

April 9, 1946.

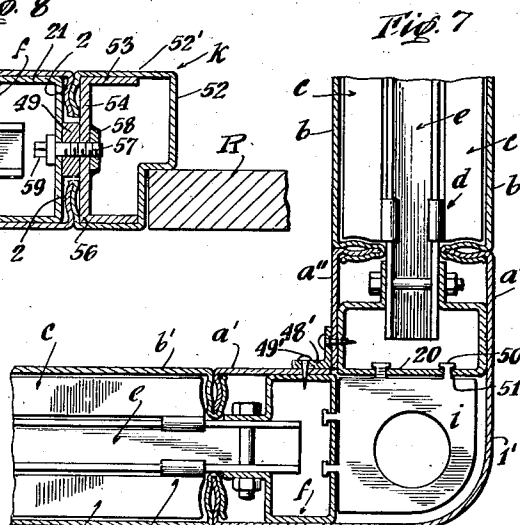
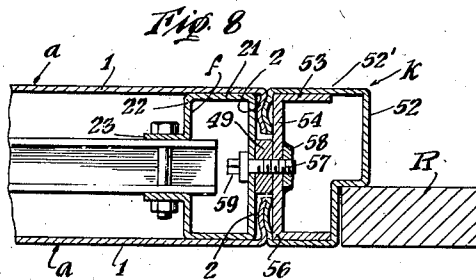
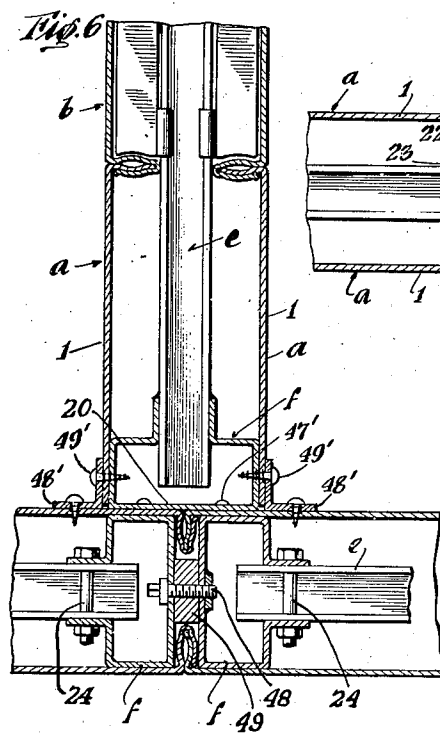
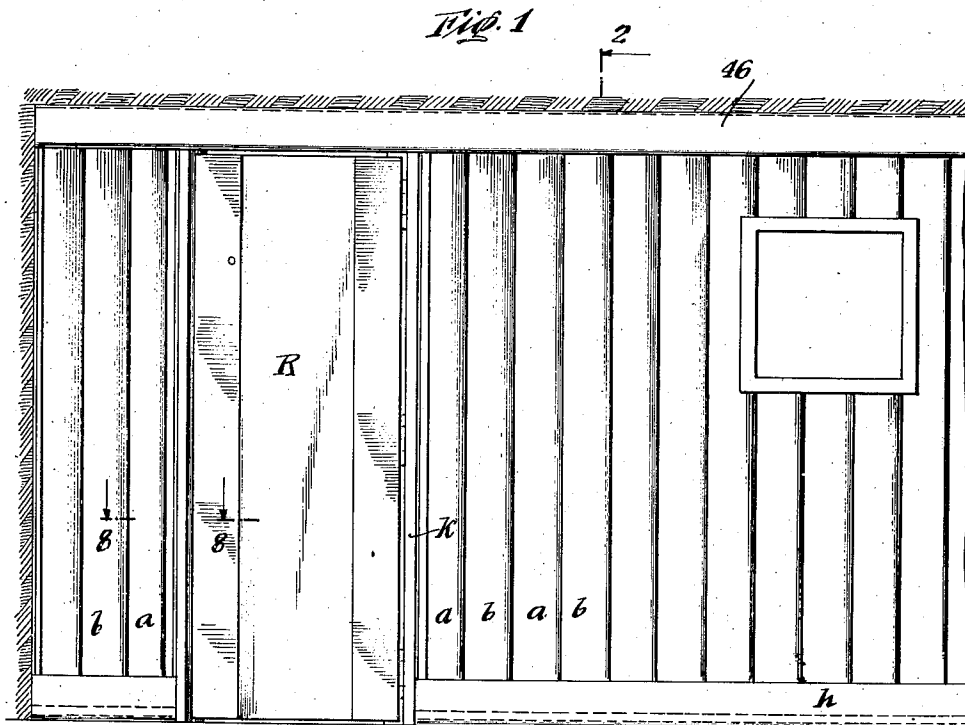
K. W. BENHAM

