

(No Model.)

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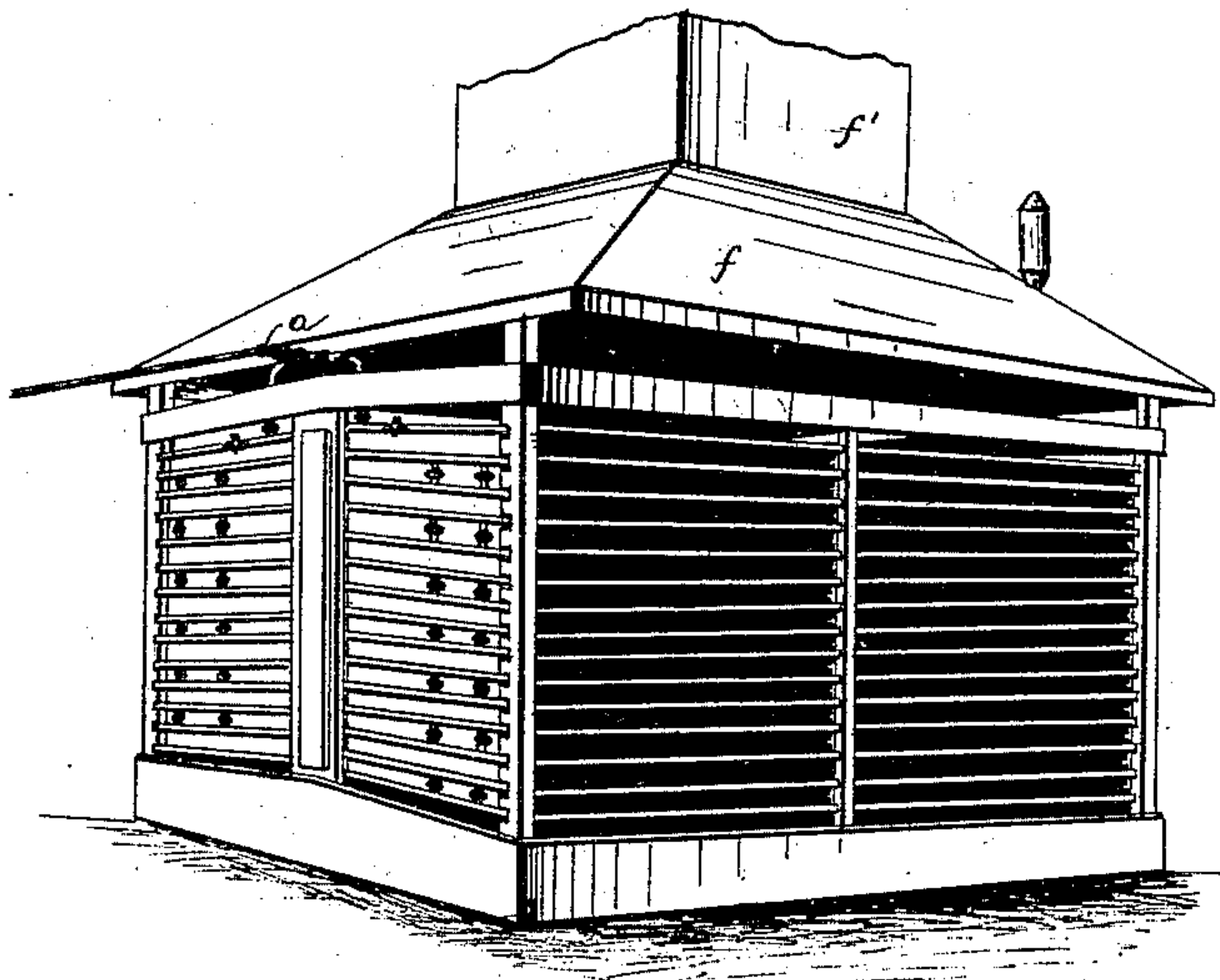
F. S. & J. B. BELCHER.

