

(No Model.)

C. CULLEN.
FRUIT DRIER.

No. 285,018.

Patented Sept. 18, 1883.

Fig 1.

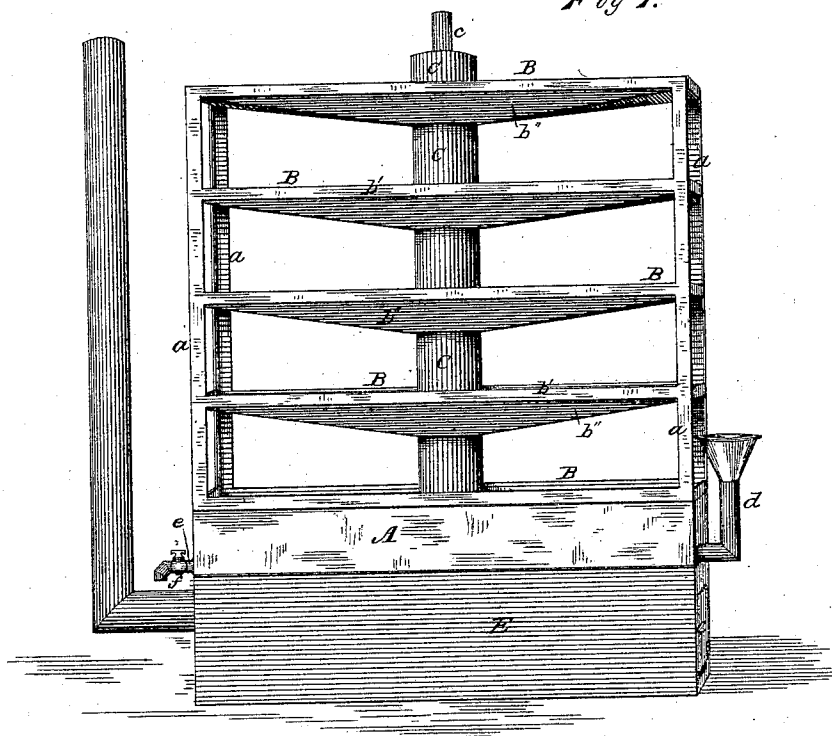
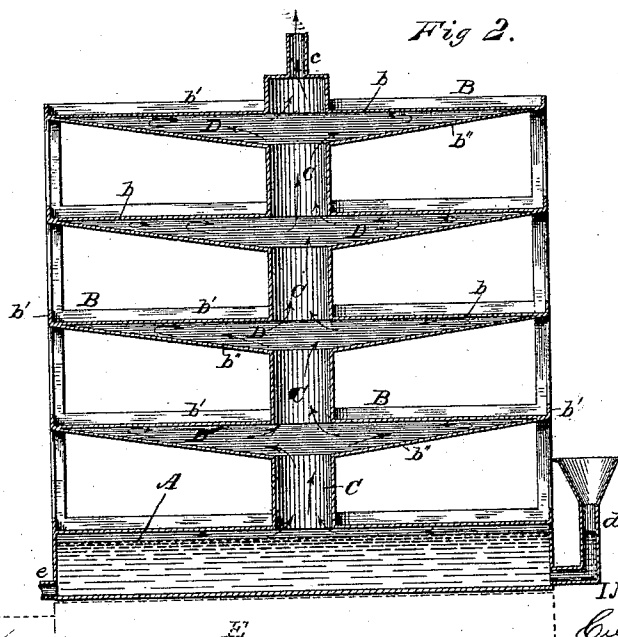


Fig 2.



WITNESSES

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FRUIT-DRIER.

SPECIFICATION forming part of Letters Patent No. 285,018, dated September 18, 1883.

Application filed June 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, C. CULLEN, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented certain new and useful Improvements in Fruit-Driers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as 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 the letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to fruit-driers; and it consists in the construction, adaptation, and application to any form of flat-top stove or furnace of a boiler from which steam is supplied to a series of hollow dished steam shelves or pans through the medium of a valveless or otherwise unobstructed central passage-way, which is also made to operate as a conduit for the passage of water back to the boiler after the steam has been condensed in the hollow shelves, the drier so constructed forming, as an article of manufacture, one body independent of and detachable from the furnace, as will be hereinafter more fully set forth.

