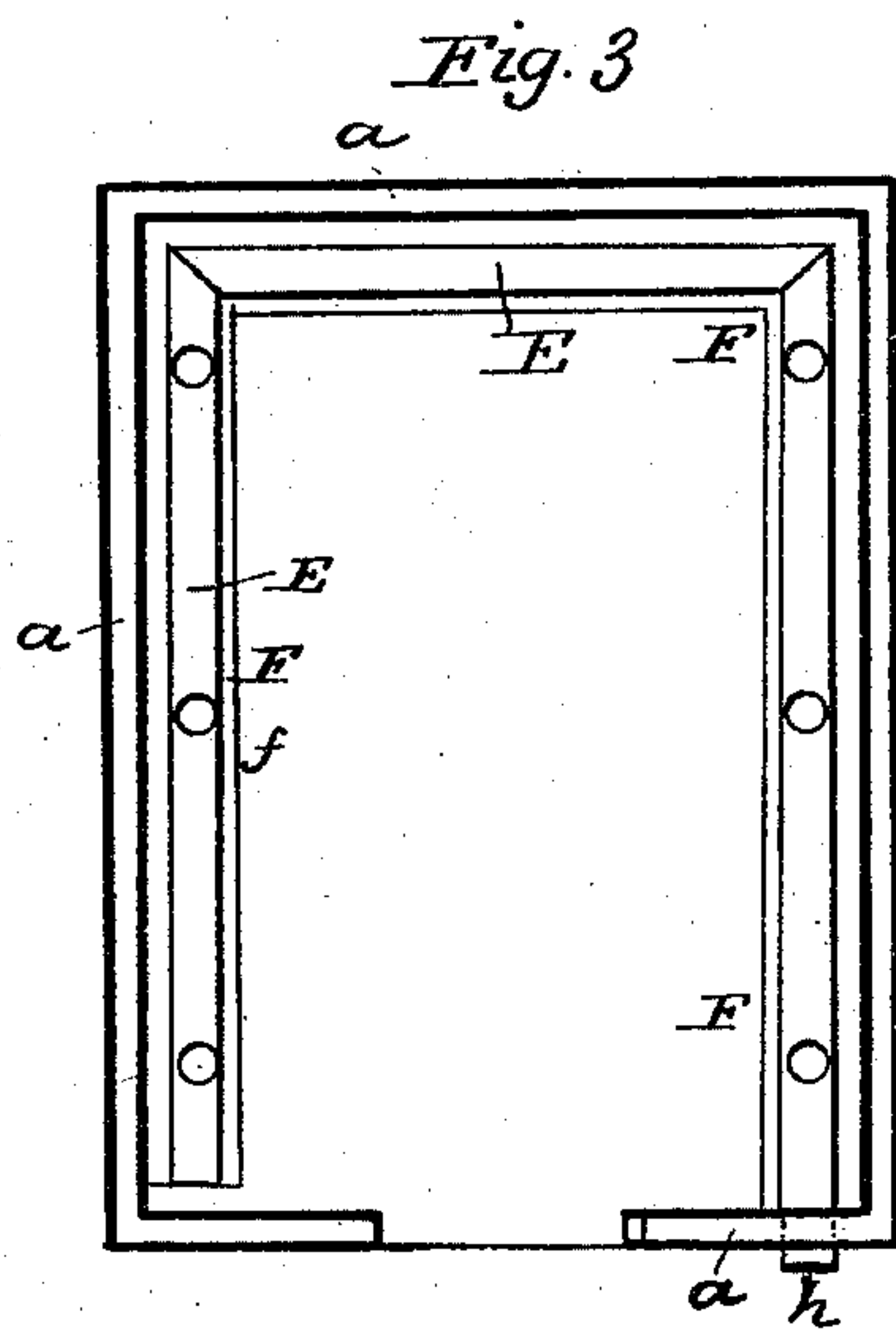
