A. H. PERRY.

Evaporating Pan.

No. 38,759. Patented June 2, 1863.

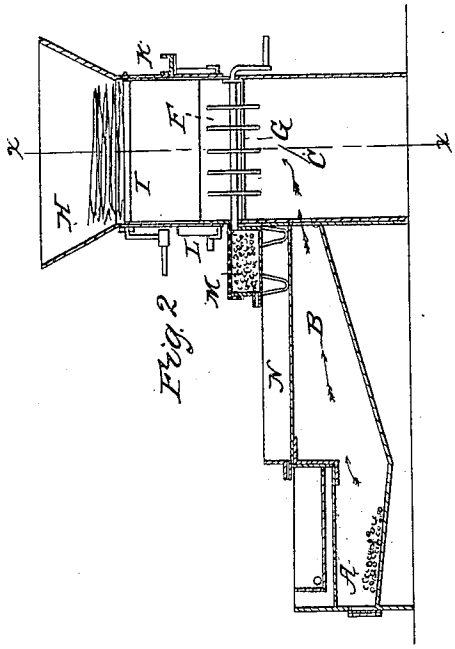


Fig. 2

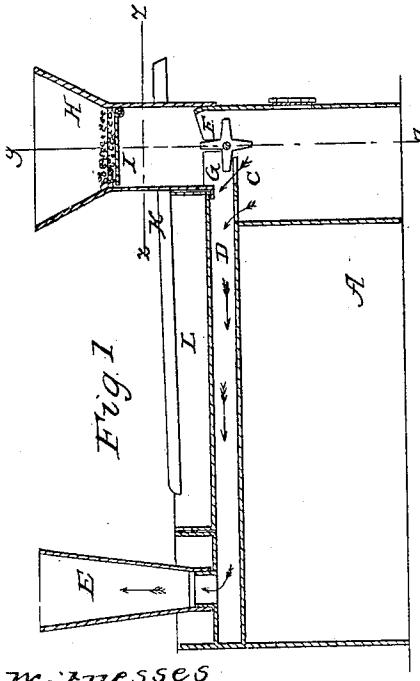


Fig. 1

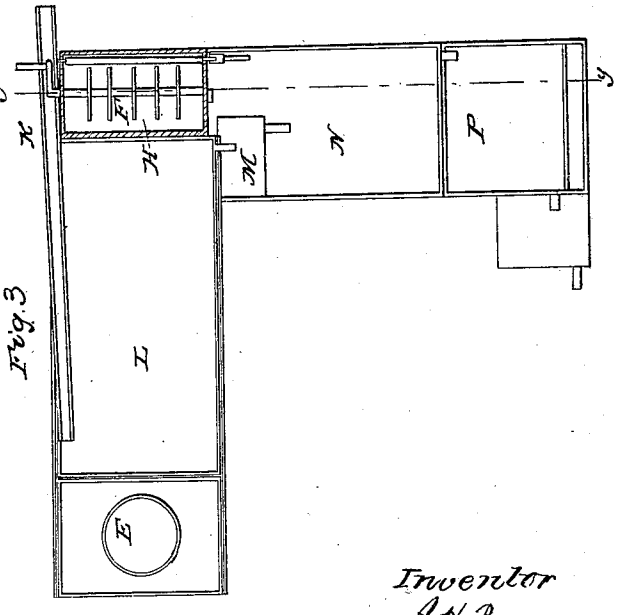


Fig. 3

Witnesses
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UNITED STATES PATENT OFFICE.

A. H. PERRY, OF TIPTON, IOWA.

IMPROVEMENT IN FURNACES OF SUGAR-EVAPORATORS.

Specification forming part of Letters Patent No. **38,759**, dated June 2, 1863.

To all whom it may concern:

Be it known that I, A. H. PERRY, of Tipton, in the county of Cedar and State of Iowa, have invented a new and useful Improvement in Evaporators for Saccharine Liquids, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 represents a longitudinal vertical section, the line *x x*, Fig. 2, indicating the plane of section. Fig. 2 is a transverse vertical section taken in the plane indicated by the line *y y*, Figs. 1 and 8. Fig. 3 is a horizontal section of the same, the plane of section being indicated by the lines *z z*, Fig. 1.

The object of this invention is to use bagasse fresh from the crushing-rollers as part of the fuel for heating the juice.

The invention consists in the arrangement of a hopper between the first and second parts communicating at its bottom with a flue through which the blaze from the fire in the furnace passes, said hopper being provided with a trap-door and with a revolving and stationary grate in such a manner that the bagasse thrown into the hopper is first dried while lying on the trap-door in the hopper, where it is exposed to the heat from the fire of the furnace, and when dried the bagasse is pitched down upon the revolving grate, where it is set on fire by the blaze from the furnace, and the heat under the first pan is thereby considerably increased, and the operation of evaporating the juice carried on with a considerable saving in fuel.

The invention consists, also, in combining two furnaces, one to burn coal or wood and to dry the bagasse which serves as fuel for the second furnace.

To enable others skilled in the art to make and use my invention, I will proceed to describe it.

A is a furnace, built up of brick or any other suitable material, for the purpose of burning wood or coal. The heat from the fire in this furnace passes through the flue B to the second furnace, C, and thence through the flue D to the chimney E. The second furnace is provided with a revolving grate, F, which works between or above the stationary grate G, and which serves to stir up the fuel or retain the fuel until dried, when it is dropped on the grate G by turning the grate F. This revolving grate is situated at the bottom of a hopper, H, through which bagasse is fed to the second furnace. The hopper is provided with a trap-door, I, which can be raised to a horizontal position, as shown in Fig. 1, to receive the bagasse, and then turned down to deposit the bagasse on the revolving grate F. This trap-door may be operated by hand or automatically, at certain intervals, by some device connecting it with the power giving motion to the crushing-mill. The bagasse as it comes from the mill is pitched into the hopper and deposited on the trap-door, where it is partially dried by the heat from the fire in the furnace H, and when dry it is dropped down upon the revolving grate, where, after being completely dried, it is dropped and set on fire on the grate G, and increases the heat under the first pan. The juice is conducted through the trough K to the first pan, L, and after it has been boiled and skimmed it is let down through the filter M into the second pan, N, and from this pan into the third or finishing pan, P. The trough K runs down close on the side of the hopper H, where it is exposed to the heat radiating from the side of the hopper, so that the juice is preliminarily heated in passing through said trough and before it reaches the first pan. The finishing-pan P is provided with a double bottom, and the space between the two bottoms is filled with water to prevent burning the molasses when finishing. By combining the two furnaces A and C the bagasse fed to the second furnace is set on fire by the heat from the first furnace, and a considerable saving in fuel is effected. By means of the trap-door the green bagasse is dried before it is deposited on the revolving grate, and its efficiency as fuel is thereby increased. The filter, which is situated between the first and second pans, serves to purify the finally boiled juice, so that the same needs no refining. The position of the several pans in relation to each other gives perfect control to the operator over the juice, and the operation of boiling the juice down can be carried on with little labor, with a great saving in fuel,

and without danger of scorching or overheating.

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

1. The arrangement of the hopper H with a trap-door I and revolving grate F, in combination with the flues B D, leading from the furnace A to the chimney, the whole being constructed and operating in the manner and for the purpose substantially as described.

2. So combining two furnaces, A and C, and their flues B and D that the fuel in the second furnace is dried and set on fire by the heat emanating from the fuel in the first furnace, substantially as set forth.

A. H. PERRY.

Witnesses:
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