

(No Model.)

C. H. WILSON & J. STEUART.

PROCESS OF FUSING METALLIC PLATE JOINTS.

No. 333,371.

Patented Dec. 29, 1885.

Fig. 1

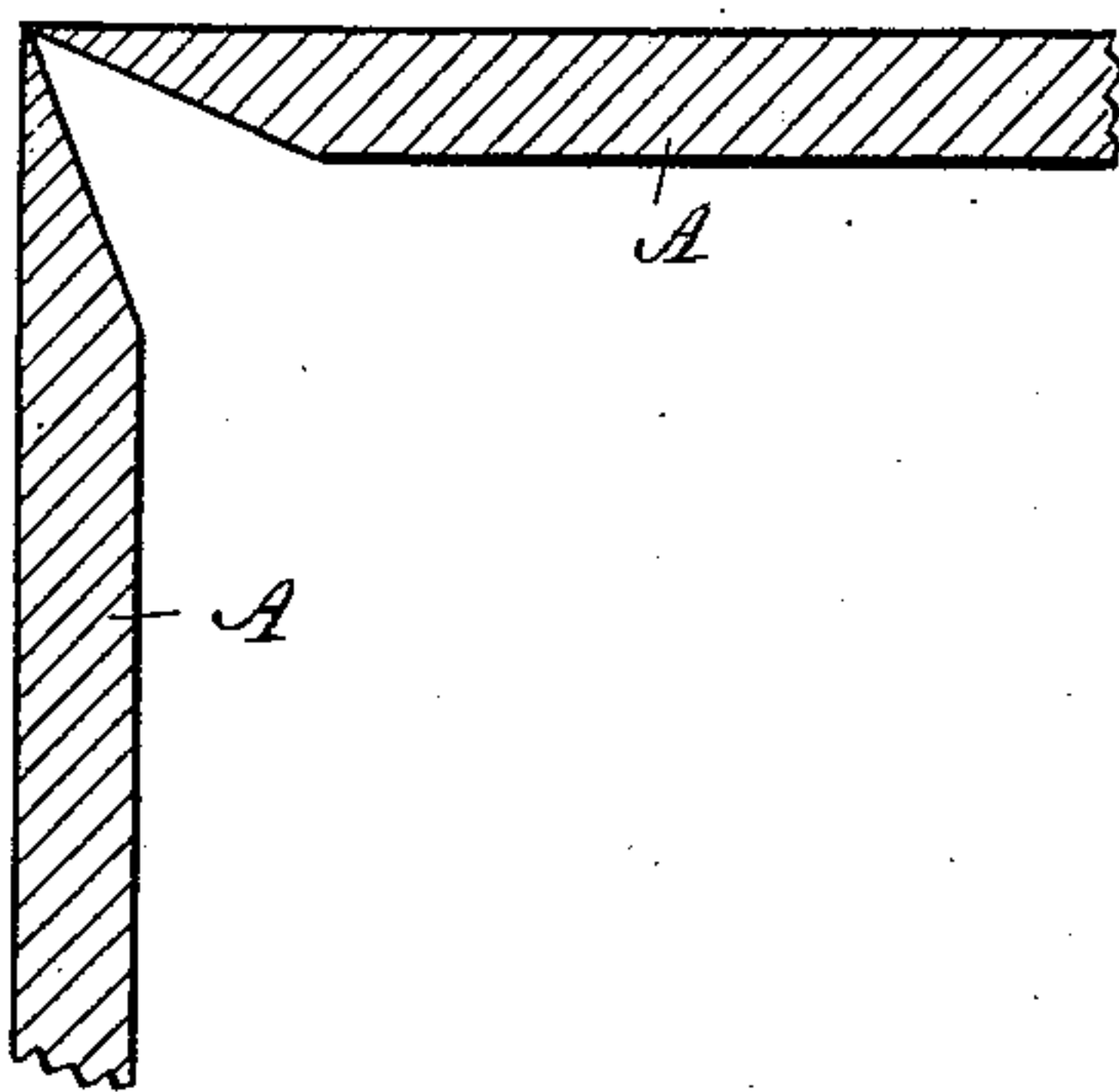


Fig. 2

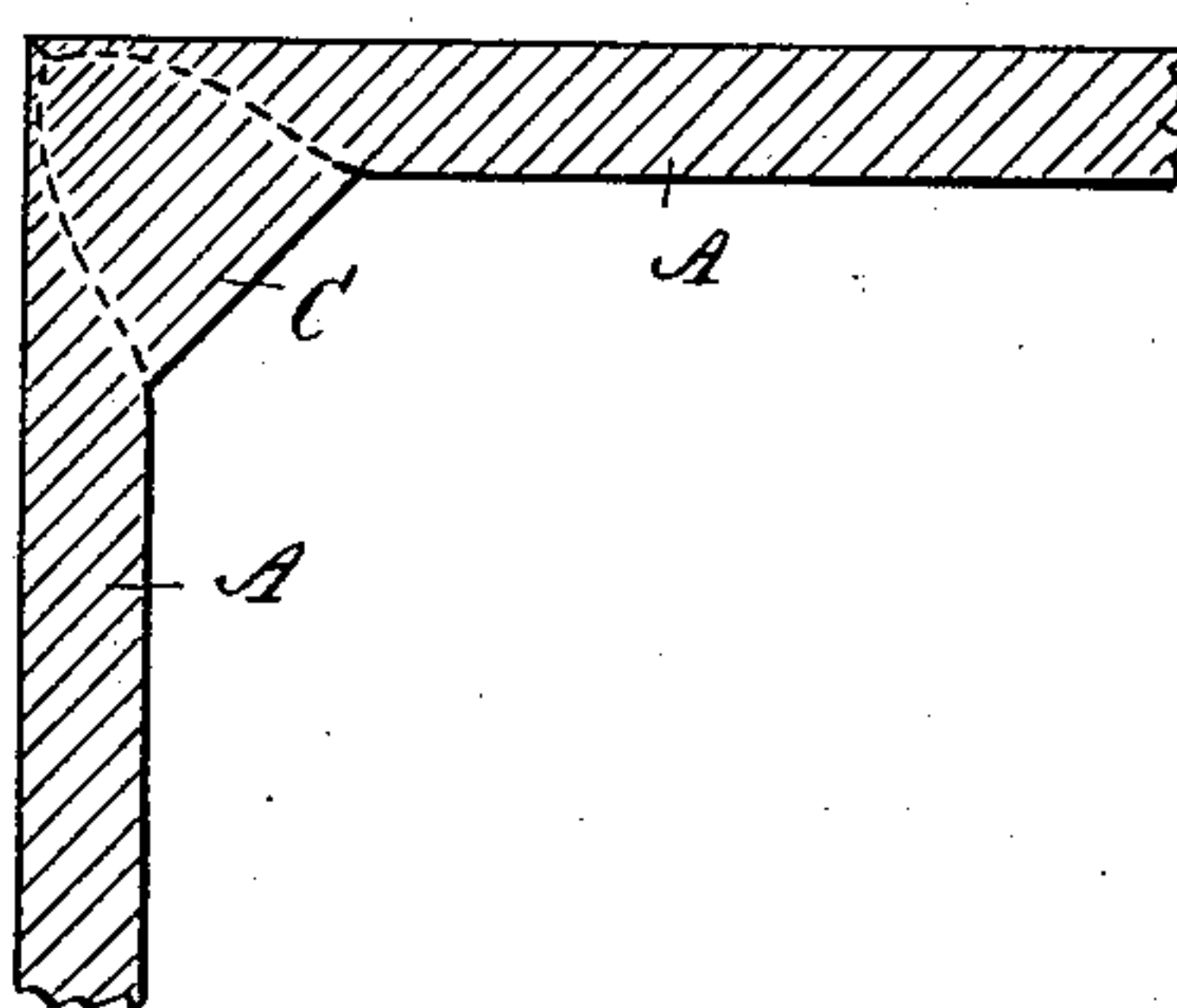
