

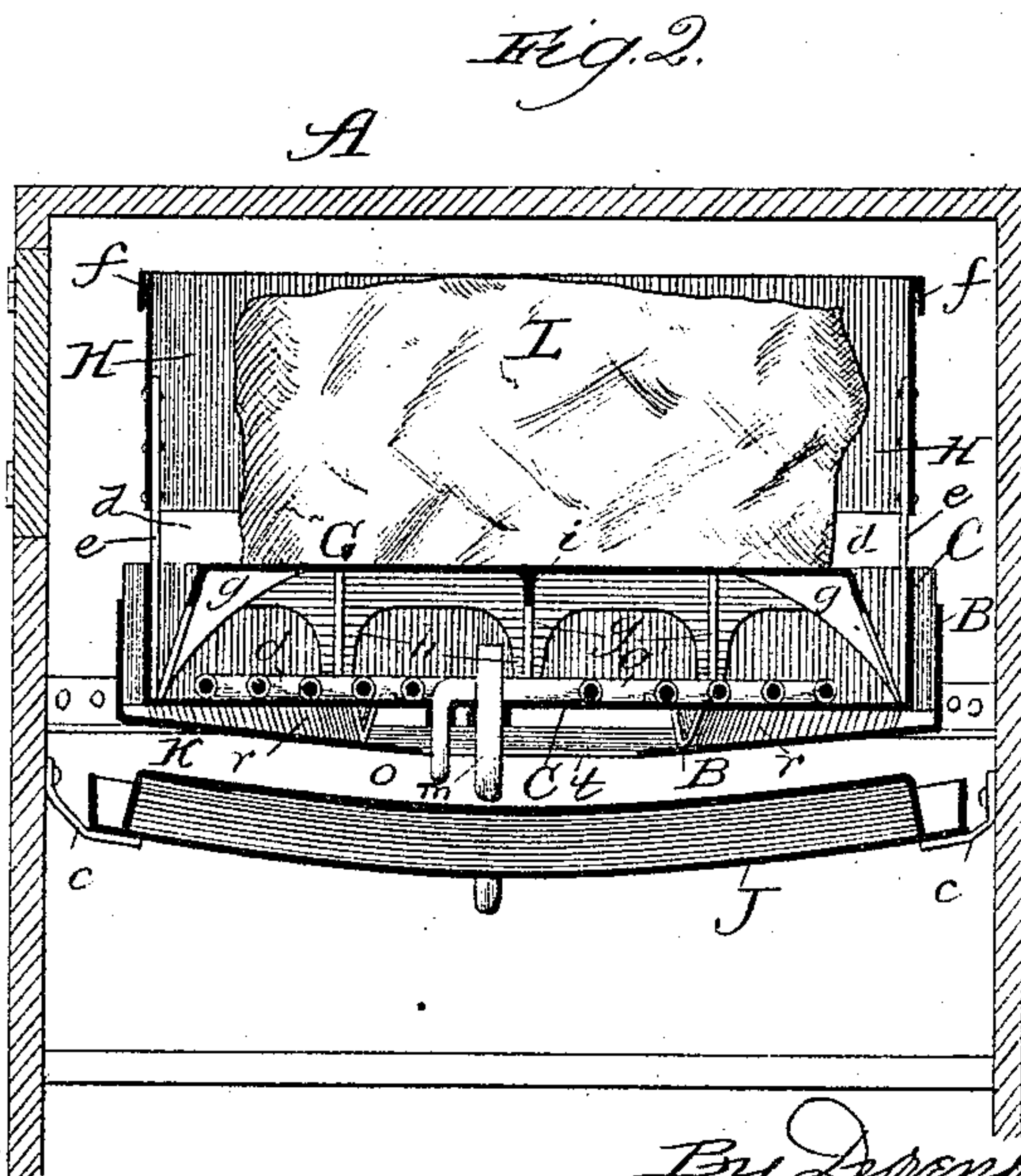
