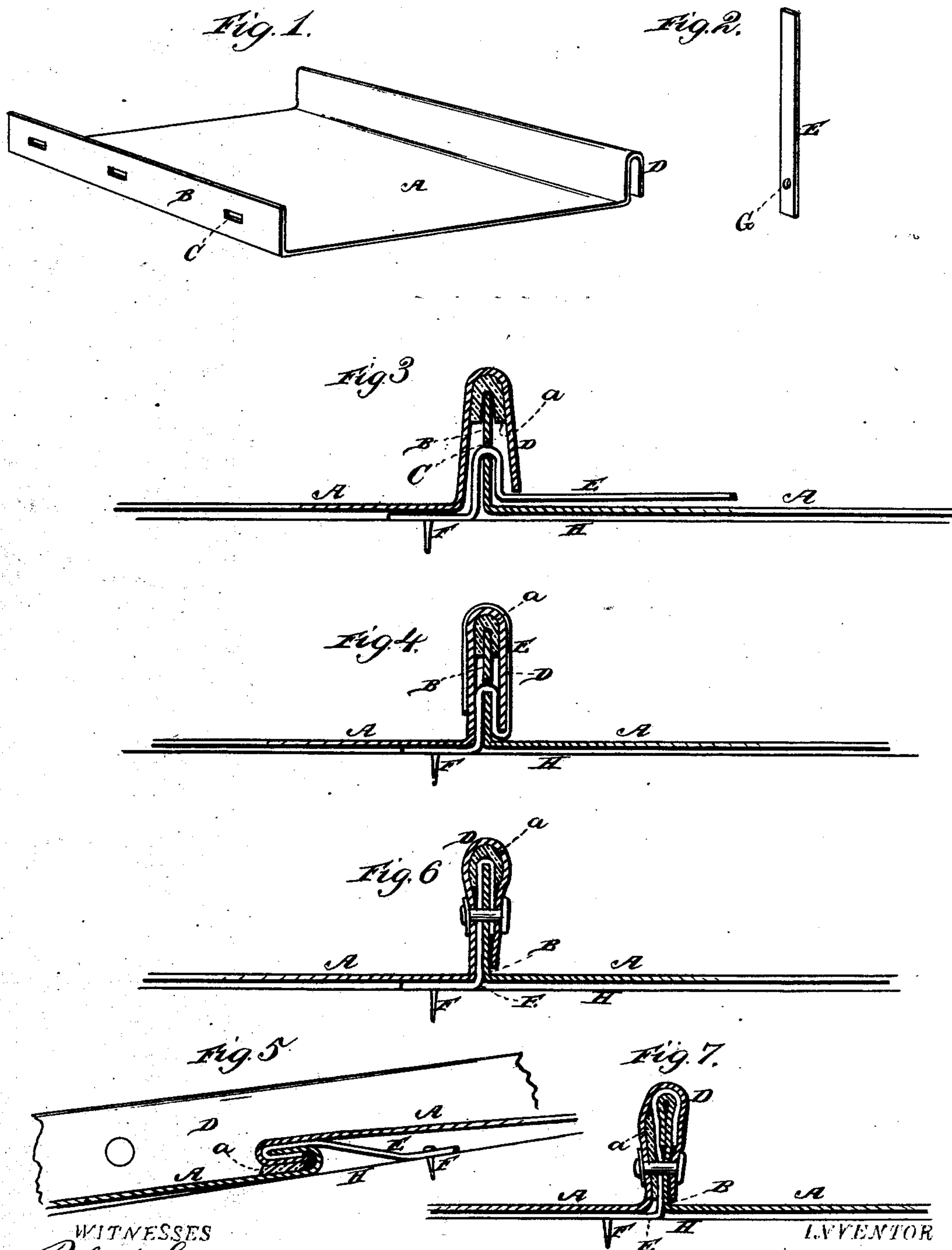


(No Model.)

L. L. SAGENDORPH:
Metal Roofing.

No. 237,133.

Patented Feb. 1, 1881.



WITNESSES
Robert Everett
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UNITED STATES PATENT OFFICE.

L. LEWIS SAGENDORPH, OF STAUNTON, VIRGINIA.

METAL ROOFING.

SPECIFICATION forming part of Letters Patent No. 237,133, dated February 1, 1881.

Application filed September 15, 1880. (No model.)

