

W. E. PRALL.
Evaporating Pan.

No. 34,469.

Patented Feb. 18, 1862.

Fig. 1.

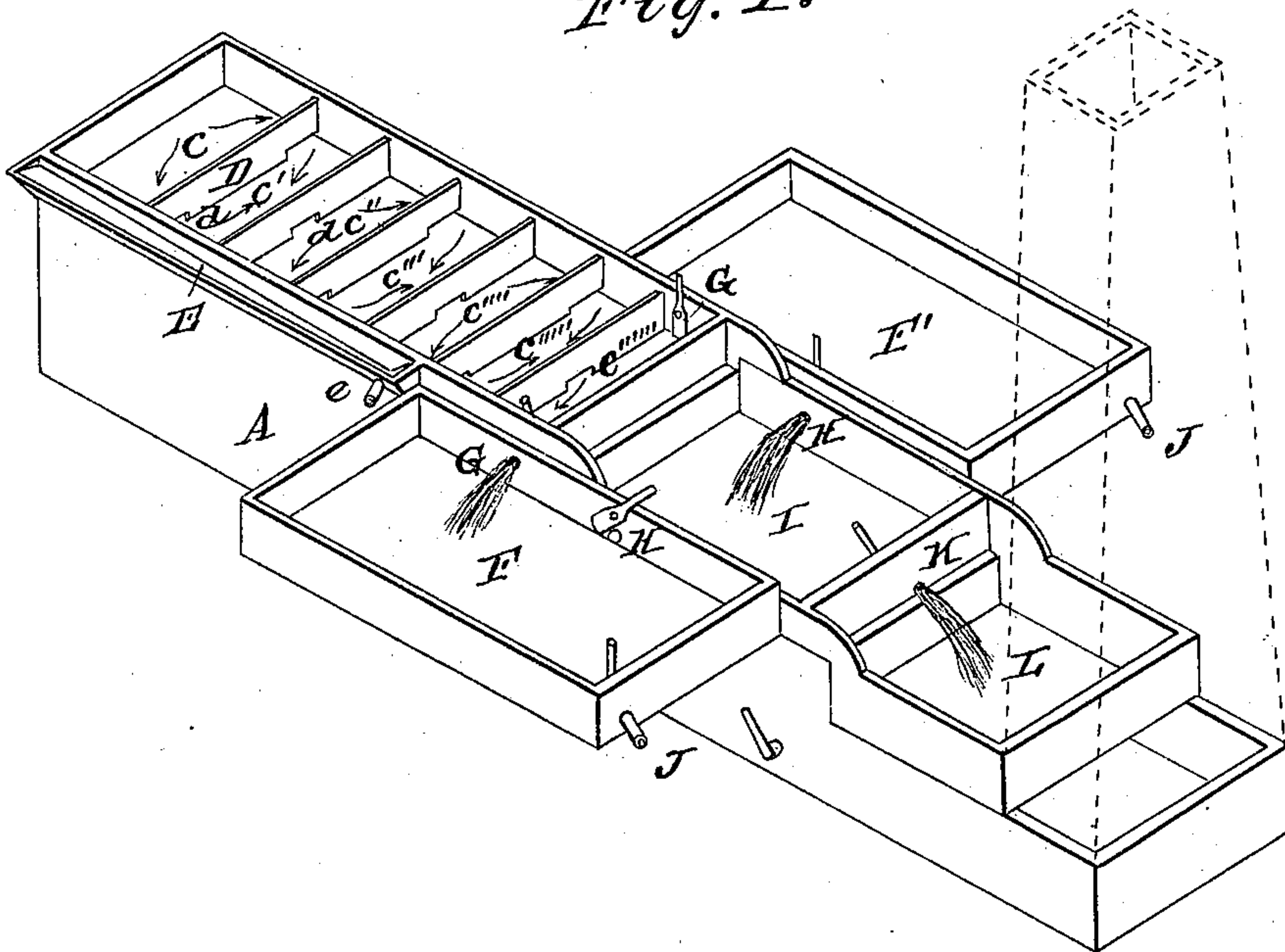
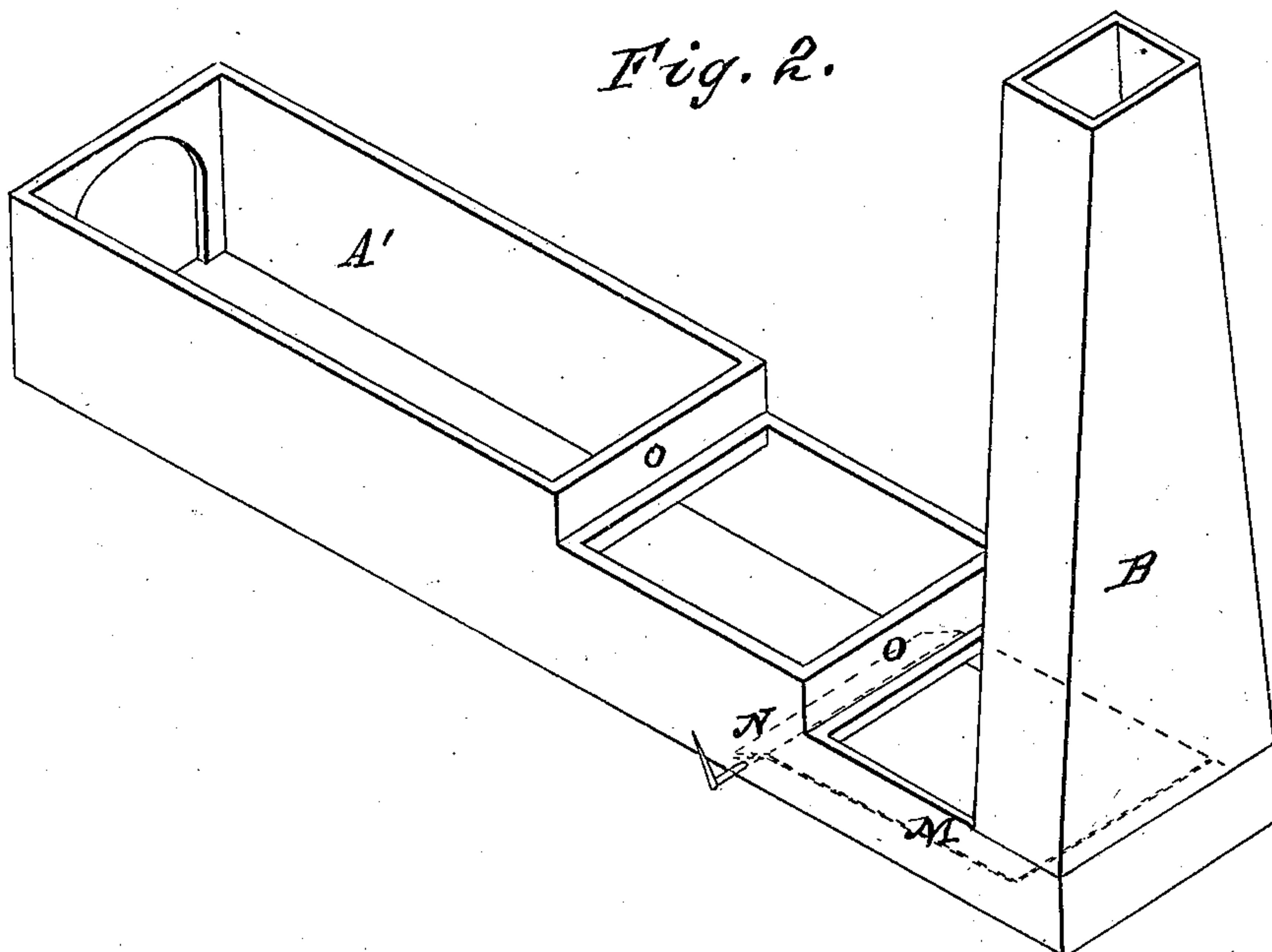


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM E. PRALL, OF MAINVILLE, OHIO, ASSIGNOR TO HIMSELF AND
HARRY EASTMAN AND WARREN A. WITHAM.

