

(No Model.)

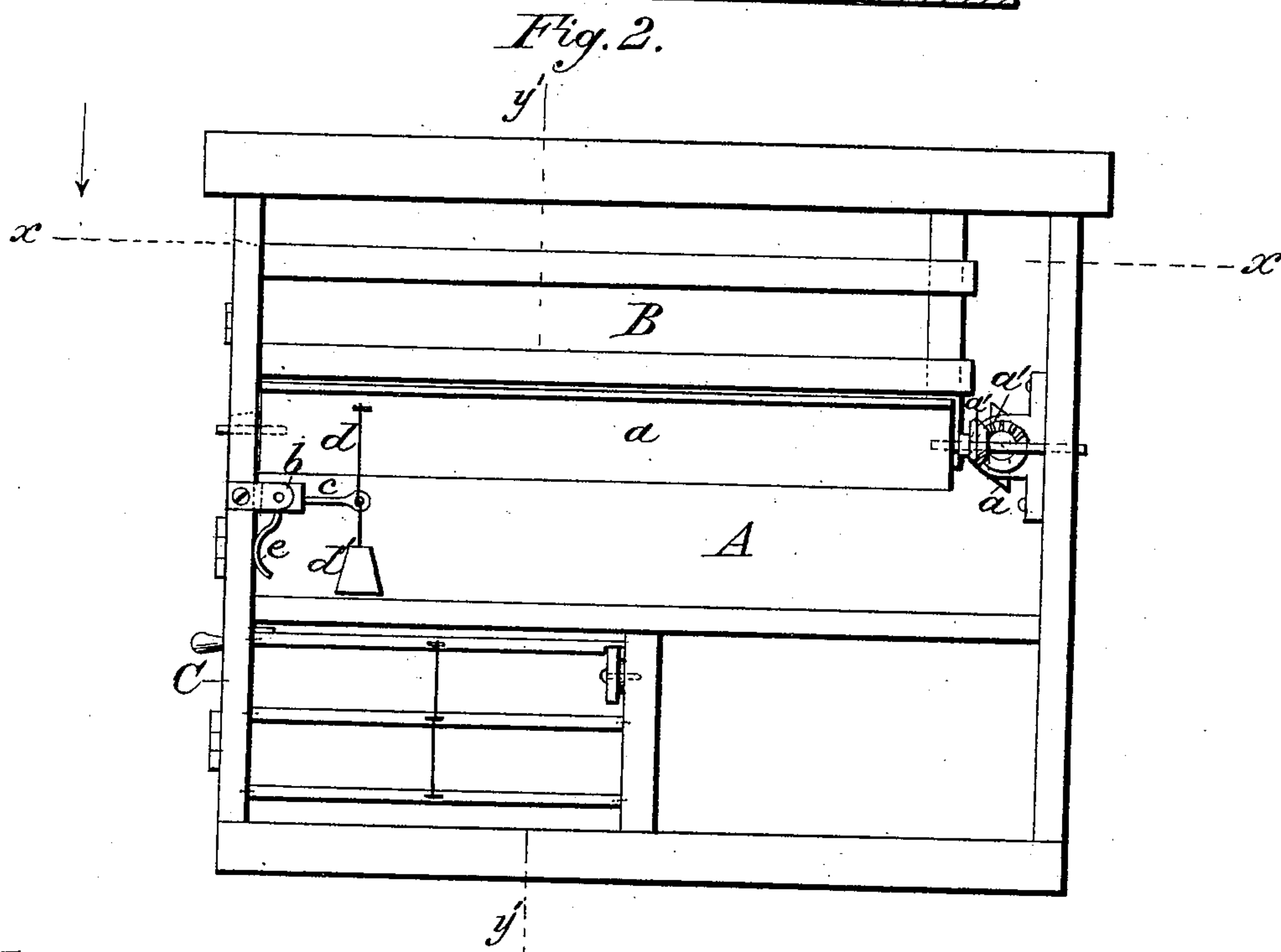
