

April 30, 1935.

C. SCHULTZ

1,999,741

PARTITION WALL CONSTRUCTION

Filed June 28, 1932

3 Sheets-Sheet 1

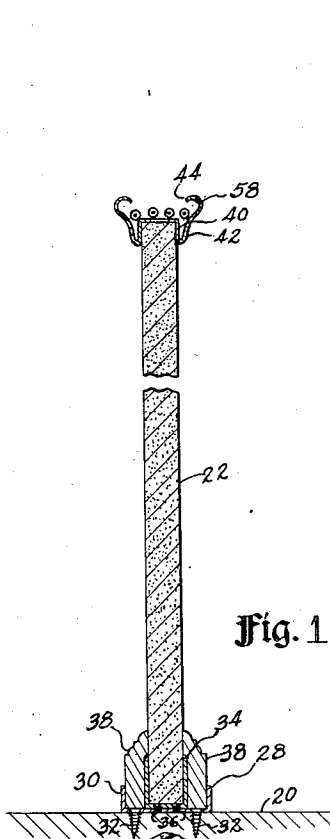


Fig. 1

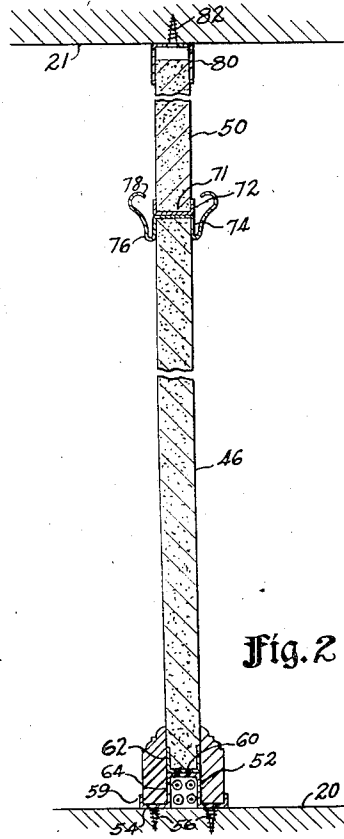


Fig. 2

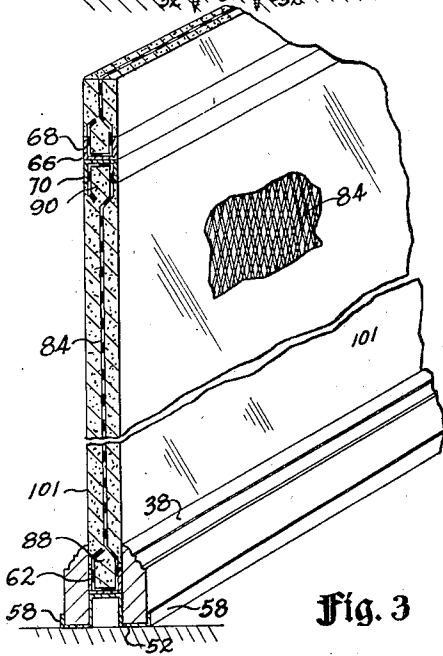


Fig. 3

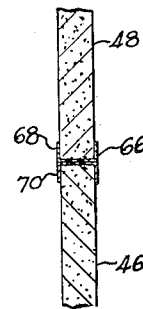


Fig. 2A

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3 Sheets-Sheet 2

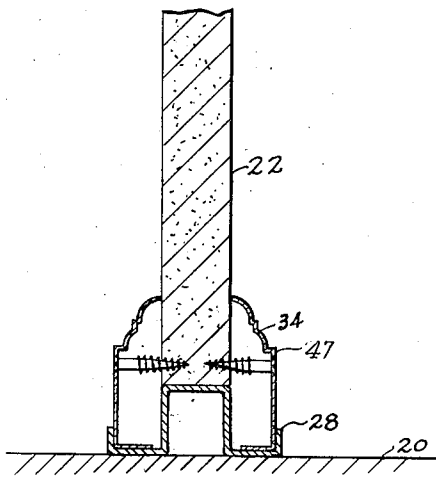


Fig. 4

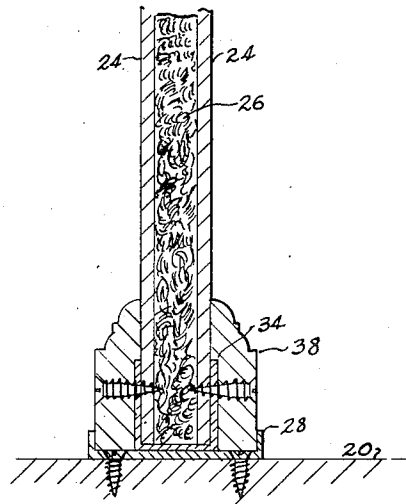


Fig. 5

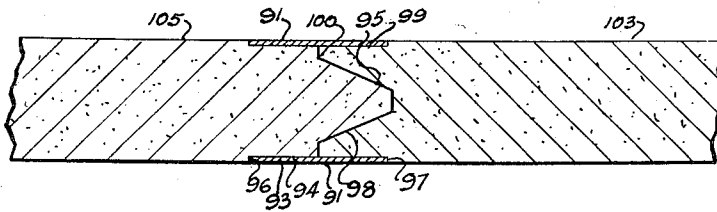


Fig. 6

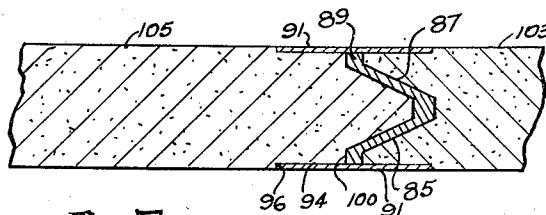


Fig. 7

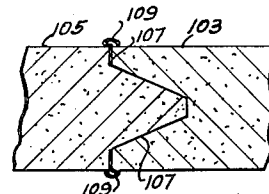


Fig. 6B

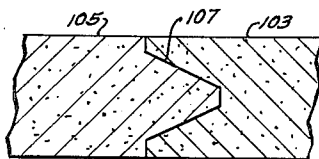


Fig. 6A

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3 Sheets-Sheet 3

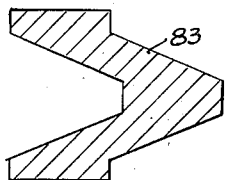


Fig. 8

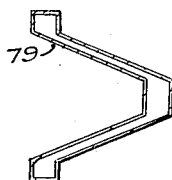


Fig. 9

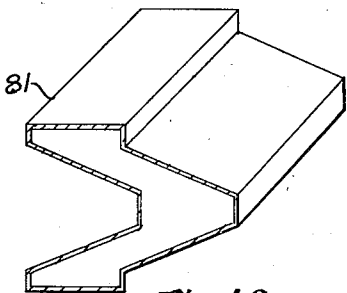


Fig. 10

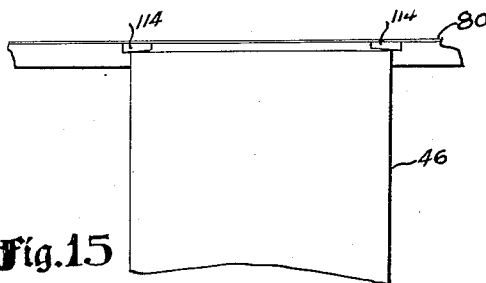


Fig. 15

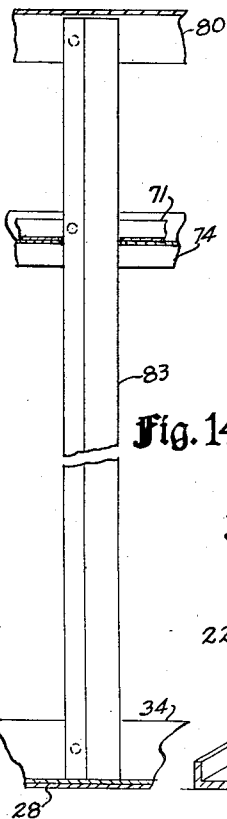


Fig. 14

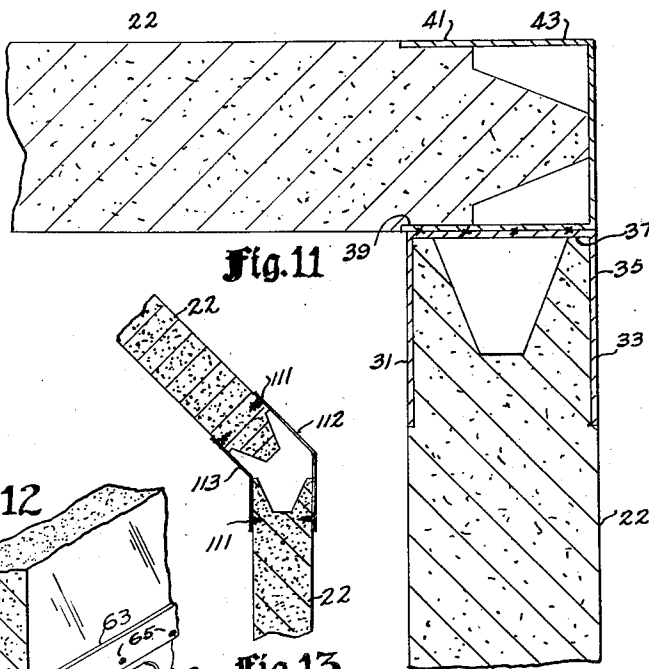


Fig. 11

Fig. 13

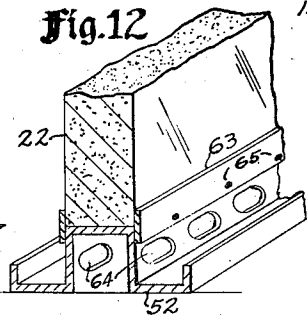


Fig. 12

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UNITED STATES PATENT OFFICE

1,999,741

PARTITION WALL CONSTRUCTION

Carlton Schultz, Cleveland Heights, Ohio

Application June 28, 1932, Serial No. 619,766

13 Claims. (Cl. 72-46)

The present invention relates to building constructions and more particularly to an improved partition for building structures. The partition comprising the present invention is primarily adapted for use in office buildings for sub-dividing large rooms into smaller ones or into open top booths or the like, although the principles of the invention are applicable to other