No. 650,939. Patented June 5, 1900.

# G. F. KASCH.

## ROOFING TILE.

(Application filed Aug. 26, 1899.)

(No Model.)

FIG. I.

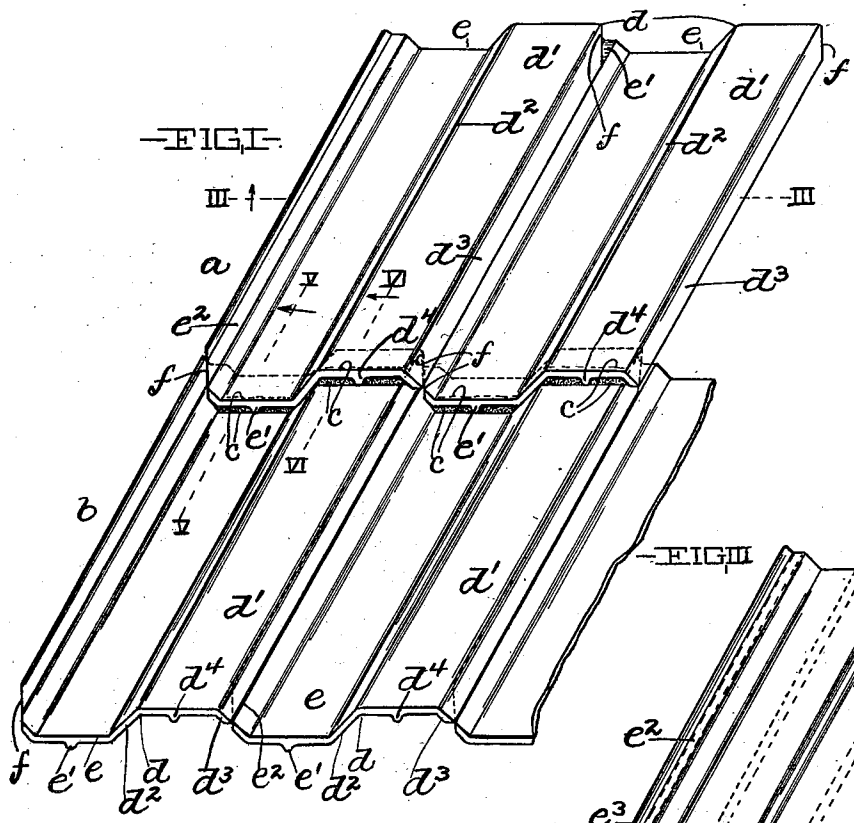


FIG. III.

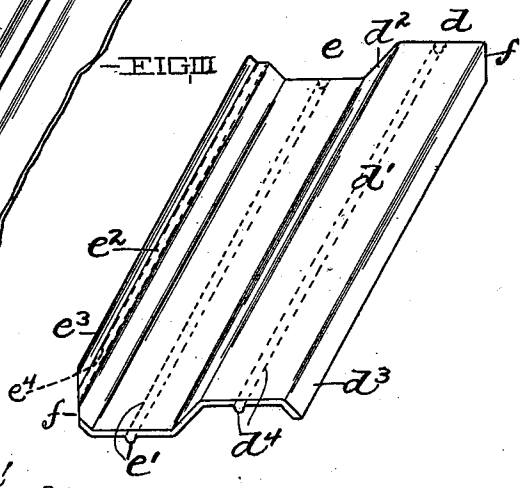


FIG. II.

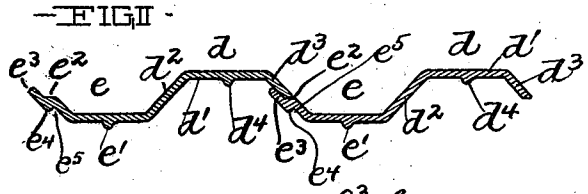


FIG. V.

