

J. C. MILLIGAN & G. BOOTH.

SHEET-METAL VESSELS.

No. 187,886.

Patented Feb. 27, 1877.

Fig. 1.

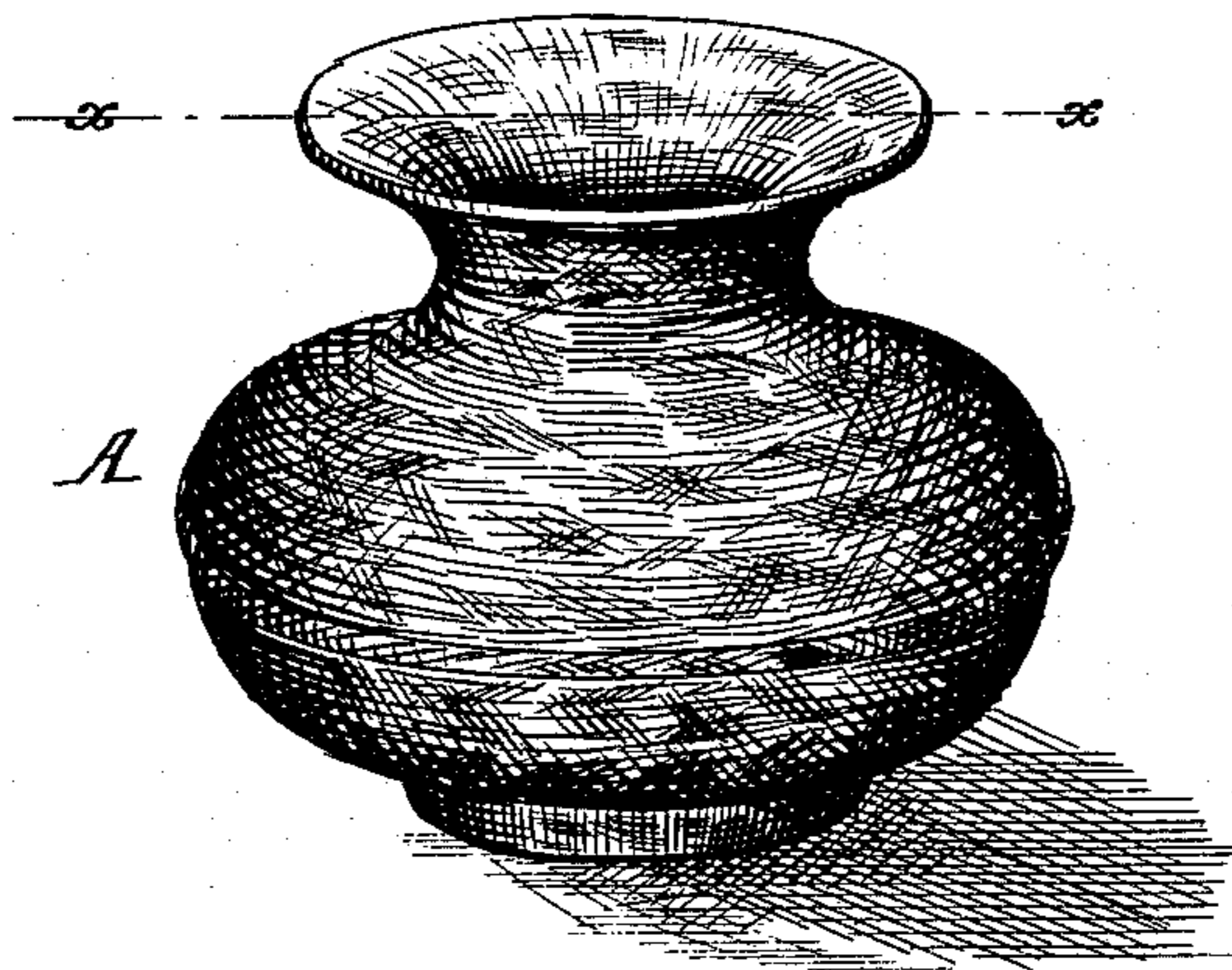


Fig. 2.

