

R. Hawley, Jr.,

Evaporator.

No. 111,121.

Patented Jan. 24, 1871.

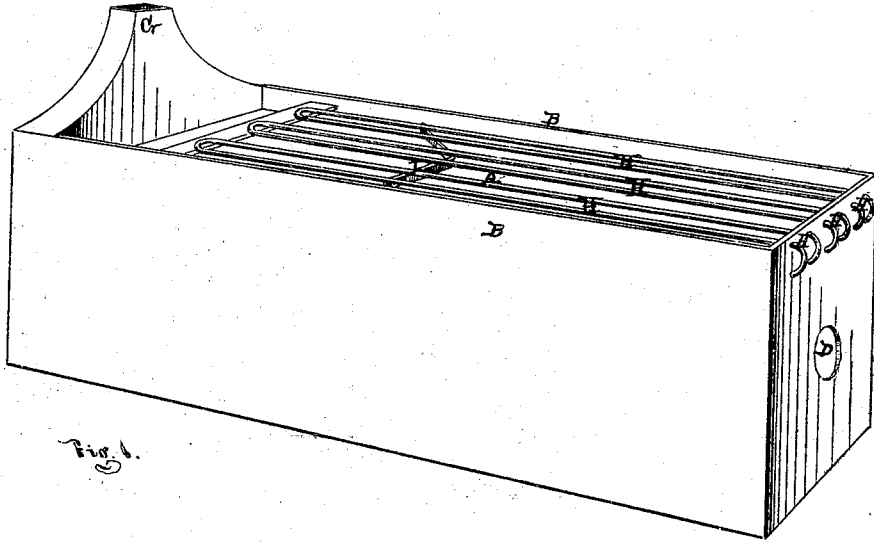


Fig. 1.

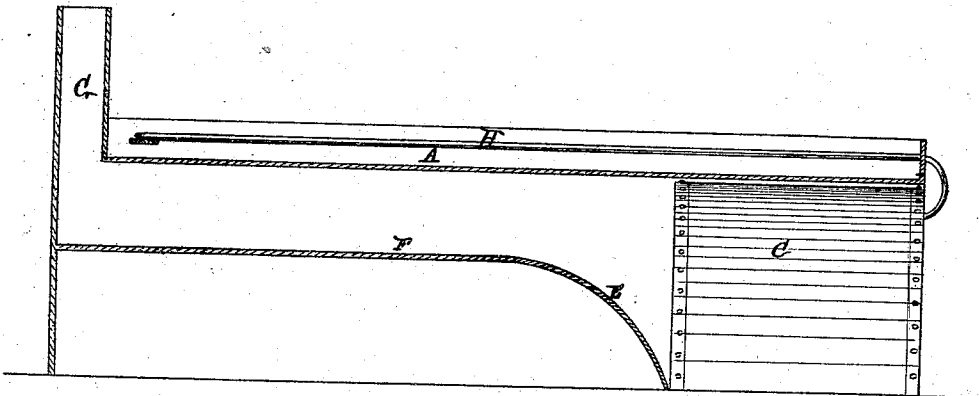


Fig. 2.

ATTEST

A. F. Dumble
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INVENTOR

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RICHARD HAWLEY, JR., OF DETROIT, MICHIGAN.

Letters Patent No. 111,121, dated January 24, 1871.

IMPROVEMENT IN EVAPORATORS.

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

To whom it may concern:

Be it known that I, RICHARD HAWLEY, Jr., of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Evaporators; 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—

Figure 1 is a perspective, and

Figure 2 a side elevation of my invention, with one of the side walls removed.

Like letters indicate like parts in each figure.

The nature of this invention relates to an improved construction of evaporators, the parts so arranged as to utilize the greatest amount of heat from a given quantity of fuel, and so that the direct action of the fire may be had upon the pan, combined with the heat from steam upon the liquid in the pan.

The invention consists in the arrangement and operation of the several parts, as more fully hereinafter described.

In the accompanying drawing—

A represents an evaporating-pan, resting upon the top of the walls B.

C is a cylindrical steam-generator, inclosed within the walls B, and at the front end of the device.

A single flue, D, extends from front to rear of said boiler, and through the center thereof.

E is a bridge-wall, built up immediately in the rear of said generator; and upon the top of said wall rests

the smoke-guide and deflector F, terminating in an exit-flue or smoke-stack, G.

H is a series of steam-pipes communicating with the steam-space in the generator, and thence running through and to the rear end of the evaporator, as shown, and above the bottom thereof, so as to allow the pipes to be entirely surrounded by the liquid in the pan.

I is a triangular scraper, inserted between the steam-pipes and the bottom of the pan, for the purpose of collecting and withdrawing the deposits in the pan.

The fire should be made in the flue D, in the boiler, which should have been previously filled with water, above said flue. The fire heats the water in the boiler and generates steam, which, passing into the steam-pipes, assists in the exaporation of the contents of the pan. The flames, passing through the flue, strike against the bridge-wall and are thrown by the smoke-guide and deflector directly against the bottom of the pan.

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

The arrangement, hereinbefore described, of the evaporating-pan A, walls B, generator C, flue D, bridge-wall E, smoke-guide F, and steam-pipes H, for the purposes set forth.

RICHARD HAWLEY, JR.

Witnesses:

M. STEWART,

GEORGE SNOAD.