

Specification of Charles Jones : treating sewage.

Contributors

Jones, Charles.

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A.D. 1868, 13th NOVEMBER. N^o 3457.

SPECIFICATION

OF

CHARLES JONES.

TREATING SEWAGE.

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,

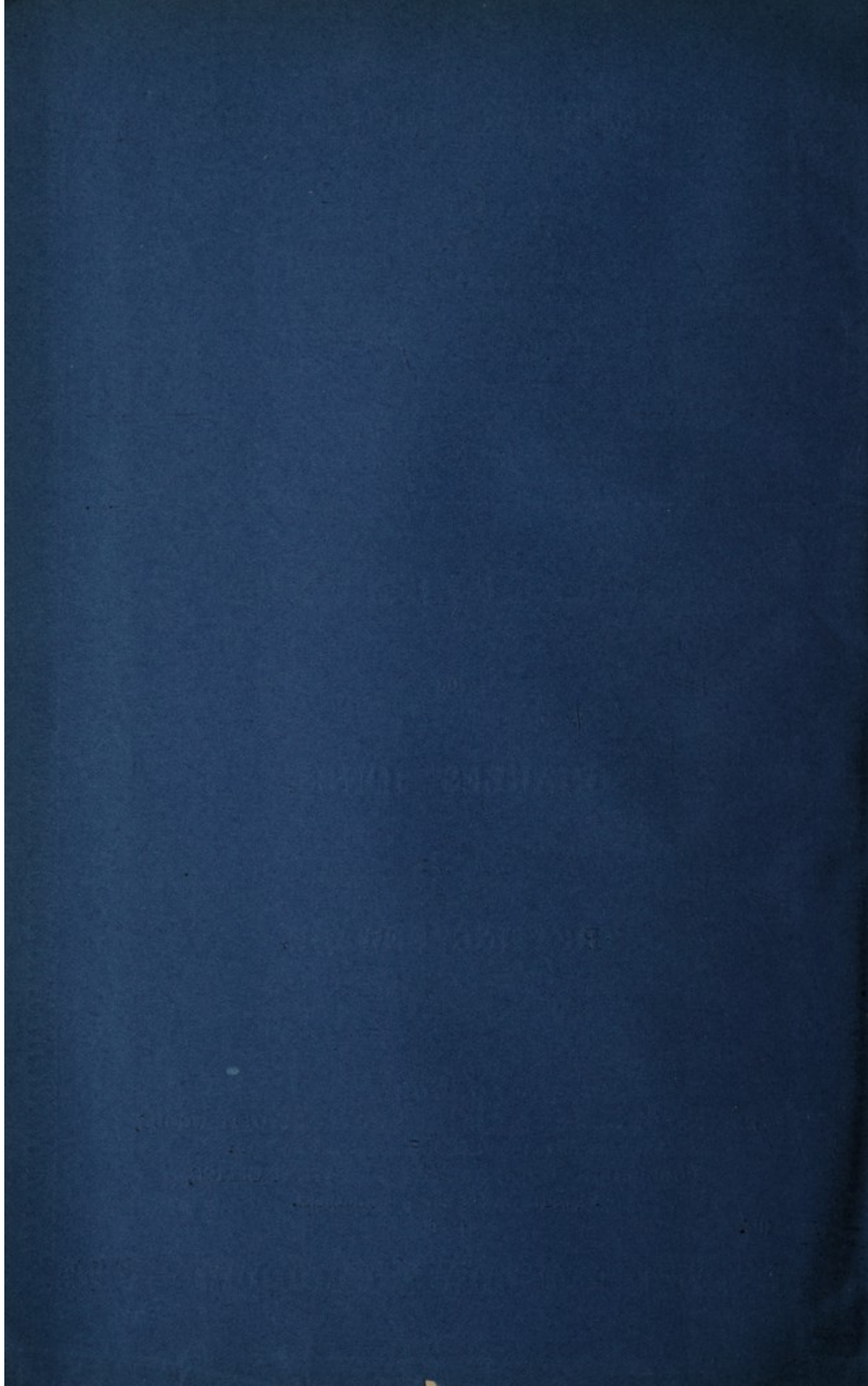
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY:

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1869.





