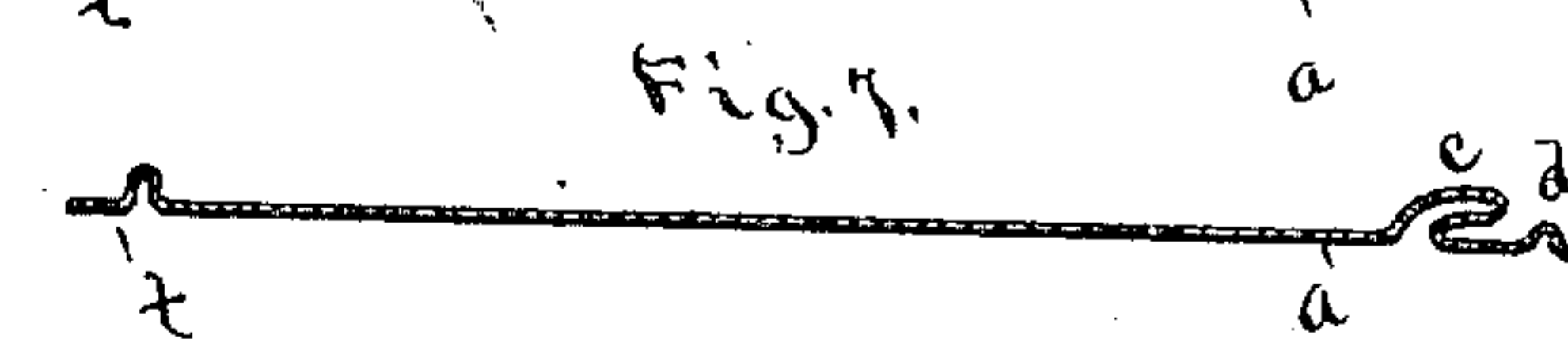
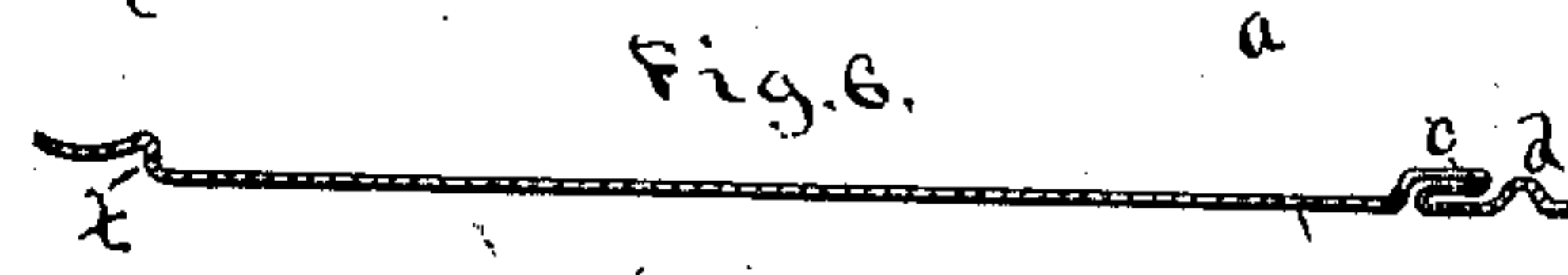
