Aug. 3, 1965 E. A. NIDA 3,197,932

BUILDING PARTITION STRUCTURE

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FIG.1.

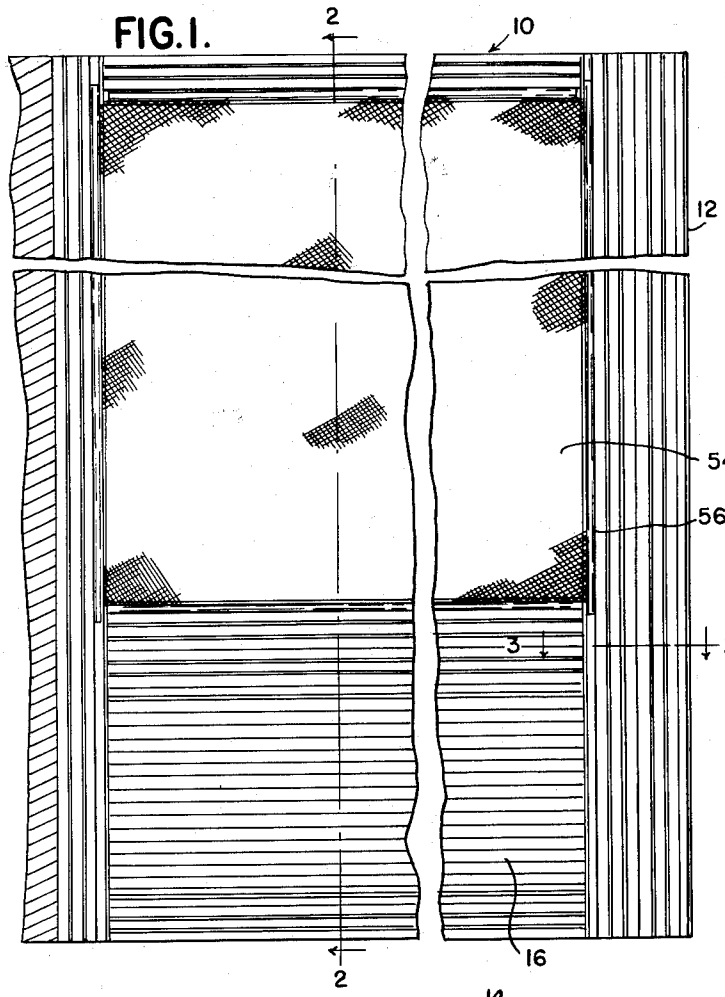


FIG.2.

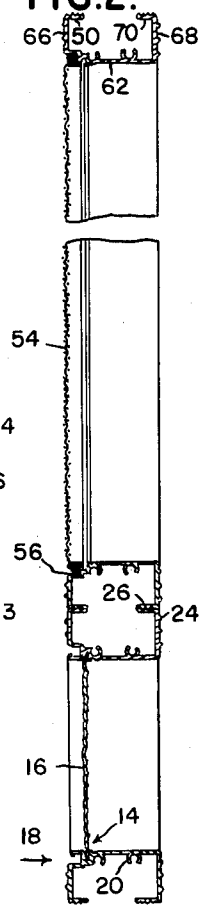
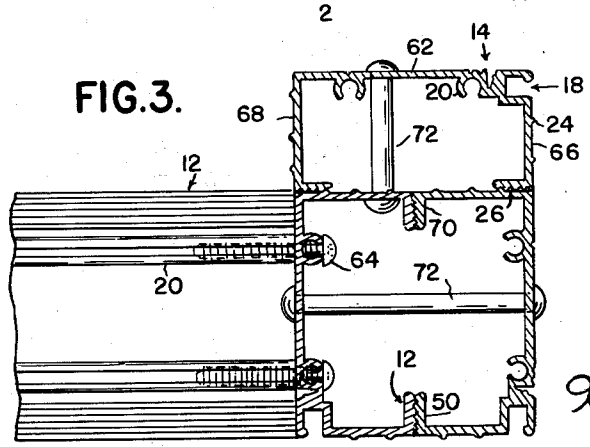


FIG.3.



INVENTOR.
EDMUND A. NIDA
BY Whittemore
Hulbert & Belknap
ATTORNEYS

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FIG. 4.

