(No Model.)

A. BICKELHOUPT.

METALLIC SHINGLE.

No. 458,152. Patented Aug. 25, 1891.

Fig. 1.

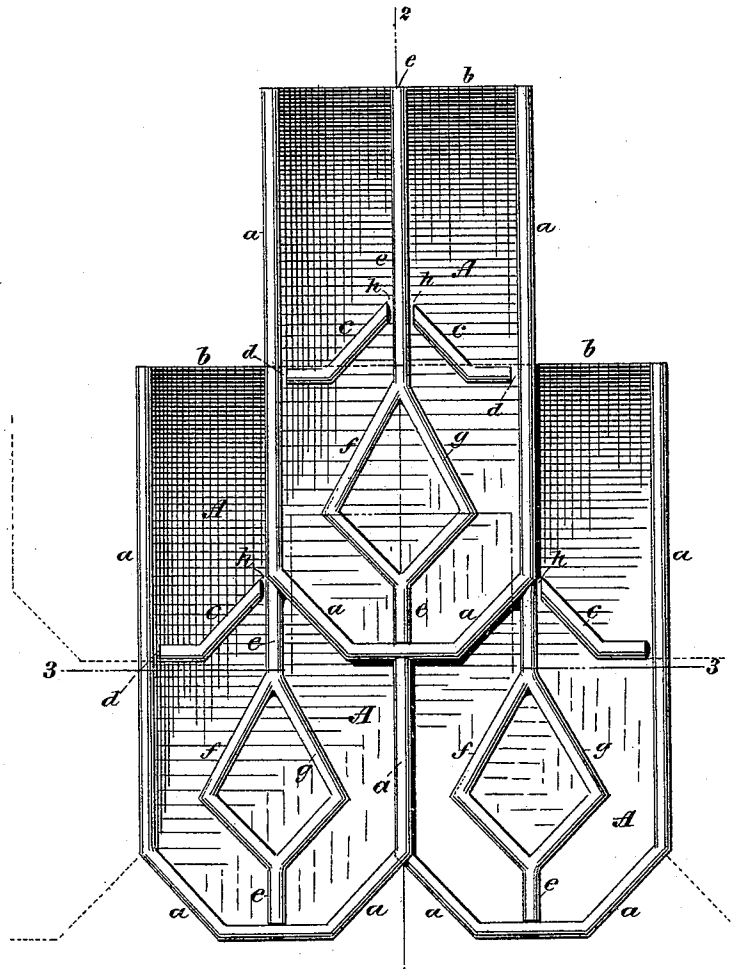


Fig. 2.

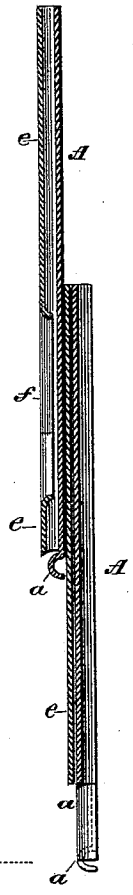
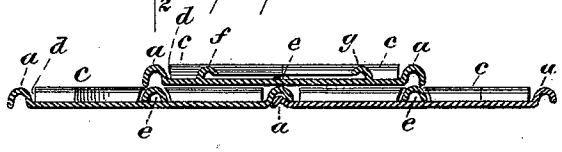


Fig. 3.



WITNESSES:

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ADAM BICKELHOUPT, OF MOUNT VERNON, NEW YORK.

METALLIC SHINGLE.

SPECIFICATION forming part of Letters Patent No. 458,152, dated August 25, 1891.

Application filed January 21, 1891. Serial No. 378,513. (No model.)

To all whom it may concern:

Be it known that I, ADAM BICKELHOUPT, a resident of Mount Vernon, Westchester county, and State of New York, have invented an Improved Metallic Shingle, of which the following is a full, clear, and exact description.

My invention relates to a metallic shingle; and it consists in constructing a metallic shingle with ribs along the edges and also with water-repelling cross-ridges, as hereinafter more fully described.

The object of this invention is to construct metallic shingles so that they may be interchangeable and when secured in position afford a perfect water-proof covering for a roof, preventing by their peculiar construction the rain from being driven up under the overlapping shingles, and to also catch and carry off the water of condensation that at times collects on the under sides of shingles.

The accompanying drawings illustrate my invention, in which—

Figure 1 is a plan view of three shingles of my construction placed together as they would appear on a roof. Fig. 2 is a longitudinal section on the line 2 2, Fig. 1; and Fig. 3 is a cross-section on the plane of the line 3 3, Fig. 1.

Similar letters refer to similar parts.

A is the main body of the sheet-metal shingle. Along the entire edge of the shingle, except along its upper edge *b*, is formed a rib *a* by bending the metal of the shingle into an inverted U, V, or similar form.

Upon the face of each shingle are placed cross-ribs *c c*, that extend upward toward its middle. These ribs *c c* serve to support the lower edge of the overlapping upper shingle. They also act as a gutter for water of condensation formed on the lower side of the overlapping shingle, and act likewise as a bulwark to prevent rain from being driven up under the edge of the overlapping shingle. They also add strength to the body of the shingle. These ribs *c* are securely fastened to the shingle by soldering or otherwise, so as to leave the under side flat. They do not quite meet in the middle of the shingle, nor do they quite meet the ribs *a a*, but leave openings *d d* between *a* and *c*, and an opening or openings *h* in the middle to enable the water to flow down through these openings. The ribs *a a* also serve to stiffen the shingle and to prevent rain-water from getting between the shingles. To more firmly insure rigidity and strength to the shingle, another rib *e* may be added to the longitudinal center of the shingle. This rib *e* will enter below the overturned edge *a* of the overlapping upper shingle, as shown in Fig. 1, thereby affording more rigid connection between adjoining shingles. Partly for strength and partly for ornament the rib *e* may branch out into a diamond or other shaped side ribs *f g;* but I do not limit myself to this or any specific form.

In operating my invention the shingles are placed on the roof in the usual manner and held to the roof near their upper ends by means of nails. Each row of overlapping upper shingles partially covers the junction made by the overlapping adjoining hollow ribs *a* of the lower shingles, as shown in the middle of Fig. 3, so that the whole roof is perfectly covered with a double thickness of metallic shingles.

Having now described my invention, I claim—

1. As a new article of manufacture, a metallic shingle A, having the continuous hollow ribs *a a* along its edges except the top edge *b*, substantially as and for the purposes specified.

2. A metallic shingle A, having its under side perfectly flat except along its overlapping edges, and provided with the separately-formed upwardly-extending cross-ribs *c c*, leaving between them the opening *h*, substantially as and for the purpose specified.

3. A metallic shingle provided along its lower and side edges with the hollow ribs *a a*, being otherwise perfectly flat on its under side, combined with the upwardly-extending cross-ribs *c c*, leaving openings *d d* and *h*, substantially as herein shown and described.

4. A metallic shingle provided along its lower and side edges with the hollow ribs *a a*, being otherwise perfectly flat on its under side, combined with the upwardly-extending cross-ribs *c c* and longitudinal stiffener-rib *e*, all arranged to form the openings *d d* and *h h*, substantially as herein shown and described.

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