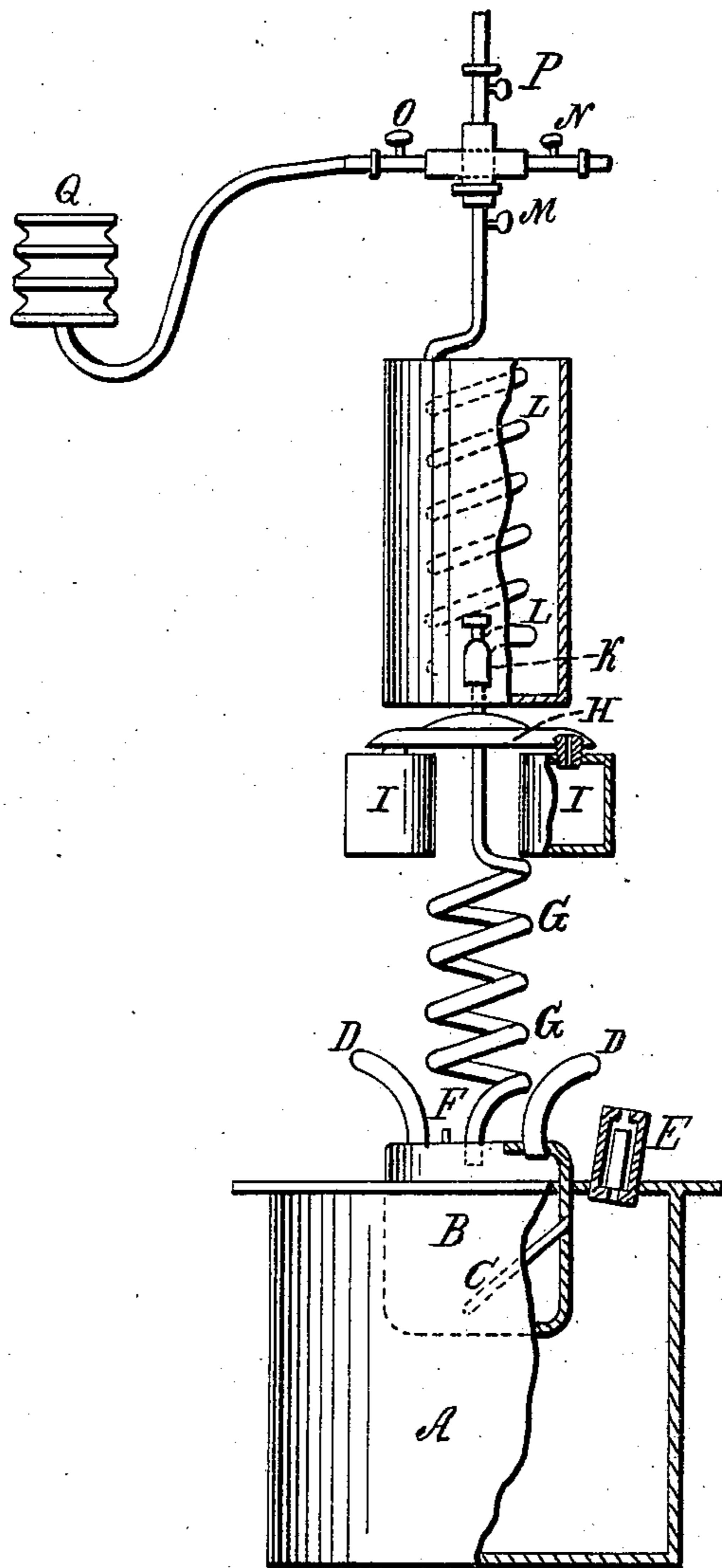


J. SHOEMAKER.
Making Coal Gas.

No. 71,233.

Patented Nov. 19, 1867.



Witnesses.

Chas. Clausen
L. Murphy

Inventor.

J. Shoemaker
by
D. P. Holloway & Co.
his attys.

United States Patent Office.

JOHN SHOEMAKER, OF PUTNEYVILLE, PENNSYLVANIA.

Letters Patent No. 71,233, dated November 19, 1867.

IMPROVED APPARATUS FOR MANUFACTURING GAS AND OIL FROM COAL.

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, JOHN SHOEMAKER, of Putneyville, in the county of Armstrong, and State of Pennsylvania, have invented a new and improved Apparatus for Manufacturing Gas, and Distilling Oils from Coals; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which the apparatus is shown by an elevation partly in section.

My invention consists in so constructing an apparatus that the coal may be distilled, and the oils collected and the gas evolved in the process be burned, the said apparatus being so arranged as to be adapted to ordinary domestic use, substantially as follows:

A is the retort, made of iron, and adapted to fit into the boiler-holes of an ordinary cooking-stove, or to be fitted into a furnace. B is the rectifier, which is a metallic vessel, formed to be fitted tightly into the top of the retort. C is a pipe leading through the shell of the rectifier, through which the volatilized products of distillation may pass from the retort. E is a safety-valve, placed in the retort. The handles D are used to lift the rectifier. An opening may be effected, by removing the plug F, to introduce crude or impure oils into the rectifier.

The volatilized products of distillation pass from the rectifier, through the pipe G, into the worm L, which is placed within the condenser K, the latter being filled with cold water, which, as it is heated, may be drawn off through the cock K'. The oils formed by the condensation of the vapor, entering the worm L, will flow back into the receiver H, into which the pipe G is extended, so that they will not run back through the pipe G, but may be collected in the vessels I attached to the bottom of the receiver H. The non-condensable gas evolved by the distillation of the coal will rise through the pipe L, the flow thereof being regulated by the stop-cock M, and, entering the pipes leading to the burners, may be either burned as it is produced, or, by closing the stop-cocks N and P, and opening the one at O, it may be collected and stored in any suitable gasometer.

I have represented at Q a very simple form of gas-receiver, being a receptacle formed, like a pair of bellows, by two wooden heads, connected by a piece of leather, varnished cloth, or other pliable and air-tight material.

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

1. A retort for distilling bituminous coal, adapted for application to an ordinary stove, in combination with a rectifier, B, pipes G and L, receiver H, vessels I, and condenser K, arranged substantially as set forth.
2. The combination and arrangement of the retort A, safety-valve E, rectifier D, constructed as described, with the pipe G, receiver H, vessels I, condenser K, worm L, and connected branch pipes, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN SHOEMAKER.

Witnesses:

WM. R. HAMILTON,
JOHN DUFF.