IMPROVED EVAPORATING-PANS FOR SACCHARINE JUICES.

Specification forming part of Letters Patent No. 34,469, dated February 18, 1862.

To all whom it may concern:

Be it known that I, WILLIAM E. PRALL, of Mainville, Warren county, Ohio, have invented a new and useful Improvement in Saccharine Evaporators; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawings, making part of this specification.

The object of my invention is the provision of an effective portable battery within the means and comprehension of any farmer, and capable in one furnace of rendering clear sirup directly from the crude sap.

Figure 1 is a perspective view of a battery embodying my improvements. Fig. 2 is a perspective view of the furnace without the pans.

The furnace A is made highest at the part A', intended for the fire, and thence descends by steps to the chimney B.

C is a long shallow pan situated immediately over the fire-place A', and separated by transverse partitions D into a series of compartments, *c, c' c'' c''' c''''*, &c. Apertures *d* at foot of partitions D alternately at their end and middle portions permit the passage of the lowest stratum of sap, while compelling it to flow in a meandering course.

E is a trough to receive the scum which the operator from time to time skims off the liquor in the evaporating-pans. *e* is a discharge-pipe for said scum.

F F' are two defecating or settling pans removed from contact with the fire and situated a little lower than the evaporating-pan C. Gate-guarded ducts G conduct alternately into the respective reservoirs F and F' portions of the first boiling from the bottom of the last compartment of pan C. The liquor in each defecator in succession, when all its heavier impurities have been precipitated, is decanted through gate-guarded ducts H into the reservoir or second boiling-pan, I, which pan is situated a little lower than the defecators. Gate-guarded spouts J enable the discharge of sediment from either defecator after the decanting of the clear liquor. A gated duct, K, enables liquor to be emptied from the reservoir J into the teache or last boiler L, which boiler is situated lower than said reservoir and over the coolest part of the furnace. A draft-plate, M, and damper N enables the fire to be directed either against the bottom of the teache or not, as may be desired. Breasts

or fenders O protect from a too intense heat the sides of the reservoir and teache nearest to the fire.

For convenience of illustration, the pan C is shown much shorter and its partitions fewer than in the working-machine, in which about twenty-four partitions are used.

By the above means the crude feculent portions of the sap are prevented from mixing with the partially inspissated and clarified liquor, which prevents the taint and discoloration incident to the scorching of the impurities, which always occurs more or less when the unskimmed and turbid sap is allowed to mingle with the sirup. The defecators being isolated from the fire, while in close proximity and intermediate in height to the first and second boilers, enables the complete removal of sediment before the final inspissation. The removal of the sediment is deemed of essential importance before the final boiling, as removing the most prevalent source of discoloration and taint. The use of two such settling-pans in the position shown enables the use of one for settling while the other is being decanted, cleansed, and refilled.

The suit of pans being complete as a whole may be furnished as an article of manufacture, and a simple furnace of masonry being prepared the pans may be placed upon it or removed therefrom at will.

I claim as new and of my invention herein—

1. A series of evaporating-pans descending from the front of the furnace to the chimney, as herein shown and described.

2. In the described combination with a descending series of evaporating-pans, the arrangement of side defecators, F F', isolated from the fire, and communicating with the first and second evaporating-pans, in the manner and for the objects stated.

3. While disclaiming the general use of guards or shields to protect heating-surfaces from too intense or direct action of the fire, I claim the fenders O when used in the described connection with a series of evaporating-pans descending from the front toward the chimney.

In testimony of which invention I hereunto set my hand.

W. E. PRALL.

Witnesses:

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