Aug. 19, 1930. J. S. EDWARDS 1,773,175

BUILDING PANEL

Filed May 16, 1927 3 Sheets-Sheet 1

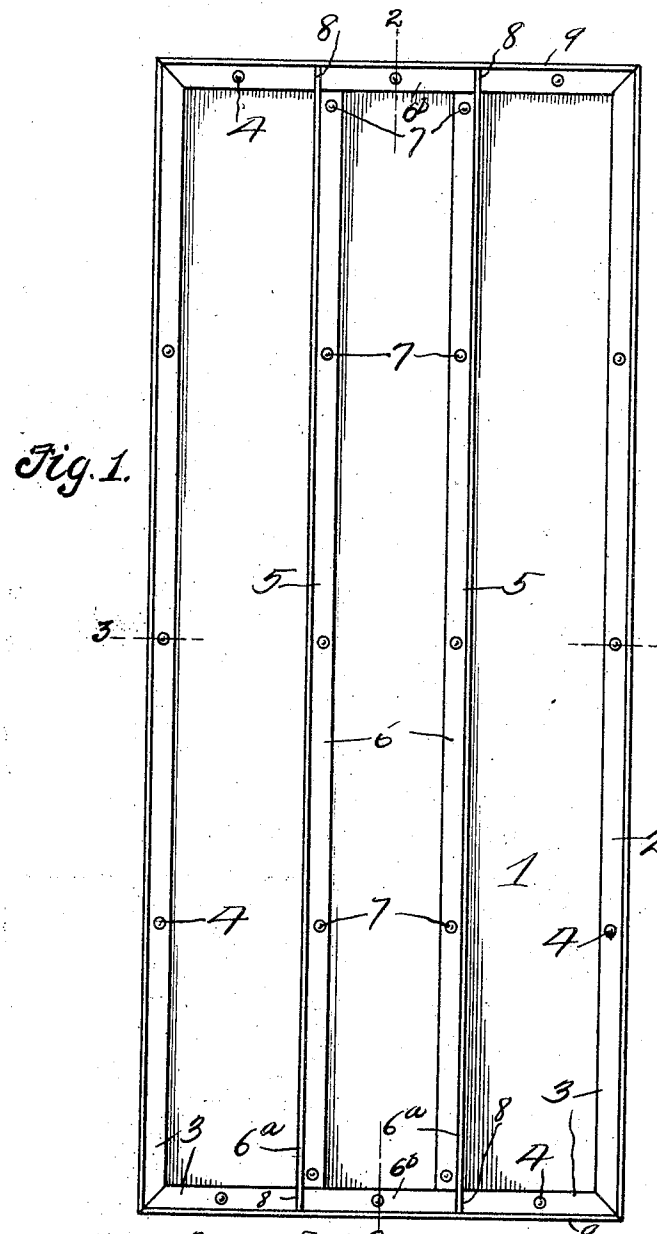


Fig. 1.

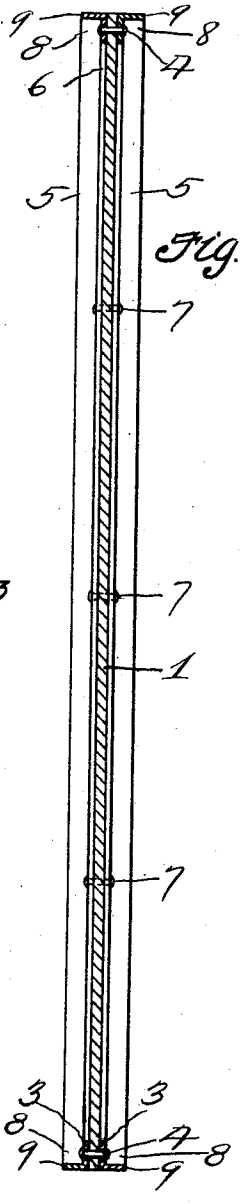


Fig. 2.

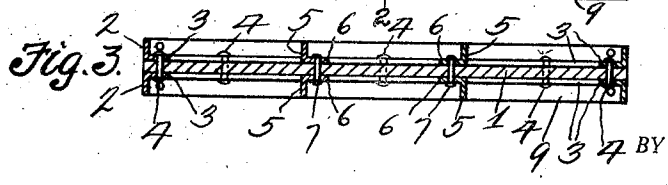


Fig. 3.

