

Specification of John William Slater : treating sewage.

Contributors

Slater, John William.

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A.D. 1875, 21st OCTOBER.

N^o 3668.

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

OF

JOHN WILLIAM SLATER.

TREATING SEWAGE.

LONDON:

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A.D. 1875, 21st OCTOBER. N° 3668.

Treating Sewage.

LETTERS PATENT to John William Slater, of No. 2, Tamworth Terrace, in the County of Middlesex, Analytical Chemist, for the Invention of "**IMPROVEMENTS IN THE TREATMENT OF SEWAGE DEPOSITS OR PRECIPITATES, OR SEWAGE SLUDGE, IN ORDER TO OBTAIN THEREFROM AMMONIA, ILLUMINATING GAS, AND OTHER USEFUL PRODUCTS.**"

Sealed the 20th December 1875, and dated the 21st October 1875.

PROVISIONAL SPECIFICATION left by the said John William Slater at the Office of the Commissioners of Patents, with his Petition, on the 21st October 1875.

I, JOHN WILLIAM SLATER, of No. 2, Tamworth Terrace, in the
5 County of Middlesex, Analytical Chemist, do hereby declare the nature of the said Invention for "**IMPROVEMENTS IN THE TREATMENT OF SEWAGE DEPOSITS OR PRECIPITATES, OR SEWAGE SLUDGE, IN ORDER TO OBTAIN THEREFROM AMMONIA, ILLUMINATING GAS, AND OTHER USEFUL PRODUCTS,**" to be as follows:—

10 My Invention relates to processes in which the nitrogenous deposits

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obtained by precipitating sewage (either according to the process known as the "A, B, C, process," or according to other processes) is carbonized for the purpose of obtaining therefrom a carbonaceous residue which is useful in purifying sewage and for other purposes.

In carbonizing the said deposits according to the usual process the 5 volatile products of the destructive distillation are either allowed to escape into the open air or are passed into the furnace. Now my Invention consists in utilizing the said volatile products, or some of them, as herein-after described.

I pass the said volatile products from the retort through condensing 10 and purifying apparatus similar to that in use in gasworks, and thus obtain ammonia, tarry or oily products, and illuminating gas, the illuminating power of which may be increased by passing it through volatile hydrocarbons, as is done with other illuminating gas.

SPECIFICATION in pursuance of the conditions of the Letters Patent, 15 filed by the said John William Slater in the Great Seal Patent Office on the 21st April 1876.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JOHN WILLIAM SLATER, of No. 2, Tamworth Terrace, in the County of Middlesex, Analytical Chemist, send greeting. 20

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Twenty-first day of October, in the year of our Lord One thousand eight hundred and seventy-five, in the thirty-ninth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said John William Slater, Her 25 special license that I, the said John William Slater, my executors, administrators, and assigns, or such others as I, the said John William Slater, 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 30 make, use, exercise, and vend, within the United Kingdom of Great

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Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "IMPROVEMENTS IN THE TREATMENT OF SEWAGE DEPOSITS OR PRECIPITATES, OR SEWAGE SLUDGE, IN ORDER TO OBTAIN THEREFROM AMMONIA, ILLUMINATING GAS, AND OTHER USEFUL PRODUCTS," upon the condition (amongst
5 others) that I, the said John William Slater, 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
10 Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said John William Slater, do hereby declare the nature of the said Invention, and in what manner the same is to be performed, to be particularly described and ascertained
15 in and by the following statement thereof, that is to say:—

My Invention relates to processes in which the nitrogenous deposits obtained by precipitating sewage (either according to the process known as the A, B, C, process, or according to any other processes in which clay or charcoal, or clay and charcoal is, are, or may be used) are car-
20 bonised for the purpose of obtaining therefrom a carbonaceous residue which is useful in purifying sewage and for other purposes.

In carbonising the said deposits according to the usual process the gases or volatile products of the destructive distillation are either allowed to escape into the open air or are passed into the furnace. Now my
25 Invention consists in utilizing the said gases or volatile products, or some of them, as herein-after described.

I pass the said gases or volatile products from the retort through condensing and purifying apparatus similar to that in use in gasworks, and thus obtain ammonia, tarry or oily products, and illuminating gas, the
30 illuminating power of which may be increased by passing it through volatile hydrocarbons, as is done with other illuminating gas.

In carrying my Invention into effect I pass the said gases or volatile products from the retort into a hydraulic main, so as to condense their tarry and oily constituents and other heavy matters which such gases

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may contain. From the said main I pass the said gases into a scrubber, in which the ammonia is collected, and from this scrubber I pass the said gases either direct into an ordinary gas holder or through a vessel containing a volatile hydrocarbon, and thence into the gas holder. I prefer however to interpose between the hydraulic main and the scrubber 5 aforesaid additional condensing apparatus for the purpose of further purifying the gases from tarry and oily matters before such gases pass into the scrubber. This condensing apparatus may be advantageously constructed as illustrated in the accompanying Drawings.

