Specification of Gustav Alsing : treating sewage, &c.;

A.D. 1873, 9th APRIL. N° 1319.

SPECIFICATION

OF

GUSTAV ALSING.

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 10d. 1873.

A.D. 1873, 9th April. N° 1319.

Treating Sewage, &c.

LETTERS PATENT to Gustav Alsing, Civil Engineer, 3, Bank Place, Preston, for the Invention of "IMPROVEMENTS IN THE TREATMENT OF NIGHT SOIL, OF SEWAGE DEPOSITS, AND OF OTHER SIMILAR MOIST MANURIAL MATTERS."

Sealed the 20th June 1873, and dated the 9th April 1873.

PROVISIONAL SPECIFICATION left by the said Gustav Alsing at the Office of the Commissioners of Patents, with his Petition, on the 9th April 1873.

I, GUSTAV ALSING, Civil Engineer, 3, Bank Place, Preston, do hereby declare the nature of the said Invention for "IMPROVEMENTS IN THE TREATMENT OF NIGHT SOIL, OF SEWAGE DEPOSITS, AND OF OTHER SIMILAR MOIST MANURIAL MATTERS," to be as follows:—

This Invention consists in a method of rapidly fixing or solidifying moist night soil, sewage, slush, or other similar manurial matters, in order to render such materials conveniently portable and capable of being inoffensively stored for use as manures. To accomplish this I mix with the said moist material about one-third its weight of dry sulphate

of calcium or burnt gypsum, commonly known as plaster of Paris, or I use more or less according to the quantity of moisture to be absorbed.

In order to facilitate the mixing of these materials in definite proportions I place the powdered gypsum in a large hopper or receptacle, at the bottom of which is a revolving worm or screw actuated by means of differential speed pulleys, by which means the powdered gypsum is given out in regulated quantities and deposited on an endless belt or other suitable carrier, to be thus conveyed to a mixing cylinder by means of a chain pump. While passing through the said cylinder the manurial slush and the dry powdered gypsum are thoroughly mingled by means of revolving arms, after which the mixture is discharged in a pasty condition through suitable openings into a succession of long troughs placed below and moving off upon rollers as they become filled with the pasty compound. These troughs may be divided across into any convenient spaces so as to form moulds, according to the size and shape into which it is desired the product should solidify as soon as the blocks or bricks thus formed are sufficiently set (which takes place very rapidly); they are turned out upon a drying frame when the troughs will be ready to be again filled.

The drying also may be greatly facilitated by fixing upright studs or cores in the moulds, by which means the bricks will be turned out perforated.

When useing my Invention in connection with the method of purifying sewage by filteration I use an additional feeding apparatus, similar to that used for the gypsum, for the purpose of adding to the mixture of deposited sewage slush and gypsum a regulated quantity of the saturated filtering material after it has been removod from the filters. In this way I readily obtain a convenient compound of all the manurial substances extracted from and deposited by the sewage.

When there is much free ammonia in the moist material operated on I neutralize and fix it with dilute sulphuric or other suitable and convenient acid before running the moist material into the mixing cylinder, and when desirable fortify the several compounds or any of them by adding in the mixing phosphate of lime, potash, ammonia, salt, or any other suitable substance according to the market demand.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said Gustav Alsing in the Great Seal Patent Office on the 9th October 1873.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, GUSTAV ALSING, Civil Engineer, 3, Bank Place, Preston, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Ninth day of April, in the year of our Lord One thousand eight hundred and seventy-three, in the thirty-sixth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Gustav Alsing, Her special licence that I, the said Gustav Alsing, my executors, administrators, and assigns, or such others as I, the said Gustav Alsing, 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 TREATMENT OF NIGHT SOIL, OF SEWAGE DEPOSIT, AND OTHER SIMILAR MOIST MANURIAL MATTERS," upon the condition (amongst others) that I, the said Gustav Alsing, 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 Gustav Alsing, 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 consists in a method of rapidly fixing or solidifying moist night soil, sewage slush, or other similar manurial matters, in order to render such materials conveniently portable and capable of being inoffensively stored for use as manures. To accomplish this I mix with the said moist material about one-third its weight of dry sulphate of calcium or burnt gypsum, commonly known as plaster of Paris, or I use more or less according to the quantity of moisture to be absorbed.

And in order that my said Invention may be properly understood I will proceed to describe the same with reference to the annexed Drawings.

Fig. 1 represents longitudinal section; Fig. 2, plan of same; Fig. 3, end view; Fig. 4, cross section at A, B; Fig. 5, cross section at C, D; Fig. 6, back view of cone; and Fig. 7 is a general view of the machine.

