

(No Model.)

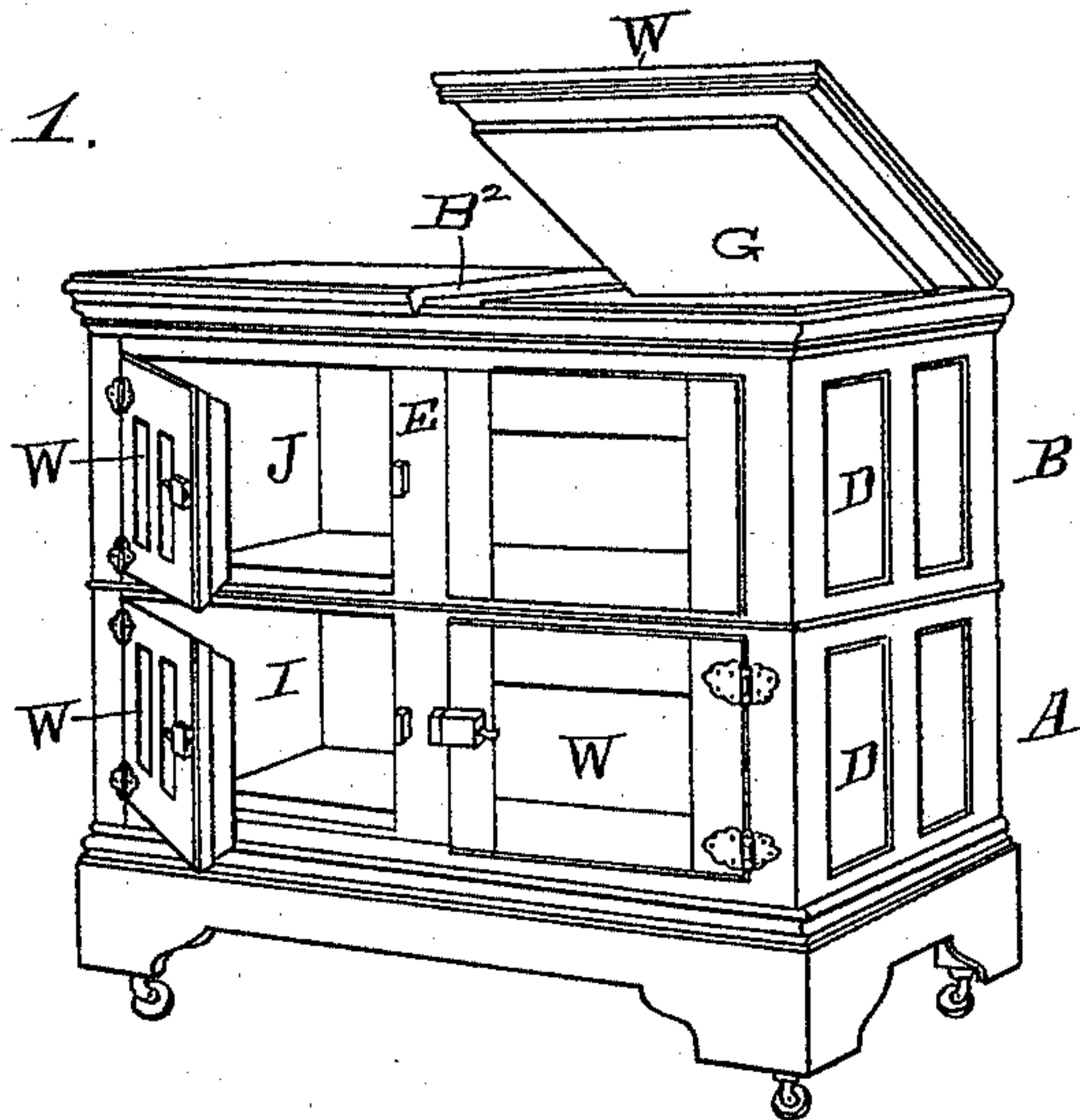
2 Sheets—Sheet 1.

