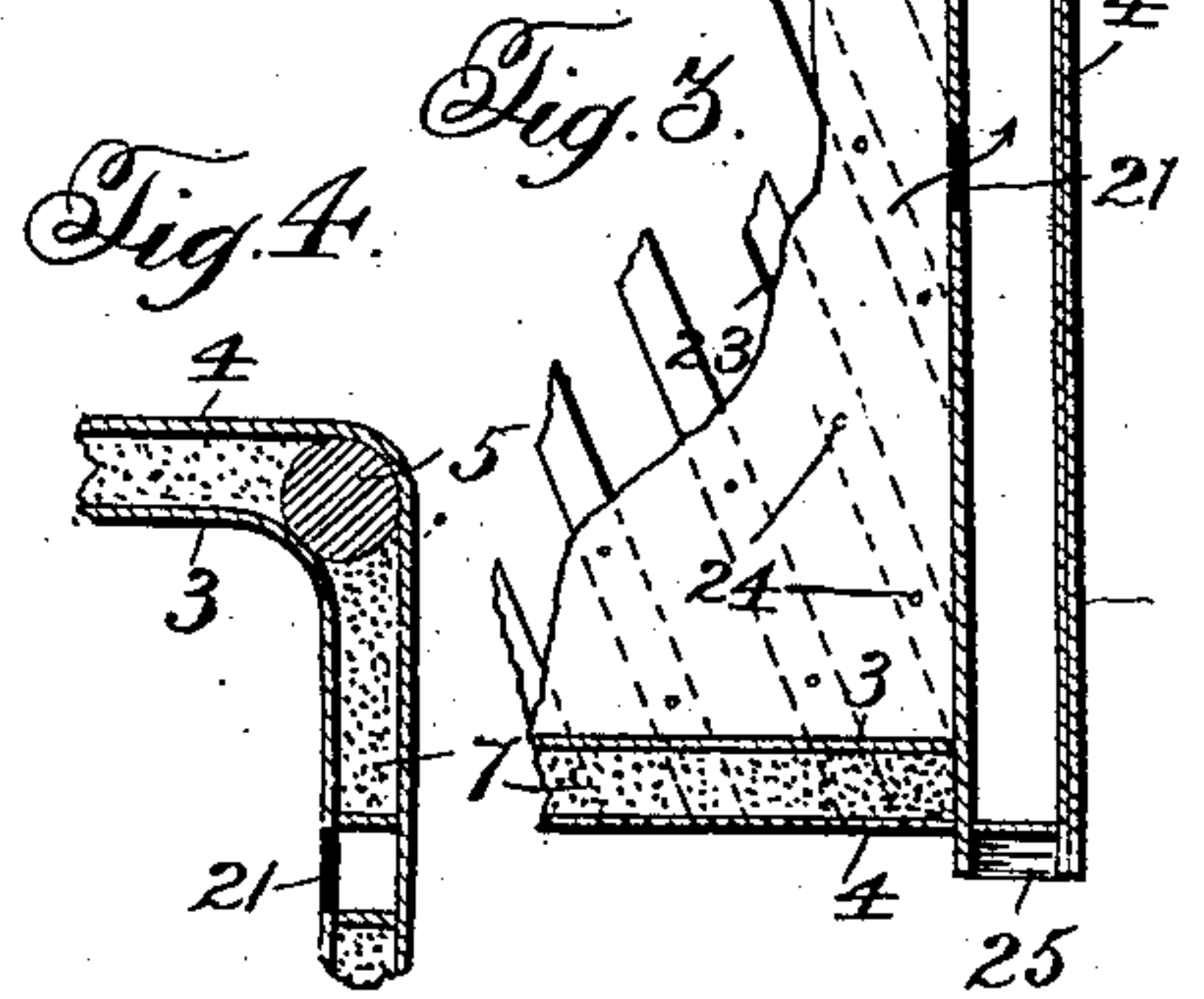
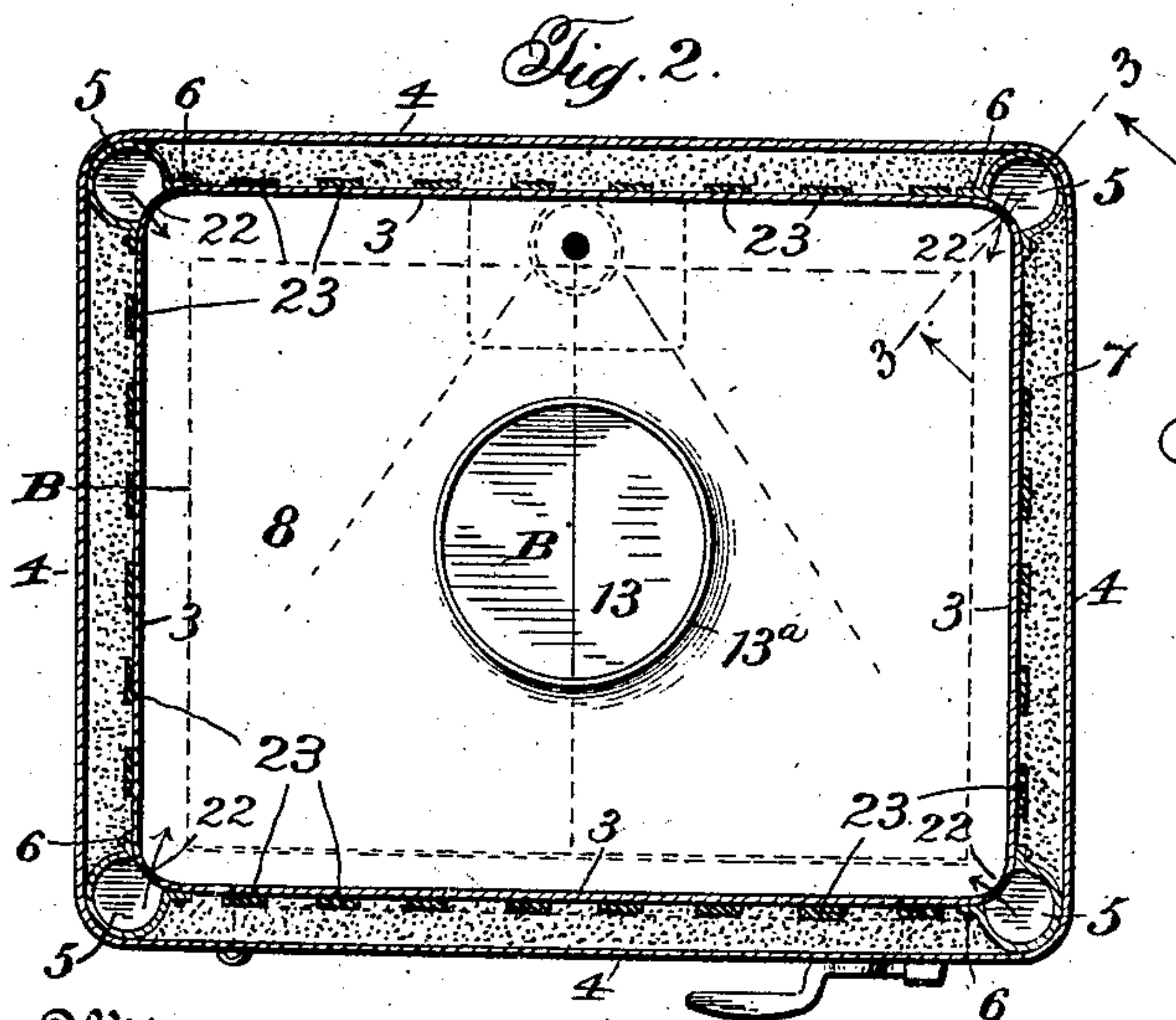
