

J. S. Thompson.

Boiling Sap & other Liquids.

N^o 74452

Patented Feb. 11, 1868.

Fig. 1.

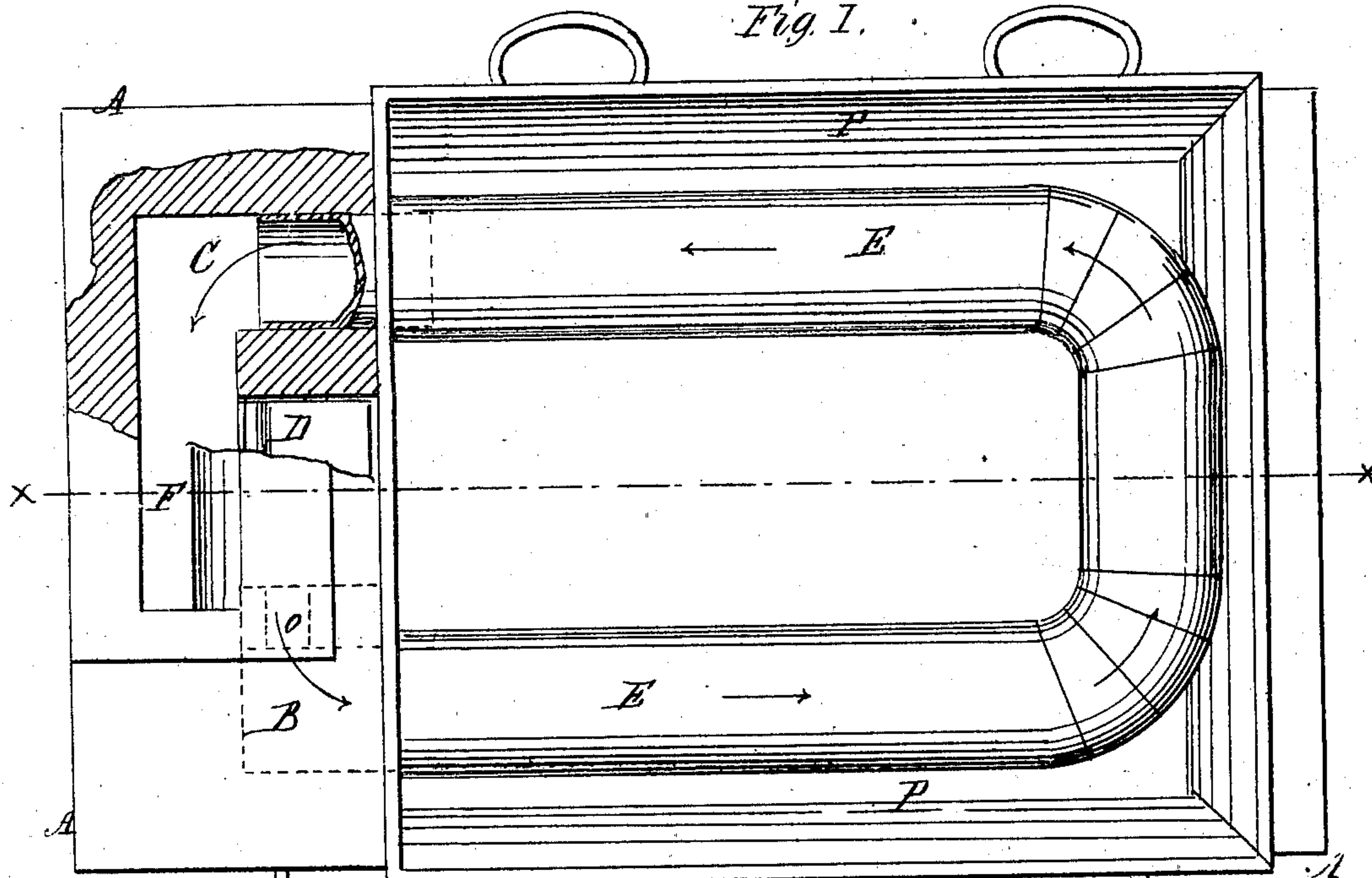
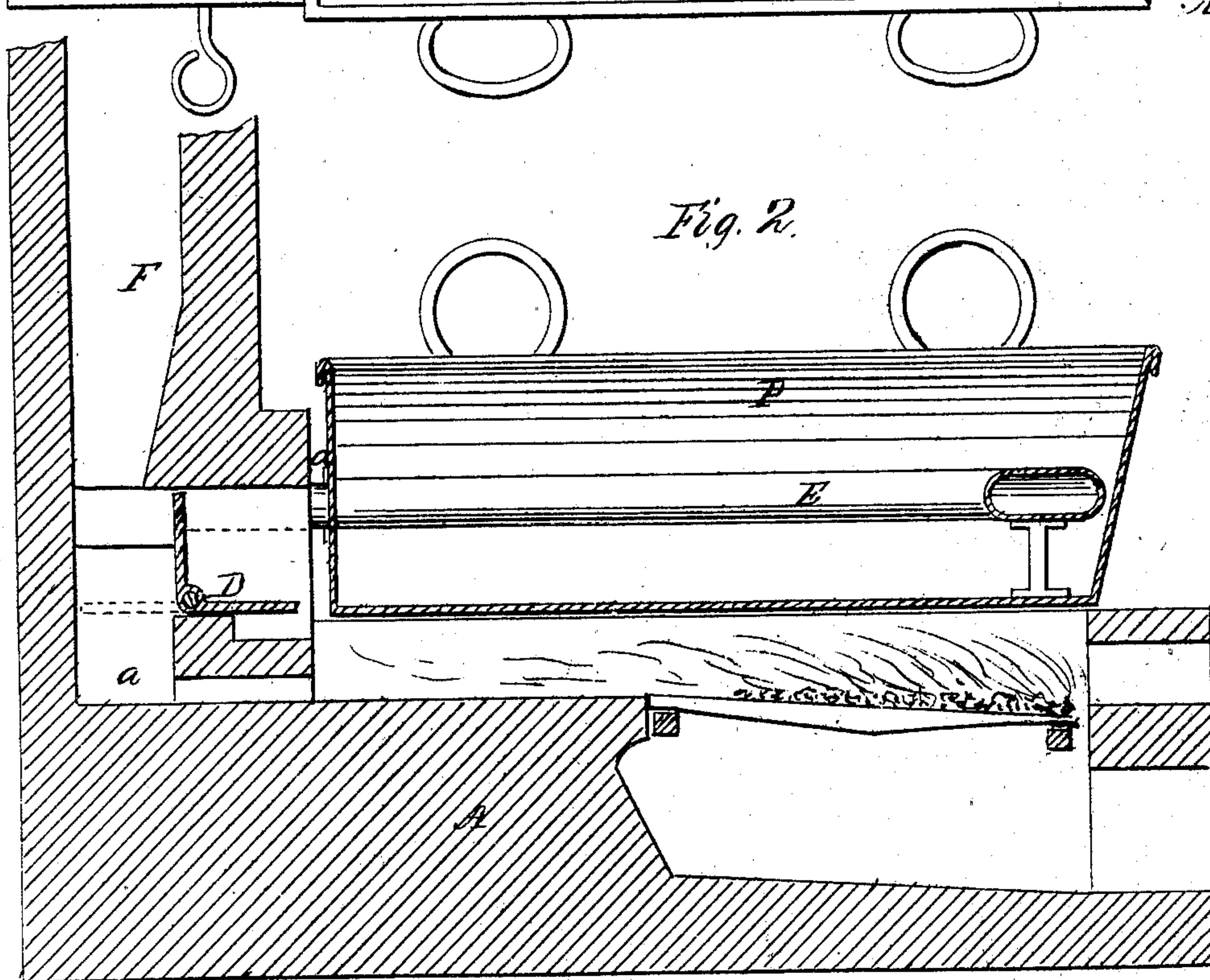


