

**Specification of Donald Bethune : apparatus for the prevention or consumption of smoke.**

**Contributors**

Bethune, Donald.

**Publication/Creation**

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A.D. 1857 . . . . . N° 995.

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

**OF**

**DONALD BETHUNE.**

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**APPARATUS FOR THE PREVENTION OR  
CONSUMPTION OF SMOKE.**

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**LONDON:**

**PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,**

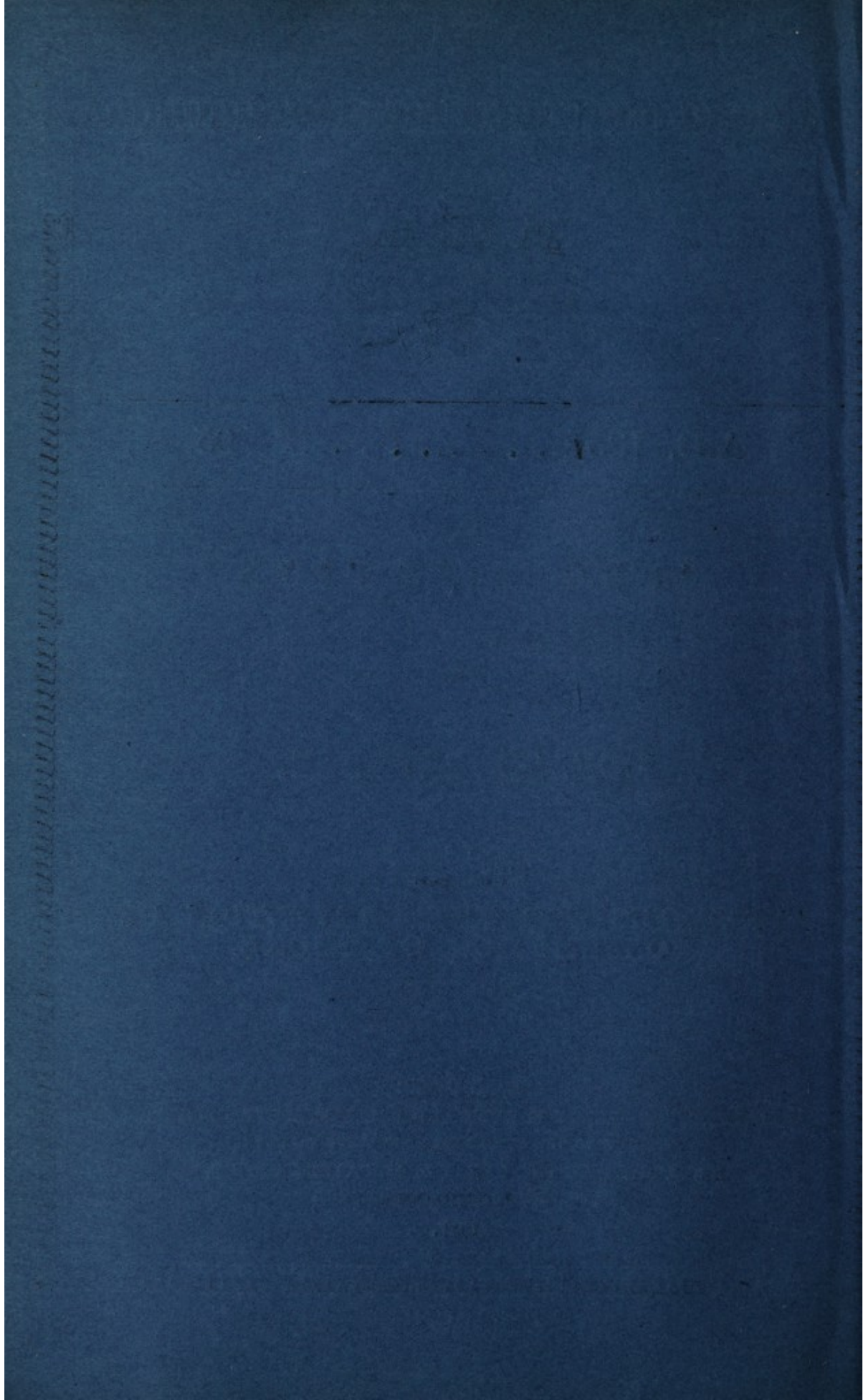
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1857.





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A.D. 1857 . . . . . N° 995.

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**Apparatus for the Prevention or Consumption of Smoke.**

*(This Invention received Provisional Protection, but notice to proceed with the application for Letters Patent was not given within the time prescribed by the Act.)*

**PROVISIONAL SPECIFICATION** left by Donald Bethune at the Office of the Commissioners of Patents, with his Petition, on the 8th April 1857.

I, DONALD BETHUNE, of Cambridge Terrace, Hyde Park, London, Esquire,  
5 do hereby declare the nature of the said Invention for "**IMPROVEMENTS IN APPARATUS FOR PREVENTING OR CONSUMING SMOKE IN CHIMNIES AND FURNACES,**" to be as follows:—

My said Invention consists in improvements in apparatus for the admission of air into the flues of furnaces, boilers, and chimnies, by which improvements  
10 the smoke that ordinarily arises from fires in boilers, furnaces, and chimnies is prevented or consumed; and I admit the air through hollow grate bars, the air passing from the front of the grate bar to the back of it, and thence through a proper opening in the bridge of the boiler or furnace, made for that purpose, into the flue of the boiler or furnace, where it comes into con-  
15 tact with the gases arising from the fuel on the grate, and causes such gases to ignite, and they are thus consumed. By passing the air through the hollow grate bars it becomes heated, and while it increases the draught of the chimney it does not materially lessen the heat of the furnace, and thereby effects a considerable saving in fuel. A slide or valve is used to regulate the  
20 quantity of air to be admitted into the bars.

Bethune's Impts. in Apparatus for Preventing or Consuming Smoke in Chimneys, &c.

I also admit air into furnaces, for the manufacture of iron, in order to consume the smoke arising therefrom, and without injury to the iron, such air being introduced considerably above the ore in the furnace. The air may be introduced into such furnaces by perforated plates of iron being inserted in the chimney, or through perforated bricks. I do not confine myself to the details 5 herein mentioned.

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LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,  
Printers to the Queen's most Excellent Majesty. 1857.