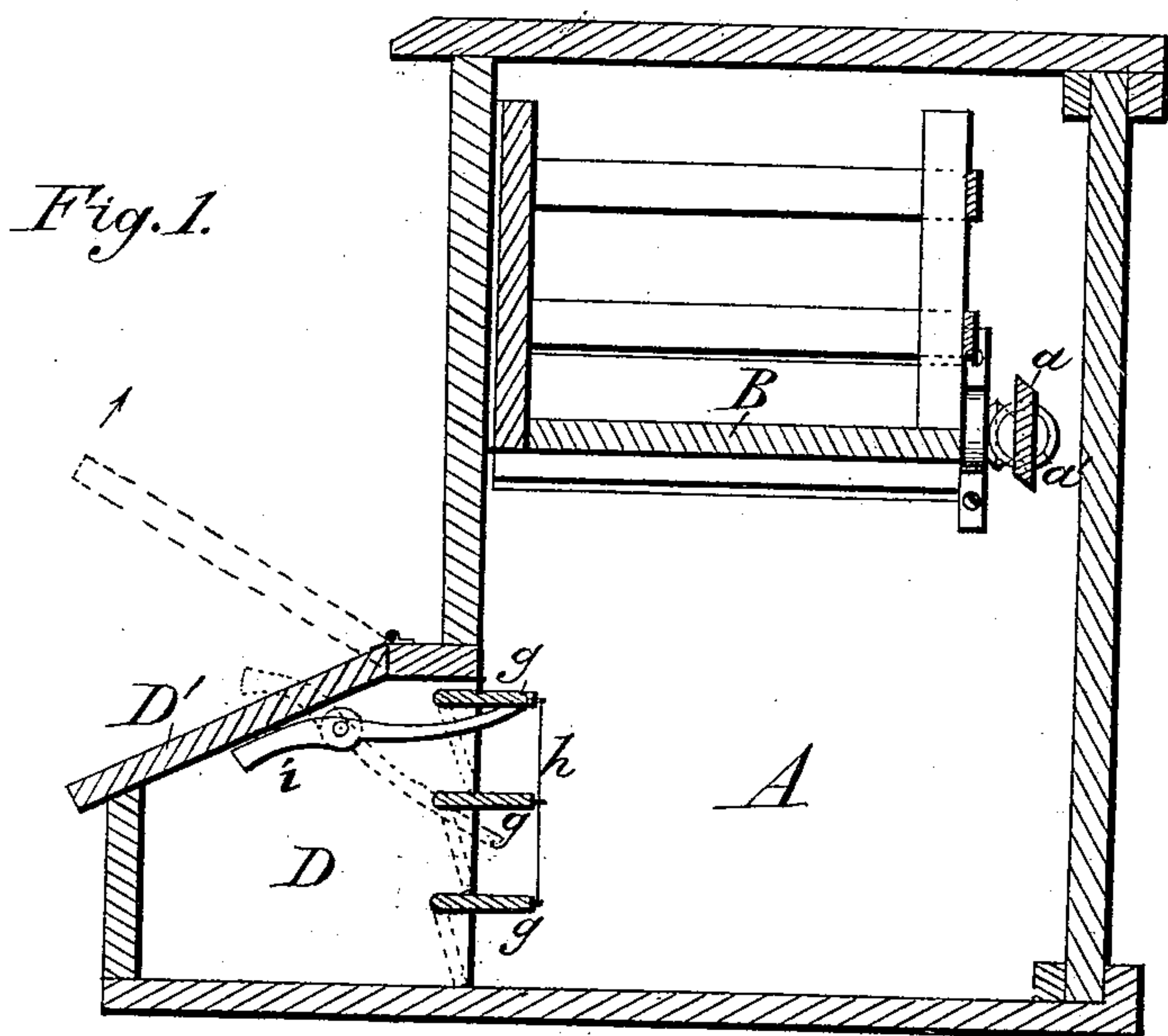
2 Sheets—Sheet 1.

