P. M. STEWART.

BUILDING CONSTRUCTION.

APPLICATION FILED AUG. 19, 1915.

1,264,991. Patented May 7, 1918.

Fig. 1.

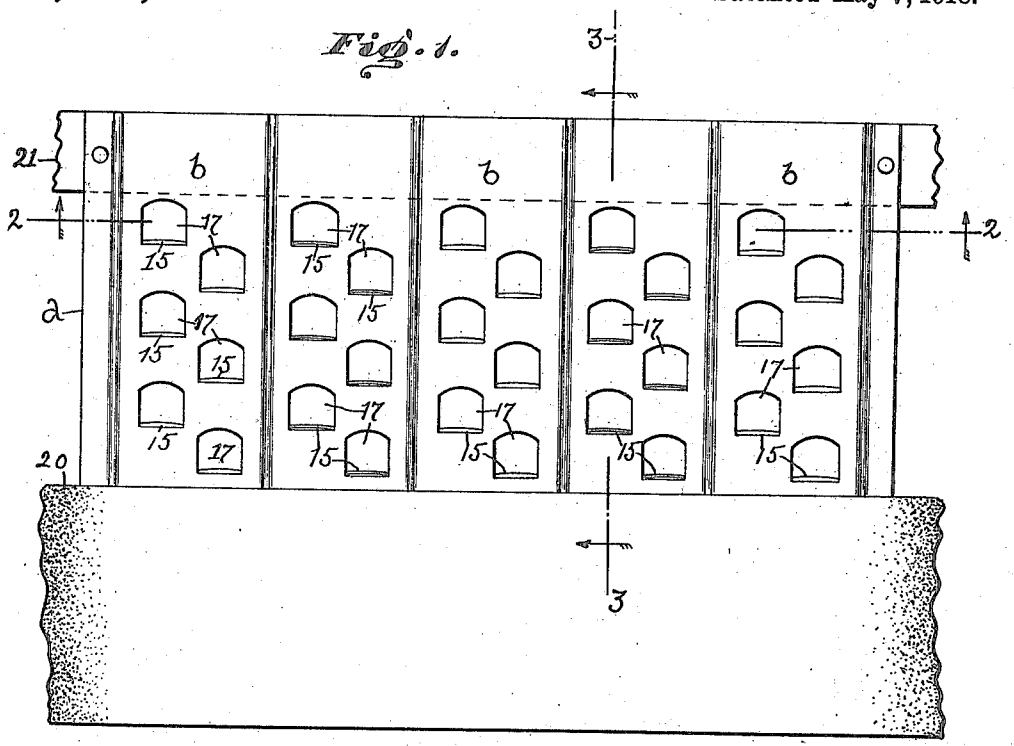


Fig. 2.

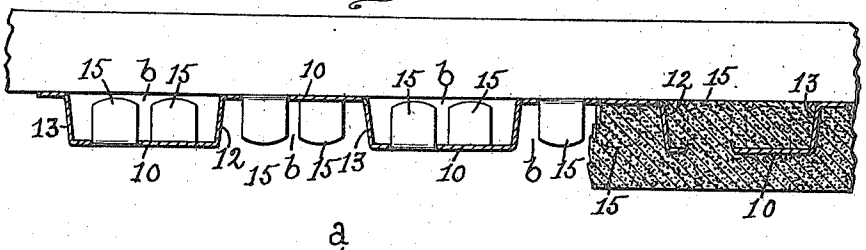
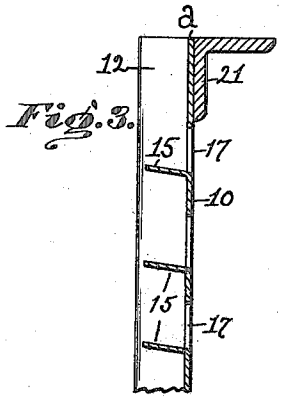


Fig. 3.



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UNITED STATES PATENT OFFICE.

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BUILDING CONSTRUCTION.

1,264,991. Specification of Letters Patent. Patented May 7, 1918.

Application filed August 19, 1915. Serial No. 46,345.

To all whom it may concern:

Be it known that I, PEREZ M. STEWART, a citizen of the United States, residing in the borough of Manhattan, in the city, county, and State of New York, have invented an Improvement in Building Constructions, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to reinforced concrete building constructions, and more particularly to the upright walls or partitions thereof, and has for its object to provide a thin, fireproof partition or wall of great strength, at low cost.

