

No. 881,522.

PATENTED MAR. 10, 1908.

E. J. WINSLOW.  
FIREPROOF ROOFING TILE.  
APPLICATION FILED JULY 14, 1906.

2 SHEETS—SHEET 1.

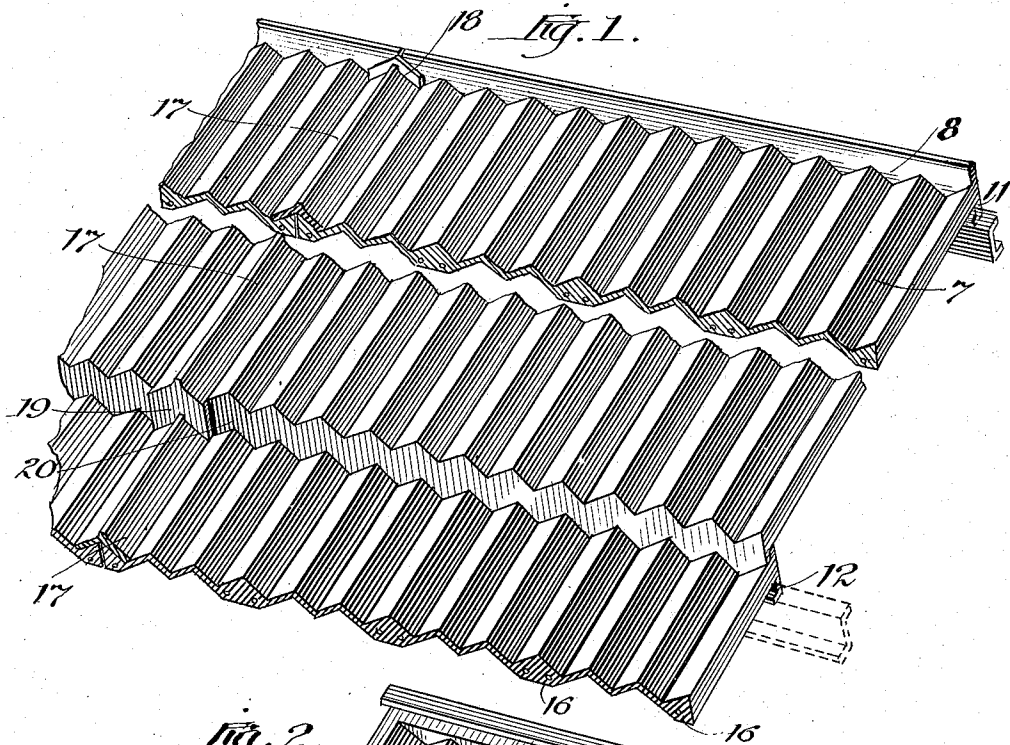
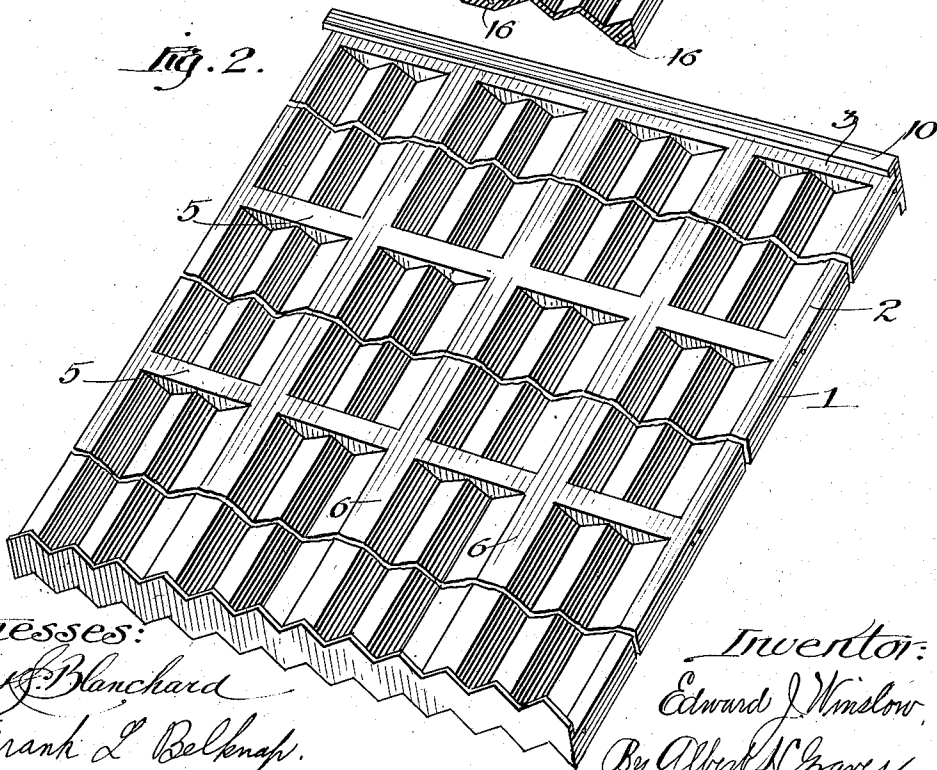


Fig. 2.



