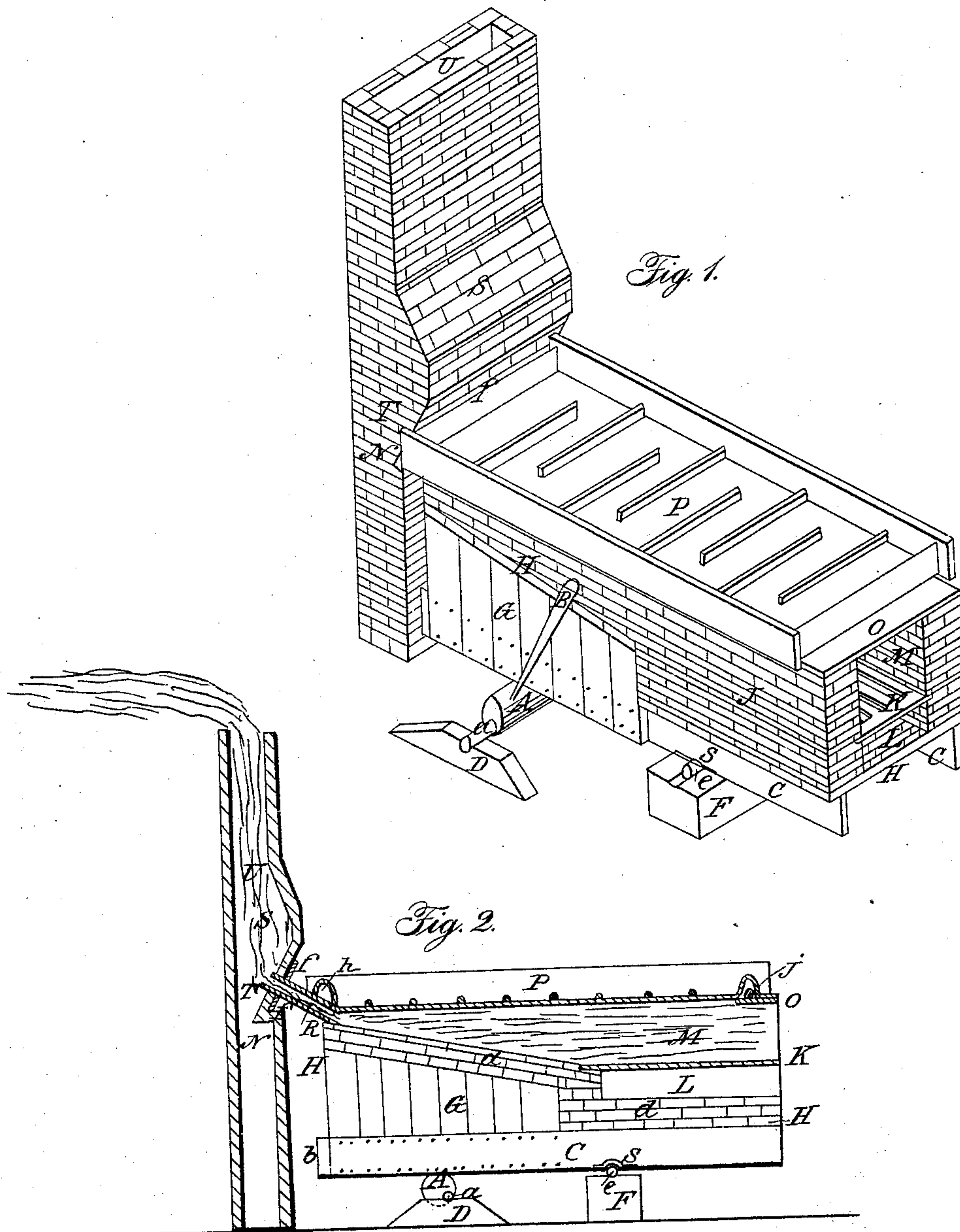


L. W. BODWELL.

Evaporating Pan.

No. 41,674.

Patented Feb. 23, 1864.



Witnesses:

M. H. Goodrich
C. H. Vanclue

Inventor:

L. W. Bodwell

UNITED STATES PATENT OFFICE.

LUKE W. BODWELL, OF ANN ARBOR, MICHIGAN.

