

Specification of John Cornes : furnaces.

Contributors

Cornes, John.

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A.D. 1855 N° 1891.

SPECIFICATION

OF

JOHN CORNES.

FURNACES.

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A.D. 1855 N° 1891.

Furnaces.

LETTERS PATENT to John Cornes, of Swan Lane, in the City of London, Engineer, for the Invention of "**AN IMPROVED METHOD FOR CONSUMING SMOKE.**"

Sealed the 19th February 1856, and dated the 21st August 1855.

PROVISIONAL SPECIFICATION left by the said John Cornes at the Office of the Commissioners of Patents, with his Petition, on the 21st August 1855.

I, JOHN CORNES, of Swan Lane, in the City of London, Engineer, do hereby
5 declare the nature of the said Invention for "**AN IMPROVED METHOD FOR CONSUMING SMOKE**" to be as follows:—

My Invention consists in drawing smoke and the other products of combustion from the fires of locomotive and other furnaces by means of a fan blower, in connection with either the fire tubes of a locomotive furnace, or with the
10 flue of other classes of furnaces. The smoke and gases, after being thus drawn into the centre of the fan, are driven back through a return tube or flue communicating with the furnace below the fire bars, thus causing the smoke and products of combustion to be passed through the fire, and thereby to be consumed. I prefer to make the fire-place in the form of a hopper, or
15 of an inverted conical or pyramidal shape, perforated on all its sides and at bottom.

Cornes' Improved Method for Consuming Smoke.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said John Cornes in the Great Seal Patent Office on the 21st February 1856.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JOHN CORNES, of Swan Lane, in the City of London, Engineer, send greeting. 5

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Twenty-first day of August, in the year of our Lord One thousand eight hundred and fifty-five, in the nineteenth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said John Cornes, Her special licence that I, the said John Cornes, my 10 executors, administrators, and assigns, or such others as I, the said John Cornes, 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 15 Islands, and Isle of Man, an Invention for "**AN IMPROVED METHOD FOR CONSUMING SMOKE**," upon the condition (amongst others) that I, the said John Cornes, by an instrument in writing under my hand and seal, 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 20 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 John Cornes, 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 25 statement thereof, reference being had to the Drawings hereunto annexed (that is to say):—

My Invention consists in drawing smoke and the other products of combustion from the fires of locomotive and other furnaces by means of a fan blower, in connection with either the fire tubes of a locomotive furnace, or 30 with the flue of other classes of furnaces. The smoke and gases, after being thus drawn into the centre of the fan, are driven back through a return tube or flue communicating with the furnace below the fire bars, thus causing the smoke and products of combustion to be passed through the fire, and thereby to be consumed. I prefer to make the fire-place in the form of a hopper, or 35 of an inverted conical or pyramidal shape, perforated on all its sides and at bottom.

In the annexed Drawing I have shewn so much of a locomotive boiler as is

Cornes' Improved Method for Consuming Smoke.

necessary to explain the manner in which I carry my Invention into effect. A is the furnace or fuel chamber, the bottom of which, instead of being composed of fire bars as usual, is formed of perforated plates B, B, bolted together, and embracing a central perforated rose C; D, D, are the tubes leading into the
5 smoke box E, which is open to a certain extent in front; F is a fan or blower, the axis of which *b* is supported by and revolves in a bearing affixed to the front of the smoke box; this axis is prolonged beyond the bearing, and has fixed on it a pulley G. H is a return tube leading into the rose C. This rose is prolonged downwards, and terminates in a pipe I, open at bottom to the
10 atmosphere. Rotary motion is communicated to the fan by means of gear worked by one of the axles of the engine or otherwise, and made to drive a strap passed over the pulley G, whereby the products of combustion are drawn into the fan together with air from the atmosphere, and are driven through the return tube H into the furnace, being divided into jets or streams by the rose
15 or perforated top to the pipe I. K is a small chimney for the escape of any smoke which may not be driven back by the fan. For stationary furnaces I fit the fan in any convenient part of the flue, and if necessary lead air therein through a pipe open to the atmosphere. I not only prevent the escape of any dense smoke, but am enabled to burn small and inferior coal in furnaces fitted
20 with the appliances herein-before described.

