

## **Specification of Robert George Cecil Fane : treating sewage, &c.;**

### **Contributors**

Fane, Robert George Cecil.

### **Publication/Creation**

London : Great Seal Patent Office, 1859 (London : George E. Eyre and William Spottiswoode)

### **Persistent URL**

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A.D. 1858, 8th JULY. N° 1541.

SPECIFICATION

OF

ROBERT GEORGE CECIL FANE.

TREATING SEWAGE, &c.

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.

Price 6d.

1859.









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A.D. 1858, 8th JULY. N° 1541.

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**Treating Sewage, &c.**

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**LETTERS PATENT** to Robert George Cecil Fane, of Upper Brook Street, in the County of Middlesex, Esquire, for the Invention of "**IMPROVEMENTS IN TREATING SEWAGE, AND IN APPARATUSES TO BE EMPLOYED THEREIN.**"

Sealed the 7th January 1859, and dated the 8th July 1858.

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**PROVISIONAL SPECIFICATION** left by the said Robert George Cecil Fane at the Office of the Commissioners of Patents, with his Petition, on the 8th July 1858.

I, ROBERT GEORGE CECIL FANE, of Upper Brook Street, in the County of Middlesex, Esquire, do hereby declare the nature of the said Invention for "**IMPROVEMENTS IN TREATING SEWAGE, AND IN APPARATUSES TO BE EMPLOYED THEREIN,**" to be as follows:—

My Invention consists in constructing intercepting wells beneath sewers and drains; in placing in such wells receiving vessels, perforated on all sides and at bottom, which are intended to receive the sewage matter; in erecting a stop bridge on the further side of each well; in providing a passage upwards from each well on the further side of the bridge; and in providing suitable sealed openings through which to get at, remove, and replace the receiving vessels. Filtering, deodorizing, or disinfecting agents may be employed in the wells and otherwise; but as these form no part of my Invention, I do not think it necessary more particularly to allude to them.

Sewage flowing down drains and sewers will fall into the receiving vessels from which the liquid portions will escape through the perforations, and



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rising through earth, charcoal, or other filtering and purifying agent or not, will again flow into the drain or sewer through the passage on the further side of the stop bridge. The more solid matters will remain in the receiving vessels, which when full are raised up through the openings above the drain or sewer, but before being taken directly out from the openings I recommend 5 they should be allowed to rest upon a grating provided for the purpose in the openings there thoroughly to drain, a fresh vessel being placed at the bottom of the well to receive the sewage matter. Every well would thus require three receiving vessels, one at the bottom of the well, one in the opening to drain, and a third to replace that at the bottom of the well which would be raised 10 up to drain when full, while that which had drained would be removed.

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**SPECIFICATION** in pursuance of the conditions of the Letters Patent, filed by the said Robert George Cecil Fane in the Great Seal Patent Office on the 8th January 1859.

**TO ALL TO WHOM THESE PRESENTS SHALL COME, I, ROBERT 15**  
GEORGE CECIL FANE, of Upper Brook Street, in the County of Middlesex, Esquire, send greeting.

**WHEREAS** Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Eighth day of July, in the year of our Lord One thousand eight hundred and fifty-eight, in the twenty-second year of Her 20 reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Robert George Cecil Fane, Her special licence that I, the said Robert George Cecil Fane, my executors, administrators, and assigns, or such others as I, the said Robert George Cecil Fane, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time 25 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 TREATING SEWAGE, AND IN APPARATUSES TO BE EMPLOYED THEREIN,**" upon the condition (amongst others) that I, the said 30 Robert George Cecil Fane, 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 35 after the date of the said Letters Patent.



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NOW KNOW YE, that I, the said Robert George Cecil Fane, 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 thereof, reference being had to the Drawing hereunto  
5 annexed, that is to say :—

My Invention consists in constructing intercepting wells beneath sewers and drains ; in placing in such wells receiving vessels, perforated on the sides and at the bottom, which vessels are intended to receive the sewage matter ; in erecting a stop bridge in the sewer on the further side of each well ; in providing  
10 a passage upwards from each well through the said bridge ; and in providing suitable openings from the surface of the earth to the sewer, capable of being closed or sealed, through which to get at, remove, and replace the receiving vessels. Filtering, deodorizing, or disinfecting agents may be employed in the wells and otherwise ; but as these form no part of my Invention, I do not think  
15 it necessary more particularly to allude to them.

