

[54] WALL PANEL LATERAL SUPPORT
ASSEMBLY AND LOCKING MECHANISM
THEREFOR

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[58] Field of Search 248/188, 243, 165; 211/148,
211/176, 177; 108/110; 160/351

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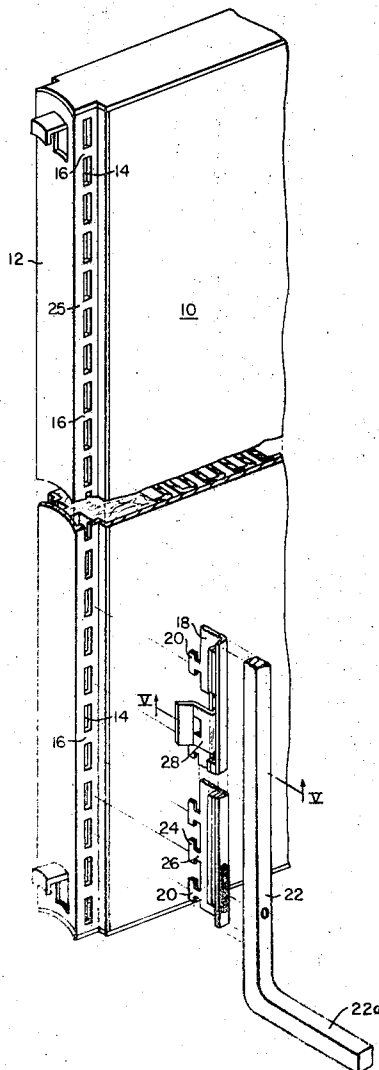
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[57] ABSTRACT

A locking mechanism for securing a lateral support to a free standing wall panel in which a plurality of T-shaped connectors extending from the lateral support engage a complementary plurality of spaced slots in a slotted standard affixed to the wall panel by containing the partitions between the slots in the bottom recesses of the T-shaped connectors. The T-shaped connectors are locked into the spaced slots by means of a latch mechanism which when rotated causes a finger detent thereon to engage the side of one of the partitions opposite that side of the partition engaging the bottom recess of the T-shaped connector to thereby securely lock the partition between the finger detent and the adjacent T-shaped connector.

