

C. A. DESOBRY.
Evaporating Pan.

No. 26,024.

Patented Nov. 8, 1859.

Fig. 1.

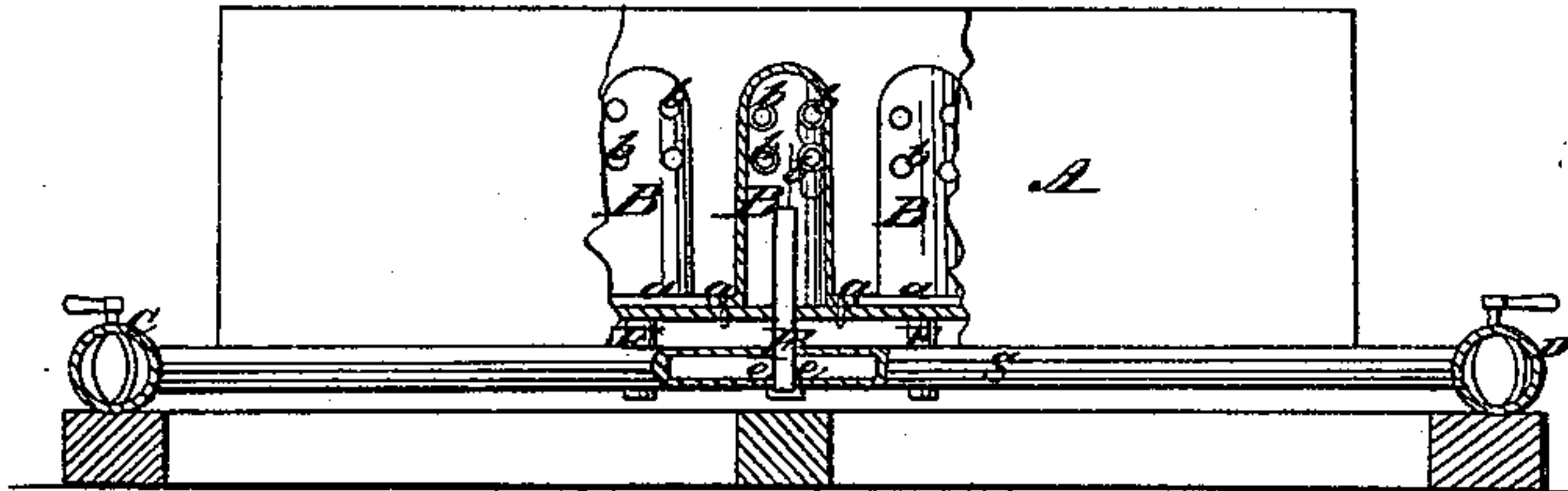


Fig. 2.

