

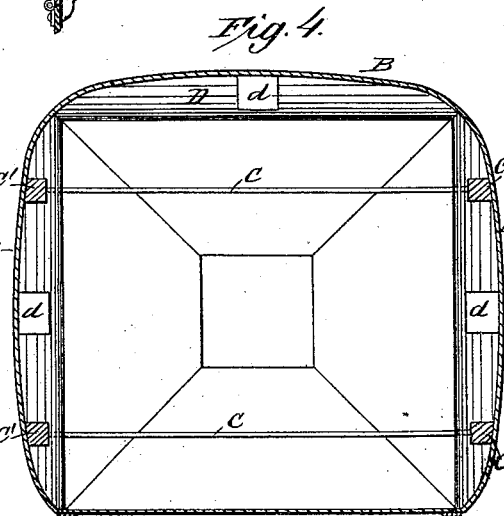
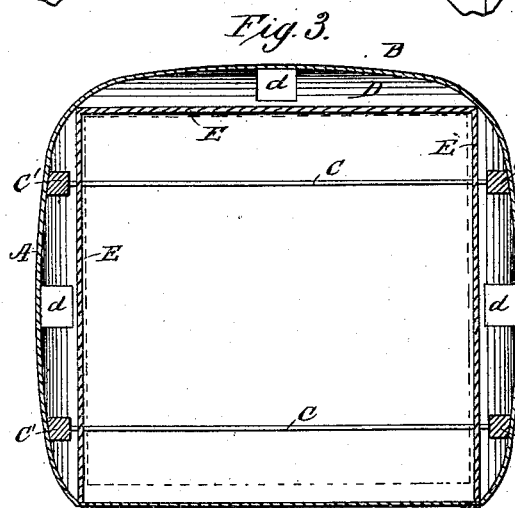
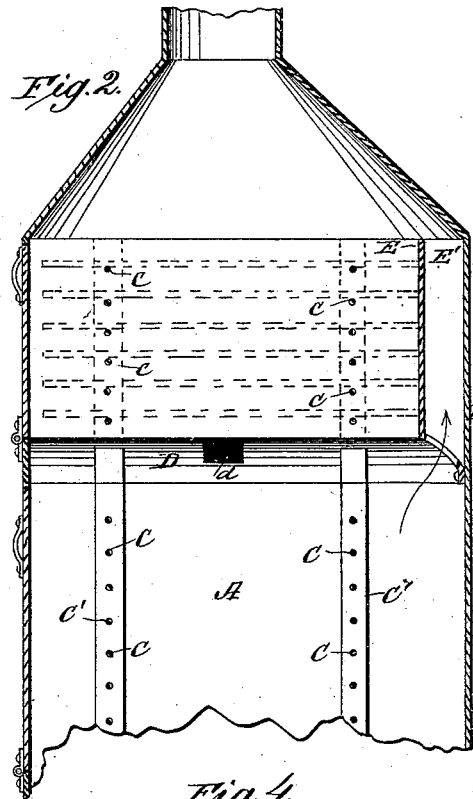
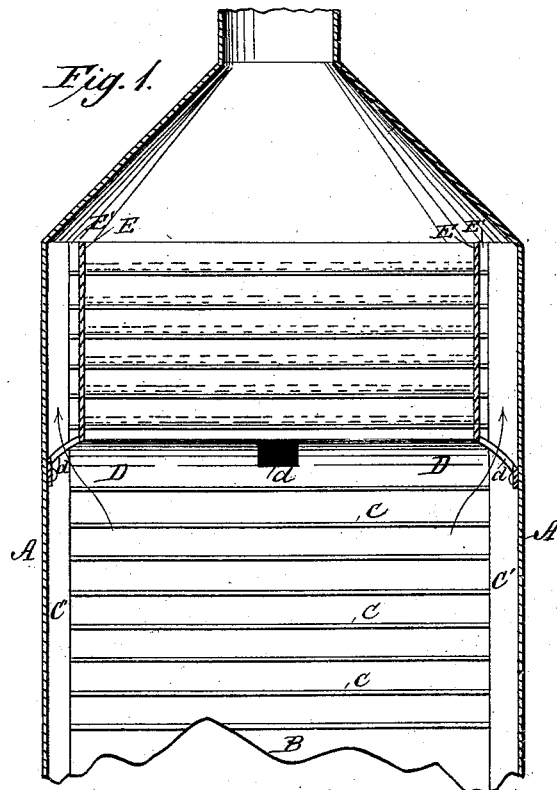
(No Model.)

W. S. PLUMMER.

FRUIT DRIER.

No. 343,607.

Patented June 15, 1886.