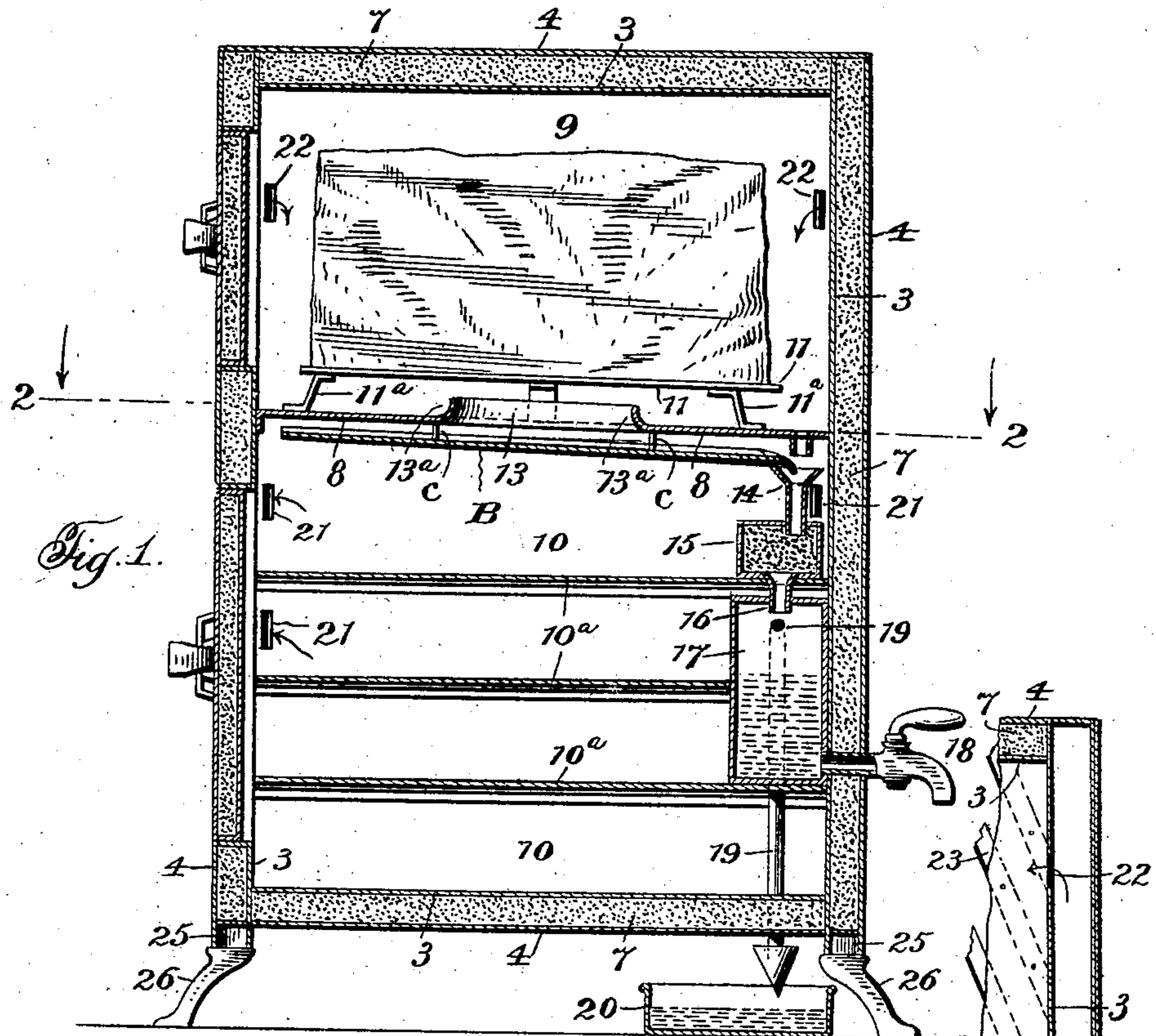