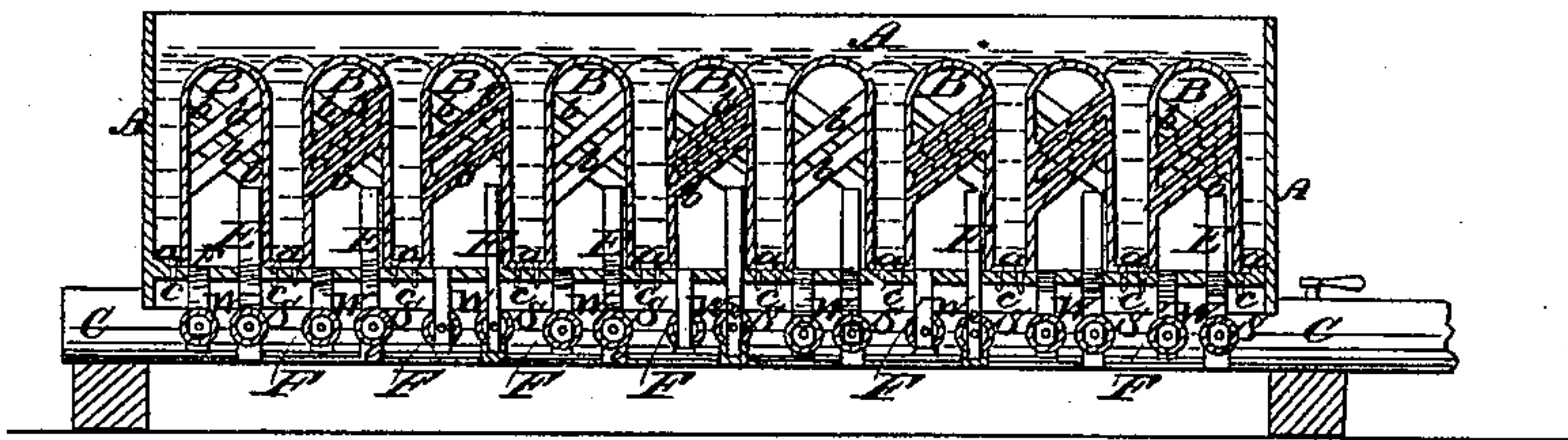
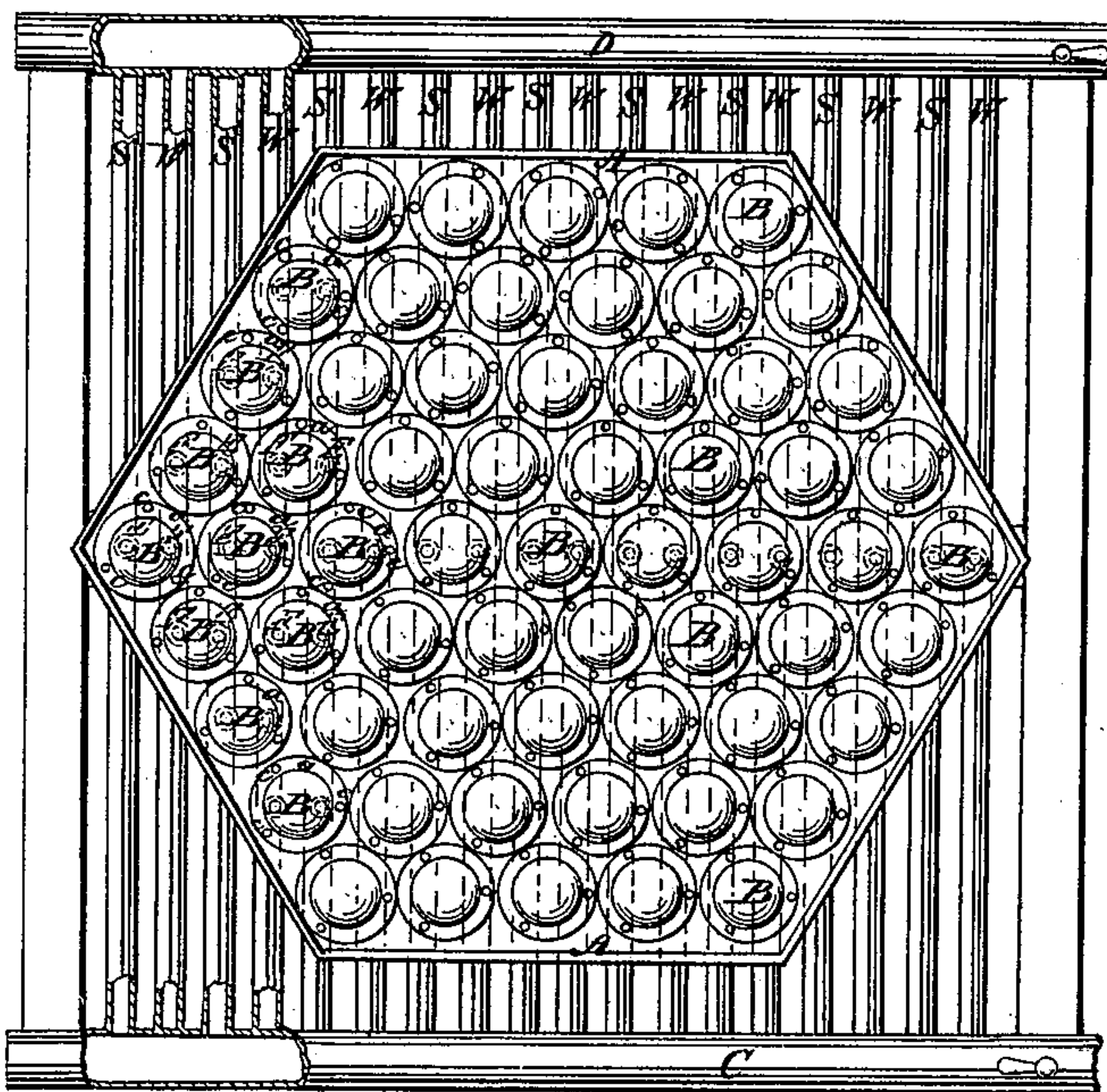


Fig. 3.



