

(No Model.)

3 Sheets—Sheet 1.

J. HANLON.

APPARATUS FOR MAKING GAS.

No. 270,427.

Patented Jan. 9, 1883.

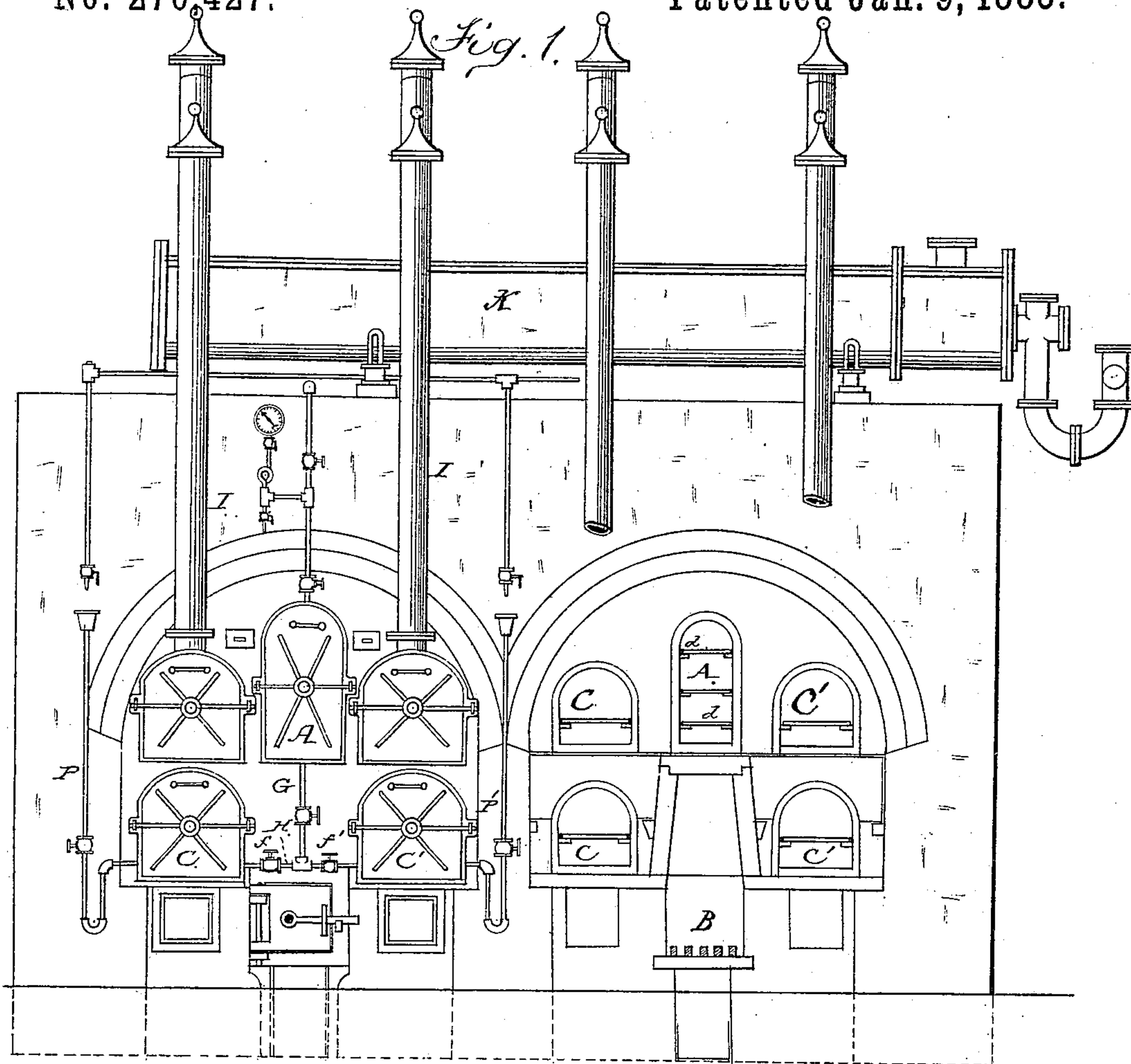
