

(No Model.)

R. A. MESSERVEY.
REFRIGERATOR.

No. 257,361.

Patented May 2, 1882.

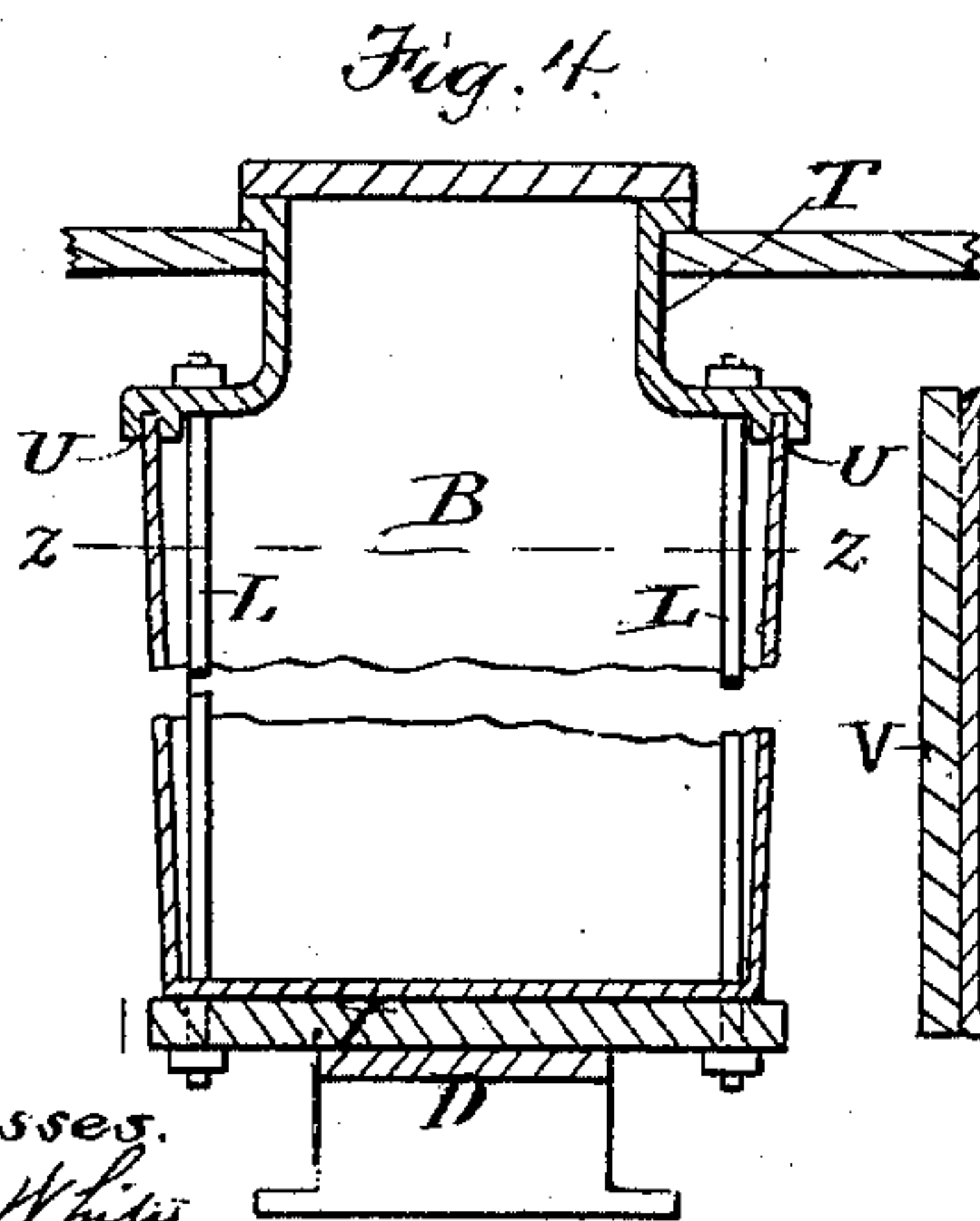