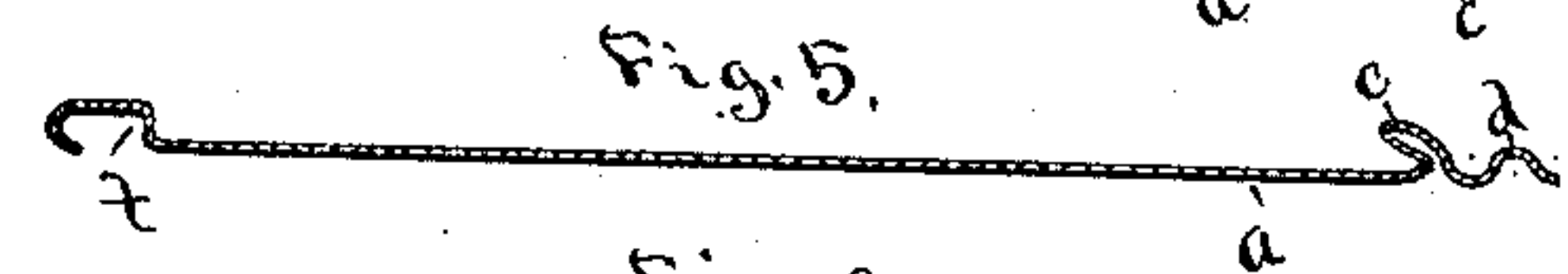
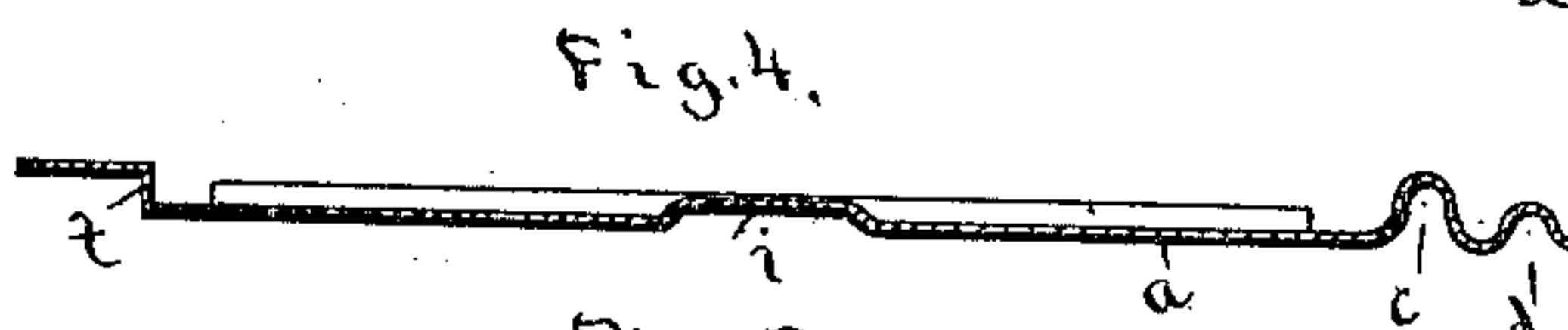
