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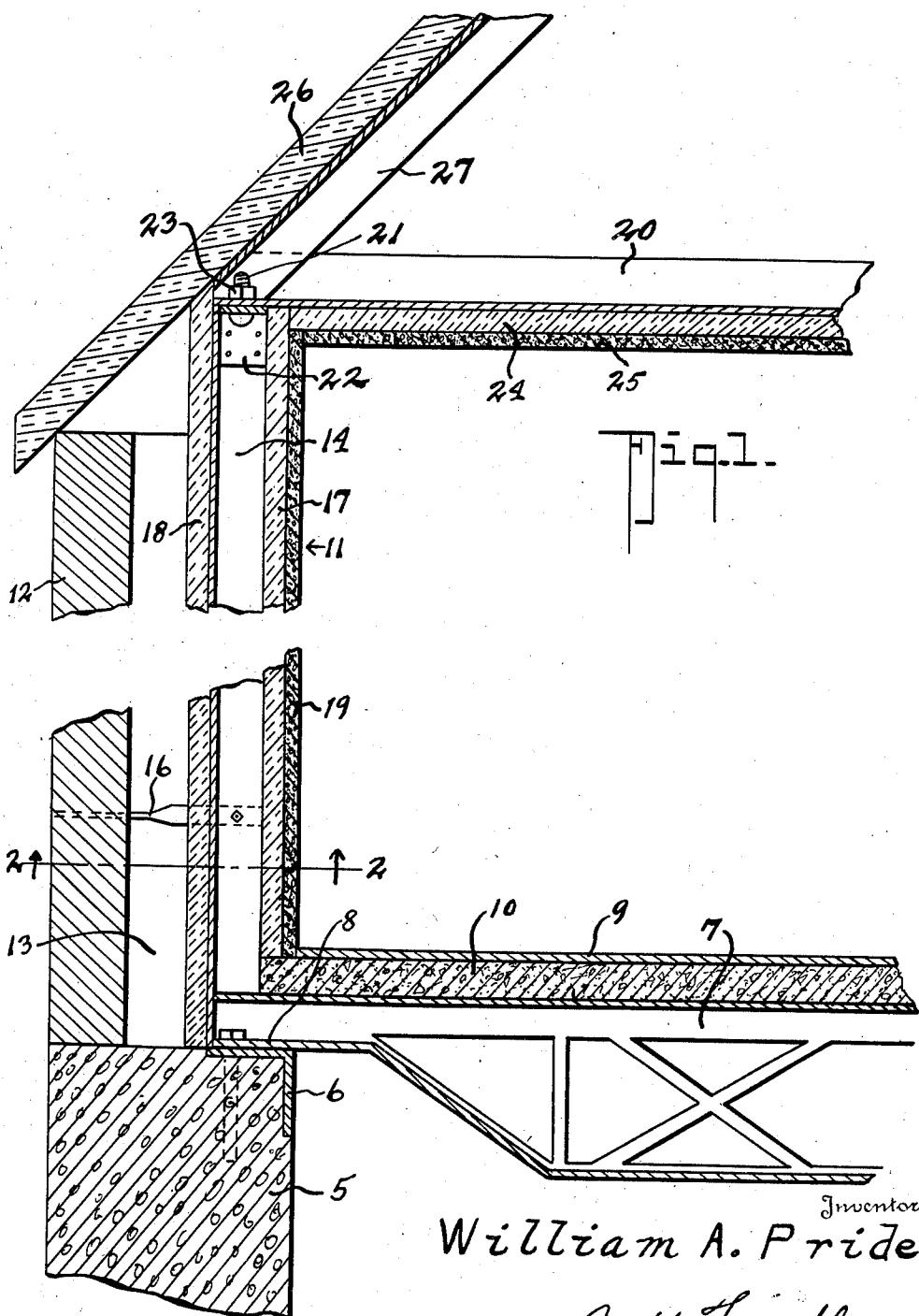
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2,139,461

