

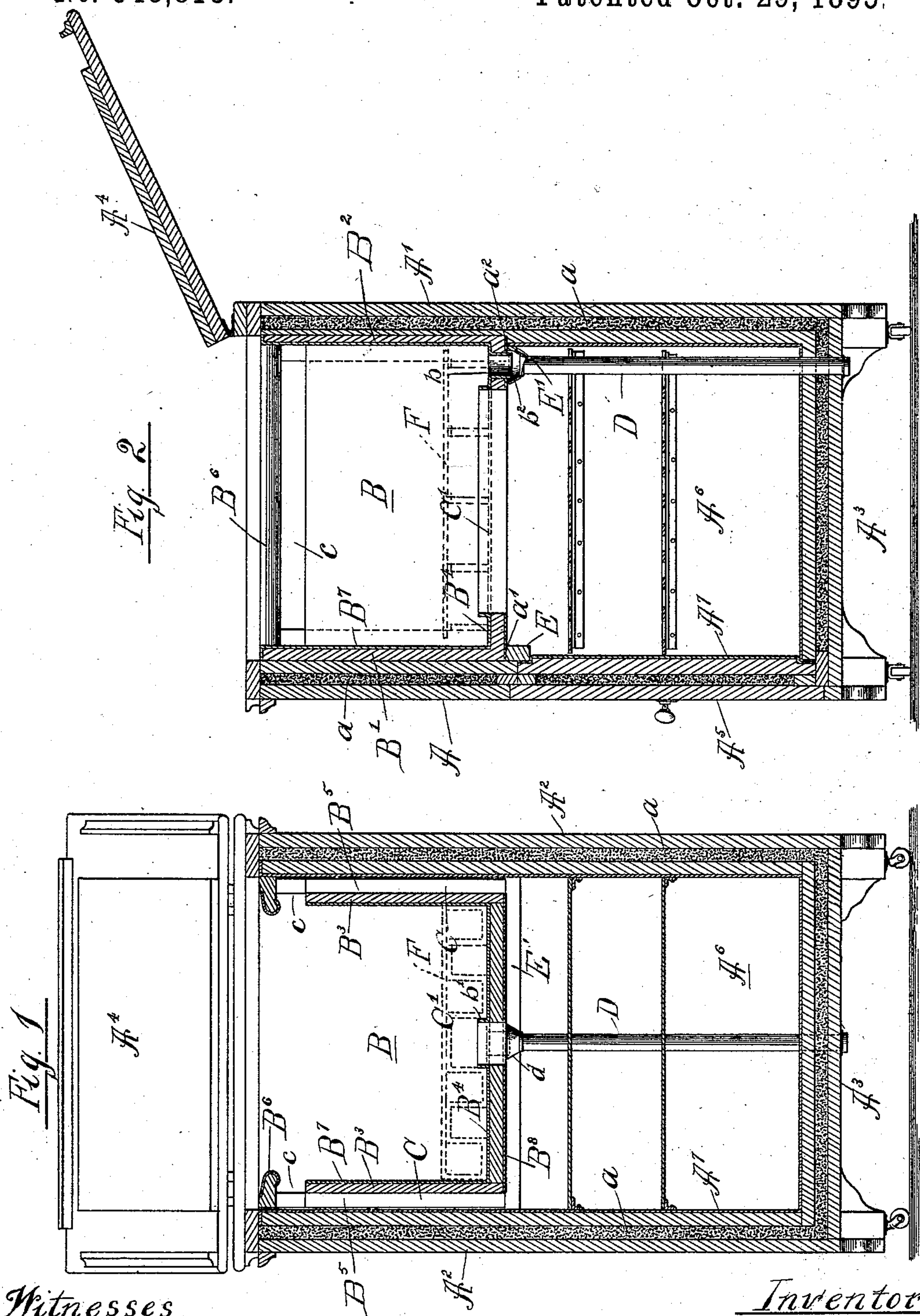
(No Model.)

2 Sheets—Sheet 1.

F. E. RANNEY.
REFRIGERATOR.

No. 548,818.

Patented Oct. 29, 1895.



