

Specification of James Neville : furnaces for steam boilers, &c.;

Contributors

Neville, J.

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A.D. 1837 N° 7428.

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

OF

JAMES NEVILLE.

FURNACES FOR STEAM BOILERS, &c.

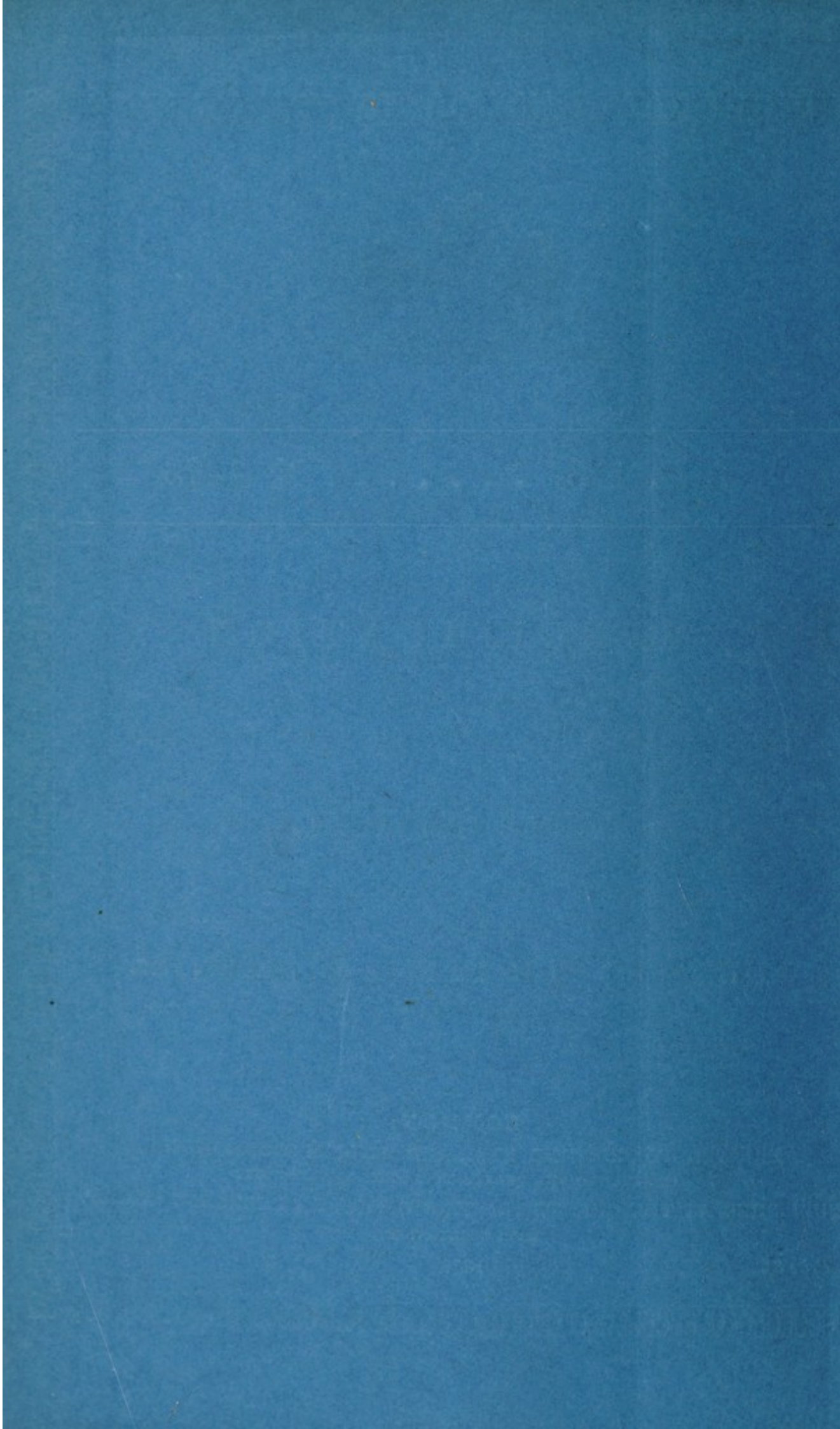
LONDON:

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1854.





