

Specification of William Edward Gedge : smoke-consuming fire-place.

Contributors

Gedge, William Edward.

Publication/Creation

London : Great Seal Patent Office, 1868 (London : George E. Eyre and William Spottiswoode)

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A.D. 1868, 24th MARCH. N^o 990.

SPECIFICATION

OF

WILLIAM EDWARD GEDGE.

SMOKE-CONSUMING FIRE-PLACE.

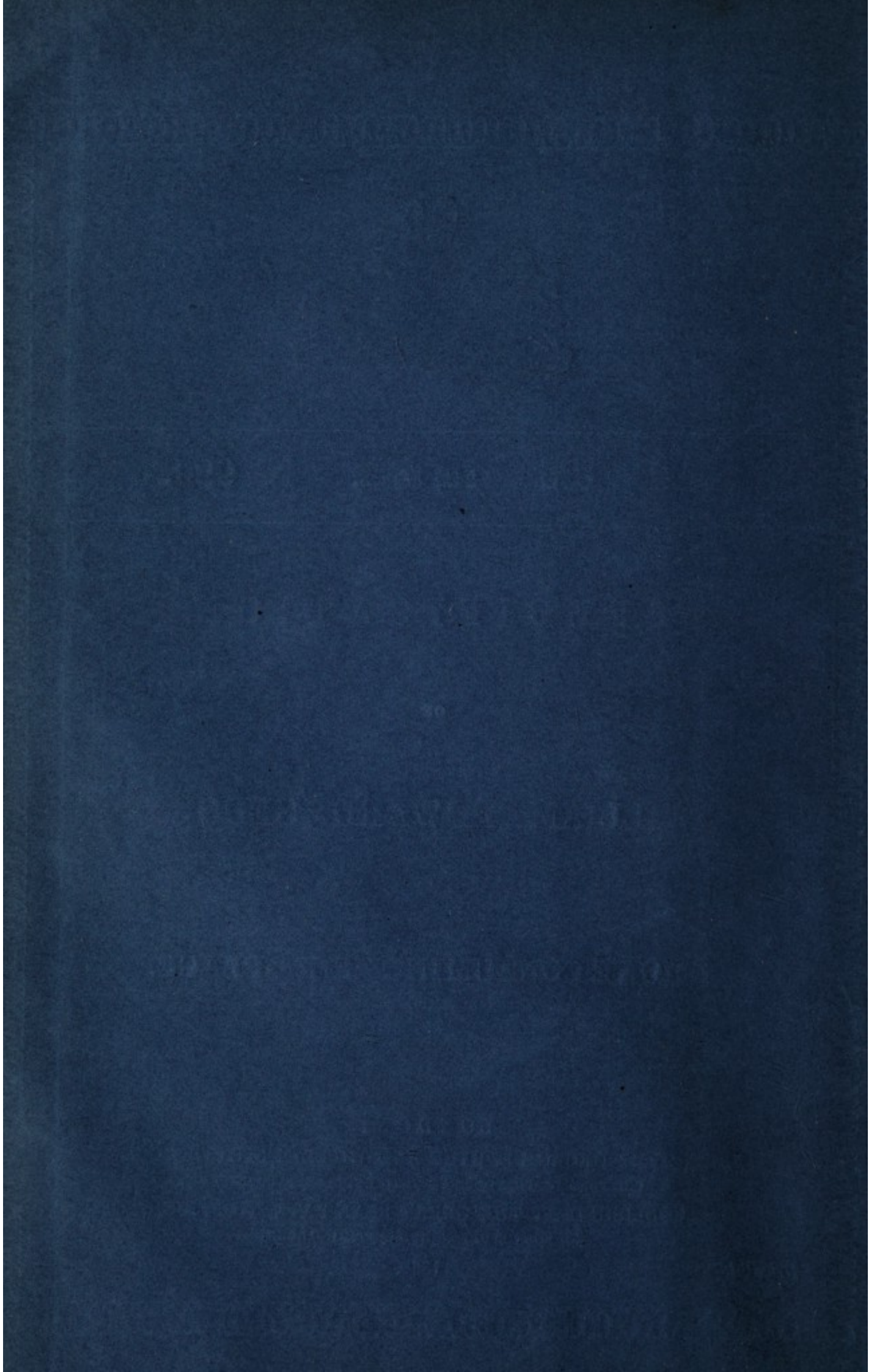
LONDON:

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 6d.

1868.





A.D. 1868, 24th MARCH. N^o 990.

Smoke-consuming Fire-place.