Figure 1 is a horizontal section of the said apparatus, which said 10 section is taken on the line A, B, Figure 3; Figure 2 is a vertical section of the same taken on the line C, D, Figure 1; and Figure 3 is a vertical section of the same taken on the line E, F, Figure 1.

The same letters of reference indicate the same parts in the several Figures. 15

The apparatus consists of a sheet-iron vessel A*, constructed with gas chambers or passages a^1, a^2, a^3, a^4 , and water chambers b^1, b^2, b^3 , the gas chambers being furnished with an inlet pipe c and an outlet pipe d , and the water chambers being furnished with an inlet pipe e and an outlet pipe f , the flow of the water being regulated or stopped as required by 20 means of a cock g ; h, h , are pipes by which the gas chambers communicate with one another; i^1, i^2 , are pipes furnished with cocks i^2, i^3 , through which the tarry or oily matters which fall to the bottoms of the gas chambers are drawn off. The gases are passed either from the hydraulic main or direct from the retort through the pipe c into 25 the chamber a^1 , and thence pass through the pipes h, h , and the chambers a^2, a^3 , and thence through the pipe d to the scrubber.

Having thus described the nature of my Invention, and the manner in which the same is to be performed, I wish it to be understood that I do not limit myself to or claim the precise details and apparatus herein- 30 before described, as any other suitable apparatus may be used for the purposes described, but I claim as my said Invention utilizing the gases or volatile products of the destructive distillation of sewage deposits by collecting the said gases, condensing their condensible constituents, and

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purifying the said gases, as herein-before described, so as to obtain therefrom ammonia, illuminating gas, and other useful products.

In witness whereof, I, the said John William Slater, have here-
unto set my hand and seal, this Twenty-first day of April, in
5 the year of our Lord One thousand eight hundred and seventy-
six.

J. W. SLATER. (L.S.)

Witness,

H. H. MURDOCH,

10

Staple Inn,
London.

LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1876.

State's Department of Justice

position the said case. As hereinbefore detailed, so as to obtain
therefrom accurate information, and also other useful purposes.

In witness whereof, I the said John William Slatts, have here-
unto set my hand and seal this Tenth day of April, in
the year of our Lord One thousand eight hundred and seventy

J. W. SLATTIS (Att.)

H. H. MURDOCK,
Solicitor General

Washington

Printed by Groom, Jackson, Park and H. H. MURDOCK
Twelve and a half Cent Street, New York, 1870

The image shows a piece of aged, yellowish paper with a very faint, ghostly grid pattern. The grid is centered on the page and consists of a large outer rectangle and an inner grid of approximately 10 columns and 10 rows. The lines are extremely light and barely visible, suggesting they were either printed or drawn very lightly. The paper has a textured appearance with some minor blemishes and discoloration.

