(No Model.)

D. D. LUPTON.
METALLIC SHINGLE.

No. 484,211. Patented Oct. 11, 1892.

FIG. 2.

FIG. 1.

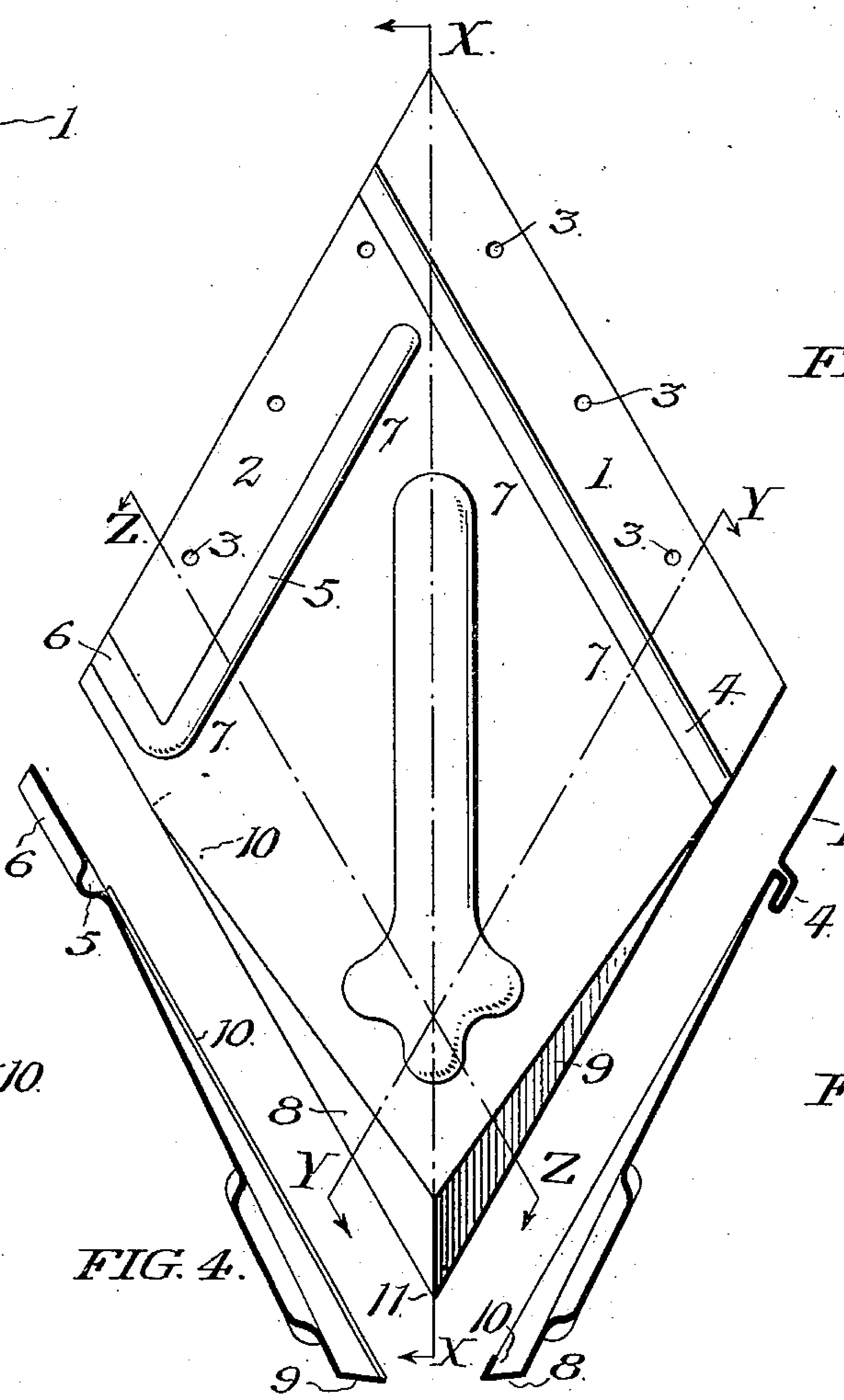
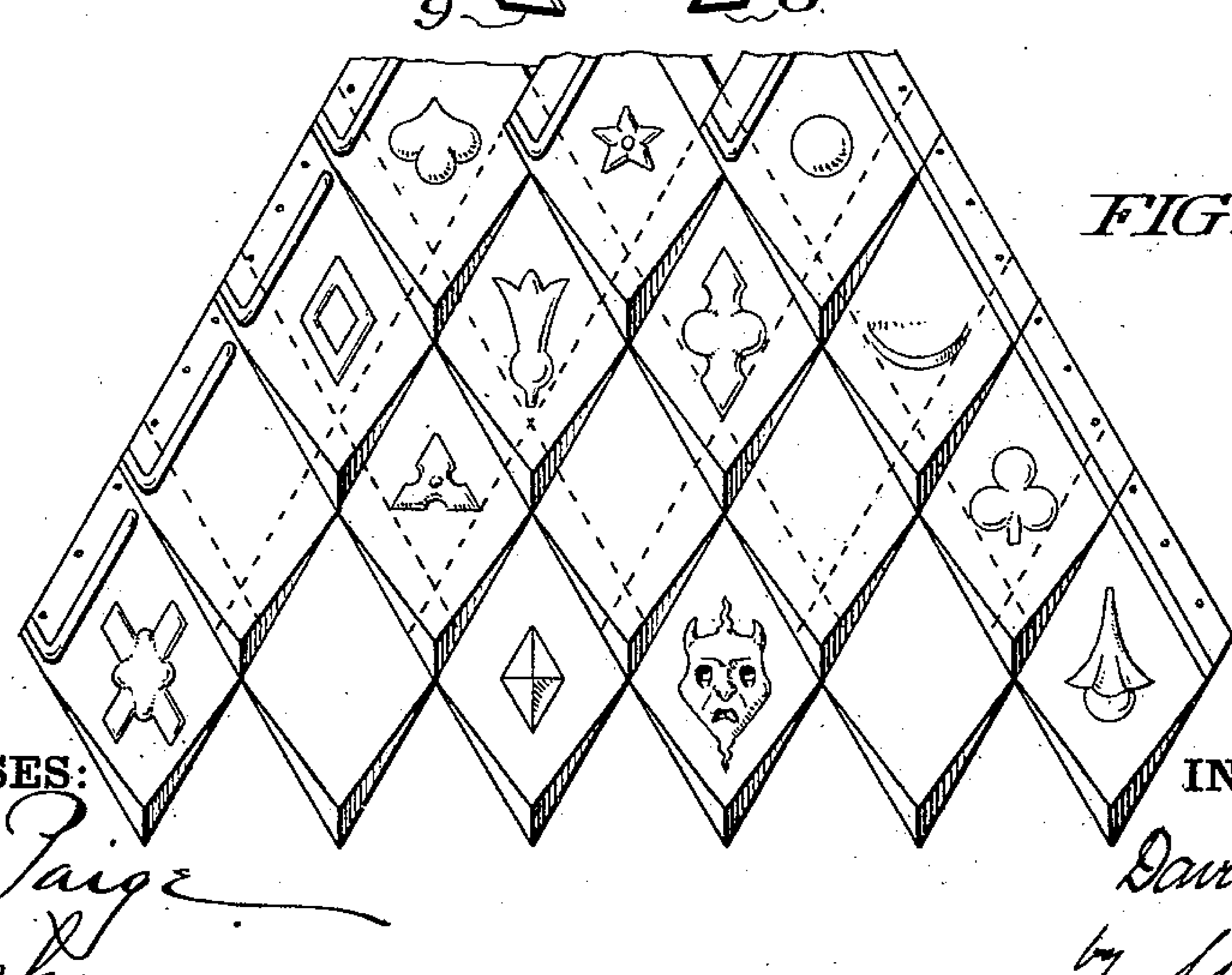


