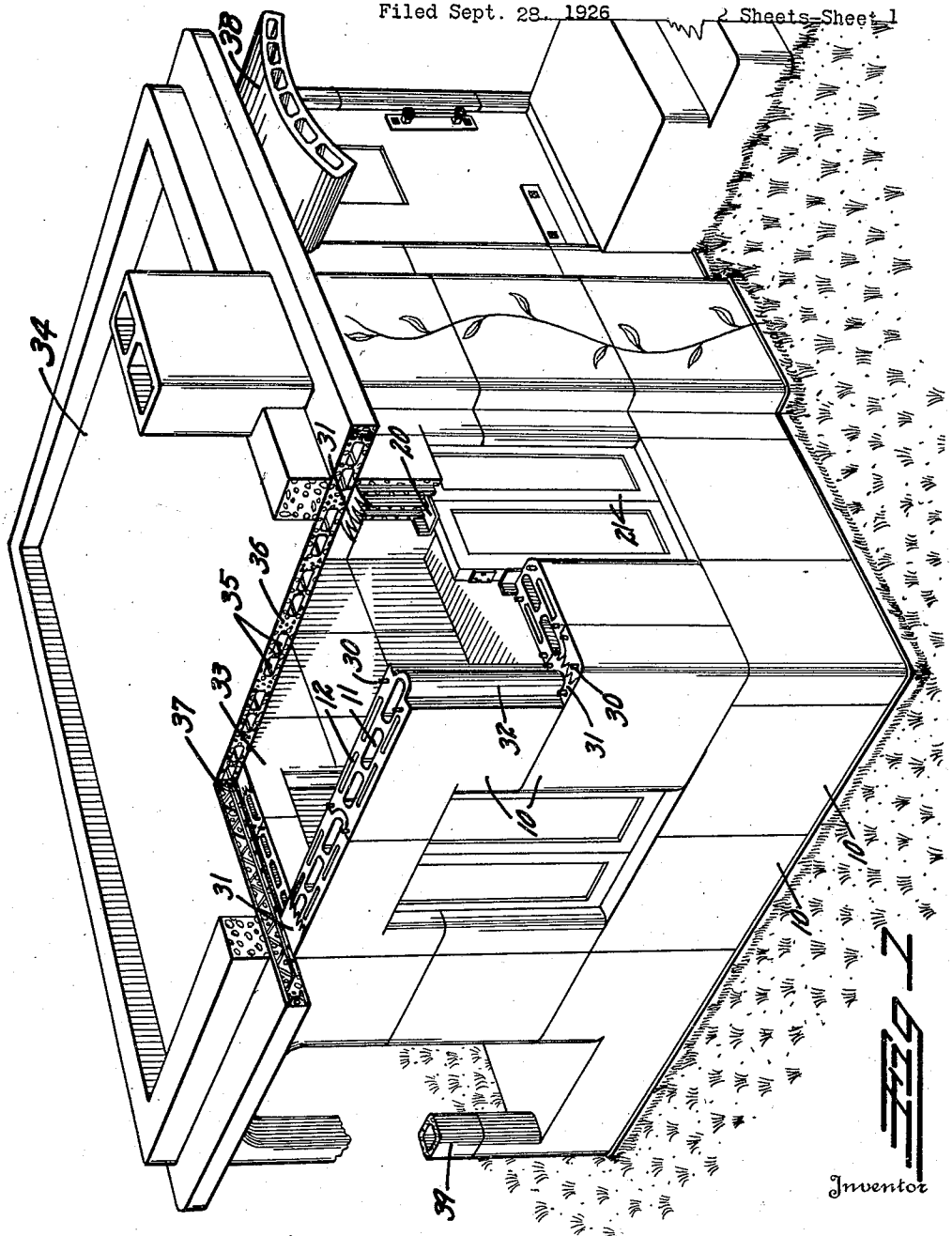
April 17, 1928. 1,666,235

F. H. FRANSON

BUILDING CONSTRUCTION

Filed Sept. 28, 1926 2 Sheets-Sheet 1



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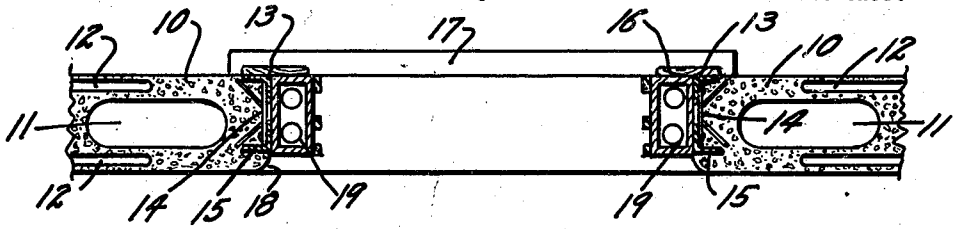


