W. BEAUMONT.

Making Coal-Gas.

No. 20,541. Patented June 15, 1858.

Fig. 2.

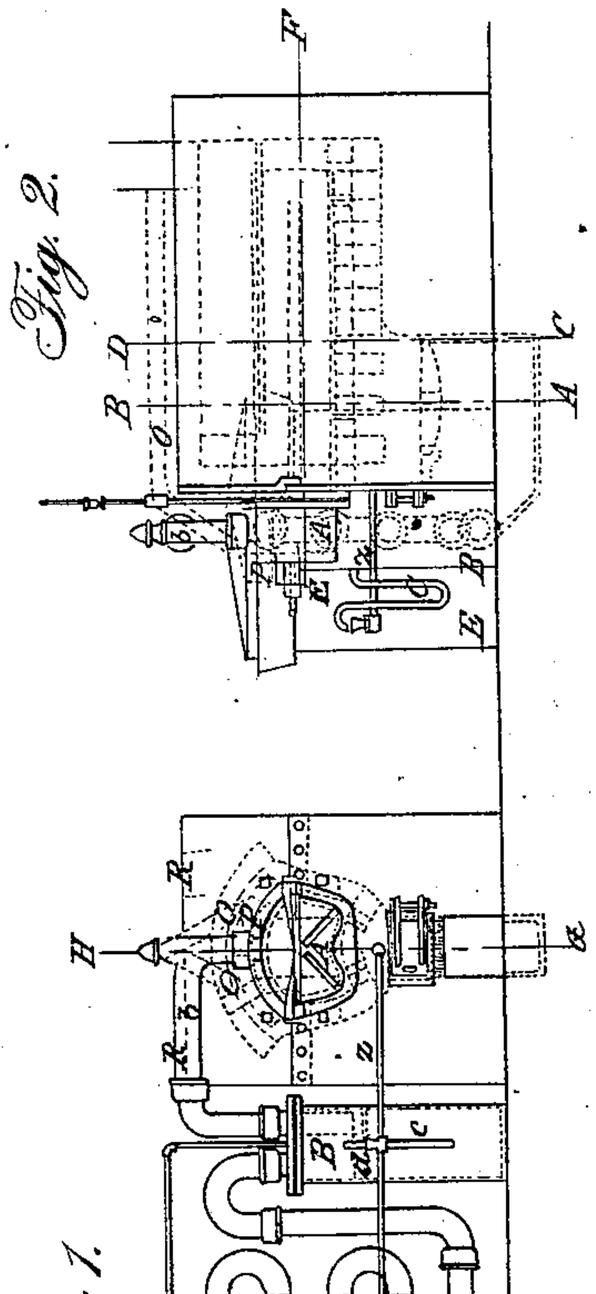


Fig. 7.

