M. S. LYONS.
Fruit-Drier.

No. 209,620. Patented Nov. 5, 1878.

Fig. 1.

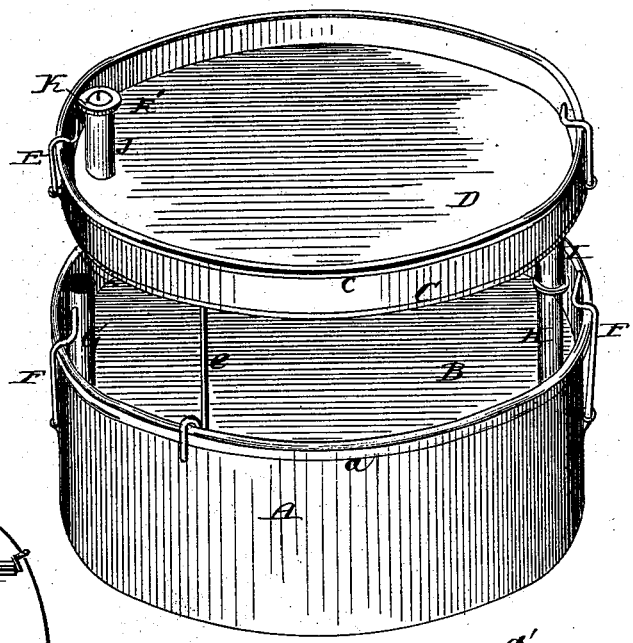


Fig. 4.

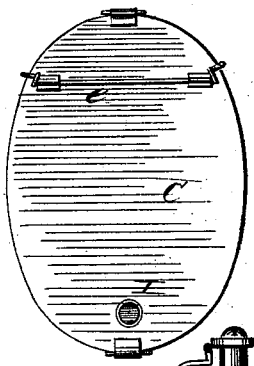


Fig. 3

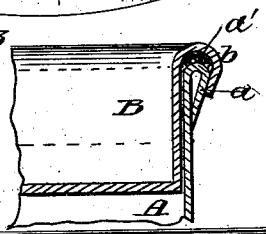
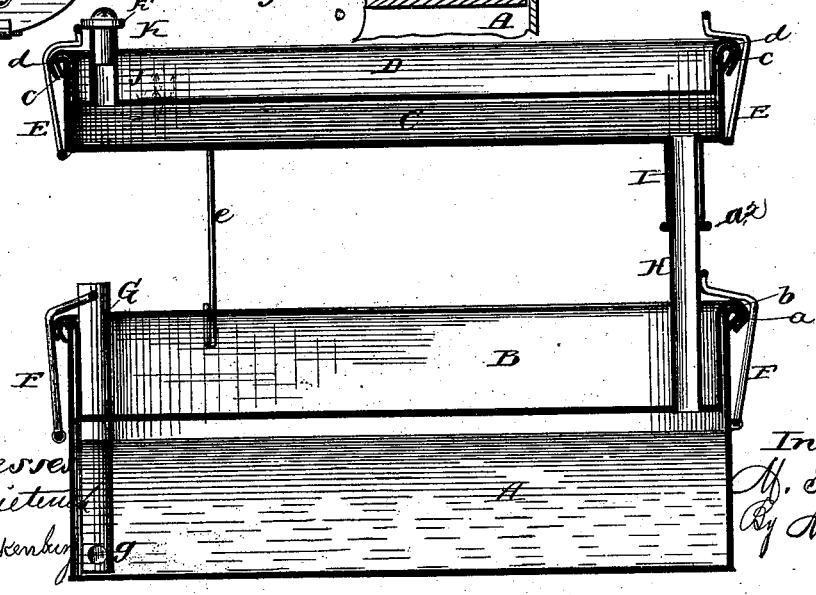


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

MARCUS S. LYONS, OF ARMADA, MICHIGAN, ASSIGNOR OF ONE-HALF HIS RIGHT TO CULLEN B. CLARK.

IMPROVEMENT IN FRUIT-DRIERS.

Specification forming part of Letters Patent No. **209,620**, dated November 5, 1878; application filed August 17, 1878.

