

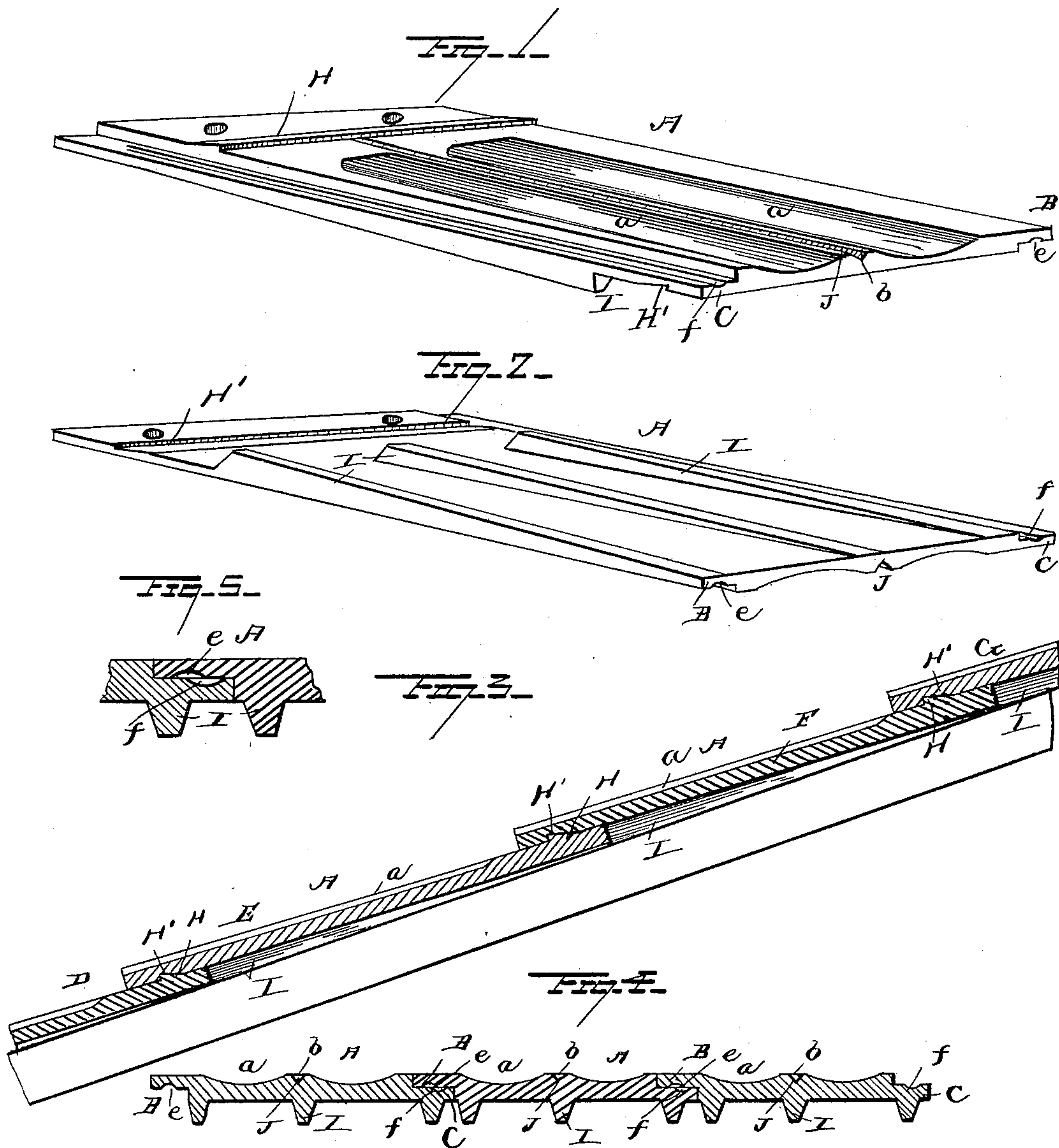
(No Model.)

J. E. DONALDSON.

ROOFING TILE.

No. 368,386.

Patented Aug. 16, 1887.



Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN E. DONALDSON, OF MONTEZUMA, INDIANA.

## ROOFING-TILE.

SPECIFICATION forming part of Letters Patent No. 368,386, dated August 16, 1887.

Application filed June 19, 1886. Serial No. 205,712. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN E. DONALDSON, a citizen of the United States, residing at Montezuma, in the county of Parke and State of Indiana, have invented a new and useful Improvement in Roofing-Tiles, of which the following is a specification.

