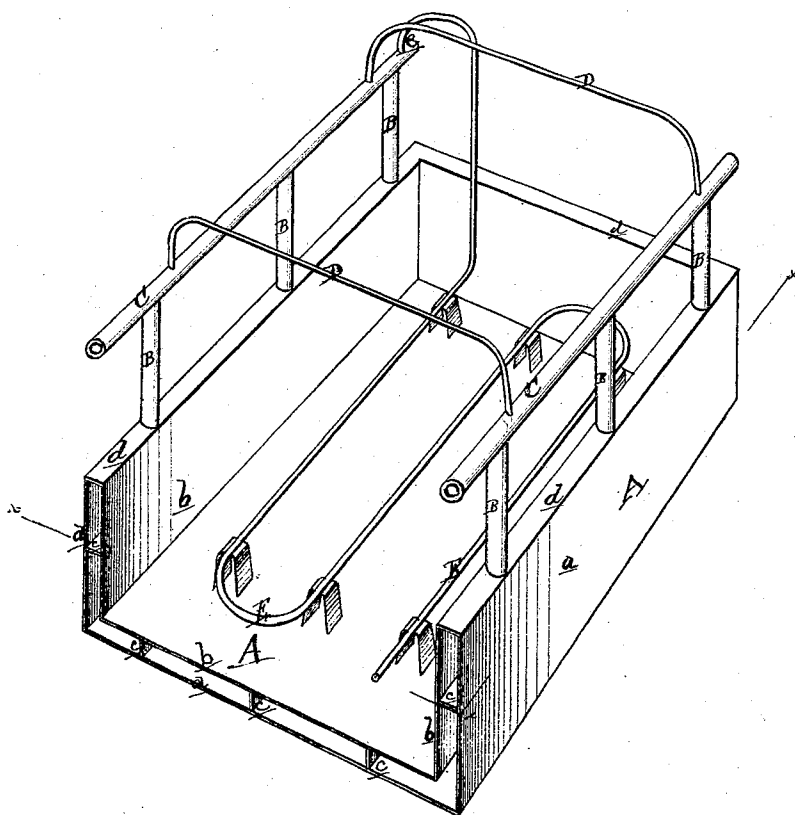


J. Buchanan,

Evaporator.

No. 109802.

Patented Dec. 6. 1870.



Attest

No. Stewart
Frederick Shertis

Inventor

J. Buchanan
per A. H. S.
Thos. S. Sprague

United States Patent Office.

JAMES BUCHANAN, OF DETROIT, MICHIGAN.

Letters Patent No. 109,802, dated December 6, 1870.

IMPROVEMENT IN APPARATUS FOR EVAPORATING BRINE AND OTHER LIQUIDS.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that I, JAMES BUCHANAN, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Steam-Generators and Evaporators, Combined; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon, and being a part of this specification, in which my device is shown in perspective section.

The nature of this invention relates to an improvement in the method of manufacturing salt by steam-evaporation, and to the necessary mechanism for accomplishing that purpose.

The invention consists in the peculiar construction of a steam-generator and evaporator, combined, to be employed in the manufacture of salt, sugar, and other articles which are obtained by evaporation, as more fully hereinafter shown.

In the accompanying drawing—

A represents a steam-generator, which may be of any desired length, set in any suitable fire-arch; and which is constructed as follows:

The generator is constructed in the form of a rectangular pan, with *a* representing the outside, and *b* the inner shell, suitably stayed, as at *c*, to keep the shells in their relative position.

The two shells are closed at their top edges, as at *d*, from which rise steam-pipes, B, connecting the top sides of the generator with the steam-drums C, which, in turn, are connected by steam-pipes D.

By this arrangement of pipes and steam-drums the pressure of the steam is equalized.

The generator, being constructed in the form shown, is a pan, within which the water to be evaporated is placed.

To assist in a more rapid evaporation a coil of pipe may be employed, as shown at E, within the pan, and connecting and receiving steam from one of the steam-drums at *e*.

The generator, being set in any suitable manner over a fire, should be filled with water to the line *x x* in the drawing.

The operation of this device for the purpose described is so simple that a particular description thereof is deemed unnecessary.

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

1. The steam-generator A, constructed in the form of a pan, as shown, of two shells, *a b*, and stayed as described, so that the same will be a steam-generator and an evaporating-pan, as and for the purposes herein set forth.

2. In combination with said steam-generator, the steam-pipes B, connecting the sides of the generator with the steam-drums C and the connecting steam-pipes D, by means of which free communication is had between said steam-drums, as and for the purposes set forth.

3. In combination with said steam-drums, and the pan, when constructed as described, the coil of pipe E, as and for the purposes set forth.

JAS. BUCHANAN.

Witnesses:

M. STEWART,
FREDERICK EBERTS.