2,397,940

WALL CONSTRUCTION

Filed Sept. 18, 1943

5 Sheets-Sheet 1



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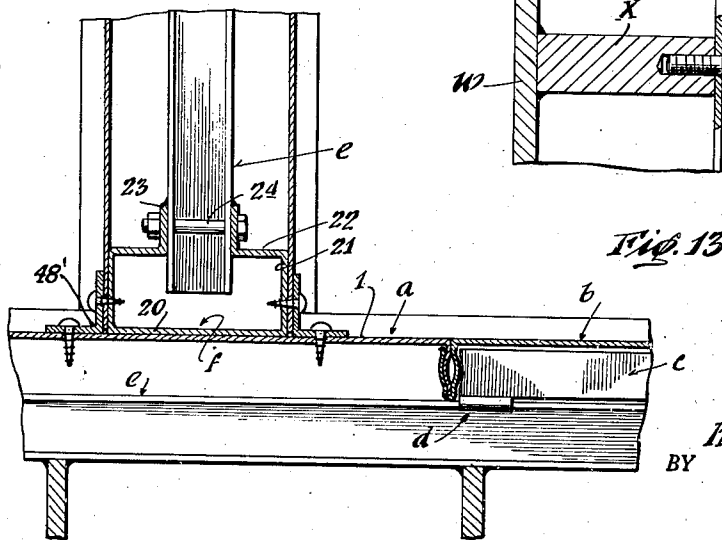
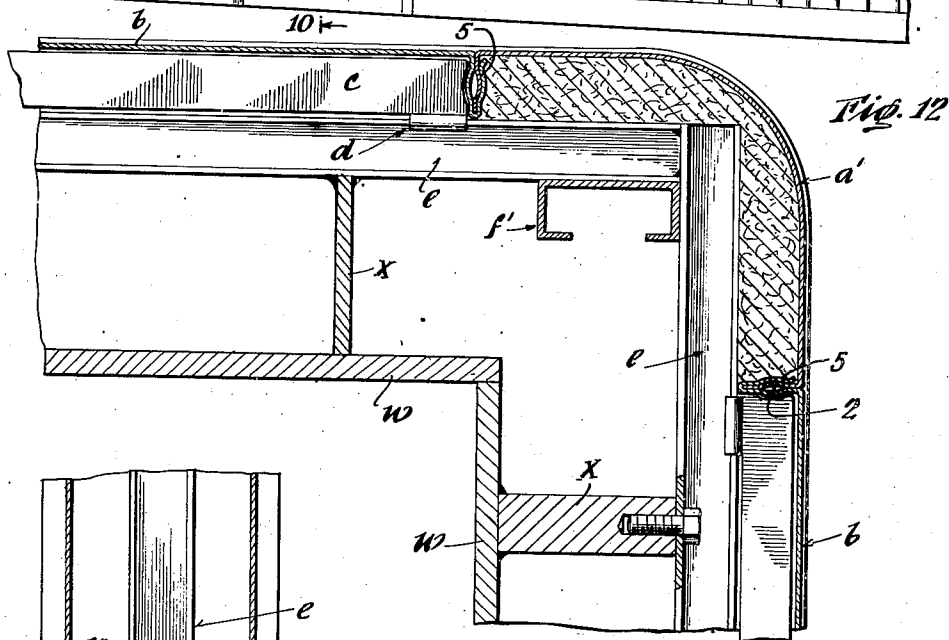
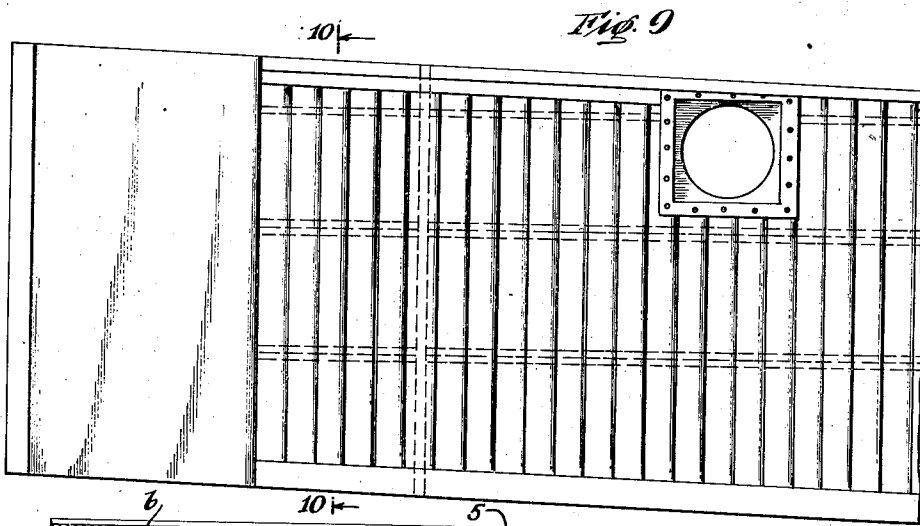
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WALL CONSTRUCTION