E. H. GIESY.  
REFRIGERATOR.

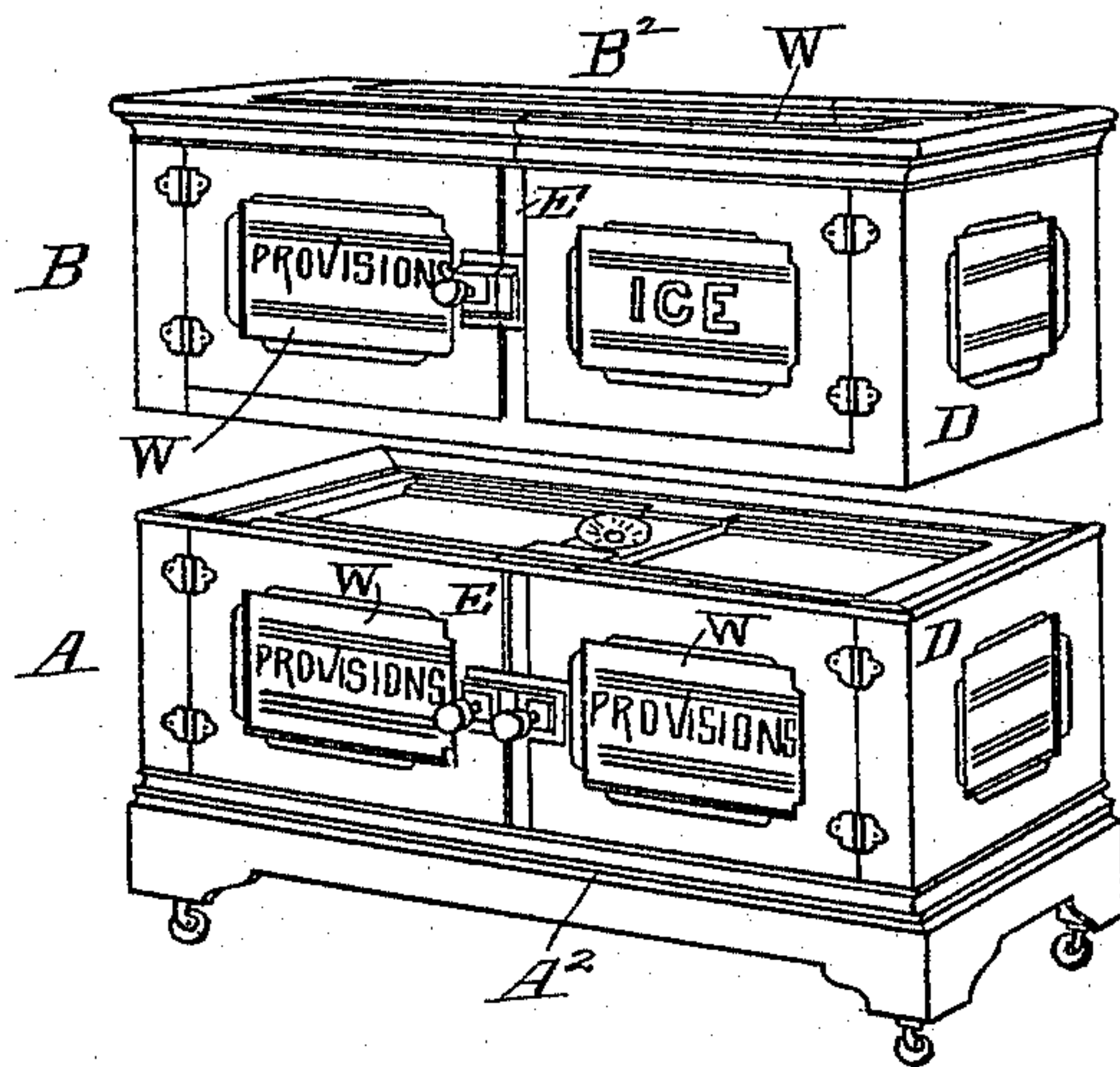
No. 570,426.

Patented Oct. 27, 1896.

