

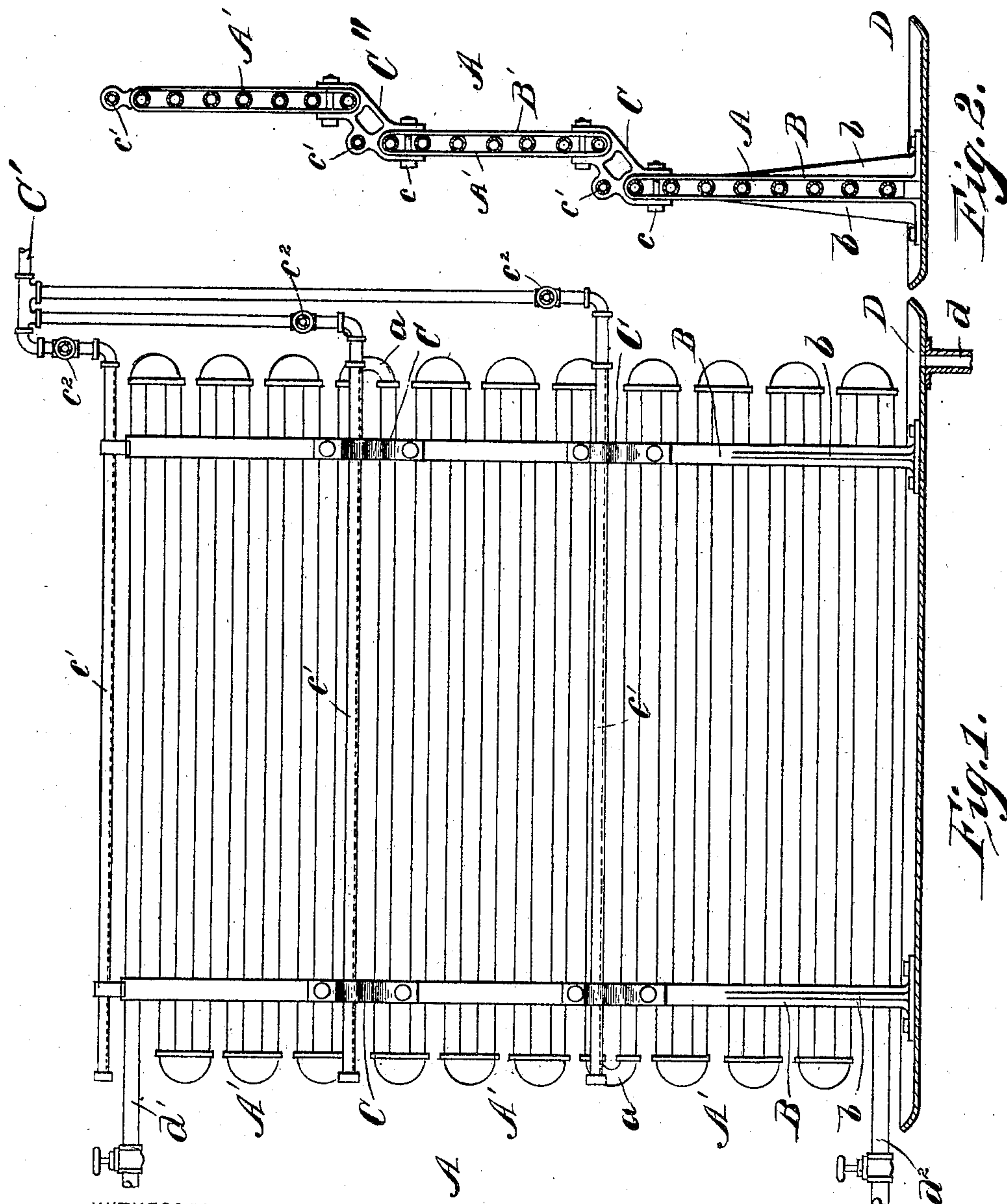
No. 682,403.

Patented Sept. 10, 1901.

C. F. CONOVER.
CONDENSING APPARATUS.

(Application filed Nov. 18, 1900.)

(No Model.)



