

E. F. CRANE.
CONCRETE TILE.
APPLICATION FILED JAN. 9, 1911.

1,061,455.

Patented May 13, 1913.

Fig. 1

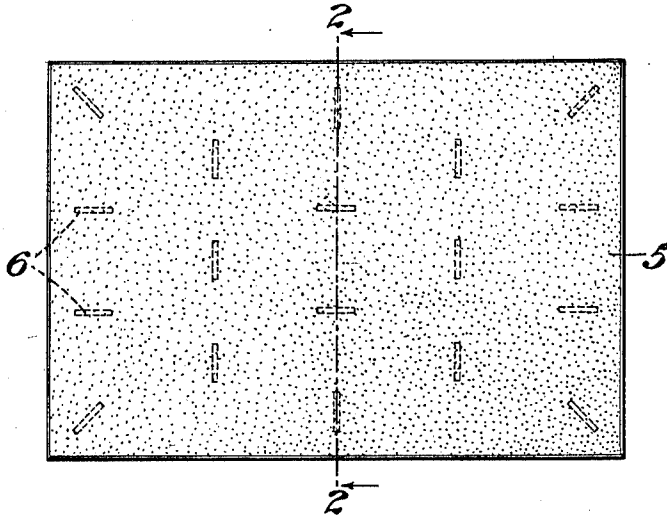


Fig. 2

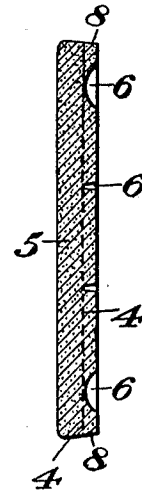


Fig. 3

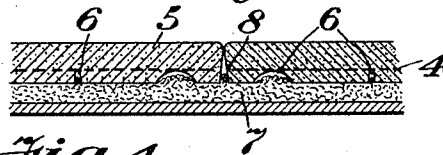


Fig. 4

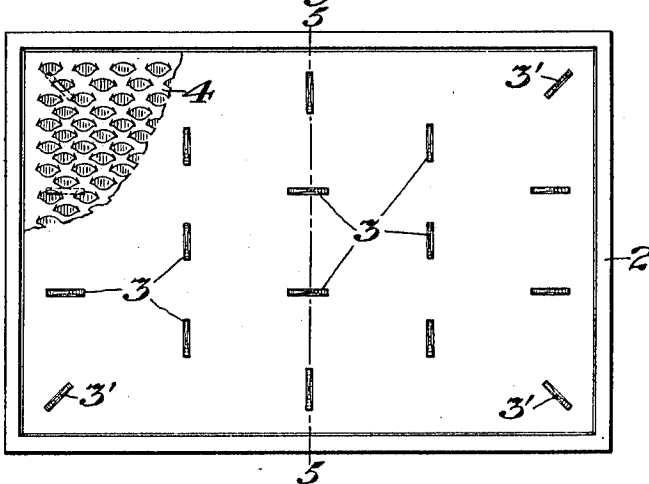
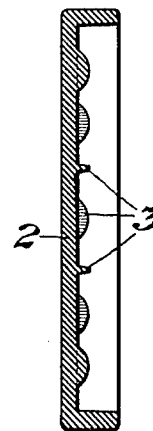


Fig. 5



WITNESSES:

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CONCRETE TILE.

1,061,455.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWARD F. CRANE, citizen of the United States, and resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Concrete Tiles, of which the following is a specification.

My invention has for its object to provide a tile for roofing or similar purposes that will be cheap, strong and durable.

To this end the invention, in a preferred form thereof, consists in forming a tile of cementitious material having a metal reinforcement to impart a necessary tensile strength thereto, and also having at its under side a series of recesses or depressions adapted to receive the concrete of the bed on which it is placed to assure a firm adherence of the tile to said bed. A tile embodying these several features and also other features of my invention to be hereinafter referred to in the detailed description of the invention which follows is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the tile; Fig. 2 a cross-section of the same on line 2—2 of Fig. 1; Fig. 3 an enlarged sectional detail showing the adjoining ends of two tiles on a supporting bed; Fig. 4 a plan view of a mold used for making my improved tile, the same having a piece of expanded metal located therein; and Fig. 5 a cross-section of said mold on line 5—5 of Fig. 4.

