

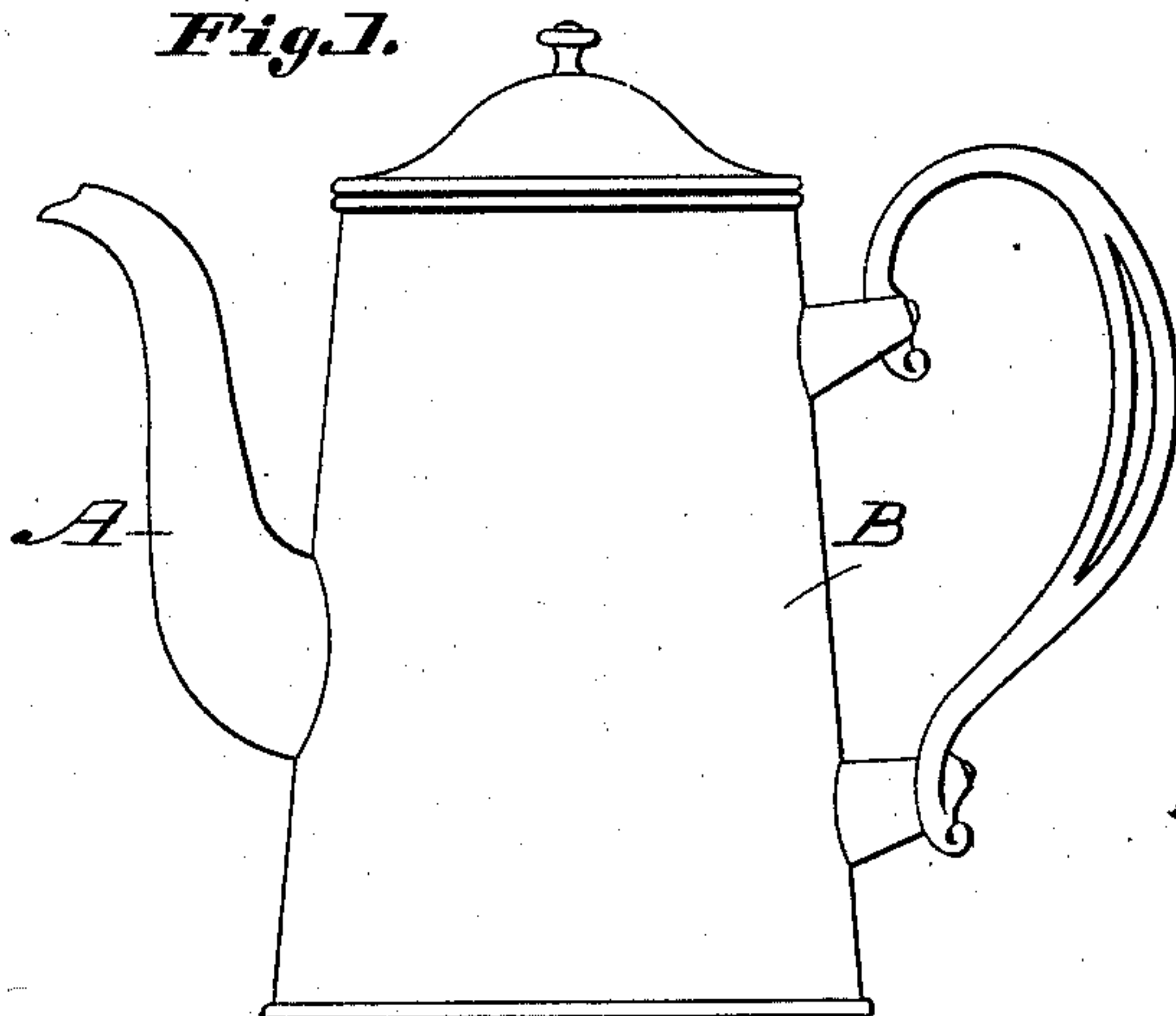
(No Model.)