A.D. 1837 N° 7428.

Furnaces for Steam Boilers, &c.

NEVILLE'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JAMES NEVILLE, of Clap Hall, near Gravesend, in the County of Kent, Civil Engineer, send greeting.

WHEREAS Her present most Excellent Majesty Queen Victoria, by Her
5 Letters Patent under the Great Seal of Great Britain, bearing date at West-
minster, the Thirty-first day of August, in the first year of Her reign, did, for
Herself, Her heirs and successors, give and grant unto me, the said James
Neville, Her especial license, full power, sole privilege and authority, that I,
the said James Neville, my eñors, adñors, and assigns, or such others as I, the
10 said James Neville, my eñors, adñors, or assigns, should at any time agree with,
and no others, from time to time and at all times during the term of years therein
expressed, should and lawfully might make, use, exercise, and vend, within
England, Wales, and the Town of Berwick upon Tweed, my Invention of
"A CERTAIN APPARATUS OR FURNACE FOR ECONOMIZING FUEL AND FOR MORE EFFEC-
15 TUALY CONSUMING SMOKE OR GASES ARISING THEREFROM, THE SAME BEING APPLICABLE
FOR THE GENERATION OF STEAM AND FOR HEATING OR EVAPORATING FLUIDS;" in
which said Letters Patent is contained a proviso that I, the said James
Neville, shall cause a particular description of the nature of my said Invention,
and in what manner the same is to be performed, to be inrolled in Her said
20 Majesty's High Court of Chancery within six calendar months next and imme-
diately after the date of the said in part recited Letters Patent, as in and by the
same, reference being thereunto had, will more fully and at large appear.

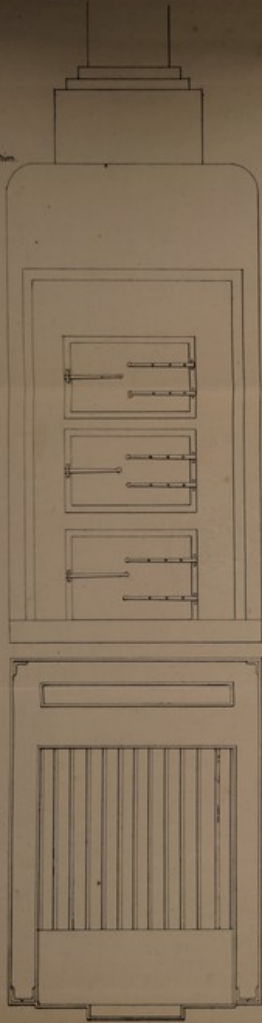
Neville's Improved Apparatus or Furnace for Economizing Fuel, &c.

NOW KNOW YE, that in compliance with the said proviso, I, the said James Neville, do hereby declare the nature of the said Invention, and the manner in which the same is to be performed, are fully described and ascertained in and by the following statement thereof, reference being had to the Drawing hereunto annexed, and to the figures and letters marked thereon, 5 that is to say:—

According to the most usual construction of furnaces applied to steam boilers and to other vessels for generating steam, and for heating and evaporating fluids, the fire bars are solid and the fuel is placed on them, the gases and smoke evolved rise above the fuel, and passes away to the flue and chimney. 10 There have, however, been attempts in some arrangements of furnaces to produce a downward draft through the fire bars, in order to cause the vapours distilled from the fresh fuel (which from time to time would be laid on to the ignited fuel on the fire bars) to pass through the ignited fuel on the bars; but such arrangement of furnace has not proved successful, owing to the 15 destruction of the fire bars. And further, there have been furnaces constructed with an improved draft with hollow fire bars. Now the object of the present Invention is to construct furnaces of steam boilers, and generators, and vessels for heating and evaporating fluids by combining downward draft with hollow fire bars, such hollow fire bars being in connection with the 20 boiler or vessel to which the furnace is applied, in order that the fluid to be operated on may circulate freely in the fire bars and take heat therefrom. By this means, in addition to the advantages of preserving the fire bars, the smoke and gases evolved from the fresh fuel laid on to the fire will, in consequence of passing downwards by the downward draft between the fire bars, come in 25 contact with and be subjected to the ignited fuel on the fire bars, and by such means be consumed. It will be evident to the practical engineer that, as there are varied arrangements and constructions of vessels for generating steam and for heating and evaporating fluids, there will be a necessity for varying the arrangement of furnace with hollow fire bars with downward draft according 30 to circumstances, which, however, the practical engineer will readily arrange when he has examined this my Specification, and the Drawing hereunto annexed, which represents my Invention applied to one arrangement of steam boiler or vessel for evaporating flues.