Fig 2

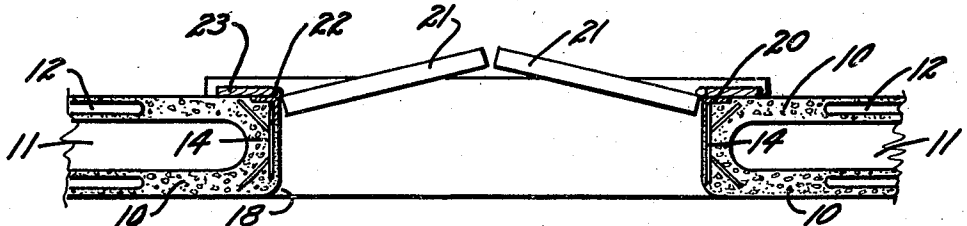


Fig 3

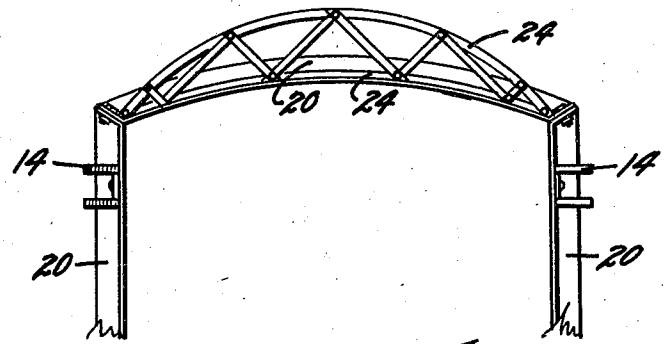


Fig 4

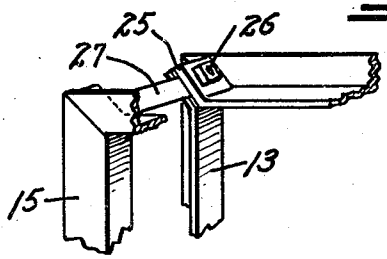


Fig 5

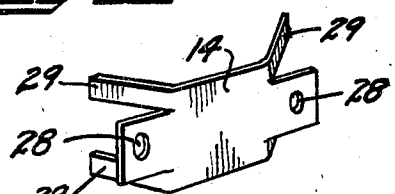


Fig 6

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UNITED STATES PATENT OFFICE.

FRITZ HUGO FRANSON, OF DENVER, COLORADO.

BUILDING CONSTRUCTION.

Application filed September 28, 1926. Serial No. 138,151.

This invention relates to a construction for buildings and other shelters and has for its principal object the provision of a building construction comprising a series of co-acting blocks which are cast in place in the building wall but are maintained independent of each other.

Another object of the invention is to provide a cast-in-place, polylithic construction for the walls of a building.

A further object of the invention is to form a wall of a series of units separated by a medium which will allow relative expansion of the units without affecting the solidity of the wall.

A still further object is to provide a frame construction for the wall openings which may be cast into the wall sections at the time of erection.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing:

Fig. 1 is a perspective view of a building erected according to my invention. In this view the building is partially broken away to illustrate the detail construction thereof.

Fig. 2 is a detail horizontal section through a window opening in a wall erected according to the invention. In this view the window frame is of the box type, that is, weights are employed for supporting the window sash.

Fig. 3 is a similar view illustrating the invention surrounding a window or door of the casement type.

Fig. 4 is a detail view illustrating a reinforcing arch construction employed over wall openings.

Fig. 5 is a detail view illustrating the manner of tying an inner frame to an outer frame for the wall openings.

Fig. 6 is a detail view of a tie member employed with the frames.

In this invention the walls of a building are formed of a series of relatively large blocks 10, each of which is cast in place in the wall. Suitable forms for casting the blocks are illustrated in my co-pending application, Serial Number 91,055. Each of the blocks 10 is provided with a series of relatively large, vertical, central, cells 11 which extend throughout the vertical length of the block, and with a series of relatively narrow, outer vertical cells 12. It is well known that blocks cast of concrete, gypsum, and the like with central cells, will have a tendency to pass moisture through the solid parts of the blocks between the cells. By arranging the narrow cells 12 in staggered relation with the cells 11, however, this objection is obviated since there is no direct path through the block for the moisture. These cells may be formed by employing a core form such as illustrated in my prior Patent, Number 1,595,461.