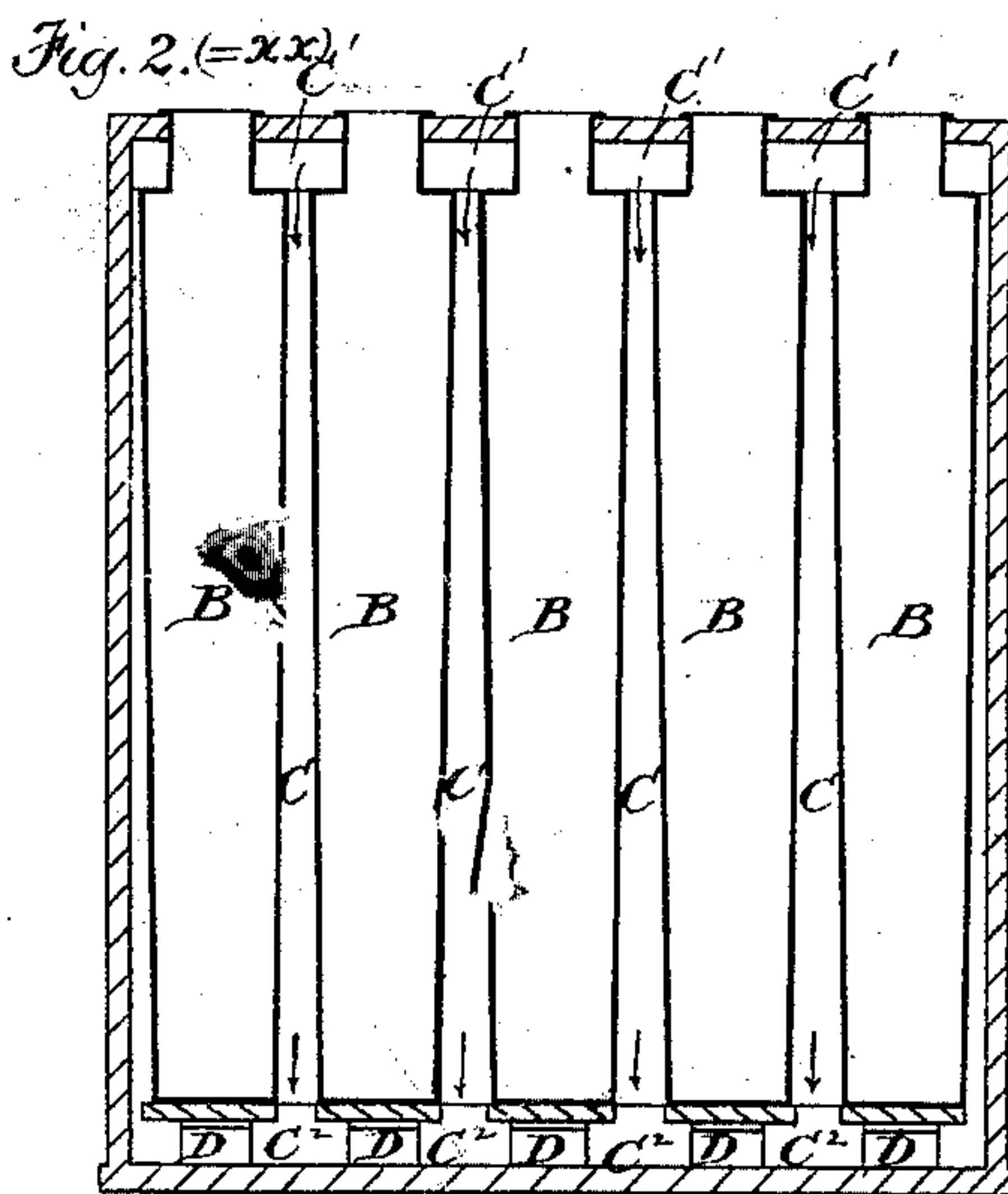
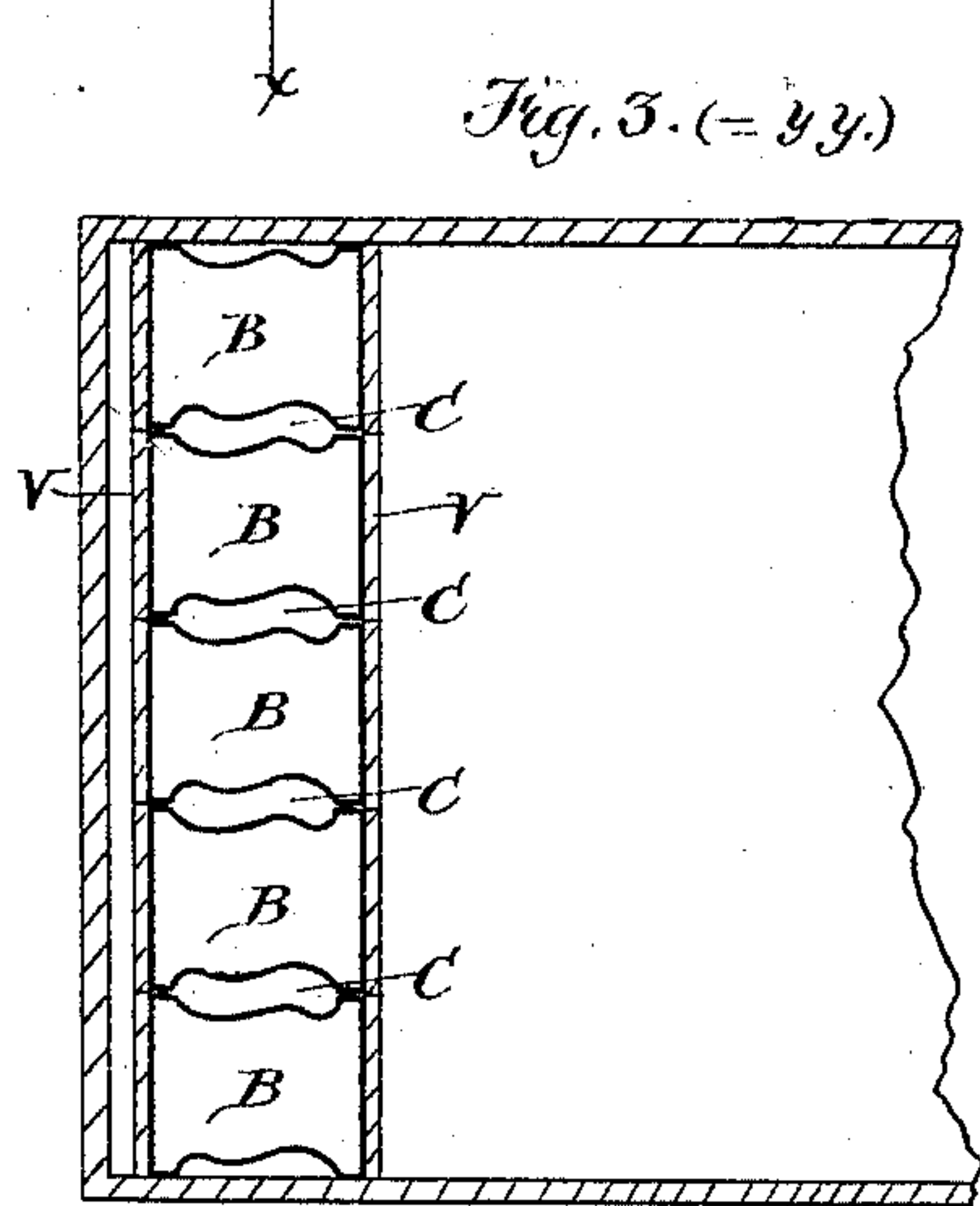
