W. SEYMOUR.

REINFORCED BUILDING UNIT.

APPLICATION FILED AUG. 9, 1920.

1,399,088. Patented Dec. 6, 1921.

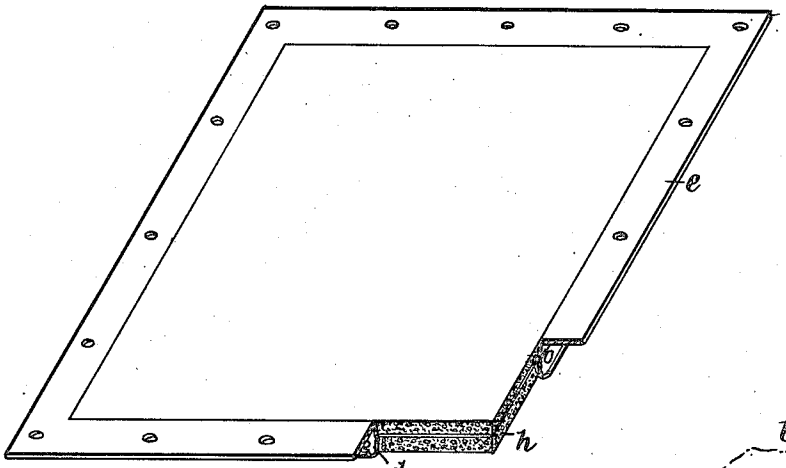


Fig. 1.

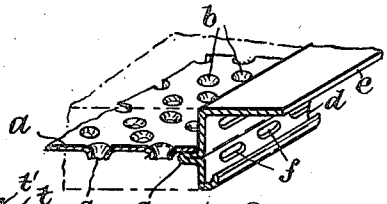


Fig. 2.

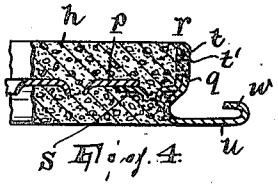


Fig. 4.

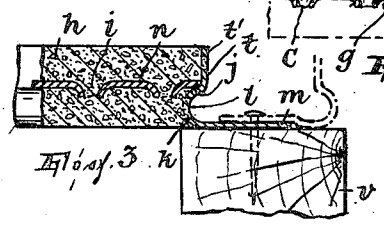


Fig. 3.

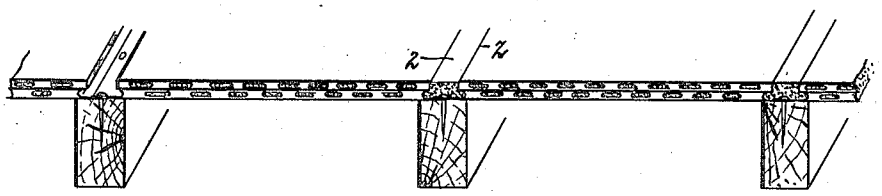


Fig. 5.

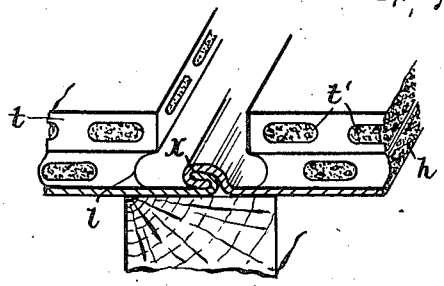


Fig. 6.

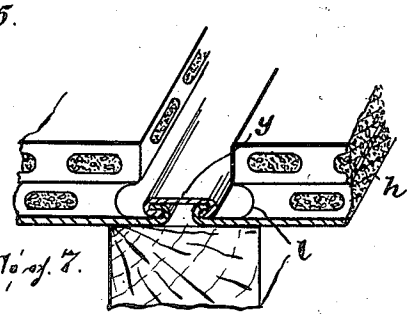


Fig. 7.

WITNESS:

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REINFORCED BUILDING UNIT.

1,399,088. Specification of Letters Patent. Patented Dec. 6, 1921.

Application filed August 9, 1920. Serial No. 402,083.

To all whom it may concern:

Be it known that I, WILLIAM SEYMOUR, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Reinforced Building Units, of which the following is a specification.

The object of this invention is to provide an improved reinforced plate formed of plastic material and adapted for use in building walls, ceilings, roofing, the forming of boxes or other containers and the like purposes where a strong and durable and readily attached unit of this class is desired.

Another object is to provide an improved roof, ceiling, or other wall structure composed of a series of plates attached to a suitable support and all in the same plane but spaced from each other and a plastic mass filled into the spaces between the plates.

In the accompanying drawing,

Figure 1 is a perspective view of one form of the reinforced plate embodying my invention;

Fig. 2 shows fragments of the reinforcing parts before the plastic material is applied thereto;

Figs. 3 and 4 show modified forms of the plate;

Fig. 5 shows a roof or other wall structure formed in accordance with my invention; and

Figs. 6 and 7 show fragments, on a larger scale, of wall-structures with two different forms of joints between the constituent plates.

