

(No Model.)

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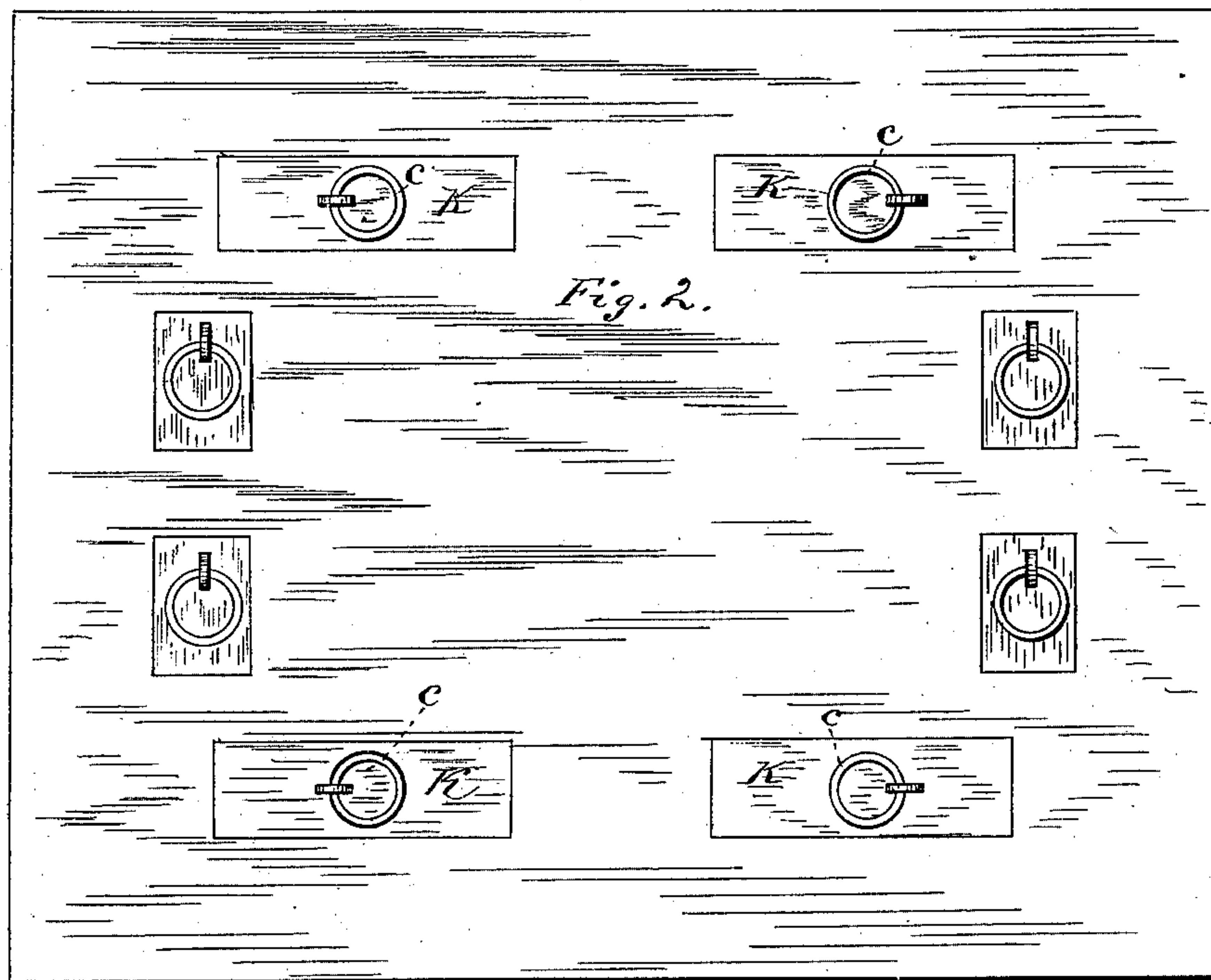
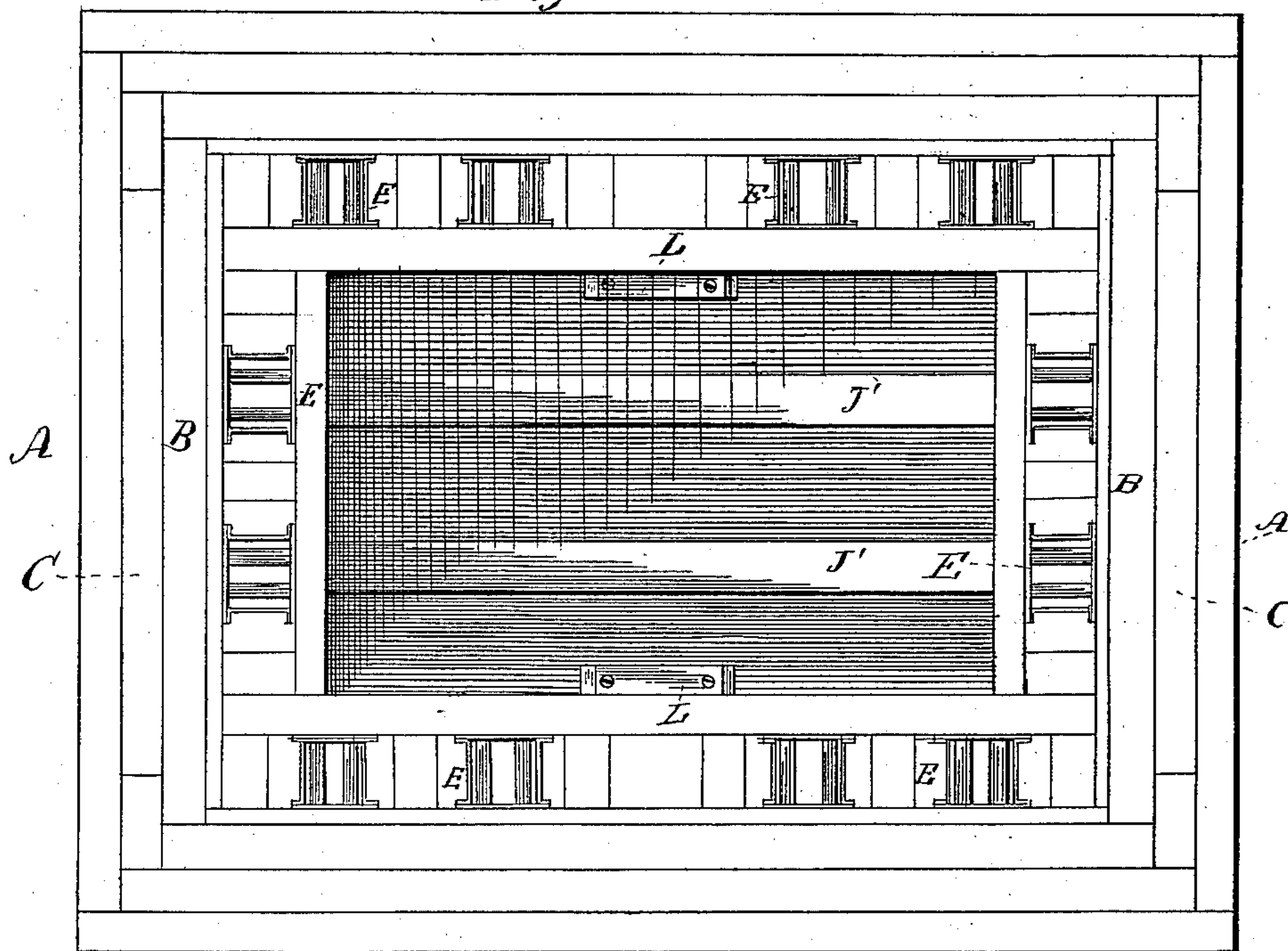
J. CASTELL.