To this end, I employ a metal sheet provided with corrugations substantially rectangular in cross-section, and having lips punched out of the walls of the corrugations so as to extend from said walls transversely of the same, said lips being of a material length and width, so that supporting shelves or surfaces of substantial area are obtained for supporting concrete, cement or other plastic material, and which lips are arranged in substantially parallel rows and preferably staggered with relation to one another to obtain a maximum number of supporting lips or shelves without weakening the corrugated metal sheet.

The lips or shelves in adjacent sections or valleys and crests extend in opposite directions, and the corrugated sheet is arranged with the corrugations or valleys running vertically, so as to form studs and obtain a strong partition or wall with a metal plate of minimum weight and at a minimum cost.

The particular features of this invention will be pointed out in the claim at the end of this specification.

Figure 1 represents in elevation a partition or wall embodying this invention.

Fig. 2, a section on the line 2—2, Fig. 1, and

Fig. 3, a section on the line 3—3, Fig. 1.

Referring to the drawing, *a* represents a metal sheet or plate, which is provided with a plurality of corrugations forming valleys and crests *b*, whose walls 10, 12, 13, are substantially rectangular in cross-section, (see Fig. 2).

The corrugated metal plate *a* is arranged with the valleys and crests *b* running in a vertical direction, and the bottom wall 10 of each valley and the top wall 10 of each crest has extended from it a plurality of shelves or supporting devices 15, which extend transversely of the bottom and top walls and are arranged in substantially parallel rows, and for the best results the shelves 15 in one row are staggered with relation to the shelves 15 in the other row or rows.

The shelves 15 are made by punching them out from the bottom and top walls 10 and bending them into a substantially horizontal position, and said shelves are preferably made of a length substantially equal to the depth of the corrugation or valley and crest *b*, so that the front edges of the shelves in one valley are substantially flush with the top walls 10 of adjacent crests and vice versa. The bottom and top walls 10 of the valleys and crests are thus provided with a plurality of openings 17 arranged in rows and in staggered relation. The shelves 15 are made of substantial width to form a supporting surface for the plastic material 20, which may be cement, concrete or other plastic material.

The corrugated metal sheet *a* may be secured at its top and bottom to suitable cross supports or bars, only one, 21, of which is herein shown, and said corrugated metal sheet has applied to it the plastic material 20, which can be applied by a trowel in the usual manner, and which is of sufficient thickness to fill the valleys and crests, and a portion of which passes readily through the substantially large openings 17 in the corrugated metal sheet.

By reference to Fig. 2, it will be seen that the plastic material fills the vertical valleys *b* of the sheet and is firmly supported by the shelves 15, which afford a broad bearing for the plaster to rest upon and adhere to, and thereby support the weight of the plaster and prevent slipping down of the plaster under pressure of the weight of the body of plaster above.

By making the shelves of a length substantially equal to the depth of the valleys, I am enabled to obtain the broad or extended supporting area for the plaster without interfering with the application of the latter by means of a trowel, which enables the plaster to be applied in a minimum time and at a minimum cost.

Furthermore by arranging the shelves in one row in staggered relation to the shelves

in the adjacent rows, I not only obtain the desired broad area of supporting surface for the plaster without sacrificing the strength of the metal sheet, but I also obtain a bonding of the plaster which passes through the holes in one row, with the plaster which passes through the holes in the other row, and the plaster wall or partition is most effectively reinforced by the metal sheet.

By arranging the corrugated sheet with the valleys running vertically, the metal reinforcing sheet for the plaster is converted into a plurality of metal studs connected together and arranged in substantially close parallel relation.

Claim:

A corrugated metal sheet for walls of reinforced building constructions, comprising a corrugated metal sheet having valleys and crests of substantially uniform width and provided with walls substantially rectangular in cross section and vertically arranged to form studs of substantially uniform width in said corrugated metal sheet, the bottom walls of both the valleys and crests being provided with openings and with shelves extended from one edge of said openings transversely of said valleys and crests, with shelves of the valleys extended toward the plane of the top walls of the crests, and with the shelves of the crests extended in the opposite direction and toward the plane of the bottom walls of said valleys to form substantially horizontal supports for plastic material in both valleys and crests.

In testimony whereof, I have signed my name to this specification.

PEREZ M. STEWART.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."