BARTLE & PUTNEY.

Evaporating Pan.

No. 45,667. Patented Dec. 27, 1864.

Fig. 1.

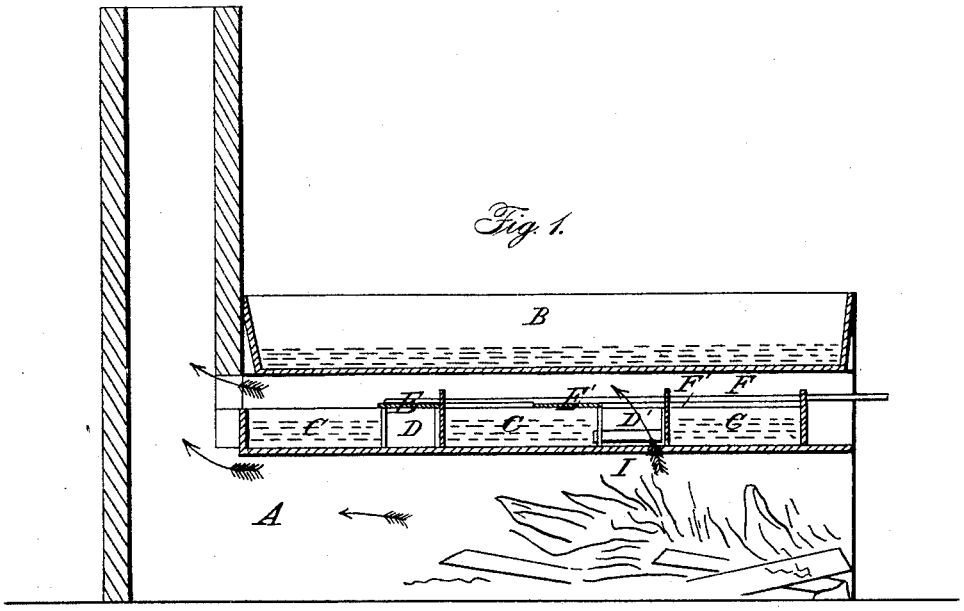


Fig. 2.

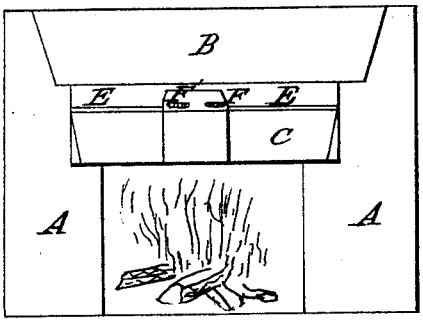
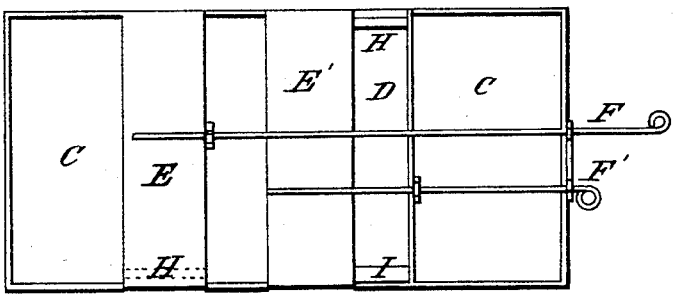


Fig. 3.



Witnesses:

Alonzo J. Snow

Chas. E. Baker

Inventor:

T. C. Bartle

C. F. Putney

by Coburn & Morris

Attys

UNITED STATES PATENT OFFICE.

T. C. BARTLE AND C. F. PUTNEY, OF INDEPENDENCE, IOWA, ASSIGNORS TO T. C. BARTLE.

IMPROVEMENT IN STEAM-PANS FOR EVAPORATORS.

Specification forming part of Letters Patent No. **45,667**, dated December 27, 1864.

To all whom it may concern:

Be it known that we, T. C. BARTLE and C. F. PUTNEY, of Independence, in the county of Buchanan and State of Iowa, have invented a new and useful Improvement in Steam-Pans for Evaporators; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and the letters and figures marked thereon, which form part of this specification.