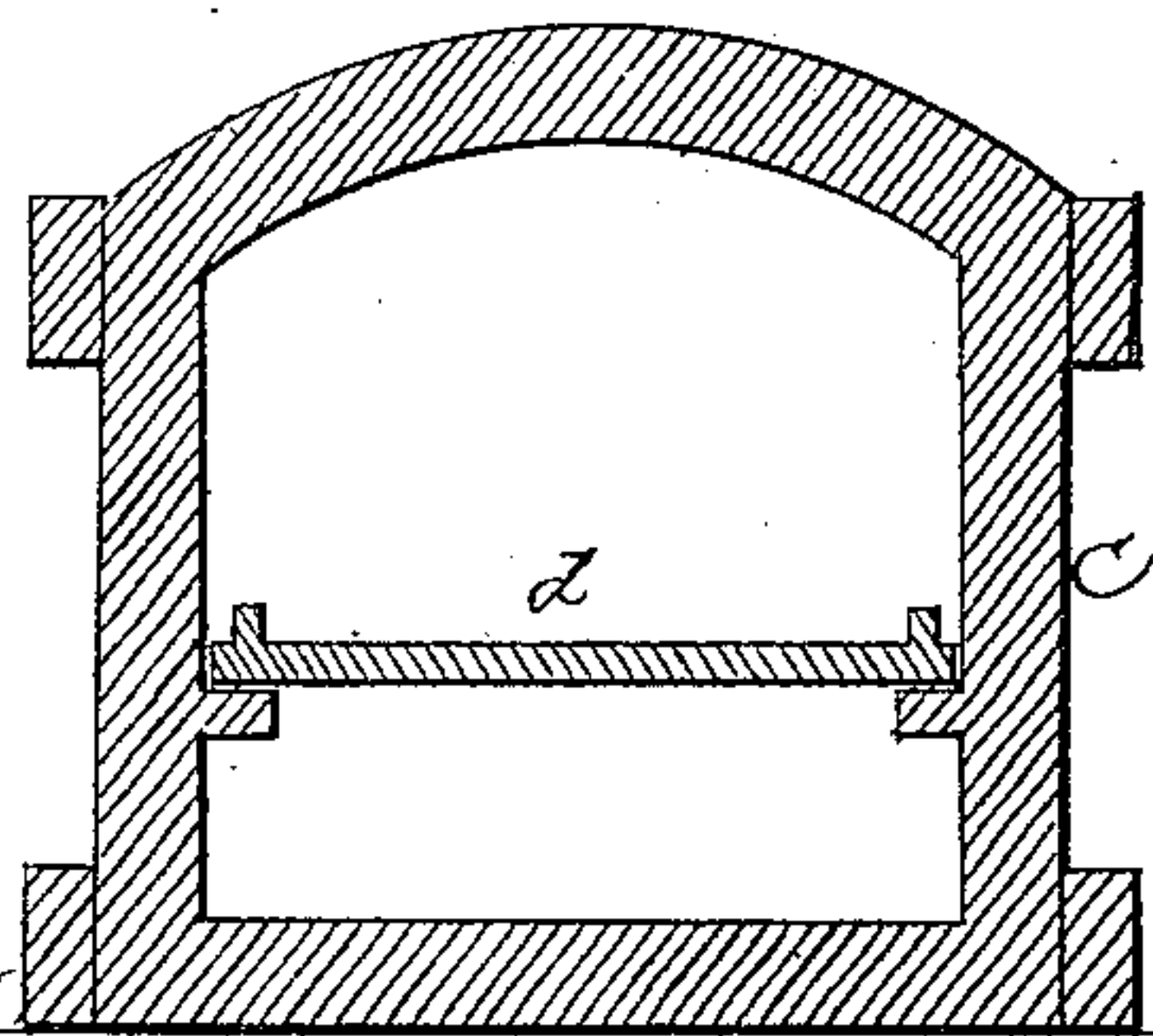


Fig. 7



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by
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Atty.