At each of the wall openings, such as for a window or door, an angle iron frame is set in place before the blocks 10 are cast around the opening. These angle iron frames are illustrated in detail in Figs. 2 to 5, inclusive, and, for windows of the box type, comprise an outer angle frame 13 connected by means of ties 14 to an inner angle frame 15. The inner angle frame 15 forms a metallic corner for the blocks 10 at each side of the window opening on the inside of the wall, and may be covered by a suitable window casing 16, if desired, terminating in the usual interior sill 17. The outer angle frame 13 is embedded in the blocks 10 beneath the outer face of the block, the block corner being rounded at this point, as shown at 18. The box frame for the windows, illustrated at 19, is secured to the face of the two angle frames 13 and 15. For windows of the casement type and doors I employ an inner angle frame 20 to which, throughout its length, are secured a number of the ties 14 which are embedded in the blocks 10 alongside of the window openings, as shown in Fig. 3. The windows, illustrated at 21, may be hinged as at 22 to the angle frame 20 and the inner face of the frame covered, if desired, by suitable casing 23. A frame of the latter type is illustrated more in detail in Fig. 4 which shows it in elevation.

For reinforcing the arch above the openings I employ a relatively light lattice work arch 24 which I place over the opening to be embedded in the blocks 10 which are cast over the opening. In Fig. 4 a semi-arch construction is shown on the opening frame. This may, of course, if desired, be

a flat arch, but in either case the arch 24 may be employed.

In forming the frames for the openings, the extremities of the inwardly extending leg of each angle bar are turned upwardly so as to lie against each other, as shown at 25, Fig. 5, and are secured together by means of a suitable bolt or rivet 26. This construction shows no fastening means on the exterior of the wall and provides a neat and tight mitered joint. For frames such as illustrated in Fig. 2 a cross tie 27 is arranged to extend between the bolts 26 of the opposite frames, as shown in Fig. 5.

In Fig. 6 one of the ties 14 is illustrated in detail and comprises a strip of sheet metal perforated at 28 adjacent its extremities for attachment to the angle frames. At each side of the perforation 28 the strip is split so as to form four inwardly projecting tongues 29 for embedment in the blocks 10. As each block 10 is cast, dowel pins 30 are placed in its upper face. The blocks are then covered with a strip of cushioning material, such as tar paper 31, and the next above block is then cast. The material of the above block will flow around the dowel pins 30 and securely lock the block thereon.

The tar paper 31 separates the wall into integral sections, thus allowing temperature expansion and settling without cracking or destroying the blocks. The paper also serves as an insulating and water-proofing material to fill the joints between the blocks.

Extending vertically along one edge of each block 10 is a projecting tongue 32 which is cast into the next adjacent block as it is put in place. It is desired to call attention to the fact that the end cell 11 of each block extends within the projecting tongue 32 so as to break any direct path for moisture through the block.

The interior walls of the building, illustrated at 33, are of a similar but lighter construction to the outer walls. The roof of the building, illustrated at 34, is of monolithic construction and comprises a series of horizontal cells 35 spaced between light reinforcing metallic trusses 37. A projecting roof may be formed over the entrance way, as at 38, by the same monolithic hollow construction. The columns for projecting roofs are supported by hollow sectional blocks 39.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claims, without departing from the spirit of the invention.

Having thus described the invention, what I claim and desire to secure by Letters Patent is:—

1. In a building having walls of cast material with window and door openings therethrough; angle frames surrounding said openings and forming corners therefor; and ties secured to said angle frames and extending within said walls.

2. In a building having walls of cast material with openings therethrough; angle frames surrounding said openings and forming corners therefor; ties secured to said angle frames and extending within said walls; the inward projecting legs of the members of said angle frames being turned so as to lie along each other in said frame; and fastening means for securing said turned legs together.

3. In a building having walls of cast material and an opening extending therethrough; an angle frame adapted to surround said opening; ties secured to said angle frame and adapted to extend within said walls, said ties comprising a strip of sheet metal, said strip being split longitudinally inwardly from each of its extremities, the portions at one side at each of said splits being turned at an angle to the plane of said strip so as to extend with said walls.

4. A door and window jamb for openings in building walls comprising an angle iron frame adapted to surround said opening at one face of the wall and form corners therefor; ties secured to said angle frames and adapted to extend within said walls, the inwardly extending legs of the angle irons forming said frame being turned at the corners thereof so as to lie along each other; and means for securing the turned corners together.

5. A door and window jamb for openings in building walls comprising an angle iron frame adapted to surround said opening at one face of the wall and form corners therefor; ties secured to said angle frames and adapted to extend within said walls, said ties comprising a strip of sheet metal; and inwardly turned tongues on said strip adapted to form anchors in said wall.

In testimony whereof, I affix my signature.

FRITZ HUGO FRANSON.