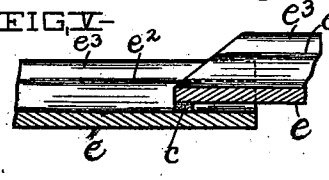


FIG. IV.

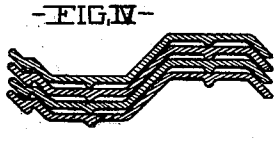
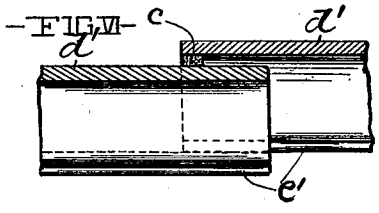


FIG. VI.



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# UNITED STATES PATENT OFFICE.

GUSTAV F. KASCH, OF AKRON, OHIO.

## ROOFING-TILE.

SPECIFICATION forming part of Letters Patent No. 650,939, dated June 5, 1900.

Application filed August 26, 1899. Serial No. 728,523. (No model.)

*To all whom it may concern:*

Be it known that I, GUSTAV F. KASCH, residing at Akron, Summit county, and State of Ohio, have invented certain new and useful Improvements in Roofing-Tiles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in roofing-tiles.

One object of this invention is to construct a roofing-tile that has a gutter-forming portion and a convex portion extending longitudinally of the tile and has the outer side wall of the gutter provided with an elevated shoulder that extends from end to end of the gutter and has the said side wall extending upwardly at the outer side of the said shoulder, so that in laying a lateral tier of my improved tiles the convex portion of one of two adjacent tiles of the said tier at the outer longitudinal edge of the said convex portion shall rest upon the elevated shoulder or seat formed upon the gutter-forming section of the next adjacent tile and overlap the latter's wall that extends above the outer side of the said seat-forming shoulder and the overlapping and seating of the one tile upon the outer wall and considerably above the bottom of the gutter of the other tile enlarges the capacity of the gutter and reduces to a minimum the liability of rain, water or moisture, and dirt and dust being blown, forced, or washed up into the said overlapping tile.

Another object of my present invention is to provide a tile of the character indicated that is, in the main, uniform in thickness from end to end and from side to side of the tile, so that the burning and drying of the same in a kiln shall be uniform throughout the tile and so that the weight of the tile shall be reduced to a minimum that is uniform in width at both ends, that has such shape in cross-section or end elevation that several tiles can be nested together and require little room in shipping or transportation, and that upon the lower surface of its convex portion and upon the lower surface of its concave or gutter-forming portion has a rib that extends longitudinally of the tile and forms a direct downward bearing for the tile upon the overlapped tile of the next row or tier of tiles in the formation of a roof.

Another object of this invention is to provide a roofing-tile that in end elevation or cross-section is shaped as required to form a gutter extending longitudinally of the tile and has one of the side walls of the gutter offset laterally and outwardly, so as to form an upwardly-facing seat-forming shoulder and a downwardly-facing bearing below the said shoulder between the latter and the under surface of the gutter's bottom.

With these objects in view and to the end of realizing other advantages hereinafter appearing the invention consists in certain peculiarities of construction hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure I is a perspective view of a portion of two lateral tiers of tiles as they are laid in the formation of a roof. Fig. II is a perspective view of one of the tiles. Fig. III is a transverse section on line III III, Fig. I. Fig. IV is an end elevation showing several tiles nested together. Figs. V and VI are sections in detail on lines V V and VI VI, respectively, Fig. I, and show the parts illustrated therein on a larger scale than the illustration of the corresponding parts in the preceding figures.

Fig. I of the drawings shows the relative arrangement of two lateral tiers *a* and *b* of tiles as the latter are laid in the construction of a roof. Each tile of the upper tier of two adjacent tiers has its lower end overlapping the upper end of the next adjacent tile of the lower tier.