*Fig. 1.*



*Fig. 6.*



Witnesses

*John C. Fitzpatrick*  
*T. Smith*

Inventor

*Edward H. Giesy*

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

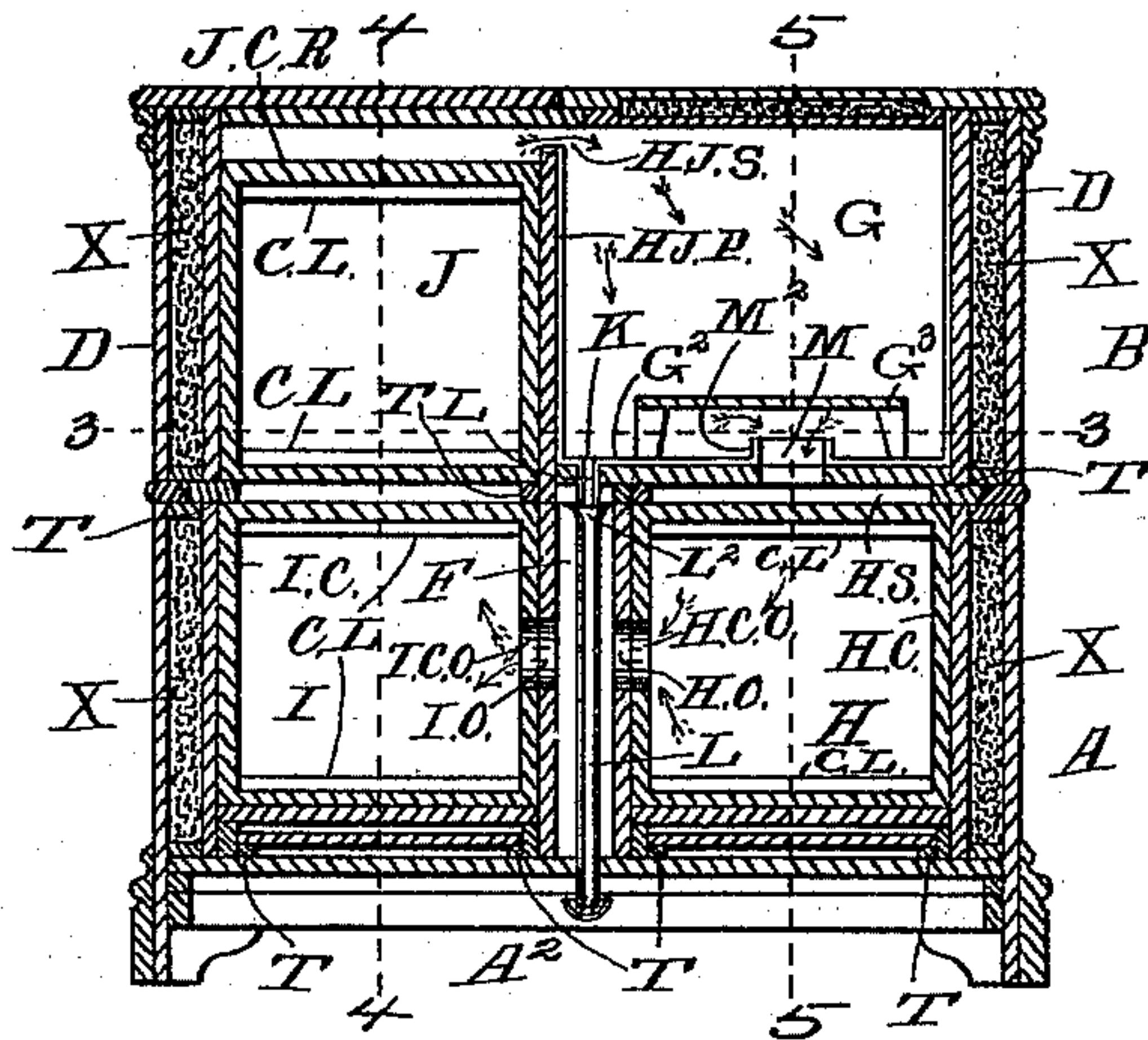


Fig. 3.