To all whom it may concern:

Be it known that I, MARCUS S. LYONS, of Armada, in the county of Macomb and State of Michigan, have invented certain new and useful Improvements in Fruit-Driers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification, and in which—

Figure 1 is a perspective view of my invention. Fig. 2 is a vertical section of the same. Fig. 3 is a sectional view of the flanges and rims, showing the packing for rendering the boiler and steam-chamber steam-tight. Fig. 4 is a plan view, showing the adjustable supports.

My invention consists in constructing a fruit-drier in such manner that the steam generated in a boiler in its lower part and beneath the fruit is caused to impart its heat to drying-pans for fruit, which pans are so constructed with relation to the steam-receptacles as to act as covers for said receptacles, and to form tight joints for the prevention of the escape of the steam; and in the method of supporting and rendering the upper drying-pan detachable, and of connecting the parts together; and in the combination and arrangement of the parts, as hereinafter more fully set forth.

A marks the boiler or steam-generator, to which are hinged the hooks F F, which are bent at right angles at the upper part thereof, and caused to project over the flange of the drying-pan B. B indicates a drying-pan, provided with a curved flange or rim, *b*, which is curved over and rests upon the rim of the steam-boiler A, and fits it closely, as shown, and with the aid of the slight packing a^1 the joint is rendered steam-tight.

The weighted valve K, which acts as a safety-valve, is rigidly secured to the bottom of the drying-pan D, and there opens into the steam-chamber C, which latter is supplied with steam from the boiler A, and it is provided with an elastic washer, K′, which fits into the conduit J, and is so weighted as to be elevated by steam-pressure when the temperature and pressure become immoderate.

The steam pipe or conduit H opens into and connects with the generator A and the steam-chamber C, and when a greater number of drying-pans are employed it is in like manner connected therewith. The lower section, H, is provided with the ring-seat a^2 for the pipe I to rest upon, and it is telescoped or fitted into pipe I, and it may be rendered steam-tight by packing.

The drying-pan D is, in like manner as drying-pan B, provided with the curved flange *a*, which projects over the rim of the steam or caloric receptacle, and a slight packing is or may be inserted between the rim and flange to make the joints thus formed steam-tight.

G marks a low-water indicator. It consists of the pipe G, provided with the orifices *g*, which latter are situated a short distance above the bottom of the steam-generator. When the water has descended by evaporation the slightest distance beneath the orifice *g*, the steam, ascending from the top of the indicator, gives notice by its presence and accompanying noise of the fact, and thus the water in the steam-generator may be replenished in season.

The supports *e e* are hinged to the bottom of the upper steam-chamber, C, as shown in Fig. 4, and they clamp the flange of the drying-pan B, and thus, in conjunction with the steam-supply pipe I, which rests upon the seat a^2, provided on steam-supply pipe H, is formed the support of the steam-chamber C and drying-pan D.

The operation is as follows: The generator A being provided with water and heat applied thereto, steam is generated, which ascends through pipes H and I into the steam-chamber C, and the fruit in the pans B and D is thus dried. When the heat applied is too great to efficiently perform the intended work, the valve K is slightly lifted from its seat, and the escape of the steam tends to lower and equalize the temperature.

I am aware that my invention embraces a few of the minor obvious features of fruit-driers, that drying-pans for fruit located over a

steam-boiler have been connected by pipes conveying steam beneath them, and also that a tube located a short distance above the bottom of the steam-boiler of a fruit-drier has been employed as an indicator of the depth of the fluid in the boiler, as shown in the patent of W. G. Flanders, of November 13, 1877, No. 197,113, which I disclaim.

I claim—

1. The combination of the steam-generator A, having flange *b*, hooks F F, steam-supply pipe H, with pipe-seat a^2, pipe I, and steam-chamber C, with hooks E and valve K, substantially as shown and specified.

2. In a fruit-drier, the generator A, with flange *a*, indicator G, and hooks F F, in combination with drying-pan B, having flange *b*, adapted, in connection with flange *a*, for reception of packing, to render the joints steam-tight, substantially as shown, and for the purpose described.

3. The steam-chamber C, having the adjustable supports *e e* pivoted thereto, and pipe I and pipe-seat a^2, for supporting the detachable steam-chamber C, with drying-pan B and valve K, substantially as shown and specified.

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

MARCUS S. LYONS.

Witnesses:
GEORGE BRYANT,
RUFUS SMALL.