

April 19, 1938.

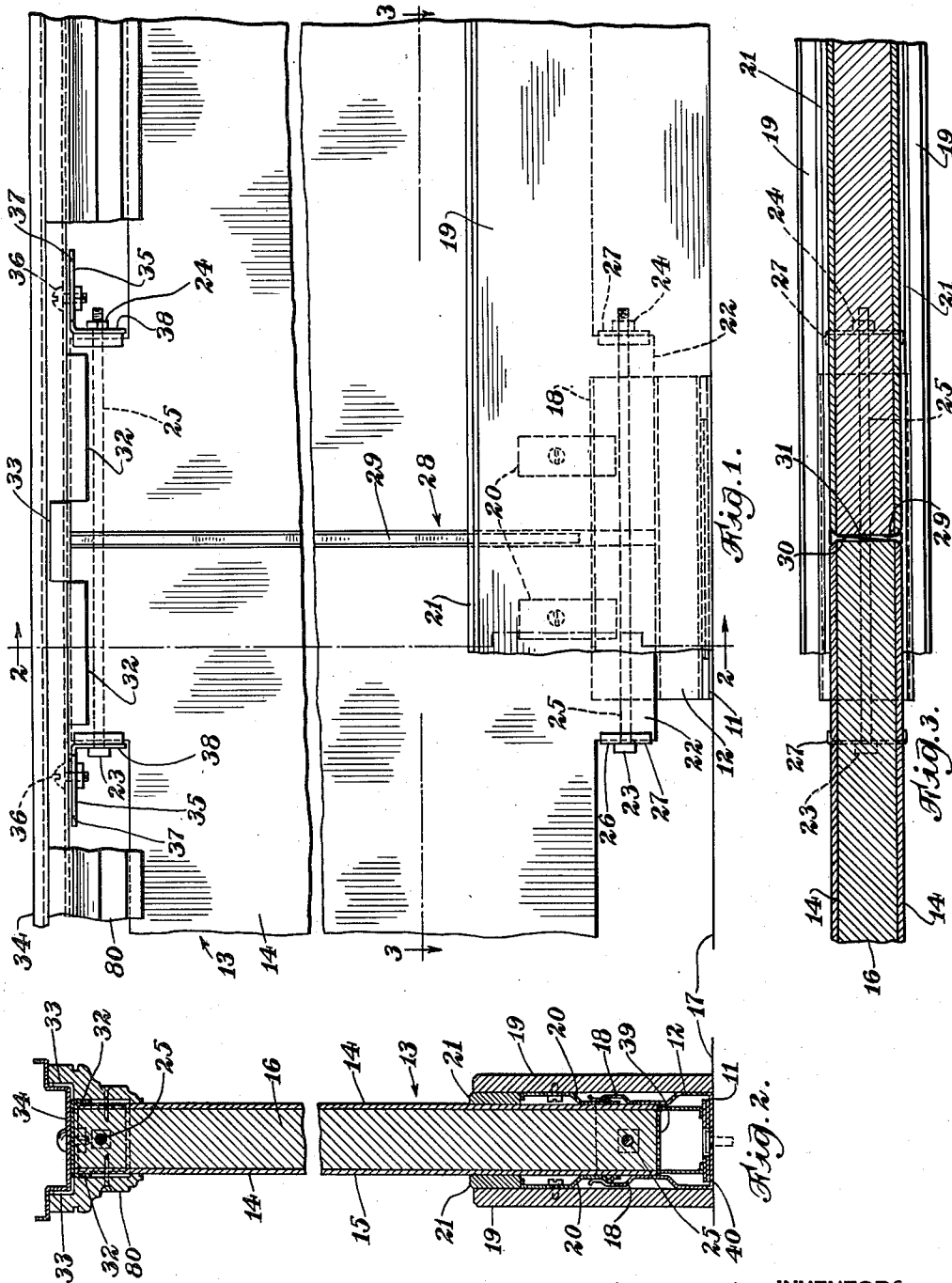
G. E. SHIPWAY ET AL

2,114,770

WALL ASSEMBLY

Filed Feb. 26, 1936

3 Sheets-Sheet 1



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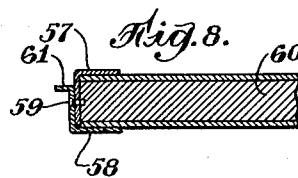
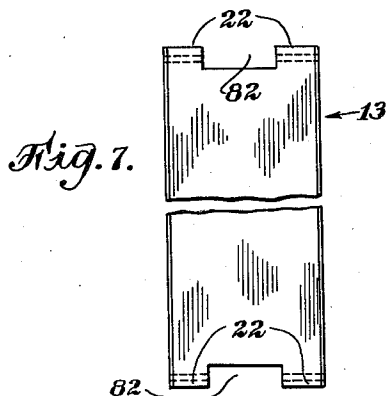
