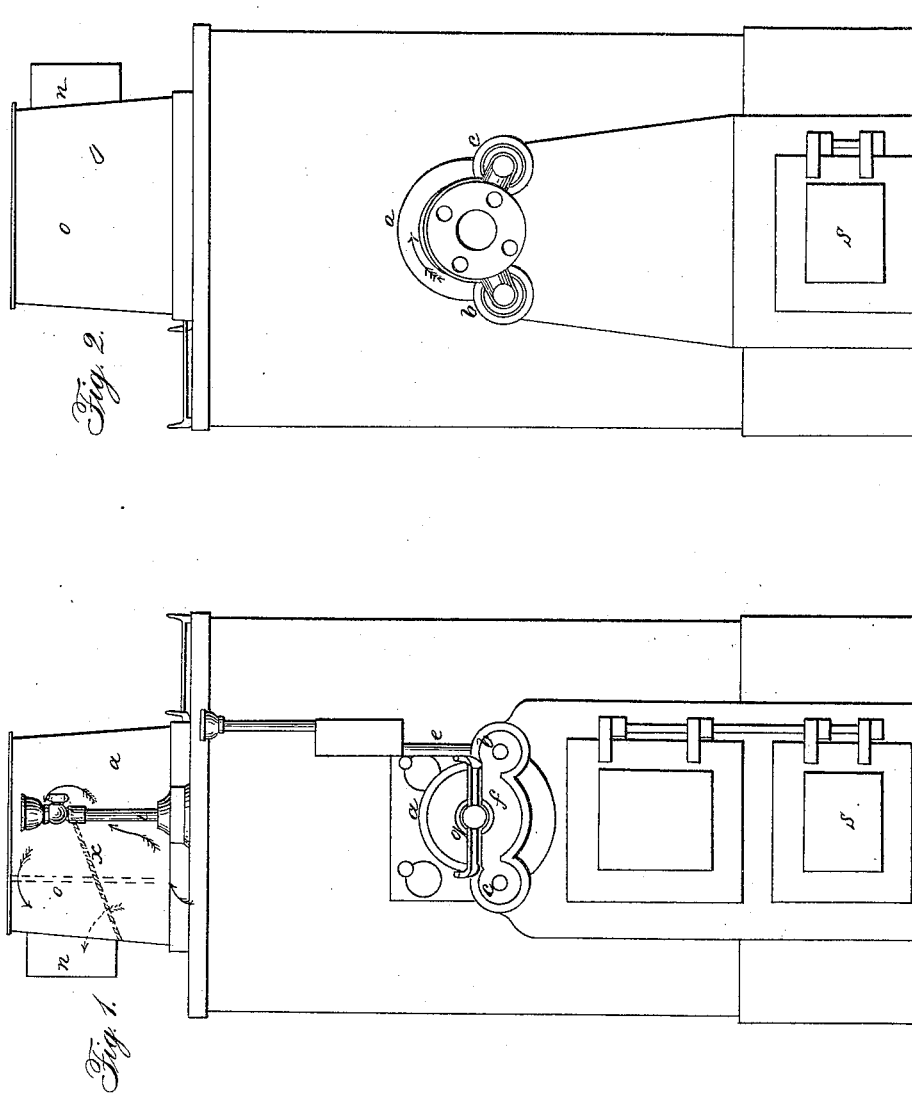


C. F. BROWN.

Making Oil and Water Gas.

No. 7,115.

