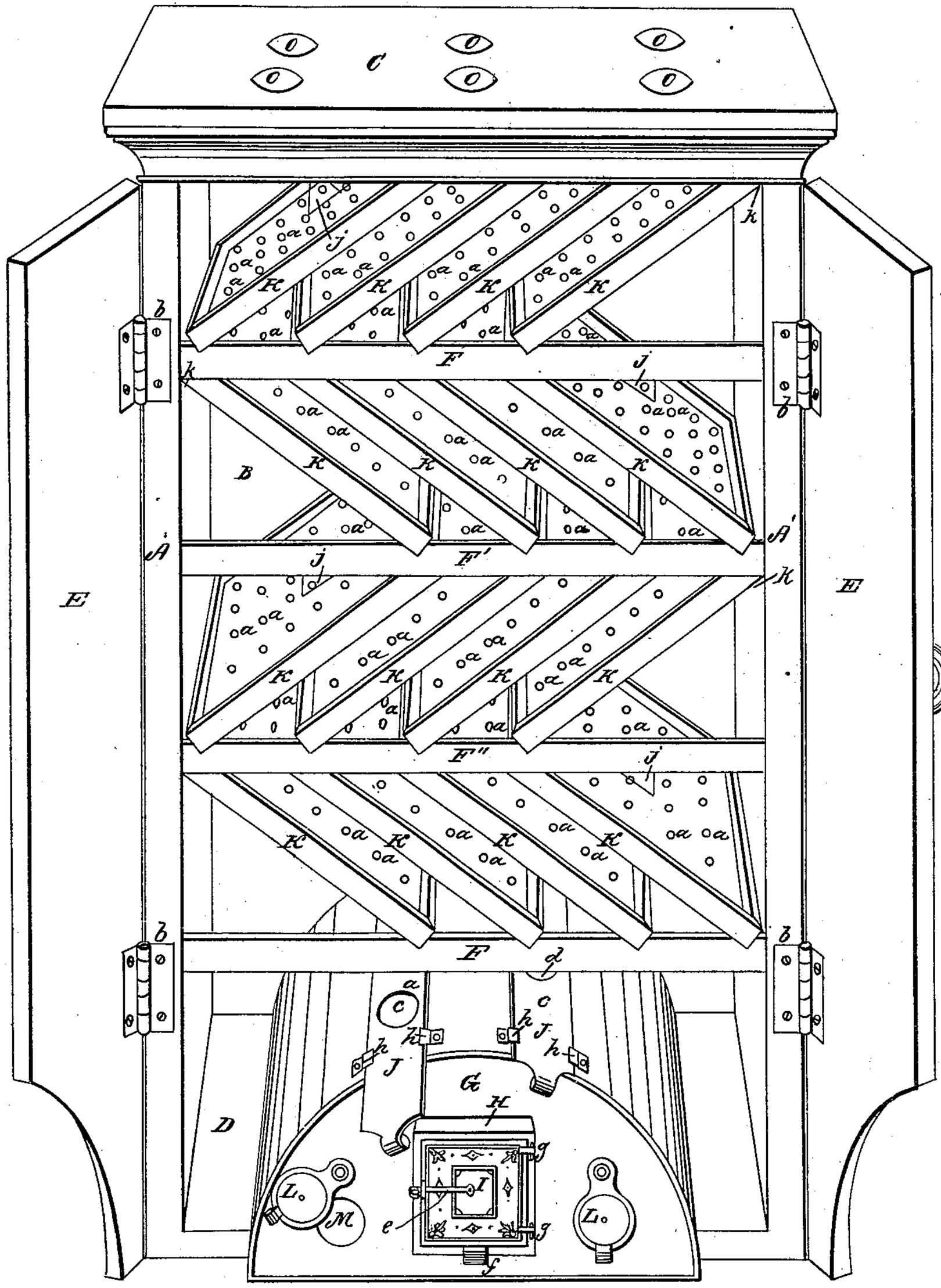
2 Sheets—Sheet 1.

I. RANDALL.

Fruit Drier.

No. 28,775. Patented June 19, 1860.

Fig: 1.



Witnesses:
Edmund Burke
C. L. Newton

Inventor:
Isaac Randall

2 Sheets—Sheet 2.

I. RANDALL.

Fruit Drier.

No. 28,775. Patented June 19, 1860.

Fig: 2.