A.D. 1868, 13th NOVEMBER. N^o 3457.

Treating Sewage.

LETTERS PATENT to Charles Jones, of Ealing, in the County of Middlesex, Surveyor, for the Invention of "IMPROVEMENTS IN THE TREATMENT OF SEWAGE."

Sealed the 11th May 1869, and dated the 13th November 1868.

PROVISIONAL SPECIFICATION left by the said Charles Jones at the Office of the Commissioners of Patents, with his Petition, on the 13th November 1868.

I, CHARLES JONES, of Ealing, in the County of Middlesex, Surveyor,
5 do hereby declare the nature of my said Invention for "IMPROVEMENTS
IN THE TREATMENT OF SEWAGE," to be as follows:—

This Invention has for its object the purification, deodourisation, and
utilisation of sewage, and consits in first precipitating the matters in
the sewage by the application thereto of a mixture of slaked lime and
10 shale oil, petroleum, or other hydrocarbons. I have found that one
bushel of slaked lime to two gallons and a half of shale oil or other
hydrocarbon will be sufficient for precipitating the solid contents of

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100,000 gallons of ordinary sewage, these proportions will however vary according to the greater or less per-centage of solid matter in the sewage. At the time of introducing the above mixture, or directly after, I sometimes introduce, according to the particular character of the manure required, either a solution of chloride of zinc, sulphuric acid, burnt clay, 5 or magnesium, or a combination of any two or more of them.

In practically carrying out my Invention I prefer to introduce the precipitating agents into the sewage just before it falls into the depositing beds, where the solid matters collect at the bottom, whilst the comparatively clear liquid passes through one or more filtering beds, 10 by preference constructed to filtrate by ascension.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said Charles Jones in the Great Seal Patent Office on the 13th May 1869.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, CHARLES 15
JONES, of Ealing, in the County of Middlesex, Surveyor, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Thirteenth day of November, in the year of our Lord One thousand eight hundred and sixty-eight, in the thirty-second year of Her reign, did, for Herself, Her heirs and successors, 20 give and grant unto me, the said Charles Jones, Her special license that I, the said Charles Jones, my executors, administrators, and assigns, or such others as I, the said Charles Jones, my executors, administrators, or assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein 25 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 TREATMENT OF SEWAGE,**" upon the condition (amongst others) that I, the said Charles Jones, my executors or administrators, by an instrument in 30 writing under hand and seal, 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.

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NOW KNOW YE, that I, the said Charles Jones, 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, reference being had to the accompanying
5 Drawings, and to the letters and figures marked thereon, that is to say:—

My said Invention has for its object the providing a method of obviating in a cheap and efficient manner the nuisance and danger attendant upon the discharge of fluid sewage into rivers, and also the
10 utilizing the solid residuum as a manure.

Deodourization of sewage has never hitherto been perfectly arrived at, or has been abandoned on account of expense. The lime process alone is merely a temporary expedient, as the water flowing off after the partial precipitation of the solids speedily undergoes changes and evolves
15 foetid gases.

Other materials, such as metallic salts, and more particularly perchloride of iron, have been strongly recommended as deodourizers and have been considered far more successful than many others that have been used, but their great expense has proved a serious obstacle to
20 their use.

Now my Invention consists in effecting precipitation and deodourization of sewage by the use of slaked lime combined or mixed with hydrocarbons, such, for example, as petroleum, or, which I prefer, with the acid tar or such residual product as is obtained in the treatment of
25 tars for and in the production of oils or other volatile liquid hydrocarbons, such mixture or compound being introduced into the sewage just before it falls into a depositing tank. By this means I obtain results as thoroughly satisfactory both as regards the precipitation of the solids and the deodourization of the sewage water as by the more
30 expensive salts hitherto used. Precipitation and deodourization having been obtained I sometimes introduce, according to the particular character of the manure required, either a solution of chloride of zinc or of sulphuric acid, or burnt clay, or magnesia, or a combination of any two or more of them.