To all whom it may concern:

Be it known that I, L. LEWIS SAGENDORPH, a citizen of the United States, residing at Staunton, in the county of Augusta and State of Virginia, have invented certain new and useful Improvements in Metal Roofing; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is a perspective view of a single sheet from a number of which the roofing is formed. Fig. 2 is a perspective view of one of the cleats for securing the sheets together and to the sheathing. Fig. 3 is a vertical cross-section of two of the sheets united, showing the cleat nailed to the sheathing, but not bent up over the cap; and Fig. 4 is a cross-sectional view, showing two of the sheets united to form the seam, the cleats nailed to the sheathing, bent up over the cap, and the seam compressed as it appears in use upon the roof. Fig. 5 is a sectional detail of the laying seam, and Figs. 6 and 7 are modifications of the standing seam.

The invention has relation to metal roofing; and it consists in the improvements in the construction of the same hereinafter fully described, and particularly pointed out in the claim.

In the accompanying drawings like letters of reference indicate corresponding parts in the several figures.

Heretofore great difficulty has been experienced in constructing the standing seam of metal roofing to avoid the breakage resulting from the contraction and expansion caused by heat and cold upon the metal sheets of which the roof has been composed. Rivets, eyelets, staples, indentations, and the like have been employed to secure the standing seam; but they are all open to the same objection—viz., the contraction and expansion of the metal will cause them eventually to break or tear loose and permit leakage at the seam. My object is to provide a standing seam for metal roofing that will not be open to this objection, and I will now proceed to describe in detail its construction.

A designates one of the metal sheets of which

the roof is to be formed, provided at one side with a single upturned vertical flange, B, having a series of slots, C, formed therein, and at the opposite side with a double flange, D, formed by first bending the edge of the sheet up and then bending the single flange thus formed outwardly and down to form an inverted U, one arm of which, however, is shorter than the other, as shown in the drawings. In the curve of the inverted-U flange is placed a packing, *a*, of felt, rubber, or red lead, or any other suitable material that will exclude water and save the metal from breaking when the standing seam is being compressed or hammered. Felt, however, is preferable for conveniently handling. This packing takes the place of solder in double-seaming and prevents the roof from rattling, as it acts as an insulator. I also place the packing between all the joints of the roof, the cross-seams, standing and hooked seams. By using the packing the fire-pot is unnecessary, and the danger of fire to the building while roofing it is removed. Besides, the packing will not break as solder does, and the durability of the roof is increased.

The slots C may be either round or oval, or as shown in the drawings, and may be made with a punch or knife, or in any other suitable manner.

I intend in practice to make the sheets by machinery, although, as is obvious, they may be readily made by hand.

E designates the cleats, which are also of sheet metal, and which are to be passed through—that is, inserted in—the slots C in the single flange B. The ends of the cleats E, that project from the outside of the flange B, are to be bent down, as shown, and secured by the nails or screws F, driven through the holes G punched in them, to the sheathing H. The other ends of the cleats E, which are the longer ends, are bent down upon the inside of the flange B, as shown. The double flange D of another sheet, A, is then placed over the flange C and the cleats E and pressed down to place, and the ends of the cleats E, which now project from beneath the double flange D, are then bent up and back over the top of the double flange D, and then down against its side, as shown in the drawings. A seamer is then used to compress the several parts tightly together to exclude water. By this construction each sheet contracts and ex-

pands independently of the other, as also do the cleats, so that no strain comes upon the seam or the metal of which it is formed, and the seam cannot therefore break or tear loose,
5 as in the constructions hereinbefore referred to.

From the foregoing description, taken in connection with the drawings, the construction and operation of the device will be readily understood.

10 It is practical, simple, durable, and may be cheaply constructed, and possesses advantages not heretofore attained.

Having thus fully described my invention, what I claim, and desire to secure by Letters
15 Patent of the United States, is—

In a metal roof, the combination of the slotted flange B C, having the packing *a* upon its edge, the flange D, covering the packing *a*, and the cleats E, secured to the sheathing at one end, passed through the slots C, bent down 20 under the edge of the flange D, then up over and down against the opposite side of the flange D, substantially as and for the purposes set forth.

In testimony whereof I affix my signature 25 in presence of two witnesses.

L. LEWIS SAGENDORPH.

Witnesses:

W. A. CUSHING,
RICHD. P. BELL.