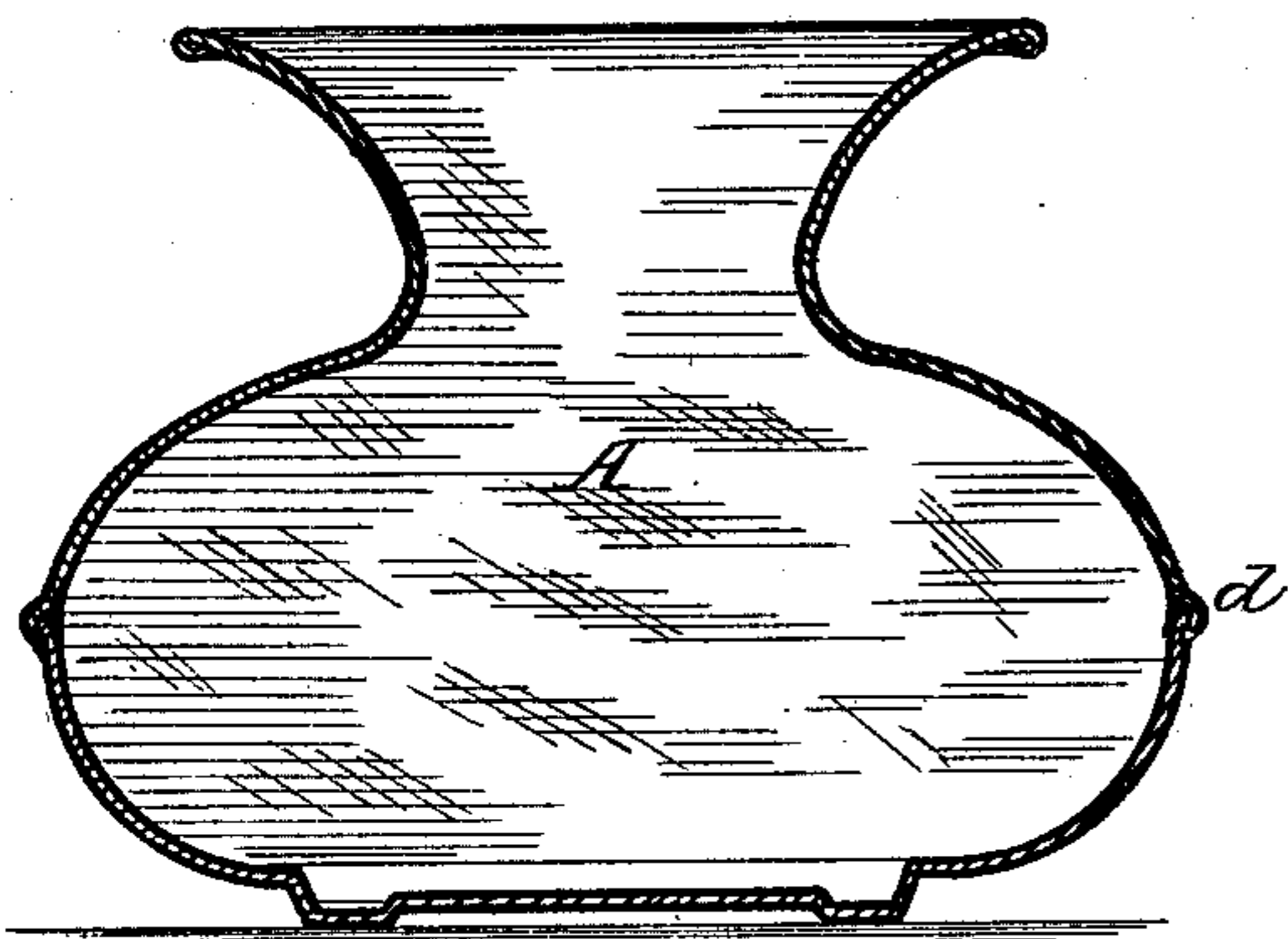


Fig. 3.

