

Specification of James Stokoe : apparatus for the purification of vapours arising from smelting and other furnaces.

Contributors

Stokoe, James.

Publication/Creation

London : Queen's Printing Office, 1854 (London : George E. Eyre and William Spottiswoode)

Persistent URL

<https://wellcomecollection.org/works/c2gnc44h>

License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



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



A.D. 1845 N^o 10,785.

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

OF

JAMES STOKOE.

APPARATUS FOR THE PURIFICATION OF
VAPOURS ARISING FROM SMELTING AND
OTHER FURNACES.

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY:

PUBLISHED AT THE QUEEN'S PRINTING OFFICE, EAST HARDING STREET,
NEAR FLEET STREET.

No 92.

1854.



A.D. 1845 N° 10,785.

**Apparatus for the Purification of Vapours arising from
Smelting and other Furnaces.**

STOKOE'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JAMES STOKOE,
of Newton, in the County of Northumberland, Millwright, send greeting.

WHEREAS Her present most Excellent Majesty Queen Victoria, by Her
Royal Letters Patent, under the Great Seal of Great Britain, bearing date
5 at Westminster, the Twenty-fifth day of July, in the ninth year (1845) of Her
reign, did, for Herself, Her heirs, and successors, give and grant unto me, the
said James Stokoe, my exors, adñors, and assigns, Her especial licence, full
power, sole privilege, and authority, that I, the said James Stokoe, my exors,
adñors, and assigns, or such others as I, the said James Stokoe, my exors,
10 adñors, and assigns, should at any time agree with, and no others, from time
to time and at all times during the term of years therein expressed, should
and lawfully might make, use, exercise, and vend, within England, Wales,
and the Town of Berwick upon Tweed, my Invention of "**IMPROVEMENTS IN
PURIFYING THE VAPOURS ARISING FROM SMELTING AND OTHER FURNACES, AND IN
15 RECOVERING THEREFROM THE USEFUL MATTERS WHICH MAY BE INTERMIXED THERE-
WITH;**" in which said Letters Patent is contained a proviso that I, the said
James Stokoe, shall cause a particular description of the nature of my said
Invention, and in what manner the same is to be performed, to be inrolled
in Her said Majesty's High Court of Chancery within six calendar months

Stokoe's Impts. in Purifying Vapours arising from Smelting Furnaces, &c.

next and immediately after the date of the said in part recited Letters Patent, as in and by the same, reference being thereunto had, will more fully and at large appear.

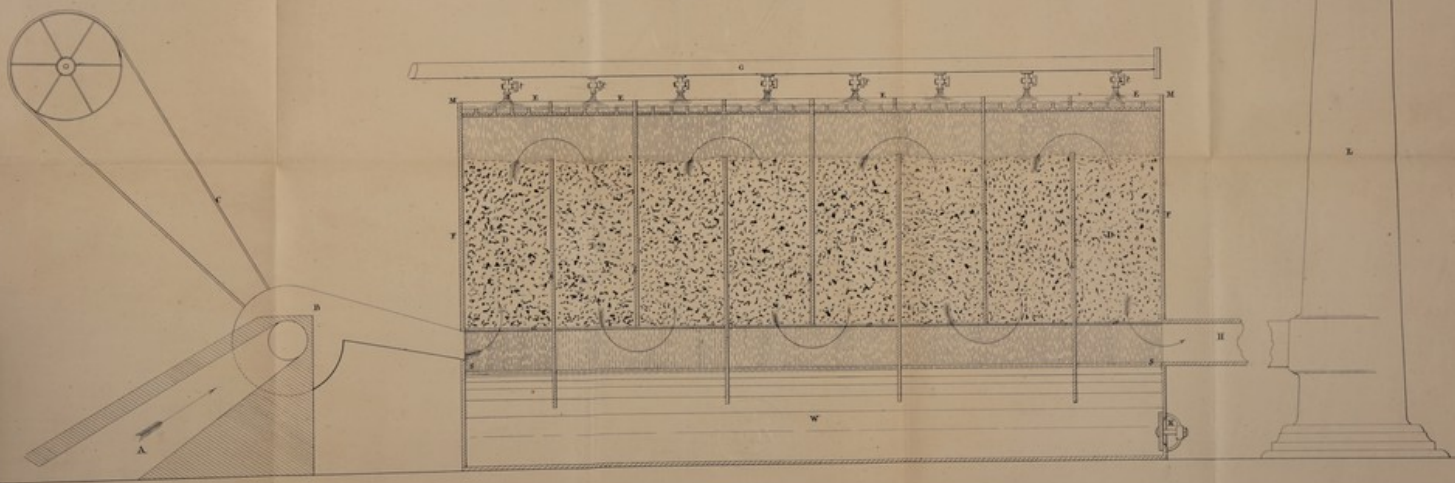
NOW KNOW YE, that in compliance with the said proviso, I, the said James Stokoe, hereby declare that the nature of my said Invention, and in what manner the same is to be performed, are fully described and set forth in and by the present Specification thereof, reference being had to the Drawings hereunto annexed, that is to say :—

Whereas one of the most approved methods now in use for purifying the vapours arising from smelting and other furnaces, and in recovering therefrom any useful matters which may be intermixed therewith, consists in giving such a direction to the vapours that they may by virtue of their own moving force pass through a filter or series of filters filled with stones, gravel, or other like materials, having water constantly passing through them, but that the said method is often found to fail or to answer but imperfectly in practice, owing in part to the sluggishness of the vapours, to their lingering at the entrance to the filters, and to their producing a consequent reaction more or less prejudicial to the working of the furnace.