uses, and the partitions comprising the present invention may be employed in the formation of temporary or permanent wall constructions, as, for example, in the building of permanent office of living rooms or in the erecting of temporary divided rooms adapted to remain erected only until the expiration of a tenant's lease, when the partitions are to be removed and the space restored to its original condition.

Partitions manufactured in accordance with the principles of the present invention are particularly well adapted for use in factory buildings where the assignment of floor space to various services, as, for example, engineering service, shop service, office service, or the like, constantly requires remodeling and alteration of the interior space of the building.

The invention is also applicable for use in overnight alteration of large halls, as, for example, convention halls where the hall must be hastily altered to suit the needs of the exhibitors.

The principal object of the present invention is to provide a partition which may be formed of any suitable composition, as, for example, artificial board such as pressed fibrous material or cementitious material, many of which are well known and are in common use under various trade names and which will simulate in every respect the appearance of a more substantial permanent wall construction.

A further object of the invention is to provide a partition which may be erected in position with comparative facility and which may be disassembled when its use is no longer desired and reserved for further use in the erection of another partition.

Yet another object of the invention is to provide a partition adapted for use in office buildings which is extremely simple in its construction, rugged and durable, and which will withstand considerable hard usage without becoming dislodged or in any other way affected.

Yet another object of the invention is to provide a partition which may be manufactured inexpensively, one which is attractive in its design, and which may be easily installed and fitted into the position which it is to occupy.

Other objects and advantages of the invention not at this time more particularly enumerated, will become more readily apparent as the nature of the invention is better understood and the same consists in the novel construction, combination, and arrangement of parts shown in the accompanying three sheets of drawings, in which:

Fig. 1 is a vertical sectional view taken through one form of partition manufactured in accordance with the principles of the present invention, and showing the same in assembled position.

Fig. 2 is a sectional view similar to Fig. 1, showing a modified form of partition installed between a floor and ceiling.

Fig. 2-A is a fragmentary sectional view showing one method of supporting adjacent vertical panel sections.

Fig. 3 is a fragmentary perspective view of a still further modified form of partition construction, in which there is incorporated an expanded metal reinforcing structure.

Fig. 4 is a fragmentary vertical sectional view showing one form of panel board construction that may be employed in connection with the improved partition.

Fig. 5 is a sectional view of Fig. 4 showing yet another form of panel board construction that may be employed.

Fig. 6 is an enlarged detail horizontal sectional view showing the meeting vertical edges of a pair of adjacent partition sections. Figs. 6-A and 6-B are similar views.