My invention relates to improvements in roofing-tiles; and it consists of the peculiar construction and adaptation of the various parts for service, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

The object of my present invention is to provide an improved roofing-tile which shall effectually drain or carry off the rain-water and exclude it from between the joints of adjacent roofing-tiles to thereby prevent the roof from leaking.

A further object of my invention is to provide the roofing-tile with means whereby ventilation beneath the same is attained, and a secure locking-joint is provided, which effectually excludes the fine particles of snow, all as presently fully described.

My present invention is especially designed as an improvement in that class of roofing-tiles or shingles shown in patent issued on July 28, 1885, and numbered 322,917.

In the accompanying drawings, which illustrate a roofing-tile embodying my invention, Figure 1 is a perspective view, looking from the upper side of the roofing-tile. Fig. 2 is a like view of the roofing-tile in an inverted position. Fig. 3 is a vertical sectional view of a portion of a roof to which my improved roofing-tiles are applied. Fig. 4 is a similar sectional view taken at right angles to Fig. 3. Fig. 5 is an enlarged detail sectional view.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates a roofing-tile constructed in accordance with my invention, and preferably made of fire-clay or other like non-destructible material, for strength, durability, lightness, and cheapness in the manufacture.

The upper surface of my improved roofing-tile is provided with two or more longitudinal channels or grooves, *a*, which are parallel with each other and separated or isolated by an intervening rib, *b*, and when the roofing-tile is

laid or placed on a roof, with roofing-tile of similar construction adjacent thereto, the grooves of the upper roofing-tile align with those of the roofing-tile immediately beneath the same, and thus form grooves which are practically continuous from the ridge to the lower edge of the roof, so that water is rapidly and effectually carried or drained off the roof.

At one of its side edges the roofing-tile is provided with an extension or flange, B, which projects from the upper side thereof, and the opposite side edge of the roofing-tile is provided with a similar flange, C, which, however, projects from the lower side of the roofing-tile. These extensions form a lap or rabbet joint when the roofing-tiles are placed together, as in the patent hereinbefore mentioned, and no novelty is claimed on the same.

In Figs. 3 and 4 I have shown a series of roofing-tiles which are laid in proper position upon a roofing-tile roof, and I have lettered the tiles of the roof D, E, F, and G, which will serve to illustrate the arrangement thereof, as contemplated by my invention.

The flanges B of each of my improved roofing-tiles are provided with a longitudinal groove or gutter, *e*, on their lower faces, and the flanges C of the roofing-tiles are also provided with longitudinal channels *f* on their upper faces. When the roofing-tiles are laid together so that their side flanges lap each other, the longitudinal channel *f* of the flange C is arranged out of line with the similar channel, *e*, of the flange B, and communicates therewith or opens into the same, as clearly shown in Figs. 4 and 5 of the drawings. By means of this channel *f* being arranged to one side of the channel *e* and nearest to the lower joint between the two roofing-tiles, the water that enters the upper joint between said roofing-tiles enters the channel *f*, before leaking through said lower joint, and is conveyed thereby to the upper face of the roofing-tile that lies beneath the said roofing-tile, as shown. The channel *e* also serves as a vent to the channel *f*, as air is constantly supplied thereby to the upper end of the channel *f*, to thus permit of the free movement or escape of the water therefrom. This arrangement and construction of the flanges of the roofing-tiles are very important, from the fact that when my improved roofing-tiles are laid upon roofs where the roofing-



tiles are not straight or true, as is very often the case, water will enter the joint between the roofing-tiles, adhere to the under side of the flange B, and thence pass diagonally across the flange B and out of the joint between the flange C and the adjacent roofing-tile, whereas by means of the two channels *e* and *f* the former serves to intercept the water that may adhere to the under side of the flange B and conduct it into the channel *f*, to effectually discharge it onto the roofing-tile beneath the same.

Each of the roofing-tiles is provided near its upper edge with a transverse rib or flange, H, on its face, which is formed integral therewith. The front face of this rib H lies at right angles to the roofing-tiles, or perpendicular, and the rear face thereof is inclined or beveled rearwardly at an acute angle to the front perpendicular face. At its lower edge, on the rear side, the roofing-tile is provided with a transverse recess, H', which corresponds in shape and size with the rib H, and when the roofing-tiles G and F are laid properly the rib H of the roofing-tile F fits snugly in the corresponding socket of the roofing-tile G, and by means of the vertical or perpendicular portions of the rib and its recess fine particles or flakes of snow, &c., are effectually excluded from entering the joint between the upper and lower roofing-tiles.

