Dec. 10, 1929. L. W. RAY 1,738,842

WALL STRUCTURE

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Fig 1

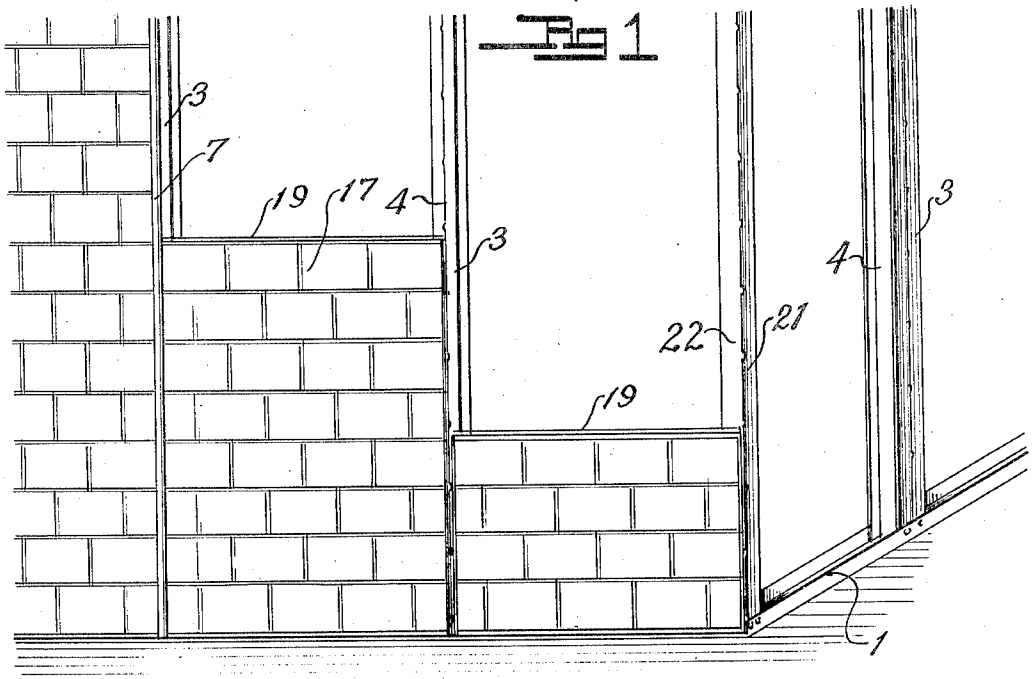
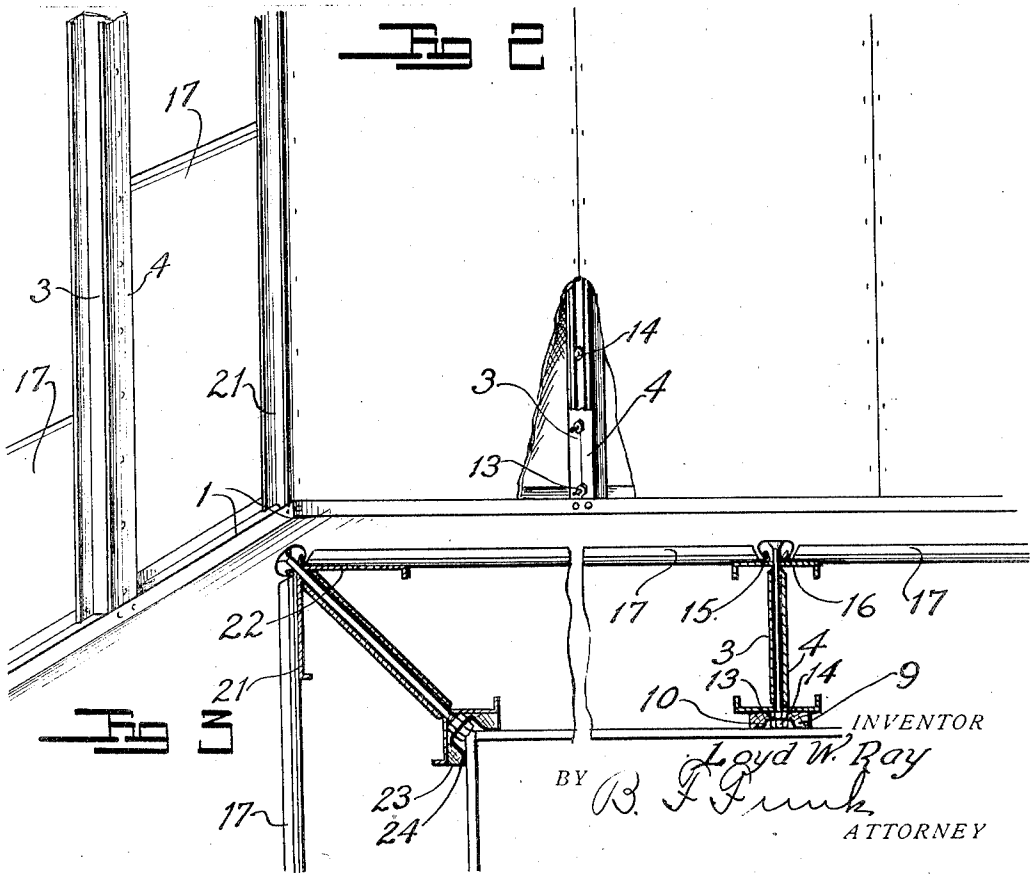


