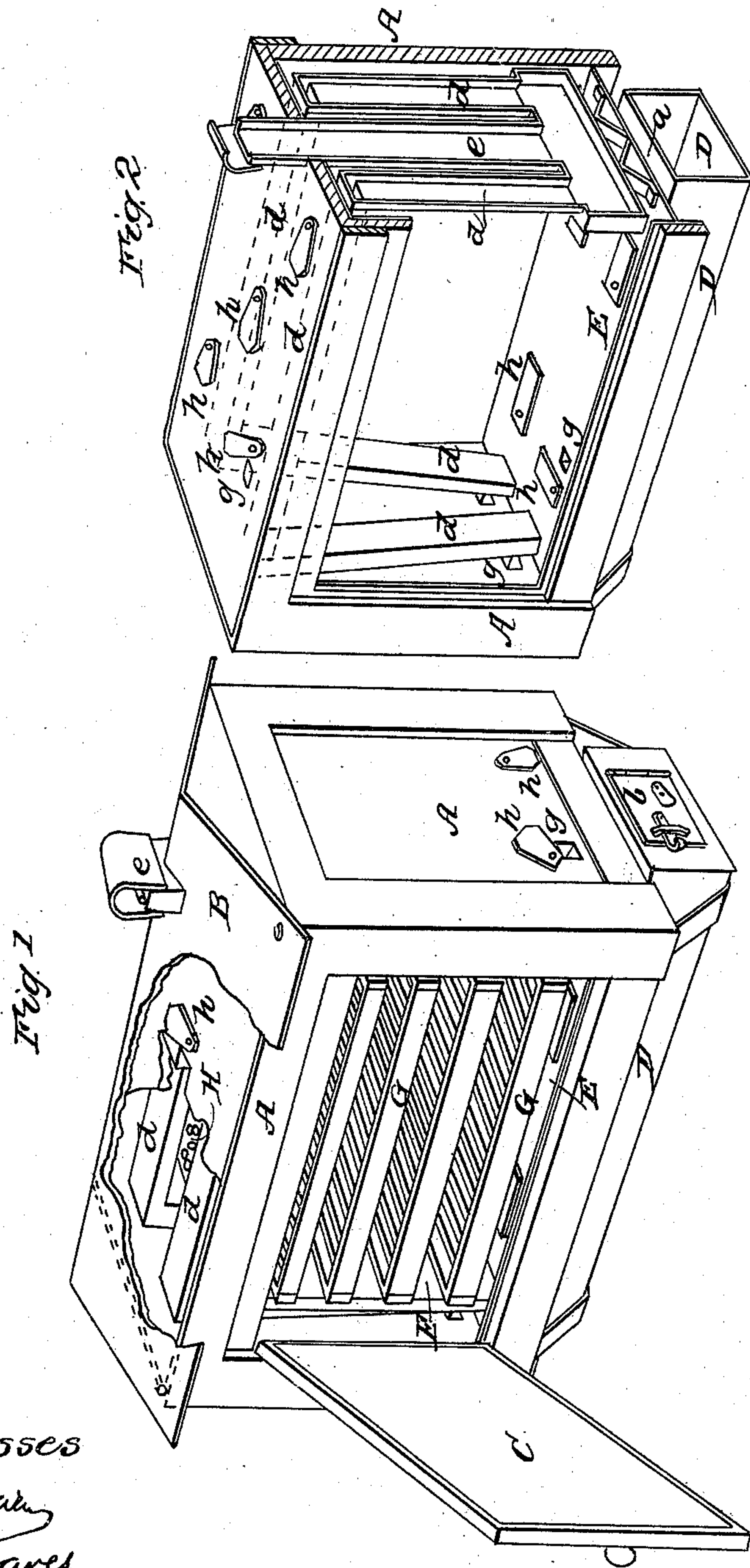


E. DUNCAN.

Fruit Drier.

No. 32,597.

Patented June 18, 1861.



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# UNITED STATES PATENT OFFICE.

ELI DUNCAN, OF WEST HILTON, OHIO.

## FRUIT-DRYING APPARATUS.

Specification of Letters Patent No. 32,597, dated June 18, 1861.

*To all whom it may concern:*

Be it known that I, ELI DUNCAN, of West Hilton, Miami county, in the State of Ohio, have invented a new and Improved Portable Fruit-Drying House; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings and letters of reference marked thereon, which form part of this specification.

My invention relates to the drying of fruits without scorching; and consists of a ventilated chamber for containing the fruit, surrounded by flues proceeding from a fire placed underneath.

In the accompanying drawings: Figure 1, is a perspective view of the drying-house; a portion of the pitched roof and top being removed to show the flues, and the door being opened to show the disposition of the fruit trays. Fig. 2, is a perspective view of the same, with the pitched roof and door removed, as also the fruit-trays; and the near end shown in section.

Like letters of reference designate like parts in all the drawings.

A, A, are the outside walls of the drying-house; B, is the pitched roof; C, is the door, which is hung on hinges; D, is the fire box, running longitudinally underneath the floor E, and at some little distance therefrom as shown at *a*, on Fig. 2. The fire box D, is closed by a door *b*, having a ventilator or draft-valve *c*. At the far extremity of the fire box, two flues *d, d*, take their rise, and passing through the floor of house continue to the ceiling, when they bend at right angles, and running longitudinally backward to the other end, again bend, going down the end wall to within a short distance of the floor: they then open into an upshaft or chimney *e*, which emerges at the apex of roof. In this manner the heated air and smoke from the fire makes the entire circuit of the drying chamber before escaping.

Parallel with each end of the drying-house, two uprights F, are fixed, having transverse bearers in which the fruit-trays G, G, slide in the manner of drawers.

A perforated ceiling H, is interposed between the fruit trays and the horizontal sec-

tion of the flues. In the floor and at the lower part of the two sides, as also in the top of drying house, apertures *g, g*, are made, having valves *h, h*, attached, for the purpose of admitting and regulating currents of air through the chamber during the process of drying.

The operation of my invention is as follows: the green fruit properly arranged in the trays G, being introduced into the drying-house, and the fire lighted beneath; the valves *h, h*, are all opened, and the door C, closed. As the heated air and smoke from the fire circulates in the flues, the temperature within the chamber is raised, and the water in the fruit is converted into vapor: this vapor being greedily taken up by the heated air is carried off through the upper apertures *g, g*, fresh cold and dry air entering, to supply its place, by the apertures *g, g*, in the floor and sides of house. This circulation of air continues as long as is requisite for the drying of the fruit. The valves *h, h*, may be partially closed during the latter part of the process, when moisture is not evolved so rapidly from the fruit.

The advantages of my invention are; 1st great rapidity in drying the fruit; and 2nd freedom from the danger of scorching the same. By means of the thorough ventilation secured by the apertures *g, g*, the moisture from the fruit is carried off very rapidly, without cooking the fruit—24 hours usually sufficing for the complete drying of a batch of fruit in this apparatus. As to the second advantage, it is evident from the construction and arrangement of the apparatus, that with ordinary care the accident of scorching can scarcely ever occur.

Having described my invention, and stated its advantages, I proceed to state what I claim as new, and what I desire by Letters Patent to secure—

The flues *d, d*, the apertures *g, g*, and valves *h, h*; when used in connection with the fruit trays G, G, all substantially arranged as and for the purpose set forth.

ELI DUNCAN.

Attest:

J. T. JANVIER,  
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