

Specification of Andrew Robertson : preventing smoke.

Contributors

Robertson, Andrew.

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A.D. 1860, 11th MAY. N° 1166.

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

OF

ANDREW ROBERTSON.

—
PREVENTING SMOKE.
—

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,

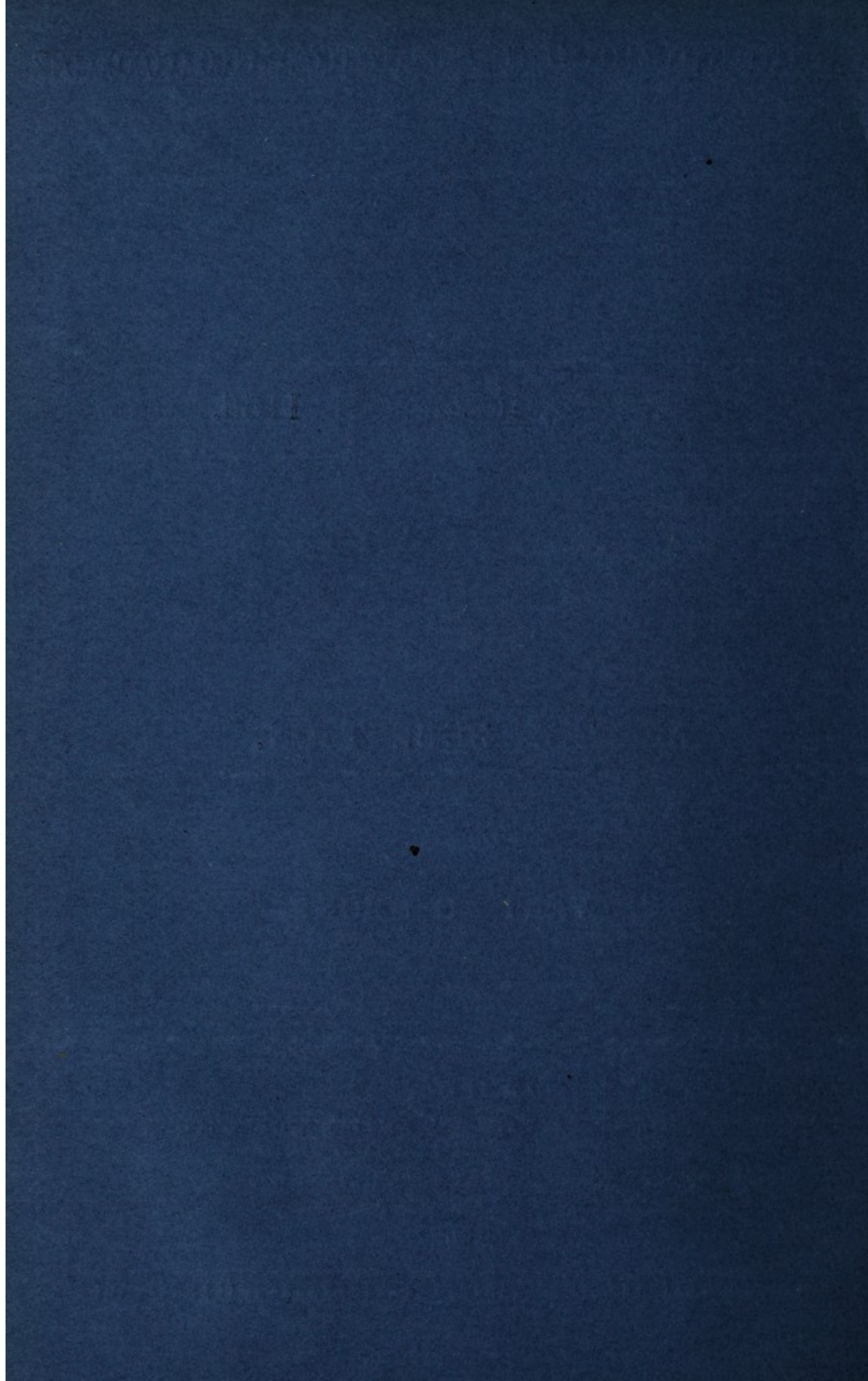
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY :

PUBLISHED AT THE GREAT SEAL PATENT OFFICE,

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Price 3d.

1860.





A.D. 1860, 11th May. N^o 1166.

Preventing Smoke.

LETTERS PATENT to Andrew Robertson, of Neilston, in the County of Renfrew, North Britain, Bleacher, for the Invention of "**IMPROVEMENTS IN PREVENTING SMOKE.**"

Sealed the 6th November 1860, and dated the 11th May 1860.

PROVISIONAL SPECIFICATION left by the said Andrew Robertson at the Office of the Commissioners of Patents, with his Petition, on the 11th May 1860.