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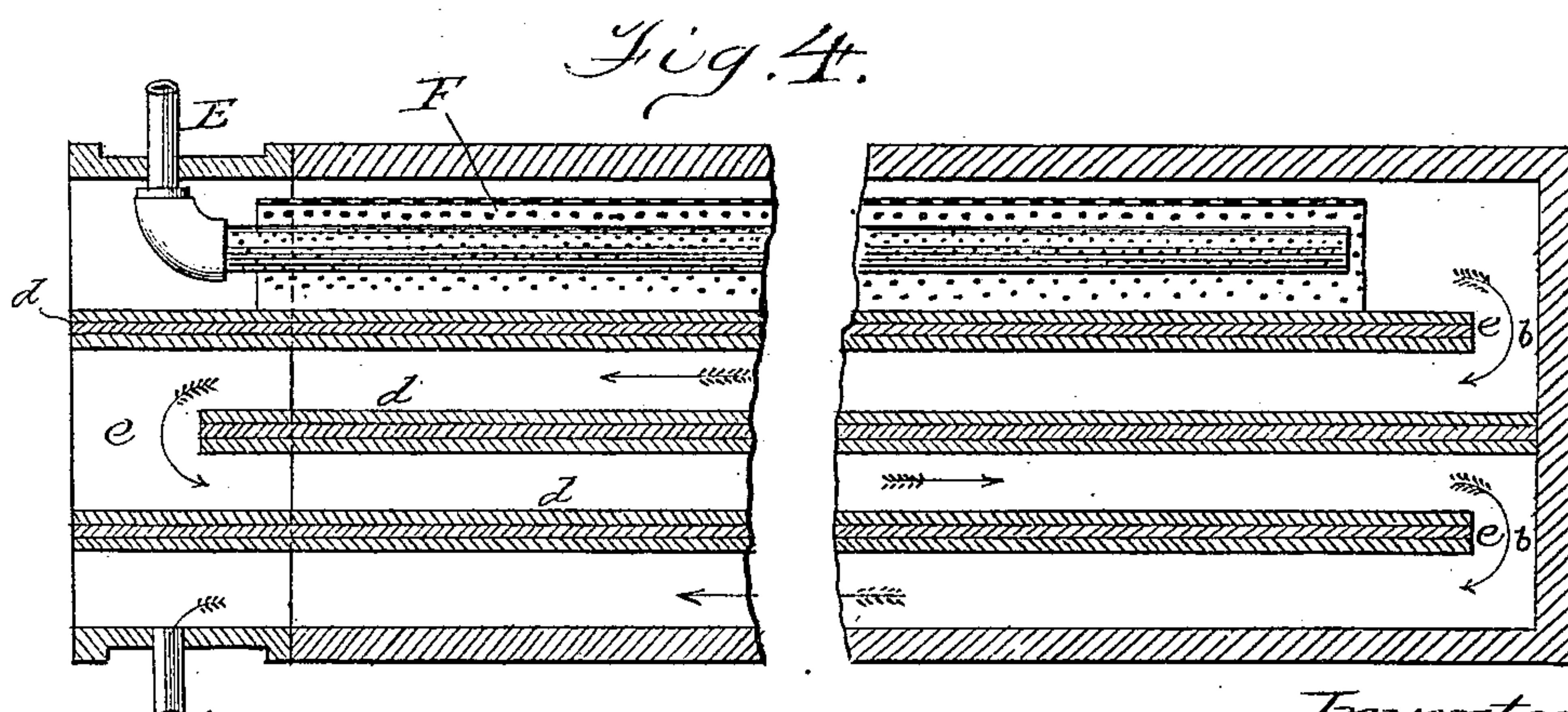