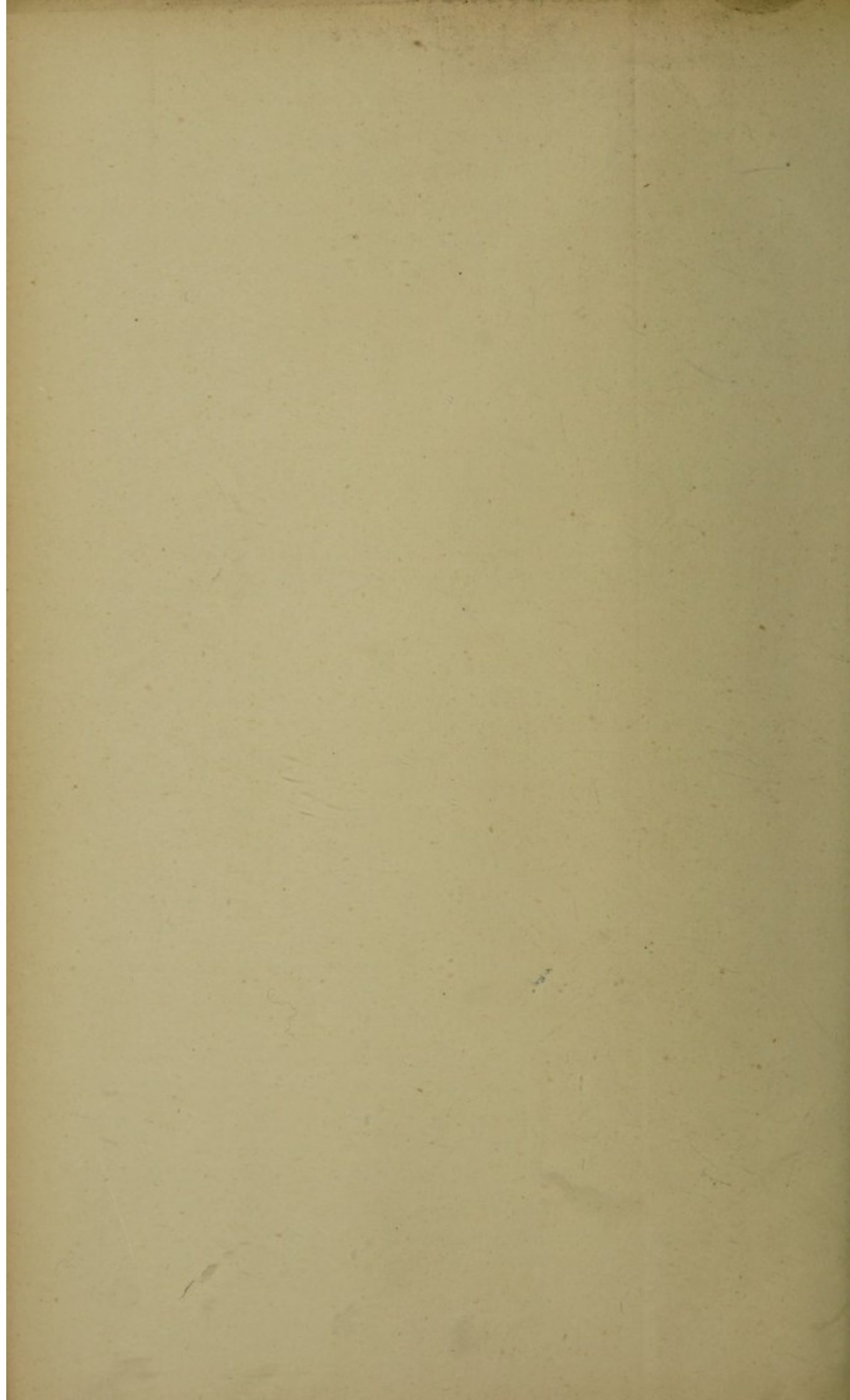


FIG. 1.

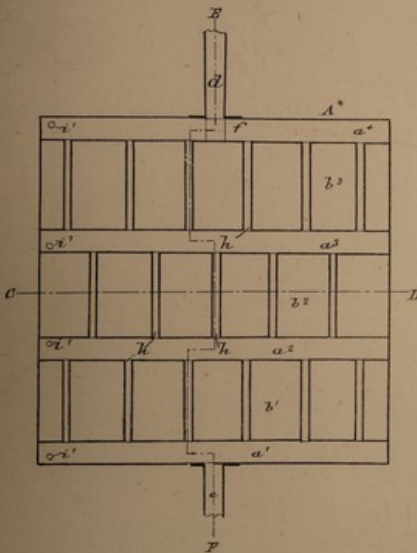


FIG. 2.

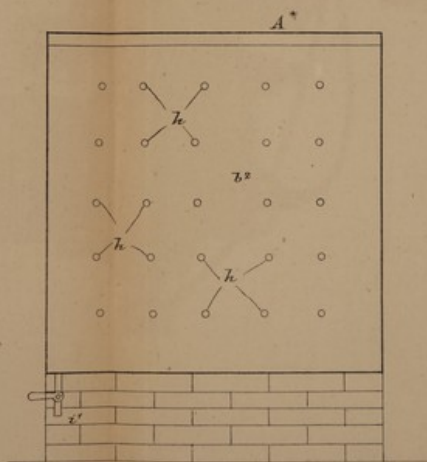
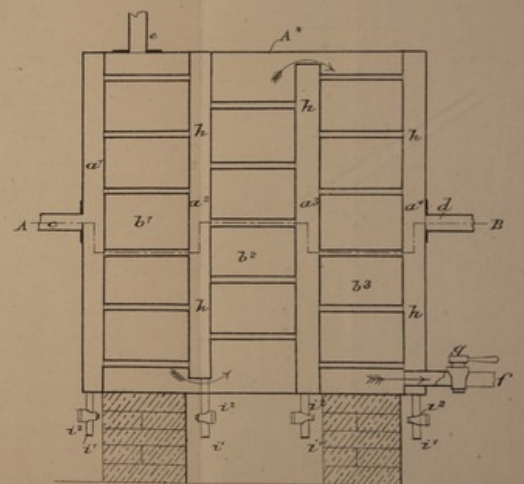


FIG. 3.



Scale, $\frac{1}{2}$ in. = 1 Foot.

The filed drawing is partly colored.

Drawn on Stone by Malby & Sons

