

W. WELLS.
Vapor Generators.

No. 144,581.

Patented Nov. 11, 1873.

FIG. 1.

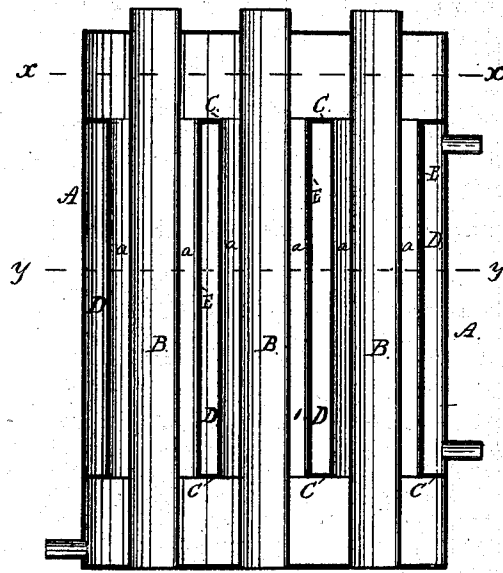


FIG. 2.

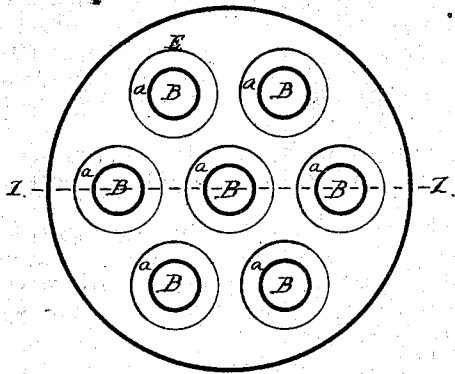
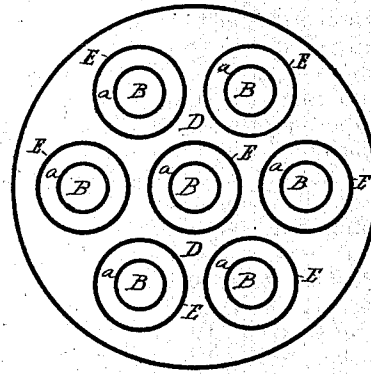


FIG. 3.



Witnesses.
Robert Morris
Robert Morris

Inventor.
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per *Brown Brothers*
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UNITED STATES PATENT OFFICE.

WILLIAM WELLS, OF SALEM, MASSACHUSETTS, ASSIGNOR OF ONE-HALF
HIS RIGHT TO DAVID BUFFUM, OF SAME PLACE.

IMPROVEMENT IN VAPOR-GENERATORS.

Specification forming part of Letters Patent No. **144,581**, dated November 11, 1873; application filed
October 1, 1873.

To all whom it may concern:

Be it known that I, WILLIAM WELLS, of Salem, in the county of Essex and State of Massachusetts, have invented an Improvement in Vapor-Generators, of which the following is a specification:

This invention relates to the generation of vapor from bisulphide of carbon; and this generator is constructed of a closed receptacle for water, which has tubes extending from one end to the other for the passage of the products of combustion from the fire-chamber; and has, intermediate of its two ends, a receptacle for the bisulphide of carbon, which is closed to the water, but along its length, concentric with the flue-tubes, is provided with tubes for the free circulation of water about the flue-tubes, and between them and the tubes of the bisulphide-of-carbon receptacle.

In the accompanying plate of drawings, Figure 1 is a central vertical section of the generator; Fig. 2, a horizontal section in plane of line *x x*, Fig. 1; Fig. 3, a horizontal section in plane of line *y y*, Fig. 1.

A in the drawings represents a receptacle for water, in the present instance shown as of a cylindrical shape, closed at both ends. This water-cylinder A, from end to end, is provided with tubes B, which are for the passage of the products of combustion from the fire-chamber to heat the water in cylinder A. The interior

of the cylinder A is divided by cross partitions or heads C into a chamber, D, which is to receive the bisulphide of carbon. The bisulphide-of-carbon chamber D, from end to end, has tubes E concentric with the flue-tubes B; and, between the two tubes B and E, there is a space, *a*, for the free circulation of the water in water-chamber A from end to end of the bisulphide-of-carbon chamber D. By this construction of the vapor-generator the heat is transmitted to the bisulphide of carbon through the medium of the water; and, while all the advantages of an interposed water medium are secured, obviously the heat is transmitted in the most effective degree to the bisulphide of carbon.

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

The combination of water-cylinder A, and bisulphide-of-carbon chamber D arranged therein, and the two provided with concentric tubes B and E, substantially as and for the purpose specified.

The above specification of my invention signed by me this 16th day of September, A. D. 1873.

WILLIAM WELLS.

Witnesses:

JOHN P. McELROY,
EDWIN W. BROWN.