(No Model.)

J. E. DONALDSON.

ROOFING TILE.

No. 426,584. Patented Apr. 29, 1890.

Fig. 1.

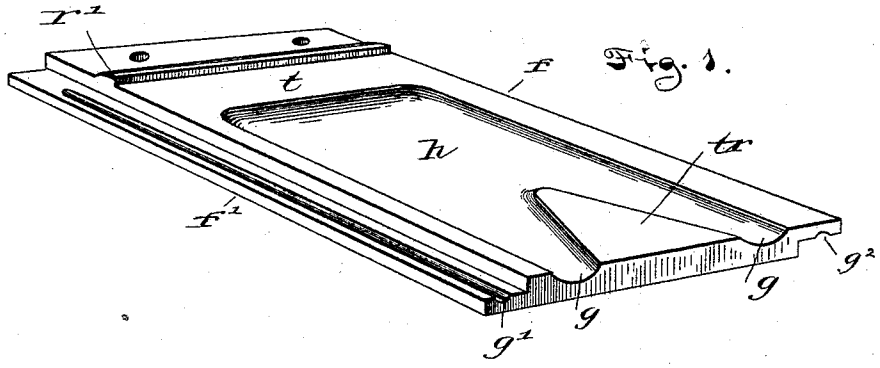


Fig. 2.

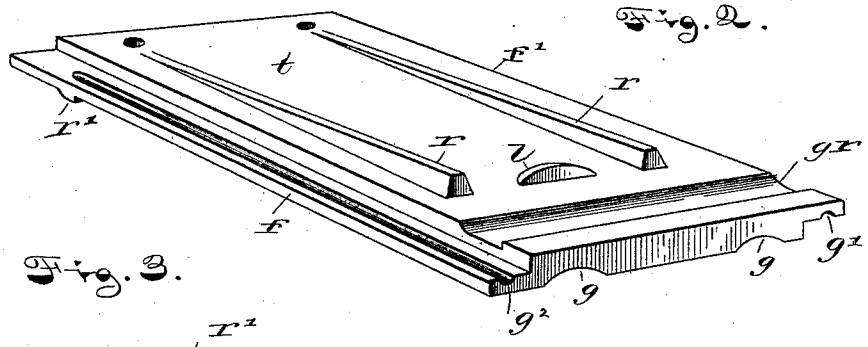


Fig. 3.

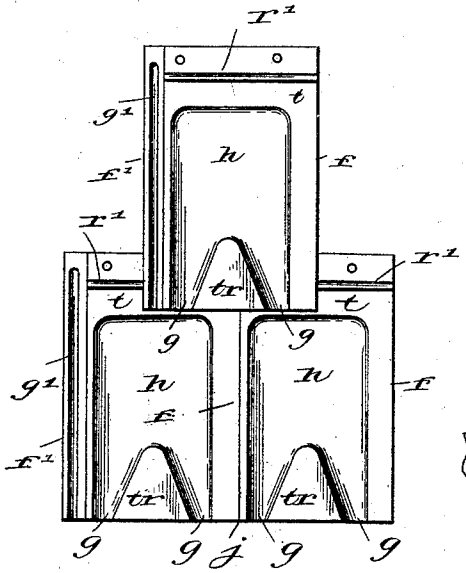
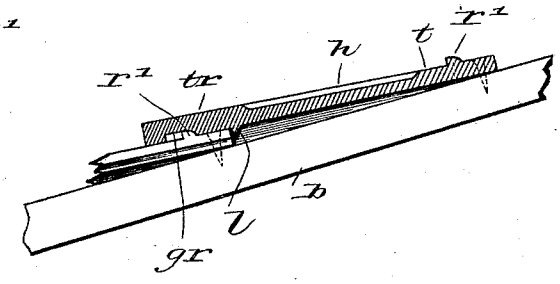


Fig. 4.



WITNESSES:

H. D. Healy

E. B. Griffith.

INVENTOR

John E. Donaldson.

BY

C. F. Jacobs.

ATTORNEY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN E. DONALDSON, OF MONTEZUMA, ASSIGNOR TO THE CLAY SHINGLE COMPANY, OF INDIANAPOLIS, INDIANA.

ROOFING-TILE.

SPECIFICATION forming part of Letters Patent No. 426,584, dated April 29, 1890.

Application filed January 8, 1890. Serial No. 336,219. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. DONALDSON, of Montezuma, county of Parke, and State of Indiana, have invented certain new and useful Improvements 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, in which like letters refer to like parts.

My invention relates to the construction of roofing-tiles, and consists in the peculiar adaptation and arrangement of the various parts of the tile, as hereinafter more fully set forth and claimed, the object being to provide a tile that shall be practically indestructible, light, easily attached, economical in avoiding long laps, thereby using the bulk of the body of the tile for the roof, providing at the same time grooved channels for carrying off water from the joints of adjacent tiles, preventing the roof from leaking.

The tile herein shown and described is an improvement upon those shown in my former Letters Patent, No. 322,917, issued July 28, 1885, and No. 368,386, issued August 16, 1887.