FRUIT DRIER.

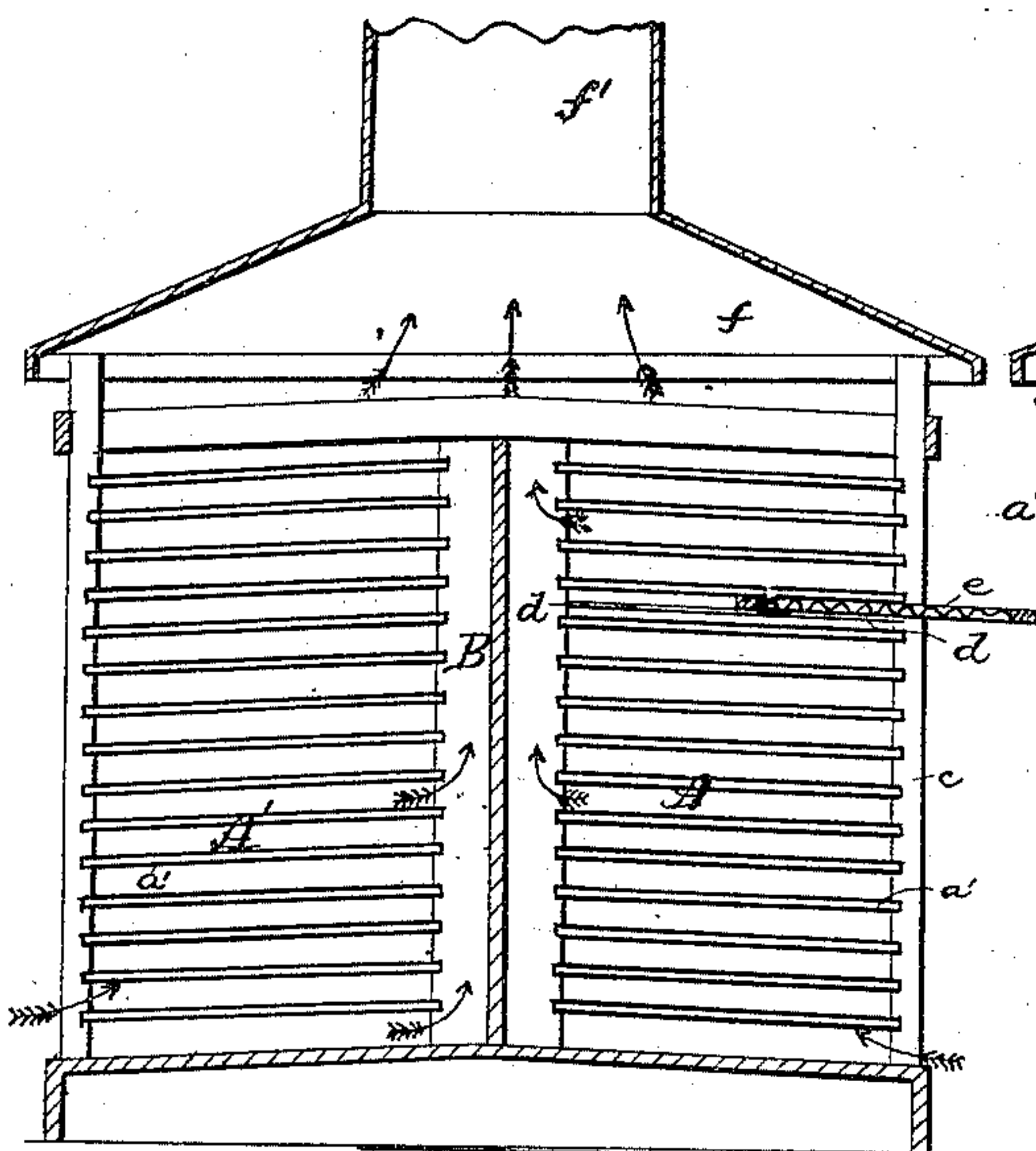
No. 285,957.

