S. P. MILLER.

Refrigerator for Cooling Articles Underground.

No. 200,624. Patented Feb. 26, 1878.

Fig. 1.

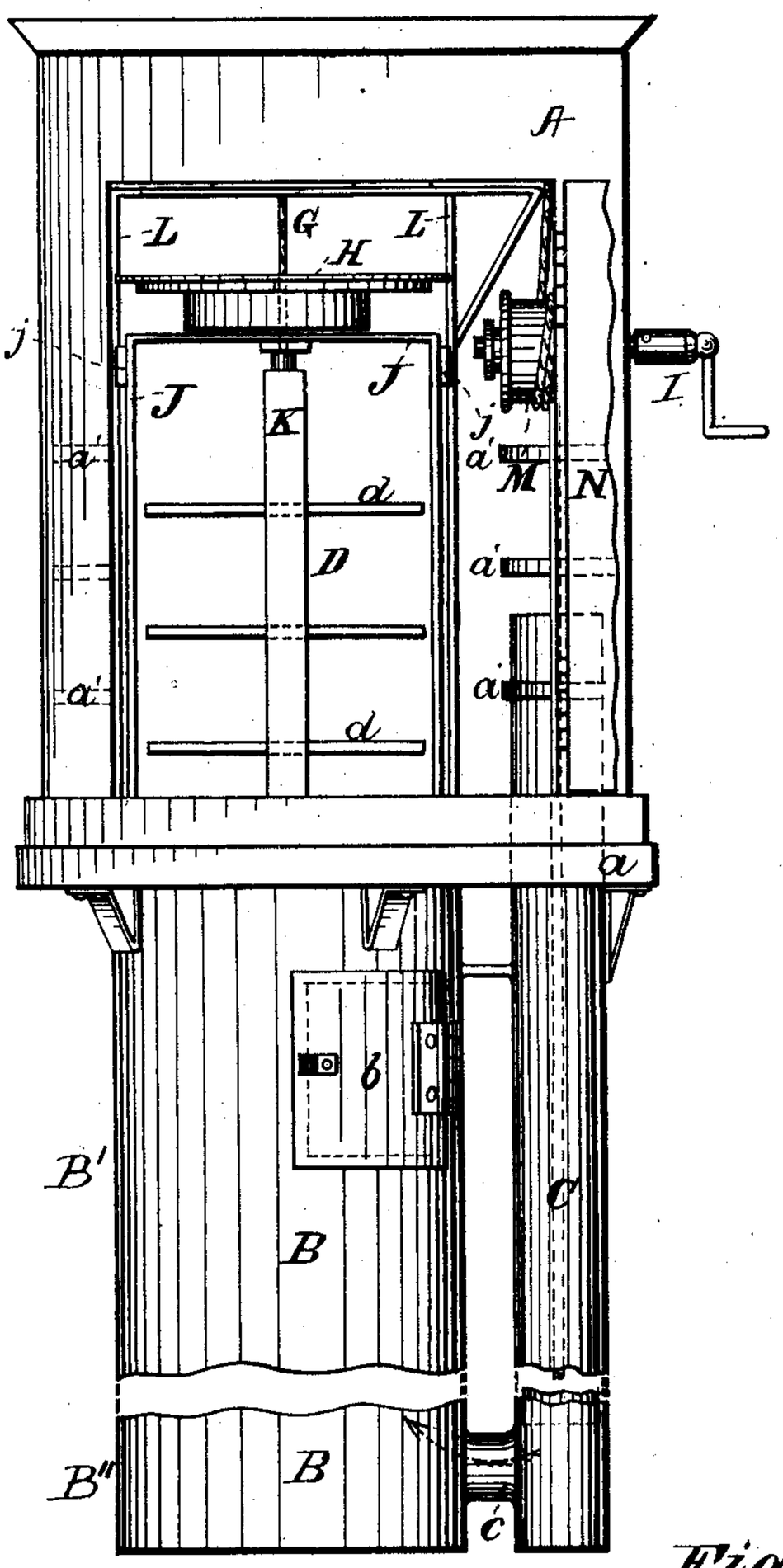


Fig. 2.

