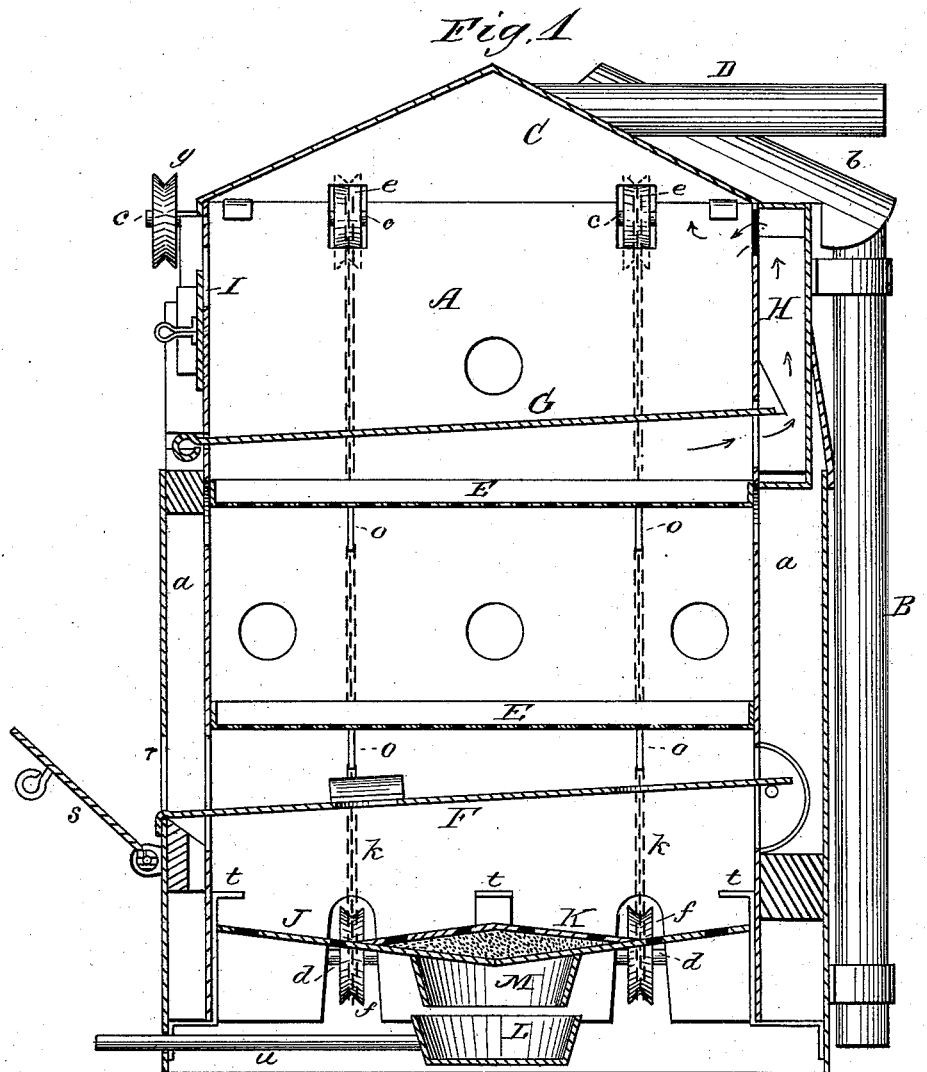


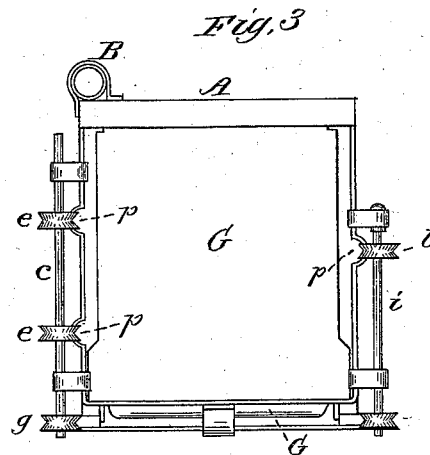
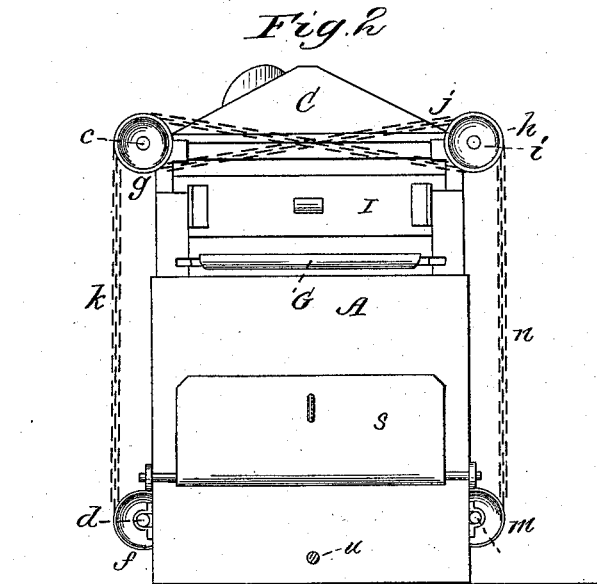
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No. 217,288. Patented July 8, 1879.