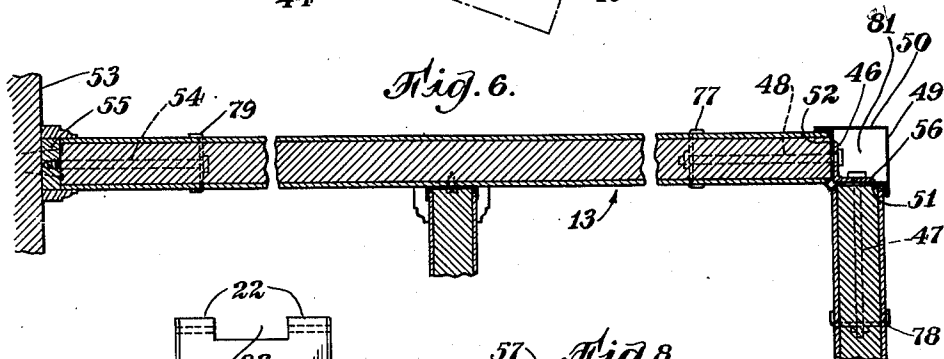
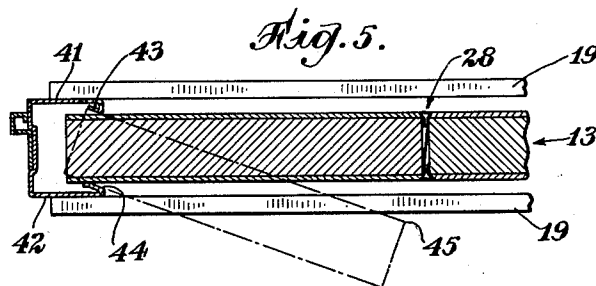
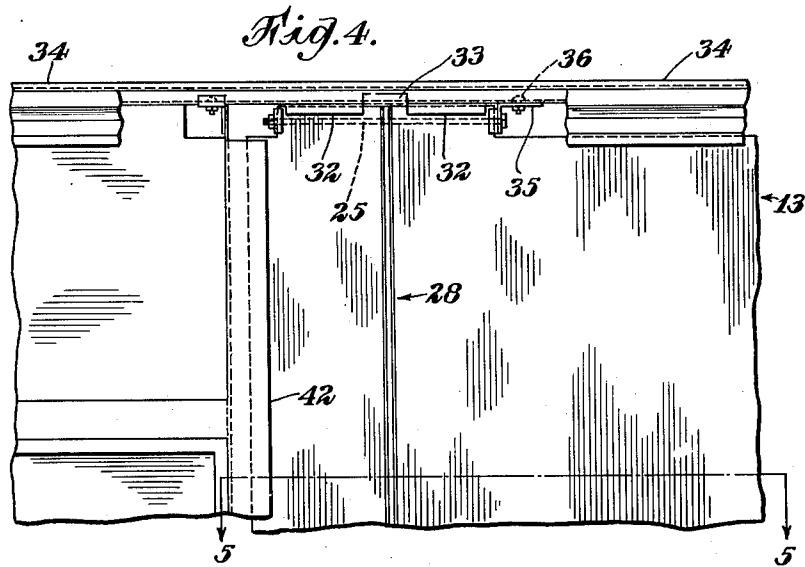
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3 Sheets-Sheet 2



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Fig. 9.

