P. M. STEWART.

TILE.

APPLICATION FILED SEPT. 10, 1912.

1,073,541.

Patented Sept. 16, 1913.

Fig. 1.

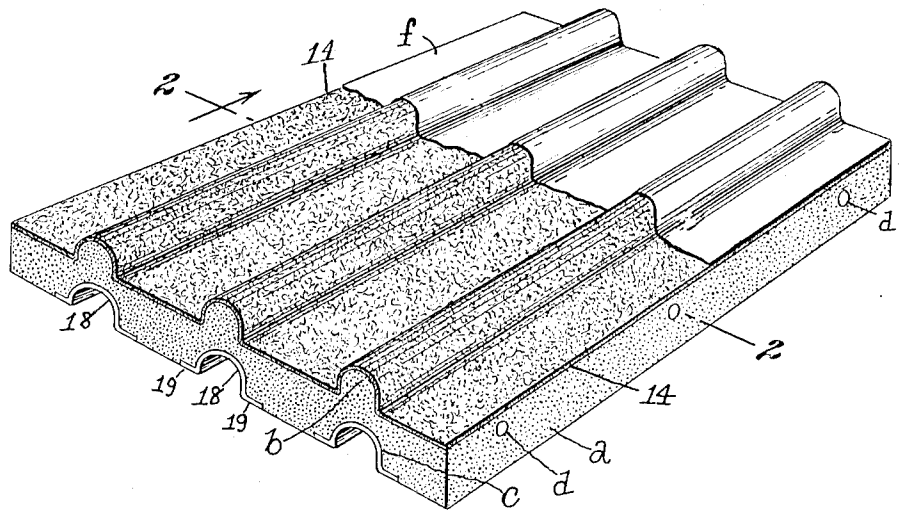


Fig. 2.

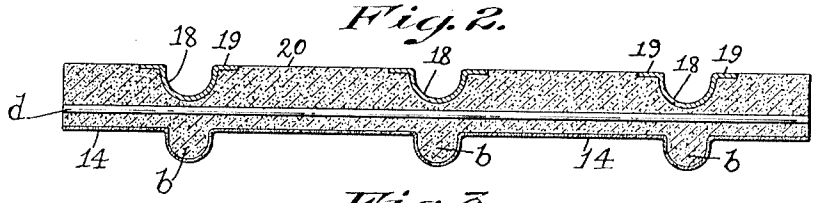
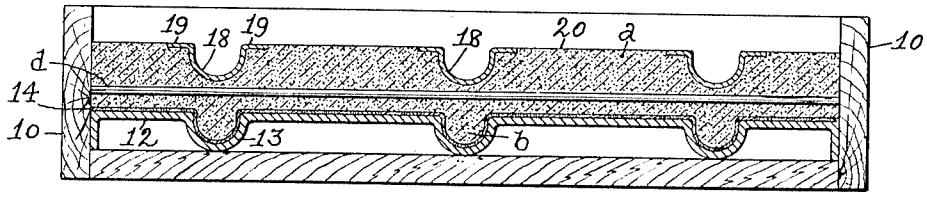


Fig. 3.



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UNITED STATES PATENT OFFICE.

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TILE.

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Application filed September 10, 1912. Serial No. 719,604.

To all whom it may concern:

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

This invention relates to a roofing tile and has for its object to provide an efficient, inexpensive, and durable tile, which is capable of resisting the weather and reduces to a minimum condensation of moisture on its inner side. To this end, the tile is composed of a body portion or slab of concrete, having a metal reinforcement within it, and provided on the surface which is to be exposed to the weather, with a layer of fibrous mineral fabric, which is capable of having applied to it a layer or coating of paint or other waterproofing material.

The layer of fibrous mineral fabric is preferably composed of asbestos paper, which is bonded with the concrete in a manner as will be described.