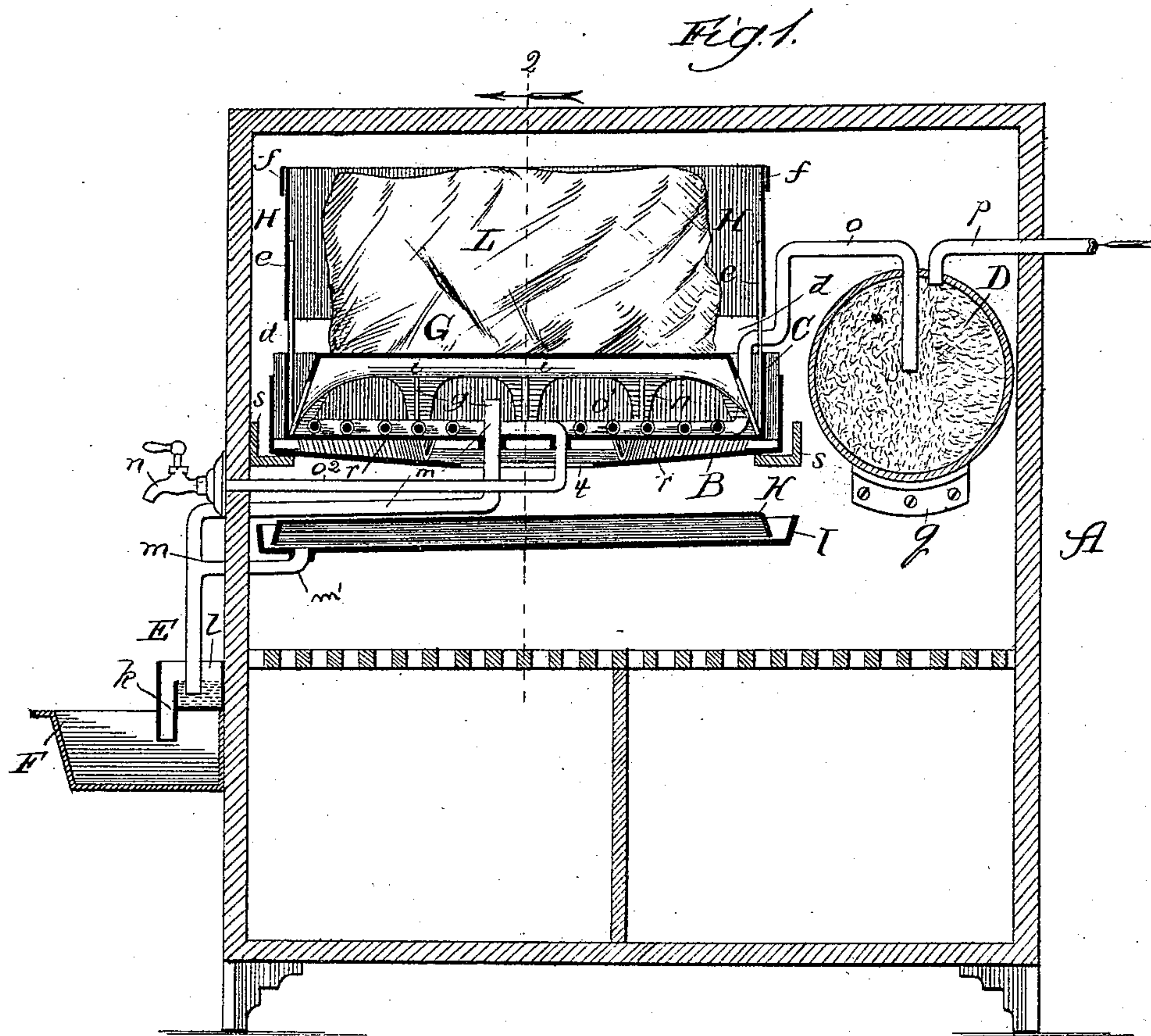
(No Model.)