Patented Oct. 2, 1883.

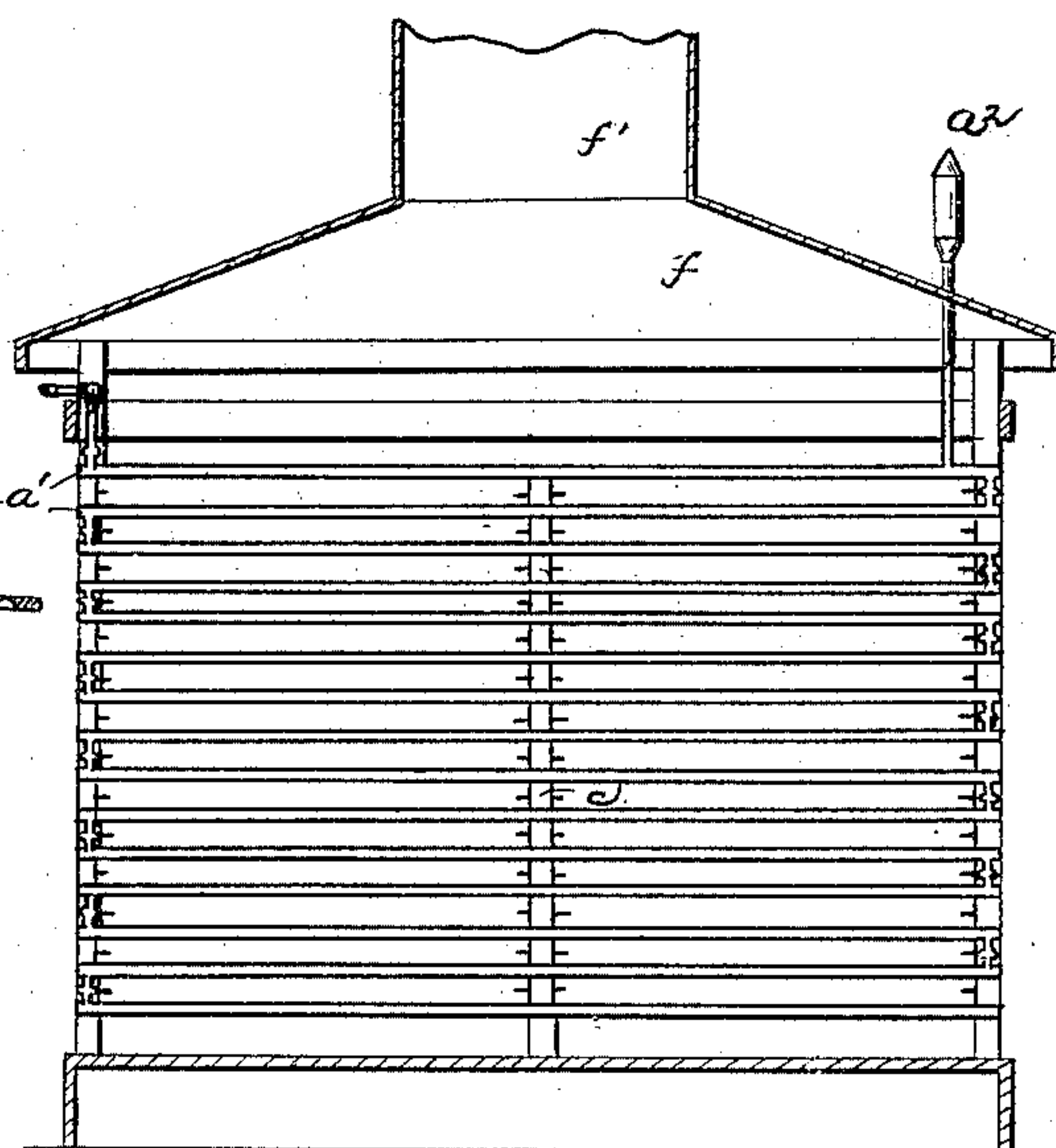
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses.  
W. J. Osgood  
A. Printz.

