

(No Model.)

2 Sheets—Sheet 1.

J. A. DAVIS.
REFRIGERATOR.

No. 322,043.

Patented July 14, 1885.

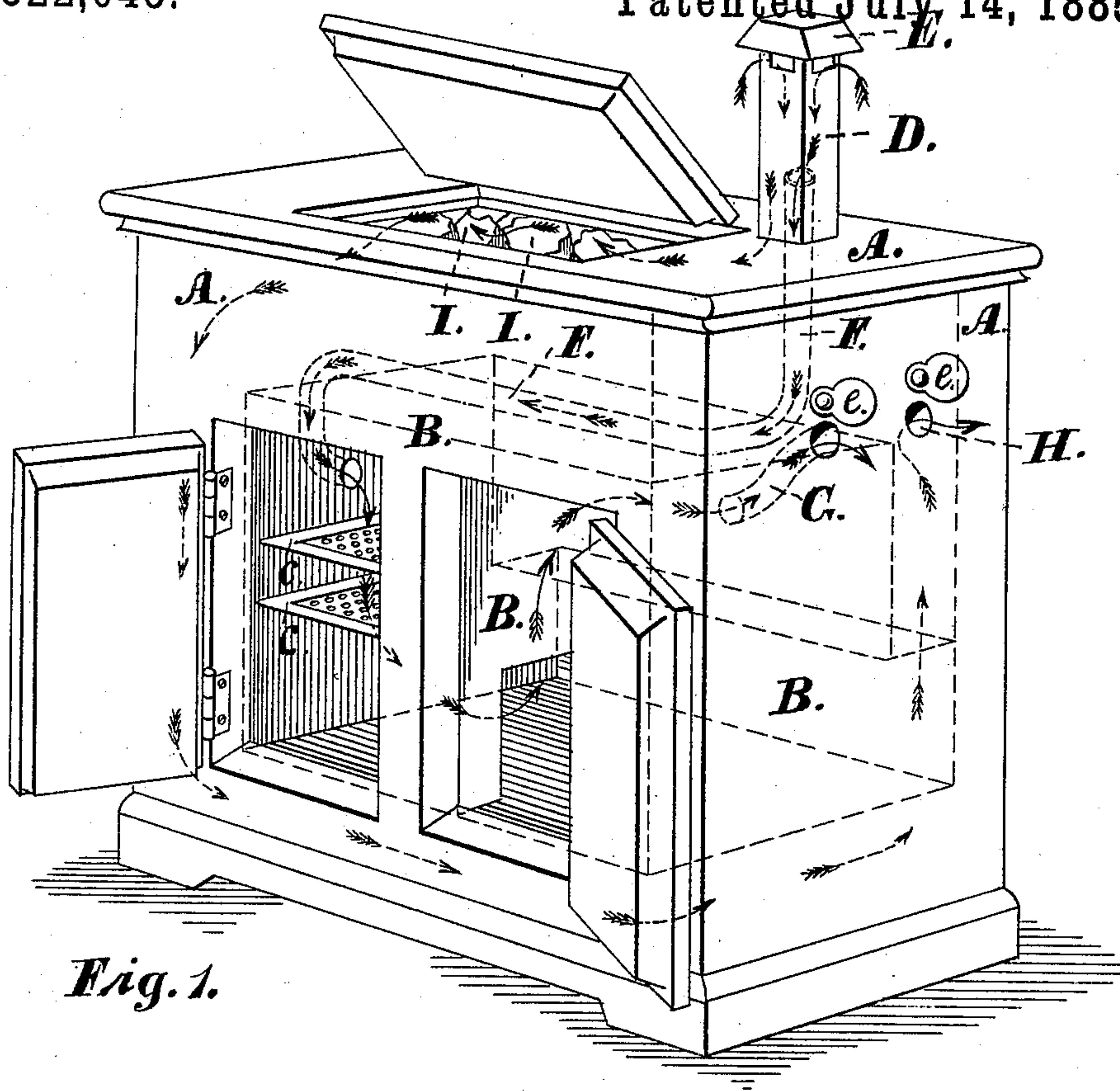


Fig. 1.

