

No. 705,510.

Patented July 22, 1902.

F. R. BEAL.  
REFRIGERATOR.

(Application filed Jan. 11, 1901.)

(No Model.)

2 Sheets—Sheet 1.

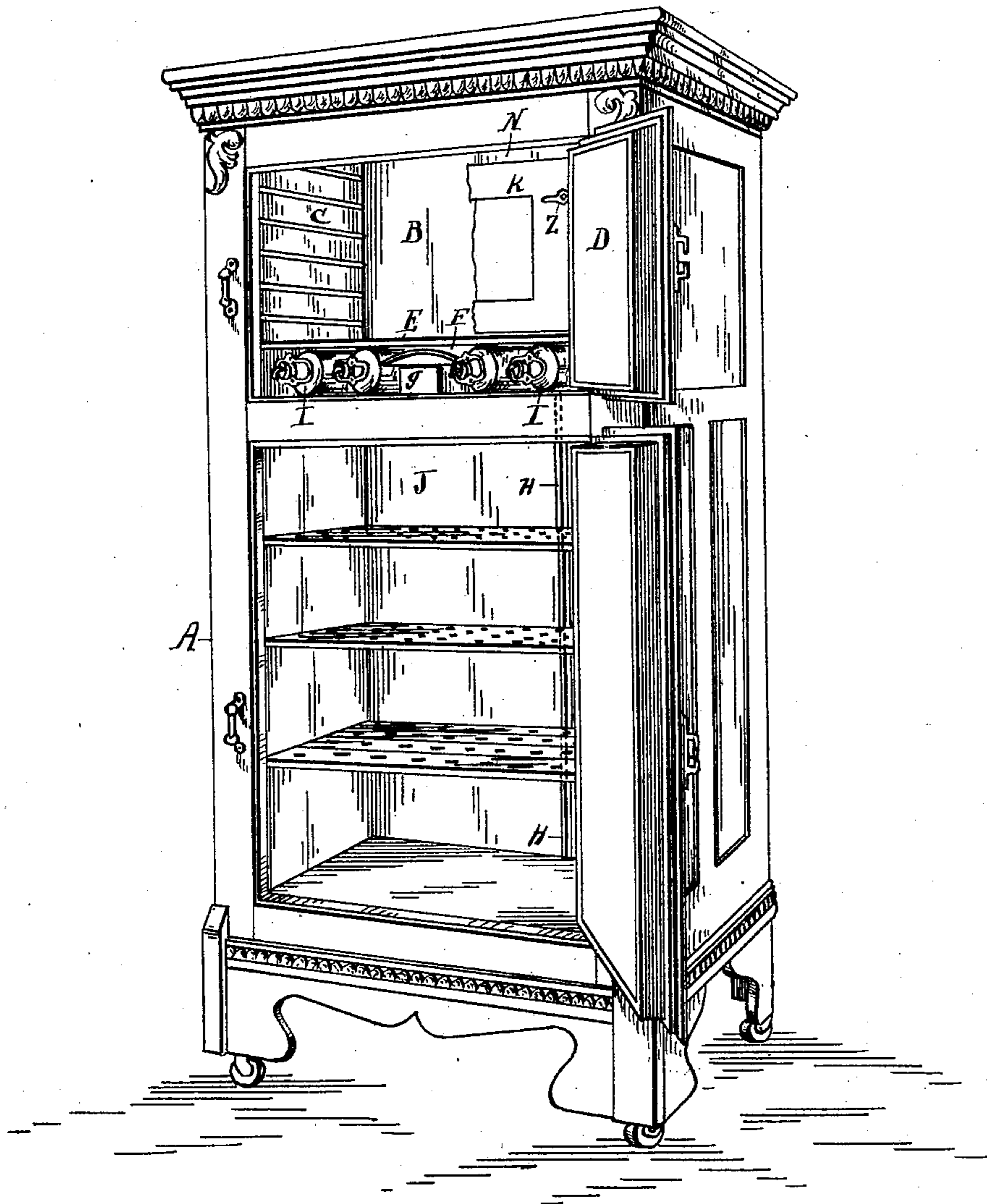


Fig. 1.

WITNESSES.

*O. B. Baenziger*  
*M. V. Key*

INVENTOR.