Witnesses

Clinton Hamblin

John W. Adams

Inventor

Fred E. Ranney

by Dayton, Vooler & Brown
his Attorneys

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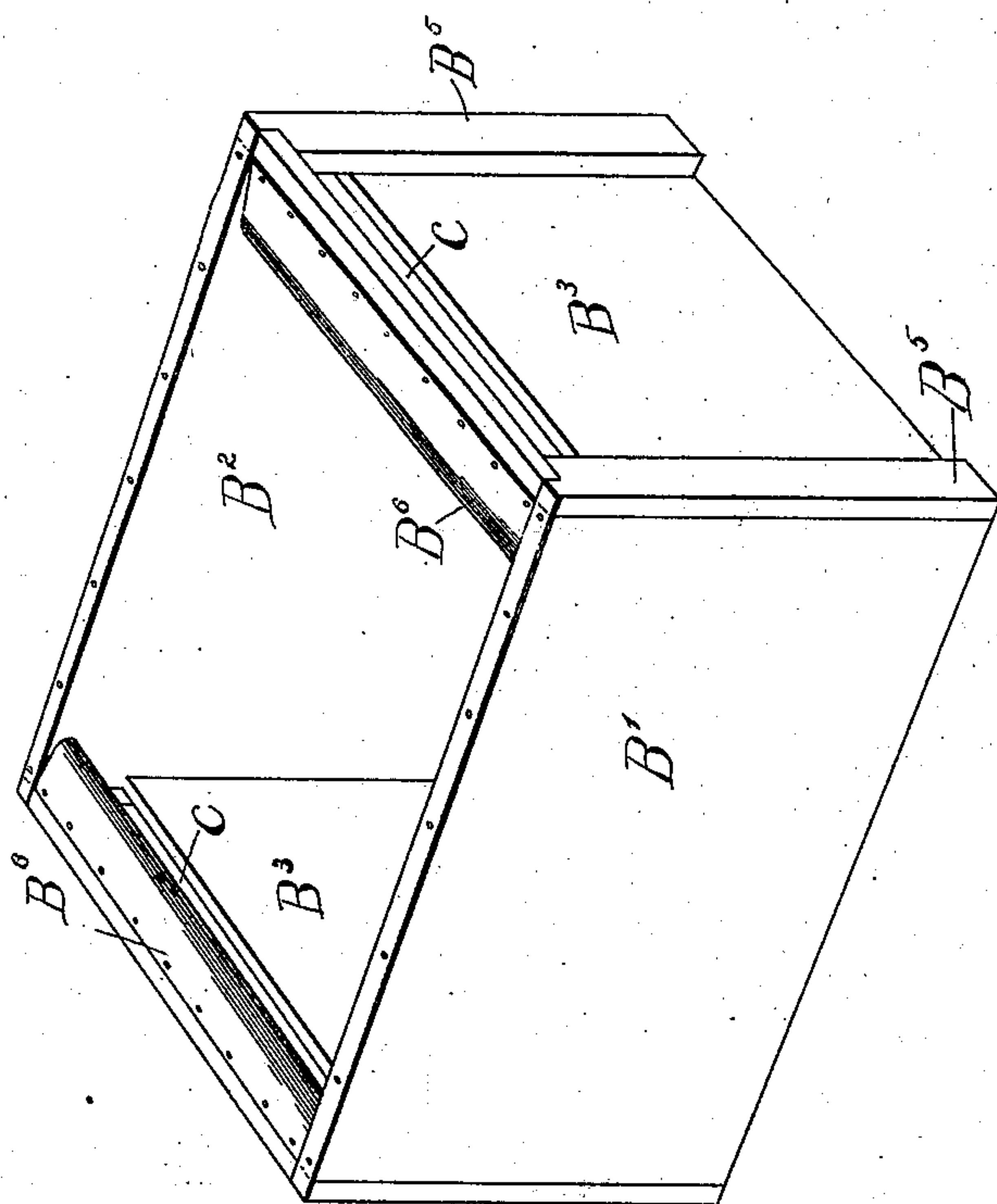


