(No Model.)

L. L. SAGENDORPH.

METALLIC ROOFING.

No. 411,683. Patented Sept. 24, 1889.

Fig. 1.

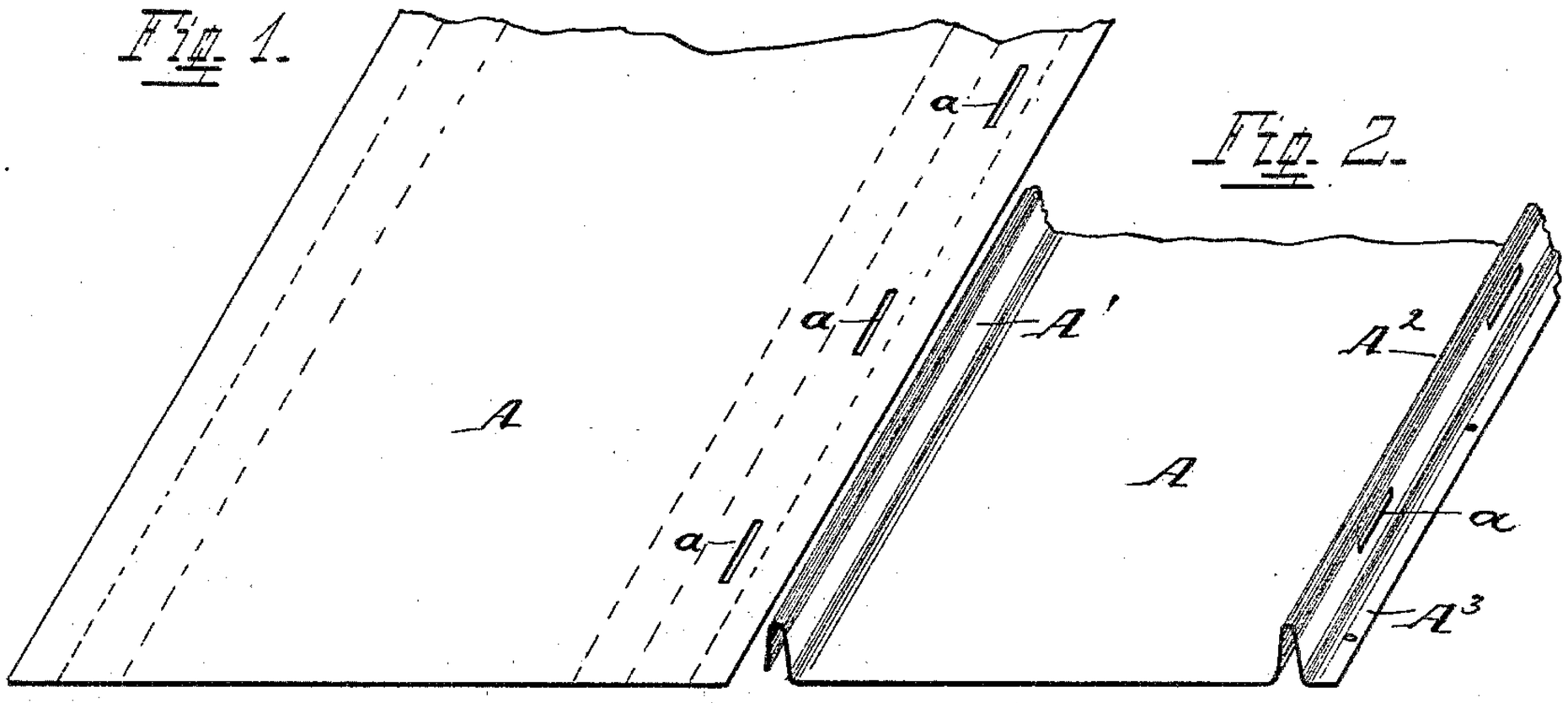

Fig. 2.

