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PATENTED APR. 30, 1907.

A. VOIGT.
ROOFING TILE.
APPLICATION FILED JAN. 22, 1906.

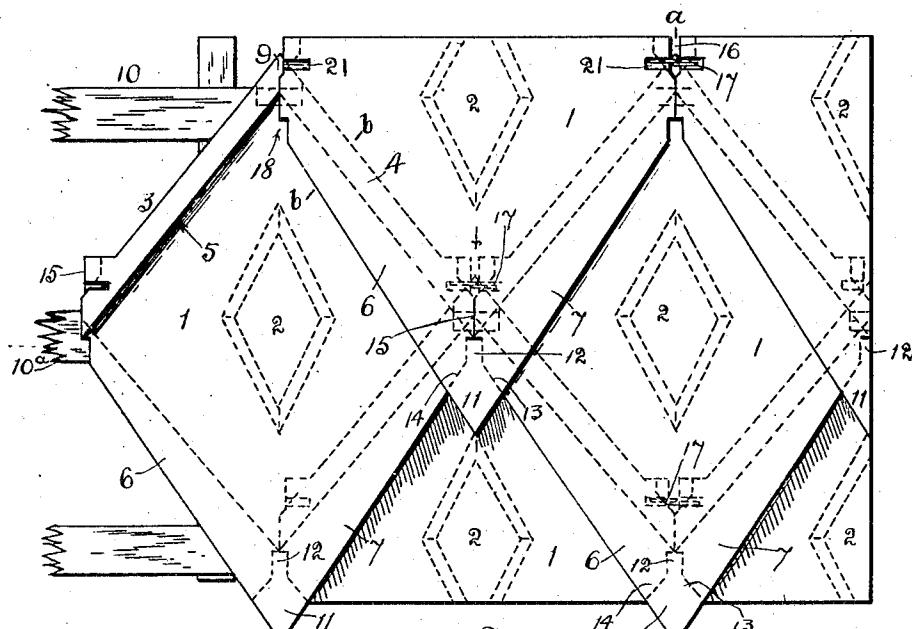


Fig.

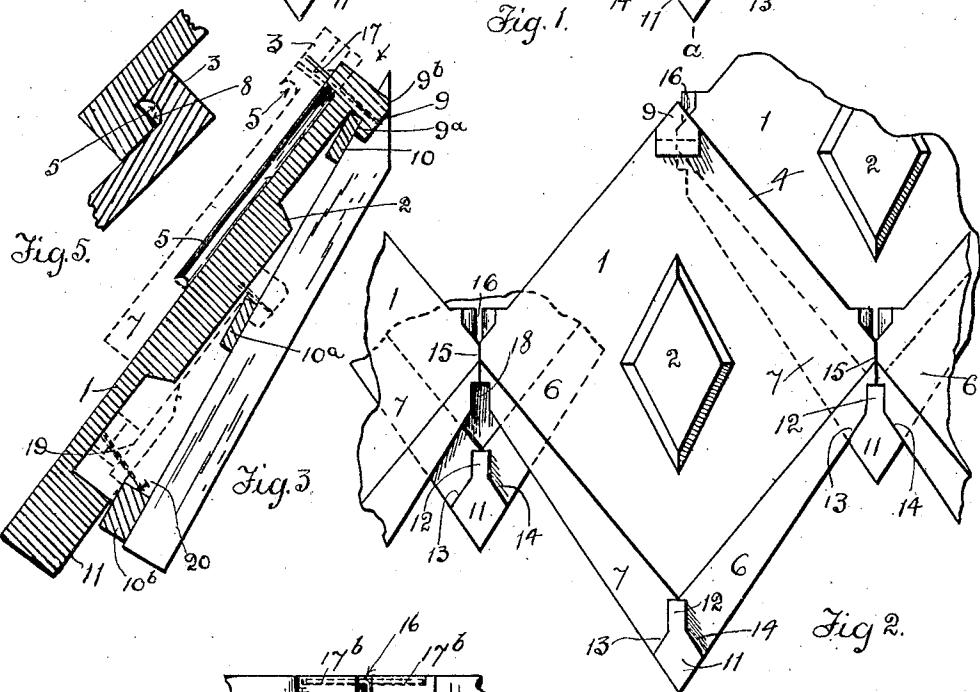
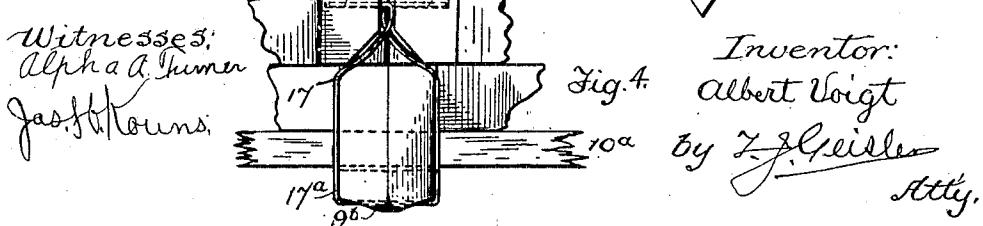