FIG. 3.

FIG. 4.

FIG. 5.



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UNITED STATES PATENT OFFICE.

DAVID D. LUPTON, OF PHILADELPHIA, PENNSYLVANIA.

METALLIC SHINGLE.

SPECIFICATION forming part of Letters Patent No. 484,211, dated October 11, 1892.

Application filed November 18, 1891. Serial No. 412,332. (No model.)

To all whom it may concern:

Be it known that DAVID D. LUPTON, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Metallic Shingles; and I do hereby declare the following to be a sufficiently full, clear, and exact description thereof as to enable others skilled in the art to make and use the said invention.

This invention relates to roofing of buildings, and particularly to that class of roofing formed of metallic shingles, and has for its object the more secure interlocking of the shingles with each other, the exclusion of water from beneath the shingles, and the avoidance of buckling and opening of the joints between the shingles from changes of temperature.

To this end this invention consists in a construction of metallic plate-shingles having a flat nailing-surface, raised projections upon its upper surface, a cavity beneath it, a hooked flange upon one of its edges, and an upwardly-inclined groove adapted to receive the hooked flange of similar shingles, as shown in the accompanying drawings, in which—

Figure 1 shows a top view of a metallic shingle embodying this invention. Figs. 2, 3, and 4 show sections, respectively, in the planes indicated by the dotted lines X X, Y Y, and Z Z in Fig. 1, viewed in the direction of the arrows marked across said lines; and Fig. 5 shows a portion of a roof covered with shingles embodying this invention.

This shingle consists of a single integral plate of ductile metal of a rectangular or rhomboidal form, having margins 1 and 2 at the upper edges and practically parallel therewith, made flat, so as to lie upon and be fastened by nailing through holes 3 to the laths or boards or other like roofing-supports.

Below the flat margin 1 and parallel with the edge the plate is bent into a hooked groove 4, (see Figs. 2 and 3,) the opening of the groove being downward.

Below the flat margin 2 is a raised rib 5, commencing a slight distance below the hooked groove 4 and extending downwardly parallel with the edge of the margin 2 to a short distance from the end of such margin, where it joins or turns into a short raised rib 6, extending to the edge. The portions marked 7 of the plate below and contiguous to the groove 4 and the ribs 5 and 6 are in the same plane as the margins 1 and 2. The plate below the part marked 7 gradually rises above that plane to the lower edges 8 and 9, where they are bent downwardly with inclined sides, so as to present an edge in practically the same plane as the margins 1 and 2, and upon the edge 8 is a flange 10, turned under and upward, extending from about the line of the rib 5 to the lower point of the shingle 11, at which point the parts 8 and 9 are united by soldering or other means, so as to be fluid-tight and to brace each other. The flange 10 is of such dimensions as to hook under and fit in the hooked groove 4 of the contiguous shingle.

The plate of the shingle, between the surfaces marked 7 7 and the bent lower edges 8 and 9, is stiffened by stamping a portion in relief, so as to remove the buckling incident to the bending and working of the margins or edges, and such relief may be of any ornamental or grotesque form that taste or caprice may dictate within the limits of the ductile properties of the metal and avoiding any depressions which would retain water when the shingles are applied to a roof.

The shingles of the construction above described are applied to the roof by nailing a lower row by means of nails through the holes 3 3 in the margins 1 and 2, and hooks of plate metal may be secured to the roof before placing the first row of shingles into position, so as to engage the flanges 10 of the shingles of the first row, after which the shingles of the next row are hooked by their flanges 10 into the grooves 4 of the shingles of the first row.

The shingles of the second row cover the ribs 7 and 6 of the lower row and also the margins 1 and 2, as well as the hooked grooved portion 4 of the shingles of the row below. The several successive rows are added in this manner, and the final or top row is protected by a molding in the usual manner. Each shingle, as thus constructed and applied, is free to contract and expand independently of the others, and the expansion is never sufficient to disengage the flanges 10 of any shingle

from the groove 4 of another in which it is hooked. The grooves 4, opening downward, shed water instead of retaining it.

Having described this invention, what I claim is—

A metallic plate-shingle having flat margins extending from the upper corner upon the upper edges for nailing, a downwardly-open hooked groove parallel with and near one upper edge, adapted to engage an upwardly-bent flange on the lower edge of a similar plate-shingle, a stiffening-rib commencing below said hooked groove and extending parallel with the other upper edge near to the length of said second edge and then returned in parallel direction with the hooked groove across said edge, a gradually-raised plate extending below the hooked groove and stiffening-rib, terminating in downwardly-bent flanges parallel with the hooked groove and longer sides of the stiffening-rib and adapted to cover the stiffening-rib of a similar shingle with one lower flange and provided with an upwardly-bent edge upon the other lower flange, adapted to engage in the downwardly-open hooked groove of a similar shingle, substantially as set forth.

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Witnesses:
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