
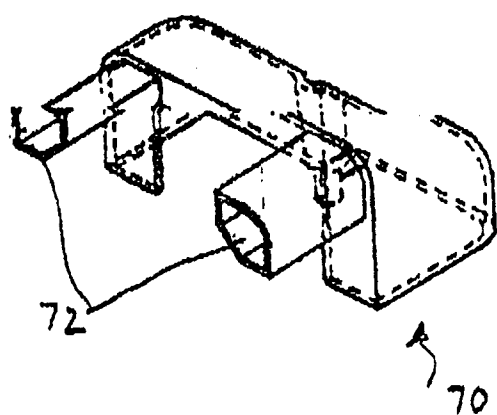
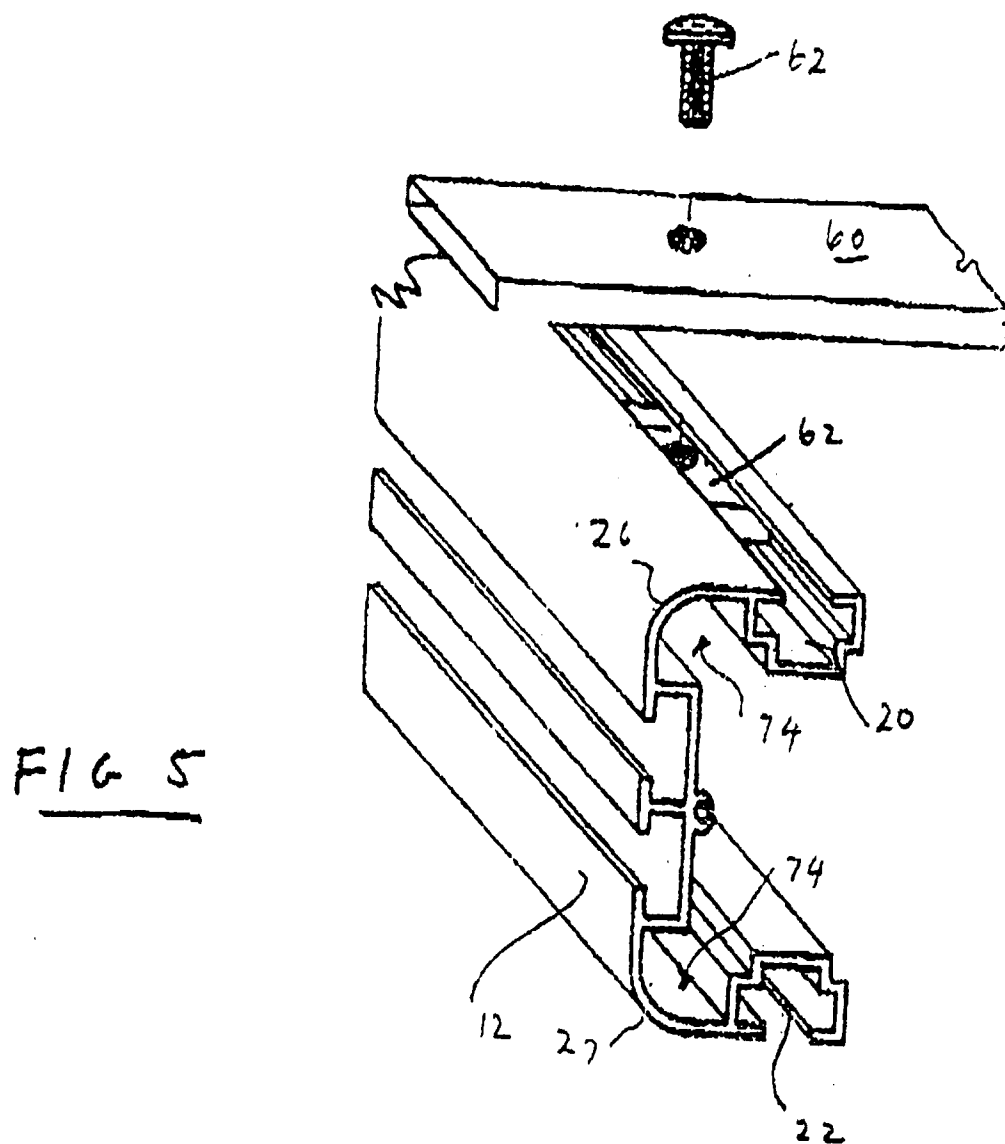


