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C. R. FREEMAN

3,431,692

BUILDING CONSTRUCTION

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FIG. 1

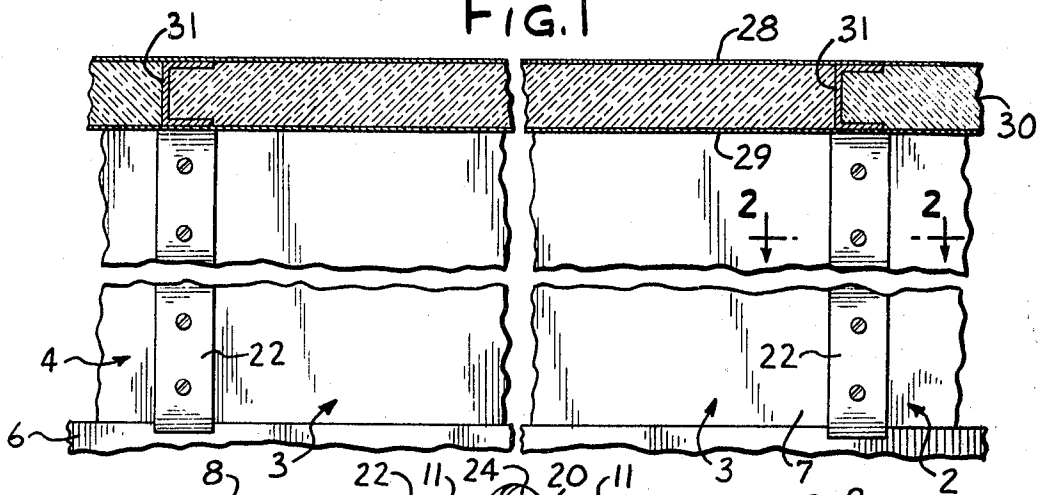


FIG. 2

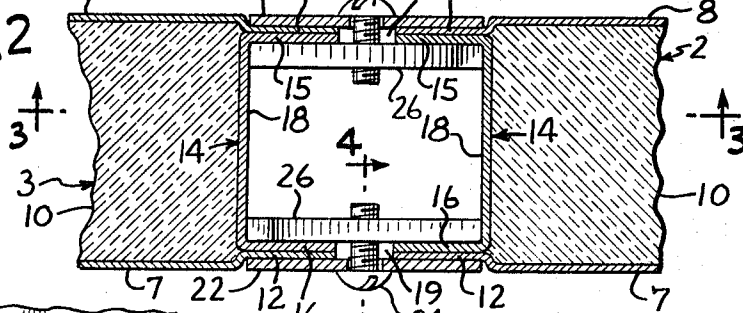


FIG. 3

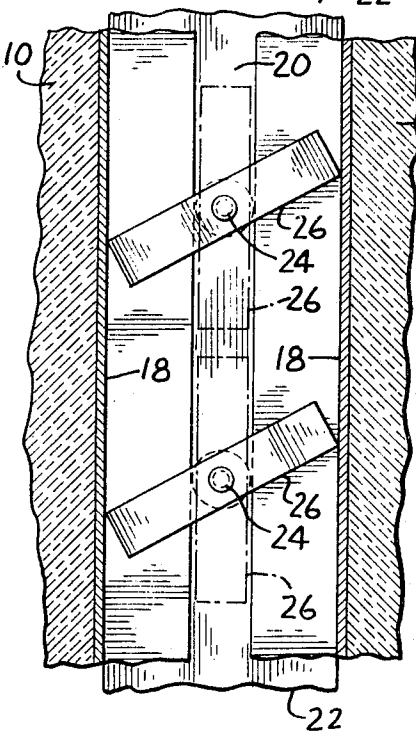
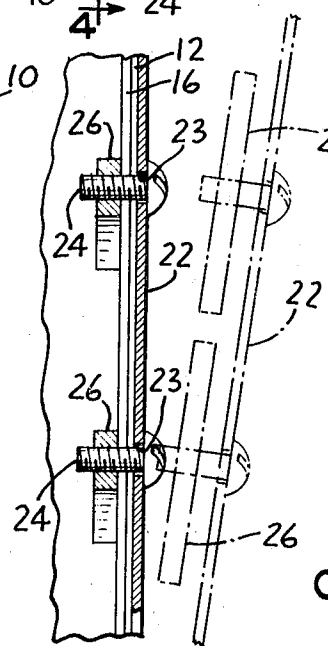


FIG. 4



INVENTOR
CARL R. FREEMAN

by: Spector & Alster
ATTYS.