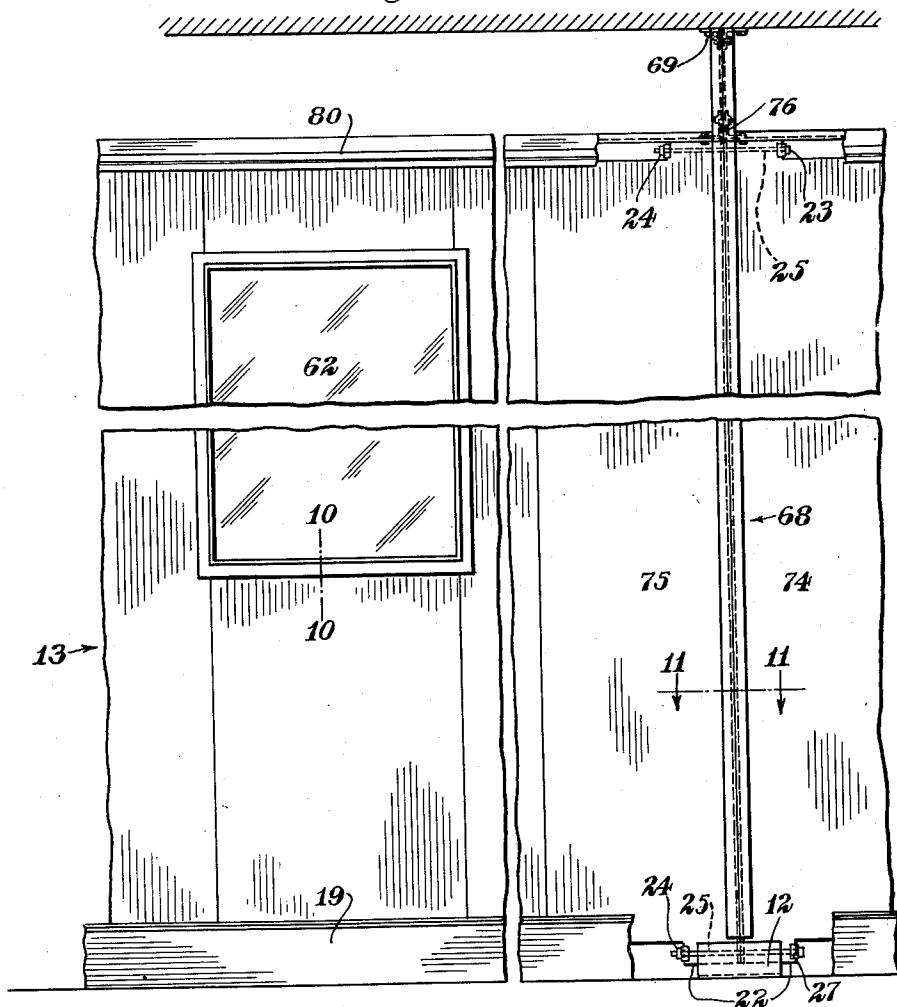


Fig. 10.

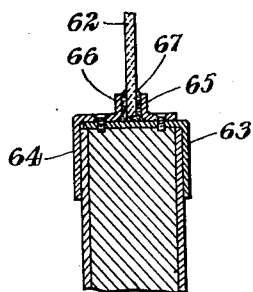
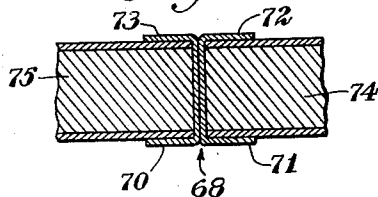


Fig. 11.



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WALL ASSEMBLY

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25 Claims. (Cl. 72-46)

This invention relates to an improved wall assembly.

The invention comprises the novel features of the assembly and elements thereof hereinafter described. In the preferred embodiment, the invention comprises a wall, suitably a partition, that, although light in weight, is non-rattling. More particularly, the invention comprises a wall assembly including panels and springy means engaging them at an edge portion and, preferably, at all edges thereof.

Other features of the invention will appear from the detailed description that follows. Among such other features are projections constituting heels on panels adjacent to a joint therebetween and means passing through the said heels, engaged therebehind, and forcing the said panels in the direction of the joint, advantageously, against a resiliently compressed joint closing member.

The invention is illustrated in the attached drawings and will be described, for the purpose of exemplification, in connection therewith.

Fig. 1 shows a face view of a wall assembled in accordance with the present invention, with parts broken away for clearness of illustration.

Fig. 2 shows a vertical sectional view on line 2-2 of Fig. 1.

