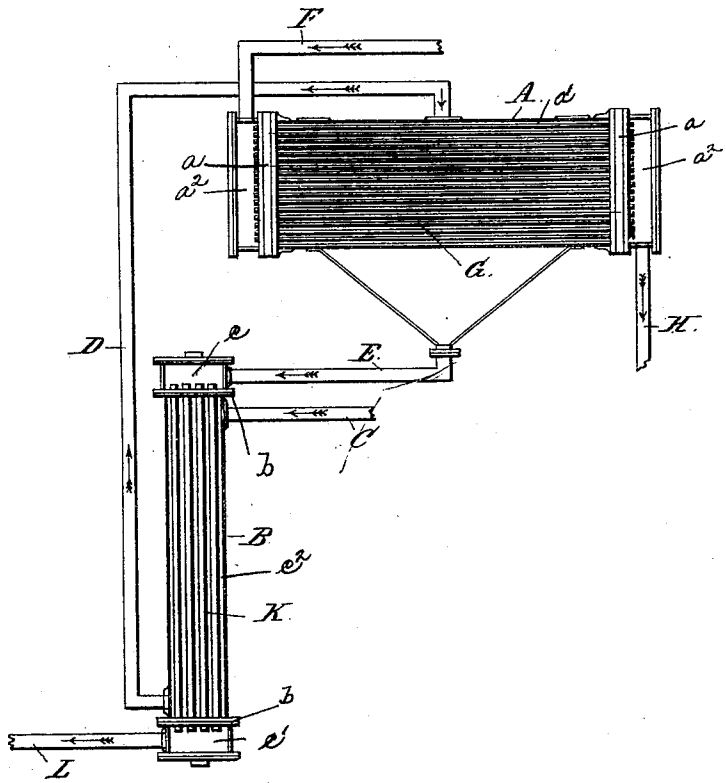
(No Model.)

# E. W. DEMING.

## APPARATUS FOR CLARIFYING SUGAR SOLUTIONS.

No. 479,250. Patented July 19, 1892.




WITNESSES:
Helmuth Holtz.
Percy D. Parks.

INVENTOR
Eugene W. Deming.
by W. L. Stringfellow
ATTORNEY

# UNITED STATES PATENT OFFICE.

EUGENE W. DEMING, OF NEW ORLEANS, LOUISIANA.

## APPARATUS FOR CLARIFYING SUGAR SOLUTIONS.

SPECIFICATION forming part of Letters Patent No. 479,250, dated July 19, 1892.

Application filed November 18, 1891. Serial No. 412,321. (No model.)

*To all whom it may concern:*

Be it known that I, EUGENE WATSON DEMING, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Processes of Clarifying and Filtering Saccharine Solutions; and I do 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 has relation to an improved apparatus for clarifying saccharine solutions; and it has for its general object to clarify saccharine solutions after proper treatment with reagents and reduce the same to a condition for rapid and complete filtration.

To the attainment of the foregoing and other objects the invention consists in the peculiar construction and relative arrangement of the elements making up my improved apparatus.

In the annexed drawing the figure is a view of my improved apparatus, partly in section and partly in elevation.

Referring by letter to the said drawing, A indicates the heater or defecator of my improved apparatus, which is preferably of a cylindrical form and is horizontally disposed, as shown. This heater or defecator A, which has its ends closed, as shown, is provided adjacent to said ends with the partitions *a*, which are connected by the steam-pipe G, as shown. Leading from a suitable source of supply to one of the chambers $a^2$, formed between the partitions *a* and the ends of the heater or defecator, is a steam-pipe F, which is designed to conduct the heating agent to the heater, and leading from the other chamber $a^2$, formed between the partitions *a* and the end walls of the heater, is a steam-discharge pipe H, which conducts the steam from said heater. Thus it will be readily perceived that the steam takes continuously through the heater or defecator, by reason of which said heater or defecator will be kept at a high even heat.

B indicates a stand-pipe, which is preferably of a cylindrical form and has its ends closed, as shown. This stand-pipe B is provided adjacent to its ends with partitions *b* to form the chambers *c*, *c'*, and $c^2$, which chambers are connected by the pipes K, as shown.

C indicates the feed-pipe, through which the saccharine solution, forced by a pump or the like, (not illustrated,) is carried to the chamber $c^2$ of the stand-pipe B, and D indicates the pipe for conducting the solution from the chamber $c^2$ of the stand-pipe B to the middle chamber *a'* of the heater or defecator A.

Leading from the chamber *a'* of the heater or defecator A to the chamber *c* of the stand-pipe B is the pipe E, and leading from the chamber *c'* of the stand-pipe is a pipe L, which discharges into a suitable filter. (Not illustrated.) In practice the heater or defecator is heated to a temperature of about 220° Fahrenheit, which will coagulate the impurities in the solution that would not be affected by a less temperature and will render their removal possible. The high heating of the solution in the heater or defecator not only serves to clarify the same by coagulating the impurities, but it serves to reduce the solution to a thin consistency, whereby the same may be rapidly and thoroughly filtered.

By reason of the heated saccharine solution from the heater or defecator A taking through the pipes K of the stand-pipe B it will be readily seen that the solution entering the chamber $c^2$ from the feed-pipe C will be superheated by absorbing a portion of the heat of the heated solution, whereby it will be rendered thinner and will consequently flow faster. By the solution in the chamber $c^2$ absorbing a portion of the heat of the heated solution it will be further seen that a portion of the heat is saved in the apparatus and the heated solution is partially cooled, so that it will not injure the filter or filters employed, which is a highly-important desideratum.

Having described my invention, what I claim is—

The apparatus, substantially as and for the purpose set forth, comprising the heater or defecator having the chamber *a'*, the chambers $a^2$, and the pipes connecting the chambers $a^2$, the steam-feed pipe connected with one of the chambers $a^2$, the steam-discharge pipe connected with the other chamber $a^2$, the stand-

pipe having the chamber $c^2$, the chambers $c$ $c'$, and the pipes connecting said chambers $c$ $c'$, a pipe connecting the chamber $c^2$ of the stand-pipe and the chamber $a'$ of the heater or defecator, a pipe connecting the chamber $a'$ of the heater or defecator and the chamber $c$ of the stand-pipe, and a pipe leading from the chamber $c'$ of said stand-pipe, all adapted to operate substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

EUGENE W. DEMING.

Witnesses:
V. G. ROBEINTISCH,
PERCY D. PARKS.