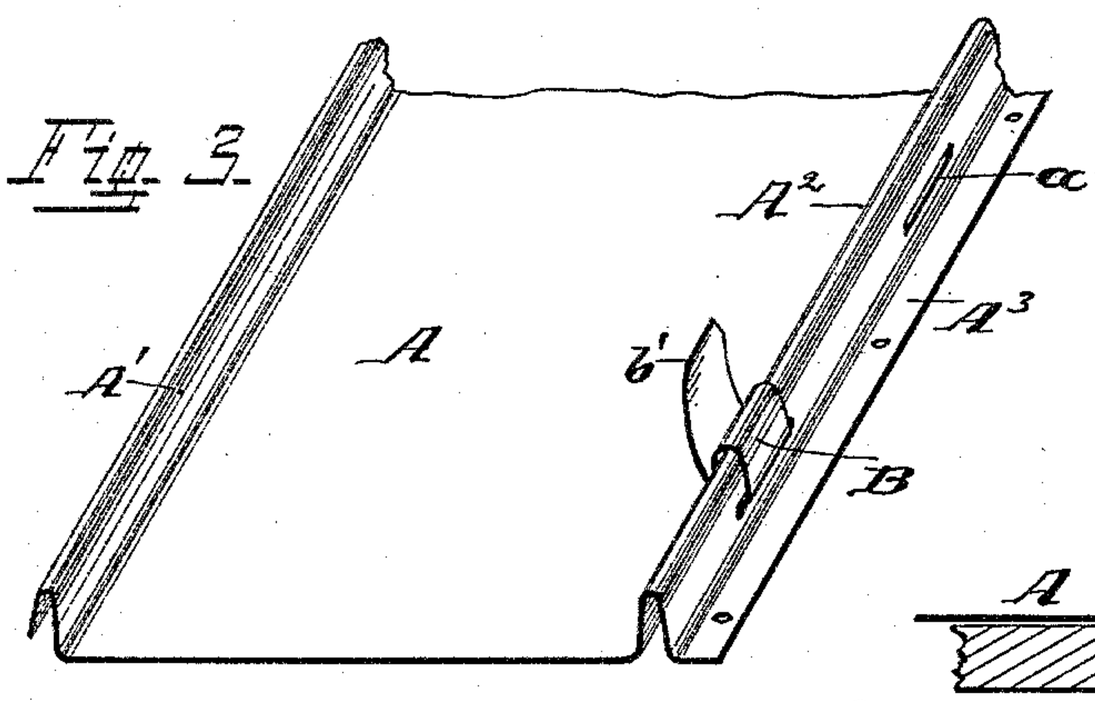

Fig. 3.

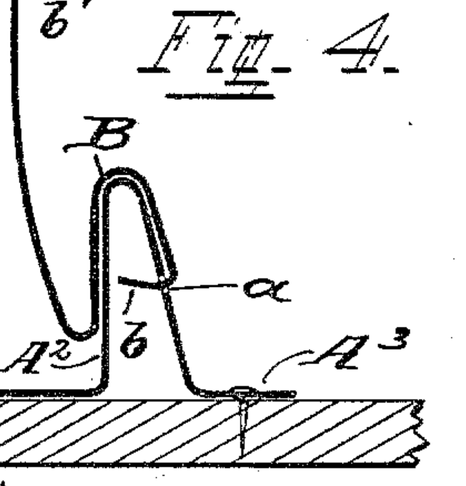

Fig. 4.

