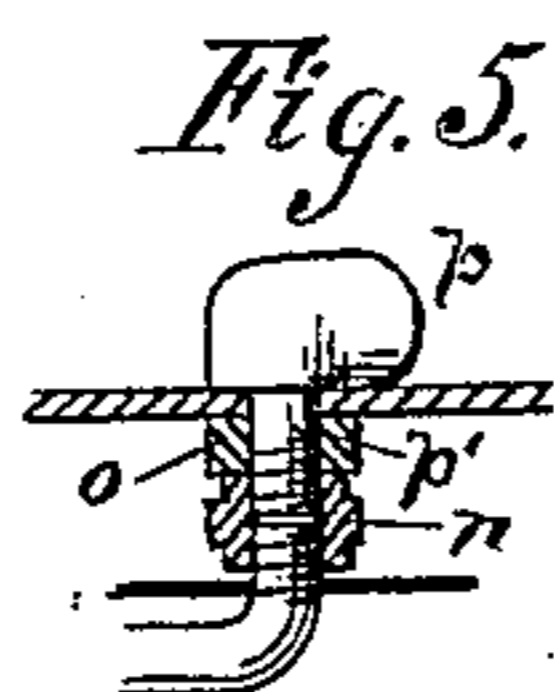
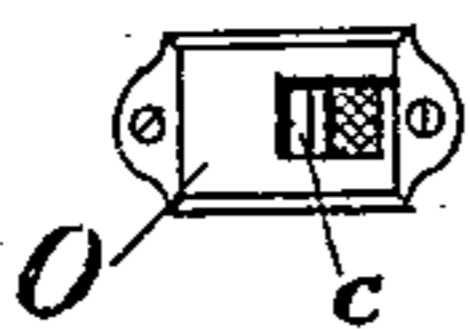
