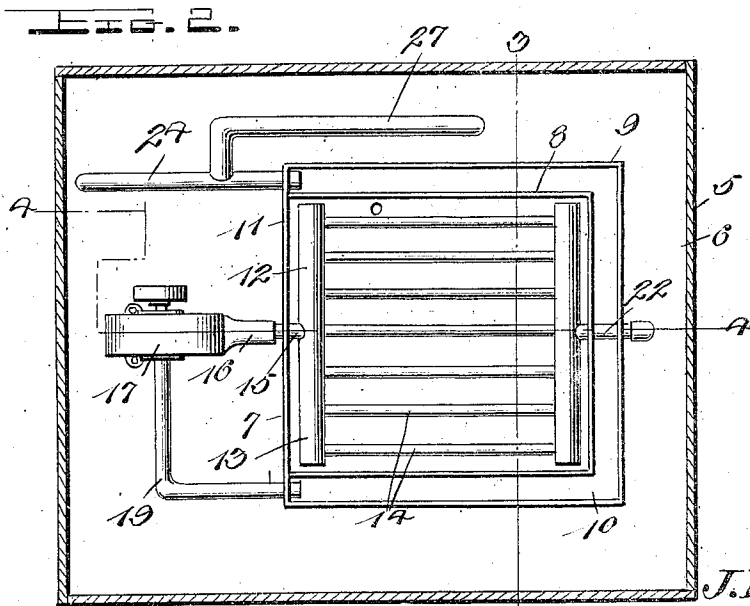
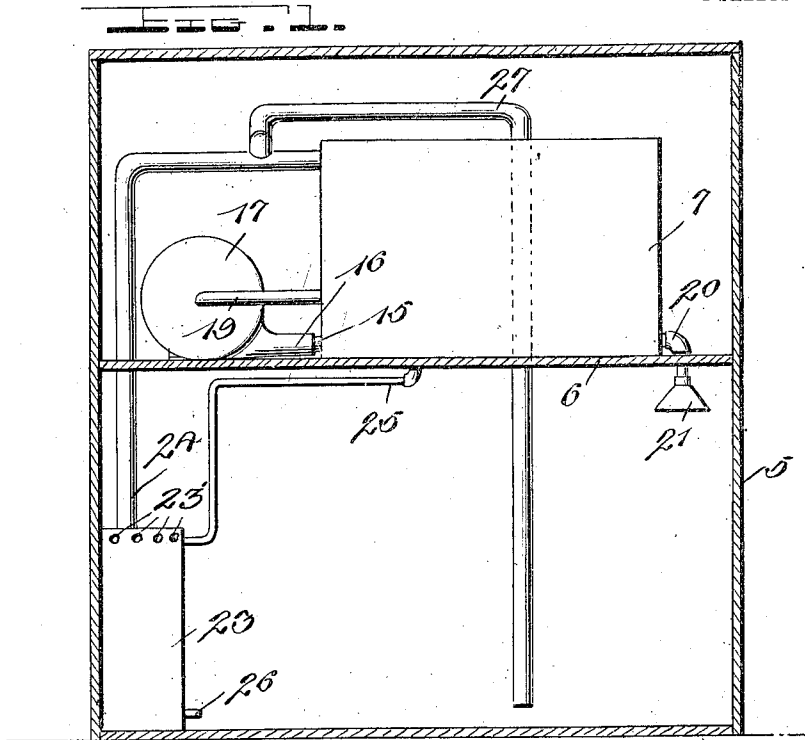


J. BLENZ & J. R. MORGENSTEIN.
REFRIGERATING APPARATUS.
APPLICATION FILED MAY 18, 1912.

1,046,727.

Patented Dec. 10, 1912.