Sewage flowing down drains and sewers will fall into the receiving vessels, from which the liquid portions will escape through the perforations, and rising through earth, charcoal, or other filtering and purifying agent or not, as actual experience may prove to be desirable, will again flow into the drain or sewer  
20 through the passage in the stop bridge. The more solid matters will remain in the receiving vessels, which when full will be raised up through the openings above the drain or sewer ; but before being taken directly out from the openings, I recommend they should be allowed to rest upon a grating or other contrivance provided for the purpose in the openings, there thoroughly to drain,  
25 a fresh vessel being placed at the bottom of the well to receive the sewage matter. Every well would thus require three receiving vessels, one at the bottom of the well, one in the opening to drain, and a third to replace that at the bottom of the well, which would be raised up to drain when full, while that which had drained would be removed.

30 Having thus set forth the nature of my Invention, I now proceed to describe more in detail the manner in which the same may be performed as follows :—

Select any suitable place in the course of a public sewer, and there construct a well, commencing from the surface of the earth continuing down to the sewer, through the sewer, and to a convenient distance, say, 4, 5, or 6 feet  
35 below it. The well may be made of any material commonly used in the construction of wells, except that the part below the sewer should be made impervious to leakage, lest leakage should taint neighbouring house wells. The diameter of the well will be matter of judgment, having regard to the necessity which will exist of sending scavengers and laborers down the well occasionally,



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even to the bottom, for the purpose of repairing, cleansing, and keeping it in order, and having regard also to the most convenient size to be adopted for vessels presently to be described. Probably the most convenient diameter would be from 4 to 5 feet.

The well should be divided into three compartments, A, B, and D, as shewn 5 in the Drawing hereunto annexed. Compartment A should be about two feet deep, and should be separated from the one below by a wooden cover *a*, resting upon ledges *b, b*, in the framing of the well. The object of this compartment would be to contain any deodorizing substance such as common earth or peat charcoal to a depth of, say, two feet, and thus prevent the rising of any 10 offensive exhalations from the well. It would probably be found convenient for the periodical removing and replacement of the deodorizing substance, if the substance were kept in a large loose sack.

Compartment B would form a place where a vessel C full of moist sewage raised from the bottom of the well might be placed and left to drain itself dry 15 during an interval of two months or thereabouts, between its removal from the bottom of the well when full, and its ultimate removal to the country. This compartment will also have ledges *c, c*, on which the vessel full of sewage will rest by means of a bar passed through brackets at the bottom of each vessel, and extending slightly beyond the vessel on each side. 20

Compartment D will be the bottom of the well. In constructing this part the following particulars should be attended to; it should extend four or five or six feet below the bottom of the sewer. It should be water-tight except at an orifice near the top, presently to be described. It must be water-tight lest liquid sewage should ooze through and taint neighbouring house wells. There 25 must be an iron peg E, or something of the kind so fixed at the bottom of the well as to tilt up a vessel C placed in it in such manner as to make its edge lean against the side of the well down which the sewage will fall, and thus catch the sewage. It may tend to further the object of catching the sewage if a small stone or iron trough I, or similar contrivance, were so placed as to 30 force the sewage a little forward, and make it fall into the vessel C. There must also be a stop bridge G, 5 or 6 inches high across the lower part of the sewer, to stop the descent of the sewage down the sewer except in times of storm, and lastly, there must be a small orifice F, say, 2, 3, or 4 inches in diameter, a little way down, say, 4, 5, or 6 inches down compartment D of the 35 well, and opening upwards to the lower part of the sewer just below the stop bridge.

The effect of these arrangements it is conceived will be that as the solid and liquid sewage falls from the upper side of the sewer into the well, a corre-



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sponding quantity of comparatively pure liquid will rise from the well through the orifice F, F, F, and go down the sewer beyond the stop bridge G, and the result will be that by degrees the solid sewage will accumulate in the vessel C in the well, whilst the liquid passes forward. The solid may then easily be  
5 raised by ordinary lifting contrivances, and then removed to the country and sold as manure.

Under the above plan, the whole of the solid sewage would probably be intercepted, and would sink into the vessel in the well, but if contrary to expectation, part should rise through the orifice, it would only proceed a little  
10 way down the sewer, before it would be intercepted at the next well.

These arrangements having been made, the next step would be to provide three vessels C, C, for each well, all properly fitted to the size of the lower part of the well, and all on one pattern; probably it would be found convenient to have them of galvanize iron. They should be perforated with small holes  
15 in all directions, to allow liquid sewage to pass through them, whilst the solid was detained. Each should have a bar of iron across the top to facilitate the raising them to the surface by a hook, and other ordinary lifting contrivances. Each vessel should also have two brackets at the bottom, for an iron bar to pass through diagonally and support the vessel in compartment B, whilst left  
20 there to drain. One bar would suffice for the three vessels belonging to each well.