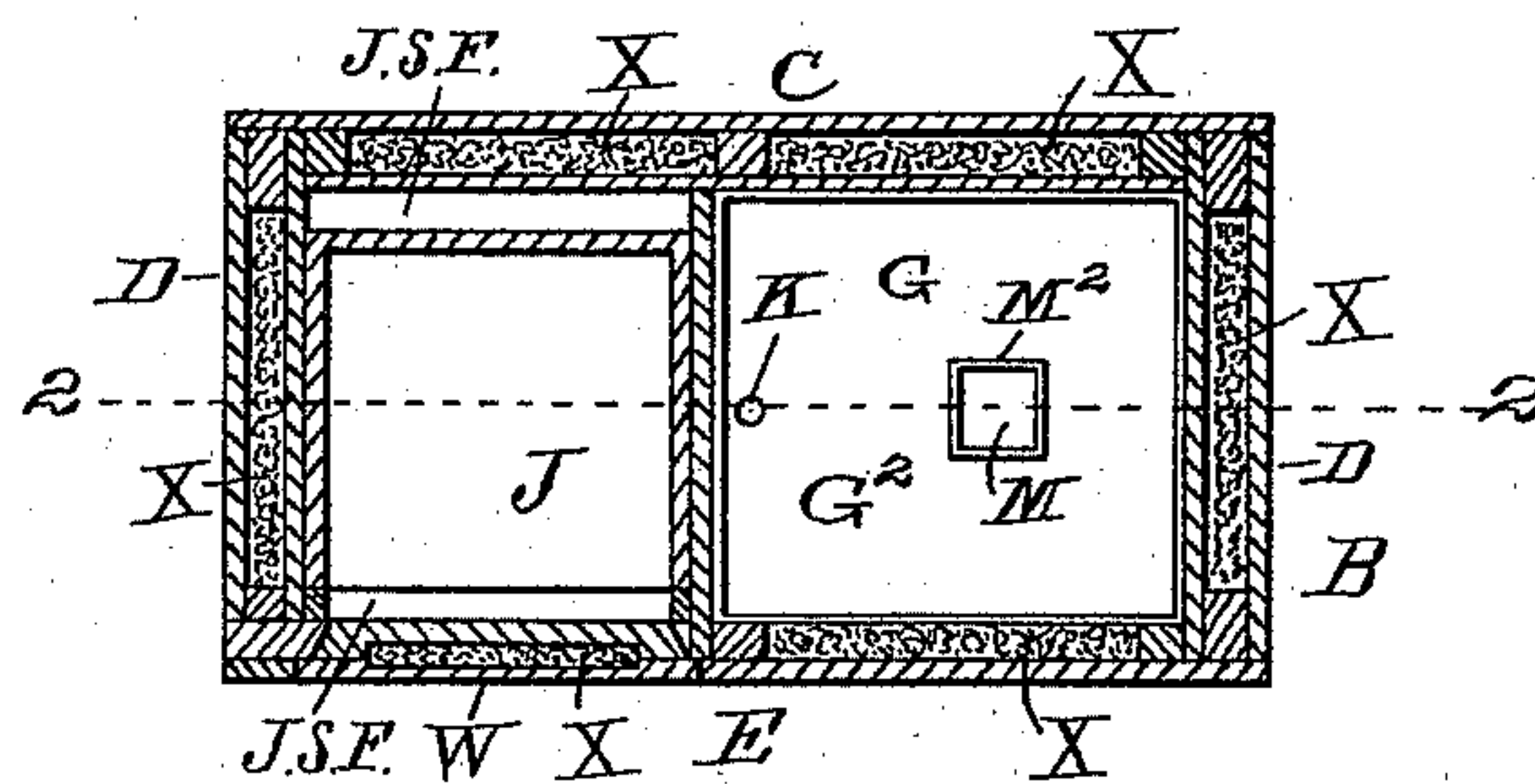


Fig. 4.