Fig. 7 is a transverse sectional view of a space filling or stiffening element employed in connection with the present invention.

Fig. 8 is a sectional view similar to Fig. 7 showing a space filling and stiffening element of larger proportions than that shown in Fig. 6.

Figs. 9 and 10 are sectional views similar to Figs. 7 and 8, respectively, and showing hollow space filling and stiffening elements of a modified nature.

Fig. 11 is a fragmentary sectional view showing a corner fitting employed in connection with the improved partitions.

Fig. 12 is a fragmentary perspective view of the base portion of the partition shown in Fig. 2.

Fig. 13 is a fragmentary sectional view showing the method of joining adjacent edges of partition sections meeting at an odd angle.

Fig. 14 is a fragmentary sectional view showing a method of using the space filling or stiffening elements of Figs. 8, 9 and 10 for the full partition height to give maximum rigidity, and

Fig. 15 is a view of a method of wedging panels in place.

In all of the above described views, like characters of reference are employed to designate like parts throughout.

Referring now to Fig. 1 wherein an open top partition construction is shown, the floor is designated at 20. The partition proper is shown at 22. This partition may be formed of any suitable composition and, as shown in Fig. 4, may be of a single thickness of material. An alternate form of partition proper shown in Fig. 5 consists in a pair of thin sheets of material 24, between which there is disposed a filler material 26 which may be of any suitable composition such as plaster or porous or fibrous material.

In order to secure the lower longitudinal edge of the partition 22 to the floor, a retaining unit designated in its entirety at 28 is secured to the floor 20. This unit comprises a U-shaped channel member 30 adapted to be secured to the floor by means of screws 32 or the like. Welded or otherwise secured as at 36 centrally of the channel member 30 and co-extensive therewith, is a second and smaller channel member 34, the parallel flanges of which are somewhat longer than the parallel flanges of unit 30. The lower longitudinal edge of the partition proper is adapted to be received between the parallel flanges of the member 34. Ornamental base boards 38 or 47 of any suitable design and of any suitable material are adapted to be received on opposite sides of the partition 22 with their lower longitudinal edges positioned between the flanges of the channel member 34 and the flanges of the channel member 30 and held therein by means of bolts or screws. From the above construction it will be seen that the partition is securely supported on the floor against lateral shifting.

In open top panel work, an ornamental effect may be given to the panel construction by providing a longitudinally extending sheet metal structure 58 simulating a molding strip. This member may be rolled from flat strip stock and consists in an inverted U-shaped panel member having side walls 40 which are bent upon themselves as at 42 and inwardly as at 44 to give the desired effect on opposite sides of the panel. Such a strip provides a picture molding on opposite sides of the panel construction at the top thereof and lends a finished appearance to the panel structure. In addition to this, rigidity of construction is effected by virtue of the fact that the channel-shaped molding 58 will bridge adjacent sections of the partition.

Further, low potential electric wires, such as are used in connection with bells, buzzers, telephones and the like, will be run behind the molding portions of this member and thereby eliminate the necessity of special electrical conduits.

Referring now to Fig. 2, a modified form of partition construction is shown. In this form of the invention the partition is adapted to divide the space between the floor and the ceiling and is adapted to be employed as a more or less permanent structure. The partition is formed of a plurality of sections 46 and 50 arranged in superimposed relation. The retaining unit for the lower longitudinal edge of the lowermost section 46 comprises an inverted channel member 52 having lateral flanges 54 adapted to be secured by screws 56 to the floor 20 and having upwardly extending base boards retaining flanges 59. Welded as at 60 to the inverted channel portion of the member 52 and co-extensive therewith, is

a U-shaped member 62, the parallel flanges of which are adapted to receive therebetween the section 46 of the panel proper. The space within the hollow channel member 52 is adapted to contain and conceal electrical or telephone wires that may be strung therethrough, and in order that access may be had to these wires, a plurality of apertures 64 are provided in the side flanges of the channel portion of the member 52. Pipes and conduits may also be run through this hollow space.

