No. 848,537. PATENTED MAR. 26, 1907.

C. C. DAVIS.

REINFORCED TILE OR SLAB.

APPLICATION FILED DEC. 27, 1906.

Fig 1

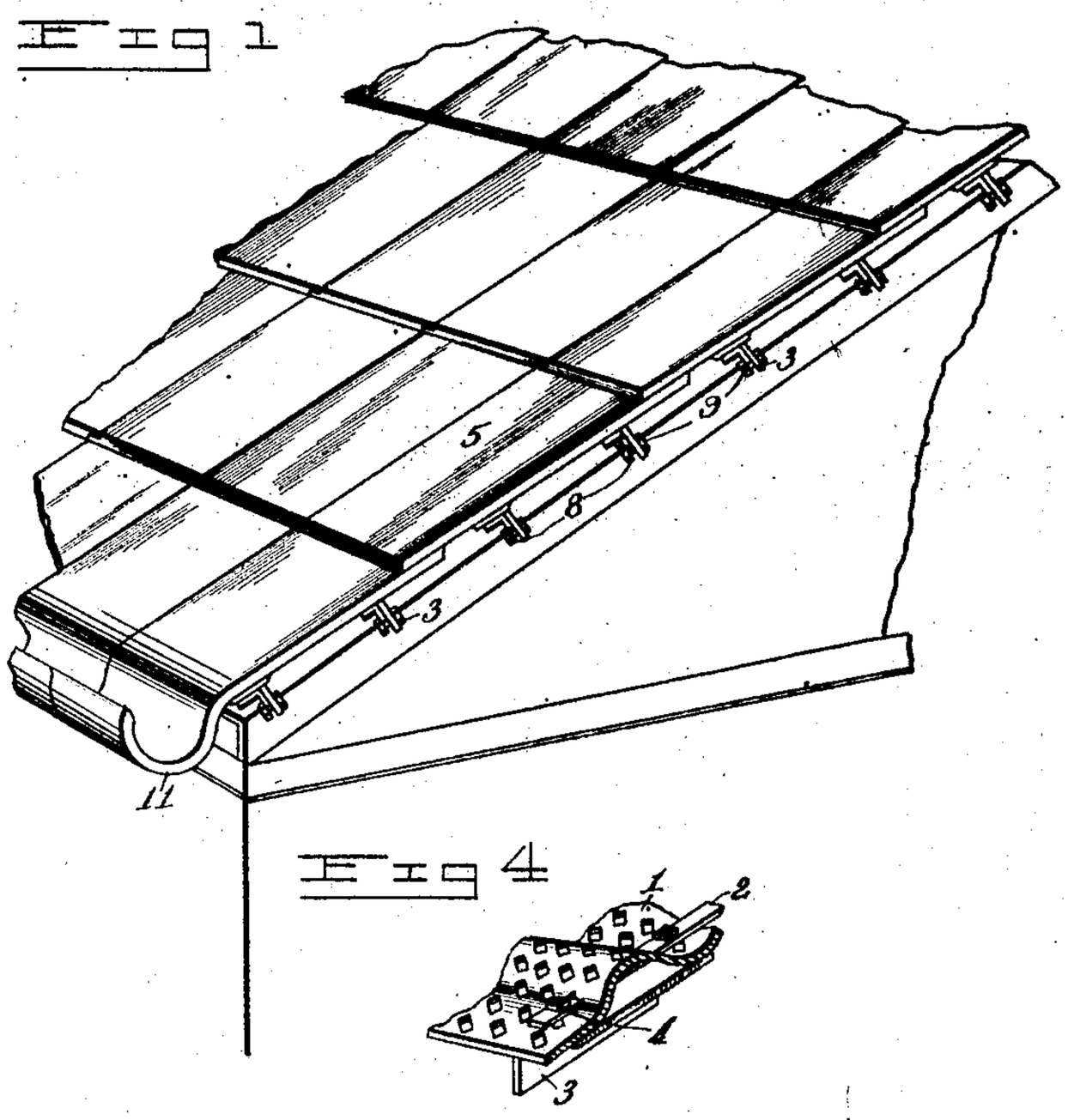


Fig 2

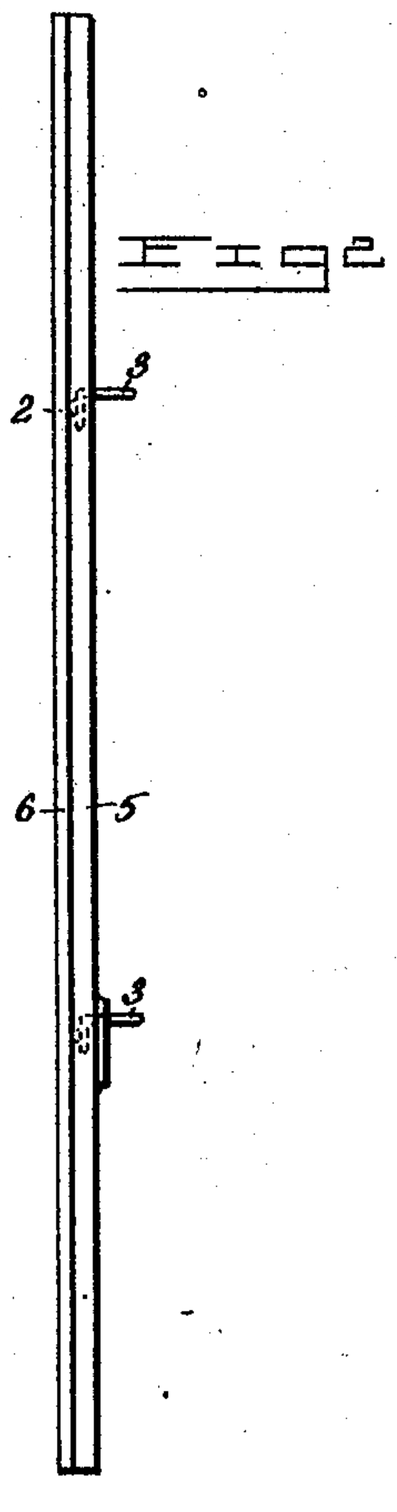
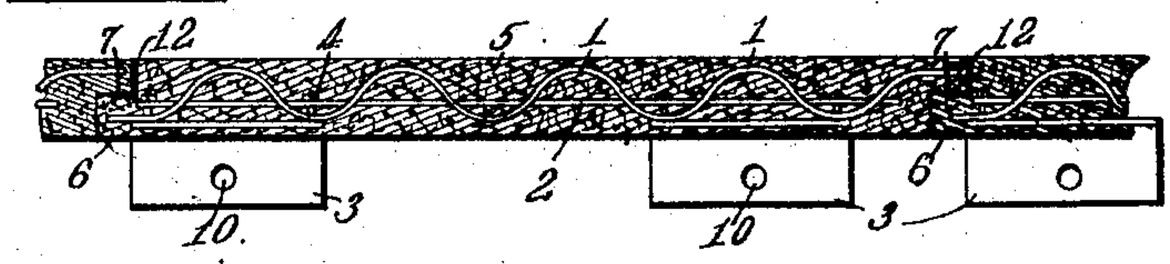


Fig 4

Fig 3



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REINFORCED TILE OR SLAB.

No. 848,537. Specification of Letters Patent. Patented March 26, 1907.

Application filed December 27, 1906. Serial No. 349,677.

To all whom it may concern:

Be it known that I, CHARLES C. DAVIS, a citizen of the United States, residing at Germantown, Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Reinforced Tiles or Slabs, of which the following is a specification.

My invention relates to improvements in reinforced concrete tiles or slabs; and it consists in the constructions, combinations, and arrangements herein described and claimed.

An object of my invention is to provide an improved concrete tile having an efficient reinforcing structure adapted to insure a maximum of stiffness and rigidity with a minimum of reinforcing material.

