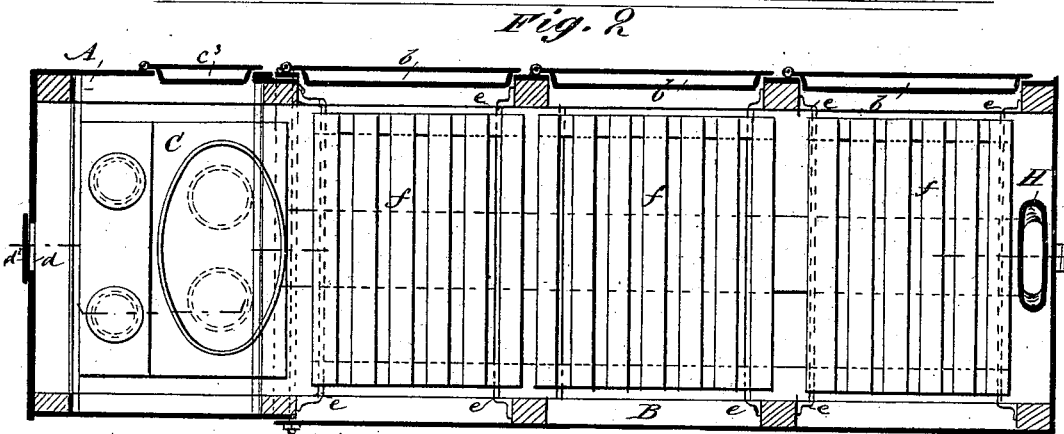
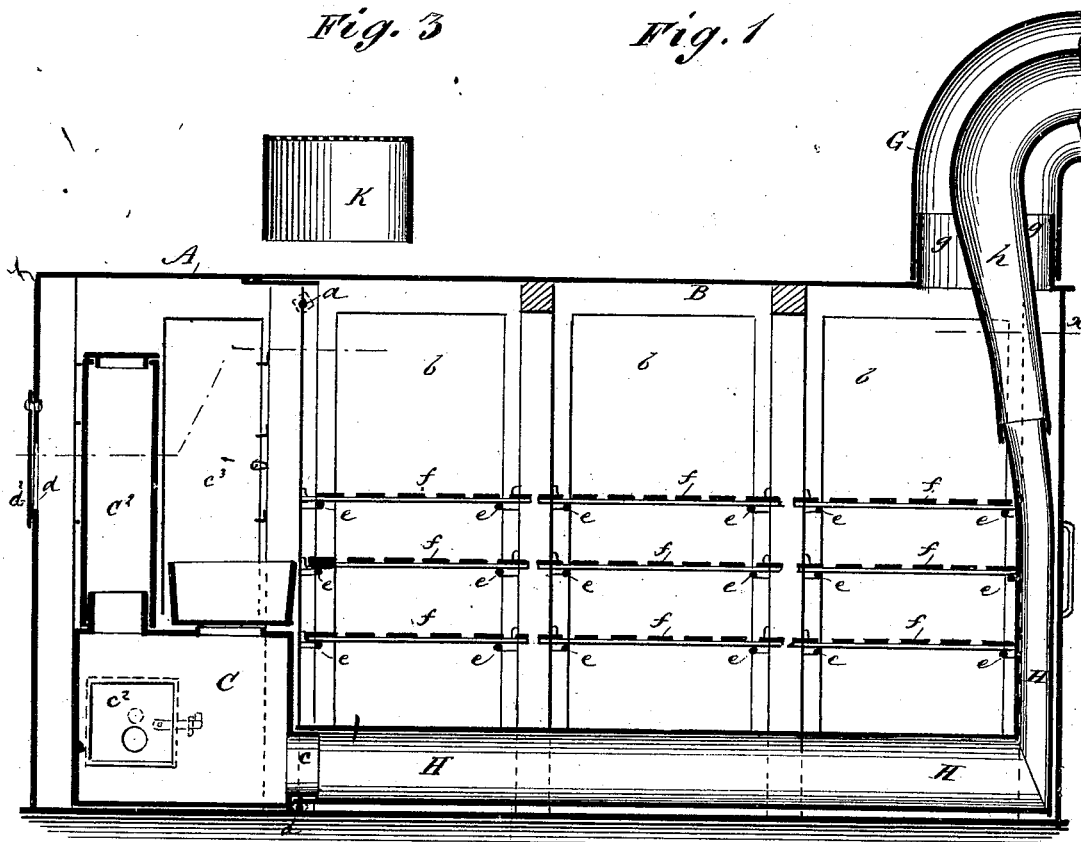


A. COLEMAN.  
Drying Apparatus for Fruits, &c.

No. 206,421.

Patented July 30, 1878.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

ABNER COLEMAN, OF LEXINGTON, OHIO.

## IMPROVEMENT IN DRYING APPARATUS FOR FRUITS, &c.

Specification forming part of Letters Patent No. 206,421, dated July 30, 1878; application filed June 13, 1878.

*To all whom it may concern:*

Be it known that I, ABNER COLEMAN, of Lexington, in the county of Richland and State of Ohio, have invented a new and Improved Drying Apparatus, of which the following is a specification:

The invention is an improvement in the class of driers for fruits, &c., which are composed of a stove or heater and a drying-chamber proper, the two parts being so connected as to allow the passage of heated air from the stove laterally into and through the drying-chamber.

My invention consists in constructing the frame or casing of my apparatus in two parts, which are of like form and dimension in cross-section, and are so fitted together and so connected by bolts that they form practically one symmetrical structure for use for drying purposes, but may be detached or separated from each other when it is desired to use them separately.

The accompanying drawing illustrates a mode of carrying out my invention.