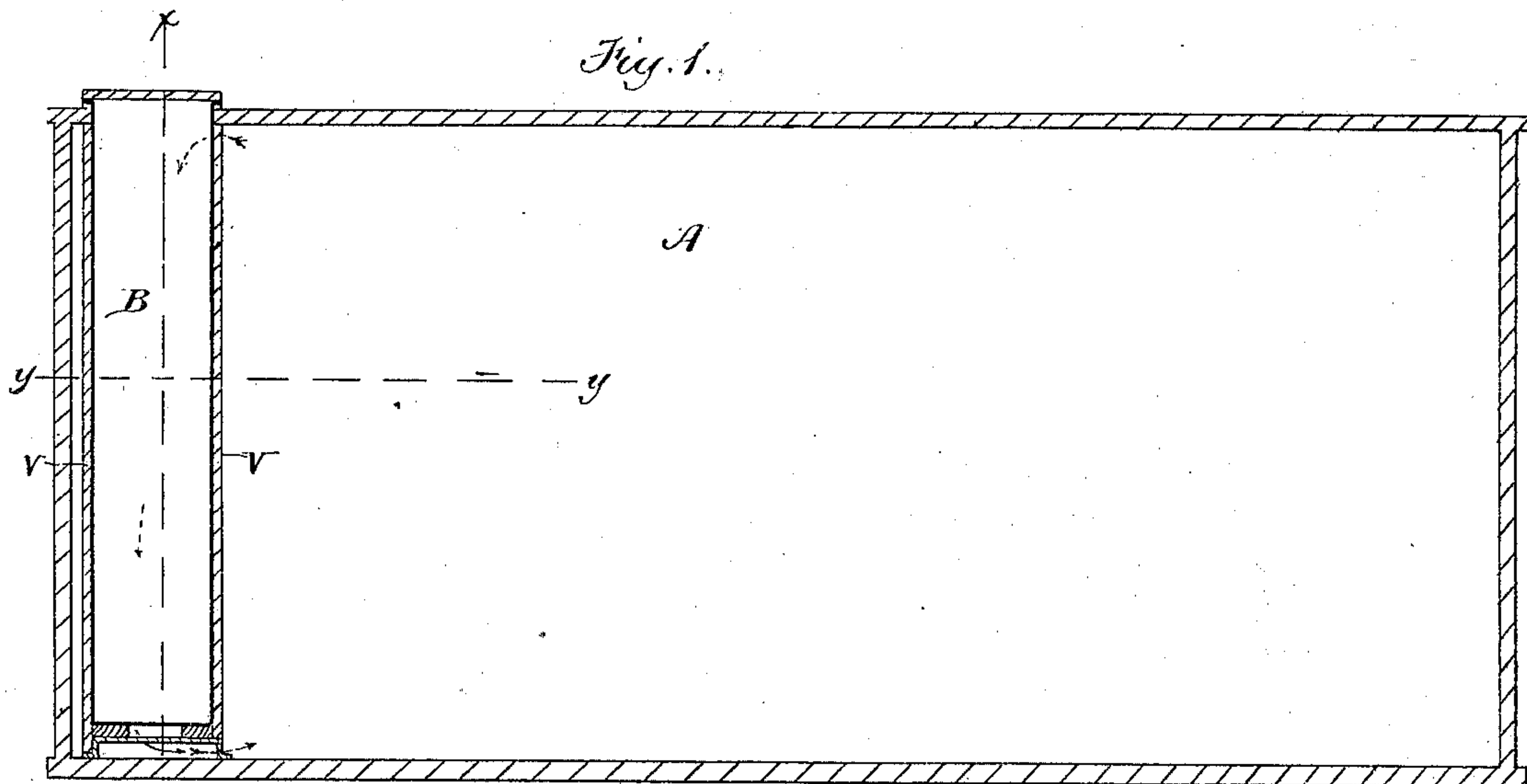


