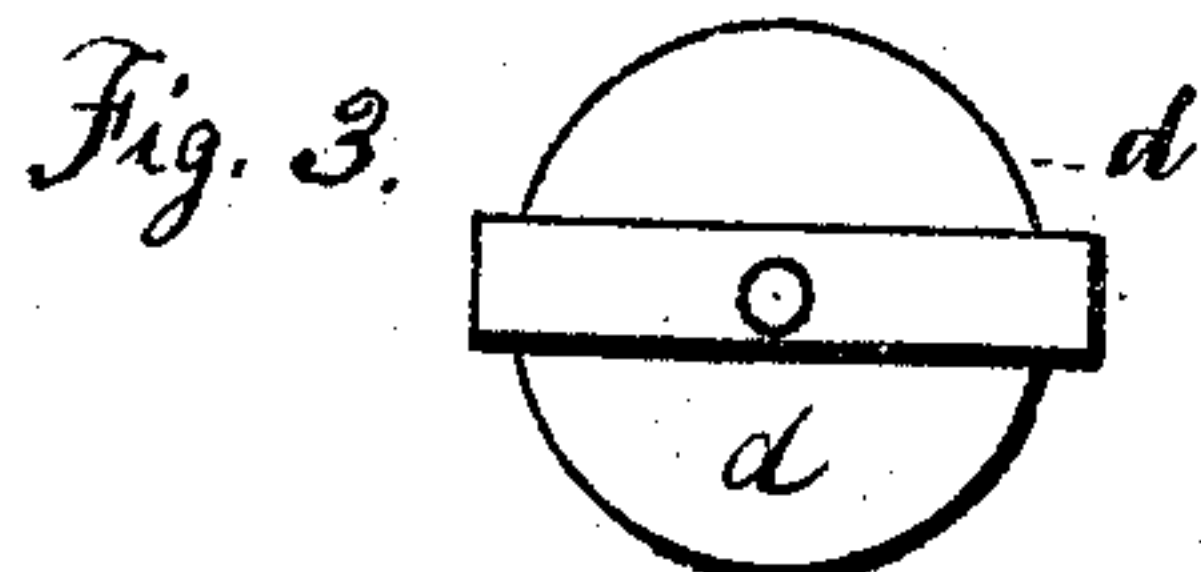
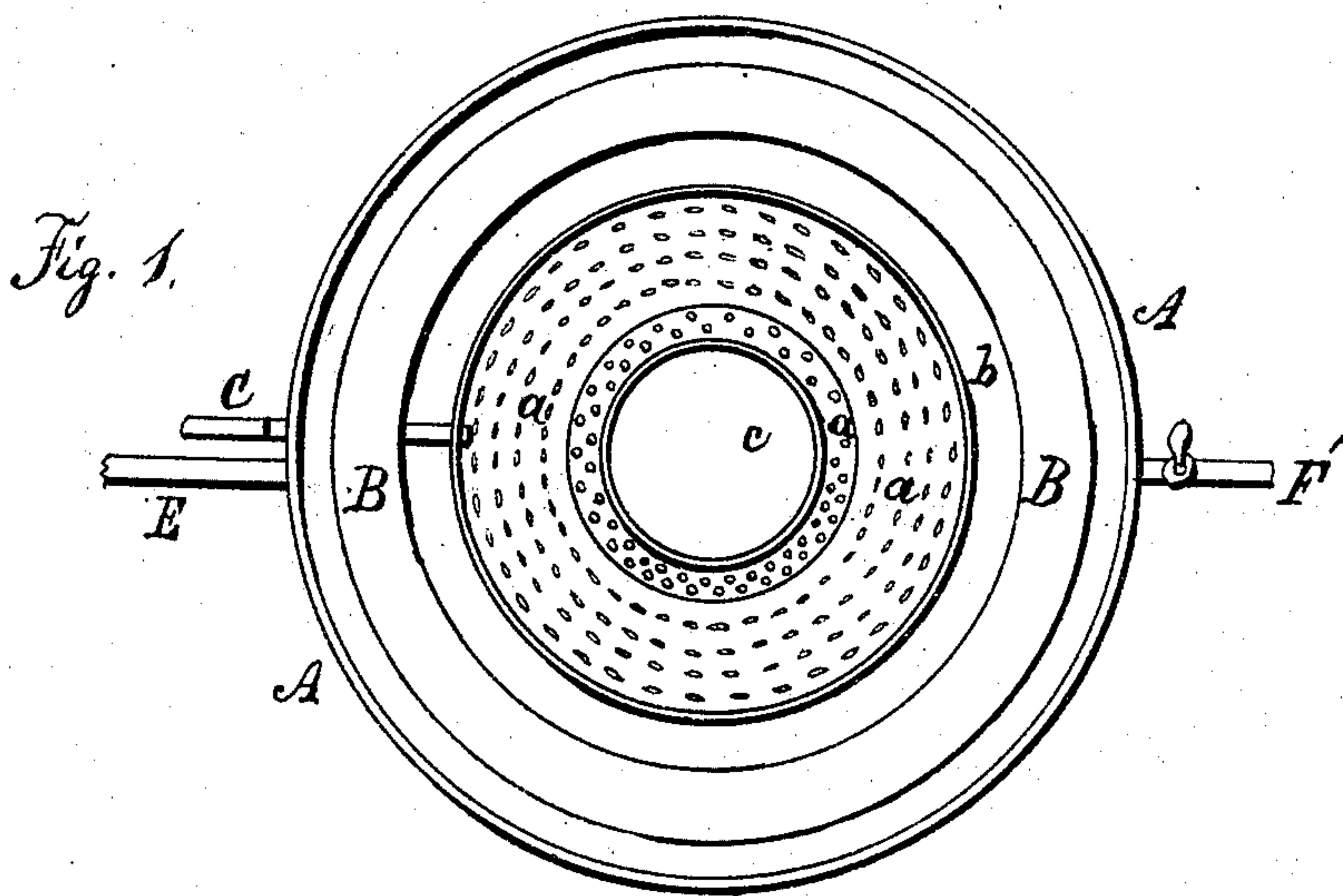