Fig. 3.



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UNITED STATES PATENT OFFICE.

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ROOFING-TILE.

No. 852,402.

Specification of Letters Patent.

Patented April 30, 1907.

Continuation of application filed July 1, 1904, Serial No. 214,951. This application filed January 22, 1906. Serial No. 297,326.

To all whom it may concern:

Be it known that I, ALBERT VOIGT, a citizen of the United States, and a resident of Portland, in the county of Multnomah and State of Oregon, have invented a new and useful Improvement in Roofing-Tiles, of which the following is a specification, reference being had to the accompanying drawings as constituting a part thereof.

This invention relates to roofing tiles, and has for its object to obtain the improvements hereinafter described and especially in the following particulars:

In building a tile roof due regard must of course be had to the weather conditions. The tiles must be securely fastened to the roof timbers, so as to be able to withstand the force of a wind storm; furthermore, the lapping edges of the tiles must be so constructed as to divert and disperse, in an effective manner, the wind and rain striking the same, and thereby prevent a driving rain from beating through; but, nevertheless, with a view to economy, the over-lapping of contiguous tiles should not be excessive, or in other words the overlapping arrangement should not be such as to add unduly to the bulk of material used in the manufacture of the tiles, nor to their weight on the roof timbers. To this end I construct my tiles as shown in the drawings in which,

Figure 1 shows an elevation of a section of a tile-roof embodying my improvements; Fig. 2 shows a bottom view of a section of such tiling removed from the supporting roof timbers, but in part arranged as if fastened to such roof timbers; Fig. 3 is a section on a line *a—a* of Fig. 1 the distant contiguous tiles being shown in broken outline; this figure in particular showing the means provided by me for fastening the top-ends of the tiles to the roof-timbers; Fig. 4 shows a section of the top-ends of a tile in an underlying course and portions of the abutting lateral ends of two tiles in the overlying course, and in particular shows the means provided by me for fastening said lateral ends to the top the underlying course; and Fig. 5 is a sectional detail taken on a line *b—b* of Fig. 1.

Referring now to the numerals: The body 1 of my tiles is made substantially of rhomb form, and preferably provided with a reinforced or thickened part 2 on the bottom. The two upper sides 3, 4 are respectively made with upwardly projecting flanges the inner vertical faces 5 of which are concaved,

as shown in Fig. 5. The object hereof will be below explained. The two lower sides 6, 7 are respectively made with downwardly projecting flanges, the inner vertical faces 8 of which may be straight. The upper corner or top of each tile is made with a hook-like member 9, as shown in Fig. 3, the inner face, 9^a, of which hook is preferably inclined as also shown in said Fig. 3, so as to facilitate the engaging or locking of said hook with the roof-timber 10, 10^a. The lower ends of the tiles are made with protuberances 11, comprising a tongue-member 12 and angular faces 13, 14. The lateral ends 15 are respectively made with flat faces, so that contiguous tiles of a tier or course may be arranged closely side by side. Said abutting faces are however provided with beveled recesses 16 leaving a space intermediate of two contiguous tiles for the insertion of a locking-bail 17. The construction of said bail is to be seen in Fig. 4, and it will be noted that it is made of wire and comprises a loop portion 17^a and laterally extending arms 17^b. The upper face of the lateral ends of the tiles are made with grooves 21 for the arms 17^b of the bail 17 to lie in. It will be seen from Fig. 3 that the hook member 9 of the tile has an inclined exterior face; and the apex or corner 9^b may be rounded. The object of this construction is to allow for the forcing of the lower end of the loop 17 over the top of the hook 9; and the loop then drops down over such exterior beveled-face of the hook and is securely held in place. Each tier or course of overlying tiles is thus securely fastened at their abutting lateral ends, to the top portions of the underlying tier of tiles. It will also be noted that the fastening means described secure the tiles at three places: namely, at the top by the hook 9; and at the lateral ends by the bails 17. Bails 19 are also used for fastening the lateral ends of the lower most tier of tiles, such bails being fastened to the roof timber 10^b by nails 20.