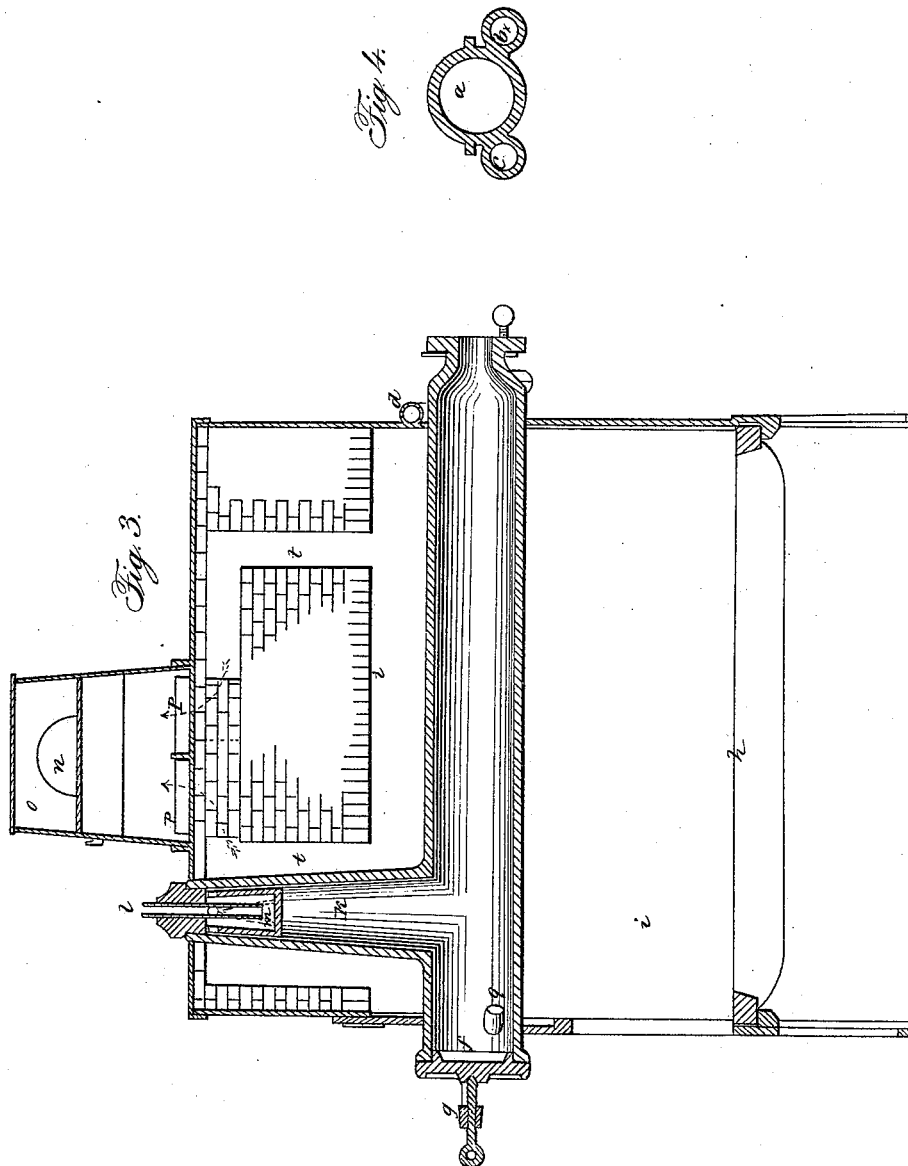
Patented Feb. 26, 1850.



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No. 7,115.

Patented Feb. 26, 1850.



UNITED STATES PATENT OFFICE.

CHRISTOPHER F. BROWN, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN GAS-GENERATING APPARATUS.

Specification forming part of Letters Patent No. 7,115, dated February 26, 1850.

To all whom it may concern:

Be it known that I, CHRISTOPHER F. BROWN, of Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Illuminating-Gas; and I do hereby declare that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known and of the usual manner of making, modifying, and using the same, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of the apparatus. Fig. 2 is a rear elevation. Fig. 3 is a vertical longitudinal section through the center of the same, and Fig. 4 is a cross-section of the retort.

My improved apparatus and mode of producing gas consists in so arranging a retort for producing an illuminating-gas and adapting a furnace thereto as to produce a brilliant illuminating-gas from rosin, combined with a due proportion of decomposed water charged with carbon.