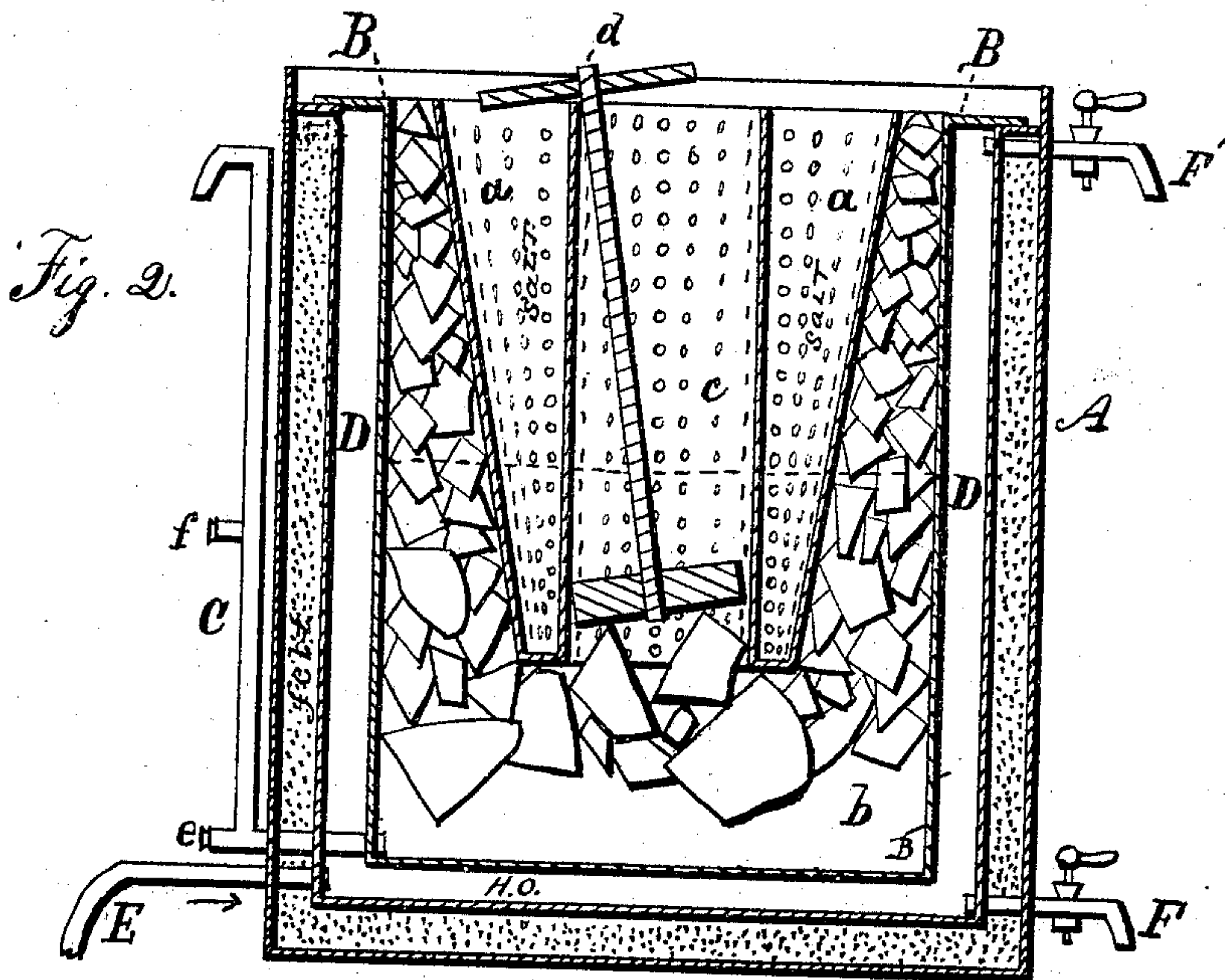