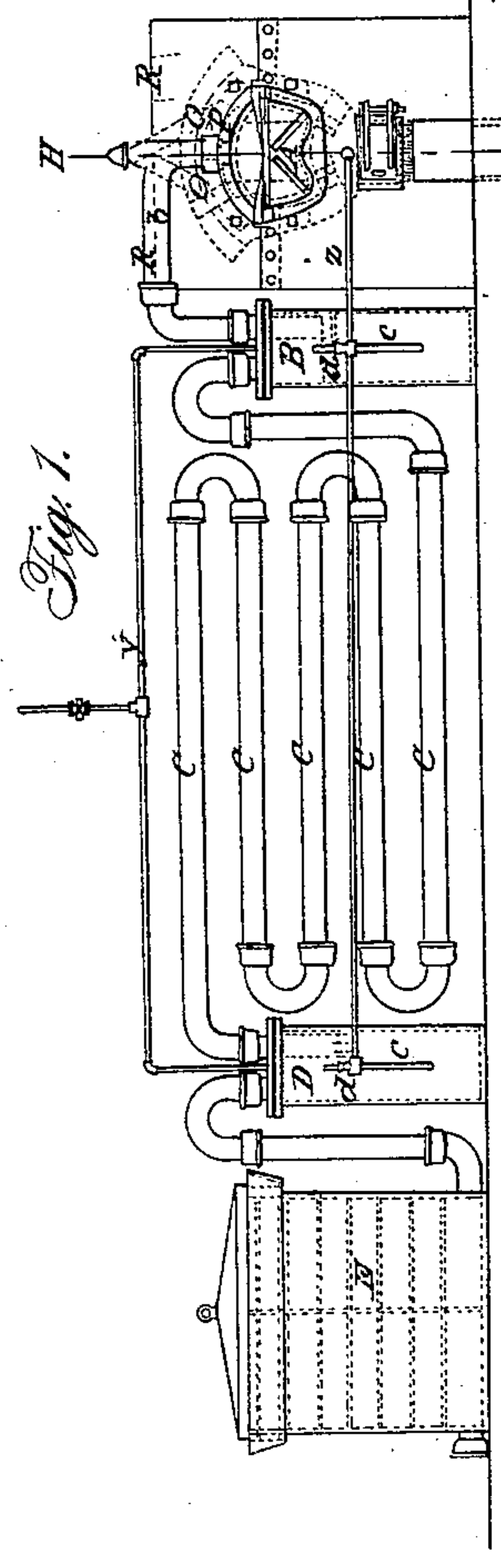


Fig. 6.

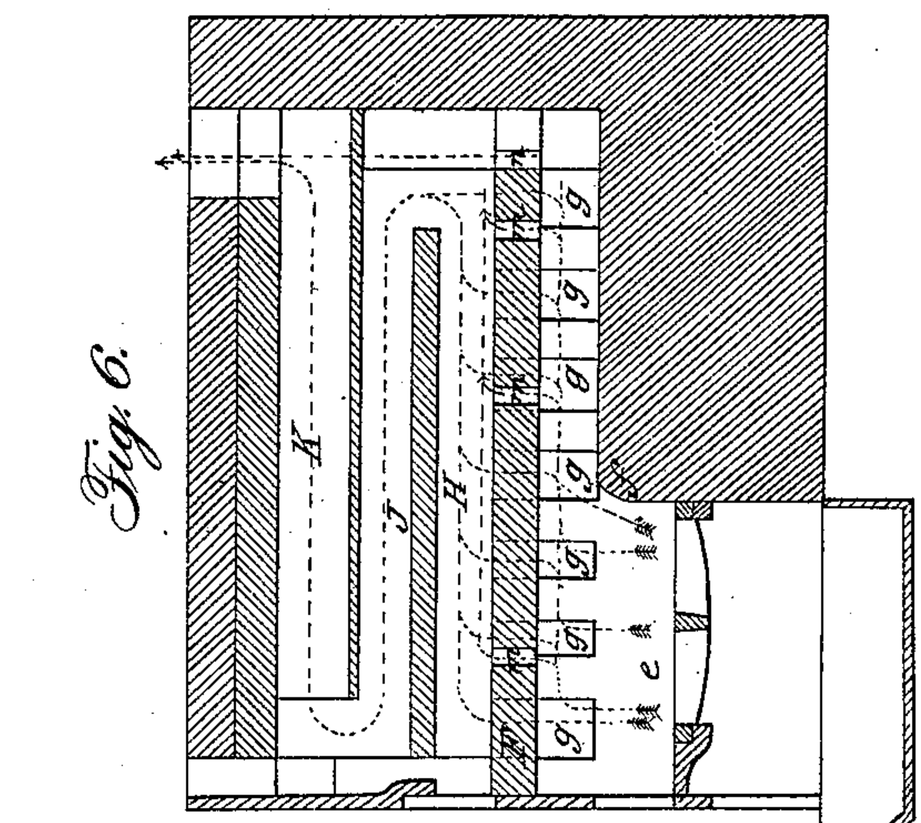


Fig. 5.