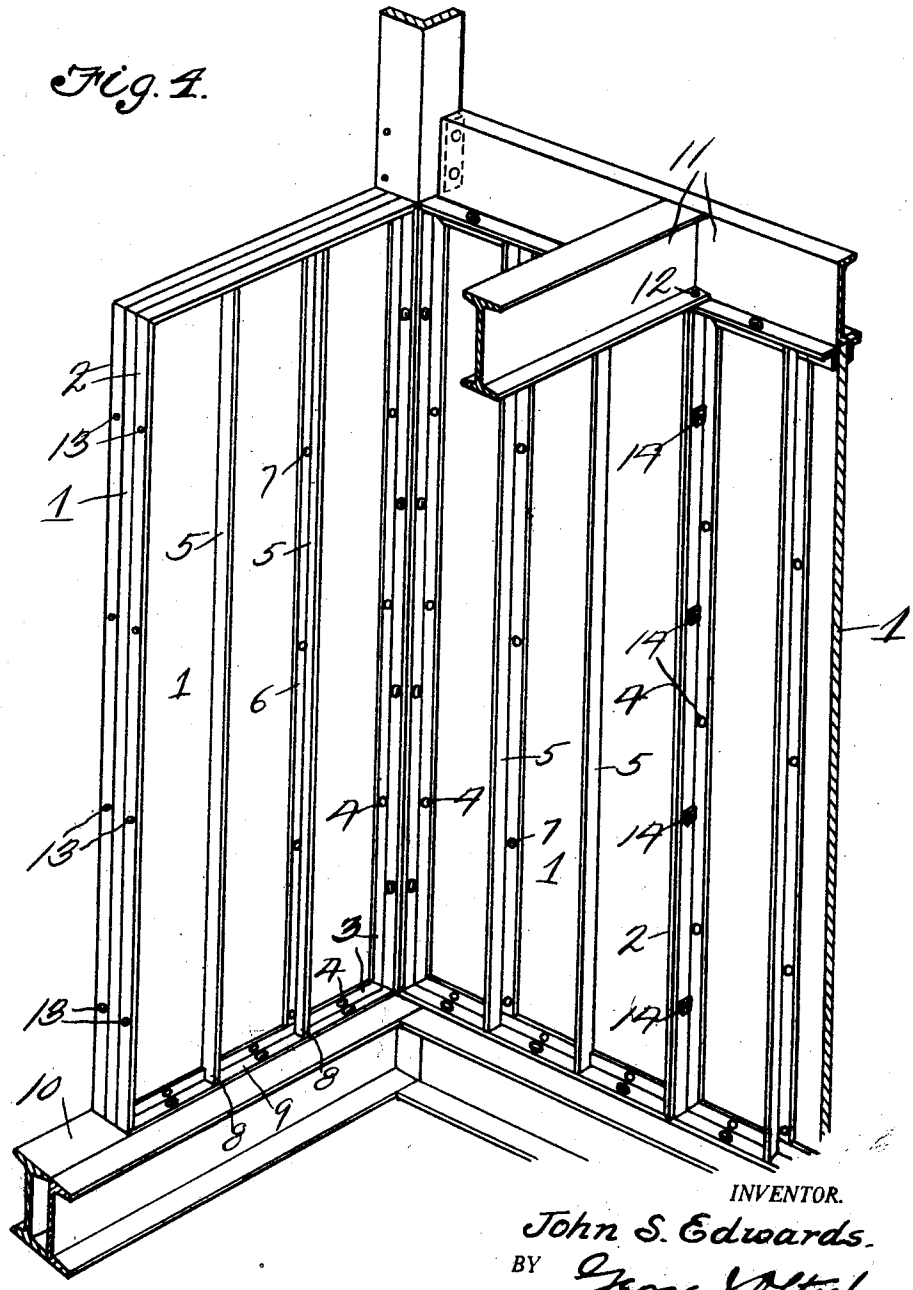
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Fig. 1.



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Fig. 5.

