

**Specification of François Jules Fahlman : apparatus for treating sewage, &c.;**

**Contributors**

Fahlman, François Jules.

**Publication/Creation**

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A.D. 1871, 29th NOVEMBER. N° 3233.

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

OF

FRANÇOIS JULES FAHLMAN.

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APPARATUS FOR TREATING SEWAGE, &c.

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LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,  
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1872.





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A.D. 1871, 29th NOVEMBER. N° 3233.

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**Apparatus for Treating Sewage, &c.**

**LETTERS PATENT** to François Jules Fahlman, of Stockholm, in the Kingdom of Sweden, for the Invention of "IMPROVED APPARATUS FOR DISINFECTING AND COLLECTING FÆCAL MATTERS, SEWAGE, AND MANUFACTURING REFUSE."

Sealed the 28th May 1872, and dated the 29th November 1871.

**PROVISIONAL SPECIFICATION** left by the said François Jules Fahlman at the Office of the Commissioners of Patents, with his Petition, on the 29th November 1871.

I, FRANÇOIS JULES FAHLMAN, of Stockholm, in the Kingdom of Sweden, do hereby declare the nature of the said Invention for "IMPROVED APPARATUS FOR DISINFECTING AND COLLECTING FÆCAL MATTERS, SEWAGE, AND MANUFACTURING REFUSE," to be as follows:—

My Invention relates to improved apparatus for the disenfection and collection of fœcal matters and substances discharged from the sewers of

*Fahlman's Improved Apparatus for Treating Sewage, &c.*

towns, or the outlet pipes of manufactories and like structures, and consists of a reservoir containing the disinfected matters made to any required size, and containing a moveable tray or strainer pierced with holes, or made of perforated zinc or other metal or material, and placed suitably within the said reservoir so as to divide the latter into two 5 parts; the upper one to contain, as before stated, the disinfected matters, the latter to receive the disinfected solids. The liquids or matters discharged from the sewer or other place are made to pass through a basin or other shaped funnel into the lower or larger division of the reservoir, and after rising through the disinfected matters, by 10 reason of the flow pressure, to reach a shoot or spout, and afterwards by this means be passed away through the usual means of outlet. The lower or smaller end of the basin or other shaped funnel receiving the fœcal matters or sewage required to be disinfected reaches a small distance below the perforated tray or strainer, so as to facilitate the 15 filling of the bottom or lower division of the reservoir.

The reservoir may, if desired, have the form of a flat-bottomed boat to allow of its floating on canals or other waters, and be furnished with small wheels for the purpose of transport on land.

**SPECIFICATION** in pursuance of the conditions of the Letters Patent, 20  
filed by the said François Jules Fahlman in the Great Seal Patent  
Office on the 28th May 1872.

**TO ALL TO WHOM THESE PRESENTS SHALL COME, I, FRANÇOIS JULES FAHLMAN,** of Stockholm, in the Kingdom of Sweden, send greeting. 25

**WHEREAS** Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Twenty-ninth day of November, in the year of our Lord One thousand eight hundred and seventy-one, in the thirty-fifth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said François Jules Fahlman, Her special 30 licence that I, the said François Jules Fahlman, my executors, administrators, and assigns, or such others as I, the said François Jules Fahlman,

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*Fahlman's Improved Apparatus for Treating Sewage, &c.*

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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  
5 and Ireland, the Channel Islands, and Isle of Man, an Invention for "IMPROVED APPARATUS FOR DISINFECTING AND COLLECTING FÆCAL MATTERS, SEWAGE, AND MANUFACTURING REFUSE," upon the condition (amongst others) that I, the said François Jules Fahlman, my executors or administrators, by an instrument in writing under my, or their, or  
10 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.