Similar reference characters indicate like parts in the several figures of the drawings.

The tile may of course be made of any desired form, that shown in the present case being of rectangular form.

To describe the construction of the tile, I will describe the method employed in making the same, which is substantially as follows: A mold of desired form is provided, such as that indicated at 2, having formed or otherwise located on its bottom wall a relatively large number of projections 3 preferably of a height less than one-half the depth of the mold. On these projections is placed a strip of metal of open-work construction, such as 4, which may be of woven wire, expanded metal, or similar material, after which the cementitious material 5 in substantially liquid condition is poured into the mold. Following this, the molds are allowed to stand until the cementitious material has become set or hardened, after which the tiles so formed are removed from

the molds and are ready for use. The strip of open-work metal 4 serves as a reinforcement to the cementitious material for imparting the desired tensile strength thereto, and it is preferably located or positioned in the tile at a point below its vertical center in order to best serve such reinforcing function; the positioning of said reinforcing bond in the tile as described being effected by having the projections 3 in the bottom of the mold of a height less than one-half the depth of the mold as hereinbefore referred to. As these tiles are quite small and the open-work metal reinforcement quite light and flexible, it is important that said reinforcement should be supported at practically all points when the cementitious material is poured into the mold in order to prevent undue bending or other displacement of the same. This is accomplished by providing a relatively large number of projections 3 and making them of somewhat elongated form, and also by arranging said projections in staggered relation and at different angles to each other, whereby they will span the mesh openings of the metal reinforcement. As the latter is usually cut in a manner to cause the elongated mesh openings to extend in direction parallel with either the side or end walls of the mold, the corner projections 3' are arranged at an angle to the mold walls as shown in order to assure their spanning the mesh openings and supporting the metal reinforcement at the corners thereof. If the said reinforcement was not so supported and the mold projections 3' allowed to project through the mesh openings, the reinforcement would drop below its proper or predetermined plane with a consequent weakening of the tile at such point. The described construction and arrangement of the projections 3 and 3' also provides a like formation and arrangement of recesses or depressions 6 in the bottom of the tile which serve to receive the concrete of the bed on which they are placed or embedded, as indicated in Fig. 3, and thereby lock the tile against displacement in any direction relatively to its said bed.

The staggered and irregular arrangement of the recesses 6 is also important in that it avoids weakness of the tile at any particular point. For instance, as shown in Figs. 1 and 2, four recesses are shown arranged in line with each other across the center of the tile. If the two center recesses were ar-

5 ranged to extend lengthwise thereof in line
with the outer recesses they would form col-
lectively such a length of slot as would ob-
viously materially weaken the tile on such
10 line, but by having two of them arranged
transversely to the direction of the other two
as shown the tile is not materially weakened.
The recesses 6 are also formed with taper-
ing side and end walls as shown whereby the
15 formation in them of so-called "air pockets"
when the tiles are being seated on their plas-
tic bed is prevented, and so assuring the
complete admission into them of the concrete
constituting their said plastic bed. The tiles
20 are also preferably formed with beveled un-
dercut edges 8 so as to provide an opening
or space 9 between the adjacent edges of two
tiles when the latter are brought into con-
tact with each other at their upper edges,
into which space the concrete of the bed 8
will also be received as a further means to
lock the tiles in position relatively to each
other and to said bed.

The metal reinforcement 4 intersecting the
recesses 6 at their inner ends in the manner 25
described permits the said reinforcement be-
ing readily cut through said recesses on pre-
determined lines and so provide for the tile
being readily and evenly broken on such
lines when it is found necessary to provide 30
sections of tile for filling in small spaces, etc.

What I claim is:—

A tile comprising a cementitious body
having inwardly beveled edges and a plu-
rality of relatively small and downwardly 35
flared recesses in its underside arranged at
right and oblique angles to one another, and
an open work reinforcement embedded in the
body across the upper ends of said recesses.

Signed at New York, in the county of New 40
York, and State of New York, this 30th
day of December, A. D. 1910.

EDWARD F. CRANE.

Witnesses:

W. A. TOWNER, Jr.,

CHAS. F. DANE.

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