HOLLOW WALL BUILDING CONSTRUCTION

Filed Sept. 16, 1937

2 Sheets-Sheet 1



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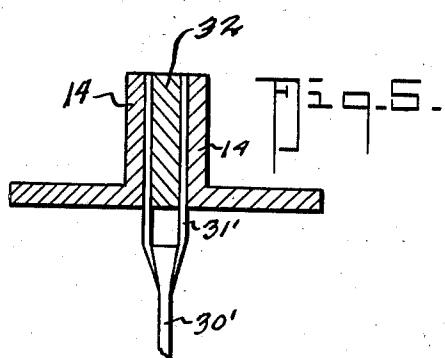
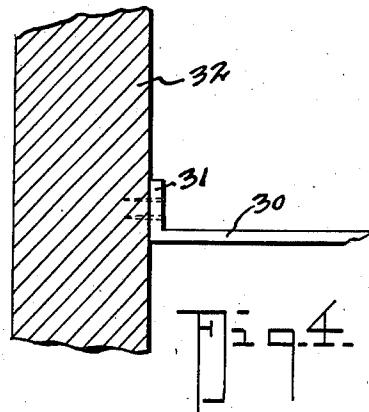
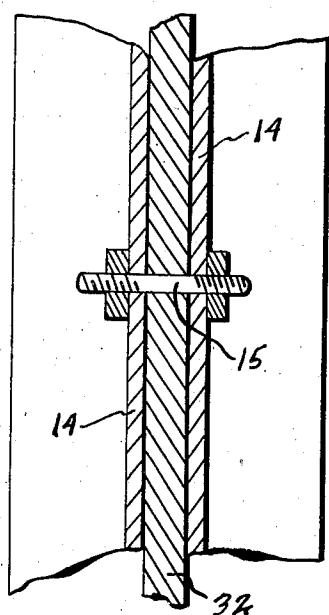
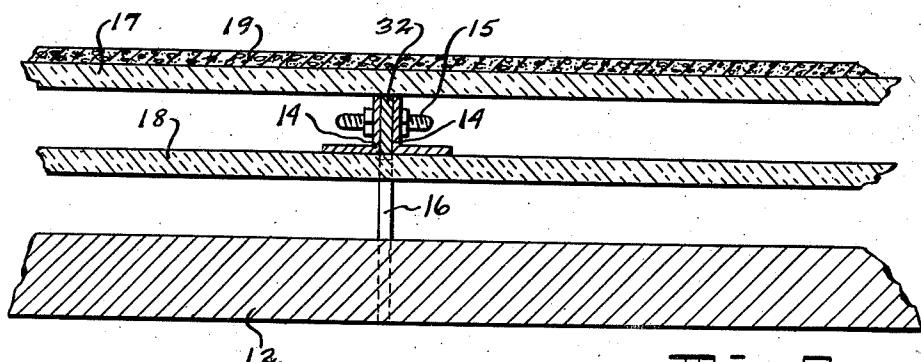
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HOLLOW WALL BUILDING CONSTRUCTION

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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HOLLOW WALL BUILDING CONSTRUCTION

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5 Claims.

(CL. 72—1)

This invention relates to improvements in hollow wall building constructions and more particularly to the type used for ventilating purposes.

The primary object of this invention is to provide a building wall of the above mentioned character including a pair of spaced walls providing an air circulating space capable of being employed for heating and cooling as well as ventilating purposes.

10 A further object of this invention is to provide a building wall of the above character, comprising a series of frame angle irons having composition wall boards on opposite sides from which may be spaced an outer wall formed of brick or 15 brick veneer.

A still further object of this invention is to provide novel means for spacing the outer wall from the composition board covered framework, which includes spaced tie members connected to 20 the brick or brick veneer and to the angle iron supporting members, by interposing the tie members between pairs of angle irons forming the framework.

A still further object of this invention is to 25 provide a ventilated building wall of the character described, including angle iron supporting members placed together with a strip of wood or the like interposed therebetween for the purpose of receiving nails or other fastening means for the 30 tie members.

Other objects and advantages of the invention will become apparent during the course of the following detailed description forming a part of this specification and in which

35 Fig. 1 is a vertical cross sectional view of the construction embodying this invention showing the vertical angle iron supporting members and the manner in which the outer wall is supported and spaced thereby.

40 Fig. 2 is a horizontal cross sectional view taken on lines 2—2 of Fig. 1 looking in the direction of the arrows of the wall embodying this invention, illustrating the manner in which the tie members are mounted between complementary angle iron 45 frame members and showing the details adherent thereto.

Fig. 3 is a vertical cross sectional view through one of the angle iron frame members illustrating the interposed fibrous strip mounted between 50 complementary flange portions of abutting angle irons.

Fig. 4 is a detailed view showing the manner in which the tie member is attached to the fibrous strip interposed between the flanges of the complementary angle irons, and

Fig. 5 is a detail cross sectional view of a modified form of anchoring means for the tie members.

In the drawings, wherein for the purpose of illustrating the invention in detail and wherein like reference characters will be employed to designate like parts throughout the same, the reference character 5 will generally be employed to designate the foundation of a building in accordance with this invention.

10 Mounted on the inner edge of the foundation 5 is an angle iron 6, adapted to form a support for the joint rails 7 as at 8. Each of the joint rails 7 may be suitably braced by means of truss work for reinforcing purposes. The building 15 includes a floor 9 formed of suitable material and is supported by a layer of concrete 10 or the like.

