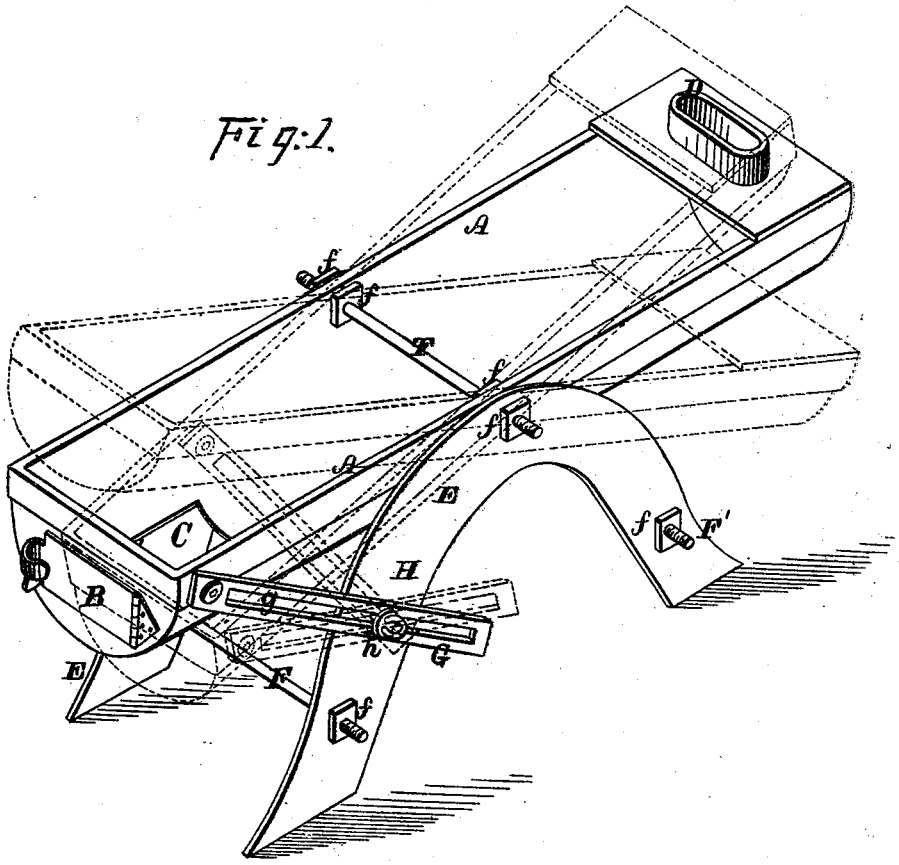
W. M. TOWERS & J. M. BOWIE. 2 Sheets—Sheet 1.

PORTABLE FURNACES FOR EVAPORATORS.

No. 180,677. Patented Aug. 1, 1876.

Fig. 1.



WITNESSES=

Jas. E. Hutchinson

John R. Young

INVENTORS.

Wm. M. Towers and J. M. Bowie,

by Pindle and Co. their attys

2 Sheets—Sheet 2.

W. M. TOWERS & J. M. BOWIE.

PORTABLE FURNACES FOR EVAPORATORS.

No. 180,677. Patented Aug. 1, 1876.

Fig. 2.

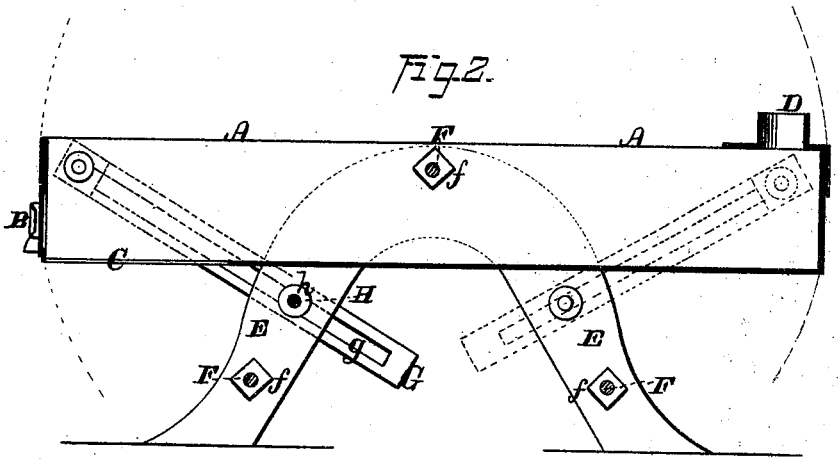
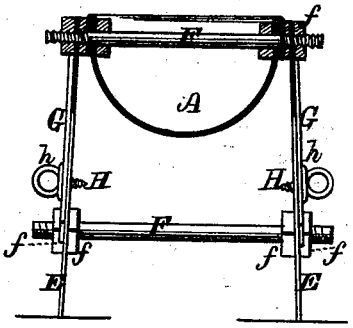


Fig. 3.



WITNESSES:

Jas. E. Hutchinson.

John R. Young

INVENTORS.

Wm. M. Towers and J. M. Bowie,

by Pindle and Lothian attys

UNITED STATES PATENT OFFICE.

WILLIAM M. TOWERS AND JOHN M. BOWIE, OF ROME, GEORGIA.