WITNESSES:

B. McComb.
Robert A Williams

INVENTOR

Charles F. Conover
BY

BY

E. J. Ingram
ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES F. CONOVER, OF NEW YORK, N. Y.

CONDENSING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 682,403, dated September 10, 1901.

Application filed November 19, 1900. Serial No. 36,946. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. CONOVER, a citizen of the United States, and a resident of 406 East Fifty-third street, New York city, county of New York, and State of New York, have invented certain new and useful Improvements in Condensing Apparatus, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

My invention relates to an improved condensing apparatus for ice-machines, in which I provide two or more series of pipes suitably connected and arranged one above the other, but offset so that they are not directly one above the other, each of the said series of pipes being provided with suitable sprinkling-pipes adapted to throw cold water over the pipes, as will be hereinafter fully described.

Heretofore condensers have been constructed and made with one series of pipes provided with but one sprinkler to supply cold water for cooling the pipes of the condenser. The water by the time it reaches the lower pipe would be quite warm and its cooling function lost. To overcome this objection, I have designed my device so that the condenser-pipes are divided into two or more series which are arranged one above the other and offset so as not to set directly above the series beneath, and I supply each series of pipes in the condenser with an independent sprinkling-pipe, being enabled thereby to provide a fresh supply of water for cooling purposes at two or more points in the condenser.

This invention is in the nature of an improvement over a previous invention of mine patented October 2, 1900, No. 658,942.

Referring to the drawings, Figure 1 is a general side elevation of my improved condenser, and Fig. 2 is a cross-sectional view of same.

A designates a set of condenser-pipes divided into the series A', which are connected by the connecting-pipes a. The lower series of pipes are held within the frame or uprights B, which is formed with the strengthening-flange b and is securely fastened to the floor

of the draining-pan D. The second series of pipes are held within the frame B' and are mounted upon the offsetting-bracket C, which is securely fastened to the upright frame B by means of the bolt c. The offsetting-bracket C is adapted to hold a second series of condensing-pipes, so that they do not set directly above the series below. An offsetting-bracket C², similar to the bracket C, is securely fastened to the frame B' by means of the bolt c and is adapted to hold a third series of condensing-pipes above the second series, so that they are offset and do not come directly above the series below. Each series of condensing-pipes is provided with a sprinkling-pipe c', which is connected to the supply-pipe C', and each in turn is provided with a cut-off valve c². The draining-pan D is provided with a drain-pipe d, which may lead to any suitable reservoir or receptacle for receiving the heated water.

In practice the gas to be condensed is admitted into the condenser through the pipe d' and passes successively through the different series of condensing-pipes and out through the pipe d². While the gas is thus passing through the condensing-pipes I allow cold water to drip from the sprinkling-pipes c'. By the time the water coming from the uppermost sprinkler has passed the last pipe in the uppermost series of condensing-pipes it has become considerably heated and is allowed to drop off without coming in contact with the series of pipes below. The fresh supply of cold water is allowed to drip from the sprinkling-pipe placed above the next lower series of pipes, and it in turn is allowed to drip from the lowest pipe of this series without coming in contact with the series of pipes below it. Another fresh supply of cold water is allowed to drip from the sprinkling-pipe above the lowest series of pipes, all the water being finally carried away through the drain-pipe d.

In the drawings I have shown my condenser divided into three series of pipes; but it is obvious that I may divide the same into two or more series of pipes without departing from the spirit of my invention, the number of series into which the condenser may be divided depending entirely upon the number of condensing-pipes in the condenser, the

objective feature being to provide the condenser with sufficient sprinkling-pipes so that the water at no time becomes so hot as to lose its condensing function.

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

10 In a condensing apparatus as herein described, consisting of two or more series of condensing-pipes arranged out of line, one above the other, and a sprinkling-pipe located above each of the said series of condensing-pipes, of offsetting-brackets secured to the frames of the condenser-pipes and adapted

to hold together the said series of pipes so that they set out of line with each other to prevent the water dripping from the upper series of pipes from coming in contact with the series below, substantially as described. 15

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 14th day of November, 1900. 20

CHARLES F. CONOVER.

Witnesses:

S. S. SUGAR,

BELLE McCOMB.