REFRIGERATOR.

No. 296,923.

Patented Apr. 15, 1884.

Fig. 1.



WITNESSES

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INVENTOR

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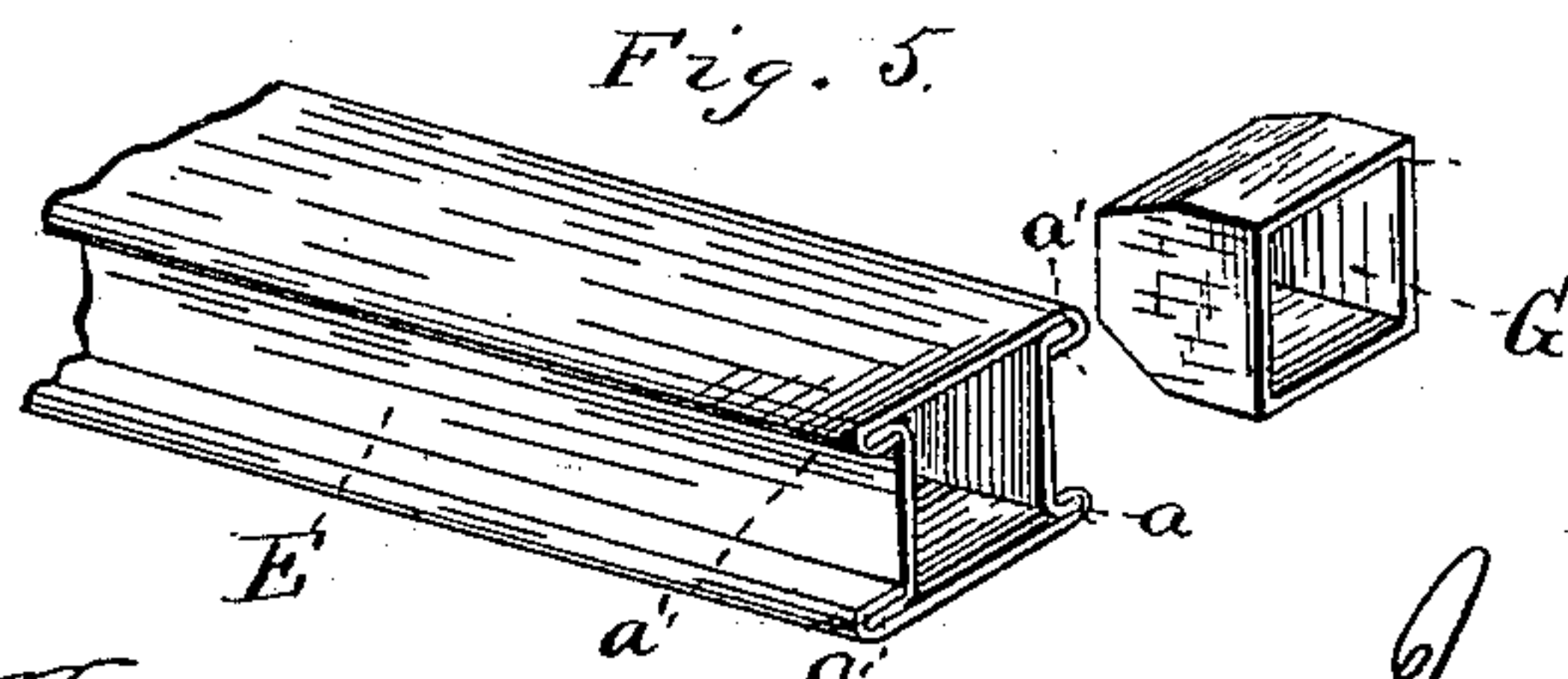
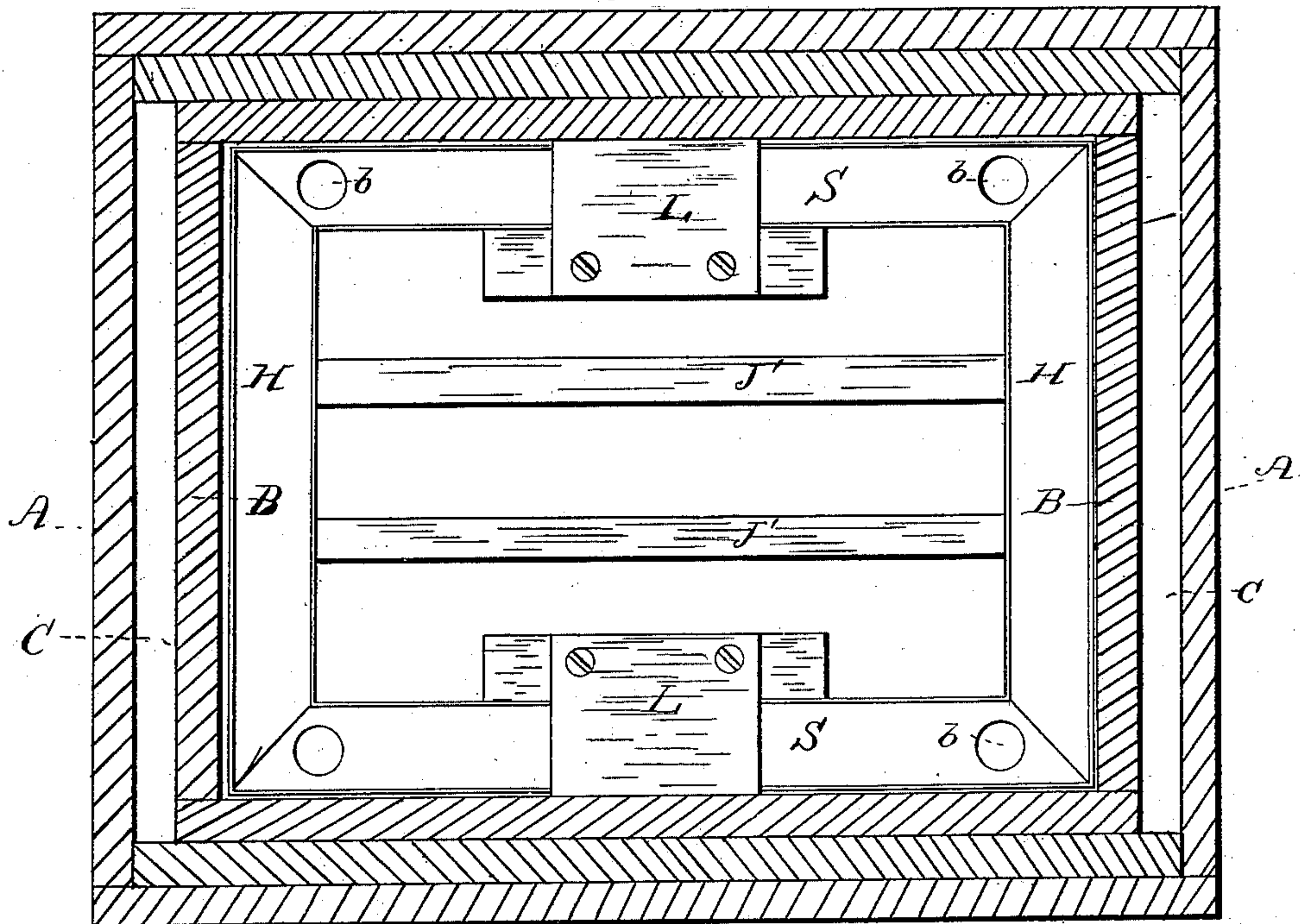
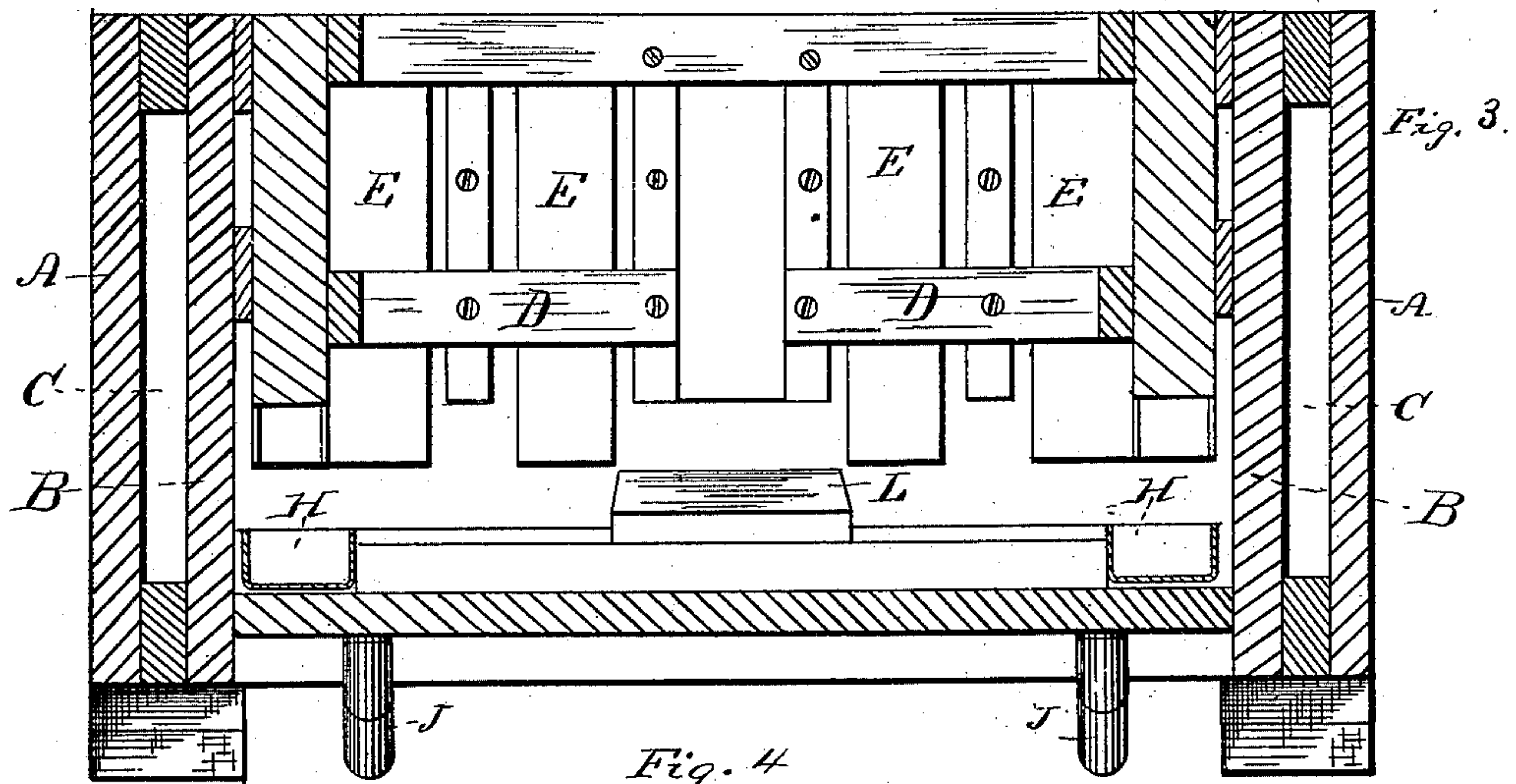
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J. CASTELL.
REFRIGERATOR.

