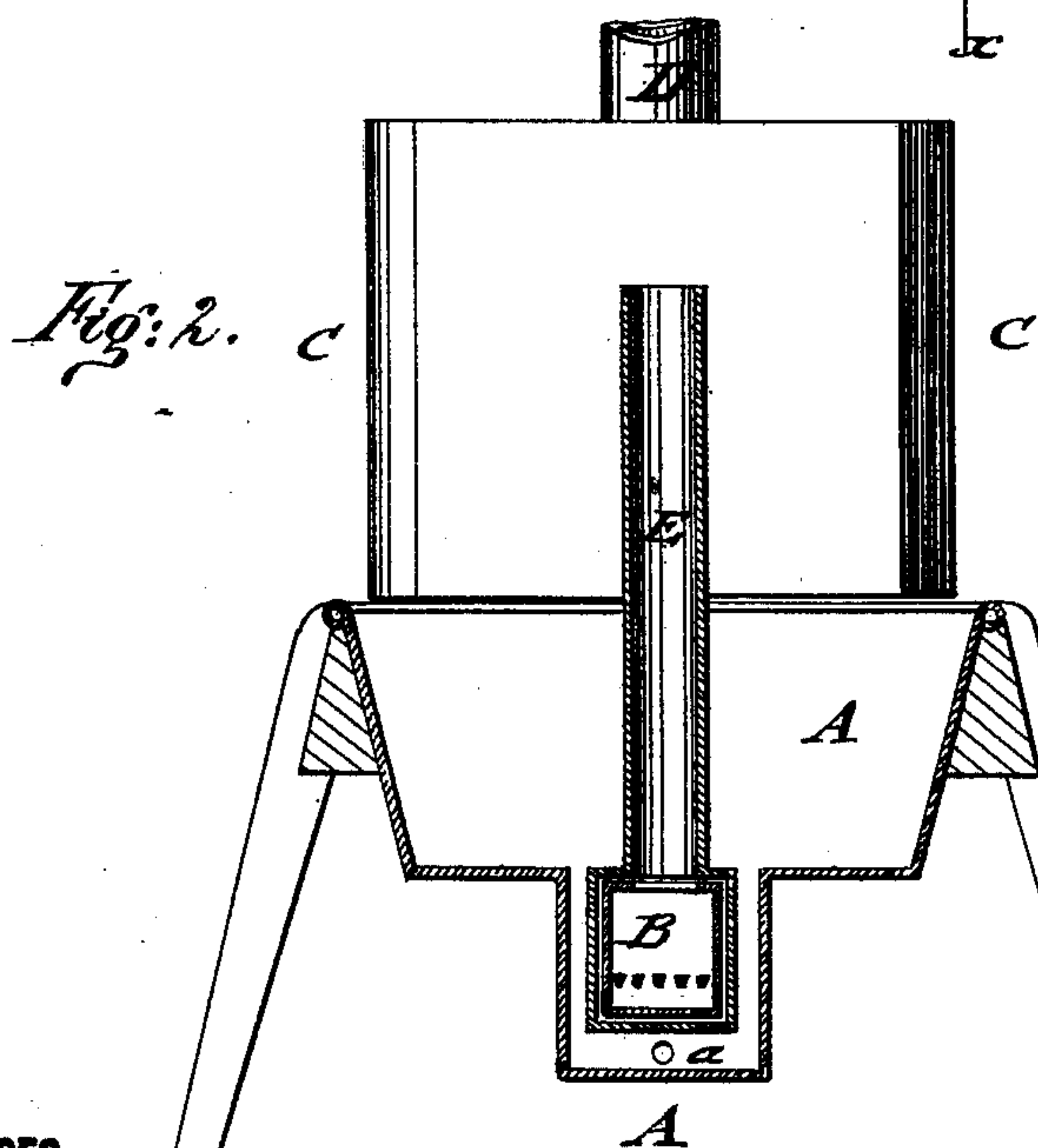
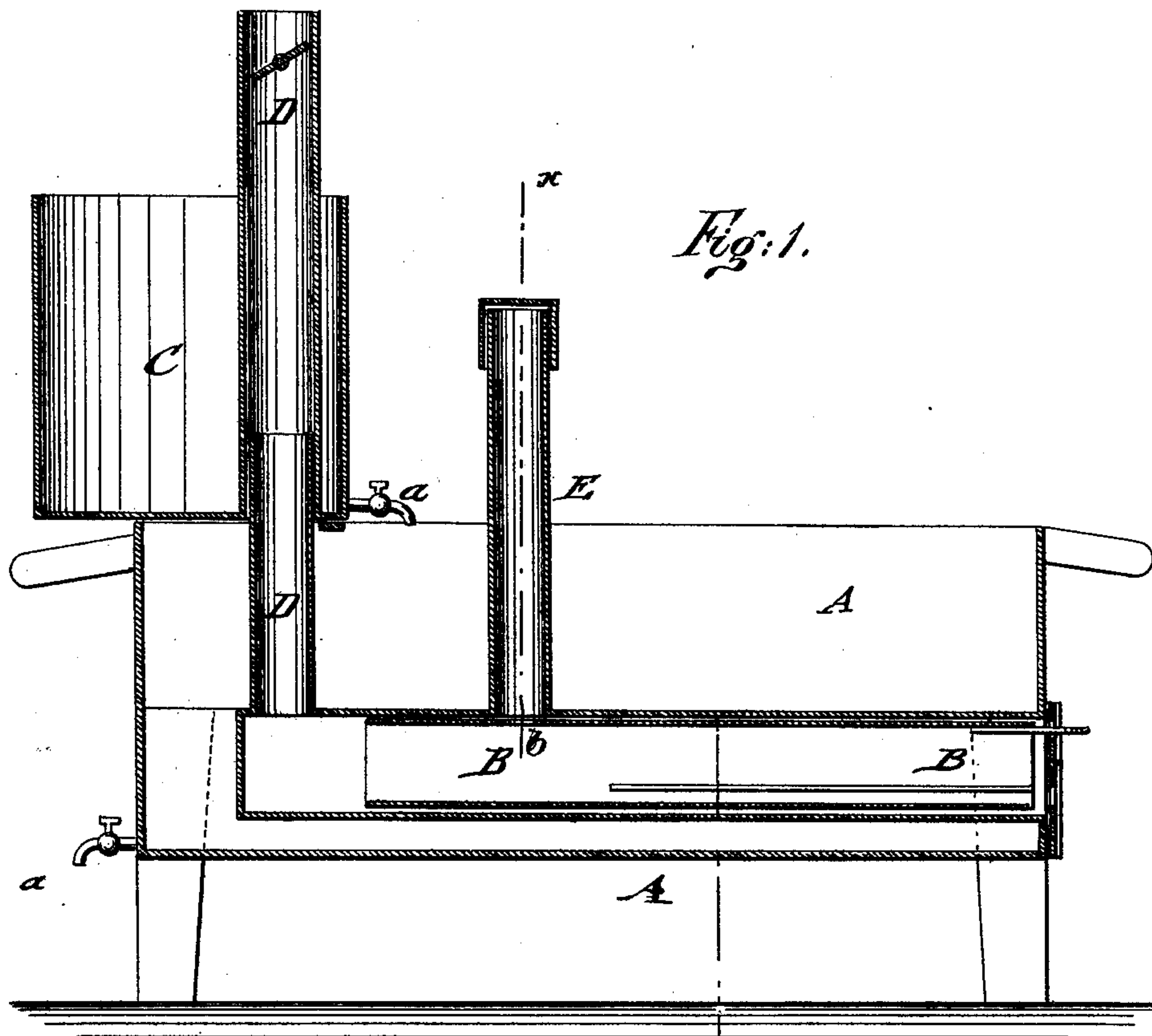