G. H. GOETCHIUS & J. C. SHULTS.

REFRIGERATOR.

No. 265,494.

Patented Oct. 3, 1882.



*Attest:*

*H. H. Schott.*

*A. R. Brown*

*Inventor:*

*George H. Goetchius*  
*John C. Shults*  
*per J. C. Parker*



(No Model.)

2 Sheets—Sheet 2.

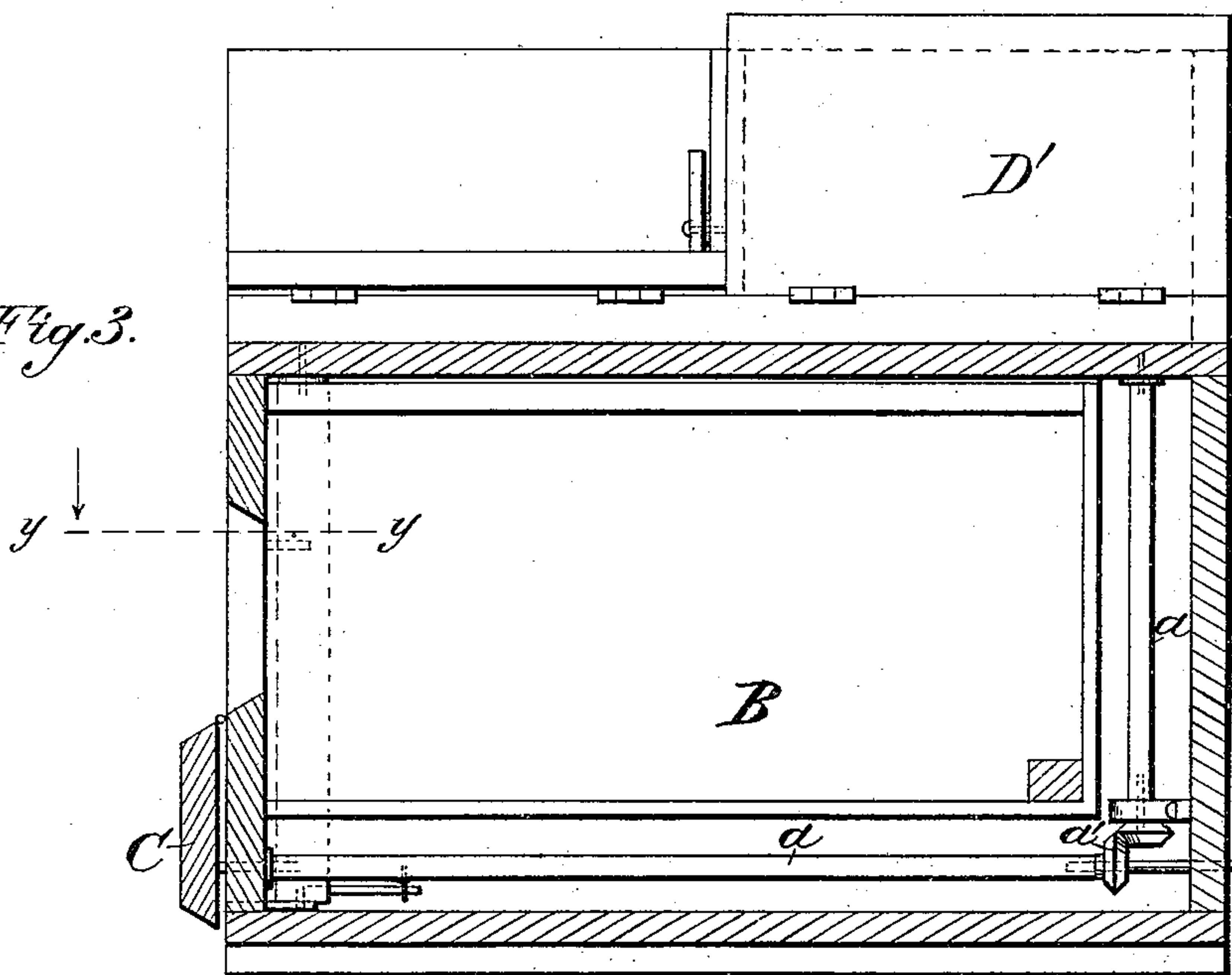
G. H. GOETCHIUS & J. C. SHULTS.

REFRIGERATOR.

