

Specification of Joseph Whitley : treating sewer gas.

Contributors

Whitley, Joseph.

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A.D. 1875, 5th MAY.

N° 1672.

S P E C I F I C A T I O N

OF

JOSEPH WHITLEY.

—
TREATING SEWER GAS.
—

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,

PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY :

PUBLISHED AT THE GREAT SEAL PATENT OFFICE,

25, SOUTHAMPTON BUILDINGS, HOLBORN.

10d.

1875.





A.D. 1875, 5th MAY. N° 1672.

Treating Sewer Gas.

LETTERS PATENT to Joseph Whitley, of Roundhay, near Leeds, in the County of York, Engineer, for the Invention of "**IMPROVED MODE OF AND ARRANGEMENTS FOR REMOVING FROM SEWERS AND DEALING WITH DELETERIOUS GASES.**"

Sealed the 16th November 1875, in pursuance of an Order of the Lord Chancellor, and dated the 5th May 1875.

PROVISIONAL SPECIFICATION left by the said Joseph Whitley at the Office of the Commissioners of Patents, with his Petition, on the 5th May 1875.

I, **JOSEPH WHITLEY**, of Roundhay, near Leeds, in the County of York, Engineer, do hereby declare the nature of the said Invention for "**IMPROVED MODE OF AND ARRANGEMENTS FOR REMOVING FROM SEWERS AND DEALING WITH DELETERIOUS GASES,**" to be as follows:—

The object of this Invention is to exhaust and purify the deleterious gases of common sewers by the application of heat in the following manner:—I erect a shaft in proximity to a trunk sewer, and connect by a suitable conduit. At a proper height from the ground line I place a

Whitley's Improved Mode of Treating Sewer Gas.

series of Bunsen's burners or other mode of caloric force to heat the entire area of the shaft. By these means the gases in the sewers are caused to flow to the centre of heat, and in their passage through the flames become purified prior to their discharge into the atmosphere. For this purpose I provide a main for the supply of carburetted hydrogen 5 gas, from which main I convey such gas to a series of compounding chambers, which supply the jets or burners over the area of the shaft or chimney, "blue" flame being thus created. All other apertures, whether for lighting, inspection, testing apparatus, or other purpose are hermetically sealed, and covered with glass, mica, or other transparent 10 substance.

SPECIFICATION filed in pursuance of the conditions of the Letters Patent, and of an Order of the Lord Chancellor, by the said Joseph Whitley in the Great Seal Patent Office on the 16th November 1875.

15

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JOSEPH WHITLEY, of Roundhay, near Leeds, in the County of York, Engineer, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Fifth day of May, in the year of 20 our Lord One thousand eight hundred and seventy-five, in the thirty-eighth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Joseph Whitley, Her special license that I, the said Joseph Whitley, my executors, administrators, and assigns, or such others as I, the said Joseph 25 Whitley, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an 30 Invention for "**IMPROVED MODE OF AND ARRANGEMENTS FOR REMOVING FROM SEWERS AND DEALING WITH DELETERIOUS GASES,**" upon the condition (amongst others) that I, the said Joseph Whitley, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascer- 35 tain the nature of the said Invention, and in what manner the same

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was to be performed, and cause the same to be filed in the Great Seal Patent Office on or before the Sixteenth day of November, in the year of our Lord One thousand eight hundred and seventy-five.

NOW KNOW YE, that I, the said Joseph Whitley, do hereby declare
5 the nature of the said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement thereof, and the Sheet of Drawings therein referred to (that is to say):—

The object of this Invention is to exhaust and purify the deleterious
10 gases of common sewers by the application of heat in the following manner:—I erect a shaft in proximity to a trunk sewer, and connect the sewer to it by a suitable conduit. At a proper height from the ground line I place (within the shaft or outside of it, as may be most convenient in each case) a series of Bunsen's burners or other mode of
15 caloric force to heat the entire area of the shaft, and to destroy the fever germs contained in the gases of the sewer. By these means the gases in the sewers are caused to flow to the centre of heat, and in their passage through the flames become purified prior to their discharge into the atmosphere. For this purpose I provide a main for the supply of
20 carburetted hydrogen gas, from which main I convey such gas to a series of compounding chambers, which supply the jets or burners over the area of the shaft or chimney, "blue" flame being thus created. All other apertures, whether for lighting, inspection, testing apparatus, or other purpose, are hermetically sealed and covered with glass, mica, or
25 other transparent substance.