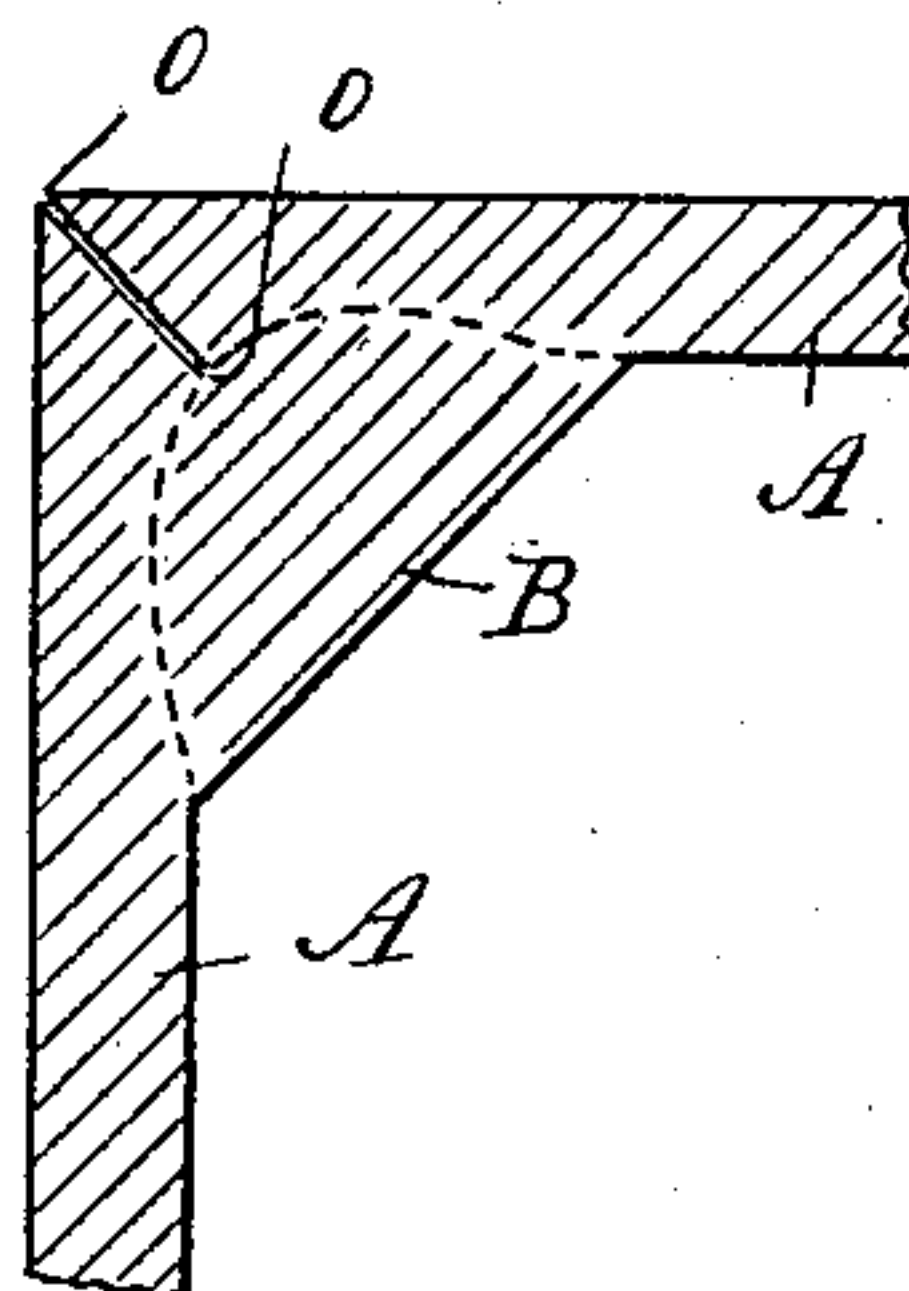


Fig. 3



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UNITED STATES PATENT OFFICE.