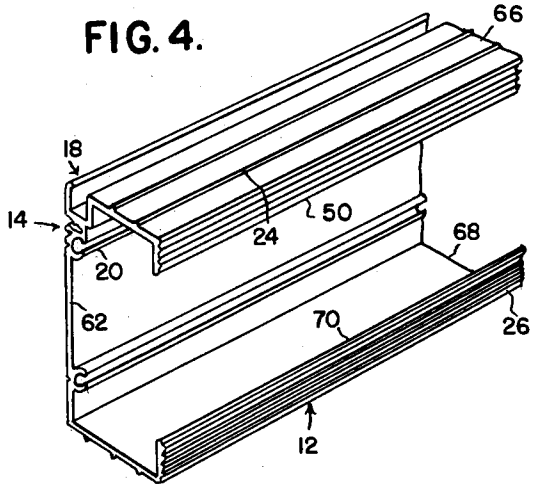


FIG. 5.

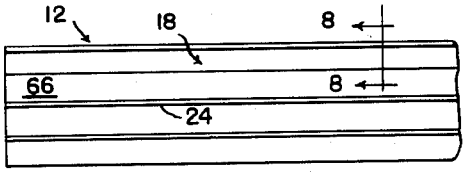
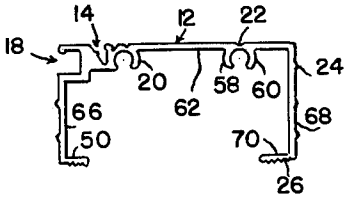


FIG. 6.



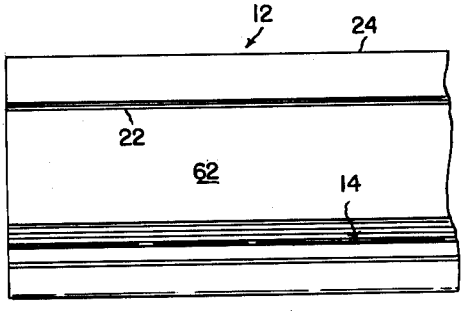
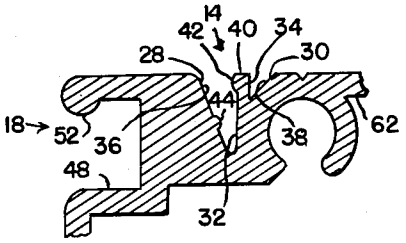


FIG. 7.

FIG. 8.



INVENTOR.
EDMUND A. NIDA
BY Whittemore
Hulbert & Belknap
ATTORNEYS

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BUILDING PARTITION STRUCTURE

Edmund A. Nida, Detroit, Mich., assignor to Advance-craft Aluminum Industries, Inc., a corporation of Michigan

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14 Claims. (Cl. 52—474)

The invention relates to building partition structure and refers more particularly to partition structure for screened porches and the like including a frame formed of structural members each having the same cross-section which cross-section includes means to facilitate rapid accurate construction of the frame and means for securing of screens and kick plates or similar panels to the frame.

In the past framing of building partitions to form a screened porch or the like has required structural members of several different cross-section and separate means for securing thereto panels such as kick plates. The storage of different structural shapes and means for securing panels thereto by dealers in such material adds to the expense of the ultimate partition formed therewith. In addition often the structural shapes from which the partition frame is constructed and the separate connecting means are so complicated as to require skilled labor to erect.

It is therefore an object of the present invention to provide building partition structure wherein the frame thereof is formed of structural members having the same cross-section.

Another object is to provide building partition structure wherein the structural members of the frame include means integral therewith for securing kick plates or similar panels thereto.

Another object is to provide building partition structure having a frame formed of structural members having the same cross-section which cross-section is shaped to facilitate the installation of screens or similar panels in the openings defined by said structural members.

Another object is to provide a structural member for framing a building partition structure including means integral therewith for securing kick plates or similar panels thereto.

Another object is to provide a structural member for framing a building partition structure including means integral therewith for rapid securing of screens or other similar panels thereto.

Another object is to provide a structural member for framing a building partition structure including channels extending lengthwise thereof adapted to receive fastening means therein to permit endwise connection of the structural member to a perpendicular structural member.

Another object is to provide a structural member as set forth above including grooves extending longitudinally thereof for indicating the center-line of the channel.

Another object is to provide building panel structure as set forth above which is simple in construction, economical to manufacture and efficient in use.

Other objects and features of the invention will become apparent as the description proceeds, especially when taken in conjuiction with the accompanying drawings, illustrating a preferred embodiment of the invention, wherein:

FIGURE 1 is an elevation view of building partition structure according to the invention.

