J. M. TRUMBO.

Evaporating-Pan.

No. 166,656. Patented Aug. 10, 1875.

Fig. 1.

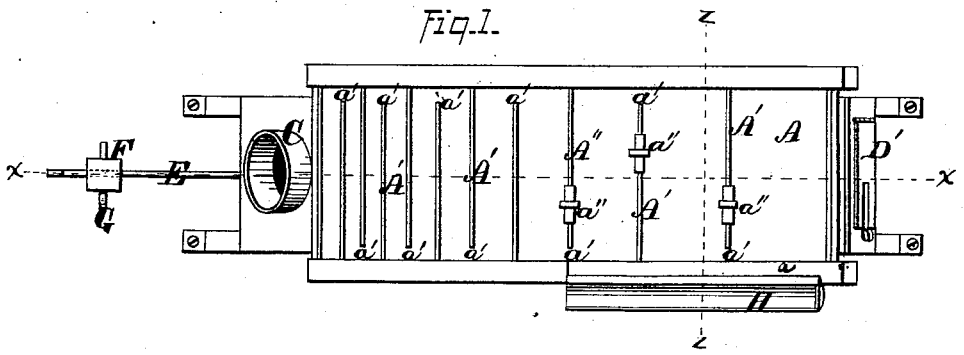


Fig. 2.

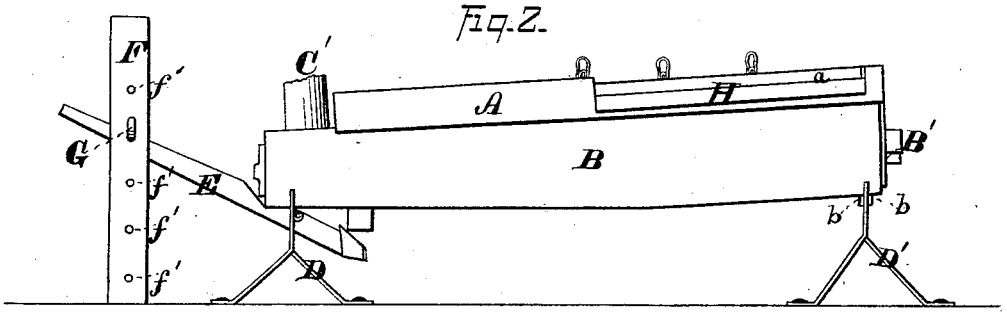


Fig. 3.

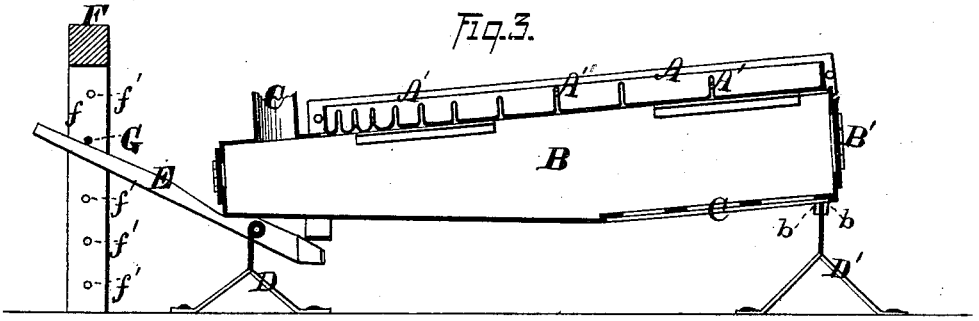
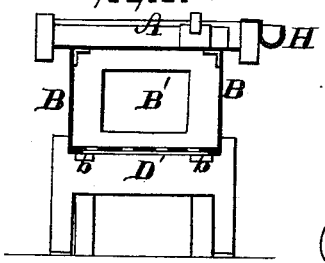


Fig. 4.



WITNESSES:

Jas. E. Hutchinson

John R. Young

INVENTOR.

Jno. M. Trumbo, by

Prindle and Lay his Attys.

UNITED STATES PATENT OFFICE.

JOHN M. TRUMBO, OF METROPOLIS CITY, ILLINOIS.

IMPROVEMENT IN EVAPORATING-PANS.

Specification forming part of Letters Patent No. **166,656**, dated August 10, 1875; application filed May 3, 1875.