W. F. NIEDRINGHAUS.  
ENAMELED SHEET IRON VESSEL.

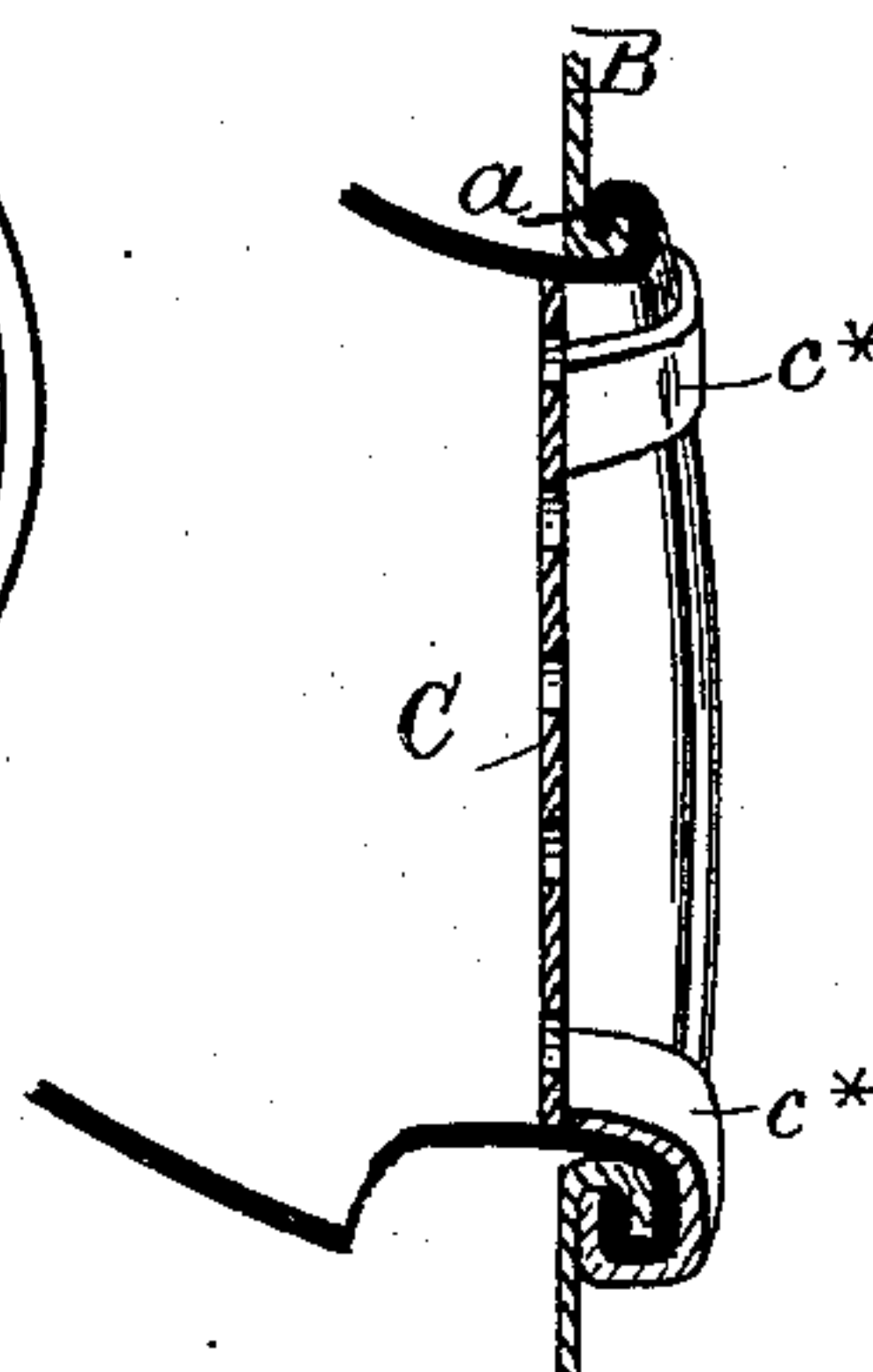
No. 307,077.

Patented Oct. 21, 1884.