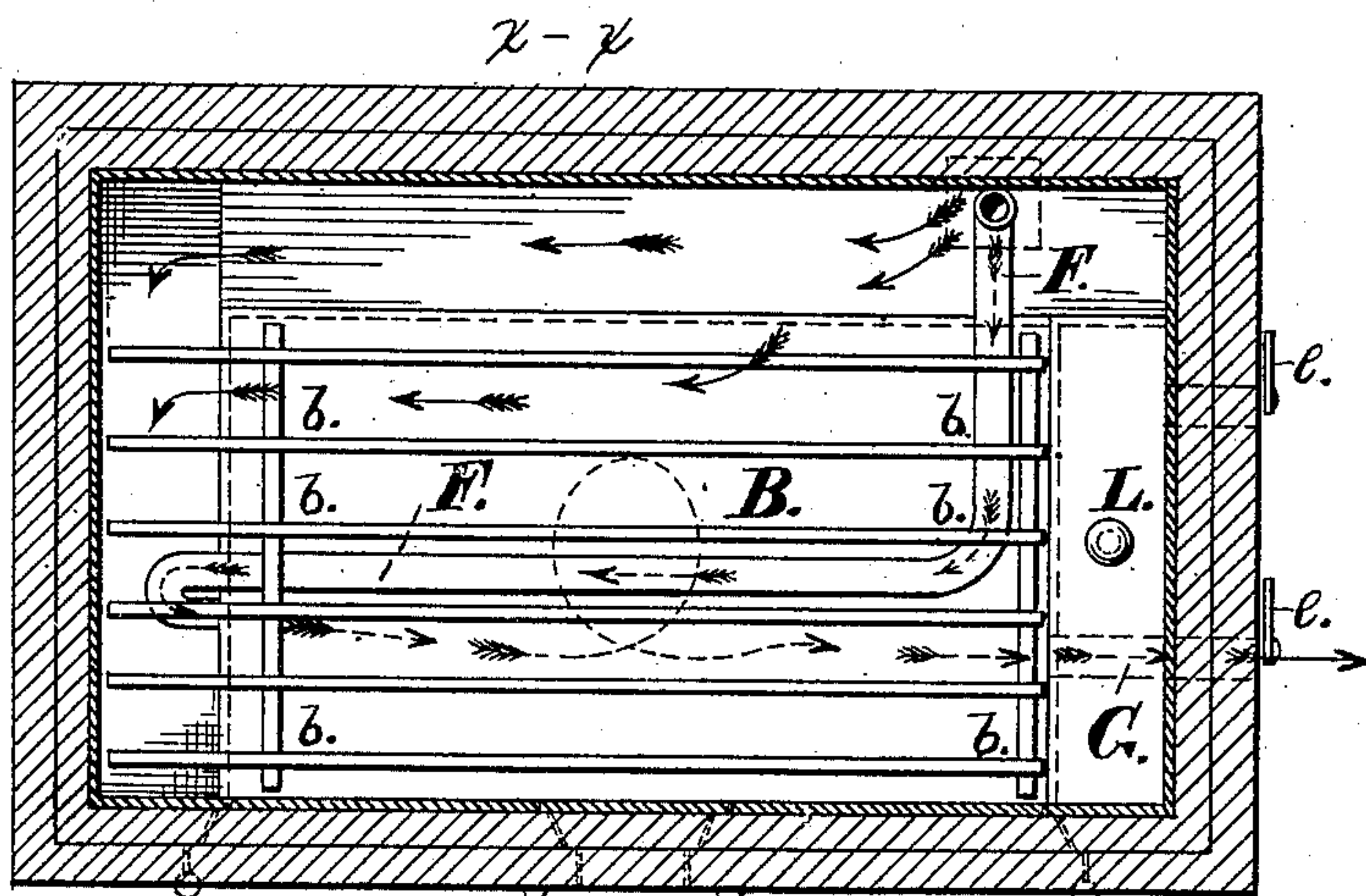


Fig. 2.

Witnesses.

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Henry S. Hoyt.

Inventor.