The section 50 is supported upon the section 46 and is held in alignment therewith by means of a retaining unit designated in its entirety at 71. This unit comprises a lower channel member 74 and an upper channel member 72, which may or may not be welded together, the members 74 and 72 having oppositely extending parallel flanges. The parallel flanges of the member 74 are extended and are bent upon each other as at 76 and inwardly as at 78 to provide structures on opposite sides of the panel assembly simulating picture moldings and from which pictures or other objects of decoration may be hung. The upper longitudinal edge of the section 50 is held against lateral displacement by means of a channel member 80 suitably secured by means of screws 82 to the ceiling 21. It will be seen that adjacent sections of the panel construction will be longitudinally reinforced by means of the retaining unit 71.

In Fig. 2—A the method of joining adjacent vertical panel sections is shown. The upper panel section is shown at 48 and the lower panel section at 46. The section 48 is supported upon the section 46 and held in alignment therewith by means of a retaining unit 66 consisting of two channel-shaped members 68 and 70 welded back to back to present upwardly extending retaining flanges on opposite sides. The upper longitudinal edge of the section 46 is disposed within the downwardly presenting channel member 70, while the lower longitudinal edge of the section 48 is disposed within the upwardly presenting channel member 68. In addition to supporting the section 48 upon the section 46, this retaining member 66 serves to reinforce the sections against lateral bending or displacement.

In Fig. 3 a modified form of the invention is disclosed and in this form of the invention the lower retaining unit 52 is identical with the retaining unit described in connection with Fig. 2 and the retaining unit 66 is the same as in Fig. 2—A. The channel member 62 of the unit 52 and the channel member 70 of the member 66 respectively serve to retain the lower and upper longitudinal head members 88 and 90 of an expanded metal or woven wire structure 84. The base boards 38 have their lower longitudinal edges disposed between the channel portion of the member 52 and the flanges 58. The other material 101 in this figure is made of plaster or the like to give the partition a smooth finished appearance.

Referring now to Fig. 6, the method of joining the adjacent panel sections is disclosed. In this figure, a pair of adjacent panel sections are designated at 103 and 105. The panel 105 is provided with a reduced portion 94 adjacent one vertical edge thereof providing a shoulder 96. The extreme edge of this panel 105 is provided with a tapered reduced portion 98 providing a shoulder 100. The adjacent edge of the panel 103 is provided with a reduced portion 99 providing a shoulder 97 and the extreme edge of this panel

is provided with a tapered groove 95 adapted to receive therein the tapered reduced portion 98 of the panel 105, the shoulder 100 bearing against the extreme edge of the panel 103. The shoulders 96 and 97 provide therebetween shallow grooves 93 in which there may be cemented or otherwise suitably secured an elongated vertical sheet metal strip 91, the outer surface of which lies flush with the surface of the panels 103 and 105. This strip may remain exposed and present an ornamental feature of the panel assembly, or, if the panels are to have wall paper or other covering applied to their outer surface, this strip insures a smooth surface at the joining edges of adjacent panels. The strip 91 may be formed in any suitable manner and of any suitable material. It is preferable, however, that this strip be of light sheet metal, as, for example, metal having a thickness of 1/64" or less. The material of which the panel is formed is preferably such that it will withstand a trimming operation or cutting operation to present well defined corners and edges, in order that the dovetail joint above described will be effective. If material that is not capable of preserving its sharp corners is employed, the metal strip 91 will effectively conceal the joining edges of the panels.

Fig. 6—A shows how the strip 91 in Fig. 6 may be omitted and the dovetailed edges cemented together with cement 107. If a more ornamental appearance is desired, the construction in Fig. 6—B may be used, wherein the beaded element 109 is interposed between panels 105 and 103 and cemented in place.

In order to add rigidity to the panel construction, the present invention makes use of a number of different size spacing and stiffening elements shown in Figs. 7, 8, 9 and 10. These spacing and stiffening elements may be in the form of solid metal members, the members shown in Fig. 7 being designated at 89 and having one side 87 thereof complementary in form to one vertical edge of the panel 105, while the other side thereof, 85, is complementary to the adjacent edge of the panel 103. The thickness of the member 89 may be varied and in Fig. 8 one of these spacer elements designated at 83 is shown as being formed of solid metal of somewhat greater thickness than the thickness of the member 89. In Figs. 9 and 10 spacer elements similar to the elements shown in Figs. 7 and 8 are disclosed. These elements are in the form of hollow sheet metal members 79 and 81 respectively.

