

## **Specification of James Anderson : furnaces.**

### **Contributors**

Anderson, James.

### **Publication/Creation**

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Wellcome Collection  
183 Euston Road  
London NW1 2BE UK  
T +44 (0)20 7611 8722  
E [library@wellcomecollection.org](mailto:library@wellcomecollection.org)  
<https://wellcomecollection.org>



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A.D. 1859, 11th APRIL. N° 901.

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

OF

JAMES ANDERSON.

—  
FURNACES.  
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LONDON:

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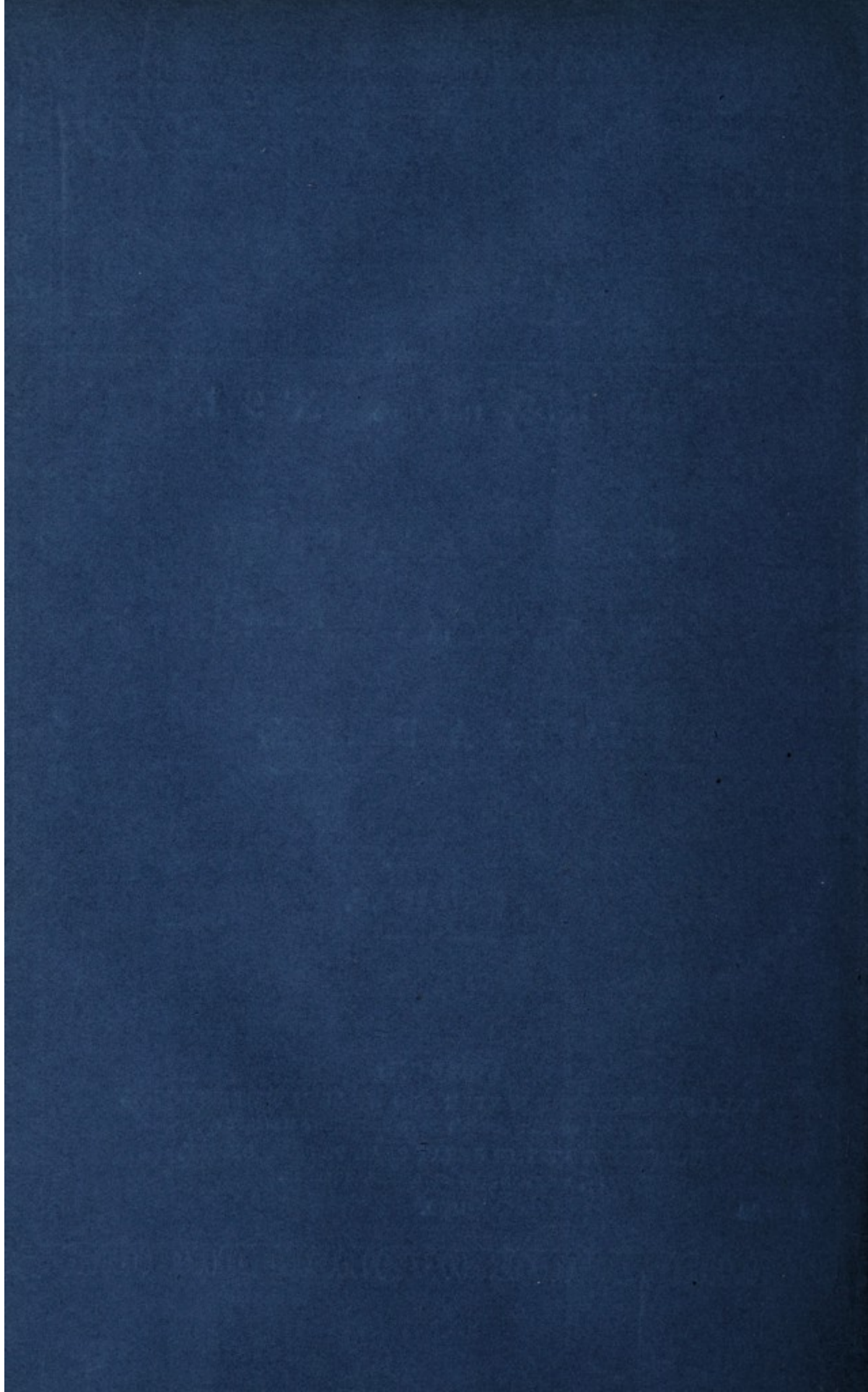
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1859.









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## Furnaces.

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*(This Invention received Provisional Protection only.)*

**PROVISIONAL SPECIFICATION** left by James Anderson at the Office of the Commissioners of Patents, with his Petition, on the 11th April 1859.

I, JAMES ANDERSON, of Liverpool, Lancashire, do hereby declare the nature  
5 of the said Invention for "IMPROVEMENTS IN THE CONSTRUCTION OF THE FURNACES  
OF BAKERS' OVENS FOR THE PURPOSE OF CONSUMING SMOKE, WHICH IMPROVEMENTS  
ARE ALSO APPLICABLE TO THE CONSUMPTION OF SMOKE IN OTHER FURNACES," to be  
as follows:—

This Invention relates to a novel combination of the parts of furnaces, and  
10 is principally designed for the purpose of consuming the smoke in bakers'  
ovens, but with slight modifications is also applicable to like purposes in other  
furnaces. By its adoption, the fuel is economized in such furnaces, a better  
combustion is effected of the gaseous matters evolved from the fuel, and thus  
the discharge of smoke is prevented.

15 In previous arrangements of flues for the purpose of consuming the smoke  
in bakers' ovens, the supply of atmospheric air required for the purposes of  
combustion was admitted directly into the furnace itself, but the cold air was  
found to have the effect of lowering the temperature in the furnace, and thus  
the boiler or oven did not receive the full benefit of the fuel. Now my  
20 Invention consists in the following arrangement or combination of parts:—  
I provide an additional flue which is carried into the main flue of the oven;  
in this additional flue I insert a damper for the purpose of regulating the  
supply of air to the main flue; the air flue thus terminating in the chimney



*Anderson's Improvements in the Construction of Furnaces for Bakers' Ovens, &c.*

the boiler or oven receives the full benefit of the flames without the temperature being lowered by the direct introduction of cold air. Dampers are provided in the furnace flue to regulate the strength of the draught, the mode of operating the dampers is as follows:—When the furnace damper is fully open, the smoke arising from the furnace will be the same as that of an ordinary furnace or chimney; this damper requires to be fully open for about 10 or 15 minutes, untill the flame breaks right through the coals, that is, when the coals are placed upon the grate. In the additional air flue near to the point where it joins the furnace flue, I insert a damper for the purpose of regulating the air draught, the air draught must be regulated by the strength of the furnace draught; this can be effected by means of the dampers placed in the furnace and air flues. In one instance, where I have employed this arrangement, the furnace flue is 9 inches square, and the air flue is  $9 \times 12$  inches. This proportion is found to work well, the height of the chimney being 50 feet. Where there are two furnaces and the flues are connected in one chimney, there must be an air draught flue for each furnace with suitable dampers for regulating the supply of atmospheric air to the furnaces. By this means a great saving is effected in the consumption of fuel, the combustion of the same being more perfect, and by keeping thin fires and firing frequently & carefully any quantity of steam can be kept up in the boiler or heat in the oven as the case may be.

LONDON:

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Printers to the Queen's most Excellent Majesty. 1859.