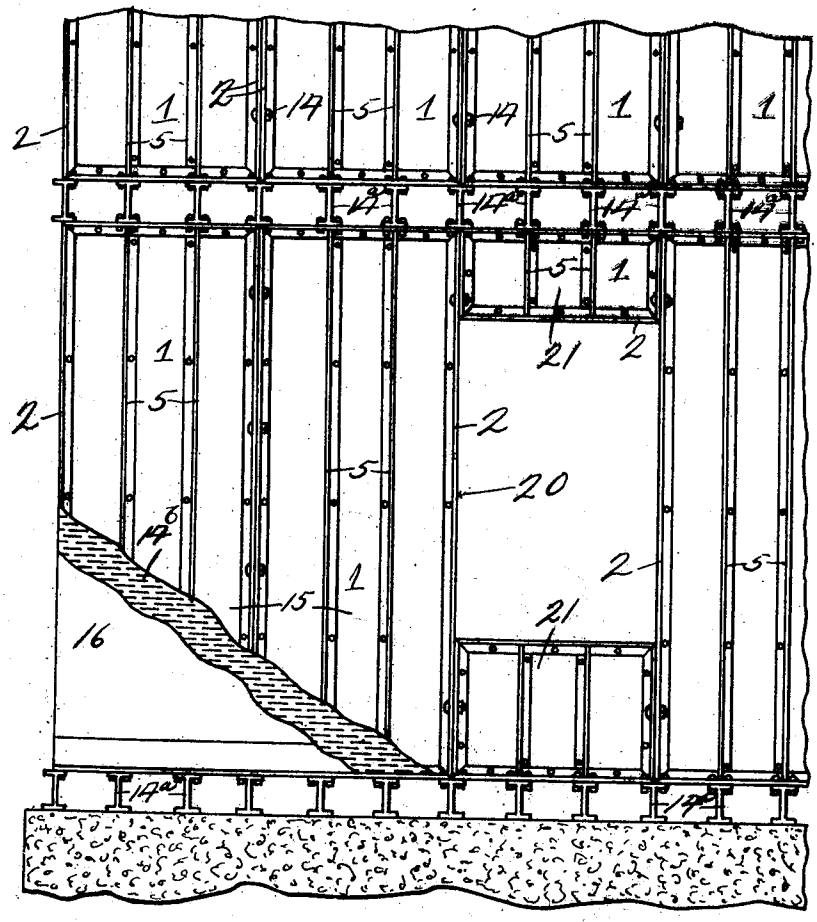
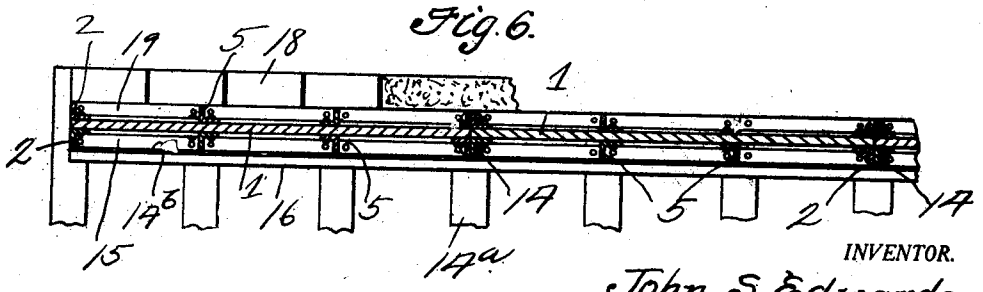


Fig. 6.



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UNITED STATES PATENT OFFICE

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BUILDING PANEL

Application filed May 16, 1927. Serial No. 191,764.

The invention relates to building panels, and has for its object to provide a device of this character wherein the body of the panel is formed from a single piece of fibrous material, for instance what is known as wall board, and frames secured to the marginal edge of said sheet of fibrous material on opposite sides thereof and formed from angle iron, through flanges of which extend securing members, and which securing members also extend through the sheet of material, thereby forming a rigid panel.

A further object is to provide opposite sides of the panel with brace members formed from angle iron and which brace members register with each other and secured to the panel and to each other by means of securing members extending through flanges thereof and through the sheet of fibrous material.

A further object is to provide the end of the brace members with cutaway portions whereby one of their flanges will abut the inner edges of the angular members of the frame and their other flanges will overlap the angular members of the frame, thereby additionally bracing the panel.

A further object is to provide a building panel particularly adapted for wall construction and comprising a fibrous sheet of material to opposite sides of which are secured reinforcing frames, and which frames brace and reinforce the sheet of material whereby when formed into a wall will support a substantial load.

A further object is to provide flanges of the reinforcing angle frames with apertures, which apertures register when the panels are in abutting engagement and receive securing means whereby a rigid wall structure is formed.

A further object is to provide a wall structure formed from a plurality of panel sections, said panel sections comprising fibrous sheets having metallic reinforcing frames at opposite sides thereof, and which frames form chambers in connection with metal lathing when placed in engagement with the frames, and to which metal lathing a plastic material is applied, thereby providing a cheap wall structure having an air space.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawing, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawing:

Figure 1 is a view in elevation of the panel.

Figure 2 is a vertical transverse cross section through the panel taken on line 2—2 of Figure 1.

Figure 3 is a horizontal sectional view taken on line 3—3 of Figure 1.

Figure 4 is a perspective view of adjacent floor beams showing the wall panels applied thereto.

Figure 5 is a view in elevation of adjacent floor beams, showing the panel construction and plaster applied thereto.

Figure 6 is a horizontal sectional view through the wall showing the plaster and metal lathing applied thereto.