Such being the nature of my said Invention I proceed to describe the manner of carrying it into practical effect as illustrated in the accompanying Drawings whereof,—

Fig. 1 is a sectional elevation of the general arrangement of a shaft,
30 and the terminus of a sewer and the burners; Fig. 2 is a plan of the above, without pipes; Fig. 3 is a sectional elevation to an enlarged scale and Fig. 4, a sectional plan.

Fig. 5 and Fig. 6 represent sectional elevation and plan of a modified burner arrangement.

35 In Figs. 1 to 4 A is a shaft; B, the terminus of a common sewer; C, an entrance door to the sewer; D, the main gas pipe supplying E, the

Whitley's Improved Mode of Treating Sewer Gas.

system of burners; F is a circular pipe around the base of the shaft, and serving as a reservoir, whence the burners may be amply supplied. The gas enters through D into the tubular gas reservoir F, from which it passes through the pipes *b, b*, into the mixing chambers E¹; *a, a*, are air holes to allow air to enter the mixing chambers E¹, and to mix with the gas. The flame produced is of an intense heat, and ample to destroy the fever germs generated in the sewer. 5

Fig. 5 and Fig. 6 relate to an arrangement similar to that already described, but modified to work with gas of inferior quality to the ordinary coal gas. The gas to be used may be produced in gas retorts or gas chambers, and may be conducted directly to the shaft pipes without undergoing the process of purification, etc. 10

In Fig. 5 and Fig. 6 A is the shaft; B, the sewer; D, the gas supply pipe; G is a deflector for the flame, and is to be made of material that will resist high temperatures; H is a protector for the bottom part of the shaft, where the flame will be most intense, and is to be made of same material as deflector G; I, I, are air holes to allow a constant current of air to pass through the annular space between the shaft and the protector H; N, N, are the supports for the deflector G; K is the nozzle of the gas pipe encased in metal, and made of a heat-resisting material; L, L, are air holes to allow a certain quantity of air to mix with the gas before being discharged as a flame; M is a hole in the shaft to facilitate the lighting of the gas when the apparatus is to be put in operation. The action of this arrangement resembles that of the arrangement shewn in Figs. 1, 2, 3, and 4. 15 20 25

Having thus described the nature of my Invention for an "Improved Mode of and Arrangements for Removing from Sewers and Dealing with Deleterious Gases," and having explained the manner of carrying it into practical effect, I would have it understood that I am aware various plans have been proposed for exhausting sewers and dealing with the foul gases, but so far as I know none of the arrangements heretofore proposed have been such as would effectually destroy the fever germs floating in the sewer gas, and which it is the object of my Invention to remove, and which I effect by causing the said gas to pass through an intense heat, as herein-above described; what I consider to be novel and original and therefore claim as the Invention secured to me by the herein-before in part recited Letters Patent is,— 30 35

Whitley's Improved Mode of Treating Sewer Gas.

The mode of and arrangements for dealing with the deleterious gases from sewers by subjecting them to the action of intense heat in the manner and for the purpose herein-before described.

I also claim the combination of parts forming the improved apparatus
5 for removing from sewers and dealing with deleterious gases constructed, arranged, and operating as shewn in and described with reference to Figs. 1, 2, 3, and 4 of the accompanying Drawings.

I also claim the arrangement of apparatus, as shewn in Figs. 5 and 6, for the purpose specified.

10 In witness whereof, I, the said Joseph Whitley, have hereunto set my hand and seal, this Fifth day of November, in the year of our Lord One thousand eight hundred and seventy-five.

JOSEPH WHITLEY. (L.S.)

LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1875.

Wheeler's Improved Mode of Treating Sewer Gas

The mode of and arrangements for dealing with the deleterious gases from sewers by subjecting them to the action of incense heat in the manner and for the purpose herein-before described.

