Specification of Benjamin Young and Peter Brown : collecting and disposing of sewage.

Contributors

Young, Benjamin.
Brown, Peter.

Publication/Creation

London : Great Seal Patent Office, 1858 (London : George E. Eyre and William Spottiswoode)

Persistent URL

https://wellcomecollection.org/works/c5xmrahf

License and attribution

Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
https://wellcomecollection.org

A.D. 1858, 28th JUNE. N° 1460.

SPECIFICATION

OF

BENJAMIN YOUNG AND PETER BROWN.

COLLECTING AND DISPOSING OF SEWAGE.

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 4d.

1858.

A.D. 1858, 28th JUNE. N° 1460.

Collecting and Disposing of Sewage.

LETTERS PATENT to Benjamin Young and Peter Brown, of Spa Road, Bermondsey, in the Borough of Southwark, Glue Manufacturers, for the Invention of "AN IMPROVED METHOD OF COLLECTING AND DISPOSING OF THE SEWAGE OF TOWNS OR CITIES."

Sealed the 24th December 1858, and dated the 28th June 1858.

PROVISIONAL SPECIFICATION left by the said Benjamin Young and Peter Brown at the Office of the Commissioners of Patents, with their Petition, on the 28th June 1858.

We, BENJAMIN YOUNG and PETER BROWN, of Spa Road, Bermondsey, in the Borough of Southwark, Glue Manufacturers, do hereby declare the nature of the said Invention for "AN IMPROVED METHOD OF COLLECTING AND DISPOSING OF THE SEWAGE OF TOWNS OR CITIES," to be as follows:—

This Invention of an improved method of collecting and disposing of the sewage of towns or cities has for its object more particularly to collect and dispose of the sewage of London and its environs, and by preventing the solid matters contained in the sewage from passing into the Thames, the river will be purified and at the same time the said solid matters may be used as a manure for fertilizing land. In order to effect the object of our Invention, we propose to lay a sewer or drain constructed of cast-iron pipes, brickwork, or other convenient and suitable materials along the banks of the river at a con-

venient distance between low and high water mark. This sewer, or drain which must be of considerable sectional area, to be computed according to the quantity of sewage expected to be carried through it in a given time, should be sunk in the ground, which should be excavated for the purpose, and all the land drains and sewers may be made to communicate with it. This main drain or sewer may be enclosed within an embankment extending from the present line of shore to any distance that may be considered necessary, and manholes at suitable distances may be made for the convenience of obtaining access when required to the sewer. This embankment may be used either as additional wharfage accommodation, where required, or as a promenade or carriage way along the side of the river, or, if preferred, a carriage may be raised up on columns or arches on the embankment, and the spaces beneath may be used as warehouses or for other purposes. The large main sewers or drains which receive the sewage from the land drains are to be made to empty themselves into sumps, from which it is to be pumped or lifted into large tanks or reservoirs situate at a distance from the town, and must be covered over and converted into close chambers, in which, when filled, the liquid is to remain at rest for a suitable time in order to allow the solid matters to settle to the bottom. While so doing the liquid will give off many noxious vapors, such as sulphuretted hydrogen and other gases, which we collect by means of an artificial draught induced by fans, blowers, high chimnies, or otherwise, and the noxious vapors so collected are conducted to a furnace or furnaces, and are passed through the fires where they will be consumed.

The supernatant liquid is then to be allowed to run off at the higher level, and will be carried through suitable pipes to some outfall which will carry it to the sea. When the deposit of solid matters in the tanks has attained a certain thickness or depth they must be deodorized, and the tanks cleaned out from time to time, for which purpose a sufficient number of tanks must be constructed. It will be understood that by thus collecting the sewage in sewers or drains that are not affected by the tide, there will always be a regular flow towards the tanks as the pumps and lifting engines are to be kept constantly at work. The artificial draught caused by the ventilating fans or high chimnies will always create a current of air in one direction in the land drains as well as in the main drain or sewer, and consequently no smell will emanate from the traps or gulley holes either of private houses or public streets or ways.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said Benjamin Young and Peter Brown in the Great Seal Patent Office on the 28th December 1858.

TO ALL TO WHOM THESE PRESENTS SHALL COME, we, BENJAMIN YOUNG and PETER BROWN, of Spa Road, Bermondsey, in the Borough of Southwark, Glue Manufacturers, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Twenty-eighth day of June, in the year of our Lord One thousand eight hundred and fifty-eight, in the twenty-second year of Her reign, did, for Herself, Her heirs and successors, give and grant unto us, the said Benjamin Young and Peter Brown, Her special license that we, the said Benjamin Young and Peter Brown, our executors, administrators, and assigns, or such others as we, the said Benjamin Young and Peter Brown, our 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 "AN IMPROVED METHOD OF COLLECTING AND DISPOSING OF THE SEWAGE OF TOWNS OR CITIES," upon the condition (amongst others) that we, the said Benjamin Young and Peter Brown, by an instrument in writing under our hands and seals, or under the hand and seal of one of us, 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 Benjamin Young, on behalf of myself and of the said Peter Brown, do hereby declare the nature of our 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 of "An Improved Method of Collecting and Disposing of the Sewage of Towns or Cities," has for its object more particularly to collect and dispose of the sewage of London and its environs, and by preventing the solid matters contained in the sewage from passing into the Thames the river will be purified, and at the same time the said solid matters may be collected and used as a manure for fertilizing land. In order to effect the object of our Invention, we propose to lay a sewer or drain constructed of cast-iron pipes,