15 **NOW KNOW YE**, that I, the said François Jules Fahlman, 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, that is to say:—

This Invention relates to improved apparatus for the disinfection of  
20 fœcal matters and substances discharged from the sewers of towns, or from the outlet pipes of manufactories and industrial works, and consists of a reservoir of any required size containing a moveable horizontal tray or partition made of wire, cloth, or of perforated plates of zinc or other metal or material, the tray or partition being placed within the reservoir  
25 so as to divide it into two compartments, the upper one for containing disinfecting materials, and the lower one for receiving the sediment or solid matters contained in the sewage. The matters discharged from the sewers or other places are made to pass through a basin or other shaped funnel into the lower compartment of the reservoir, and the liquid  
30 portion by the effect of the pressure from the flow of the sewage rises through the disinfecting materials and passes off through an outlet or delivery pipe.

These improvements will be clearly understood by referring to the figures and letters on the accompanying Sheet of Drawings, in which  
35 Figs. 1 and 2 are end and front elevations of the apparatus arranged to receive the sewage from a branch sewer.

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*Fahlman's Improved Apparatus for Treating Sewage, &c.*

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In both Figures *a* represents the reservoir; *b*, the tray or partition; *c*, the lower compartment of the reservoir; *d*, the upper compartment; *e*, the level of the disinfecting materials; *f*, the basin shaped funnel; *g*, the outlet of branch sewer; *h*, the outlet or delivery pipe; and *i*, the canal or conduit of the main sewer. The pipe *k* of the basin *f*, which 5 receives the sewage and other matters to be disinfected, reaches a small distance below the perforated tray or partition *b* in order to facilitate the filling of the compartment *c*; and the reservoir may be provided with small wheels *l* to enable it to be transported from place to place by traction, or it can be formed as a flat-bottomed boat, so that it can float 10 in sewers or canals.

The upper compartment of the reservoir can be divided into two, three, or more lateral compartments for receiving disinfecting materials of different kinds, the first containing earth intended to retain matters suspended in the liquids, and the others for containing disinfectants 15 capable of precipitating the solids dissolved in the liquids; and for these purposes each partition between the compartments has in it a hole near the upper edge, but above the level of the disinfectant, and from this hole the liquid descends by means of a tube or pipe opening near the bottom of the next compartment in which the liquid rises from the 20 bottom to the top, traversing the bed of disinfecting matter, to run off in the same manner to the next compartment or compartments, and finally into the canal or main conduit.

The apparatus is employed at the main sewers or canals before and below the branch sewers, drains, or pipes from the houses or other places 25 in such a way that the refuse matter can fall into the basin *f*; and the liquid, after traversing through the disinfecting materials, can run off to the canal or main conduit *i*.

If the openings of the sewers or pipes are level with the pathway, or with the water in the canal or main conduit, a hole *m* can be dug in the 30 ground in order to place the reservoir in such a position that the sewage matters can enter the basin *f*, and the liquid run off through the outlet or delivery pipe *h*; and for manufactories and other places the apparatus is placed in the most convenient position for receiving the liquids and matters to be disinfected, and facilitating their removal after 35 disinfection.

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*Fahlman's Improved Apparatus for Treating Sewage, &c.*

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For the application of my system to the gutters and drains of towns, the apparatus is so placed that the water from the gutters and drains shall run into the branch sewers, and thus the waters from the valves and traps, both from the privies, closets, and gutters, are disinfected; the  
5 first by mixing at the moment of the emission of excrements with matters having been already disinfected by urine which has passed through disinfecting matters contained in a receptacle below the seat of the privy or closet, as described in my former Patent, dated May 11, 1871, No. 1269, and then, both the first and the second, by traversing  
10 the bed of disinfecting matter in the upper compartment of the reservoir; and it is evident that by this system can be collected, for use in agriculture, solid excrement rendered much richer by containing the solid matters of the urine, and at the same time the atmosphere and water sources are prevented from being infected by offensive and unhealthy  
15 emanations.