In the drawings, Figure 1 is a top view of a single tile. Fig. 2 is a bottom view of the same. Fig. 3 is a top view of three tiles arranged in order upon a roof, whereby it will be seen that the central joint between the two lower tiles strikes about midway of the tile above, the joints being broken in this manner throughout the entire series of tiles of which the roof is composed. Fig. 4 is an edge view showing the upper tile in section through the center and the edge of the lower tile, the latter being broken off.

In detail, the tile t is formed of clay, molded, and burned in a kiln, and is about six and three-quarters inches wide and ten inches long. The top face of the tile is hollowed out at h to form a shallow receptacle for the water, which is prevented from overflowing the sides by the margins of the tile on each side of the hollow. Midway in the bottom of this hollow is a triangular piece tr left in the clay, the main channel h branching off into diagonal channels g on each side of this piece, so that as the water collects above it will divide and be carried down these narrow channels g. At the top of the tile are holes for nails for securing it to the roof, and below these nail-holes is formed a transverse rib r'. On either side of the central body portion of the tile are formed flanges $f\,f'$, offset with reference to each other, the top of the right-hand flange f being flush with the body of the tile and having a small groove g^2 beneath. The left-hand flange f' is cut down below the top of the tile and has a groove g' formed therein, as shown. These flanges allow the overlapping of the tiles, so that the flange on one side will fit over and upon the cut-away flange of the other, and the two grooves $g'\,g^2$ will be substantially in line one above the other. The groove g^2 is preferably made smaller than g'. What water collects in the joints will thus be provided with a free outlet through these grooves, so that it will pass off readily and will not accumulate, so as to freeze or affect the joints or crack the tile.

The bottom of the tile is shown in Fig. 2, and is provided with two longitudinal ribs r, which form bearings on the roof, and centrally between these ribs is a horizontal lug l, whose lower end has a squared face, its upper end being somewhat rounded at the ends, though this rounding is immaterial. The lower and squared end of this lug is substantially in line with the end of the ribs r, and below this is a wide groove gr, into which the rib r' enters when one tile is laid over the other, lapping as shown in Fig. 3. In such case the ends of the ribs r and of the lug l of the upper tile abut against the upper end of the lower tiles, as shown in Fig. 3.

The object of the lug will now be explained. Each upper tile is set so that the triangular piece tr will come nearly to the center of the joint j between the lower tiles, and this throws the lower end of the lug l directly over, covering the upper end of the joint formed by the flanges $f\,f'$, preventing water or snow from being blown up the joint between the tiles, and thus finding its way to the roof beneath, while the triangular piece tr, dividing the channel h into diagonal channels $g\,g$, carries the water that falls away from the joint and empties into the channels h of the lower tiles, preventing any water from getting into

the joint *j* except what falls directly on the joint, and this is carried away by the grooves *g g*. By this construction it will be seen that all the water coming down the top of the tile and that which might be accumulated from water or snow blown up beneath by the wind is diverted from the line of the joints and carried freely and rapidly away. The triangular piece *tr* also serves to support the tile on the pallet while drying, the tile being thus supported at each end, allowing air to circulate freely in the channel *h* of the central portion, thus preventing its warping while drying. It also retains snow and ice on the roof, preventing its sliding off in sheets or large pieces, to the injury of persons below.

It will readily be seen that instead of making the triangular piece *tr* solid it may be made in the shape of a triangular rib, which will effectuate the same purposes—namely, that of dividing the channel *h* into narrower channels *g* below, also forming a support upon the pallet, facilitating its drying, allowing air to enter into the upper portion, and at the same time preventing ice and snow from falling off in large sheets or pieces, as described.

What I claim as my invention, and desire to secure by Letters Patent, is the following, viz:

1. The roofing-tile composed of clay having a jointing-rib *r'* at its upper end, the groove *gr* at its lower end, and on the opposite side a channel *h* formed in its top, and divided into diagonal channel-ways *g* by a triangular piece *tr*, and having reverse flanges *f f'* upon its edges, such flanges provided with grooves, substantially as shown and described.

2. The roofing-tile *t*, having longitudinal ribs *r* upon its bottom, and a lug *l* between such ribs for closing the joint formed by the flange of the tiles below, and preventing snow or water from being blown up along such joint, substantially as shown and described.

3. A roofing-tile *t*, provided with a channel *h* upon its top divided into narrow channel-ways or grooves *g* near its lower end and having lateral flanges *f f'*, as shown, the bottom of the tile provided with inclined longitudinal ribs *r* near its sides and a central lug *l* between them closing the joint formed by the flanges of the tiles below, and having a hollow groove *gr* upon its under side upon its lower end, and a corresponding rib *r'* upon the opposite side of such tile and at its upper end, all as shown and described.

In witness whereof I have hereunto set my hand this 4th day of January, 1890.

JOHN E. DONALDSON.

Witnesses:
C. P. JACOBS,
E. B. GRIFFITH.