Witnesses:

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Frank L. Belknap.

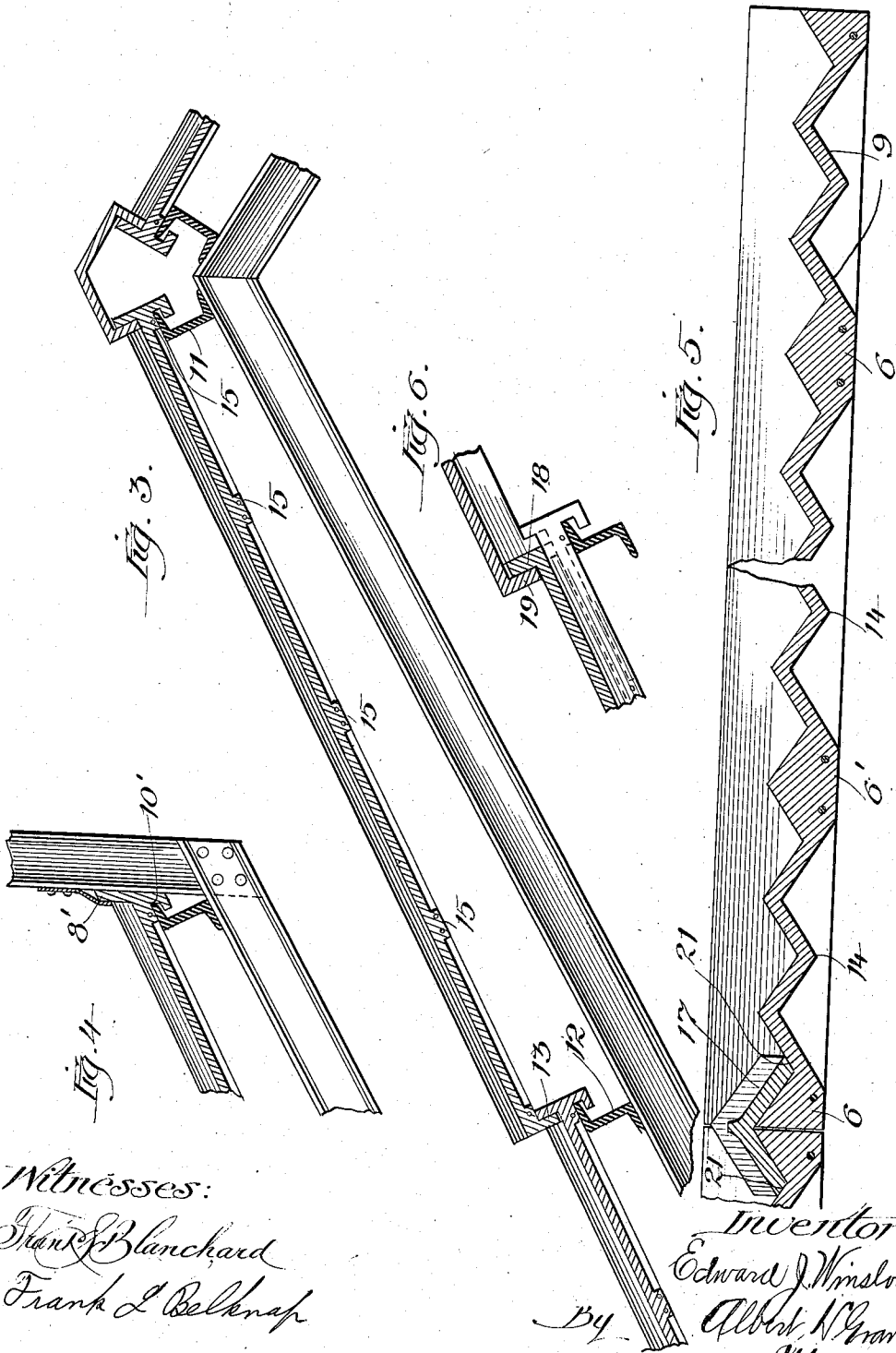
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# UNITED STATES PATENT OFFICE.