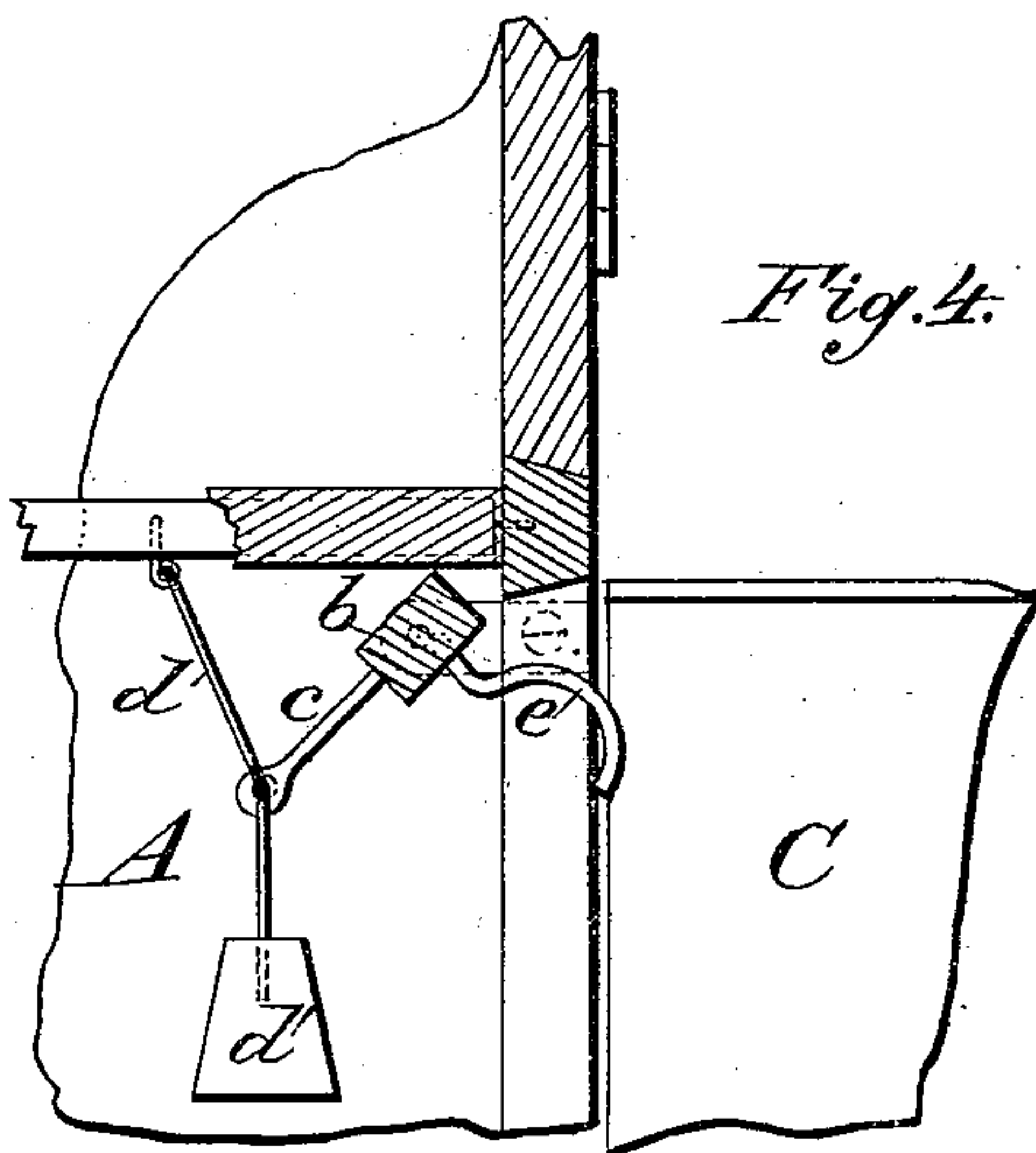
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