M. GREENEBAUM.

COMBINED REFRIGERATOR AND WATER COOLER.

No. 486,286.

Patented Nov. 15, 1892.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

MICHAEL GREENEBAUM, OF CHICAGO, ILLINOIS.

## COMBINED REFRIGERATOR AND WATER-COOLER.

SPECIFICATION forming part of Letters Patent No. 486,286, dated November 15, 1892.

Application filed July 5, 1890. Serial No. 357,740. (No model.)

*To all whom it may concern:*

Be it known that I, MICHAEL GREENEBAUM, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in a Combined Refrigerator and Water-Cooler, of which the following is a specification.

My invention relates to certain improvements upon the combined refrigerators and water-coolers for which Letters Patent of the United States Nos. 211,565 and 238,679 were granted to me, respectively, January 21, 1879, and March 8, 1881.

The features of construction which constitute my present improvements will be made clear by the following description, reference being had to the accompanying drawings, in which—

Figure 1 is a central vertical section of my device, and Fig. 2 a vertical section taken on the line 2 2 of Fig. 1 and viewed in the direction of the arrow.

My present device omits the filter, which formed one of the features in the devices which formed the subjects of my Letters Patent aforesaid; but this omission has nothing to do with my present invention, which relates entirely to features of construction designed to contribute to the efficiency of the apparatus both as a refrigerator for general domestic purposes and as a water-cooler, and if it is desired to combine with these a filter this may as easily be done with this apparatus, as in the case of the apparatuses described in my former patents.

In the drawings, A represents the chest, which may be divided into compartments, according to requirement, and may be lined with metal or not, as preferred, and may be made either with single walls, as shown, or with filled or spaced double walls in any of the common and well-known ways, since the construction and arrangement of the chest itself forms no part of my present invention.

B is a flaring pan having a large opening *t* through its center, and which is supported from the inner walls of the chest by means of brackets *s*. This pan performs the twofold office of a deflector for the chilled air in its descent, causing it to circulate in the proper direction, and of a purifier of the air by pre-

cipitating the moist impurities and causing them to flow out of the refrigerator by way of the drainage-pipes, as will appear further on, and it also aids in supporting the parts above it. Maintained above the bottom of the pan B by means of radial supports *r* is a pan C, somewhat less in diameter than the pan B. Within the chest and supported from the walls thereof by means of brackets *q* is a reservoir D, preferably cylindrical, so that it may easily withstand any hydrant-pressure to which it may be subjected. Into the top of this reservoir a pipe *p* leads from the water-supply, and a separate pipe *o*, in the form of a dip-pipe, leads from near the center of the reservoir up through the top, and over to the bottom of the pan C, where it is formed into a coil, as shown at *o'*, and thence it passes through the bottom of the pan C onward by the continuation *o''* to the faucet *n*. The purpose of having the pipe *o* pass up from near the center of the reservoir is to take the water from a point where it will be most free from both the lighter and heavier impurities. In some cases I provide additional reservoirs within the same refrigerator, each having its own cooling-coil leading to a separate faucet, so that other beverages—as tea and coffee, for example—may also be cooled.

Leading through the bottom of the pan C and extending considerably above the upper surface of the coil *o'*, as shown, is an overflow-pipe *m*, which leads out through the wall of the chest and down into the trap E, which is secured to the outer wall of the chest over the sink F. In practice I support the sink from its upper side flanges upon brackets. (Not shown.) The trap E comprises a receptacle *l* for water, into which the lower end of the pipe *m* dips, and an overflow *k*, extending downward into the sink.