*Francis R. Beal*  
*By Maxwell S. Wright*

*His Attorney*

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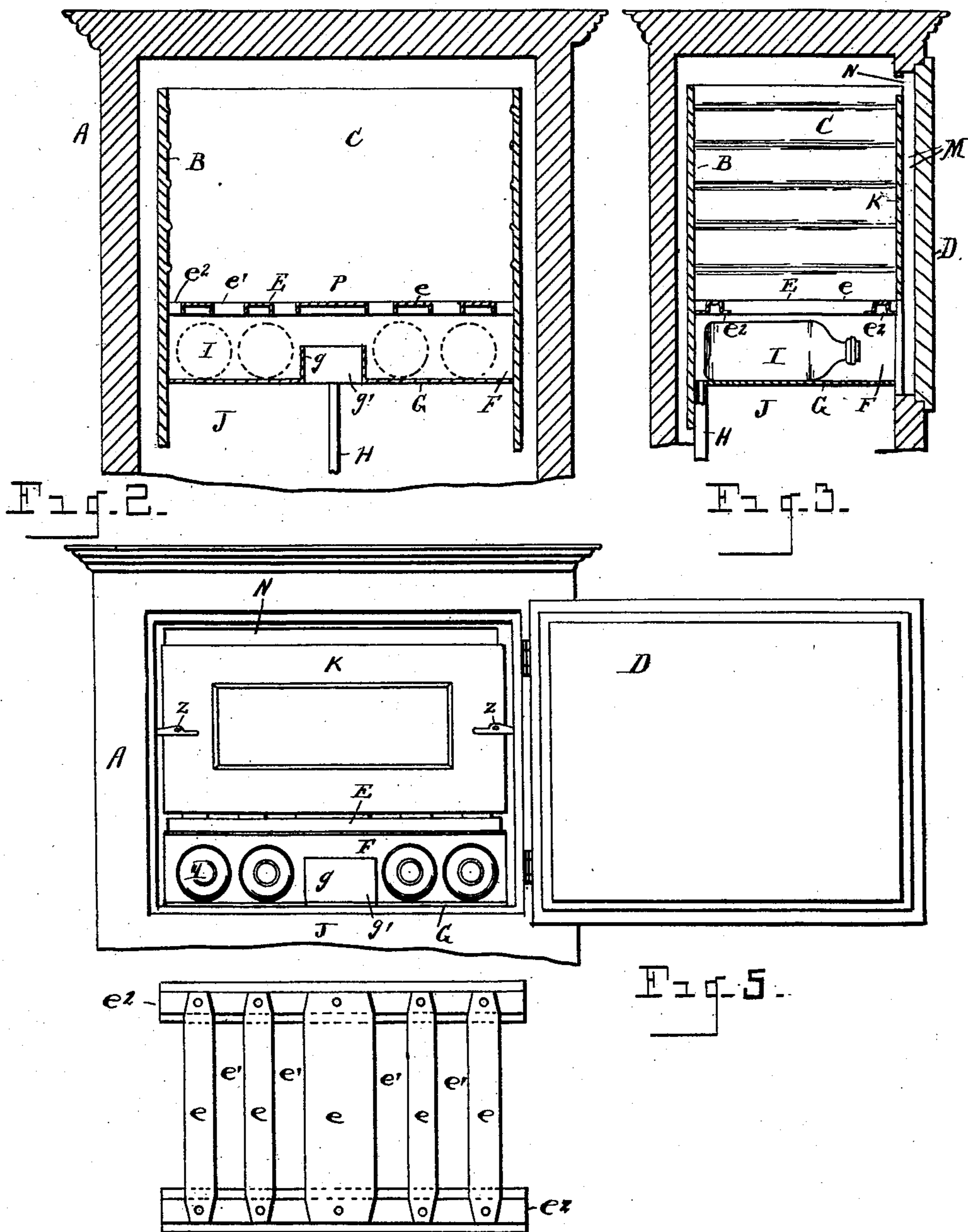
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2 Sheets—Sheet 2.



WITNESSES.

*O. B. Baumgarter,*  
*M. Hickey,*

Fig. 4.

INVENTOR.