The vertical walls of the building are formed of spaced inner and outer walls 11 and 12, respectively, to provide an air space 13 therebetween, allowing free circulation of air throughout the entire structure. Preferably, the outer wall 12 is formed of brick or brick veneer, while the inner wall 11 is formed of a metal framework 25 covered by plasterboard or other composition board. In forming the inner walls, a series of angle irons 14 are arranged in vertical relation and have their lower ends supported on the foundation 5. As shown in Figure 2, a pair of angle 30 irons 14 are placed together so that the flanges extend in opposite directions and are bolted together by fastening means 15 such as bolt nuts or rivets. Interposed between the abutting faces of the angle irons 14 are strips of fibrous material 32, and it has been found in practice that wood is preferable, although other similar materials may be used with equal advantages. At spaced intervals, tie members 16 are interposed between the angle irons 14 as shown in Fig. 2, and may have their outer free ends embedded in the outer brick wall 12 in order to maintain the walls in spaced relation.

35 Composition boards 17 and 18 are mounted on the inside and outside of the vertical frame members 14 and may be fastened in place by lathing clips of the usual type, attached to the vertical angle supporting members. On the inner composition board 17, a layer of plaster is provided as at 19 for producing a finished appearance.

40 Connected to the top portions of the vertical angle irons 14 are horizontal beams 20, also formed of pairs of angle irons placed with abutting flanges fastened together. The horizontal beams 20 are connected to the vertical support 50

ing beams 14 by bolts 21 which extend through bracket members 22 and are held in place by nuts 23.

A ceiling 24 is attached to the horizontal angle beams 20 and may be finished with a coating of plaster 25. Also, a roof 26 is mounted above the structure and includes angle irons 27, welded or otherwise secured to the horizontal angle irons 20 and arranged to extend over the inner and outer walls 11 and 12 to cover the air space 13. The walls of the entire buildings may be formed identically the same manner as the vertically spaced walls 11 and 12, with minor alterations which may be produced by the average layman, and involves merely changes in the details of construction.

It is to be understood that the roof 26 may be formed of tile or cementitious material and that, if desired, the air space 13 may communicate with the space above the ceiling 24 and below the roof 26.

In Fig. 4, there is shown a modified form of connection between the outer and inner wall and as shown, the tie member 30 has its inner end bent angularly as at 31 for attachment by means of nails to the wooden or fibrous strip 32, mounted between the angle iron frame members 14 as shown in Figs. 1 to 3 inclusive. The free end of the tie member 30 may be embedded in the outer brick wall in the same fashion as is shown in Figs. 1 to 3.

A further modified tie member is shown in Fig. 5, as at 30' and includes a strip of metal having one end bifurcated as at 31' to straddle the wooden strip 32 and be locked in place by the angle iron supporting members 14 on opposite sides thereof.

It is to be further understood that the form of the invention herewith shown is to include window and door frames positioned at desired locations in suitable openings formed in the walls above described to permit circulation throughout the building, as well as the entrance of air and light. Also, further changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described the invention, what I claim is:

1. A building wall comprising an inner wall and an outer wall providing an air ventilating space, said inner wall being formed of pairs of

angle iron frame members arranged with their abutting flanges placed face to face, a strip of wood interposed between the angle iron members, tie members having one of their ends connected to the outer wall and the opposite end connected between the angle iron frame members. 5

2. A building of the character described comprising an inner wall and an outer wall, said inner wall being fabricated of a wall board and angle iron construction, an outer wall spaced from the inner wall formed of cementitious material, and means for spacing the inner wall from the outer wall including a series of spaced tie 15 members having one end anchored in the outer wall and the opposite end connected between the angle iron frame members.

3. A building of the character described, comprising an inner wall and an outer wall spaced 20 to form air circulating passages, said inner wall being formed of angle iron supporting framework including pairs of angle irons placed face to face, a fibrous strip interposed between the angle irons, means for fastening the angle irons and fibrous 25 strips together and tie members for spacing the outer wall from the inner wall having one end embedded in the outer wall and the opposite end attached to the fibrous strip.

4. A building of the character described comprising an inner wall and an outer wall spaced therefrom, forming an air circulating passage-way, said inner wall being formed of angle iron frame members, composite wall boards mounted on opposite sides of the angle iron frame members and tie members, having one end embedded 35 in the outer wall and the opposite end secured to the angle irons.

5. A building wall comprising an inner wall and an outer wall providing an air ventilating 40 space, said inner wall being formed of vertically extending pairs of angle iron frame members arranged with their abutting flanges face to face, a strip of fibrous material interposed between the abutting flanges, composition boards placed 45 on opposite sides of the vertical angle iron frame members and tie members for spacing the inner wall from the outer wall including metal straps having one end fastened between the abutting flanges of the angle irons and the opposite end embedded in the outer wall. 50

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