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5 Sheets-Sheet 4



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WALL CONSTRUCTION

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5 Sheets-Sheet 5

Fig. 10

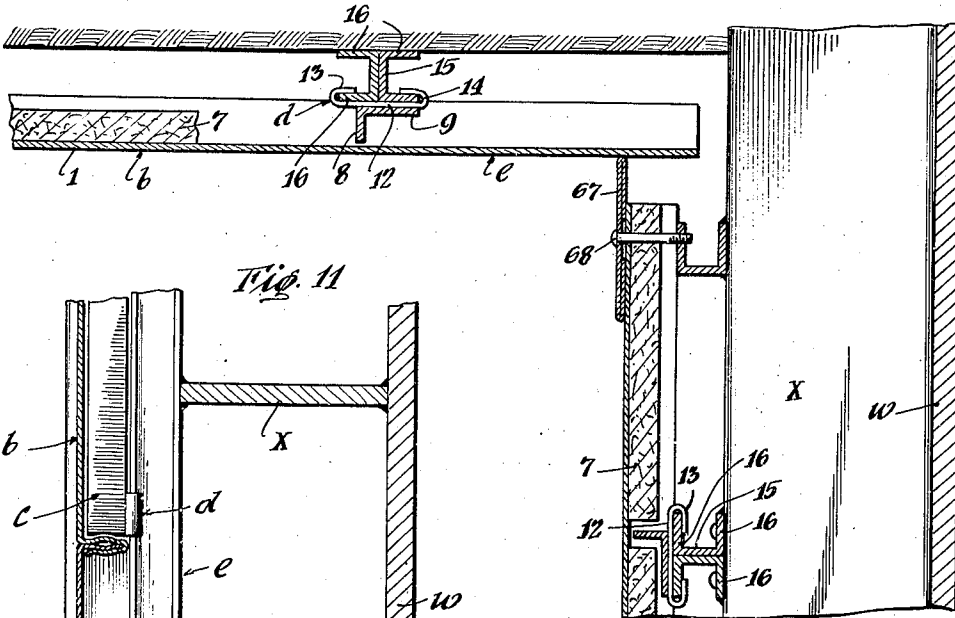
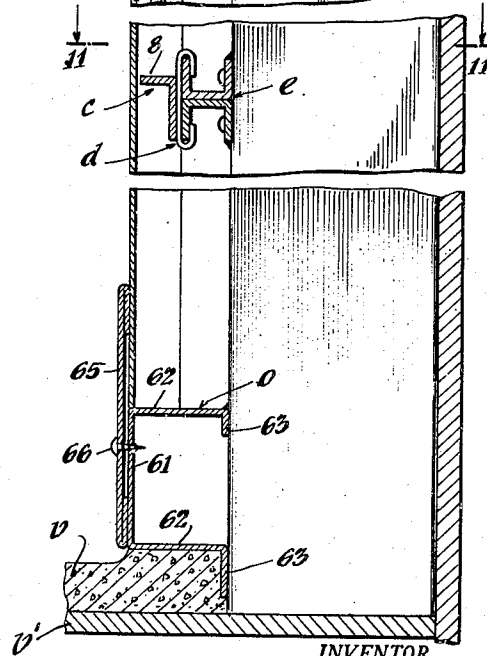
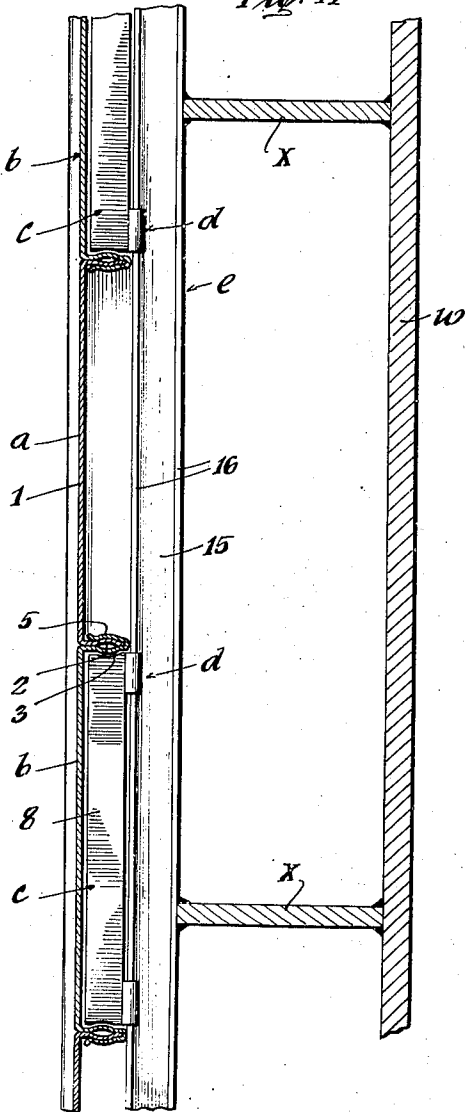


Fig. 11



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# UNITED STATES PATENT OFFICE

2,397,940

## WALL CONSTRUCTION

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Application September 18, 1943, Serial No. 502,861

18 Claims. (Cl. 189—34)

This invention relates to wall construction, and more particularly to a construction formed from a series of interlocking sheet metal panels and associated securing devices and supports therefor, which may be assembled to form partitions, railings, wainscoting, wall sheathing and enclosures of various sorts.

In accordance with this invention, the wall construction is formed from a series of sheet metal panels having interlocking flanges extending along the side edges thereof. The wall forming surfaces of the panels may be arranged in substantially flush alignment with the side edges of the panels closely abutting to provide neat and attractive seams. The flanges of alternate panels are provided with rebent portions forming female sockets into which the flanges of the adjacent intermediate panels may extend.

The panels may be mounted on, supported by and removably secured to spaced rack members which extend generally at right angles to the panel flanges, and ends of the rack members being suitably secured in suitable framing. A series of locking bars are slidably mounted on each rack member by means of suitable clips which may be formed to embrace the flanges associated with the rack member. Each locking bar is designed to extend between the flanges of alternate panels with the ends of the securing bar suitably shaped to releasably grip the flanges and thus firmly retaining the alternate panel firmly secured to the rack member. The intermediate panel is held in position by the interlocking connection between its flanges and the socket flanges associated with the adjacent alternate panels.

The rack members may be incorporated as a part of a partition framework or railing or they may be directly and suitably secured to the base wall of the enclosure. The securing bars may be readily attached to the rack members so as to slide therealong. The alternate panels are first applied by forcing the flanges thereof into firm resilient engagement with the ends of the securing bars. As thus supported the alternate panels can be moved along the rack members in a manner similar to sliding doors, until the alternate panels are properly spaced to receive the intermediate panels therebetween. The intermediate panels may then be applied by forcing their flanges into the socket forming flanges of the alternate panels which serve to firmly secure the intermediate panels in fixed wall forming position. This improved wall construction can thus be quickly erected and assembled in any de-

sired location. Insulating material may be secured and attached to the inside faces of the alternate and intermediate panels between the flanges thereof, so as to provide a wall construction which is substantially soundproof.

In assembling a partition or railing it will be appreciated that the rack members may be so formed as to receive panels on both sides thereof. The rack members may be secured at their ends to uprights suitable secured to the building floor. These uprights may also be secured to the ceiling in the event a ceiling height partition is to be constructed, or a suitable cornice may be provided extending along the top of the partition and to which the uprights are secured. Leveling means may be provided along the bottom of the partition for leveling the same and base boards or mop strips may be removably secured along the bottom of the partition and along each side thereof to give the partition a finished appearance.

In wainscoting, sheathing or lining enclosures of various sorts, the rack members may be secured in any desired manner to the vertical walls or ceiling of the enclosure. The alternate panels are held to the rack members by the sliding locking bars and the intermediate panels are held in position by the cooperating interlocking flanges with which the intermediate and alternate panels are provided.

The alternate and intermediate panels may be quickly formed and manufactured at the plant from the selected sheet metal by a few simple and quickly executed flange forming operations performed on a press or drawbench. The panels may be formed in almost any desired width or length. Insulating material may be quickly applied between the preformed flanges of the panels. The rack members may be formed from a pair of sheet metal channels secured together back-to-back to form a rack member of H-shaped cross-section. These H-shaped rack members may be carried in stock and cut when needed to any desired length. The locking bars likewise may be quickly and economically formed from a strip of sheet metal bent to provide a bar having a right-angled cross-section. Spaced metal clips may be welded to one leg of the locking bar at spaced intervals. The locking bars with the spaced clips welded thereto may be formed in any desired length and carried in stock to be later cut into such lengths as to fit between the flanges of the alternate panels. Each clip may comprise simply a blank of sheet metal whose ends may be bent around the flanges or rails of

the rack member. The main parts of the wall construction assembly, such as the panels, rack members and securing bars, are so shaped and formed as to permit rapid and economical fabrication, assembly and stacking for shipment or storage.