FIGURE 2 is a section of the building partition structure shown in FIGURE 1 taken on the line 2—2 in FIGURE 1.

FIGURE 3 is a partial section of the building partition structure shown in FIGURE 1 taken on the line 3—3 in FIGURE 1.

FIGURE 4 is a perspective view of a structural member having a cross-section according to the invention which is used to form the frame of the building partition structure illustrated in FIGURE 1.

FIGURE 5 is a side view of the structural member illustrated in FIGURE 4.

FIGURE 6 is an end view of the structural member illustrated in FIGURE 4.

FIGURE 7 is a top view of the structural member illustrated in FIGURE 4.

FIGURE 8 is an enlarged fragmentary section view of the structural member illustrated in FIGURE 4 taken on line 8—8 in FIGURE 5.

With reference to the figures a particular embodiment of the invention will now be disclosed.

In accordance with the invention the building partition structure 10, illustrated in FIGURES 1–3, is framed with structural members 12 having the same cross-section which cross-section is shown best in FIGURE 6. The structural member 12 includes means, generally indicated 14, for securing a kick plate 16 or similar panel thereto and means generally indicated 18 to facilitate securing of screens thereto. In addition the structural member 12 includes channels 20, locating grooves 22, locking beads 24, and locking grooves 26 as shown in FIGURE 6 to facilitate rapid accurate construction of a building partition structure frame by unskilled labor in a minimum of time.

More specifically the structural members 12 may be extruded or otherwise formed of metal, such as aluminum, plastic, or other suitable material. The specific material of which the structural member 12 is made will depend of course on the kind of building partition to be made therefrom and the location in which the partition is to be used. Similarly it will be understood that the method of producing the structural member 12 in the cross-section shown in FIGURE 6 may vary with the different materials of which the structural member is made.

The means 14 integral with the structural member 12 for securing a kick plate or similar panel thereto comprises a pair of adjacent recesses 28 and 30 having adjacent substantially vertical sides 32 and 34 and other sides 36 and 38, respectively, tapering away from the adjacent vertical sides outwardly of the structural member 12, as shown in FIGURE 8. The adjacent vertical walls 32 and 34 of the recesses 28 and 30 form a relatively thin rib 40 therebetween having a locking bead 42 at the outer end thereof extending longitudinally of structural member 12 and toward recess 28 as shown. Recess 28 which is substantially deeper than recess 30 includes a locking bead 44 on the tapered side 36 thereof extending longitudinally of structural member 12 and toward recess 30.

When it is desired to secure a kick plate 16 or similar panel to the structural member 12, the kick plate is positioned in recess 28 and abutted against the bottom thereof. A closing instrument is placed in recess 30 and the rib 40 is bent toward the recess 28 whereby the edge of the kick plate within the recess 28 is secured between the locking bead 42 of the rib 40 and the locking bead 44 on the tapered side of the recess 28.

As the kick plate 16 is positioned in recess 28 it will first contact the surface 36 of recess 28 at some point above the locking bead 44. The edge of the kick plate 16 will travel along surface 36 as the kick plate is forced further into recess 28 until the edge thereof contacts locking bead 44 which is located slightly below mid depth of the recess 28 as shown in FIGURE 8. The kick plate is then forced over locking bead 44 and into contact with locking bead 42. The two locking beads create a binding action during final seating of the kick plate 16 in recess 28.

The binding action between the locking beads 42 and 44 is aided in securely holding the kick plate in a building

panel 10 due to possible slight variation in the location of recess 28 in the individual framing members 10 due to manufacturing tolerances and the practical impossibility of perfectly aligning the individual framing members 12 in the construction of a building panel 10.

Should the binding action between the locking beads 42 and 44 be so great as to start to prevent the complete installation of the kick plate 16 in the recess 28 the rib 40 will be bent toward recess 30 to permit further installation of the kick plate in the recess 28. Should the kick plate be loose in recess 28 after being installed therein the rib 40 may be bent toward recess 28 as previously indicated.

Thus a kick plate or similar panel may be secured to the structural member 12 as desired without the use of separate attaching means which may become lost or damaged before it is desired to assemble the kick plate 16 with the structural member 12. In securing the kick plate 16 within the recess 28 the rib 40 and recess 30 have the double purpose of permitting expansion of the recess 28 should the kick plate be so wide as to require such expansion and allowing thin kick plates to be held tightly within recess 28.

