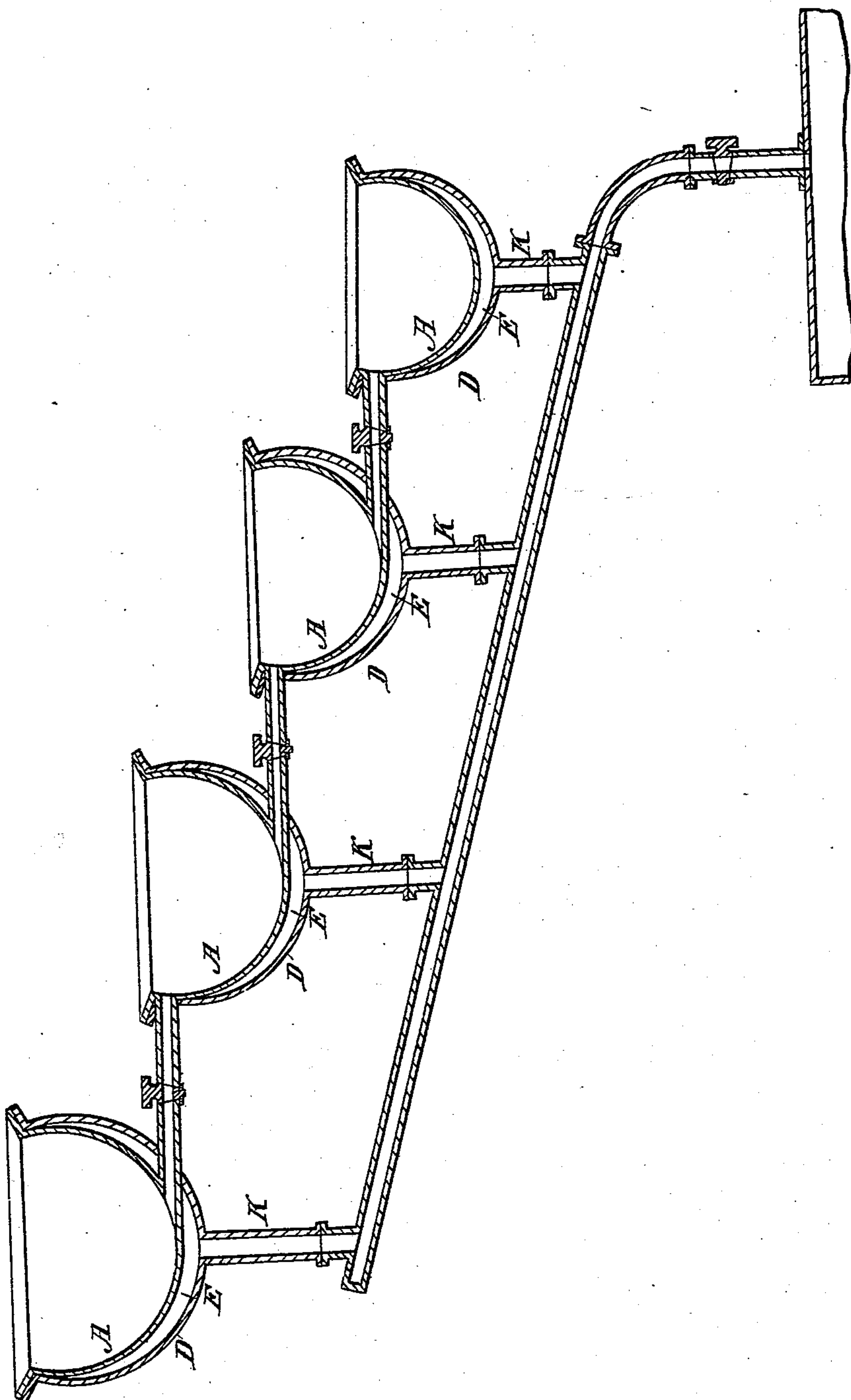


W. GRAHAM.
Apparatus for Boiling Sugar.

No. 3,000.

Patented March 10, 1843.



UNITED STATES PATENT OFFICE.

WM. GRAHAM, OF ST. CHARLES PARISH, LOUISIANA.

IMPROVEMENT IN SUGAR-BOILERS.

Specification forming part of Letters Patent No. 3,000, dated March 10, 1843.

To all whom it may concern:

Be it known that I, WILLIAM GRAHAM, of the parish of St. Charles, in the State of Louisiana, have invented a new and useful Improvement in Making Sugar, which is described as follows, reference being had to the annexed drawing of the same, making part of this specification.

The figure is a vertical section of the evaporating-kettles, &c.

The evaporating-kettles A, in which the juice is evaporated, are made of copper or other suitable material, of different sizes, and are arranged on different levels, the largest in this arrangement being the highest, the kettles gradually diminishing in size from the kettle termed the "Grand A²" to that which is termed the "Battery A¹," the upper edge of each kettle being placed nearly on a level with the bottom of the preceding one, and communicating the one with the other by suitable tubes, B, provided with cocks C for opening or closing the communication from one boiler to the other.

The evaporators A are placed in semi-spherical cast-iron or other metallic shells or jackets, D, of larger size than the evaporators, so made and arranged as to leave a space, E, between the two to admit steam from a common boiler, by which the evaporators are to be heated, the steam being admitted through branch tubes F of a main tube, G, leading from the steam-boiler, all of said tubes being furnished with stop-cocks for regulating the admission of the steam, and consequently the degree of heat required. The evaporators are

provided with pipes and cocks for letting off the liquid from one to the other.

The condensed steam is made to flow back into the boiler constantly by arranging the main steam-pipe immediately beneath the kettles, in a position inclining upward from the boiler, with vertical branch tubes leading into the same from the lower part of the jackets, through which the steam is admitted to the spaces between the jackets and kettles, and by which the condensed steam is suffered to flow back into the boiler by its gravity, thereby preventing the evaporation of the steam by keeping it constantly inclosed from the atmosphere.

I do not claim the sugar-kettles surrounded by jackets, nor the application of high-pressure steam for heating them; but

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

Arranging the main steam-pipe immediately beneath the said kettles, in a position inclining upward from the boiler, with vertical branch tubes leading into the same from the lower parts of the jackets, through which the steam is admitted to the spaces between the jackets and kettles, and by which the condensed steam is suffered to flow back into the boiler by its gravity, thereby preventing any evaporation of the steam by keeping it constantly inclosed from the atmosphere.

WILLIAM GRAHAM.

Witnesses:

F. CHAIX,

F. T. TATRAUCHE.