(No Model.)

H. L. STRONG.

EVAPORATOR.

No. 361,379. Patented Apr. 19, 1887.

Fig. 1.

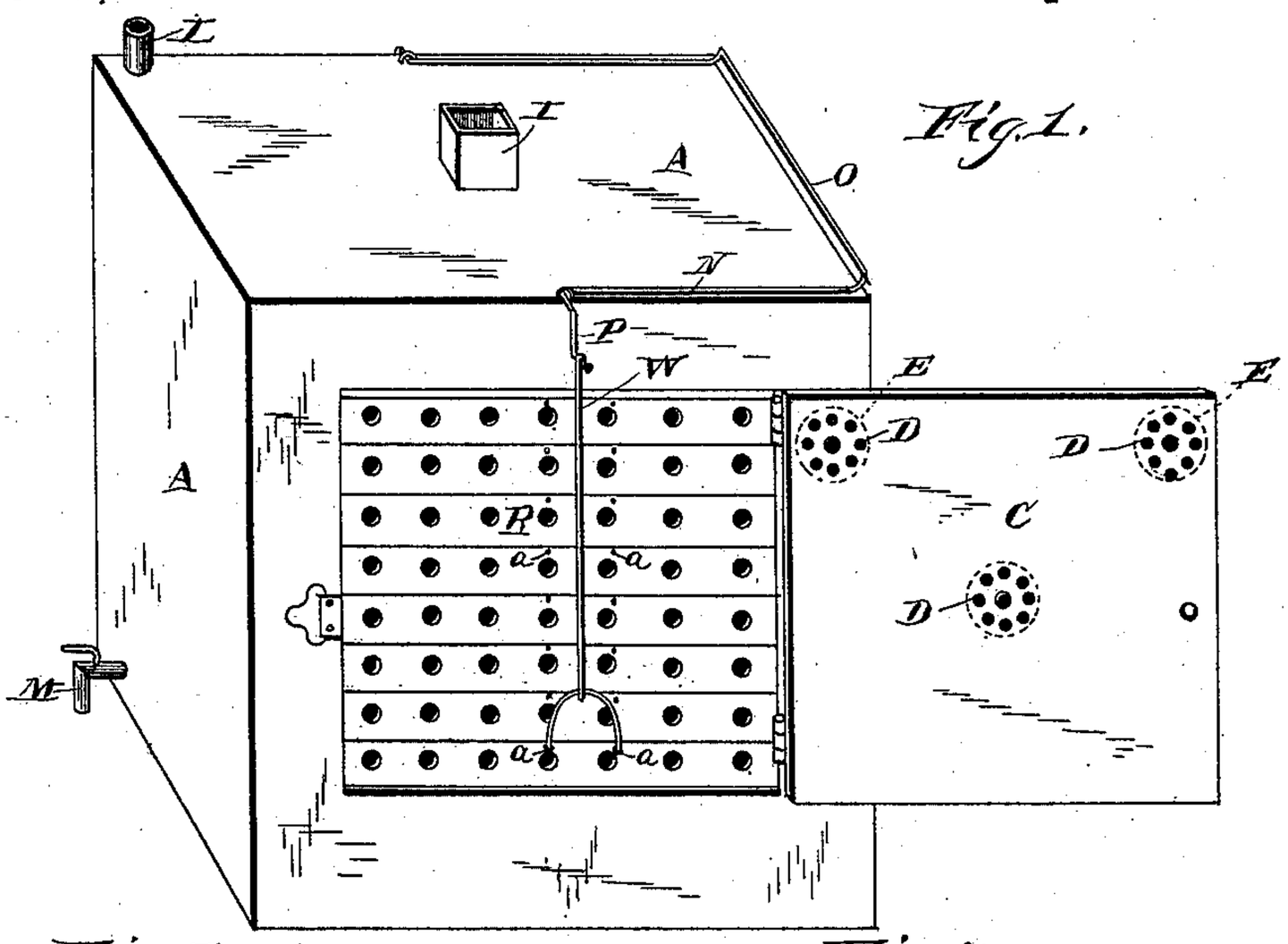


Fig. 3.

