

## **Specification of James Robertson : furnaces, &c.;**

### **Contributors**

Robertson, James.

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A.D. 1857 . . . . . N° 2316.

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

OF

JAMES ROBERTSON.

—  
FURNACES, &c.  
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LONDON:

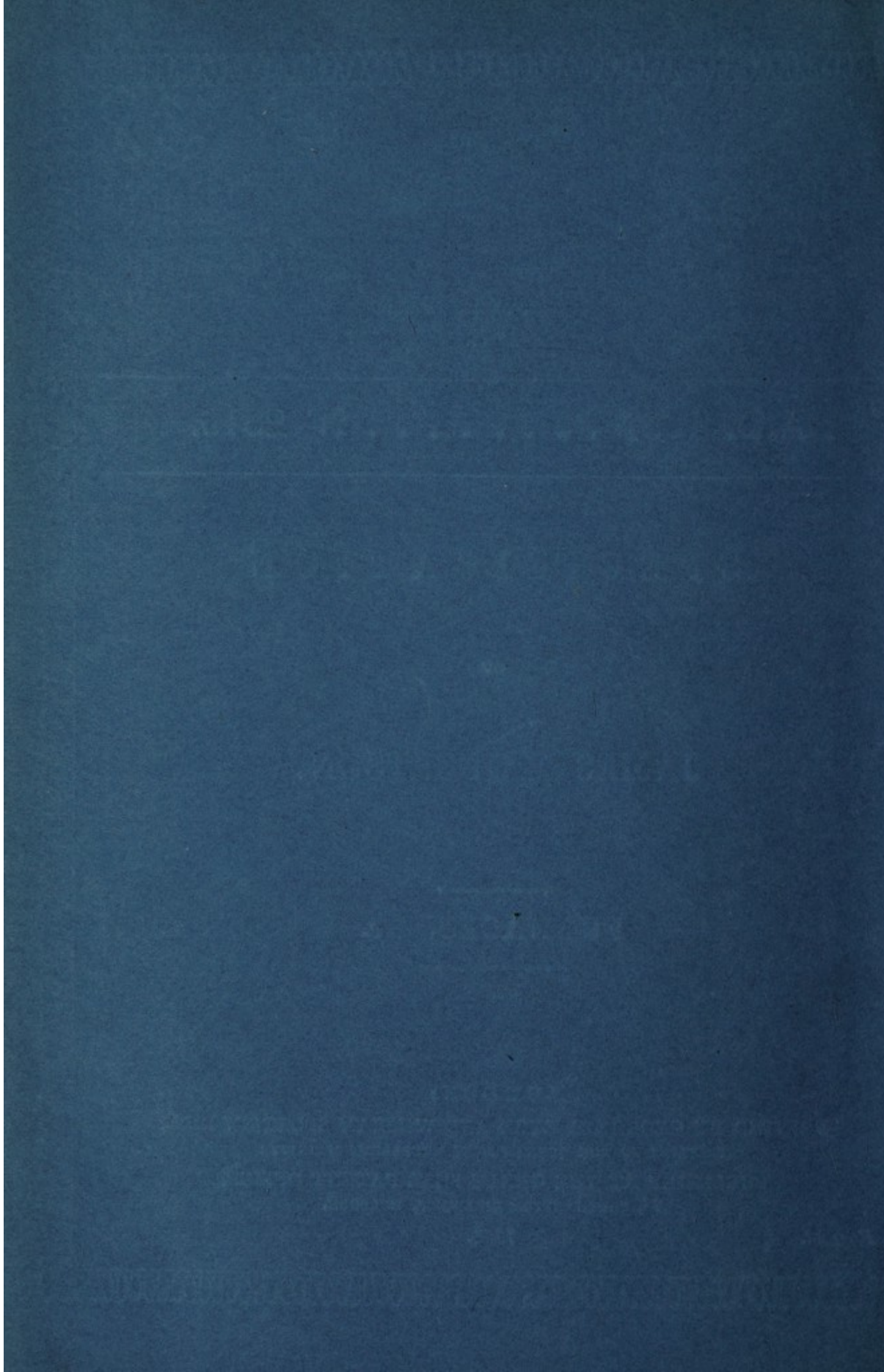
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**Furnaces, &c.**

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*(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 James Robertson at the Office of the Commissioners of Patents, with his Petition, on the 4th September 1857.

I, JAMES ROBERTSON, of Kentish Town, in the County of Middlesex,  
5 Gentleman, do hereby declare the nature of the said Invention for "**IMPROVEMENTS IN FURNACES, AND IN THE CONSUMPTION OR PREVENTION OF SMOKE,**" to be as follows, that is to say:—

This Invention relates to the arrangement and construction of furnaces for steam boilers and for other purposes in such manner as to economise the fuel  
10 consumed therein, and at the same time effect the better combustion of the gaseous matters evolved from the fuel, and thus prevent or mitigate the discharge of smoke.

In furnaces constructed according to this Invention a low bridge is built in at the inner or back termination of the furnace bars, and at some distance  
15 beyond this bridge there is a second and higher bridge, contrived for the purpose of deflecting or throwing up the heated current well in contact with the bottom of the boiler above. The lower portion of the space between the two bridges is built up with brickwork, and through this solid structure an inclined air duct or thoroughfare is carried upwards from the back end of the  
20 furnace bars and beneath their level; this passage thus opens up an air passage between the ash-pit and a long transverse air passage formed



*Robertson's Impts. in Furnaces, and in the Consumption or Prevention of Smoke.*

between the back edge of a large horizontal slab of fire-clay or hot plate and the front of the back bridge; this slab or hot plate is laid upon the brick structure between the bridges, forming the top of it; and there is also a horizontal passage directly beneath it, to allow heated currents to pass in beneath it directly from the top of the grate bars, and thus meet the entering air from the ash-pit at the upper discharge end of the inclined air duct. The effect of this arrangement is that the air supplied from the ash-pit becomes highly heated, and mingling with the unconsumed gases from the furnace as they pass over the low bridge, effectual combustion is secured as they pass over the high bridge.

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