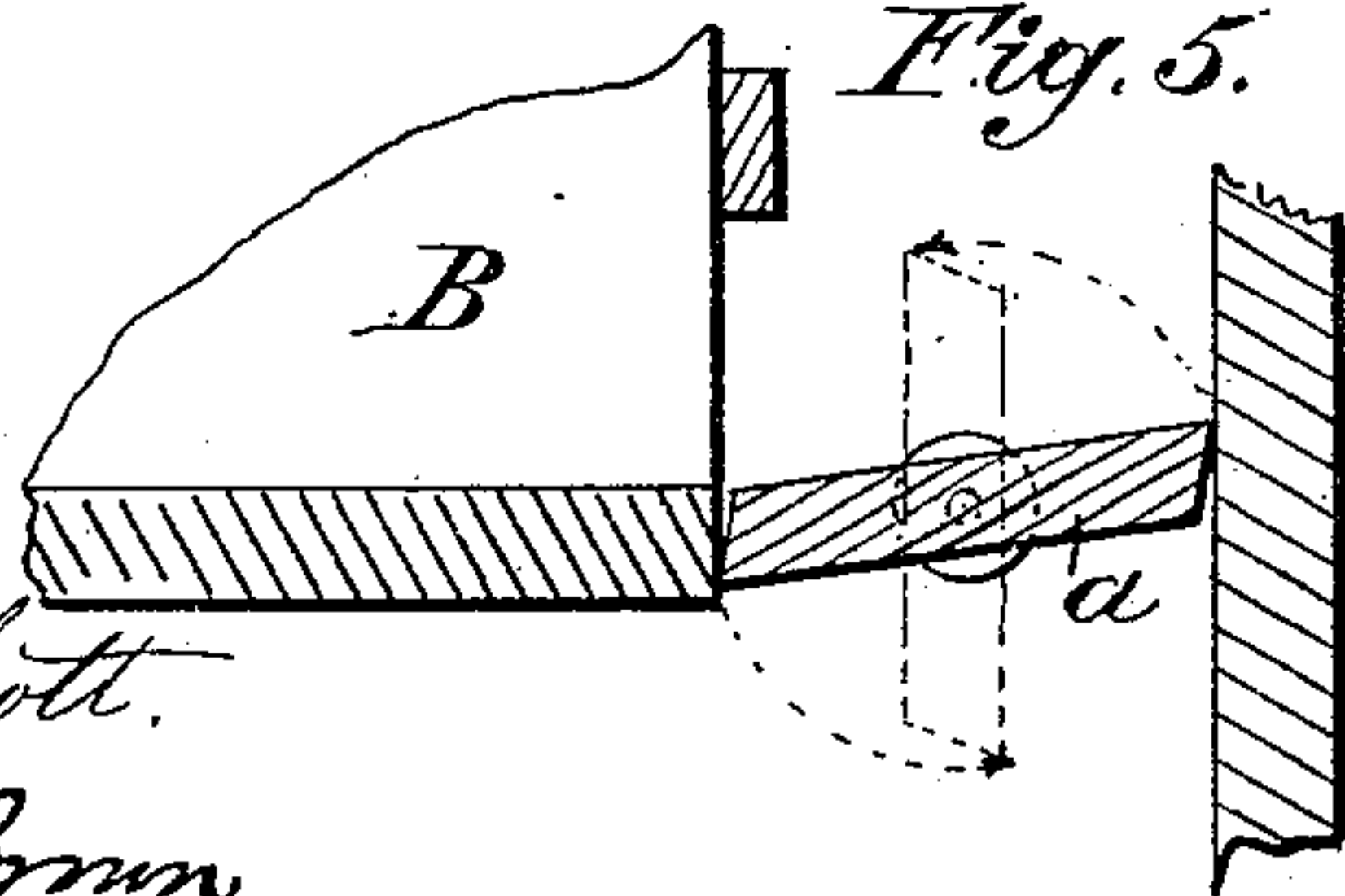
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



