Specification of Edward Brooke the younger : deodorizing noxious gases.

A.D. 1866, 2nd April. N° 941.

SPECIFICATION

OF

EDWARD BROOKE THE YOUNGER.

DEODORIZING NOXIOUS GASES.

LONDON:
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Deodorizing Noxious Gases.

LETTERS PATENT to Edward Brooke, the younger, of Huddersfield, in the County of York, Manufacturer of Sanitory Tubes and other Fire-clay Goods, for the Invention of "IMPROVEMENTS IN THE CONSTRUCTION AND ARRANGEMENT OF APPARATUS AND MATERIAL FOR EFFECTING THE DEODORIZING OF NOXIOUS GASES ARISING FROM SEWERS AND DRAINS, AND FOR THE MORE EFFECTUAL VENTILATION OF SUCH SEWERS AND DRAINS."

Sealed the 11th September 1866, and dated the 2nd April 1866.

PROVISIONAL SPECIFICATION left by the said Edward Brooke at the Office of the Commissioners of Patents, with his Petition, on the 2nd April 1866.

I, EDWARD BROOKE, the younger, of Huddersfield, in the County of York, Manufacturer of Sanitory Tubes and other Fire-clay Goods, do hereby declare the nature of my said Invention of "IMPROVEMENTS IN THE CONSTRUCTION AND ARRANGEMENT OF APPARATUS AND MATERIAL FOR EFFECTING THE DEODORIZING OF NOXIOUS GASES ARISING FROM SEWERS AND DRAINS, AND FOR THE MORE EFFECTUAL VENTILATION OF SUCH SEWERS AND DRAINS, to be as follows:—

This Invention relates to further improvements (in the construction and arrangement of apparatus and material for effecting the deodorizing of noxious gases arising from sewers and drains, and for the more effectual ventilation

of such sewers and drains) upon a previous Invention for which Letters Patent were granted to me in the year of our Lord One thousand eight hundred and sixty-five, dated September Twenty-fifth, and numbered 2451. The practice heretofore has been to "trap" or prevent the escape of noxious effluvia or gases at the "gullies or stench traps," which gullies serve to convey the surface water from the streets to the drains or sewers.

My Invention consists, firstly, of a method of constructing and arranging gullies and deodorizing medium in such manner as to deodorize and discharge gases, which I effect as follows:—I construct a gully or cesspitt of earthenware or iron, which by a branch or bend and pipes communicates with the sewer or drain. Upon and communicating with the said branch or bend is a box or chamber, the bottom of which is perforated, and communicates by an opening with the upper part of the gully or cesspitt. To the interior of said box or chamber is introduced a tray or screen of galvanized wire or iron containing charcoal (or other deodorant); the noxious gases arising from the sewer or drain pass through the perforated bottom of the chamber or box and through the charcoal, and thence escape through an aperture in the end of the box or chamber to the ordinary surface grating. The gases are prevented from arriving at the surface grating otherwise than by way of the chamber and box by means of a "trap" constructed in the ordinary manner. Access to the tray or screen of charcoal for the purpose inspecting or replenishing the charcoal from time to time is obtained by raising a lid or cover placed at the surface level of the ground, or the tray may be removed through the aperture connecting the charcoal chamber or box with the gulley. The bend or branch pipe above mentioned may be divided by a midfeather placed longitudinally therein, the upper passage serving as an "air passage" for the escape of gas after deodorization, a screen or tray of charcoal being inserted in the air passage for that purpose, the other or lower passage serving to convey water to the drain or sewer as usual, or a tray or screen containing charcoal may be placed in the interior of the gulley or cesspitt, which tray or screen is supported above the branch or bend. In the centre of the said tray or screen I introduce a funnel-mouthed pipe, which is supported in a vertical position by the tray or screen above mentioned, the lower end of the said pipe extends to near the bottom of the gulley, forming a trap. To the surface grating is attached a hopper, which conveys water into the funnel mouth of the vertical pipe above mentioned, and by means of the branch or bend and pipes to the sewer or drain. The gases arising from the sewage matter pass through the charcoal, are deodorized, and escape by the surface grating

Brooke's Improvements in Apparatus for Deodorizing Noxious Gases.