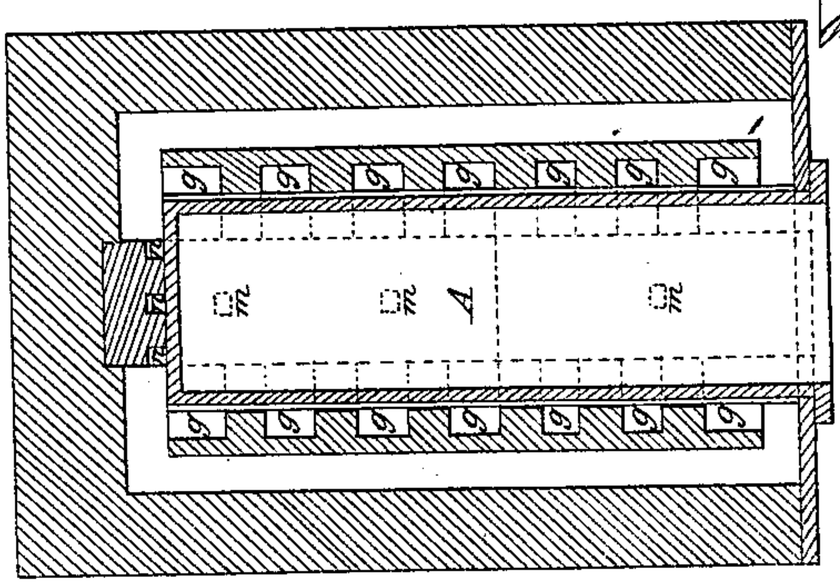


Fig. 4.

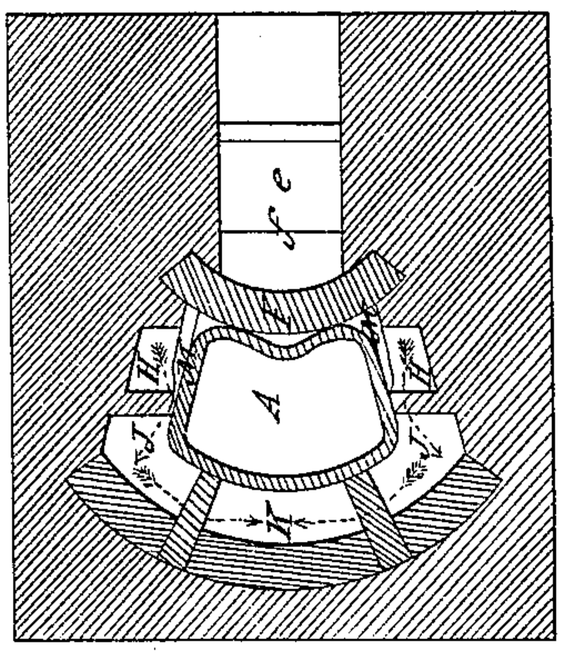
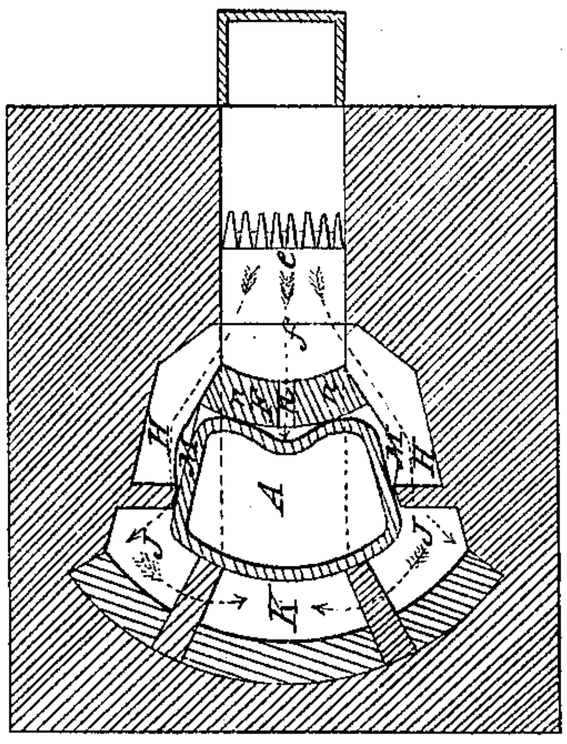


Fig. 3.



UNITED STATES PATENT OFFICE.

WILLIAM BEAUMONT, OF PATERSON, NEW JERSEY.