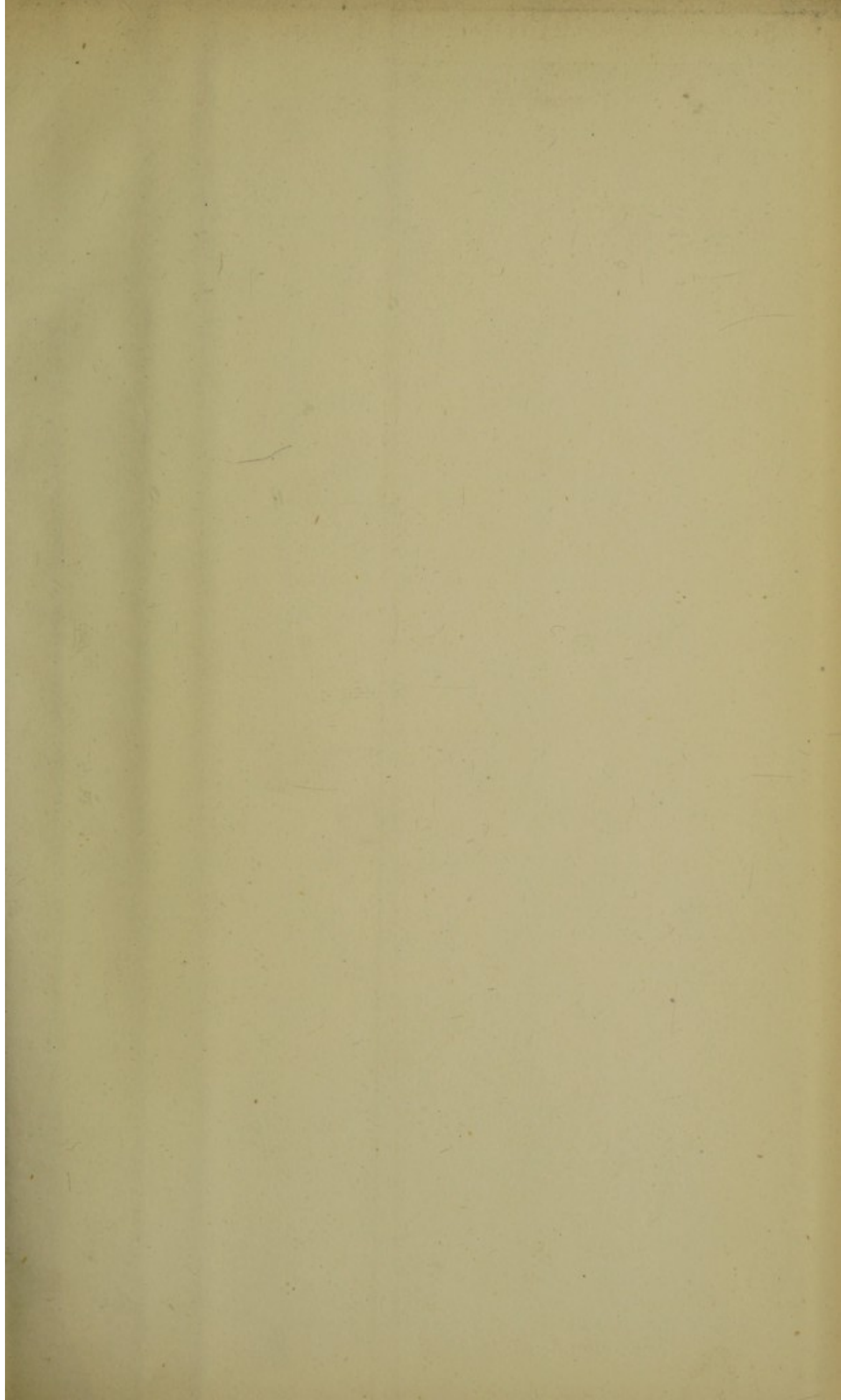
I also claim the combination of parts forming the improved apparatus for removing from sewers and dealing with deleterious gases constructed, arranged, and operating as shown in and described with reference to Figs. 1, 2, 3, and 4 of the accompanying Drawings.

I also claim the arrangement of apparatus, as shown in Figs. 5 and 6 for the purpose specified.

