(No Model.) 2 Sheets—Sheet 1.

F. S. BELCHER & F. A. HOOKER.

FRUIT DRIER.

No. 263,101. Patented Aug. 22, 1882.

Fig. 1.

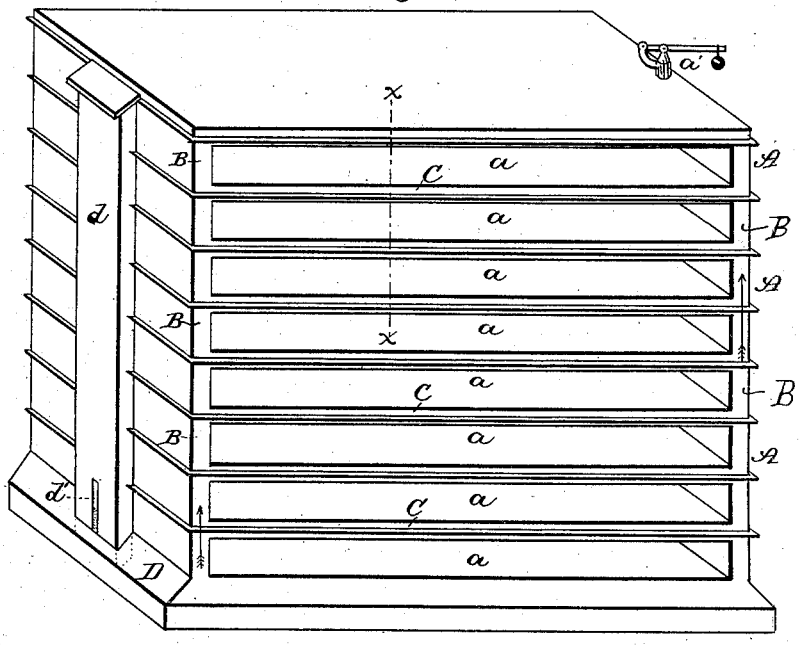


Fig. 2.

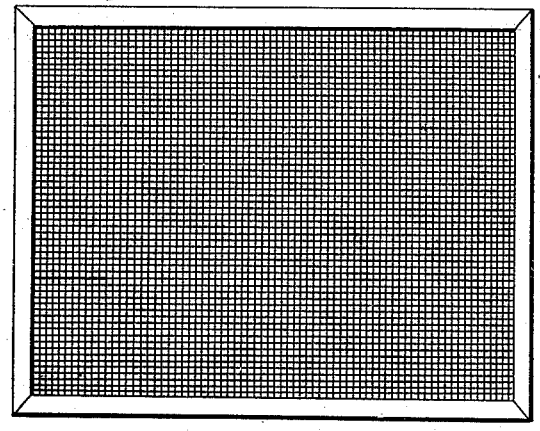


Fig. 3.

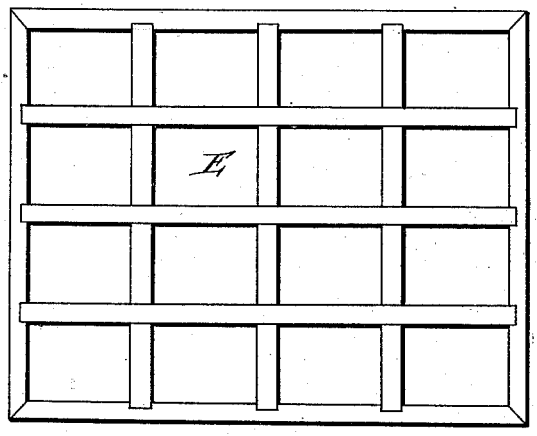
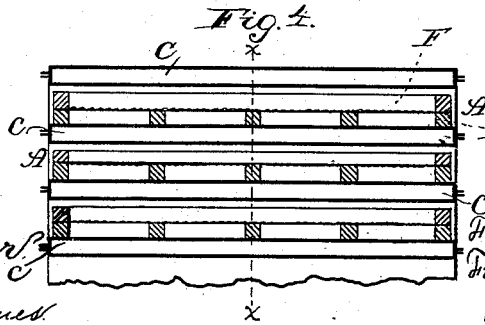


Fig. 4.