The means 18 for facilitating the attachment of a screen or similar panel to the structural member 12 includes the recess 48 in wall 66 of the structural member 12 and retaining bead 52 extending longitudinally of the structural member 12 and into the recess 48 as shown.

When it is desired to secure a screen 54 to the structural member 12 it is necessary to place the edge of the screen over the open side of the recess 48 and to force the screen into the recess 48 by means of a molding strip 56 of plastic or other deformable material. The screen 54 is thus firmly held between the molding strip 56 in recess 48 and the retaining bead 52.

Channels 20 are provided on the interior of wall 62 of the structural member 12 as shown. The channels 20 are formed of arcuate flanges 58 and 60 extending longitudinally of the structural member 12 and outwardly from wall 62 as shown. The channels 20 as previously indicated and as illustrated in FIGURE 3 are useful in permitting endwise connection of one structural member 12 to the wall 62 of a perpendicularly orientated similar structural member 12 by means of self-threading screws 64.

The locating grooves 22 which extend longitudinally of framing members 12 are provided to permit accurate drilling of openings for screws 64 through the structural members 12 into channels 20 so that accurate rapid alignment of the structural members 12 may be provided in assembly of a building partition structure as shown in FIGURE 1.

Similarly locking grooves 26 and locking beads 24 are provided on walls 66 and 68 and walls 50 and 70 respectively of the structural member 12 to permit aligning of adjacent structural members 12 and to aid in locking adjacent structural members together in conjunction with bolts 72 as shown in FIGURE 3.

As previously indicated structural members 12 having the cross-section shown in FIGURE 6 may be used to provide the total framing of a building partition structure such as that illustrated in FIGURE 1. In erecting a building partition structure as shown in FIGURE 1 the frame is first constructed of structural members 12 connected as shown best in FIGURES 2 and 3.

The connections between structural members 12 shown in detail in FIGURES 2 and 3 illustrate the flexibility of the structural member 12 in providing both vertical and horizontal framing members for the building partition structure. The framing members may be attached to the usual building structure by means of bolts secured to the building structure. In addition, as set forth above, the installation of kick plates 16 and screens 54 or similar panels within the openings provided in the building partition structure frame is easily accomplished due to the particular cross-section of the structural members 12.

Thus, as previously indicated, to install a kick plate in the building partition structure illustrated in FIGURE 1, it is merely necessary to insert the kick plate within the recess 28 provided in the structural members 12 and to bend the ribs 40 toward the kick plate to lock the kick plate between the locking beads 42 and 44 where the kick plate is so thin as to require bending of rib 40.

The installation of a screen within the opening in the building partition structure shown in FIGURE 1 is equally as simple. In such installation the screen is cut to a size slightly larger than the frame opening therefor so that the screen edges when the screen is held over the opening in the frame project over the open recesses 48. Molding strips 56 are then forced into the recesses 48 forcing the screen edges into the recesses 48 with them, whereby the screens are locked between the retaining bead 52 and the molding strip 56.

Thus it will be seen that in accordance with the invention a building partition structure is provided which is constructed of structural members having a single cross-section which structural members are adapted to be rapidly and accurately secured together. In addition particular means are provided integral with the structural members for locking kick plates within openings in a building partition structure frame constructed of structural members according to the invention without the use of separate complicated fastening devices and means are provided to permit rapid, simple installation of screens in openings provided in the building partition structure frame by unskilled persons.

What I claim as my invention is:

1. A structural member for framing building partitions comprising a hollow channel including a connecting wall between two walls extending perpendicular to said connecting wall, said connecting wall having a pair of longitudinally extending adjacent recesses therein forming a rib therebetween, and means within one of said recesses cooperable with said rib for securing the edge of a panel therein.

2. A structural member for framing building partitions comprising a hollow channel including a connecting wall between two walls extending perpendicular to said connecting wall, said connecting wall having a pair of longitudinally extending adjacent recesses therein forming a rib therebetween, a longitudinally extending locking bead on the side of one of said recesses opposite said rib, a longitudinally extending locking bead on said rib projecting into said one recess, said locking beads cooperating to secure therebetween the edge of a panel inserted in said one recess.

3. A structural member for framing building partitions comprising a hollow channel including a connecting wall between two walls extending perpendicular to said connecting wall, said connecting wall having a pair of longitudinally extending adjacent recesses therein forming a rib therebetween, one of said recesses being deeper than the other, a longitudinally extending locking bead centrally of the side of said one recess opposite said rib, a longitudinally extending locking bead on said rib adjacent the outer end thereof and projecting into said one recess, said locking beads cooperating to secure the edge of a panel inserted in said one recess therebetween.