Referring to the drawing the numeral 1 designates the fibrous sheet, for instance wall board, and which sheet is preferably rectangular shaped, and secured to opposite sides of the sheet 1 are rectangular shaped reinforcing frames 2, which frames are formed from angle iron and extend around the marginal edges of the sheet in registration with each other, and with their flanges 3 in engagement with the opposite sides of the sheet. The frames 2 are secured together and to opposite sides of the sheet 1 by means of rivets 4, which rivets extend through the flanges 3 and through the sheet of fibrous material, therefore it will be seen that the fibrous sheet is reinforced and braced and the frames 2 will collectively in cross section form a T-shaped structure which is relatively strong and rigid, consequently the panels as a whole will support a considerable weight when formed into a wall. To further brace the panel vertically disposed angle bars 5 are provided on opposite sides of the fibrous sheet 1 and in registration, and extending through the flanges 6 of the bars 5 are rivets

7 which also extend through the fibrous sheet, therefore it will be seen that the bars are in close binding engagement with opposite sides of the sheet, consequently the sheet is rigidly held against buckling. The flanges 6 of the brace bars 5 are shorter than the flanges 6ᵇ of said brace bars and engage the inner edges of the flanges 6ᵇ of the frames 2, therefore it will be seen that when weight is applied to the upper end of the panel, the strain will be received by the frame and brace bar and will not materially fall on the fibrous sheet 1. The ends 8 of the brace bars 6 engage the inner sides of the flanges 9 of the frames 2 and additionally brace the upper and lower ends of the frames 2 and receive a portion of the strain incident to weight on the upper end of the panel.

Referring to Figure 4, it will be noted that the panels are preferably supported on floor beams 10 and below the floor beams 11 and when so positioned are riveted or otherwise secured to the beams at 12, and the opposite sides of the frames are provided with apertures 13 through which securing bolts 14 extend when the panels are placed in engagement with each other, and it will be seen that when the panels are bolted or otherwise secured together a rigid structure is provided. The general arrangement as shown in Figure 4 is for purposes of illustration and applicant does not limit himself as to applying the device to any particular type of floor beams or floor, and the showing in said figure may be varied.

Referring to Figures 5 and 6 wherein the panels are shown secured together and extending over I beams 14ᵃ, in this figure a sheet of metal lathing 14ᵇ is applied to the inner side of the wall thereby forming air pockets or spaces 15 between the opposite sides of the frames and the brace bars 5, and to which metal lathing is applied a plaster coat 16 in the usual manner, therefore it will be seen that a wall is provided which will have air spaces therein. Where the outer side of the building is of brick construction the superimposed courses of brick 18 will form a closure for the air spaces 15, however if the outer side is stucco metal lathing may be applied thereto and the stucco applied to the metal lathing. At window openings 20 smaller panel sections 21 may be used, however said panel sections are of similar construction as the main panel. The frames and braces 2 and 5 may be made of relatively light material, however when applied have a combined strength incident to their T-shaped arrangement in cross section, adds materially to the rigidity and strength of the panel without materially increasing the weight thereof, which is a decided factor which allows the panels to be easily is a decided factor which allows the panels to be easily handled and to be made relatively light, as it is obvious some of the panels would be of considerable area according to the distances between floors of a building.

From the above it will be seen that a building panel is provided wherein a fibrous sheet is used, and which sheet is reinforced by metallic frames secured to opposite sides of the sheet of fibrous material by securing means extending through the frame and the sheet of fibrous material. The particular kind of fibrous sheet used may be of any material and is preferably what is known as wall board, plaster board or a cork composition, however applicant does not limit himself in this regard.

The invention having been set forth what is claimed as new and useful is:—

1. The combination with a building panel comprising a sheet of material having a reinforcing frame secured to the side thereof, said reinforcing frame being formed from angle bar and having one of its flanges extending inwardly in engagement with the surface of the sheet of material, of brace bar means formed from angle bar, one of the flanges of said brace bar means being secured to the sheet of material, the ends of said flange engaging the inner edges of the first mentioned flange of the frame, the other flange of said brace bar means engaging within the angles of the angle bar of the frame at opposite sides thereof.

2. The combination with a building panel comprising a sheet of insulating material having a reinforcing frame secured thereto, said reinforcing frame being formed from registering interconnected angle iron frame members disposed at the opposite sides of said sheet and each having one of its flanges extending inwardly in face contact with said sheet, of registering interconnected angle iron brace bars disposed at the opposite sides of said sheet with one flange of each brace bar in contact with said sheet, the ends of the sheet contacting flanges of the brace bars engaging the inner edges of the sheet contacting flanges of the frame members and the other flanges of the brace bars extending within the angles of said frame members in contact with the flanges thereof.

In testimony whereof I affix my signature.

JOHN S. EDWARDS.