

W. S. PLUMMER.
FRUIT-DRIER.

No. 191,072.

Patented May 22, 1877.

Fig: 1.

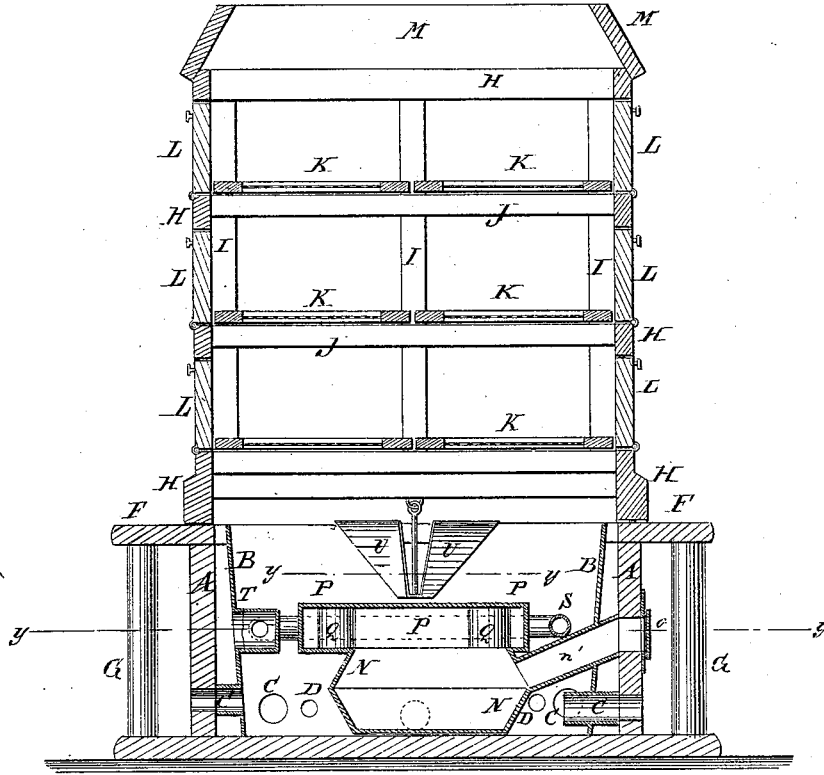
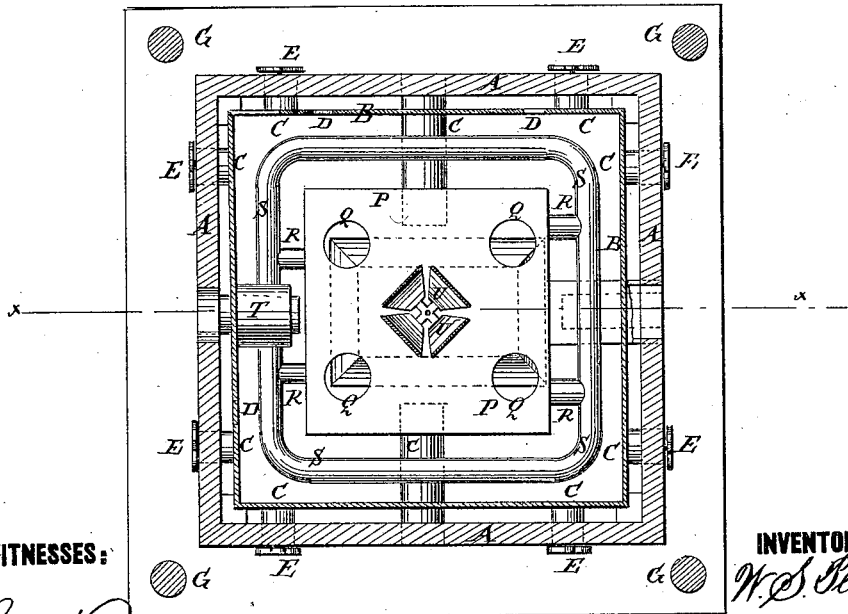


Fig: 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM S. PLUMMER, OF PORTLAND, OREGON.

IMPROVEMENT IN FRUIT-DRIERS.

