

(No Model.)

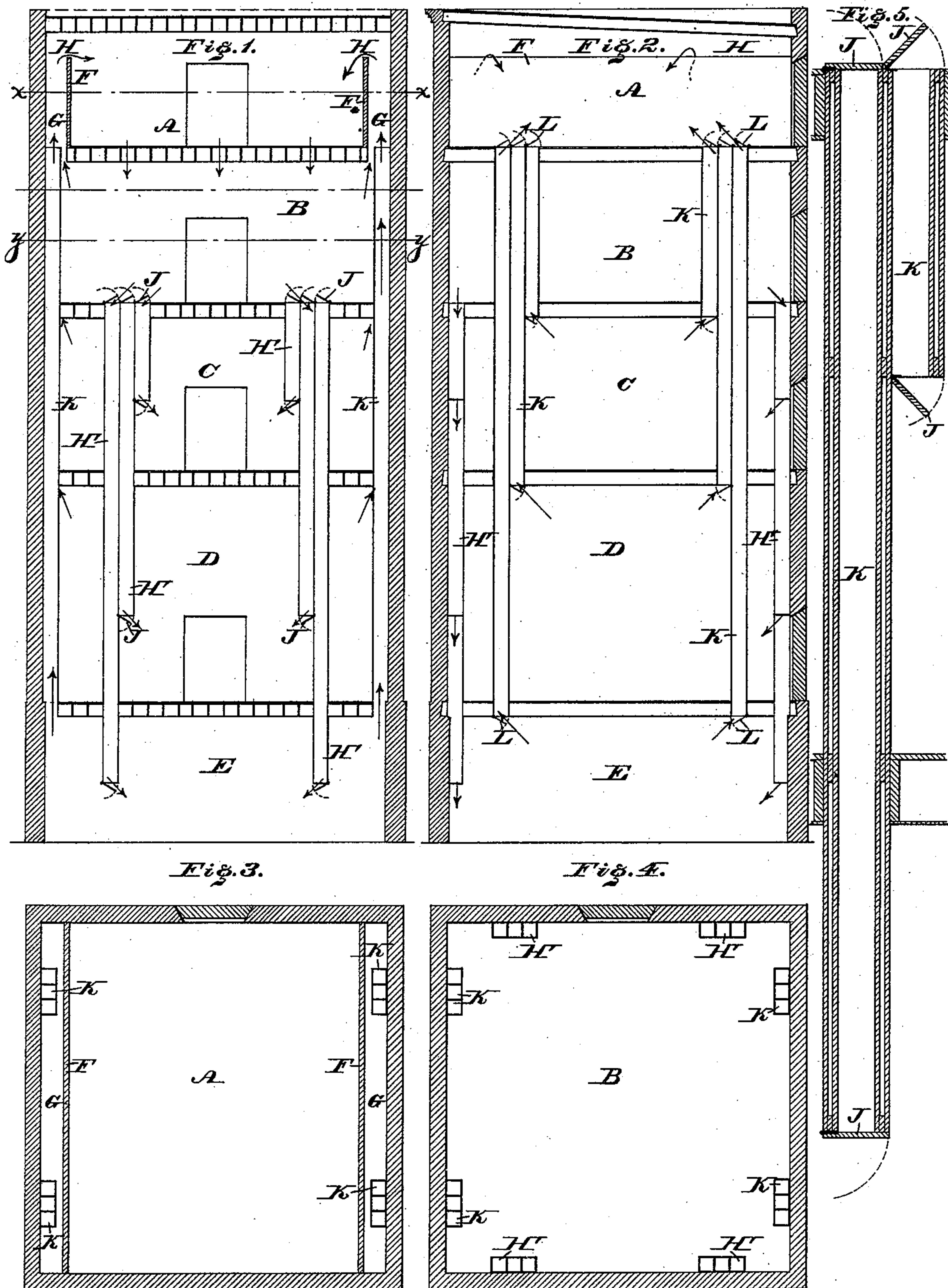
T. J. & E. H. HUGHES.

T. J. HUGHES, administrator of E. H. HUGHES, dec'd.

REFRIGERATOR BUILDING.

No. 352,872.

Patented Nov. 16, 1886.



WITNESSES:

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REFRIGERATOR-BUILDING.

SPECIFICATION forming part of Letters Patent No. 352,872, dated November 16, 1886.

Application filed March 27, 1885. Serial No. 160,210. (No model.)