The second part of my Invention relates to the deodorizing of gases in their passage from a sewer or drain by way of the rain pipes; this I effect by removing one of the pipes connecting the rain pipe with the sewer; the pipe so removed I replace with a similar pipe, but provided with a branch and socket (the said branch and socket being in or near the vertical position). In the said socket rests a tray or screen containing charcoal; at the foot of the said rain pipe I place a syphon bend or trap communicating with the pipes leading to the sewer or drain. As the noxious gases ascend the pipes from the sewer or drain they are prevented from ascending the rain pipe before passing through the charcoal by the water (trap) lodging in the syphon bend. The ordinary outlet being cut off the gases ascend the vertical or upright branch, and pass through the charcoal in the tray or screen placed in the socket of the said upright branch (which socket is provided with a lid or cover), from whence they are conveyed by a pipe connecting the socket with the upper part of the syphon bend, and escape by the rain pipe. Pipes of an ornamental design may be fixed to buildings specially for the purpose of ventilating sewers and drains by carrying off the gases after being deodorized as above described. Access to the apparatus for the purpose of replenishing the charcoal from time to time is readily obtained by raising a lid or cover placed level with the footpath or road.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said Edward Brooke in the Great Seal Patent Office on the 28th September 1866.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, EDWARD BROOKE, the younger, of Huddersfield, in the County of York, Manufacturer of Sanitary Tubes and other Fire-clay Goods, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Second day of April, in the year of our Lord One thousand eight hundred and sixty-six, in the thirtieth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Edward Brooke, the younger, Her special licence that I, the said Edward Brooke, the younger, my executors, administrators, and assigns, or such others as I, the said Edward Brooke, the younger, 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 Invention for "IMPROVEMENTS IN THE CONSTRUCTION AND ARRANGEMENT OF APPARATUS AND MATERIAL FOR EFFECTING THE DEODORIZING OF NOXIOUS GASES ARISING FROM SEWERS AND DRAINS, AND FOR THE MORE EFFECTUAL VENTILATION OF SUCH SEWERS AND DRAINS," upon the condition (amongst others) that I, the said Edward Brooke, the younger, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said Edward Brooke, the younger, do hereby declare the nature of my said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This Invention relates to further improvements, in the construction and arrangement of apparatus and material for effecting the deodorizing of noxious gases arising from sewers and drains, and for the more effectual ventilation of such sewers and drains, upon a previous Invention for which Letters Patent were granted to me A.D. 1865, dated September Twenty-fifth, and numbered 2451. The practice heretofore has been to "trap" or prevent the escape of noxious effluvia or gases at the "gullies or stench traps," which gullies serve to convey the surface water from the streets to the drains or sewers.

My Invention consists, firstly, of a method of constructing and arranging gullies and deodorizing medium in such manner as to deodorize and discharge gases, which I effect as follows:—I construct a gully or cesspit of earthenware or iron, which by a branch or bend and pipes communicates with the sewer or drain. Upon and communicating with the said branch or bend is a box or chamber, the bottom of which is perforated, and communicates by an opening with the upper part of the gully or cesspit. To the interior of said box or chamber is introduced a tray or screen of galvanized wire or iron containing charcoal (or other deodorant); the noxious gases arising from the sewer or drain pass through the perforated bottom of the chamber or box and through the charcoal, and thence escape through an aperture in the end of the box or chamber to the ordinary surface grating. The gases are prevented from arriving at the surface grating otherwise than by way of the chamber and box by means of a "trap" constructed in the ordinary manner. Access to the tray or screen of charcoal for the purpose of inspecting or

replenishing the charcoal from time to time is obtained by raising a lid or cover placed at the surface level of the ground, or the tray may be removed through the aperture connecting the charcoal chamber or box with the gully. The bend or branch pipe above mentioned may be divided by a midfeather placed longitudinally therein, the upper passage serving as an air passage for the escape of gas after deodorization, a screen or tray of charcoal being inserted in the air passage for that purpose, the other or lower passage serving to convey water to the drain or sewer as usual; or a tray or screen containing charcoal may be placed in the interior of the gulley or cesspit, which tray or screen is supported above the branch or bend. In the centre of the said tray or screen I introduce a funnel-mouthed pipe, which is supported in a vertical position by the tray or screen above mentioned, the lower end of the said pipe extends to near the bottom of the gully forming a trap. To the surface grating is attached a hopper, which conveys water into the funnel mouth of the vertical pipe above mentioned, and by means of the branch or bend and pipes to the sewer or drain. The gases arising from the sewage matter pass through the charcoal, are deodorized, and escape by the surface grating.

