

(No Model.)

2 Sheets—Sheet 1.

B. W. KOLB.  
REFRIGERATOR.

No. 477,944.

Patented June 28, 1892.

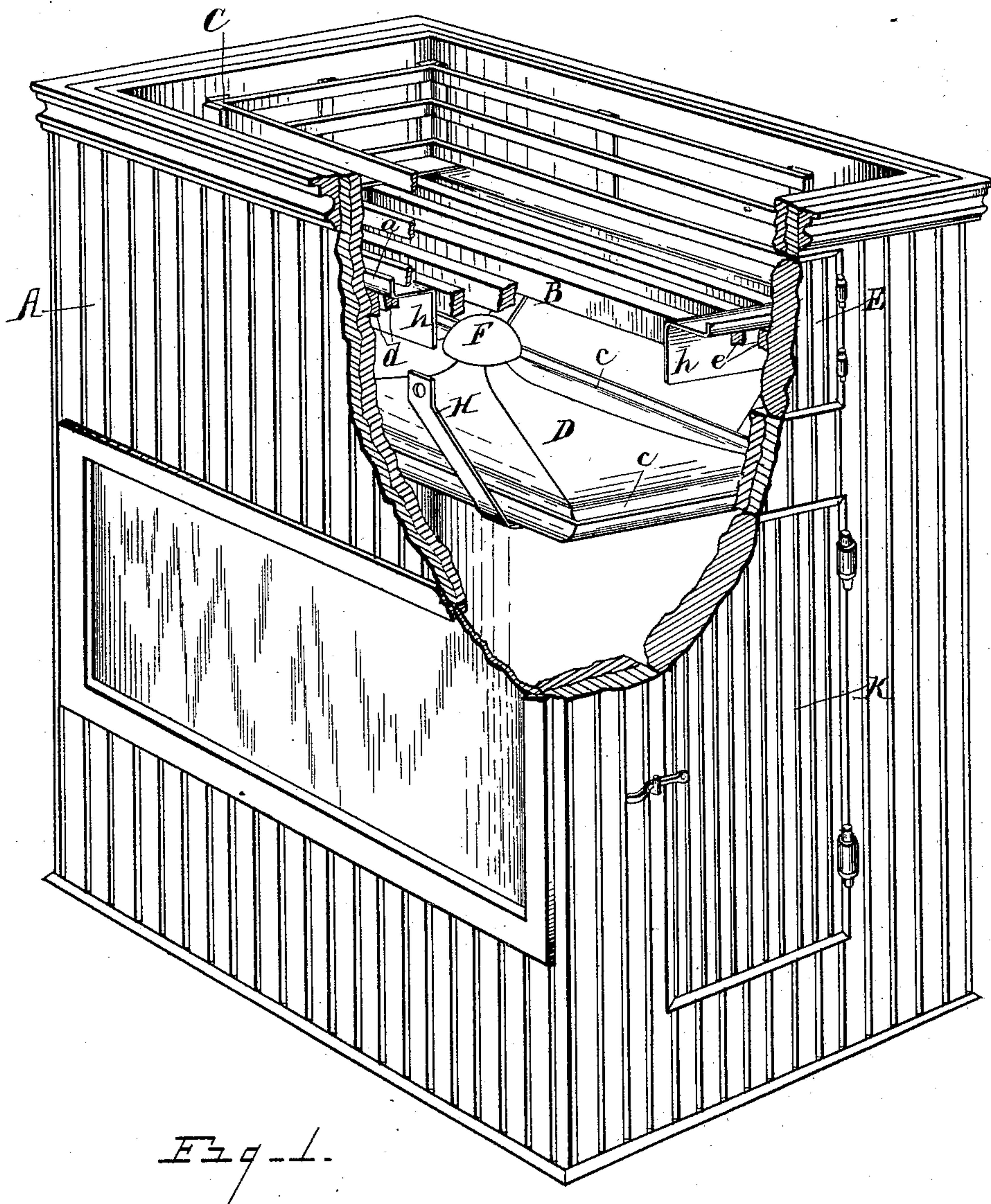


Fig. 1.