Referring, first to Figs. 1 and 4, *a* is a stiffening or reinforcing structure such as reticulated sheet metal. The holes or openings *b* in this sheet are preferably formed by punching so as to leave around each hole and at one side of the sheet a bur *c*. Around this sheet *a* is a sheet metal frame having (in the example illustrated four) vertical walls *d* and four horizontal walls *e* all lying in the same plane and projecting outwardly from one margin of the endless band which the several walls *d* virtually constitute, the walls *e* being in effect a flange of the band. The walls *d* are preferably reticulated, as at *f*. The sheet *a* rests on the ledge formed by an inward bead *g* on each wall *d*.

With the sheet *a* held resting in some way against the ledge *g* plastic material *h*, such as plaster or cement, is applied to both sides of the sheet and so as not only to fill the inclosure formed by the frame completely but penetrate the holes *b* thereof and also extend into the holes *f* in the band portion of the frame, as illustrated for example in Figs. 3 and 4, the opposite surfaces of the plastic material being leveled up flush with the frame. When the material hardens, the product will be a slab which is reinforced throughout by the sheet and also reinforced and protected marginally by the frame, the material being locked to the band of the frame, which is in effect cast as an integral part thereof, and affords at the ledge a seat or support for the slab, and the two portions of the material on opposite sides of the sheet *a* being joined by numerous connections *i* (Figs. 3 and 4).

In Fig. 2 the bead *g* is an inward fold formed in each wall *d* midway its width. In Fig. 3 the ledge *j* is formed by a bead *k* which at the outside of the band constitutes a groove *l*, and the flange *m* (corresponding to the flange *e*) is a continuation of the outer margin of the bead. The reticulated sheet *n* (corresponding to sheet *a*) rests on the ledge *j* and the plastic material *h* is assembled with the sheet and frame substantially the same as in Figs. 1 and 2.

In Fig. 4 the ledge for the reticulated sheet *p* (corresponding to sheet *a*) is formed by first folding inwardly one edge-portion of the band *q* of the frame, as at *r*, and then shaping the margin of said edge-portion so that it will extend inwardly, as at *s* to produce the ledge. The plastic material is in this case assembled with the sheet and frame the same as already described.

It will be noted that the flange *e* in Figs. 1 and 2, or the flanges *m* and *u* in Figs. 3 and 4 become a convenient means for attaching the plate in position. The flange may be mailed to the available support *v* for the plate, Fig. 3, or it may be formed with a fold *w*, Fig. 4, to be interlocked with another such fold in securing the plate in place, thus:

In Fig. 6 the folded flanges of two adjoining reinforced plates are made to compose a lock seam *x*, which may be soldered if necessary to make it tight. A number of the reinforced plates, so assembled, are well adapted for a roof. Instead of connecting the two flanges with each other to form the lock seam, a lock seam may be formed as in Fig. 7 by a separate strip *y* having its mar-

gins rebent and interlocked with the rebent edges of the two reinforced plates.

As shown in Fig. 5 the space *z* that is left between the adjoining plates may be filled in with plastic material 2; and if the plates are marginally undercut, as by the grooves indicated at *l* in Figs. 4 and 7, the plastic mass filling the spaces between the plates will be held bonded therein.

The band is indicated in Figs. 3 and 4 by the reference character *t;* the material *h* of the plate is locked to the band in the same way as in Figs. 1 and 2, viz., by projecting into the pockets formed by its openings *t'*.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A reinforced unit for the purpose set forth including a plastic slab and a supporting band of sheet material extending around and lying throughout substantially its whole longitudinal extent in adhering contact with the slab marginally thereof and being inwardly deflected as to a relatively great part of its longitudinal extent and forming outwardly a marginal undercut and inwardly an elongated ledge-support for the slab.

2. A reinforced unit for the purpose set forth including an inclosure-forming band of sheet material having an inward bend formed therein as to a relatively great part of its longitudinal extent and thereby forming a ledge-support, a sheet of reticulated material having the band extending around the same marginally thereof and resting at its margin on said ledge-support, plastic material filled into the inclosure formed by the band and adhering to said sheet and lying in adhering contact with the band above the ledge support.

3. A reinforced unit for the purpose set forth including an inclosure-forming band of sheet material having a flange projecting outwardly at an angle thereto whereby to attach the unit to a suitable supporting surface and a plastic slab formed in and occupying the inclosure formed by and adhering marginally to the band, said flange projecting laterally farther than any other part of the unit.

4. A reinforced unit for the purpose set forth including an inclosure-forming band of sheet material having a flange projecting outwardly at an angle thereto whereby to attach the unit to a suitable supporting surface and a plastic slab formed in and occupying the inclosure formed by and adhering marginally to the band, said flange projecting laterally farther than any other part of the unit, and said band having an exterior longitudinal groove forming an undercut.

In testimony whereof I affix my signature.

WILLIAM SEYMOUR.