35 In carrying out my Invention for every one hundred thousand gallons of ordinary sewage I take one hundred pounds of lime, and having slaked the same, I add to it at the time of its highest temperature about

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twenty per cent, of petroleum, or the refuse matter known as "acid tar;" the compound is then properly incorporated, and a one hundred and twenty-five gallons of water are added thereto; the mixture thus formed is ready for use, but must be kept in a state of agitation whilst being applied to the sewage; it should be introduced moreover into the sewage 5 just before it falls into the depositing tanks, where the solid matters collect at the bottom, whilst the comparatively clear liquid passes onwards through one or more filtering beds. I have found in practice that a good result is obtained by introducing the said mixture into the sewage at a distance of from sixty to one hundred feet from the 10 depositing tank.

The annexed Sheet of Drawings illustrates the mode of applying my Invention, and represents in vertical and horizontal section at Figures 1 and 2 respectively a complete duplex system of depositing tanks and filter beds with inlet and outlet sewers. 15

A, A, are the depositing tanks, and B, B, the filter beds, which I construct by preference so as to filter by ascension; C is a tank or cistern provided with any suitable mechanical stirrer or agitator D, which may be worked by the flow of the sewage itself along the sewer E through the intervention of a pallet wheel or otherwise, as will be readily 20 understood. Into this tank C I introduce the mixture of slaked lime and petroleum or "acid tar," with the required proportion of water, according to the quantity of sewage to be operated upon. Whilst this mixture is kept in a state of agitation I allow it to run into the sewer at a point in moderate proximity to the depositing tank, and I prefer 25 that the sewage itself should be well agitated at the point where the said mixture is introduced, for which purpose a small rotatory stirrer in the form of a paddle or pallet wheel F may be erected inside the sewer, as shewn clearly in Figure 1, and turned by the action of the flow of the sewage. The clear and deodourised liquid, after passing up through 30 the filtering medium flows off by the outlet sewer G. When I employ the herein-before mentioned solutions of chloride of zinc, or of sulphuric acid or powdered burnt clay, a magnesia, or combinations of the same, I introduce such solutions or substances into the sewer through the mouth of an opening H at the point of discharge into the depositing 35 tanks.

Having now described and particularly ascertained the nature of my said Invention, and the manner in which the same is or may be

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used or carried into effect, I would observe in conclusion that 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,—

First. The peculiar mode of treating sewage for the purpose of
5 deodourising the same, and for precipitating the solid matters contained therein, as herein-before described.

Second. The peculiar mode of treating sewage for the purpose of rendering the precipitated matter more useful as a fertilizing agent, as herein-before described.

10 In witness whereof, I, the said Charles Jones, have to this my Specification set my hand and seal, the 13th day of May, One thousand eight hundred and sixty-nine.

CHARLES JONES. (L.S.)

LONDON:

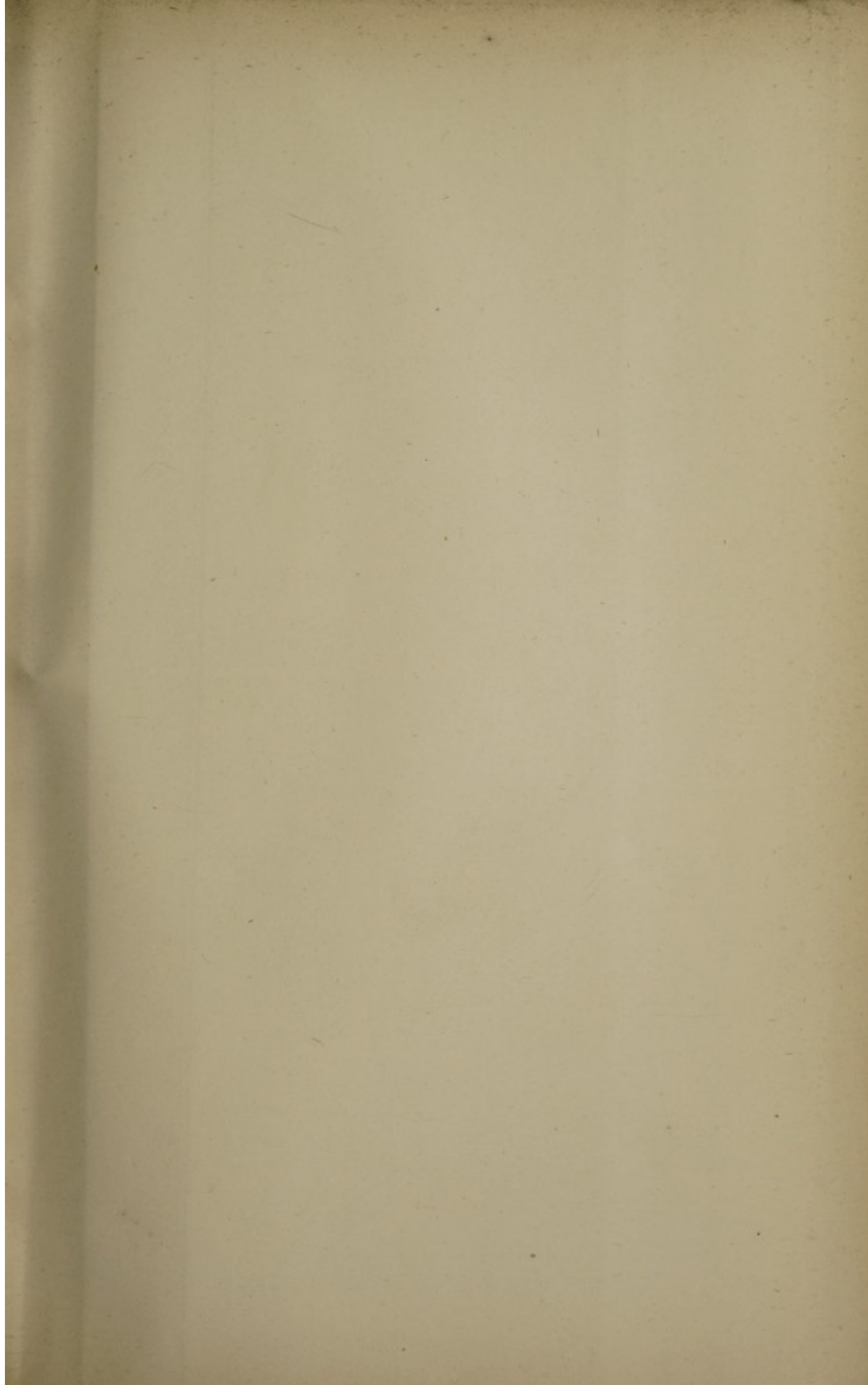
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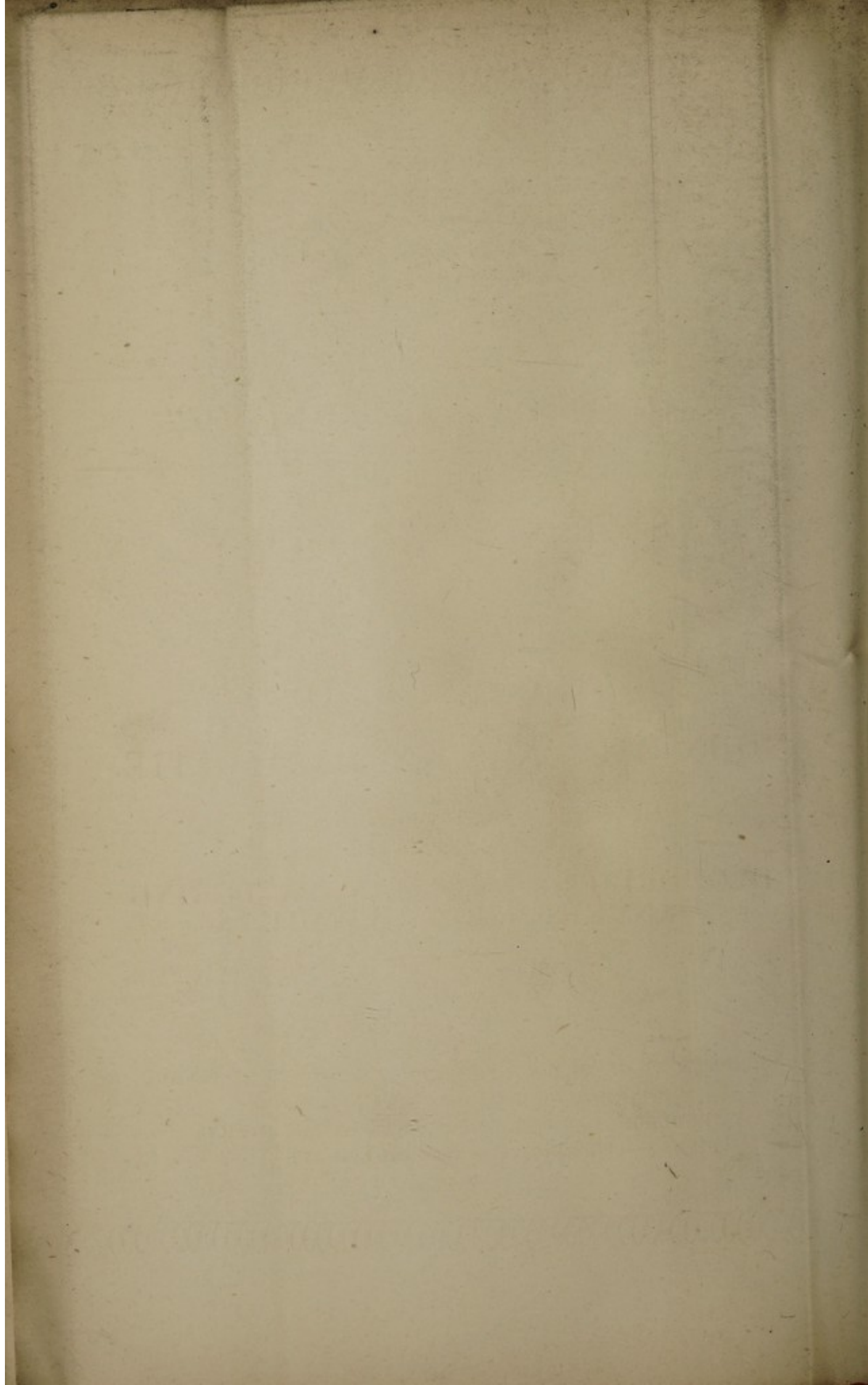
James Thompson, Jr. Esq. Clerk of the Court
 I have the honor to acknowledge the receipt of your letter of the 10th inst. in relation to the above named case, and in reply to inform you that the same has been forwarded to the proper authorities for their consideration. I am, Sir, very respectfully,
 Yours truly,
 J. W. Thompson

