(No Model.)

J. FREUND.

TILE AND ARRANGEMENT THEREOF IN ROOFS.

No. 604,035. Patented May 17, 1898.

Fig. 1.

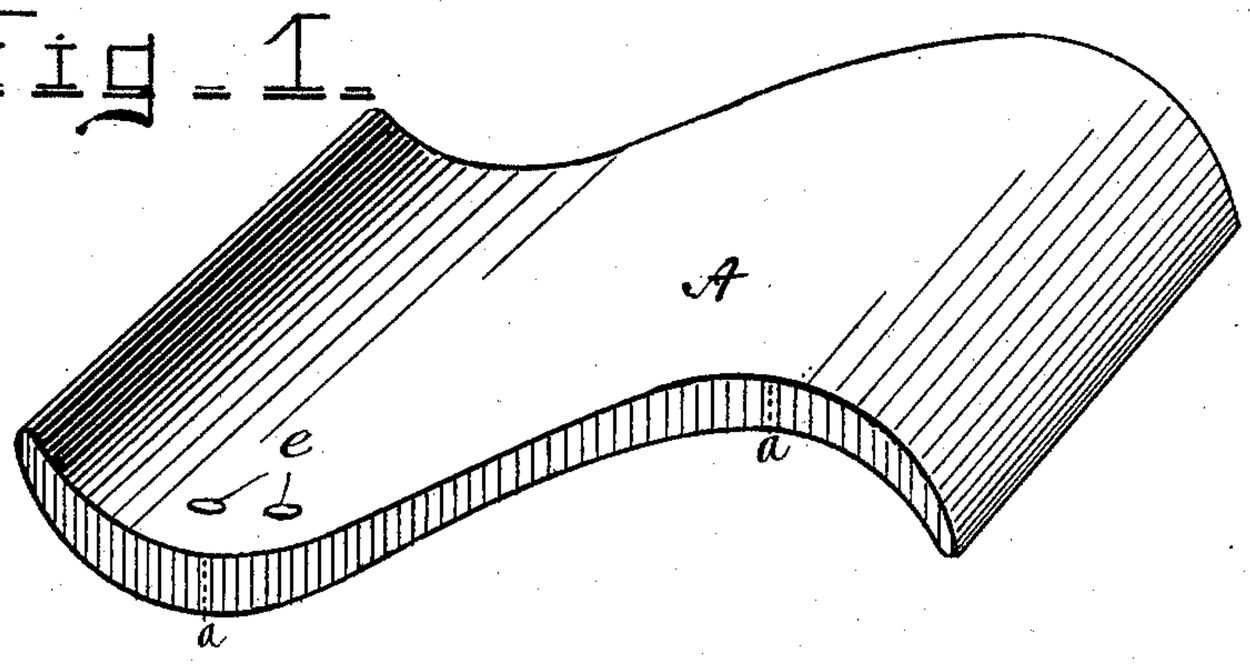


Fig. 3.

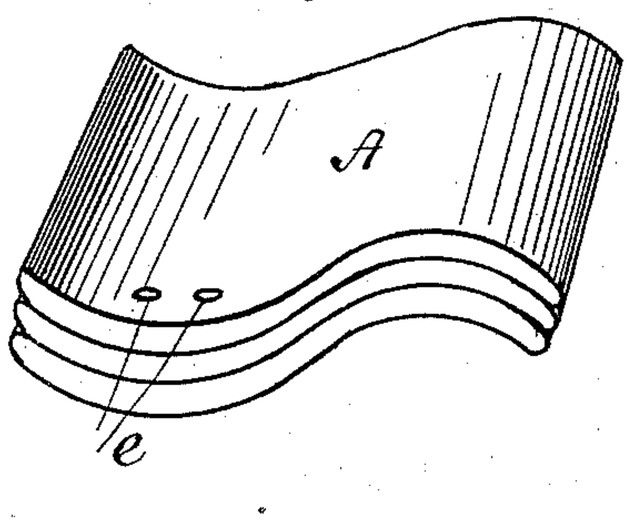


Fig. 2.