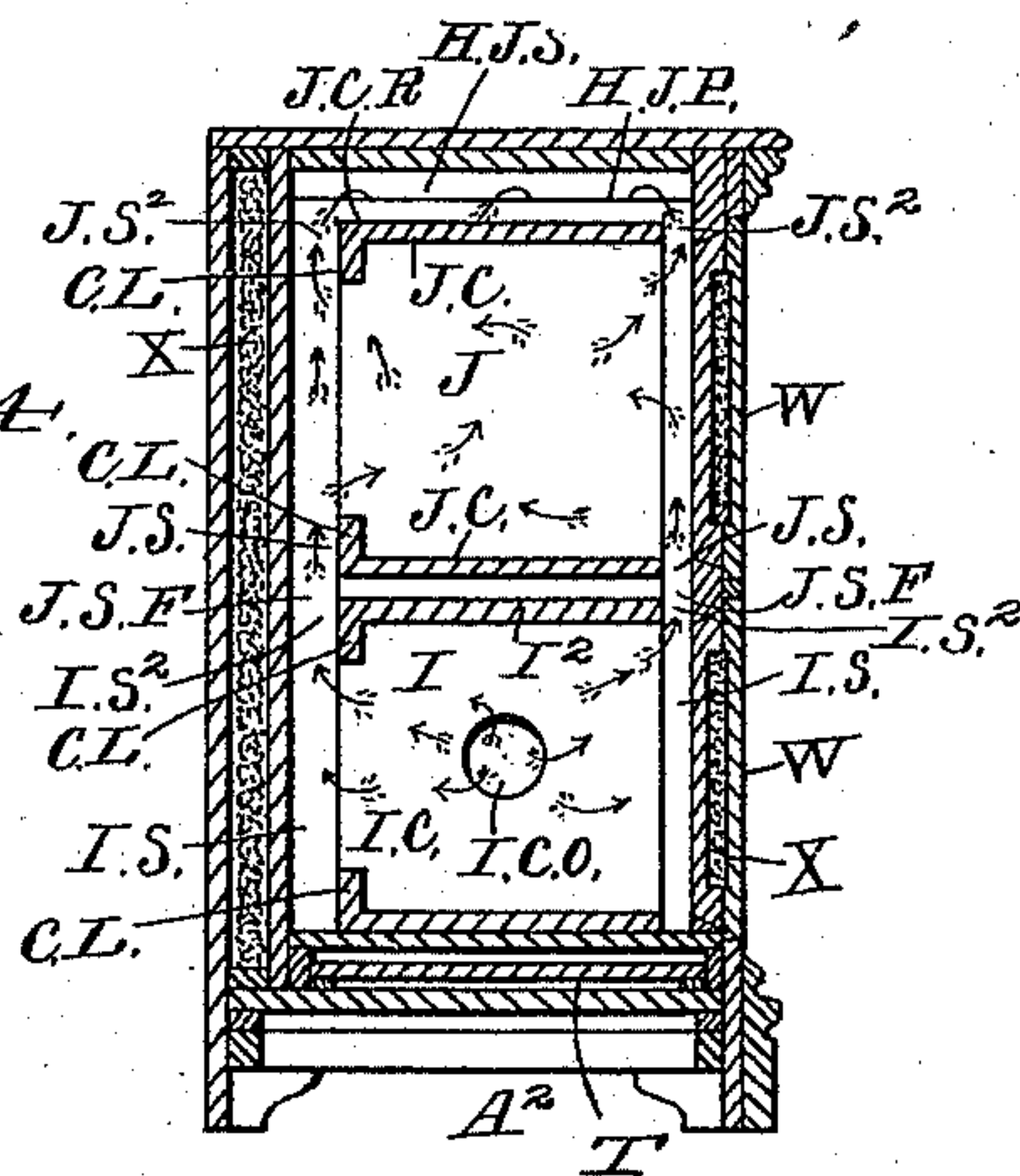
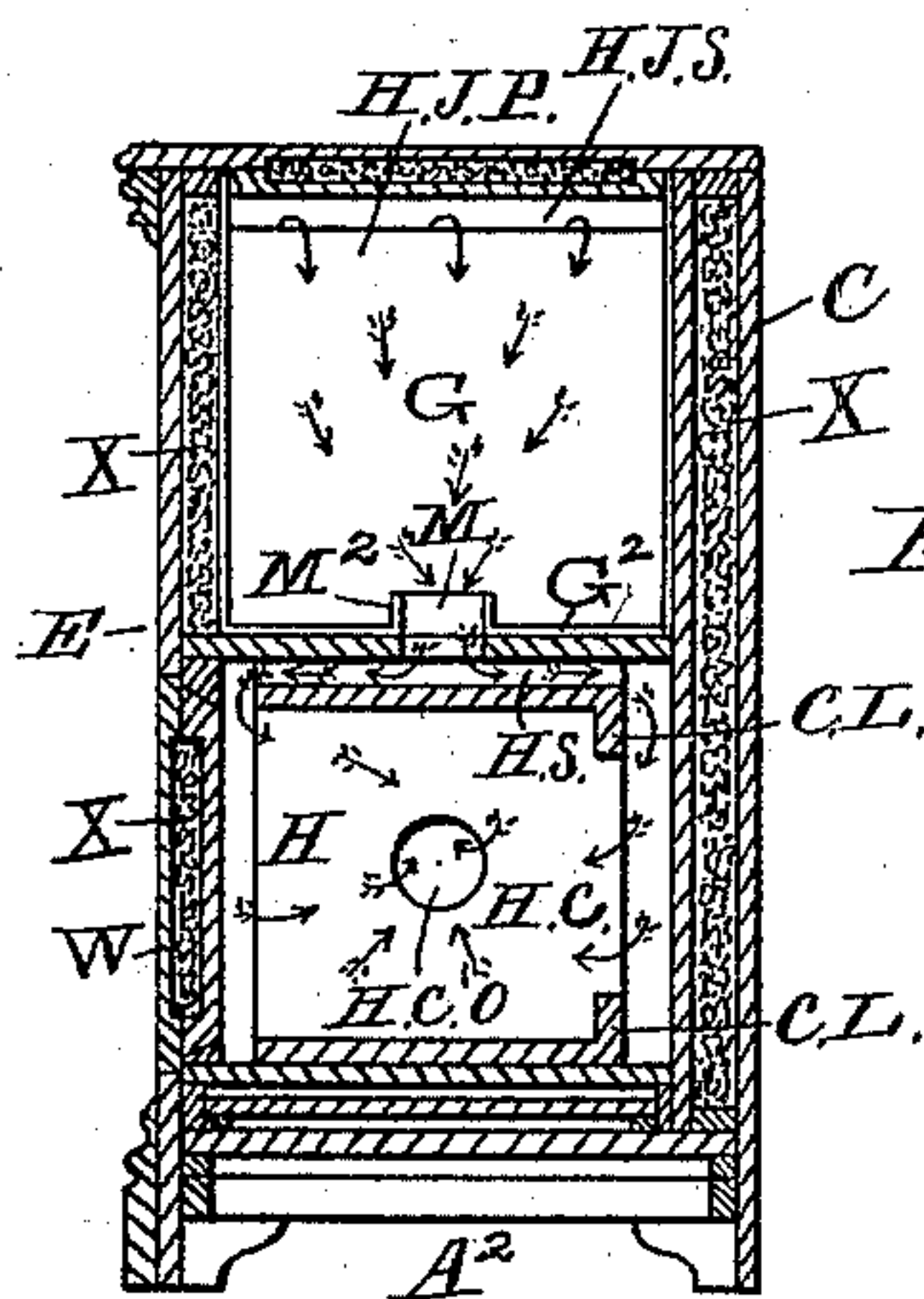