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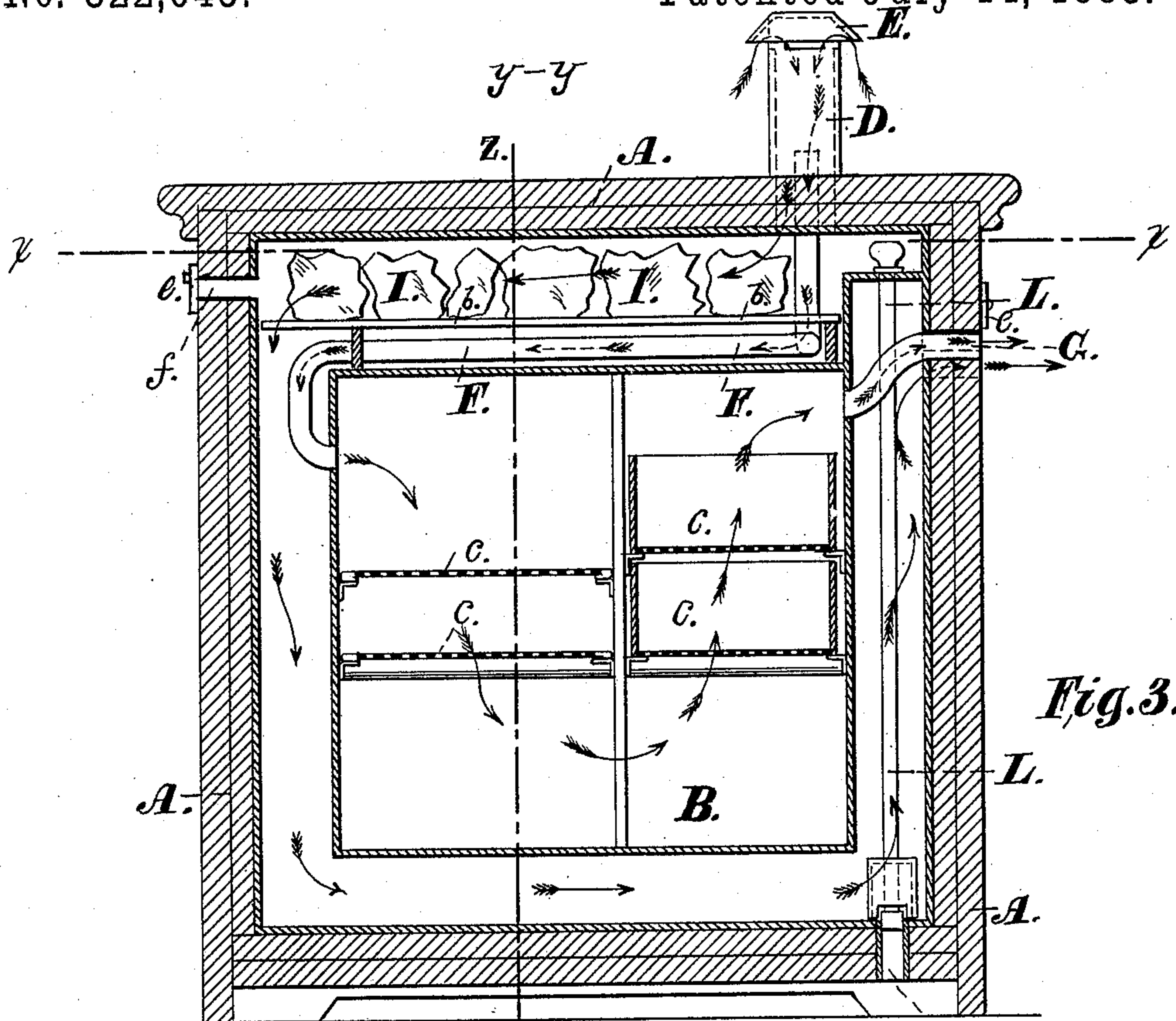


Fig. 3.

