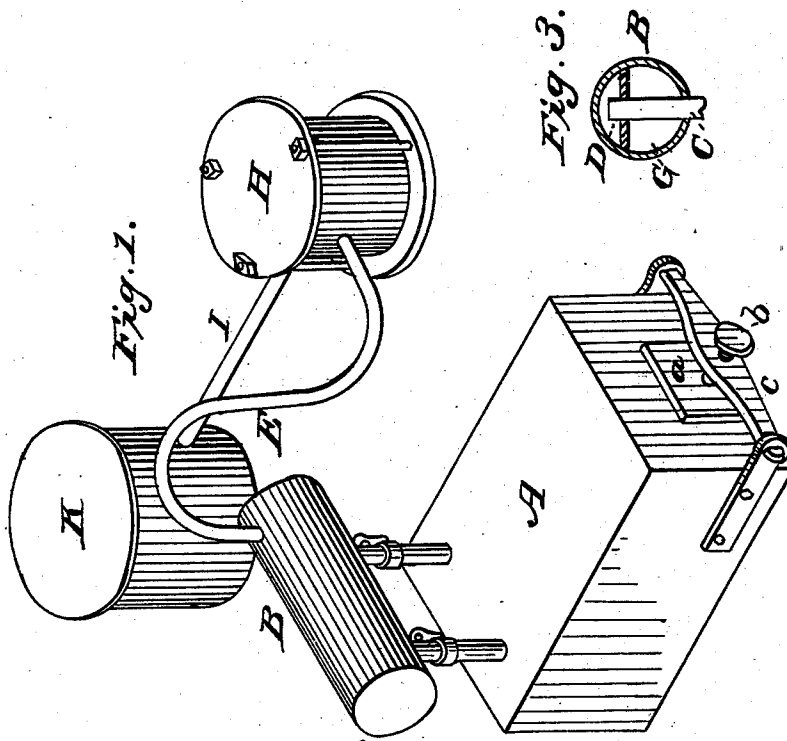
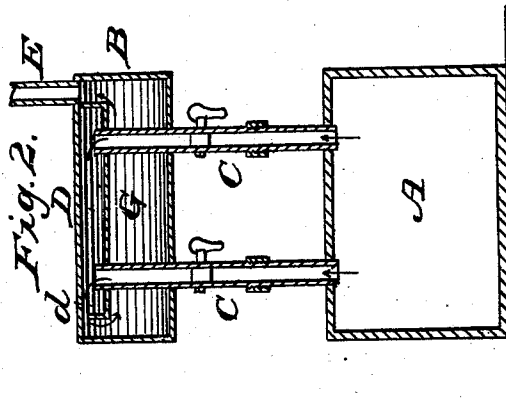


D. H. IRLAND.
Making Coal Gas.

No. 78,209.

Patented May 26, 1868.



WITNESSES
J. A. Davis
William H. Shaffer

INVENTOR:
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By *J. L. Granger*
Atty.

United States Patent Office.

DAVID H. IRLAND, OF FAYETTE, NEW YORK.

Letters Patent No. 78,209, dated May 26, 1868.

IMPROVED APPARATUS FOR THE MANUFACTURE OF COAL-GAS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, DAVID H. IRLAND, of Fayette, in the county of Seneca, and State of New York, have invented a certain new and useful Improvement in Gas-Apparatus; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a perspective view of my improved apparatus.

Figure 2, a vertical section of the retort and condensing-chamber.

Figure 3, a cross-section of the condensing-chamber.

Like letters of reference indicate corresponding parts in all the figures.

My improvement relates to a portable gas-apparatus, in which the retort is applied to a common stove, so that when the gas has been extracted from the coal, the latter can be utilized for fuel by drawing from the retort into the stove.

My invention consists in the construction and arrangement of the condensing-cylinder, having an elevated ash-pan for catching soot, and a chamber for the contact of the gas with water, said cylinder being employed in connection with the retort, purifier, and gasometer, as hereinafter set forth.

In the drawings, A represents the retort, which may be of any desired form, and connected with the stove in any desired manner. It has a suitable door, *a*, held in place by set-screw *b* of removable cross-head *c*.

Above the retort is situated the condensing-cylinder B, the parts being connected by pipes C C, which open near the top of cylinder, as shown in fig. 2. The condensing-cylinder has in its upper part an ash or soot-pan, D, with raised edge or flange *d*, and partition *f*, which cuts off the passage from the induction-pipes C C to eduction-pipe E, except in the roundabout way indicated by the arrows, fig. 2, in which case the gas is brought in contact with water, nearly filling the chamber G below the ash-pan.

The opposite end of pipe E opens into purifier H, which is filled with lime, and after the gas is purified, it passes through pipe I into gasometer K, containing water, from whence it is discharged in any suitable manner for utilization.

By this connection and construction of the condensing-cylinder, I am enabled to bring the gas in contact with water, to deposit the aqueous elements before it reaches the lime-purifier. Such soot as is carried up from the retort is caught in the elevated ash-pan D, and can be drawn out at any time through a man-hole in the head or side of the cylinder. This soot is prevented from tainting the water by the flanges *d f*, forming thereby a shallow pan. The gas, in passing the indirect way indicated by the arrows, becomes in a degree cooled by contact with the cold top of the cylinder, so that when it reaches the surface of the water beneath, it is in that condition to best deposit the watery part, which it effectually does in the long passage over the surface of the liquid. I am not aware that a condensing-cylinder thus constructed has ever before been interposed between the retort and purifier.

What I claim as my invention, and desire to secure by Letters Patent, is—

The interposed condensing-cylinder B, constructed with the elevated ash-pan D, and water-chamber G, and employed in connection with the retort A, purifier H, and gasometer K, substantially as and for the purpose herein set forth.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

D. H. IRLAND,

Witnesses:

LUKE JOHNSON,
GEORGE TRAUTMAN.