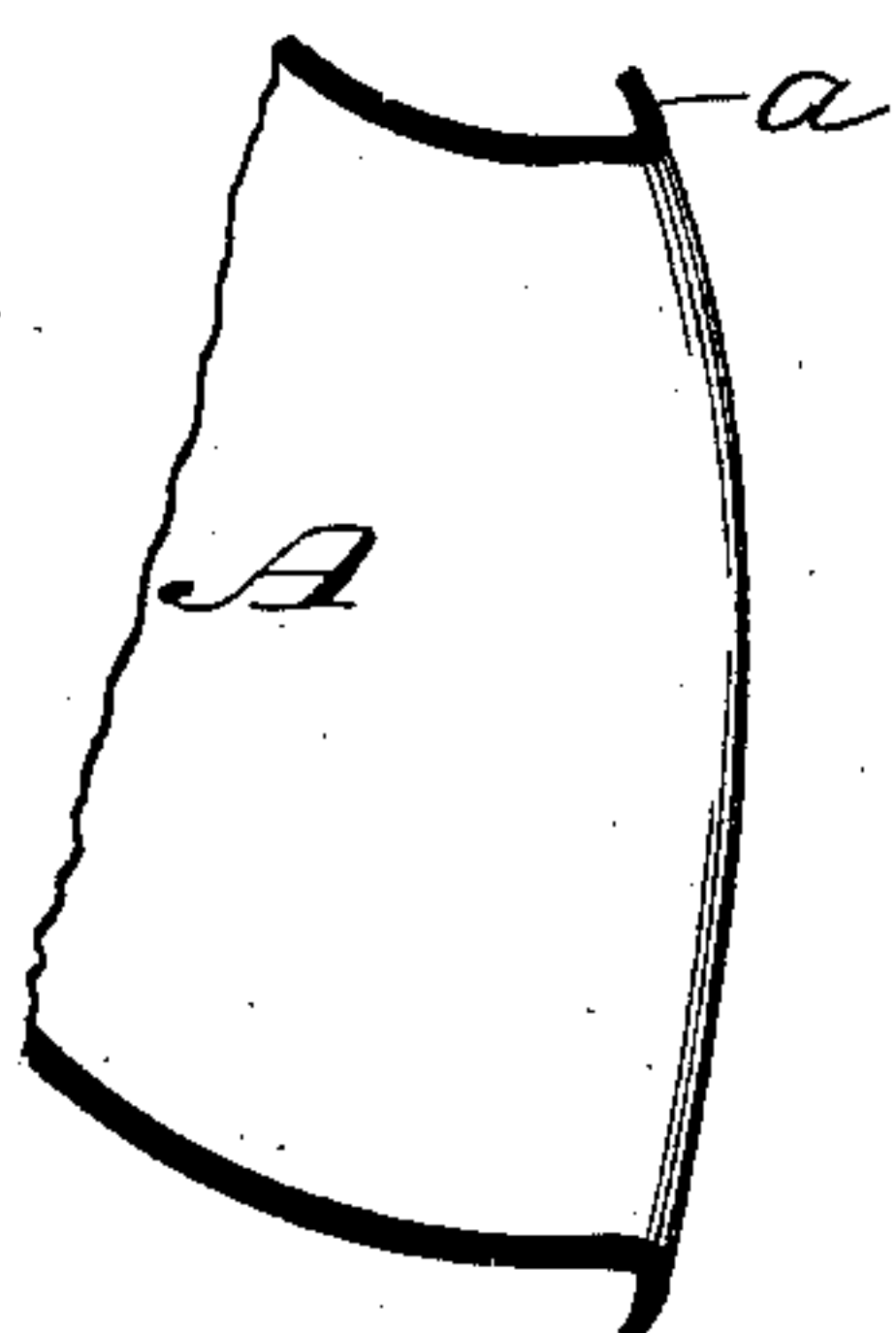
*Fig. 1.*



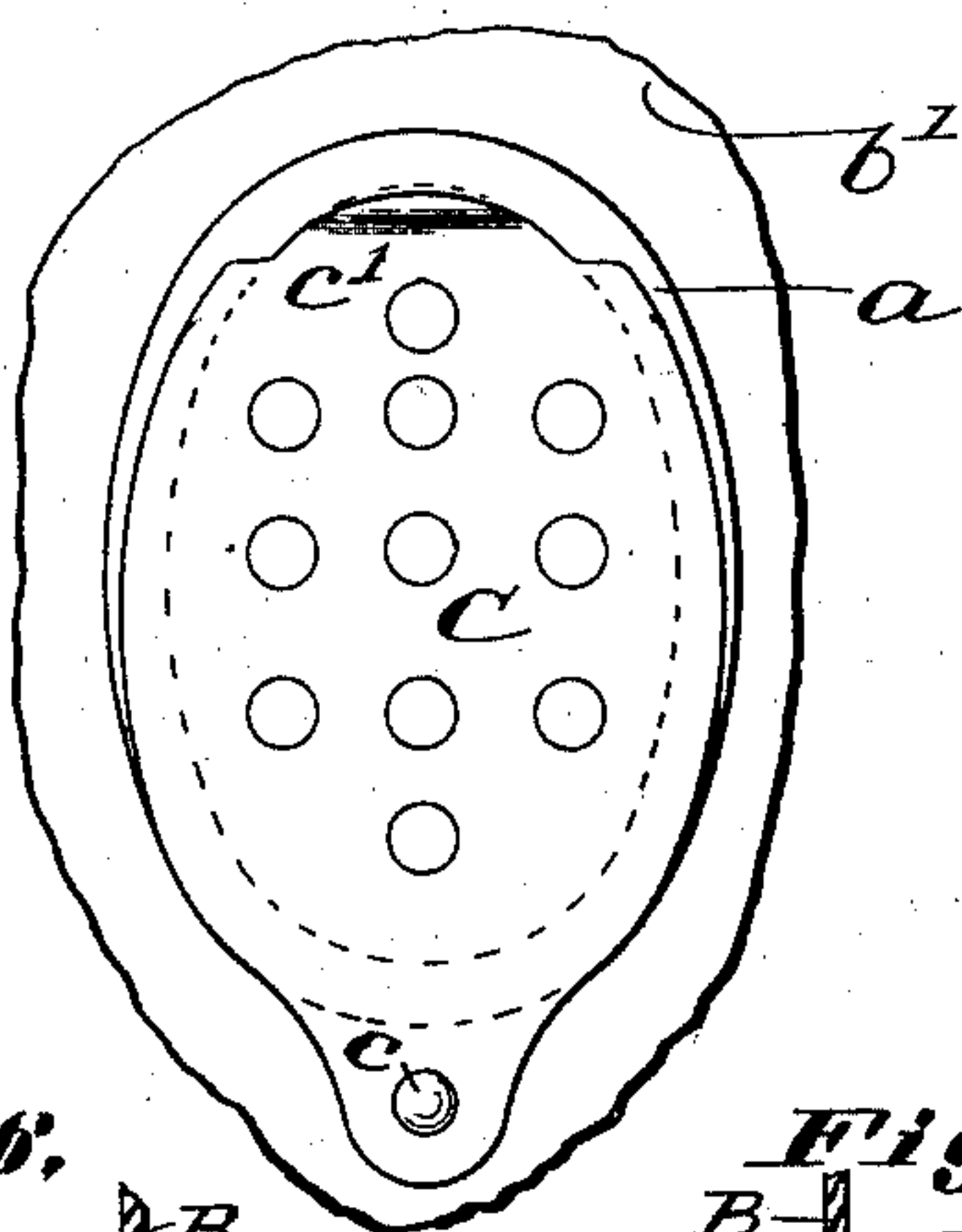