No. 296,923.

Patented Apr. 15, 1884.



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J. CASTELL.
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Fig. 6.

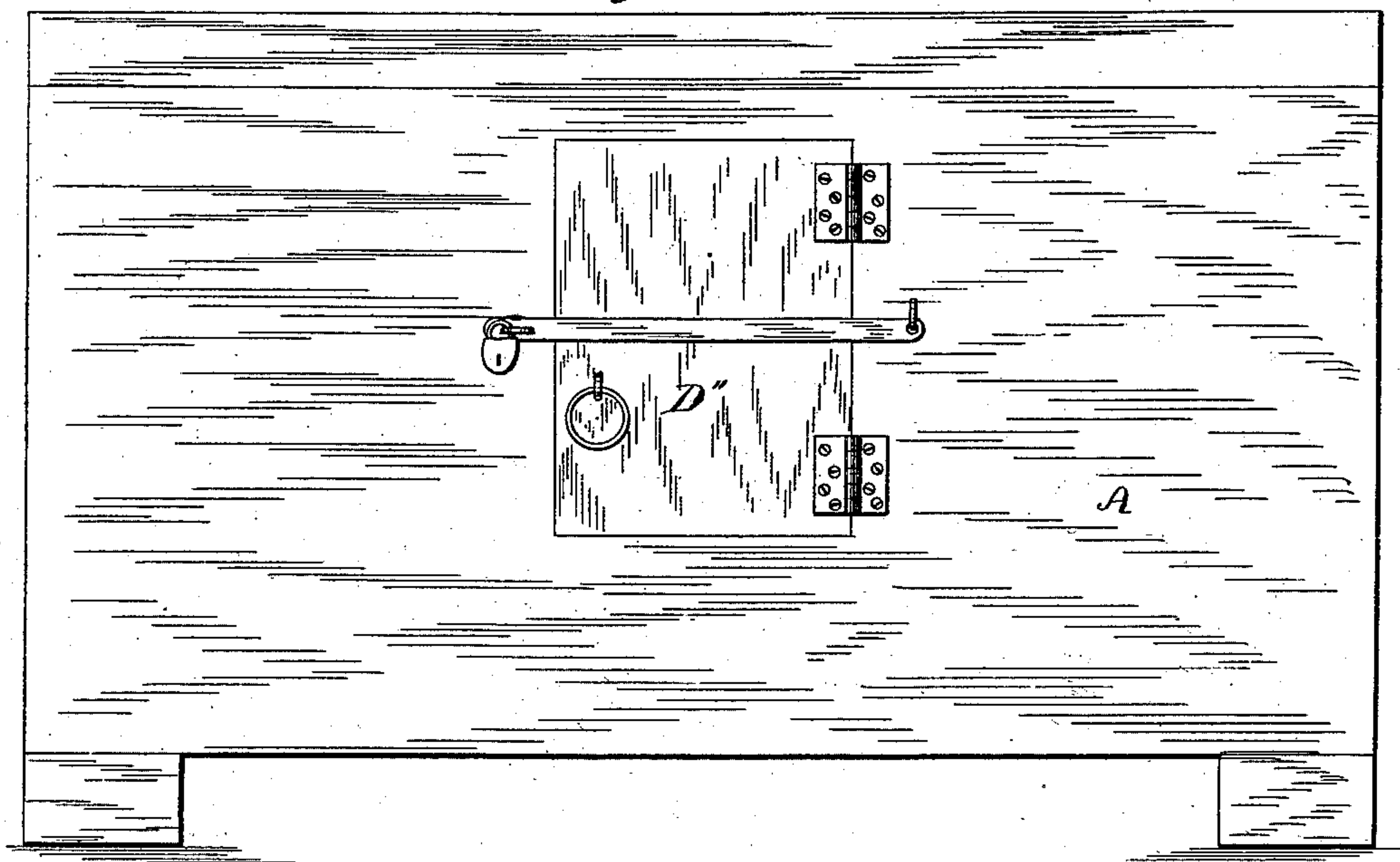


Fig. 7.