IMPROVEMENT IN PORTABLE FURNACES FOR EVAPORATORS.

Specification forming part of Letters Patent No. **180,677**, dated August 1, 1876; application filed June 14, 1876.

To all whom it may concern:

Be it known that we, WM. M. TOWERS and JNO. M. BOWIE, of Rome, in the county of Floyd and in the State of Georgia, have invented certain new and useful Improvements in Portable Furnaces for Evaporators; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of our improved device as arranged for use, the dotted lines showing changes of position from a horizontal line; and Figs. 2 and 3 are, respectively, vertical central sections upon longitudinal and transverse lines.

Letters of like name and kind refer to like parts in each of the figures.

The design of our invention is to increase the facility and ease with which portable mechanism for use in evaporating cane-juice, salt-water, &c., may be operated; and

It consists, principally, in an evaporating pan or furnace, suspended at its longitudinal center and upper side upon a pivotal bearing, and capable of being oscillated thereon, so as to depress each end, substantially as and for the purpose hereinafter specified.

It consists, further, in the peculiar construction of the pivotal supporting-frame, substantially as and for the purpose hereinafter shown.

It consists further, in the means employed for securing the pan or furnace in position at any desired angle with relation to the horizon, substantially as and for the purpose hereinafter set forth.

It consists, finally, in the apparatus as a whole, its several parts being constructed and combined to operate in the manner and for the purpose substantially as is hereinafter shown and described.

In the annexed drawings, A represents a pan, which has a length equal to several times its breadth, and is, preferably, made semicircular transversely upon its lower side. The pan A may be employed for the reception of the liquid to be evaporated, or it may constitute the furnace therefor, and the liquid-pan be placed within its upper open side, as is desired; but in the latter case a fuel-door, B, is provided within one end, and a grated opening, C, is formed in its bottom near the same end, while at the opposite end is provided a thimble, D, for the reception of a smoke-pipe. The pan A is supported by or within a frame which is composed of two arch-shaped bars, E and E, that are arranged in parallel lines with their convex edges upward, and are secured together by means of three rods, F, which extend through their central and end portions, and are each threaded at each end, and provided with two nuts, *f* and *f*, that bear upon opposite faces of the bar E through which such end passes. The pan A is suspended upon the central rod F, between the bars E and E, said rod passing through the sides of said pan near their upper edges and at their longitudinal centers, by which arrangement said pan is permitted to oscillate freely, and to be placed at any desired angle with relation to a horizontal line.

Evaporating pans, and furnaces for supporting the same, have heretofore been arranged so as to oscillate upon pivotal bearings placed at or near their longitudinal centers; but in each instance such bearings were placed at or near the lower side of the pan or furnace, so as to cause the principal portion of the weight to be above said bearings, while in the case of our device the weight is entirely below the pivotal bearings, and the motion similar to that of a pendulum, and easily controlled.

The objects sought by thus pivoting the pan centrally are, first, to enable it to be leveled up while the supporting-frame rests upon uneven or sloping ground; second, to enable the pan, when used as a continuous evaporator, to be placed at such angles as will cause the liquid being evaporated to flow with more or less rapidity from the end at which it enters to the point of discharge; and, third, to enable the contents of such pan to be readily discharged and its interior easily cleansed.

In order that the pan A may be secured in position, when adjusted, a bar, G, provided with a longitudinal slot, *g*, which extends nearly to each end, is pivoted at one end to or upon one side of said pan, at its end, and from thence extends inward and downward by the side of the outer face of the contiguous

portion of one of the frame-bars E. A set-screw, H, passing through said slot *g*, with its inner threaded end contained within a correspondingly-threaded opening in said frame-bar E, and its head *h* bearing upon the outer face of bar G, enables the latter to be pressed with such firmness against said frame-bar as to prevent all motion, and to lock said pan in place. We preferably employ two locking-bars, and arrange the same at one end and upon opposite sides of the pan; but, if desired, said locking-bars may be arranged upon the same side of said pan, or four bars may be used, and one pivoted upon each corner of the latter.

The apparatus described may be taken apart, and the frame and locking-bars placed within the pan whenever it is necessary that less bulks should be had, as during transportation and for storage, while to remount said pan, and to arrange it for use, require but little time or labor.

Having thus fully set forth the nature and merits of our invention, what we claim as new is—

1. An evaporating-pan, or a furnace for supporting the same, suspended at its longitudinal center and upper side upon a pivotal bearing, and capable of being oscillated thereon, substantially as and for the purpose specified.

2. In combination with the pan A, the arched bars F and E, rods E, and nuts *f*, substantially as and for the purpose shown.

3. In combination with the centrally-pivoted pan A, the bar G, provided with a longitudinal slot, *g*, and pivoted at one end to or upon said pan, and the set-screw H, passing through said slot, and engaging with the frame-bar E, substantially as and for the purpose set forth.

4. The pan A, frame-bars E, rods F, nuts *f*, slotted bars G *g*, and set-screws H, all constructed and combined in the manner and for the purpose substantially as shown and described.

In testimony that we claim the foregoing we have hereunto set our hands this 29th day of May, 1876.

W. M. TOWERS.
JNO. M. BOWIE.

Witnesses:
SAML. S. STONE,
J. SINCLARE.