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REFRIGERATING APPARATUS.

No. 171,204.

Patented Dec. 14, 1875.



WITNESSES

*C. A. Johns*  
*E. M. Johnson*

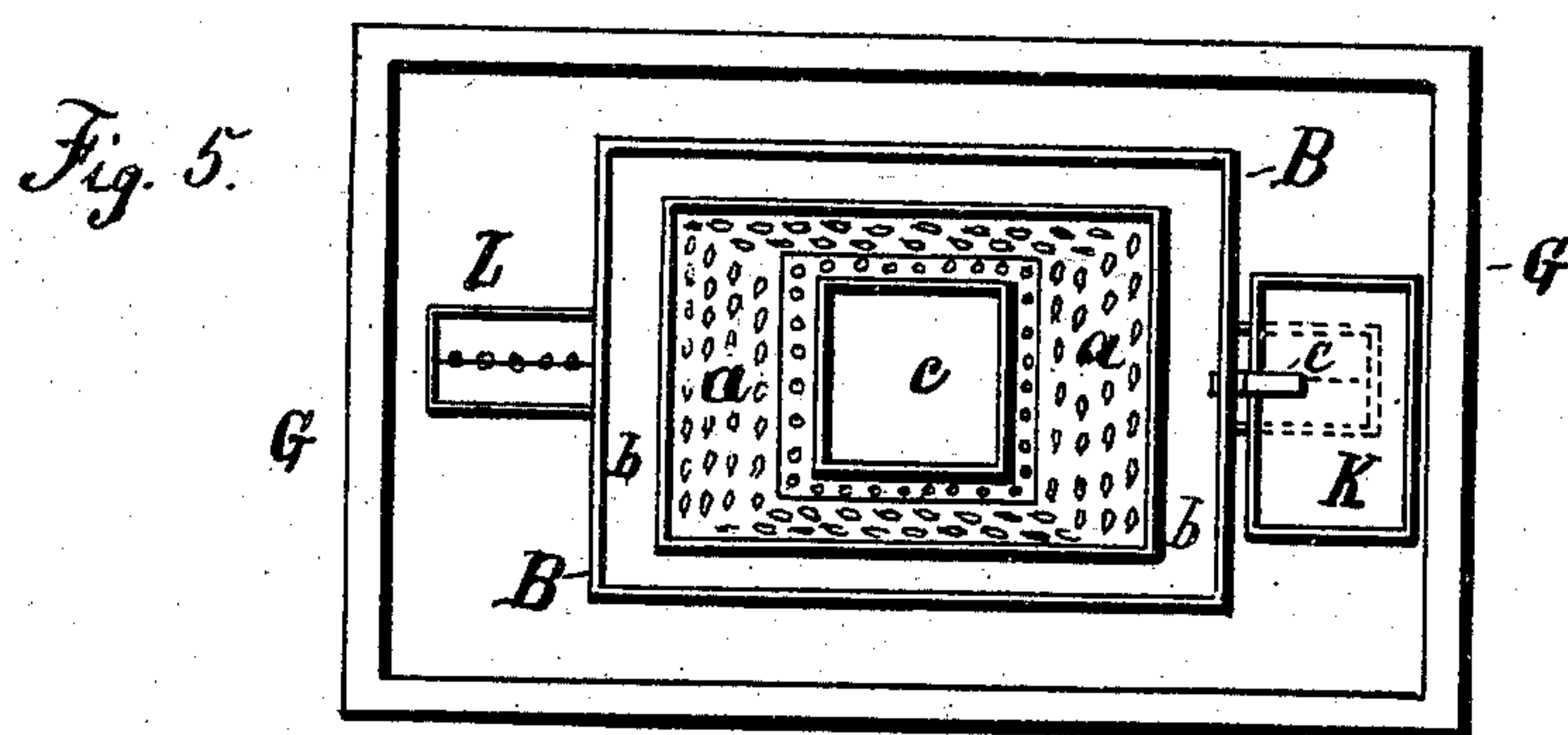
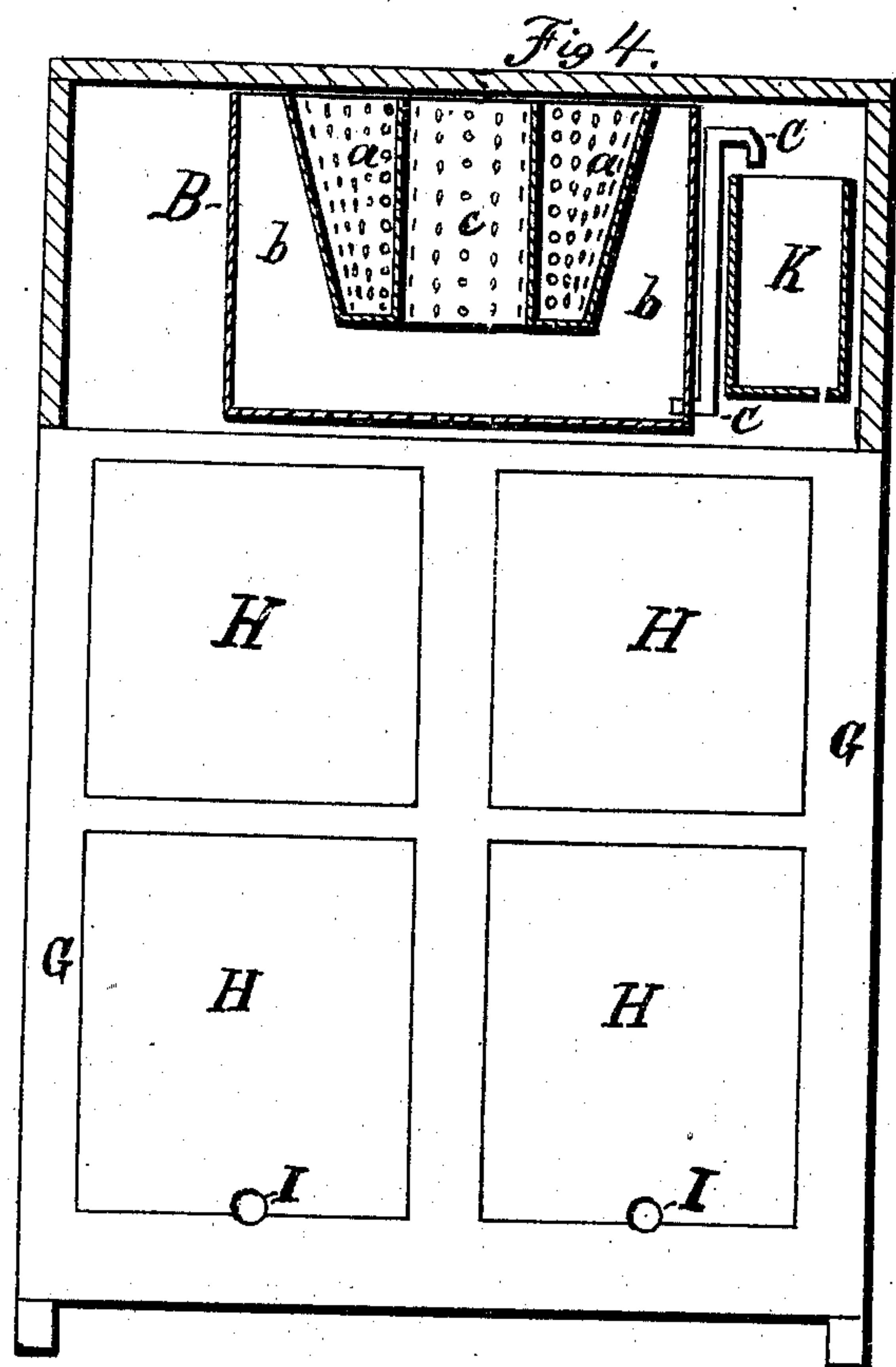
INVENTOR

*Lucien B. Woolfolk*

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# UNITED STATES PATENT OFFICE

LUCIEN B. WOOLFOLK, OF LEXINGTON, KENTUCKY.

## IMPROVEMENT IN REFRIGERATING APPARATUS.

Specification forming part of Letters Patent No. **171,204**, dated December 14, 1875; application filed June 19, 1875.

