Nov. 22, 1938. A. V. PRETOT 2,137,677

WALL ASSEMBLY

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Fig. 2.

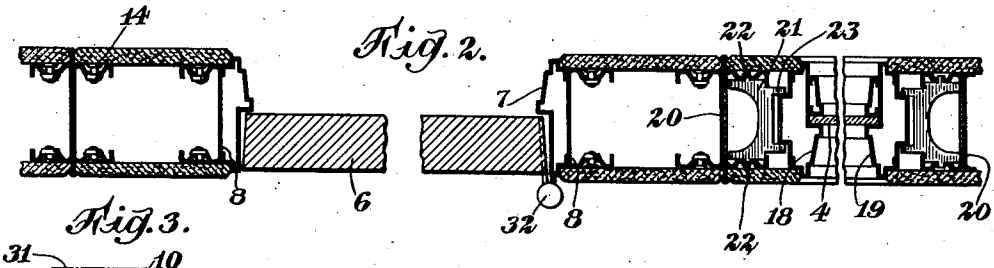


Fig. 3.

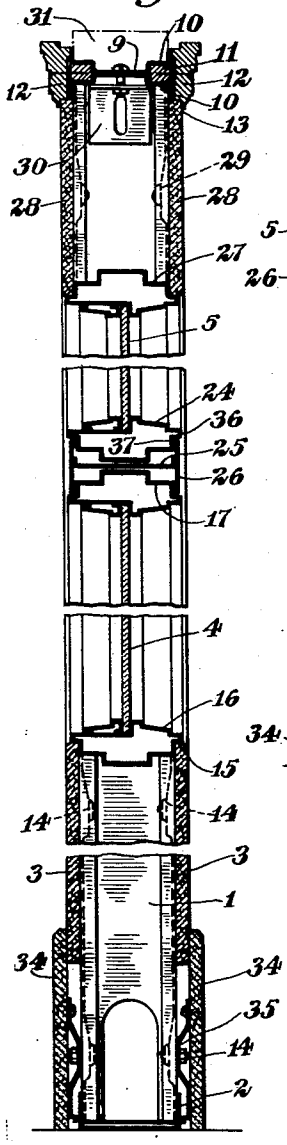
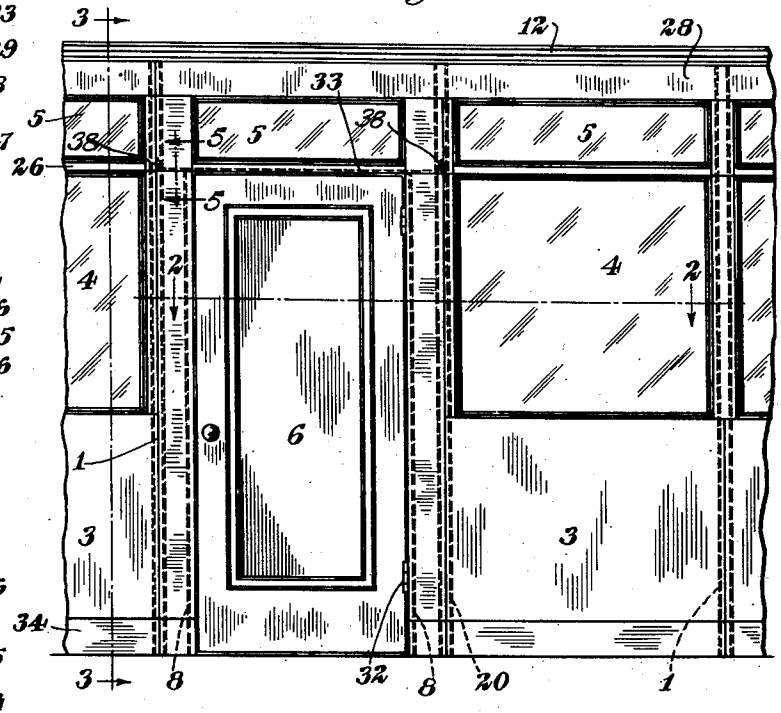


Fig. 1.