brickwork, or other convenient and suitable materials along the banks of the river at a convenient distance between low and high water mark. This sewer or drain we prefer to construct of cast-iron pipes or tubes, which must be of considerable sectional area, to be computed according to the quantity of sewage expected to be carried through it in a given time. These pipes or tubes are to be sunk in the solid ground, which must be excavated for the purpose, and all the land drains and sewers must be made to communicate with the main sewer or drain so formed. This main drain or sewer may, if desired, be enclosed within an embankment extending from the present line of shore to any distance that may be considered necessary, and manholes or openings must be made in the pipes at suitable distances for the convenience of obtaining access, when required, to the sewer. This embankment may be used either as additional wharfage accommodation, where required, or as a promenade or carriage way along the side of the river, or, if preferred, a carriage way may be raised up on columns or arches on the embankment, and the spaces beneath may be used as warehouses or for other purposes. These large main sewers or drains which are intended to receive the sewage from the land drains are to be made to empty themselves into pumps, from which the sewage is to be pumped or lifted into large tanks or reservoirs situate at a distance from the town. These reservoirs must be covered over and converted into close chambers, in which, when filled, the liquid is to remain at rest for a suitable time, in order to allow the solid matters to settle to the bottom, or instead of the large main drains or sewers being made to empty themselves into pumps, from which the sewage is afterwards pumped into reservoirs, as above mentioned, force pumps may be adapted direct to the large iron pipes or tubes of which the sewer is constructed, and by this means the sewage will be pumped at once into the reservoirs. While the sewage is thus settling and depositing its solid matters at the bottom of the reservoir, the liquid will give off many noxious vapours, such as sulphuretted hydrogen and other gases, which are to be collected and drawn out of the reservoirs by means of an artificial draught induced by fans, blowers, high chimnies, or other convenient and suitable exhausting apparatus, and the noxious vapours so collected are conducted to a furnace or furnaces, and are passed through the fires, where they will be consumed, or the deleterious gases removed or burnt out of them. After the sewage has been allowed to remain at rest for from six to ten days, the supernatant liquid is allowed to run off at the high level to which it has been lifted to the pumps, and it will be carried through suitable pipes to some outfall, and if desired, it may be conveyed to the sea ; but it has been proved by experiment that the supernatant liquid after being allowed to remain at rest for some

days will be perfectly tasteless, and as brilliant and clear as the best spring water; this liquid may, therefore, without the slightest inconvenience, be allowed to run direct into the Thames or other river. When the deposit of solid matters in the tanks or reservoirs has attained a certain thickness or depth, the solid matters must be deodorized, and the tanks cleaned out from time to time, for which purpose a sufficient number of tanks must be constructed. For the purpose of deodorizing these solid matters, we prefer to use peat charcoal, but we do not intend to confine ourselves to this or any other deodorizer, and we would merely observe that as it is proposed to use the solid matters as manure, it is advisable not to make use of any chemical ingredient as a deodorizer, which will injuriously affect the fertilizing principle of the manure. It will be undertood that by thus collecting the sewage in sewers or drains that are not affected by the tide, there will always be a regular flow of the liquid towards the tanks, as the pumps and lifting engines are to be kept constantly at work, there will consequently be little risk of the main or other drains becoming choked or clogged by any deposit of solid matters therein. The artificial draught caused by the ventilating fans or high chimnies will always create a current of air in one direction in the land drains as well as in the main drain or sewer, and consequently no smell will emanate from the traps or gulley holes, either of private houses or public streets or ways, as is now the case at certain seasons and times of the tides.

Having now described our Invention of "An Improved Method of Collecting and Disposing of the Sewage of Towns or Cities," and having explained the manner of carrying the same into effect, we would observe that inasmuch as the construction and arrangement of the necessary apparatus for carrying out and effecting the object of our Invention must necessarily depend upon local circumstances, which must be judged of by the engineer employed in erecting or constructing the works, we have not considered it requisite to give any Drawings thereof as the principle upon which our improved method of collecting and disposing of the sewage of towns or cities is based, is sufficiently explained in the above description of our Invention. In conclusion, we claim collecting the sewage of towns or cities in close tanks or reservoirs, in which it is allowed to remain at rest for a sufficient length of time to enable all the solid matters contained therein to settle, and be deposited at the bottom of the said tanks or reservoirs, from which the clear supernatant liquid is afterwards drawn or allowed to run off, in order to admit of the said tanks and reservoirs being again filled from time to time at regular or stated intervals, so as to obtain an accumulation of solid matter in the said tanks or reservoirs.

We claim particularly the use of close or covered tanks or reservoirs for

the above purposes, so as to admit of the noxious or deleterious fumes or gases arising from the stagnant sewage being collected and drawn off by any convenient exhausting apparatus, whereby such noxious or deleterious fumes or gases may be conveyed to furnaces or fireplaces, in which they may be consumed or purified before being allowed to escape into the atmosphere.

In witness whereof, I, the said Benjamin Young, have hereunto set my hand and seal, the Twenty-eighth day of December, in the year of our Lord One thousand eight hundred and fifty-eight.

BENJAMIN YOUNG. (L.S.)

Witness,

J. W. MOFFATT,

66, Chancery Lane.

LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,

Printers to the Queen's most Excellent Majesty. 1858.