And having now described the nature of my said Invention, and in what manner the same is to be performed, I declare that I do not limit myself to the precise details herein-before described; but I claim the method of consuming smoke by drawing the products of combustion into a fan, mixing them
25 with atmospheric air, and driving them into the fire, whether ordinary fire bars be employed, or whether the bottom of the fire-place is formed in the manner herein-before described.

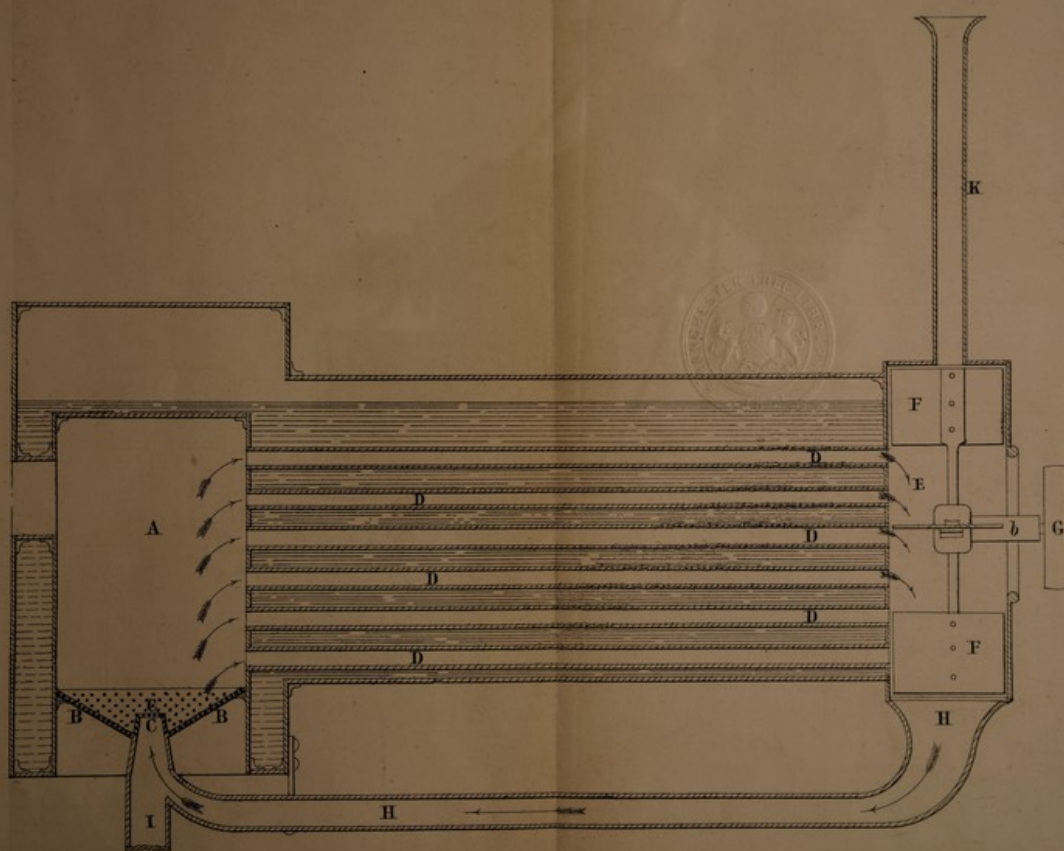
In witness whereof, I, the said John Cornes, have hereunto set my hand and seal, this Twentieth day of February, One thousand eight hundred
30 and fifty-six.

JOHN CORNES. (L.S.)

LONDON :

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1 SHEET



Drawn on Stone by Malby & Stone

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