Inventor  
Frank S. Belcher  
John B. Belcher  
by H. A. Snow, Atty.

(No Model.)

2 Sheets—Sheet 2.

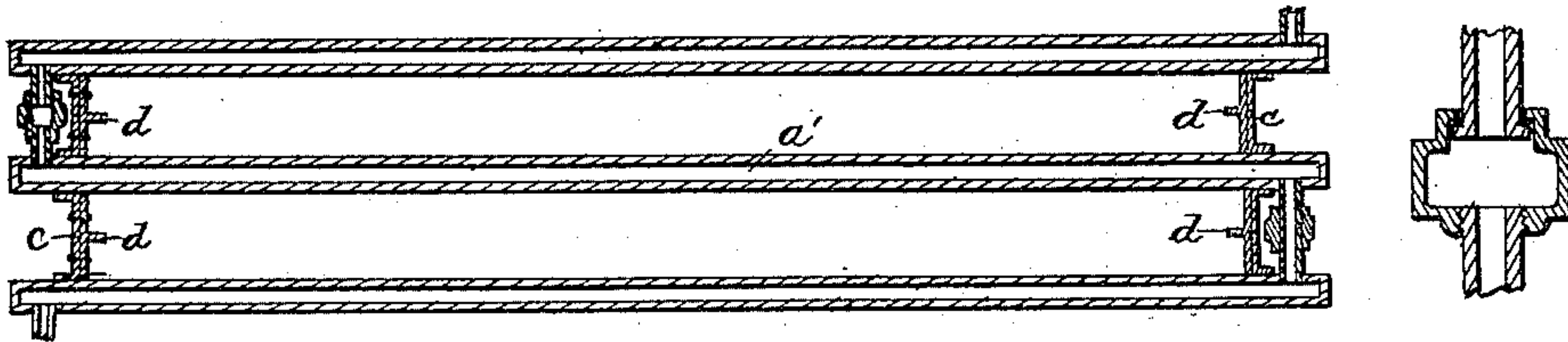
F. S. & J. B. BELCHER.

FRUIT DRIER.