Specification forming part of Letters Patent No. **191,072**, dated May 22, 1877; application filed February 17, 1877.

To all whom it may concern:

Be it known that I, WILLIAM S. PLUMMER, of Portland, in the county of Multnomah and State of Oregon, have invented a new and useful Improvement in Fruit-Driers, of which the following is a specification:

Figure 1 is a vertical section of my improved fruit-drier, taken through the line *x x*, Fig. 2. Fig. 2 is a cross-section of the same, taken through the line *y y y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved apparatus for drying fruit, which shall be so constructed as to enable large quantities of fruit to be dried at the same time, the drying being done quickly and evenly, and which shall be simple in construction and convenient in use.

The invention consists in the combination of the fire-box, the drum, the pipes, and the coil with the lower case, provided with the lining, the pipes, and the holes, the continuous platform, the upper case, provided with the posts, the slides, and the doors, and the cover.

A is the lower part of the case, within which the air-heating apparatus is placed, and which is lined with a brick or sheet-metal lining, B, placed at a little distance from the walls of the said case A, so as to leave an air-space between them.

C are short pipes, leading in through the case and lining, to admit cold air to be heated. Several of the pipes C are extended inward nearly to the heater, so as to discharge the cold air directly against the hottest parts of said heater.

In the lower part of the lining B are formed a number of holes, D, leading into the space between the said lining and the case A, to cause currents of hot air to pass up through the said space to strike the outer parts of the fruit frames or trays, and cause the outer parts of the fruit to dry as fast as the inner parts.

The outer ends of the pipes C may be wholly or partly closed by slides E, pivoted to the case A, to regulate the inflow of cold air.

To the top of the lower part A of the case

is attached a platform, F, for the attendants to stand upon while operating the drier, which platform may be the floor of the building. The platform F extends entirely around the case A, and its outer part is supported by posts G.

H is the upper part of the case, which is divided centrally into two parts by posts I. To the posts I and the side wall of the case H in each part are secured from fifteen to twenty pairs of cleats or slides, J, to receive the frames or trays K, upon which the fruit is placed to be dried.

The case H is made of such a size that each pair of slides J will hold two fruit frames or trays, K, so that there will be four fruit frames or trays, K, in each horizontal section of the case.

In the front and rear sides of the case H, just above the ends of each pair of slides J, is a door, L, hinged at its lower edge, so that there will be a door, L, for each three fruit frames or trays, K.

The cover M of the case H is made in the shape of a truncated hollow pyramid, and is provided with a ventilating-cap, to allow the moisture-laden air to escape freely. The cap is not shown in the drawings.

N is the fire-box, into which fuel is inserted through a chute, *n'*, leading in through the lining B and case A, and which is provided with a door, O, at its outer end. Upon the top of the fire-box N is formed a square drum, P, which projects beyond the sides of the fire-box N, and has pipes Q passed through and secured in holes in the top and bottom plates of its said projecting parts, so that the flame of the fire may circulate around the pipes Q, and heat the air passing through them.

The smoke and other heated products of combustion pass, through short pipes R, connected with the drum P at its corners, into a coil, S, which passes around the drum P, and from which a pipe, T, leads out through the lining B and case A.

From the center of a cross-bar of the lower part of the case H is suspended a deflector, U, which is made in about the form of an inverted square pyramid, and which is designed to deflect the hot air, as it rises from the heat-

ing apparatus, toward the sides of the case H, so that the fruit near the sides of the said case may be dried as rapidly as that near its center.

In using the drier, a frame or tray of fruit is inserted through each door L of the upper section of the case H, and after a few minutes a frame or tray is inserted through each door of the next lower section, and so on, the intervals of time being so regulated that the fruit in the upper section will be fully dried by the time that the lower section is reached, so that the operation may be continuous.

Having thus described my invention, I claim

as new and desire to secure by Letters Patent—

The combination of the fire-box N, drum P, pipes Q, and coil S with the lower case A, provided with the lining B, pipes C, and holes D, the continuous platform F, the upper case H, provided with the posts I, the slides J, and the doors L, and the cover M, substantially as herein shown and described.

WILLIAM S. PLUMMER.

Witnesses:

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