

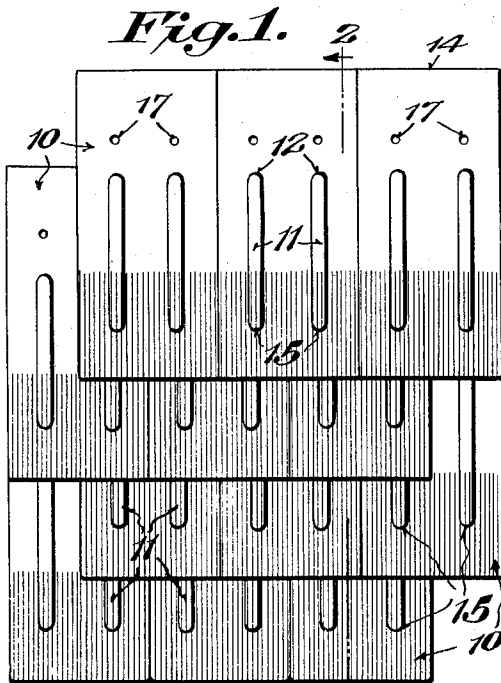
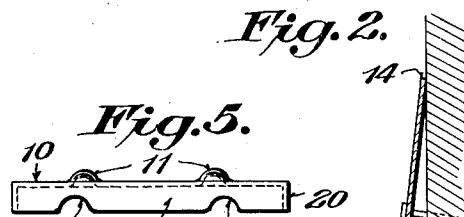
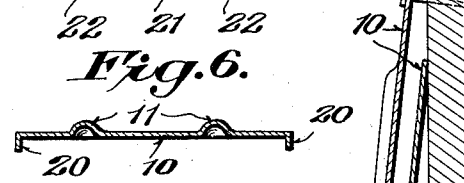
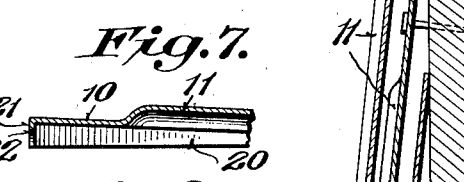
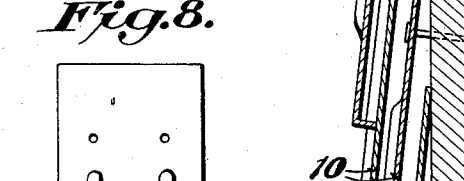
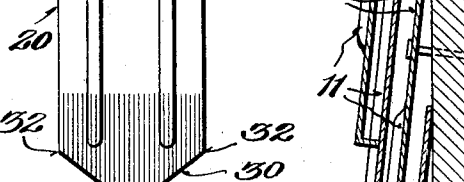
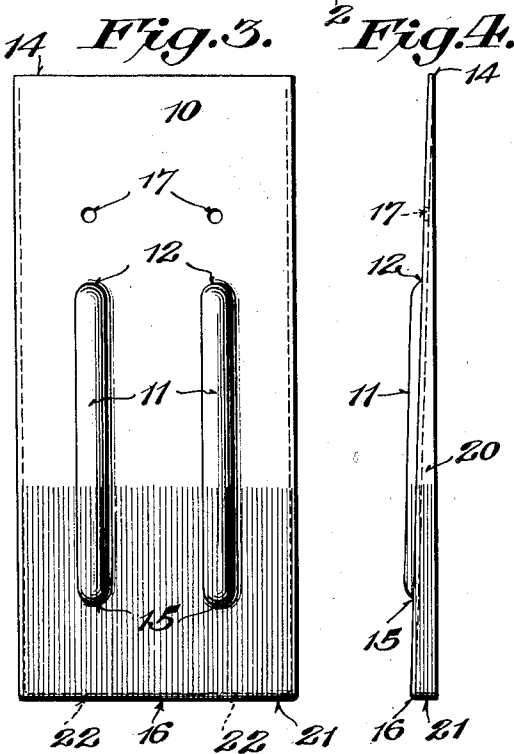
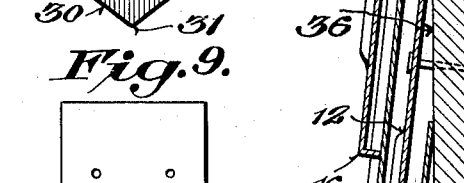
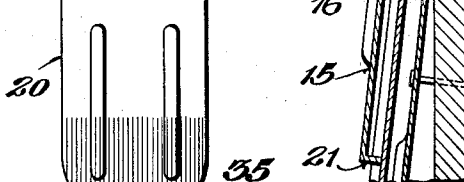
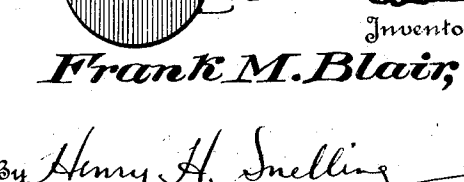
Feb. 9, 1926.