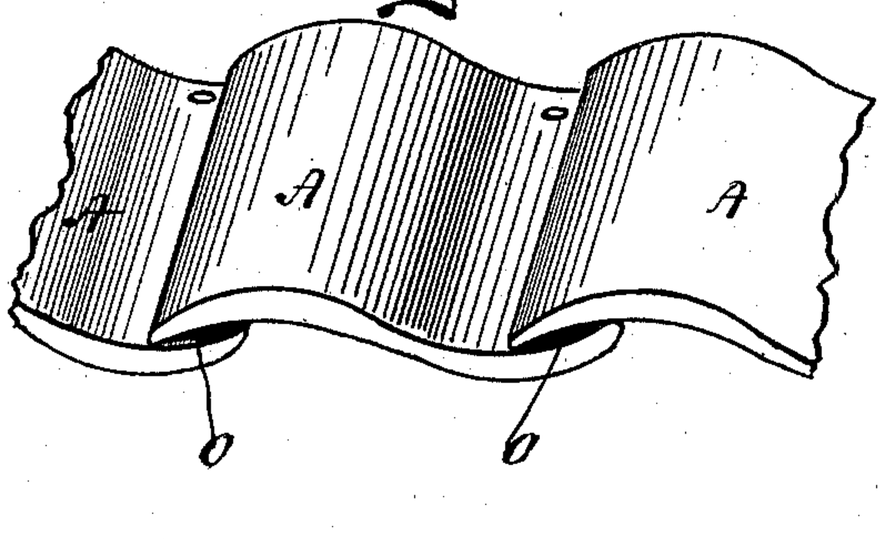
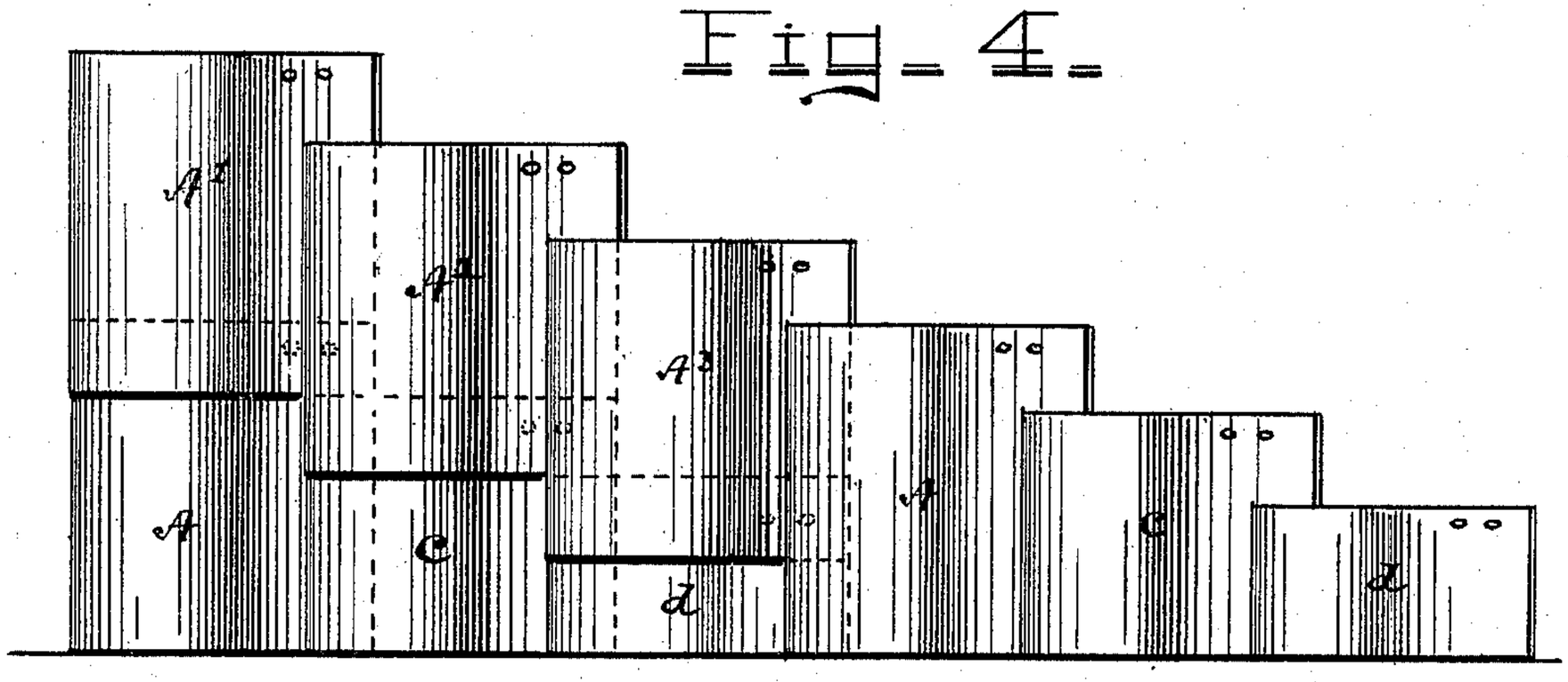


Fig. 4.