The wall construction may be quickly assembled and erected in the field to accommodate almost any field conditions. The space enclosed by the panels is readily accessible for the stringing or repair of wiring and conduits since all the intermediate panels can be quickly pulled out of position and, if necessary, the alternate panels can then be slid along the supporting rack members. There is also substantial flexibility between the individual panels and between the panels and the rack members which makes this improved wall construction especially desirable for partitioning, wainscoting or sheathing ships, boats, barges, boxcars, trucks and other land vehicles, as well as cargo planes and air transports.

The assembled panels and associated securing devices and supports constructed in accordance with this invention may be assembled to provide partitions, railings, wainscoting, and wall sheathing forming smooth, finished and attractive wall surfaces closely interfitting to provide only hair-line seams. Wall structures formed from the assembled panels are adapted to receive any trim or ornamentation desired such as ornamental baseboards, cornices and finishing strips, may be fully insulated against heat, cold and sound, are economical to fabricate, erect and assemble, may be shaped to various architectural forms, are sturdy and strong in construction, lasting in appearance, and possess the desired flexibility between panels and panel supports which makes a particularly desirable wall construction for either movable or stationary enclosures.

Other objects and advantages of this invention will become apparent as the disclosure proceeds.

Although the novel features which are believed to be characteristic of this invention will be particularly pointed out in the claims appended hereto, the invention itself, as to its objects and advantages and the manner in which it may be carried out, may be better understood by referring to the following description taken in connection with the accompanying drawings forming a part hereof, in which:

Fig. 1 is a front elevational view showing the improved sheet metal panel assembly held in position by associated securing devices and supports to provide a partition;

Fig. 2 is an enlarged vertical cross-sectional view through the partition as it appears when viewed along line 2—2 of Fig. 1;

Fig. 3 is an enlarged elevational view of the partition with certain parts broken away to illustrate structural details;

Fig. 4 is an enlarged horizontal cross-sectional view of the partition as it appears when viewed along line 4—4 of Fig. 3;

Fig. 5 is an enlarged fragmentary elevational view of a section of the assembled partition with parts broken away to illustrate further details thereof;

Fig. 6 is an enlarged fragmentary and horizontal cross-sectional view of the partition showing at a T intersection;

Fig. 7 is an enlarged fragmentary and horizontal cross-sectional view of the partition showing structural details thereof at an angular bend;

Fig. 8 is a fragmentary and horizontal cross-

sectional view through the partition wall and door frame as the same appears when viewed along line 8—8 of Fig. 1;

Fig. 9 is an elevational view of the improved panels assembled to provide a wall sheathing, wainscoting or wall lining;

Fig. 10 is an enlarged vertical cross-sectional view through the panel sheathed wall as the same appears when viewed along line 10—10 of Fig. 9;

Fig. 11 is an enlarged fragmentary and horizontal cross-sectional view through the panel sheathed wall as it appears when viewed along line 11—11 of Fig. 10;

Fig. 12 is an enlarged fragmentary horizontal cross-sectional view through the panel sheathed wall as it would appear at an angular bend; and

Fig. 13 is an enlarged fragmentary horizontal cross-sectional view showing the partition joined to a panel sheathed wall.

Similar reference characters refer to similar parts through the several views of the drawings and the specification.

The intermediate or male panels *a* and the alternate or female panels *b* form the basis of my improved wall construction from which metal partitions, as illustrated in Figs. 1 to 8, inclusive, may be formed and assembled or from which wainscoting, sheathing or wall linings may be formed and assembled as illustrated in Figs. 9 to 13, inclusive. The structural formation of the male and female panels whereby the panels may be accurately and neatly arranged and aligned and securely interlocked together in wall forming relationship, forms an important feature of this invention.

Referring for convenience to Figs. 4 and 5, the male panel *a* is formed from a single blank of sheet metal of the desired gauge and is shaped to provide a facing section 1 and a flange 2 at each side edge thereof. Each flange 2 is grooved to present an inbent bead 2'. The bead 2' is joined to the edge of the facing section 1 by a base portion 2'' and the free edge of the flange terminates in a relatively straight free edge portion 2''' . Flanges 2 may be shaped by bending operations quickly performed either on a draw-bench or a metal bending press. The male panel when thus formed is channel-shaped in transverse cross-section with the flanges thereof presenting inbent beads extending longitudinally of each flange midway between the side edges thereof. The inbent beads 2' provide the means for locking the male panel to the adjacent flanged edges of the female panels.

Each female panel presents a wall facing section 1 having a main flange 3 extending from each side edge substantially at right angles to the facing section 1. Each of the flanges 3 is also provided with an inbent bead 3' extending longitudinally of each flange midway between the side edges thereof. Each bead 3' is joined to the adjacent side edge of the facing section 1 by a relatively straight base portion 3'' . At the opposite side of the bead 3' is a relatively straight end portion 3''' which merges into a rounded edge portion 4. The edge portion 4 merges into a rebent flange 5 which extends substantially parallel to the adjacent main flange 3. The rebent flange 5 is provided with an outwardly bent bead 5' extending longitudinally thereof and positioned substantially opposite to the inbent bead 3' of the associated flange 3. The outbent bead 5' is joined to the rounded edge portion 4 by a straight portion 5'' and the rebent flange ter-

minates in an outwardly rounded edge portion 5". Thus it will be noted that each main flange 3 and its associated rebent flange 5 joined by the rounded edge portion 4 form a socket 6 which is of such depth as to snugly receive the flange 2 of the adjacent male panel a.