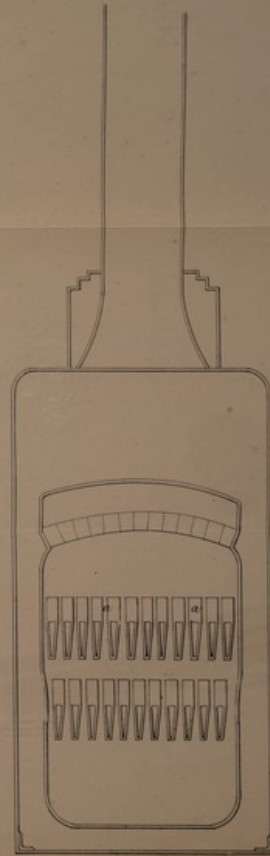
In each of the Figures of the Drawing the same letters indicate similar 35 parts; *a, a*, being a series of hollow bars, which are so arranged that the fluid in the boiler or vessel *b, b*, can circulate freely through the bars *a, a*, as will readily be understood on examining the Drawing; *c, c*, is an arch of fire brick, which I prefer should be constructed over the fire bars, which becoming highly

Elevation

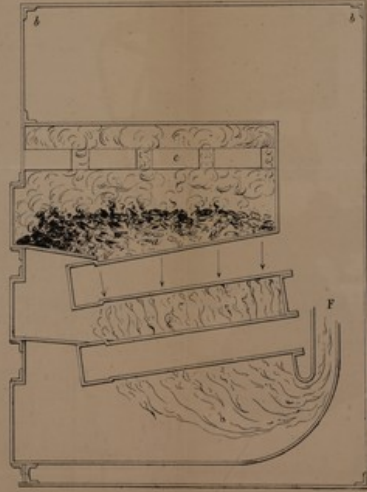


Section of Fire Bar.

Plan Elevation and Section
of Steam Generator.




Transverse Section.



The Plan at F. where broken off to be continued through the Boiler in any shape or Direction.

The engraved drawing is colored.



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Neville's Improved Apparatus or Furnace for Economizing Fuel, &c.

heated, will materially facilitate the combustion of any gases or vapours which may be evolved into the furnace above the fire bars. Atmospheric air is to be supplied by any suitable blowing apparatus, or a draft may be produced by the chimney, as is well understood, so as to supply the furnace with a constant flow
 5 of air above the fuel on the fire bars, as the same will pass down through the fire and between the fire bars. The other parts of the Drawing being clearly shewn, will readily be understood, and will require no further description.

In witness whereof, I, the said James Neville, have hereunto set my hand and seal, this Twenty-third day of October, in the year of our Lord
 10 One thousand eight hundred and thirty-seven.

JAMES (L.S.) NEVILLE.

AND BE IT REMEMBERED, that on the Twenty-third day of October, in the year of our Lord 1837, the aforesaid James Neville came before our said Lady the Queen in Her Chancery, and acknowledged the Specification
 15 aforesaid, and all and everything therein contained and specified, in form above written. And also the Specification aforesaid was stamped according to the tenor of the Statute made for that purpose.

WINGFIELD.

Inrolled the Twenty-eighth day of February, in the year of our Lord
 One thousand eight hundred and thirty-eight.

LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
 Printers to the Queen's most Excellent Majesty. 1854.

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Printed by the Government Printer, Ottawa, 1877.