

UNITED STATES PATENT OFFICE.

SILAS B. MAULSBY, OF MUNCIE, INDIANA.

IMPROVED EVAPORATOR.

Specification forming part of Letters Patent No. 56,585, dated July 24, 1866.

To all whom it may concern:

Be it known that I, SILAS B. MAULSBY, of Muncie, Delaware county, State of Indiana, have invented a new and useful Improvement in Portable Evaporators; 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, in which—

Figure 1 is a top or plan view of my improved portable evaporator. Fig. 2 is a vertical longitudinal section of the same, taken through the line *x x*, Fig. 1. Fig. 3 is a detail sectional view taken through the line *x' x'*, Fig. 1. Fig. 4 is a detail sectional view taken through the line *y y*, Fig. 1. Fig. 5 is a detail sectional view taken through the line *z z*, Fig. 1.

Similar letters of reference indicate like parts.

My invention has for its object to furnish an improved evaporator by means of which a superior article of molasses may be manufactured from cane-juice; and it consists, first, in a portable furnace; second, in the combination of a graduated self-straining step-pan with the furnace; third, in the combination, with the graduated step-pan and with the furnace, of a system of revolving finishing-pans supported by and revolving upon cranes, the whole being constructed and arranged as hereinafter more fully described.

A are the furnace doors. B is the fire-grate, and C the ash-pit.

D is the opening in the front of the furnace into the ash-pit. This opening may be closed by a door or damper in the ordinary manner, if desired.

E is a partition extending through the back part of the furnace, for the purpose of keeping the heat away from the finishing-pans, when desired, by changing the direction of the draft, and instead of allowing the draft to pass between the partition E and the bottom of the pans to compel it to pass between the said partition E and the bottom F of the furnace.

G is the chimney or flue, into which there is an open passage both from above and below the partition E.

H is a damper, by means of which the draft

is made to pass above or below the partition E, as desired. This damper is pivoted to the sides of the furnace, one end of this pivoting-rod passing through and being bent up, so as to form a handle or crank for operating the damper. When this damper is closed the heat and other products of combustion are made to pass into the chimney G beneath the partition E; but when the damper is open the finishing-pans will be exposed to the full force of the heat.

The step-pans I are so arranged that each succeeding pan, as you pass back from the front of the furnace, is a little lower than the preceding one.

The partitions J, between the pans *i'* and *i''*, *i'''* and *i''''*, and *i''''''* and *i''''''''* are made in the form represented in Fig. 4—that is to say, they are highest in the center and lowest at their ends, as shown. The partitions K, between the pans *i''* and *i'''*, *i''''* and *i''''''*, and *i''''''''* and *i''''''''''*, are made in the form represented in dotted lines in Fig. 5—that is to say, they are lowest in the middle, as shown.

L are strainer-gates, which may be set at any desired elevation, so as to allow the pure juice to flow or boil over the lowest part of the partitions K and yet keep back all the scum. The juice is put into the pan *i'* and the fire started. As the juice comes to the boil it flows over the partition J into the pan *i''*. It flows across this pan and over the partition K into the pan *i'''*, the scum being prevented from passing over with the juice by the strainer-gate L. In this way the juice passes on from one pan to another, becoming more and more evaporated until it reaches the pan *i''''*. From this pan it flows through the short pipe M into the revolving finishing-pans N. This pipe should be provided with a stop-cock to stop the flow of the sirup while the pans N are being revolved. At all other times it should be allowed to flow slowly into one or the other of the pans N.

O are arms attached to the side of the furnace in such a position that when one of the pans N may be in position on the furnace another may be in position for receiving the sirup from the pan *i''''*, as shown in Fig. 1.

P is a shaft or bar supported in a vertical position by the arms O. Upon the top of this bar or post P is pivoted a block, R, through

which pass and in which revolve the horizontal arms S' S². To the ends of the arms S' S² are immovably attached cranks T. The cranks, at opposite ends of the arms, project in opposite directions, as shown in Figs. 2 and 3, so that when the pan N, at one end of the arm, is raised the one at the other end will be lowered. To these cranks are pivoted the upper ends of the hooks U, by means of which the pans N are suspended, the said pans being furnished with bails and eyes for convenience in suspending and removing them.

V are cranks attached firmly to the arms S' S², by means of which the said arms are revolved to raise or lower the pans N.

W are springs attached to the block R, which catch into notches in small wheels X, attached to the arms S' S², to hold them in position,

with one or the other pan raised, as may be desired.

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

1. The graduating self-straining step-pan I, constructed substantially as herein described, in combination with the furnace, for the purposes set forth.

2. The revolving finishing-pans N, supported by and revolving upon cranes, substantially as herein described, in combination with the step-pan I and with the furnace, for the purposes set forth.

SILAS B. MAULSBY.

Witnesses:

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D. H. CEIS.