To all whom it may concern:

Be it known that we, THEODORE J. HUGHES and EDWARD H. HUGHES, both citizens of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Refrigerator-Buildings, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figures 1 and 2 represent vertical sections at a right angle to each other of a refrigerator-building embodying our invention. Fig. 3 represents a horizontal section in line *xx*, Fig. 1. Fig. 4 represents a horizontal section in line *yy*, Fig. 1. Fig. 5 represents a vertical section of the flues of the refrigerator detached and on an enlarged scale.

Similar letters of reference indicate corresponding parts in the several figures.

Our invention consists of a refrigerator-building having an ice-chamber in its upper story or apartment, the same being in communication with the underlying stories or apartments in such manner that all the stories can be cooled, while, if desired, the cold air may be cut off from any story or apartment and the refrigeration suspended therein. A further provision is that of conveying warmed and foul air from each story or apartment to the ice-chamber, where it will be cooled and purified.

Referring to the drawings, A represents an ice-chamber in the upper floor or apartment of a building, and B C D E represent rooms or apartments below the same to be refrigerated or cooled, the walls of the chamber and cooling-rooms and their ceilings and floors being properly insulated or lined with non-conducting material. Between the side walls, F, of the ice-chamber and side walls of the building are flues G, and between the top of said walls F and the roof or ceiling of the building are passages H, whereby air may enter the ice-chamber from said flues G. The floor of the ice-chamber is perforated, grated, or slatted, so that the cold air therefrom is permitted to descend into the room or apartment below.

H' represents a series of cold-air flues, which are formed of non-conducting material, or lined with such material, and passed tightly through

the floors of the different apartments in such manner that each flue opens into a different story or apartment—that is to say, one set of flues ends at a point below the ceiling of the apartment C, and another set stops similarly in the apartment D, and another set similarly in the apartment E. Each flue is provided with doors or shutters J at the top and bottom thereof, so that the supply of cold air may be regulated or entirely shut off, said flues furthermore ending at points below the ceilings of the apartments that they are intended to cool, so that the cold-air currents do not interfere and drive back the warm air which collects at the ceilings of the apartments.

From the ceiling of each apartment rises a series of warm-air flues, K, also formed of or lined with non-conducting material having a dead-air space between the said lining or an inner wall and the walls of the flues, and provided at top and bottom with doors or shutters L, and terminating at or in the flues G on the sides of the ice-chambers.

The operation is as follows: When the chamber A is supplied with ice and all of the flues are open, the cold air descends into the apartment or room B, and then by the flues H' into each apartment below, said air forcing the warm air to the ceilings, where said warm air enters the flues K, and is thus directed to the flues G, and consequently to the ice-chamber, where it is again cooled and returned as cold air to the apartment B and distributed to the other apartments, C D E. The warm air which collects in the upper part of each apartment passes directly to the flues G, and thence to the ice-chamber. If it is desired to cease the cooling of any apartment—as, for illustration, the apartment D—the cold-air flues H', leading to said apartment, and the warm-air flues K, leading from the same, are closed at top and bottom, and thus the refrigeration in said apartment is suspended. In the course of time said apartment becomes warmer; but as the flues passing through it are made of or with non-conducting walls, the temperature of the air passing through said flues is not affected. If the flues of the apartment E are left open, said apartment will be kept cold. In large cooling-rooms illuminating-gas is often used for light-

ing the same. We utilize the heat of the same to assist in causing the desired circulation of air throughout the refrigerator. For this purpose the gas-burners are placed under or close to the warm-air flues, thus creating an increased upward draft in said flues.

Our invention is applicable to any building of sufficient strength and size without necessarily employing the entire building. Any intermediate story or part of a story may be used for purposes other than cold storage or refrigeration, it being only necessary that if there are rooms below the story so used which are to be cooled there be communication by flues between each room and the ice-chamber above. Thus in a five-story building with a cellar the first or ground floor may be reserved for general business purposes, while the cellar below the first floor and the floors above the first floor may be cooled by the ice-chamber in the top or fifth story, and of the stories to be cooled any story or all stories below the fourth story can be cut off and refrigeration suspended when desired.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A refrigerator-building having a number of compartments arranged one above another and an ice-chamber located above said compartments, warm-air flues leading from the upper portion of the said compartments to the upper part of said ice-chamber, the said flues being formed of double walls having a dead-air space between the same, all combined substantially as and for the purpose set forth.

2. A refrigerator having a series of compartments one above another, an ice-chamber having a perforated floor located above said compartments, warm-air flues leading from the ceilings of said compartments to the upper portion of said ice-chamber, cold-air flues leading from the floor of the compartment next below the ice-chamber to the lower portion of the other compartments, the said flues being formed with dead-air spaces between the inner walls or linings and the outer walls, substantially as and for the purpose set forth.

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Witnesses:

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