(No Model.)

J. A. COOK.

APPARATUS FOR THE MANUFACTURE OF SUGAR, &c.

No. 343,108. Patented June 1, 1886.

Fig. 2.

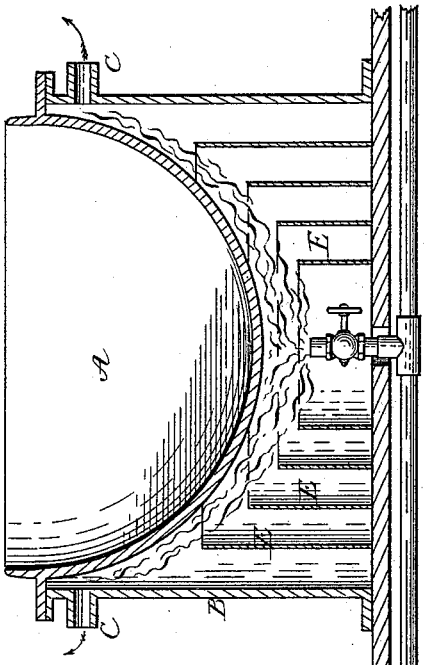


Fig. 1.

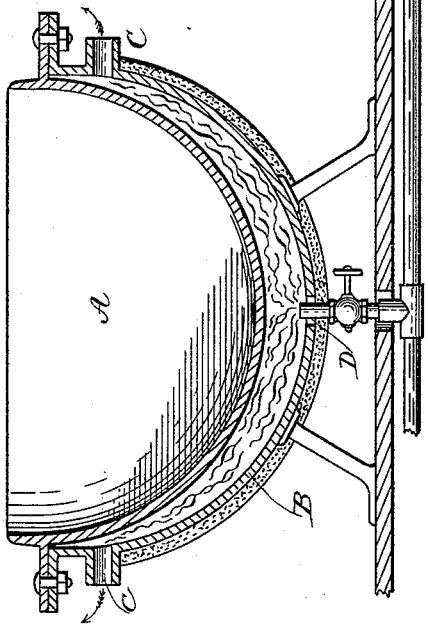
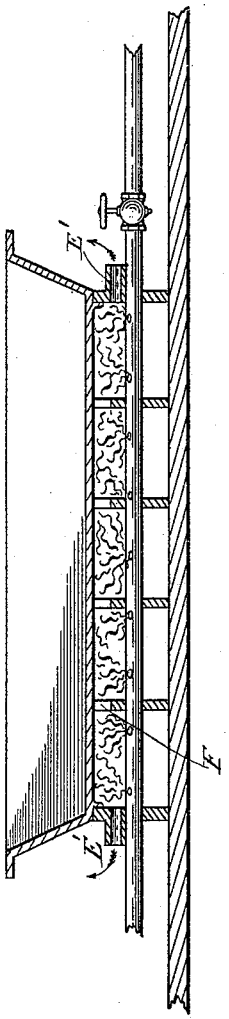


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOSEPH A. COOK, OF AUBURN, NEW YORK.

APPARATUS FOR THE MANUFACTURE OF SUGAR, &c.

SPECIFICATION forming part of Letters Patent No. 343,108, dated June 1, 1886.

Application filed April 27, 1883. Serial No. 93,148. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. COOK, of Auburn, county of Cayuga, State of New York, have invented new and useful Improvements in Apparatus for the Manufacture of Sugar, Salt, &c., of which the following is a full and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a sectional view of an evaporating-kettle provided with an inclosing-jacket for deflecting the flame over the entire surface of the kettle. Fig. 2 is a similar view showing another form of inclosing-case having a series of stepped annular rings for a similar purpose, and Fig. 3 is a sectional view showing the application of my improvement to an evaporating-pan.

In salt and other evaporating apparatus in which fuel of any kind was used as the heating agent, as heretofore constructed, while having been found very desirable under some circumstances, have been open to one very serious objection where a series of such evaporating kettles or pans were used, as the direct action of the flame could not be brought upon all the kettles or pans with the same regularity or intensity, and as a consequence the evaporation was caused to take place much faster in some of the kettles than in others.

My invention has for its object the remedying of the defects heretofore existing in this class of evaporators, and consisting in the employment of gas as a heating agent, whereby the same may be carried to any number of pans or kettles, and all of said pans or kettles in the series subjected to a uniform heat.

It further consists in the combination, with the main supply-pipe, of laterals provided with cocks, whereby the gas may be cut off from any one or more of the kettles without affecting the others in the series.

It further consists in surrounding the pans or kettles with an inclosing-case, and in forming the case in such a manner that it shall deflect the flame from the gas evenly over the entire surface of the kettle or pan, all as hereinafter explained.

In Fig. 1 an ordinary kettle, A, is shown having an outer jacket or casing, B, conforming in shape thereto, these parts being connected together so as to leave a space between them similar to that in like apparatus where steam is used as the heating agent. This outer jacket is provided near its upper edge with pipes or discharge-flues C, for carrying off the vapors or products of combustion of the gas, and is provided centrally with an opening, D, for connecting the gas-pipe therewith.

In Fig. 2 a modification in the form of the casing is shown, in which a series of stepped annular rings, E, are mounted and arranged in such relation to the pipe as to deflect or spread the flame over the entire surface of the kettle.

In Fig. 3, an evaporating-pan is shown resting upon a series of longitudinal bars forming separate compartments under the pan, and through which the gas-pipe is run. This gas-pipe is perforated at points between these partition-walls, and is provided with suitable tips for the passage of the gas. These partition-walls are provided with openings near their upper edge, as shown at F, for the escape of the vapors or products of combustion of the gas, and which is allowed to finally escape from the inclosing-case through openings E′ E′, arranged in the end walls of the supporting-frame. The several openings for the passage of the gas are each provided with a cock for regulating the flow of gas and the consequent intensity of the heat, either to the separate kettles or any portion of the pans without affecting the other kettles or portion of the pan. The outer cases or jackets surrounding the kettles or pans may be coated with any suitable non-conducting material, if desired.

Having now described my invention, I claim—

1. As an improvement in the art of manufacturing salt, a series of kettles for containing the liquid, a gas-supply pipe extending from end to end of the same, and an outlet from said pipe under each of said kettles, whereby the kettles are subjected to a regular heat, and a uniform grade of salt obtained throughout the series, as set forth.

2. In an evaporator, the combination, with the kettles or pans, of the gas-supply pipe, provided with the laterals or burners, and with the cocks for regulating the supply of gas to

any of said kettles or pans or portions thereof without affecting the others of the series, as set forth.

3. In an evaporator, the combination, with the kettles and with the gas main or pipe, of the inclosing case or shell provided with the curved or stepped portions surrounding the gas-escape outlet, for deflecting the flame evenly over the entire surface of the kettle, substantially as described.

In testimony whereof I have hereunto set my hand this 4th day of April, A. D. 1883.

JOSEPH A. COOK.

Witnesses:

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