

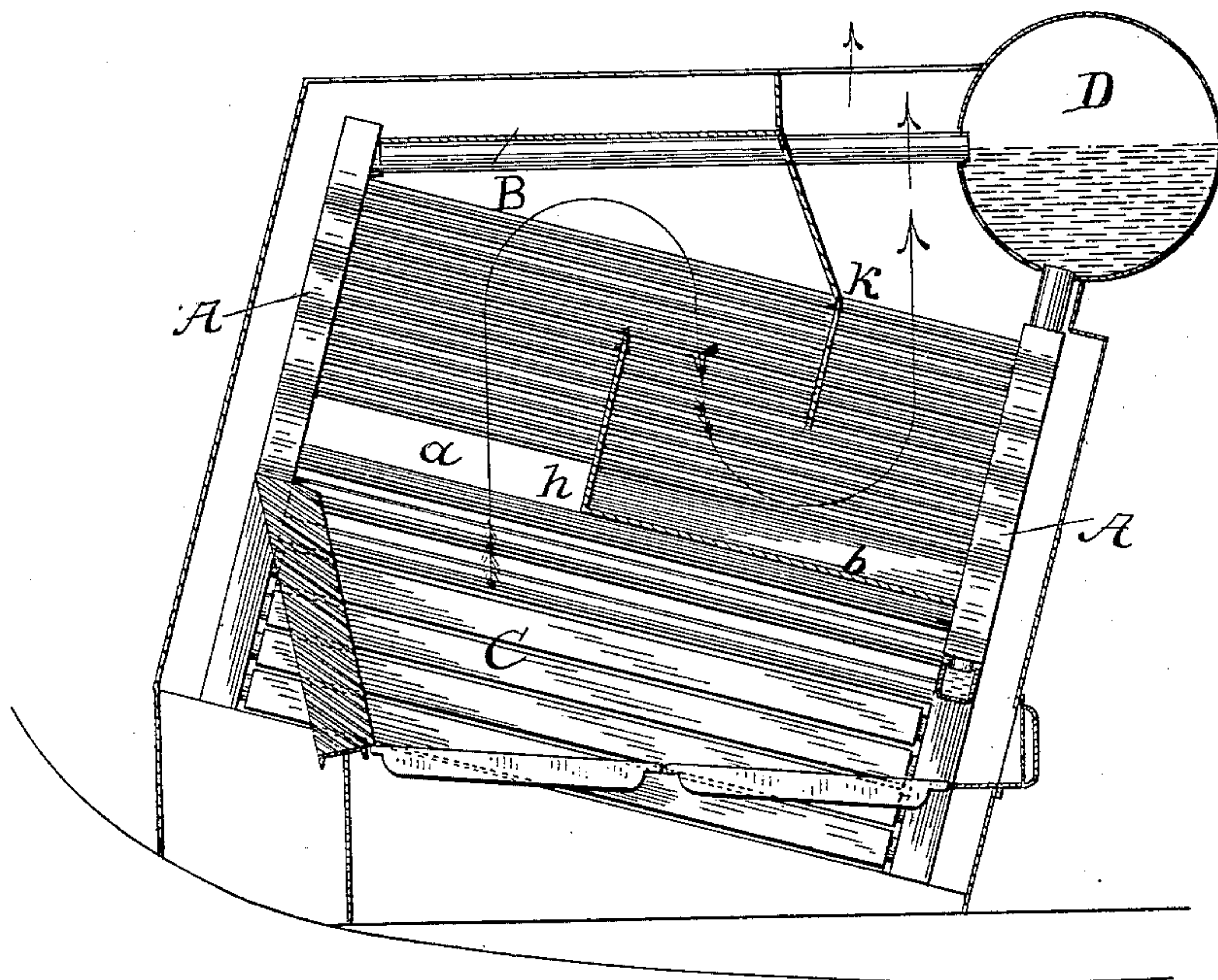
No. 638,716.

Patented Dec. 12, 1899.

W. D. HOXIE.  
SECTIONAL STEAM GENERATOR.

(Application filed Apr. 24, 1899.)