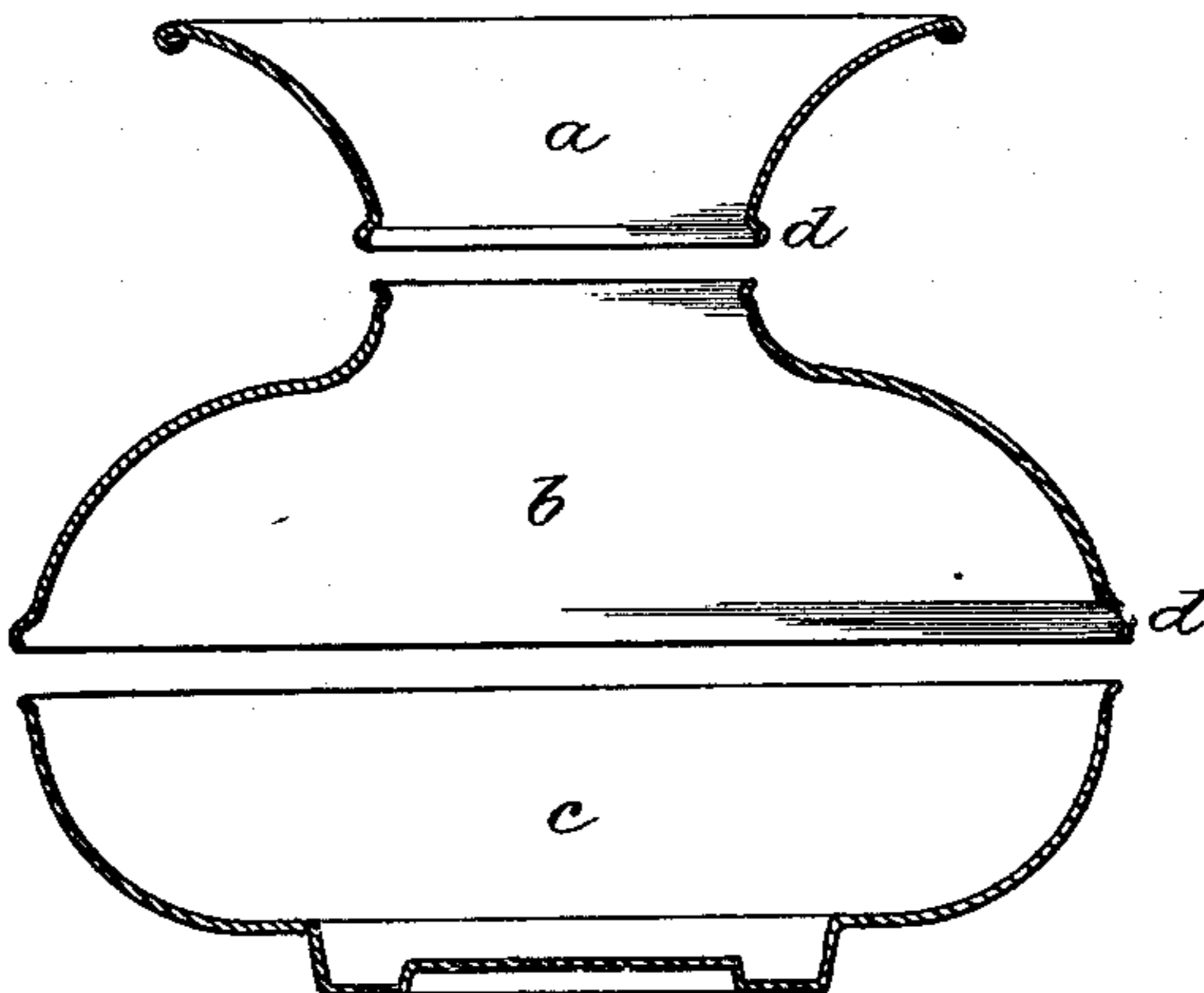


Fig. 5.

