(No Model.)

H. KLEHE.

METALLIC ROOFING.

No. 407,535. Patented July 23, 1889.

FIG - 2 -

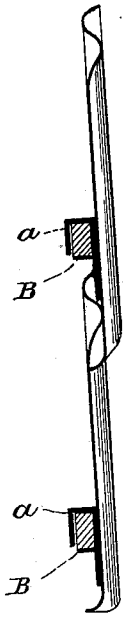


FIG - 1 -

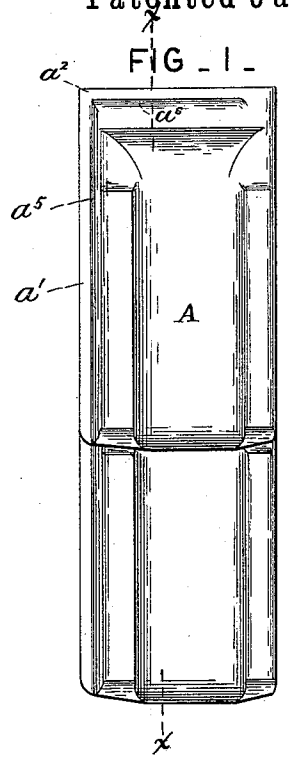


FIG - 3 -

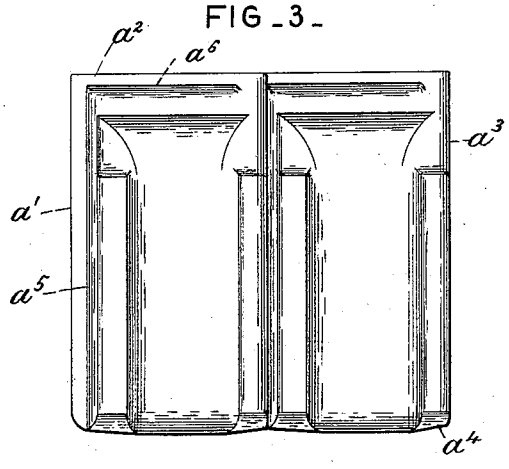
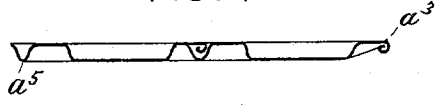


FIG - 4 -



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UNITED STATES PATENT OFFICE.

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METALLIC ROOFING.

SPECIFICATION forming part of Letters Patent No. 407,535, dated July 23, 1889.

Application filed November 20, 1888. Serial No. 291,369. (No model.) Patented in Germany January 1, 1881, No. 14,835.

To all whom it may concern:

Be it known that I, HERMANN KLEHE, a subject of the Emperor of Germany, residing at Baden-Baden, in the Grand Duchy of Baden and Empire of Germany, have invented certain new and useful Improvements in Metallic Roofing, (for which I have obtained Letters Patent in Germany, No. 14,835, dated January 1, 1881;) 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 appertains to make and use the same.

This invention relates to roofing.

The object of the invention is to produce a roof which shall be neat and substantial in appearance, free from liability to injury by fire, sleet, snow, wind, or rain, and one in which any one section may readily be removed without displacing the others, and, finally, the object is to produce a roof which shall be inexpensive of production and application.

With these objects in view my invention resides in a roof composed of sections of zinc, galvanized sheet-iron, or the like, each section provided with hooks and with interlocking edges, whereby the sections are retained in position; furthermore, the invention resides in a roof composed of metallic sections having overlapping adjacent edges and provided with hooks for retaining the sections in position; furthermore, the invention resides in a roof made of a frame of wood or metal, having cross-pieces arranged at suitable distance apart, and a series of metallic sections, each provided with a hook engaging a cross-piece of the frame and having overlapping edges.

In the accompanying drawings, forming part of this specification, and in which like letters of reference indicate corresponding parts in all the figures, Figure 1 represents a plan view of two of my improved roofing-sections joined at their ends. Fig. 2 is a section on the line $x\ x$ of Fig. 1. Fig. 3 is a plan view of two sections of roofing joined at their sides. Fig. 4 is a section on the line $y\ y$ of Fig. 2.

The roof-sections are represented by the letter A. They are each provided on their under faces with hooks a, designed to engage with suitable bars and thereby hold the different sections in position on the roof. The sections are each provided on one end and one side with upturned outwardly-extending curved flanges a' a'' and upon the other end and side with downward inwardly-extending flanges a^3 and a^4. These flanges are so formed that the adjacent ones of joining sections interlock. Just inside the edges at which the upturned flanges are placed are the grooves or channels a^5 a^6, connected, as shown, to make a continuous conduit, and serving as a trough for carrying off water, snow, and the like from the sections. The sections are of zinc, galvanized iron, earthenware, or any other desirable or suitable substance, preferably, however, a non-corrosive and non-inflammable one.

B represents a bar of wood or metal, a series of which are designed to be placed on the rafters of a building at a distance apart about equal to the length of the roof-sections.

In placing the sections on the roof they are so arranged that the depending flanges of one section overlap and bear upon the upwardly-extending flanges of the adjacent sections, thereby forming a joint which will effectually prevent the entrance of water, &c., between the sections.

In placing the roof-sections in position, I begin preferably at the lower left-hand end of the roof and adjust the hooks of each section upon the cross-pieces. The hooks are of such length that when they are in position under the bars B the sections are bound firmly in place and are held firmly together without the use of nails or screws.

It will also be clear that the hooks when in their designed positions on the bars will hold the interlocking edges of the sections firmly together and prevent displacement.

From the foregoing it will be clear that a roof made in accordance with my invention will possess great advantages over the ordinary sheet-metal or wooden roof, because of the advantages of being attached without the employment of nails or the like, and without requiring the sections or parts being soldered or similarly secured, and because of the fact that water, wind, or fire will do the roof no harm.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A roof made up of a series of metallic sections provided on their under sides with hooks and also provided with interlocking edges forming joints, substantially as described.

2. A roof made up of a series of metallic sections provided with hooks and interlocking edges and with grooves or conduits forming receptacles for projecting parts of adjacent sections and means for conducting water, substantially as described.

3. As a new article of manufacture, a roofing section consisting of the body provided on two sides with downturned grooved edges, and curved edges designed to interlock with the downturned edges of adjacent sections and provided with hooks for securing the sections in place, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HERMANN KLEHE.

Witnesses:
ELISE LEACHAR,
FELIX S. S. JOHNSON.