Fig. 4

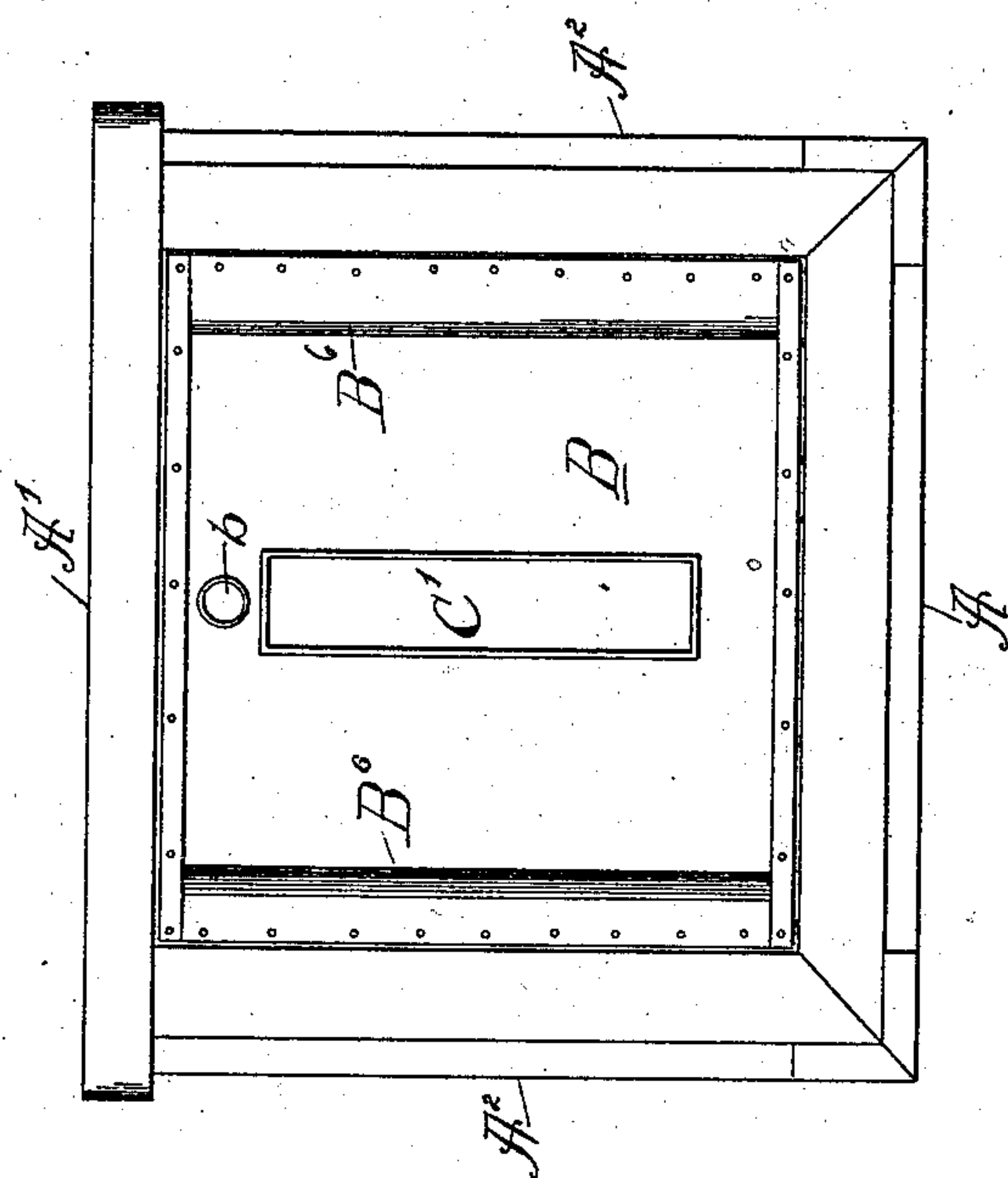


Fig. 3

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UNITED STATES PATENT OFFICE.

FRED E. RANNEY, OF GREENVILLE, MICHIGAN.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 548,818, dated October 29, 1895.

Application filed March 25, 1895. Serial No. 543,036. (No model.)

To all whom it may concern:

Be it known that I, FRED E. RANNEY, of Greenville, in the county of Montcalm and State of Michigan, have invented certain new and useful Improvements in Refrigerators; and I do hereby declare that the following is a full, clear, and exact description thereof, 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 improvements in dry-air refrigerators, or refrigerators in which the interior construction and arrangement are such as to secure a definite and continuous circulation of air from the ice to the provision chamber and back again to the ice-chamber without any condensation of moisture within or upon the walls of said provision-chamber, so that the atmosphere of the latter is at the same time maintained cold and dry.

The object of the present invention therefore is to provide a dry-air refrigerator of the character under consideration in the construction of which the ice-compartment shall be constructed of non-conducting material, shall also be suitably lined with metal, and may be removable as a whole from the refrigerator to facilitate cleansing of the refrigerator and the easy repairs thereto and to the ice-compartment, and whereby the refrigerator may be more easily filled with ice without interfering with, but, on the contrary, increasing, the proper circulation of dry air, and whereby the refrigerator as a whole may be more cheaply constructed.

The invention consists in the matters herein set forth, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a sectional elevation of a refrigerator embodying my invention in one form. Fig. 2 is a similar view taken in a plane at right angles to Fig. 1. Fig. 3 is a top plan view of the refrigerator when open. Fig. 4 is a perspective view of the ice-chamber removed.

In said drawings, A and A' designate the front and back walls of the refrigerator, A² A² its side walls, and A³ and A⁴ the bottom and top thereof. Said walls and bottom are rigidly secured together in the usual manner to form a rectangular box or chest and are each

preferably made of two separate thicknesses of wood, with an intervening filling *a* of any suitable non-conducting material. The top A⁴ is hinged to the rear end wall A' of the chest in the usual manner, and a door A⁵ in the front wall A affords access to the provision-chamber A⁶, which comprises the lower portion of the chest.