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B. J. Wheeler

INVENTOR-  
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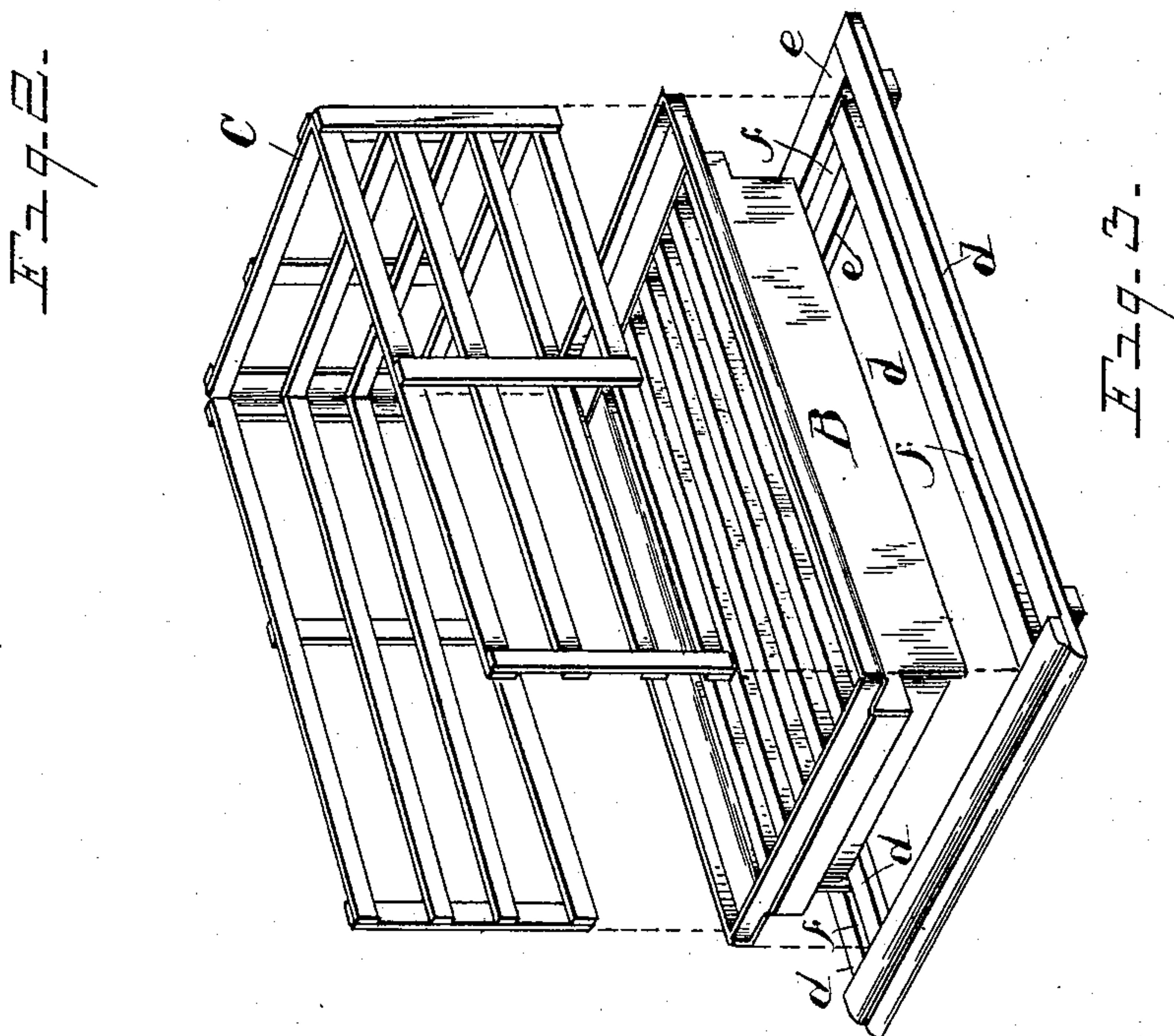
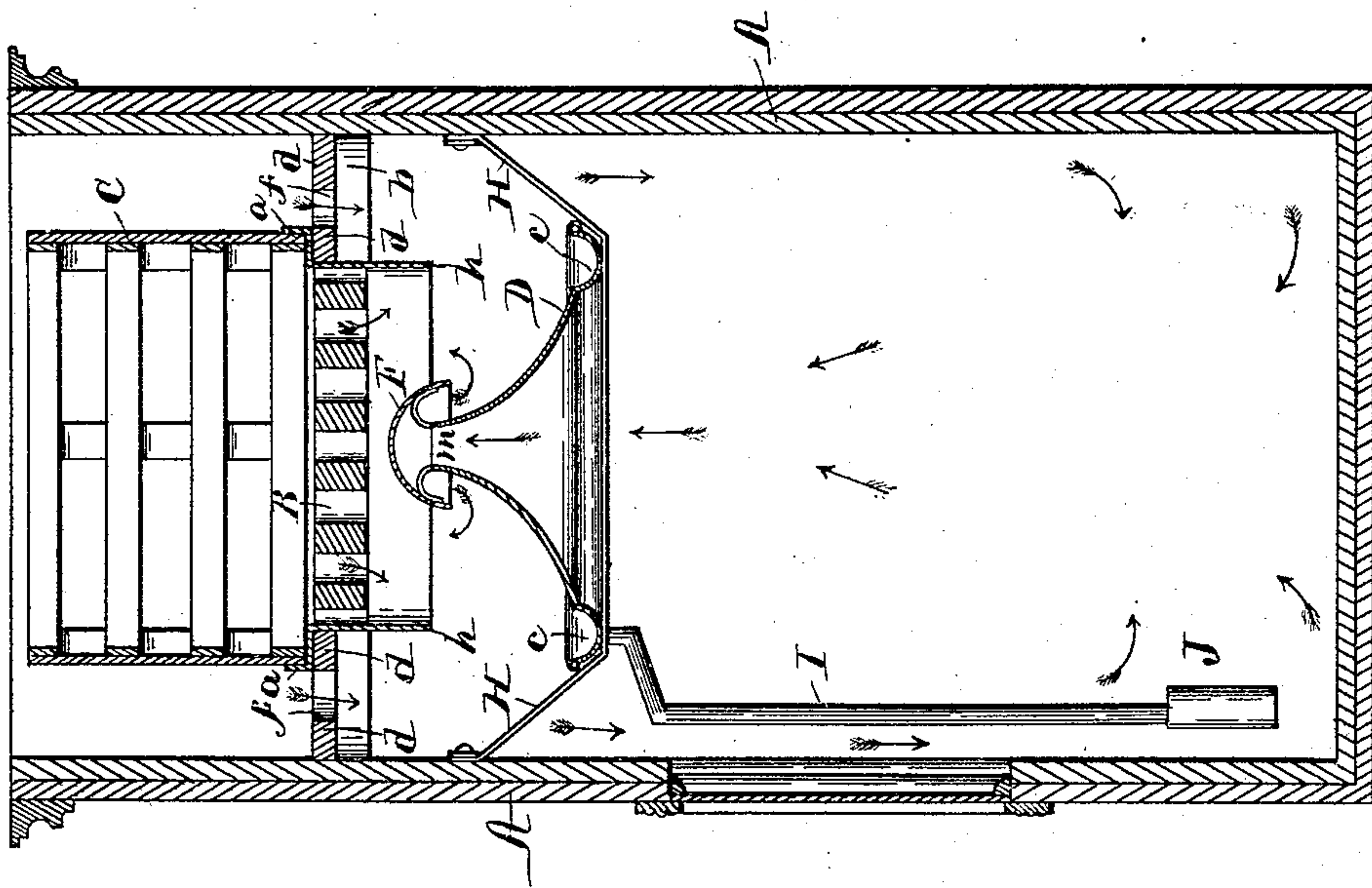
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H. Wheeler  
B. J. Wheeler