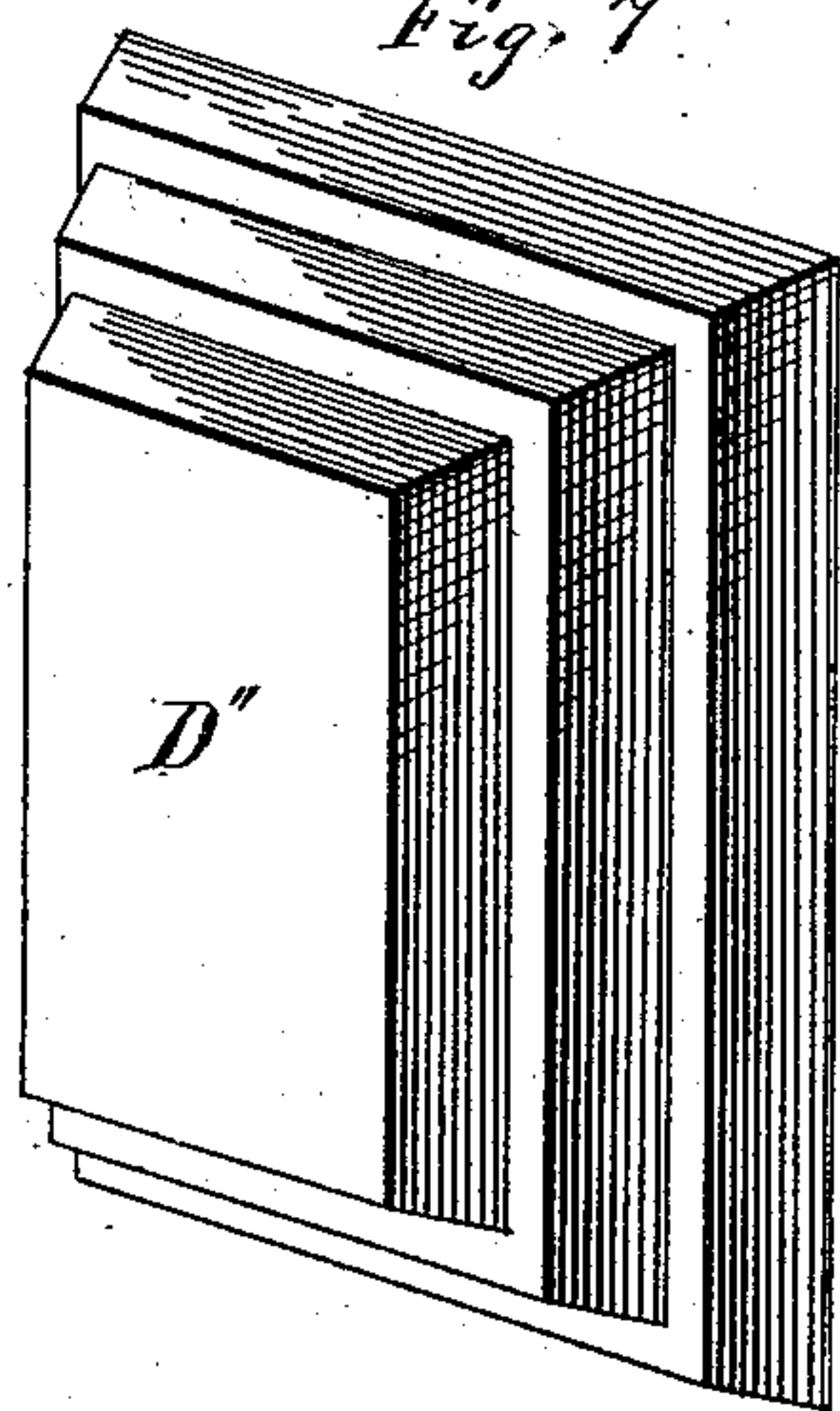


Fig. 8.