Fig. 5. (= z z.)

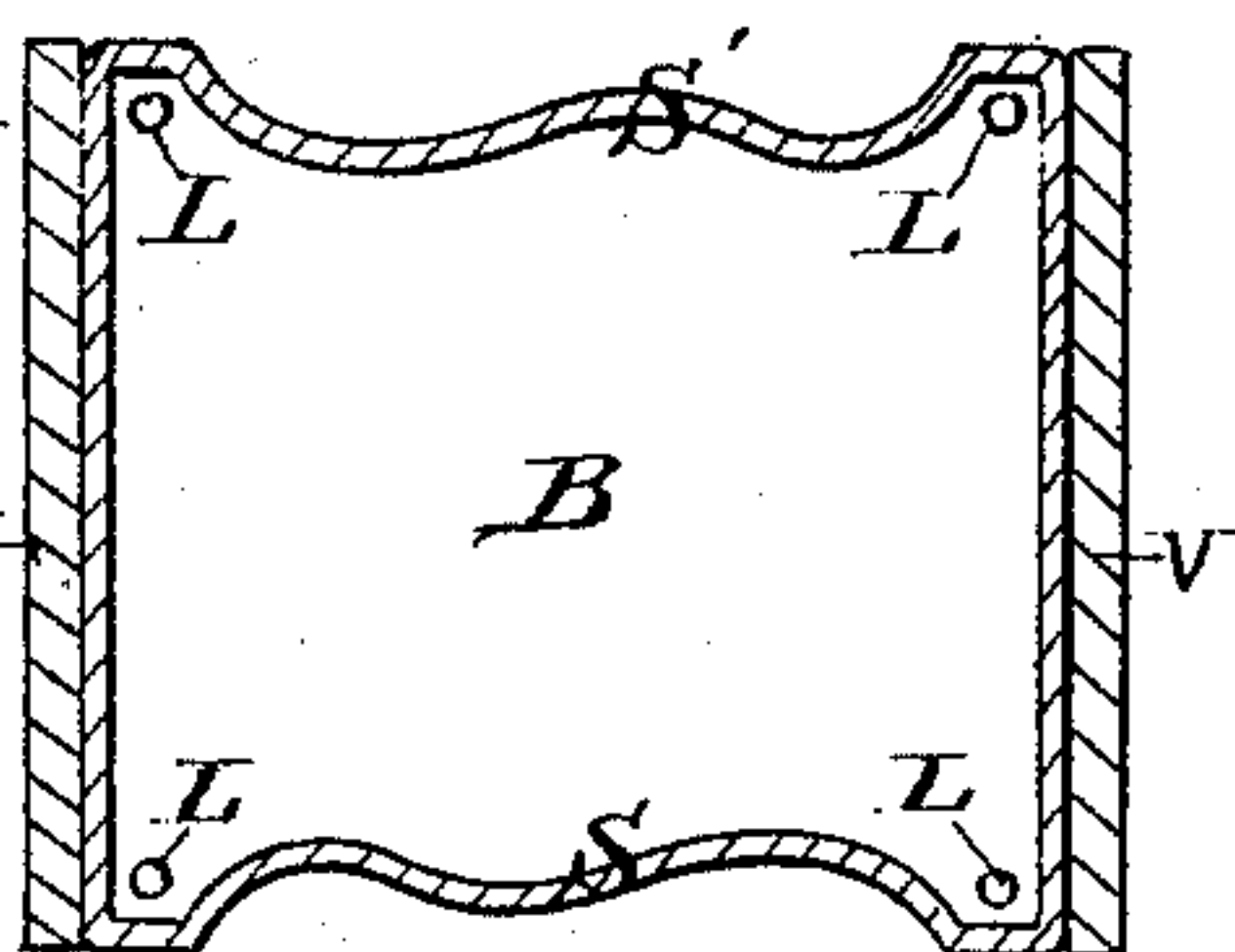