INVENTOR  
Bernard W. Kolb  
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# UNITED STATES PATENT OFFICE.

BERNARD W. KOLB, OF DETROIT, MICHIGAN.

## REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 477,944, dated June 28, 1892.

Application filed March 21, 1892. Serial No. 425,760. (No model.)

*To all whom it may concern:*

Be it known that I, BERNARD W. KOLB, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Ice-Boxes; and I do 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 to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in ice-boxes or refrigerators especially designed for butchers' use; and it consists in a certain construction and arrangement of parts, as hereinafter fully set forth, the essential features of which are pointed out in the claims.

The object of the invention is to produce an ice-box in which the construction is such that economy in the consumption of ice is effected and a uniform temperature is maintained throughout the entire interior of the box, thereby obviating the warm stratum of air that forms at the top of boxes in common use. This object is attained by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved box, the top being removed and a portion of the box being broken away to show the interior construction and arrangement of parts. Fig. 2 is a vertical transverse section through the box. Fig. 3 is an enlarged perspective view of the ice-rack, the grate, and the supporting-frame removed from the box and drawn apart.

Referring to the letters of reference, A indicates the body of the box, which is constructed in the ordinary manner. Located in the box at the top is a frame supported at each end by a cross-piece *b*. (Shown in Fig. 2.) Said frame is composed of the double side rails *d d'* and end rails *e*, so secured as to leave an opening *f* between their adjacent edges, as clearly shown in Fig. 3. This frame extends horizontally across the interior of the box and supports the grate B, upon which the ice is placed.

C indicates the ice-rack, that rests upon said

grate within the vertical flange *a* around the edge thereof. This rack retains the ice in proper position, which is placed therein through the door E in the box. (Shown in Fig. 1.) Directly below the grate B is a drip-pan D, the base of which is rectangular and provided with a continuous gutter *c*, extending around the edge thereof, which is in vertical line with the depending rectangular flange *h* of the grate B. The central portion of the drip-pan is raised in conical form and provided with an opening *m* at the top, which is covered or protected by a canopy F. The pan D is supported by angle-rods H, that cross the box transversely, the ends of which extend upward and are secured to the sides of the box, by which means said pan is suspended centrally within the box. Leading from the gutter *c* of the drip-pan is a pipe I, that drains the water therefrom, the lower end of said pipe being provided with an ordinary trap J. It will now be apparent that in an ice-box of this construction the cold air from the ice, that passes downward through the grate and through the opening *f* in the frame that supports the grate, is deflected by the conical drip-pan and thrown out to the sides of the box and falls to the bottom. This sheet of cold air descending around the wall of the ice-box drives the warmer air into the center, which rises under the drip-pan and passes through the opening *m* at the top to the ice and, becoming cool, again descends with the cold air around the wall of the box, thereby maintaining a circulation, as shown by the arrows in Fig. 2. The warm air that rises under and passes through the central opening in the drip-pan, upon which the water from the melting ice is continuously falling, is cooled by coming in contact with said pan, so that when discharged therefrom its temperature is but little higher than that of the air immediately around the ice, by which means the warm air that is admitted to the box through the door K, that affords access thereto, is greatly reduced in temperature before coming in direct contact with the ice, thereby effecting economy in the consumption thereof.

By providing an open frame, upon which the grate B is supported, there is no chance for the warm air to collect at any point below the grate, thus preventing the formation of a



warm stratum of air in the upper portion of the ice-box, by which means the shanks of the quarters that are hung around the wall of the box are kept as cool as that portion of the meat that depends in the lower stratum of air. It will also be seen that by reason of the conical shape of the drip-pan the water falling thereon from the grate is prevented from splashing, and by means of the depending flange *h* of the grate the water is confined within the pan *D*, obviating all dripping within the interior of the box.

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

1. The combination, with the ice-box, of the transverse open frame supported near the upper portion thereof, the grate mounted on said frame and having the depending flange *h*, and upwardly-extending flange *a*, substantially as set forth.

2. In an ice-box, the combination of the

grate, the drip-pan supported below said grate, said pan having a raised conical center with an opening at the top and having a gutter around the base thereof, substantially as specified.

3. The combination, with the ice-box, of the grate and its open supporting-frame therein, the deflecting drip-pan having a raised conical center with an opening at the top, said pan being supported centrally within the box and directly below the grate, whereby the descending cold air is thrown outward around the walls of the box and the warm air is caused to rise under the drip-pan and pass through the central opening at the top, substantially as and for the purposes set forth.

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

BERNARD W. KOLB.

Witnesses:

E. S. WHEELER,  
J. W. PLIES.