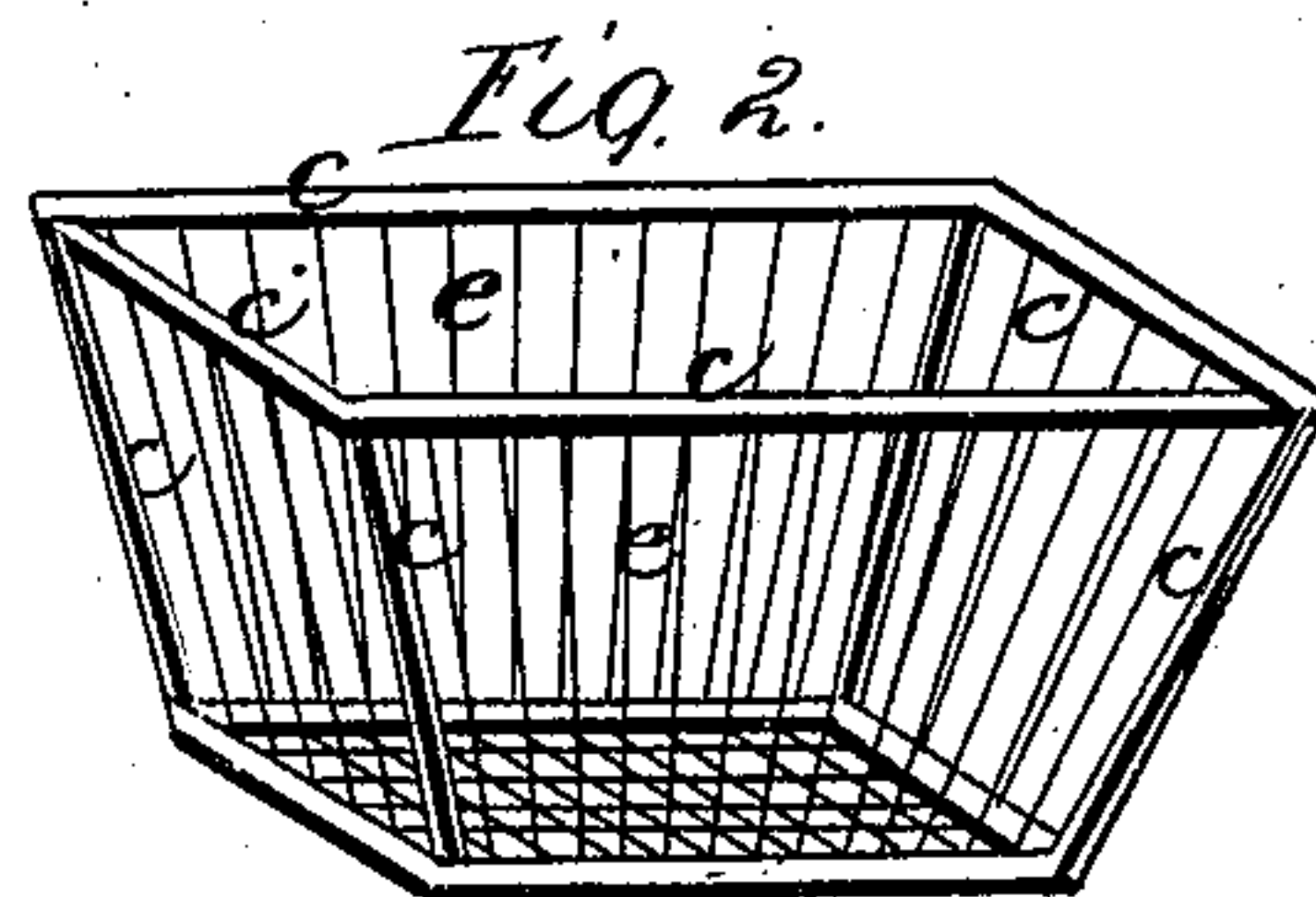
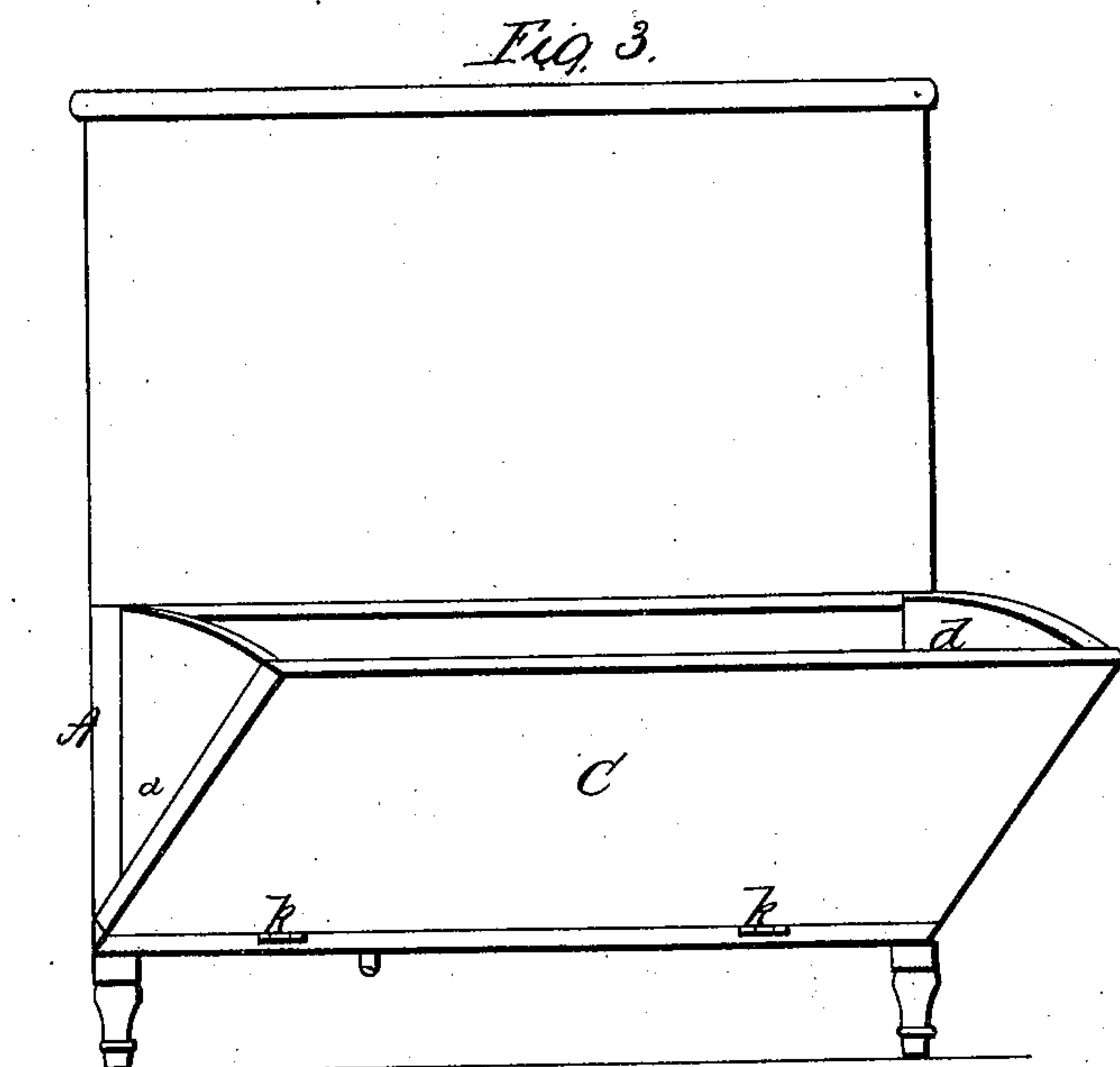