The three compartments of the well being thus prepared, and the three vessels and the iron bar being ready, the scavengers would come first with one vessel only, and having opened the well, they would lower the vessel to the  
25 bottom, and leave it; they would then deposit the deodorizing substance at the top of the well and close its mouth. The next time they came, say, two or three months after, they would bring another of the three vessels, open the well, remove the deodorizing substance, and lift the vessel at the bottom of the well towards the surface, but to avoid nuisance as much as possible, they should  
30 pause in the raising after reaching compartment B, and hold the vessel there in suspense for a few minutes to let as much liquid as possible run off, before the vessel was raised to the surface. After a few minutes they would raise it to the surface, put it on one side, and without any delay deposit a similar vessel at the bottom. They would then pass the iron bar through the brackets  
35 under the vessel just raised, and place it in compartment B to drain until their next time of coming, and having cleansed the surface of the street or ground they would close the well. The next time they came they would bring the third vessel, raise the vessel in compartment B, (by that time drained quite dry), and place it on a car for removal to the country, then raise the vessel at



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the bottom of the well, pausing as before a few minutes in the ascent to let it drain, and would then raise it to the surface, put down instantly the third vessel to the bottom, and the moment that was done, place the vessel just raised in compartment B of the well to remain and drain itself till their next time of coming; they would then close the well and retire as before. These 5 processes would of course continue as long as the system remained in use.

And having now described the nature of the said Invention, and what manner the same is to be performed, I declare that I claim,—

First, the method of constructing intercepting wells beneath sewers and drains, of placing in such wells perforated vessels intended to receive the sewage, 10 of erecting a stop bridge across the sewer on the lower side of each well, of providing a passage through such stop bridge, and of further providing suitable openings capable of being sealed or closed, through which the said perforated vessels may be removed when full, and replaced when empty, all in the manner 15 and for the purposes herein-before described.

Secondly, the employment of apparatuses for the above purposes, essentially as herein-before described and illustrated in the Drawing hereunto annexed.

In witness whereof, I, the said Robert George Cecil Fane, have here-  
unto set my hand and seal, this Thirtieth day of December, One  
thousand eight hundred and fifty-eight. 20

R. G. C. FANE. (L.S.)

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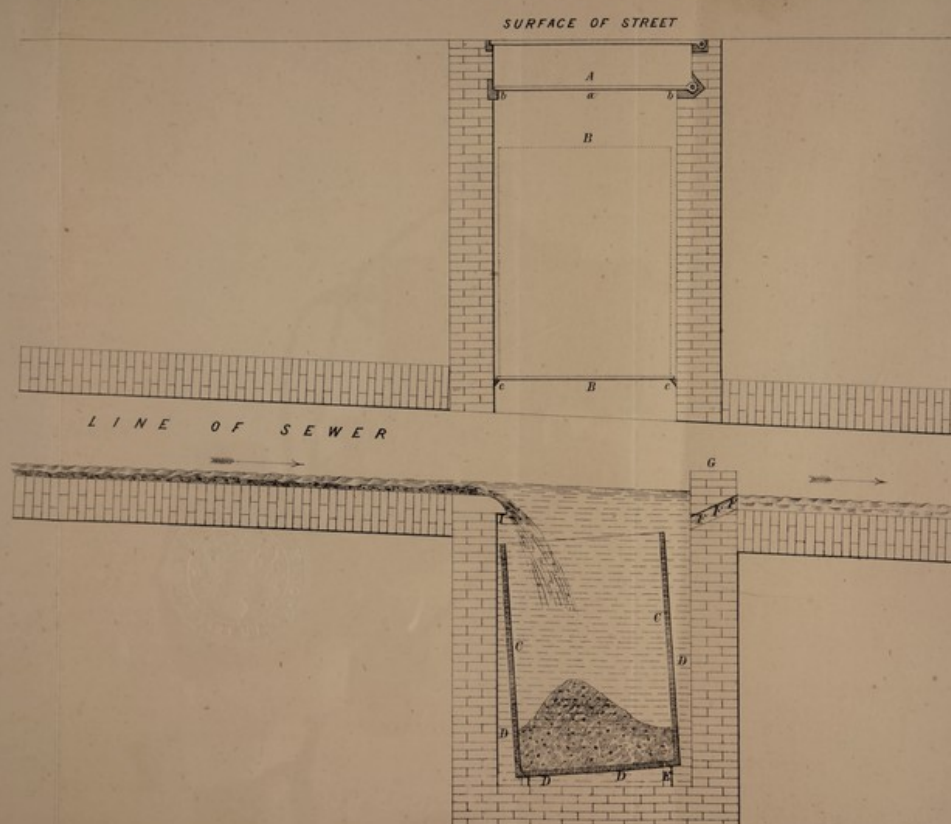
LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,  
Printers to the Queen's most Excellent Majesty. 1859.



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A.D. 1858. JULY 8. N° 1541.  
FANE'S SPECIFICATION.

( 1 SHEET )



*The filed drawing is not colored.*

*Drawn on Stone by Malby & Sons.*

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