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UNITED STATES PATENT OFFICE.

JACOB FREUND, OF CINCINNATI, OHIO.

TILE AND ARRANGEMENT THEREOF IN ROOFS.

SPECIFICATION forming part of Letters Patent No. 604,035, dated May 17, 1898.

Application filed April 19, 1897. Serial No. 632,745. (No model.)

To all whom it may concern:

Be it known that I, JACOB FREUND, a citizen of the United States, residing at Cincinnati, Ohio, have invented new and useful Improvements in Tiles and Arrangement Thereof in Roofs, of which the following is a specification.

My invention relates to roofing-tiles, its object being to provide as a new article of manufacture a tile of novel form, convenient and economical to construct, adapted to nest compactly in transportation, and when laid on a roof to make joints and form a rain-proof covering without an extra or covering tile.

It consists also in a method of laying tile as a roof-covering, whereby the same may be done expeditiously and economically and whereby in the declivity of the roof each upper tile derives support from that below and a picturesque "diagonal" effect is produced by the arrangement.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a general perspective view of one of my improved tiles. Fig. 2 is an end view of two tiles overlaid, showing the overlapping joint; Fig. 3, an end view of three tiles nested together for shipment or transportation; Fig. 4, a diagram or plan view of a roof partially laid, showing the mode of laying and the supporting relations.

Referring now to the drawings, A designates my improved tile, which consists of a rectangular slab of burned clay, whose cross-section in one direction presents a double reversed curve, as indicated in Figs. 1, 2, and 3, while in the direction perpendicular thereto its cross-section is straight. The radius of curvature at the concave side is the same as that at the opposite convex side, whence it follows that the thickness of the tile at the center of the curve at each end, as shown at the dotted cross-lines *a a*, is somewhat greater than the thickness at the center indicated at the dotted cross-line *b*. The opposite edges terminating the curves may be drawn together or rounded.

The mode of manufacture is by forcing the moist clay in a strip through a correspondingly-curved die and cutting to length. The tiles thus formed nest together for shipment, as indicated in Fig. 3, deriving support and protection from each other.

When laid, the convex side of one tile overlaps into the concave side of the next, as indicated in Fig. 2, whereby the covering side of one tile sheds water into the gutter formed by the concavity of the next, and the adjacent surfaces form a somewhat oval opening *o*, which effectually prevents the "creeping" of moisture due to capillary attraction between closely adjacent surfaces as usually arranged.

In laying the tile to form a roof-covering I provide two or more special sizes successively smaller than the regular tile for the initial row at the eaves. In the illustration Fig. 4 I show two such sizes, *c d*. Beginning at the left hand I lay the full-sized tile A, nailing it to the sheathing through the holes provided for that purpose, (shown at *e e*, Fig. 1.) I next lay the shorter tile *c*, securing it in like manner, overlapping the tile A in the manner indicated in Fig. 4, and in like manner lay the tile *d*, overlapping the tile *c*. I then proceed with the next upper row, laying tile A′ in line with A, but overlapping it from above in the nesting relation indicated in Fig. 3 far enough to cover and protect the nails driven into the sheathing through the nail-holes *e*, and then proceed with tiles A^2 and A^3, each in a similar relation to that immediately below. In this arrangement the tile A′ has a lower contact-support upon the short tile *c*, the tile A^2 a similar support on the short tile *d*, while the tile A^3 derives a similar support upon a block of cement introduced in the opening between the short tile *d* and the right-hand tile A, which forms the first of the right-hand series of lower or first row tiles A *c d* (shown in the figure) and are laid after the second-row tiles A′, A^2, and A^3 and before third-row tiles are laid. This general plan or method of laying is continued from left to right and gradually works out to completion at the upper right-hand corner of the roof side, making a rain-proof covering secure from displacement, amply protecting its fastening-nails and presenting a diagonal relation of the tiles both unique and picturesque.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. A roofing-tile of rectangular outline having a cross-section oppositely curved from the center outward, in similar curves of dimin-

ishing radii, increasing the thickness of the material from the center to the apex of the curves and thence closing together to an acute-angled edge, whereby the tiles nest together in continuous contact; and, when laid, the overlapping surfaces present an elongated cross-opening of opposite arcs as a protection against capillary action, substantially as set forth.

2. A series of tiles of the general form described, of similar width but different lengths, laid so that the upper courses of uniform size overlay the lower courses at successively greater distances from the eaves producing a complete covering-joint, and a diagonal relation over the body of the roof, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JACOB FREUND.

Witnesses:
L. M. HOSEA,
H. J. ALLSUP.