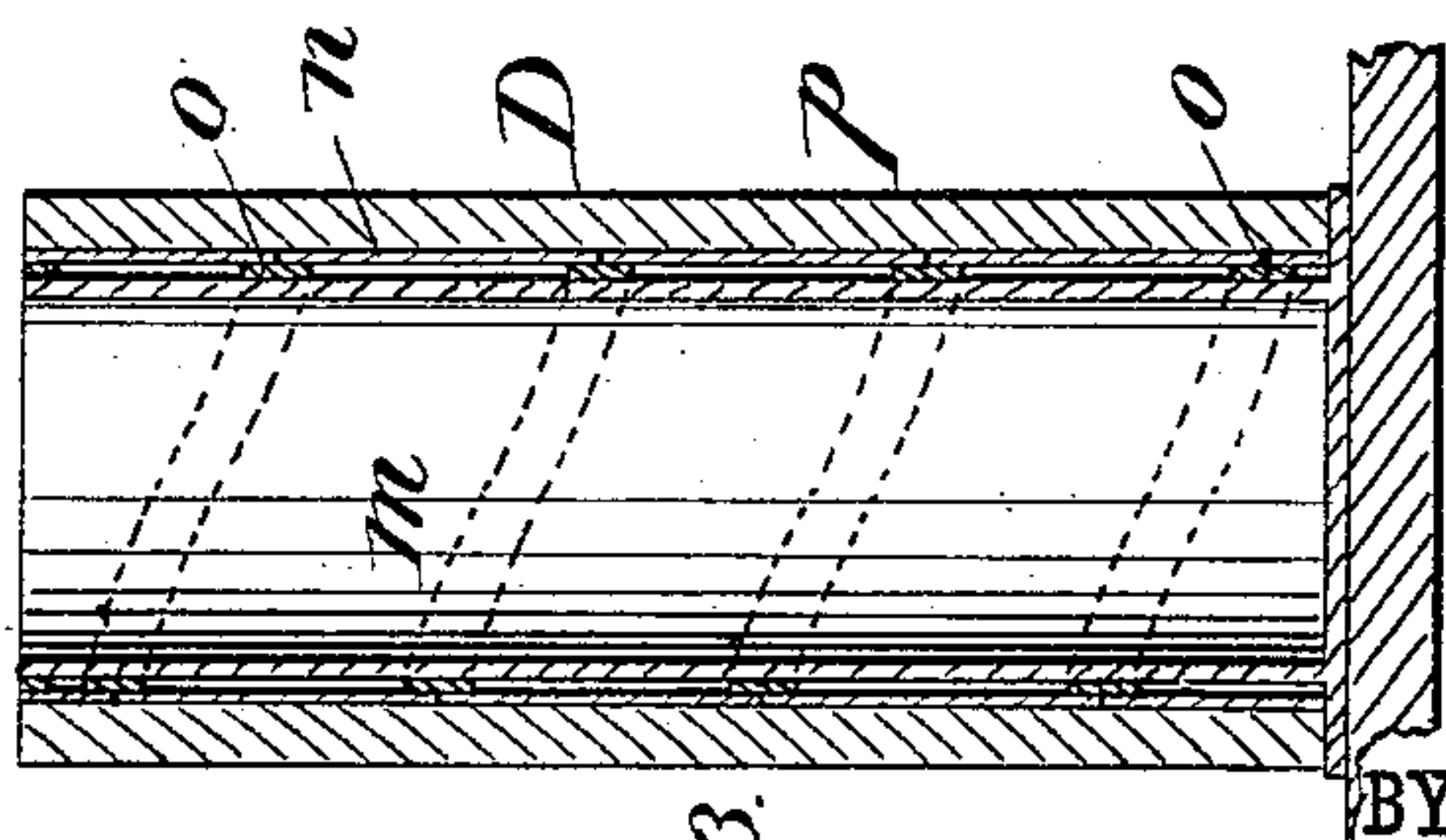