I, ANDREW ROBERTSON, of Neilston, in the County of Renfrew, North Briton, Bleacher, do hereby declare the nature of the said Invention of "**IMPROVEMENTS IN PREVENTING SMOKE,**" to be as follows, that is to say:—

This Invention has for object the prevention of smoke in furnaces of various kinds, and consists in sytematically and constantly admitting air from the ash-pit through and between the fire-bars at their front ends, the extent of aperture being regulated by simply arranging the fuel so as to uncover the front ends of the fire-bars more or less. Special contrivances may be adopted in connection with this system, and to assist in carrying it out; but without such it is capable of more or less complete application to almost all ordinary furnaces.

Robertson's Improvements in Preventing Smoke.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said Andrew Robertson in the Great Seal Patent Office on the 9th November 1860.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, ANDREW ROBERTSON, of Neilston, in the County of Renfrew, North Britain, Bleacher, 5 send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Eleventh day of May, in the year of our Lord One thousand eight hundred and sixty, in the twenty-third year of Her reign, did for Herself, Her heirs and successors, give and grant unto me, the said 10 Andrew Robertson, Her special licence that I, the said Andrew Robertson, my executors, administrators, and assigns, or such others as I, the said Andrew Robertson, 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, 15 exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "**IMPROVEMENTS IN PREVENTING SMOKE**," upon the condition (amongst others) that I, the said Andrew Robertson, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should par- 20 ticularly 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 Andrew Robertson, do hereby declare 25 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 in writing, that is to say:—

My said Invention has for object the prevention of smoke in furnaces of various kinds, and comprises a system the practical working of which may be 30 assisted by sundry special contrivances; but which without such contrivances is capable of more or less complete application in almost all ordinary furnaces.

The Invention consists in systematically and constantly admitting air from the ash-pit through and between the fire-bars at their front ends, and is carried out in its simplest form by arranging the fuel so as to leave uncovered the 35 front ends of the fire-bars to the requisite extent. The extent of the fire-bars to be thus left uncovered cannot be defined by a rule applicable to all cases as it will vary with the numerous peculiarities of each furnace; but in practice

Robertson's Improvements in Preventing Smoke.

no difficulty is met with in arriving at a suitable amount of opening by observing the result as regards emission of smoke, and as regards the efficiency of the fire, and modifying the opening accordingly.

In order to carry out my said improved system in a more precise manner,
5 I, in some cases, regulate the extent to which the front ends of the fire-bars are uncovered by placing a defining bar across the top of the fire-bars as a front limit for the fuel, such bar being fixed down to the fire-bars by bolts or clamps in the position which, after trial, appears to give the best results. For the purpose of further adjusting the admission of air through the fire-bars,
10 or of modifying such admission as the combustion of the fuel progresses, I apply an adjustable valve or shutter of any suitable or convenient kind to the fire-bar openings.

According to another modification, I introduce a grating, or set of smaller bars at the front ends of the ordinary fire-bars, in place of the dead plate,
15 using such grating for the admission of air from below, and in some cases applying a valve or shutter to regulate the admission of air through it.

Having thus particularly described my said Invention, and the manner in which the same is or may be used or carried into effect, I have to state that I do not restrict myself to the precise details herein-before described, but that
20 what I consider to be novel and original, and claim as the Invention secured to me by the herein-before in part recited Letters Patent is,—the admitting of air systematically and constantly from the ash-pit through and between the fire-bars of furnaces for the purpose of prevent smoke substantially as herein-before described.

25 In witness whereof, I, the said Andrew Robertson, have hereunto set my hand and seal, this Eighth day of November, in the year of our Lord One thousand eight hundred and sixty.

ANDREW ROBERTSON. (L.S.)

LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1860.

MILNER'S IMPROVEMENTS IN FURNACE GRATES.

to efficiency is met with in arriving at a suitable amount of opening by observing the result as regards emission of smoke, and as regards the efficiency of the fire and modifying the opening accordingly.

In order to carry out my said improved system in a more precise manner, I, in some cases, regulate the extent to which the front ends of the fire-bars are uncovered by placing a defining bar across the top of the fire-bars as a front limit for the fuel, such bar being fixed down to the fire-bars by bolts or staples in the position which, after trial, appears to give the best results. For the purpose of further adjusting the admission of air through the fire-bars, I am of modifying such admission as the combustion of the fuel progresses, I apply an adjustable valve or shutter of any suitable or convenient kind to the fire-bar opening, or I introduce a grating, or set of smaller bars at the front ends of the ordinary fire-bars, in place of the fixed plate, using such grating for the admission of air from below, and in some cases applying a valve or shutter to regulate the admission of air through it.

Having thus particularly described my said invention, and the manner in which the same is or may be used or carried into effect, I have to state that I do not restrict myself to the precise details herein-before described, but that what I consider to be novel and original, and claim as the invention secured to me by the herein-before patented Letters Patent is—the admitting of air systematically and constantly from the sub-pit through and between the fire-bars of furnaces for the purpose of preventing smoke substantially as herein-before described.

In witness whereof, I, the said Andrew Robertson, have hereunto set my hand and seal, this Eighth day of November, in the year of our Lord One thousand eight hundred and sixty.

ANDREW ROBERTSON. (S.)

LONDON: Printed by George Thomas and William Stevenson, 15, Abchurch Lane, in the Queen's most Excellent Majesty's City of London, 1860.