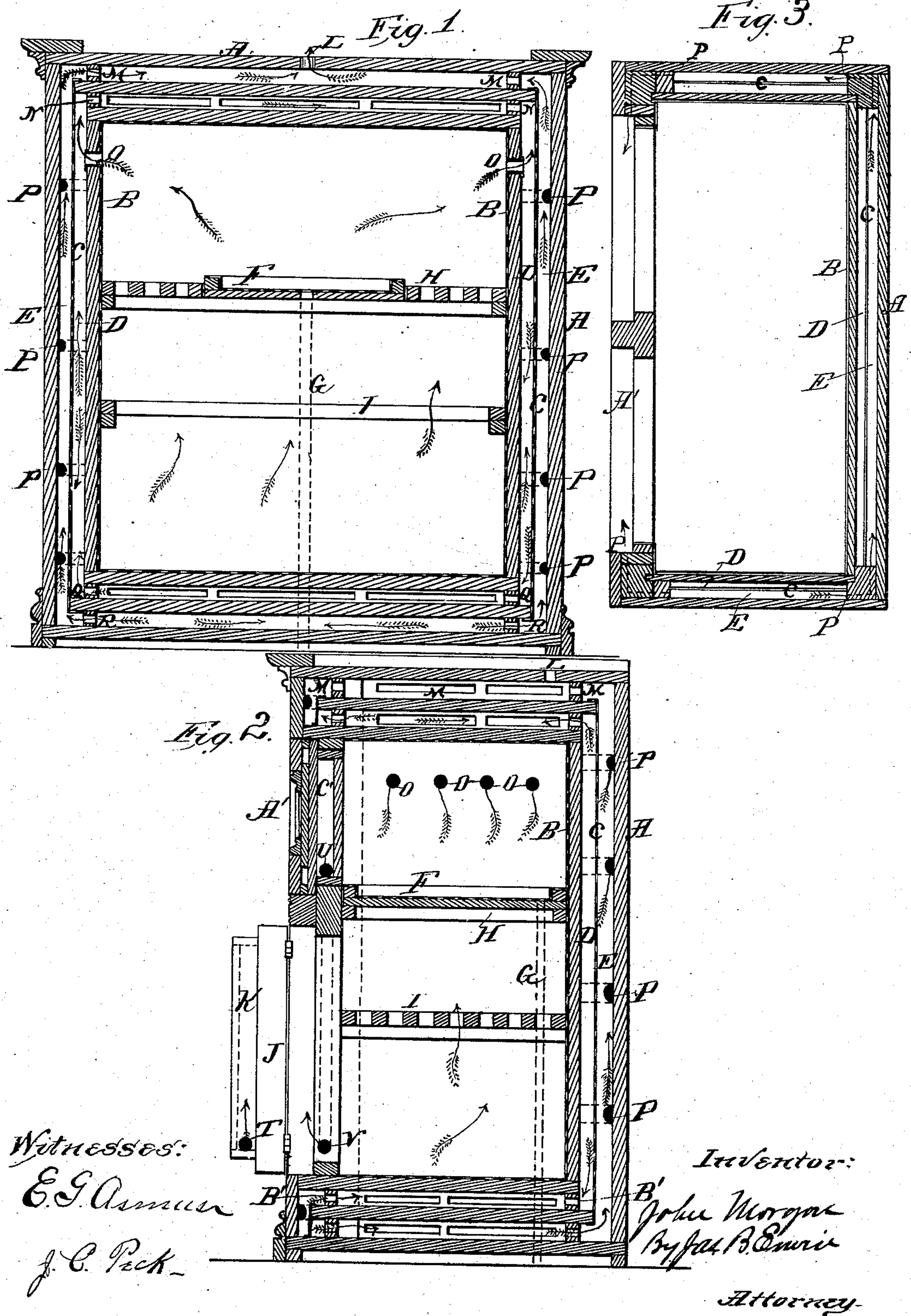


(No Model.)

