July 24, 1923. 1,462,622

E. J. PHELAN

COMBINATION CONCRETE WALL BOARD AND STUDDING

Filed Nov. 21, 1922

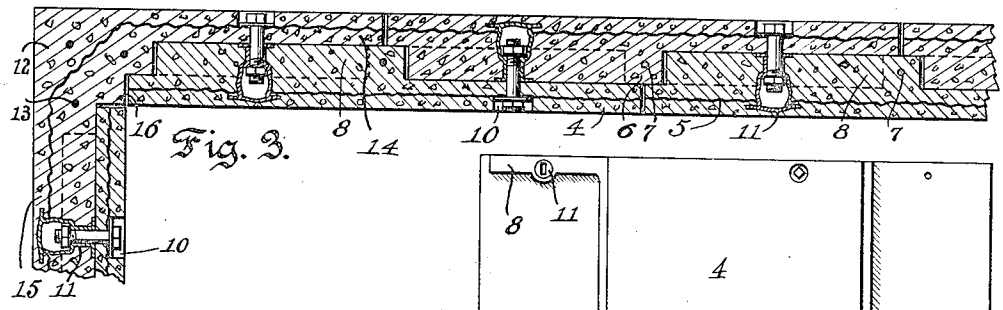


Fig. 3.

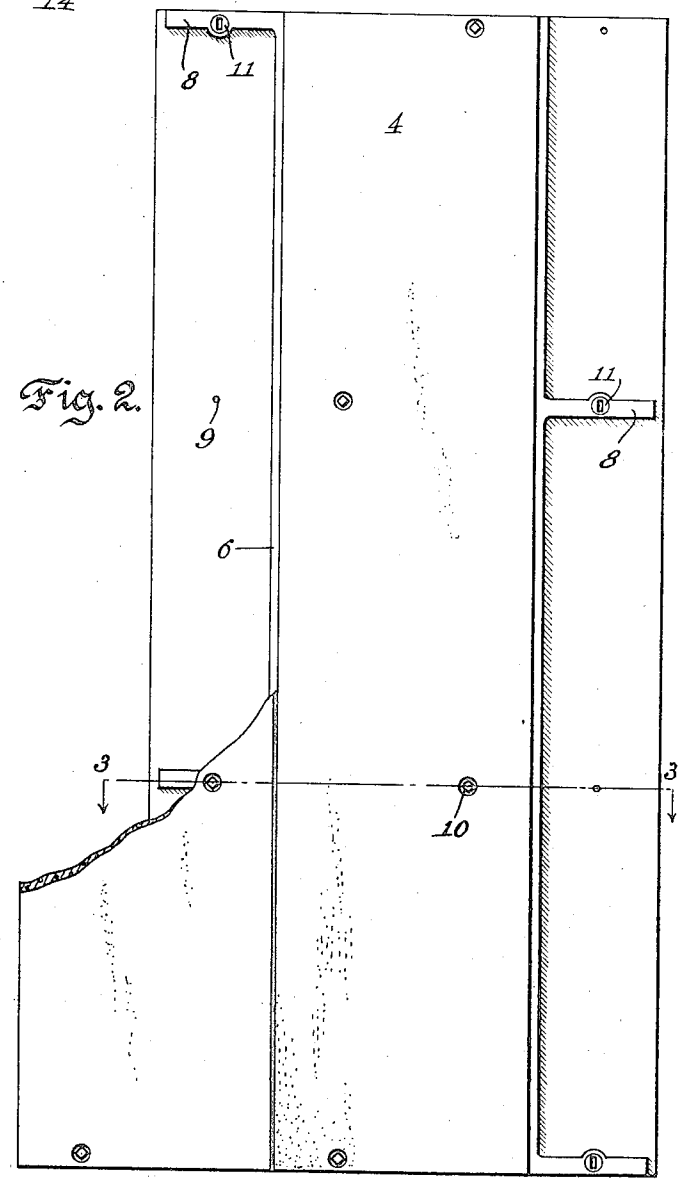


Fig. 2.

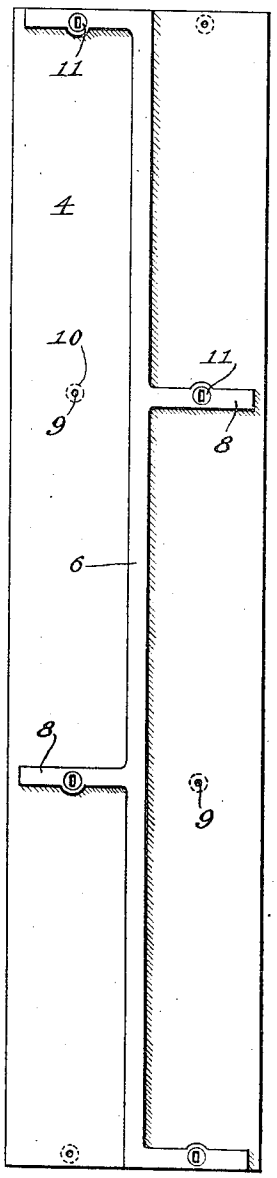


Fig. 1.