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BUILDING CONSTRUCTION
 Carl R. Freeman, 1237 W. 47th St.,
 Chicago, Ill. 60609

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4 Claims

Int. Cl. E04c 1/34, 1/10

This invention relates to improvements in building constructions, and more particularly to a joint for building wall sections.

It is an object of the present invention to provide a building construction having adjacent wall sections that are normally incapable by themselves of supporting a roof load, but which are joined together by columnar structures upon which a roof structure may be supported.

It is a further and more specific object of the present invention to provide a building construction of the type stated in which the wall sections have U-shaped column members at their facing ends, the column members of two adjacent wall sections being spaced apart and joined together by battens that are firmly clamped to the column members in such a manner as to form a reinforced columnar structure of greater load-carrying capacity than that of the two column members alone.

It is an additional object of the present invention to provide a building construction of the type stated which is particularly suitable for a smokehouse used for curing meat and like products, and results in a saving of material in the fabrication of such smokehouse without sacrificing the strength of the columnar structure for the roof support.

The attainment of the above and further objects of the present invention will be apparent from the following description taken in conjunction with the accompanying drawing forming a part thereof.

In the drawing:

FIG. 1 is an elevational view of the building wall constructed in accordance with and embodying the present invention and showing a portion of the roof of the building in section;

FIG. 2 is a fragmentary sectional view, on an enlarged scale, taken along line 2-2 of FIG. 1; and

FIGS. 3 and 4 are fragmentary sectional views taken along lines 3-3 and 4-4, respectively, of FIG. 2.

Referring now in more detail to the drawing, 1 designates a building wall having like building wall sections 2, 3, 4, etc., which are supported at their lower ends on a suitable curbing 6 that projects upperly from the floor of the building. While one building wall 1 is herein shown, it will be apparent that the other walls of the building may be of similar construction.

Each of the wall sections extends to the roof or roof beams of the building and has inner and outer upstanding sheet metal panels 7, 8, and the space between the panels 7, 8 may be filled with a suitable heat-insulating material 10. At their facing ends, the panels 7, 8 are indented to form parallel terminal portions 11, 12 which are closer together than are the parts of the panels 7, 8 remote therefrom. A U-shaped column 14 is secured to each pair of panels 7, 8 to form part of an end of each wall section. Each column 14 has spaced parallel flanges 15, 16 that have their laterally outer surfaces welded to the associated terminal portions 11, 12 and are approximately coextensive in length therewith. Each column 14 also has a web 18 that is at right angles to and joins the flanges 15, 16 and runs transversely of and between the panels 7, 8. When the wall sections 2, 3 are in mounted positions on the curbing 6, their adjacent ends are spaced apart, with the flanges 15, 16 and terminal portions 7, 8 of one wall section 2 being respectively aligned with the corresponding flanges 15, 16 and terminal

portions 7, 8 on the outer wall section 3, leaving vertical gaps 19, 20 of uniform width at the inside and outside surfaces of the building wall.

A sheet metal connector plate or batten 22 is disposed across each of the gaps 19, 20 and abuts the exposed faces of the terminal portions 11, 12. Each batten 22 preferably is of such width as to cover substantially completely the terminal portions 11, 12 and is of such length as to extend from the tops of the wall sections to a region slightly below the bottoms of the wall sections. Each batten 22 is individually clamped to the terminal portions 11, 12 and hence to the column flanges 15, 16. For this purpose, each batten 22 has a series of vertically spaced holes 23 for receiving screws 24 that also project loosely through the gaps 19, 20. On the inside of each wall section and disposed against the flanges 15, 16, 16 are threaded batten clips or nuts 26, one nut being threaded onto each screw 24. The nuts 26 are preferably blocks or heavy-gauge plates of metal of generally rectilinear shape having a width that is less than the width of each gap 19, 20 and a length that is greater than the distance between the webs 18, 18.

In mounting the battens 22 in place, the screws 24 are inserted into the holes 23 and the nuts 26 are threaded onto the screws 24. The nuts 26 are oriented vertically, as shown in broken lines in FIGS. 3 and 4. Each batten 22 may then be positioned against a pair of terminal portions 11, 11 or 12, 12, allowing the nuts 26 to pass through the associated gap 19 or 20 and clear the column flanges 15 or 16, as the case may be. As each screw 24 is turned a fraction of a revolution, the nut 26 thereon will rotate until its opposite ends abut the webs 18, 18. Upon further rotation of each screw 24, the nut 26 thereon will be prevented from rotating. As a result, when the screw 24 is tightened, the batten 22 is drawn tightly against the adjacent terminal portions 11, 11 or 12, 12, and the nuts 26 are drawn tightly against the adjacent inside surfaces of the column flanges 15, 15 or 16, 16. If desired, a rubber gasket coextensive in width and length with the batten 22 may be interposed between each batten and its adjacent terminal portions 11, 11, 12, 12. The battens 22, 22 thus not only connect the wall sections 2, 3 together but also connect the columns 14, 14 into a rigid structure and form, in effect, a unitary columnar structure for supporting a roof beam or other roof load.