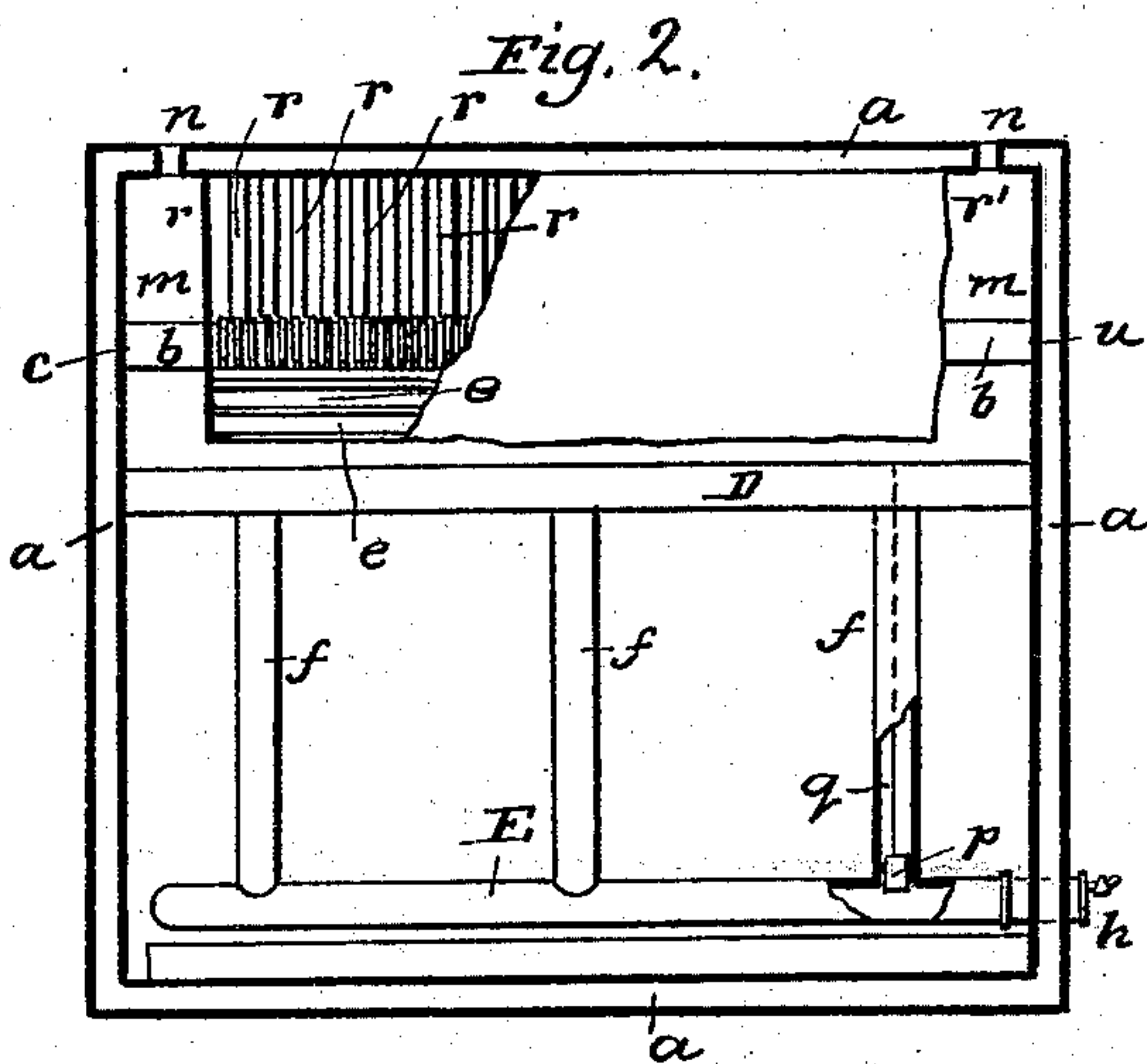