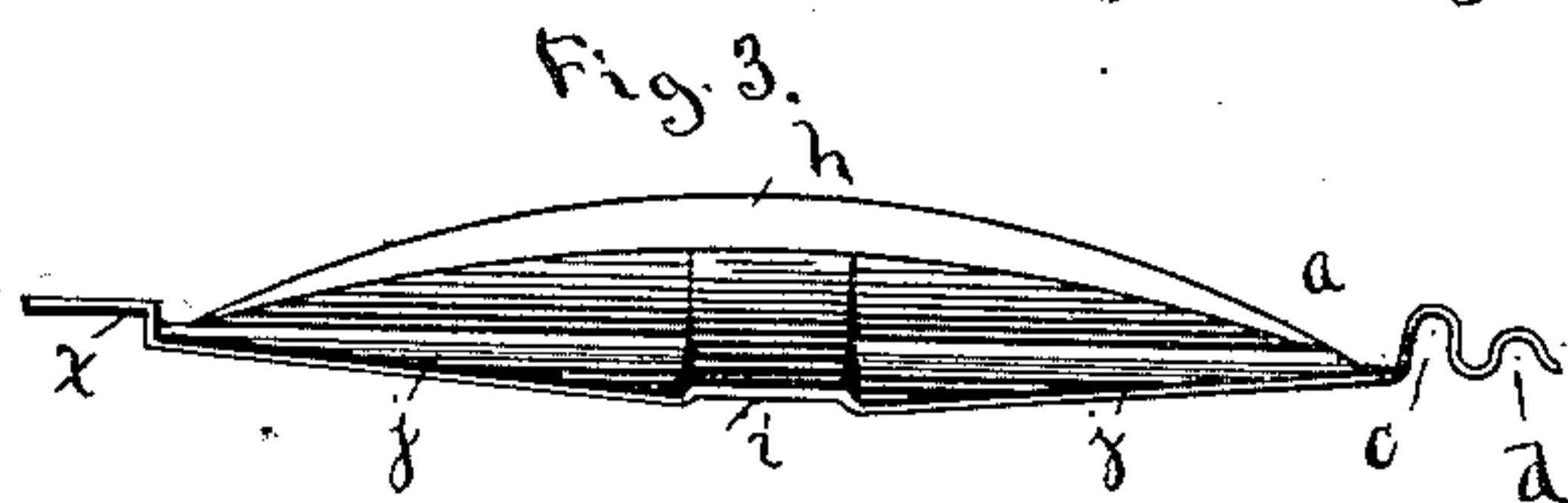