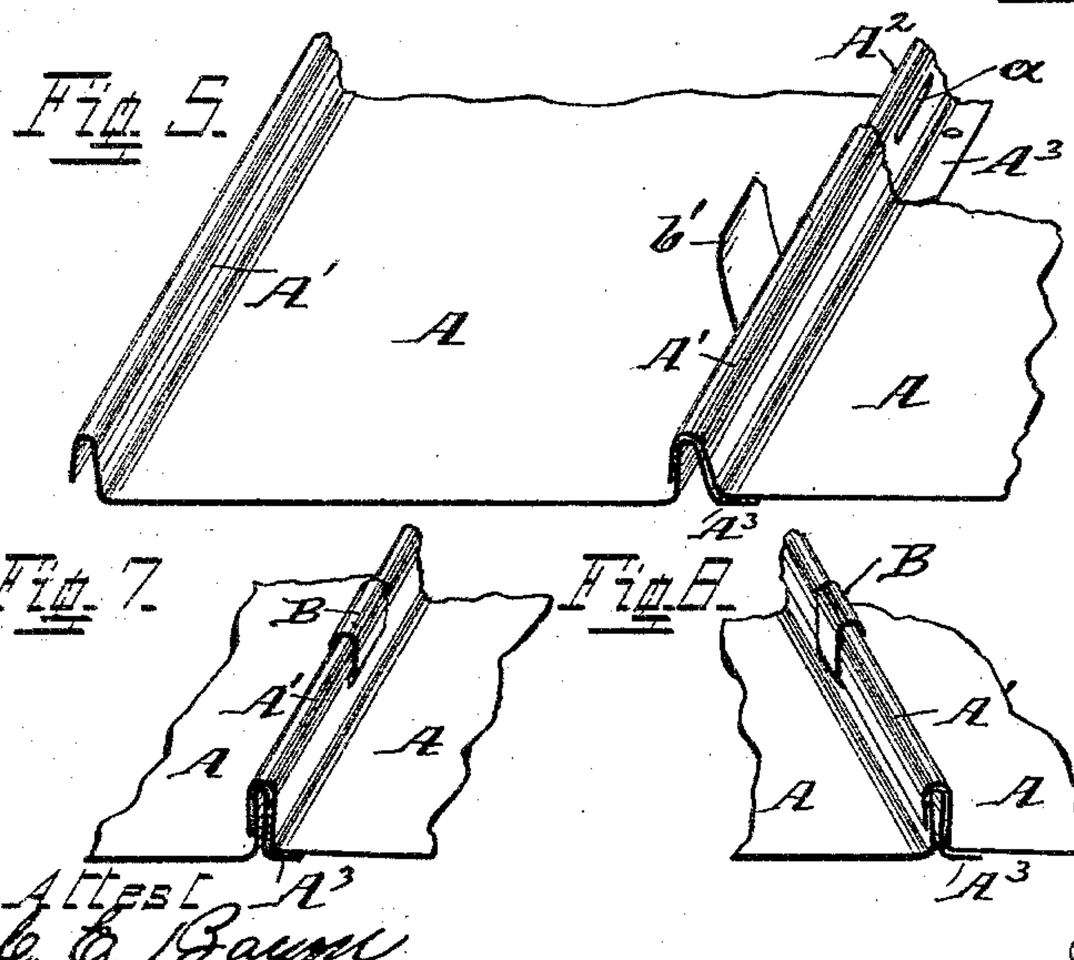

Fig. 5.

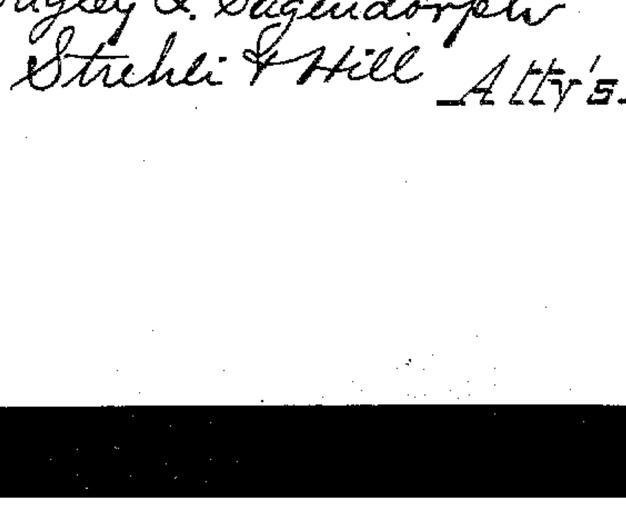

Fig. 6.

Fig. 7.

Fig. 8.

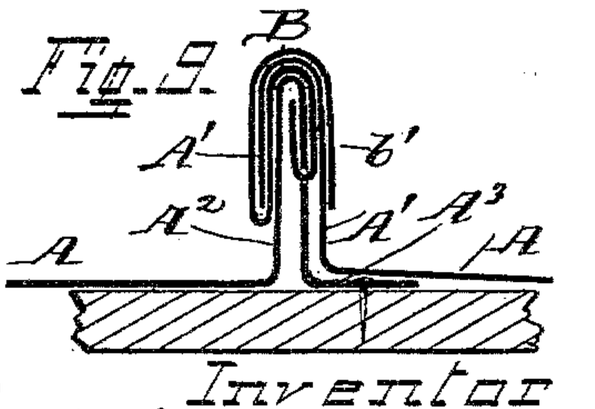

Fig. 9.

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UNITED STATES PATENT OFFICE.

LONGLEY LEWIS SAGENDORPH, OF CINCINNATI, OHIO.

METALLIC ROOFING.

SPECIFICATION forming part of Letters Patent No. 411,683, dated September 24, 1889.

Application filed July 5, 1889. Serial No. 316,568. (No model.)

To all whom it may concern:

Be it known that I, LONGLEY LEWIS SAGENDORPH, a citizen of the United States, residing at Cincinnati, in the county of Hamilton, State of Ohio, have invented certain new and useful Improvements in Metallic Roofing, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to construct a metallic roof in such a manner that the roofing-sheets may be nailed direct to the sheeting at one side thereof, the cap-flange of one sheet being anchored over the cap-flange of the adjacent sheet by means of suitable cleats locked into openings in the outer face of the cap-flange on that side which is nailed to the sheeting, said cleat being bent up and over the overlapping flange-cap of the adjacent sheet, as will more fully hereinafter appear.