EDWARD J. WINSLOW, OF CHICAGO, ILLINOIS.

## FIREPROOF ROOFING-TILE.

No. 881,522.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed July 14, 1906. Serial No. 326,269.

To all whom it may concern:

Be it known that I, EDWARD J. WINSLOW, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Fireproof Roofing-Tiles, of which the following is a specification.

This invention relates to improvements in fireproof roofing tiles, and it has for its salient objects to provide a construction which combines great strength and rigidity with lightness and an efficient form; to provide a construction in which the rigidity of the tile against bending stresses is reinforced by transverse and intersecting strengthening ribs formed upon the under side of the tile only and the rigidity and strength of the tile is further increased by extending reinforcing wires through said ribs; to provide a construction which is especially effective in its weather proofing qualities, the exterior form of the tile being such that the rain cannot beat in or be driven inwardly past the joints by wind; to provide in conjunction with the main tile members cap-like batten members which effectively overlie and close the joints between the meeting edges of the main tile members; to provide a construction which is adapted to be readily and reliably secured to a roof by means of channel members, Z-bars or other commercial shapes of structural iron; and in general to produce an efficient and improved construction of the character referred to.

To the above ends the invention consists in the matters hereinafter described and more particularly pointed out in the appended claims.

The invention will be readily understood from the following description, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a fragmentary portion of a roof covered with tiles embodying a preferred form of the invention; parts being broken out and other parts shown in transverse section; Fig. 2 is a perspective view of the under side of one of the main tile members, parts being broken out to reduce the length of the figure; Fig. 3 is a transverse sectional view through a portion of a roof frame and the tiling thereon, showing particularly the manner in which the tile members interlock with the support-

ing irons and the manner in which the cap or batten members overlap the main tile members; Fig. 4 is a fragmentary detail showing the manner in which the tiles are applied and fit against the base portion of a turret or other perpendicular wall rising from the roof; Fig. 5 is an end elevation of one of the tiles. Fig. 6 is a fragmentary sectional detail taken vertically and longitudinally through the assembled structure in the plane of the joint shown at the left end of Fig. 5.

Describing first in detail the form and construction of one of the main tile members, 1 designates as a whole one of such members which will usually be made rectangular in plan and has the form in cross section of a corrugated plate provided with marginal thicker portions 2, 3 and 4, and a plurality of transverse reinforcing ribs 5 and other intersecting longitudinal ribs 6. The upper face of the tile member is uniformly corrugated with longitudinally extending corrugations 7, except that it is provided along that end margin which is uppermost when the tile is in position with an upstanding flange or rib 8. Its under side is correspondingly corrugated, as indicated at 9, so that, with the exception of the intersecting strengthening ribs hereinbefore described, the main body of the tile is of practically uniform thickness, as indicated clearly in Fig. 5. Extending along its upper margin at the under side thereof is a hook-shaped flange 10 adapted to engage over and hook upon the edge of a channel member or Z-bar, as indicated at 11 and 12. Extending along its lower edge at its under side is a downturned flange 13 adapted to hook over the upstanding flange 8 of the tile belonging to the next lower tier, as best seen in section of Fig. 3. The end margins of the main tile members are ordinarily perpendicular to the main plane of the tile, as best seen in Fig. 3, but in case the upper end of the tile is formed to abut and fit against a vertical wall, as for example the base of a turret skylight, as indicated in detail Fig. 4, then the corresponding upstanding and downturned flanges 8' and 10' will be inclined to the main plane of the tile so as to abut against the vertical frame structure.

The longitudinally extending intermediate ribs 6 are desirably formed by omitting the corrugating grooves of the under side opposite certain ones of the ridges of the upper

side, thus forming bars approximately diamond-shaped in cross section but with the lower angle of each bar omitted and a flat face 6' thus formed. The lower sides of these bars 6 extend substantially below the apices 14 of the corrugations of the under surface. The marginal lateral ribs 6'' are in form halves of the intermediate ribs; the tile being so formed that its lateral edges are coincident with the apices of the outermost ones of the upper corrugations or ribs. The transverse strengthening ribs are of the same thickness as the longitudinal ribs, lie in the same plane with the latter and are in cross section desirably rectangular, as seen clearly in the perspective Fig. 2. Reinforcing wires are arranged to extend both longitudinally and transversely through the body of the tile for the purpose of adding greater rigidity and strength to the structure. Describing them, 15 designates transverse wires, of which there are two arranged to extend through each transverse intermediate rib 5 and one through each of the end ribs 4; these wires being located as near the lower outer surface of the respective ribs as practicable without exposing the wires, in order that they may have a truss effect to resist bending stresses brought upon the tile. In the same general way other wires 16 are extended longitudinally through the intermediate and marginal longitudinal ribs 6. It will be understood that both the transverse and longitudinal wires extend the full length and width, respectively, of the tile member; these wires being embedded during the formation of the tile.