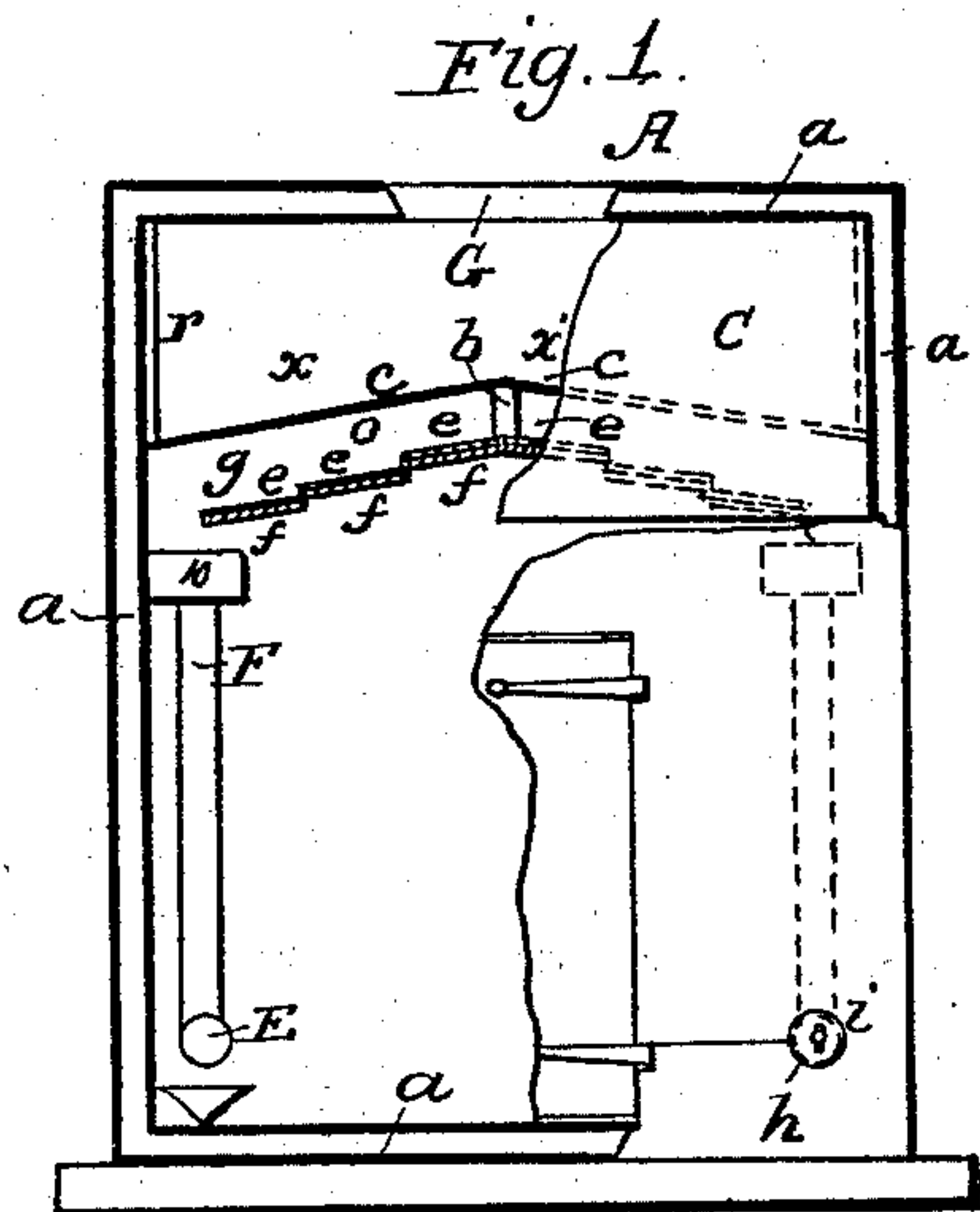