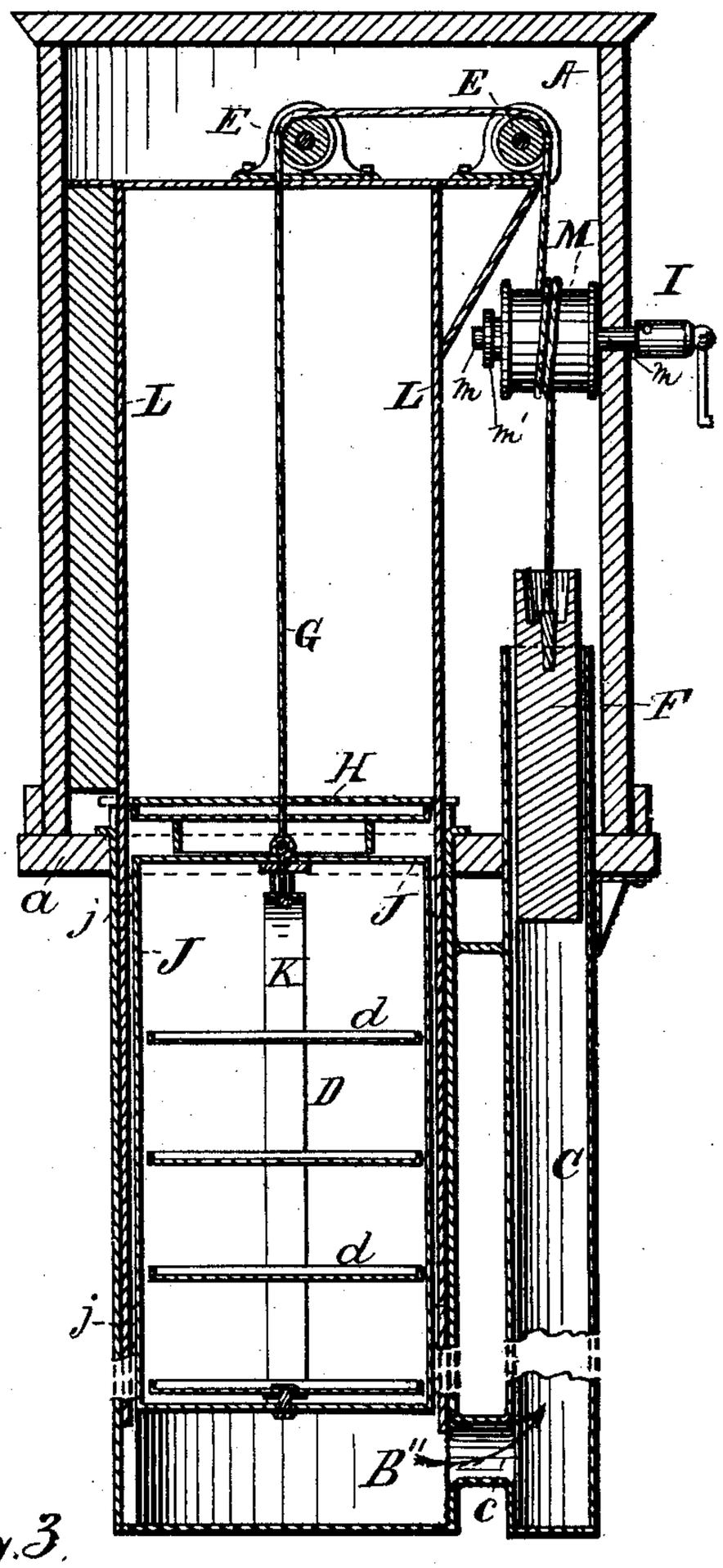
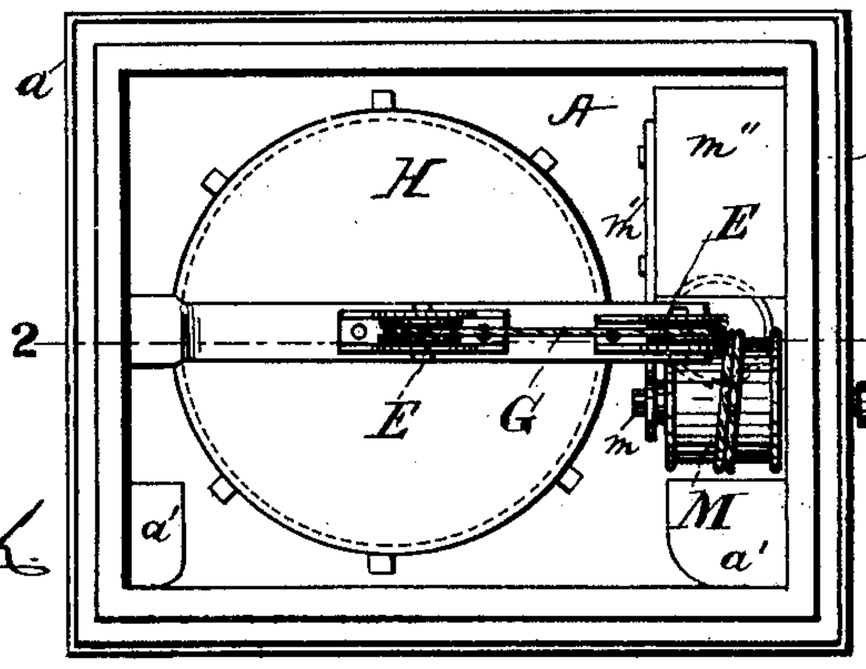


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

SAMUEL P. MILLER, OF SPRINGFIELD, OHIO.

IMPROVEMENT IN REFRIGERATORS FOR COOLING ARTICLES UNDER GROUND.