The second part of my Invention relates to the deodorizing of gases in their passage from a sewer or drain by way of the rain pipes, this I effect by removing one of the pipes connecting the rain pipe with the sewer; the pipe so removed I replace with a similar pipe, but provided with a branch and socket (the said branch and socket being in or near the vertical position). In the said socket rests a tray or screen containing charcoal; at the foot of the said rain pipe I place a syphon bend or trap communicating with the pipes leading to the sewer or drain. As the noxious gases ascend the pipes from the sewer or drain they are prevented from ascending the rain pipe before passing through the charcoal by the water (trap) lodging in the syphon bend. The ordinary outlet being cut off the gases ascend the vertical or upright branch, and pass through the charcoal in the tray or screen placed in the socket of the said upright branch (which socket is provided with a lid or cover), from whence they are conveyed by a pipe connecting the socket with the upper part of the syphon bend and escape by the rain pipe. Pipes of an ornamental design may be fixed to buildings specially for the purpose of ventilating sewers and drains by carrying off the gases after being deodorized as above described. Access to the apparatus for the purpose of replenishing the charcoal from time to time is readily obtained by raising a lid or cover placed level with the footpath or road.

Such being the nature of this my said Invention, I will now proceed to

describe the same in detail, and in order that the same may be clearly understood I have hereunto annexed a Sheet of Drawings illustrative thereof, and have marked the same with figures and letters of reference, the same letter referring to the same part in various views or Figures, in which Fig. 1 is a vertical section of a gully with my improvements attached; Fig. 2 is a sectional plan through the line A, B, on Fig. 1; Figs. 3, 4, and 5 shew other forms of gulleys with deodorant attached; Fig. 6 is a sectional plan through the line C, D, on Fig. 4; Fig. 7 is a sectional plan of a gully with air passage or separate passage for the gases; Fig. 8 is a vertical section shewing construction and arrangement of apparatus and material for effecting deodorization and discharge of gases by means of the ordinary rain pipes; at Fig. 9 is shewn application of apparatus to existing gullies and rain pipes; at Fig. 10 is shewn application of the apparatus in connection with water-closet drain pipe. At A is shewn a gully communicating with the sewer by means of the bend B and pipes *b*; on the said bend is a box or chamber C, the bottom of which is perforated or provided with an opening D for the passage of gases from the sewer. To the interior of the box or chamber C is introduced a tray or screen E containing charcoal (or other deodorant), the noxious gases pass through the opening D and charcoal contained in the screen E (course shewn by arrows), and through the aperture F to the surface grating G. At G^1 is shewn a partition or midfeather immersed in the water contained in the gully, thus forming an ordinary "trap," and preventing the noxious gases arriving at the surface grating otherwise than by way above described. Access to the tray or screen E for the purpose of inspecting or replenishing the charcoal from time to time is obtained by raising the lid or cover H placed at the surface level of the ground, or the tray or screen may be removed for that purpose through the aperture F. The bend or branch B may be divided by a midfeather b^1 (see Fig. 7), the upper passage b^2 serving for the escape of gases after deodorization by passing through the charcoal in the tray or screen E as above described, the lower passage *b* serving to convey the surface water to the sewer or drain; or a tray or screen E containing charcoal may be placed in the interior of the gully A (see Fig. 5), and a funnel-mouthed pipe I, supported vertically therein by means of the tray or screen E, the lower part of such pipe being immersed in the water contained in the gully, thus forming a "trap;" to the surface grating is attached a hopper G^2, which serves to convey surface water into the funnel mouth of the pipe I, and by means of the bend B and pipes *b* to the sewer or drain. The gases pass through the tray or screen E, and are deodorized, afterwards escaping by the surface grating. In discharging

deodorized gases by way of existing rain pipes I remove one of the ordinary pipes connecting the rain pipe with the sewer, and replace such pipe with a similar one, but provided with a branch and socket J (see Fig. 8), the said branch and socket being in or near the vertical position, the socket serving for the reception of a tray or screen E containing charcoal. At the foot of the rain pipe H^1 is a syphon bend or trap G^1 communicating with the pipes *b*, leading to the sewer or drain. As the noxious gases ascend the pipes *b* they are prevented ascending the rain pipe H^1 before passing through the charcoal in the screen E by the water (trap G^1) lodging in the syphon bend. The ordinary outlet being cut off the gases ascend the branch and socket J and through the charcoal contained in the tray or screen E, from thence by the pipe L to the upper part of the syphon bend, and escape by the rain pipe H^1. At K is shewn a lid or cover serving to protect the charcoal in the tray or screen E from wet, and to prevent the escape of deodorized gases otherwise than by way of the rain pipe.

