Somerville & Elsdon,

Gas Apparatus.

No. 76,837. Patented Apr. 14, 1868.

Fig: 2.

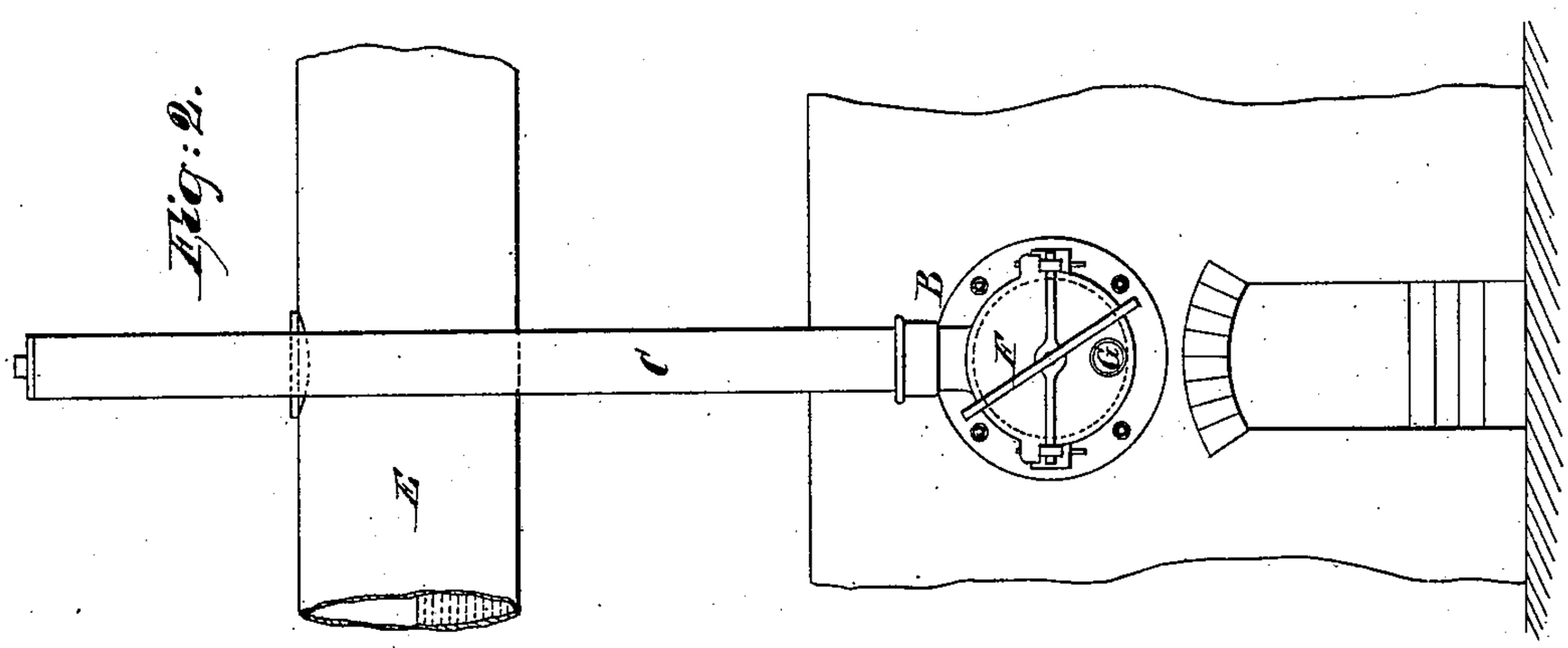
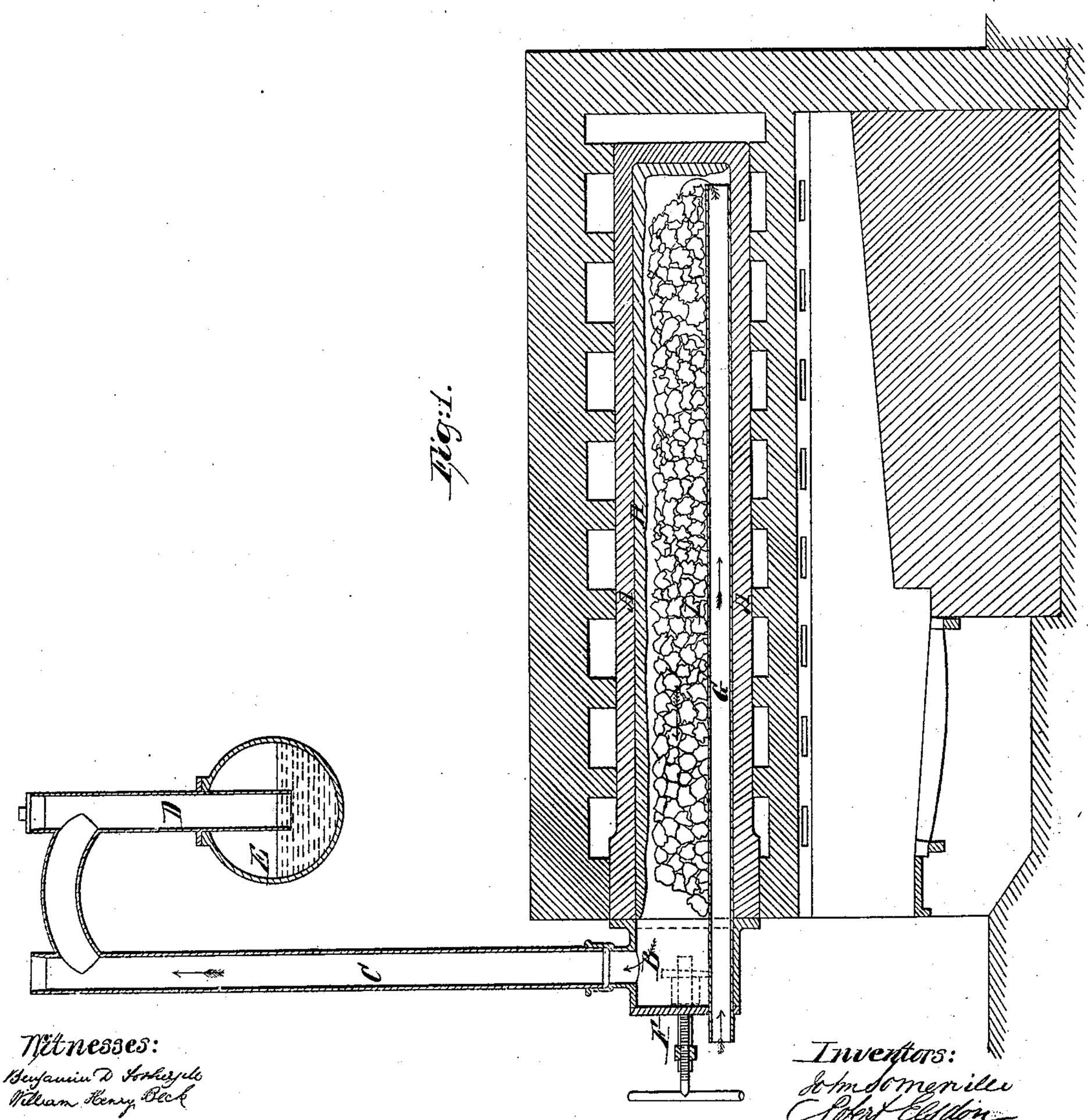