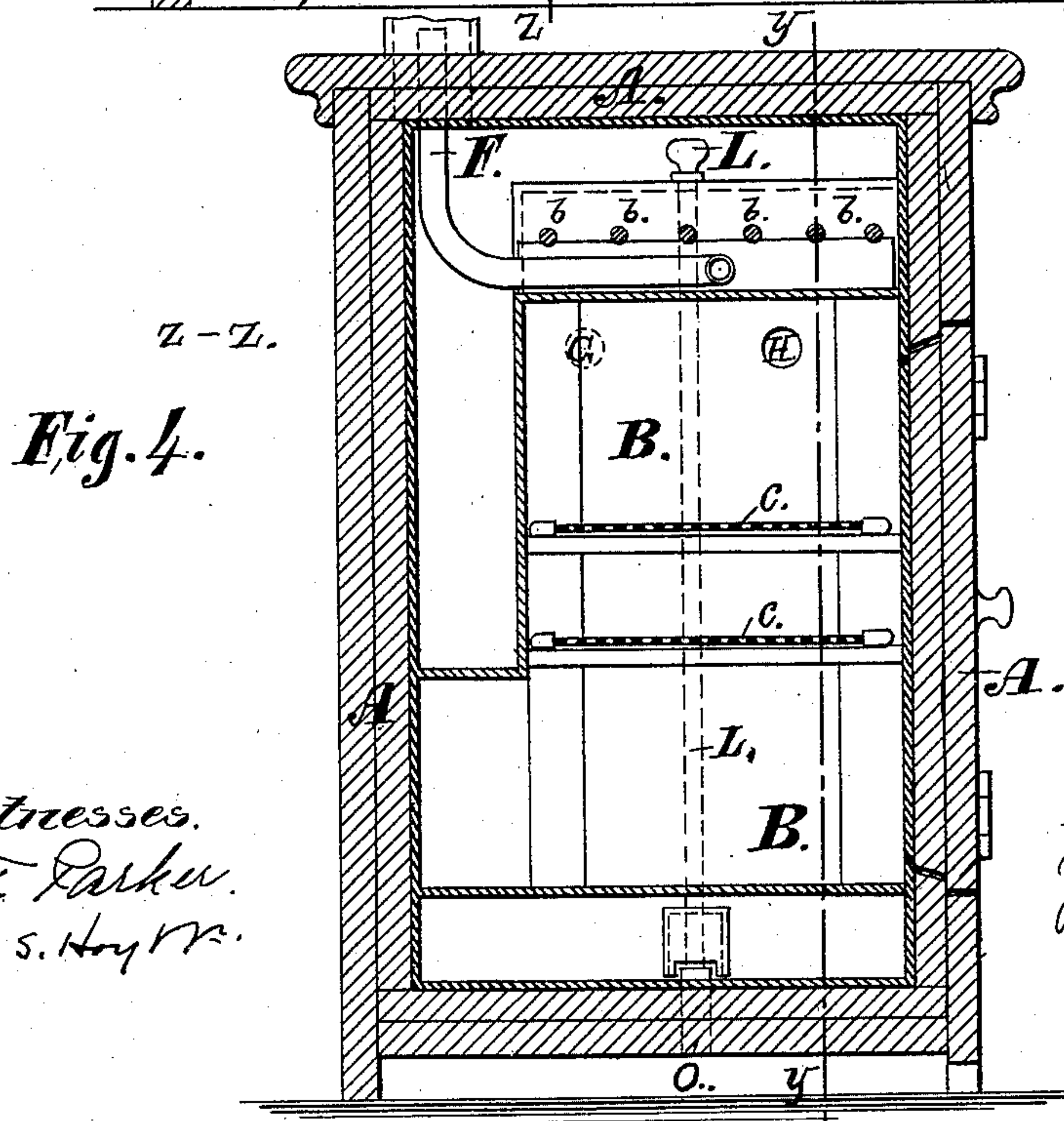
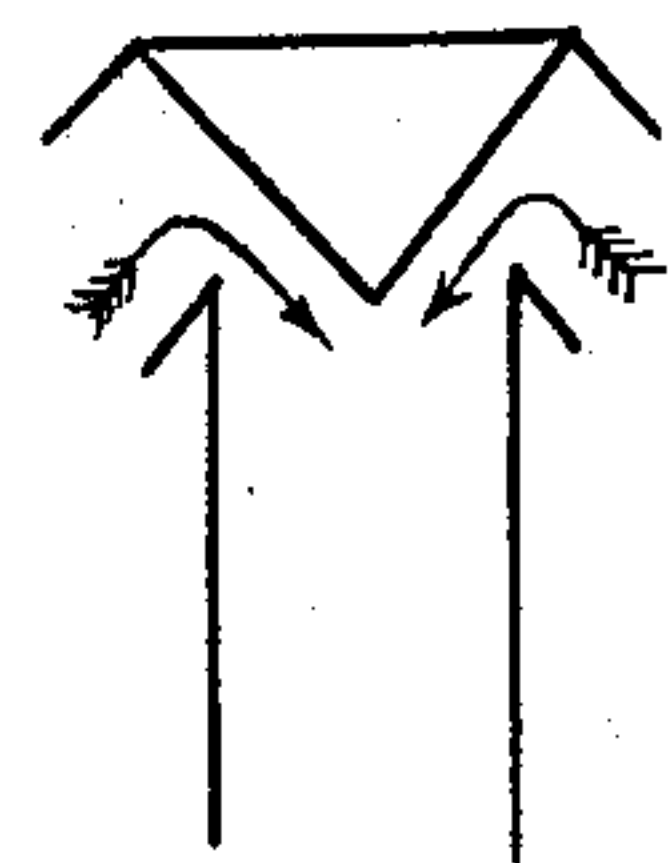


Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE.

JOSEPH A. DAVIS, OF NEW-YORK, N. Y.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 322,043, dated July 14, 1885.