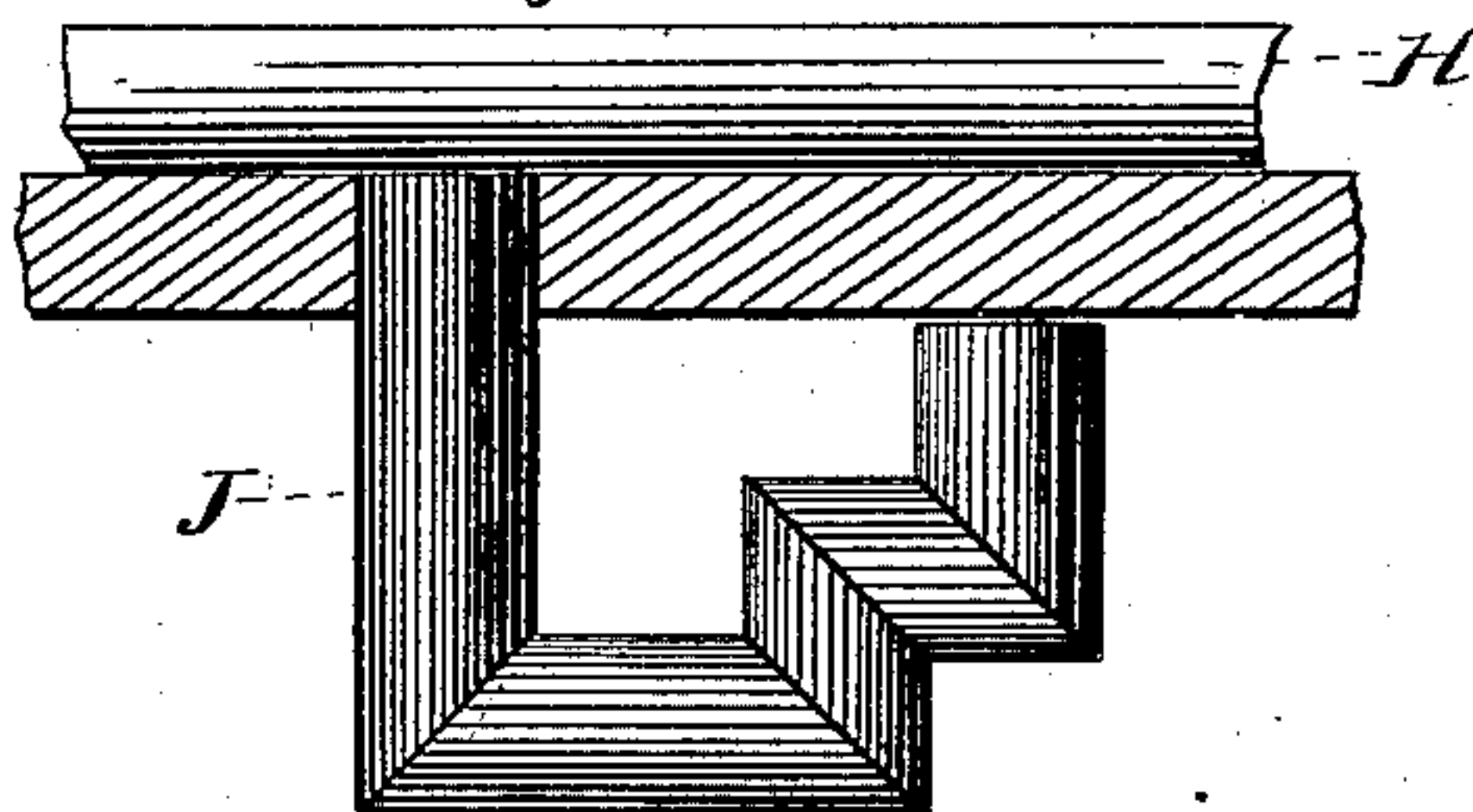
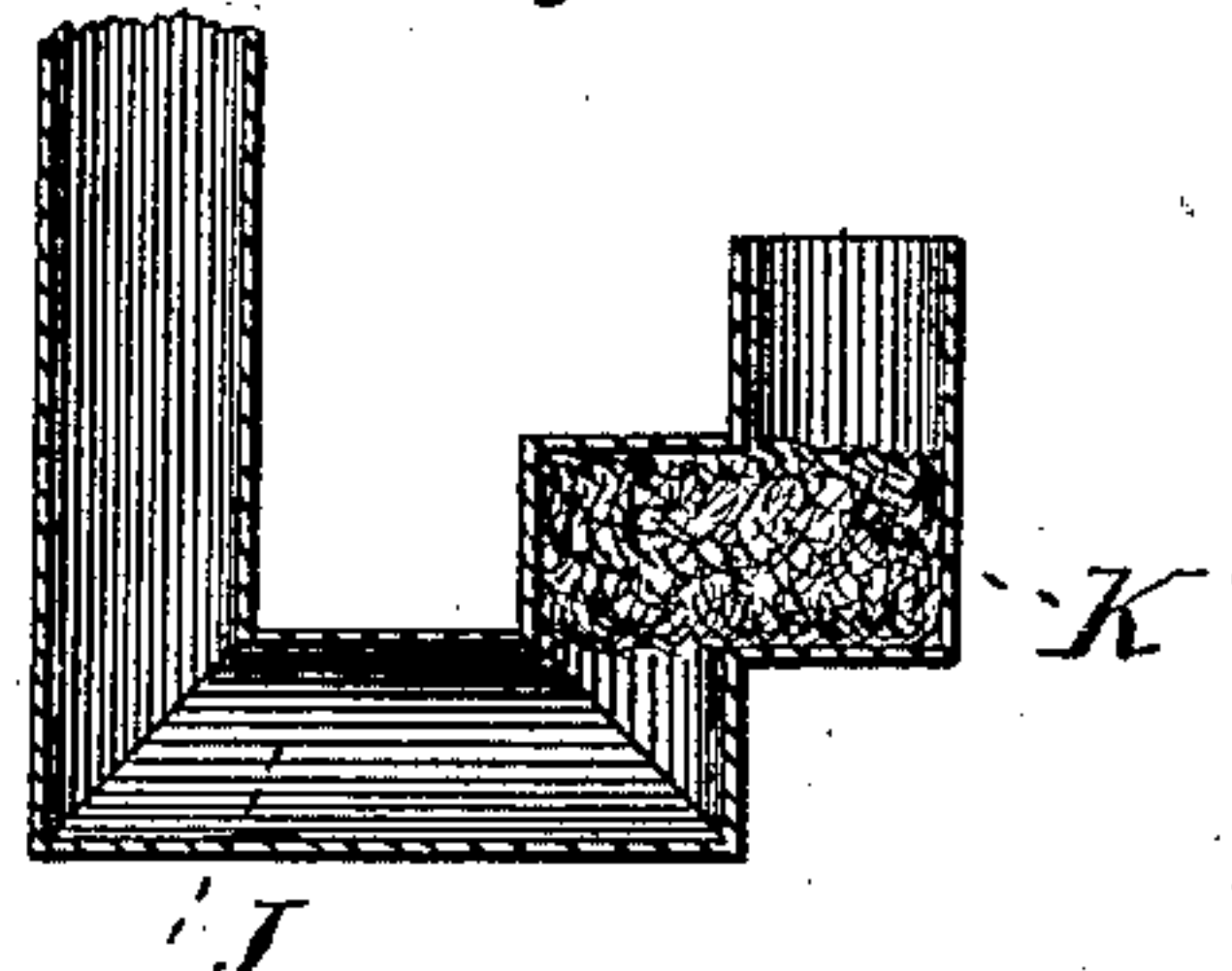


Fig. 9.



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UNITED STATES PATENT OFFICE.

JAMES CASTELL, OF BLUE RAPIDS, KANSAS.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 296,923, dated April 15, 1884.