Fig. 3 shows a longitudinal sectional view on line 3-3 of Fig. 1.

Fig. 4 shows a face view on a somewhat reduced scale of the wall assembly at a top portion thereof.

Fig. 5 shows a sectional view of a portion of the assembly, on line 5-5 of Fig. 4.

Fig. 6 shows a typical longitudinal sectional view of the wall assembly illustrating the manner of union to assemblies extending at an angle from the assembly first mentioned.

Fig. 7 shows a face view of a panel of kind preferred for use in the assemblies described.

Fig. 8 shows a sectional view of a modified form of door buck with panel engaged on one side thereof.

Fig. 9 shows a face view of a wall similar to that of Fig. 1, but at a portion thereof including a borrowed light and a brace extending from the floor plate to the permanent ceiling of the room.

Fig. 10 shows a sectional view on line 10-10 of Fig. 9.

Fig. 11 shows a sectional view on line 11-11 of Fig. 9.

There are shown a channel floor plate or member 11, provided with upstanding flanges 12, and a panel 13 engaged therebetween.

The panel 13 may be faced on both front and back. Preferably, the panel has dense and strong facing and backing elements 14 and 15 and an inner or core portion 16 adapted to be penetrated readily. Thus, a suitable panel is one having, as the facing and backing elements, a compressed and hardened composition of asbestos and Portland cement in the form of sheets and an inner or core member, including insulating fibre board or composited alternating sheets of asbestos paper of plane and corrugated surfaces, respectively. In any case, the core material is secured, as by conventional adhesive or other means, to the facing and backing material. The use of such core material renders the panel difficultly but moderately compressible while sufficiently resilient to readily recover after compression of the same. Another type of panel that may be used is a sheet of insulating fibre board, without facing or backing element. Other conventional panels may be used.

The upstanding flanges 12 of the channel member are suitably springy and so spaced from each other normally that, when a panel is inserted therebetween, the spring flanges are spread apart somewhat, so as to give spring engagement of the panel between the flanges.

When the channel member is used at the lower portion of a wall and rests, at its back, upon a permanent floor 17, as illustrated, the upstanding flanges of the said member may be used as a part of the means securing baseboards in position. Thus, the flanges may have a portion 18 that is spaced from both the said panels engaged by the flanges and the baseboard 19, so that the clip 20, attached at one part to the rear of the baseboard, may be engaged at another part behind the said portion 18. There is thus provided means for securing the baseboard and holding it in position by spring action, that is, resiliently. Means for plumbing or establishing the vertical position of the baseboard may include the spacer block 21 engaged behind the upper portion of the baseboard and a portion of the said flange 12 in contact with the baseboard at its lower portion, as illustrated, the outside of the said block and portion lying in a vertical plane.

The panels 13 are disposed in parallel relationship and meet to form joints between their edges.

The panels are provided with projections 22 constituting heels at the portions of the panels adjacent to the joints. Engaged behind these heels, on opposite sides of the several joints, are

elements 23 and 24 such as the head and nut, respectively, of a bolt assembly with a rod member 25 engaged by the said elements and extending therebetween. The rod element extends through the core, as in a preformed hole, between the face and back portions of the panels. The rod is concealed from view in the finished assembly. Washers 26 and 27 may be disposed under the said elements, to distribute the load against the edges of the panels as the nut 24 is tightened and the rod is thus caused to pull or force the panels towards each other, that is, towards the joint and against the closing member therein.

This closing member 28 is disposed in the joint and extends continuously therealong. It is, suitably, a resiliently compressible member, say, of modified I-shape, having legs 29 and 30 turned inwardly from either end thereof, spaced from the web element 31, and adapted to be resiliently flexed theretowards.

Under the combined effect of the tension produced by the bolt assembly and the resilient compression of the joint-closing member 28, the joint is maintained properly closed, without danger of rupture of the material constituting the edges of the panels. Also, the resilient expansibility of the joint-closing member minimizes the likelihood of development of an open space at the joint as the panels undergo change in width, with changing atmospheric temperature or humidity.

At the top portion of the wall there may be used a channel member having flanges with portions 32 extending downwardly at certain positions and other portions 33 extending upwardly at intervening positions. All these portions may be springy. The portions 32 may be resiliently forced apart by a panel engaged therebetween.