Figure 1 represents a longitudinal vertical section of an apparatus embodying my improvements. Fig. 2 is a horizontal section taken in the line *x x* of Fig. 1. Fig. 3 is a detail view hereinafter referred to.

Similar letters of reference indicate corresponding parts.

A represents a compartment which I call the "furnace-room or oven," and B a compartment which I call the "safe or dry-house." When the two parts are connected together, as shown, they constitute the complete drying apparatus.

The compartment A has its top and bottom and three of its sides permanently closed, and its fourth side or inner end open, except when closed by a cap, as hereinafter described.

The compartment B has its top and bottom and two of its sides permanently closed, its third side provided with doors *b*, which may be opened and closed, and its fourth side or inner end open, except when closed by a cap, as hereinafter described.

The two compartments are connected together to form the drying apparatus by inserting the open end of one part a short distance within the open end of the other part, and securing them by any suitable fastenings.

They are here shown as secured by bolts *a* passing through the connected edges and provided with nuts.

In the bottom of the compartment A is a stove, C, which nearly fills the floor, a space being left around three of the vertical sides for radiating purposes. The fourth side of the stove is about flush with the edge of the open side or end of the compartment, and is provided with a stove-pipe collar, *c*, located near the bottom of the stove and extending beyond the edge of said open side or end.

The stove is provided with a door, *c*<sup>1</sup>, opening on the outside of the compartment A, either on the end or the side, as may be preferred. The top of the stove is provided with pot-holes and covers for use when desired; and it is also provided with an auxiliary radiating-surface, consisting of an upright box-like casing, C<sup>2</sup>, fitting around a rim or collar immediately over the point of combustion of fuel in the stove, which radiator may be readily removed when desired. The door *c*<sup>2</sup> provides for supplying the stove with fuel, and another door, *c*<sup>3</sup>, affords access to the interior of the oven above the top of the stove. The closed end of the compartment is provided with a damper consisting of an opening, *d*, and an adjustable sliding or swinging door, *d*<sup>1</sup>.

The compartment B is provided with rack-holders consisting of rods *e*, extending from the upright portions of the frame-work transversely across the compartment. Upon these rods rest the racks or shelves *f*, composed of slats connected by braces and bars, and intended for holding the articles to be dried.

At the top of the compartment B, near the end farthest from the oven A, is an opening provided with a collar, *g*. On this collar fits a curved elbow or goose-neck pipe, G, the open end of which may be turned to correspond with the direction of the wind.

A smoke-pipe, H, has one end fitted to the smoke-collar *c* of the stove, and from thence extends horizontally near the bottom of the compartment B to the closed end thereof, where it extends upward toward the top, and connects with a curved elbow or goose-neck pipe, *h*, passing out through the elbow G, the latter being considerably larger than said pipe *h*.

The parts being in the position shown in the drawing, the apparatus is ready for use as a drier. The articles to be dried are placed upon the racks or shelves *f*, and a fire is made in the stove. The heat is radiated from the radiator *C*<sup>2</sup> in a horizontal direction, a current being established toward the goose-neck *G*, and the force of said current regulated by means of the damper *d*<sup>2</sup>. The exterior air enters through said damper, and, impinging against the radiator *C*, becomes heated, and is divided into two currents, which pass around the opposite ends of the radiator, and thence between the racks or shelves *f*, extracting the moisture from the articles to be dried, and passes out through the goose-neck *G*, taking with it the steam and moisture thus extracted.

By the employment of the auxiliary upright radiator *C*<sup>2</sup>, and by locating the stove-pipe *H* at the bottom of the apparatus, the heat is thoroughly utilized, as only a small proportion thereof passes off through the smoke-pipe, and that small quantity is radiated from the pipe and mingles with the horizontal current before described. In consequence of this horizontal current the vapors and gases extracted from the articles are carried horizontally between the shelves, and by this means I prevent the saturation of the articles on the upper shelves by the vapors extracted from those on the lower shelves, as would be the case if the current passed upward through the articles. I thus preserve the natural flavor of fruits and vegetables by avoiding the steaming and sweating process.

When not used for drying purposes the two parts of the apparatus may be separated and utilized for other purposes.

The compartment *A*, when used separately, has its open end closed by a cap consisting of a sheet of metal provided with a rim fitting on said open end, like the cover to a box. The cap is provided with an opening for the passage of the stove-pipe collar *c*, so that a smoke-pipe may be attached to said collar. The compartment may then be used as an oven

for baking or cooking, and may be used out of doors for such purposes; or it may be used indoors, either as an oven or a heater, by arranging the smoke-pipe to communicate with a chimney.

The compartment *B*, when used separately, has its open end closed by a cap similar in construction to the cap used for closing the compartment *A*, and provided with an opening covered by wire-cloth for the purpose of ventilating it. A cap, *K*, (see Fig. 3,) having one end covered with wire-cloth, is fitted over the end of the goose-neck *G*, and thus the compartment is ventilated, and dust and dirt are excluded. The compartment may then be used as a safe for storing milk or provisions, or as a closet for holding various articles.

I do not claim, broadly, a radiator located in the front part of a drier, nor do I claim, broadly, the furnace and drying-room of a drier made separate; but,

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

1. The casing of the drying apparatus, composed of two parts or compartments having a like form and dimension in cross-section, and jointed or fitted together, and secured detachably by bolts *a*, as described, and said parts containing, respectively, the stove *C*, having collar *c* and the shelves or racks *f*, and pipe *H*, all combined and arranged as shown and described, for the purpose specified.

2. The combination, with the drying-chamber *A B*, having an air-induction opening, *d*, at the front end and air-exit at the rear end, of the box-like radiator *C*<sup>2</sup>, located immediately before the opening *d*, all as shown and described, whereby a heated current of fresh air is caused to circulate horizontally through the drier, as specified.

ABNER COLEMAN.

Witnesses:

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