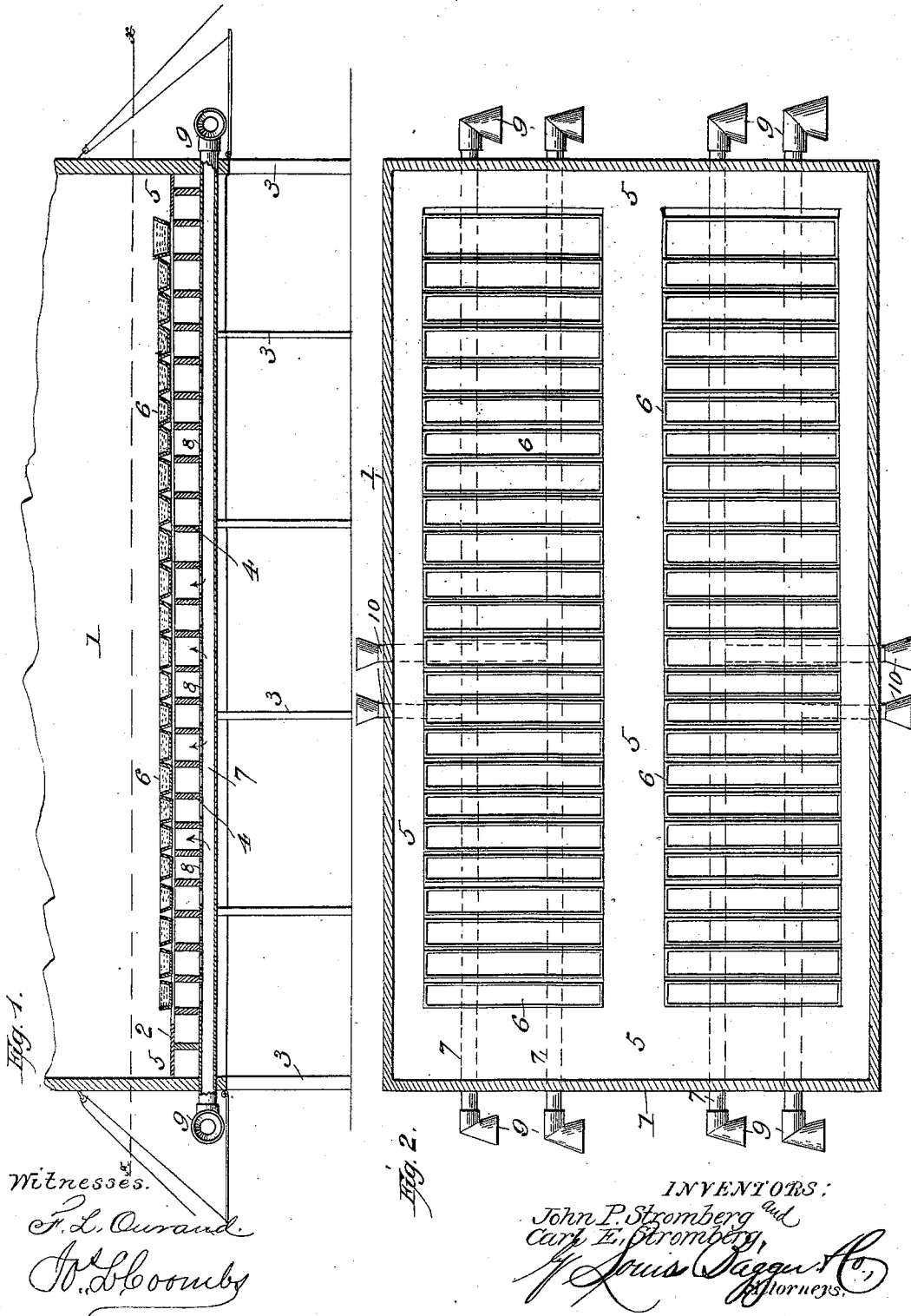


(No Model.)

J. P. & C. E. STROMBERG.
APPARATUS FOR MANUFACTURING ICE.

No. 532,921.

Patented Jan. 22, 1895.



UNITED STATES PATENT OFFICE.

JOHN P. STROMBERG AND CARL E. STROMBERG, OF ESSEX, IOWA.

APPARATUS FOR MANUFACTURING ICE.

SPECIFICATION forming part of Letters Patent No. 532,921, dated January 22, 1895.

Application filed September 11, 1893. Serial No. 485,277. (No model.)

To all whom it may concern:

Be it known that we, JOHN P. STROMBERG and CARL E. STROMBERG, both residents of Essex, in the county of Page and State of Iowa, have invented certain new and useful Improvements in the Manufacture of Ice; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Our invention relates to apparatus for the manufacture of ice, and it consists in the construction and novel combination of the parts of the same hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a building containing our improvements. Fig. 2 is a horizontal section of the same on the line $x-x$, Fig. 1.

In the said drawings the reference numeral 1 designates a building of suitable size, in which is located one or more raised platforms 2, (two being shown in the present instance.) These platforms consist of side and end beams connected together forming a rectangular frame supported by legs 3 and provided with transverse strips 4, set at some distance from each other, so as to form air spaces therebetween. There are suitable aisles 5 between these platforms and also between them and the sides of the building for the passage of workmen. Upon these platforms are located shallow metallic pans 6, and running underneath the slatted bottom is a pipe or tube 7, (one or more) formed with a number of perforations or openings 8. In the present instance two pipes or tubes 7 are shown, and the openings 8 are arranged below each pan. The ends of the pipes or tubes extend outside the building and are provided with cone-shaped funnels 9, which are preferably swiveled thereto. Pipes 10 also provided with funnels may be connected with the pipes 7 intermediate the ends thereof, extending through the sides of the building, so that air can enter from all sides.

There may be connected with the building an elevated water tank to supply water to the pans and an engine for forcing water into the tank, but these are not illustrated as they form no part of the present invention.

The building is preferably provided with drop doors to draw up as a wind break at intervals.

The operation is as follows: The pans are filled with water and placed upon the slatted platforms. Air currents will now enter the air conducting pipes or tubes through the cone shaped funnels, and escaping through the openings therein will circulate around the pans and reduce the temperature of the water therein. We have found by experiment that air at a temperature of 4° below the freezing point will solidly congeal the water in the pans in about six hours, while at the same time water in the open air will not congeal at all, or at the best only a thin film of ice will form on the surface thereof. After the water is frozen the pans are removed and dipped in hot water to loosen the cake of ice so that it can be removed and stored in an ice house. The pans are then again filled and replaced on the platforms.

Having thus described our invention, what we claim is—

The combination with a platform supported on legs within an inclosed space and provided with transverse strips having air-spaces between them, of shallow metallic pans supported on said transverse strips, and perforated pipes having air-funnels at their projected exposed ends, and perforations in their upper sides intermediate of said transverse strips, substantially as specified.

In testimony that we claim the foregoing as our own we have hereunto affixed our signatures in presence of two witnesses.

JOHN P. STROMBERG.
CARL E. STROMBERG.

Witnesses:

E. DUNN,
W. A. POWELL.