Whether solid spacing and stiffening elements or whether the hollow type of elements be employed, these elements are manufactured of different thicknesses, so that by proper choosing of these elements for insertion between the vertical edges of the panels, discrepancies in the distance between walls to be bridged by the panel construction may be accommodated, as well as adding the required rigidity. Fig. 14 is a view showing how the spacing and stiffening element 83 of Fig. 8 may be adapted to a panel construction such as shown in or similar to Figs. 1 and 2.

In Fig. 12 a simplified form of retaining unit, adapted to supplant the retaining unit shown at 52 in Fig. 2, is disclosed. In this form of the invention the panel sections 22 are retained in position on the channel portion 52 by means of a pair of strips of sheet metal 63 spot-welded or otherwise secured as at 65 to the sides of the channel portion 52. These strips project upwardly above the channel portions 52 and are adapted to receive therebetween the lower longi-

tudinal edge of the panel sections 22 to support the same against lateral displacement and to reinforce the same. The sides of the channel member 52 are provided with apertures 64 so that access may be had to the interior of the channel portion 52 for the purpose of running electrical or telephone lines through the channel.

Where adjacent ends of panel sections 22 are to be brought together to form a corner fastening, the invention contemplates provision of a structure shown in Fig. 11. A U-shaped channel member 43 having parallel flanges 41 and 39 is received over a vertical edge of a panel 22. The flange 39 is welded to the base 37 of a channel member 35 having parallel flanges 33 and 31, between which there is received the adjacent end of another panel 22. Such a corner fastening is interchangeable in use and may be employed for forming corners regardless of the direction that the right angle of the corner may extend.

In Fig. 13 is disclosed a method of joining two panel members at an odd angle. Two angular plate members 112 and 113 are secured to the adjacent ends of the panels 22 by screws 111, forming an easily made and rigid joint.

In carrying out the invention where open top structures of the type shown in Fig. 1 are concerned, it is contemplated employing panels of sufficient height that the horizontal joints shown in Fig. 2 need not be employed and, similarly, where the panel sections are to extend from the floor to the ceiling, it is preferable that the lower panel section extend from the retaining member 52 to the picture molding member 72 and that a panel of sufficient height be employed to extend from the picture molding member 72 to the ceiling.

Where a single panel will extend from the floor to the ceiling, it may be wedged in the channel member 80 of Fig. 2, as shown in Fig. 15, using wedges 114.

The invention is not to be limited to the exact arrangement of parts shown in the accompanying drawings or described in this specification, as various changes in the details of construction may be resorted to without departing from the spirit of the invention. Only in so far as the invention has been particularly pointed out in the accompanying claims is the same to be limited.

I claim:

1. The combination with a floor, of a comparatively wide channel member secured to said floor with its flanges presenting upwardly, a relatively narrow channel member secured centrally to said first mentioned channel member and co-extensive therewith, the flanges of said second mentioned channel member extending upwardly, a partition having its lower longitudinal edge received between the flanges of said second channel member, and a pair of base boards, one disposed on each side of said partition, said base boards having their lower longitudinal edges disposed between a flange of said first mentioned channel member and a flange of said second mentioned channel member.

2. The combination with a floor, of a comparatively wide channel member secured to said floor with its flanges presenting upwardly, a relatively narrow channel member secured centrally to said first mentioned channel member and co-extensive therewith, the flanges of said second mentioned channel member extending upwardly, a partition having its lower longitudinal edge received between the flanges of said second channel member, and a pair of base boards, one disposed on

each side of said partition, said base boards having their lower longitudinal edges disposed between a flange of said first mentioned channel member and a flange of said second mentioned channel member, and said base boards serving to reinforce said partition and concealing the flanges of said second mentioned channel member.

3. A retaining unit for partitions comprising a comparatively wide channel member having relatively narrow parallel flanges, a relatively narrow channel member secured within said first mentioned channel member centrally thereof and extending co-extensively therewith, said second channel member having comparatively wide parallel flanges extending parallel to the flanges of said first mentioned channel member.

4. The combination with a sectional partition consisting of a lower section supported on a floor and an upper section superimposed on said lower section, of an elongated retainer having a channel portion in which the upper longitudinal edge of said lower section is disposed and having a second channel portion in which the lower longitudinal edge of said upper section is disposed, one of said channel portions having parallel flanges, one of said flanges being turned inwardly to provide a picture molding on one side of said partition.