2 SHEETS—SHEET 1.



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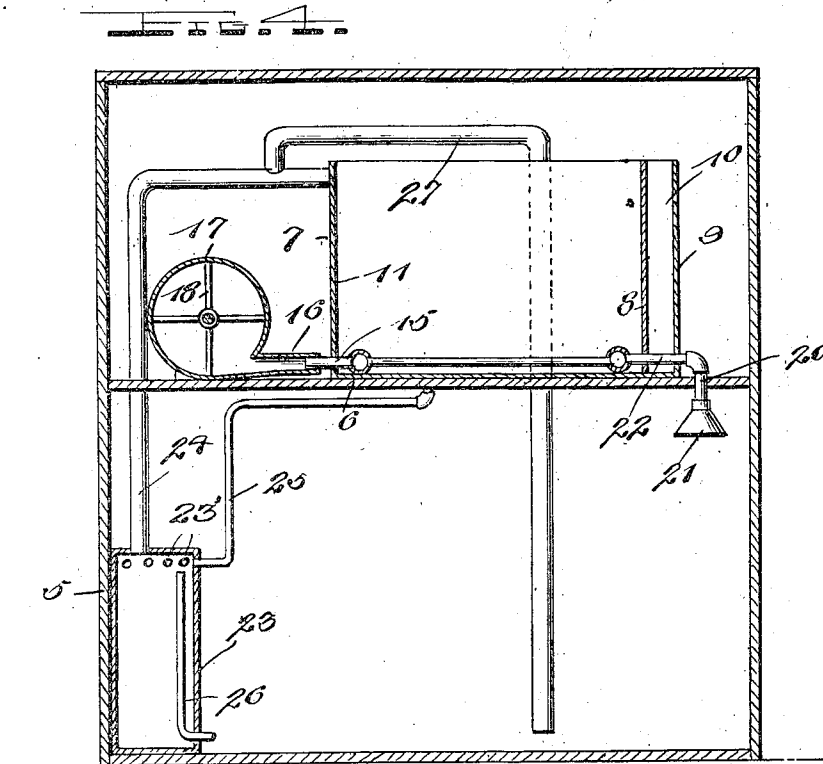
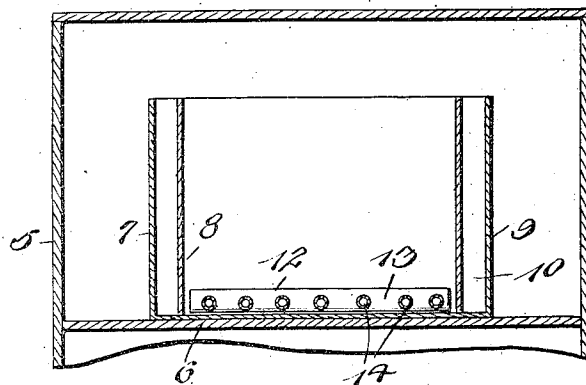


Fig. 2.



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UNITED STATES PATENT OFFICE.

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REFRIGERATING APPARATUS.

1,046,727.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed May 18, 1912. Serial No. 698,329.

To all whom it may concern:

Be it known that we, JACOB BLENZ and JACOB R. MORGENSTEIN, citizens of the United States, residing at Decatur, in the county of Macon and State of Illinois, have invented certain new and useful Improvements in Refrigerating Apparatus, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to improvements in refrigerating apparatus and has for its object to provide means whereby a constantly circulating current of cold air may be supplied to the provision chamber from a minimum quantity of ice or other refrigerant, thus materially reducing the expense incident to the operation of apparatus of this character.

Another object of the invention is to provide an ice box provided with an air receiving chamber, means arranged in the box beneath said ice to receive the air, and a fan having a pipe connecting the same with the air chamber, said fan directing the air into and through said receiving means in the ice box to a supply pipe connecting the air chamber with the provision chamber of the refrigerator.

30 Still another object of the invention resides in the provision of a brine containing tank and a pipe connecting the same to the air chamber of the ice box, and a pipe connected at one of its ends to the bottom of the provision chamber and at its other end to said first named pipe to return the air from the provision chamber to the cold air chamber of the ice box.

A still further object of the invention is to provide an apparatus for the above purpose which is comparatively simple in its construction, may be manufactured and installed at small cost and is highly efficient and reliable in practical use.

45 With the above and other objects in view as will become apparent as the description proceeds, the invention consists in certain constructions, combinations and arrangements of the parts that we shall hereinafter fully describe and claim.

50 For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which—

55 Figure 1 is an elevation, the walls of the refrigerator being shown in section; Fig. 2 is a top plan view; Fig. 3 is a section taken

on the line 3—3 of Fig. 2; and Fig. 4 is a longitudinal section taken on the line 4—4 of Fig. 2.

Corresponding and like parts are referred to in the following description and accompanying drawings by like reference characters.

Referring in detail to the drawings, 5 designates the body walls of the refrigerator, in which a horizontal floor or partition 6 is arranged to provide upper and lower compartments. The lower compartment of the refrigerator is furnished with the usual hocks, hangers and other accessories upon which meats and other provisions are arranged. In the upper chamber 5 an ice box 7 is arranged. This ice box is preferably of rectangular form and on three sides is provided with inner and outer walls 8 and 9 respectively, to provide an air receiving chamber 10 between them. These walls may be constructed in any desired manner, and provided with a heat insulating medium. The other wall 11 closes the air receiving chamber 10 at one of its ends.