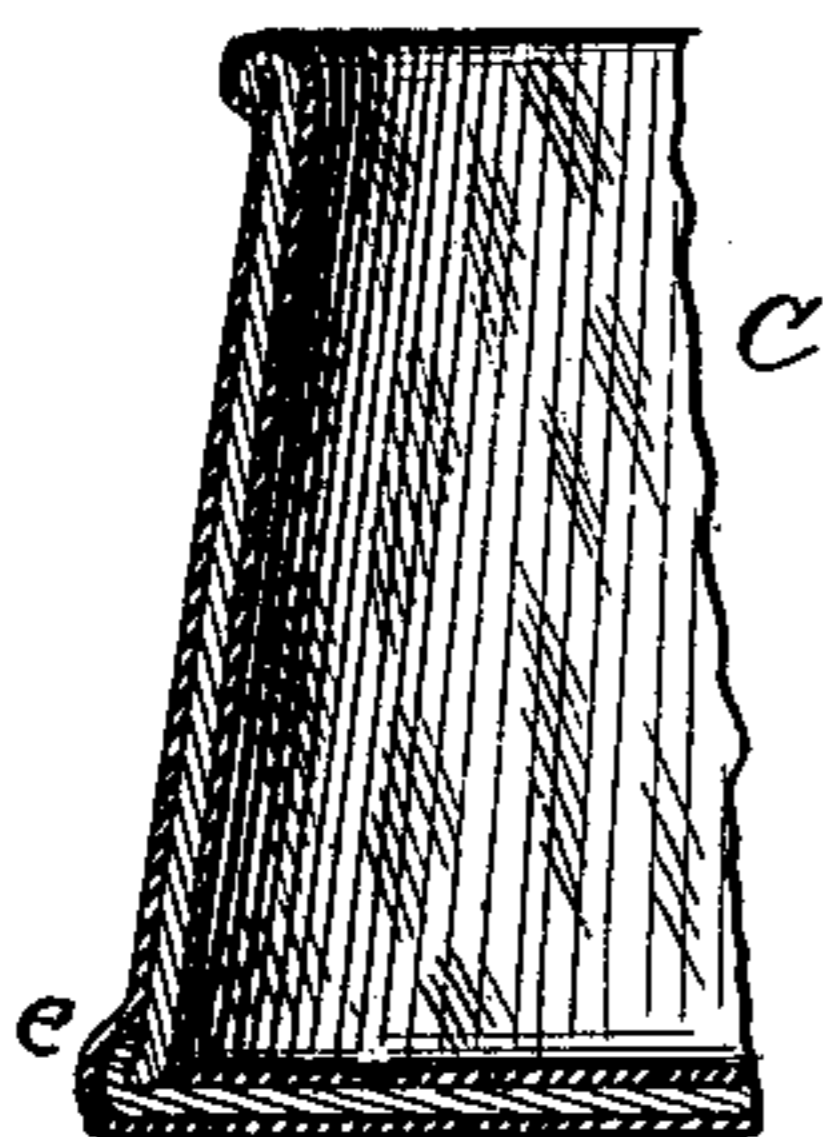


Fig. 4.