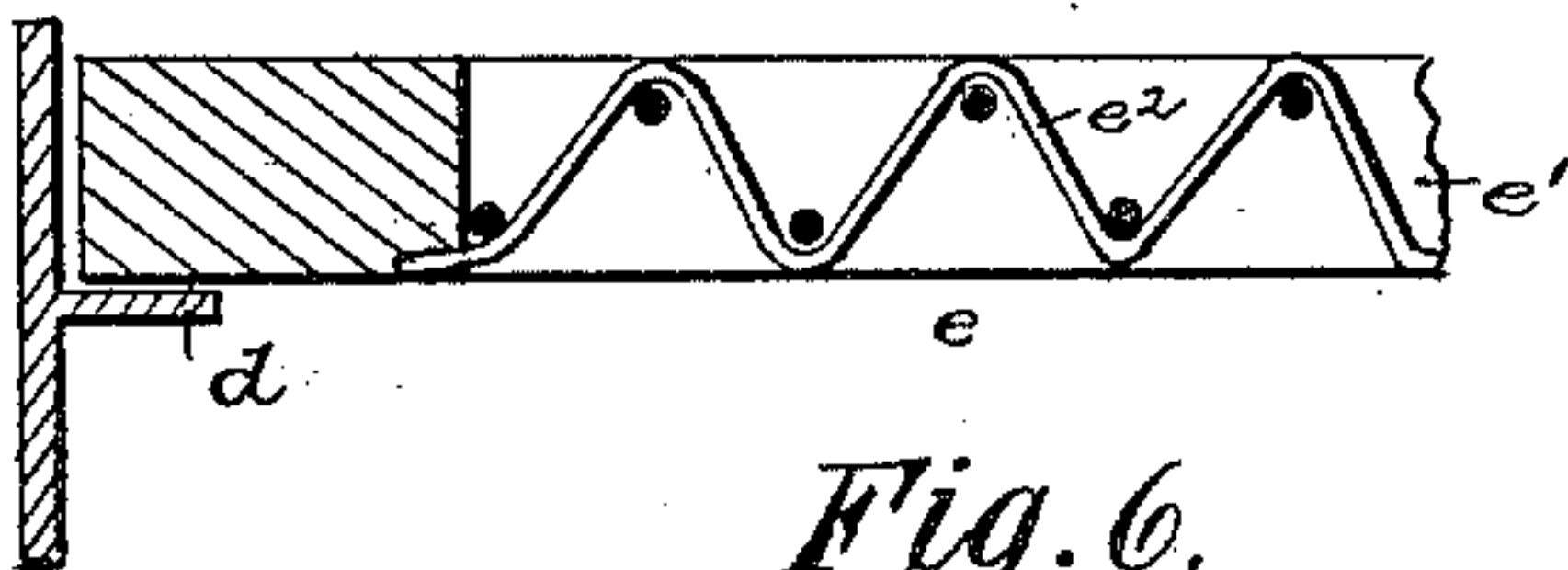
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