My improved tile comprises a convex portion *d* and a concave or gutter-forming portion *e*, and both of the said portions are parallel longitudinally and extend from the upper end to the lower end of the tile. The convex portion in the case illustrated has a crown or top $d'$ and two sides $d^2$ and $d^3$, diverging downwardly from opposite sides, respectively, of the top $d'$. The inner side of the said convex portion forms the inner side wall of the gutter-forming section. The said convex portion upon its under side is provided with a rib $d^4$, that extends from end to end of the tile. The bottom of the gutter-forming section of the tile is provided upon its lower surface and preferably centrally

with a rib $e'$, extending from end to end of the tile. The outer side wall of the said gutter is provided about centrally between the bottom and top of the gutter with a shoulder $e^2$, that extends from end to end of the gutter. The said side wall in the case illustrated extends upwardly to about two-thirds of the height of the convex portion of the tile, and the said side wall may be described as being offset outwardly and laterally about two-thirds of its height, so as to form the aforesaid shoulder $e^2$, and the upper portion $e^3$ of the side wall above the said shoulder projects, preferably, somewhat outwardly from the shoulder.

My improved tile is approximately uniform in thickness from side to side and from end to end. In fact, the tile illustrated is exactly uniform in thickness except where the aforesaid ribs and shoulder are formed. The concave section of my improved tile has a desirably-large capacity for drainage purposes, because it has a comparatively-great depth below the seat for the adjacent tile. The shoulder $e^2$, formed upon and high up the outer side wall of the gutter, forms an elevated seat for the outer longitudinal edge of the convex section of the next adjacent tile in laying a row or tier of tiles, and the convex section of my improved tile has its outer side terminating about midway of the height of the inner side of the said section. In other words, the outer longitudinal edge of the convex section of the tile and the seat-forming shoulder of the tile are arranged in the same plane, so that each tile of two adjacent tiles of a lateral tier of tiles will have the outer longitudinal edge of its convex portion resting upon the seat-forming shoulder of the gutter of the other tile and overlapping the latter's gutter-forming section above the said shoulder. The provision of the elevated seat $e^2$ and the tile's extension $e^3$ upwardly at the outer side of the said seat prevents rain, water or moisture, and dust and dirt from being blown, driven, or washed upwardly into the convex section of the next adjacent tile of the lateral tier of which the said tiles form a part, and the elevated seat $e^2$ dispenses with the use of cement in the joint formed between the said tiles, and consequently materially reduces the cost of constructing a roof of tiles embodying my invention.

In laying lateral tiers of my improved tiles the tiles of each tier have their lower ends overlapping the upper ends of the tiles of the tier next below, as shown in Fig. I—that is, the lower end of the gutter-forming section of each tile fits into the gutter-forming section of the tile next below and has its rib resting upon the bottom of the gutter of the last-mentioned tile, and the convex section of each tile has its lower end embracing the upper end of the convex section of the tile next below and has the rib upon its under side resting upon the last-mentioned tile. The elevation of each tile, in laying a roof, above the next lower tile by means of the ribs upon the upper tile accommodates the overlapping of the lower tile by the upper tile without necessitating a reduction in the width of the lower tile at or toward the latter's upper end, and of course the tiles are cut away at diagonally-opposite ends, as at $f$, to accommodate the aforesaid overlapping of the tiles.

The gutter-forming section of the tile below the seat $e^2$ has a depending rib $e^4$ and an air-channel $e^5$. The latter forms an air-space, and the rib $e^4$ affords a directly or perpendicularly downward bearing for the tile and facilitates the formation of a nice fit between the tile and the overlapped tile. The upper end of the gutter-forming section of the tile is provided with holes for the reception of the nails or tile-fastening devices.