Fig 2



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WALL STRUCTURE

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Fig 4

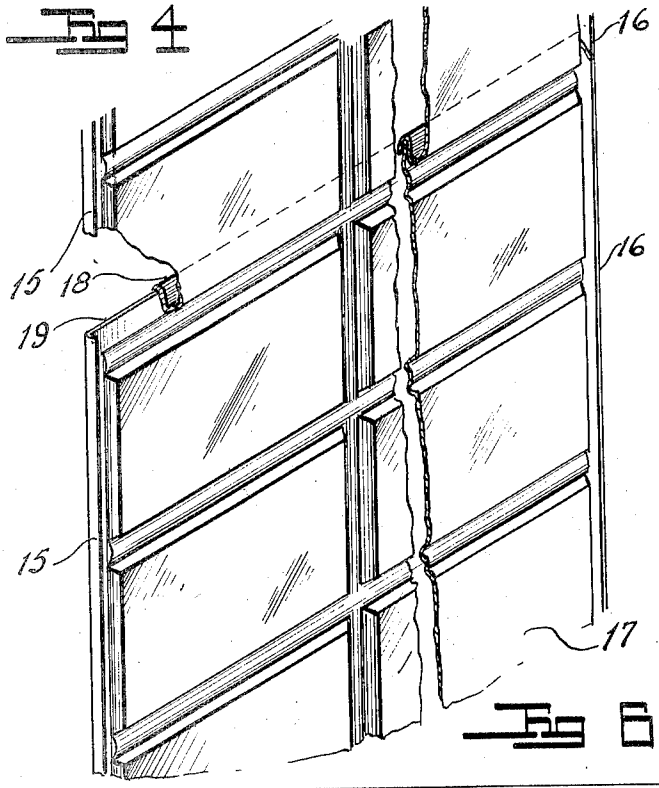


Fig 5

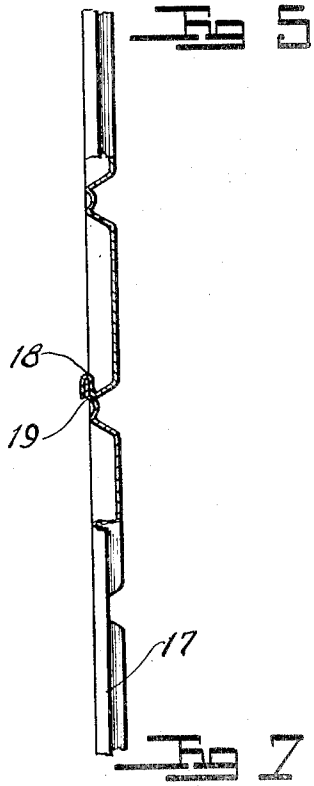


Fig 6

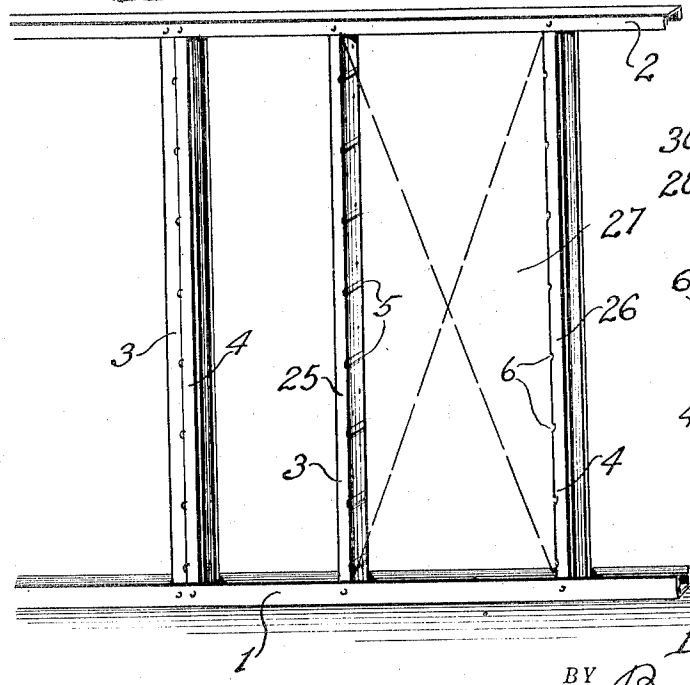