F. M. BLAIR

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ENAMEL METAL SHINGLE

Filed March 20, 1925



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UNITED STATES PATENT OFFICE.

FRANK M. BLAIR, OF NEWARK, OHIO.

ENAMEL METAL SHINGLE.

Application filed March 20, 1925. Serial No. 17,067.

To all whom it may concern:

Be it known that I, FRANK M. BLAIR, a citizen of the United States, residing at Newark, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Enamel Metal Shingles, of which the following is a specification.

This invention relates to shingles and to roofs composed of shingles and has for its principal object the provision of a shingle of such material and configuration as to form a roof which will be practically everlasting and which will be highly non-conducting to heat.

A further object of the present invention lies in the provision of a reinforced metallic shingle.

A still further object is the provision of a substantial ornamental, enameled shingle of the general shape of a wood shingle and in which the exposed portion is given a second coat of enamel for three purposes, first to lengthen the life of the shingle and second to force the workmen to apply the shingles in the manner to secure best results, and third for ornament.

In the drawings:

Figure 1 is a portion of a roof embodying my invention.

Figure 2 is a cross-section of the roof shown in Figure 1.

Figure 3 is a top plan view of one of the shingles.

Figure 4 is an edge view of the shingle.

Figure 5 is an end view.

Figure 6 is a transverse cross-section.

Figure 7 is longitudinal cross-section.

Figures 8 and 9 show modifications.

In its preferred form the shingle consists of a rectangular body portion 10, plane throughout its entire extent save for the two longitudinal stiffening, ornamenting and positioning ribs 11 which have their upper ends 12 at a distance from the top edge 14 of less than one-third the length of the shingle and have their bottom margins 15 approximately one-sixth of the length of the shingle from the base edge 16 so that when laid the ribs shall be exposed for a length approximately equal to the distance from the margin 15 to the base edge 16.

The nail holes 17 are located between the upper margins 12 of the ribs and the top edge 14 and each preferably in line with the ridges of the adjacent rib. By spac-

ing the nail holes a reasonable distance from the top edge I am enabled to put a slight stress on the metal when nailing it in place which is advantageous.

The shingle body portion 10 has integral, turned down right angular flanges on three sides, the side flanges 20 each being right angle triangles tapering off to a point at the top edge 14 and having their greatest depth at the base end, being at this point flush with the uniform depth of the base flange 21 which latter is notched or indented as at 22 to receive a rib of the shingle immediately beneath it as laid on the roof. As will be best seen in Figure 5 the ribs 11 and the notches 22 in the preferred form do not align.

The distance from the center of either notch 22 to the edge must of course be exactly half of the distance from crest to crest of the ribs 11 but by slightly offsetting the ribs and notches of each shingle a somewhat more ornamental effect is given to the roof than is obtained when the notches and ribs are aligned with their consequent severe straight line effect in the finished roof. The invention however, is not to be limited to this or other specific details except as called for in the claims.

The turned down flanges 20 and 21 each independently strengthen and stiffen the shingle as a whole and together with the central stiffening ribs 11 serve to lessen the danger of the sheet metal shingle warping due to heat incident to the enameling step if the shingle is to be coated as I prefer to have it.