5 Claims, 6 Drawing Figures



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SHEET 1 OF 2



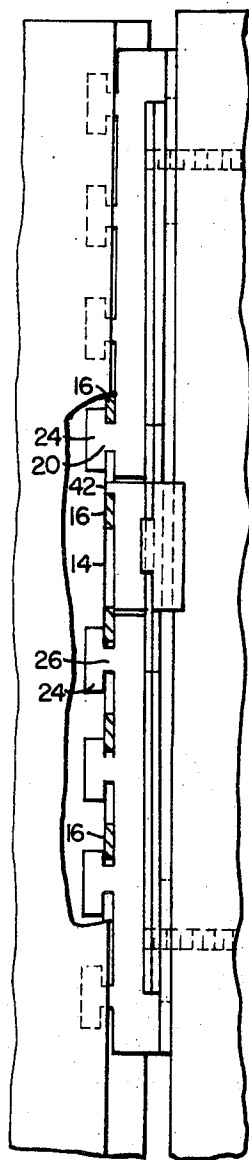


FIG. 4

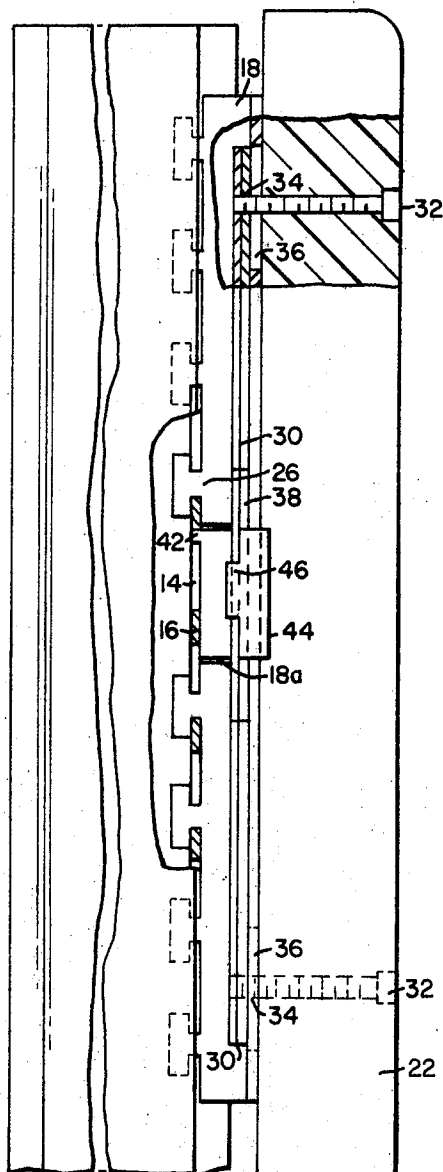


FIG. 3

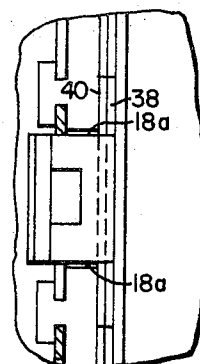
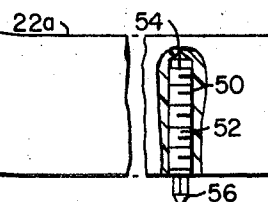


FIG. 2



WALL PANEL LATERAL SUPPORT ASSEMBLY AND LOCKING MECHANISM THEREFOR

BACKGROUND OF THE INVENTION

This invention relates to space dividing systems of the office partition type and more particularly to a locking mechanism for securing a lateral support to a free standing wall panel.

In most instances, where the new concept of "office landscaping" is employed, free standing walls are supported by adjacent perpendicular or angular runs of wall panels and thus the various walls of the space dividing system act as lateral supports for each other. In some instances, however, adjacent perpendicular or angular runs of wall panel are not available in sufficient quantity or are nonexistent and thus some other form of lateral support is required. A typical modern office space dividing system illustrating lateral support from adjacent perpendicular or angular runs of wall panel is disclosed in co-pending application Ser. No. 159,360, filed July 2, 1971 by William C. Anderson et al for "Space Divider System and Connector Assembly Therefor."

In the majority of these systems, office furniture such as desk tops, wall cabinets, bookshelves and filing cabinets are mounted directly to the walls by a uniform mounting and connecting system. One such system employs the use of a slotted standard on the wall panel which cooperates with and receives a plurality of T-shaped connector elements mounted on the rearward side of the furniture item. Two illustrations of this type connection may be found in copending application Ser. No. 216,415, filed Jan. 10, 1972 for "Over-the-Cabinet Door Assembly" by M. Aylworth and application Ser. No. 216,416, filed Jan. 10, 1972 for "Utility Line Holder" by R. A. Bleeker et al., both applications being owned by the assignee of this application. This type of connector assembly is completely adequate for mounting utility line holders, wall cabinets, book cases and the like to free standing wall panels. However, when this type connecting assembly is employed to connect lateral floor supports to free standing wall panels, or heavy desk tops, there is a tendency, if either the wall panel or the lateral support or desk top is severely jarred, to cause the T-shaped connectors to be dislodged from their complementary slots in the slotted standard with a resultant toppling of the wall or desk top.

SUMMARY OF THE INVENTION

This invention relates to a locking mechanism which may be associated with T-shaped connector elements to provide positive locking of the T-shaped connectors to the slotted standard of the wall panel to thereby eliminate the possibility of inadvertent disassociation of the furniture piece or lateral support member from the free standing wall panel.

The foregoing is accomplished in accordance with the present invention by providing a locking mechanism for selectively locking a first member to a second member when one of the first and second members includes a plurality of linearly aligned slots therein spaced apart by partitions of uniform length. The other of the first and second members having a plurality of linearly aligned T-shaped connectors extending therefrom and constructed and arranged to be received into

the plurality of slots and be retained at least partially behind the partitions which separate the slots. The improvement of this invention provides a latch mechanism which is associated with the T-shaped connectors and includes a projecting finger which is movable into one of the slots adjacent a partition edge on the opposite side of the partition from its associated and retained T-shaped connector to thereby prohibit relative movement between the first and second members by locking the partition between the leg portion of the T-shaped connector and the projecting finger.

