

No. 672,437.

Patented Apr. 23, 1901.

J. E. BIMM.

COMBINED REFRIGERATOR AND WATER COOLER.

(Application filed June 22, 1900.)

(No Model.)

Fig 1

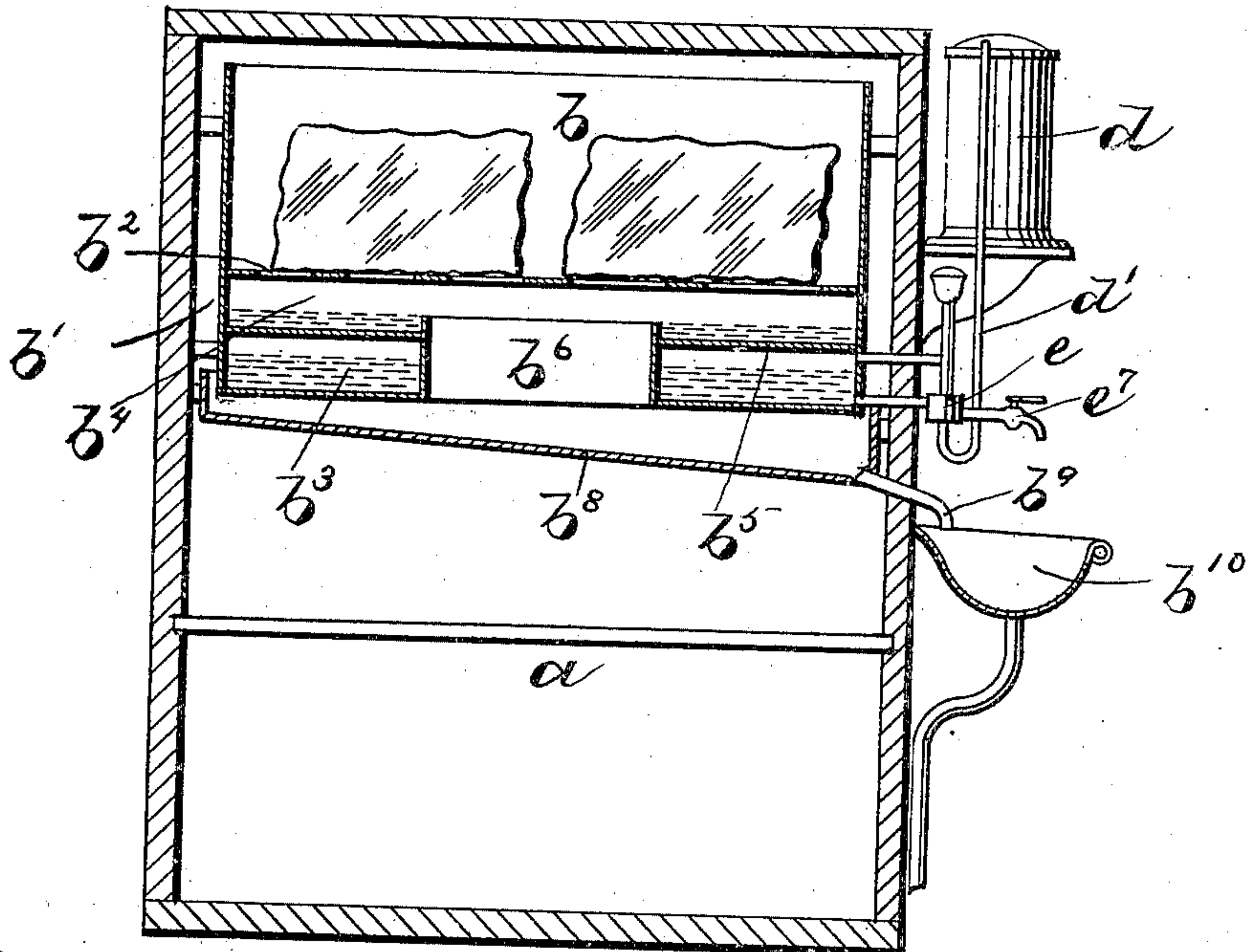


Fig 3

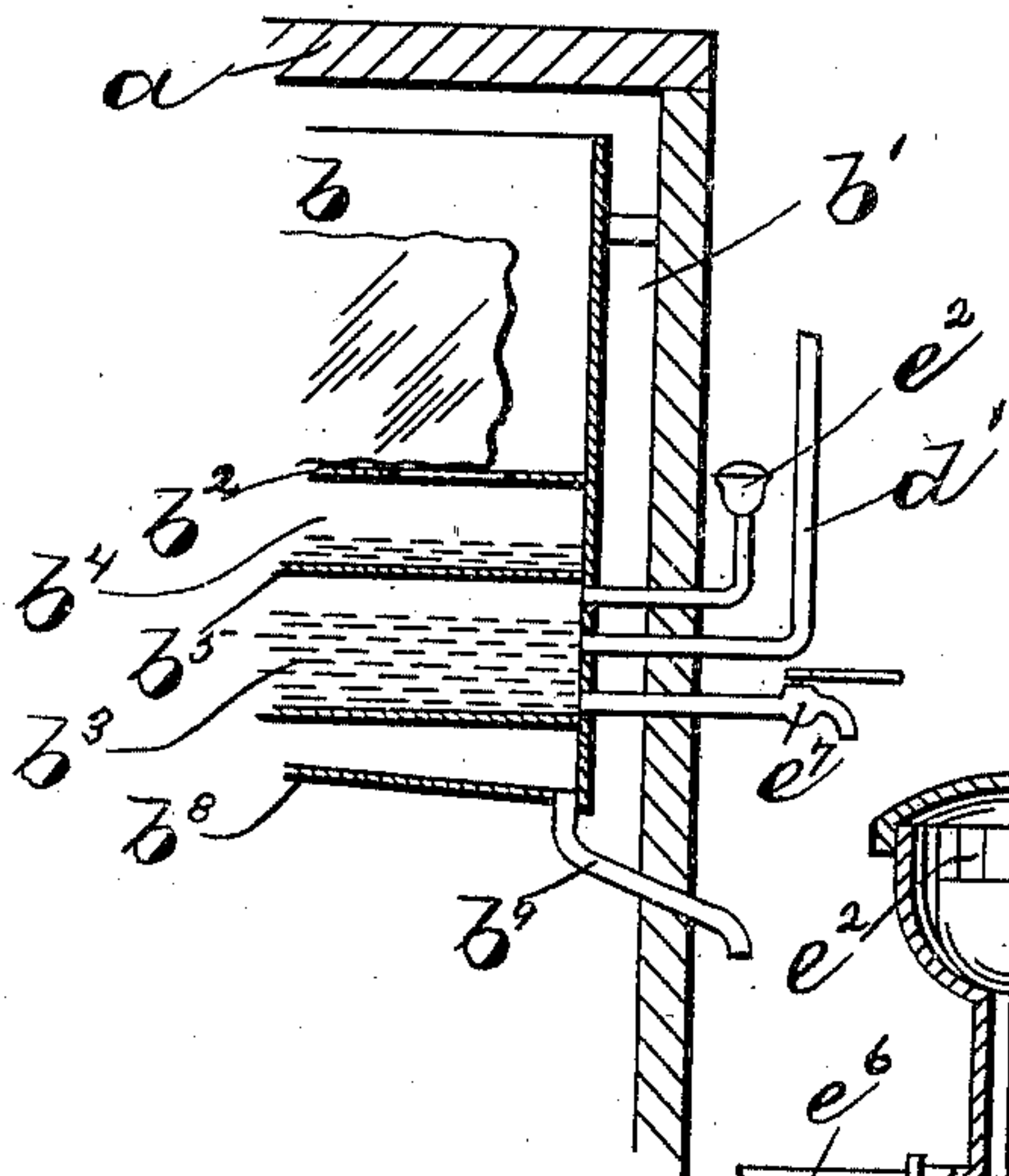


