

J. TRAGESER.

Beer Cooler.

No. 32,542.

Patented June 11, 1861.

Fig. 2

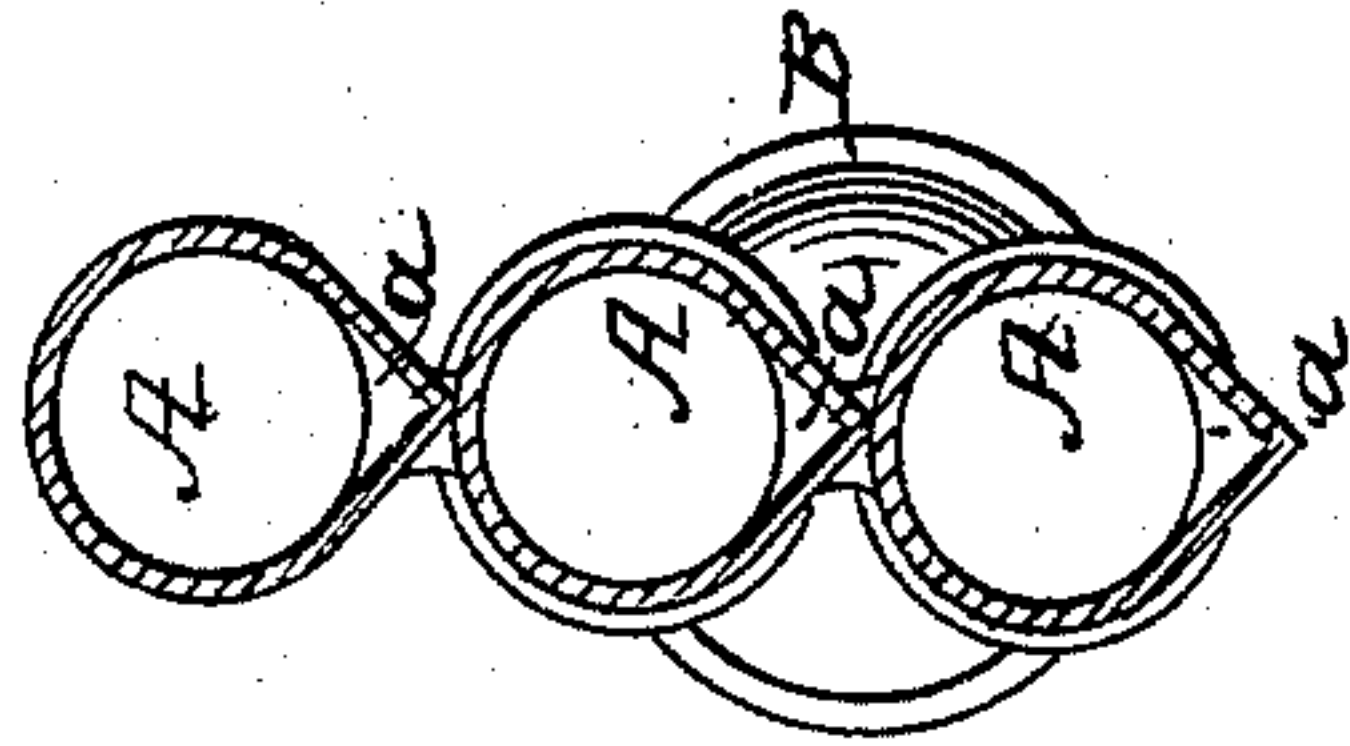


Fig. 3

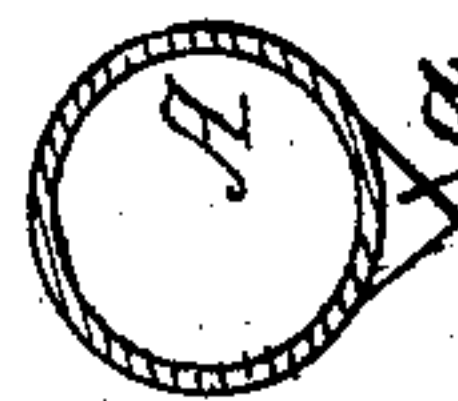


Fig. 4

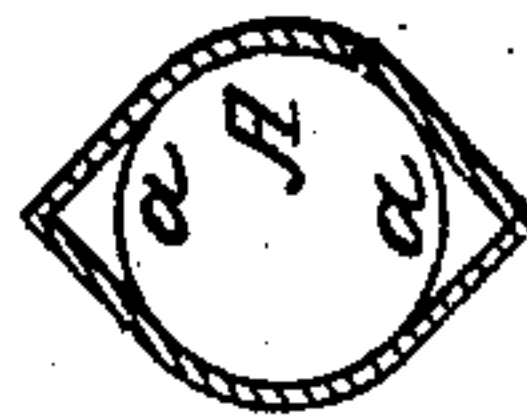
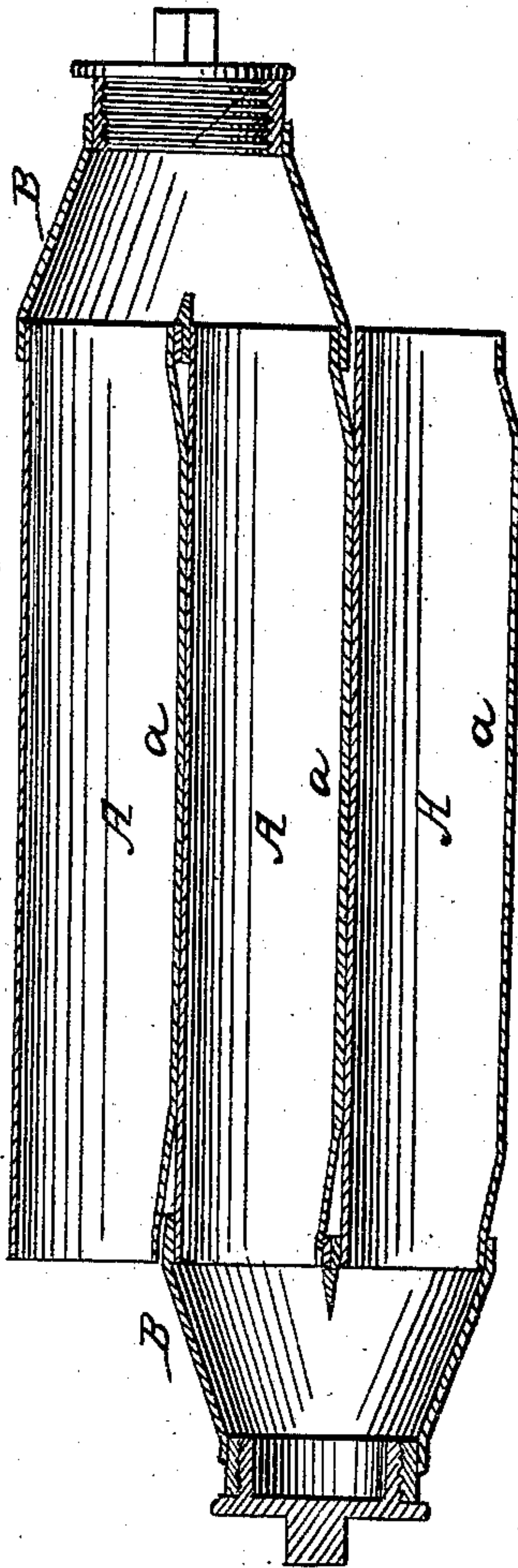


Fig. 1



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN TRAGESER, OF NEW YORK, N. Y.

APPARATUS FOR EVAPORATING LIQUIDS.

Specification of Letters Patent No. 32,542, dated June 11, 1861.

To all whom it may concern:

Be it known that I, JOHN TRAGESER, of the city, county, and State of New York, have invented certain new and useful Improvements in Apparatus for Evaporating and Cooling Liquids; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a longitudinal vertical section of my invention. Fig. 2 is a transverse vertical section of the same. Fig. 3 is a detached cross section of one of the pipes. Fig. 4, is a modification of the same.

Similar letters of reference in all the figures indicate corresponding parts.

This invention relates to certain improvements in that class of evaporators or coolers, which is constructed of a series of pipes, laid one above the other or side by side and having their ends connected by elbows or cross pipes and it consists in the arrangement of projecting angles on one or more sides of each pipe extending within a short distance of their ends in such a manner that sufficient room is obtained for the elbows or connecting pipes and at the same time an unbroken corrugated surface is preserved.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation with reference to the drawing.

Coolers or evaporators of the ordinary construction are made of round pipes the ends of which are connected by elbows or by cross pipes. When elbows are used, the thickness of the metal of said elbows causes the adjoining pipes to be separated throughout their entire length and when cross pipes are used, the holes which receive the longitudinal or main pipes have to be drilled a certain distance apart and an open space between the adjoining pipes becomes unavoidable.

