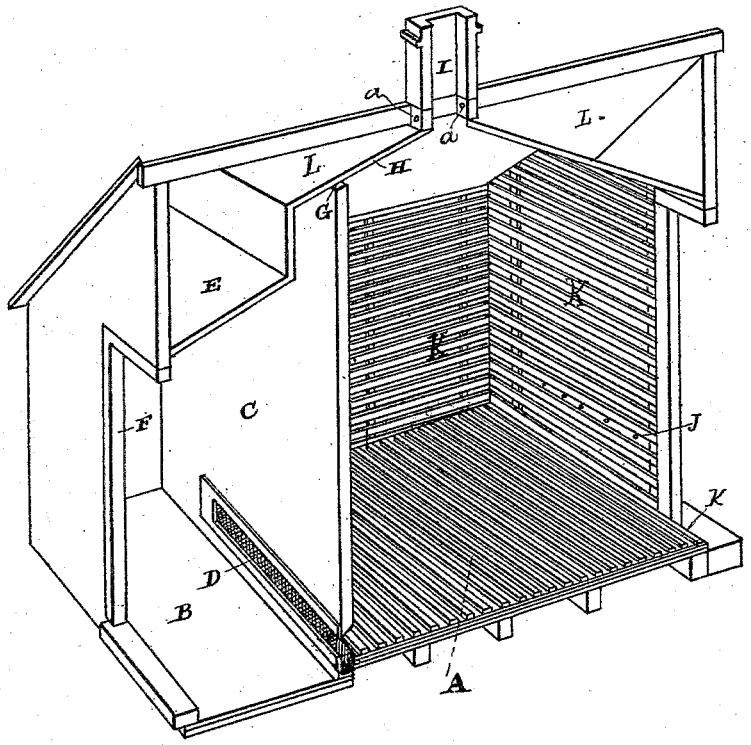
(No Model.)

J. ALEXANDER.

COMBINED ICE HOUSE AND COOLING CHAMBER.

No. 301,468. Patented July 8, 1884.



Witnesses.

Lewis Tomlinson

F. B. Fetherstonhaugh

Inventor:

John Alexander

by Donald. Ridout & Co

Atty

UNITED STATES PATENT OFFICE.

JOHN ALEXANDER, OF TORONTO, ONTARIO, CANADA.

COMBINED ICE-HOUSE AND COOLING-CHAMBER.

SPECIFICATION forming part of Letters Patent No. 301,468, dated July 8, 1884.

Application filed October 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN ALEXANDER, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Combined Ice-Houses and Cooling-Chambers, of which the following is a specification.

The object of the invention is to construct an ice-house in which the cooling property of the ice may be economically and effectually secured; and it consists, essentially, in an ice-house having a wall between the ice-chamber and the cooling-chamber, a cold-air flue extending from the bottom of the ice-chamber into the bottom of the cooling-chamber, with a hot-air flue extending from the ceiling of the cooling-chamber into the top of the ice-chamber, the ceiling of the cooling-chamber being so arranged that the air near its top, which is of course warmer than the air at its bottom, shall be gradually cooled before it re-enters the ice-chamber, substantially as hereinafter explained.

The accompanying drawing is a sectional perspective view of my improved ice-house.

A is the ice-chamber; B, the cooling-chamber, and C the wall separating the two. It will be noticed that the ice-chamber A has a rack, K, extending around it, so that passage-ways behind the ice shall always be maintained.

D is a cold-air flue extending from the bottom of the ice-chamber below its bottom rack into the bottom of the cooling-chamber B. When the cold air enters the cooling-chamber B, it is to a certain extent warmed by coming in contact with the contents of the cooling-chamber, and also from the fact that it is separated from the ice. As it grows warmer, it will naturally ascend, coming in contact with the slanting ceiling E. This ceiling, it will be noticed, slants from the top of the cooling-chamber's door F to a point near the wall C a little below the warm-air flue G. From this point the ceiling extends vertically, as indicated, till it reaches the higher ceiling, H, which extends into the cold-air chamber A, and also forms the top side of the warm-air flue G. The space between the vertical portion of the ceiling E and the wall C being less than the width of the chamber, the warm air passing up the slanting portion of the ceiling is in a measure checked before it reaches the flue G, which admits it into the ice-chamber A. By thus checking the warm air condensation is prevented from taking place on the ceiling E, as the air is gradually cooled before it comes in contact with the cold air on the ice-chamber's side of the wall C. It will be noticed that the ice-chamber A has a ventilating-flue, I. This flue provides effective ventilation for both chambers.

With the view of maintaining a circulation, and at the same time admitting fresh air into the ice-house, I make one or more draft-holes, J, in the side of the ice-house. The air from the outside will enter these holes, and after passing through the ice and cooling chambers will flow out again through the ventilator I.

It will be noticed that there is a double roof provided for the ice-chamber and cooling-chamber, and, further, that the inner roof or ceiling slants toward the ventilator I. This double roof leaves an air-space, L, between the outer and inner roofs. With the view of preventing this air-space becoming heated I form a series of holes, *a*, around the ventilator I, thereby forming communication between this ventilator and the air-space L.

What I claim as my invention is—

1. In an ice-house having a wall between the ice-chamber and the cooling-chamber, with a cold-air flue at the bottom of the wall and a warm-air flue at the top, the combination of a slanting ceiling from the top of the cooling-chamber's door to a point near the separating-wall a little below the warm-air flue, from which point the ceiling extends in a vertical direction till it meets an incline ceiling extending into the cold-air chamber, substantially as and for the purpose specified.

2. In an ice-house having a wall between the ice-chamber and the cooling-chamber, with a cold-air flue at the bottom of the wall and a warm-air flue at the top, the combination of a slanting ceiling from the top of the cooling-chamber's door to a point near the separating-wall a little below the warm-air flue, from which point the ceiling extends in a vertical direction till it meets an inclined ceiling extending into the air-chamber provided with a ventilating-flue, substantially as and for the purpose specified.

Toronto, October 1, 1883.

JOHN ALEXANDER.

In presence of—

CHARLES C. BALDWIN,

LEWIS TOMLINSON.