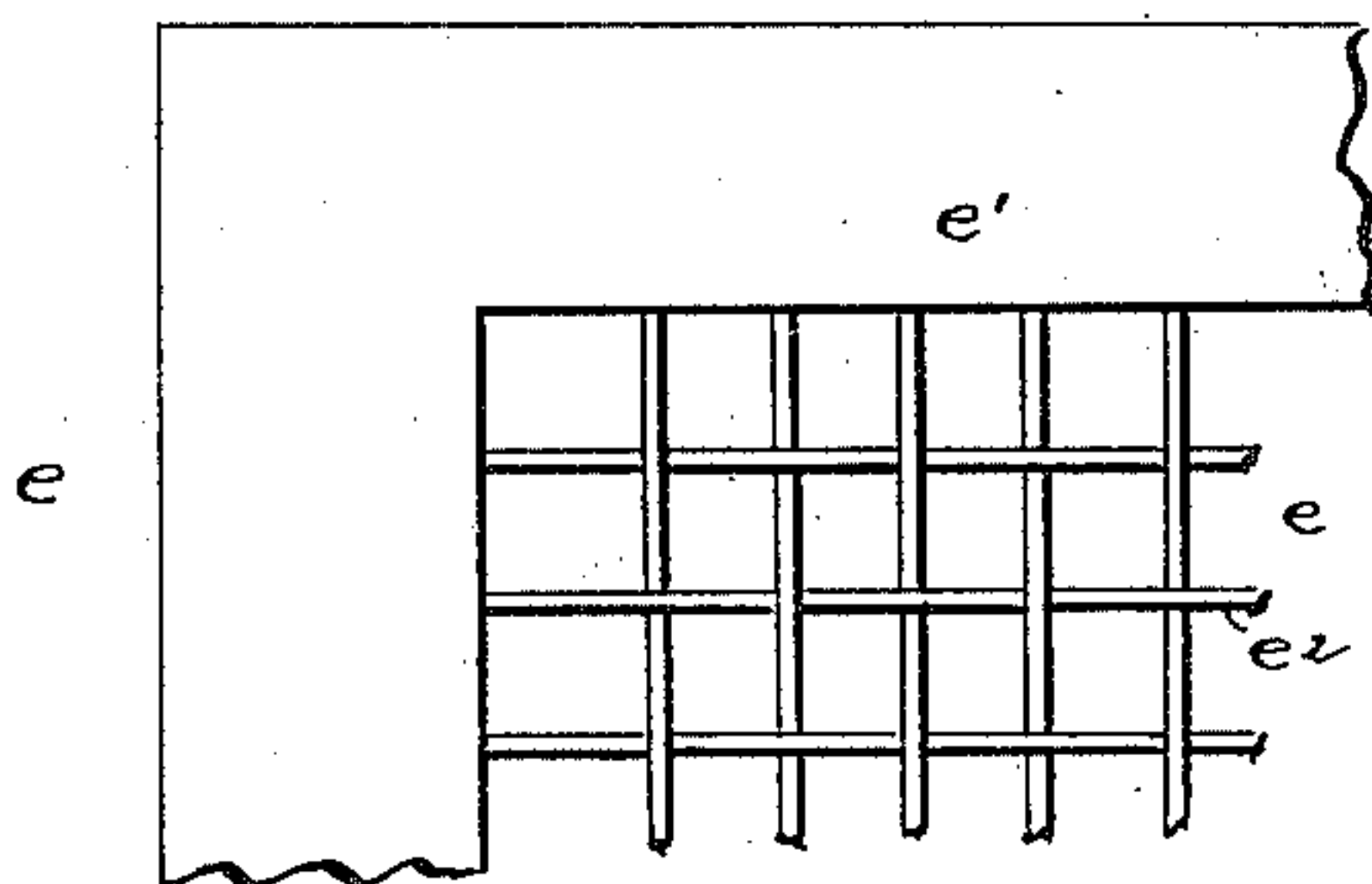
*Fig. 4.*



