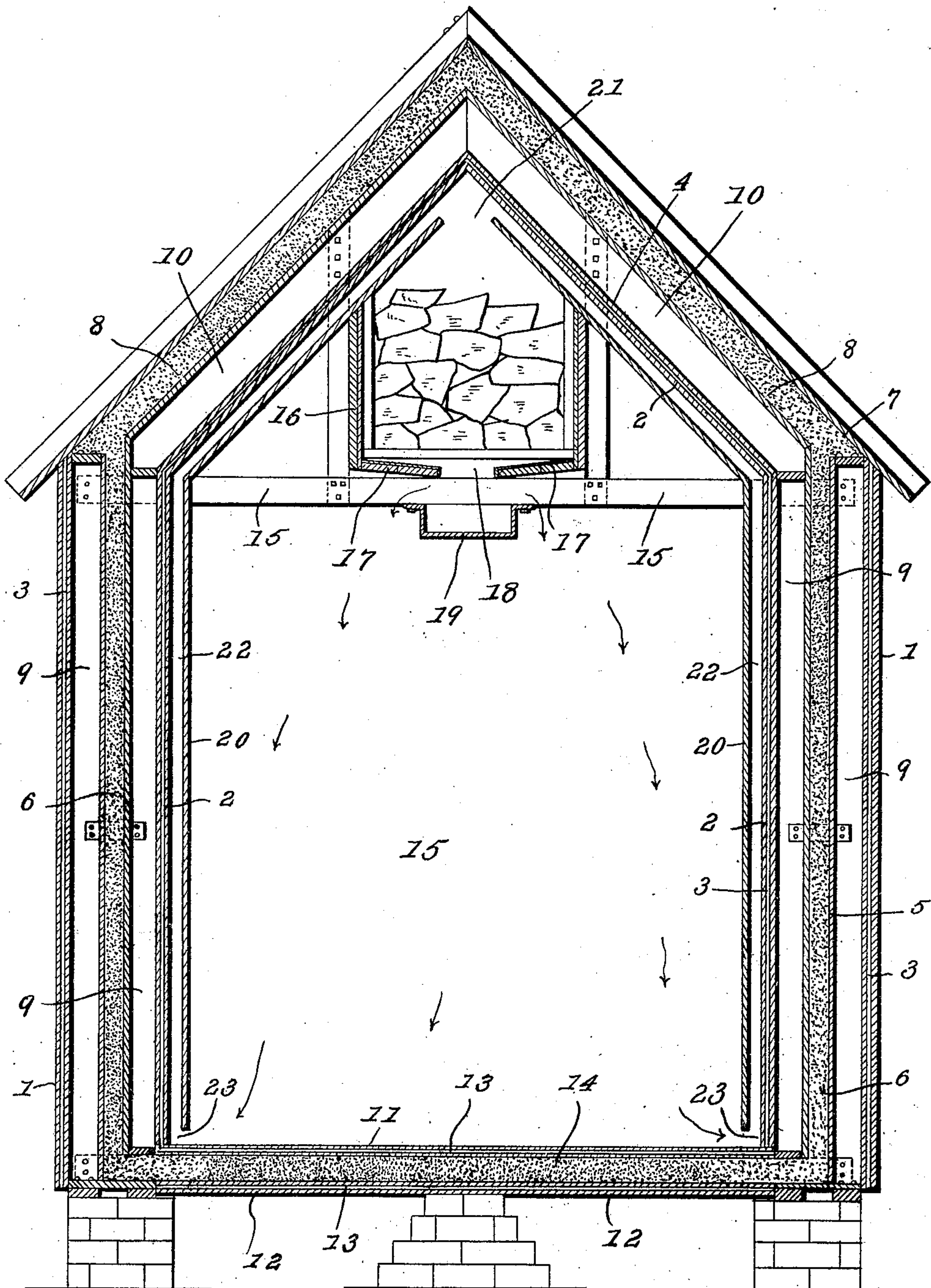


No. 819,245.

PATENTED MAY 1, 1906.

B. A. NORMAN.  
COLD STORAGE BUILDING.  
APPLICATION FILED AUG. 31, 1904.



Witnesses:

*E. J. Stewart*  
*R. M. Elliott*

*Bern't A. Norman*, Inventor,  
by *C. A. Snow & Co.*  
Attorneys,



# UNITED STATES PATENT OFFICE.

BERNT ANDREAS NORMAN, OF LOGAN, UTAH.

## COLD-STORAGE BUILDING.

No. 819,245.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed August 31, 1904. Serial No. 222,886.