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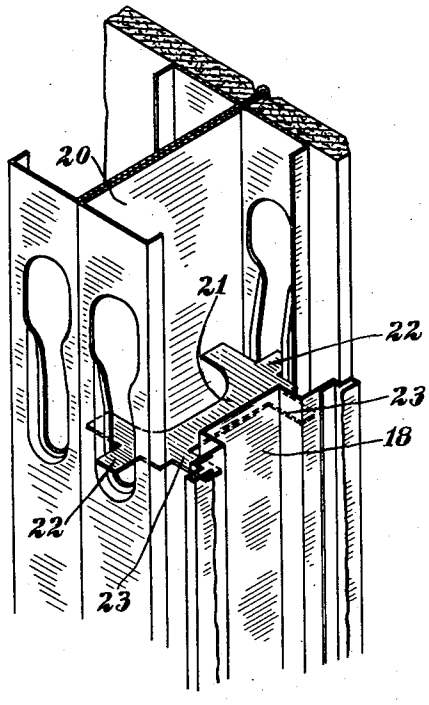


Fig. 4.

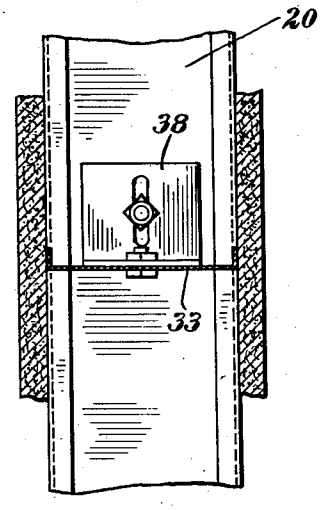


Fig. 5.

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UNITED STATES PATENT OFFICE

2,137,677

WALL ASSEMBLY

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Application September 19, 1934, Serial No. 744,617

7 Claims. (Cl. 189—34)

This invention relates to a wall assembly providing satisfactory alignment of preformed units assembled therein and to the means for effecting such alignment.

There is wide usage of wall assemblies, particularly assembled partitions in office buildings, including panels of facing material and a substructure upon which the panels are supported. In many such assemblies there is a base or dado portion of the wall including opaque panels of wood or the like and superposed panels such as sheets of glass constituting a large portion of the upper area of the partition. Such partitions frequently do not extend all the way to the ceiling of the room. It is customary to support panels of facing material, such as the sheets of glass referred to, in frames of hollow metal sections commonly known as borrowed light frames.

There is need in such a structure for means for maintaining the borrowed light frames conveniently in alignment with the substructure, for supporting one borrowed light frame upon another, in proper alignment therewith, and without the need of union members projecting laterally beyond the outermost parts of the said frames, and for aligning properly the various members constituting the top edge portion of the partition.

It is an object of the present invention to provide means for meeting the above requirements. Another object is to provide a wall assembly that may be quickly and conveniently assembled, disassembled, or extended, with proper alignment of the several parts thereof. Other objects and advantages will appear from the detailed description that follows.

An embodiment of the invention that is preferred at this time is illustrated in the drawings in which:

Fig. 1 shows a front elevational view, partly diagrammatic, of a wall assembly constructed in accordance with the invention;

Fig. 2 shows a longitudinal sectional view on line 2—2 of Fig. 1, in the direction of the arrows;

Fig. 3 shows a vertical sectional view on line 3—3 of Fig. 1, in the direction of the arrows;

Fig. 4 shows a perspective view of means for securing a frame member in alignment with a stud; and

Fig. 5 shows a sectional view on lines 5—5 of Fig. 1 in the direction of the arrows.

In the various figures like reference characters denote like parts.

There is shown a wall assembly comprising a supporting substructure including studs 1, which may be secured to the floor in suitable manner, as by the channel member 2 lying upon and secured to the floor. The assembly includes also panels of facing material, such as dado sheets 3, of wood, asbestos-cement compositions, or the like, and also panels 4 disposed above the dado sheets and being composed suitably of glass or other conventional material. Overlying these panels 4 there may be additional panels 5 of the same material, for example, as the panels 4, and lying in substantially a common plane therewith. The assembly may include also a door 6 of conventional type, a frame member of the type of the door buck 7 and studs 8 welded to the sides of the door buck.

