W. S. PLUMMER.

Fruit-Driers.

No. 158,308. Patented Dec. 29, 1874.

Fig. 1

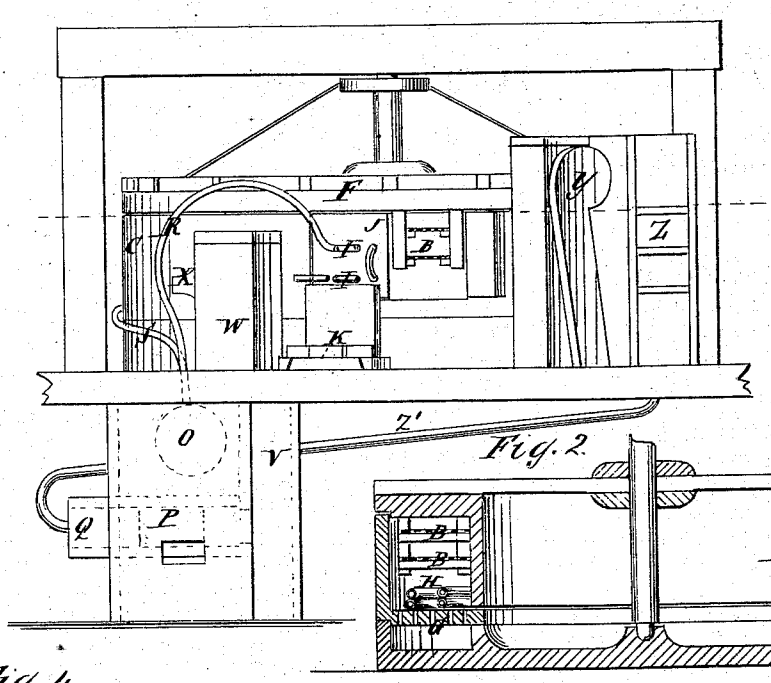


Fig. 2

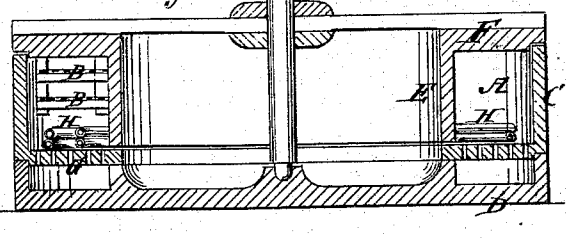


Fig. 4

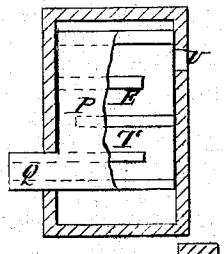
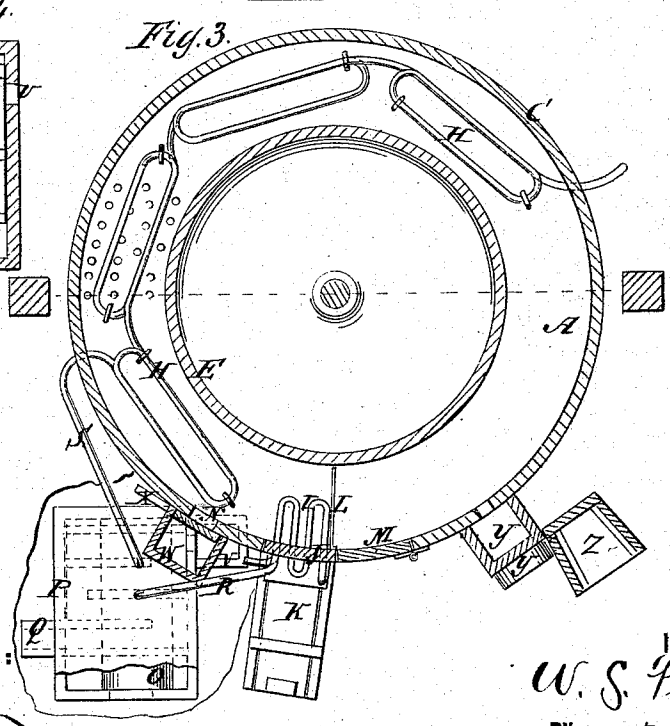


Fig. 3



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM S. PLUMMER, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN FRUIT-DRIERS.

Specification forming part of Letters Patent No. **158,308**, dated December 29, 1874; application filed November 14, 1874.

To all whom it may concern:

Be it known that I, WILLIAM S. PLUMMER, of San Francisco, in the county of San Francisco and State of California, have invented a new and Improved Fruit-Drier, of which the following is a specification:

My invention relates to a fruit-drier in which the racks for holding the fruit pans or plates are made to revolve and carry the fruit around a horizontal course through a heated chamber and back to the place of starting, when the dried fruit is replaced by green, making a continuous process.

The invention consists of a peculiar contrivance of the circular chamber, partly of stationary walls and partly of revolving walls; also, of contrivances for heating the chamber economically by hot air and steam.

Figure 1 is a side elevation of my improved fruit-drier. Fig. 2 is a sectional elevation, taken on the line *x x* of Fig. 3. Fig. 3 is a horizontal section, taken on the line *y y* of Fig. 1; and Fig. 4 is a detail of the furnace, showing the air-heating apparatus.

Similar letters of reference indicate corresponding parts.

A represents an annular drying-chamber, in which the racks B, for holding the fruit, are to be carried. This chamber is inclosed by the stationary circular wall C and bottom D, and the revolving wall E and top F, and it is divided horizontally by the perforated partition G, through which hot air received into the space below may be distributed as it enters the drying-chamber above. H is a steam-coil arranged over the perforated floor, to heat the fruit as it passes along over the coil. I is a small coil attached to a sliding door, J, in the wall C, fixed on a slide, K, and carrying a partition, L, for dividing the drying-chamber transversely. This coil and the partition L are at the side of the door M, through which the green fruit is put in and the dry taken out. The partition is also between the door M and the hot-air passage N, through which the hot air enters the chamber to cut off the escape of the hot air when the door is opened. The coil is to subject the green fruit for a short time to a greater heat than can be maintained in the drying-chamber, for bursting the air-cells. The slide is to draw the coil and the partition back momentarily, to allow the racks to be turned as often as each set is filled with green fruit. O is the boiler for supplying the steam to the coils by pipes R S, and P is an air-heater, arranged in the furnace under the boiler, suitably for a bridge-wall. The air enters at Q and passes in a zigzag course, T, to the entry U, into the conductor V W, by which it passes to the drying-chamber, either under the partition G, or above it, or both, for which suitable dampers X will be employed. The boiler and air-heating apparatus will be placed in a room below the floor on which the drier stands. Y represents a fan that may be used for drawing the hot air around through the drying-chamber for aiding and improving the circulation, if necessary, and Z represents a drying-closet into which this fan may discharge for completing any batches that may, in the regular operations of the drier, come out before being completely dried, the same being put into it as they come from the other.

In practice, I propose to connect the exhaust of the drying-closet Z with the heater by a pipe, Z′, to use the air over and over, and thus economize the heat which would otherwise be lost.

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

1. The combination of annular drying-chamber, formed by the stationary bottom D and side C, and the revolving top F, and side E, substantially as specified.

2. The perforated partition G, hot-air pipe V W, and steam-coil H, combined with the annular oven A, substantially as specified.

3. The movable coil I, combined with the drying-oven, substantially as specified.

4. The partition L, combined with the movable coil I and the drying-oven, substantially as specified.

WM. S. PLUMMER.

Witnesses:

ANDW. SPAULDING,

GEO. L. BAILEY.