Specification forming part of Letters Patent No. **200,624,** dated February 26, 1878; application filed July 7, 1877.

To all whom it may concern:

Be it known that I, SAMUEL P. MILLER, of Springfield, in the county of Clarke and State of Ohio, have invented an Improved Apparatus for the Preservation of Food, of which the following is a specification:

My invention relates to an apparatus for lowering articles of food into a space or chamber in the ground, so as to utilize the coolness of the earth as means for the preservation of food.

My improvement consists, first, in a tight shaft, which is placed in the ground, or is surrounded by an embankment of earth. Into this shaft the articles of food are lowered. The shaft is tight, so that water and insects cannot get into the interior of the shaft.

My improvement consists, secondly, in providing a case at the top of said shaft and combining therewith a ventilating-tube adapted to form a passage between the lower end of said shaft and the casing above.

My improvement consists, thirdly, in combining, with the shaft, the case, and ventilating-tube, a rack of shelves and counterbalance-weight, so arranged that their vertical movement will force a current of air through the apparatus.

My improvement consists, fourthly, in an apparatus for the preservation of food, consisting of the following parts, to wit: A case, a shaft having cellar or basement and subterranean portions, a ventilating-tube, a rack of shelves, a rope or chain passing over sheaves to a windlass and connected to a counterbalance-weight, and an operating-handle.

In the accompanying drawings, Figure 1 is a front view of my improved apparatus, the door being open, and the rack of shelves in elevated position. Fig. 2 is a vertical section of the same on the line 2 2, Fig. 3, with the rack of shelves lowered. Fig. 3 is a plan view, the top of the case being removed.

A may represent a case (of any suitable shape) resting on the floor *a*. Beneath this case is located a shaft, B, passing down through the basement or cellar into the ground a sufficient distance, preferably, to obtain an even temperature throughout the year. This shaft can be of metal or cement, and is constructed tight, so as to exclude water, vermin, and insects. I prefer to construct this shaft of galvanized iron or other indestructible material.

B′ represents the basement or cellar portion, and B″ the subterranean portion. C is a vertical ventilating-tube, connecting the lower end of the shaft B with the case A, and forming a passage for a weight, F, to play in. The tube C may be connected to the shaft by a short tube, *c*. Within the case A is a rack of shelves, D. This rack is adapted to slide vertically between guides L, and consists of two frames, K J, and any desirable number of shelves *d*. The shelves are secured to the inner frame or yoke K, which is swiveled at top and bottom to the outer frame J, whose sides are provided with recessed plates *j*, fitting the vertical guides L. To the top of the frame J is attached a cord or chain, G, passing over sheaves or pulleys E, and connected to a weight, F, at its other extremity. This weight is adapted to counterbalance the sliding rack and its contents, or nearly so, so that it may be raised or lowered with ease. The weight F is constructed in such form as to fit within the ventilating-tube C, so that when the weight is raised or lowered it may force a current of air through the apparatus.

The cellar or basement portion B′ of the shaft is provided with a door, *b*, at a suitable height, so that articles may be inserted or withdrawn while the cover is in place. H is the cover to the shaft B, and is so applied as to be raised or lowered by the rack D coming in contact therewith or receding therefrom. The cord or chain G passes from the sheaves E to a windlass, M, rotated by a handle, I, on the exterior of the case. The front side of the case is provided with a door, N.

I represent the shaft B of tubular form; but I do not limit myself to this construction, as I may make it of rectangular form and dispense with the guides L within the shaft. The shaft is made water-tight, thus preventing water or insects from getting inside of it. The weight F may be made in sections, if preferred. The shelves *d* are preferably made of galvanized sheet-iron, perforated, or of galvanized wire, in the form of a reticulated web, with a suitable sustaining margin or rib. The cover H is made of sheet metal or of wood. I prefer to construct it of two connected plates of

sheet metal, the intervening space being filled with charcoal or other non-conducting material. The lower sheet is made of less diameter than the upper sheet, so as to fit within the shaft, the upper sheet resting on the shaft.

The case A is provided with shelves *a'*, adapted to receive articles transferred to or from the rack of shelves.

Instead of the shelves *d*, I may use a series of pans.

Having thus described my invention, the following is what I claim as new and desire to secure by Letters Patent:

1. In an apparatus for preserving food, the tight shaft B, having a subterranean portion, B″, as and for the purpose set forth.

2. The combination, with a case, A, and a shaft, B, of the vertical ventilating-tube C, as and for the purpose set forth.

3. The combination, with the case A and shaft B, of the ventilating-tube C, weight F, and rack of shelves D, said weight and shelves being adapted to force a current of air through the apparatus, as set forth.

4. The apparatus herein described, consisting of a case, A, shaft B, having basement and subterranean portions B′ B″, ventilating-tube C, rack of shelves D, rope or chain G, sheaves E, weight F, windlass M, and handle I, as and for the purpose set forth.

SAMUEL P. MILLER.

Witnesses:

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