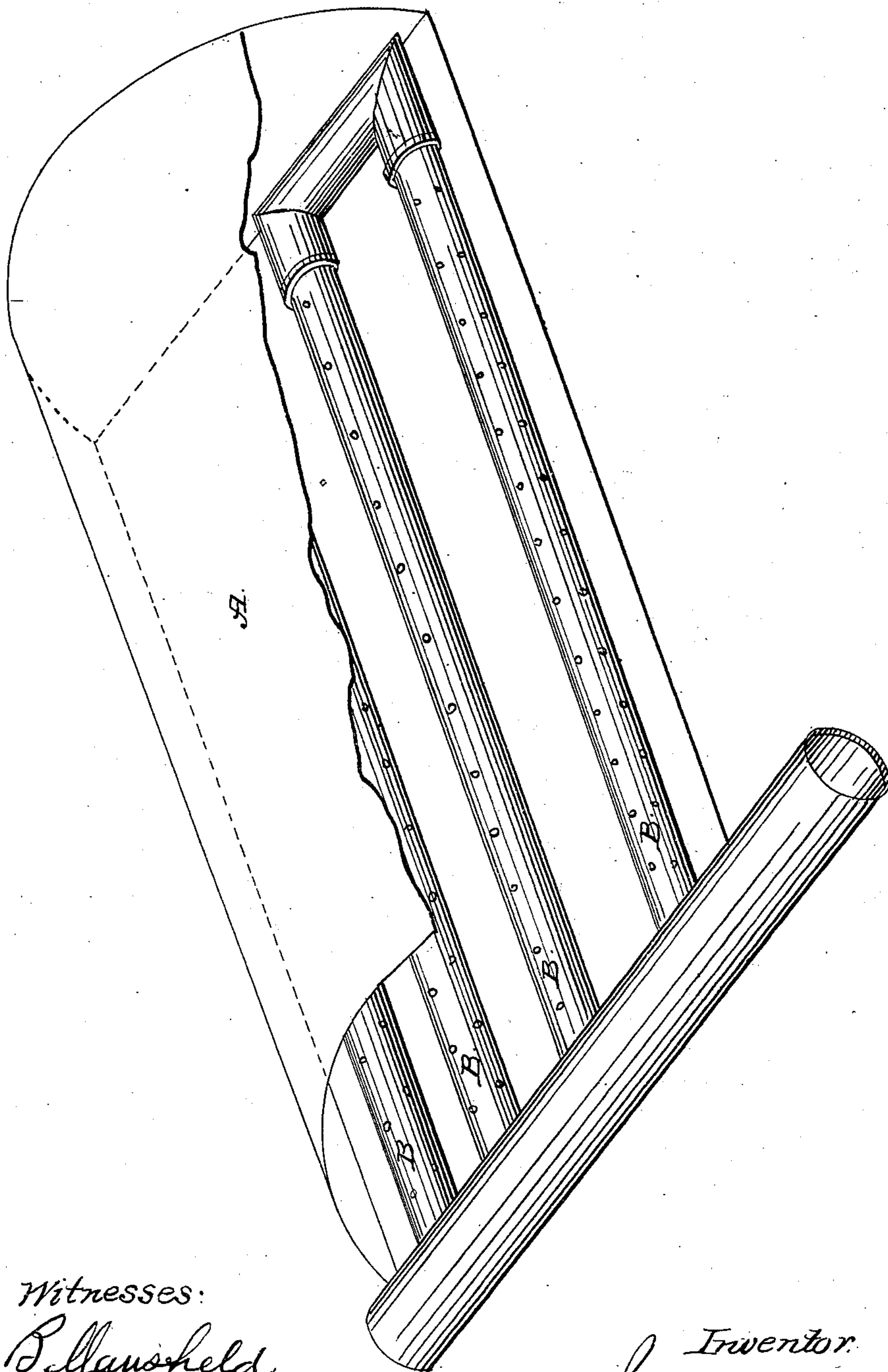


J. McGEARY.

Method of Decomposing Steam.

No. 59,246.

Patented Oct. 30, 1866.



Witnesses:

A. B. Mansfield
E. W. Barrett

Inventor:

James Mc Geary

UNITED STATES PATENT OFFICE

JAMES McGEARY, OF SALEM, MASSACHUSETTS.

IMPROVED METHOD OF DECOMPOSING STEAM.

Specification forming part of Letters Patent No. 59,246, dated October 30, 1866.

To all whom it may concern:

Be it known that I, JAMES McGEARY, of Salem, in the county of Essex and State of Massachusetts, have invented a new and Improved Method of Decomposing Steam; and I do hereby declare that the following is a full description of the same, with reference to the accompanying drawing.

The object of this invention is to obtain a regular and continuous decomposition of steam into hydrogen and carbonic oxides for illuminating and heating purposes; and the nature of my invention consists in an arrangement of alternate superheating and decomposing surfaces, so that the steam is first expanded and dried, and then subjected to the action of incandescent carbon alternately.

In carrying out my invention I propose to use a clay retort, A. This material resisting the extremely high temperature better than iron. It may have a supplementary chamber placed on top, which may be used as a superheater, or additional superheating-pipes may be placed in the furnace with the retort and exposed to the same heat.

I prefer to place three of these retorts in one furnace and to have the connections so arranged that the steam is passed through the superheaters and retorts alternately.

I find by my experiments that there is a lowering of temperature in the process of decomposition, and by the means here shown this decrease of temperature is compensated for and the decomposition goes on regularly and continuously.

I place in the bottom of these retorts a series of perforated pipes, B, which are connected at the front end with a T-branch, which

conveys the steam into all the pipes at once, and thoroughly distributing it to the carbonaceous material in the retort.

Steam being thus generated in a suitable boiler connected with the furnace and heated by its waste heat, it is conveyed by a pipe through the chamber or superheating-pipes into the retort A, through the superheating-pipes B. A portion of it is decomposed, and it is then passed through the next superheater before being again exposed to superheating-surfaces in the next retort, and so on through the series until it is fully decomposed.

When the above-named gases are desired for illuminating purposes, they are passed through the retort A and pipes B, containing bituminous coal or other carbonaceous material, in a continuous manner; or the resulting gases from the decomposition of steam may be carbureted at any convenient place between the gas-holder and the burner.

Having thus fully described the nature of my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

1. Subjecting steam for decomposition to the action of alternate superheating and decomposing surfaces, in the manner substantially as and for the purpose herein described.

2. Subjecting the resulting gases to the action of bituminous coal, petroleum, or other carbonaceous material, when used in the manner and for the purpose set forth.

3. The apparatus as shown and described, when used for the purpose set forth.

JAMES McGEARY.

Witnesses:

D. E. SOMES,

CHARLES HERRON.