

M. S. ANDREWS.
Cooler for Soda-Water and other Similar Apparatus.
No. 223,462. Patented Jan. 13, 1880.

Fig. 1

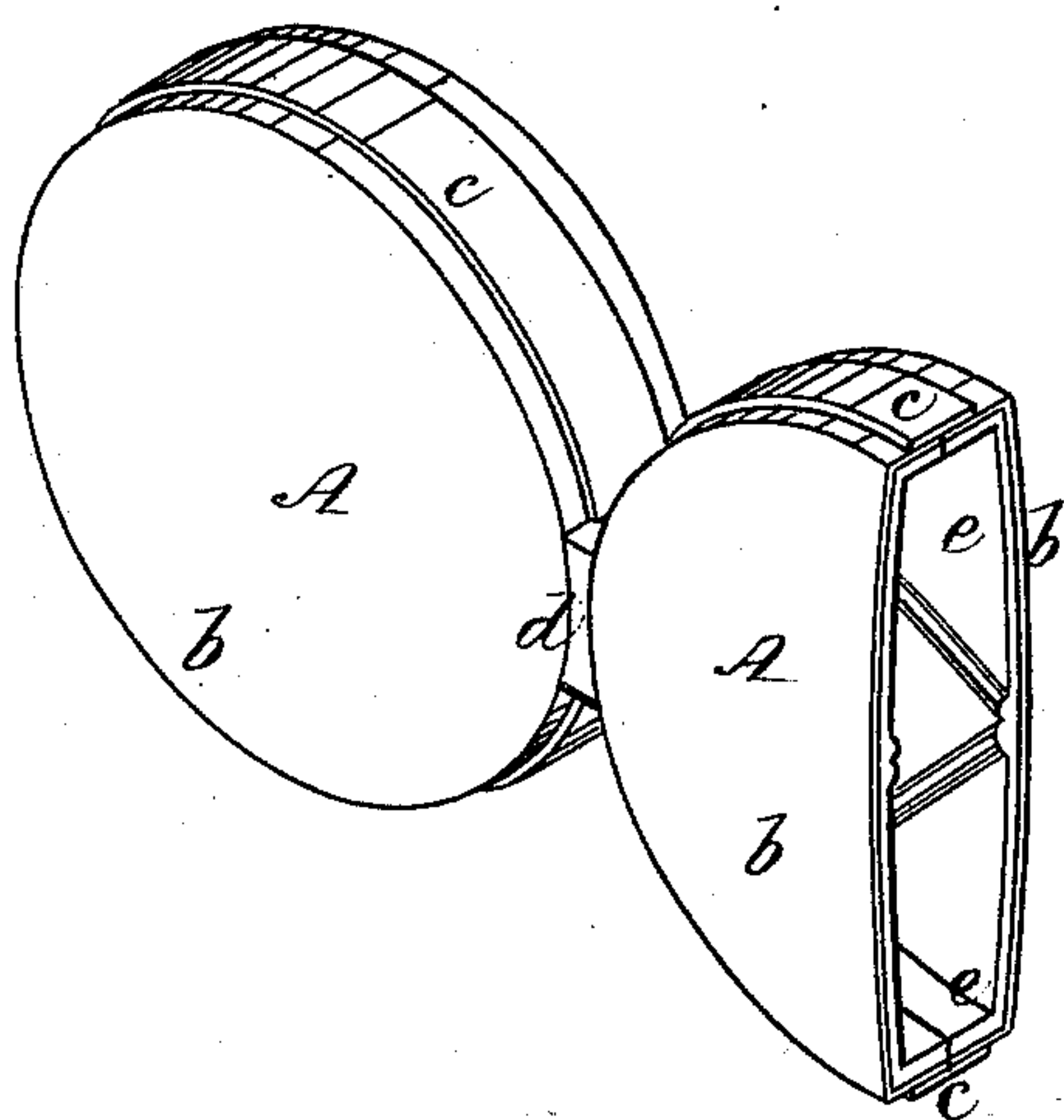


Fig. 2