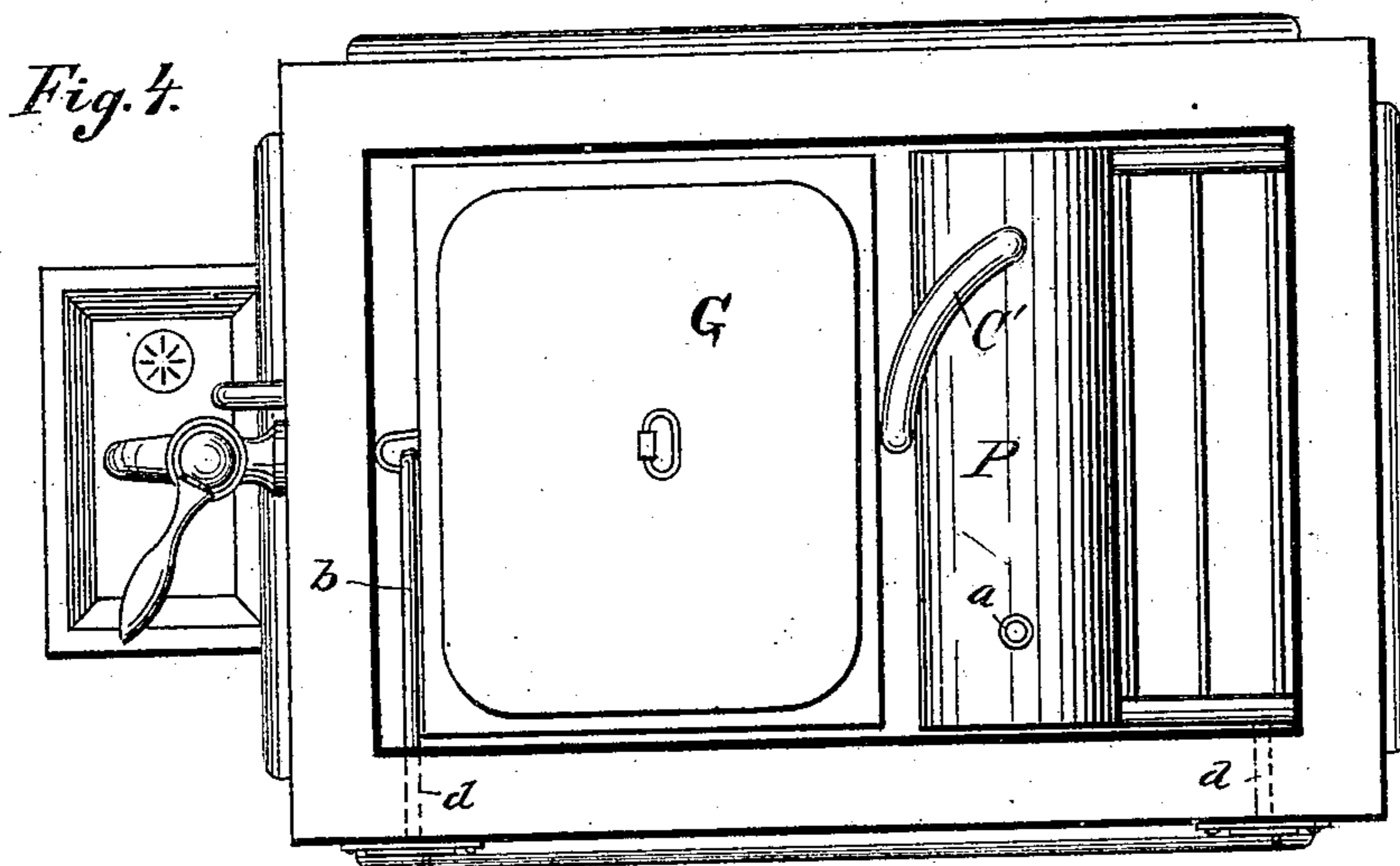
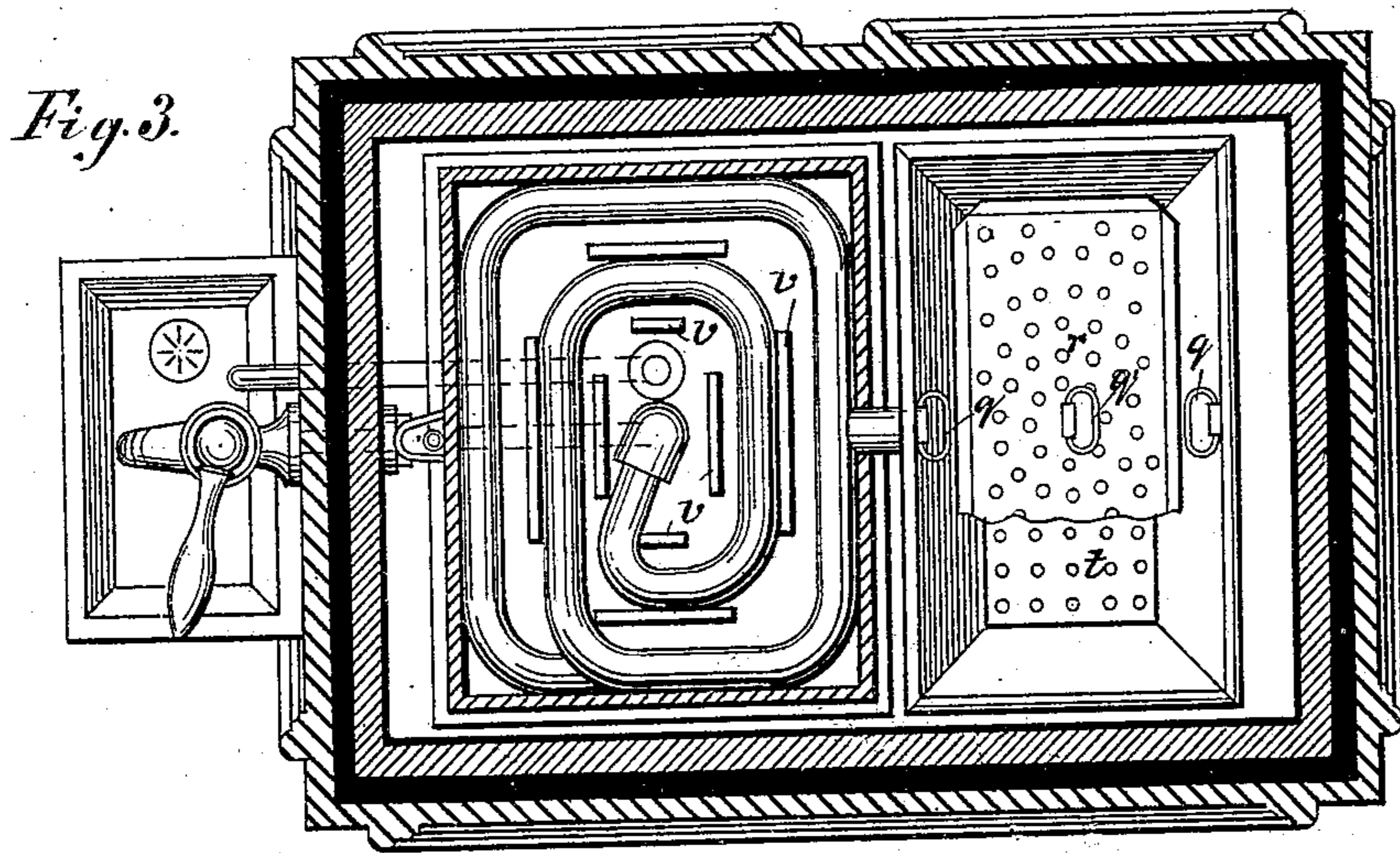