FIG 4



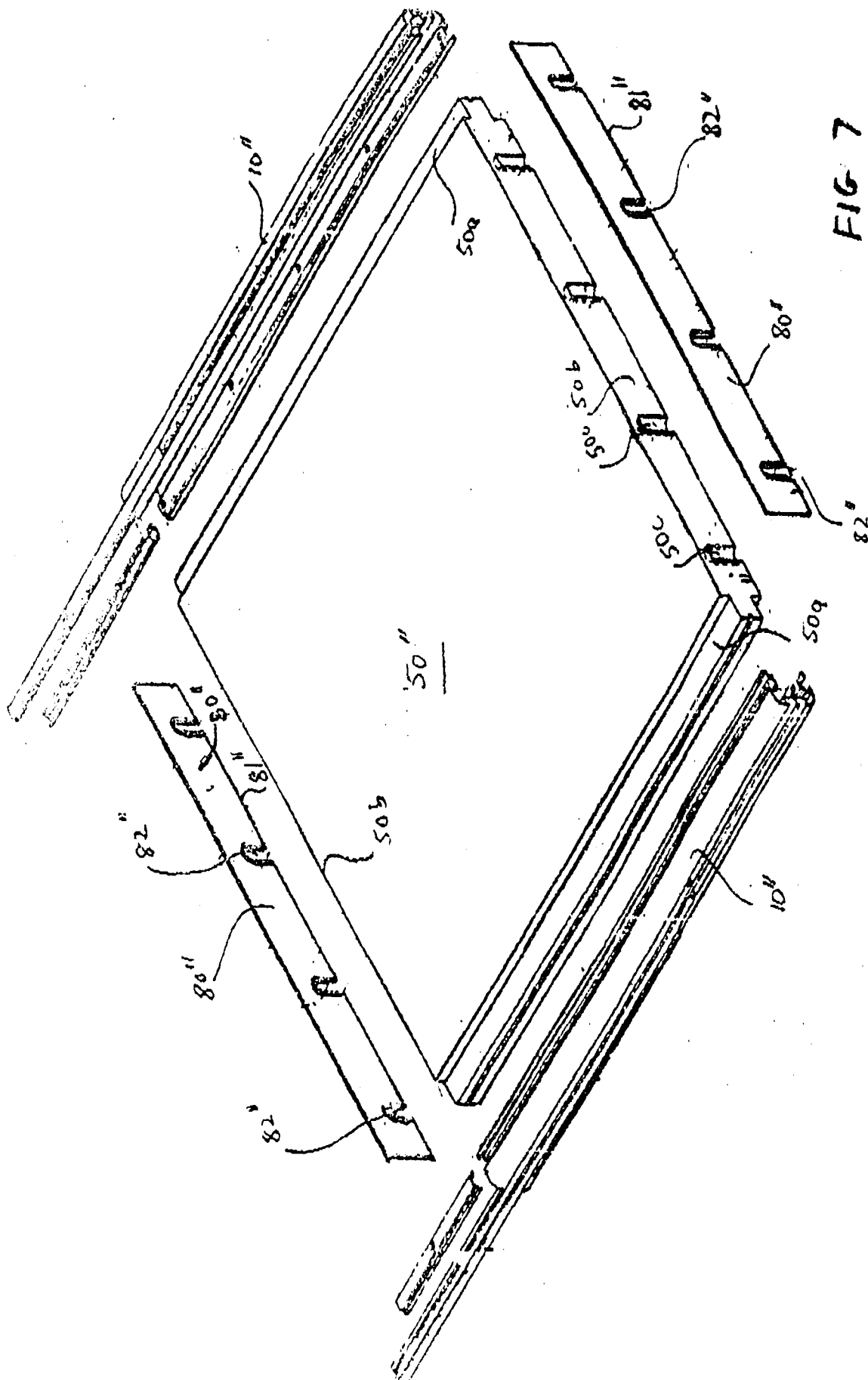


FIG 7