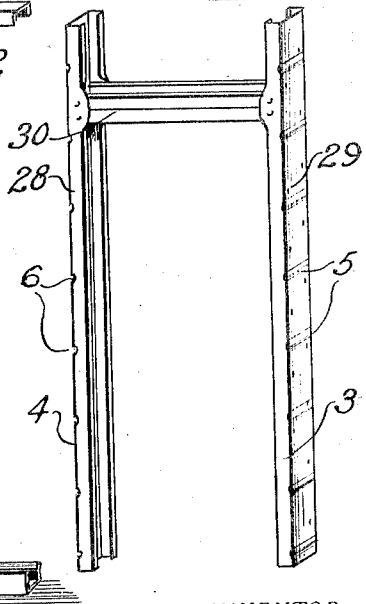


Fig 7



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WALL STRUCTURE

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Fig. 8

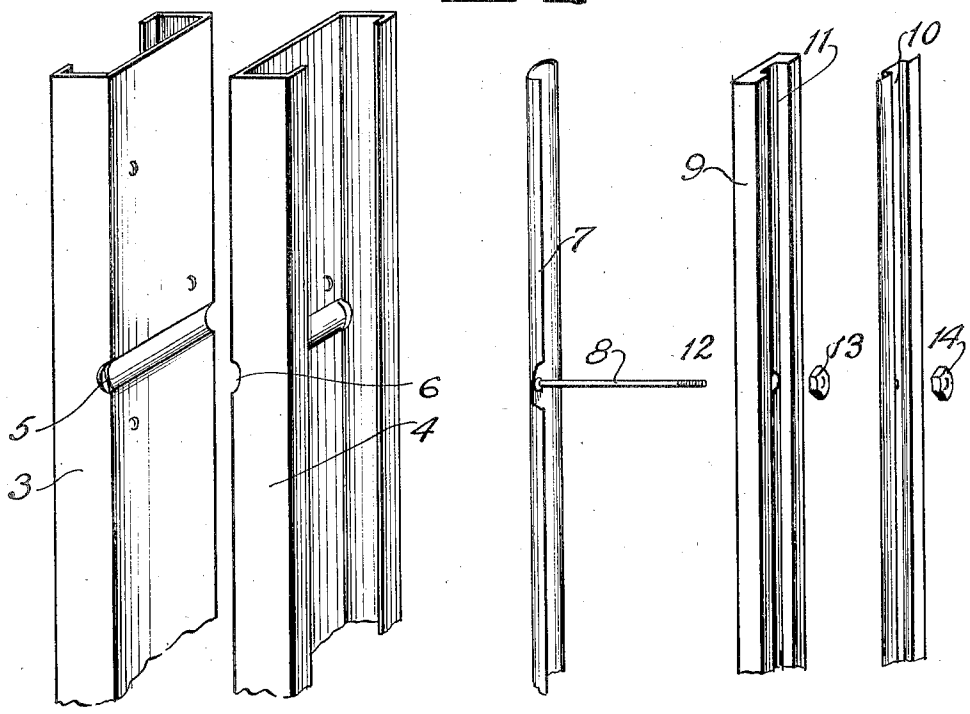
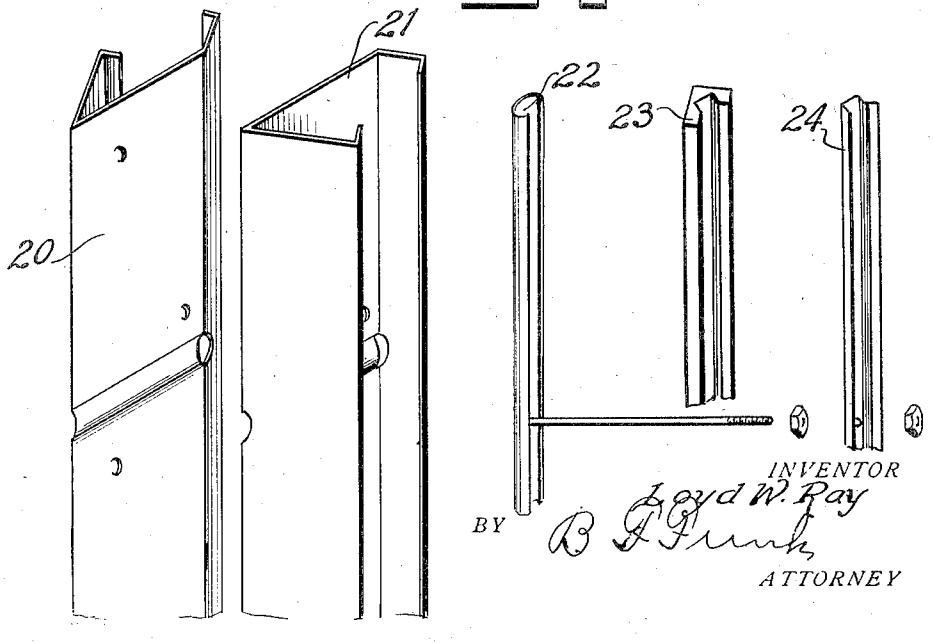