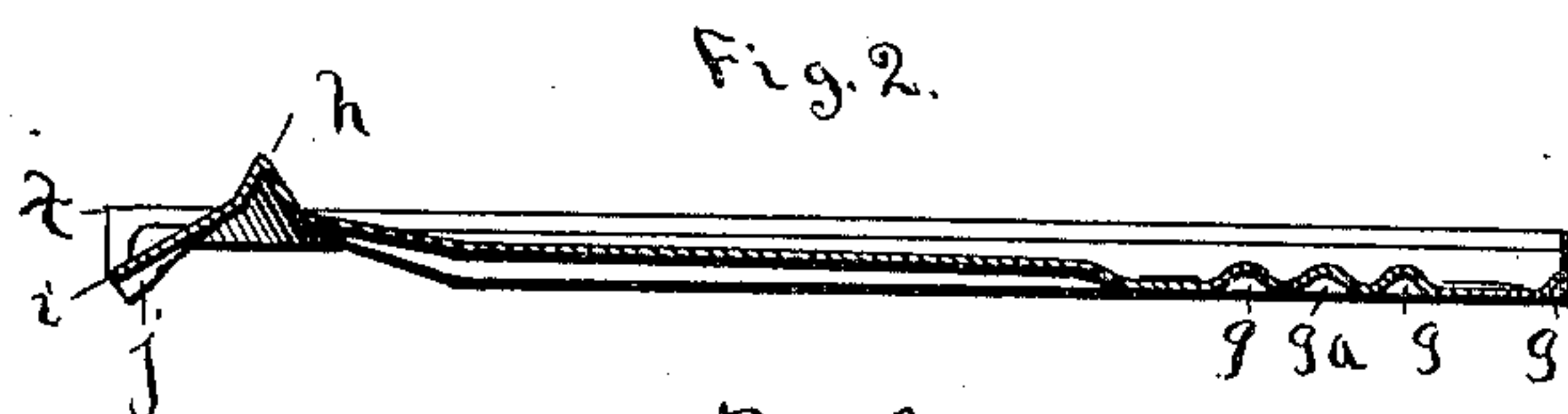
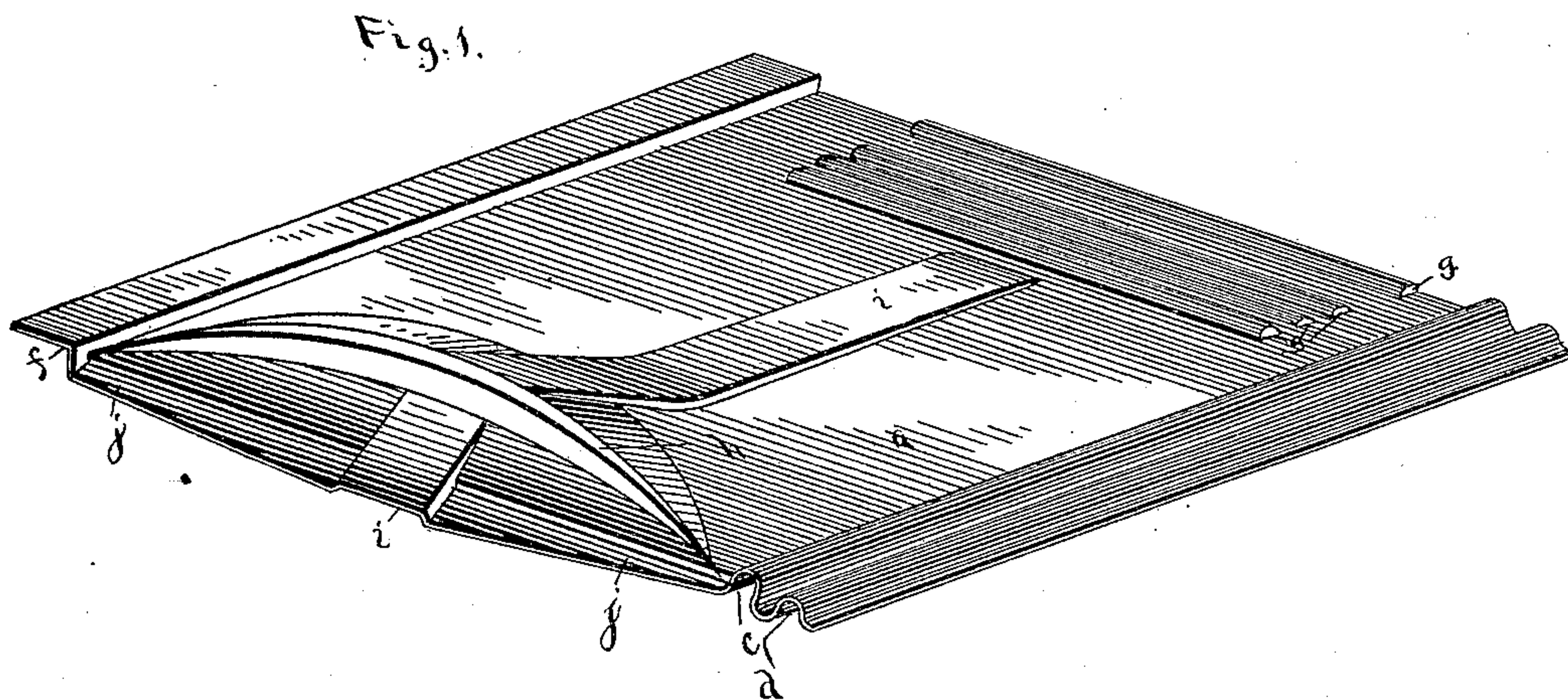