LETTERS PATENT to William Edward Gedge, of the Firm of John Gedge and Son, of No. 11, Wellington Street, Strand, in the County of Middlesex, Patent Agent, for the Invention of "**AN IMPROVED SMOKE-CONSUMING FIRE-PLACE OR FURNACE.**"—A communication from abroad by Ernest Henry, of Lisieux (Calvados), France.

Sealed the 21st August 1868, and dated the 24th March 1868.

PROVISIONAL SPECIFICATION left by the said William Edward Gedge at the Office of the Commissioners of Patents, with his Petition, on the 24th March 1868.

I, WILLIAM EDWARD GEDGE of the Firm of John Gedge and Son, of
5 No. 11, Wellington Street, Strand, in the County of Middlesex, Patent Agent, do hereby declare the nature of the said Invention for "**AN IMPROVED SMOKE-CONSUMING FIRE-PLACE OR FURNACE,**" a communication to me from abroad by Ernest Henry, of Lisieux (Calvados), France, to be as follows:—

10 This smoke-consuming fire-place is based on the well-known principle of passing the products of combustion of the black coal through the layer of red or live coal. The fire-place is fed in the ordinary manner, that is to say, black coal on red, but the direction of the

Gedge's Improved Smoke-consuming Fire-place.

draught is reversed, so that the smoke produced by the black coal drawn from the top towards the bottom may pass through the incandescent layer. This reversal of draught is obtained by putting the lower part of the fire-place in communication with the chimney.

The smoke-consuming fire-place or furnace of this Invention therefore consists essentially of a case intended to be filled with coal, and presenting at its lower part an opening by which escape the gases drawn by the chimney. In order that the fire-place may be smoke-consuming it is necessary that this opening be downward of the layer of constantly live coal. 5 10

Smoke-consuming fire-boxes for locomotives will only differ from ordinary fire-places in being provided with a transverse partition which retains the fuel while leaving at its lower part the opening necessary to the disengagement of the gas. This partition is composed of two parts, of which one forms a boiler tube and may thus bear contact with the live coal, the other a shifting sheet-iron plate inclined backwards to be less exposed to the fire. In this arrangement the grate is preserved either horizontal or inclined towards the boiler to permit the escape of the ashes. The entire quantity of coal which lies beneath the lower part of the transverse partition therefore burns in the ordinary manner, and it is only as regards the layer of fuel situated upwards from this level that the draught is reversed. The fire must be attended to so that the incandescent mass always rises above the lower edge of the boiler tube. The door of the fire-box is so arranged that it may be opened to a variable extent and thus permit a greater or lesser supply of air. The boiler tube rises to such a height as not to mask the tubes of the generator; it is vertical or slightly inclined, and may have one or more steam pipes. 15 20 25 30

This system is applicable to fire-places of every description, its application to a locomotive engine being given simply as an illustration. 30

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said William Edward Gedge in the Great Seal Patent Office on the 10th September 1868.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, WILLIAM EDWARD GEDGE, of the Firm of John Gedge and Son, of No. 11, 35

Gedge's Improved Smoke-consuming Fire-place.

Wellington Street, Strand, in the County of Middlesex, Patent Agent, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Twenty-fourth day of March, in the year
5 of our Lord One thousand eight hundred and sixty-eight, in the thirty-first year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said William Edward Gedge, Her special licence, that I, the said William Edward Gedge, my executors, administrators, and assigns, or such others as I, the said William Edward
10 Gedge, 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
15 for "**AN IMPROVED SMOKE-CONSUMING FIRE-PLACE OR FURNACE,**" a communication to me from abroad by Ernest Henry, of Lisieux (Calvados), France, upon the condition (amongst others) that I, the said William Edward Gedge, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should
20 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,

25 **NOW KNOW YE**, that I, the said William Edward Gedge, do hereby declare the nature of the 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 smoke-consuming fire-place is based on the well-known principle
30 of passing the products of combustion of the black coal through the layer of red or live coal. The fire-place is fed in the ordinary manner, that is to say, black coal on red, but the direction of the draught is reversed, so that the smoke produced by the black coal drawn from the top towards the bottom may pass through the incandescent layer. This
35 reversal of the draught is obtained naturally by putting the lower part of the fire-place in communication with the chimney.

The smoke-consuming fire-place or furnace of this Invention therefore consists essentially of a case intended to be filled with coal and

Gedge's Improved Smoke-consuming Fire-place.

presenting at its lower part an opening by which escape the gasses drawn by the chimney. In order that the fire-place may be smoke-consuming it is necessary that this opening be downward of, that is to say, lower than, the layer of constantly live or burning coal.