The upturned portions 33 of the flanges engage and secure in alignment a stiffening rail 34 that extends parallel to the top edge of the wall and rests upon the channel member with flanges 32 and 33.

Also, there may be used a clip element 35 such as the bracket clip shown and means 36 slidably securing a leg of the said element to the stiffening rail, as, for instance, the bolt engaged as shown in the slot 37. In the other leg 38 of the clip element, the rod member 25 is preferably engaged, as by passage through a hole in the said leg, so that the rod member is thus held in established relationship to the plane of the back of the stiffening rail, limited variation being permitted.

The various channel members provide convenient passageways for conduits, pipes and the like. Also, at the lower portion of the wall, a channel iron 39 may rest within the channel member 11 and have its flanges, extending downwardly, resting upon leveling shims 40. When this member 39 is used, a convenient conduit space is defined therebelow.

In Fig. 5, there is shown a support member that may be a stud or beam in the assembly and that, as illustrated, may be a vertically extending part of a door buck. The flanges 41 and 42 of this member extend each in direction generally parallel to the plane of a face of the wall and are provided at their edge portions with backwardly turned heels 43 and 44, respectively.

These heels are provided with interior surfaces extending approximately parallel to each other and at an angle to the main portion of the flanges. The heels extend each in the direction occupied by a panel deflected from the plane of the face

of the wall, at the position of insertion, so that the opposite edge 45 of the panel just clears the edge of the next nearest support or member in the wall, which, in the assembly illustrated, would be the joint-closing member 28.

These heels 43 and 44 are preferably springy and are spaced apart by a distance equal approximately to the thickness of the panel or slightly less; thus they are adapted to engage, resiliently, the borders of the panel inserted therebetween.

When two walls of the class described meet at an angle to form therebetween a corner between the inside edges of the panels, as illustrated at the right in Fig. 6 and having an open space 81 associated therewith, there may be used a corner-brace such as the angle iron having legs 46 and 56 extending across portions of the edges of the said panels and bolts 47 and 48, each engaging at one end, one of the said legs and, at the other end, being secured within one of the panels or engaged behind an upstanding projection or heel thereon, as, for instance, behind washer elements 77 and 78.

In order to close the open space at the corner, there may be used an angle corner post including a portion 49 and another portion 50 forming therebetween a corner and extending each in a plane approximately parallel to a face of the wall. Additional elements 51 and 52 secured, respectively, to portions 49 and 50, may be engaged by the said legs 46 and 56, whereby the corner post is established and held securely in position.

When the wall assembly meets a permanent wall 53, a bolt 54 may be secured at one end within the panel or behind a heel thereon, as by a washer 79, and at the other end may be secured to the permanent wall, as, for instance, by being screwed thereinto or secured to a strip 55 of wood nailed to the permanent wall.

A wall assembly so made eliminates the need of studs at every joint between the panels. Nevertheless, the spring engagement of the panels at one or more edges, and preferably at all edges thereof, makes a tight non-rattling assembly. The assembly is relatively inexpensive of materials and requires a minimum of labor in setting the materials together.

The panels used may be thin, say $1\frac{1}{2}$ to $2\frac{1}{2}$ or less inches thick, a given panel forming both sides of the wall and the wall being reenforced on each face by the material of the entire thickness of the panel.

The baseboard 19 and the molding 80 conceal, in the finished wall, the cut-outs 82 (Fig. 7) of the panels and the bolt ends and washers.

In place of the door buck, of kind shown at the left of Fig. 5, there may be used an assembly including detachable elements 57 and 58, adapted to engage therebetween the edge portion of a panel 60 and to be held together by disengageable means such as the screw 59. The said elements are suitably angle bars which overlap at their edges, the edges extending each at least partly across the edge of the panel. Suitably, one of the elements also has an out-turned portion or projection 61, to serve as a stop for a door registering with the buck.

In this modified form of door buck, the panel may be introduced into position against the element 57 from a forward position, the other element 58 then being placed over the front and corner of the panel and secured in position. The elements 57 and 58 may be springy.

To secure a thin panel 62 such as a window light in position in the partition (Fig. 9), there

may be used an assembly similar to that of the door buck, shown in Fig. 8, except that the angle bars 63 and 64 are provided with upstanding bead portions 65 and 66, respectively. In the space defined between these bead portions, there is engaged the window light glass, preferably suitably gasketed, as shown at 67.