*Francis R. Beal*  
*By Maxwell S. Wright*  
*his Attorney*

# UNITED STATES PATENT OFFICE.

FRANCIS R. BEAL, OF NORTHVILLE, MICHIGAN.

## REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 705,510, dated July 22, 1902.

Application filed January 11, 1901. Serial No. 42,833. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS R. BEAL, a citizen of the United States, residing at Northville, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Refrigerators; and I declare the following to be a full, clear, and exact description of the invention, such as 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.

This invention has for its object certain new and useful improvements in refrigerators; and it consists of the construction, combination, and arrangement of devices hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a view in perspective showing a part of the door K broken away. Fig. 2 is a vertical section. Fig. 3 is a vertical cross-section at right angles to the section shown in Fig. 2. Fig. 4 is a detail view in plan of the ice-rack. Fig. 5 is a view in front elevation showing the outer door to the refrigerator and cooling-compartments open.

More particularly my invention aims to provide in a refrigerator a cooling-compartment located beneath the ice-chamber, the top of the compartment being formed by an ice-rack so arranged that the drip may escape from the ice-chamber into said compartment, the bottom of said cooling-compartment containing a drip-pan connected with the waste-pipe, the cooling-compartment being of sufficient size to receive sealed receptacles containing water or other liquids.

My invention also contemplates an improved ice-rack, also an inner door in front of the ice-chamber to protect the ice-chamber from the air when the outer door is open.

My invention also contemplates the general structure, combination, and arrangement of devices hereinafter shown and described and claimed.

I carry out my invention as follows:

In the drawings, A represents the outer case of the refrigerator, and B an inner case. Within the inner case B is formed an ice-chamber C. D is a door at the upper portion

of the refrigerator. These parts may be of any desired construction.

E denotes my improved ice-rack, and F is a cooling-compartment located beneath the ice-chamber, the top of said compartment being formed by the ice-rack E and the bottom of said compartment by the drip-pan G, connected with the waste-pipe H. This cooling-compartment is of a size sufficient to receive sealed receptacles I, containing water or other liquids. The ice-rack E is made of channeled metal strips *e*, arranged to form alternate openings *e'* therebetween, the ends of the channeled metal strips being riveted or otherwise secured to transverse channeled metal supports *e''*. In the particular form shown the strips *e* run from the front of the ice-chamber to the rear thereof; but the strips *e* may run lengthwise of said chamber instead, if preferred. By making the strips *e* and supports *e''* of channeled metal thus firmness and strength are efficiently secured in a simple manner. With an ice-rack so constructed and so arranged between the ice-chamber C and the cooling-chamber F it will be apparent that the drip may escape through the ice-rack into the cooling-compartment and to the drip-pan G at the base of said compartment.

The drip-pan G is formed with a vertical upwardly-projecting flange (indicated at *g*) about a corresponding opening *g'* of a height sufficient to prevent the water from the ice-chamber running over into the provision-chamber J, beneath the cooling-chamber F.

In the upper section of the refrigerator is located an inner door K in front of the ice-chamber to protect the ice within the ice-chamber from the air when the outer door is open. This inner door may be held in place in any suitable manner, as by buttons Z.

By providing the refrigerator with a cooling-compartment F, as above set forth, underneath the ice-rack articles placed in said cooling-compartment may be cooled by close contact with the ice thereabove and by the drip from the melting ice passing through the openings of the ice-rack, the drip being utilized to facilitate the cooling of the articles in the cooling-compartment.

The inner door is spaced from the outer

door, as indicated in Fig. 3 at M, forming an air-chamber between said doors when the outer door is closed. To allow a free circulation of air between the outer and the inner doors and through the ice-chamber, the inner door is spaced at the top thereof from adjacent portions of the refrigerator, as indicated at N, to permit such air circulation, the circulation thus being through the ice-chamber, the cooling-compartment, and the provision-chamber, through the openings in the ice-rack, the opening in the bottom of the drip-pan at the bottom of the cooling-compartment, and between said inner and outer doors. It will be understood that instead of sealed packages in the cooling-compartment any articles which may be cooled without injury by the drip from the ice may be placed in said compartment. A central cooling-compartment between the ice-rack and the drip-pan is a very important feature in a refrigerator, while the provision of an ice-rack at the base of the ice-chamber provided with openings through which the drip from the ice-chamber may pass is also of great importance. The base of the central cooling-chamber is practically the base of the ice-chamber, inasmuch as this construction utilizes the drip from the ice-chamber for cooling articles in the cooling-compartment. The central strip of the ice-rack may be made sufficiently broad to cover the opening  $g'$  in the drip-pan to prevent the drip from passing through the opening in the drip-pan therebelow.