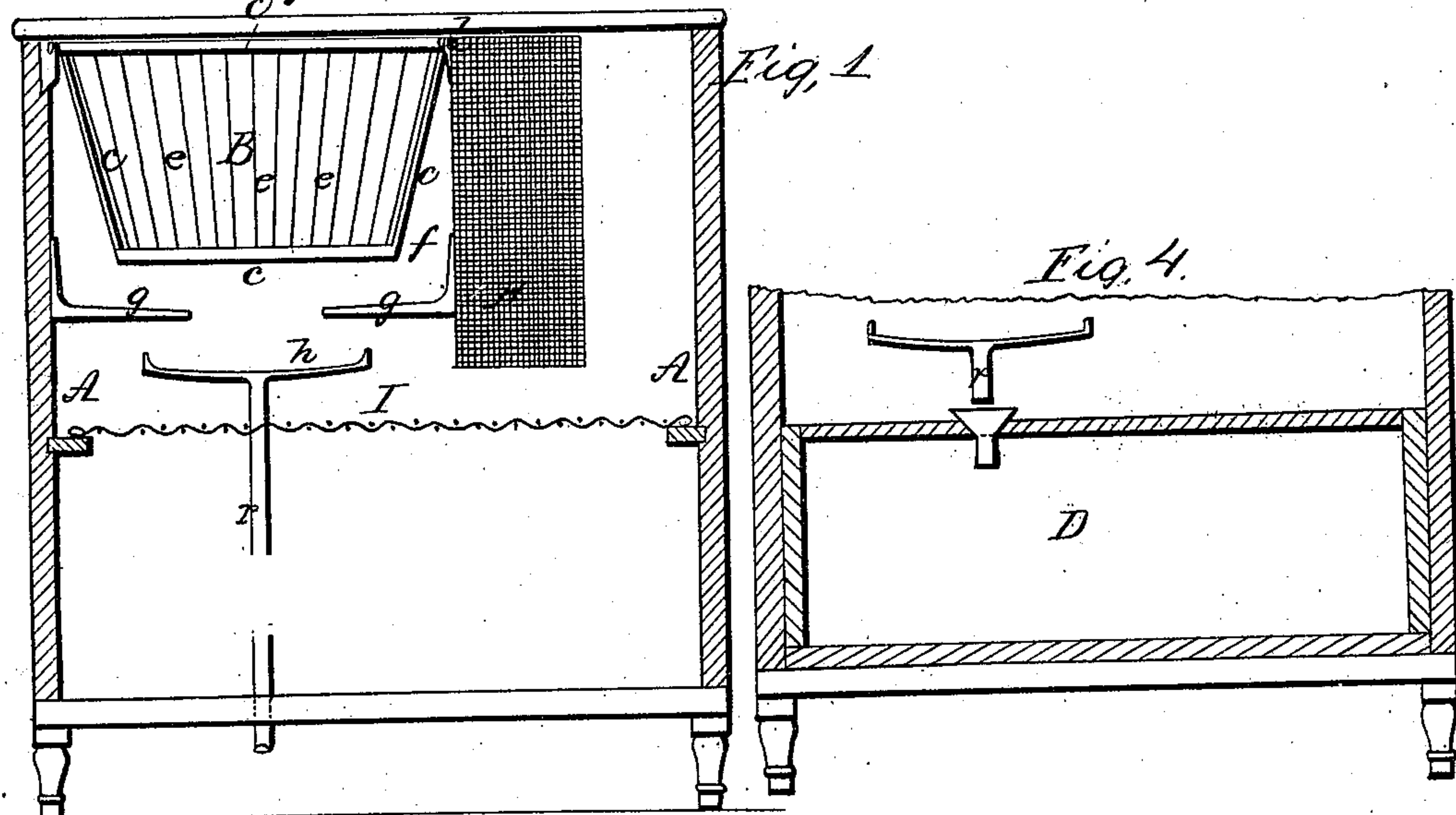