(No Model.)



Witnesses  
Charles Hanemann  
G. A. Rowell.

William D. Hoxie  
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By His Attorney  
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# UNITED STATES PATENT OFFICE.

REISSUED

WILLIAM D. HOXIE, OF NEW YORK, N. Y., ASSIGNOR TO THE BABCOCK & WILCOX COMPANY, OF SAME PLACE.

## SECTIONAL STEAM-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 638,716, dated December 12, 1899.

Application filed April 24, 1899. Serial No. 714,269. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM D. HOXIE, a citizen of the United States, residing at New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Sectional Steam-Generators, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention is particularly designed as an improvement in the type of generator referred to in Letters Patent granted to me December 21, 1897, No. 595,852. In the patent referred to a water-tube generator is shown, with the water-tubes inclined at an obtuse angle with the front or vertical face of the generator, thus increasing the capacity of the combustion-chamber of the furnace at its rear part. In the generator referred to in the patent the products of combustion are permitted to pass from the furnace directly up and among the inclined water-tubes and adjacent to the drum to the escape-passage or uptake.

The object of the present invention is to utilize and control the expanding volume of the gases in the furnace combustion-chamber at its rear part by such disposition of the baffle or partition plates as to direct the course of the expanding gases to the chamber intermediate of the double series of tubes and among the water-tubes throughout their entire length from rear to front, all as hereinafter described.

In the accompanying drawing the figure represents a side elevation of the generator, showing the disposition of the baffles.

The relative arrangement of the main parts of the generator herein shown are substantially similar to the corresponding parts illustrated in the prior patent referred to, A representing the headers, B the intermediate inclined water-tubes, C the furnace, and D the elevated steam and water drum. The inclined water-tubes are also shown of different sizes, similar to those shown in the patent, the large tubes with larger intermediate spaces being located directly above the furnace.

In the present arrangement a greater space *a* is designed between the inclined clusters of the different-sized water-tubes to provide a

chamber for greater expansion of the products of combustion and to locate the accumulation of ashes and dirt and facilitate their removal.

The baffle-plates are preferably arranged as shown in the drawing, the plate *b* at the top of the lower series of water-tubes and at the bottom of the chamber *a* and extending from the front header partially over the furnace forming a deflecting-plate for the products of combustion from beneath and an ash-receptacle from above. At the end of the plate *b* the baffle *h* is placed, extending upward at a right angle therewith across the chamber *a* and about half the depth of the upper cluster of inclined water-tubes. About midway of the chamber formed by the plate *b* and the baffle *h* another baffle *k* is fixed, which depends from the top of the generator and also extends about half the depth of the cluster of water-tubes. This arrangement of the baffles, as clearly illustrated, causes the products of combustion from the furnace to follow the course indicated by the arrows to the escape or uptake and by means of which the gases are thoroughly circulated throughout the chamber *a* and among the inclined water-tubes, and by the increased distance they are required to travel their effective heat is fully absorbed. This relative arrangement of the baffles is especially advantageous in association with the enlarged rear portion of the combustion-chamber of the furnace, wherein a much greater degree of expansion of the gases takes place than in furnaces of ordinary construction and, further, in connection with the supplementary expansion-chamber *a*. This latter part of my invention also provides for the concentration of ashes and dust upon the inclined covering-plate *b*, from which they can be easily removed through a cleaning-door communicating therewith at the side of the generator.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination in a sectional steam-generator of a double series of water-tubes both inclined downwardly toward the front of the generator and separated by an expanding-chamber *a*, a baffle *b* located at the top of the

lower series of water-tubes and at the bottom of the chamber *a*, and extending from the front partially over the furnace forming a deflecting-plate for the products of combustion  
5 from beneath and an ash-receptacle from above, a baffle *h* extending upward from the inner end of the baffle *b* across the chamber *a* and partially across the water-tubes, and a succeeding baffle *k* depending from the top of

the generator partially across the water-tubes, 10 substantially as described.

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

WILLIAM D. HOXIE.

Witnesses:

CHAS. W. FORBES,  
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