

(No Model.)

2 Sheets—Sheet 1.

C. B. NIEHAUS.
SHEET METAL OR PAPER CEILING.

No. 358,405.

Patented Feb. 22, 1887.

Fig. 1.

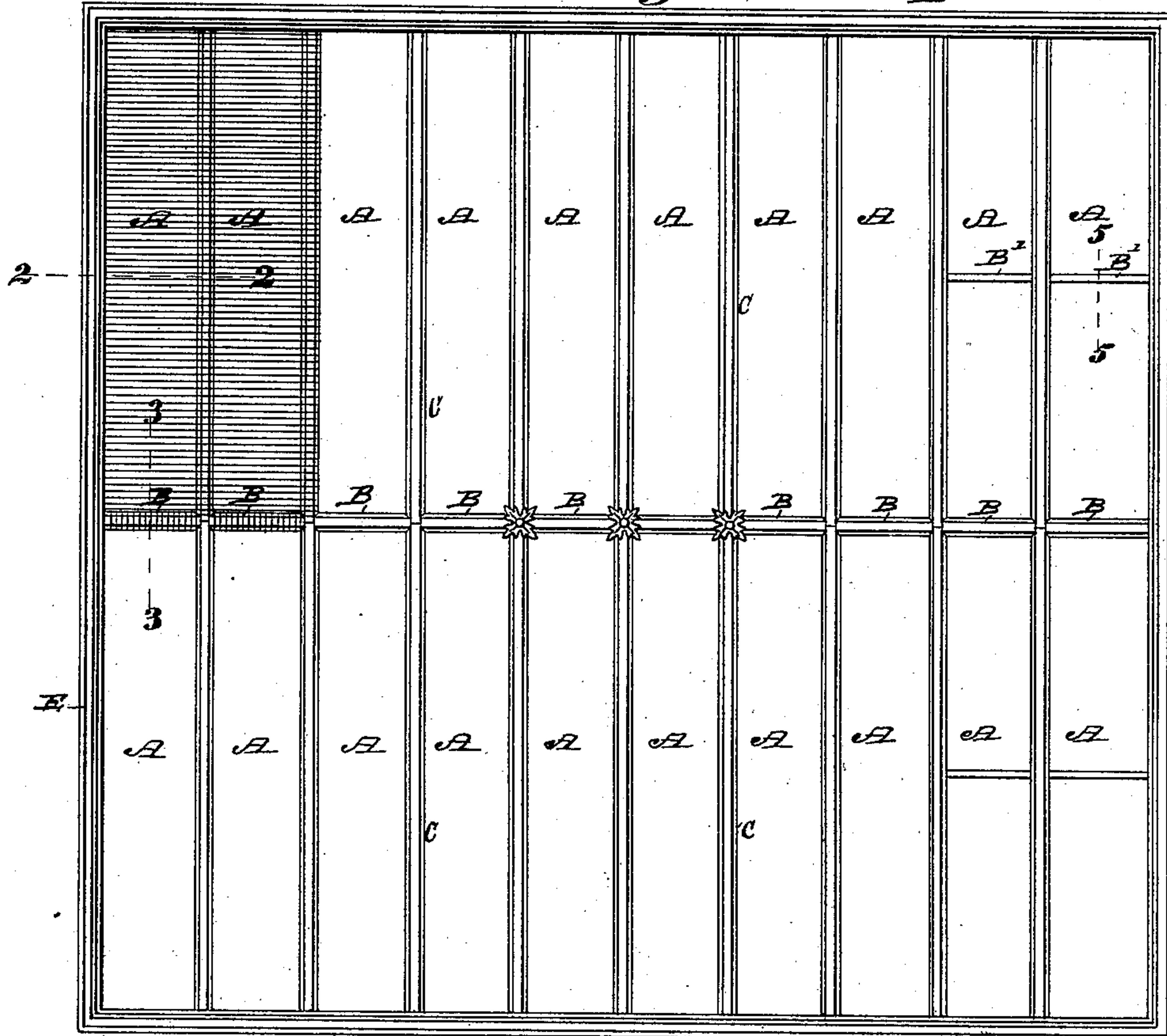
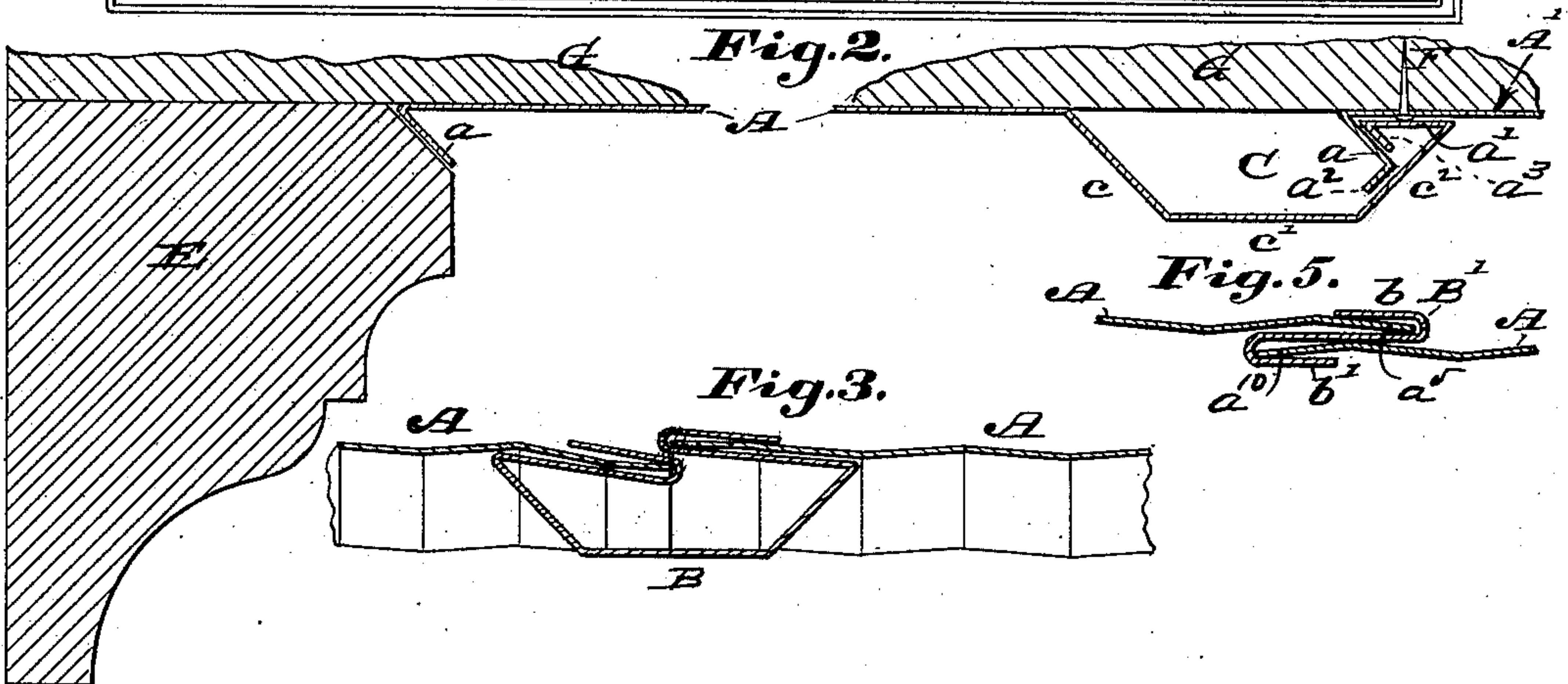


