

H. F. BARTLETT.

Evaporating Pan.

No. 49,694.

Patented Sept. 5, 1865.

Fig. 1.

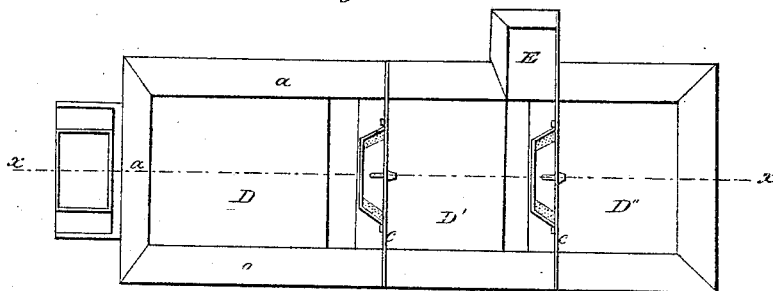


Fig. 2.

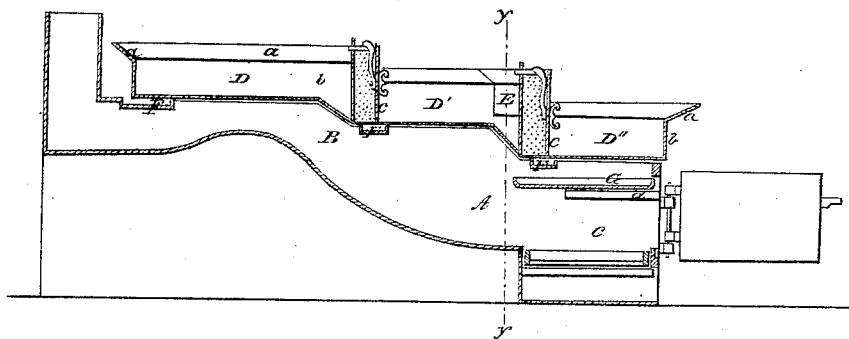
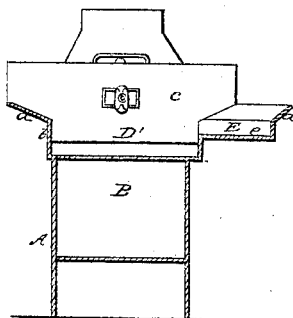


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

H. F. BARTLETT, OF LA GRANGE, MISSOURI.

IMPROVED EVAPORATING-PAN.

Specification forming part of Letters Patent No. 49,691, dated September 5, 1865.

To all whom it may concern:

Be it known that I, H. F. BARTLETT, of La Grange, in the county of Lewis and State of Missouri, have invented a new and Improved Pan for Evaporating Sugar; 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 a part of this specification, in which—

Figure 1 is a plan or top view of my invention; Fig. 2, a side sectional view of the same, taken in the line *xx*, Fig. 1; Fig. 3, a transverse vertical section of the same, taken in the line *yy*, Fig. 2.

Similar letters of reference indicate like parts.

This invention relates to certain improvements in a sugar-pan for which Letters Patent were granted to me bearing date October 18, 1864.

The invention consists in a modification of the construction of the pan, whereby the juice is prevented from boiling over; and also in the employment or use of a skimming-chamber, applied to any or all of the compartments of the pan; and in the application of air-tubes and plates to prevent the burning or scorching of the juice, as hereinafter fully shown and described.

A represents a furnace, which may be of masonry or cast-iron, B being the flue and C the fire-chamber thereof.

The pan is composed of three compartments, D D' D'', and is placed upon the furnace, the flue B running underneath the whole length of the same, as shown clearly in Fig. 2. The several compartments D D' D'' are constructed or formed with flanges *a*, which flare outward and upward and serve to prevent the juice from boiling over, as said flanges increase the capacity of the compartments in a remarkable degree above the upper edges of their vertical sides *b*, while they do not increase materially the depth of said compartments. Thus by this simple means the contingency of the boiling over of the juice is effectually prevented.

E represents a compartment or chamber which is at one side of the compartment D' of the pan. This chamber E communicates with the compartment D', and it has its bottom *c* a

trifle above the bottom of D'. The scum collects in this chamber E, and may be readily removed by an ordinary hand-skimmer. There may be a chamber E to each compartment of the pan, and in case the latter is quite broad there may be a chamber E at each side of each compartment, said chamber being also provided with the flanges *a*.

F represents air-tubes which pass transversely underneath the pan, one underneath each partition-plate *c* thereof. These air-tubes, in consequence of the currents of cold air passing through them, prevent any scorching of the juice by the sides of the partitions. These tubes may be of sheet or cast iron.

Directly over the fire-chamber C there is a plate, or a shallow pan, G, may be used in certain cases. This plate or pan rests on cleats *d* at each side of the fire-chamber, so that it may be readily placed in the fire-chamber and withdrawn from it. It is used when the sirup becomes thick enough to be in danger of scorching. This plate or pan, it will be seen by referring to Fig. 2, is directly underneath the compartment D'' of the pan, in which compartment the finishing or completion of the evaporating process is carried on, and in which the sirup or juice is comparatively thick, and therefore in greater danger of being burned or scorched. The plate or pan is a short distance below the bottom of the compartment D'', so that a hot-air chamber is formed between the plate or pan and the bottom of said compartment, and consequently all danger of burning or scorching the sirup or juice avoided.

I design to use a plate during the evaporating process, and when the latter is completed draw out the plate and insert a shallow pan in its place filled with water. The sirup of course cannot burn when the water is cold, and when it becomes heated the steam will condense or form a "sweat" on the bottom of compartment D'', which will effectually prevent the burning of said part of the pan when the sirup is drawn off from compartment D''. This compartment is filled by opening the gate of the compartment D' adjoining it, one compartment being filled from the other, and when the compartment D'' is first filled the plate or pan is removed, so that the direct heat of the fire may be obtained during the boiling operation,

the plate and pan being again inserted in the fire-chamber when the sirup in D'' is reduced to the required thickness to need it. This method of finishing directly over the fire is a great saving of time, there being no dampers to turn in order to check the fire; and even when the plate or pan is in place the boiling in the compartments D D' will not be checked in the least.

The sides of the pan may be made of wood, the bottom being of metal. The pan, however, may be wholly constructed of metal, if desired.

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

1. The pan provided with flaring or inclined flanges *a* around the vertical sides, and with

terraced bottom and partitions, arranged substantially as and for the purpose herein set forth.

2. The side or scum chambers, E, the bottoms of which are a little higher than that of the pan, communicating with one or any or all of the compartments of the same, substantially as and for the purpose specified.

3. The transverse air-tubes F, placed in the upper part of the furnace underneath the pan, immediately in front of the sloping portions of the bottom, as and for the purpose specified.

H. F. BARTLETT.

Witnesses:

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