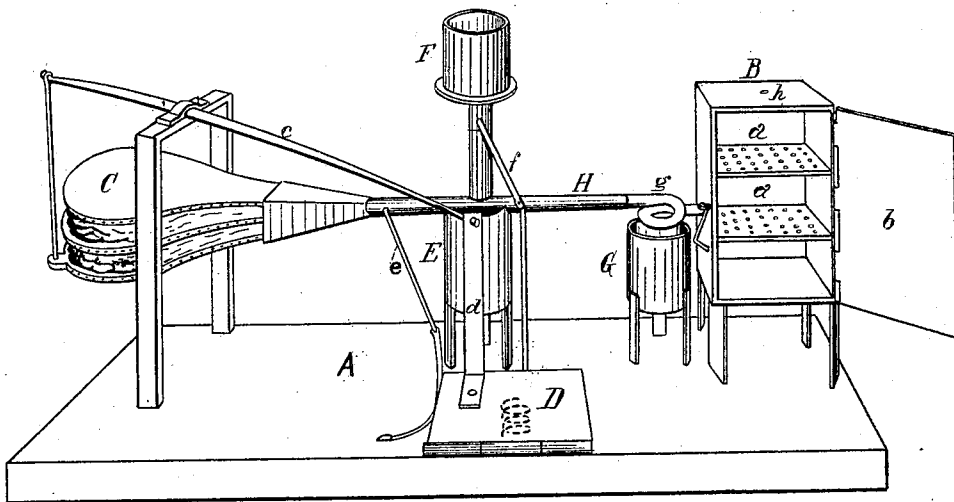


W. BROWN.

PROCESS AND APPARATUS FOR DRYING FRUIT, &c.

No. 178,991.

Patented June 20, 1876.



WITNESSES:
Charles Thurman,
L. V. Sely

William Brown. INVENTOR.
Geo. W. Dyer & Co. ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM BROWN, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN PROCESSES AND APPARATUS FOR DRYING FRUIT, &c.

Specification forming part of Letters Patent No. **178,991**, dated June 20, 1876; application filed April 8, 1876.

To all whom it may concern:

Be it known that I, WILLIAM BROWN, of San Francisco, State of California, have invented an Improved Process and Apparatus for Drying Fruits, &c., of which the following is a specification:

This invention consists in vaporizing alcoholic spirits and forcing the fumes or vapors of the same into the drying-oven containing the material to be desiccated or dried.

The apparatus for effecting the object consists of a pipe connecting with a bellows. One end of the pipe, terminating in a worm, enters the drying-oven. A furnace is placed under the worm, and one under the pipe midway between the oven and bellows, for heating the alcohol, and over the latter pipe is placed a reservoir containing alcohol, all of which, together with other details of construction, will be more fully described hereinafter.

To enable others skilled in the art to make and use my apparatus, reference is had to the accompanying drawing, and to the letters of reference marked thereon, the figure represented being in perspective.

A represents the base or foundation; B, the drying-oven, provided with a door, *b*, and perforated shelves *a a*. H is a pipe, which connects with the bellows C, the opposite end of which terminates in a coil, *g*, and enters the drying-oven. Beneath this coil is placed a furnace, G. About midway between the bellows and furnace G is placed another small furnace, across which the pipe rests, and directly above it, and attached to the pipe, is placed a can or reservoir, F, containing alcohol, having a valve, *f*.

The operation will be as follows: The fruit or other substance to be dried or desiccated is placed on the perforated shelves *a a* of the oven, and the door closed, and live coals or fire sufficient to heat the worm and pipe placed in the furnace F G, when alcohol, stored in

the can or reservoir, is admitted by withdrawing the valve *f* into the pipe H. The alcohol is immediately vaporized, and, by operating the bellows, the vapor or fumes and heated atmospheric air are carried through the warmer coil into the oven, which soon desiccates or dries the contents, the steam from which passes off through the hole or opening *h*. The position of the worm near to the oven prevents this alcoholic flame from entering the oven, which it otherwise would do in absence of the coil, while the furnace underneath the coil intensifies the heat of the air and alcoholic fumes, so that the operation of drying the fruit, &c., in the oven is greatly accelerated.

Care should be taken to shut off the air from the bellows C during the time of feeding the alcohol to the pipe, and this is accomplished by pushing back the rod *e*, to the end of which is an air-tight valve, which prevents the air from the bellows from entering the pipe.

The bellows may be operated by a foot-board, D, behind which a spring may be placed.

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

1. The process of drying fruit and other substances, consisting in conveying alcoholic vapors into a chamber containing the substance to be dried, in the manner substantially as described.

2. The apparatus herein described, consisting, essentially, of the drying-oven, furnaces E G, pipe H, coil *g*, bellows C, and reservoir F, as set forth and specified.

Witness my hand and seal this 11th day of March, 1876.

WILLIAM BROWN. [L. S.]

Witnesses:

PHILIP MAHLER,
C. W. M. SMITH.