As shown in Figs. 4 and 5, the inbent bead 2' associated with the flange 2 of the male panel a is shaped to snugly pocket in the groove formed by the outbent bead 5' of the rebent flange 5 of the female panel b. The rebent flange 5 associated with the female panel thus provides in effect a spring clip which serves to grip the flange 2 and hold the same firmly in the pocket 6 of the female panel b. The pocket 6 is of such depth that when the flange 5 of the male panel has been fully inserted therein, the surface section 1 of the male panel a will lie flush with the surface section 1 of the female panel b with the base portion 2" of the male flange 2 in snug and tight abutment against the base portion 3" of the female flange 3. Thus a smooth and hair-line joint between the surface sections 1 of the male and female panels is provided. Insulation boards or other suitable sound deadening material 7 may be secured to the inside surfaces of the male and female panels between the side flanges thereof.

It will be noted that the surface sections 1 of the male and female panels may be formed in any desired length or width. The external surfaces of the sections 1 may be painted or enameled to simulate grained wood effects or other desired finish. By making the panel sections 1 of relatively narrow width, the panels may be finished to resemble matched wood lumber. Thus it will be appreciated that the male and female panels may be formed so as to provide surface sections ranging in width from a relatively few inches to fifty inches or more, depending upon the decorative effect desired. The panels may be made in any length, varying from two feet to five feet in cases where the panels are to be assembled to form railings or wainscoting, to six or more feet in length where the panels are to be assembled to form partitions or vertical wall or ceiling paneling or sheathing.

The alternate or female panels b are rigidly secured in wall forming relationship by a series of spaced locking bars c which extend between the main flanges 3 thereof. As shown, for example, in Figs. 2, 4 and 5, each locking bar c may be formed of sheet metal of angle-shaped cross-section having, when mounted, a flange engaging leg 8 and a clip attaching leg 9. The end of each flange engaging leg 8 has a pocket forming curvature 10 which closely conforms to the inner surface curvature of the main flange 3 of the female panel. The length of the horizontal leg 8 also closely conforms to the inside distance between the main flanges 3 of the female panel b.

When the leg 9 is suitably attached to a wall framework or supporting structure, the main flanges 3 of the female panel may be sprung or forced over the ends of the flange engaging leg 8 and when fully telescoped thereover the inbent bead portions 3' of the female flanges 3 will snap into the shaped pockets 10 at each end of the flange engaging leg 8 of the locking bar c, so that the female panel will thus be securely attached to the locking bar. Each corner 11 of the locking bar c will then also snugly abut the base portion 3" of the flange 3 of the female panel b so as to resist removal or withdrawal

of the female panel from the locking bar c. It will be appreciated that when the female panels are thus secured and assembled, the male panels a may be telescoped between the female panels b and the rebent flanges 5 of the female panels will in turn serve to securely hold the male panels in assembled wall forming position. A plurality of these locking bars c suitably and conveniently spaced may be employed to secure the female panels of any desired length to the wall area.

The attaching leg 9 of each locking bar c may be secured to a wall area or to a framework provided for the purpose by any suitable means, such as screws or other holding elements. It is convenient, however, to mount the securing bars c in such a manner that they can be moved along the wall area as erection of the male and female panels progresses, so that the locking bars may be accurately located during erection to receive the female panels in proper position. I have provided for this purpose simple metal clips d which may be conveniently spaced and attached as by welding to the attaching leg 9 of the locking bar c. As illustrated in Figs. 2, 4 and 5, for example, each clip d may comprise a base portion 12 which is welded to the attaching leg 9 of the locking bar c, the base portion being provided with a rebent flange 13 at each end thereof, each forming a pocket 14. The pockets 14 of each clip are shaped to receive therebetween a rail element forming a part of a fixed rack member e which forms a part of the structural framework on which the panels are supported.

The rack members e are arranged to extend at right angles to the panel flanges and may be suitably spaced to provide adequate support for the male and female panels. Where a seven-foot partition, a ceiling high partition, or a full height wall is to be sheathed with my improved panels, three or more rack members should be employed, preferably spaced from two to four feet apart. Each rack member e may be formed from a pair of sheet metal channels arranged in back-to-back relationship, as illustrated, for example, in Figs. 2 and 3. Each of the paired channels comprises a base portion 15 and side flanges 16. The base portions 15 of the paired channels are welded together to provide a rack member of generally H-shaped cross-section.

These H-shaped rack members e provide highly convenient rail frames to which the clips d may be attached. It will be noted by referring more particularly to Figs. 2 and 3 that the legs 16 of each rack member are arranged to snugly seat within the opposite pockets 14 of the clips d, and the clips and the securing bars c to which they are attached are free to slide along the rail forming legs 16 of the rack member. It will be further appreciated that the clips d may be formed of bendable sheet metal so that the rebent end portions 13 thereof may be bent over and around the ends of the rail forming legs 16 during erection. The rebent edges 13 of the clips d may, if desired, be easily driven with a hammer or other tool into tight gripping engagement with the rail forming legs 16 of the rack member e when the locking bar c has been properly located to receive the female panel b. Preferably, however, the paired rail forming legs 16 are provided with paired notches 16' as shown in Fig. 5, of sufficient size to receive the end portions 13 of the clip d so that the preformed end portions 13 may be inserted through the paired notches 16' and slid laterally along the rail forming legs 16. The second clip, associated with the locking bar c, may likewise be inserted through the same paired notches so that

only one pair of notches need be provided in the paired legs 16. The locking bar *c* and associated clips *d* may then be horizontally adjusted to the location of the female panel to be applied.

In event the improved panels are to be assembled to form a metal partition or railing, it is desirable to secure the rack members to vertical uprights which may be adjustably secured to the building floor at their lower ends and may be secured at their upper ends to a hand rail or to a ceiling. There is shown for purpose of illustration in Figs. 1 to 7 inclusive, a partition assembly, in which the rack members *e* are secured at each end thereof to a vertical upright of channel-shaped construction, as illustrated more particularly in Figs. 2, 3, 4 and 5. The vertical upright *f* may comprise a base portion 20 joined to a pair of spaced flange portions 21 each having a re-bent shoulder portion 22 and an outturned edge portion 23. The outturned edge portions 23 are spaced apart a sufficient distance to snugly receive the rail forming flanges or legs 16 of the rack members *e*. The adjacent end of each rack member *e* may be secured to the outturned edge portion 13 of the vertical upright by welding or by other securing means. For convenience in shipping and erection, the ends of the rack members *e* may be secured to the outturned edge portions 23 by means of screw bolts 24, as illustrated more particularly in Fig. 4.