When the apparatus is in use, the continual expansion and contraction to which the pipes are subjected causes them to warp and sag down in the middle and the liquid to be cooled or evaporated in following the curvature of each pipe collects in the middle, thus rendering the largest portion of the evaporating or cooling surface ineffective. These difficulties I have avoided by connecting the pipes A in such a manner that the adjoining pipes are in close contact with each other from end to end, or nearly so and that a sagging down of the pipes is prevented and an unbroken surface is presented. In order to effect this purpose in the most convenient manner, I have constructed my pipes with an angular projection *a*, as clearly shown in Figs. 2 and 3. These angular projections terminate within a short distance of each end of the pipes leaving said ends round, so that the elbows B can be attached to them in the ordinary manner. The distance to which these angular projections are drawn out must be equal to the double thickness of the metal from which the elbows are constructed, so that the adjoining pipes are in close contact with each other, almost during their entire lengths as clearly shown in Fig. 1 of the drawing.

Instead of making the pipes with one projection each pipe might be made with two projections as shown in Fig. 4, or it might be made oval or in any other form, whereby the same object could be accomplished.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is,

The arrangement of one or more angular projections *a* on the sides of the pipes A of a cooler or evaporator substantially as and for the purpose shown and described.

JOHN TRAGESER.

Witnesses:

W. HAUFF,
J. F. BUCKLEY.