The top portion of the wall includes means for aligning the panels and other parts and holding them in a reenforced stiffened assembly. These means include the reenforcing and stiffening rail provided with web element 9 extending substantially horizontally and elements extending from either side edge thereof. The elements include spaced legs 10 defining therebetween a recess, suitably, more narrow at the mouth than at its base and adapted to receive a nailing strip 11 of wood or the like, inserted originally in endwise manner and held in position in the recess. Secured to the strip 11, as by a nail may be a molding strip 12 which, at its lower portion, extends below the top edge portion of the uppermost panel in the wall, as indicated at position 13.

It will be noted that the side faces of the studs are approximately parallel to each other and that the sides 10 of the alignment member have flanged portions extending downwardly, on the two sides of the said member, over the said side faces of the stud, respectively, and substantially in conforming contact therewith.

The dado panels are secured to suitable studs, in a convenient manner. Thus, the studs may have flanged side faces provided with slots registering with each other in opposite faces and each engaging an end of fastening means 14. The fastening means may be of the type of pins secured at one end in a panel of finishing material and engaged at the other or head end in one of the said slots.

The dado sheets 3 on the two faces of the wall extend to substantially the same elevation; and the top edges of the dado sheets, as indicated at 15 (Fig. 3), are adapted to support a borrowed light frame 16. This frame is a formed metal section, preferably closed on the two faces and two side edges, extending continuously along the

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top edges of the dado sheets for a distance at least approximately as great as the width of the panel 4 engaged thereby.

The panel 4 is engaged at its upper and two side edges by similar borrowed light frames 17, 18 and 19, respectively.

As illustrated in Fig. 2, the borrowed light frames 18 and 19, engaging the side or vertical edges of the panel 4, are disposed each adjacent to one of the vertical studs 20, of type similar to the stud 1 shown in longitudinal view in Fig. 3. These studs and the borrowed light frames 18 and 19 extend approximately parallel to each other.

A clip or key member 21 is used to maintain the frame in alignment with the stud. This clip 21 has projecting portions 22 extending from opposite sides of the clip and engaged each in a slot in the flanged face of the stud. The clip is rotatable upon these projections 22 as an axis. When rotated to the position shown in Figs. 2 and 4, one portion of the clip engages the opposite faces of the stud and another portion is shaped to engage a substantially vertical, laterally extending locking surface on the side of the borrowed light frame facing the stud, as illustrated at 23. The locking surface 23 may take many different shapes, the only requirement being that it be shaped so that an end of the key or clip member may engage it and lock the stud and frame together in accurate alignment. The clip is readily engaged upon or disengaged from the stud and borrowed light frame, as by rotation of the same in the slotted faces of the stud, to facilitate assembling or disassembling of the structure.

In order to provide alignment of the borrowed light frame 17 engaging the upper edge portion of the panel 4 and an additional borrowed light frame 24 and to provide means for supporting the latter upon the frame 17, there is used a suitable union or stretcher member 25.

This member 25 is continuous and approximately as long as the borrowed light frames which it is intended to align. The member is suitably approximately I-shaped in cross-section and may include a web element 25' extending substantially horizontally and flanges 26 extending in opposite directions from each of the side edges of the said web element. These flanges engage surfaces extending generally laterally of or transverse to the borrowed light frames, as illustrated, and, advantageously, do not extend horizontally beyond the outermost portions of the borrowed light frames. In this manner, undesired prominence or conspicuousness of the union member is avoided and the edges of the flanges are caused to engage the borrowed light frames at portions 36 extending approximately horizontally, to give a good, firm, non-slipping resting of the several members, one upon another. Preferably, the borrowed light frame has substantially vertically extending portions constituting a shoulder 37 engaged inside the said flanges and preventing lateral shifting.

Over the panel 5 there is engaged, in turn, a borrowed light frame 27 of type similar to the borrowed light frames previously referred to. This borrowed light frame 27 engages, on its face, the upper edge portion of the panel 5, and on its back the frieze strips or panels 28 of composition suitably the same as that of panels 3. These frieze strips may be engaged by pins, or the like, at one end secured to a panel and at the other end engaging a slot in the face of the stud, as indicated generally at 29.

Studs that are suitable for this work may be metal studs of modified I-beam shape, with the slotted faces described.