Supported upon the bottom of the pan C is the ice-support G, which consists of a flat metal plate braced across its center by a rib *i* and mounted upon a series of legs *h*, each braced by a web *g*, and it is preferable to inclose the ice within four metal walls having openings through them at their bases for the exit of the chilled air, the front wall being removable to give access for the insertion of ice. I make these walls of sheet-metal plates H, reinforced by strips *f* and provided with legs *e*, which fit



within the edges of the pan C and which are made long enough to extend from the bottom of the pan sufficiently above its top to afford the openings *d*.

5 Below the pan B and supported from the walls of the chest, as by metal strips *c*, is an inclined curved or synclinal pan J, provided with a drainage-pipe *m'*, leading through the wall of the chest into the overflow-pipe *m*,  
10 and upon this pan is a pan K of similar form, but smaller and inverted, the purpose of which is to present a surface above the pan I for the condensation of moisture, so that the lower surface of that pan shall remain comparatively dry, the air having been substantially  
15 deprived of moisture by the "sweat-pan" above, before it reaches the plane of this lowest pan.

In practice the ice L is placed upon the ice-  
20 support and communication is opened between the water-supply and the reservoir through the pipe *p*. The faucet *n* being opened for a brief period to expel the air, the coil *o'* becomes filled with water. The drip from the  
25 melting ice soon submerges the coil, so that the water therein in a short time becomes reduced to a temperature corresponding with that of the melted ice, and the drip thus collected materially aids toward cooling the interior of the chest. The situation of the reservoir within the refrigerator is productive of  
30 decided advantage, since it causes the water to be considerably reduced in temperature before it enters the coil. As fast as the water from the melting ice attains the level of the top of the pipe *m* it flows off through that pipe to the trap E, whence it passes off to the sink and thence to the sewer or any receptacle provided for it. The purpose of the trap E is to  
35 prevent any backflow of air into the interior of the chest.

As a result of the construction of condensing-surfaces, deflecting-surfaces, and drainage-pipes described above, a continuous circulation of cold dry air is maintained throughout the refrigerator, and all atmospheric impurities and effluvia are immediately carried off through the drainage-pipes, causing the interior with ordinary care always to remain  
45 pure and wholesome. The principal downward current is through the ice-inclosure in direct contact with the ice, thence through the openings *d* at the base, thence between the pans B and C, through the opening *t*, and

over the pans I and J, displacing in its progress warmer air, which finds its way to the top and is in its turn chilled and precipitated, thus maintaining a constant circulation, during which the air is continuously subjected to the purifying and moisture-condensing influences of the devices for these purposes described above.

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the refrigerator-chest A, the pan C, supported within the chest, reservoir D, supported within the chest and provided with a pipe *p* to connect it with a water-supply, coil *o'* in the pan C, continued at one end into a pipe *o*, passing into the interior of the reservoir D near the center thereof and continued at the other end into a pipe *o''*, leading to the faucet *n*, an ice-support above the pan C, and an overflow-pipe extending from a point above the coil *o'* through the pan C and out of the refrigerator, substantially as described.

2. In combination with the refrigerator-chest A, pan C, supported therein, coil *o'* within the pan C, communicating at one end with the water-supply and at the other with the faucet *n*, ice-support above the pan C, overflow-pipe leading from a point above the coil *o'* through the pan C and out of the refrigerator, and flaring pan B, having the opening *t* and within which the pan C is supported, the drip-receiving pan I, supported below the pan B and provided with a discharge-pipe *m'*, leading out of the refrigerator, and condensing-pan K, inverted upon the pan I, substantially as described.

3. In combination with the refrigerator-chest A, pan C, supported therein, coil *o'* within the pan C, communicating at one end with the water-supply and at the other with the faucet *n*, overflow-pipe leading from a point above the coil *o'* through the pan C and out of the refrigerator, flaring pan B, having the opening *t* and within which the pan C is supported, ice-support G, and the inclosure for the ice, comprising plates H, supported above the edges of the pan C and having spaces *d* below them, substantially as described.

MICHAEL GREENEBAUM.

In presence of—

J. W. DYRENFORTH,  
M. J. FROST.