W. H. EVERS.

BUILDING CONSTRUCTION.

APPLICATION FILED MAY 27, 1915.

1,170,743. Patented Feb. 8, 1916.

FIG. 1.

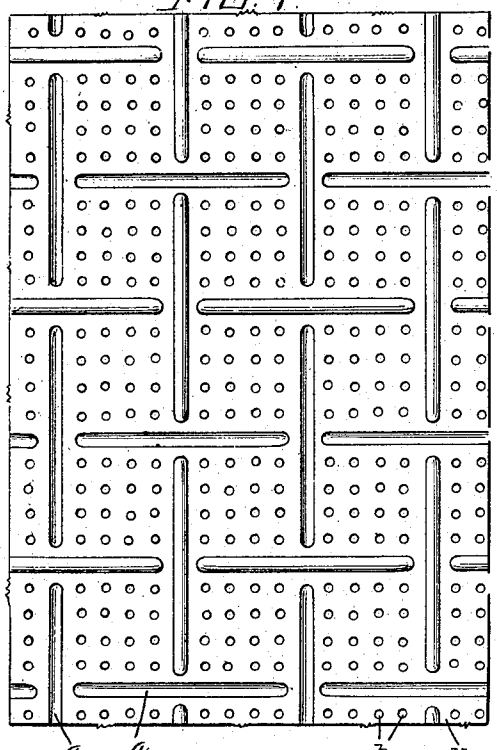


FIG. 2.

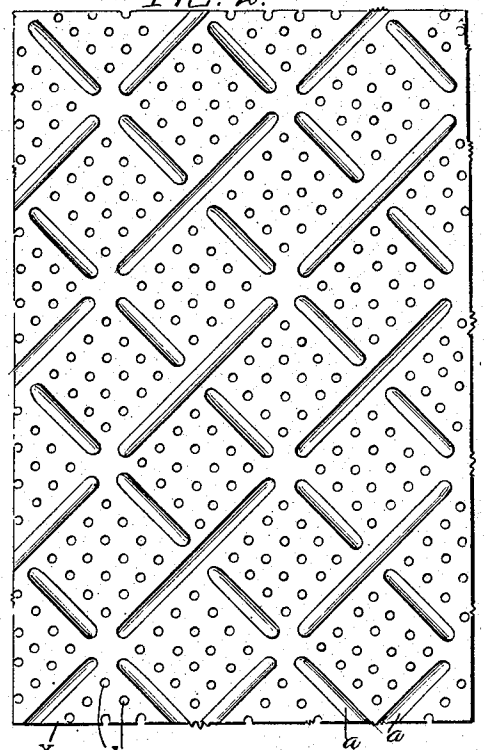


FIG. 3.

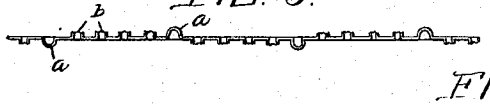


FIG. 4.

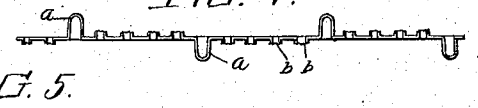


FIG. 5.

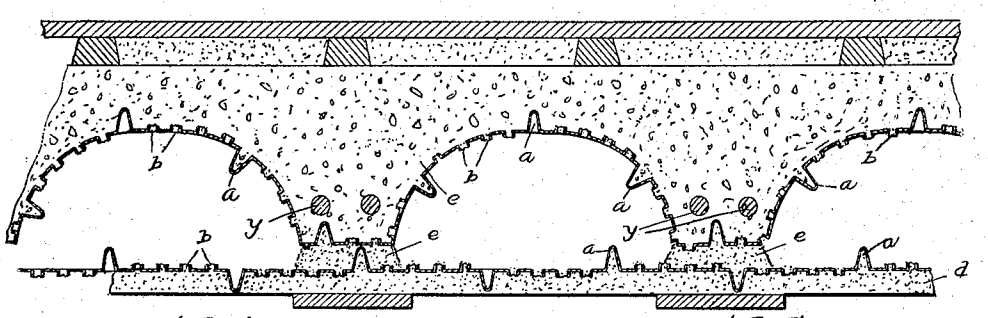


FIG. 6.

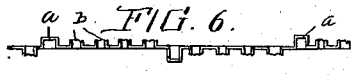
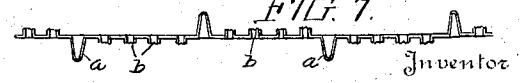


FIG. 7.



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UNITED STATES PATENT OFFICE.

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BUILDING CONSTRUCTION.

1,170,743. Specification of Letters Patent. Patented Feb. 8, 1916.

Application filed May 27, 1915. Serial No. 30,719.

To all whom it may concern:

Be it known that I, WILLIAM H. EVERS, citizen of the United States, residing at Lakewood, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Building Construction, of which the following is a specification.

