

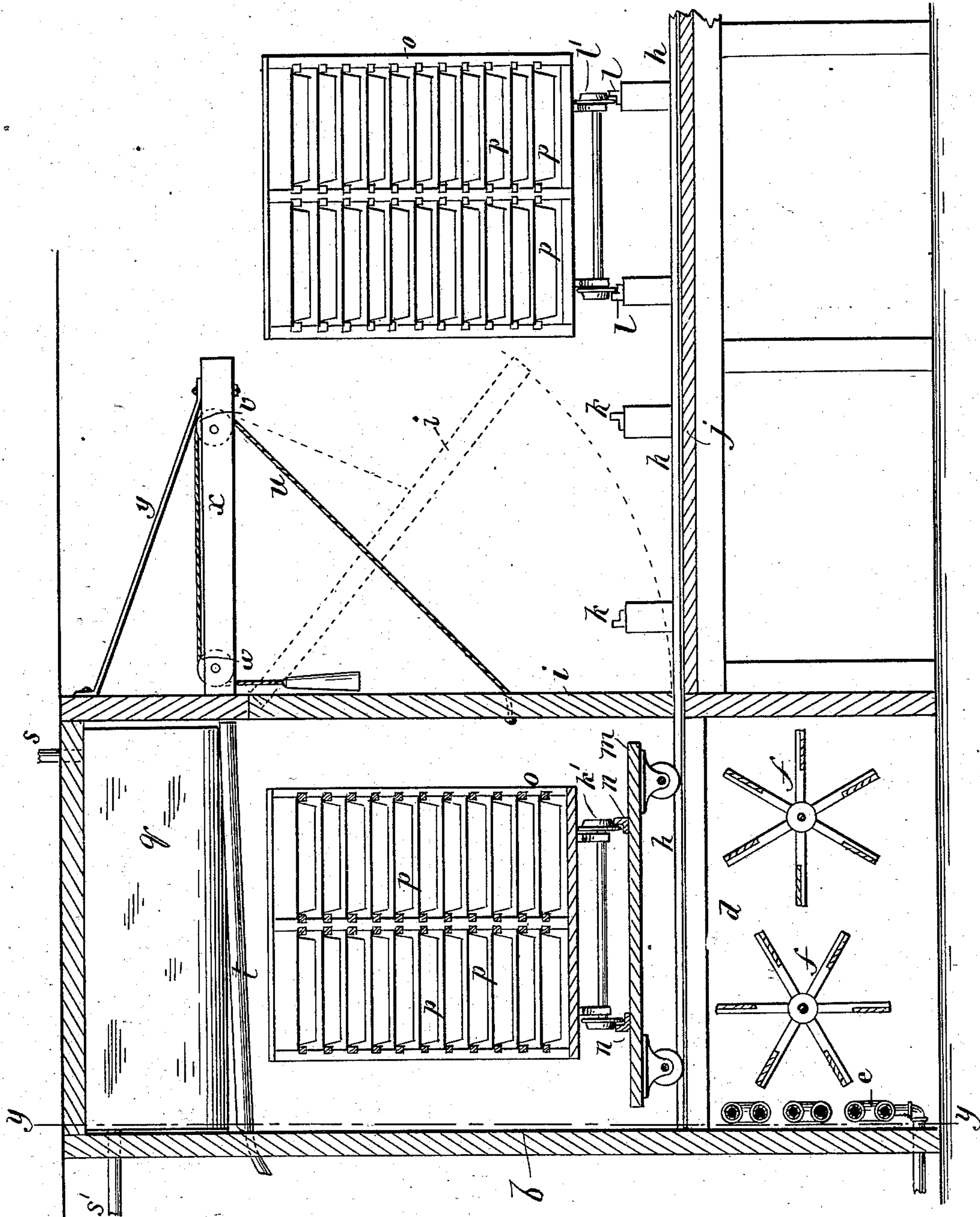
(No Model.)

2 Sheets—Sheet 1.

S. W. LOWELL.  
FRUIT EVAPORATOR.

No. 284,450.

Patented Sept. 4, 1883.



WITNESSES:

*J. D. Garfield*  
*C. Sedgwick*

*Fig 1*

INVENTOR:

*S. W. Lowell*

BY

*Mum Ho*

ATTORNEYS.