The lower ends of the panels may be conveniently supported in a sheet metal tray of generally channel-shaped cross-section as illustrated in Figs. 2, 3 and 5, whose ends may be adjustably and removably secured to the spaced uprights *f*. Each tray *g* may comprise a bottom wall 25 and spaced upwardly extending flanges 26. Each of the flanges 26 of the trays *g* is flared outwardly at the upper end 27 thereof to provide means for removably securing an adjacent baseboard *h* thereto. The bottom wall 25 of the tray is of such width as to snugly receive the lower ends of the panels at each side of the partition and provides a firm support therefor.

To permit knockdown shipment of the partition framework it is desirable to provide means for permitting adjustable attachment of the tray *g* to the vertical uprights *f* in the field. For this purpose a pair of angle-shaped clips 28 may be secured to each end of the tray *g* suitably spaced to permit the outturned edge portions 23 of the upright to extend therebetween. The bottom wall 25 of each tray is notched out at each end thereof to permit the outturned edge portions 23 of the upright to extend into the notch and to permit the upright leg 29 of each clip 28 to seat against the adjacent shoulder portion 22 of the upright when the lower leg 30 has been secured to the bottom wall 25 of the tray. A metal screw 31 extends through a suitable slot 32 provided in the upright leg 29 of the clip and is adapted to be screwed into a threaded aperture provided in the shoulder portion 22 of the upright. The slot 32 permits proper leveling of the tray, whereupon the tray can then be secured in fixed level position by tightening the screws 31. Thus the tray *g* provides means for supporting the lower ends of the panels in level alignment.

Any suitable means may be provided for securing the uprights *f* to the building floor, such as lag screws, bolts, brackets or other convenient means known to the art. Where a ceiling high partition is to be erected, suitable leveling means may be provided which also serves to firmly press the upper end of the upright against the ceiling.

There is shown in Figs. 2, 3 and 5 for purpose of illustration, a heavy bolt 35, the shank of which extends into the upright and through aligned holes in the horizontal leg of a pair of angle-shaped brackets 36 and 37, the vertical legs being welded to the base wall 20 of the upright. The head 38 of the bolt 35 may seat within a receiving channel 40 which is secured to the floor *v* directly under the partition run. The threaded shank portion of the bolt 35 carries an adjusting nut 41 upon which the lower angle bracket 37 may seat. By manipulating the nut 41, the lower end of the vertical upright *f* may be raised to the desired elevation. A locking nut 42 may be provided to hold the nut 41 in adjusted position. The upper end of each upright *f* may be provided with an angle bracket 43 one leg of which is attached to the base wall 40 of the upright. A lag screw 45 extending through the horizontal leg of the bracket 43 may be provided for securing the upright to the ceiling *z*. It will be appreciated that other means may be provided for securing the vertical upright to the floor and the ceiling and to provide for vertical adjustment of the upright. It will also be appreciated that the upright *f* may extend short of the ceiling and be capped by a suitable continuous cornice, as is well known in the art.

The space between the bottom wall 25 of the tray *g* and the floor *v* provides a convenient passageway for wiring and conduits. The space between the tray *g* is concealed by the baseboards *h* which have a facing portion 45 the lower end of which rests against the floor *v* and the upper end of which overlaps the outbent upper portion 27 of the tray flanges 26. The upper end of each of the baseboards *h* may be provided with a re-bent flange portion 46 which may be forced between the outwardly flared portion 27 of the flanges 26 and the facing sections *t* of the panels. A trim strip 46 may extend along the upper end of the partition panels, along each side of the partition, and abut against the ceiling *z* to give the partition a finished appearance. The trim strip 46 may be secured to the panels by screws 47, clips, or by any other convenient means.

Where a considerable run of partition is to be erected, necessitating the use of more than two vertical uprights *f*, the intermediate uprights between the ends of the partition run may be arranged in back-to-back relationship as illustrated in Fig. 6, which may be secured together by spaced bolts 48 and held in spaced relationship by spacer plates 49. The uprights are concealed by the facing section *t* of the panel which extends thereover. A T-run of the partition is provided by placing the base wall 20 of the upright *f* initiating the branch run against the facing section *t* of the panel and securing the same to the adjacent uprights by means of suitable metal screws 47', as shown in Fig. 6. An angle-shaped trim strip 48' may be positioned at corners suitably secured in position by screws 49' to give the partition a finished appearance.

Where a right-angled run of the partition is desired, as shown in Fig. 7, a male corner panel *a'* may be provided whose facing section *t'* is given a rounded curvature to extend around the outer corner. The adjacent uprights *f* are positioned as shown in Fig. 7 and are connected together by a plurality of spaced connecting plates *i* having dogs 50 which extend into bayonet slots 51 provided in the base wall 20 of the adjacent uprights. The connecting plates *i* serve to rigidly connect the adjacent uprights *f* in fixed position.

The inside corner may be covered by a male corner panel *a''* shaped as shown in Fig. 7. The inside corner of the angular partition may be given a finished appearance by the use of an angle-shaped trim strip 48'.

Where the partition is to be provided with a door *R*, the door frame *k* may be secured to the adjacent uprights *f* of the partition as shown in Fig. 8. As shown in Fig. 8, the door frame may comprise a sheet metal door buck 52 which embraces a relatively heavy vertically extending stiffening channel 53. The flange lips 56 of the sheet metal door buck 52 seat against the base wall 54 of the stiffening channel 53 and are suitably welded thereto. Each flange lip 56 is so shaped as to interfit with the flange 2 of the adjacent male panel *a*. The adjacent vertical upright and the stiffening channel 53 may be positioned in back-to-back relationship. A securing bolt 57 having a head 59 extends through the base wall 20 of the upright *f* and is threaded into a nut 58 welded to the base wall 54 of the reinforcing channel 53. Upon manipulation of the base bolt 57 the upright *f* may be drawn to and firmly secured to the door frame member *k*, the door frame *k* and upright being held in the proper spaced relation by spacer plates 49. As thus constructed, the outside exposed faces 52' of the door buck 52 may be made substantially flush with the facing section 1 of the adjacent panels with only a fine seamline joint therebetween.