Fig: 1.



Witnesses:
Benjamin D Sokerzyde
William Henry Beck

Inventors:
John Somerville
Robert Elsdon

United States Patent Office.

JOHN SOMERVILLE AND ROBERT ELSDON, OF MAIDSTONE, GREAT BRITAIN.

Letters Patent No. 76,837, *dated April* 14, 1868.

IMPROVEMENT IN THE MANUFACTURE OF ILLUMINATING-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 we, JOHN SOMERVILLE, of the gas-works, Maidstone, in the county of Kent, and ROBERT ELSDON, engineer, also of Maidstone, in the county of Kent, and Kingdom of Great Britain, have invented certain "Improvements in the Treatment of Apparatus Employed in the Manufacture, and of Materials Used in the Purification of Gas;" and we do hereby declare the following to be a full, clear, and exact description of the same.

The object of this invention is to remove with rapidity the deposit of carbon which accumulates in and adheres to the interior of the retorts or ovens used in the distillation of coals or other materials for the manufacture of gas, and which operation is commonly called "scurfing."

The improvements consist in scurfing by the following means: A cast-iron or other suitable pipe is introduced into the retort, of sufficient length to reach from the front to within a few inches of the back. The retort, which is heated in the ordinary manner, is then charged with a quantity of chalk or limestone. A special retort-lid or cover is provided, having a hole through which the pipe before mentioned is passed, leaving a few inches projecting outwards beyond said retort-lid or cover. The lid or cover is luted and secured to the mouth-piece in the usual way. The cap of the ascension-pipe is then removed, and a current of air established, which passing through the cast-iron pipe, above mentioned, to the back end of the retort, returns through or amongst the chalk or limestone to the front end, whence it escapes by the ascension-pipe. By this means the chalk or limestone will be converted in the course of a few hours into quicklime, and during the process, the carbon adhering to the retort will be removed and carried off through the ascension-pipe. Thus, not only is the retort freed from a deposit which is as prejudicial to the economical manufacture as it is annoying to the gas-maker, but an excellent lime is produced, without injury to the retort, and which may be used for the purification of gas, or other purposes.

In cases where it is desired to retain the carbon in a solid form, the charge of chalk or limestone may be so modified in quantity as to cause the carbon to be merely loosened from the surface of the retort, so as to facilitate its after removal by mechanical means.

In the case of double or through retorts, the cast-iron or other suitable pipe, before mentioned, can be dispensed with, and the lid or cover at the end of the retort opposite to that from which the cap of the ascension-pipe has been removed, is to be left open, or only partially closed, so as to establish a current of air through and amongst the chalk or limestone with which the retort is charged.

This invention is also of great advantage in works where the gas is purified by lime, as it enables the manufacturer to charge the retort which requires scurfing, with the spent or foul lime from the purifiers, so as to revivify it, and thus admit of the repeated use of the same material, while it affords means for the utilization of what is now a very offensive residual.

In some cases it may be found necessary to make a temporary connection between the tip of the ascension-pipe and the chimney-shaft, or other suitable outlet, so as to convey away more completely any objectionable effluvia that might arise in the course of the operation.

Description of the Drawing.

Figure 1 is a longitudinal section through a retort, its setting, ascension-pipe, &c., showing the cast-iron pipe and special lid or cover in place.

Figure 2 is a front view of same.

A A represent the retort, set in brick-work in the ordinary manner; B, the cast-iron mouth-piece; C, the ascension-pipe, communicating by the dip-pipe D with the hydraulic main E. The ascension-pipe C is shown with its cap removed. F is the special lid or cover, secured to the mouth-piece in the usual manner. G is the cast-iron or other suitable pipe, passing through the hole in the lid F, and, lying along the bottom of the retort, extends to within a few inches of the back end thereof. H represents the accumulation of carbon on the

interior of the retort, and I I show the charge of chalk or limestone. It will now be readily understood that with this arrangement of the parts, heat being applied to the retort as usual, a current of air will enter through the pipe G in the direction of the arrow, passing to the back end, thence it will traverse the chalk or limestone to the front end, and finally escape by the ascension-pipe, the carbon of the retort being carried away with it.

We lay no claim to the apparatus employed, that is, the pipe and perforated lid, or, in the case of long retorts, the leaving of one end open, while the other remains closed, as they are old and well known, but

What we do claim to be our invention, is—

The use of chalk, limestone, or foul-gas lime, for the purpose of removing carbon from the interior of gas-retorts without injuring them, in the manner substantially as herein described, while, by the same operation, a useful product, namely quicklime, is obtained.

In testimony whereof, we have signed our names to this application in the presence of two subscribing witnesses.

JOHN SOMERVILLE,
ROBERT ELSDON.

Witnesses:

BENJAMIN D. FOTHERGILL,
WILLIAM HENRY BECK.