As a further feature of the invention, I provide caps of peculiar shape and construction for overlying and closing the joints between the meeting edges of adjacent tiles. These caps are designated as a whole 17 and each cap is of a length equal to the length of the tier of tiles to which it is applied. In cross sectional form the main body of each cap is that of an inverted V-shaped trough, the angle of inclination and dimensions of the inclined sides of which conform to and fit upon the corrugation formed by the two meeting edges of the adjacent tiles, as shown clearly in Fig. 5. At its upper end, each cap is provided with an upstanding flange 18 which, when the cap is in position, abuts and fits against the sides of the upstanding flanges 8 of the tile members, as seen in Fig. 1. At its lower end each cap is provided with a downwardly extending flange 19 which hooks over the upstanding flange 18 of the next lower cap of the series. The lower edge margin 20 of the downturned flange 19 of the cap is of inverted V-shape to fit accurately upon the downwardly divergent upper surface of the next lower cap. Preferably the lateral margins 21 of the cap members 17 extend to the bottoms of the corru-

gating grooves of the tile members and fit against the opposed inclined surfaces, as seen clearly in Fig. 5.

With the title and cap members constructed and arranged as described, it will be obvious that the roof surface thus formed presents no recesses or angles in which water, snow or ice may become permanently lodged since the surfaces all pitch downwardly and form unobstructed water-sheds. Moreover it will be seen that the joints are so overlapped that rain or water cannot be driven through the joints beneath the titles in such manner as to penetrate the roof. The overlapped and interflanged arrangement of the tiles and caps is of particular importance in making the roof weatherproof against rain accompanied by violent wind. The construction of the tile as a whole is extremely simple and light, and of a form which readily lends itself to molding in a rapid and economical manner.

While the construction described constitutes a preferred embodiment of the invention, it is nevertheless to be understood that the details may be modified to some extent without departing from the spirit of the invention.

I claim as my invention:

1. A roofing tile formed from plastic material, having a main body member relatively thin and longitudinally corrugated as to both its upper and lower sides, an upstanding flange extending across its upper margin, a downturned flange extending across its upper end margin, a downturned flange extending across its lower end margin, and a plurality of reinforcing ribs extending across the main body at the lower side thereof one or more of which extends across the central part of the tile.

2. A roofing tile formed from plastic material, having a main body of generally rectangular form and longitudinally corrugated both as to its upper and lower sides, marginal strengthening ribs extending along each of the four sides of the tile, longitudinal ribs extending the length of the tile between the lateral margins thereof, upstanding and downturned flanges extending across its upper margin, a downturned flange extending across its lower end margin, and reinforcing wires extending through the body of the tile.

3. A roofing tile formed from plastic material, having a main body of generally rectangular form and longitudinally corrugated both as to its upper and lower sides, integral marginal strengthening ribs extending along each of the four sides of the tile, intermediate longitudinally extending strengthening ribs, intermediate transverse ribs, upstanding and downturned flanges extending along the upper margins of the tile, a downturned flange extending across its lower end margin, and reinforcing wires extending longitudinally

through said intermediate longitudinal and transverse ribs, said reinforcing wires being located below near the lower surfaces of the respective ribs within which they are embedded.

5 4. In combination with a pair of roofing tiles arranged edge to edge, the upper surfaces of the meeting edges of which are inclined upwardly and towards each other, a  
10 cap member having its under side recessed and constructed to fit upon and overlap the meeting edges of said tiles, said cap member being provided with an upstanding flange across its upper end and a downturned flange  
15 across its lower end, and being of a length slightly in excess of the length of the tiles, substantially as described.

20 5. In combination two tiers of roofing tiles, each tier comprising corrugated tile members arranged edge to edge, the lateral

edges of said tiles meeting in a line extending coincident with the apex of a corrugation, and cap members arranged to overlie the meeting edges of the laterally contiguous tiles, each cap member being longitudinally  
25 grooved or recessed in its under side to fit upon the meeting edges of the tiles, and provided at its upper end with an upstanding flange and at its lower end with a downturned flange, the cap member of one tier of  
30 tiles being of a length to extend slightly below the lower edges of the tiles it overlies and the upper flange of the next lower cap member being hooked beneath and interengaged  
35 with the depending flange of the upper cap member, substantially as described.

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Witnesses:

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