

Specification of George Henry Birkbeck : furnaces for consuming smoke.

Contributors

Birkbeck, George Henry.

Publication/Creation

London : Great Seal Patent Office, 1861 (London : George E. Eyre and William Spottiswoode)

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A.D. 1860, 28th DECEMBER. N° 3177.

SPECIFICATION

OF

GEORGE HENRY BIRKBECK.

FURNACES FOR CONSUMING 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,
25, SOUTHAMPTON BUILDINGS, HOLBORN.

Price 3d.

1861.





A.D. 1860, 28th DECEMBER. N° 3177.

Furnaces for Consuming Smoke.

(This Invention received Provisional Protection only.)

PROVISIONAL SPECIFICATION left by George Henry Birkbeck at the Office of the Commissioners of Patents, with his Petition, on the 28th December 1860.—A communication from abroad by François Jules Chéry, Captain in the Corps of Imperial Engineers, of Paris.

5 I, GEORGE HENRY BIRKBECK, of the Firm of Tongue and Birkbeck, of 34, Southampton Buildings, Chancery Lane, in the County of Middlesex, Patent Agents and Engineers, do hereby declare the nature of the Invention for "IMPROVEMENTS IN FURNACES FOR CONSUMING SMOKE," to be as follows:—

This Invention has for its object improvements in steam boiler and other
10 furnaces, whereby the heat and gases evolved from the fuel are more perfectly consumed than in furnaces of the ordinary construction, and by supplying the fuel in small quantities, and igniting it on the upper surface as it enters and progressively advances into the furnace, a great saving of fuel is effected. For this purpose it is preferred to mount the fire-bars in a frame supported on
15 wheels, on which it can move to and fro on a tram or railway into and out of the ash-pit, and part of the series of fire-bars forming the fire grate are capable of moving a short distance to and fro on the frame independently of the other half of such bars, each series being composed of alternate bars; at the front or entrance to the furnace an iron plate is fixed just above the sur-
20 face of the fire-bars and from it a vertical plate rises, which forms part of a chest or hopper to receive the supply of coal or fuel, which is forced into the furnace in small and regular quantities by a sliding ram or feeding instrument, which is caused to slide to and fro at the bottom of the chest or hopper as

Birkbeck's Improvements in Furnaces.

the fire-bars alternately recede and advance, thus feeding and distributing a small charge or quantity of fuel, which is forced by the sliding ram from the bottom of the hopper under a fixed plate on to the fire-bars. The gas evolved from the fuel thus introduced is ignited and consumed by coming in contact with a stream of heated air passing over the surface of the fuel, the air being 5 conducted through a pipe or passage placed under the fire-bridge to a chamber in front of the furnace; the ignited fuel is thus brought in contact with that which is in a state of incandescence, and is gradually conducted through the furnace by the movement of the fire grate to the back part where currents of cold air from the ash-pit are admitted near the bridge to perfect the 10 combustion.

LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1861.