Fig. 5.



Witnesses

John C. Fitzpatrick  
N. Smith.

Inventor

Edward H. Giesy



# UNITED STATES PATENT OFFICE.

EDWARD H. GIESY, OF WYOMING, OHIO, ASSIGNOR TO ALFRED M. STEARNS,  
OF SAME PLACE, AND HENRY H. GIESY, OF LANCASTER, OHIO.

## REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 570,426, dated October 27, 1896.

Application filed February 26, 1896. Serial No. 580,863. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD H. GIESY, a citizen of the United States, and a resident of the village of Wyoming, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Refrigerators, of which the following is a specification.

The several features of my invention and the various advantages resulting from their use, conjointly or otherwise, will be apparent from the following description and claims.

In the accompanying drawings, making a part of this specification, and in which similar letters indicate corresponding parts, Figure 1, Sheet 1, is a view in perspective of the front and one end of a refrigerator embodying my invention, the doors of the two left-hand provision-compartments and the door of the ice-chest being open. Fig. 2, Sheet 2, is a vertical central section from end to end, taken in the plane of the dotted line 2 2 of Fig. 3. Fig. 3, Sheet 2, is a horizontal section taken in the plane of the dotted line 3 3 of Fig. 2. Fig. 4, Sheet 2, is a vertical section from front to rear, taken in the plane of the dotted line 4 4 of Fig. 2, and looking at that face of the section which faces toward the left hand of Fig. 2. Fig. 5, Sheet 2, is a vertical section from front to rear, taken in the plane of the dotted line 5 5 of Fig. 2, and looking at that face of the section which faces toward the right hand of Fig. 2. Fig. 6, Sheet 1, is a view in perspective of the refrigerator, showing the upper and lower divisions separated.

The several features of my invention are applicable to a refrigerator in which the entire frame is integral, and also to one made in sections.

In the drawings, Figs. 1, 2, and 6, I have shown the refrigerator as made in sections, premising that a description of the principle of construction of my invention and the operation thereof as applied to a sectional refrigerator will be understood when applied to a refrigerator whose frame is entire, as indicated in Figs. 4 and 5. There are four compartments, two in the upper and two in the lower half or section. Of these compartments one, G, is for the reception and retention of

the ice and the other three, respectively indicated by the letters H, I, and J, are provision-chambers to receive and hold the articles of food to be kept good, fresh, and sweet. Each compartment is provided with a door W. That of the ice-compartment is preferably at the top of the chamber, as shown, but it may be at the front thereof. The doors of the provision-compartments are at the front of their respective compartments, and are duly hinged and provided with suitable latches for catching the door when shut and holding it tightly to place until unlatched.

The inclosing shell of the refrigerator is duly packed with a substance which is a non-conductor of heat. In the drawings I have shown the sides or ends and the back and the front of the refrigerator, including the doors, preferably (as is customary) packed with a lining or packing X, which does not conduct heat, and for this reason I am accustomed to employ mineral wool, as one of the best, if not the best, of packings.

A indicates the lower or basal section of the refrigerator, and B the upper one. Each section is provided with the usual back C and ends D D and front E, and the upper section B has the top B<sup>2</sup> and the lower section A has the bottom A<sup>2</sup>.

