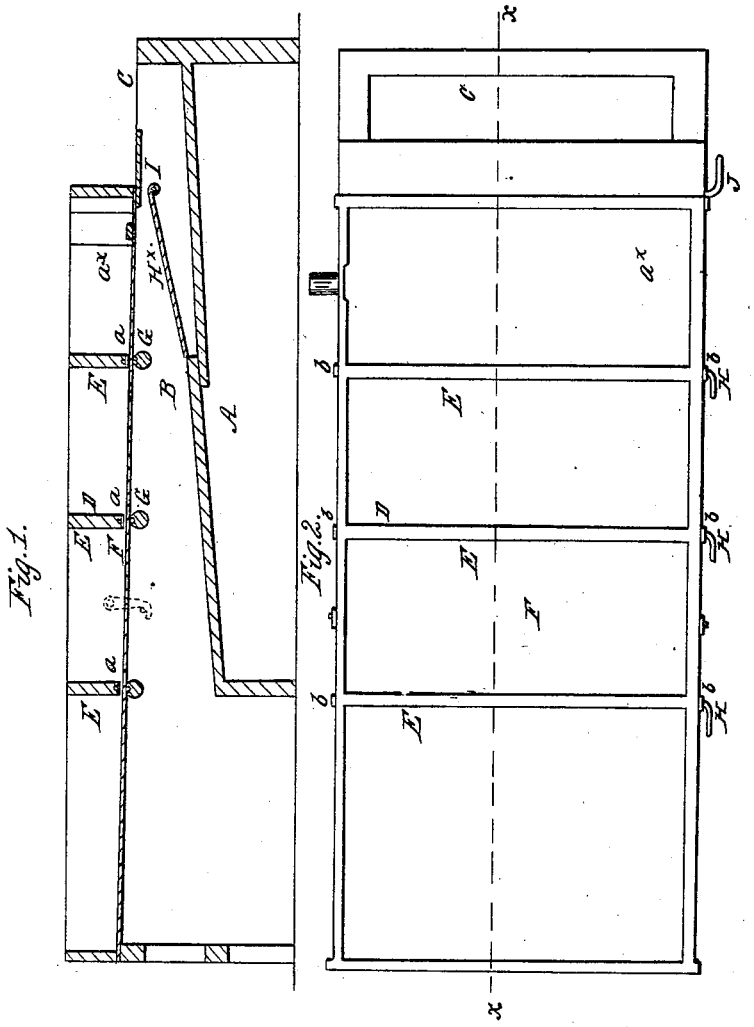
D. REEVES.

Evaporator.

No. 53,873. Patented April 10, 1866.



Witnesses:
Theo Tusch
C. L. Tyloff

Inventor:
David Reeves
By Munn & Co
attys.

UNITED STATES PATENT OFFICE.

DAVID REEVES, OF SOUTH PASS, ILLINOIS.

IMPROVED EVAPORATOR.

Specification forming part of Letters Patent No. **53,873**, dated April 10, 1866; antedated April 7, 1866.

To all whom it may concern:

Be it known that I, DAVID REEVES, of South Pass, in the county of Union and State of Illinois, have invented a new and Improved Sugar-Evaporator; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those 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 side sectional view of my invention, taken in the line *x x*, Fig. 2; Fig. 2, a plan or top view of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to an improved means for transferring the juice or sirup from one compartment of the pan to another, whereby the scum is not allowed to incorporate with the body of the juice or sirup during said transfer; and the invention further relates to an adjustable throat or damper placed in the flue and arranged in such a manner as to graduate the heat under the finishing compartment as occasion may require.

A represents a furnace, constructed of iron or masonry, and B is the flue, communicating with a suitable smoke-stack at C.

D is the evaporating-pan, which is placed in the top of the furnace, and is divided into a series of compartments by transverse boards E, the lower edges of which are grooved and have rolls of cloth or other suitable material, *a*, fitted in them. (See Fig. 1.)

F is the pan-bottom, constructed of sheet-metal and nailed to the bottom of the sides and ends of the pan, but not to the partition-boards E, and underneath the bottom F, in line with each partition E, there is an eccentric-shaft, G. These shafts extend the whole width of the pan, and have their bearings in pendants *b* at the sides of the pan, and are provided at one end with a crank, H, for the convenience of turning them. By means of these eccentric-shafts the communication between the several compartments may be formed or cut off at the will of the operator or attendant, for when the prominent portions of the eccentric-shafts are turned down the bottom F will sag or drop from the lower edges of the partitions E; but when the prominent portions are turned upward the bottom F will be pressed snugly against the lower edges of the partitions E, the cloth or packing *a* effectually preventing any leakage. By this means the juice or sirup is transferred from one compartment of the pan to another in a thin sheet extending the whole width of the pan, and at the bottom of the same, so that the scum at the top during the transfer will not be disturbed, and consequently not incorporated with the body or main portion of the juice or sirup.

The packing *a* is an important feature, as it renders the eccentric-shaft G very efficient in closing the communication between the several compartments.

In the flue B, underneath the last compartment, $a^{\times}$, of the evaporating-pan, which is the finishing compartment, there is placed a damper or an adjustable throat, $H^{\times}$, which is constructed of a metal plate hung at one end on a shaft, I, which passes transversely through the flue, about midway between its bottom and the bottom of the pan. The shaft I has a crank, J, at one end for the convenience of turning or adjusting the damper or throat.

When the free or disengaged end of the damper or throat is turned upward in contact with the pan-bottom the products of combustion and heat from the furnace pass underneath said damper or throat, and consequently the compartment $a^{\times}$ will not be subjected to the full heat from the flue; but when the free or disengaged end of said damper or throat is turned down the products of combustion will pass over or above said damper or throat and receive the full benefit of the heat in the flue. Thus the juice or sirup in the compartment $a^{\times}$ may be subjected to a greater or less heat, as occasion may require, during the finishing process, and the juice or sirup prevented from being burned.

In order to more fully control the heat under the compartment $a^{\times}$, openings or doors may be employed in the sides of the flue at the back of the damper or throat, in order to admit cold air when necessary.

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

1. The employment or use in a sugar-evapo

rating pan of a bottom, F, and partition E, arranged in such a manner that a communication may be formed between the several compartments and the communication cut off when desired by the moving of the bottom in contact with and from the lower edges of the partitions, substantially as specified.

2. The packing *a* inserted in the lower edges of the partitions, substantially as and for the purpose set forth.

DAVID REEVES.

Witnesses:

ISAAC N. PHILLIPS,

E. SILL.