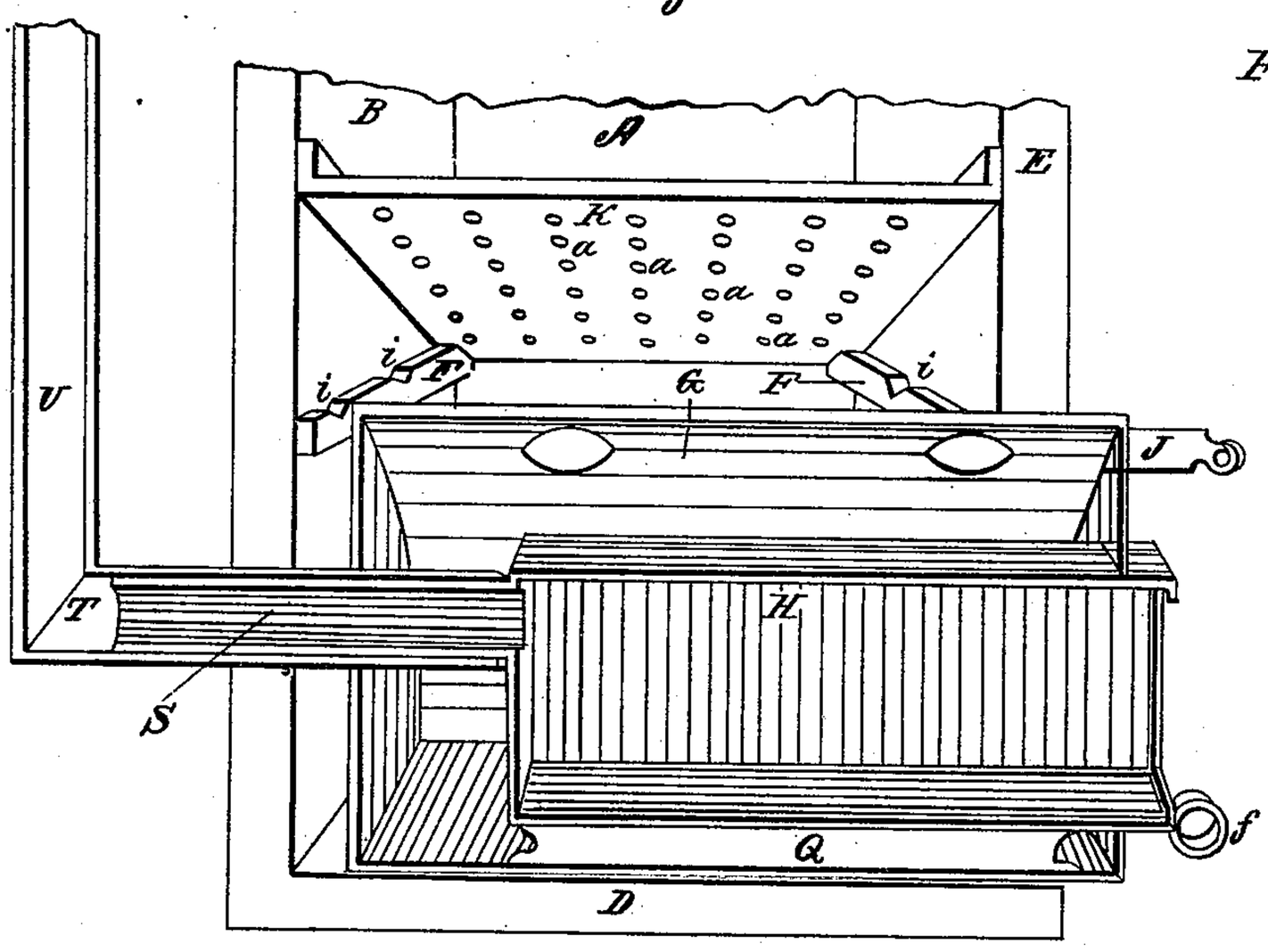
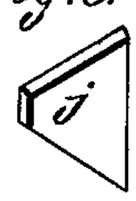


Fig: 3.



Witnesses:

Edmund Burke
C. L. Newton

Inventor:
Isaac Randall Jr.

UNITED STATES PATENT OFFICE.

ISAAC RANDALL, 2D, OF CLAREMONT, NEW HAMPSHIRE.

APPARATUS FOR DRYING FRUIT.

Specification of Letters Patent No. 28,775, dated June 19, 1860.

To all whom it may concern:

Be it known that I, ISAAC RANDALL, 2d, of Claremont, in the county of Sullivan and State of New Hampshire, have invented a new and useful improvement in the apparatus for drying fruit, herbs, and other materials, which I denominate "Randall's improved portable fruit-drier;" and I do declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a front perspective view of my said apparatus; and Fig. 2, is a longitudinal sectional view of the lower part of the same, and the hot air chamber and fire box therein contained. Fig. 3, is a view of the rests on which the shelves are supported.