*Fig. 9.*



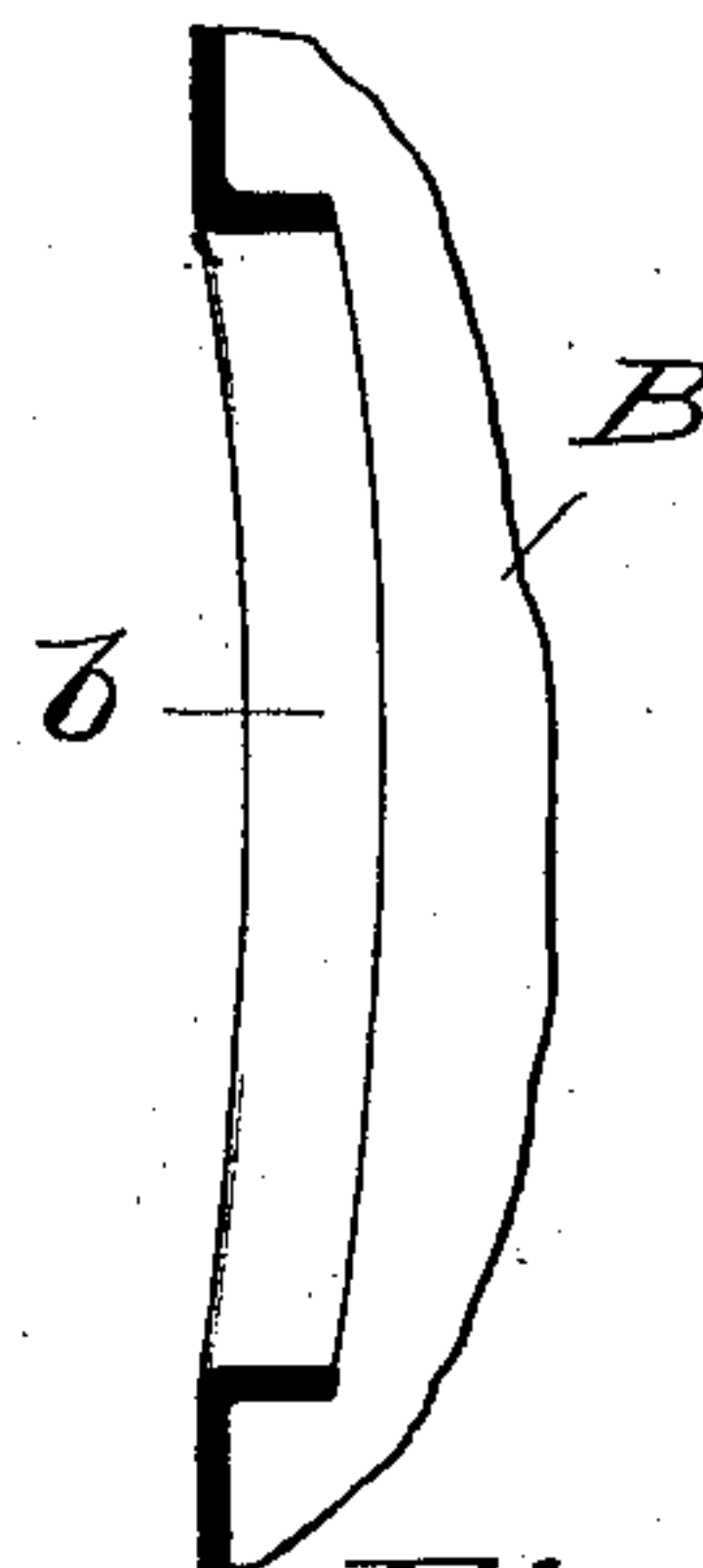
*Fig. 3.*



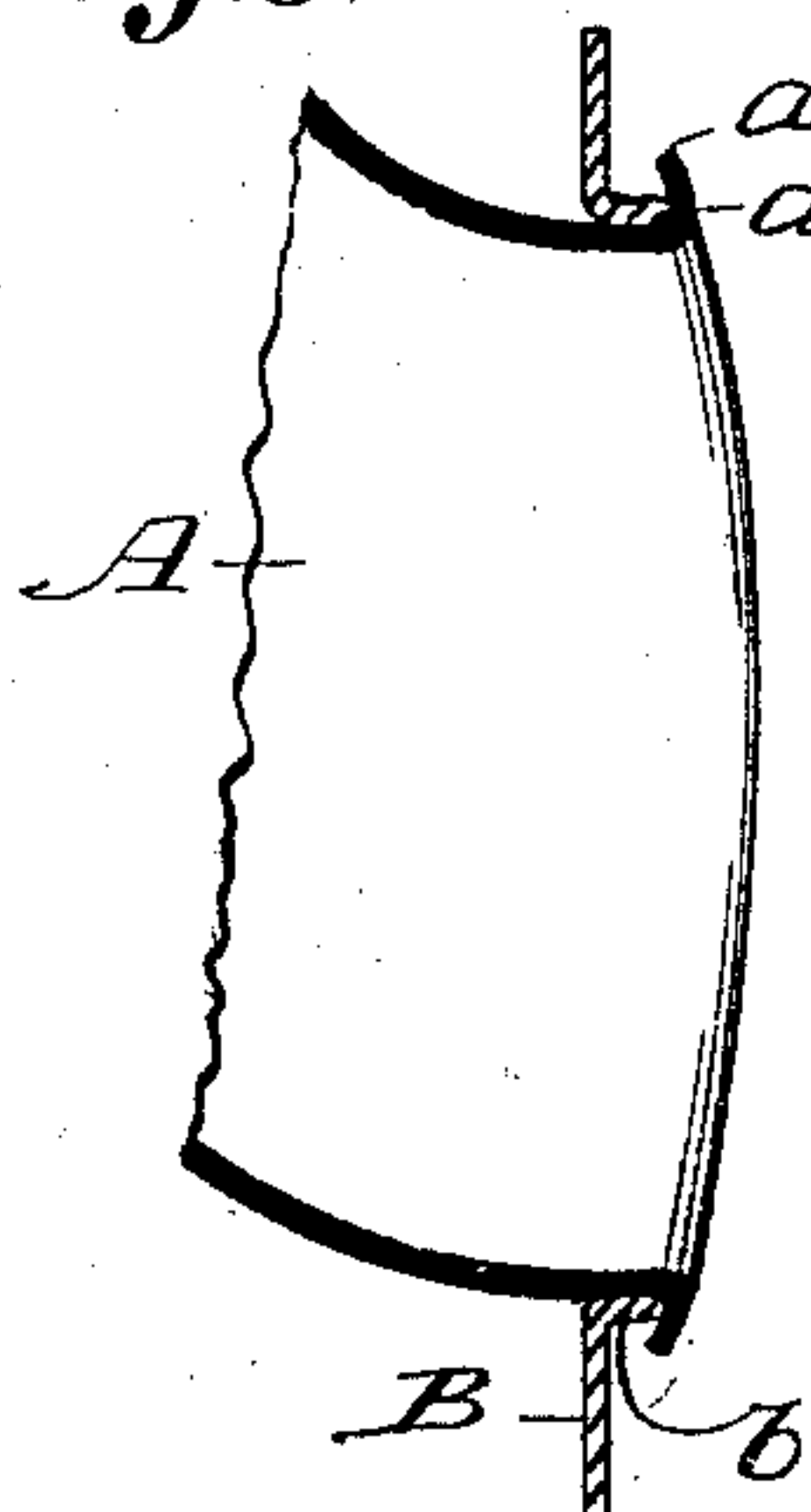
