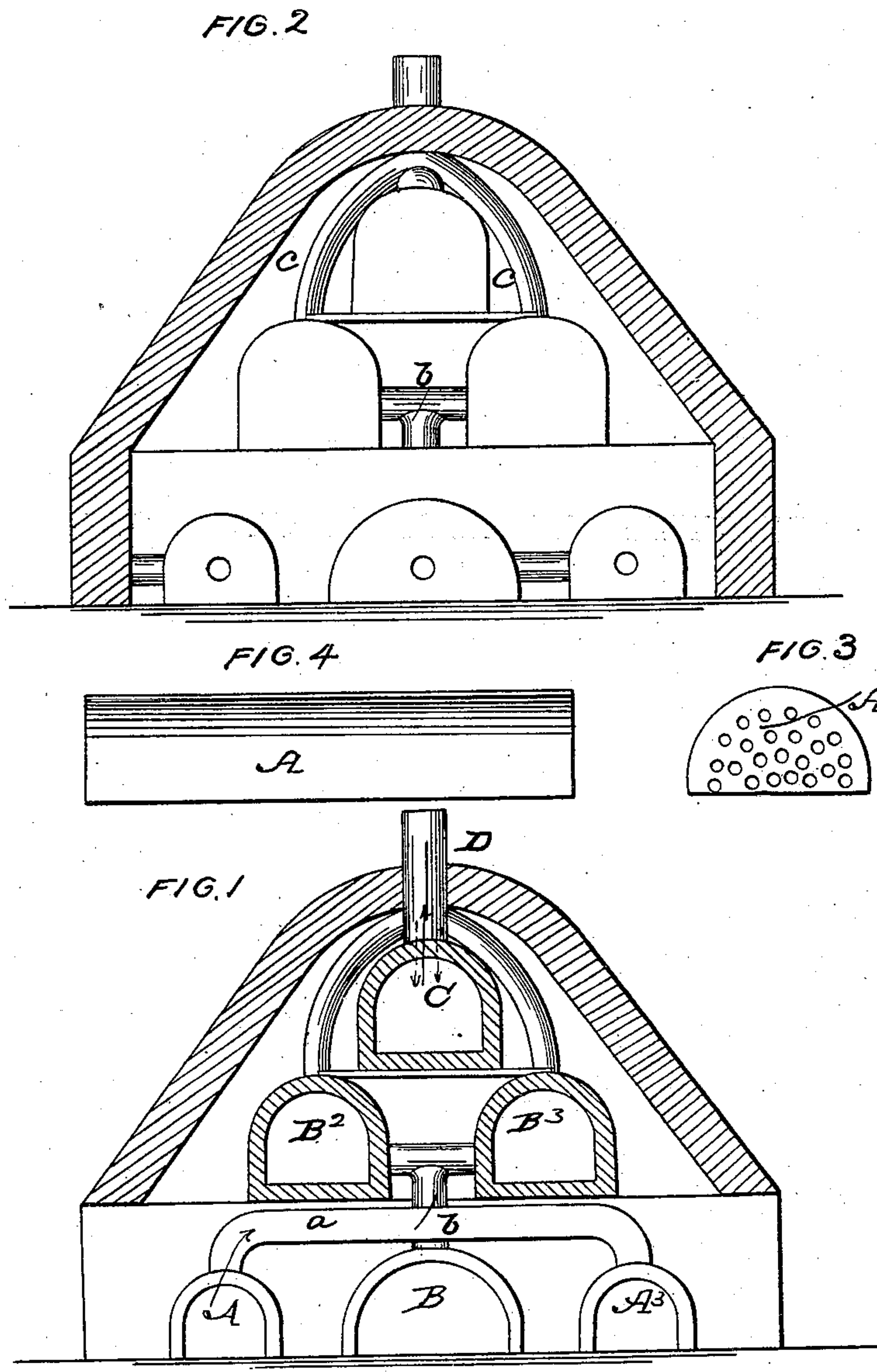


J. JENNINGS.

Apparatus for the Manufacture of Illuminating Gas.

No. 46,473.

Patented Feb 21, 1865.



WITNESSES

*Fredrick Dawd
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INVENTOR

James Jennings by Attorney Doane Atty

UNITED STATES PATENT OFFICE.

JAMES JENNINGS, OF NEW YORK, N. Y.

IMPROVED APPARATUS FOR THE MANUFACTURE OF ILLUMINATING-GAS.

Specification forming part of Letters Patent No. 46,473, dated February 21, 1865.

To all whom it may concern:

Be it known that I, JAMES JENNINGS, of the city, county, and State of New York, have invented, made, and applied to use a new and Improved Bench for the Manufacture of Illuminating-Gas; and I do declare that the following is a full, clear, and correct description of the same, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a front view of my improved bench for the manufacture of illuminating-gas; Fig. 2, a back view of the same; Fig. 3, a front view of the tubular retort, sometimes used by me; Fig. 4, a longitudinal view of the same.

Letters corresponding to each other designate the same parts of the invention in the drawings.

The nature of my invention consists in the construction and operation of an improved bench for the manufacture of illuminating-gas, as hereinafter set forth.

To enable those skilled in the arts to make and use my invention, I will speak of the same.

A and A² show retorts for the reception of superheated steam.

B, B², and B³ are carbon retorts connected to the superheated-steam retorts A and A² by the pipes *a* and *b*.

C shows the decomposing-retort.

D is an exit-pipe connected to the same.

c are pipes connecting the carbon retorts B² and B³ with the decomposing-retort C.

Operation: Steam enters the retorts A and A², and is there heated to incandescence owing to the presence of broken brick, porcelain, and broken crockery. To deprive the steam of its oxygen a sufficient quantity of scrap-iron is also placed in the retorts A and A². The hydrogen then passes through the pipes *a* and *b* to the carbon retorts B, B², and B³, where it mingles with incandescent carbon-

vapors, which are liberated from coal or other material for gasifying. In this mixed condition the hydrogen and incandescent vapors enter the decomposing-retort, where, by means of a suitable decomposer, they are deprived of their oxygen and unite to form an illuminating-gas.

When desired, one of the superheaters A may be dispensed with, and the bench will then consist of five retorts instead of six, as in the present instance. In this case a tubular retort (see Figs. 3 and 4) is used, the steam entering the same and being there decomposed. Hitherto in the manufacture of gas, the steam has been passed directly into the decomposing-retort from the water-tank, and there superheated and decomposed, or the steam has been superheated in coils of pipe and then passed into the decomposing-retort. In the former case the retort is cooled by the water, and the steam is necessarily imperfectly decomposed, thus greatly retarding the process. In the second case the steam is not perfectly superheated for the want of sufficient room for the expansion of the atoms, the joints soon leak, steam is lost, and the pipes are apt to oxidize, rendering the whole process slow and uncertain.

By the use of my improved bench any quantity of superheated steam can be had, owing to the facilities afforded. My improved bench, from its simplicity, is not apt to get out of order, while the whole process of manufacturing gas is most expeditiously and economically effected.

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

The bench, constructed substantially as described, for the purpose specified.

JAMES JENNINGS.

In presence of—

C. O. GORDON,

A. SIDNEY DOANE.