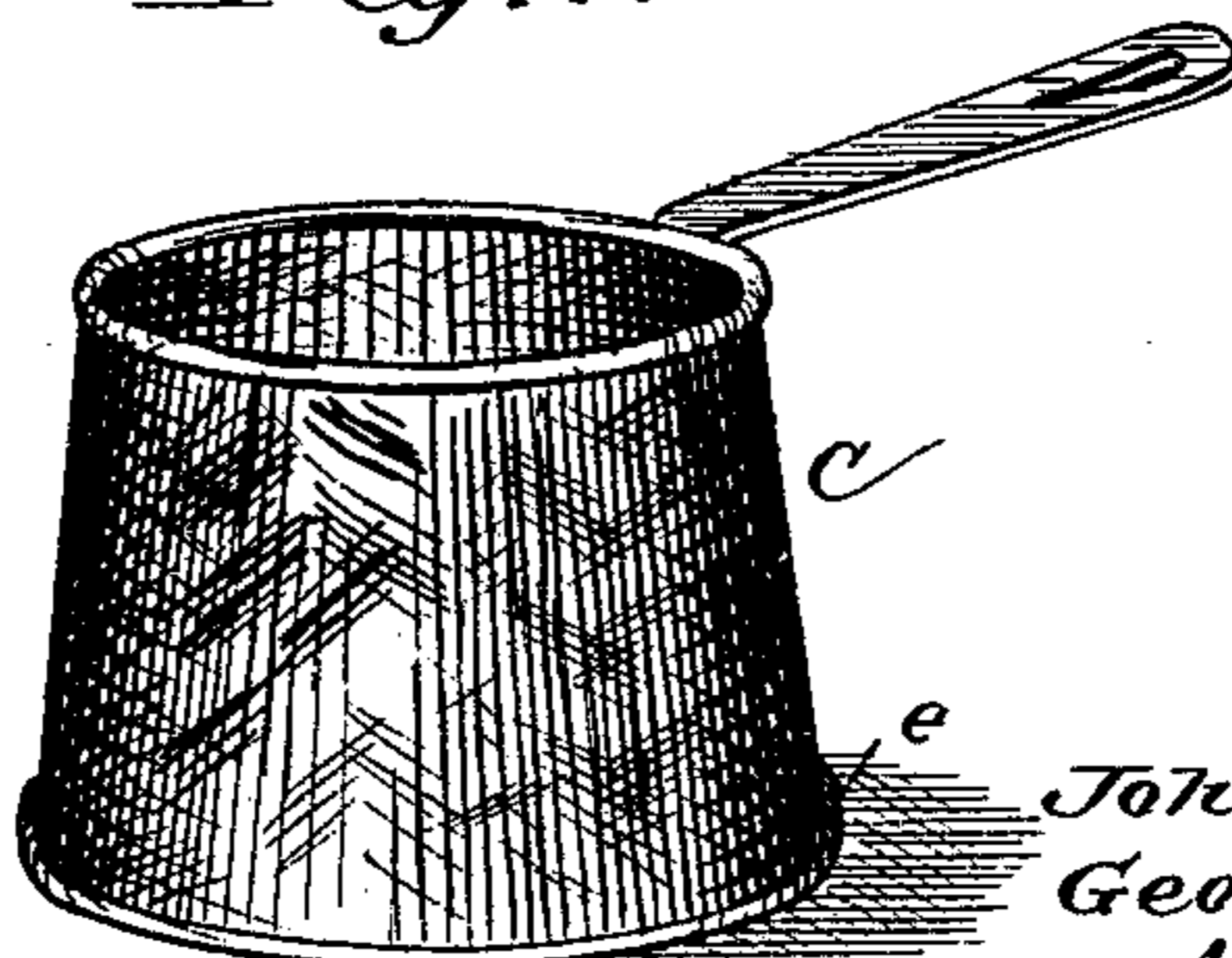
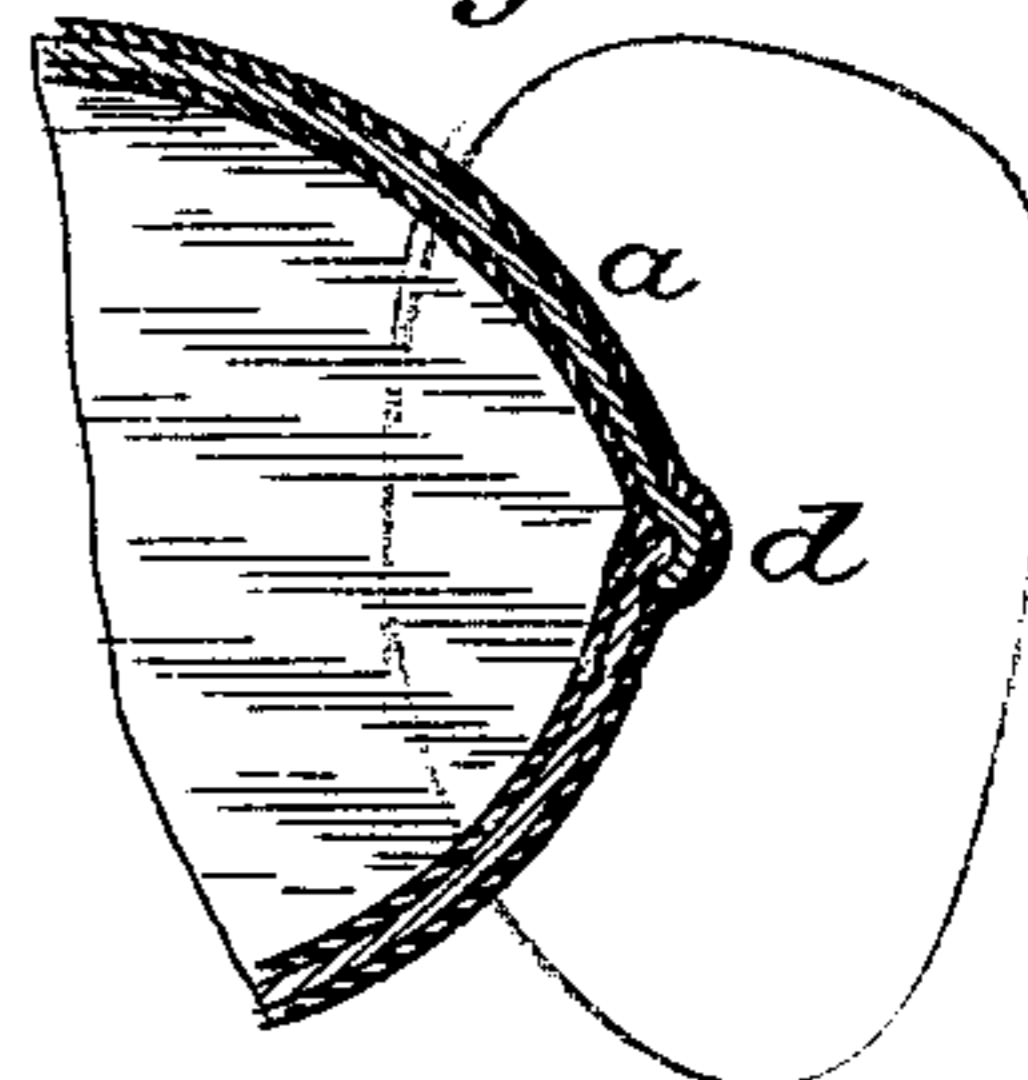