In order to facilitate the mixing of the before-mentioned materials in definite proportions, I place the powdered gypsum in a large hopper or receptacle G, at the bottom of which is a revolving worm or screw A, actuated by means of differential speed pulleys B, by which means the powdered gypsum is given out in regulated quantities, and deposited on an endless belt C, Fig. 7, or other suitable carrier, to be thus conveyed to a mixing cylinder E, Fig. 7; at the same time a regulated supply of moist night soil, sewage deposit, or other manurial slush is also conveyed to the mixing cylinder by means of a chain pump. While passing through the said cylinder the manurial slush and the dry powdered gypsum are thoroughly mingled by means of revolving arms, after which the mixture is discharged in a pasty condition through suitable openings into a succession of long troughs F, Fig. 7, placed below and moving off upon rollers as they become filled with the pasty compound. These troughs may be divided across into any convenient spaces so as to form moulds according to the size and shape into which it is desired the product should solidify. As soon as the blocks or bricks thus formed are sufficiently set (which takes place very rapidly), they are turned out upon a drying frame, when the troughs will be ready to be again filled.

The drying may also be greatly facilitated by fixing upright studs or cores in the moulds, by which means the bricks will be turned out perforated.

When using my Invention in connection with the method of purifying sewage by filtration I use an additional feeding apparatus similar to that used for the gypsum for the purpose of adding to the mixture of deposited sewage slush and gypsum a regulated quantity of the saturated filtering material after it has been removed from the filters. In this way I readily obtain a convenient compound of all the manurial substances extracted from and deposited by the sewage.

When there is much free ammonia in the moist material operated on I neutralize and fix it with dilute sulphuric or other suitable and con-

venient acid, before running the moist material into the mixing cylinder, and when desirable I fortify the several compounds or any of them by adding in the mixing phosphate of lime, potash, ammonia, salt, or any other suitable substance according to the market demand.

Having thus described the nature of this my said Invention and the mode of carrying the same into effect, I would have it understood that what I claim and desire to be secured to me by the herein-before in part recited Letters Patent is, the improvements in the treatment of night soil, of sewage deposits, and other similar manurial moist matters, substantially as herein described, and in conjunction with the apparatus shewn on the accompanying Drawings or any mere modification thereof.

In witness whereof, I, the said Gustav Alsing, have hereunto set my hand and seal, this Eighth day of October, in the year of our Lord One thousand eight hundred and seventy-three.

GUSTAV ALSING. (L.S.)

LONDON:
Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1873.

A.D. 1873. Apr. 9. N° 1329
ALSING'S Specification.

1 SHEET

FIG. 1.

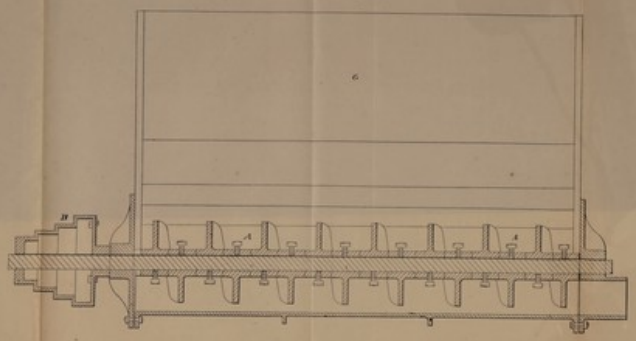

FIG. 5.

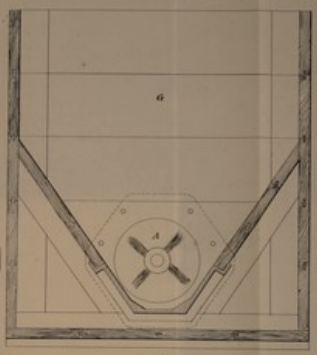

FIG. 4.

FIG. 3.

FIG. 2.

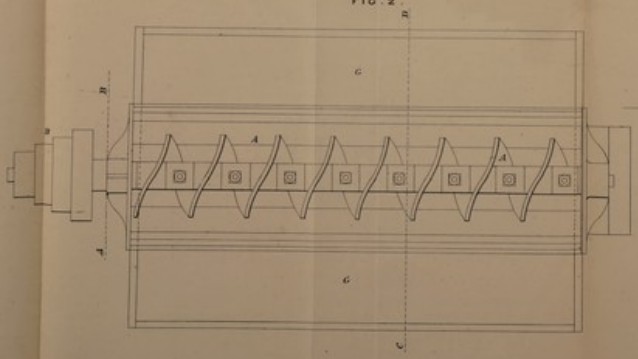

FIG. 7.

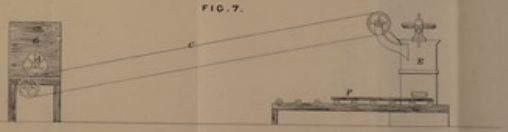

FIG. 6.

The Seal drawing is not colored.

London: Printed by George Edward Eyre and William Spottiswoode
Printers to the Queen's most Excellent Majesty 1873

Drawn on Stone by Malby & Son