Fig. 9



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Patented Dec. 10, 1929 1,738,842

UNITED STATES PATENT OFFICE

LOYD W. RAY, OF WICHITA, KANSAS, ASSIGNOR TO THE WHITE CASTLE SYSTEM, INC., A CORPORATION OF KANSAS

WALL STRUCTURE

Application filed June 4, 1928. Serial No. 282,833.

This invention relates to panel securing means for structural buildings and the like. The panels may be constructed to simulate weather boarding, bricks, tile or other facing surfaces and they may be removably secured to metal risers or structural frame work in a novel manner, the structure for which constitutes the major portion of my invention. My invention is particularly adapted for use in connection with knock-down buildings although it is not limited thereto.

The novelty of the invention will be clearly apparent by reference to the following description in connection with the accompanying drawings in which:

Fig. 1 is a perspective view of a part of a building to which my invention is applied.

Fig. 2 is an inside view of a portion of a building showing the ends of the anchor bolts and the furring strips.

Fig. 3 is a top plan view of one corner of a building to which the invention is applied.

Fig. 4 is a perspective view of a number of panels showing the overlapping edge joints.

Fig. 5 is a view partly in edge elevation and partly in section showing the overlapping edge joint for two adjacent panels.

Fig. 6 is a view of the vertical members or risers of the building to which the wall panels can be attached.

Fig. 7 is a view of a door or window frame.

Fig. 8 is a disassociated view showing two risers, the anchor and the furring strip for a straight wall and

Fig. 9 is a similar view showing the corner risers, the anchor and its appurtenances.