*Fig. 2.*



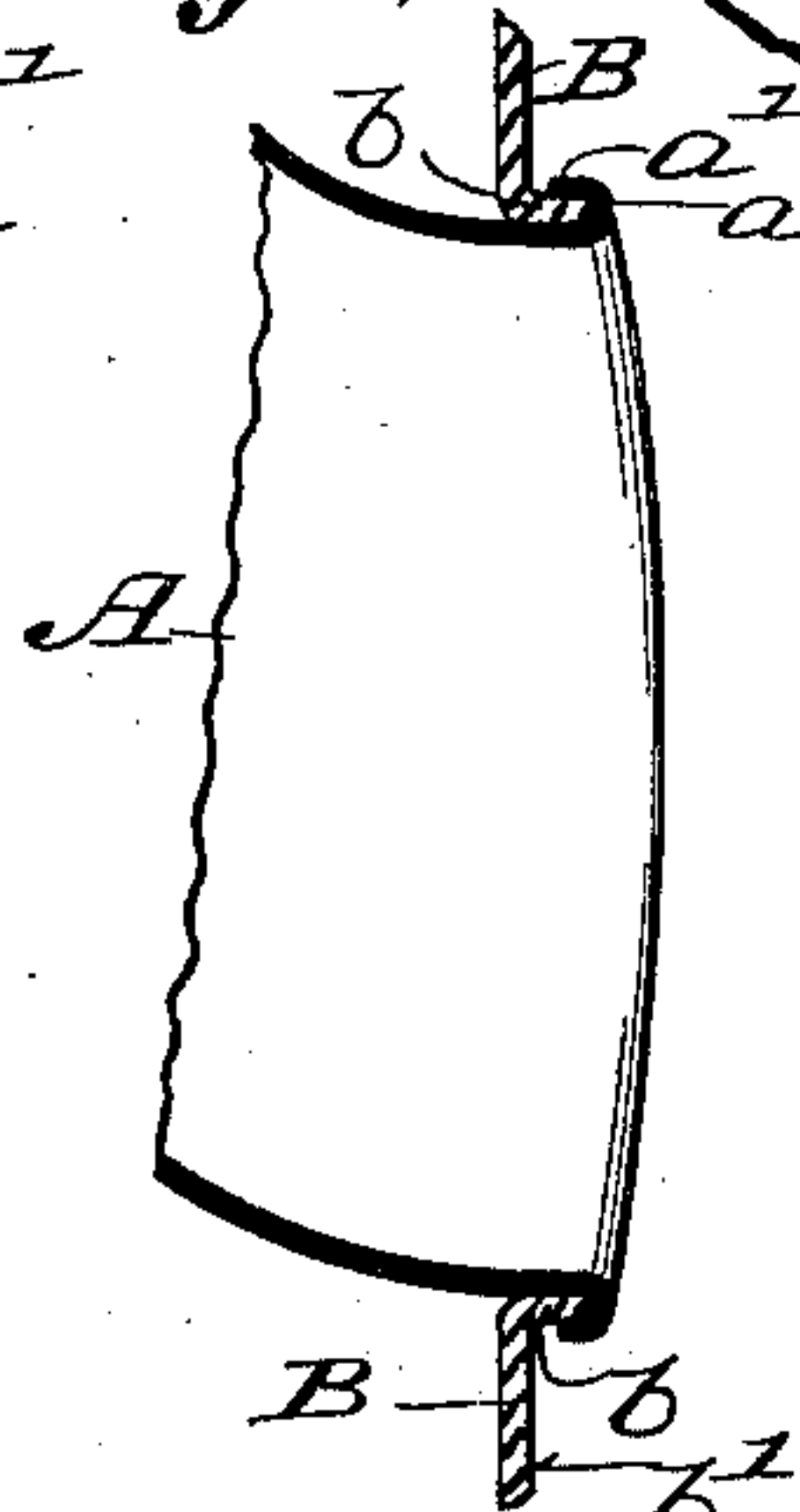
*Fig. 4.*



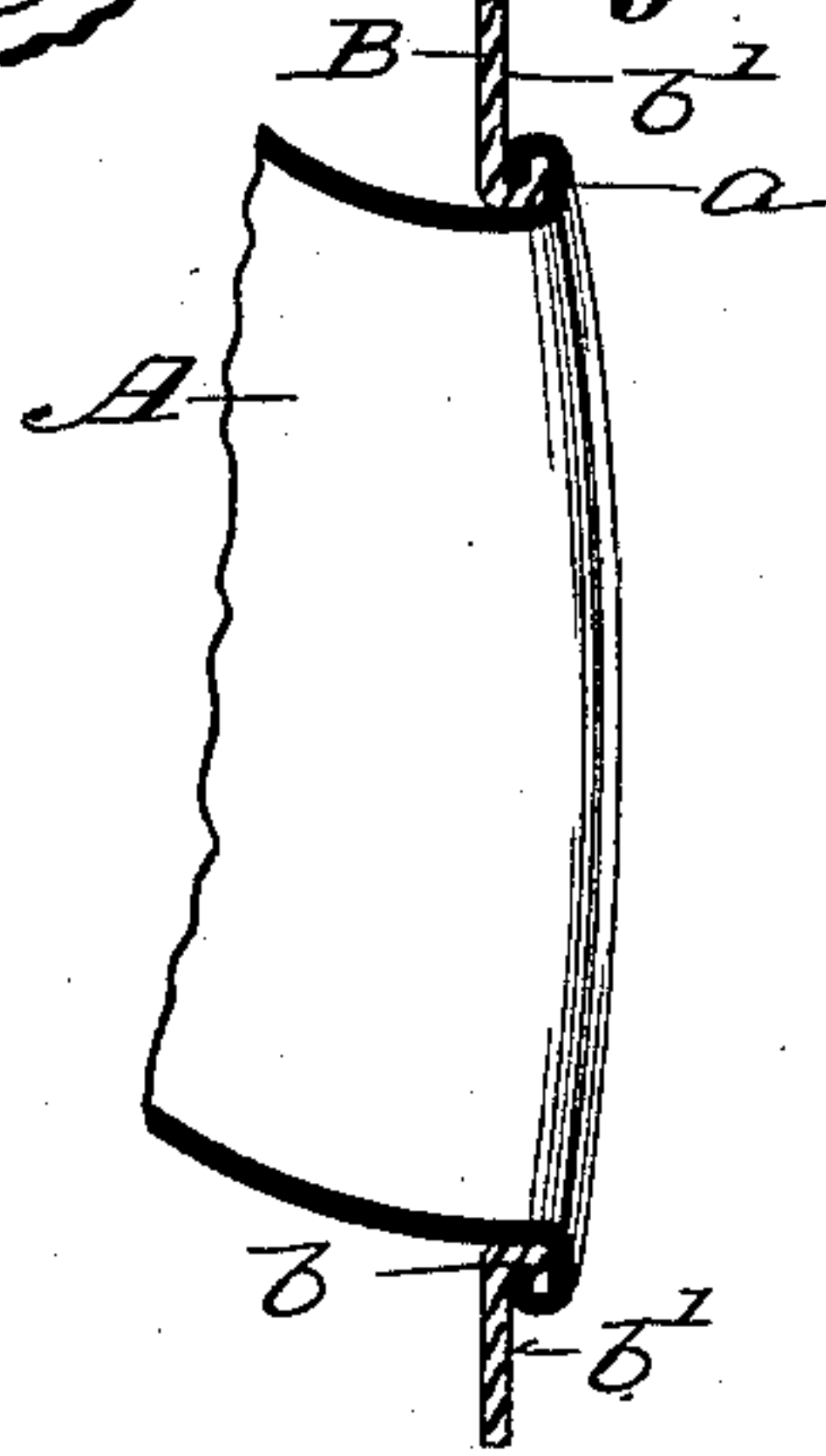
