

Specification of Francis Erskine : economizing fuel and consuming smoke.

Contributors

Erskine, Francis.

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



A.D, 1868, 12th DECEMBER. N° 3784.

SPECIFICATION

OF

FRANCIS ERSKINE.

ECONOMIZING FUEL AND CONSUMING
SMOKE.

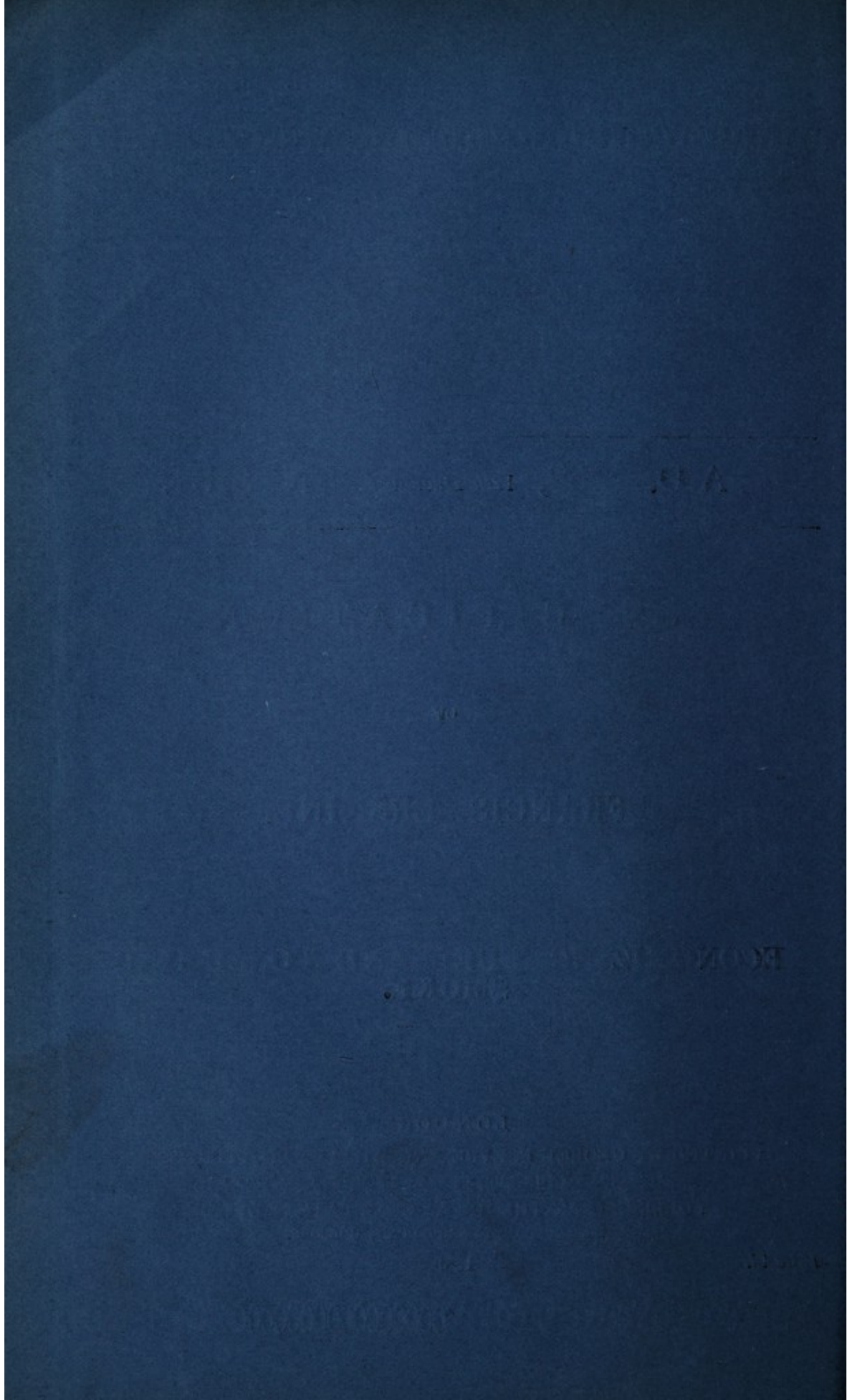
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A.D. 1868, 12th DECEMBER. N^o 3784.

Economizing Fuel and Consuming Smoke.

(This Invention received Provisional Protection only.)

PROVISIONAL SPECIFICATION left by Francis Erskine at the Office of the Commissioners of Patents, with his Petition, on the 12th December 1868.

I, FRANCIS ERSKINE, of the City of Manchester, in the County of Lancaster, Engineer, do hereby declare the nature of the said Invention for "IMPROVEMENTS IN MEANS OR ARRANGEMENTS FOR ECONOMIZING FUEL AND CONSUMING SMOKE, APPLICABLE TO STEAM BOILER AND OTHER FURNACES," to be as follows:—

This Invention consists in certain arrangements, namely, in forming the fire bridge on a beam or otherwise to commence about on a level with the fire-bars and ascend to within a few inches of the under side of the boiler or top of the flue or furnace. By this arrangement an open space is left under the fire bridge between the ash-pit and the flue beyond the fire bridge, and the space for the products of combustion to pass above the fire bridge is so far contracted that part of the flame or heat from the fuel is drawn through the fire-bars, and this heat and flame mixing with the air passing under the fire bridge meets the unconsumed gases passing over the fire bridge and the two combine and ignite, and thus

Erskine's Improvements in Economizing Fuel and Consuming Smoke.

complete combustion is attained. The space below the fire bridge is provided with a valve or damper of metal or fire-clay, and the space above the fire bridge may also be provided with a valve or damper of metal or fire-clay, so that the quantity of gases passing over and the quantity of air passing under the fire bridge may be regulated in each 5 case. The damper or valve for regulating the space under the fire bridge is arranged in a vertical position, and so that it can be slid to and from the fire bridge (remaining vertical in each position) by any suitable connection. The damper for the space above the bridge may be arranged in vertical guides and may be actuated by inclines or other 10 means. In some boilers having internal flues with water tubes across them I make one tube form either the whole or part of the fire bridge, if the tube forms only a part of the fire bridge the other part is made of fire-bricks or fire-clay built upon the tube. In the flues of the boilers I sometimes apply to facilitate the mixing of the gases additional 15 bridges either descending from the top or ascending from the bottom of the flue, or both combined with my improved arrangements above described.

LONDON :

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Printers to the Queen's most Excellent Majesty. 1869.