B. J. Burnett,

Refrigerator,

N^o 31,007-

Patented Jan. 1, 1861.



Witnesses;

M. F. Hadden
G. W. Vanderbilt

Inventor;

B. J. Burnett

UNITED STATES PATENT OFFICE.

BENAJAH J. BURNETT, OF MOUNT VERNON, NEW YORK.

REFRIGERATOR.

Specification of Letters Patent No. 31,007, dated January 1, 1861.

To all whom it may concern:

Be it known that I, BENAJAH J. BURNETT, of Mount Vernon, in the county of Westchester and State of New York, have invented certain new and useful Improvements in the Construction of Refrigerators; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying and making part of this specification and to the letters thereof.

Of these drawings, Figure 1, is a longitudinal vertical section through the middle of the refrigerator and ice chamber. Fig. 2, is a perspective view of the ice chamber. Fig. 3, is a front elevation of the peculiarly shaped door or leaf which constitutes the second part of my improvement.

The nature of my invention consists first, in securing without mechanical aid an ample and constant circulation of air within a refrigerator around the provision chamber by a mode of constructing the ice reservoir differing in essential particulars from any which has heretofore been adopted so far as I am aware. Second, in a new device for confining within the refrigerator the air around the provision chamber, after it has become cooled by contact with the ice and by the circulation above referred to.