Fig. 2.



Witnesses:

H. B. Anderson.
J. W. Hoke.

Inventor:

Charles B. Niehaus
by C. D. Moody atty

(No Model.)

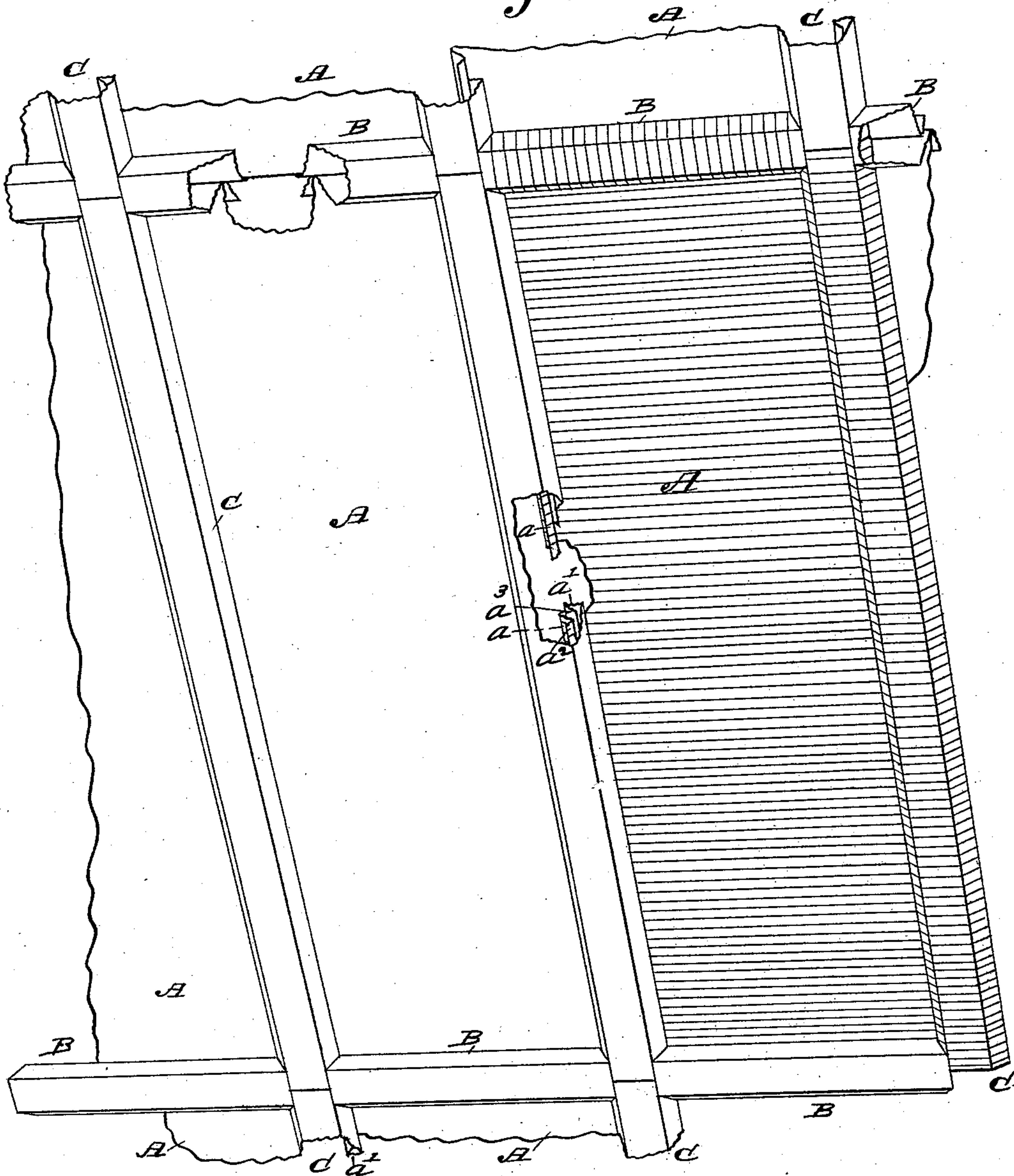
2 Sheets—Sheet 2.

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Fig. 4.



Witnesses:

N. B. Anderson.
J. W. Hoke.

Inventor:

Charles B. Niehaus
by C. P. Moody atty

UNITED STATES PATENT OFFICE.

CHARLES B. NIEHAUS, OF ST. LOUIS, MISSOURI, ASSIGNOR TO FRANK MESKER, OF SAME PLACE.

SHEET-METAL OR PAPER CEILING.

SPECIFICATION forming part of Letters Patent No. 358,405, dated February 22, 1887.

Application filed November 8, 1886. Serial No. 218,312. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. NIEHAUS, of St. Louis, Missouri, have made a new and useful Improvement in Sheet-Metal or Paper Ceilings and Walls, of which the following is a full, clear, and exact description.

The improvement consists in a special mode of shaping and uniting the sheets at their edges, substantially as hereinafter described and claimed, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a view from beneath of a ceiling in which the improvement is embodied. Two of the panels are shown corrugated, and in four of the panels the mode of joining the sheets at their ends is shown. Fig. 2 is a vertical section, upon an enlarged scale, on the line 2 2 of Fig. 1. Fig. 3 is a vertical section on the line 3 3 of Fig. 1. Fig. 4 is a view in perspective, from beneath, of a portion of the improved ceiling, portions being broken away to give a better understanding of the construction and one of the panels being shown corrugated; and Fig. 5 is a vertical section on the line 5 5 of Fig. 1.

The same letters of reference denote the same parts.

The ceiling is composed, mainly, of the sheets A A and the cross-bars B B. An additional form, B', of cross-bar may be used. The sheets are interlocked at their side edges and laid together at their end edges.

Sheets having been combined in various ways in ceilings and walls, no claim is made generally thereto, but only to the special form imparted to the sheet and the special mode of uniting the edges of adjoining sheets, as follows: At one of its side edges the sheet is inclined downward to form a flange, *a*, Figs. 2, 4, substantially as shown. At its opposite side edge the sheet is turned backward to form the horizontal or substantially horizontal flange *a'*, and within the last-named flange the sheet is shaped to form the longitudinal bar C, the sheet being bent downward at *c*, extended horizontally at *c'*, and then upward at *c''* to the point where the flange *a''* begins, and which flange extends horizontally, or thereabout, backward above the depression in the sheet occasioned by the formation of the bar C.

