J. V. R. MILLER.

Fruit Drier.

No. 111,467. Patented Jan. 31, 1871.

Fig: 1.

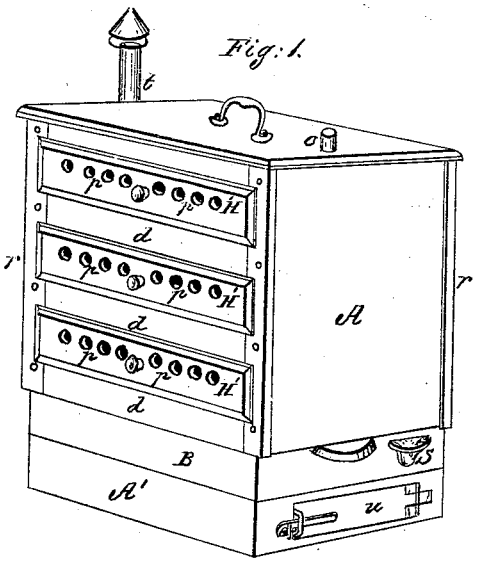


Fig: 2.

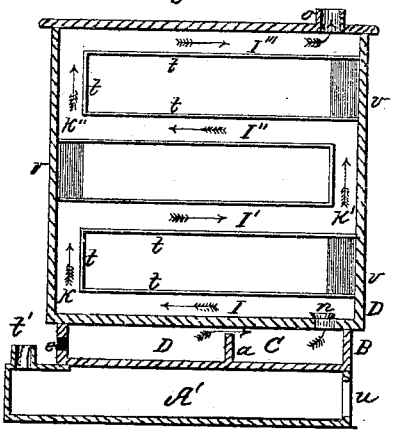


Fig: 3.

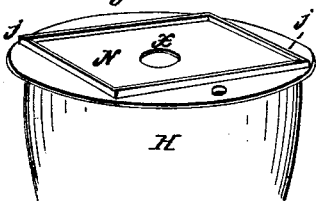


Fig: 4.

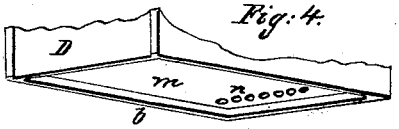


Fig: 5.

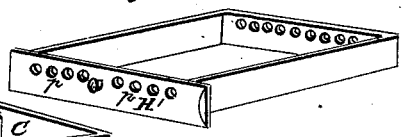
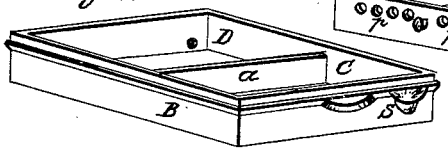


Fig: 6.



Witnesses:

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United States Patent Office.

JOHN V. R. MILLER, OF RICHMOND, INDIANA.

Letters Patent No. 111,467, dated January 31, 1871.

IMPROVEMENT IN FRUIT-DRIERS.

The Schedule referred to in these Letters Patent and making part of the same.

I, JOHN V. R. MILLER, of the city of Richmond and State of Indiana, have invented a new and useful Improvement in Fruit-Driers, of which the following is a specification, reference being had to the accompanying drawing.

Nature and Object of the Invention.

My invention relates to fruit-driers; and

It consists in the provision of certain devices, to be more specifically pointed out hereinafter, by which a current of steam and dry heated air combined is made to traverse a series of chambers communicating with each other, located between drawers in which the fruit is held, said current of combined steam and heated air passing through said chambers from the bottom to the top of the apparatus; the whole being so arranged that the current of steam and heated air does not come in contact with the fruit.

Description of the Accompanying Drawing.

Figure 1 is a perspective view.

Figure 2 is a longitudinal vertical section of the apparatus, without the fruit-drawers.

Figure 3 is the substitute steam-generator.

Figure 4 is a section showing the bottom of the apparatus with perforations, through which the steam and heated air are admitted.

Figure 5 is one of the fruit-drawers.

Figure 6 is the air-heater and steam-generator.

General Description.

A represents the body of the apparatus, the exterior of which is a wooden structure.

The series of chambers, along which the steam and hot air are conducted in their passage through the apparatus, is shown in fig. 2, I I′ I″ I‴ being the horizontal chambers, and K K′ K″ the vertical chambers, connecting said horizontal chambers.

The bottoms and tops of these horizontal chambers are formed of sheet metal, except the top of the upper chamber, in which case the wooden top of the structure serves also as the top of the chamber.

In the accompanying example, in order to obviate the necessity of soldering, a sheet of metal, equal in width to the depth of the apparatus, is bent into an angular form, so as to form the bottom of one horizontal chamber and the top of another, the vertical portion forming the inside wall of a vertical chamber, as shown by the lines *t*, in fig. 2.

The wooden sides of the structure at *v* are grooved, to admit the edges of the metal sheets and form steam-tight joints.

The front and rear of a horizontal chamber are formed of wooden strips, which are also grooved to receive the edges of the metal.

The vertical chambers at front and rear of the apparatus are inclosed by corner strips *r*.

A′ represents a fire-pan or furnace, open at the top, with a door, *u*, and chimney *t′*.

B represents the steam-generator and air-heater, which is made to fit tightly on furnace A′, the latter being provided with a ledge or projection, by which the generator, which is shouldered to suit, is held in position.

The generator B is a cast-iron pan, with a partition, *a*, forming two compartments.

The compartment C is supplied with water, in the operation of drying, by which steam is generated.

D represents the compartment in which the air is heated.

The metal bottom *m* of the apparatus is perforated at *n*, figs. 2 and 4, which perforations are located over the steam-generating compartment, and through which perforations the heated air and steam pass into the lower chamber I.

The cold air is admitted to compartment D through openings *e e*.

The partition *a* is less in height than the other walls of generator B, thus leaving a passage over its top, through which the hot air from compartment D passes into compartment C, where it mixes with the steam, and, with the latter, passes through the perforations *n* into the chamber I, and through the successive chambers, escaping at pipe *o*.

The bottoms, at least, of the fruit-drawers H′ should be constructed of metal, in order to more readily conduct the heat to the fruit.

The bottoms and sides of the drawers, in the accompanying example, are constructed of sheet metal, the fronts and backs being wood.

The latter are provided with perforations *p*, as an escape for the moisture of the fruit.

A funnel, *s*, is provided, for convenience in supplying the steam-generator with water.

The substitute generator H is an ordinary kettle, provided with a cover, N.

The cover N is provided with a quadrangular ledge or projection, J, fitting into the flanged bottom *b* of the apparatus.

The cover N is also provided with an opening, *x*, for the escape of steam into the apparatus, and a supply opening, *x′*.

When the substitute generator is used, both the furnace A′ and generator B are dispensed with, in which case steam only is used for drying.

The cover N may be made in an oval form, with the necessary additional openings for supplying water and allowing steam to escape, thus admitting two or more kettles to be used and the apparatus to be constructed on a larger scale.

Having thus fully described my invention,

What I claim, and desire to secure by Letters Patent, is—

1. The pan B, for generating steam and heating air, constructed with a partition, *a*, and perforations *e*, in combination with a fruit-drier, A, operating substantially as herein described.

2. The combination of the fruit-drier A, having a perforated bottom, *m n*, pan B, and furnace A′, arranged relatively to one another, substantially as set forth.

JOHN V. R. MILLER.

Witnesses:

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