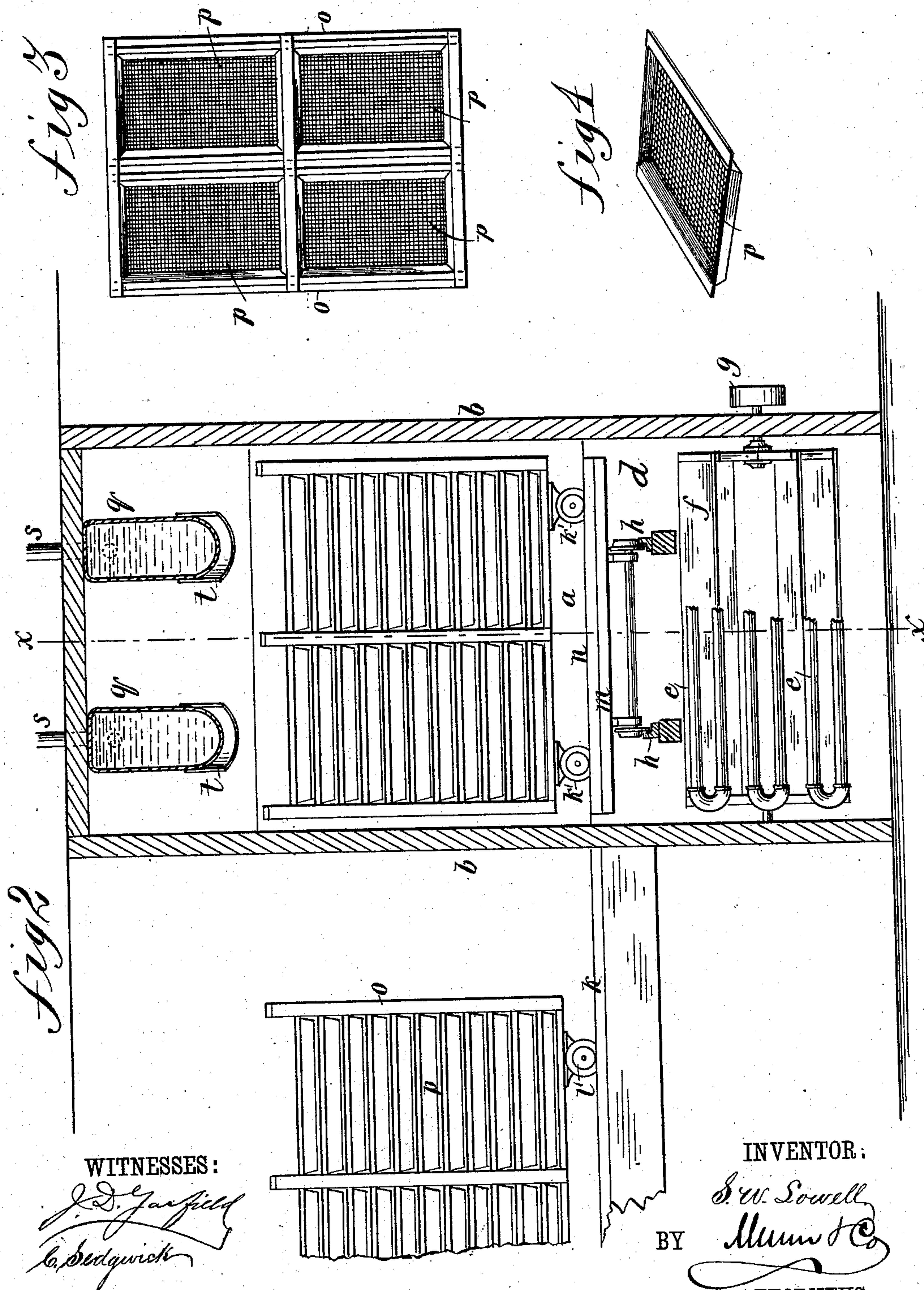
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BY *Mum & Co*  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

SETH W. LOWELL, OF FILLMORE, NEW YORK.

## FRUIT-EVAPORATOR.

SPECIFICATION forming part of Letters Patent No. 284,450, dated September 4, 1883.

Application filed May 11, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, SETH W. LOWELL, of Fillmore, in the county of Allegany and State of New York, have invented a new and Improved Fruit-Evaporator, of which the following is a full, clear, and exact description.