When a long partition is to be constructed, a stud or brace member 68 may be employed at intervals of 25 feet or so. The stud or brace member 68 is secured to the ceiling or other permanent enclosure of the room, as illustrated at 69. This member extends downwardly between and against adjacent panels of the wall, is engaged or secured thereby and terminates at its lower portion within the channel floor plate.

Suitably, this brace is of generally H-shape cross section and includes oppositely extending flanges 70, 71, 72, and 73 engaged outside the edge portions of the adjacent panels 74 and 75.

These flanges may be springy and engage the edges of the panels in a resilient manner.

At its lower portion, the said flanges terminate above the flanges of the floor plate 11. The web of the brace, however, extends downwardly between the flanges of the said floor plate and, advantageously, is held therebetween in a manner to permit lateral sliding movement, except as it is restrained by the abutment of the panels 74 and 75 against the same. This abutment prevents accidental lateral movement of the brace.

Preferably, the web of the brace is provided with holes and the bolt or rod members 25 extend therethrough.

At the top portion of the wall, the channel member and stiffening rail may be severed and portions thereof terminating adjacent to the said brace member, on either side, are secured to the said member, as by means including bracket clips 76.

The details that have been given are for the purpose of illustration, not restriction. It is intended, therefore, that variations within the spirit of the invention are to be included in the scope of the appended claims.

What we claim is:

1. A wall assembly comprising panels disposed in approximately parallel relationship and defining joints between their edges and means extending each across one only of the joints, securing together the panels on opposite sides thereof, and pulling the panels towards the joint, the said means including elements engaging each a panel on opposite sides of the joint and a rod member extending generally parallel to and between the planes of the face and back of the panels and between the said elements and being engaged thereby.

2. A wall assembly including panels defining a joint between adjacent edges thereof, a resiliently compressible, lineal member extending continuously within and closing the said joint, and means forcing the said panels laterally against the said member.

3. A wall assembly comprising a channel member having upwardly extending flanges, a baseboard, a clip secured at one part to the back of the base board and at another part engaging the upper portion of one of the said flanges, and substantially continuous means for plumbing the baseboard.

4. A wall assembly comprising a channel member, a panel engaged between portions of the flanges of the said member, other portions of the said flanges extending in direction generally par-

allel to the planes of the face and back of the panel and away from the panel, and a stiffening rail extending longitudinally with respect to the channel member and engaged between the said other portions of the flanges.

5. A wall assembly comprising panels disposed in parallel relationship and defining a joint between their edges, projections constituting heels on the portions of the panels adjacent to the said joint, and means pulling the panels towards the said joint, the said means including elements engaged behind the said heels and a rod member extending through the said heels, between the face and back thereof, and engaging the said elements.

6. A wall assembly, as described in claim 5, including a rigid beam extending along the top of the assembly, a clip element, and means securing the clip element to the rigid beam, the clip element engaging the said rod member.

7. A wall assembly, including panels, supporting members, flanges of the supporting members extending generally parallel to the face and back of the panels, backward turned heels, on the inside of the edge portions of the said flanges, defining therebetween a space of width approximately equal to the thickness of the panels and extending approximately parallel to each other, at an angle to the main portion of the flanges, adapting the said heels to receive tightly therebetween a panel deflected from the general plane of the wall, the panel being deflected to clear, at its opposite edge, the next nearest member in the wall.

8. A building assembly, including a firm wall, a panel extending at an angle from the said wall, a projection on the said panel constituting a heel in the portion thereof adjacent to the said wall, and fastening means engaged at one end behind the said heel and at the other end secured to the said wall.

9. A wall assembly, as described in claim 4, all of the said portions of the flanges of the channel member being springy and engaging, respectively, in resilient manner, the top portions of wall panels and the stiffening rail.

10. A wall assembly including a panel, two angle bars engaging the panel on their inside faces, disengageable means securing the angle bars together, and a projection constituting a door stop on one of the said bars.

11. A wall assembly including a panel, two angle bars engaging the panel on their inside faces, disengageable means securing the angle bars together, and bead portions upstanding from the angle bars and defining between the bead portions a space adapted to receive a panel of glass and the like.