(No Model.)

C. B. COOPER.
METALLIC ROOFING.

No. 429,015.

Patented May 27, 1890.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES B. COOPER, OF NEW YORK, N. Y.

METALLIC ROOFING.

SPECIFICATION forming part of Letters Patent No. 429,015, dated May 27, 1890.

Application filed February 20, 1890. Serial No. 341,160. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. COOPER, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Metallic Roofing; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in metallic roofing or outside covering.

The object of the invention is to provide, as a new article of manufacture, an improved sheet-metal roofing or siding plate so constructed that adjoining plates can be locked together and form a water-proof seam, and also so constructed that the plates can be nested tightly or snugly together and packed in a small compass for transportation, thereby economizing space and freight charges. These objects are accomplished by and my invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a detail perspective of one of the roofing-blanks in shape for transportation. Figs. 2 and 3 are respectively a central longitudinal section and a lower end view. Fig. 4 is a cross-section of the blank. Figs. 5, 6, and 7 are cross-sections of the completed roofing-plate when the corrugations of the blank are bent into position to lock overlapping edges of adjoining plates together, showing the different shapes to which these corrugations can be bent.

This invention relates to that class of metal roofing wherein the plates or shingles are joined by side or edge corrugations to form a water-tight roof.

In the drawings, the reference-letter *a* indicates a roofing-plate blank, while the cross-sections of Figs. 5, 6, and 7 show the plate when in completed condition in readiness for use in covering the roof. In one of its sides or longitudinal edges this blank has two deep vertical upwardly-extending corrugations *c* *d*,

located a distance from the edge to leave the nailing-strip *e*. One of these vertical corrugations *c* is preferably deeper or higher than the other corrugations *d*. The opposite edge of the blank is provided with a raised corrugation *f*, parallel with the two other corrugations. These vertical corrugations can be readily and quickly formed in plates by cheap inexpensive machinery, and the corrugations of the blanks thus formed can be fitted snugly and tightly together, as the corrugations will all rest and fit into each other. The blanks, as shown in Figs. 1 and 4, are shipped by manufacturer to the consumer, and the consumer by a simple process and inexpensive hand-machine can change the upright vertical and flat corrugations of the blank into well-known locking corrugations, such as shown in Figs. 5, 6, and 7, which are necessarily of such shape and form that they will not nest into each other, and consequently require in transportation a much larger space than those that nest. The distance between the upright corrugations *c* *d* is immaterial.

These blanks may be embossed on their surface with any design fancy may suggest, provided such embossing does not interfere with the blanks fitting one into the other.

These plates or blanks at their upper ends are provided with several dams or vertical corrugations *g*, extending transversely across the plate, and serve to brace and strengthen the upper overlapping end of the same, &c., as fully set forth in my former patents. At the lower overlapping end the plate is provided with a transverse curved vertical bracing corrugation *h*. This corrugation *h* is inverted-V-shaped in cross-section and is arched or highest at the middle of the plate and gradually shallower from the middle to the ends of the corrugation. A longitudinal raised corrugation *i* is formed down the center of the plate from the upper portion of the same to the lower edge thereof. This corrugation *i* is divided or bisected by corrugation *h*. This corrugation gives the plate great rigidity against longitudinal bending, and also forms a longitudinal socket or recess to fit over the seam, joining the two plates beneath.

The extreme lower edge of the plate is provided with a transverse corrugation *j*, extend-

ing from near corrugations *c d* to near the
corrugation *f*. This corrugation dips in the
center, as shown, and this corrugation and the
bracing corrugation *h* are for the purpose of
5 causing the lower edge of the plates to hug
or press close upon underlying plates when
arranged in course after the manner of lay-
ing ordinary shingles.

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

1. As an article of manufacture, a sheet-
metal roofing-plate blank having a pair of
vertical parallel longitudinal corrugations at
15 one edge, one higher than the other and leav-
ing a longitudinal nailing-strip at said lon-
gitudinal edge, a single vertical raised longi-
tudinal corrugation at the opposite longitudi-
nal edge of the plate, and vertical raised em-
20 bossments between said longitudinal edges,
said corrugations and embossments being
straight and vertical, so that the blanks can

be snugly fitted together and nested and said
longitudinal edge corrugations can be con-
verted into locking corrugations, substan- 25
tially as described.

2. As a new article of manufacture, a sheet-
metal roofing-plate having a transverse cen-
trally-dipping corrugation at its lower edge,
the intermediate curved arched transverse 30
bracing corrugation, the central longitudinal
raised corrugation bisected by said bracing
corrugation, the longitudinal edge-locking
corrugations, and the transverse corrugations
at the upper portion of the plate, substantially 35
as described.

In testimony that I claim the foregoing as
my own I affix my signature in presence of
two witnesses.

CHARLES B. COOPER.

Witnesses:

W. F. WALLACE,
JOHN J. HAMMOND.