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# UNITED STATES PATENT OFFICE.

GEORGE H. GOETCHIUS AND JOHN C. SHULTS, OF LITTLE FALLS, N. Y.

## REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 265,494, dated October 3, 1882.

Application filed June 11, 1880. - Renewed April 13, 1882. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE H. GOETCHIUS and JOHN C. SHULTS, citizens of the United States, residing at Little Falls, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Refrigerators; and we 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 to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in that class of refrigerators in which the ice-receptacle is placed at or near the top of the refrigerating-chamber, and is intended to prevent the free entrance of external air into the chamber when the lower doors are opened, thus preventing the displacement of the cold air in the refrigerating-chamber by a higher temperature, it being well known that cold air has a tendency to sink, while warm or heated air rises. Therefore when doors in the lower part of the refrigerator are opened the cold air, unless prevented, will flow out and its place be supplied by the warmer external air, which, as air is but a slow conductor of heat, is a long time in being cooled down to the proper temperature.

The invention consists in the construction and arrangement of the inner doors or valves that are placed between the various compartments of a refrigerator, so that communication through the same may be cut off when the outer doors are opened, as hereinafter more fully described and claimed.

In the drawings, Figure 1 is a vertical transverse section on the line *y y* of Fig. 2. Fig. 2 is an interior view, the back being removed. Fig. 3 is a horizontal section on the line *xx* of Fig. 2. Figs. 4 and 5 are enlarged detail views, showing the method of arranging the valves and their operating mechanism.

The frame of this refrigerator consists in the ordinary chest-like chamber, A, the walls of which are preferably of wood, as being an excellent non-conductor, and may be lined with sheet-zinc or other metallic lining which shall

present a smooth non-absorbent surface. In the upper part of this chamber A is placed the ice rack or receiver B, preferably constructed with a tight sheet-metal-covered bottom and open slat-work sides, which latter allow a free passage to the air cooled by contact with the ice in the rack to pass to other parts of the chamber unless such passage is prevented by the closure of the semi-rotating valves *a a*, which surround the ice-receptacle upon two or more sides, and are pivoted in the side walls of the refrigerator in the same manner as the slats of an ordinary window-blind. At the adjacent angles the pivots of the valves *a* are provided with bevel-gears *a' a'*, so that they move simultaneously. A rock-shaft, *b*, is pivoted across the chamber at a point just above the door C. To the arm *c* of this rock-shaft is connected one end of the rod *d*, the upper end of which is attached to the valve *a*. Projecting downwardly from the rock-shaft *b* is a curved arm, *e*, so located that when the door C is closed the rock-shaft will partially rotate and cause the rod *d* to open the valves *a a*, thus allowing free communication between the air surrounding the ice-rack and the lower part of the chamber. In order to make this closing apparatus act quickly and with certainty, a weight, *d'*, may be attached to the end of the arm *e* to press upon the door, so that the slightest movement of the latter is at once communicated to the valves *a a*.

Additional chambers D may be formed at the sides of the main chamber A and separated therefrom by the swinging valves *g g*. These valves are pivoted at their ends and near their upper edges, so that when they hang in nearly a vertical position, as shown by dotted lines in Fig. 1 of the drawings, they form a partition between the chambers, but when raised into the horizontal position by the rod *h*, which is attached to their free edges, they allow free communication between the two chambers A and D. In order to operate these swinging valves, an arm or lever, *i*, is pivoted to one end of the chamber in such a position that when the cover D' of the box or chamber D is closed it will rest upon the outer curved end of the lever, the opposite end of which raises the valves *g g*, as shown in Fig. 1; but



when the cover D' is lifted it no longer rests upon the lever, and consequently the valves are not held open, but close by their own gravity, cutting off all communication between  
5 the chambers.

We are aware that communication between the chambers or compartments of a refrigerator has heretofore been opened and closed by means of swinging valves or traps that are connected  
10 by a rod and operated by a straight sliding lever the end of which comes in contact with the outer door of the refrigerator when closed. This, however, we do not claim. In the form of construction just referred to the straight lever  
15 is not pivoted, but slides horizontally in supporting loops or brackets, so that it will only operate the inner valves when they are placed nearly or quite in a parallel line with the outer door. By giving the operating-lever a curved  
20 form, however, and securing it on a pivot, so that it will swing or oscillate freely, as shown in the drawings, it will operate the valves by coming in contact with the outer door or cover, whether the latter is hung in a vertical posi-

tion, as an ordinary door, or so as to rest at an  
angle when closed. 25

Having thus described our invention, we claim as new, and desire to secure by Letters Patent, the following:

1. In a refrigerator, the combination, with 30 the chamber A and ice-rack B, of the semi-rotating valves *a a*, having bevel-gears *a' a'*, the rod *d*, weight *d'*, rock-shaft *b*, arms *c e*, and door C, substantially as and for the purpose described.

2. In a refrigerator, the combination of the 35 chambers A D, swinging valves *g g*, connecting-rod *h*, pivoted lever *i*, and cover D', all constructed and arranged substantially as and for the purpose specified. 40

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE G. GOETCHIUS.  
JOHN C. SHULTS.

Witnesses:

WATTS T. LOOMIS,  
E. H. SMITH.