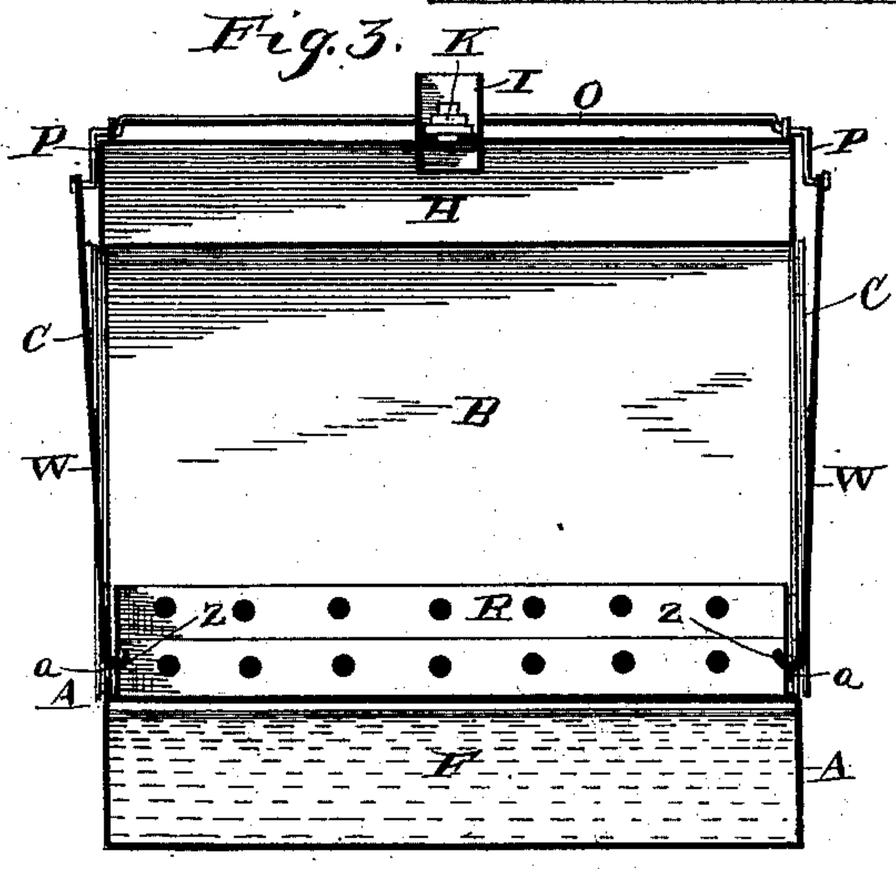


Fig. 4.