The object of the invention is to improve fruit-evaporators, as hereinafter described, and pointed out in the claim.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of my improved drier, taken on the line *x x* of Fig. 2. Fig. 2 is a sectional elevation on line *y y* of Fig. 1. Fig. 3 is a plan view of one of the crates for holding the fruit, and Fig. 4 is a perspective view of one of the pans to be placed on the crates to hold the fruit.

The drying chamber or space *a*, in which the fruit is to be dried, is inclosed by any approved kiln, *b*, of brick or other approved material, and is located above an air-heating space, *d*, in which the air is to be heated, preferably by a steam-coil, *e*, and wherein I propose to arrange one or more rotary fans, *f*, for effecting rapid circulation of the air by forcing it up, say, in the middle portion and down along the sides of the chamber.

The fan shafts or axles will extend at one end through the wall of the kiln, to be turned by power applied with a belt on pulleys *g*, fitted to them. Above the heating-chamber is a rail-track, *h*, extending across the drying-space and out through the kiln, which has a door, *i*, to open and close the way, the said track extending along a platform, *j*, sufficiently to connect with two side tracks, *k* and *l*, said side tracks being arranged in a sufficiently higher plane than track *h* to enable trucks *k'* and *l'*, located on them, to roll on and off the truck *m*, arranged on track *h*, and having cross-rails *n*, which may connect with either of the tracks *k* or *l* at will. Each of the trucks *k' l'* carries a large crate or frame, *o*, in which the fruit-pans *p* are to be compactly arranged on supports, on which they slide in and out, as is customary with such devices for spreading the fruit in thin layers, around and through which the hot air may circulate, the pans being made with wire-gauze bottoms.

By the employment of the two side tracks and two crates, with their respective trucks *k'* and *l'*, in addition to the truck *m* and the track *h*, I economize largely in time, heat, and labor by having a crate with fresh fruit ready charged to run into the kiln immediately on the removal of the one having the dried fruit to be discharged from the pans, and by recharging in time for taking the place of the next one to be removed from the kiln, which may be readily done by stopping truck *m* in front of side track *k* and running truck *k'* thereon, then shifting truck *m* along to track *l*, running truck *l'* onto it, and returning it to the kiln. The discharging of the dried fruit from the crate on track *k* and refilling with green fruit may then be proceeded with while the fruit in the kiln is drying, and so on, thus losing but little time and heat in the kiln as compared with a single track and crate arrangement, in which the kiln remains empty while the crate is being emptied and refilled.

The hot air, passing up through the fruit and taking up the moisture therefrom, becomes heavily charged with the moisture and requires to be relieved of it in order to have the best effects in drying the fruit. I therefore propose to arrange one or more deep and inclosed water-pans, *q*, in the upper part of the kiln, through which a circulation is to be maintained by a flowing stream entering at *s* and escaping at *s'*, or in any approved way, on which the air is to be cooled, both for condensing the vapor in it and for causing the air to descend more rapidly into the heating-chamber again, and below the condensing-pans I arrange a trough, *t*, for each one to catch the drip from them and discharge it out through the walls of the kiln, thus facilitating the circulation and preparing the air for more rapidly absorbing the moisture.

The door *i* is to open a space in the wall large enough to pass the crates through, and will by preference be hung at the upper end, to swing from the track upward, as indicated by the dotted lines in Fig. 1, and it will be counterbalanced by a weighted cord, *u*, passing over pulleys *v* and *w* on the arm *x*, projecting from the side of the kiln, and supported by a stay, *y*, or in any approved way.

I desire it to be understood that it is only with kilns in which the air is to be used over



and over to economize the heat that I propose  
to employ the condensing apparatus, for such  
apparatus is not required in such kilns as are  
provided with ventilators, through which the  
5 air escapes at the top, as the air in that case  
carries the moisture with it; but for using the  
air over for saving the heat so carried away  
the condenser performs two important func-  
tions—first, in promoting the circulation, and,  
10 second, reserving the moisture, as above stated.

Having thus described my invention, I claim  
as new and desire to secure by Letters Patent—  
In a fruit-evaporator, the combination of a

heater at the bottom, a fan-blower in the up-  
per part thereof, one or more tracks above the 15  
fan-blower, and a condenser at the top, where-  
by the fruit-trucks may be conveniently en-  
tered, supported, and removed from a platform  
above the heater, the hot air caused to circu-  
late up through the fruit and pass down at the 20  
sides, and the aqueous vapor condensed and  
discharged at the top, as described.

SETH W. LOWELL.

Witnesses:

J. P. MANCHESTER,  
A. H. COY.