Because the battens 22 are tightly clamped to the column flanges 15, 15, 16, 16, the battens become part of the columnar structure and thus increase the load-carrying capacity thereof. If the battens were connected to the columns by a series of bolts each of which passes through the two battens and the openings 19, 20, a tight clamping of the battens to the column flanges does not take place, and tightening of the through bolts merely tends to distend the column flanges toward each other. Under such circumstances the battens do not, to any significant extent, increase the load-supporting capability of the columnar structure. In the present invention, the manner in which the battens are clamped to and thus made part of the columnar structure permits the use of channels of smaller gauge metal or smaller slenderness ratio over that which would otherwise be required if through bolts were used.

By way of example but not of limitation, a roof structure may comprise upper and lower sheet metal panels 28, 29 with heat insulation 30 therebetween and a roof beam or channel 31 also between the panels 28, 29. The roof beam 31 may be supported on two spaced columnar structures on opposite walls of the building. The columnar structures support not only the roof itself but also any products to be cured in the building that may be sus-

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pended from the roof or any treating apparatus that is mounted on the roof.

In compliance with the requirements of the patent statutes, I have herein shown and described a preferred embodiment of the invention. It is, however, to be understood that the invention is not limited to the precise construction herein shown, the same being merely illustrative of the principles of the invention. What is considered new and sought to be secured by Letters Patent is:

1. In a building construction, a pair of building wall sections each comprising spaced upstanding panels and insulating means filling the space between the panels, an upstanding column secured to each wall section and having flanges respectively flush against the inside surfaces of said panels and a web running transversely of the upstanding panels and column flanges, each column constituting part of an end of a wall section and forming an end closure for the wall section and retaining the insulating material therein, the end of one wall section being adjacent but spaced from the end of the other wall section to leave gaps between the ends of the wall sections at the opposite sides thereof and with the webs being spaced apart a distance greater than the widths of said gaps, and means forming a rigid connection between said ends of the wall sections and between the columns; said means comprising a unitary batten spanning each gap and each being in rigid engagement with an outwardly presented surface of each upstanding member, threaded fasteners projecting through each batten and the adjacent gap, and nuts on the inside of each wall section adjacent to each gap and being retained against rotation by engagement with said webs as the fasteners are tightened to draw each said batten against the adjacent flanges and clamp those flanges and the adjacent upstanding panels between the nuts and the battens, each nut having a width that is less than the width of the gap and a length that is greater than the distance between said webs so that the nuts may be threaded onto the fasteners and oriented to pass through said gaps and then rotated a fraction of a revolution by said fasteners until the nuts abut said webs.

2. A building construction according to claim 1 in which the distance between the outer surfaces of the battens is substantially the same as the distance between

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the outer surfaces of said upstanding panels whereby the region of juncture of the two wall sections has a thickness substantially that of each wall section.

3. A building construction according to claim 1 in which the parts of the upstanding panels that are flush against said flanges are indented from the parts of the panels remote from said column so that recesses are formed in the walls on opposite sides thereof and adjacent to said column, and said battens are in said recesses.

4. In a building construction, a wall having a pair of building wall sections each having spaced sheet panels with insulation therebetween, the panels of one section being spaced apart from the panels of the other section to form two vertical gaps between the wall sections on opposite sides thereof, an upstanding column in rigid connection with each pair of panels of a wall section and forming a retainer for the insulation at the end of a wall section, each column having spaced flanges that run longitudinally of the wall section and between its panels at each side of the wall section, the flanges of one column being respectively in substantial edgewise alignment with the flanges on the other column and being spaced at said two gaps, a batten outwardly of the flanges of each column and also outwardly of the panels, each batten spanning a gap, means on the inside of each column and adjacent to each pair of edgewise aligned flanges, and means projecting through said gaps and cooperating with said inside means for drawing each batten and inside means into rigid assembly with the adjacent pair of edgewise aligned flanges.

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JOHN E. MURTAGH, *Primary Examiner.*

U.S. Cl. X.R.

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