G. ELBREG.

ROOFING TILE.

No. 185,632. Patented Dec. 26, 1876.

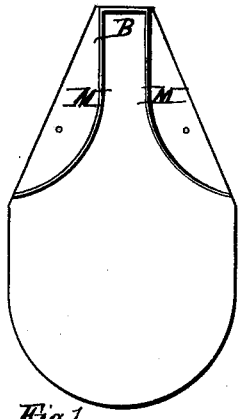

Fig 1

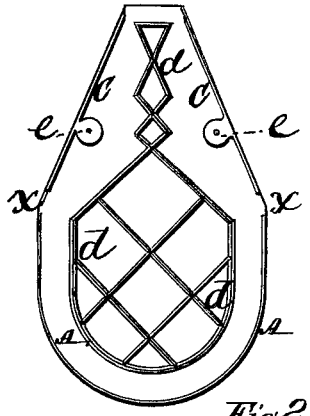

Fig 2.

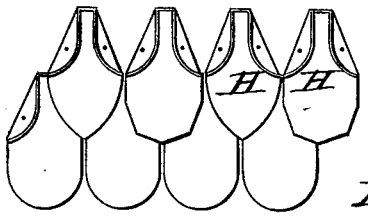

Fig 3.

Witnesses;
H. P. K. Peck
J. C. Brooks

Inventor;
George Elbreg.

UNITED STATES PATENT OFFICE.

GEORGE ELBREG, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO ALFRED J. HODDER, OF SAME PLACE.

IMPROVEMENT IN ROOFING-TILES.

Specification forming part of Letters Patent No. **185,632**, dated December 26, 1876; application filed May 31, 1876.

To all whom it may concern:

Be it known that I, GEORGE ELBREG, of Cincinnati, Ohio, have invented a new and useful Improvement in Roofing-Tiles; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 represents the upper side of my improved tile. Fig. 2 represents the under side of the same. Fig. 3 represents the arrangement of the tiles as used upon the roof of a building.

Among the objects to be attained by my invention are the combination of strength and lightness, economy of construction, capability of being interchangeably used, avoiding loss or injury from unequal shrinkage in burning, security against breakage in the kiln and in the roof, besides providing a tile which gives to the roof in which it is laid an ornamental and attractive appearance.

My improved tile is particularly designed to obviate the objections to tile roofs on account of having hitherto been of excessive weight and cumbersome; and roofs covered with them presented an unsightly appearance.

In the accompanying drawings, Figure 1, which represents the outside of the tile, is provided with the curved ribs M M, which are connected by the rib B at the upper end; and the under side (shown in Fig. 2) is provided with the circular rim or flange A, of corresponding form to the ribs M M, as shown at H H in Fig. 3, where the tiles are arranged as upon a roof. The under side of the tile also has two straight flanges, C, which extend from spaces *x x* to the upper end of the tile, and V-shaped ribs *d* upon the central portion, and bosses *e e* around the holes, (for the insertion of nails to secure the tiles to a roof.) These flanges, ribs, and bosses project equally from the body of the tile, and occupy the same plane in relation thereto occupied by the flange A.

These features confer strength to the tile, and enable it to be made comparatively thin and light. Besides, these projections enable the tiles to be arranged in tiers one upon another, and to occupy horizontal positions, instead of being placed vertically, resting upon their edges in the kiln—a method of burning which causes both warping and breakage.

When the tiles are thus placed one upon another the ribs *d*, which strengthen the tiles, serve as central supports to equalize the weight, and occupy the plane surface of the outer or upper side of the tile represented in Fig. 1; the flanges C C will occupy the spaces along the upper margins opposite to the curved flanges M M, and the flange A will bear against the correspondingly-formed lower margin of the adjoining tile in the kiln—that is say, when the tile represented in Fig. 2 is reversed and placed upon the tile represented in Fig. 1, the flanges and ribs upon the one will not come in contact with those upon the other, but will allow the tiles to occupy parallel horizontal planes, and also allow communicating spaces between them for the free and equal diffusion of the heat of the kiln.

Thus my improvement does not only facilitate the process of burning, but greatly economizes by avoiding breakage.

The form and arrangement of the ribs M M and of the curved flanges A A are such that when placed in their proper relation in the roof the rib B will occupy the opening at *x* of the two adjoining tiles, and the space between ribs M M is sufficient to permit the overlying tiles to be adjusted toward and from each other, to an extent that will compensate for any unequal shrinkage caused in the burning.

The uniform shape of the tiles, each having corresponding ledges and flanges, enables their use interchangeably, so as to form a perfectly-close roof; and it is apparent that the upper ends of the tiles may be made rectangular, so as to make the entire roof of two thicknesses, and without departing from the essential form and mode of construction described.

Having fully described my improvement in roofing-tiles, I claim and desire to secure by Letters Patent—

1. The arrangement of the united ribs M M on the upper side of the tile, in combination with the supporting-ribs A C, with the openings *x x* between them on the under side, substantially as and for the purpose specified.

2. The strengthening and supporting ribs and flanges C *d*, arranged substantially as and for the purpose described.

Witness my hand this 27th day of April, 1876.

GEORGE ELBREG.

Attest:
M. B. FRESHMAN,
H. P. K. PECK.