J. M. RANDOLPH.
Evaporator.

No. 196,595

Patented Oct. 30, 1877.



WITNESSES:

Chas. N. daq.
J. H. Scarborough.

INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN M. RANDOLPH, OF SOMERSET, OHIO.

IMPROVEMENT IN EVAPORATORS.

Specification forming part of Letters Patent No. **196,595**, dated October 30, 1877; application filed June 11, 1877.

To all whom it may concern:

Be it known that I, JOHN M. RANDOLPH, of Somerset, in the county of Perry and State of Ohio, have invented a new and Improved Evaporator and Feed-Boiler, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical longitudinal section of my improved evaporator and feed-boiler; and Fig. 2 a vertical transverse section of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The invention relates to an improved evaporator for molasses, maple sirup, and other purposes, which may also be used conveniently as a feed-boiler, it being simple in construction and economical in the consumption of fuel; and it consists of an evaporating-pan, extending around the top, sides, and bottom of a sliding fire-box in which the fire is regulated by a supplementary smoke-pipe in front of the main smoke-pipe, which passes through a cleansing tub or receptacle, to heat up the liquid therein, preparatory to its being let into the pan.

In the drawing, A represents an evaporating-pan, and B the fire-box, which slides into the lower section of the pan, being surrounded at the top, rear, sides, and bottom by the pan.

The cleansing tub or receptacle C is arranged at the rear end of the pan A, on the top of the same, and the cane-juice or other liquid therein cleansed and purified before being let into the pan by the heat of the main smoke-pipe D, that passes up through the pan A and tub C.

The fire-box is provided with two smoke-pipes, D E, the former placed beyond the open end of the sliding fire-box, while the latter pipe registers with fire-box by means of the aperture *b*. The pipes are provided with dampers, as shown in Fig. 1 of the drawing, so that the draft through either may be shut off.

The cleansing-tub and evaporating-pan are provided with stop-cocks *a*, for drawing off the contents.

The evaporation of the liquid is effected rapidly and economically by the arrangement of the fire-box in the evaporating-pan so as to be surrounded by the liquid, while by the cleansing-tub the preparatory heating and skimming of the liquid is accomplished.

The apparatus may be used as a common feed-boiler, by taking off the cleansing-tub and using the pan in the customary manner. The boiler may be made of any suitable material, preferably of galvanized sheet-iron, forming an effective and economical boiler for agricultural purposes.

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

In an evaporator, the sliding fire-box B, open at the front, and having aperture *b*, in combination with the pan A, having a lower section surrounding said fire-box, and the dampered smoke-pipes D E, as shown and described.

JOHN MILTON RANDOLPH.

Witnesses:

P. H. BINCKLEY,
JOS. A. FLAUTT.