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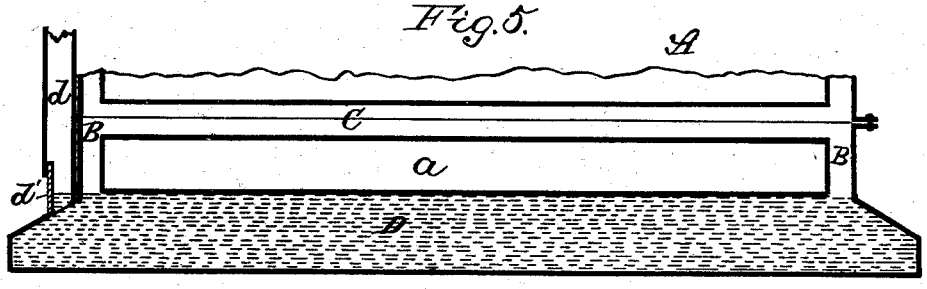
(No Model.) 2 Sheets—Sheet 2.

F. S. BELCHER & F. A. HOOKER.

FRUIT DRIER.

No. 263,101. Patented Aug. 22, 1882.

Fig. 5.



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UNITED STATES PATENT OFFICE.

FRANK S. BELCHER AND FRANK A. HOOKER, OF CHARLOTTE, MICHIGAN.

FRUIT-DRIER.

SPECIFICATION forming part of Letters Patent No. 263,101, dated August 22, 1882.

Application filed April 3, 1882. (No model.)

To all whom it may concern:

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

Our invention relates to fruit-driers; and it consists in the construction and arrangement of its several parts, as will be hereinafter fully set forth, and pointed out in the claims.

In the drawings, Figure 1 is a perspective of the drier; Fig. 2, a view of the fruit-screen; Fig. 3, the non-conducting frame; Fig. 4, a vertical cross-section of the evaporator on the line *x x*, Fig. 1; and Fig. 5 is a vertical longitudinal section of the boiler and its evaporating-chamber.

A are separate horizontal sections, each of which contains an evaporating-chamber, *a*, a portion of the vertical end steam-columns, B, and the upper and lower halves of the horizontal communicating flues C, as shown. Any desired number of these sections may be bolted one upon the other and the evaporator carried to any convenient height.

D is the boiler, to the top of which is bolted the lower section of the sections A, as shown. It is provided with an inlet-pipe, *d*, which extends up the ends of the section A to the top of the boiler. A gage-glass, *d'*, is arranged in the lower portion of the pipe *d* to indicate the height of water in the boiler. In the top of the evaporator is placed a safety-valve, *a'*, by which the pressure of steam in the evaporator can be regulated, according to the kind of fruit dried. The upper portion of the boiler is formed with an evaporating-chamber, *a*, similar in construction to the chambers above it, and the upper edge of the boiler is formed with a flange, by which the lower section A is bolted to it, as shown.

E is a frame of wood or other non-conducting material. One is placed upon each of the sections, and they serve to keep the fruit from contact with the heated surface of the evaporating-chamber, whereby browning or burning of the fruit is prevented.

F is a fruit-screen, and is of ordinary construction. It is filled with fruit, and one is placed upon each of the frames E within the evaporator, as shown in Fig. 4.

In the operation of the evaporator the steam rises in both the vertical columns B and is carried around the evaporating-chambers through the flues C. By this arrangement the steam is communicated rapidly to all portions of the evaporator, the steam-pressure is equalized, and the fruit is dried without danger of its being browned or burned.

Another advantage this drier has for drying fruit rapidly is that the heat from the stove or furnace is rapidly communicated to all portions of the drier, and is thence transmitted along the flues C more rapidly than if the heated water or steam was compelled to travel backward and forward along each flue.

This drier also affords a ready means of transmission for the cold water or condensed steam back to the boiler without affecting the operation of the machine, as in this instance the cold water or condensed steam forces its way downwardly through the columns B, so that all portions of the evaporating-chambers are heated alike, no portion being made cold by the passage along it of a mass of cold water.

What we claim is—

1. The fruit-drier consisting of the boiler D, having an evaporating-chamber, *a*, formed in its upper portion, the separate sections A, each formed with a portion of the continuous steam-column B, and upper and lower portions of the flues C, all combined and arranged to operate substantially as shown and described.

2. In a fruit-drier, the combination of the separate sections A, constructed with evaporating-chambers *a*, and vertical end steam-columns, B, provided with flanges around their upper and lower edges, whereby horizontal flues C, communicating with the end columns, B, are formed between the evaporating-chambers *a*, substantially as shown.

In testimony whereof we affix our signatures in presence of two witnesses.

FRANK S. BELCHER.
FRANK A. HOOKER.

Witnesses:
E. HAYDEN,
H. M. MUSGRAVE.