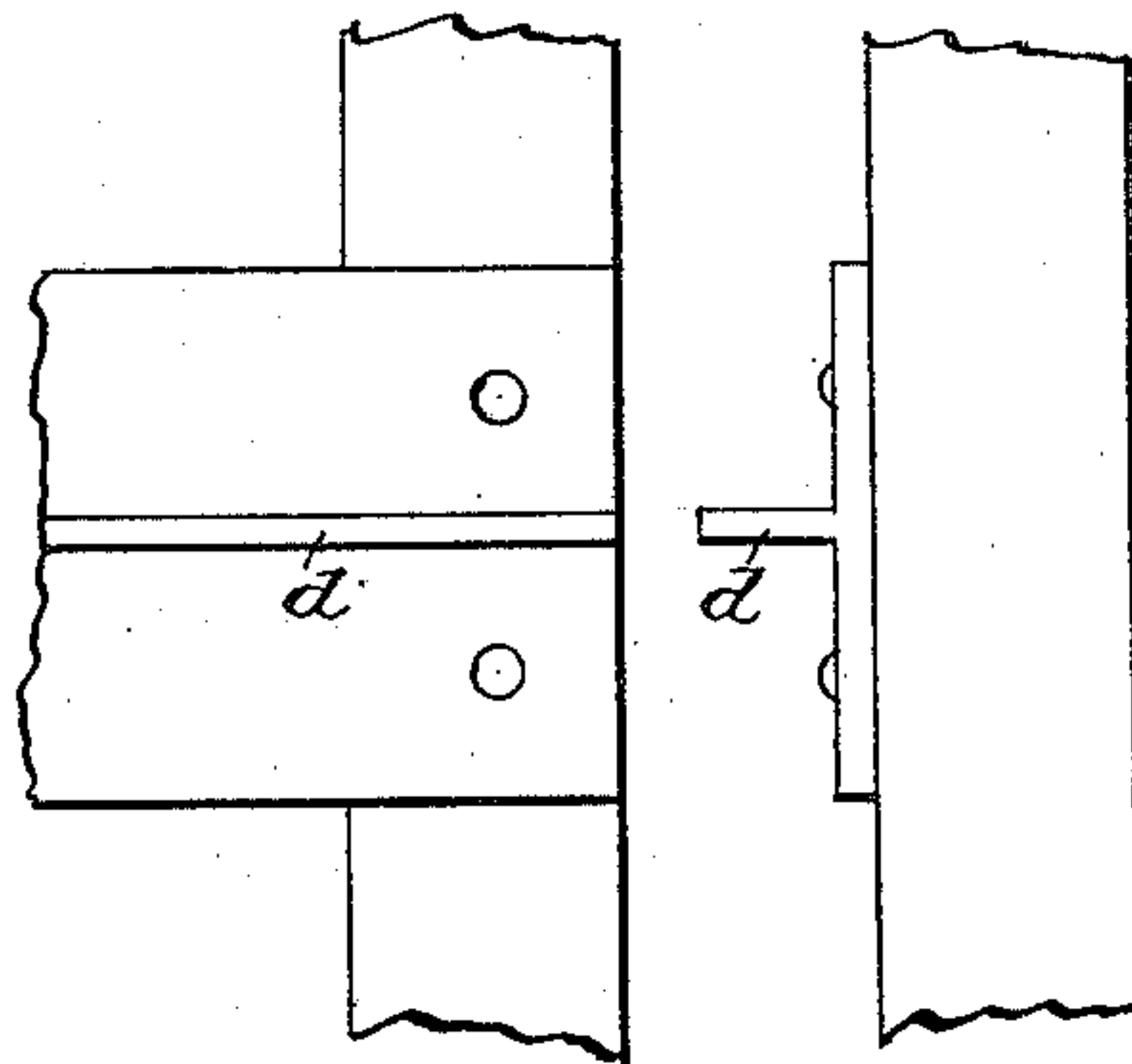
*Fig. 5.*



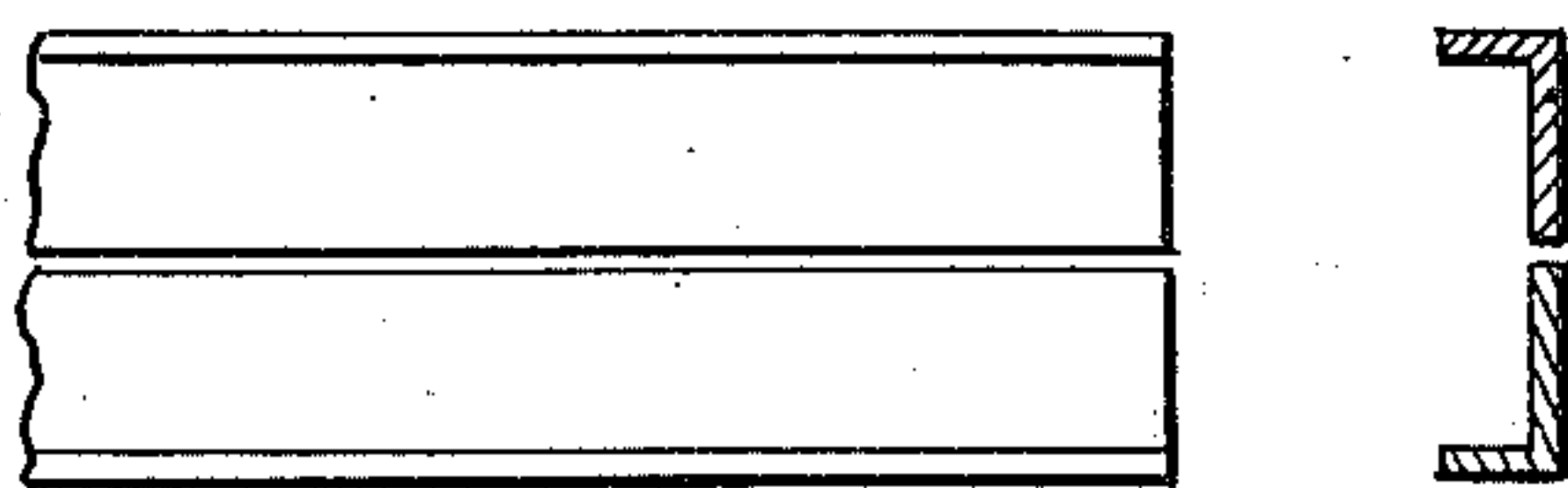
*Fig. 6.*



*Fig. 7.*



*Fig. 8.*



Witnesses.  
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# UNITED STATES PATENT OFFICE.