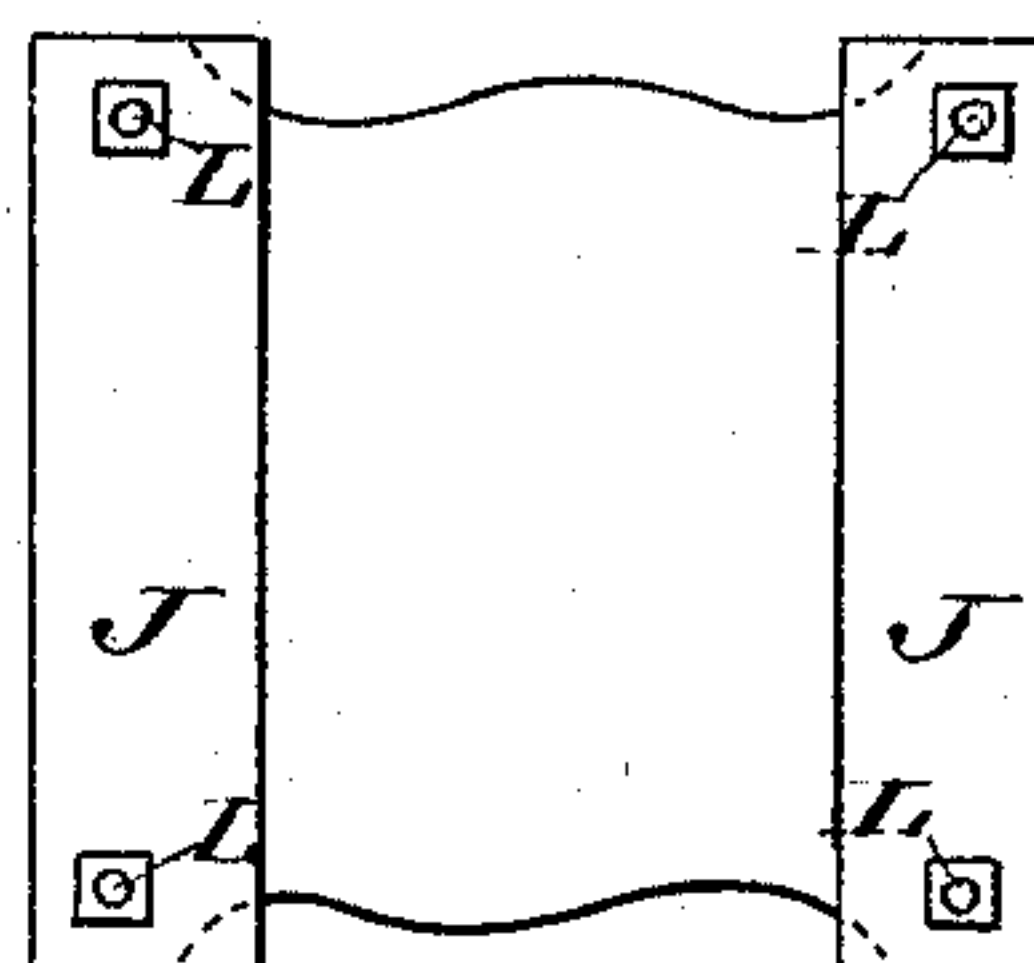


