

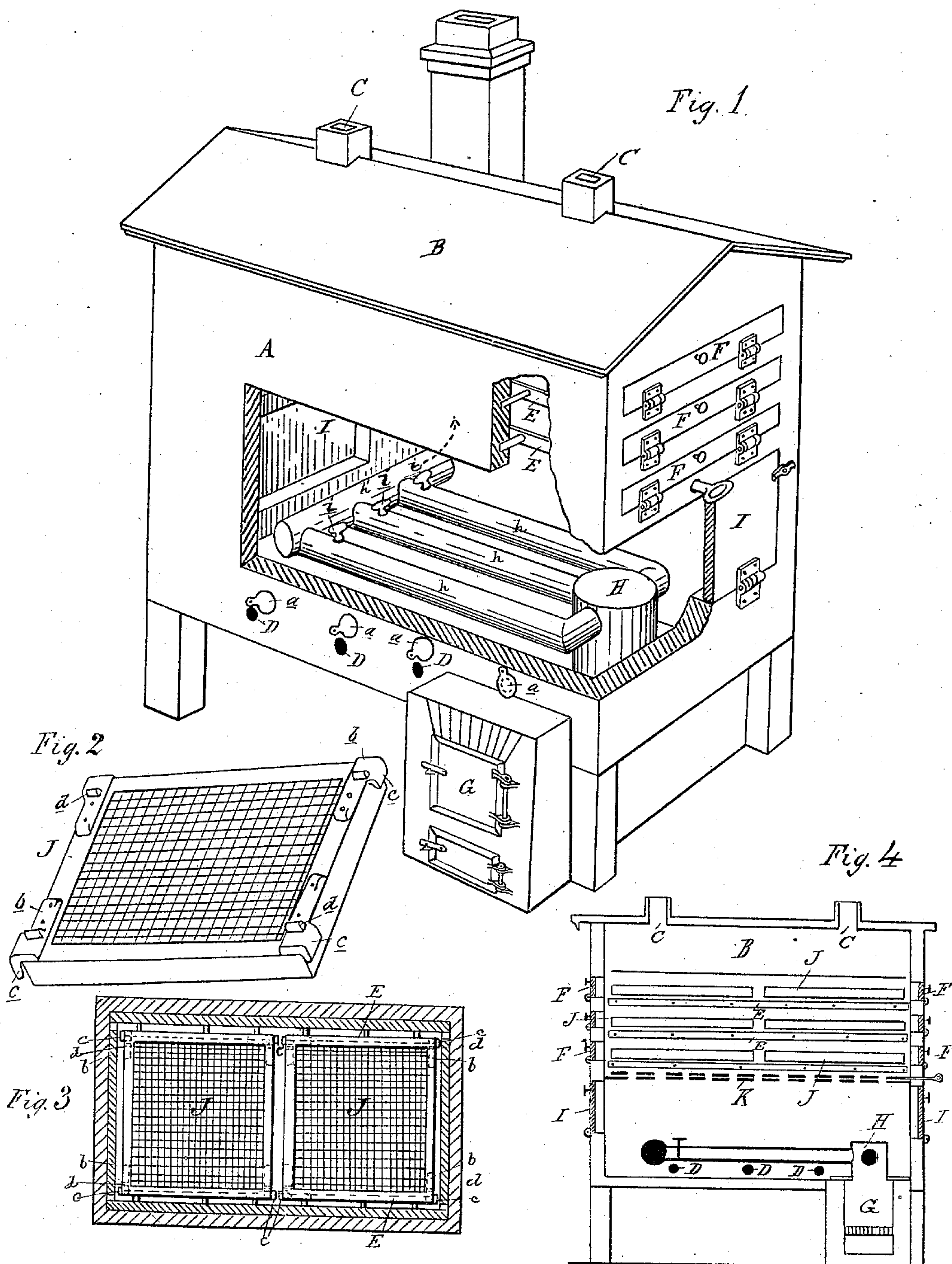
(No Model.)

S. L. MILLER.

FRUIT DRIER.

No. 316,637.

Patented Apr. 28, 1885.



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J. Paul Mayer  
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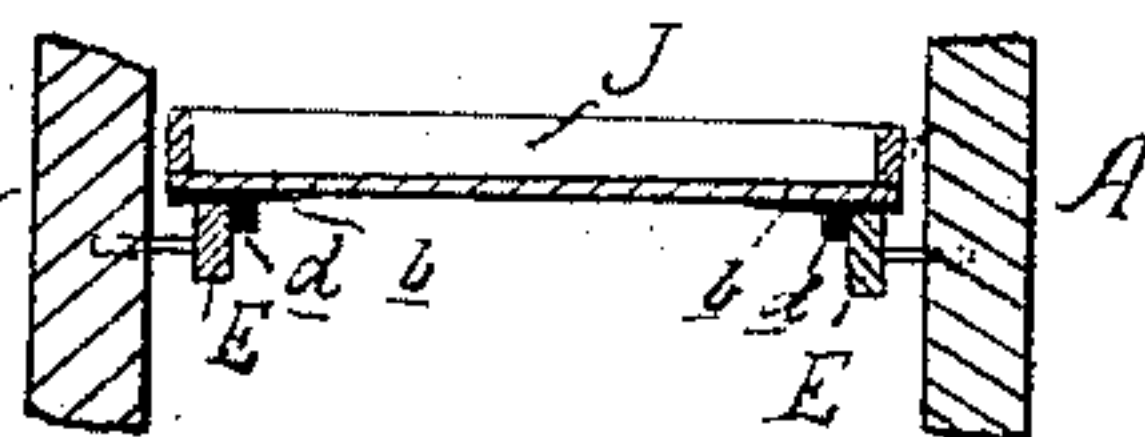


Fig. 5.