Fig. 6.



Attest:

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UNITED STATES PATENT OFFICE

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IMPROVEMENT IN SHEET-METAL VESSELS.

Specification forming part of Letters Patent No. **187,886**, dated February 27, 1877; application filed
December 6, 1876.

To all whom it may concern:

Be it known that we, JOHN C. MILLIGAN, of South Orange, in the county of Essex and State of New Jersey, and GEORGE BOOTH, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Sheet-Metal Vessels, of which the following is a specification:

This invention relates to certain improvements in sheet-metal vessels.

In order to produce such vessels at a marketable price, it has been found absolutely necessary to employ sheet-iron in their construction; but a serious difficulty is experienced in the use of said metal, owing to its extreme tendency to oxidation, which renders it liable to corrode under the action of moisture and the weakest vegetable acids. To remedy this objection, the sheet metal of which such have heretofore been constructed has usually been covered with a coating of tin; or the vessels, after having been made, are coated with tin, which is much less liable to oxidation. This, however, only partially overcomes the objection, as the tin is readily attacked by many of the vegetable acids to which a culinary vessel is invariably exposed in use, and is soon worn off, rendering the vessel comparatively useless. Besides, such sheet-metal vessels, when made in any but the simplest shapes, have necessarily to be constructed in sections, the parts being united and cemented by the ordinary soft solder—a compound of tin and lead—which is not only readily acted upon by the vegetable acids, but tends to establish with the other metals an electrical action at the joints, which materially hastens the corrosion at such points, causing the vessels to wear out at said parts long before the body of the metal is affected; and, further, the solder is liable to melt at an exceedingly low temperature—less than that of boiling grease—which renders the vessel unsuitable for many culinary purposes. In addition to these objections it has been found necessary to finish the rough edges of said tinned vessels by turning over the edges and wiring the same, in order to form a neat

rim to the vessel, all of which materially enhances the cost of the finished vessel.