B designates a removable ice box or chamber, which normally occupies the entire upper portion of the refrigerator and is adapted to be inserted and removed through the open upper end thereof when the top hinged cover A⁴ is thrown back. Said ice-box B is comprised of front and rear walls B' and B², end walls B³ B³, and a bottom B⁴. The depth of the box B from front to rear is made such that its walls B' and B² fit closely against the front and rear walls A and A' of the refrigerator and serve as so much additional insulation to resist the influence of the outside air. The width of the box between the external faces of its side walls B³ B³ is made shorter than the internal width of the chest, so as to leave spaces C C between said walls B³ B³ and the side walls A² A² of the chest, which spaces constitute the lateral warm-air flues of the refrigerator.

Vertical cleats B⁵, secured to the lateral faces of the box B, at the front and rear edges thereof, serve to accurately locate the box centrally between the side walls A² A², the outer faces of said cleats fitting against the inner faces of said walls A² A² when the box is placed in position. The upper edges of the side walls B³ B³ terminate some distance below the top of the box and afford apertures *c*, through which the warm air is discharged from the flues C into the ice-compartment. The tops of the flues C are closed by horizontal cleats B⁶, which extend across the box from front to rear thereof, above the apertures *c*. Said cleats B⁶ are secured at their ends to the front and rear walls B' and B² and to the upper ends of the cleats B⁵ and serve both to strengthen the box and as handles by which it may be conveniently lifted.

The bottom B⁴ of the box is provided at its center with an elongated aperture C', extending the greater part of the distance from the front to the rear wall thereof and forming the downdraft or cold-air flue of the refrigerator.

Said bottom B^4 is also provided at some suitable point with a drip-opening b , which in this instance is located directly behind the aperture C' , close to the rear wall B^2 of the box.

5 A drip-pipe D , secured in the lower portion of the refrigerator, immediately below the drip-opening b , and extending down through the bottom A^3 of the chest, serves to conduct off the drip in the usual manner.

10 The ice-chamber B is supported within the refrigerator upon horizontal ledges $a' a^2$, provided on the front and rear walls A and A' . The front ledge a' is herein shown as formed by the upper surface of a cleat E , which is secured to said front wall A just above the door A^5 , while the rear ledge a' is formed partially by a somewhat narrower cleat E' on the rear wall and partially by rabbeting the upper portion of the said wall to form a shoulder at this point.

20 F indicates an ice-rack of any approved form.

As herein shown, the refrigerator is lined throughout in the usual manner with zinc or other suitable sheet metal. The lining A^7 of the body of the chest covers the inner walls of the lower portion thereof and extends at the sides up through the flues C . The lining B^7 of the ice-box covers the interior thereof and is applied to the cleats B^6 as well. Around the central flue C' said lining is turned up to form a surrounding ledge b' , which prevents any drip from passing into said flue, and the whole of the lining is inclined slightly toward the drip-opening b to secure the proper drainage of the box. The latter is also provided with a depending nipple b^2 , which projects into the funnel-shaped top d of the drip-pipe D and insures against leakage past the latter.

40 A lining-plate B^8 on the under side of the bottom of the box forms the ceiling of the provision-chamber and completes the lining of the same when the ice-box is in place.

In a refrigerator thus constructed the same perfection of dry-air circulation is obviously attained as in the ordinary dry-air refrigerator of the same general type, while at the same time every surface of both the ice and provision chambers and of the several flues 50 can be readily reached for cleaning by simply removing the ice-chamber. When thus re-

moved, the latter can be cleaned by turning a hose upon it, and it can, moreover, be readily carried out of doors or to the ice-house to be filled.

I claim as my invention—

1. A dry air refrigerator provided with an open upper end, a hinged cover, and a removable ice box fitting within the upper portion of the body of the refrigerator and occupying 60 the full depth thereof from front to rear, the side walls of the ice box being separated from the side walls of the body by narrow spaces forming lateral warm air flues, and being cut down at their upper edges to afford communication between said flues and the ice chamber, vertical cleats secured to the exterior corners of the box at the front and rear of said flues and fitting against the side walls of the body, inwardly projecting horizontal cleats 65 extending from front to rear of the box above the flues, and forming the handles of the box, and a vertical cold air flue or aperture in the bottom of the box, substantially as described.

2. A dry air refrigerator provided with an open upper end, a hinged cover, and a removable ice box fitting within the upper portion of the body of the refrigerator and occupying the full depth thereof from front to rear, said ice box comprising a metal pan and a non-conducting case inclosing said pan, the side walls of the ice box being separated from the side walls of the body of the refrigerator by narrow spaces forming lateral warm air flues and being cut down at their upper edges to afford communication between the flues and the ice chamber, vertical cleats secured to the exterior corners of the box at the front and rear of said flues, and fitting against the side walls of the body, inwardly projecting horizontal cleats extending from front to rear of the box above the flues, and forming the handles of the box, and a central cold air flue or aperture in the bottom of the box, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

FRED E. RANNEY.

Witnesses:

JNO. LEWIS,
W. C. JOHNSON.