It will be appreciated that the partition wall may be made of any thickness desired. The male or female panels may be provided with flanges of the same convenient depth for all partitions. The thickness of the partition wall may be varied as desired by merely selecting rack members having their flanges 16 properly spaced and selecting tray members *g* having their flanges 26 properly spaced.

Fig. 9 illustrates my improved panel assembly arranged to provide a wainscoting, sheathing or lining wall, as for example the interior finished wall for a ship. It is understood, however, that my improved panel assembly may be used to wainscot or sheath or finish any desired base wall. As shown more particularly in Figs. 10 and 11, the rack members *e* may be attached in any desired manner to the base wall, for example, to wood or metal studding *x* extending from the outer wall *w*. The rack members *e* may be attached to the studs *x* or base wall as by screws, welding or any other suitable fastening means. The lower ends of the male and female panels may rest upon a bed frame *o*, which may comprise a channel-shaped sheet metal member having a base wall 61 and flanges 62 provided with bent lips 63 which may be welded or otherwise secured to the studding *x*. The bed member *o* may rest upon the rough floor *v'* or the finished floor *v*. The female panels *b* are held in position by means of the locking bars *c* having the clips *d* secured thereto, which slide upon the rail flanges 16 of the rack members *e*, in the manner heretofore described. The male panels are held in position by the female panels in the same manner as heretofore described. The wainscoting or sheathing wall may be provided with a base finishing strip 65 which may be suitably secured to the bed frame member *o* as by screws 66. A finishing strip 67 may also extend along the top of the panels and may be secured in position by screws or bolts 68.

As shown in Fig. 10, my improved panels may also be assembled to provide a finished ceiling for

the room, in which event the flanges 16 of the rack members *e* are secured to the base ceiling wall *z* which may also comprise studding. The female panels are hung from the rack members *e* by the provision of the locking bars *c* slidably secured to the rack members *e* by the clips *d*. The male panels *a* are held in position by the flanges associated with the female panels *b* as heretofore described.

Where the finished wainscoting or sheathing wall is to extend around a corner, the meeting ends of the rack members *e* may be further supported by a suitable upright *f'* welded or otherwise secured to the rack members *e*, as shown in Fig. 12. The female panels *b* are held in position by the locking members *c* heretofore described, and the male corner panel *a'* may be smoothly bent to extend around the outside corner with the flanges 2 thereof interlocking with the rebent flanges 5 of the adjacent female panels.

As shown in Fig. 13, a partition wall assembled from my improved panels may be run laterally from a wainscoting wall at any point desired. Since the vertical upright *f* of the partition wall is fixed at both ends thereof, the upright *f* may be placed directly in abutment with the outside surface of either the male or female panel forming a part of the wainscoting or sheathing wall. Angle-shaped finishing strips 48' may be provided to cover the intermediate joints.

My improved sheet metal interlocking panels with associated supports and securing devices may be used to assemble partitions, railings, wainscoting, sheathing and wall linings of varied and different architectural designs. These wall structures may be assembled from a limited number of different parts which may be economically carried in stock. The panels and their securing devices lend themselves to high speed economical production with a minimum amount of manufacturing machinery.

While certain novel features of the invention have been disclosed and are pointed out in the annexed claims, it will be understood that various omissions, substitutions and changes may be made by those skilled in the art without departing from the spirit of the invention.

What is claimed is:

1. In a wall construction, a sheet metal panel having socket formations extending along the side edges thereof, an adjacent panel having a flange adapted to interlock with the socket formation of said first named panel, and means for supporting said panel in wall forming position including a locking member extending between and releasably engaging the socket formations of said first named panel.

2. In a wall construction, a plurality of sheet metal panels having wall surface sections adapted to be arranged in wall forming position, socket formations extending along the side edges of alternate panels, flanges extending along the side edges of intermediate panels adapted to interlock with the socket formation of an adjacent alternate panel, and means for supporting said panels in wall forming position including a frame member, locking bars supported by said frame member and extending between the socket formations of said alternate panels, and means associated with the ends of each of said locking bars adapted to releasably engage the socket formations of the adjacent alternate panel.

3. In a wall construction, a sheet metal panel having socket forming flange portions extending

along opposite side edges thereof, a locking member extending between and adapted to engage said flange portions to retain said panel in wall forming position, and a sheet metal panel on each side of said first named panel adapted to interlock with the adjacent socket forming flange portion of said first named panel to retain said last named panels in wall forming position.

4. In a wall construction, sheet metal panels having wall forming sections providing a wall surface, and interlocking flanges extending along the side edges of said panels, fixed rack members providing a frame structure for supporting said panels in position, and locking members slidably secured to said rack members having means associated with the opposite ends thereof for releasably engaging the flanges of certain of said panels to retain all of said panels in wall forming position.

5. In a wall construction, sheet metal panels having wall forming sections arranged in generally aligned relationship to provide a substantially flush and continuous wall surface, interlocking flanges extending along the side edges of said panels, fixed rack members providing a frame structure for supporting said panels in position, and locking members slidably secured to said rack members having means associated with the opposite ends thereof for engaging the flanges of certain of said panels and thereby retain all of said panels in wall forming position.

6. In a wall construction, sheet metal panels having wall forming sections arranged in generally aligned relationship to provide a substantially flush and continuous wall surface, interlocking flanges extending along the side edges of said panels, fixed rack members providing a frame structure for supporting said panels in position, and locking members slidably secured to said rack members having means associated with the opposite ends thereof for releasably engaging the flanges of alternate panels to thereby retain all of said panels in wall forming position.