CHARLES H. WILSON AND JAMES STEUART, OF DETROIT, MICHIGAN.

PROCESS OF FUSING METALLIC PLATE JOINTS.

SPECIFICATION forming part of Letters Patent No. 333,371, dated December 29, 1885.

Application filed October 29, 1885. Serial No. 181,343. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. WILSON and JAMES STEUART, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Fusing Metallic Plate Joints; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention consists in certain new and useful improvements in the process employed to secure metallic plates together at their edges, such plates being at right angles to each other, although the angle may be varied without departing from the spirit of our invention.

In casting plates for polygonally-shaped monuments each face or plane is cast separate and distinct from the others, and these have been hitherto cast with those edges that are designed to form the corners, mitered, or with such edges at an angle of forty-five degrees to the planes of the outer and inner faces, if the design is square, or at such other angles as the polygonal shape of the completed structure demands, in order to produce as perfect a joint as possible. The plates then, being set up in juxtaposition to each other, are secured in that position, while the operator, in a manner well known to the metal-molder's art, fills the corners with molten metal, which, fusing with the interior surface of the plates, there cools and holds them in place; but this fusing does not extend to the outer corner, which, in castings, does not fit so closely as to look solid. On the contrary, such outer corner presents an appearance of a crack, there being no fusion of the sides A A between the points o o, which is objectionable, and which it is the object of the present invention to obviate. Of course this process is only applicable to effectually close the corners in that class of metals which fuse at a comparatively-low temperature—like zinc, for instance—which is now so extensively used in the manufacture of what are known as "white-bronze" monuments.

Figure 1 shows the plates ready to be joined at their edges to make a perfect corner. Fig. 2 shows the corner closed by fusing. Fig. 3 shows the way of joining such corners as known to the state of the art. In this figure, which is introduced for the purpose of com-

parison, the edges of the plates are forty-five degrees to the planes of the sides of the plates, and the extent of the fusion is shown in dotted lines. All the figures are cross-sections.

In the accompanying drawings, which form a part of this specification, A A represent two cast-zinc plates with their edges brought down to almost an edge at their points of intersection by beveling off the interior faces at angles of twenty degrees, (more or less,) as shown in Fig. 1. These now being brought into proper juxtaposition molten zinc is poured into the corners thus formed at such a degree of heat that it will fuse the adjoining surfaces together almost to the outer face of the joint, thereby effectually securing the plates together with solid and perfect joints, as shown in Fig. 2. The reason for this will readily be seen. In Fig. 3 the distance on the forty-five degree line is so great that the influence of the metal poured in to form the fusing-brace B is not felt sufficiently to form a fusion between points o o, so that the joint must be closed by hammering or "peening." Now, by our process we so reduce the thickness of the plates at the edges or points of juncture that the molten metal poured in to form the corner C will so exert its influence at the outer corner that a good and strong joint and corner is made.

It will be observed that in forming a joint in the manner described, but a small quantity of the molten zinc enters near the outer corner, and hence the heat cannot be made so great as to cause sufficient fusion at that point to melt through the sides and mar or discolor the face, while the greater body of the molten zinc will contain heat enough to create a fusion nearly upon the lines (dotted) shown in Fig. 2.

What we claim as our invention is—

The herein-described method of fusing metallic joints together, which consists in beveling off to an edge the interior faces of two plates, then bringing together the points formed by such beveling, leaving a space between the inclined faces of the plates, and then filling in said space with molten metal, substantially as and for the purpose specified.

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Witnesses:

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CHARLES J. HUNT.