The same letters in the different figures represent identical parts of my said apparatus.

My apparatus consists of a drying box, and its contents hereinafter described, made of timber or other suitable material, four feet wide, two and a half feet deep, and seven and a half feet high, (the dimensions being varied as may be found expedient,) of which A, A, are the sides; B, the back; C, the top with apertures O, O, &c., for the egress of the heated air; D, the bottom, and E, E, the doors, the latter turning on hinges C, C, C, C.

F, F, F, F, are the front supports, having corresponding supports in the back of the drying box, (one of which is shown in Fig. 2,) upon which the inclined shelves K, K, &c., for the reception of the fruit or other material to be dried, rest in the notches *i*, *i*, &c. The shelves K, K, &c., are perforated with holes *a*, *a*, &c., which are designed to facilitate the free circulation of the air among the fruit or other material to be dried.

G, is a hot air chamber.

H, is a movable fire box situated in the hot air chamber G.

M, M, are apertures for the admission of the atmosphere outside into the hot air chamber G.

c, *c*, are apertures for the passage of the air when heated from the air chamber G, into the drying box containing the shelves K, K, &c.

J, J, are dampers sliding in the clasps *h*, *h*, &c., having perforations *d*, *d*, &c., corresponding with the apertures *c*, *c*, in the air chamber G.

L, L, are dampers covering the apertures M, M.

I, is the door of the fire box H, and turns on the hinges *g*, *g*; and is confined by the latch *e*.

f, is a handle or projection to enable the operator readily to withdraw and return the fire box H, in the air chamber G.

Q, is a platform or support, made of iron, stone, or bricks, on which the fire box H, rests and slides.

S, is a pipe which conducts the smoke from the fire box H, and slides in the pipe T as the fire box H, is withdrawn or returned in the air chamber G.

U is a continuation of the pipe T, and secures the smoke from the pipe S, and conducts it to the atmosphere surrounding.

j, *j*, &c., are projections or rests on the shelves K, K, &c., and serve as supports to the shelves immediately in front of the same, the upper edge of the first shelf in each series of shelves, rests against the side of the drying box, as seen at *k*, *k*, &c.

P is the handle of the door E.

Having described the construction of my improved fruit drier, I now proceed to set forth its operation and application in use. In apparatus for the drying of fruit and other materials, it is desirable to employ as much surface as possible, and to secure a free and abundant circulation of heated air among the material to be dried. These desiderata I obtain by the construction of the shelves K, K, &c., with their perforations *a*, *a*, &c., and by their inclination with respect to these supports F, F, &c., which enables the heated air to pass freely between them. This inclination may be at any angle which will be found best to obtain the object designed, not exceeding forty-five degrees. An angle of inclination much less than that will be found best in the practical use of my apparatus. By this mode of arranging the shelves I obtain a drying surface of eighty square feet in a drying box of the dimensions hereinbefore stated; and this surface may be increased to one hundred square feet by introducing an additional shelf in each series, and inclining all the shelves at a less angle than that at which they are represented in the drawings. The heated air is produced and applied in the following man-

ner, namely: A fire is made in the fire box H, which rarefies and expands the air in the hot air chamber G, thus causing fresh air to enter it through the apertures M, M, and as it becomes heated, to pass out through the apertures *c*, *c*, into the drying box containing the shelves K, K, &c., among and through which it freely and thoroughly diffuses itself, traversing the spaces between the shelves K, K, &c., and then apertures *a*, *a*, &c., until it finally finds an egress through the apertures O, O, &c., into the surrounding atmosphere. The fire box H, is made so as to slide freely in the air chamber G, for the purpose of enabling the operator to regulate the quantity of heat required during the operation of drying.

The dampers L, L, serve to regulate the supply of fresh air admitted into the air chamber G, and the sliding dampers J, J, assist in retaining it in the air chamber until it is sufficiently heated for admission into the drying box. The egress of the heated air from the drying box may also be regulated at pleasure, by the usual methods of closing and opening the apertures O, O, &c., by dampers or stoppers. The apertures O, O, &c., may also be made in the form of tubes or chimneys with caps to be applied to one or more as may be necessary in the operation of drying.

Having above described the construction and operation of my improved portable fruit drier, what I claim, and desire to secure by Letters Patent, is—

The fire box H, and the hot air chamber G, in combination with the drying box, as shown in Fig. 1, and above described, and the shelves K, K, &c., constructed and arranged substantially as herein before set forth.

In witness whereof I have hereunto set my hand this twenty-fifth day of February, A. D. 1860.

ISAAC RANDALL, 2D.

Witnesses:

EDMUND BURKE,

C. L. NEWTON.