J. MORGAN.
Refrigerator.

No. 241,401.

Patented May 10, 1881.



UNITED STATES PATENT OFFICE.

JOHN MORGAN, OF MILWAUKEE, WISCONSIN.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 241,401, dated May 10, 1881.

Application filed January 18, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN MORGAN, a citizen of the United States, residing at the city of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Refrigerators; and I do hereby 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, and the letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in refrigerators; and it consists in the peculiar construction and relative arrangement of the air-passages and dead-air chambers, whereby the warm air is more effectually excluded and the cold air retained in and around the provision-chamber.

My invention is further explained by reference to the accompanying drawings, in which—

Figure 1 represents a longitudinal vertical section. Fig. 2 represents a transverse section. Fig. 3 represents a horizontal section.

Like parts are represented by the same reference-letters throughout the several views.

A represents the exterior wall or case of the refrigerator. B is the interior case. C is an intermediate partition, by which the space between the exterior and interior cases is divided into two dead-air chambers, D and E. F is an ice-receptacle. G is a tube which conducts the water from the ice-receptacle out through the bottom of the refrigerator. H and I are racks or shelves, upon which provisions are stored. They are formed of a series of bars, which are secured in their proper relative position to each other by transversely-arranged bars at their respective ends. The spaces between the series of bars afford ample room for a free passage of the air from the upper to the lower apartments. J is the door to the lower apartment, which is provided with a dead-air chamber, K. L, M, N, O, P, Q, R, S, T, U, and V are air-passages.

It is obvious that by this arrangement two dead-air spaces, D and E, are formed, which entirely surround the provision-chambers upon all sides. The interior chamber, D, has no com-

munication whatever with the exterior air when the doors are closed. The cold air passes from the provision-chamber through the passage O into the chamber or space D, when it falls to the bottom of the space and passes beneath the provision-chamber through passages B'. When the door J is closed the air-passages T and V are connected together, so that the cold air from the space D enters the space K in the lower door.

A' represents the upper door, which is provided with a cold-air space, C', which communicates with the cold-air space D through the passage U when the door is closed. Thus when the doors are both closed a continuous cold-air space is formed upon all sides of the provision-chamber, which has no communication with the exterior air, and through which the cold air is free to circulate upon all sides of the provision-chamber without interruption.

When the doors are open, as represented by door J in Fig. 2, it is obvious that the passages T and V are disconnected thereby, and a communication is thus formed from the space D with the exterior air. Thus when the doors are opened any foul or impure air which may accumulate within the chamber D is free to escape through the passages T, V, and U.

The space E is kept at a low temperature by the cold which passes through the materials of which the partitions C are composed. The cooled air in the space E passes downward, around, and beneath the provision-chamber, through the passages, R, M, and P, and the warm air therein is buoyed up thereby and forced out through the passage L.

By these improvements it becomes unnecessary to surround the provision-chamber, as heretofore, with charcoal, sawdust, or any other packing material whatever.

The air-spaces D and E exclude all hot air both from entering through the interior case or coming in contact therewith, whereby the cold air is effectually prevented from escaping from, and warm air from entering into, the provision-chamber.

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

1. The improvements in refrigerators herein described, consisting in the interior air-space,

D, surrounding and communicating with the provision-chamber, adapted to communicate with the exterior air only when the doors are open, which communication is hermetically closed by closing the door, substantially as and for the purpose specified.

2. The improvements in refrigerators herein described, consisting in the interior air-space, D, exterior air-space, E, as adapted to surround the interior cold-air space upon all sides, closely-fitting partition C, adapted to close all communication between the two air-spaces and prevent the escape of the cold air from the in-

terior space, arranged and combined substantially as set forth.

3. The combination of the exterior wall, A, interior wall, B, and intermediate wall or partition, C, provided with air-passages L, M, N, O, P, Q, R, S, T, U, and V, all substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN MORGAN.

Witnesses:

E. G. ASMUS,
JAS. B. ERWIN.