No. 884,242.

PATENTED APR. 7, 1908.

J. C. TYLER.
REFRIGERATOR.
APPLICATION FILED NOV. 6, 1905.



Witnesses:

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JOEL C. TYLER, OF KNOXVILLE, TENNESSEE.

REFRIGERATOR.

No. 884,242.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed November 6, 1905. Serial No. 286,036.

To all whom it may concern:

Be it known that I, JOEL C. TYLER, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented certain new and useful Improvements in Refrigerators, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention is directed, among other things, particularly to refrigerators wherein provision is made to induce circulation of air between the cooling medium and the materials to be kept at low temperature.

The invention includes effective provision for maintaining circulation of air from the ice-receptacle toward the bottom of the refrigerator and return.

In addition, the invention contemplates the provision of other means for inducing circulation of air than the usual rising of temperature in the lower part of a refrigerator.

Further, means are provided whereby a refrigerator comprising one or more casings of comparatively thin material, such as sheet metal, can be made strong and durable, the casings being held in proper relation to each other, and distortion of the casings as the result, for instance, of changes in temperature, or by external injury, prevented. Columns for strengthening and other purposes extend between the casings from top to bottom of the refrigerator, and strips of strengthening material are associated with the material of the casings. Novel and effective means are provided for attaching the casings to the upright columns.

The invention also provides such a construction as will afford strong and rigid means of attachment for the legs of the refrigerator.

Within the refrigerator, means are provided for collecting the drip from the melting ice, filtering the same, and conserving the filtered water for drinking and other purposes. Water of condensation from the ice is also collected and prevented from dripping into the lower part of the refrigerator.

The details of construction and arrangement of parts contemplated by the invention are disclosed in the accompanying drawings, forming part hereof, wherein a preferable embodiment of the invention is shown, for purposes of illustration, and in which like reference characters refer to corresponding parts in the several views, of which—

Figure 1 is a vertical sectional view of the

refrigerator; Fig. 2 is a transverse sectional view on the line 2—2, Fig. 1, looking in direction of the arrows; Fig. 3 is a detail sectional view showing the column construction and strengthening ribs; and Fig. 4 is a view showing the construction when solid columns are employed.

Referring more particularly to the drawings, 3 designates the inner casing and 4 the outer casing of the refrigerator, and between these casings are disposed a plurality of vertical columns 5, the columns being placed preferably at the corners of the refrigerator when the same is of angular construction or contour. The casings 3 and 4 are made of some comparatively thin material, such as sheet metal, and the columns 5 are also preferably of metal.