Now the nature of my said Invention consists in combining with such filters as aforesaid certain other means by which the ascent of the vapours is accelerated, and as fast as they issue from the furnace are drawn along the flue and driven rapidly into and through the filters; and the manner in which the same is carried into effect is shewn in the Drawing hereunto annexed, which represents a side view in section of the combination of means aforesaid. A is the top of a flue leading from the smelting or other furnace; B, an exhausting and forcing apparatus attached to A, and worked by a driving belt C from a steam engine or other first moving power, which serves at once to draw the vapours with an increased degree of velocity out of the flue, and to drive them forward into and through the filtering and recovering box or case F, F. The shape of this box F, F, is rectangular; it is divided longitudinally at about three eighths of its height from the bottom by a horizontal perforated partition *a, a*. The space above that partition is filled to near the top with stones, gravel, small pieces of wood, brushwood, heath, or other suitable filtering material, and the part below (W) is filled with water to the level indicated by S, S, leaving an open space between the partition *a, a*, and the surface of the water where the nozzle of the apparatus B is introduced. The portion of the box appropriated to the filtering materials is further divided vertically into compartments D, D, by partitions *b, b*, which are prolonged alternately

A. D. 1045 July 25 N° 10.765.
STORÖEN Securitacion.

(1. JUNE 1877)



The engravings are partly colored.

London: Printed by George Edwardes Esq. and William Greenough Esq. for the University and the Society of the City of London. 1877.

Wiley & Sons, Ltd.



Stokoe's Impts. in Purifying Vapours arising from Smelting Furnaces, &c.

upwards and downwards in the manner shewn, three of them as in the annexed Drawing, or any other number, being carried to the top of the box while the others stop short of it, and the latter being carried down through the partition *a, a*, into the water beneath. *M* is a long open trough the whole
5 length of the recovering box *F, F*, and divided crossways by partitions immediately above *D, D*, into compartments *E, E*, each of which is again divided by four or more low parallel divisions; the bottoms of those cisterns *E, E*, have perforated metallic plates fixed in them on the top of the case, one over each of the filtering compartments *D*. *G*, is a close trough or pipe, which
10 extends along and immediately above the trough *M*, and serves to keep the compartments *E, E*, supplied with water. The current of vapours being driven with great force by the apparatus *B* into the box takes of necessity the course through the filtering compartments indicated by the arrows passing over and under the partitions *b, b*, alternately until it reaches the outlet pipe *H*,
15 terminating in the chimney *L*, and while making this circuit comes into contact with the water which is being continually dispersed in showers from *E, E*, and which keeps percolating through the filtering materials into the receiving pool beneath, carrying down with it all the heavier matters contained in the vapours or that have been deposited from them in their progress through
20 the filters. *K* is a trap door through which the water and deposit in the receiving pool is drawn off as often as necessary, and *t, t*, taps for letting on and shutting off the water from the trough or pipe *G* as required.

And having now described the nature of my said Invention, and in what manner the same is performed, I declare that I lay no claim to the purifying
25 of the vapours of furnaces by passing them through filters filled with stones, gravel, and other like materials having water constantly percolating through them, being as before signified well aware that the same or similar methods have been already in use; but that what I claim as of my Invention is the application as before described of an exhausting and forcing apparatus to
30 increase the velocity of draught in the flues of smelting and other furnaces, and to drive the vapours rapidly through filters of the above or of any other suitable description, for the purpose of purifying such vapours and recovering therefrom any useful matters which may be intermixed therewith.

In witness whereof, I, the said James Stokoe, have hereunto set my
35 hand and seal, this Twenty-third day of January, in the year of our Lord One thousand eight hundred and forty-six.

JAMES (L.S.) STOKOE.

Stokoe's Impts. in Purifying Vapours arising from Smelting Furnaces, &c.

STABLE, Extra. **AND BE IT REMEMBERED**, that on the Twenty-third day of January, in the year of our Lord 1846, the aforesaid James Stokoe came before our said Lady the Queen in Her Chancery, and acknowledged the Specification aforesaid, and all and everything therein contained and specified, in form above written. And also the Specification aforesaid was stamped according to the tenor of the Statute made for that purpose.

Enrolled the Twenty-fourth day of January, in the year of our Lord One thousand eight hundred and forty-six.

LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1854.