In Figures 8 and 9 I have shown two popular modifications, and I intend to shape the shingles in other ways. In all the modifications, some means is provided for spacing the main body portion from the next lower shingle and preferably this is to be accomplished in the modification in exactly the same way as in the preferred form, namely by providing parallel tapered side flanges. The base flanges 30 will necessarily also be tapered, being deeper at the cusp 31 than at the point of juncture 32 with the side flanges, differing slightly and obviously in this respect from the base flange 21, but like the latter will be provided with notches to receive the ribs 11 of other shingles. In the modified form shown in Figure 9 the base flange 35 may be integral with the side flanges or may, if

preferred, be slit at a sufficient number of points to give the desired contour.

In laying the shingles, the shingles of the next higher row are laid so that their side edges exactly aline with the centerline of the shingle beneath, and the notches in their base edges snugly receive the proximate ribs of adjacent lower shingles, such ribs being exposed only in small part, approximately two-thirds of each rib and of each shingle being covered. Great advantage is secured in this lapping and locking of the ends of the shingles for not only are the ribs useful for ornament and for strength but the snug engagement of rib and notch has a material effect in holding the shingles in place and lessening to a minimum the tendency to rattle or whip when the roof is subjected to high wind.

As best seen in Figure 2 this method of laying the shingles provides at every point a triple air space between the exposed shingle and the roofing surface 36 as the base edge of the top shingle preferably is spaced just a trifle short of the vertical plane passing through the top edge of the lowest shingle. The advantage of such air spaces is obvious as it insures a cool roof in summer and a warm roof in winter, particularly when the shingles are encased in one or more coats of non-conducting enamel, as preferred.

In its best form the invention contemplates the enameling of the shingles, as in addition to the resistance to heat transfer the enamel will result in the optional coloring of the roof with a permanent shade or color, either standard or to suit the surroundings. I prefer to coat the entire shingle and after this application coat or coats is complete I dip only a little more than one third (the lower or base end naturally) for the remaining coat or coats. This makes the ribs slightly larger at the bottom and tends to force the mechanic to apply the shingles in the manner desired and herein described for the size of the notch is made to fit exactly the redipped portion of the rib. A still further and very important advantage of the partial enameling is that by so constructing the shingle the workmen are able without excessive trouble to cut the unexposed portion of the shingles while laying them on the roof in order to fit them into gutters, around ridge poles and other irregular places in the roof. The primary coat does not crack or check in the cutting operation but the portion of the shingle which has the full number of coats is very difficult to operate upon without injury to the shingle, consequently if the shingle were completely coated with all the coats it would not be possible for the shingles to be thus cut to shape by the workmen right on the

job as can be done with a shingle made in accordance with this invention.

What I claim is:—

1. A roof composed of a series of shingles, each with two longitudinal ribs and with a right angular downturned base flange extending below the body of the shingle and having therein two notches, one of said notches receiving the rib of a shingle to the right and the other notch receiving the rib of a shingle to the left, said shingle to the right and said shingle to the left being held in contact with one another by said engagement.

2. A metal roof shingle comprising a body portion having two ribs and means for spacing the shingle from the surface upon which it is laid, said ribs being spaced from each other and from all edges of the shingle, and said spacing means positioning and locking other similar shingles by engagement with their ribs.

3. A shingle composed of a rectangular body portion having downturned flanges on three sides, the parallel flanges being tapered from the third side to the flangeless side, the third side flange having notches therein, said body portion having embossed ribs of such size to fit loosely the notches of similar shingles, said body portion and flanges being covered with a coating substantially non-conductive to heat, and a portion of said shingles having an additional coating extending from the flange on the third side and including approximately half of the length of said ribs, said additional coat increasing the size of the ribs to make the treated portions thereof fit said notches snugly.

4. A roof consisting of a series of rows of overlapping shingles, the shingles of each row having their center lines directly above the junction between adjacent shingles of the next lower row, and overlapping the tops of the adjacent lower shingles in the same tier, each shingle having means for spacing it above the surface beneath whereby there is provided at every point in the roof, three separated air chambers.

5. The roof of claim 4 in which the shingles are each composed of a rectangular body with downturned flanges on three sides to resemble a wooden shingle, the two parallel side flanges being tapered from the base end to the top end which has no flange, and said body having embossed therein a pair of ribs parallel to the tapered flanges, spaced from all four sides of the body and interlocking with the flanges of other shingles to position and to secure the shingles in place on the roof, said flanges being the means for spacing the shingle above the surface beneath.

FRANK M. BLAIR.