This apparatus is constructed as follows: A compound retort is formed, consisting of three parts or cylindrical chambers *a b c*, placed parallel with each other, the center one *a* being about three times the capacity of the others, although I do not confine myself to this exact proportion. The two smaller side chambers are connected at their rear ends by a pipe *d*, that passes over the main center chamber from one to the other. In front one of the side chambers opens into the center chamber. The other is connected with a siphon-pipe *e*. The front ends of all these retorts are closed by one cap *f* and luted in the ordinary way, the cap being held by the ordinary clamp and binding-screw *g*. At the opposite end the center retort connects with the hydraulic main. At the front end of the center retort there is a vertical branch *h*, through the top of which the rosin, hereinafter to be named, is conveyed to the retort by means of a siphon-receiver of peculiar construction, into which the melted rosin passes from the induction-pipe *l*, that descends nearly to its bottom. This receiver *m* is a short truncated cone having holes near its upper end, from each of which diverging grooves are made down its outside,

and the melted rosin with which it is filled is discharged by ebullition and diffused into the retort. It is obvious that this apparatus can be varied in form to produce the same effect. This receiver, together with its induction-pipe, is fitted into the upper end of the branch *k* above named and within the chamber of the retort by grinding, a projecting flange being left on it, which projects around its upper edge over the branch pipe, by which it can be readily removed.

This apparatus minutely diffuses the material into the body of the retort and greatly aids in the subsequent action of the heat upon it. This compound retort thus constructed presents a general outline similar to those retorts that are concave on their under side, as clearly shown in the drawings, Fig. 4, which form is advantageous to economize heat. It is set in a horizontal position directly over the fire-grate *h* in an arch of brick-work *i*, in which the flues are located. Under the fire-grate there are openings *s* into the ash-pit at each end for the purpose of admitting air, which can either or both be closed during the operation to regulate the process. At the top of the arch are two openings *t t'* for flues—one near the rear end of the retort, the other farther in front. These both connect in a common exit-pipe *n*, which is in a square box *o* on the top, which box serves as a heater for the vessel containing the rosin, from which in a melted state it runs into the induction-pipe. The heat can be regulated to the rosin-vessel by means of a damper contained in the box. When turned as shown by red lines *x* in the drawings, the greatest heat is imparted to the rosin-vessel; but when it is turned as shown by the dotted lines *g'* it all passes out at the flue. There are dampers *p* to close the entrance of either flue into the box.

To operate this apparatus, the retort *a* is filled with coke, pieces of brick or limestone, anthracite coal, or other suitable material well known to the chemist. The retort *b* is filled with charcoal, and that lettered *c* with scrap-iron, or it may also be filled with carbonaceous matter. When these are raised to a proper degree of heat by the fire below on the fire-grate *h*, the receiver *m* is filled with melted rosin or any other suitable material

of which the gas is to be made—such as animal or vegetable oils or other fatty substances capable of being gasified—which is transmitted in the manner before named to the retort below, when the process is completed. At the same time water is made slowly to pass down through the siphon-pipe *e* into the front end of the retort *b*, where it is vaporized, passes through said retort, and by means of the connecting-pipe *d* enters retort *c*, where the gases are separated by passing through it, after which the compound enters into the retort *a* at the front end through the opening *q* near the point where the oleaginous matter first comes in contact with the charge in said retort, and they are then commingled and pass off to the hydraulic main in the gaseous form, and after being

submitted to the usual processes enter the gasometer.

Having thus fully described my improved apparatus and mode of manufacturing gas, what I claim therein as new, and for which I desire to secure Letters Patent, is—

1. The supply-tube, combined with the vaporizing-cup, as herein set forth, for the double purpose of supplying liquid for making gas and for vaporizing the same before it comes in contact with the decomposing-surfaces in the retort, for the purposes set forth.

2. The compound retort constructed and arranged as above specified.

CHRISTOPHER F. BROWN.

Witnesses:

WM. GREENAUGH,
T. C. DONN.