In laying two lateral tiers of tiles the air-spaces formed between the forward and lower end of each tile of the upper tier and the upper end of the overlapped tile of the lower tier are closed with cement $c$. The upper tier of tiles overlap the lower tier of tiles preferably about two inches, whereas the strip of cement filling is preferably about a quarter of an inch in width. The cement cushions the tiles in walking upon them and assists in preventing crushing of the tiles from undue pressure brought to bear upon them. The uncemented rear portion of the spaces formed between the overlapped upper end of each tile and the lower end of the tile next above accommodates the formation of suitable air-spaces rearward of the cement and the displacement of any cement resulting from pressure upon the overlapped tile.

I would remark that although my improved tile is preferably made of one piece my invention is not limited in this respect, because the tile might be made in two pieces joined together centrally and longitudinally of the inner side wall of the gutter of the tile.

What I claim is—

1. A roofing-tile that, in end elevation, has the shape required to form a convex section and a concave and gutter-forming section with one wall of the gutter forming a side wall of the convex section; a rib formed upon and extending longitudinally of the bottom of the gutter-forming section; a rib formed upon and internally and longitudinally of the convex section, and the tile being uniform, or approximately uniform, in thickness, from side to side and from end to end except at the location of the aforesaid ribs, substantially as and for the purpose set forth.

2. A roofing-tile that, in end elevation or cross-section, is shaped as required to form a gutter extending longitudinally of the tile, and the gutter's side wall that forms a support for the next adjacent tile in laying a lateral tier of tiles, being offset laterally and outwardly so as to form an upwardly-facing seat-forming shoulder $e^2$ and a downwardly-facing bearing below the said shoulder between the latter and the under surface of the

gutter's bottom, substantially as and for the purpose set forth.

3. A roofing-tile that, in end elevation or cross-section, has the shape required to form a convex portion and a concave and gutter-forming portion extending longitudinally of the tile, that has one side wall of the gutter forming a side of the convex portion, and that has the gutter's opposite side wall offset laterally and outwardly to form an upwardly-facing shoulder or seat $e^2$ longitudinally of the said wall, and to form, below the said seat, a bottom bearing above the under surface of the bottom, substantially as and for the purpose set forth.

4. A roofing-tile that, in end elevation or cross-section, has the shape required to form a gutter extending longitudinally of the tile; that has a rib formed upon and longitudinally of the gutter's bottom, and that has the gutter's side wall, that forms a support for the next adjacent tile in laying a lateral tier of tiles, offset laterally and outwardly above the aforesaid rib so as to form a shoulder or seat $e^2$ that extends longitudinally of the said wall, substantially as and for the purpose set forth.

5. A roofing-tile that, in end elevation, has the shape required to form a gutter extending longitudinally of the tile; that has a rib formed upon and longitudinally of the under side of the gutter's bottom, and that has the gutter's side wall that forms a support for the next adjacent tile in laying a lateral tier of tiles, offset laterally and outwardly above the gutter's bottom, substantially as and for the purpose set forth.

6. In a roofing-tile that, in end elevation, has the shape required to form a convex section and a concave and gutter-forming section with one wall of the gutter forming a side wall of the convex section; a rib formed upon and extending longitudinally of the bottom of the gutter; a rib formed upon and internally and longitudinally of the convex section; a shoulder formed upon the gutter's other side wall above the gutter's bottom, and the tile being uniform or approximately uniform in thickness from side to side and from end to end except at the location of the aforesaid shoulder and ribs, substantially as and for the purpose set forth.

7. A roofing-tile that, in end elevation or cross-section, has the shape required to form a gutter extending longitudinally of the tile and having its side wall, that forms a support for the next adjacent tile in laying a lateral tier of tiles, offset laterally and outwardly above the aforesaid rib so as to form a shoulder extending longitudinally of the gutter, and a depending rib formed upon and longitudinally of the gutter below the aforesaid shoulder, substantially as shown, for the purpose specified.

Signed by me at Cleveland, Ohio, this 17th day of August, 1899.

GUSTAV F. KASCH.

Witnesses:
C. H. DORER,
A. H. PARRATT.