In the said drawings, Figure 1 represents a longitudinal vertical section of our invention; Fig. 2, a front or end view thereof, and Fig. 3 is a plan view of the steam-pans detached from the evaporator.

The same letters of reference in the different figures denote corresponding parts of our invention.

The nature of our invention consists in the employment of a series of steam-pans arranged transversely beneath the main evaporating-pan, between it and the fire, with suitable intervening spaces between said steam-pans, provided with adjustable slides or dampers, whereby the said spaces may be gradually opened or closed.

The object of our invention is to prevent the sirup from being burned or scorched by the action of the fire when the juice has been evaporated to that point where the danger of burning or scorching intervenes, as the aforesaid dampers may then be adjusted so as to cover or close the said spaces intervening between the steam-pans, and thus entirely exclude the fire from the evaporating-pan, and so continue the evaporating process to any desired point by the action of steam alone. By this arrangement it will also be observed that whenever it is desired to increase the temperature of the boiling mass the object can be accomplished by gradually opening said slides or dampers and allow the heat and fire to pass up through the said spaces, and thus supercharge the steam with heat, and so hasten the process of evaporating without any danger of burning; for by the arrangement of said dampers the heat passes up the entire width of the evaporating-pan, and as the steam rising from the steam-pans passes back to go out of the flue or chimney it effectually intermingles and incorporates itself with the fiery heat, and tones down the same, and prevents it from scorching or burning the sirup.

To enable those skilled in the art to understand how to construct and use our invention, we will proceed to describe the same with particularity, reference being made to the aforesaid drawings.

A represents the arch in which the evaporating-pan is placed, (marked B,) and C C C represent a series of pans arranged beneath the evaporating-pan B, as shown, said pans being equal in length to the width of the evaporating-pan, and sufficient in number so that the series, including the intervening spaces, (marked D D′,) shall equal the length of the evaporating-pan. These pans C are to be partially filled with water, so that the steam arising therefrom may heat the upper pan and evaporate the contents.

E E′ represent the slides or dampers for regulating and closing the spaces D D′, and are provided with the rods F F′, projecting at the front of the apparatus, whereby the said slides may be readily adjusted upon the spaces.

H H represent pipes connecting the several pans C, so that the whole series may be supplied with water by pouring in at the pan at the front part of the apparatus.

I I represent two shoes passing under the ends of the steam-pans, and to which they are attached, so that the whole series may be withdrawn from or placed beneath the evaporating-pan, as may be desired, so that at the commencement the whole heat from the fire may come in contact with the same, and when the danger of burning arises the steam-pans may be introduced and the danger controlled and prevented, as aforesaid. By opening the slides E E′ and allowing the heat to pass up through the spaces D D′ the evaporation is rendered much more rapid, while at the same time there is no danger of burning the sirup, for the steam and heat from the fire, owing to the aforesaid arrangement of the spaces and slides, must thoroughly intermingle, and while the steam is supercharged with the heat passing up through the spaces, at the same time the effect of the steam upon the heat is such as to prevent its burning the sirup.

The arrangement of the dampers upon the

spaces we consider an important one, for if the slides were moved over the said spaces longitudinally with respect thereto, then part of the spaces would be wholly closed and the other end would be wholly open. The result would be that one side of the evaporating-pan would be heated entirely by steam and the other side thereof entirely by the fire, the column of heat passing through the open end of the space remaining isolated, and the steam passing around the same and escaping unmingled. This objection is wholly obviated by our invention.

We do not limit our invention to its application to the evaporating of saccharine juices; but it may be applied to all similar and analogous uses.

Having described our improvement, we will now specify what we claim as new and desire to secure by Letters Patent—

The employment of a series of steam-pans, C C C, provided with the slides E E′ for closing the spaces D D′, in combination with the evaporating-pan B, arranged and operating substantially as and for the purposes herein shown and described.

T. C. BARTLE.
C. F. PUTNEY.

Witnesses:
WM. A. CHATFIELD,
W. H. TULLIS.