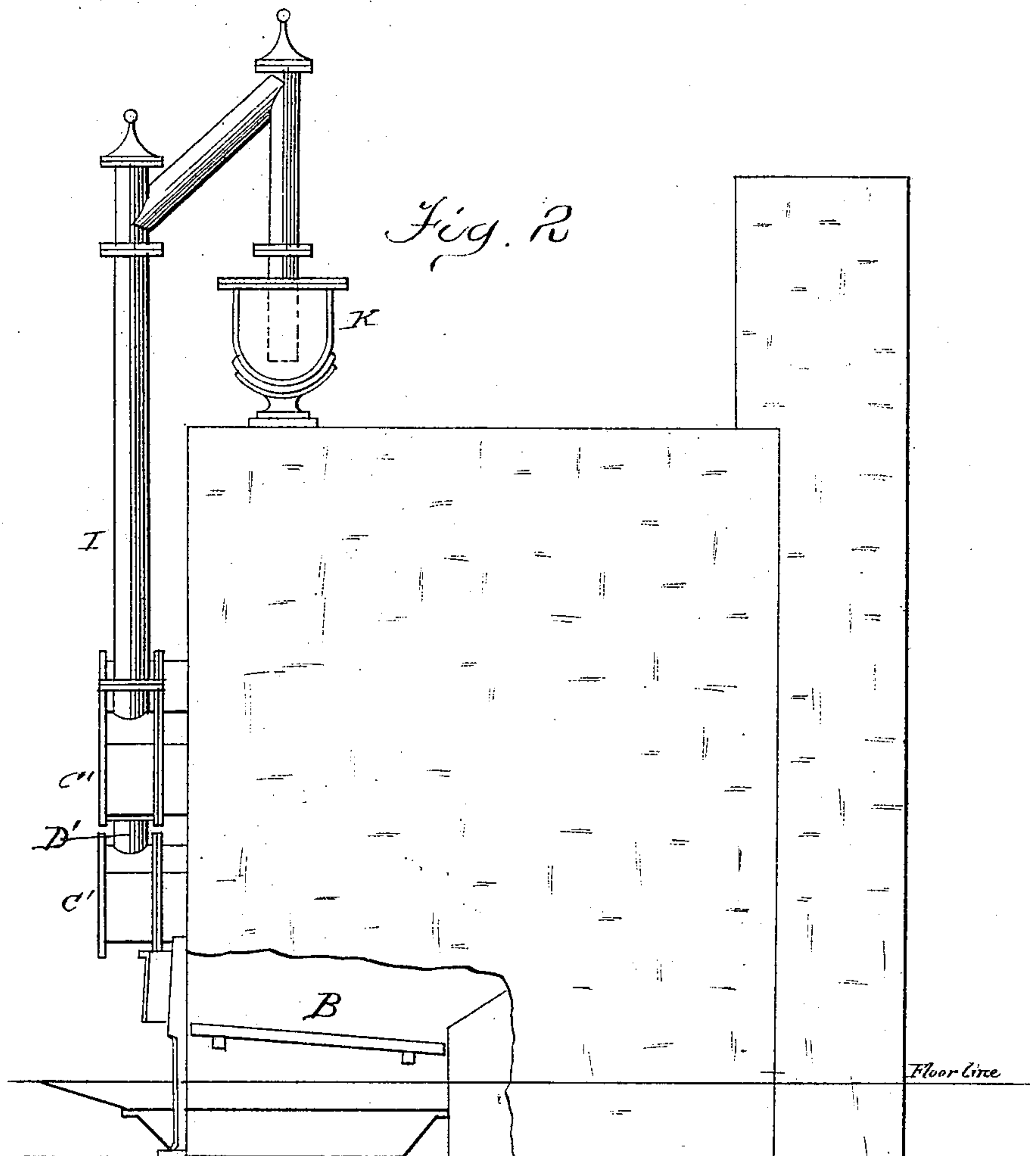
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