12. A wall assembly including panels, a bracing member of the type of a stud disposed between and against the edges of adjacent panels, a channel floor plate with upstanding flanges, the bracing member at its lower portion being engaged movably, in lateral manner, between the said flanges and the adjacent panels controlling the position, laterally, of the said member.

13. A wall assembly, as described in claim 1, including a brace extending in the said joint between the panels, the brace at its lower portion being provided with a hole and the rod member extending therethrough.

14. A room partition assembly comprising panels disposed in parallel relationship and forming a plurality of joints between their edge portions, means closing some of the joints and ter-

minating short of the room ceiling and approximately at the top of the partition, a brace member extending in and closing another of the said joints, and means securing the brace member at its upper portion to the said ceiling.

15. A wall assembly comprising two angularly disposed panel sections abutting at corresponding corner portions, a substantially L-shaped member having each leg fastened to a panel section at the end surface thereof adjacent the abutting corner, a corner finishing member having joined side portions extending respectively in substantial prolongation of the distant side faces of the panel sections, and means for fastening the finishing member to the assembly.

16. A wall assembly comprising panels disposed edge to edge in a common plane, resilient joint-closing means disposed between adjacent edges of contiguous panels, a stiffening means positioned along the said panels, and means disposed substantially entirely within the plane of the panels for simultaneously clamping the said adjacent edges against the resilient joint-closing member to compress the same therebetween and for connecting the stiffening means to the panels.

17. A wall assembly comprising panels disposed edge to edge in a common plane, joint-closing means disposed between adjacent edges of contiguous panels, a stiffening means positioned along the said panels, and means disposed substantially entirely within the plane of the panels for simultaneously clamping the said adjacent edges against the joint-closing member and for connecting the stiffening means to the panels.

18. A wall assembly comprising panels disposed edge to edge in a common plane, a stiffening means disposed along said panels, and means disposed substantially entirely within the plane of the panels for simultaneously drawing the adjacent edges of contiguous panels toward one another and for connecting the said stiffening means to the panels.

19. A wall assembly comprising panels disposed edge to edge in a common plane, a stiffening means disposed along said panels, and means for simultaneously drawing the adjacent edges of contiguous panels toward one another and for connecting the said stiffening means to the panels.

20. A wall assembly comprising a plurality of panels disposed edge to edge in a common plane and defining joints between their edges, a stiffening member disposed along the panels, the panels being formed with recesses adjacent said member, a bracket projecting laterally from said member into a recess near the panel edge on each side of each joint, and means extending within

the panels across each joint and engaging brackets on opposite sides of each joint to simultaneously clamp contiguous panels together and connect the stiffening member to the panels.

21. A wall assembly comprising panels disposed edge to edge to define joints therebetween, a stiffening member disposed along said panels and a member disposed between said panels and said stiffening member and including one channel section with the channel flanges gripping opposite faces of the panels and another channel section with the channel flanges gripping said stiffening member.

22. A wall assembly comprising panels disposed edge to edge to define joints therebetween, a stiffening member disposed along said panels, a member disposed between said panels and said stiffening member and including one channel section with the channel flanges gripping opposite faces of the panels and another channel section with the channel flanges gripping said stiffening member, and means for simultaneously connecting contiguous panels and fastening the stiffening member to the panels.

23. A wall assembly comprising panels disposed edge to edge to define joints therebetween, a stiffening member disposed along said panels, a member disposed between said panels and said stiffening member and including one channel section with the channel flanges gripping opposite faces of the panels and another channel section with the channel flanges gripping said stiffening member, and means disposed substantially entirely within the plane formed by said panels for simultaneously connecting contiguous panels and fastening the stiffening member to the panels.

24. A wall assembly comprising a floor channel having resilient, upstanding flanges, a wall panel gripped between said flanges, a baseboard disposed over each flange and clips fastened to the back of each baseboard and inserted between the adjacent flange and panel face.

25. A wall assembly comprising a floor channel having resilient, upstanding flanges provided with laterally inset portions, a wall panel gripped between said inset portions, a baseboard disposed over each flange and contacting near its bottom with a base portion thereof, clips fastened to the back of each baseboard and inserted between the adjacent flange and panel face, and a member inserted between the top portion of each baseboard and the adjacent panel face and which is of sufficient thickness to cause the baseboard to stand vertically.

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