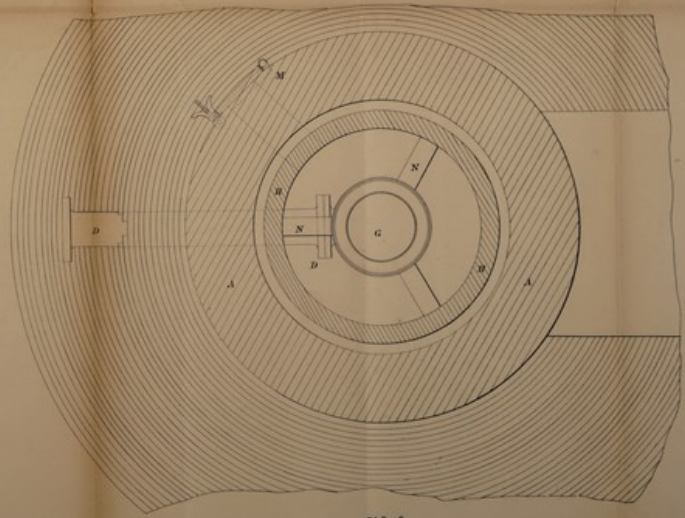
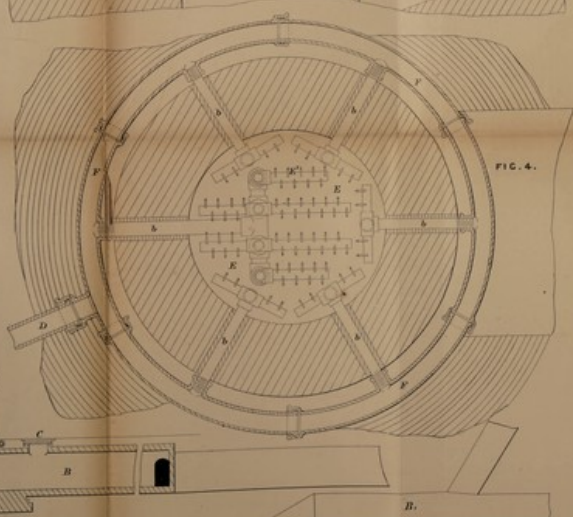
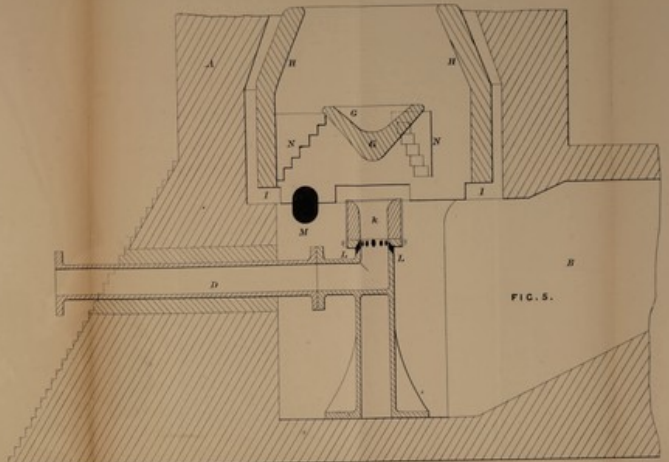
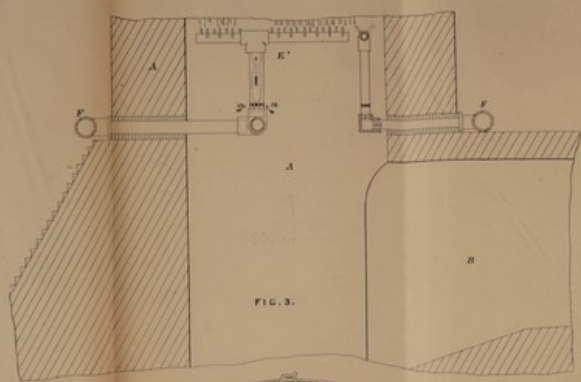
In witness whereof, I, the said Joseph Whitley, have hereunto set my hand and seal, this fifth day of November, in the year of our Lord One thousand eight hundred and seventy-five.

JOSEPH WHITLEY. (s.s.)

LONDON:
Printed by GEORGE BROWN, River and Wharf Street, Strand.
Printers to the Queen's most Excellent Majesty. 1875.







The steel drawing is not colored.

LONDON: Printed by George Lewis, Eng. and Walter Drommond, Printers to the Queen at the Queen's Printing Office, 1875.

Drawn on Stone by Malby & Sons