Columns 5 are preferably rounded or cylindrical in cross section and when hollow columns are used the material thereof is not joined on the sides adjacent to the inner casing for a distance equal to the height of the casings, but is cut longitudinally and bent outwardly to form attaching flanges 6. Inner casing 3 is riveted or otherwise suitably attached to flanges 6, thereby forming a rigid connection with columns 5 which form a support therefor. In this manner, also, the open space resulting from the bending out of the column material to form flanges 6 is tightly closed, and a tight passageway from top to bottom of said columns afforded. Outer casing 4 is tightly drawn over columns 5, space being left between the two casings which is filled with any suitable insulating material 7. The top and bottom of the refrigerator are also formed of layers 3 and 4 of suitable material attached to columns 5 and between which is also disposed insulating material 7.

The interior of the refrigerator is divided by shelf 8 into ice-chamber 9 and chamber 10 for provisions and the like. Chamber 10 is provided with shelves 10^a for provisions, etc.

A watertight ice-rack 11, supported on legs 11^a, is provided in ice-chamber 9, said rack being removable and resting on shelf 8. Shelf 8 under rack 11 is perforated or formed with one or more apertures 13 for descent of cold air from the upper to the lower chamber. An upwardly-projecting ridge 13^a is formed around said perforation or aperture to prevent passage therethrough of drip-water from the ice. Rack 11 being watertight, water from the ice will not drip through per-

foration 13 into the chamber below, and it is inclined so that the water will be drained off to the side. Shelf 8 is inclined to drain the water to a drip-pipe 14, which leads to a filter 15 therebeneath in the refrigerator, and in turn a pipe 16 leads from the filter to a tank 17 in the refrigerator. This tank is connected to a stop-cock 18 leading out through the refrigerator casings. An overflow-pipe 19 leads from tank 17 to the usual drip-pan 20 beneath the refrigerator. A drip-plate B is attached under shelf 8 by hangers C and drains into drip-pipe 14. Plate B catches the water that usually condenses under the ice-chamber of a refrigerator, and prevents the same dropping into the provision-chamber. It will thus be seen that water from the melting ice is automatically collected, filtered, and saved in a cold place for use as desired.

Through inner casing 3 a plurality of vents 21 lead from chamber 10 to the interior of columns 5, and one or more vents 22 are formed through said casing to constitute passageways from the interior of the columns to chamber 9.

When solid columns are used, as shown in Fig. 4, the passage of air from the lower to the upper chamber is effected between the outer and inner casings.

As air in the lower chamber 10 becomes warmer than that above with a tendency to rise, and as the air in the upper chamber 9 is cooled by the ice with a tendency to descend, a circulation of air will be set up and maintained within the refrigerator, cold air passing from the upper chamber through perforation 13 and around drip-plate B to the lower chamber, and after becoming warmer entering the columns through vents 21, passing up through the columns, and entering ice-chamber 9 through vents 22, where it is again cooled.

It is obvious that the temperature of that part of columns 5 adjacent to the outer casing will be slightly higher than that of air entering these columns from the interior of the lower chamber. This will result in a slight rising of the temperature of this air as it is deflected against the inner surface of the outer sides of the columns and thereby increase its tendency to ascend.

The sheet material forming the inner and outer casings 3 and 4 of the sides, top, and bottom of the refrigerator may be strengthened by ribs 23 of similar or different material arranged adjacent to said sheet material, the ribs being disposed obliquely and fastened to columns 5 and at the joining ends of the top and bottom of the refrigerator. These ribs may or may not be fastened to the sheet material by rivets 24, as desired.

Columns 5 are extended below the bottom of the refrigerator casing to form legs, or sockets 25 may be formed in their bottom ends into which legs 26 may be screwed or otherwise attached.

Doors 27 and 28 are provided for easy access to the ice and provision chambers, respectively.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A refrigerator comprising upright cylindrical columns having outwardly-extending flanges, an inner casing attached to said flanges, and an outer casing disposed around said columns.

2. A refrigerator comprising upright cylindrical columns the material of which is cut and bent to form flanges, an inner casing attached to said flanges, and an outer casing disposed around said columns.

3. A refrigerator comprising upright cylindrical columns the material of which is cut longitudinally for part of the length and bent outwardly to form flanges and an opening, an inner casing attached to said flanges and forming a closure for said opening, and an outer casing disposed around said columns.

4. In a refrigerator, the combination with columns, a casing of sheet material associated therewith and having edges joining the top and bottom of the refrigerator, of strengthening-ribs associated with said casing and disposed obliquely with respect to the columns and attached to the columns and to the top and bottom.

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

JOEL C. TYLER.

Witnesses:

E. T. MANNING,
A. SAVAGE.