Fig. 6.



Witnesses.
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UNITED STATES PATENT OFFICE.

REUBEN A. MESSERVEY, OF MEDFORD, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO JOHN M. WATSON, TRUSTEE, OF BROOKLINE, MASS.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 257,361, dated May 2, 1882.

Application filed February 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, REUBEN A. MESSERVEY, of Medford, in the county of Middlesex and State of Massachusetts, have invented certain
5 Improvements in Refrigerators, of which the following is a specification.

This invention relates to that class of refrigerators in which a circulation of air in a preserving-chamber is maintained by the employment in a suitable part of the chamber of vertical air-passages communicating at their upper and lower ends with the chamber, and having their walls cooled by contact with a refrigerant contained in tanks or receptacles,
10 the warm air from the top of the chamber entering the upper ends of such passages becoming cooled therein and passing from the lower ends of the passages to the lower portion of the chamber.

The invention has for its object to provide certain improvements in the construction of the tanks or receptacles for the refrigerant, whereby when two of said tanks are placed together S-shaped or tortuous vertical air-passages will be formed between them, having a large extent of surface cooled by the refrigerant without encroaching materially on the space for containing the refrigerant. To this end the invention consists in the improvements
15 which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a longitudinal vertical section of a preserving-chamber having my improved tanks. Fig. 2 represents a transverse vertical section on line
35 *xx*, Fig. 1. Fig. 3 represents a horizontal section on line *yy*, Fig. 1. Fig. 4 represents an enlarged vertical section of one of the tanks. Fig. 5 represents a section on line *zz*, Fig. 4. Fig.
40 6 represents a bottom view of one of the tanks.

The same letters of reference indicate the same parts in all the figures.

In the drawings, A represents a preserving-chamber, which may be a car or a fixed apartment of any suitable construction.
45

B B B represent my improved tanks, which are arranged side by side in contact with each other in any suitable part of the chamber A, in this instance at one end. Each tank has
50 two corrugated or wavy sides, S S', which are so formed that when two tanks are placed to-

gether said sides will co-operate in forming a narrow air-passage, C, which is S-shaped or tortuous in cross-section, having substantially parallel curved sides in somewhat close proximity to each other, as shown in Fig. 3. The tanks are contracted in width at their upper ends, the contracted portions passing through the top of the chamber, as shown in Fig. 2, and forming spaces C', through which warm
55 air can pass from the upper portion of the chamber A into the passages C. The tanks rest upon suitable supports, D, elevated above the bottom of the chamber, so that spaces C² are afforded for the passage of cold air from the
60 passages C into the lower portion of the chamber. The corrugated sides of the tanks B are preferably inclined inwardly, as shown in Fig. 2, so that the passages C are gradually increased in width from their upper to their
65 lower ends. The body of each tank is composed preferably of galvanized sheet-iron. The top T is composed of cast-iron, having a groove, U, which receives the upper end of the body of the tank, as shown in Fig. 4. The
70 bottom of the tank has two transverse cleats, J J, which are connected to the top T by vertical rods L, extending from top to bottom of the tank, near the corners thereof. The top of each tank is provided outside of the chamber
80 with a suitable cover.

Among the advantages secured by the S-shaped sides of my improved tank over others are the following: It is much more easily filled than a tank containing an air pipe or passage
85 inclosed within the tank, or one having semi-circular corrugations, and the ice or refrigerating mixture lies more closely in contact with the walls of the air-passages. By the parallel arrangement of the S-shaped sides of the pas-
90 sages a large extent of cooling-surface is obtained without encroaching on the interior of the tanks to any material extent. The form of the air-passages in cross-section, each elongated transversely and having its curved sides
95 comparatively close to each other, enables a large volume of air to pass through each passage, and keeps the air in close contact with the cooling-surface during its entire passage. In a round tube or passage of the same ca-
100 pacity the center of the column of air would derive comparatively little benefit from the

cooling-surface, on account of its distance therefrom; but with the improved form all portions of the column are acted on alike.

I prefer to provide the outer and inner sides of the tanks B with coverings of wood or other non-conductor, V, extending the whole or a part of the distance from the bottom to the top of the tanks.

I claim—

10 1. In a refrigerator, a series of tanks or receptacles formed, as described, on their approximate surfaces, whereby when the tanks are placed in contact with each other said proximate surfaces will form narrow parallel-sided
15 S-shaped vertical air-passages, the entire surfaces of which are cooled by the refrigerant in the tanks, as set forth.

2. In a refrigerator, the tanks or receptacles having S-shaped or tortuous air-passages be-

tween their proximate sides, contracted upper ends projecting through the top of the refrigerator, and spaces between said contracted upper ends connecting said air-passages with the upper portion of the preserving-chamber, as set forth. 20

3. The improved tank composed of the cast-metal top T, having a groove, U, the sheet-metal body having its upper end contained in said groove, and the bottom cleats connected to the top by vertical rods, as set forth. 25

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 18th day of January, A. D. 1882. 30

REUBEN A. MESSERVEY.

Witnesses:

SAMUEL W. JOHNSON,
C. F. BROWN.