5. The combination with a sectional partition having a lower section adapted to rest upon the floor and an upper section superimposed upon said lower section, of an elongated strip of material substantially channel-shaped in cross section and having downwardly extending flanges, the upper longitudinal edge of said lower section being disposed between said flanges, said strip of sheet metal having a second channel portion having parallel flanges, the lower longitudinal edge of said upper section being disposed between said last mentioned flanges, said first mentioned flanges being bent outwardly and upwardly and thence inwardly to form a picture molding concealing said last mentioned channel portion.

6. The combination with a floor of a retaining unit secured to said floor, said retaining unit having an inverted channel portion providing a space for the reception of wires, a channel member secured to said inverted channel portion and having upwardly presenting flanges and a partition having its lower longitudinal edge disposed between said flanges and retained therein, said retaining unit having upwardly extending flanges spaced from the sides of said inverted channel portion and a pair of base boards having their lower edges disposed between said flanges and the sides of said channel portion, said base boards extending upwardly to conceal said channel portion and reinforce the lower portion of said partition.

7. A retaining unit for partitions and the like, comprising an elongated strip of metal having a central inverted channel portion and a pair of parallel upright channel portions on opposite sides of said central channel portion, a pair of retaining elements on opposite sides of said inverted channel portion adapted to receive therebetween the lower edge of a panel, the sides of said channel portion having a plurality of spaced apertures therein to permit access to the interior of said channel portion, said upright channel portions being adapted to receive therein the lower edges of a pair of base boards.

8. The combination with a sectional partition comprising an upper section and a lower section, of a channel member having downwardly extend-

ing flanges straddling the upper end of said lower section, said downwardly extending flanges being reversed upon themselves to form picture molding, a second channel member having upwardly extending flanges straddling the lower end of said upper section, said channel members being spot-welded together at their base portions.

9. The combination with a floor of a retaining unit secured to said floor, said retaining unit being substantially channel shaped in cross section and having an inverted channel portion adapted to receive therein electrical wires, said retaining unit having an upright channel portion secured to said inverted channel portion, a panel assembly comprising an expanded metal web having a lower hollow head portion disposed within said upright channel portion, said expanded metal web being embedded in a cementitious composition forming a panel section.

10. A panel assembly comprising a retaining unit adapted to be secured upon a floor, said retaining unit comprising an elongated strip of sheet metal having an inverted channel portion having downwardly extending flanges, said flanges being extended laterally and upwardly to provide a pair of channel portions disposed on opposite sides of said inverted channel portion, there being apertures in the sides of said inverted channel portion to permit access to be had to the interior of the same, a channel member secured to said inverted channel portion and having upwardly extending flanges, a pair of base boards having their lower longitudinal edges disposed in the channel portions adjacent said inverted channel portion, a channel section comprising a lower head portion and an upper head portion connected together by a web portion of expanded metal or woven wire, said lower head portion being received between said upwardly extending flanges of said channel member, said expanded metal web being embedded in a cementitious or other material.

11. The combination with a floor of a comparatively wide channel member secured to said floor, a relatively narrow channel member secured within said first channel member centrally thereof and extending co-extensively therewith, the flanges of said channel members extending upwardly in parallel relation, a partition having its lower longitudinal edge disposed between the flanges of said second mentioned channel member and a pair of base boards disposed in opposite sides of said partition and having their lower longitudinal edges disposed between the flanges of said first mentioned channel member and the flanges of said second mentioned channel member, and a screw extending through each base board and a flange of said second mentioned channel member and into said partition to secure said partition in position.

12. The combination with a sectional partition consisting of a lower section supported on a floor and an upper section superimposed on said lower section, of an elongated retainer having a channel portion in which the upper longitudinal edge of said lower section is disposed and having a second channel portion in which the lower longitudinal edge of said upper section is disposed, the upper of said channel portions having parallel flanges, one of said flanges being turned inwardly to provide a picture molding on one side of said partition.

13. A retaining unit for partitions and the like comprising an elongated strip of metal having a central inverted channel portion and a pair of

parallel upright channel portions on opposite sides of said central channel portion, a pair of retaining elements on opposite sides of said inverted channel portion adapted to receive there-
5 between the lower edge of a panel, the interior of said channel portion being adapted to receive therein a plurality of electrical conductors, the sides of said channel portion having a plurality of spaced apertures therein to permit the passage of said electrical conductors therefrom, said upright channel portions being adapted to receive therein the lower edges of a pair of base boards. 5

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