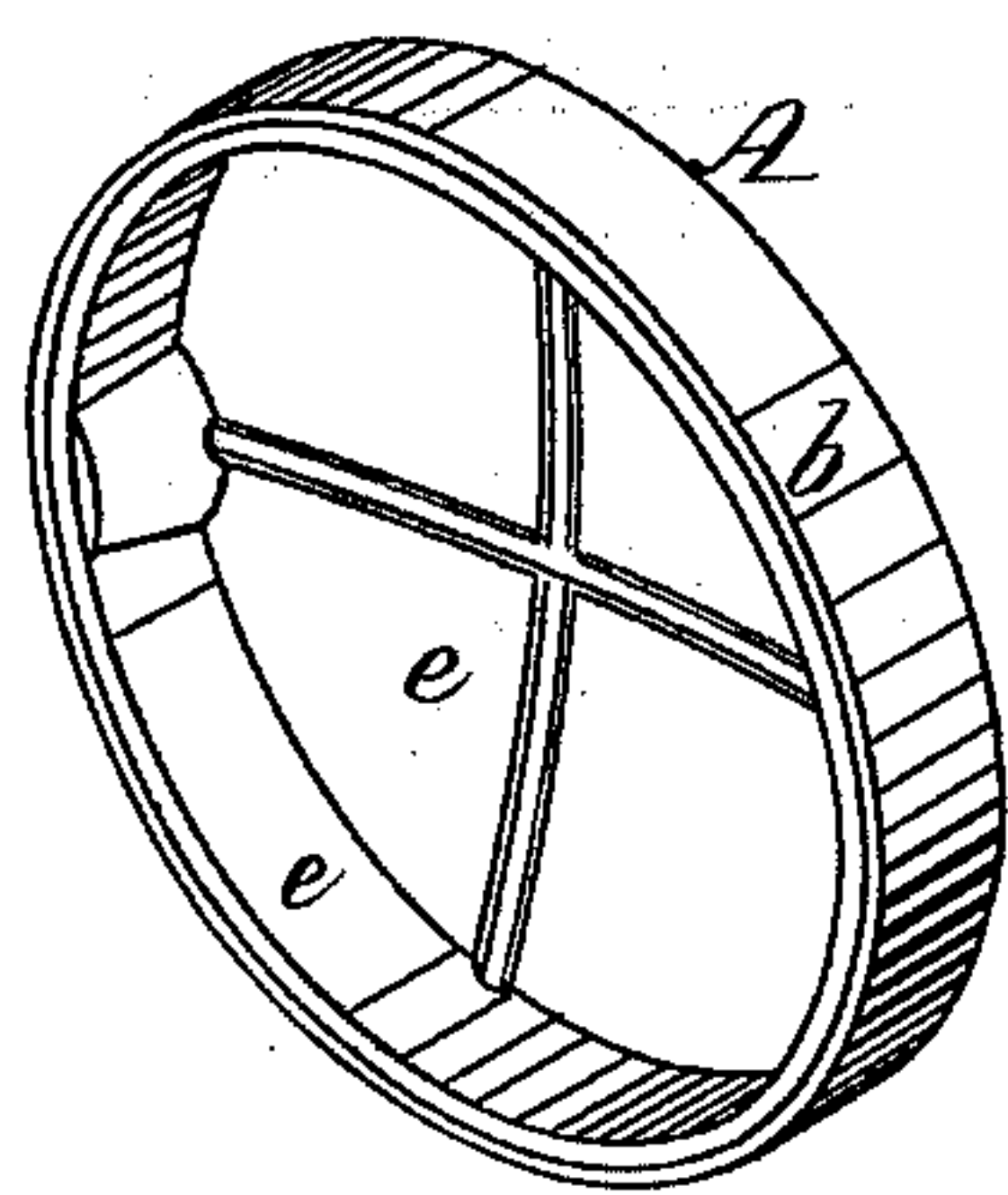
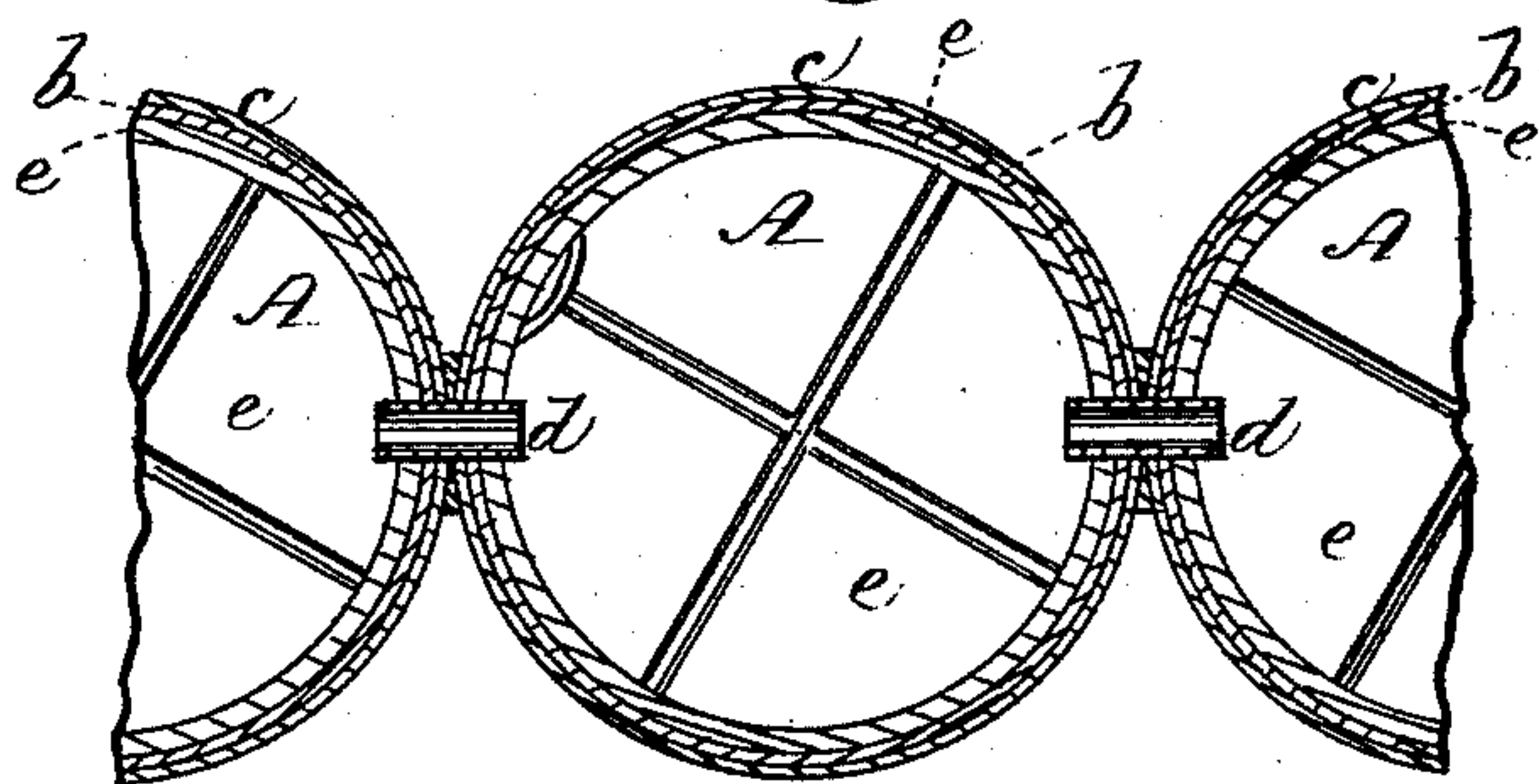