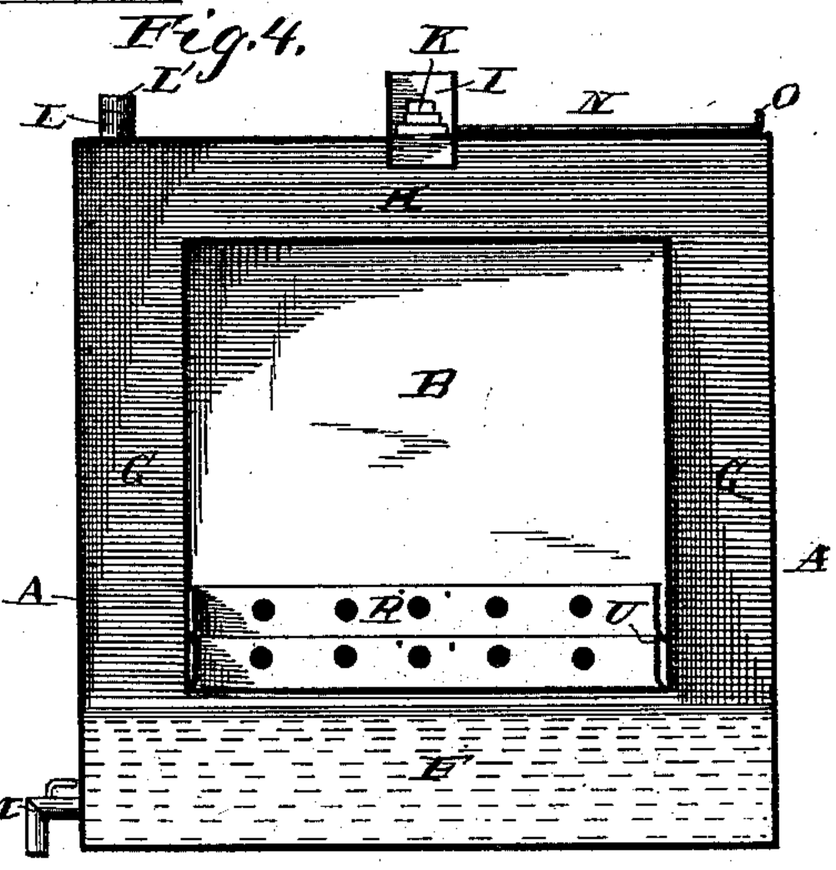
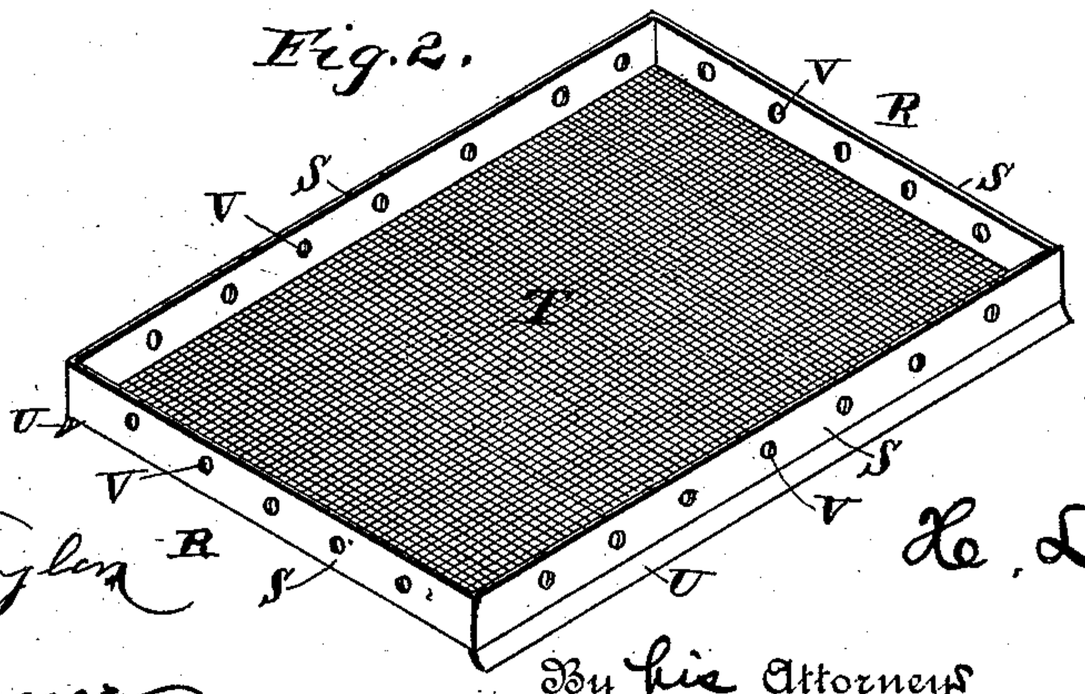


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

HOMER LEE STRONG, OF SCHELL CITY, MISSOURI.

EVAPORATOR.

SPECIFICATION forming part of Letters Patent No. 361,379, dated April 19, 1887.

Application filed September 15, 1886. Serial No. 213,624. (No model.)

To all whom it may concern:

Be it known that I, HOMER LEE STRONG, a citizen of the United States, residing at Schell City, in the county of Vernon and State of Missouri, have invented a new and useful Improvement in Evaporators, of which the following is a specification.

My invention relates to an improvement in evaporators; and it consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of an evaporator embodying my improvements. Fig. 2 is a detail perspective view of one of the trays. Fig. 3 is a vertical longitudinal sectional view taken on the line *x x* of Fig. 1. Fig. 4 is a vertical transverse sectional view taken on the line *y y* of Fig. 1.

A represents the case or boiler of the evaporator, which is rectangular in form, and is provided with a central rectangular chamber, B, which extends transversely entirely through the case or boiler A, and has its ends closed by the doors C, which are hinged to the sides of the case A. The said doors are provided at their sides and upper edges with ventilating-openings D, which may be opened or closed by means of pivoted slides E.