BRIEF DESCRIPTION OF THE DRAWINGS

Many of the attendant advantages of the present invention will become more readily apparent and better understood as the following detailed description is considered in connection with the accompanying drawings, in which:

FIG. 1 is a perspective view illustrating the interconnection of a free standing wall panel and a lateral support member;

FIG. 2 is a partial side elevation view illustrating the interconnection of the support member with the wall panel prior to actuation of the locking mechanism;

FIG. 3 is a side elevational view partly in section illustrating the locking mechanism in a locked position;

FIG. 4 is a side elevational view partly in section illustrating an alternative locking position for the locking mechanism of this invention;

FIG. 5 is a sectional view of the locking mechanism of this invention, in an unlatched position, taken along the line V—V of FIG. 5; and

FIG. 6 is a sectional view similar to FIG. 5 illustrating the locking mechanism in a latched position.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now in detail to the drawings wherein like reference characters represent like parts throughout the several views there is illustrated in FIG. 1 a conventional free standing wall panel 10 carrying at each vertical edge (only one edge illustrated) a mounting strip 12 in the form of a slotted standard. Each side edge of the slotted standard includes a plurality of equidistantly spaced slots 14 extending for the length thereof spaced apart by partitions 16 of uniform length. The slots 14 are adapted to receive complementary T-shaped connectors which are normally secured to the rearward side edge of a furniture item such as a book-case, bookshelf or cabinet which is intended for mounting on the free standing wall panel. The T-shaped connector elements may also be mounted to lateral support members for either supporting the free standing wall panel, or which when inverted, can be employed to support a desk top, table or the like on the free standing wall panel. In FIG. 1, a bracket 18 carrying a plurality of equidistantly shaped T-shaped connectors 20 is illustrated as being attached to a lateral floor support 22, which may be utilized to provide lateral support to a free standing wall panel when adjacent perpendicular or angular runs of wall panel are not available in sufficient quantity or are non-existent and hence unable to provide such lateral support. The T-shaped connectors 20 are spaced a distance one from the other which is complementary to the space between adjacent slots 14 in the slotted standard 12. When connection is desired, the tops or cross member or portion 24 of the T-shaped

connectors are inserted into the slots 14 until the bracket 18 is flush against the face 25 of the slotted standard. The bracket is then moved slightly downwardly permitting one side edge of each leg portion 26 of the T-shaped connector 20 to contact an upper edge of each partition 16 thus causing the underside of one side of the cross member 24 to be hooked behind each of the associated partitions 16.

The foregoing conventional interconnection between T-shaped connector elements and a slotted standard have been used for many years to mount various kinds of elements to walls or partitions. A problem with this kind of connection is that when either of the connected elements is jarred or moved, minor relative movement between the T-shaped connector elements and the partitions 16 can cause the T-shaped elements 20 to move out of the slots 14 causing accidental disassociation of the two connected elements. The locking mechanism of this invention when actuated completely prohibits the possibility of any relative movement between the bracket 18 and the slotted standard 12.

The latch mechanism of this invention is illustrated at 28 in FIG. 1. The bracket 18 is adjustably secured to the lateral support member 22 by means of a clamping bar 30. A pair of threaded bolts 32 extend through the lateral support member 22 and are threaded into a pair of threaded apertures 34 in the clamping bar 30. The bolts 32 extend through elongated apertures 36 in the bracket 18 which allow for relative movement for positioning purposes between the bracket 18 and the lateral support 22 prior to the clamping bar being tightly secured by the bolts 32. Adjacent its center portion the clamping bar 30 includes a two dimensional cut-out area at 38 which accommodates the latch member 28. More descriptively, the clamping bar 30 is only about half as thick and half as wide in the area 38 and includes a center section 40 which overlies and retains the latch or locking mechanism 28. The locking mechanism 28 is essentially L-shaped with a locking detent or finger 42 extending from the base portion of the L-shaped member and an actuating or finger lever 44 and stop 46 affixed to the upright portion of the L-shaped member.

In operation, slight force is applied in the direction indicated by the arrow in FIG. 5 causing the latch or locking mechanism to rotate under the portion 40 of clamping bar 30 on the rounded edge 48 of the locking mechanism until the stop 46 abuts the side edge of the portion of the clamping bar 30, thus placing the locking detent or finger 42 in a locked position with respect to the adjacent T-shaped connector element 20 as best seen in FIG. 6. It should be noted that a section of 18a of the portion of the bracket 18 which carries the T-shaped members 20 is eliminated and is replaced by the base portion of the locking mechanism 28 when the locking mechanism is moved to its latched position.

