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R. TAPPAN

1,781,794

BUILDING CONSTRUCTION

Filed Jan. 13, 1928

Fig. 1.

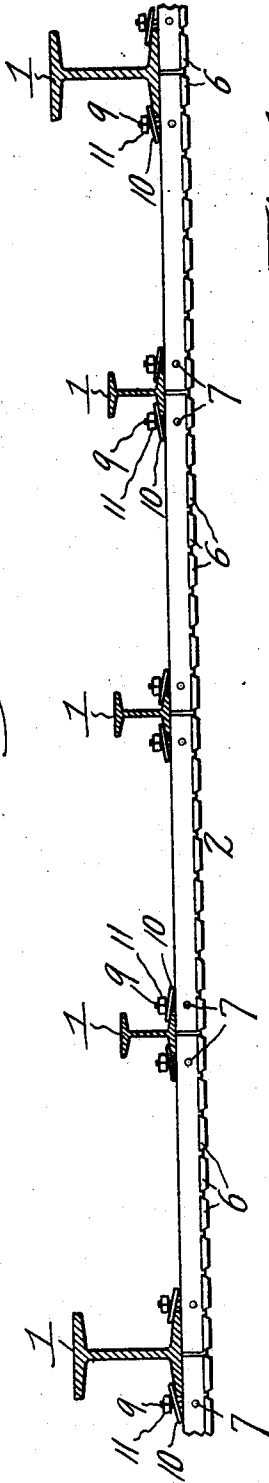


Fig. 4.

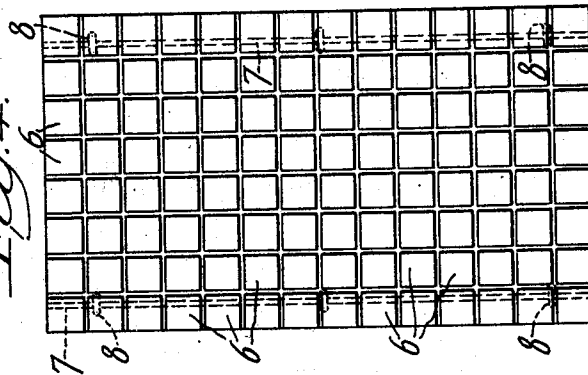


Fig. 3.

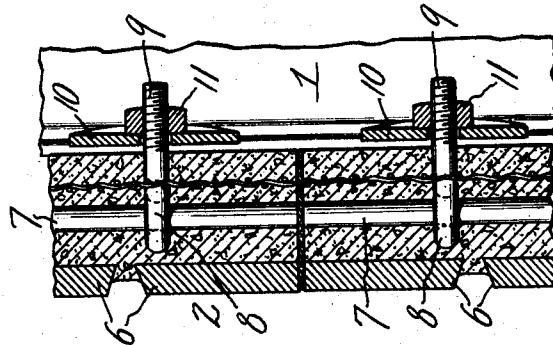
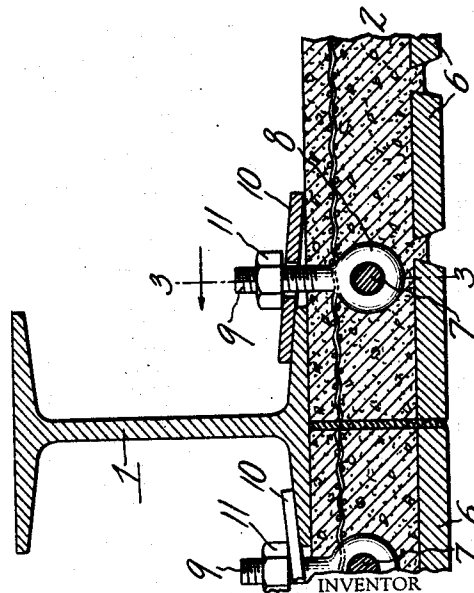


Fig. 2.



INVENTOR
Robert Tappan
BY
Frederick K. Barker
ATTORNEY

UNITED STATES PATENT OFFICE

ROBERT TAPPAN, OF FOREST HILLS, NEW YORK

BUILDING CONSTRUCTION

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This invention relates to building construction employing steel beams or uprights and pre-cast or fabricated wall units, and my improvement is directed to means whereby the uprights and wall units are united and interlocked in such manner as to produce an integrated building structure of homogeneous texture that cannot be disrupted by climatic, seismic or other influences to which buildings are subjected.

Briefly expressed my improved building construction consists of suitably spaced vertical I beams composed of steel, mounted on a suitable foundation and provided with the usual horizontal beams.

Placed against these vertical beams are panels, composed of cast material, such as concrete with wire reinforcement and an outer finish, said panels having cast therein vertical steel rods carrying eye-bolts that project from the inner surfaces of the panels. It is by means of these eye-bolts, which are provided with securing devices, that the panels are rigidly clamped into permanent, interlocked engagement with the vertical steel I beams, thereby constituting an integrated wall structure of unusual strength and durability.

I have found it desirable to employ a light weight concrete for the wall panels, such for example as cinder concrete, and by reason thereof and of the secure union effected between the panels and the steel uprights, the latter, or some of them, may be of smaller cross-section than would otherwise be necessary. For example the vertical beams intermediate those at the building corners may be of lighter weight than the corner beams.

Other features and advantages of my invention will hereinafter appear.

In the drawing:

Figure 1 is a horizontal sectional view of a building wall produced according to my invention.

Fig. 2 is a horizontal section, on a larger

scale of a vertical I beam, also showing a wall panel united therewith.

Fig. 3 is a section on the line 3—3 of Fig. 2, and

Fig. 4 is a front elevation of a wall panel.

In said figures let 1 indicate the vertical I beams employed in my improved wall construction. While some of said beams 1 in Fig. 1 are shown as of smaller cross-section than others it is essential that the flanges of all said beams opposed to the wall they support are disposed in the same vertical plane.

At 2 I have indicated wall 4 formed of suitable cementitious composition in which is embedded metallic reinforcement lying in a plane parallel with the panel surfaces. Exterior finish of any suitable character may be applied to the outer surfaces of the panels. In the example illustrated I have shown tiles 6, spaced apart and having opposed bevelled edges, so that the cementitious material of the panel may be moulded between said edges to comprise dove-tailed interlocking joints.

Also embedded in the cementitious material of which the panels are composed are vertical steel rods 7, and threaded on said rods are eye-bolts 8 whose screw portions 9 project out beyond the inner surfaces of the panels. Washers or disks 10 are placed upon the screw portions 9 of the eye-bolts and are adapted to engage the flanges 10 of I beams 1 that lie against the inner surfaces of the panels. As thus positioned, nuts 11, engaging screw portions 9 are screwed tightly against the washers causing the latter to securely clamp the I beam flanges against the panels. It is in this manner that the vertical I beams and the wall panels become integrated in the formation of a homogeneous wall structure.

Variations within the spirit and scope of my invention are equally comprehended by the foregoing disclosure.

I claim:

In building construction including a plurality of vertically disposed and spaced apart

I-beams, panels attached to the flanges of said I-beams, each of said panels including embedded eye-bolts having their threaded portions projecting beyond the rear face of said panel, rods extending vertically through said panel and passing through the eyes of said eye-bolts and means for securing said bolts to the flanges of said I-beams, said means including washers that overlie the marginal edges of said flanges.

New York, January 7th, 1928.

ROBERT TAPPAN.

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