The lower side of the case A, below the compartment B, forms a water-chamber, F. The spaces between the ends of the compartment B and the ends of the case A form vertical flues G, to permit the vertical escape of steam from the water-chamber or boiler F, and the space between the upper side of the compartment B and the top of the case A forms a horizontal flue, H, which connects the end flues, G. The said flue H is provided with an escape-pipe, I, which projects vertically from the upper side of the case A, and forms a seat for a weighted valve, K.

L represents an inlet-opening at the upper side of the case A, at one end thereof, which is closed by a cap, L′; and M represents a faucet, which is attached to the lower side of the water-compartment F, at one end thereof.

On the upper side of the case A, at the center thereof, is journaled an elevating-bail, N, which is made from a single piece of wire or rod bent to form a handle, O, and crank-arms P. The said crank-arms normally depend on the front and rear sides of the case A.

R represents a series of evaporating pans or trays, each of which comprises a rectangular frame, S, which is made of tin or other suitable sheet metal, and a screen, T, which is stretched on the lower side of the frame S, and has its edges secured thereto. The side walls of the frames S are provided with depending outwardly-flaring flanges U, and openings V are made in the frames S, about midway between the upper and lower edges thereof.

Attached to the crank-arms of the elevating-bail, and depending therefrom, are rods W, having their lower ends bifurcated and provided with inwardly-extending prongs Z, which are adapted to enter openings *a*, which are made in the ends of the evaporating-trays, near their upper edges.

The operation of my invention is as follows: A suitable quantity of water is placed in the water-chamber F, and the evaporator is placed on a cooking-stove or over a furnace, and the water therein is raised to the boiling-point. The steam therefrom fills the flues or chambers G and H, which extend around the compartment B, and the said steam is kept at a suitable pressure by means of the weighted valve K. When the steam exceeds the desired pressure, the said valve opens and permits the escape of the steam until its pressure is reduced. The fruits or vegetables which are to be evaporated are placed in one of the evaporating pans or trays, and the latter is placed at the bottom of the compartment B, and the doors C are then closed and another tray is filled. The elevating-rods W have their prongs Z then inserted in the openings *a* of the tray which is in the evaporator, when the doors are opened and the said tray is elevated in the evaporating-chamber a distance equal to the height of the tray by turning the elevating-bail N to the reverse of the position indicated in full lines in Fig. 1. The tray which has just been filled is then inserted in the compartment B, between the bottom thereof and the lower side of the elevated tray, and the operation before described is repeated until the compartment B is entirely filled with trays. By this time the tray which was first placed therein has its fruit or vegetables sufficiently evaporated, and it

can be removed and a new one substituted at the bottom of the pile of trays, as before described, this operation being repeated indefinitely until all the fruit or vegetables have been evaporated.

The depending outwardly-flared flanges on the lower sides of the trays serve the purpose of nesting the trays closely together when they are piled in the evaporating-chamber, and the ventilating-openings D in the doors serve to permit the escape of vapor and moisture from the fruit or vegetables as they are being dried.

After the fruit has all been evaporated, the trays are removed from the evaporating-chamber, and the water remaining in the water-chamber is drawn off by the faucet N. The heat remaining in the case or boiler A quickly dries the interior thereof, thus preventing it from becoming rusted.

An evaporator thus constructed is extremely cheap and simple, is very strong and durable, and is adapted to evaporate large quantities of fruit or vegetables in a short period of time.

Having thus described my invention, I claim—

1. The combination of the evaporator-case A, having the compartment B, with the evaporating-trays adapted to be nested or placed one on top of the other in the said compartment, and the bail having the crank-arms P, and the rods W, depending from the said crank-arms and adapted to engage the trays, for the purpose set forth, substantially as described.

2. A fruit-evaporator comprising the shell having a water-tank in its lower portion and an opening at one side closed by a door, an interior bottomless chamber, B, arranged above the water-tank to communicate with the opening in the shell and surrounded by escape-flues, the removable trays having the depending flaring flanges on their lower sides and adapted to be nested together within the interior chamber, said trays being adapted to be adjusted beneath one another and passed and removed through the opening in the shell, and elevating mechanism arranged exteriorly to the shell and adapted to be connected with the lower tray to elevate all the trays in the chamber, and thereby provide a space beneath the trays for the introduction of another tray therein, as and for the purpose described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

HOMER LEE STRONG.

Witnesses:

H. P. WHERRITT,

ROBT. E. HERRICK.