In witness whereof, I, the said François Jules Fahlman, have hereunto set my hand and seal, this Sixteenth day of May One thousand eight hundred and seventy-two.

F. J. FAHLMAN. (L.S.)

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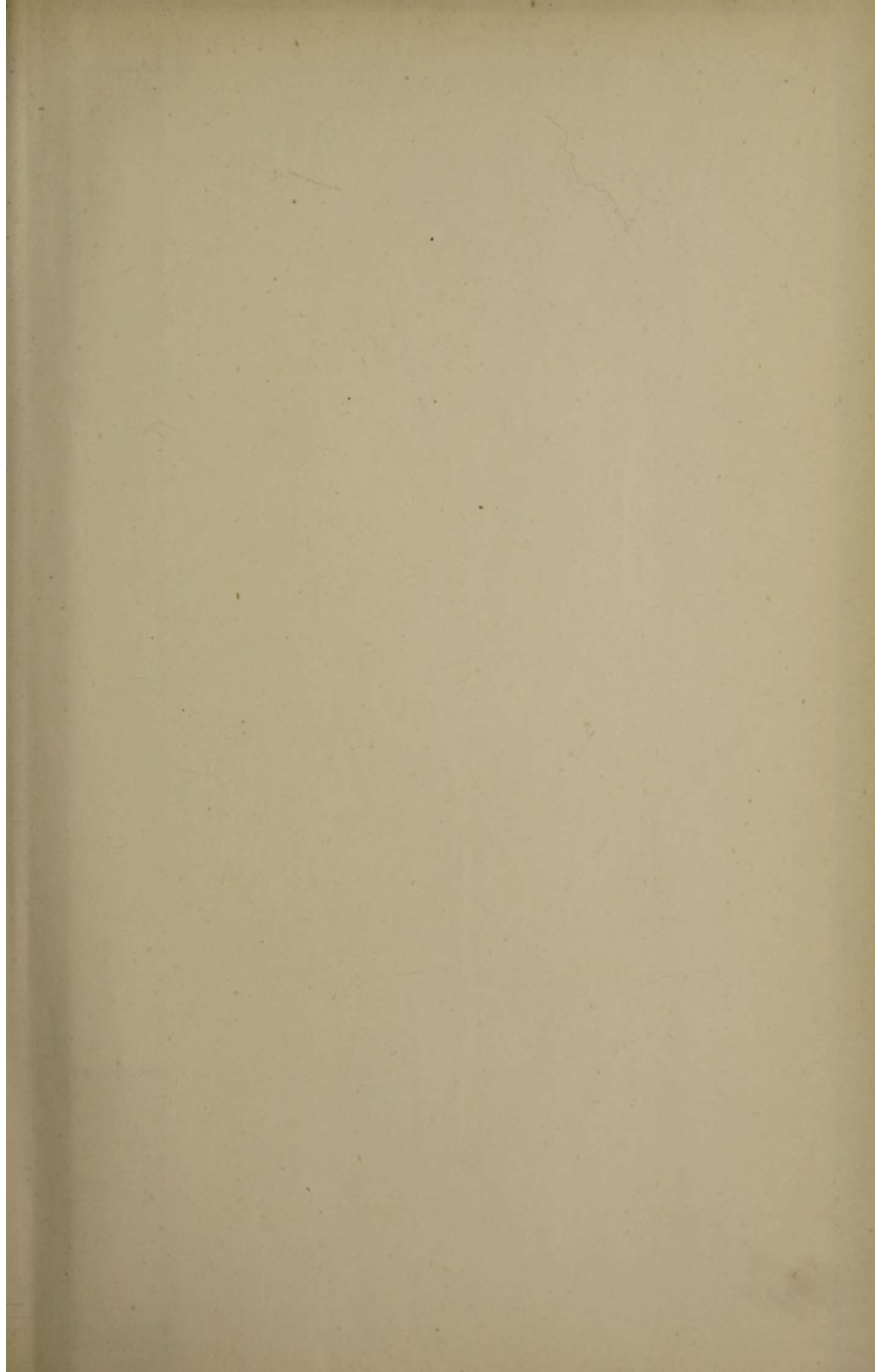
Kahlman's Improved Apparatus for Treating Sewage, &c.