WITNESSES:

W. W. Hollingsworth
P. B. Turpin.

INVENTOR:

W. S. Plummer
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UNITED STATES PATENT OFFICE.

WILLIAM S. PLUMMER, OF SAN JOSÉ, CALIFORNIA.

FRUIT-DRIER.

SPECIFICATION forming part of Letters Patent No. 343,607, dated June 15, 1886.

Application filed August 18, 1885. Serial No. 174,742. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. PLUMMER, a citizen of the United States, residing at San José, in the county of Santa Clara and State of California, have invented a new and useful Improvement in Fruit-Evaporators, of which the following is a description.

The invention is an improvement in fruit-evaporators of the class represented in the Patent No. 261,036, granted me July 11, 1882.

The present invention has for an object to provide simple and efficient means whereby the air deflected under the upper trays will be caused to move upward through the same and will be prevented from passing off at the side; and the object is to construct the heat-conductors in such manner that a vacuum will be formed above the trays, and the heated air below the same will be drawn rapidly up through them, so as to expedite the evaporation of the juices of the fruit and prevent the dampening of same by the vapors rising from the lower trays.

The invention has other objects, which will be described more fully hereinafter.

The invention consists in certain novel constructions and combinations of parts as will be more fully described and pointed out in the claim.

In the drawings, Figures 1 and 2 are vertical sections of my evaporating-chamber on, respectively, planes parallel with and at right angles to the doors thereof. Fig. 3 is a transverse section of the chamber above the deflector, looking down thereon; and Fig. 4 is a transverse section below the deflector, looking up.

The position of the trays is indicated in dotted lines. The side and back walls, A, A, and B, of the casing are preferably curved transversely and bulged outward for the purposes presently described.

For supporting the trays I provide horizontal rods C, two or more in the same horizontal plane, and the trays are slid on such rods, and are so formed that their edges rest a slight distance from the walls and the front or door of the casing. The rods may be secured to the casing in any suitable manner. In the present instance their ends rest in uprights C', and such construction is preferred

because it is simple, cheaply made, and in great part relieves the casing of the weight of the trays.

By the rods, it will be seen, I dispense with the slides now commonly used, and provide supports for the trays, which supports are at the same time light and can be made at a much reduced cost over the ordinary tray-supports.

The spaces between the edges of the trays and the side and back walls of the case form air chambers or spaces to a point about six or seven trays from the top, at which point a plate, D, extends transversely across the space, forming a deflector which throws the heat in under the upper trays. This deflector may be similar to the deflectors shown in my former patent, above referred to, and it also has an opening, *d*, such as shown in said patent. However, in the said patent, the air deflected inward by the plate will pass out and up alongside the trays, instead of up through them. In the present instance, I provide plates E, which preferably join at their lower ends to the deflector, and are separated from the casing, forming chambers E'. Manifestly the lower edges of the plate E may be disconnected from the deflectors, but it is preferred to secure them to such part as before described. These plates extend from side to side of the casing and rest flush against the edges of the trays in the practice of the invention.

The furnace or heater may be of any suitable construction, and be located within or properly connected with the lower end of the drying-chamber.

In operation it will be seen the heat passes up through and on opposite sides of the lower trays until the deflectors are reached, at which point the hot air is forced inward under the upper sets of trays, where it will be held from passing off at the edges by the plate E. The air surrounding the upper trays will be thus re-expanded or heated and the evaporation be facilitated. The air passing up between the plates E and the casing flows out above the fruit-trays and passes rapidly out of the chimney or flue, forming a vacuum below it which draws the hot air quickly up through the upper trays above the deflectors, and prevents the vapors arising from the fruit in the lower trays

from dampening that in the upper trays, as will be seen.

The casing is preferably formed of metal curved or bulged outwardly at the center of its sides and back end to form the air-spaces without materially increasing the cross-sectional area of the drying-chamber.

It will be noticed that the front edges of the trays are set back from the door, so that a portion of the warm air may pass up in front of the trays and prevent the fruit on the latter from being affected by the cold air from the door.

Having thus described my invention, what I claim as new is—

A fruit-evaporator comprising a casing, trays supported therein, deflectors projected from the inner side of the casing inward to

the sides of the trays, and having openings *d*, and the plates *E*, projected upwardly from the inner edge of such deflectors close to the edges of the trays and extended the full width of said trays, whereby the heated air will be prevented from passing up alongside the trays and will be forced up through the same in the operation of the apparatus, substantially as set forth.

The above specification of my invention signed by me in the presence of two subscribing witnesses.

WILLIAM S. PLUMMER.

Witnesses;

P. B. TURPIN,
C. A. PETTIT.