*To all whom it may concern:*

Be it known that I, BERNT ANDREAS NORMAN, a citizen of the United States, residing at Logan, in the county of Cache and State of Utah, have invented a new and useful Cold-Storage Building, of which the following is a specification.

This invention relates generally to cold-storage buildings, and particularly to that class in which are employed an ice-chamber, a storage-chamber, and a system of cold and warm air flues or ducts.

The object of the invention is in a ready and practical manner to cause the cold air passing from the ice-chamber to be split or deflected, thereby to secure equal treatment of all the matter contained within the chamber.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a cold-storage building, as will be hereinafter fully described and claimed.

In the accompanying drawing, forming a part of this specification, and in which like characters of reference indicate corresponding parts, the figure is a view in vertical section through a cold-storage chamber constructed in accordance with the present invention.

Referring to the drawing, 1 designates the outer wall of the building, and 2 the inner wall. Each of these walls consists of two thicknesses of boards or planking interposed by insulating or building paper 3, which operates in a manner that will be well understood to lag these walls. The ceiling 4 constitutes a continuation of the inner wall 2 and is constructed in a similar manner. Arranged between the inner and outer walls is a division-wall 5, which extends from the floor of the structure to the eaves of the roof and consists of spaced planks interposed by suitable insulating material 6, such as damp sawdust, sand, or the like. The roof 7 constitutes a continuation of the division-wall and is constructed similar thereto—that is to say, it is composed of spaced planking interposed by insulating material 8. The spaces between the division-wall and the inner and outer walls 1 and 3 constitute air-spaces 9, which still further operate to effect insulating of the structure, similar spaces 10 between the roof and the ceiling serving to insulate this por-

tion of the structure. The floor of the building consists of double thicknesses of planking 11 and 12, interposed by insulating or building paper 13, the plankings being spaced by insulating material 14, forming a continuation of insulating material 6 in the division-wall and insulating material 8 in the roof, and by this arrangement it will be seen that the storage-chamber 15 is entirely inclosed by an insulated sheath or shell. It is to be understood that the end walls are constructed the same as the side walls, and as this will be readily understood detailed illustration thereof is deemed unnecessary.

Arranged near the roof of the structure are joists 15, upon which is supported an ice-chamber 16, the sides of which are imperforate and the bottom of which is formed by oppositely-inclined drip-boards 17, which rest upon the joists. The space 18 between the opposed ends of the drip-boards constitutes a cold-air escape, beneath which is arranged a drip-box 19, secured to the under side of the joists and extending the entire length of the structure, as does also the ice-chamber.

Extending lengthwise of the structure and spaced from the inner walls 3 and ceiling 4 is a supplemental wall 20, which extends from a point near the floor to a point near the apex of the ceiling, the opposed ends of the wall being spaced apart within the ice-chamber at 21 to permit passage of the warm return air to the ice-chamber, where it is again cooled and passes to the storage-chamber. The flues or passages 22, formed between the inner wall 3 and the supplemental wall 20, are of such size as to permit free and uninterrupted circulation of the air from the bottom of the storage-chamber to the ice-chamber, and so on.

In the operation of the structure the air that has passed through the material within the storage-chamber enters the intake-mouths 23 of the flues 22, passes up and into the ice-chamber near its apex, thence down through the ice, and upon contacting with the drip-pan is split, part passing around one side the pan and part around the other side, so that proper treatment of all the material within the chamber will be effected.

By making the sides of the ice-chamber imperforate the air will be caused to circulate through the entire body of ice before escaping through the space 18 between the



drip-boards, thereby effecting rapid and positive cooling of the contained air within the storage-chamber.

The structure of the present invention, while exceedingly simple, will be found of the highest efficiency and durability in use, and by reason of the manner in which the air is caused to impinge the ice the maximum refrigeration will be secured with the minimum expenditure of ice.

Having thus described the invention, what is claimed is—

A cold-storage building consisting of outer and inner lagged walls and an intermediate lagged division-wall forming air-spaces at opposite sides thereof, a lagged roof and flooring constituting continuations of the division-wall said roof being peaked, an inner lagged wall constituting a portion of the roof and forming an air-space thereabove; sup-

plemental walls within the building and spaced from the inner lagged walls of the sides and roof and terminating above the floor and adjacent the apex of the ceiling, said supplemental walls forming flues for conducting air from the floor of the building to the apex of the ceiling, an ice-chamber supported from the ceiling and having imperforate walls and an outlet in the bottom thereof; and a drip-box disposed below the outlet, the air-outlet between the upper ends of the supplemental walls being disposed above the center of the ice-receptacle.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

BERNT ANDREAS NORMAN.

Witnesses:

H. A. PEDERSEN,  
F. M. ACKLEY.