*To all whom it may concern:*

Be it known that I, LUCIEN B. WOOLFOLK, of Lexington, in the county of Fayette and State of Kentucky, have invented a new and useful Improvement in Refrigerating Apparatus, of which the following is a specification:

This invention relates to certain improvements in that class of refrigerators in which ice and salt are placed in separate compartments.

The invention consists in so constructing the perforated compartment for containing the salt that it shall surround an opening in the top of the refrigerator, through which ice may be supplied to the refrigerator. The ice is forced down to its desired position in the ice and brine holder by means of a dasher. Overflow is guarded against by means of a waste-pipe, which extends from near the bottom to near the top of the vessel, and is of such form that the cold brine will be kept at one uniform level.

Figures 1 and 2, Sheet 1, represent my invention as applied to a water-cooler, of which Fig. 1 is a plan, with covers removed, and Fig. 2 is a vertical section of same, taken through the center. Fig. 3 is a detached plan view of the dasher. Figs. 4 and 5, Sheet 2, represent my invention with a modification as applied to a refrigerator for cooling beer in the keg, of which Fig. 4 is a front elevation, showing a vertical section of the refrigerating apparatus. Fig. 5 is a plan with covers removed.

In the water-cooler, Figs. 1 and 2, water flows into the water-chamber through a pipe leading from a hydrant, and is drawn from it through a faucet. A is a water-cooler, of any usual construction, having double walls containing felt or other non-conducting material between them. B is the refrigerating-vessel, joined water-tight to the water-cooler A. The refrigerating-vessel B contains the salt-compartment *a*, constructed of perforated sheet metal or of woven wire, and the ice-compartment *b*. *c* is an opening in the salt-compartment, through which the ice is supplied to the refrigerating-vessel. *d* is a dasher, with which the ice is pushed down through the opening *c* into the ice-compartment *b*. C is the waste-

pipe, which regulates the height of the brine in the refrigerating-vessel B. *e* and *f* are escape-vents in the waste-pipe C, which are stopped with corks or other stoppers. D is the water-chamber, constructed water-tight between the refrigerating-vessel B and the water-cooler A. E is the pipe through which water is supplied from the hydrant to the water-chamber. F and F' are faucets through which the water is drawn off from the water-chamber.

The mode of operating this apparatus is as follows: The refrigerating-vessel B being partially filled with brine, the salt-vessel is filled with salt, and the ice is supplied to the ice-compartment through the hole *c*, but the ice, having a less specific gravity than water or brine, floats in it, and it is therefore necessary to push it down into the ice-compartment with the dasher *d*, when, by its less specific gravity, it rises through the brine and fills the upper part of the ice-compartment, around the salt-vessel *a*.

The advantages of this construction of the salt-vessel are two-fold. Large lumps of ice may be supplied through the hole *c*, and the hole *c*, furthermore, facilitates a series of currents in the brine, which facilitates and intensifies the cooling action of the ice and salt. The top of the waste-pipe C is lower than the faucet F', in order that the cold brine in the refrigerating-vessel may never be on so high a level as the top of the water in the water-chamber. By this arrangement the water in the water-chamber is prevented from freezing solid, it being difficult to freeze a liquid when the refrigerating-force is applied at a lower level than the top of the liquid to be cooled. The supply-pipe E enters the water-chamber at the bottom, in order that the warmer water may be introduced where its lighter specific gravity will cause it to rise through the cold water in the water-chamber, and thus start a series of currents that will keep the water in D agitated, thereby promoting its cooling.

The faucets F and F' are both necessary. The faucet F is necessary to drain the sediment from the water-chamber D. The faucet F' is necessary to allow the air to escape from the water-chamber, so that it may be filled.

with water. The water may be drawn from either faucet.

Figs. 4 and 5 represent my invention under a modification, as applied to refrigerators for cooling beer in the keg. In these figures G is the case of the refrigerator. H H are doors, through which the kegs are introduced. I I are holes in the bottom of the doors for the faucets through which the beer is drawn. K is a vessel into which the waste-pipe C empties the brine. The vessel K has a small hole in the bottom, through which the brine falls into the trough L. In the trough L are small holes in the bottom, through which the brine drips upon the kegs. The object of this arrangement is to keep the kegs moist, inasmuch as the dry air, chilled by the refrigerat-

ing-vessel, will not cool the kegs so rapidly if dry as when the outside of the kegs is damp.

If desired, the ice-supply passage may be made of greater depth than is shown in the drawings, and, where desired, two such passages may be formed in the apparatus, instead of one only.

I claim—

The combination, in a refrigerating-vessel, of the salt-vessel *a*, having ice-passage *c*, the dasher *d*, ice and brine holder B, and waste-pipe C, substantially as set forth.

LUCIEN B. WOOLFOLK.

Witnesses:

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