Fig. 3



*Witnesses,
W. J. Cambridge
Chas. E. Griffin*

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per J. E. Steinhilber
Atty.*

UNITED STATES PATENT OFFICE.

MATTHEW S. ANDREWS, OF SOMERVILLE, ASSIGNOR TO JAMES W. TUFTS,
OF MEDFORD, MASSACHUSETTS.

COOLER FOR SODA-WATER AND OTHER SIMILAR APPARATUS.

SPECIFICATION forming part of Letters Patent No. 223,462, dated January 13, 1880.

Application filed September 16, 1879.

To all whom it may concern :

Be it known that I, MATTHEW S. ANDREWS, of Somerville, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Coolers for Soda-Water and other Similar Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a portion of a cooler constructed in accordance with my invention. Fig. 2 is a perspective view of one of the halves or sections of one of the cooler-vessels. Fig. 3 is a section through a series of cooler-vessels connected together.

The ordinary cooler used for soda-water and other similar apparatus is composed of a series of flattened circular vessels connected together by suitable pipes or passages leading from one to the other, an extended cooling-surface being thus afforded for the aerated liquid passing through these vessels on its way to the draft-tube. The vessels composing a cooler of this description must necessarily possess great strength, in order to resist the pressure of the gas contained in the aerated liquid, and on this account they are made of copper, as the strength and tenacity of this metal render it particularly adapted for the purpose, a lining of tin being employed to prevent the corrosion which would otherwise be produced.

To properly line these vessels with tin has, however, heretofore been attended with many difficulties. They have been washed or coated by dipping them in molten tin; but this coating, being thin, soon wears off, leaving the copper exposed, which is extremely dangerous on account of the corrosion, and it has, therefore, been often customary to provide these vessels with a lining of rolled tin of the desired thickness, formed of pieces of the required shapes soldered together at the joints; but with this latter construction there is no adhesion between the surface of the copper and the tin lining in contact therewith, and it has been found impossible to prevent the gas in the aerated liquid from penetrating at the joints and introducing itself between the lining and the inner surface of the copper vessel, in which case the great pressure of the gas causes the

tin lining to collapse, rendering the cooler useless. Furthermore, the air-space necessarily formed between the vessel and its lining, owing to their want of adhesion, serves as a non-conductor, and interferes to some extent with the rapid cooling of the contents of the vessel.

My present invention has for its object to overcome all of these difficulties and objections; and it consists in a copper cooler-vessel provided with a tin lining of suitable thickness cast into it so as to adhere firmly thereto, as a new article of manufacture, thus forming one homogeneous piece, whereby great durability and entire freedom from the objections incident to coolers as heretofore constructed are secured.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A, A, Fig. 1, represent two vessels of a series composing a cooler for a soda-water apparatus, one of the vessels being broken away to show its interior. Each of these vessels, which is of flattened circular form, as seen in Fig. 1, is composed of a sheet-copper shell, *b*, made in the usual manner, of two halves or sections, Fig. 2, which, after being lined, as will be hereinafter described, are soldered together and strengthened by an outside band, *c*, pipes or passages *d* being provided for connecting each vessel with the next one of the series on either side. Each half of the shell *b* is furnished with a lining, *e*, of tin of suitable thickness, which is cast into it by placing each half in a mold provided with a suitable core and ways for allowing the molten metal to run rapidly over the entire surface to be covered, the mold being so formed as to allow of a flame being brought into contact with the outside of the shell, which is thus kept heated while the molten tin is being poured into the mold, whereby the tin is caused to flow uniformly over the surface to be covered thereby. By thus providing the vessel A with a tin lining cast into place as described the latter is caused to adhere firmly and tenaciously to the shell *b* and form one homogeneous piece therewith, and, consequently, all liability of the separation of the two from any cause whatever is entirely

avoided; and as there is no air-space between the shell and its lining, the rapid cooling of the contents of the vessel is in nowise interfered with. Furthermore, the cost of lining a cooler in the manner above described is very small, while its durability is greatly increased and all liability of corrosion avoided.

I do not confine my invention to coolers for soda-water apparatus, as it is obvious that cooler-vessels constructed in accordance with my invention may be employed for apparatus for dispensing beverages of any description.

What I claim as my invention, and desire to secure by Letters Patent, is—

As a new article of manufacture, a soda-water cooler-vessel having a lining of tin cast within it, substantially as and for the purpose herein shown and described.

Witness my hand this 6th day of September, A. D. 1879.

MATTHEW S. ANDREWS.

In presence of—

P. E. TESCHEMACHER,
JAMES N. NORTH.