7. In a wall construction, sheet metal panels having wall forming sections arranged in generally aligned relationship to provide a substantially flush and continuous wall surface, interlocking flanges extending along the side edges of said panels for locking said panels together in wall forming assembly, means for supporting the lower ends of said panels, fixed rack members providing a frame structure for retaining said panels in wall forming position, and locking members slidably secured to said rack members having means associated with the opposite ends thereof for releasably engaging the flanges of alternate panels to thereby retain all of said panels in wall forming position.

8. In a wall construction, sheet metal panels adapted to be arranged in generally aligned relationship to provide a substantially flush wall surface, certain of said panels having resilient socket forming flange portions extending along opposite side edges thereof, other panels having flange portions adapted to releasably interlock with the socket forming flange portions of adjacent alternate panels to retain said intermediate panels in wall forming alignment with said first named panels, means for supporting the lower ends of said panels, and means for retaining said panels in wall forming position including a locking member extending between and releasably engaging the socket forming flange portions of each of said first named panels.

9. In a wall construction, sheet metal panels

adapted to be arranged in generally aligned relationship to provide a substantially flush wall surface, alternate panels having resilient socket forming flange portions extending along opposite side edges thereof, intermediate panels having flange portions adapted to releasably interlock with the socket forming flange portions of adjacent alternate panels to retain said intermediate panels in wall forming alignment with said alternate panels, fixed rack members providing a frame structure for supporting said panels in position, and locking members slidably secured to said rack members having means associated with the opposite ends thereof for releasably engaging the flange portions of alternate panels to thereby retain the alternate and intermediate panels in wall forming position.

10. In a wall construction, sheet metal panels having wall forming sections providing a wall surface and interlocking flanges extending along the side edges of said panels to retain the wall forming sections of the panels in generally aligned wall forming relationship, a fixed rack member providing a frame structure for retaining said panels in position, locking members slidably secured to said rack members having means associated with the opposite ends thereof for releasably engaging the flanges of certain of said panels to retain all of said panels in wall forming position, and a channel shaped tray member extending along the bottom ends of said panels for receiving and further supporting said panels.

11. In a wall construction, sheet metal wall-forming panels having interlocking flanges extending along the adjacent edges thereof, and means for securing said panels in assembled wall-forming position, said means including locking members extending between alternate panels, each of said locking members having means associated with the opposite ends thereof for engaging the opposite flanges of the adjacent alternate panel.

12. In a wall construction, sheet metal panels having wall-forming sections and interlocking flanges along the adjacent edges thereof, and locking bars extending between the opposite flanges of certain of said panels to retain said panels in wall-forming position, each of said locking bars having means at the opposite ends thereof for releasably gripping the opposite flanges of the adjacent panel.

13. In a wall construction, alternate and intermediate sheet metal panels having wall-forming sections providing a wall surface, said alternate panels having socket-forming flanges extending along the opposite edges thereof, locking members for retaining said panels in wall-forming position, each of said locking members extending between the opposite flanges of an adjacent alternate panel and having means at the opposite ends thereof for releasably gripping said flanges, and flanges extending along the opposite edges of the intermediate panels adapted to interlock with the socket-forming flanges of adjacent alternate panels and retain said intermediate panels in wall-forming position.

14. In a wall construction, a sheet metal panel having a wall-forming section and flange portions extending along the opposite edges thereof, and a frame structure for supporting said panel in position, said frame structure including a frame member extending substantially at right angles to the flange portions of said panel, a locking member extending substantially parallel to said frame member and arranged to extend be-

tween the opposite flange portions of said panel, cooperating means associated with the opposite ends of said locking member and said flange portions for releasably securing said panel member to said locking member, and clip elements for slidably connecting said locking member to said frame member.

15. In a wall construction, sheet metal panels having wall-forming sections providing a wall surface and interlocking flanges extending along the adjacent edges thereof, a supporting framework including rack members extending substantially at right angles to said interlocking flanges, locking members attached to said rack members, each of said locking members having means associated with the opposite ends thereof for releasably engaging the opposite paired flanges of the adjacent panel.

16. In a wall construction, a panel unit including a pair of spaced channel shaped uprights having the flanges thereof intumed and the base portions thereof forming the vertical ends of the panel unit, a sheet metal panel on each side of said uprights, a door frame including a channel shaped reinforcing member having the base portion thereof adjacent to the base portion of the adjacent panel upright, a generally channel shaped sheet metal door buck embracing the flanges of said channel shaped reinforcing member, spaced securing bolts connecting the base portion of the adjacent panel upright to the base portion of said channel shaped reinforcing member, each of said sheet metal panels having a flange extending between the base portion of said channel shaped reinforcing member and the base portion of the adjacent panel upright, and means for releasably gripping each of said panel flanges to releasably retain the panel in wall-forming position.

17. In metal partition construction, spaced up-

rights, spaced rack members extending between and secured to said uprights, alternate and intermediate panels arranged along said rack members forming a wall surface, socket-forming flanges extending along the opposite edges of each of said alternate panels, locking bars secured to and extending generally parallel to said rack members, each of said locking bars extending between the opposite flanges of an adjacent alternate panel, each of said locking bars having means associated with the ends thereof for releasably engaging the opposite-socket forming flanges of the adjacent alternate panel, and flanges extending along the opposite edges of said intermediate panels adapted to be frictionally retained by the socket-forming flanges of adjacent alternate panels.

18. In metal partition construction, spaced uprights, spaced rack members extending between and secured to said uprights, alternate and intermediate panels arranged on both sides of said rack members forming a wall surface on each side thereof, socket-forming flanges extending along the opposite edges of said alternate panels, locking bars slidably secured to said rack members, each of said locking bars extending between the opposite flanges of an adjacent alternate panel, each of said locking bars having means associated with the opposite ends thereof for releasably engaging the opposite socket-forming flanges of the adjacent alternate panel, flanges extending along the opposite edges of said intermediate panels adapted to be frictionally retained by the socket-forming flanges of the adjacent alternate panels, and a channel shaped tray member extending between and secured to said upright adapted to receive and support the lower ends of said panels on both sides of the partition.

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