Special importance is placed in this invention upon the fact of my improved refrigerator being provided with the central cooling-compartment hereinbefore described.

What I claim as my invention is—

1. In a refrigerator the combination with an ice-chamber, of an upright front door adjacent to the ice-chamber, a separate inner upright door in front of said ice-chamber and controlling access to the ice-chamber, said inner door spaced from the outer door, said inner door also spaced at its upper edge from adjacent portions of the refrigerator to permit an air circulation.

2. In a refrigerator, the combination of an ice-chamber a cooling-chamber therebelow, an ice-rack at the base of the ice-chamber, an outer upright door in front of said chambers, a separate inner upright door in front of the ice-chamber between the ice-chamber and said outer door and spaced from the outer door to protect the ice in the ice-chamber from the air when the outer door is open and controlling access to the ice-chamber.

3. In a refrigerator, the combination with an ice-chamber, of an upright outer door adjacent to said chamber, an ice-rack at the base of the ice-chamber, a cooling-compartment underneath the ice-rack communicating through the ice-rack with the ice-chamber, a separate upright inner door above the cool-

ing-chamber to protect the ice-chamber and controlling access to the ice-chamber, and a drip-pan at the base of the cooling-compartment to receive the water from the ice, said drip-pan formed with an opening there-through and with an upright flange about said opening for the purpose described.

4. In a refrigerator, the combination with an ice-chamber, of an outer upright door adjacent to said chamber, a separate inner upright door to protect the ice-chamber and controlling access to the ice-chamber, a provision-chamber, and a cooling-compartment between the provision-chamber and the ice-chamber, said inner door spaced from said outer door and from the adjacent portions of the refrigerator at the upper edge of the inner door, the cooling-compartment communicating with the ice-chamber and with the provision-chamber, and whereby an air circulation is afforded through the ice-chamber, the cooling-compartment and the provision-chamber, and between the outer and inner doors.

5. In a refrigerator, the combination of an ice-chamber at the top of the refrigerator provided with an open ice-rack at the base thereof, a provision-chamber at the base of the refrigerator, a cooling-compartment between the provision-chamber and the ice-chamber communicating with both the ice-chamber above and with the provision-chamber beneath, and a drip-pan at the base of said cooling-chamber separating the provision-chamber from the cooling-compartment, said drip-pan provided with a waste-pipe, and with an opening through which the cooling-compartment communicates with the provision-chamber therebeneath, and means above the opening in the drip-pan to prevent water from the ice-chamber passing through said opening.

6. In a refrigerator, an ice-chamber at the top of the refrigerator, a provision-chamber at the base of the refrigerator, a cooling-compartment located between the ice-chamber and the provision-chamber provided with a waste-pipe, an ice-rack provided with openings therethrough at the base of the ice-chamber through which the ice-chamber communicates with the cooling-chamber whereby the drip from the ice-chamber may be utilized for cooling articles in the cooling-compartment, a drip-pan at the base of the cooling-chamber provided with an opening in the base thereof through which the cooling-compartment communicates with the provision-chamber, said drip-pan having an upwardly-projecting flange about said opening to prevent water from the cooling-compartment overflowing through said opening into the provision-chamber, said ice-rack constructed to prevent any drip passing therethrough into said opening in the drip-pan.

7. In a refrigerator, the combination of an ice-chamber a cooling-chamber therebelow, an ice-rack at the base of the ice-chamber, an

outer upright door in front of said chambers,  
a separate inner upright door in front of the  
ice-chamber, between the ice-chamber and  
said outer door and spaced from the outer  
5 door to protect the ice in the ice-chamber from  
the air when the outer door is open and con-  
trolling access to the ice-chamber.

In testimony whereof I sign this specifica-  
tion in the presence of two witnesses.

FRANCIS R. BEAL.

Witnesses:

MILDRED J. GREER,  
W. E. AMBLER.