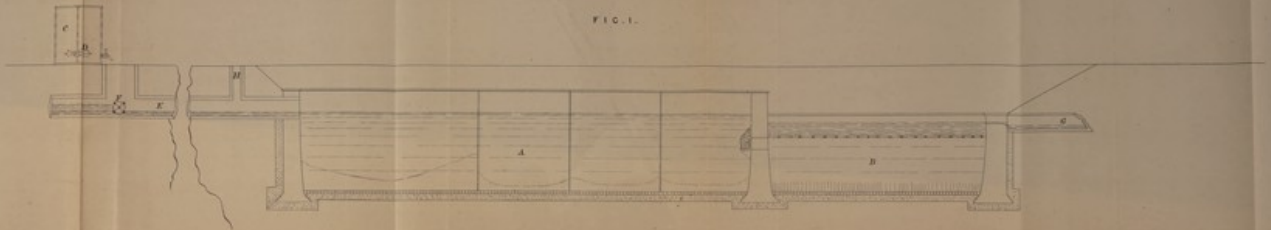
In witness whereof, I the said Charles Jones, have to this day subscribed and sealed the 10th day of May, 1856.
 CHARLES JONES

CHARLES JONES

Printed by G. W. B. & W. W. B. at the Albany Press, No. 100 N. 3rd St.
 Albany, N. Y. 1856.







The steel drawing is partly colored.