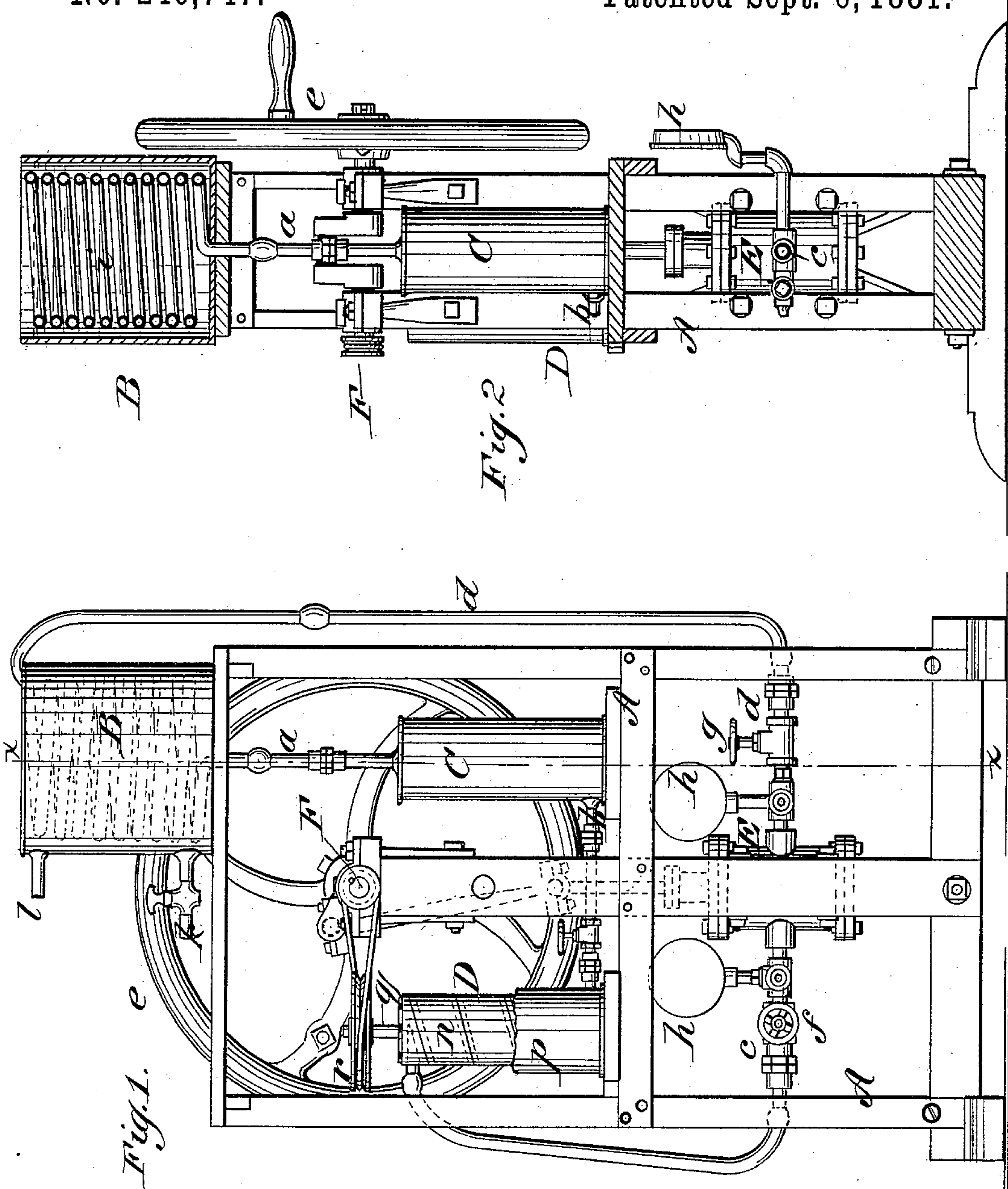