Fig 2

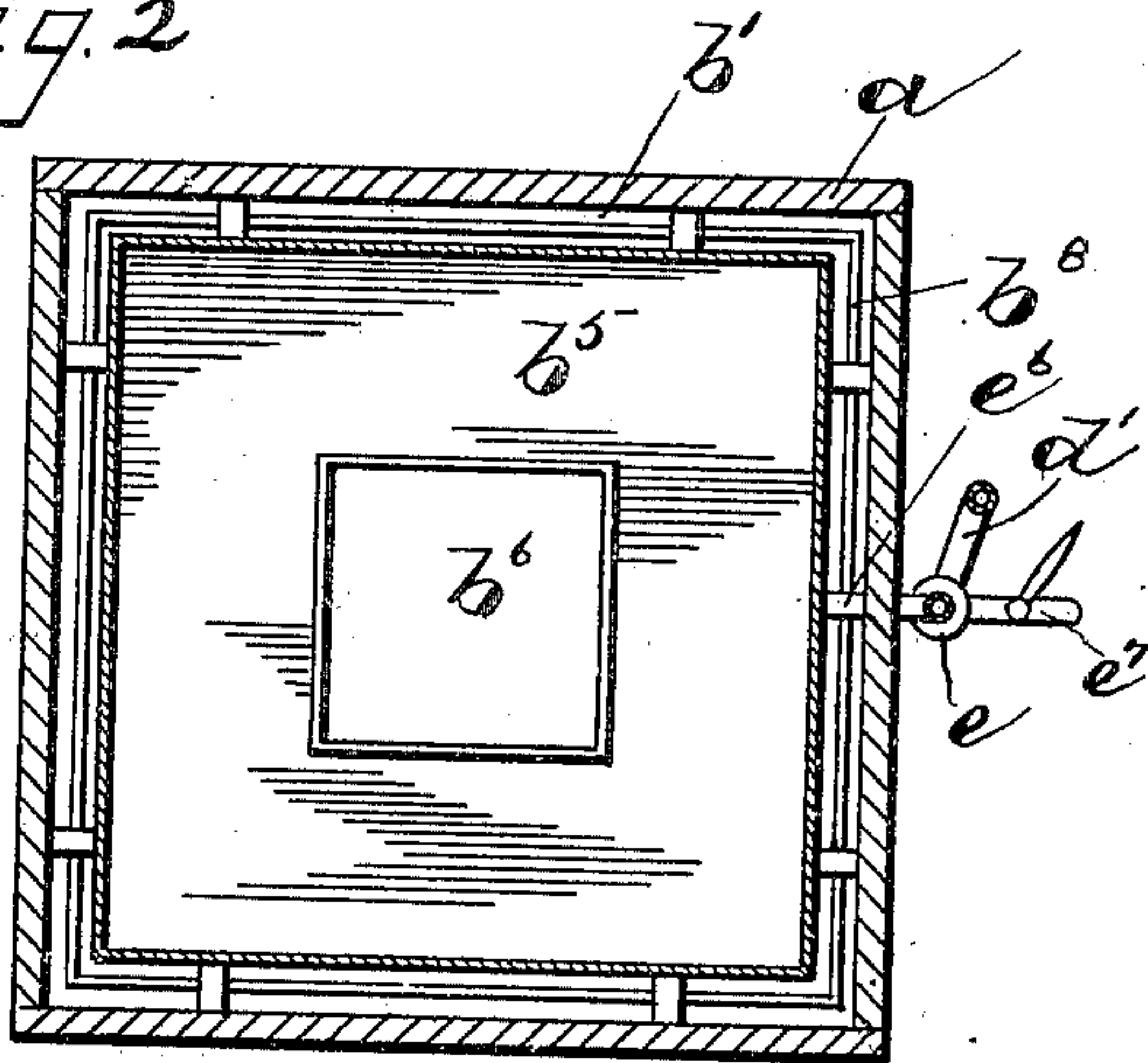
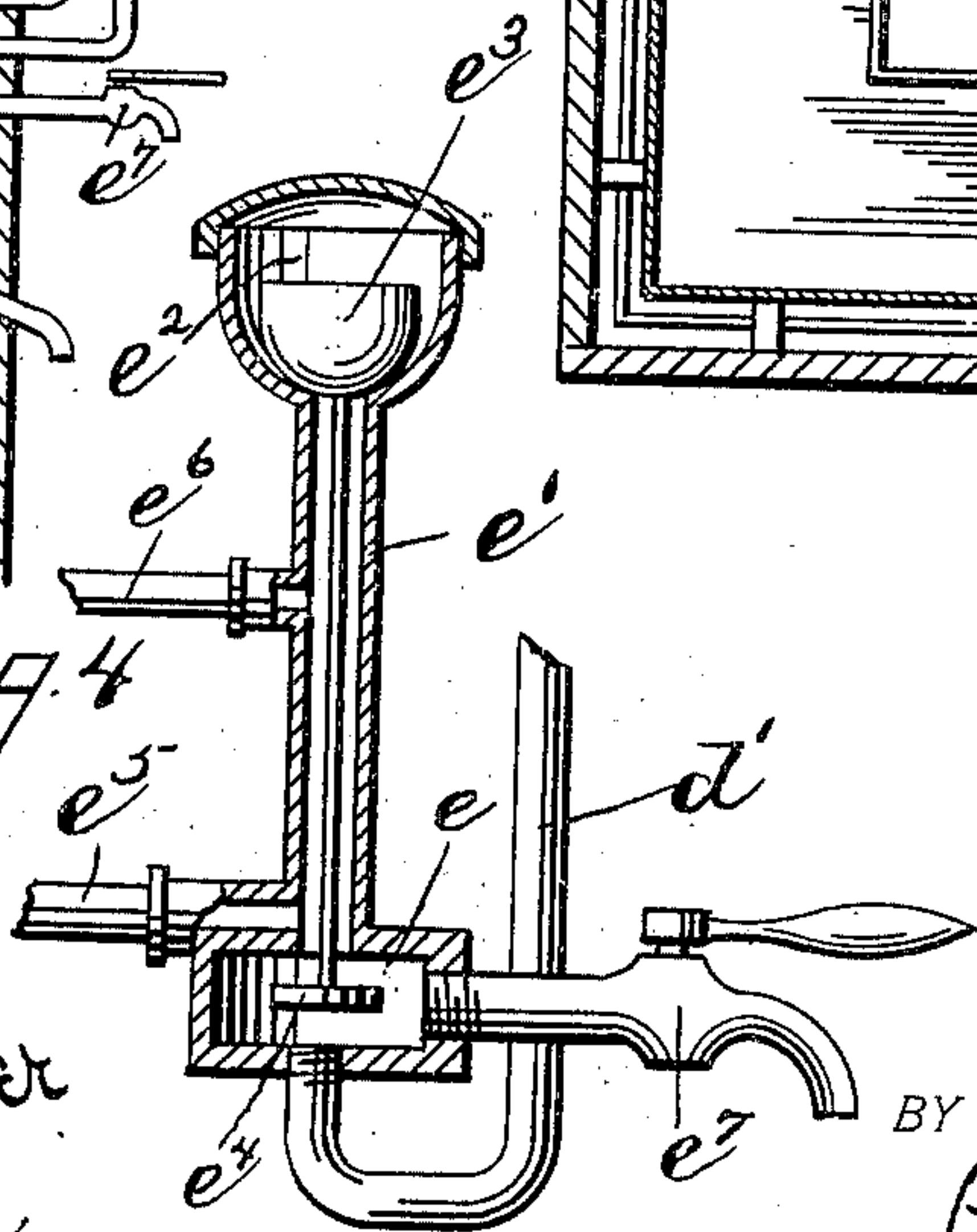