The frame of the building is shown as constructed of structural steel. The base members 1 may consist of channels corresponding to the top members 2. These are held in spaced relation by vertical channels arranged in pairs, there being two shown in Figures 3, 6 and 8, designated 3 and 4. The channels are provided with half-round grooves 5 and 6 respectively which can be formed in them in any appropriate manner. The two co-operating channels are secured together web to web or back to back by spot welding, bolting or otherwise so that the two half-round grooves form bolt openings, it being understood that there are as many grooves as will be necessary to accommodate the bolts to fasten the bead to the outside of the building. The beads are concavo-convex in cross-section, one being shown in detail in Fig. 8 and designated 7. It may have as many lateral bolts 8 projecting therefrom as is necessary to fasten it in place. The bolt will be longer than the widths of the webs of the structural steel members 3 and 4 and they will preferably project through the wooden furring strips 9 abutting against the inner faces of the channels 3 and 4 and extend through the channel-shaped binder strips 10 which lie in the grooves 11 of the furring strips. The ends of the bolts are threaded as at 12 to receive nuts 13 and 14, one of which is a jam nut, the nut 13 being effective in drawing the bolt so as to clamp the bead against the facing members to hold them tight against the frame work of the building. The beads 7 may be split tubes or they may be formed of heavy sheet metal so that their edges will interlock with the outwardly projecting flanges 15 and 16 of the facing members 17. The facing members 17 may be formed of sheets to simulate weather boarding, stones, bricks or other suitable wall facing and when in place will present a finished appearance. Each panel has an inturned grooved lower edge 18 which receives the plain upper edge 19 of the next lowest panel so that an unbroken wall will be presented. It will be seen that the panels can be quickly assembled and fastened to the wall in a most convenient manner.

In Fig. 9 I have shown corner channels 20 and 21 which correspond to channels 3 and 4 in Fig. 8 except that they are constructed with their webs at mitre angles to meet the requirements of the corner. The bead 22 corresponds to bead 7 in Fig. 8 and the furring strip 23 has a strip 24 corresponding to strip 10 except that it is formed to fit the corner.

By reference to Fig. 6 it will be observed that the two channels 25 and 26 bounding the outlet opening 27, such as a door or window, are not connected to co-operating channels. The co-operating channels are shown in Fig.

7. They are designated 28 and 29 and are fastened by a cross channel or lintel 30 so that they can be inserted in the opening 27 and fastened to members 25 and 26 in the event that the outlet opening is to occur between the members 25 and 26. The structure shown is designed for a knock-down building and it is not always possible to determine just where the outlet openings will occur so in making up the building, the window or door frames, such as are indicated in Fig 7, will be made separate to be placed in the proper position when the building is constructed.

It will be apparent that the entire building can be fabricated at the steel plant and shipped in a knock-down condition to be easily erected by unskilled labor so that the cost of erection may be reduced to a minimum.

What I claim and desire to secure by Letters Patent is:—

1. A building structure comprising a frame work made up of structural steel, members having abutting webs with alining grooves to form through openings, wall facing members lying against the steel members, arranged edge to edge, beads interlocking adjacent edges of the facing members, bead carrying bolts projecting through the through openings and means for securing the bolts to the steel members, said means comprising devices adjustable with respect to the bolts to draw the beads into intimate contact with the facing members to bind them against the steel members.

2. A building structure comprising a skeleton frame having vertical channels, arranged back to back, with bolt openings between the abutting backs of the channels, wall facing members lying against the outer faces of the channels, adjacent edges of the facing members having outwardly projecting flanges, beads comprising split tubes interlocking with the flanges, bolts connected to the beads projecting through the openings between the backs of the channels and nuts on the ends of the bolts for drawing the beads into intimate interlocking contact with the facing members and for clamping the facing members against the channels.

3. A building structure comprising a skeleton frame having vertical channels, arranged back to back, with bolt openings between the abutting backs of the channels, wall facing members lying against the outer faces of the channels, adjacent edges of the facing members having outwardly projecting flanges, beads comprising split tubes interlocking with the flanges, bolts connected to the beads projecting through the openings between the backs of the channels, nuts on the ends of the bolts for drawing the beads into intimate interlocking contact with the facing members and for clamping the facing members against the channels and furring strips fastened by the bolts and nuts to the inner ends of the channels.

4. A building structure comprising a skeleton frame including vertical channels, arranged web to web, with bolt openings formed in the webs at right angles to the flanges of the channels and facing member securing means comprising a bead, bolts carried by the bead projectable through the openings and nuts on the ends of the bolts.

5. A building structure comprising two channels arranged web to web, secured together and provided with alining grooves to form bolt openings between the webs, wall facing members lying against the outer flanges of the channels, furring strips lying against the inner flanges of the channels, a bead strip between which and the outer flanges of the channels, the wall facing members are secured, bolts carried by the bead strip projecting through the bolt openings and through the furring strip and nuts on the ends of the bolts for fastening the edges of the facing members, the bead strip and the furring strip to the channels.

In testimony whereof I affix my signature.

LOYD W. RAY.