Fig. 2.



Witnesses.
Theo. Fische
W. Brown

Inventor
J. S. Thompson
Per Munnell
Attorneys

United States Patent Office.

JAMES S. THOMPSON, OF LYNDON, VERMONT.

Letters Patent No. 74,452, dated February 11, 1868.

IMPROVED APPARATUS FOR BOILING SAP AND OTHER LIQUIDS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES S. THOMPSON, of Lyndon, in the county of Caledonia, and State of Vermont, have invented a new and improved Apparatus for Boiling Sap and other Liquids; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and improved method of constructing apparatus for evaporating or boiling sap or other liquids, whereby the same is more effectually and economically done. It consists of a furnace and evaporating-pan, having a tube or tubes passing through said pan, so connected with the flue that the heat is made to pass through said tube or tubes before going out at the chimney. In the accompanying plate of drawings—

Figure 1 represents a plan view of my invention.

Figure 2 represents a central longitudinal section of the same, taken in the line *x x*: fig. 1.

Similar letters of reference indicate corresponding parts.

A is the furnace. B is a chamber in the flue F, communicating with the tube E. C is the outer chamber in said flue F, communicating with the other end of the tube E. E is a tube in the pan P, passing entirely around the same, and opening into the chambers B C. P is a metal evaporating or boiling-pan. D is the damper. F, the flue or chimney. G, pipes in the furnace A, by which the tube E is connected with the chambers B C in the flue F.

The furnace A is constructed in the ordinary way. The flue F is divided into two chambers, B C. Into the chamber B there is an opening, O, which, in any position of the damper D, is in open communication with the fire in the furnace A. Into said chambers B C there are fixed pipes, represented in the drawing, in fig. 2, by G, upon which the tube E in the pan P is fitted, one of said pipes being in the chamber B, and the other of said pipes being in the chamber C, so that one end of the tube E is in communication with the chamber B, and the other end of the tube E is in communication with the chamber C. The damper D is made of two plates, at right angles to each other, and is represented open in the drawing, the red lines indicating its position when shut. Said damper is so arranged in connection with the flue F that, when open, as shown in the drawing, the flue F is in direct communication with the fire in the furnace A, but when said damper D is closed, as represented by red lines, the passage *a* is closed, and the heat and smoke, stopped by the damper D, pass through the opening O into the chamber B, and through the pipe E in the pan P, in the direction shown by arrows in the drawing, through the tube E to the chamber C into the flue F.

The operation is such that, by means of the damper D, an open communication is left between the fire in the furnace A and the flue F, or the same is closed, and the heat made to pass through the tube E in the pan P, in which is placed the sap or other liquid to be boiled or evaporated.

The advantages of this improvement are, the greater radiating-surface which is thereby brought into contact with the fluid to be boiled or evaporated, and the more perfect combustion and economical use of fuel.

I claim as new, and desire to secure by Letters Patent—

The arrangement of the chambers B C and opening O in the furnace A and flue F, the tube E, short pipes G, pan P, passage *a*, and right-angular damper D, as herein described, for the purpose specified.

The above specification of my invention signed by me, this first day of October, 1867.

JAMES S. THOMPSON.

Witnesses:

CHAS B. DRAKE,
J. T. PALMER.