*Fig. 5.*



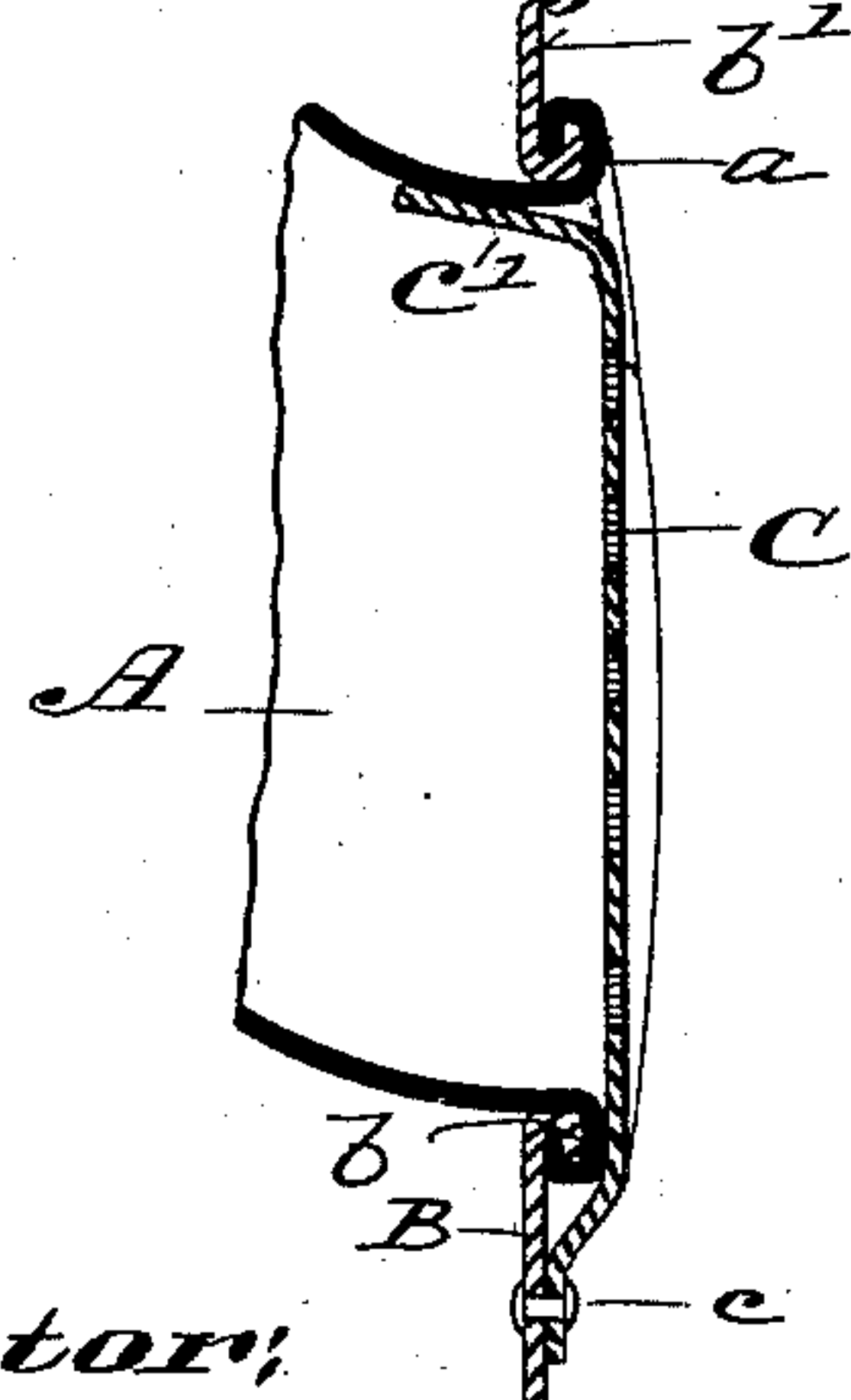
*Fig. 6.*



*Fig. 7.*



*Fig. 8.*



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# UNITED STATES PATENT OFFICE.