The object of the concavity 5 in the inner faces of the flanges 3 is to divert the force of the wind driven against the roof, and prevent wind and rain beating through. For it is obvious that if the wind were even coming from a direction to beat directly against the tile roof, the currents beating through between a lower and upper course or tier of tiles would be effectively dispersed by striking against the concaved faces 5 of the flanges; because said concaved faces would impart a return

circular motion to the current of air, or water striking against the same. Incidentally the concaved faces 5 would also prevent a driving wind from lifting the lower ends of an 5 overlying tier of tiles, because of deflecting the force of the wind, as mentioned. The construction described with respect to the lower portions of the lateral ends of the tiles has for its object to effect a weather tight 10 closure for the crevices between the abutting faces of said ends. That is to say when the tiles have been arranged in place the tongue 12 will be inserted in the recess or notch 18 and the angular faces 13, 14 of the protuberance 11 will abut against the upper portions 15 of the flanges 6, 7 on the lower sides of the tile; and thus effectively preventing wind or rain being driven through the crevices between said abutting end faces 15 of contiguous 20 tiles; for the construction described involves so many turns that the force of the driving wind will be diverted.

I claim:

1. In a roof-tiling system, tiles arranged 25 to overlap one the other, said tiles being substantially of rhomb form, and each thereof being made along its two upper sides with upwardly projecting flanges the inner vertical faces 5 of which are concaved for the 30 purpose specified, and the lower sides of said tiles being made with downwardly projecting flanges which cover said concavities of the upper flanges of the underlying tile, the upper corners of the tiles being made with 35 hooks 9 adapted to engage with the roof-timbers, locking bails each comprising a loop encircling the upper corner of the underlying tile and laterally extending arms, the lateral ends of the tiles being made with flat abutting 40 surfaces having intermediate spaces through which the locking bails extend and provided with grooves for the arms of the bails to lie in, and the opposite portions of said lateral ends being made with a notch or

recess, 18, and the bottom faces of the lower 45 ends of the tiles being respectively made with protuberances having a tongue 12 and angular faces 13, 14 adapted to constitute a closure for the crevices between said abutting lateral ends of the tiles.

2. As a new article of manufacture a tile substantially of rhomb form and made along its two upper sides with upwardly projecting flanges, and made along its lower sides with downwardly projecting flanges, adapted to 50 cover said upper flanges of two contiguous tiles when arranged to underlie the same, and the lateral ends of the tile being made with flat faces 15 having a recess arranged to provide a space between contiguous tiles for 55 the insertion of a locking bail, said lateral ends being further made with a notch or recess 18, and the bottom face of the lower end of the tile having a protuberance 11 comprising a tongue 12, and angular faces 13, 14, 60 for the purpose specified.

3. As a new article of manufacture a tile substantially of rhomb form and made along its two upper sides with upwardly projecting flanges, the inner vertical faces 5 of which 65 are concaved, and made along its lower sides with downwardly projecting flanges, adapted to cover said concavities of the upper flanges of two contiguous tiles when arranged to underlie the same, and the lateral ends of the 70 tile being made with flat faces 15 having a recess arranged to provide a space between contiguous tiles for the insertion of a locking bail, said lateral ends being further made with a notch or recess 18, and the bottom 75 face of the lower end of the tile having a protuberance 11 comprising a tongue 12, and angular faces 13, 14, for the purpose specified.

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