(No Model.)

2 Sheets—Sheet 2.

M. GREENEBAUM.
Combined Refrigerator, Filter and Water Cooler.
No. 238,679.
Patented March 8, 1881.



Witnesses:
Henry Frankfurter.
W. Hardy.

Inventor:
Michael Greenebaum,
per R. C. Dyrenforth,
Attorney

UNITED STATES PATENT OFFICE.

MICHAEL GREENEBAUM, OF CHICAGO, ILLINOIS, ASSIGNOR TO HENRY L. FRANK, OF SAME PLACE.

COMBINED REFRIGERATOR, FILTER, AND WATER-COOLER.

SPECIFICATION forming part of Letters Patent No. 238,679, dated March 8, 1881.

Application filed June 29, 1880. (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 an Improved Combined Refrigerator, Filter, and Water-Cooler; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, of which—

Figures 1 and 2 are vertical sections of my device, taken at right angles with each other; Fig. 3, a horizontal section of the same, taken immediately below the lid; Fig. 4, an interior plan view, showing a modification; and Fig. 5 a detail view in section.

My apparatus may be briefly outlined in general terms as follows, leaving the details of construction for more particular description hereinafter.

I employ a refrigerating-chest adapted to answer the ordinary purposes, which chest I provide with a ventilating device, and in the upper right or left hand end, or in any other convenient part, I place an ice-receptacle containing a basket of coiled pipe, such as is described and claimed in Letters Patent of the United States No. 211,565, granted to me January 21, 1879. In the opposite upper end of the chest, at a level above the basket of pipe, I place a water-receptacle and filtering device, and connect the upper end of the basket of coiled pipe with the bottom of the said water-receptacle. The opposite or lower end of the pipe constituting the basket communicates, through the bottom of the holder, with a pipe which passes out of the chest and terminates in a faucet. Below the ice-holder I place a series of "sweat-pans," forming a device adapted to catch and carry off the moisture which collects upon the external surface of the ice-holder through the condensation of the vapor with which the atmosphere within the chest is laden, and which otherwise would fall to the bottom of the chest. This moisture is carried out of the chest on the same side with the faucet above referred to by means of a pipe, which, on the exterior of the chest, connects with another pipe leading from the bottom of the ice-holder and terminating in a trap, which last-named

pipe serves to carry off the drip of the melting ice. Below the extremities of the faucet and waste-pipe I attach to the wall of the chest a sink, of peculiar construction, and which forms the subject of a separate application for a patent.

In the drawings, A is the refrigerating-chest, having a central dividing-partition, B, reaching nearly to the bottom. I prefer to line the chest throughout with metal—usually zinc. The ice-holder, containing the basket of coiled pipe C, is placed in the upper portion of the interior of the chest, at one side, and comprises the bottom D, having upward projections *v*, between which the pipe is coiled, and a flange, *u*, at its edge, the rectangular body E fitting within the said flange, and the open flanged top F fitting over the said body. The purpose of the projections *v* is to protect the pipe from injury by the ice. The holder, which I make of galvanized cast-iron, is provided with a cover, G, of glass or metal, which serves to retard the melting of the ice in a considerable degree.

H is a receptacle set in the upper part of the chest, at the end opposite the ice-holder, with its base above the level of the uppermost coil of pipe therein, this receptacle being ordinarily in the form simply of a square metal tank, open at the top and communicating with the pipe C through an opening in its bottom, as shown.

The filter comprises a flaring pan, I, of less depth than the vessel H, having a perforated bottom, *t*, and a flange, *s*, about its upper periphery, which flange supports it by resting upon the upper edge of the vessel H. The pan I is provided with a perforated removable cover, *r*, of greater dimensions than the bottom *t*, whereby, when inserted, it rests upon the flaring sides of the vessel, at a considerable distance above the said bottom, leaving a space, as shown. The filtering material is placed in this intervening space, and may consist of alternate layers of charcoal and gravel, or of any other substance or substances that will answer the purpose. The pan I is provided with handles *q*, and the cover *r* with a handle, *q'*, to permit them to be lifted out at will.

