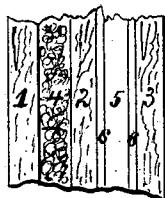
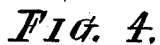


J. BAKER.
Fruit Preserving and Storing Building.
No. 236,753. Patented Jan. 18, 1881.



Michael G. Stark,
Frank Hirsch



Inventor :

Jonathan Baker,
by Michael J. Stark,
Attorney.

UNITED STATES PATENT OFFICE.

JONATHAN BAKER, OF BUFFALO, NEW YORK.

FRUIT PRESERVING AND STORING BUILDING.

SPECIFICATION forming part of Letters Patent No. 236,753, dated January 18, 1881.

Application filed May 17, 1880. (No model.)

To all whom it may concern:

Be it known that I, JONATHAN BAKER, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements on a Fruit Preserving and Storing Building; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has general reference to buildings for storing fruit; and it consists, essentially, in the novel construction and combination of parts, as hereinafter first fully set forth and described, and then pointed out in the claims.

In the drawings already referred to, which serve to illustrate my said invention more fully, Figure 1 is a transverse sectional elevation of my improved storehouse. Fig. 2 is a longitudinal sectional elevation of the same. Fig. 3 is a plan of the ducts; and Fig. 4 is a sectional elevation, showing the construction of the walls on a larger scale.

Like parts are designated by corresponding letters of reference in all the figures.

This storehouse consists, essentially, of a three-story building having two outer longitudinal walls, A A', and two inner longitudinal walls, B B', the latter dividing the building lengthwise into three separate compartments—viz., C C' the outer compartments, and D D' D'' the central portion, the latter being divided into three chambers by means of floors E E'. Transversely through this building is constructed a wall, G, extending from the longitudinal wall B to the wall B', thereby dividing the space bound by said walls into two sections, one consisting of the chambers D, D', and D'', already mentioned, and the other of three chambers, H, H', and H''.

Within the chambers C C', and a suitable distance from the floor J, are provided racks K, and in the walls B B' are provided passages L L', to establish communication between said chambers C C' and the chambers D D'. Centrally within these chambers and extending upward through the roof M are provided two series of ducts, N N', respectively, one series starting from the chamber D, and

the other from the chamber D'. These ducts consist each of a rectangular tube having in its interior cross-shaped partitions, so as to divide the interior into four separate and distinct channels, *n*, as shown in Fig. 3. Each of these ducts has a slide, O, in the upper chamber, D'', whereby the draft in said ducts may be regulated, as hereinafter fully set forth and described.

Upon the roof M is placed a ventilator or cupola of the usual construction.

Each of the side and end walls A, A', F, and F', and the longitudinal walls B B' is composed of three sections of preferably matched boards, as shown in Fig. 4, the outer section, 1, the middle section, 2, and the inner section, 3, the sections being placed a sufficient distance apart to provide for air-spaces 4 and 5 between them. Of these spaces the one designated 4 is, by preference, filled with some bad conductor of heat, such as charcoal, sawdust, sand, mineral wool, or other suitable material, while the space 5, being that toward the interior of the building, is left free so as to interpose a stratum of dead air between the outer and inner spaces of the building. The sides of the sections 2 and 3, those opposite each other, are covered with a layer of waterproof material, 6, such as roofing paper or felt, rosin-sized, or other board or fabric rendered water-proof in any well-known manner. These two layers effectually prevent any moisture reaching the chambers D, D', and D'' from the exterior of the building.

The object of a building, substantially as described, is to provide means for storing fruit, particularly apples, and to preserve them in a fresh state. To accomplish this result I first fill the side chambers, C C', entirely with ice, which will soon cool the entire interior of the building to within a few degrees of the freezing-point of water. This low temperature being attained, I fill the chambers D and D' with apples or other fruit to be stored and preserved, said fruit being packed in barrels in the usual manner and the latter stacked into as many tiers as the height of said chambers D D' will allow. In storing this fruit I take care that that particular kind thereof which requires slightly moist air for preservation and prevention of shrinkage is placed in the lower chamber, D, while such other

kinds as require perfectly dry air are placed into the upper chamber, D'.

It will now be observed that the ice in the chambers C C' cooling the air therein causes the latter to descend, and thereby to reach the lower chamber, D. This air in passing the ice absorbs or holds water particles in suspension, thus producing the humidity required for the perfect keeping of the fruit placed into this chamber. The upper chamber being so situated that the cold air cannot directly circulate within or through said chamber will be cooled by radiation only; and, therefore, the air in said chamber will be perfectly dry, and thus best suited to preserve the contents of said chamber.

The front and rear walls, F F', as well as the wall G, will be provided with suitable doors through which access is had to all the chambers. These doors will be kept closed, except in winter-time, when the external atmospheric temperature is as low as or lower than that in the chambers. In this case the doors of the ice-chambers, and sometimes, also, those in the preserving-chambers, may be left open, and thereby, to some degree, lessen the consumption of ice.

To prevent ingress of warm air to the preserving-chambers D D' the building is provided with the ante-chambers H H' H'', in which chambers the packing of the fruit, &c., is also done, so that when entry to the preserving-chambers is desired access is first had to the ante-chambers, and through them to the preserving-rooms. In this manner the external atmosphere is never directly admitted into the preserving-chambers, and thereby a uniformity of temperature in said chambers attained, which it would otherwise be impossible to maintain. The warmer air in said preserving-chambers, and other gases rising from the fruit ascend in the respective chambers and pass through the ducts N N' to the outer air. These ducts have the slides O, to

regulate the amount of draft in said ducts, said slides being located in the upper chamber, D'', otherwise used as a storeroom for empty barrels, &c., so as to enable the regulation of draft without entering the preserving-chambers.

The ducts N N' are composed of four narrow channels, *n*, which in their aggregate area are of just sufficient size to permit of a free discharge of foul and warm air. By thus making these ducts the outer atmosphere cannot force its way into the preserving-chambers in stormy weather, it being a well-known fact that the friction of the air in said narrow channels is sufficient to retard and arrest a downwardly-moving current. To further prevent entry of air in stormy weather, the ventilator P is placed over the exit-openings of said ducts. To facilitate the escape of warm air from the chambers D D' the lower ends of said ducts are flared, as shown in the drawings.

Having thus fully described my invention I claim—

1. The combination, with preserving-chambers D, D', and D'', of outlet-tubes N N', each consisting of a series of separate channels, *n*, and provided with a slide, O, whereby one or more of said channels may be covered or uncovered at will, to lessen or increase the draft.

2. The combination of side chamber, C, for the ice central preserving-chambers, D D' D'', and end ante-chambers, H H' H'', for packing, all of said chambers being inclosed within the walls and roof of the refrigerator-building and connected by suitable passages.

In testimony that I claim the foregoing as my invention, I have hereto set my hand in the presence of two subscribing witnesses.

JONATHAN BAKER.

Attest:

MICHAEL J. STARK,
FRANK HIRSCH.