Witnesses:

D. B. Starkness
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Inventor:

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UNITED STATES PATENT OFFICE.

CHARLES A. DESOBRY, OF PLAQUEMINE, LOUISIANA.

IMPROVEMENT IN STEAM-PANS FOR EVAPORATING CANE-JUICE.

Specification forming part of Letters Patent No. 26,024, dated November 8, 1859.

To all whom it may concern:

Be it known that I, CHARLES A. DESOBRY, of Plaquemine, in the parish of Iberville and State of Louisiana, have invented a new and useful Improvement in Steam-Pans for Evaporating Cane-Juice or other Liquids; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation, partly in section, of a steam-pan and its appendages constructed according to my invention. Fig. 2 is a vertical section of the same at right angles to Fig. 1. Fig. 3 is a plan of the same.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in a certain novel system of heaters arranged within an evaporating-pan, in combination with a suitable system of connections, with two series of pipes arranged below the pan for supplying steam to the said heaters and conveying away the water of condensation, whereby I am enabled to present an extensive and very effective heating-surface to the liquid or substance within the pan, and to prevent effectively any collection of water upon the said surfaces.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the pan, which may be of cast-iron or other metal, and is represented of polygonal form in its transverse section, though it may be of other form.

B B are the heaters, made of copper or other metal in the form of inverted cups, with dome-shaped tops, and with flanges *a a* round their bottoms, said flanges being countersunk into the bottom of the pan and riveted thereto by rivets *c c*, which are countersunk into the flanges, so as to leave a flush interior surface at the bottom of the pan between the heaters. The said heaters have open pipes *b b*, passing directly through them and terminating in their sides, the said pipes having inclined positions.

C is the main steam-pipe coming from the boiler, and D the main pipe for carrying off the water of condensation, arranged parallel with each other below the pan and near opposite sides thereof.

S S are a series of small branch pipes lead-

ing from the steam-pipe C under the bottom of the pan, and W W a similar series of branch pipes connected with the water-pipe D, the said pipes W W being parallel with and alternating with the pipes S S. The said pipes S S and W W are arranged at such distances apart, and the heaters B B arranged in rows at such distances apart, as represented in Fig. 3, that a pipe, S, and a pipe, W, pass under each heater. The pipes S S extend across from their main pipe C to the pipe D, but of course do not communicate with the latter, and in like manner the pipes W W extend from their pipe D across to the pipe C.

E E are pipes—one for each heater—connecting it with one of the steam-pipes S S, and F F are pipes—one for each heater—connecting it with one of the water-pipes W W. These pipes E E and F F are all alike, except that the steam-pipes E E project some distance up through the bottom of the pan into the heaters to prevent any water running from the heaters back into the steam-pipes, and the water-pipes F F terminate in the bottom of the pan, so that the water may escape freely therefrom as fast as it is condensed. The said pipes E E and F F have all closed bottoms and are all screwed right through holes tapped in the lower and upper parts of their respective pipes S S and W W, and into holes tapped in the bottom of the pan under their respective heaters, as shown in Fig. 2, and each has communication with its respective pipe S or W by means of the holes *e e* in its sides, as shown in Figs. 1 and 2. The pan is filled with the sirup or liquor to be evaporated high enough to cover the heaters B B. The steam entering by the pipes C, S, and E fills the said heaters, whose exteriors present heating-surfaces of great extent to the surrounding and intervening sirup or liquor. The pipes *b b*, which may be numerous, are filled with the sirup or liquor, and, being surrounded by the steam in the heaters, also present in the aggregate a very extensive heating-surface. The water resulting from the condensation within the heaters falls to the bottom thereof and quickly escapes by the pipes F, W, and D, and is thereby prevented interfering with the transmission of the heat from the steam to the sirup or liquor, as it does in many of the arrangements of steam-coils in use.

The provision for the escape of the water

without its covering any portion of the heating-surface is an important characteristic of the invention, especially when considered in connection with the great extent and efficiency of the heating-surface provided.

I do not claim of themselves the inverted cups B and pipes E, as their equivalents are described in Letters Patent No. 14,717; but

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

1. The heaters B B, of inverted cup form, applied within the pan, in combination with

the system of connections E E F F, and the two series of pipes S S and W W below the pan, substantially as herein described.

2. In combination with the said heaters, connections, and two systems of pipes, the pipes *b b*, passing through the said heaters, substantially as herein described.

CHARLES A. DESOBRY.

Witnesses:

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