Within the ice box 7 and upon the bottom thereof the air receiving member 12 is arranged. This member consists of spaced transverse pipes 13 and a plurality of longitudinal pipes 14 which connect the transverse pipes. Upon these pipes the supply of ice within the chest is arranged. One of the pipes 13 is provided with a central reduced laterally extending nipple 15, to which a pipe 16 extending from the fan case 17 is connected, the nipple 15 extending through the end walls 11 of the ice box adjacent to its lower end. A fan 18 is arranged in the casing 17 and the fan shaft is provided on one end with a band wheel to which a driving belt extending from the shaft of a motor is connected. A pipe 19 is also connected to the fan case at one of its ends, the other end of said pipe being extended through the end wall 11 of the ice box into the air chamber 10 thereof. Through the other end of the ice box a pipe 20 extends, said pipe extending through the partition wall 6 and being provided upon its other end with a nozzle 21. This pipe 20 is connected to a short nipple 22 extending centrally from the other of the transverse pipes 13 of the air receiving member 12. By means of this arrangement of parts it will be readily understood that the air is drawn into the fan case from the cham-

ber 10 through the pipe 19 and driven into the end pipe 13 of the member 12 and through the longitudinal pipes 14 into the other end pipe 13 from which it is exhausted through the pipe 20 into the provision chamber of the refrigerator.

The chamber 10 of the ice box is constantly supplied with air from a brine tank 23 which is arranged at any convenient point in the provision chamber and is connected to said chamber by means of the pipe 24, the walls of the tank 23 being provided with suitable air inlet openings, shown at 23'. A drain pipe 25 extending from the bottom of the ice box 7 carries the water from the melting ice to the upper end of the brine tank 23. This water percolating through the brine in the tank generates a vapor which rises through the pipe 24 and enters the chamber 10 of the ice chest. A pipe 26 is arranged in the tank 23 and extends to the surface of the brine therein to receive the overflow, the lower end of the pipe extending exteriorly of the tank to discharge the water and brine. To the pipe 26 adjacent its point of connection to the chamber of the ice box 7 a pipe 27 is connected. The other end of this pipe extends through the partition of the refrigerator and adjacent to the bottom of the provision chamber and conducts the comparatively warm air therefrom and delivers the same into the pipe 24 from which it flows into the chamber of the ice box. This air circulates around the walls of the ice box and is again directed into the member 12 beneath the ice in the manner above stated. It will thus be apparent that a constantly circulating current of cold air is maintained through the provision chamber of the refrigerator.

The expense incident to the consumption of ice is materially reduced by means of our improved apparatus and even when the ice supply has become entirely exhausted, the cold air rising from the brine tank and being driven by the fan through the ice box will still maintain the provision chamber at a low temperature.

From the foregoing it is believed that the construction and manner of operation of our improved refrigerating apparatus will be clearly understood.

The device is extremely efficient, and re-

liable in actual use and owing to the simplicity of its construction, the same may be readily installed in the ordinary refrigerator at comparatively small cost.

While we have above set forth the preferred construction and arrangement of the various parts employed, it will be obvious that the invention is susceptible of considerable modification without departing from the essential features or sacrificing any of the advantages thereof.

Having thus described the invention what is claimed is:

1. In a refrigerating apparatus, an ice chest having an air chamber, an air receiving grid arranged in said chest and provided with an inlet for the cold air at one of its ends, a discharge pipe connected to the other end of the grid to receive the air therefrom and discharge the same into the provision chamber of the refrigerator, a brine tank arranged in the provision chamber, an air conducting pipe connected to the brine tank and to the air chamber to supply air to the latter, and an air return pipe connected to said last referred-to pipe and extending into the provision chamber to a point adjacent the bottom thereof.

2. In a refrigerating apparatus, an ice chest provided with an air chamber, an air receiving grid arranged in said ice chest upon which the ice is supported, a fan connected to said grid, a pipe connecting the fan case to the air chamber of the ice chest, a brine tank, a drain pipe connected to said tank and to the ice chest, an air conducting pipe connected to the tank and to the air chamber of the chest, a discharge pipe connected to the grid to discharge the cold air therefrom into the provision chamber of the refrigerator, and a pipe connected to the provision chamber and to the pipe connection between the brine tank and the chamber of the ice chest to return the comparatively warm air from the provision chamber to the chest chamber.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

JACOB BLENZ.
JACOB R. MORGENSTEIN.

Witnesses:

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W. F. MOORE.