

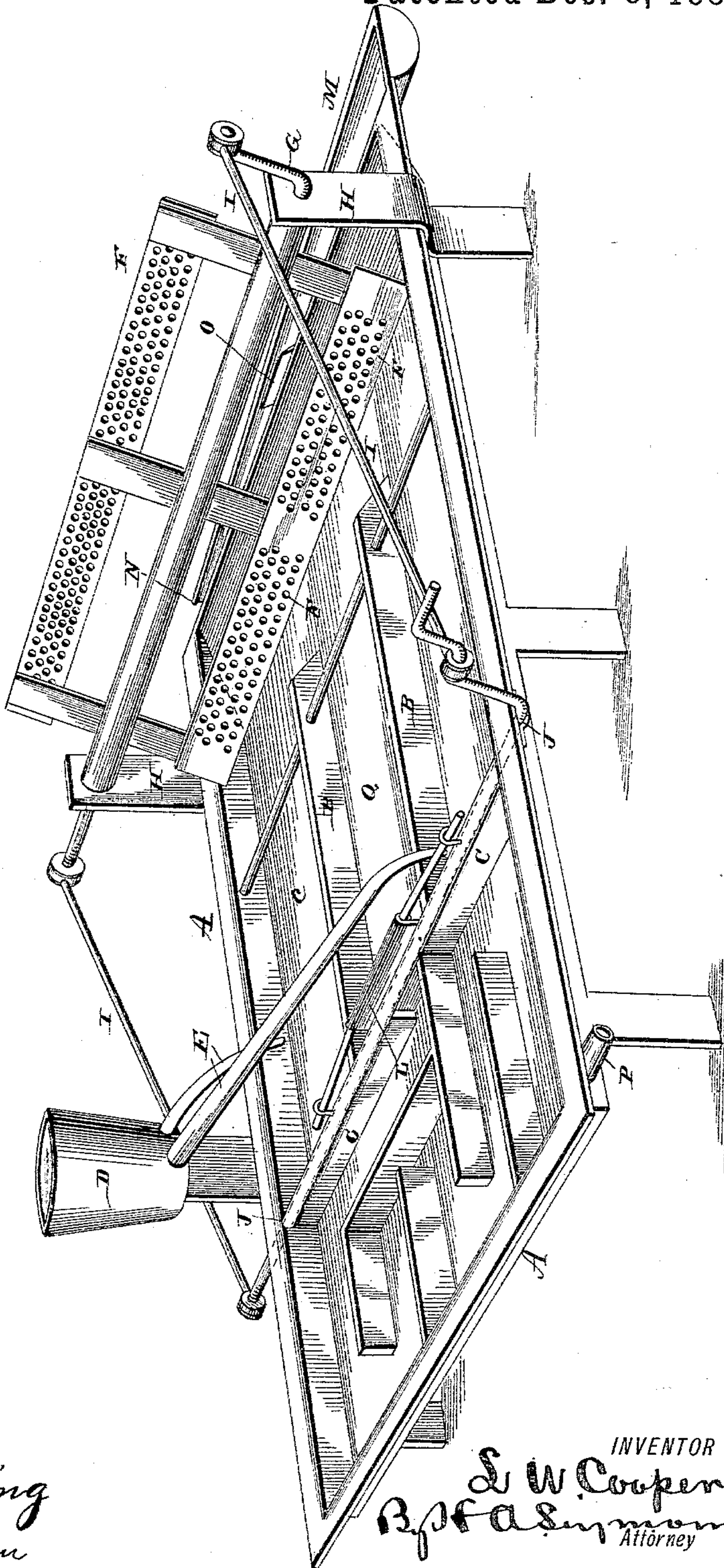
(No Model.)

L. W. COOPER.

EVAPORATOR.

No. 331,867.

Patented Dec. 8, 1885.



WITNESSES
Geo. F. Downing
S. G. Nottingham

INVENTOR
L. W. Cooper.
B. F. A. Symmon.
Attorney

UNITED STATES PATENT OFFICE.