REES & TEVIS.

Refrigerator.

No. 56,094.

Patented July 3, 1866.



Witnesses:
Francis M. Pastors
W. H. Donahue

Inventors:
Chas. B. Rees
J. B. Tevis

UNITED STATES PATENT OFFICE.

CHARLES B. REES AND J. B. TEVIS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. 56,094, dated July 3, 1866.

To all whom it may concern:

Be it known that we, CHARLES B. REES and JOSEPH B. TEVIS, both of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improved Refrigerator; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Our invention consists in the use of an ice-box, C, in a refrigerator, which is so devised and situated that the ice is constantly in contact with the air of the refrigerator, keeping it dry and lowering the temperature of the air, and in retaining the drip-water from the ice in metallic or other pipes, substantially as is hereinafter shown.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is an end view, partly sectioned, showing the interior of the refrigerator and the end and interior of the ice-box C. Fig. 2 is a side view, sectioned, showing the interior of the refrigerator and the interior and side of the ice-box; and Fig. 3 is a plan view, showing the horizontal and vertical pipes E and F.

Similar letters refer to similar parts in the several views.

A is a refrigerator composed of an outer shell, B, and an inner shell, B', the space *a* between them being filled with any non-conducting material. C is an ice-box, the top of which fits tight against the top of the inner shell. It is held in place by a ridge-pole, *b*, which passes through it at a short distance from its bottom, and has its ends fixed to the inner shell, and also by its ends *w w'*, projecting over and secured to the inner shell. It is constructed with air-tight sides and without a bottom. *c c c*, &c., are slats or gratings, one end of each being fixed to the ridge-pole, while the other end is secured to the sides of the ice-box, the gratings of one side, *x*, forming a double incline or an angle with those of the other side, *x'*, as shown. *e e e'*, &c., are drip boards or shelves, whose contiguous edges overhang, situated beneath the grating, with an air-space, *y*, between them, and having a parallel, or nearly so, inclination to the gratings, their lengths running crosswise with the lengths of the gratings, and are carried by

cleats *f f f*, &c., fixed to the ends of the ice-box, and are shown set at a distance apart equivalent to the thickness of the cleats, though we do not confine ourselves to any specified distance. A space, *g*, is left between the edge of the last board, *e'*, of the shelving, at each side and the side of the box.

D is a drip-pan, one being at each side of the refrigerator, which communicates with a horizontal pipe, E, traversing three sides, Fig. 3, by means of the vertical pipes F F, &c., of which any number can be used, the said horizontal pipe being raised a short distance from the floor, and has one end, *h*, projected through the end of the refrigerator, and also has a try-cock, *i*, inserted into that end, its nozzle opening upward conveniently near the top. By it a determinate height of water is preserved in the pipe without fear of draining it or any liability of a sudden influx of the outside air raising the temperature, as would be the case were the nozzle to open downward and also be constantly open.

The ice-box C is so constructed as to leave an air-space, *m*, between its ends *v v'* and the inner shell, B', for the free circulation of air, it being supplied through the ventilators *n n*, they being covered with gauze to prevent the entrance of dust, &c. The sides of the shell B' form the sides of the ice-box. The sides and ends of the ice-box above the slats *c* have battens *r r r*, &c., fixed to them to allow a free, uninterrupted circulation of air around the entire body of the ice by preventing it from bearing against the sides and ends. The linings of the drip-pans D D, or the backs of the pans, when constructed of metal, are carried up the sides of the inner shell to above the bottom of the ice-box, as shown at *z*, Fig. 1.

The refrigerator, as shown, is a parallelopipedon; but we do not confine ourselves to precise forms, since the shape must conform to the situation to be occupied.

Ice being put into the box C, through the trap G, onto the slats *c*, which carry it, the air contained in the refrigerator circulates freely through the openings *o* between the shelves *e e'*, &c., and through the interstices of the gratings or slats *c*, under, around, and over the ice, acquiring a uniform density and reducing its temperature to nearly that of the ice. As the ice melts the water from it drops

through the interstices of the slats *c* onto the shelves, over which it flows and drops into the pans *D D*, thence through the vertical pipes *F F*, into the horizontal pipe *E*, where it is allowed to remain to cool the pipes, thereby assisting to keep down the temperature. The water dropping through the space included between the slats *c* and the shelves *e* also aids materially in reducing the temperature.

On the vertical pipes *F F* being partly filled with ice, it was found that it sank down into the drip-water in the horizontal pipes, thereby melting vastly faster than it otherwise would if kept dry, and that the cold was greatly increased by keeping the ice high up in the pipes. To that end we employ an adjustable carrying-block, *p*, Fig. 2, one being suspended centrally in each pipe by a take-up chain, *q*, or other secured to the drip-pan.

H is a double door, filled with any non-conducting substance, leading into the refrigerator. The meats, fruits, vegetables, and other articles to be preserved are fixed to hooks or stowed away on shelves arranged around the sides.

We claim—

1. Retaining the drippings from the ice in vertical and horizontal pipes, for the purpose specified and described.

2. An adjusting carrying-block for adjusting the height of the ice in the vertical pipes, substantially as shown.

3. The vertical pipes *F* and the horizontal pipe *E*, combined and arranged and situated either on one or both sides of the refrigerator, as specified and described.

4. The vertical pipes *F*, the horizontal pipe *E*, and the drip-pan *D*, combined and arranged and placed either on one or both sides of the refrigerator, substantially as shown.

In testimony whereof we hereunto set our hands to this specification in presence of two subscribing witnesses.

CHARLES B. REES.
JOSEPH B. TEVIS.

Witnesses:

W. W. DOUGHERTY,
WM. R. GREBLE.