Fig 4



WITNESSES:

Frank L. Walker
Edmond J. Ogden

INVENTOR.

BY Jos. E. Bimm
Paul A. Hotaling
ATTORNEY.

UNITED STATES PATENT OFFICE.

JOSEPH E. BIMM, OF DAYTON, OHIO.

COMBINED REFRIGERATOR AND WATER-COOLER.

SPECIFICATION forming part of Letters Patent No. 672,437, dated April 23, 1901.

Application filed June 22, 1900. Serial No. 21,143. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH E. BIMM, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in a Combined Refrigerator, Water-Cooler, and Filter, of which the following is a specification.

My invention relates to improvements in water-coolers and filters; and it consists in combining the same with an ordinary refrigerator, by means of which the refrigerator may be employed for cooling the water which is stored within the refrigerator.

My invention consists in the constructions and combinations of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a sectional view of a refrigerator in which my invention is shown applied. Fig. 2 is a transverse sectional view showing the bottom of the ice or drip chamber. Fig. 3 is a sectional elevation showing a slightly-modified construction. Fig. 4 is a sectional view showing in detail the arrangement of the supply, discharge, and air valves as employed in the construction shown in Fig. 1.

Like parts are represented by similar letters of reference in the several views.

In the drawings, *a* represents an ordinary refrigerator having an ice-chamber *b*. This ice-chamber is preferably supported from the main body of the refrigerator to give circulating-passages *b'* about the same. It is divided into several compartments, the upper compartment *b* for the ice, which contains a false bottom *b²*, and a lower compartment which contains a closed compartment *b³*—that is, one entirely separated from the other intermediate compartment *b⁴*, immediately above the lower compartment and between the false bottom *b²* and the real bottom *b⁵* of the ice-chamber. There is extended through the lower chamber *b³* and into the intermediate chamber *b⁴* an opening *b⁶*, the sides of which project into the intermediate chamber. This opening *b⁶* furnishes the double purpose of permitting the drip from the ice-chamber to overflow the projecting edges and trickle down the sides thereof, so as to more thoroughly take up the heat from the lower chamber *b³*, and also to permit a circulation of air

from the ice-chamber into the refrigerator proper.