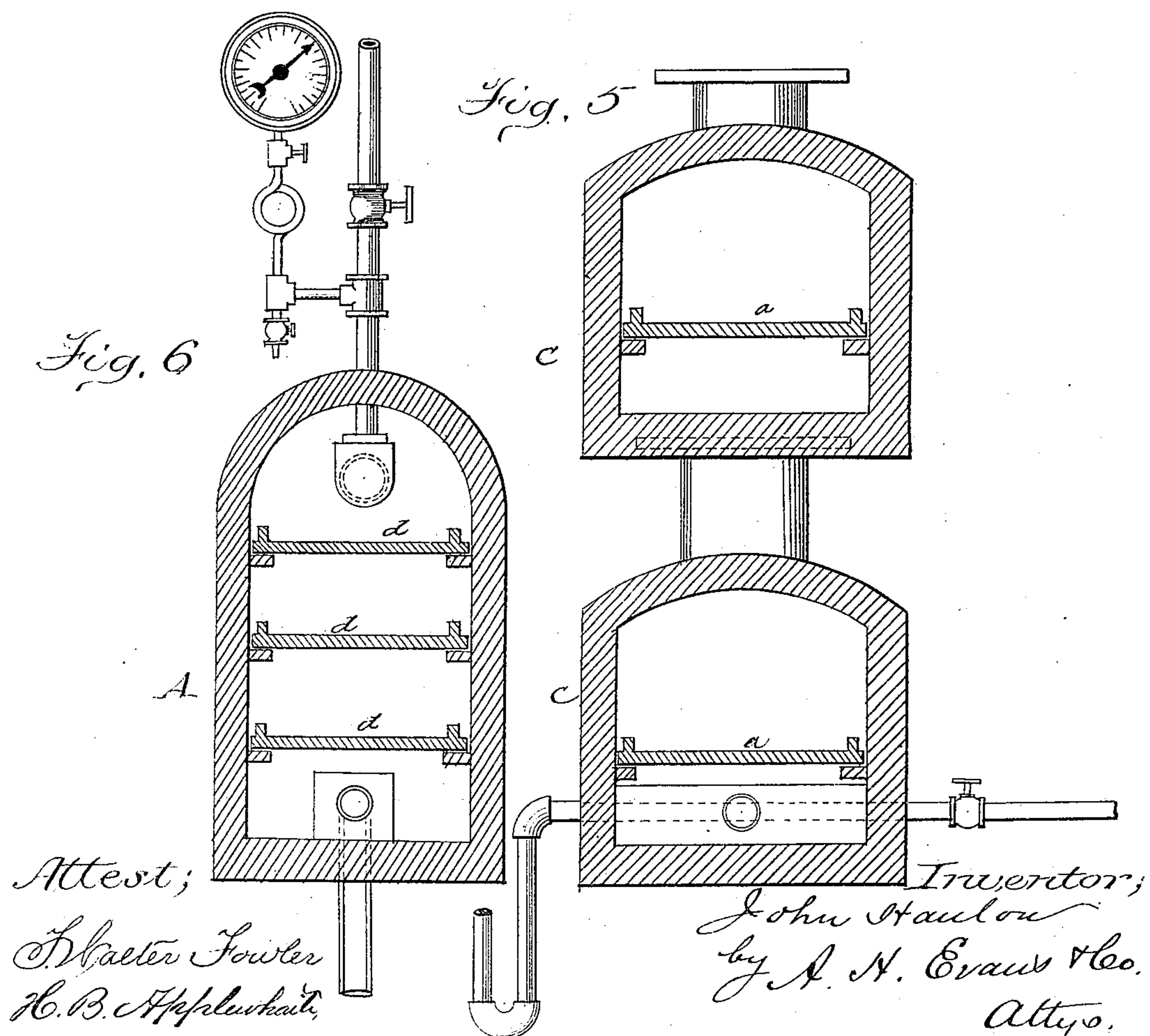
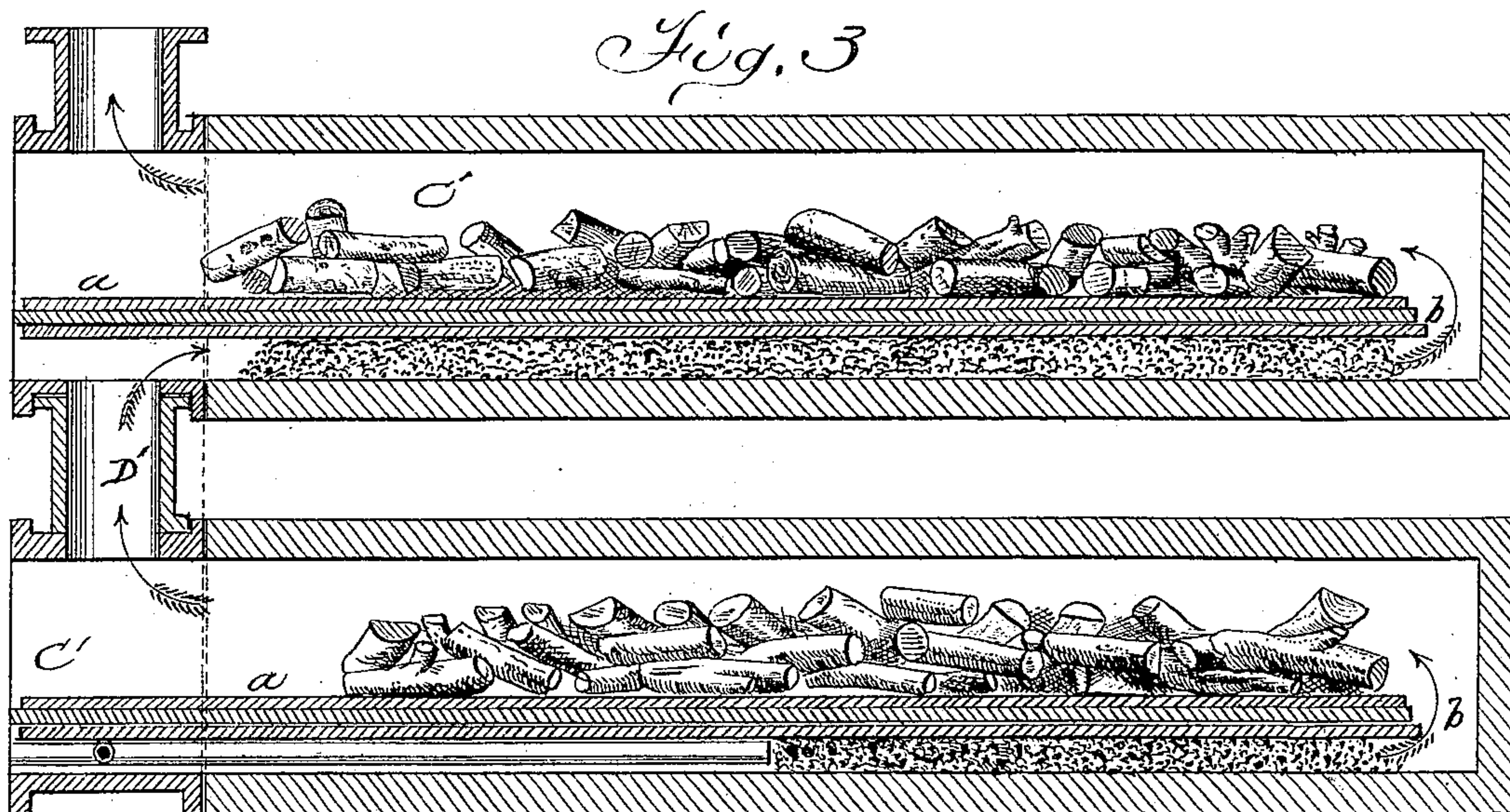
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UNITED STATES PATENT OFFICE.