WILLIAM F. NIEDRINGHAUS, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE  
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## ENAMELED SHEET-IRON VESSEL.

SPECIFICATION forming part of Letters Patent No. 307,077, dated October 21, 1884.

Application filed September 22, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM F. NIEDRINGHAUS, of St. Louis, Missouri, have made a new and useful Improvement in Enameled Sheet-Iron Vessels, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is an elevation of a vessel having the improvement, and Figs. 2 to 8 details, Fig. 2 being an elevation from the inside of the vessel, showing the inner end of the spout and the strainer; Fig. 3, a longitudinal section of the inner end of the spout as before the spout-flange is turned down; Fig. 4, an edge view showing the flange upon the vessel-body; Fig. 5, a section showing the spout-flange laid against the flange around the opening in the vessel-body; Fig. 6, a section showing the spout-flange turned over the body-flange; Fig. 7, a section showing the spout and body flanges interlocked against the inner side of the vessel-body around the spout-opening; and Fig. 8, a section on a vertical line through the center of Fig. 2. Fig. 9 shows another mode of securing the strainer in the base of the spout.

The last eight-named views are upon a larger scale.

The same letters of reference denote the same parts.

This invention relates to an improved mode of attaching spouts and strainers to pots, pails, and similar vessels of enameled sheet-iron. The spout A, at its inner end, is provided with a flange, *a*, Fig. 3, the flange being turned outwardly. The body B of the vessel, at the opening therein where the spout is attached, has a flange, *b*, turned inwardly into the body. The spout-flange *a* is then laid against the body-flange *b* as in Fig. 5. The edge *a'* of the spout-flange is then turned over the edge of the body-flange, as in Fig. 6. The two flanges are then turned down and interlocked against the inner side, *b'*, of the body, as in Figs. 7 and 8. This secures the spout in the vessel-body, and the vessel is then finished by enameling it in the ordinary manner. There being no protuberance upon the outer side of the vessel around the spout, (as is the case

when flanges or collars are used upon the outside of the vessel-body to unite the spout with the body,) a neater appearance can be imparted to the article.

In enameling the fluid enamel runs into the spaces between the flanges *a b*, and also into those between the flange *a* and the body B, and fills them so that when fused therein it cements the flanges together, as well as prevents access of liquids into the joint. The enamel is also useful in closing the joint around the spout.

When a strainer is employed, it may be attached in any suitable mode—for instance, as shown in the drawings, where C represents a perforated plate laid against the inner end of the spout and there held, say, by means of the rivet *c* and by tucking the upper end, *c'*, into the spout.

The strainer is applied before enameling, and the enamel closes the space around the edge of the strainer.

In interlocking the flanges on the spout and body of the vessel they are not simply rolled together, but are set down or flattened against each other and the side of the said body. The effect of this is to close the spaces between and to make the joint project as little as may be from the inner surface of the vessel. For enameling purposes the effect is very important, if not necessary, inasmuch as enamel, unless very thin, is easily cracked and disintegrated. If the flanges were curved or bent, the pockets or spaces between the flanges and the wall of the vessel would contain considerable quantities of the enamel, which, as it would not expand or contract or bend with the sheet metal, would soon become broken and drop out, leaving the metal unprotected. By flattening the flanges the coating or filling of enamel is very thin and is less liable to become broken and detached.

Instead of having the strainer fastened by a rivet, it may be held in place by lugs on the strainer, as shown in my Patent No. 186,432, January 23, 1877, without the use of a rivet.

In this case the lugs *c\** (say four in number) will be bent around the interlocked flanges, and the ends will be confined between said flanges and the wall of the body B, as shown in Fig. 9.



Having now described the invention and the manner of carrying the same into effect, I would observe, in conclusion, that no claim is herein made to any matter shown or described  
5 in United States Letters Patent No. 61,853, to Munn, dated February 5, 1867, nor No. 164,385, to Menaar, dated June 15, 1875, the interlocked edges of the spout and vessel-body being in those patents curved or bent, as if rolled  
10 together, and not flattened, as herein specified, and the vessels, moreover, not being enameled nor provided with strainers; but

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

15 1. An enameled sheet-metal vessel having a spout secured to the body by inside flanges interlocked and flattened so as to lie parallel and close to each other and to the wall of said

body, whereby the enamel which fills the spaces at the joint exists as a thin coating 20 and therefore does not readily crack and become separated from the metal of the vessel, substantially as described.

2. An enameled sheet-metal vessel having a spout secured to the body of the same by inside flanges interlocked and flattened so as to 25 lie parallel and close to each other and to the wall of said body, and having also a strainer secured in the base of said spout, the enamel which fills the spaces at the joint and around 30 the strainer existing as a thin coat, substantially as described.

WM. F. NIEDRINGHAUS.

Witnesses:

C. D. MOODY,

F. W. SUHRE.