Inventor  
Samuel L. Miller  
By Thos. L. Sprague Atty



# UNITED STATES PATENT OFFICE.

SAMUEL L. MILLER, OF WASHINGTON, MICHIGAN, ASSIGNOR TO WILLIAM W. VAUGHAN AND BYRON NORTON, BOTH OF SAME PLACE.

## FRUIT-DRIER.

SPECIFICATION forming part of Letters Patent No. 316,637, dated April 28, 1885.

Application filed January 16, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL L. MILLER, of Washington, in the county of Macomb and State of Michigan, have invented new and useful Improvements in Fruit-Driers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in the construction and operation of fruit-driers of that class wherein heated air is employed to evaporate the moisture from fruit spread upon racks or screens, which run upon ways in a close chamber.

The invention consists in the peculiar construction of the parts, their combinations and operation, as more fully hereinafter described.

Figure 1 is a perspective view of my improved drier, with a portion of the wall broken out to show the interior arrangement of parts. Fig. 2 is a perspective view of one of the screens, taken from the bottom. Fig. 3 is a plan in section of two of the screens, showing their relative position when in use. Fig. 4 is a vertical longitudinal section. Fig. 5 is a detail showing the relation of the tracks and the lugs on the screens.

In the accompanying drawings, which form a part of this specification, A represents a chamber, preferably made fire-proof in any desired way. This chamber is surmounted by a roof, B, provided with ventilating-openings C for the escape of hot air and steam. Near the bottom of this chamber there are openings D for the admission of air from the outside, and these openings are provided with covers or dampers *a*, by means of which the openings may be partially or wholly closed, as occasion may require. To each of the side walls of this chamber are secured coincident tracks E, and as many of these tracks may be employed in coincident pairs as the height of the chamber will allow. At each end of the chamber there are provided hinged doors F, one door at each end for each complete track and coincident therewith.

G is a furnace, the mouth of which projects outside the walls of the chamber.

H is a smoke-jacket closed at top and pro-

vided with three lateral and parallel branches, *h*, the opposite ends of which terminate in a cross-pipe, *h'*, which leads into a suitable flue outside the walls, this latter pipe passing through said walls for that purpose. This flue may be situated on either side of the chamber, as may be desired. Each of these branches *h* is provided with a damper, *i*, by which the amount of draft in said branches may be regulated so as to have an even temperature in order to dry the fruit evenly; for instance, there will be the strongest draft in the branch nearest the chimney, and the damper in this pipe will be turned, say, half-way, while the draft in the next pipe not being so strong, the damper in this will be turned, say, a quarter of the way, while the damper in the next will remain all on, as will be readily understood, by which means the heat can be regulated as desired, which otherwise would be varied and the fruit dried unevenly.

I is a door leading into the chamber just above the furnace and below the tracks, for the purpose of ingress when occasion requires the operator to enter the chamber.

J are the screens. These are made rectangular in form and of sufficient width to extend across the chamber and rest upon the tracks on either side without coming into contact with the side walls, as shown in Fig. 3, to allow a circulation between said walls and the ends of the screens. In order to insure the correct position of these screens, they are provided at each corner with a casting, *b*, which is provided with a downwardly-projecting flange or lug, *d*, to guide the screen on the track and hold it from contact with the side walls. Each of these castings is also provided with an offset, *c*, so that when the screens are in place these flanges or offsets strike each other, and thereby keep a space open between such screens for the ascent of the hot air and steam which escapes from the fruit being treated. This space becomes a necessity in treating solid fruits, while other sliced fruits will allow such escape through the screens.

Above the smoke-pipes and below the tracks there is a closely-fitting perforated diaphragm, K, to admit hot air from the chamber below, heated by the furnace when the latter is in



operation. A damper-plate provided with perforations coincident with those in the diaphragm is arranged to close or disclose the perforations therein in whole or in part, as circumstances may require. This latter-named damper-plate is provided with a handle projecting through the wall, as shown.

In practice, the fruit is prepared for treatment in the usual way and placed upon the trays or screens. The fire is made in the furnace and the screens inserted through the doors and onto the tracks. The various dampers are manipulated to regulate the quantity of hot air admitted to the upper or drying portion of the chamber. The openings through the walls will admit air to be heated to take the place of that which has been used and escaped through the upper ventilators.

What I claim as my invention is—

20 1. In combination with a fruit-drying chamber provided with tracks, screens provided with castings uniting the end and side bars, and upon which there are formed downwardly-

projecting flanges *d* and turned-up offsets *c*, substantially as and for the purposes described. 25

2. In combination with a drying-chamber, *A*, and means for heating the same, the furnace *G*, located at one end thereof, the drum *H*, closed at the top and provided with lateral pipes *h*, terminating at the end opposite the drum in a cross-pipe, *h'*, each of the pipes *h* being provided with a damper, *i*, substantially as herein shown, and for the purposes described. 30

3. A fruit-drying chamber provided with adjustable means for admitting cold air near the bottom below the heating-pipes thereof, a perforated diaphragm between said heating-pipes and the drying-chamber, and a sliding damper constructed and arranged to close and disclose the openings in said diaphragm, substantially as and for the purposes described. 35 40

SAMUEL L. MILLER.

Witnesses:

H. S. SPRAGUE,  
E. SCULLY.