To all whom it may concern:

Be it known that I, JOHN M. TRUMBO, of Metropolis City, in the county of Massac and in the State of Illinois, have invented certain new and useful Improvements in Evaporators for Saccharine Juices; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is a plan view of the upper side of my improved apparatus as arranged for use. Fig. 2 is a side elevation of the same, the dotted lines showing the position of parts when the rear end of the apparatus is elevated. Fig. 3 is a vertical section upon line *x x* of Fig. 1, and Fig. 4 is a cross-section upon line *z z* of said figure.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to facilitate the evaporation of sorghum or other saccharine juices; and it consists, principally, in the means employed for adjusting vertically the rear end of the apparatus, by means of which a greater or less inclination of the evaporating-pan is secured, and the flow of juice through the same correspondingly accelerated or retarded, substantially as and for the purpose hereinafter specified. It consists, further, in the means employed for removing and storing the scum which rises upon the surface of the boiling liquid contained within the evaporator, substantially as is hereinafter shown. It consists, further, in the relative arrangement of the cross-partitions within the evaporating-pan, substantially as and for the purpose hereinafter set forth. It consists, further, in the means employed for varying the dimensions of the openings at the ends of the cross-partitions, substantially as and for the purpose hereinafter shown and described.

In the annexed drawing, A represents my evaporator-pan, constructed wholly or in part of metal, having, preferably, a rectangular form in plan view, as seen in Fig. 1, and made comparatively shallow, as shown by Fig. 3. The pan thus constructed rests upon and is supported by a sheet-metal furnace, B, which has the general shape shown in Figs. 1 and 3, is somewhat narrower than said pan, and at its rear end extends beyond the same sufficiently to furnish a smoke-flue, C, to be placed upon its upper side. The upper side of the furnace B is open at all points covered by the pan A, so as to permit the heated gases of combustion within the former to come into direct contact with the bottom of the latter. The sides and bottom of said furnace are suitably lined with fire-brick or other like material, which will prevent downward and lateral radiation of heat, except near its front end, where a grate, C′, is provided. Fuel is introduced through a door, B′, at the front end of said furnace. The ends of the furnace rest upon and are supported by means of two horses, D′ and D, the first of which, D′, is considerably higher than the other, and supports the front end of said furnace. Suitable lugs, *b* and *b*, secured to the bottom of said furnace, upon each side of the upper edge of the horse D, insure the longitudinal position of the former upon the latter.

In order that the rear end of the apparatus may be raised or lowered, so as to change the inclination of the evaporating-pan A, a lever, E, is pivoted to or upon the upper side and at the longitudinal center of the lowest-horse D, its longest end being outward, and its shortest end beneath and in contact with the bottom of the furnace B, so that by depressing said outer end said furnace end will be raised. A post, F, provided with a central longitudinal slot, *f*, is placed vertically near the rear end of the furnace B, and in such position as to enable the outer end of the lever E to project through said slot. A series of openings, *f′ f′* &c., are provided horizontally within said post, each of which will permit a pin, G, to be passed through the same. When, now, the lever is manipulated, so as to raise the end of the furnace, said lever may be locked in position by inserting the pin G within the opening *f′* next above the outer end of said lever, and permitting the latter to rest against the same, the construction named enabling the apparatus to be adjusted to and secured at any desired inclination.

In order that the flow of the liquid being evaporated may be regulated between the upper and lower ends of the pan A, a series of cross-partitions, A′ and A′, are secured to the

bottom of the same, and extend from one side of said pan nearly to the opposite side, a space, a', being left between the latter and the end of said partition for the passage of the liquid, said spaces being alternately placed at opposite sides of said pan. The distance between the adjacent partitions decreases regularly from the upper to the lower end of the pan, and for each of the upper partitions is provided a gate, a'', which embraces the sides of the same, extends from the bottom of said pan above said partition, and may be moved longitudinally thereon, so as to partly or wholly close the opening a' between its end and the side of said pan, and thereby partially or entirely arrest the flow of liquid through said opening. The central partition A″ is made considerably higher than the others, and from the same to the head of the pan A one of the sides of the latter is reduced in height, as seen in Fig. 2. A trough, H, is secured to or upon the outer side of said pan, in such position as to cause it to receive any liquid that passes over said reduced portion of its side. The high partition A″ prevents scum from passing to the lower end of the pan A, and enables the same to be drawn over the side of said furnace into the trough H, from which it may be removed at the convenience of the operator.

The apparatus, as constructed, is easy of adjustment, efficient in operation, and may be attended by comparatively unskilled labor.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In combination with the furnace B, pivoted at its front end upon the support D, the lever E, pivoted upon the support D to engage with the rear end of said furnace, and the slotted post F, embracing the outer end of said lever, and provided with the horizontal openings $f'f'$ and pin G, said parts being combined substantially as and for the purpose specified.

2. In combination with the evaporating-pan A, the high central partition A″, the reduced side a, and the scum-trough H, substantially as and for the purpose shown.

3. The cross-partitions A′ A′ within the pan A, forming spaces between each pair, which decrease regularly from the upper to the lower end of said pan, and having the openings a' alternately upon opposite sides of the latter, substantially as and for the purpose set forth.

4. In combination with the partition A′, having the opening a', the gate a'', constructed to slide longitudinally upon said partition, and to close said opening, substantially as and for the purpose shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 28th day of April, 1875.

JOHN MUTIUS TRUMBO.

Witnesses:

A. D. DAVIS,

J. L. GEBHART.