The roofing-tile E lies between the roofing-tile D and F, so as to overlap the joint between the meeting side edges of the tiles B and C, and the grooves *a* of the roofing-tile F are in line with the grooves of the tiles D E. The roofing-tile is further provided on its under or lower surface with longitudinal ribs I, which are arranged parallel with each other and equidistant apart, and the said ribs are tapered longitudinally, the depth of the flange at its lower or enlarged end being equal to the depth of the enlarged end of the roofing-tile on which the roofing-tile is laid, so that the roofing-tile will bear very firmly and squarely against the sheeting. The roofing-tiles are thus laid very firmly and uniformly to present a neat appearance, and at their upper ends, just in rear of the rib H thereof, are provided apertures or openings through which the nails or like means are passed to secure the roofing-tile to the roof, as is obvious.

The upper edge of the one roofing-tile lies or laps beneath the lower edge of the roofing-tile above it, so that the rib H of the first-mentioned or lower roofing-tile will readily fit in the correspondingly-shaped recesses H' of the upper roofing-tile, and the upper edge of the lower roofing-tile bears or abuts against the lower enlarged ends of the longitudinally-tapered ribs I, and thus provide an increased bearing-surface for the roofing-tiles and prevent them from becoming displaced.

The roofing-tiles can be made of any preferred size and shape to fit around angles, &c., and I prefer to provide them with a longitudinal groove or recess, J, that is made V shape in cross-section and arranged exactly at the mid-

dle, so that the roofing-tiles can be readily broken into two pieces, and thus adapt them for use in finishing up the courses.

By means of the peculiar form of rib and recess, H and H', respectively, a secure locking means is provided for the roofing-tile, which can also be readily displaced when one of the roofing-tiles shall have become broken, thereby permitting a shingle to be readily inserted beneath the roofing-tile to exclude the water, snow, &c. The tapering ribs form air-passages beneath the roofing-tile, which afford protection against heat and dry rot, in addition to affording an even and firm bearing for the roofing-tile on the sheeting.

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

1. A roofing-tile having the longitudinal channels or grooves isolated from each other by an intervening rib, and a longitudinal recess, J, formed in the rib, substantially as described, for the purpose set forth.

2. A roofing-tile having the extensions B C projecting from the upper and lower sides of its side edges, the extension B on the upper side having a longitudinal groove or channel in its lower face and the extension C on the lower side of the roofing-tile having a similar channel in its face, whereby when the tiles are laid in series the extensions B C overlap one another and the channels thereof communicate with each other, the channel in the extension B being arranged above and to one side of the corresponding channel in the extension C, substantially as described, for the purpose set forth.

3. The combination of the roofing-tile laid side by side with each other, one of the roofing-tiles having an extension, B, projecting outwardly from its upper side, and the adjoining roofing-tile having a similar extension, C, on its lower side, which lies beneath the extension B and thereby forms a lap-joint, the opposing faces of the extensions B C being provided with longitudinal channels *e f*, respectively, which communicate with and are arranged out of alignment with each other, substantially as described, for the purpose set forth.

4. A roofing-tile having the transverse rib and groove H H' of corresponding shape in cross-section at opposite ends and on opposite sides, and the series of longitudinally-tapering ribs on the under side thereof extending nearly the entire length of the tile and terminating at points in close proximity to the transverse groove, the greatest depth of the said ribs being at their terminals in proximity to the groove and near the lower end of the shingle, as and for the purpose described.

5. A roofing-tile having the grooves *a* in its face separated by a ridge or partition, and having the rib H on its face near its upper end and the recess H' on its rear side near its lower edge, the recess H' and the rib H corresponding to each other in cross-section, substantially as set forth.



6. As a new article of manufacture, a roofing-tile having the grooves *a* in its face separated by a ridge or partition having a longitudinal recess formed therein, the longitudi-  
5 nally-tapering parallel ribs *I* on its rear side, the flanges *B C*, projected from the opposite sides of its opposite edges, the flange *B* having a longitudinal groove in its lower face and the flange *C* having a longitudinal groove in  
10 its upper face, the rib *H* on the face of the

roofing-tile near its upper edge, and the recess *H'* on its rear side near its lower edge, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 15 presence of two witnesses.

JOHN E. DONALDSON.

Witnesses:

LEWIS R. YOUNG,

BENJAMIN G. HUDSON.