The sheets are united in the manner shown in Fig. 2. At one side, that having the flange *a*, the sheet A rests, at the side of the ceiling D, Fig. 1, upon a suitable support, such as the molding E. At its opposite side the sheet is upheld by reason of its flange *a'* being interlocked with the flange *a* of the next sheet, A', Fig. 2, the flange *a'* resting upon the flange *a*, and at the same time concealing the fastening F, used to secure the sheet A' directly to the joist G. The farther edge (not shown) of the sheet A' is similarly in turn upheld by the next sheet, and so on throughout the ceiling.

I desire not to be restricted to the precise angles or directions shown, in which the flanges *a a'* are extended, as quite a variance therefrom might be made without departing from the principle of the improvement; but in all cases the flange *a'* upon one sheet and the flange *a* upon the adjoining sheet should be so relatively shaped as to enable the flange *a'* to enter and hang in the flange *a*. Nor do I wish to be confined to the particular form, in cross-section, shown of the bar C; but, whether reduced in size or altered in form, it should be sufficiently depressed to provide space for the flange *a* to pass beneath the flange *a'*, substantially as shown.

At their end edges the sheets are not joined together, but the cross-bars B are employed to give a finish to that part of the construction. The shape of the bar, as well as the mode of attaching it to the sheets, is shown in Figs. 3, 4.

The sheets A, constructed and united as described, can be used upon a wall or other upright construction as well as upon a ceiling; but when thus used I preferably employ a much flatter bar or piece than the cross-bar B at the joints between the ends of the sheets. This flatter bar B', Figs. 1, 5, may also be used to advantage in combination with the bar B—that is, in ceilings having long panels in which two or more sheets are required to complete the panel, the sheets may be united midway in the panel by means of the bar B', which, as shown in Fig. 5, is bent to form the oppositely-turned folds *b b'*, in which, respectively, are received the edges *a^b a¹⁰* of the sheets A A, substantially as shown. This mode of uniting the sheets is useful, irrespective of the use of the bars B at the ends of the panels.

The sheets A can be of any suitable metal—iron, brass, or copper, for instance—and they can be formed, also, of paper or pasteboard, and, within the lines of the panel, they can be pressed, stamped, or embossed, to present to the view any desirable ornamental figure or design. The sheets A, at their interlocking edges, may also be shaped to form the flanges a^2 and a^3 , which are useful in stiffening the construction, and also as a means for straightening the sheets at the points where the flanges a and a' , respectively, bear against the abutting sheet, for sheet-metal sheets as they are supplied to the trade are liable to be more or less untrue at their edges; but such irregularity can be disposed of in the folds a^2 a^3 .

I claim—

1. The herein-described ceiling or wall sheet A, having at one side edge the flange a and at the opposite side edge the flange a' , and within the last-named flange having the rib C, said flange a being inclined downward and inward, and said flange a' being turned backward above the depression in said rib.

2. The combination of the sheet A, having the flanges a and a' and the rib C, the sheet A', having similar flanges and rib, and the joist G, substantially as described.

3. A sheet-metal or paper ceiling or wall composed of the sheets A and the ribs B, said sheets A each at one side edge having a downwardly and inwardly turned flange, a , and at the opposite side edge having the flange a' ,

turned backward above the rib C, substantially as described.

4. A sheet-metal or paper ceiling whose sheets A are similarly provided with the flanges a and a' , constructed, respectively, as described, one of the sheets at the edge having the flange a being secured to the frame of the ceiling or wall, and the flange a' of the adjoining sheet being hung upon the flange a of the first-named sheet, substantially as described.

5. A sheet-metal or paper ceiling whose sheets A are similarly provided with the flanges a and a' , constructed substantially as described, one of the sheets at the edge having the flange a being secured to the frame of the ceiling or wall, and the flange a' of the adjoining sheet being hung upon the flange a of the first-named sheet, and the sheets at their ends being connected by means of the bar B', substantially as described.

6. The combination, in a sheet-metal or paper ceiling, of the sheets A A and the folded bar B', substantially as described.

7. The combination of the sheets A A, the cross-bar B, and the cross-bar B', said sheets having the interlocking flanges a a' , and said bars B B' being connected with the sheets, as described.

CHARLES B. NIEHAUS.

Witnesses:

C. D. MOODY,

C. C. LOGAN.