FRANK S. BELCHER AND JOHN B. BELCHER, OF CHARLOTTE, MICHIGAN.

## FRUIT-DRIER.

SPECIFICATION forming part of Letters Patent No. 285,957, dated October 2, 1883.

Application filed January 15, 1883. (No model.)

*To all whom it may concern:*

Be it known that we, FRANK S. BELCHER and JOHN B. BELCHER, citizens of the United States of America, residing at Charlotte, in the county of Eaton and State of Michigan, have invented certain new and useful Improvements in Steam-Heat Evaporators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in evaporators for fruit and other substances; and it consists in the construction, combination, and arrangement of the several parts, as will be hereinafter fully described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a perspective view, and Figs. 2 and 3 are vertical sections, of a device constructed according to my invention; and Figs. 4, 5, 6, 7, and 8 are detail views, as will be described.

One object of my invention is to construct the casing so that there will be a central air-passage, and the fruit-trays will be arranged on opposite sides thereof, as shown.

A A' represent the series of fruit-tray flues arranged on opposite sides of the central air-passage, B. This may be one passage, or may be divided into two passages by the vertical partition *b*, as shown, which is preferred, because the vapors rising from the fruits or other substances in one section will not affect those in the other, which might be of a different variety or nature, and also prevents air from passing directly through the machine. These air-passages open into a single outlet at the top, as shown.

*a* is the steam-pipe, and *a'* the section of the circular steam-section described in the specification of our patented evaporator.

*c* are horizontal partitions dividing the fruit-chamber.

*d* are rails secured to the framing between the steam-flues *a'* in position to support the fruit-trays.

*e* are the fruit-trays, composed of the frame *e'* and the wire webbing or sheet-iron fruit-support *e''*. This tray is corrugated, as shown in Figs. 2 and 5, so that the slices of fruit will stand on edge in rows, as thereby better results are had in removing the moisture therefrom.

It will be understood that instead of making the fruit-support corrugated, as shown, it might be made of a flat foraminous bot-

tom and a series of upright partitions dividing it into spaces in which the fruit may stand on edge, the object being to furnish a fruit-supporter divided into a series of spaces, whereby the fruit may be held on edge.

The steam-flues, partitions, guide-rails, and fruit-trays are all inclined, it will be seen, from the central air-passage down to the outer sides of the machine, on both sides thereof, thus enabling water formed by condensation or otherwise to pass off readily and relieving the machine from a great deal of strain in drying out condensed matter.

*f* is the hood, placed above the machine and extending over the outer edge of same in such manner as to make a draft through the chambers sufficient to carry off the moisture.

*f'* is a flue leading from the hood, so that the draft may be regulated.

The trays are so made that air will pass in under them, and, becoming heated by the steam, will rise between the slices of fruit, carrying the vapor with it about as indicated by the arrows.

*a''* designates a safety-valve or relief apparatus, which is described in former patent.

We do not desire to be limited to the use of our device for evaporating fruit, as it may be used for the drying of straw, leather, binders, tar-board, candy, and other articles.

What we claim is—

1. In an evaporator, the supporting-trays arranged in vertical series on opposite sides of an intermediate air-passage and inclined from their inner to their outer edges, and a vertical partition dividing the air-passage, substantially as set forth.

2. In an evaporator, the steam-pipes and fruit-trays, the latter supported between the former, arranged in vertical series on opposite sides of a centrally-located air-passage, and inclined from their inner to their outer edges, and an intermediate continuous vertical partition dividing the air-passage, the whole being arranged and combined to effect the purpose intended, substantially as set forth.

In testimony whereof we affix our signatures, in presence of two witnesses, this 20th day of December, 1882.

FRANK S. BELCHER.  
JOHN B. BELCHER.

Witnesses:

JAS. G. POLLARD,  
E. HAYDEN.