No. 119,942. Patented Oct. 17, 1871.

James R. Neil.

Coolers, or Condensers for Fluids.

Fig. 1.

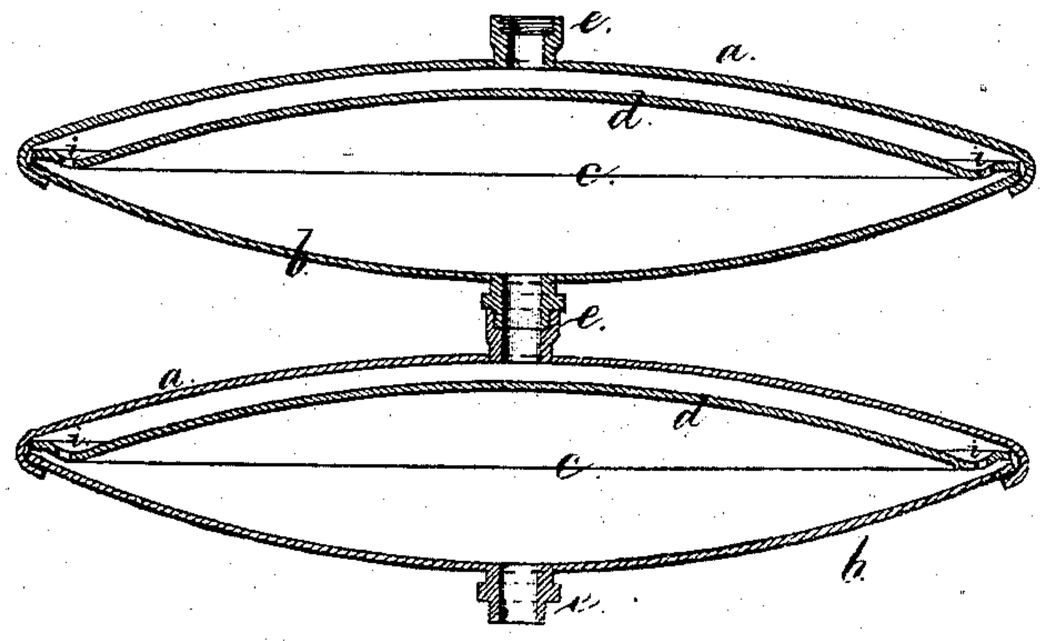
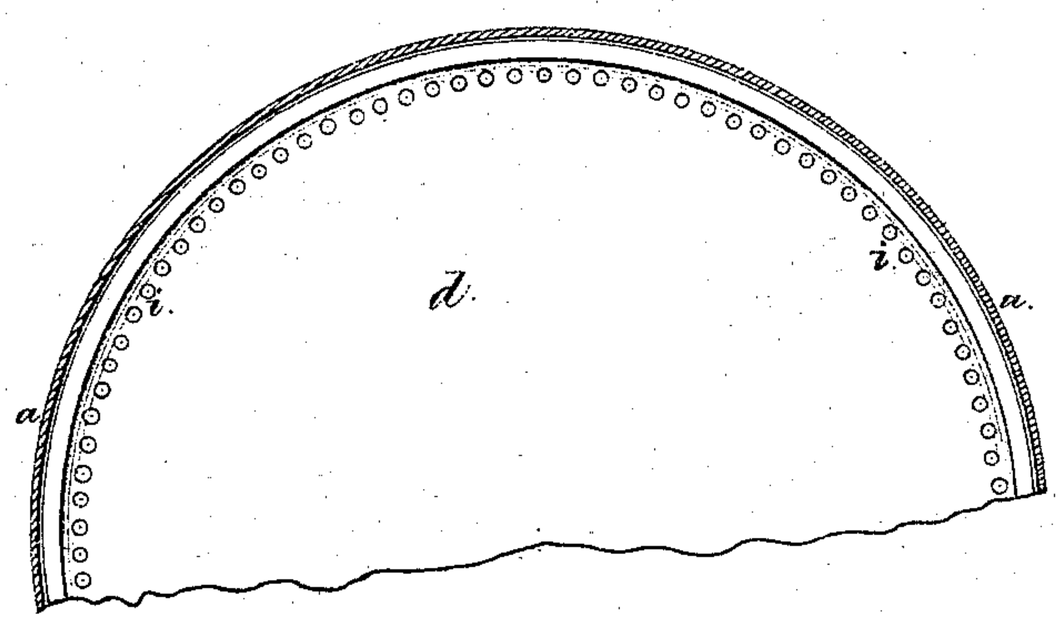


Fig. 2.



Witnesses,

Chas. H. Smith

Geo. L. Lockney

James R. Neil.

Lemuel W. Serrell

atty.

UNITED STATES PATENT OFFICE.

JAMES R. NEIL, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN CONDENSERS OR COOLERS FOR ALCOHOLIC AND OTHER LIQUIDS.

Specification forming part of Letters Patent No. 119,942, dated October 17, 1871.

To all whom it may concern:

Be it known that I, JAMES R. NEIL, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Coolers or Condensers for Fluids; and the following is declared to be a correct description thereof.

This improvement is especially designed for condensing alcohol; but it may be employed for condensing or cooling fluids or liquids of any character.

The vapor or fluid is admitted into a chamber near the middle thereof, and within this chamber is a septum with perforations or openings at or near the edge, and the vapor or fluid passes away from near the center, so that a circulation of such fluid or vapor is maintained contiguous to the walls of the chamber and cooled or condensed by the temperature at which such walls are maintained. In this manner a large extent of cooling surface is obtained within a small space, and the apparatus is cheap to construct, not liable to become injured by expansion or contraction because the connections from one chamber to the other are at the centers of the chambers, and the metal can expand or contract freely around the same.

In the drawing, Figure 1 is a vertical section of two of the said chambers, and Fig. 2 is a partial sectional plan.

Concave disks *a* and *b*, of suitable size, set together in pairs, form the cooling or condensing-chambers *c*. These disks are to be of greater or less concavity according to the thickness of the metal and the strength required. The chambers are connected together by couplings *e*, and a series of such cooling or condensing-chambers connected together form the apparatus with a capacity proportioned to the number of chambers employed. Within each chamber *c* is a septum, *d*, made preferably convex, and around the edges of the same are the passage-ways *i i* for steam or vapor. I have shown these passage-ways as made by a row of holes, but slots may be employed if desired.

In this construction the vapor or liquid to be condensed or cooled is made to travel contiguous to the inside surfaces of the disks *a* and *b* so as to become cooled; and I remark that this apparatus is to be immersed in water to reduce the temperature of the same to a proper degree.

I claim as my invention—

The septum *d* between the concave disks *a* and *b* and within the chamber *c*, in combination with the inlet and outlet connections *e* near the center of the disks, and the passage-ways *i i* near the edges of such septum *d*, as and for the purposes set forth.

Signed by me this 31st day of May, A. D. 1871.

JAMES R. NEIL.

Witnesses:

HAROLD SERRELL,

GEO. T. PINCKNEY.

(47)