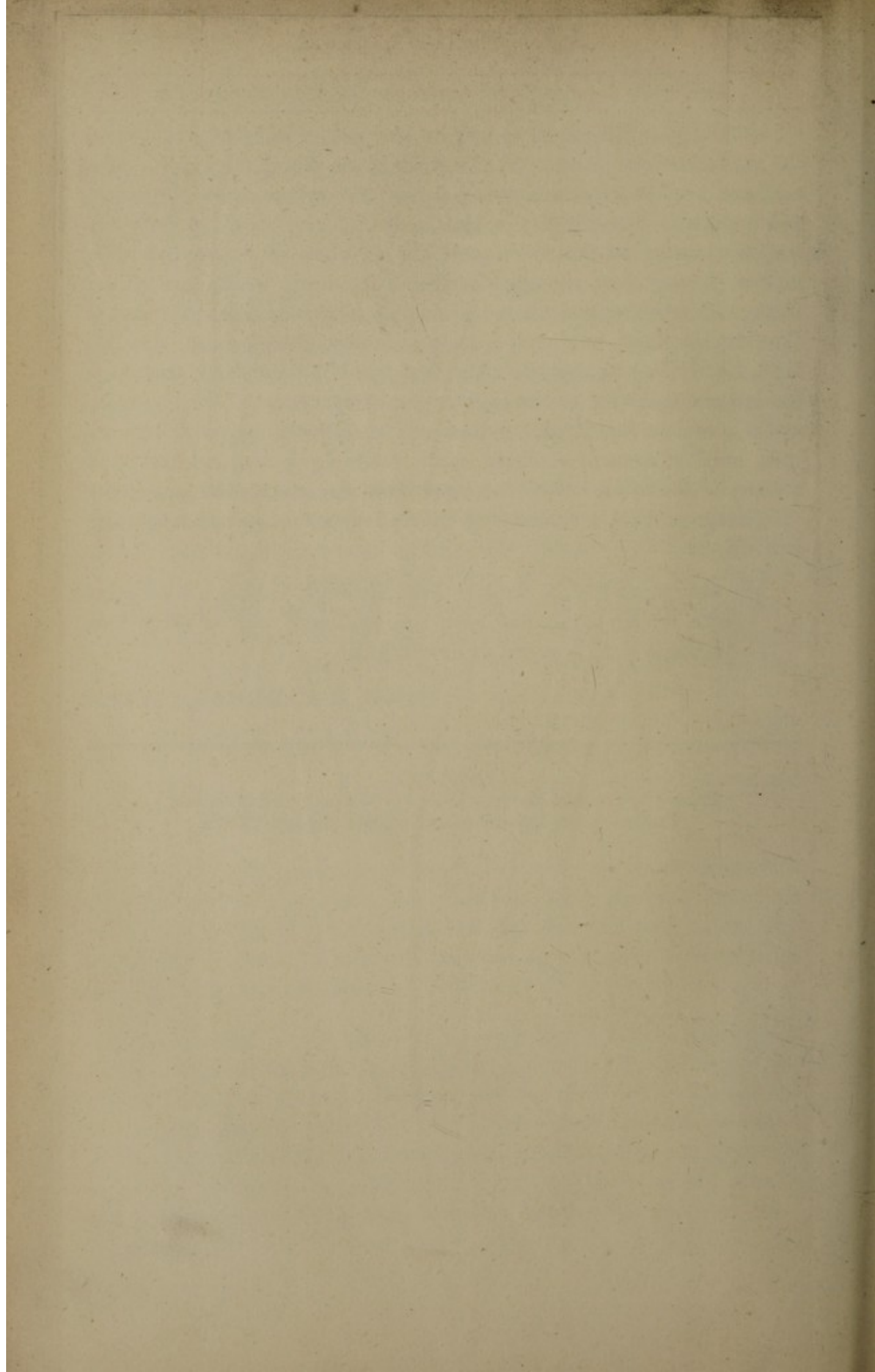
For the application of my system to the gutters and drains of towns the apparatus is so placed that the water from the gutters and drains shall run into the main sewer, and thus the waters from the valves and traps both from the privies, closets, and gutters are discharged; the first by mixing at the moment of the emission of excrement with matters having been already dissolved by urine which has passed through distilling matters contained in a receptacle below the seat of the privy or closet, as described in my former Patent dated May 17, 1871, No. 1269, and then, both the first and the second, by traversing the bed of distilling matter in the upper compartment of the reservoir; and it is evident that by this system can be collected, for use in agriculture, solid excrement rendered much richer by containing the solid matters of the urine, and at the same time the atmosphere and other sources are prevented from being infected by offensive and unhealthy emanations.