The object of our invention is to overcome these objections, and produce a sheet-metal vessel that will effectually resist the action of moisture and all ordinary acids, and which will bear an exceedingly high temperature, much greater, in fact, than any to which it will be subjected in culinary use, while at the same time the parts will be securely united at the joints, and protected and finished at the edges, the whole having a smooth and highly ornamental finish, and presenting the appearance of being made in a single piece. These objects we accomplish by constructing the article in sections of sheet-iron, with overlapping joints, and afterward covering it entirely with a vitreous enamel, in such manner as to enter and cement the joints, the semicircular joints, by reason of their configuration, imparting the necessary strength without wiring, and the cement covering and hiding the edges of the joint, which has the appearance of a raised bead on the outside of the vessel, and is highly ornamental.

In the drawing, Figure 1 represents a cuspadore constructed of sheet metal according to our invention; Fig. 2, a sectional view of the same; Fig. 3, a sectional view of the cuspadore, showing the sections of which it is composed detached; Fig. 4, a sauce-pan constructed according to our invention; Fig. 5, a sectional view of the sauce-pan, showing the rim and joint of the same; and Fig. 6, a sectional view of the cuspadore, showing the lap-joint at the intersection of its parts.

As represented in Fig. 1, the cuspadore is shown at A, and is constructed in three sections or parts, *a b c*, of sheet-iron, stamped or otherwise formed into proper shape. The upper edge of the upper section *a* is bent over or rounded, as shown in Fig. 3, and the lower edge is formed with a bead, *d*, having an annular rabbet on the inside, which fits over the upper edge of the intermediate section, forming a lap-joint with the same, the lower edge of the bead being pressed closely in contact with the edge of the intermediate section with

sufficient force to retain the two parts in position until the enamel is applied, and assist the enamel in securing the parts after it is applied. The lower edge of the intermediate section and upper edge of the lower section are similarly constructed.

In Fig. 2 the upper edge of the vessel C is formed similarly to the upper edge of the cuspadore, and the bottom is formed with an up-turned flange, *e*, which forms a lap-joint with an inclined lower edge of the body of the vessel, the inclination serving to retain the bottom in place when the flange is pressed inwardly around it with sufficient tenacity to allow the enamel to be properly applied. After the vessels are thus constructed and made up the whole is covered with a vitreous enamel, both inside and out, which is applied and fused over the entire vessel, in the ordinary manner, so as to fill the pores of the metal and become firmly attached thereto, and to enter and cover the joints and surround the edges, securely connecting the sections together and finishing the edges, giving the article the appearance of being made in one piece, and imparting to it a smooth, continuous, and highly-finished surface, which will not be affected by the atmosphere or the ordinary acids, or any temperature to which it will be ordinarily subjected.

It is evident that other forms of vessels may

be similarly constructed and made up, and that other joints than the lap-joints described may be employed for securing the sections temporarily, and therefore we do not limit ourselves precisely to the construction described.

We are aware that sheet-iron vessels constructed of a single piece of sheet metal have been stamped into shape and enameled in mottled colors to represent granite and marble, and also that sheet and cast metal vessels have also been enameled with vitreous enamels, when constructed in one piece, and this we do not wish to claim.

What we claim, and desire to secure by Letters Patent, is—

A sheet-metal vessel constructed in two or more sections, united at the edges by semicircular overlapping joints, and coated with vitreous enamel, whereby the lapped joints are cemented together and held, and the vessel strengthened and ornamented, substantially as set forth.

In testimony that we claim the foregoing we have hereunto set our hands in the presence of the subscribing witnesses.

JOHN C. MILLIGAN.
GEORGE BOOTH.

Witnesses:

A. C. SELTZER,
JOS. PUSEY.