The roofing tile may be flat or corrugated, and when corrugated, the valleys of the corrugations may and preferably will be provided with means for protecting the edges of the side walls of the valleys from being chipped or broken off in handling the tile, both in transportation and on the job.

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

Figure 1 is a perspective view of a roofing tile embodying this invention, with part of the fibrous layer broken away. Fig. 2, a section on the line 2—2, Fig. 1. Fig. 3, a section of a mold and of the tile formed therein.

In the present instance, I have shown the invention as embodied in a roofing tile, comprising a concrete body portion or slab *a* provided with corrugations, which form raised projections or ribs *b* on one surface and valleys or depressions *c* on the opposite surface, a metal reinforcement *d* within it, a layer 14 of asbestos fabric, which is bonded to the outer surface of the tile and is rendered waterproof in any suitable or desired manner as by a coating of oil or paint *f*.

In Fig. 3, I have illustrated one form of apparatus with which the corrugated tile shown in Fig. 1 may be made. The apparatus comprises a box 10 of wood, or other suitable material, which is open at its top and contains within it a metal plate 12, which is provided with corrugations 13. The metal plate 12 forms the bottom of the mold and has laid upon it a sheet 14 of fibrous mineral fabric, such as asbestos paper. The concrete in a plastic state is then poured or placed into the mold 10, and the latter is filled with concrete to the proper height to form the concrete slab or body portion *a* of the proper or desired thickness. The slab or body *a* of concrete may and preferably will be strengthened by a metal reinforcement, preferably a plurality of metal rods *d* which may be suitably supported in the mold above the bottom thereof, before the concrete is placed in the mold; or they may be laid on the concrete after a sufficient thickness of concrete has been placed in the mold. The corrugations in the bottom plate 12 of the mold form the projections or ribs *b* on the concrete slab or body portion, and corresponding valleys *c* may be formed in the opposite surface of the said slab by a suitable form, which may be a metal trough 18 of the proper width to receive in it a rib or projection *b* on another slab, so that two adjacent slabs may overlap when in use. The metal trough 18 may and preferably will be provided with side flanges 19, which are embedded in the concrete substantially flush with the surface 20 thereof. The flanged trough 18 serves as a protector for the edges of the side walls of the valleys formed in the concrete, and prevents said edges from being chipped or broken off when handled, both in transportation and on the job. The concrete tile thus formed is allowed to stay in the mold until the concrete has set, when it is removed. By reason of the fact that the concrete is plastic or wet when placed in the mold, a firm and close union or bond is effected between the concrete body and the fibrous mineral sheet or layer 14 by the intermingling of the fibers of the mineral sheet with the concrete, so that when the concrete tile is removed from the mold, the sheet or layer 14 of fibrous mineral fabric is removed with it and forms part thereof. The concrete tile is inverted when used, so that, the fibrous mineral sheet or layer 14 forms the outer or upper surface

of the tile, as represented in Fig. 1, and this fibrous sheet is capable of being rendered waterproof by applying a coat *f* of paint thereto, or in any other suitable manner, with the result, that a superior roofing tile is obtained whose surface exposed to the weather is waterproof, and whose under surface is kept free or substantially free from water of condensation by the fibrous mineral layer or sheet 14, as the latter not only protects the concrete body against the weather, but also serves as an insulator of heat to prevent or reduce condensation on the under or inner surface of the tile.

In Fig. 2, the tile is represented in the position it occupies in the mold, whereas in Fig. 1 it is shown inverted and in its operative position.

It is preferred to make the tile corrugated as herein shown, but it is not desired to limit the invention in this respect as it may be made flat.

The tile herein shown is especially applicable for the inclined roofs of power houses, foundries, chemical plants and like buildings. It is inexpensive, durable, waterproof and a good insulator of heat.

Claim.

A tile of the character described, comprising a slab or body portion of concrete, and a sheet or layer of fibrous mineral fabric bonded thereto by intermingling of its fibers with the concrete, substantially as described.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

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Witnesses:

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