WITNESSES  
Nat. E. Oliphant  
Geo. B. Porter.

INVENTOR  
Garrett W. Hopkins  
per  
Chas. H. Fowler,  
Att'y.

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# UNITED STATES PATENT OFFICE.

GARRETT W. HOPKINS, OF TRUMANSBURG, NEW YORK.

## IMPROVEMENT IN FRUIT AND VEGETABLE DRIER AND BLEACHER.

Specification forming part of Letters Patent No. **217,288**, dated July 8, 1879; application filed April 7, 1879.

*To all whom it may concern:*

Be it known that I, GARRETT W. HOPKINS, of Trumansburg, in the county of Tompkins and State of New York, have invented a new and valuable Improvement in Fruit and Vegetable Drier and Bleacher; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a sectional view of my invention. Fig. 2 is a side elevation of the same on a reduced scale; and Fig. 3 is a top-plan view of the drying-house with the roof removed.

This invention has relation to houses for evaporating the moisture from fruits and vegetables, also in bleaching them; and the object thereof is to construct a drying-house, with its several devices used to carry on the evaporating or drying process, in a manner that will secure the perfect drying of the fruit or vegetables in a comparatively short space of time; also, in simplifying the construction of the bleaching device, as will be hereinafter described, and subsequently pointed out in the claims.

In the accompanying drawings, A represents the drying-house, of any suitable form and size, provided with double wall *a*. At one side of the house A is placed a flue, B, connected at its lower end with a suitable furnace or heat-generating device. The upper end of the flue B connects with a short pipe, *b*, secured to a removable roof, C, said pipe communicating with the interior of the drying-house. A pipe, D, also communicates with the interior of the drying-house, and connects with a suitable chimney.

Upon the exterior of the drying-house are journaled horizontal shafts *c d*, to which are keyed pulleys *e f*. The outer end of the shaft *c* also carries a pulley, *g*, over which a belt or chain, *j*, passes to a pulley, *h*, upon a horizontal shaft *i*. Over the pulleys *e f* pass chains *k*, as does also a chain, *n*, over pulleys *l m*. These chains *k n* are provided with supports *o* for the trays E, said trays being of any suit-

able construction, and made either of perforated sheet metal or wire-gauze.

The sides of the drying-house A have vertical recesses or gutters *p* for the chains to work in and assist in retaining them in their proper position while elevating the trays.

A damper, F, is placed near the bottom of the drying-house, and is perforated to allow a portion of the heated air to pass through to the tray above it.

Above the damper F and trays E, and near the top of the drying-house A, is another damper, G, without perforations, so that the moist air at that point will be thrown into the back space or duct H. After the air enters the duct H it passes out through openings at the top of the duct into the drying-house above the damper G and thence into the flue. Both the dampers F G are withdrawn and replaced with every putting in of a fresh tray of fruit or vegetables, the tray of fresh fruit or vegetables being inserted through the opening *r* and placed on the supports *t*, the tray remaining a sufficient length of time to allow the fruit or vegetables thereon to be sufficiently dried, when the dampers F G are withdrawn and the tray caught up by the supports *o* upon the moving chains and carried a sufficient height to allow the introduction of a tray of fresh fruit or vegetables, after which the dampers are again inserted and the drying process is continued.

It must be recollected, however, that while a new tray is inserted at the bottom of the drying-house the upper tray, with its supply of fruit or vegetables thoroughly dried, is removed through the opening or space closed by the door I. The lower damper, F, which is inserted or removed through an opening, *r*, closed by a door, *s*, causes the current of heated air passing through the tray below the damper to be deflected downward and over the fruit or vegetables upon the tray, thereby drying them as thoroughly upon the top as on the bottom.

The drying-house A is provided with a concave perforated floor, J, to admit the hot air, and has secured to its upper side a convex cap, K, forming a space in which loose sand is placed to equalize the temperature, and that portion of the floor J under the cap is made

solid to hold the loose sand, the cap K acting as a radiator for the heat passing from the sand.

Under the bottom of the floor J is a pan, L, provided with a suitable handle, *u*, passing out through the wall of the drying-house. The pan L is for containing the sulphur, which is kept melted during the process of bleaching the fruit or vegetables, and by inserting a hot bar of iron in the sulphur the latter is vaporized.

When it is desired to extinguish the burning sulphur the pan L is raised, so that the cylindrical hollow plug M secured to the under side of the floor J will enter it, thereby shutting off or smothering the rising vapor.

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

1. The drying-house A, having duct H, flue B, and the chains and pulleys for elevating the trays, in combination with the roof C and pipes D *b*, substantially as and for the purpose set forth.

2. The combination of the movable trays E with the perforated damper F and damper G, substantially as and for the purpose specified.

3. The drying-house A, having duct H, flue B, and roof C, with pipes D *b*, in combination with the movable trays E and dampers F G, substantially as and for the purpose described.

4. The drying-house A, having concave perforated floor J and perforated cap K, and having between the same a filling of loose sand, substantially as and for the purpose set forth.

5. The drying-house A, floor J, having the hollow plug M, in combination with the pan L, with a suitable handle, *u*, substantially as and for the purpose described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

GARRETT W. HOPKINS.

Witnesses:

DAN G. CLARK,  
JAMES H. SMITH.