4. Building partition structure comprising a frame constructed entirely of structural members all of which have the same generally U-shaped cross-section including a connecting wall between two walls extending substantially perpendicular thereto, a pair of longitudinally extending adjacent recesses in the connecting wall of said structural members forming a rib therebetween, means within one of said recesses for securing the edge of a panel therein in conjunction with said rib, and panels secured within openings formed by said frame by said means in conjunction with said rib.

5. Building partition structure comprising a frame constructed entirely of structural members all of which have

the same generally U-shaped cross-section including a connecting wall bebtween two walls extending substantially perpendicular thereto, a pair of longitudinally extending adjacent recesses in the connecting wall of said structural members forming a rib therebetween, one of said recesses including a longitudinally extending locking bead on the side thereof opposite said rib, a longitudinally extending locking bead on said rib projecting into said one recess, said locking beads being operable to secure the edge of a panel therebetween within said one recess, and panels secured within openings formed by said frame by said beads.

6. Building partition structure comprising a frame constructed entirely of structural members all of which have the same generally U-shaped cross-section including a connecting wall between two walls extending substantially perpendicular thereto, a pair of longitudinally extending adjacent recesses in the connecting wall of said structural members forming a rib therebetween, one of said recesses being deeper than the other, a longitudinally extending locking bead located centrally of the side of said one recess opposite said rib, a longitudinally extending locking bead on said rib adjacent the outer end thereof and projecting into said one recess, said locking beads being operable to secure the edge of a panel therebetween within said one recess, and panels secured within openings formed by said frame by said beads.

7. A single elongated structural member adapted for complete framing of a building partition having parallel walls and a connecting wall forming a generally U-shaped cross section, flanges depending substantially perpendicularly from the outer edges of the parallel walls of the structural member extending toward each other for the length of the member and having longitudinally extending locking grooves in the outer surface thereof, longitudinally extending locking beads in parallel spaced relation on the outer surface of the parallel walls of the structural member, a pair of oppositely curved longitudinally extending arcuate members integral with and extending inwardly of the connecting wall of the structural member, a longitudinally extending locating groove on the outer surface of the connecting wall of the structural member positioned centrally of each pair of the oppositely curved arcuate members, a longitudinally extending recess in one of the parallel walls of the structural member opening outwardly of the structural member, a retaining bead projecting into said recess at the open side thereof, a pair of longitudinally extending adjacent recesses in the connecting wall of the structural member forming a rib therebetween, a longitudinally extending locking bead centrally of the side of one of said pair of recesses opposite said rib, and a longitudinally extending locking bead at the outer end of said rib projecting into said one recess.

8. Structure as set forth in claim 1 wherein said one of said pair of recesses is deeper than the other of said pair of recesses.

9. A single elongated structural member adapted for complete framing of a building partition having parallel walls and a connecting wall forming a generally U-shaped cross-section, a pair of longitudinally extending adjacent recesses in the connecting wall of the structural member forming a rib therebetween, a longitudinally extending locking bead centrally of the side of one of said pair of recesses opposite said rib, and a longitudinally extending locking bead at the outer end of said rib projecting into said one recess.

10. Structure as set forth in claim 9 wherein said one of said pair of recesses is deeper than the other of said pair of recesses.

11. Structure as set forth in claim 9 wherein one of the parallel walls of the structural member has a longitudinally extending recess therein opening outwardly of the structural member and further including a longitudinally extending retaining bead projecting into said recess at the open side thereof.

12. Structure as set forth in claim 9 and further including longitudinally extending flanges depending substantially perpendicularly from the outer edges of the parallel walls of the structural member and extending toward each other for the length of the member and having longitudinally extending locking grooves in the outer surface thereof.

13. Structure as set forth in claim 9 and further including longitudinally extending locking beads in parallel spaced relation on the outer surface of the parallel walls of the structural member.

14. Structure as set forth in claim 9 and further including a pair of oppositely curved longitudinally extending arcuate members integral with and extending inwardly of the connecting wall of the structural member and a longitudinally extending locating groove on the outer surface of the connecting wall of the structural member positioned centrally of the pair of oppositely curved arcuate members.

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RICHARD W. COOKE, JR., *Primary Examiner.*

JOEL REZNEK, *Examiner.*