IMPROVEMENT IN WORKING AND USING SUGAR-EVAPORATORS.

Specification forming part of Letters Patent No. 41,674, dated February 23, 1864.

To all whom it may concern:

Be it known that I, LUKE W. BODWELL, of the city of Ann Arbor, county of Washtenaw, and State of Michigan, have invented certain new and useful Improvements in Arches for Working and Using Sugar-Cane Evaporators and Evaporating Saccharine Juices; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a perspective view, and Fig. 2 a perpendicular longitudinal section through the center.

Like letters refer to like parts in the different figures.

The nature of my improvement consists in a certain combination or combinations of mechanical devices, whereby I am enabled to use and work a brick arch of any desirable length and dimensions connected with a stationary chimney, at the same time securing economy in construction and fuel and convenience and facility in operating.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I make the pillar-blocks D and F, Fig. 1, of wood or other suitable material, of dimensions corresponding to the size of the arch to be used, and place them on masonry let into the ground sufficiently deep to make a firm foundation. Upon these pillar-blocks I place the fulcrum or bearing E and eccentric shaft and cam A *a*. Into this eccentric shaft I insert the lever B, by means of which the shaft is made to rotate backward and forward at pleasure. I then make my frame or main foundation of the arch C of wood, corresponding to the size and dimensions of the evaporator to be used and the weight it is to sustain. Into the sills C, I insert the half of a journal-box, *s*, to receive the fulcrum E. Upon these sills I make a floor, H, also of wood, of suitable thickness, extending it back on the top of these sills a distance equal to the length of the furnace M and ash-pit and grate L and K. From the back of the furnace M, I raise the floor H by means of the perpendicular boarding G to as great an inclination as the height of the arch will admit, allowing a sufficient space from the top of said floor to the bottom of the

flue for a sufficient number of courses of brick to protect the floor from fire and the effects of heat, as represented at *d*, Fig. 2. Upon this floor or foundation I construct the arch J of brick, with an ash-pit, L, grate K, and furnace M, or any other style of arch desired. The thickness of the walls is varied according to the size and dimensions of the evaporator used and the amount of heat required. I attach the flue R, Fig. 2, made of sheet-iron or other suitable metal or material, to the arch at such an angle as will allow it to move up and down in the opening T, in connection with the sliding plate *f* with the greatest freedom and ease. I then construct the chimney N with a flue, U, of proper dimensions, with an enlargement of the flue at S, in which enlargement I make an opening, T, large enough to allow the free play of the flue R, when the arch is elevated or depressed. Over this opening T, I place the sliding plate *f*, made of cast-iron or other metal, and sufficiently large to cover the opening T when the arch is at its greatest elevation or depression, and with an aperture in the center to receive the flue R. This sliding plate moves or works up and down in grooves, snugs, or other similar devices, and is so attached to the chimney and arranged as to make as perfect a connection with the chimney as may be. The whole arch, evaporator, and contents rests upon the eccentric shaft and cam A *a* and fulcrum E, and is worked by the lever B, inserted in the eccentric shaft A. When the lever B is raised and lowered the arch is elevated and depressed, the sliding plate *f* having a corresponding motion, and at the same time keeping the opening T closed, and thereby forming a perfect connection with the chimney N of the flue R and arch J. The eccentric shaft and cam A *a* and fulcrum or center of motion E should be so arranged and bear such a relation to each other that the least motion of the eccentric shaft and cam A *a* will produce the greatest amount of elevation and depression of the arch required, reference being had to the convenience of working the lever B. I so balance the arch on the fulcrum or center of motion E that there is but a slight preponderance upon the shaft A, by which device or arrangement the expenditure of but a small amount of power is required to work the arch. If in the construction of the arch it is not prop-

erly balanced, I board up under the sills C, and effect the proper balance by means of pieces of brick, cabbie-stone, or other material convenient at hand.

What I claim for my invention, and desire to secure by Letters Patent, is—

The combination and arrangement of the eccentric shaft and cam A *a*, the fulcrum or center of motion E, the flue R, sliding plate *f*,

opening T, enlargement S, in connection with the arch J, combined and arranged as and for the uses and purposes set forth in the foregoing specification.

LUKE W. BODWELL.

Witnesses:

M. H. GOODRICH,

C. H. VANCLEVE.