In the drawings, Figure 1 is a perspective, and Fig. 2 is a longitudinal vertical section cut through the central portion, of my improved drier.

The devices referred to in this application as novel are claimed as improvements in the fruit-driers patented to J. C. Gunn, December 5, 1882, No. 268,399, and to W. Z. Hampton, January 23, 1883, No. 271,065.

To a boiler, A, and running upwardly, are attached standards *a a*, which support at regular intervals a series of horizontal shelves, one above the other. By means of this construction the sides of the drier are left open, thereby securing a free circulation of air between the shelves and around the fruit, thus facilitating the drying of the fruit upon the shelves. These shelves are constructed with a flat horizontal top, *b*, an upwardly-projecting flange or guard, *b'*, running around the edges thereof, and a "dished" bottom, *b''*, having the shape of an inverted truncated pyramid. Connecting these shelves to each other and to the

boiler below is a central open steam passage-way, C. At the upper end of this passage-way the steam-exit orifice is contracted, as at *c*, in order that the steam ascending from the boiler may be somewhat checked and forced into the recesses D, formed by the top and bottom surfaces of the shelves. Water is supplied to the boiler through the supply-pipe *d* and withdrawn through exhaust-pipe *e*, the usual faucet, *f*, being constructed thereupon.

Any flat-top furnace or stove E may be used in connection with my drier for the purpose of heating the water in the boiler.

I am also aware that steam-recesses have been heretofore used for the purpose of heating shelves, and that the shelves so heated were placed one above the other. I therefore do not broadly claim these devices.

I am also aware that steam has been supplied to the recesses by means of pipes connected with the boiler, and that these recesses have been constructed with dished bottoms similar to those shown in my improved drier; but the steam-pipes, acting also as exit-pipes for the escape of water formed by condensation, were located near the outer edge of the dished bottom of the recesses, thereby affording no escape for the water which collects at the lowermost point of the recess; and I am also aware that perforations have been made for the escape of water from the lowermost point of the dished bottom of the recess; but because of the peculiar form of the drier, adopting this system, the water is made to drip down outside of the steam-pipe, thereby causing more or less moisture in the atmosphere surrounding the fruit on the shelves.

In my improved drier the steam-recesses are drained from the lowermost point of the dished bottom through the same centrally-located pipe that furnishes the steam, the water being thus carried directly from such lowermost point to the boiler without coming in contact with or moistening the air surrounding the fruit.

In all driers heretofore used the furnace has been rigidly connected with the boiler, or else the boiler has been constructed as a separate body and rigidly attached to the drying-shelves by means of steam-pipe connections, the peculiar construction of steam and smoke pipes requiring these connections.

My form of drier, it will be observed, is made separate from and independent of the furnace, and at the sametime the boiler is connected to the shelves in such a manner as to form the recessed shelves, boiler, and open passage-way into one compact body. By means of this peculiar construction I am enabled to manufacture and supply to the trade a complete fruit-drier reduced to its simplest and cheapest form and applicable to any well-known form of flat-top stove or furnace.

I have discovered that the best results are obtained in fruit-drying by providing the recesses with as free a circulation of steam as possible. For this purpose I construct the free central passage-way, as described, unobstructed by smoke-pipes, internal sectional steam pipes, sleeves, or valves.

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

1. In combination with a flat-top stove or furnace, the detachable fruit-drier constructed

with open sides for the purpose of affording free circulation of air, and consisting of boiler, hollow steam-shelves, and open central valveless passage-way, substantially as described.

2. In a steam fruit-drier, as described, the central unobstructed steam passage-way and hollow steam-shelves, dished centrally, as set forth, whereby the water from condensation is made to return to the subjoined boiler from the lowermost point of the steam-recess directly through the said central steam passage-way, in the manner substantially as shown.

3. As an article of manufacture, the fruit-drier provided with a boiler and central unobstructed passage-way, and constructed separately from and independent of the furnace, for the purposes hereinbefore enumerated.

In testimony whereof I have affixed my signature in presence of two witnesses.

CURTIS CULLEN.

Witnesses:

W. L. LEDGERWOOD,
A. J. CAMPBELL.