The lower chamber *b³* is the chamber for the filtered water, and it is connected, through suitable pipes, to a filter *d*, placed on the outside of the refrigerator. The preferable connection for this filter is shown in Figs. 1 and 4 and it is arranged as follows: A valve-chamber *e* is placed on the outside of the refrigerator on a line with or slightly below the bottom of the water-chamber *b³*. Extending upwardly from this valve-chamber is a stand-pipe *e'*, provided at the top with a float-reservoir *e²*, having therein a float *e³*. This float is connected by a stem projecting downwardly through the stand-pipe to a valve *e⁴*, which closes the stand-pipe from the valve-chamber *e*. There extend into this stand-pipe two conduits *e⁵* and *e⁶*. The lower conduit *e⁵* furnishes the ingress and egress for the water to the cooling-chamber. The pipe *e⁶* furnishes the outlet for the air and enters the cooling-chamber at the top. The discharge-pipe *d'* from the filter *d* enters the valve-chamber *e* at the bottom. An ordinary faucet *e⁷* enters the valve chamber from the side at a point below the valve *e⁴*. This arrangement is preferably for what is known as a "pressure-filter." The water from the filter *d* enters the valve-chamber *e* and passes the valve *e⁴* through the conduit *e⁵* into the cooling-chamber, the air escaping through the vent *e⁶* and the float-reservoir *e²*. When the cooling-chamber becomes filled, the water in the stand-pipe raises the float and shuts off the valve *e⁴*, thus preventing a further supply of water entering the cooling-chamber. If the faucet *e⁷* is opened, the pressure is released from the bottom of the valve, the valve drops down, and the water is drawn from the cooling-chamber. Substantially the same arrangement is shown in Fig. 3, except that the filter-pipe *d'* and the air-valve *e²* are shown as separate connections. In this case any ordinary float-valve is used for the air-valve *e²*, which will permit the escape of the air and prevent the escape of the water.

Below the water-cooling chamber *b³* and the opening *b⁶* there is preferably placed a drip-pan *b⁸*, which catches the drip and carries it off through any suitable pipe connection *b⁹*. This is preferably discharged into a waste-

basin b^{10} , which is placed below the faucet e^7 . This drip-pan is preferably made larger than the bottom of the ice-chamber, as shown in Fig. 2, so as to leave an air-space between the sides of the chamber and the drip-pan, so that the air can circulate from the ice-chamber through the opening b' into the refrigerating-chamber, the sides of the drip-pan being sufficient to prevent the drip from overflowing. It will be seen that by this construction a water-cooling chamber is formed which is substantially surrounded by the cold water from the ice. The upwardly-projecting sides of the opening b^6 keeps a sheet of cold water on top of the cooling-chamber. This water overflowing the sides and passing down through the opening furnishes a sheet of cold water which passes through the body of the filtered water in the cooling-chamber. At the same time a complete circulation is permitted in the refrigerator proper and the drip from the ice carried off, so as not to interfere with the refrigeration.

Having thus described my invention, I claim—

1. The combination with the refrigerator, the ice-chamber having a false bottom, a cooling-chamber below said ice-chamber having a central opening extending into said ice-chamber and provided with projecting sides to form a reservoir above said cooling-chamber, a drip-pan under said central opening, a filter con-

nected to said cooling-chamber, and an air-valve also connected near the top of said cooling-chamber, substantially as specified.

2. The combination with the ice-chamber, the cooling-chamber formed therein having a central opening with projecting sides, the drip-pan under said opening, the independent air and water connections from said cooling-chamber to a stand-pipe on the outside of said refrigerator, and a float-valve in said stand-pipe, and a filtering connection below said float-valve, and a faucet also connected below said float-valve, substantially as and for the purpose specified.

3. The combination with the filter and refrigerator as described, of an ice-chamber, a cooling-chamber with a central opening provided with projecting sides to form a reservoir in the bottom of said ice-chamber above said cooling-chamber, a false bottom to receive the ice in said ice-chamber, a drip-pan under said central opening, an inlet to said cooling-chamber from said filter, an outlet from said cooling-chamber having a float-valve to limit the intake from said filter and a discharge-faucet, substantially as specified.

In testimony whereof I have hereunto set my hand this 11th day of June, A. D. 1900.

JOSEPH E. BIMM.

Witnesses:

T. J. ELLEFF,

THOMAS B. HERRMAN.