In witness whereof, I, the said Francis Julius Kahlman, have hereunto set my hand and seal, this sixteenth day of May One thousand eight hundred and seventy-two.

F. J. KAHLMAN. (S.S.)

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A. D. 1871. Nov. 29. N<sup>o</sup> 3233.  
FAHLMANN'S SPECIFICATION.

(1 SHEET)

FIG. 1.

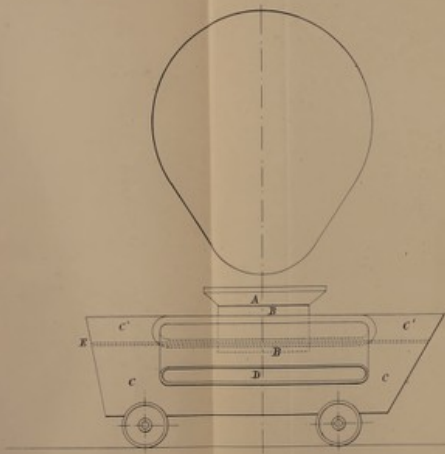
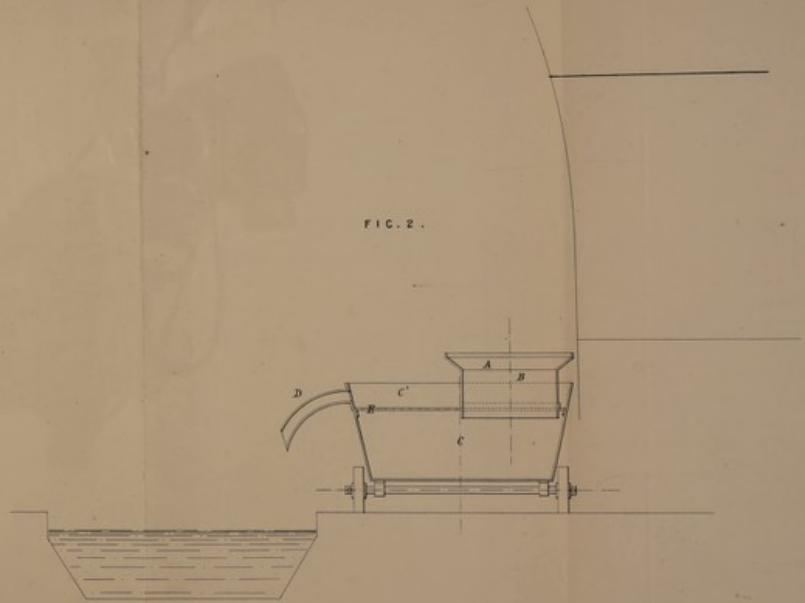


FIG. 2.



The filed drawing is partly colored.

Drawn on Stone by Malby & Sons

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