The accompanying Sheet of Drawing forming part of this Specification illustrates a smoke-consuming fire-place or fire-box constructed according to this Invention for a locomotive engine; it only differs from the ordinary fire-box in being provided with a transverse partition which retains the fuel while leaving at its lower part the opening necessary to the disengagement of the gas. This partition is composed of two parts, 5 one forming a boiler tube and thus capable of supporting contact with the live coal, the other being a shifting sheet-iron plate inclined backwards to be less exposed to the fire. 10

In the arrangement just described the grate is preserved either horizontal or inclined towards the boiler to permit the escape of the 15 ashes. The entire quantity of coal which lies beneath the lower part of the transverse partition therefore burns in the ordinary manner, and it is only as regards the layer of fuel situated upward from this level that the draught is reversed. The fire must be managed in such wise that the incandescent mass always rises above the lower edge of the 20 boiler tube. The door of the fire-box is so arranged that it may be opened to a variable extent and thus give access to a greater or lesser supply of air. The boiler tube forming part of the partition rises to a height which masks the tubes of the steam generator or main boiler; it may be vertical or slightly inclined, and may have one or more tubes 25 to facilitate disengagement of steam.

This system is applicable to fire-places of every description; it is only as an example that the Drawing relates to a locomotive engine.

In witness whereof, I, the said William Edward Gedge, have hereunto set my hand and seal, this Tenth day of September, 30 in the year of our Lord One thousand eight hundred and sixty-eight.

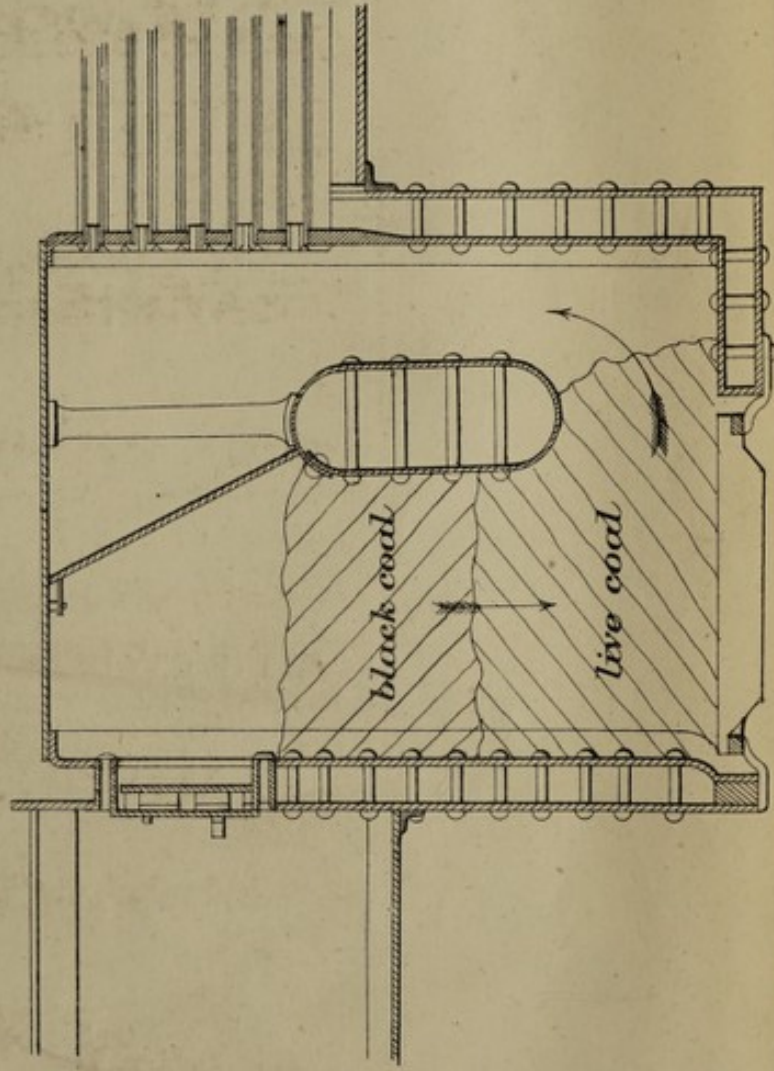
W. E. GEDGE (L.S.)

LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1868.

(1 SHEET)

A.D. 1868, MAR. 24, N^o 990,
GEDGE'S SPECIFICATION.



The filed drawing is not colored.

Drawn on Stone by Malby & Sons.

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