There are two modes with which the locking finger or detent 42 on the locking mechanism 28 can coact with an adjacent T-shaped connector to retain all of the T-shaped connectors of the series in a fixed relationship with its complementary slotted standard 12. These modes are respectively illustrated in FIGS. 3 and 4. In the FIG. 3 mode, when the locking mechanism is moved from the FIGS. 2 and 5 position to the FIGS. 3 and 6 position, the locking finger or detent 42 causes one of the partitions 16 in the slotted standard to be imprisoned on both sides between the detent 42 and the

leg portion 26 of the adjacent T-shaped connector and thus restrains the partition from moving out of the notch defined by the upper edge of the bracket 18, the leg portion 26, and the cross portion 24 of the adjacent T-shaped connector element 20.

In the mode illustrated in FIG. 4, the locking finger or detent 42 works within the same slot as its adjacent T-shaped connector and the relationship between the position of the detent 42 and the furthest edge of the cross member 24 of the adjacent T-shaped connector 20 is such that the cross member 24 cannot be moved from its position behind a partition 16.

Relative movement is provided for between the bracket 18 and the lateral support 22 through the elongated slot 36 in order that the T-shaped connectors can be aligned with respect to complementary slots in the slotted standard when both the wall panel 10 and the bottom leg 22a of the lateral support are in contact with the floor, thus providing for the ability to insure substantial vertical orientation of the wall panel.

In addition, the leg portion 22a of the lateral support 22 may be provided with a threaded aperture 50 which when desired can receive a special double ended set screw which has a flat end 54 and a cone pointed end 56. The cone pointed end may be used for carpeting installation so that the support is directed to the solid floor beneath the carpet while the flat end of the screw may be used on hard surface floors such as tile, etc. to avoid marking the floor. Additionally, when desired, commercially available adjustable levelers can be threaded into the threaded bore 50, thus providing for an alternative adjustment method for the assembly.

I claim:

1. A mechanism for securing and locking a lateral support member to a free standing wall panel which mechanism includes;

a slotted post on said free standing wall panel, said slotted post including a plurality of equidistantly spaced slots of predetermined length having partitions therebetween;

a bracket adjustably secured to said lateral support; a plurality of equidistantly spaced T-shaped connectors extending from said bracket, said T-shaped connectors being insertable into said spaced slots and constructed and arranged through relative movement to confine the partitions between said slots within one side of said T-shaped connector;

locking means having a finger detent thereon associated with and movable relative to said T-shaped connectors to cause said finger detent to enter a slot adjacent to one of said T-shaped connectors to thereby lock said partitions confined by said one T-shaped connector between said finger detent and said one T-shaped connector thereby prohibiting further relative movement between said lateral support member and said free standing wall panel; and

a clamping bar adjustably securing said bracket to said lateral support, said clamping bar having a reduced central portion which overlies and retains said locking means for relative movement with respect to said bracket.

2. The mechanism according to claim 1 wherein said locking means is L-shaped in cross-section with said finger detent extending from one end thereof and the other end thereof forming an actuating lever.

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3. A locking mechanism for selectively locking a first member to a second member; one of said first and second members including a plurality of linearly aligned slots therein spaced apart by partitions of uniform length; the other of said first and second members having bracket means adjustably secured thereto by a clamping bar, said bracket means having a plurality of linearly aligned T-shaped connectors extending therefrom constructed and arranged to be received into said plurality of slots and be retained at least partially behind said partitions; and a latch mechanism associated with said T-shaped connectors, said latch mechanism including a projecting finger movable into one of said slots adjacent a partition edge on the opposite side of

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the partition from its retained T-shaped connector to thereby prohibit relative movement between said first and second members.

4. A locking mechanism according to claim 3 wherein said clamping bar includes a reduced central portion which overlies and retains said latch mechanism to said bracket for relative rotational movement therewith.

5. A locking mechanism according to claim 4 wherein said latch mechanism is L-shaped in cross-section with said projecting finger extending from one end thereof with the other end thereof forming an actuating lever.

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