To the top of these metal studs there may be secured the angle iron member 30, to which is secured the continuous stiffening rail 9, which has been described previously. Disposed above the stiffening rail may be a wood filler strip 31 adapted to close or finish the top edge of the wall.

As a further means to minimize rattling or vibration of the wall, the vertically-extending frames which engage the panels may be spot welded, or otherwise made integral with the studs. This has previously been described where the frame member is of the type of a door buck 7 (Fig. 2). The studs 8 welded to the door buck and constituting side frame members of the door buck extend, suitably, at least the full length of the frame member 7. The door 6 may be hinged at 32. Over the top of the door and also over the tops of the studs 8, there may extend a metal reenforcing plate (rigid cross member) 33, which is united to the said studs 8, as well as to the section of metal constituting the top portion of the door buck. This plate or rigid member extends laterally beyond the said studs 8 and is secured at either end as by member 38 (Fig. 5) to an upright stud, such as 20 constituting a part of the substructure.

In making an assembly of the type described, the supporting substructure is suitably first assembled and secured to the floor. Dado sheets 3 are then secured in position to the studs. Then the baseboard 34 may be secured in position as, for example, by pins engaging slots in the studs, as illustrated at position 35. The various additional units are then applied in order, going from bottom to the top.

Provision is made during the arrangement of the substructure for the suitable spacing of the studs one from another, installation of the door buck or other frames, and the like.

The above description and specific examples are to be taken as illustrative only. Any variation or departure therefrom which conforms to the spirit of the invention is intended to be included within the scope of the claims.

What I claim is:

1. A wall assembly of the class described comprising in combination a supporting substructure containing studs, panels of facing material supported on the said studs, means for aligning the panels including a frame engaging a panel and extending substantially parallel to one of the said studs and in spaced relationship thereto, and a rotatable clip member engaging on one side the said frame and on the other side engaging one of the said studs, whereby the frame is held in alignment with the stud.

2. A wall assembly of the class described comprising in combination a supporting substructure including studs with flanged faces provided with registering slots on opposite faces thereof, a panel of facing material, a frame disposed around an edge of the panel, a clip, projecting portions of the clip rotatably engaged in the said registering slots, a portion of the clip engaging the frame and another portion of the clip engaging the stud, the clip member being adapted to be disengaged from the frame by rotation on the projecting portions engaged in the said slots.

3. A wall assembly comprising a stud having

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an open section, a panel frame spaced from said stud and having a substantially vertical, laterally extending locking surface on the side facing said stud, and a key member of greater width than the distance between the nearest portions of said stud and frame, and shaped so that when positioned between and parallel to said stud and frame and rotated out of parallelism therewith, one side thereof will engage within the open section of the stud and the opposite side will engage the locking surface on said frame and lock the two together in accurate alignment.

4. A wall assembly comprising a stud having a bifurcated form, a panel frame spaced from said stud and having laterally extending portions on the surface facing said stud, and a key member pivoted between the furcations of said stud and wider than the distance between the nearest portions of said stud and frame, and shaped at the end remote from the stud to engage the laterally extending portions upon being rotated, to lock the stud and frame together in accurate alignment.

5. A wall assembly comprising a stud, a panel frame spaced from said stud and having laterally extending surfaces on the side facing said stud, and a key member pivoted to said stud and wider than the distance between the nearest portions of said stud and frame, and shaped at the end remote from the stud to engage the laterally extending surfaces upon being rotated, to lock the stud and frame together in accurate alignment.

6. A wall assembly comprising spaced supporting members, an elongated aligning member extending across the tops of said members, said aligning member comprising pairs of longitudinally extending leg portions with a leg portion of each pair including a downwardly directed flange, said flanges embracing side portions of said supporting members, and a pair of said leg portions embracing therebetween a nailing strip.

7. A wall assembly comprising spaced supporting members, an elongated aligning member extending across the tops of said members, said aligning member comprising pairs of longitudinally extending leg portions with a leg portion of each pair including a downwardly directed flange, said flanges embracing side portions of said supporting members, each pair of leg portions embracing therebetween a nailing strip, panels of facing materials secured over said supporting members, and molding strips secured to said nailing strips.

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