It is well known to me that many plans are in use which aim to obtain the advantages of such a circulation of the air in contact with the provision chamber as is produced by the strata next to the ice increasing in specific gravity and thereby sinking to the bottom of the chamber, causing the warmer and more impure air immediately around the provisions to flow upward. I do not, therefore, in any manner claim to be the first to make practical application of this mode of obtaining circulation, but wish to be understood as limiting myself to the herein described specific device by which I have contemplated making the same available.

To enable others skilled in the art to make and use my improvements, I will proceed to describe their construction and operation.

In all refrigerators of which I have any knowledge, the ice chamber is formed by having one or more of its sides composed of a portion of the solid walls of the refrigerator or of the provision box. The evil of this mode of construction is that the circulation of air is rendered very imperfect, since it can take place only at those

parts of the ice chamber which are not so closed up, and thereby the benefits of an air circulation are greatly lessened. To secure these to the most advantageous extent, the air currents should be at liberty to circulate from every part of the ice and ice chamber, and should be wholly unimpeded in their passage to the provisions. I therefore make my improved ice chamber entirely independent of every other part of the refrigerator and construct it of a framing, *c, c, c*, Fig. 1, connected on all sides and at the bottom by bars or slats *e, e, e*, or by wire gauze or by netting or by a grating—the top being left clear to admit of filling the chamber with ice. Care is to be taken that the space between the bars or slats be great enough, or that the gauze, netting or grating be coarse enough, to afford free passage to the air. Each side of the chamber inclines inward, from top to bottom, to such a degree as that the area of the bottom shall be about one third, more or less, that of the top, as shown in the said longitudinal section at Fig. 1. The form of chamber which I prefer is that which is represented in the drawings.

I disclaim all novelty in forming an ice chamber of bars, slats, netting or grating upon one or more of its sides, but I am not aware that previous to my invention such a chamber has been constructed to operate in the manner now to be referred to.

When my ice chamber is placed in a refrigerator having its external case constructed in any of the ordinary forms, it will at once be obvious by inspection of the drawings, that spaces, *f, f*, will be left around the chamber between it and the refrigerator case, and that these spaces will afford an entirely unobstructed passage to the downward currents of air. The tapering shape of the chamber, moreover, operates so that while at the top where the current of air will be at the minimum as it can pass from only a single stratum of ice, the surrounding air passages are most contracted, yet as they approach the bottom, where a much greater volume of cooled air will descend, gradually enlarge, until at the bottom, where the mass of descending air is greatest, their capacity is at the maximum. Hence it will be seen that by employing these surrounding spaces which I am enabled to do by reason of the before mentioned construction and arrangement of my

ice chamber, I secure to the most advantageous extent the benefits of an air circulation without causing the rapid consumption of ice which takes place in other refrigerators by reason of the violent and too rapid currents of air induced by the want of sufficient circulating surface; whereas, in my improvements, the circulation is at all times equable and in consequence of the large area of circulation is ample and at the same time is produced with a great economy of ice.

To confine as long as possible within the refrigerator the cooled air, I construct a peculiarly shaped door or leaf C, which is hung to the bottom of the case A, of the refrigerator, by a hinged joint on the upper or inner side of the door, as shown at $\frac{1}{2}$ $\frac{1}{2}$, Fig. 3, having both its under sides beveled about twenty three degrees which will admit of opening the door as far as is needful. The sides d , d , which I denominate "cheek pieces", are permanently attached to and move with the door. By this device the escape of cooled air from the re-

frigerator when access to the provision chamber is sought, will be almost wholly prevented on every side.

The letters not above referred to, on the drawings, indicate parts common to nearly all refrigerators and do not require special mention.

Having thus described the nature, construction and operation of my improvements in refrigerators, what I claim therein and desire to secure by Letters Patent is—

1. In combination with the provision chamber the employment of an ice chamber B, so constructed and arranged, as hereinbefore specified, as to leave tapering spaces f , on each side as specified for the purpose described.

2. The employment of the door, or leaf, C, constructed and operating as specified for the purposes set forth.

B. J. BURNETT.

Witnesses:

M. F. HADDEN,

G. W. VANDERBILT.