LEVEN WENTWORTH COOPER, OF SMITH'S MILLS, KENTUCKY.

EVAPORATOR.

SPECIFICATION forming part of Letters Patent No. 331,867, dated December 8, 1885.

Application filed March 20, 1885. Serial No. 159,561. (No model.)

To all whom it may concern:

Be it known that I, LEVEN W. COOPER, of Smith's Mills, in the county of Henderson and State of Kentucky, have invented certain new and useful Improvements in Evaporators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in evaporators, and particularly to the class of evaporators designed for the evaporation of saccharine substances.

The object of my invention is to provide improved means whereby the scum which invariably forms on the surface during the process of boiling the sirup may be conveniently and effectually removed.

A further object is to provide means of the above character which shall be simple and economical in construction and durable and efficient in use; and with these ends in view my invention consists in the certain features of construction and combinations of parts, as will be hereinafter fully described, and pointed out in the claims.

The accompanying drawing is a view in perspective of my invention.

A represents the pan, provided with the longitudinally-extending partitions B and the horizontally-extending central partition, C, as shown, thus forming suitable compartments, *c*, for the reception of the sirup. To one side of the pan is attached a tub or other receptacle, D, to the bottom of which are connected the sirup-conveying tubes or pipes E, one of which is connected with the extreme apartment, and the other connects directly with the apartment nearest the tub.

One end of the evaporator is provided with a revolving shaft having the paddles or skimmers F. These paddles are preferably broad and perforated, as shown. The paddles are rigidly secured to the cranked shaft G, which in turn is journaled in the vertical standards H, formed integral with or secured to the side frames of the evaporator. To the cranked ends of the arms G are loosely mounted the pitman-rods I, the opposite ends of the rods being mounted on opposite ends of the cranked rod J, which is suitably journaled to the frame of the evaporator, preferably about the center

thereof. One end of the crank-rod J is provided with a suitable handle, K, by means of which the rod J is operated and the skimmer set in motion. The partition C is provided with a gate, L, for the purpose of regulating the discharge of the sirup to the rear section of the pan.

The forward end of the evaporator is provided with a trough, M, having the open end N, through which the scum is conveyed to any suitable receptacle. The trough M is provided centrally on its inner face with inwardly-projecting lug or arm O, against which the skimmer F is adapted to strike and pass when rotated, thus causing the skimmer to vibrate and jar, whereby the matter which has accumulated thereon will be shaken off and consequently fall into the trough, as described.

The rear end of the pan is provided with a suitable outlet pipe or tube, P, by means of which the sirup after being sufficiently treated is conveyed as desired.

Having described the construction of my device, I will proceed to describe the manner in which the same is operated.

The sirup or juice is emptied into the tub D, from which it is conveyed by means of the pipes into the side compartments, *c*. The sirup flows toward the forward end of the evaporator. It then naturally seeks the central compartment, Q. At this point of its progress the sirup will have engendered a considerable amount of scum. The skimmer or paddle F is then rotated in the direction of the trough, and as the paddle is provided with perforations on its end similar to a sieve the clear juice will percolate therethrough, and the scum and other heavy substances will cling to the face of the paddle until the same is forced against and past the lug O, which process will cause the paddle to vibrate, thus shaking the scum and other substances free from the paddle into the trough. The sirup continues to flow into the compartment Q, from which its flow into the rear section of the pan is regulated by means of the gate L.

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

1. The combination, with an evaporator, of a cranked shaft, a series of perforated paddles or skimmers secured to said shaft, and devices,

substantially as described, for rotating said shaft.

2. The combination, with an evaporator provided with a revolving paddle or skimmer, of
5 a lug or arm adapted to conflict with the paddle, whereby the same is vibrated or jarred, substantially as set forth.

3. The combination, with an evaporator having a trough at its forward end and an upwardly-projecting lug or arm secured thereto,
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of a paddle or skimmer suitably mounted on the evaporator, and means for rotating the same, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

LEVEN WENTWORTH COOPER.

Witnesses:

S. A. YOUNG,

T. H. BEVERLEY.