This invention relates to improvements in building construction, particularly as applied to floors, roofs and partitions, using the well known rafters, joists, beams and studding with wood, concrete or steel in combination with a specially designed plate which acts as positioner of applied materials furnishing adequate bond and strength to unite the different materials used, to form one solid mass.

In combination with wooden rafters, studding, girders or joists the plates are readily nailed to said wooden members and by using concrete or plaster as requirements may demand, build floor ceilings or walls.

A most economical construction for floors, walls or partitions is a combination of wood, steel or concrete rafters, beams, girders, plates or joists with a metal plate which is fashioned strong enough to serve the purposes of forms, can position reinforcing materials and also is formed to furnish plaster and concrete bond.

In the accompanying drawings, Figures 1 and 2 are plan views of two forms of metal plates embodying the invention. Figs. 3 and 4 are edge diagrams thereof respectively. Fig. 5 is a section showing the use of the plates in floor arches and ceilings. Figs. 6 and 7 are edge diagrams of modified plates.

In Figs. 1 and 2 *x* are metal plates ribbed as at *a* in more than one direction and on both sides of the plate; also reamed as at *b* with holes regularly spaced between ribs, yet reamed alternately in opposite directions, so that the burs at the edges of the holes project on opposite sides.

The ribs of Fig. 2 are identical with those shown in Fig. 1 but vary in length and direction. Ribs wherever shown in Figs. 1—2—3—4—5—6—7— and the reamed holes in the same figures, are marked *a* and *b* respectively. Figs. 3—4—6 and 7 are edge diagrams of the ribbed reamed plates showing various locations and forms possible for the ribs, also possible position, size and rough finish, caused by reaming holes in opposite directions. Fig. 5 show this metal plate serving as forms for the concrete *e*.

The methods of use and results secured can briefly be described as follows: In Fig. 5 the metal plate shown in Fig. 1 is spread across supporting frame work or blocks as shown at *e*. This metal plate serves as metal lath for plaster bond for the ceiling. The metal plate shown in Fig. 2 is used in arch form, Fig. 5. This plate by reason of ribs running diagonally and in opposite directions is peculiarly strong enough to hold any shape it may be formed to, and is also of sufficient strength to hold its form and carry construction loads usually carried by other forms during building operations. The metal plates are relatively placed as shown in Fig. 5, and after reinforcing material *y* is positioned, concrete marked *e* is poured into the forms and at points of contact of the metal plates enough of thin cementitious material will pass the reamed holes so that after proper setting these two metal plates will be bonded at *e*, so that after removing the supporting frame work, the metal plate *x* shown in Fig. 1 is positioned ready to receive ceiling plaster *d*. This bonding of the two metal plates is considerably strengthened by the passing of plaster *d* through the reamed holes at *e*. If a plaster finish *d* is desired the plaster bond is perfected first by the reamed holes reamed away from the plaster side and secondly by its adhesion to the rough concrete surface caused by thin concrete passing the reamed holes that are reamed away from the concrete side.

The metal plates are ribbed in both and opposite directions to provide the same strength irrespective of which side of plate is used, and with holes reamed in opposite directions to provide a rough bonding surface for the adhesion of cementitious materials applied to either surface of the plate. The ribs can be designed so as to stiffen and strengthen metal to support the small loads usual to construction operations. They may also be designed in form and position to absolutely fix and place reinforcing materials such as bars, rods and suspended wire or suspended wire rope. The plates can be bent to arch either convex or concave, also square, rectangular or any other form as the ceiling detail may be preferred, or the

economy of construction may require, without loss of strength, the ribs running in opposite directions on both sides of the plate. The holes are reamed through the metal plates in such location and direction and of such diameter as will afford ample bond for concrete or for the plaster, or the applied cementitious material, yet of a form and size as will not pass an excess of these materials. These metal plates will give necessary strength to serve to outline and position all elements composing the floor or wall construction, rafters or joists, and will also provide perfect bond and adhesion for applied cementitious materials and can eliminate the use of collapsible forms.

Various sections of possible uses for these metal plates in combination with steel framing, concrete beams, rafters, studding or joists, and as used alone are shown, indicating the adaptability and manifold uses these plates can be put to in floor, ceiling or partition construction. Such metal plates combine the advantages and serve the uses of forms, (collapsible or otherwise) and concrete molds or plaster lath, saving thereby much cost in labor and materials.

What I claim as new is—

1. A metal plate for building construction, having a plurality of intersecting rows of ribs projecting on opposite sides thereof and also provided with numerous perforations between the ribs, with rims around the perforations projecting on opposite sides of the plate at different perforations respectively.

2. A metal plate for building construction, having a plurality of relatively short ribs projecting on opposite sides thereof and disposed in intersecting lines with the ends of each rib adjacent intermediate portions of other ribs and at an angle thereto, and perforations in the spaces between the ribs and projecting rims around the perforations, the rims around some of the perforations projecting on one side of the plate, and those around other perforations projecting on the opposite side of the plate.

In testimony whereof, I do affix my signature in presence of two witnesses.

WILLIAM H. EVERS.

Witnesses:
D. Z. HERR,
R. SCOTT.