JOHN HANLON, OF NEW YORK, N. Y., ASSIGNOR TO THE UNITED GAS
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APPARATUS FOR MAKING GAS.

SPECIFICATION forming part of Letters Patent No. 270,427, dated January 9, 1883.

Application filed July 14, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN HANLON, of the city and county of New York and State of New York, have invented a new and Improved Apparatus for Making Gas; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an elevation of a double bench of retorts, the fronts of one bench being removed. Fig. 2 is a side elevation of the apparatus, with a portion of the masonry removed to show the fire-box. Fig. 3 is a longitudinal section through retorts. Fig. 4 is a longitudinal section through superheater and steam-retort. Fig. 5 is a vertical section near the front of retorts. Fig. 6 is a front view of superheater; Fig. 7, cross-sectional view of wood-retort.

My invention relates to that class of apparatus designed to utilize wood in the manufacture of heating or illuminating gas; and my invention consists in certain combinations and arrangements of devices whereby the gas is readily and economically produced, as will hereinafter be fully described and specifically claimed.

In order that those skilled in the art may make and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A is a superheating-chamber, centrally located in the masonry above the fire-place or furnace B. On each side of the superheater and furnace are benches of retorts C C', divided longitudinally by iron plates *a a*, for a purpose hereinafter set out. At their forward ends the retorts C C' are connected by the short pipe D, and the retorts C' C' are connected in like manner by short pipe D'. The iron plates *a a* have openings *b b* at the rear ends of the retorts. The superheating-chamber is made with a series of shelves, *d d*, provided with openings *e e* at alternate ends, forming zigzag flues, and at the top of the chamber steam is introduced through a pipe, E, the end section of which is provided with perforations, and is covered and shielded from the intense heat of the oven by means of perforated plate F. A steam-gage is located on pipe E, and steam is admitted at the same pressure with that of the gas-holder, thus

avoiding any back-pressure in the retorts. After the steam is superheated it leaves the superheater by pipe G, which taps a cross-pipe, H, connecting the lower portions of the retorts C C', and by means of cocks *f f'* the steam can be directed to either of the retorts or to both. The gas passes from the retorts through pipes I into the hydraulic main K.

If desirable, pipes P P' may conduct into pipe H, at its ends, a hydrocarbon oil to enrich the gas for illuminating purposes.

The space between the iron plates *a a* and the bottoms of the retorts I fill with coke and wrought-iron scraps, for a purpose hereinafter described.

The retorts C above the plates *a a* are charged with wood, and after the wood-gas is generated by the application of sufficient heat, steam is admitted into the superheater A and is conveyed through it, as is indicated in Fig. 4 by arrows. The superheated steam enters retorts C by pipe G, retorts C' being cut off by cock *f'*, and, passing through the body of coke and scrap-iron in the lower retort, oxidizes the iron, while its hydrogen is set free, and this, passing through the main body of the retort, as indicated by the arrows, seizes the carbon remaining in the wood-holding portion of the retort to form the gas which passes through short pipe D to the upper retort in the same manner, and out of pipes I into the hydraulic main K, whence it is conducted to the points of consumption or to a gasometer. The operations of retorts C C and C' C' are alternative.

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

The combination and arrangement, in one gas-producing apparatus, of the retorts C C', divided longitudinally by plates *a a* and connected by pipes D D', the upper portion being adapted to receive a charge of wood, and the lower portion provided with a mass of coke and iron scraps mixed, a retort-chamber, a fire-box, B, a superheating-chamber, A, containing a perforated steam-supply pipe surrounded by a perforated shield-plate, F, steam-pipes E and G, and oil-pipes P P', substantially as and for the purpose set forth.

JOHN HANLON.

Witnesses:

JAS. E. LEADLEY,
M. JO. BOYD.