Application filed March 14, 1885. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. DAVIS, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a new and useful Improvement in Refrigerators, of which the following is a specification.

My invention relates to improvements in refrigerators in which air cooled by ice or other cooling agent is used to preserve meats and other articles of food; and the objects of my improvements are to provide means whereby the articles to be preserved and also the cooling agent are surrounded by currents of cold air. I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the refrigerator. Fig. 2 is a plan view of the top portion of the same. Fig. 3 is a sectional view of the front elevation of the refrigerator, and Fig. 4 is a sectional view of the side elevation of the same. Fig. 5 shows a form of injector hereinafter referred to.

Similar letters refer to similar parts throughout the several views.

A is the outside case or frame of the refrigerator, and is preferably lined throughout its interior with metal or other lining material.

B is the interior chamber or receptacle for the articles to be kept cool. The interior chamber is shown in the drawings as so constructed with reference to the outer case that there is an open space or air-chamber at its back and sides, between it and the outer case, A. The interior of the chamber B is fitted with shelves or pans for the articles to be kept cool.

b b is a frame or gridiron, which rests on the top of the chamber B, and on which the ice I or other cooling agent is placed.

F is an air pipe or conduit, which runs from the outside of the outer case, A, through the ice-chamber, under the frame b b on top of the chamber B, and opens into the chamber B. There may be one or more of these pipes or conduits.

G is another air-pipe, which runs from the interior of the chamber B through the space between the chamber B and case A, (if any,) and opens on the outside of the case A, as

shown in the drawings, thus supplying a circulating outlet for the air in the chamber B.

D is a chimney for the admission of fresh external air. In the drawings it is shown located over the exterior outlet of the air-pipe F, and is larger in diameter than the pipe F, and is open at its upper end to the air. Over the opening is placed the cap E, to exclude dust; or there may be any of the ordinary forms of injectors—such, for instance, as are used in tubular lanterns—placed over the chimney D to inject air into it. One form of such injector is shown in Fig. 5.

The chimney or aperture for admitting external air to the ice-chamber need not be placed over the air-pipe for admitting air to the pipe which conveys it to the preserving-chamber, though this is the most common and economical arrangement, for there may be separate apertures to admit air to the ice-chamber and to the pipe which carries it to the preserving-chamber, if desired.

e e e are covers for the pipe G and openings H and f, (which may sometimes be convenient to have,) the opening H being the outlet for the air contained in the space between the chamber B and outer case A.

L, Fig. 3, is a rod which opens the channel O for the escape of the water from the melted ice.

The operation of the refrigerator is as follows: A portion of the air which is admitted or injected from the outside passes into the pipe F, where it is cooled in passing under the ice I without contact with it, and then flows into the interior of the chamber B, where it circulates, and finally escapes through the pipe G. Other fresh air is admitted through the chimney D into the ice-chamber, and thence passes over the ice and into the open space between the chamber and the outer case, A, and escapes through the opening H. By this means I obtain a current of fresh cold air continually passing through the chamber B, which does not pass through the ice chamber, which is apt in process of time to become musty, and I also have a current of air circulating over the ice to prevent its sweating, and (if desired) round the outside of the chamber B. This last current serves to make the ice last longer, as it is apt to melt faster in a closed chamber.

It is not essential that it should circulate all round the preserving-chamber, for it may circulate through the ice-chamber only and escape through the opening *f*; but if circulated
5 around the inner chamber it keeps it with less amount of ice at a low temperature, owing to the circulation both inside and outside the inner walls.

What I claim, and desire to secure by Letters Patent, is—

1. In a refrigerating structure, the combination, with the ice-chamber, of a pipe or conduit communicating directly from the external air to the ice in the ice-chamber, for ventilating
15 said chamber, and for a pipe or conduit communicating with the external air and extending from the ice in the ice-chamber into the preserving-chamber, to supply the same with cold air which has not been brought in contact
20 with the ice, substantially as described.

2. In a refrigerating structure, a cold-air pipe communicating with the external air by an air-injecting device, and extending into the ice-chamber and through it into the preserving-chamber, to supply the same with cold
25 air which has not been brought in contact with the ice, substantially as described.

3. In a refrigerating structure, the combination, with the ice-chamber, of one or more pipes communicating with the external air,
30 and extending through the ice-chamber from side to side under the ice and into the preserving-chamber, substantially as described.

JOSEPH A. DAVIS.

Witnesses:

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J. E. HINDON HYDE.