Application filed August 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES CASTELL, a citizen of the United States of America, residing at Blue Rapids, in the county of Marshall and State of Kansas, have invented certain new and useful Improvements in Refrigerators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention pertains to improvements in refrigerator-cars, having for its object to intercept the passage of warm air to the ice-chambers and refrigerators, and to maintain a circulation of dry cold air, and in preventing the entrance of external warm air through the drip-tubes or water-outlets; and it consists of the peculiarly-constructed ice-pans and ice-chambers, between which spaces are provided for the circulation of the cold air; of a continuous drip-pan adapted to receive the dripping water from the ice at all points around the refrigerator-chamber; of the overflow receptacles or elbows arranged on the under side of the refrigerator, and adapted to seal the drip-tubes as against the entrance of warm air; and of the general construction and arrangement of parts, substantially as hereinafter more fully set forth and claimed.

In the accompanying drawings, Figure 1 is a plan view, with the top removed, of my improved refrigerator-car. Fig. 2 is a similar view thereof with the top in position. Fig. 3 is a vertical sectional view. Fig. 4 is a horizontal section of the same. Fig. 5 is a perspective view of an ice-pan and a similar view of its containing-tube. Fig. 6 is a side elevation, and Figs. 7, 8, and 9 are detail views.

In carrying out my invention I construct the car with an outer casing, A, and an inner casing, B, between which is left a chamber or space, C, which I utilize by storing therein dead air, that serves as a non-conductor of hot or warm air, while confining the cold air set free by the melting of the ice in the ice-chamber.

D D are frames secured to the inner casing, B, and arranged around the ends and sides of the refrigerator-chamber. Within these frames are secured the vertical ice-chambers E E, for holding removably the ice-pans G, which will presently be referred to. These ice-chambers are constructed of sheet metal, and

preferably by forming their sides or walls, which are rectangular, with flanges *a a'*, (see Fig. 5,) the flanges of two opposite walls being lapped over and against the flanges of the two other opposite walls thereof without other means of fastening.

G, Fig. 5, represents the construction of the ice-pans, having tapered lower bottoms, the lower portions of two opposite sides thereof being inclined inwardly to retain the ice, while the drippings from the melting of the latter pass off through the openings in the bottoms of the pans down through the ice-chambers E, whence the same pass into the drip-pan H. The rectangular ice-chambers E are packed with ice and salt, and after the temperature of the contents of the refrigerator-car have been reduced to a minimum point, it is thus maintained by lifting separately the lids K and inserting blocks of ice in the pans G, which ice excludes air from the ice-chambers, and in melting passes through the ice-chambers E, and thus the temperature of the refrigerator may be readily maintained at minimum an almost indefinite period and at little expense. The pans G are made slightly larger at their upper part, where rectangular, than the corresponding rectangular ice-chambers E, wherein they are inserted, in order that the pans may be conveniently withdrawn from their respective ice-chambers, replenished with ice, and reinserted therein when requisite.

H is the drip-pan, placed on the bottom or floor of the car or refrigerator, directly under the ice-pans and tubes, and adapted to extend continuously around the sides and ends of the refrigerator-chamber.

Between the drip-pans, about in line with the doors of the refrigerator, are disposed, in such a manner as not to rest on the pan, blocks or fenders L, to prevent injury thereto while loading the car or refrigerator.

Cleats or strips J' are arranged on the floor of the car or refrigerator, within the space bound by the pan, for the boxes containing the poultry or other perishable articles with which the car is loaded to rest on, thus permitting greater access thereto of the cold air.

J J are the overflow elbows or receptacles, arranged on the under side of the car or refrigerator, one end of each of the elbows com-

communicating through an aperture, *b*, Fig. 4, with each corner of the rectangular drip-pan *H*. These elbows have four bends or five sections—one extending downward, two horizontally, and two upwardly—whereby an intermediate chamber between its receiving and discharging ends is provided, which is lower than the latter, to enable the holding of sufficient water, while allowing the necessary overflow to seal the drip-pan outlets as against the entrance to the refrigerator-chamber of warm air, and which are additionally fortified as against the ingress of heat and atmosphere by any suitable porous and non-conducting substance packed into the elbow at *K' K'*, through which the water percolates.

In the top of the refrigerator are a series of ice-supply openings arranged in line with the ice pans and tubes, and which are provided with readily-removable and air-tight-fitting lids *K*, said lids having rings *C*, (or they may have knobs,) for convenience in removing and replacing the same.

D'' represents the structure of doors on either

side of the refrigerator-car, as adapted to the outer casings and air-spaces.

Having thus fully described my invention, I claim and desire to secure by Letters Patent—

1. In a refrigerator, the combination of the filter *K'* and the four-angular pipe *J*, substantially as shown, and for the purpose described.

2. In a refrigerator, the combination of the receptacle having dead-air spaces or chambers, ice-chambers having removable ice-pans with tapered bottoms, drip-pan filter *K'*, and four-angular pipe *J*, substantially as shown and described.

3. In a refrigerator, the overflow-receptacle consisting of a four-angled pipe with its middle portion arranged lower than its receiving and discharging ends, substantially as and for the purpose set forth.

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

JAMES CASTELL.

Witnesses:

J. McDougall,

J. B. BROWN.