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UNITED STATES PATENT OFFICE.

EDWARD J. PHELAN, OF LOS ANGELES, CALIFORNIA.

COMBINATION CONCRETE WALL BOARD AND STUDDING.

Application filed November 21, 1922. Serial No. 602,274.

To all whom it may concern:

Be it known that I, EDWARD J. PHELAN, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Combination Concrete Wall Boards and Studdings, of which the following is a specification.

My invention relates to pre-cast concrete building material, and particularly to concrete wall boards having integral studding portions. The salient objects of my invention are, first, to provide monolithic building units comprising a wall slab, studding, and fire stops; second, to afford facilities for assembling such units, by bolting only, to form a hollow wall of great strength; and, third, to accomplish the aforesaid objects in such a manner that the cost of manufacturing will be relatively small.

Other objects and advantages will appear hereinafter, and while I show herewith and will describe a preferred form of construction, I desire to be understood that I do not limit myself to such preferred form, but that various changes and adaptations may be made therein without departing from the spirit of my invention as hereinafter claimed.

One form of the invention is illustrated in the accompanying drawing, in which Figure 1 is an elevation of the inner side of the units; Figure 2 is an elevation of a portion of a built up wall with one of the units broken for illustrative purposes; and Figure 3 is a sectional plan view taken through the fire stops, as on the line 3—3 of Fig. 2. A preferred corner construction is also illustained in Fig. 3.

Similar numerals refer to similar parts throughout the several views.

The units are made as symmetrical rights and lefts; and comprise a slab portion 4, centrally reinforced by steel fabric 5, and having on the inner side a central web 6 extending the full length of the slab. The web is centrally reinforced by a longitudinal rod 7 and is made of such size and proportions as to enable it to act as a stud adapted for supplying, in cooperation with the slab portions, the necessary transverse stiffness to the wall.

Extending laterally on each side of the web are fire stops 8. These are made to terminate short of the edge of the slab by an amount equal to half the thickness of the web.

The fire stops on one side of the web are staggered with respect to those on the other side.

For erecting purposes each unit is provided with four bolt holes 9, countersunk on the face side of the slab as at 10. These holes are centrally spaced between the fire stops on one side and directly opposite the stops on the other side of the web.

Each of the stops has an insert 11 cast therein in similar position, and so that it will register with the hole in the opposed slab when the wall is being erected. By means of these holes and inserts the wall is erected by bolting up in the manner indicated in Fig. 3.

At corners a special construction is sometimes required. One type suitable in many cases is illustrated in Fig. 3. It comprises a corner post 12 reinforced by rods 13, and having laterally extending slab portions 14 and 15. The latter are formed with fire stops, inserts, and counterbored bolt holes, in a manner corresponding to the unit construction above described; the inner corner of the post being notched in the manner shown at 16, to accommodate the interior wall slabs.

It will be noted that the construction provides a cellular wall of relatively light weight and great strength. The vertical joints between slabs on one side of the wall are staggered with respect to those on the other side, and all the joints are centered over the webs. The wall is completed, when desired, by plastering up the joints and bolt hole countersunks, and thus obtaining uniform continuous surfaces.

I claim as my invention:

1. A monolithic wall unit comprising a slab having a web and fire stops extending transversely from said web; said unit having assembling means whereby it can cooperate with similar units to form a cellular wall.

2. A monolithic wall unit comprising a slab having a central longitudinal web and fire stops extending transversely from said web on both sides thereof; said units having assembling means whereby it can cooperate with similar units to form a cellular wall.

3. A monolithic wall unit comprising a

slab having a central longitudinal web and fire stops extending transversely from said web on both sides thereof; said stops on opposed sides of said web being staggered with respect to each other and said units having assembling means whereby it can cooperate with similar units to form a cellular wall.

4. A monolithic wall unit comprising a slab having a central longitudinal web and fire stops extending transversely from said web on both sides thereof; said slab having bolt holes therethrough, and said stops having flush inserts therein, whereby said units can be assembled with similar units to form a cellular wall.

EDWARD J. PHELAN.