Pipes may be fixed in connection with the apparatus above described to buildings (or placed in the flues of chimneys) specially for the purpose of ventilating sewers by carrying off the gases after deodorization as above described.

Having thus fully described the nature and particulars of this my said Invention, together with the manner in which the same is to be or may be performed or carried into practical effect, I would remark in conclusion that I do not claim the form of the various gullies shewn in the Drawings; but what I do claim as my Invention is the general construction, combination, and arrangement of the apparatus and material for the purposes above mentioned, and as herein fully described and illustrated in the accompanying Drawings, or any mere modification thereof.

In witness whereof, I, the said Edward Brooke, the younger, have hereunto set my hand and seal, this Twenty-seventh day of September, in the year of our Lord One thousand eight hundred and sixty-six.

EDWARD BROOKE, Jun. (L.S.)

Witness,

WALTER BRIERLEY,

Patent Agent,

Halifax & Blackburn.

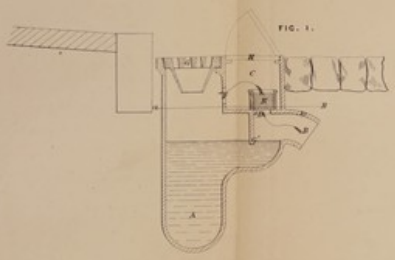
LONDON:

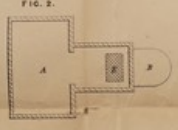
Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,

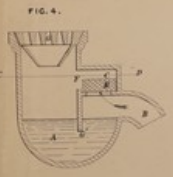
Printers to the Queen's most Excellent Majesty. 1866.

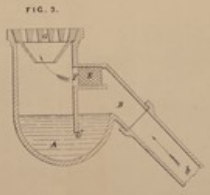
A.D. 1866, April 2, N° 941.
BROOKES' Specification.

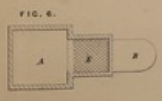
1 SHEET.

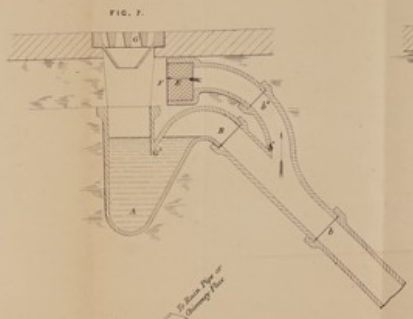


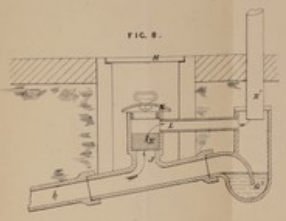


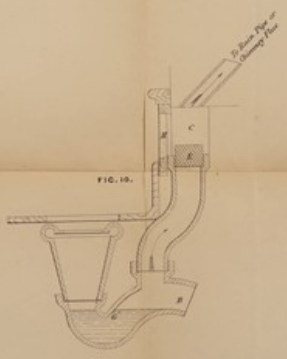


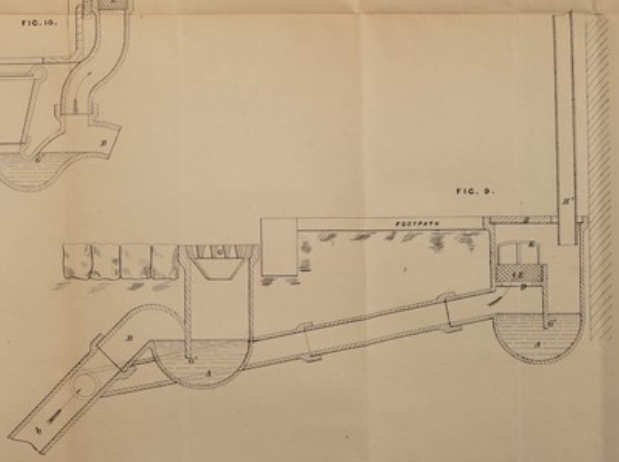












The first drawing is not colored.

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