A further object of my invention is to provide an improved reinforced concrete tile having a substantially uniform stiffness throughout and in which loading strains will be distributed on the reinforcing construction.

A further object of my invention is to provide reinforced concrete tiles constructed to be conveniently assembled and secured in position to constitute a strong, durable, and impervious roofing.

In the accompanying drawings, forming a part of this application, and in which similar reference-symbols indicate corresponding parts in the several views, Figure 1 is a fragmentary sectional view illustrating a portion of a roof formed of my improved tiles. Fig. 2 is a side edge elevation, on a larger scale, of one of the tiles shown in Fig. 1. Fig. 3 is a sectional view in the plane of the transverse retaining and strengthening bars of the reinforcing material, showing one tile and portions of two adjacent tiles; and Fig. 4 is a detail perspective view showing the common means for securing together the corrugated foraminated sheet, transverse retaining and strengthening bars, and the supporting-lugs.

Referring to the drawings, 1 indicates a sheet of foraminated material provided with longitudinal corrugations and which can be advantageously formed of expanded metal or of heavy woven mesh of iron or steel wire. At suitable distances along the sheet 1 transverse retaining and strengthening bars 2 extend freely through openings in the side walls of the several corrugations of said sheet.

Supporting-lugs 3 for securing the tiles in their assembled position on the building are shown, comprising angle-plates having one face lying against the end corrugations of the sheet 1. The supporting-lugs are secured to the bars 2 by bolts 4, extending through said lugs and the end portions of said bars. These bolts extend also through the portions of the sheet 1 which are interposed between the supporting-lugs and the bars 2, thereby securing the corrugated sheet 1 to the end portions of the retaining and strengthening bars 2. By thus securing the end corrugations of the sheet 1 the intermediate corrugations are permitted to adjust themselves uniformly along the retaining-bars 2, and strains tending to flatten any of the corrugations are distributed to the several corrugations. This provides a very advantageous construction having a maximum of stiffness with a minimum of reinforcing material and having a substantially uniform stiffness throughout.

The tiles 5 are formed of suitable material, preferably concrete, which is molded to provide beveled lips 6, extending from the sides thereof. One of the lips on each tile extends flush with the upper surface thereof, and the other lip extends flush with the lower surface thereof, said lower lip being formed somewhat longer than the upper lip in order to provide a channel 12 for the insertion of a suitable grouting or luting between the overlapping lips of adjacent tiles, as shown especially in Fig. 3.

Referring especially to Fig. 1 of the drawings, 8 indicates the usual angle-iron purlins, to which the tiles are secured by bolts 9, extending through the openings 10 in their supporting-lugs. The several tiers of tiles are shown arranged with the lips of the adjacent tiles overlapping and with the lower tier of tiles formed to provide a continuous gutter 11.

I have illustrated and described a preferred and satisfactory construction; but obviously changes could be made within the spirit and scope of my invention.

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

1. A reinforced concrete tile, comprising a corrugated sheet of foraminated material, retaining and strengthening bars extending through openings in the side walls of the several corrugations of said sheet, means for clamping said sheet to the end portions of said bars, and a body of plastic material incasing said sheet and retaining-bars, substantially as described.

2. A reinforced concrete tile, comprising a

corrugated sheet of foraminated material, retaining and strengthening bars extending through openings in the walls of the several corrugations of said sheet, supporting-lugs for securing said tile in position, a common means for securing said lugs to the end portions of said bars, and the adjacent portions of said corrugations, and a body of plastic material incasing said sheet and retaining-bars, substantially as described.

3. A reinforced concrete tile, comprising a corrugated sheet of foraminated material, retaining and strengthening bars extending freely through openings in the walls of the several corrugations of said sheet, supporting-lugs engaging the end corrugations of said sheet, a common means for fastening said supporting-lugs to the end portions of said bars and for securing thereto the interposed portions of said corrugated sheet, and a body of plastic material incasing said sheet, and retaining-bars, substantially as described.

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

CHARLES C. DAVIS.

Witnesses:

HOWARD A. DARLING,

B. B. LISTS.