(No Model.)

C. W. GELETT.
MACHINE FOR REFRIGERATING.

No. 246,747.

Patented Sept. 6, 1881.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES W. GELETT, OF OAKLAND, CALIFORNIA.

MACHINE FOR REFRIGERATING.

SPECIFICATION forming part of Letters Patent No. 246,747, dated September 6, 1881.

Application filed May 13, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. GELETT, of Oakland, county of Alameda, and State of California, have invented certain useful Improvements in Machines for Refrigerating, of which the following is a specification.

The object of my invention is to construct a portable and inexpensive apparatus that can be operated by hand for freezing cream and cooling water when ice cannot readily be obtained for such purposes.

My improvements relate to the class of machines in which volatile liquids are used as the freezing agents, and pumps and condensers used for drawing off and liquefying the gas.

The invention consists in a freezer of novel construction, and in the arrangement therewith of a pump, condenser, and receiver, all as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of the machine. Fig. 2 is a vertical transverse section on line *x x* of Fig. 1, and Fig. 3 is a vertical section of the freezing-chamber.

Similar letters of reference indicate corresponding parts.

The parts of the apparatus are fixed upon a suitable frame, A, adapted for being moved from place to place.

B is the condenser. C is the receiver of condensed liquid, connected with the condenser by pipe *a*.

D is the freezer, connected with the receiver by pipe *b*.

E is the pump, having its inlet-pipe *c* connected to freezer D and outlet-pipe *d* passing to condenser B.

F is the operating-shaft, having a crank and rod connection to the piston-rod of the pump, and provided with a balance-wheel, *e*, and crank-handle for operation by hand.

f g are stop-cocks in the pipes *c d* of the pump, and *h h* are pressure-gages on the same pipes.

The pump E is an ordinary gas or air pump of small size.

The condenser B is a box or tank, containing a coil, *i*, of pipe around its inner side, to which coil the outlet-pipe *d* of the pump and pipe *a* to the receiver are connected.

k is a pipe connected to the lower part of the

condensing-chamber, for supplying water to the chamber, and *l* is a pipe leading off from the top for overflow of the water. This arrangement is preferred for the reason that the water, when admitted at the bottom, acts more efficiently in carrying off the heat and condensing the gas.

The receiver C is simply a closed receptacle of suitable capacity. The freezer D consists of an inner cylindrical vessel, *m*, for containing the water or cream to be cooled or frozen, an outer jacket, *n*, of sheet metal or other material, separated from the vessel *m* by spiral strips *o*, and an outer covering, *p*, of asbestos or other non-conducting material. The pipe *c* to the pump connects with the space between the jacket *n* and inner vessel at the upper part, and the pipe *b* from the receiver enters the lower part of the space, so that the liquid or gas enters at the bottom and passes around the inner vessel by the spiral passage formed by the strip *o*. The expansion taking place at that time, its absorbing power is exercised upon the interior vessel by reason of the non-conducting covering which cuts off any effect on the outer air.

When used for freezing cream the vessel *m* will contain, as shown, a vertical shaft, *q*, fitted with stirrers, and having on its upper end a grooved pulley, *r*, connected by a belt with a pulley on the operating-shaft F, so that the shaft shall be turned and the material stirred while being frozen.

In operation the apparatus will first be exhausted of air by operation of the pump, the air being allowed to escape by a blow-off cock. The receiver will then be supplied with the volatile liquid, the water turned on to the condenser B, and the liquid to be cooled or frozen supplied to the vessel or freezing-chamber *m*. The pump is then put in motion, the liquid is drawn into the jacketed space around the freezing-chamber, wherein it expands, and the gas is drawn by the pump and forced through the coil of the condenser. Here the gas liquefies and then passes to the receiver for reuse.

The operation can be readily controlled by operating the pump more or less rapidly and from time to time, as required.

This construction furnishes an inexpensive apparatus especially adapted for hotels, sa-

loons, and family use, where ice cannot be obtained or where a supply of ice is not kept on hand.

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

1. The combination of the condenser B, containing coil *i*, and provided with water-supply and outlet pipes *k l*, receiver C, jacketed freezing-chamber D, pump E, connecting-pipes *a b*
10 *c d*, and operating-shaft A, substantially as shown and described, for operation as set forth.

2. The combination, in a refrigerating apparatus, of the stirring-shaft *g* and pulley *r*

with the freezing-chamber D and pump-operating shaft F, substantially as shown and described. 15

3. The freezer consisting of inner vessel, *m*, jacket *n*, spiral strip *o*, and outer covering, *p*, of non-conducting material, in combination 20 with the pump and receiver of a refrigerating apparatus, substantially as herein shown and described.

CHARLES WEATHERBY GELETT.

Witnesses:

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