The ice-compartment G is located substantially as set forth. It is zinclined and is provided with a suitable rack or shelf G<sup>3</sup>, preferably made of indurated fiber. On this rack the ice rests.

In the bottom or floor G<sup>2</sup> of the ice-compartment are two openings. One, K, conducts all water from the chamber to the drip-pipe L, and the latter conducts the water down and away from the refrigerator. A vessel is usually placed beneath this drip-pipe L and receives the water therefrom. The preferred location of this drip-pipe L is between the walls of the two lower compartments H and I in a small compartment F formed between said walls and the front and rear of the refrigerator.

To enable the sections A and B to be readily separated and without injuring the drip-pipe, I divide this pipe and furnish the upper end of the lower part with an enlarged or funnel-shaped aperture L<sup>2</sup>, or equivalent device, into



which the lower end of the upper part of the pipe enters or registers with when the sections A and B of the refrigerator are together, substantially as shown.

5 An opening M for the passage of cold air from ice-compartment G downward toward compartment H is present in the bottom of said compartment G and is provided with a surrounding guard-wall M<sup>2</sup>, whereby the  
10 water collecting on the floor G<sup>2</sup> is prevented from getting to the passage M and running down into the chamber H below.

Each of the provision-chambers H, I, and J is provided with its own lining, consisting of a  
15 stoneware crock open at both ends—viz., open toward the front and the rear of the refrigerator. Each crock has preferably a ledge C L at the rear upper end and at the rear lower end portion. These crocks are of stoneware,  
20 vitrified and glazed, resisting the action of the acids or alkalies of the provisions placed in the compartments, and are at all times readily washed and cleaned. These crocks are usually upheld beneath by cleats T crossing the  
25 bottom of the crock at front and rear, substantially as shown.

The cold air from the ice-compartment G is compelled to pass down through the opening M and between the floor G<sup>2</sup> of the ice-compartment and the upper surface of the roof or top  
30 of the crock H C of compartment H, and to pass down around the end or ends of the crock and into the room or space within the crock H C. To enable and compel the current of  
35 air to take this direction, I provide a space H S between the end of the upper part of the crock and the adjacent end of the compartment H. In case the air is to pass only at the front end of the crock, the space H S is there;  
40 if only at the rear end of the crock, the space H S is there; and there is such a space at both ends of the crock when the air is to pass down at both ends.

A novel and convenient mode of shutting  
45 the passage at either end of the crock H C is as follows: A cleat is put close to the said end of the crock and in the space between the top of the crock and the bottom of the ice-compartment, thus there shutting that passage-  
50 way from the space between the bottom of the ice-compartment and the top of the crock into the adjacent down passage H S at the end of the crock.

In the preferred construction the air passes  
55 down at both front and rear ends of the crock. When the air has entered the room inclosed by crock H C, it cools this compartment and the articles therein, and then passes to compartment I. This it does by passing through  
60 an opening H C O in the side of crock H C, as shown, thence through an opening H O on the wall of the compartment H. After passing through this opening, the air crosses the aperture or chamber F, in which the drip-  
65 pipe L is located, and thence passes through opening I O of compartment I, and thence through the opening I C O in the adjacent

side of crock I C of compartment I, and thence into compartment I. Therein this air cools  
70 the articles of food in this compartment and then passes up past the front and rear ends of the crock I C through the openings I S, which I provide between the walls of the refrigerator and the front and rear ends of the  
75 top of the crock I C, and through openings I S<sup>2</sup> in the roof I<sup>2</sup> of chamber I, and thence into chamber J through openings J S F in the lower portion of that chamber, thus passing the ends of the bottom of the crock J C  
80 of chamber J—viz., through the openings J S between the crock J C and the walls of the refrigerator—and thence the air enters into compartment J and circulates through it and then passes out and up through the openings  
85 J S<sup>2</sup> between the ends of the crock J C and the walls of the refrigerator, and from there passes up over and upon the roof or top J C R of the crock J and assists in cooling said roof, and thence passes over the vertical partition  
90 H J P and beneath the top of the refrigerator through opening H J S into the compartment G. Here the air is cooled and again traverses the refrigerator in the manner heretofore described.

Special attention is called to the fact that  
95 the cold air passing from the ice-chamber G comes immediately into direct contact with the top crock H, and the latter, being a good conductor of heat, at once becomes chilled through contact with the cold air. This crock  
100 thus has the advantage of being cooled at outside as well as having its interior cooled by the cold air subsequently entering the said interior.