In some cases, instead of suspending the pan I upon the upper edge of the tank H, as above described, I prefer to have it stand upon the bottom of the tank on legs, with its top lower than the top of the tank. In this case I find it well to have the exterior of the pan coincide with the interior wall of the tank, which may be made slightly flaring.

The connection between the coil C and the pipe K, which terminates in the faucet L, is made by means of an L-shaped coupling comprising the head *p*, which receives the end of the coiled pipe and holds it by the aid of solder, a threaded tubular extension, *p'*, passing through a central opening in the bottom D, and corresponding in diameter with the pipe K, which is also threaded at the end, a washer, *o*, upon the said extension, and a coupling-nut, *n*, which is screwed up tightly against the washer still remaining upon the pipe K. This forms a perfect and very convenient joint.

The device for collecting and carrying off the condensed moisture embraces, first, a square pan having a slightly-flaring bottom, *m*, provided with a large opening, *l*, in its center, and having a rim, *k*, projecting upward outside the flange *u* of the bottom D, with a space intervening between them; secondly, a horizontal plate, *i*, supported by the pipe K and the waste-pipe *h*, the dimensions of which plate are somewhat greater than the opening *l* in the bottom of the pan above it; and, thirdly, the synclinal pan M, covering more than half the area of the cooling-chamber, as shown, and sloping to the outlet-pipe *g*. The pan M may be made double, if desired. The waste-pipes *g* and *h* both lead into a vertical pipe, *h'*, on the outside of the chest, which pipe terminates in a trap, *f*, the purpose of which is to prevent the entrance of warm air to the interior of the ice-holder.

N is the sink, hereinbefore referred to, which receives all the waste water, and from which a pipe, *e*, may, if desired, pass through the floor, conveying it to the ground or sewer.

I provide the bottom D of the ice-holder with metal plates *v'*, secured to its under side at the corners, and with short beveled metal cleats *v''*, thicker than the plates *v'*, secured to its under side, about midway between each corner and the center, to hold the pan out of contact with the bottom of the ice-holder at the edges and elsewhere, and to give it the requisite incline toward the opening *l*.

The plate *i*, besides aiding to condense the

vapor, serves to deflect the falling cold air over the edges of the pan M. It is highly advantageous, but may be more easily dispensed with than the pans.

A ventilating-aperture, *d*, is formed through the front wall of the chest, near each upper corner, and it is covered by a plate, O, having in it a corresponding aperture fitted with wire-gauze to prevent the entrance of insects. Each plate is furnished with a slide, *c*, whereby the aperture may be opened and closed at pleasure. A pipe, *b*, leads from the ventilating-aperture adjacent to the ice-holder horizontally to a point about midway of the width of the end wall, and then descends vertically, in contact with the ice-holder, to a point at or near the base of the holder. It will be observed that no such pipe is provided for the opposite ventilator. The effect of this construction is to cause a continuous circulation of pure air through the chest, the air entering through the pipe *b*, which is at the colder end, and emerging through the opposite aperture, which is at the warmer end of the chest.

In the modification shown in Fig. 4 no filter is employed, but the water is conveyed direct from the hydrant through a pipe, *a*, into a cylindrical close vessel, P, from which a pipe, C', leads to the coil C. The position of this cylinder, when employed in lieu of the filter, is very clearly shown by dotted lines in Fig. 1.

The vessel P may be cleaned out from time to time by means of a pipe, *h''*, leading into the pipe *h*, and provided with a stop-cock.

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

1. The ice-holder comprising the bottom D, having the ribs or projections *v* and flanged rim *u*, the rectangular body E, fitting closely within the flange *u*, and the open flanged top F, closely fitting the body E, substantially as described.

2. The combination of the flaring pan *m*, fixed underneath the ice-holder and having the central opening, *l*, the synclinal pan M, sloping as shown, and the pipe *g*, leading out of the chest, substantially as and for the purpose described.

3. The coupling comprising the head *p*, adapted to receive the end of the coil C, hollow stem *p'*, extending downward from the head *p*, washer *o*, and nut *n*, substantially as described.

MICHAEL GREENEBAUM.

In presence of—

P. C. DYRENFORTH,
THOMAS A. BANNING.