In the drawings referred to, Figure 1 is a plan view of a portion of a roofing-sheet with the cleat-openings therein before the side flange-caps are bent to position, the dotted lines indicating where the metal is bent to form said caps. Fig. 2 is a perspective view of one end of the sheet, the side flange-caps being bent to position. Fig. 3 is a view similar to Fig. 2, with one of the cleats in position ready for the application of the overlapping cap of the adjacent sheet; and Fig. 4 is a cross-section on an enlarged scale through said cleat and flange shown in Fig. 3. Fig. 5 is a perspective view showing the overlapping cap in position over the cleat before the latter is bent and locked to position, and Fig. 6 is a cross-section on an enlarged scale through said cap-flanges and cleat shown in Fig. 5. Figs. 7 and 8 are perspective views from each side of the standing seam formed by the flange-caps, the cleat being locked to position; and Fig. 9 is a cross-section on an enlarged scale through said cleat and standing seam shown in Figs. 7 and 8.

My invention consists in first punching out the elongated cleat-openings *a* in the one side of the roofing-sheet A, as shown in Fig. 1, after which the side flange-caps A′ and A^2 are formed at each side of the sheet respectively, the outer edge of the cap A^2 terminating in a nailing-flange A^3, as shown. The cap A^2 is bent in such a manner as that the openings *a* will be in the outer face of said cap the desired distance above the plane of the sheet. The outer flange of the cap A′ preferably terminates above the plane of the adjacent sheet any required distance. A suitable cleat B, bent to conform to the configuration of cap A^2, is provided with a hooked flange *b* and an overlapping portion *b*′, (see Fig. 4,) the hooked portion *b* of said cleat being adapted to enter the openings *a* at an inclined angle.

My improved roof is put to place in the following manner: When the nailing-flange A^3 is at right-hand side of sheet, as shown, the first row of roofing-sheets are suitably secured along the outer left-hand end of the sheeting, the flange A^3 being nailed thereto. Having properly secured the first row of sheets to place, the cleats B are hooked into the openings *a*, as shown in Figs. 3 and 4, after which the flange-cap A′ of the adjacent sheet is placed over the cap A^2 and cleat B, as shown in Figs. 5 and 6, after which the extensions *b*′ of the cleats are bent back over the cap A′, and the said flange-caps and cleats are then firmly pressed with suitable instruments into a locked position, as shown in Figs. 7, 8, and 9. Each successive row of roofing-plates is secured and locked to place in the manner just described.

The advantages of my improved roof are numerous. The sheet being nailed direct to the sheeting through the side flange tends to greatly strengthen the roof and render the same more secure during high winds, as said flange has the advantage of the strengthening qualities of cap A^2. The cleat being disconnected from the sheeting, all capillary attraction is overcome. By the old method, in which the cleat is nailed to the sheeting, said cleat will draw a certain amount of dampness around its base, and in a short time the sheeting will decay at that point, causing the cleats and roof to become loosened, ready to rattle or blow off. This great disadvantage is overcome by the use of my improoved roof, as the nailing-flange is covered for its entire length by the adjacent sheet and cap.

Another advantage is in the saving of material, as fewer cleats are required. When the cleats are depended on for retaining the

sheets to place, it is required to place them from eight to ten inches apart along the standing seam in order to render the roof secure, while in my improved roof (the sheets being nailed at one side to the sheeting) one cleat in every two feet will answer to retain the overlapping cap to place. The standing seam formed as set forth is neat in appearance and will admit of requisite expansion and contraction.

What I claim as new, and desire to secure by Letters Patent, is—

1. The means herein shown and described for connecting roofing-sheets, the same consisting of a cleat hooked at one end into an opening in the side of one flange-cap, the other end of said cleat being bent back and over the overlapping cap of the adjacent sheet, as set forth.

2. In combination with a roofing-sheet nailed at one side direct to the sheeting, the means herein shown for retaining the cap of the adjacent sheet to place, and consisting of a cleat hooked at one end into an opening in the outer face of one of the flange-caps above the plane of the sheet, the free end of said cleat being bent back and over the overlapping cap of the adjacent sheet, substantially as set forth.

3. In a metallic roof, the sheets A, each sheet having at one side the flange-cap A′ and at the other side the flange-cap A^2, the latter terminating in the nailing-flange A^3, said cap A^2 having in its outer surface suitable openings *a* and a cleat B, one end of said cleat being hooked into the openings *a* between the two flanges of the cap A^2, the free end of the cleat being bent over the cap of the adjacent sheet, substantially as set forth.

LONGLEY LEWIS SAGENDORPH.

Witnesses:
GEO. M. VERITY.
C. M. SCHIERECK.