In case end cleats are substituted for the  
105 inner side walls to hold the crocks laterally in place, the holes H O and I O will be omitted, being merged in the space F.

The opening M may be located over the end space at front or rear of crock, as case may  
110 be; but in such event the advantages of the first contact of the cold air of the ice-compartment with the top of the crock H C will be lost.

While I employ the word "stoneware" in this  
115 description, I desire it to be understood that any vitrified material or material covered with a vitrified glaze, or glaze formed on the article by heat, is the equivalent of the stoneware, and is intended to be covered by that  
120 term in the specification and claims.

There is a great advantage in the passages present, both in front of and behind compartment J, for the reason that they permit the  
125 air to enter the crock and pass through it to the rear, and vice versa, and also pass directly up through both front and rear spaces, thus giving or securing an unretarded circulation of the air, resulting in a low temperature because of the freer circulation and the more  
130 frequent passing of the air over the ice.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. In a refrigerator, the combination of the



four compartments, two below and two above, and of which latter one is an ice-compartment, and the crocks, open at each end (otherwise solid) and respectively located in each provision-compartment, the ice-compartment having the air-outlet in its bottom and a space being present between the ice-compartment and the roof of the crock of the compartment below, and space being present at one end of the last-named crock, communicating with the space above the crock, substantially as and for the purposes specified.

2. In a refrigerator, the combination of the upper ice-compartment, and a compartment below containing a crock open-ended, a space over and in contact with the top of the crock, a passage from the ice-chamber into said space, and a passage from the said space around an end of the crock into the interior thereof, substantially as and for the purposes specified.

3. In a refrigerator, the combination of the upper ice-compartment, and a lower provision-compartment, containing an open-ended crock, the bottom of the ice-compartment, and the top of the crock forming respectively the top and bottom portions of said space, and the space H S from the same at and around the end of the crock into the interior thereof, substantially as and for the purposes specified.

4. In a refrigerator, the combination of the upper ice-compartment, and a lower provision-compartment, containing an open-ended crock, the bottom of the ice-compartment, and the top of the crock forming respectively the top and bottom portions of said space, and the space H S from the same at and around the end of the crock into the interior thereof, and the left-hand lower compartment I, and upper compartment J, and the open-ended crocks therein and the passage-spaces at front and rear of the said crocks I C and J C, and the adjacent openings in the sides of the crocks H C and I C, and means for enabling the air after circulating through the several crocks to return to the ice-compartment, substantially as and for the purposes specified.

5. In a refrigerator, the combination of the upper ice-compartment, and a lower provision-compartment, containing an open-ended crock, the bottom of the ice-compartment and the top of the crock forming respectively the top and bottom portions of said space, and the space H S from the same at and around the end of the crock into the interior thereof, and

the left-hand lower compartment I, and upper compartment J, and the open-ended crocks therein, and the passage-spaces at front and rear of the said crocks I C and J C, and the adjacent openings in the sides of the crocks H C and I C, and space above the crock J C, and the partition H J P, and opening H J S thereover, from the latter space to the ice-chamber, substantially as and for the purposes specified.

6. In a refrigerator, the combination of the four compartments G, H, I and J, arranged as described, the compartments H, I and J having open-ended crocks therein, the ice-compartment G having the bottom opening M and the space H S between the ice-compartment and the crock H C, and the passages in front and rear of said crock H C, communicating with said space H S, and with the interior of crock H C, openings in adjacent sides of crocks H C and I C communicating with each other, and the passages in front and rear of the crocks I C and J C of compartments I and J communicating with space above crock J C, and the latter space communicating with the ice-chamber, substantially as and for the purposes specified.

7. In a refrigerator, the combination of the four compartments G, H, I and J, arranged as described, each of the compartments H, I and J having open-ended crocks, space at end of crock H C, and the passage M of the ice-chamber communicating with said space, the crocks H C and I C having passages through their adjacent sides, and passages in front and rear of crocks H C and I C, and space above crock J, communicating with the ice-chamber, substantially as and for the purposes specified.

8. In a four-compartment refrigerator, the ice-chamber, and a compartment H below, and two left-hand compartments I and J, the compartments H and I receiving air in turn from the ice-chamber, and the compartment J having passages in front and rear of it receiving air from compartment I, and in turn communicating with an overhead space over compartment J, and communicating with the ice-chamber, substantially as and for the purposes specified.

EDWARD H. GIESY.

Attest:

JOHN E. FITZPATRICK,  
K. SMITH.