W. H. DOUGLASS.

Apparatus for Making Illuminating Gas.

No. 227,502. Patented May 11, 1880.

Fig 2.

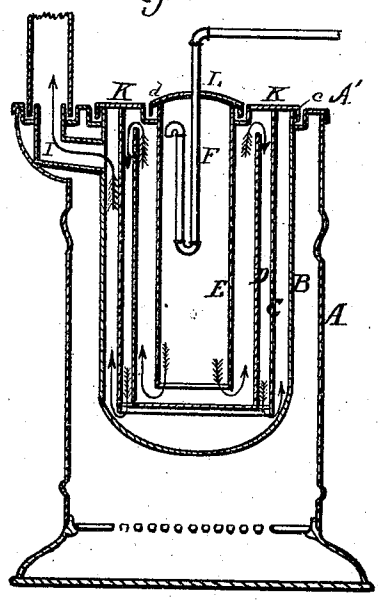


Fig 1

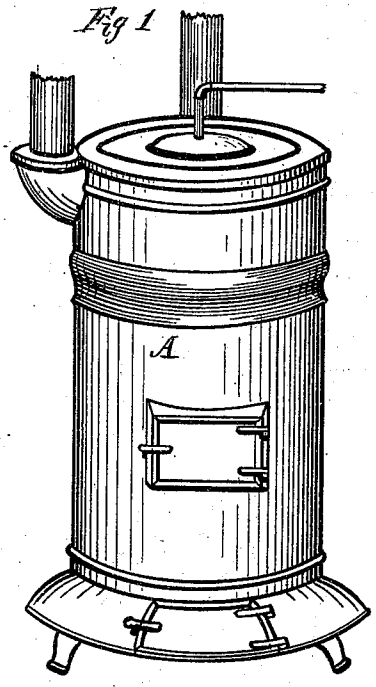
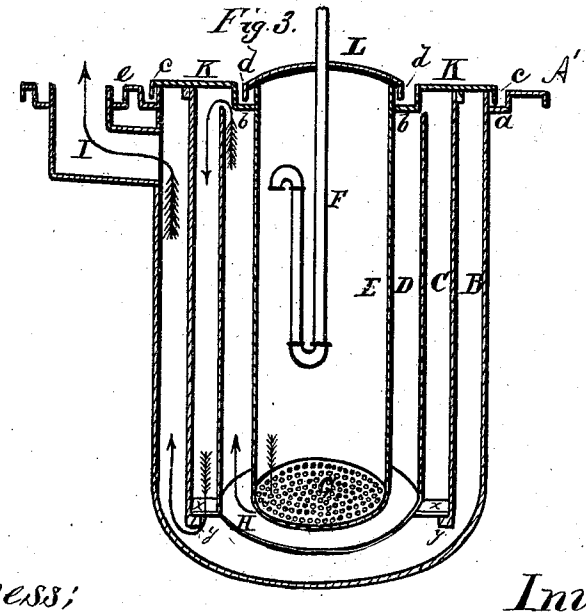


Fig 3.



Witness;

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Vernon P. Stevens.

Inventor;

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By Geo. W. Gibbitts Atty.

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UNITED STATES PATENT OFFICE.

WILLIAM H. DOUGLASS, OF CLEVELAND, OHIO, ASSIGNOR TO JAMES GRANT, OF SAME PLACE.

APPARATUS FOR MAKING ILLUMINATING-GAS.

SPECIFICATION forming part of Letters Patent No. 227,502, dated May 11, 1880.

Application filed September 26, 1879.

To all whom it may concern:

Be it known that I, WILLIAM H. DOUGLASS, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Apparatus for the Manufacture of Illuminating-Gas, which improvements are fully set forth in the following specification and accompanying drawings.

In the drawings, Figure 1 is a perspective view of my apparatus. Fig. 2 is a vertical section of the same. Fig. 3 is a vertical section of the retort.

A is the outer casing inclosing the retort, which consists of a cylinder, B, closed at the bottom, preferably with a concave bottom, and is provided with an annular flange, A′, in which is made an annular groove, *a*, for a purpose hereinafter shown.

K is a cover having a central opening, and is provided with an annular groove, *b*, immediately surrounding said opening. From the said cover K depends a second cylinder, C, having an open bottom, leaving a little space between it and the bottom of cylinder B. Within said cylinder C is placed a third cylinder, D, having a closed bottom, H, and provided with arms *x x*, which rest on lugs *y y* in the bottom of cylinder C, which support it in place. Its top edge is notched or serrated for the purpose of making passage-ways between it and the next outer cylinder.

E is an interior cylinder, fitted into the central opening of the aforesaid cover K, and has a fixed cover, L, having a downward-projecting flange, which sets into the groove *b*. The lower end of this cylinder E is made open, and is provided with a removable perforated bottom, G.

A pipe, F, is inserted through the cover L, leading part way down the center with a return-bend, and is intended for conveying the material to be treated into the interior of the said cylinder.

The aforesaid cover K has a downward-projecting flange, *c*, at its edge, which sets into the groove *a*. Said flange A′ is provided with an extension fitting over the outlet I, and is also provided with a groove, *e*, into which sets the pipe for conveying off the gas. Into the aforesaid grooves is to be placed a fusible alloy, or its equivalent, so that when heat is applied to the apparatus the alloy will melt, and the aforesaid flanges *c d* will be immersed therein, and thus a gas-tight joint will be insured.

Beneath the retort in the base of the outside casing is a grate for supporting a fire for heating the said retort, beneath which is an ash-pit. There is also a door in the said casing, through which fuel is supplied.

The manner in which this apparatus is used is as follows: The liquid material to be treated is allowed to flow through the pipe F, reaching the interior of the cylinder E, and is to be delivered upon broken brick, pumice-stone, coke, or their substantial equivalents, and, being diffused through the mass, is partially converted, and in this condition, reaching the bottom of the cylinder, is liberated and passes through the perforated bottom, and reaches the next succeeding chamber. Here meeting a resistance, a deposition of extraneous matter is effected, and which is continued during the passage of the gas through the succeeding chambers, and which, in passing through, is brought into contact with the sides and bottom of the retort, following in the direction of the arrows, and, finding outlet at the pipe I, from thence can be conveyed to suitable storage-room.

The object of the arrangement of cylinders with grooves and flanges, as described, and the use of a fusible alloy, is to provide a ready means of taking the cylinders apart for the purpose of removing the deposit and for cleaning them.

I do not claim the use of a fusible alloy for retort-joints, nor a retort provided with a removable cylinder with flanges setting in grooves of the casing, these devices being old and already known in the art; but

What I do claim is—

In combination with exterior casing, A, having at its upper end a supporting-flange, A′, grooved at *a*, the retort B, having cover K, provided with downward flange *c*, fitting into said groove, the cylinder C, suspended by cover K, and the cylinder D, supported by attachments of cylinder C, the upper end of cylinder D being serrated or recessed, whereby a passage is provided for the gas through the successive chambers formed by said cylinders.

Witnesses: W. H. DOUGLASS.

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