APPARATUS FOR MANUFACTURING GAS.

Specification of Letters Patent No. 20,541, dated June 15, 1858.

To all whom it may concern:

Be it known that I, WILLIAM BEAUMONT, of Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful Improvement in Apparatus for Manufacturing Gas; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, represents a front elevation of the apparatus. Fig. 2, represents a view from one of the ends thereof. Figs. 3 and 4, represent transverse sections through the retort and showing the arrangement of flues. Fig. 5, represents, a horizontal section through the line E, F, of Fig. 2; and Fig. 6, represents a vertical section through the line G H, of Fig. 1.

Similar letters of reference where they occur in the several figures (excepting those which designate the lines at which the sectional figures are made) denote like parts of the apparatus in the whole of them.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A, is a retort, which has its bottom, or that part of it which is in most immediate contact with the fire, curved or corrugated, as shown in Figs. 3, 4. The object of this corrugation is twofold—first, that as the metal of which it is composed expands and contracts, the wrinkles or corrugations may compensate for, or take up, said expansion or contraction, and thus prevent the retort from cracking or opening, which it is very liable to do; and secondly, for increasing the fire surface on said retorts, without a corresponding increase of fire chamber. There is a mouth piece at the end of the retort, to which a pipe *b* is connected, said pipe extending into the "wash box" B, which is a metallic cistern partly filled with water, into which water the pipe *b* extends. A socket is formed on the head of the wash box B, which receives the pipe that leads into the condensing pipes C, C, and which pipe may be more properly termed a continuation of the series or system of pipes C, C, &c. A siphon pipe *c*, is fitted to the wash box B, to ascertain the height of the water therein, and to draw off the tar, and foul water from said box—the supply water being furnished to said wash box by the pipe *y*.

d, is a screen or sieve, inside of the wash box, and located just below the water line therein—its object being to assist in the separation of the impurities from the gas.

The condensing pipes C, terminate in another cistern D, similar in all respects to that B, from which they start; and from this cistern a pipe communicates with the purifier E, which may also be a cast iron box, divided in its center vertically by a bridge, so as to form two compartments. In these compartments are arranged at equal distances from each other, a series of screens (as shown by the dotted lines in Fig. 1.) On the screens in one of the compartments, viz: that one next the cistern D, may be placed clay, and on the screws of the other compartment, lime, through which the gas passes, and is purified, and from this purifier the gas is carried by a pipe to the gasometer.

In Figs. 3 and 4, the manner of setting the retorts, is shown: E, is a fire place constructed in the usual manner, with a fire bridge *f*, in it. F, is an arch forming the crown of the fire place, and on the top of this arch rests the retort. The arch F, has a series of small flues *g*, *g*, *g*, through it, or through its abutments, which lead into the side flues H, H, which extend through nearly the entire length of the retort, and turn up into the upper side flues J, J, which return to near the front end of the retort, and then turn into the top flue K, which extends from front to rear of the retort, and thence enters the chimney. There is also in the crown of the arch F, three or more small holes *m*, *m*, *m*, which allows the flame to play along the concave, or corrugated portion of the retort, heretofore referred to. There are also three less or more, holes *n*, *n*, *n*, in the arch at the extreme end of the retort, to allow the flame to act on the rear end of the retort, which is left exposed, for the width of the lower part of the top flue K—the rest of said end being bricked up to prevent communication between the side flues H, H, and J, J. Fire brick may be built against the side of the retort, as high as the top of the flues H, to prevent the too severe action of the fire on its sides, while it is equalized all over the retort. The siphon pipes *c*, *c*, may communicate with a pipe *z*, which will convey the tar to the fire

to be consumed, or elsewhere, to prevent unpleasant smell. And an apron or cowl P, may be placed over the mouth of the retort, and connected to the chimney by a tube *o*, to carry off all escaping gases to the chimney when charging the retort.

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

In combination with the retort, the series of longitudinal flues H, J, K, and their communicating passages *g*, *m*, *n*, when arranged, substantially as herein described.

WILLIAM BEAUMONT.

Witnesses:
A. B. STOUGHTON,
THOS. H. UPPERMAN.