

Specification of Robert Fall : boiler for heating fluids.

Contributors

Fall, Robert.

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A.D. 1766 N^o 844.

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

OF

ROBERT FALL.

BOILER FOR HEATING FLUIDS.

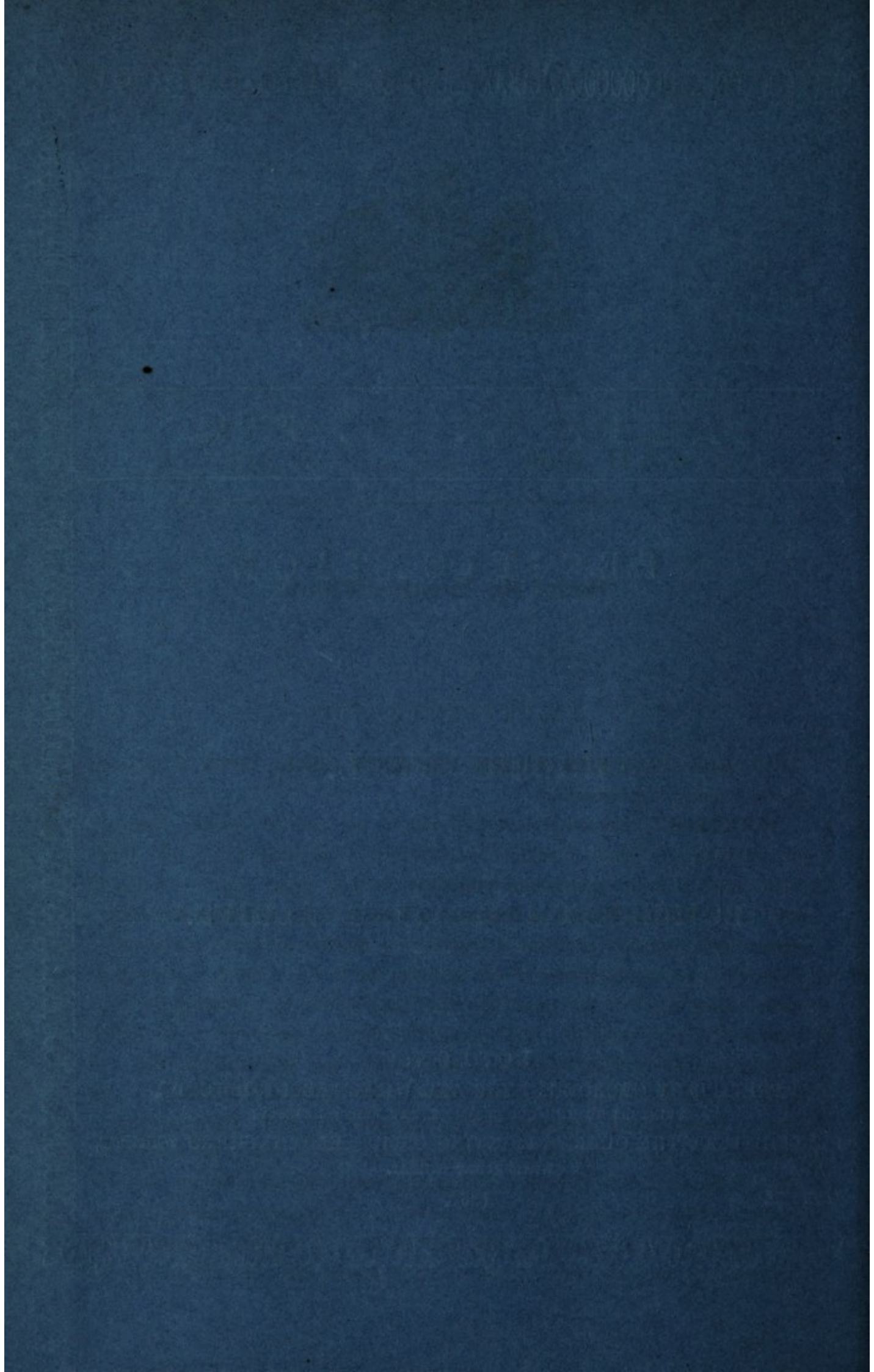
L O N D O N :

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A.D. 1766 N^o 844.

Boiler for Heating Fluids.

FALL'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, ROBERT FALL, Esquire, send greeting.

WHEREAS I, the said Robert Fall, did by my petition humbly represent unto His present most Excellent Majesty King George the Third, that I had
5 spent much time in experimental philosophy, and at great expence at length found out "**A CHEAP METHOD OF HEATING ALL KIND OF FLUIDS BY A NEW MECHANICAL CONTRIVANCE, WHEREBY THE FIRE IS APPLIED IN A MANNER HITHERTO UNPRACTISED,**" so as to save a great expence of fuel, and heat the fluid in a much shorter space of time then usual, to the great benefit of the publick, by rendering the con-
10 sumption of fuel much less, and making that article, so essential to life, much cheaper, and by enabling the several persons who deal in factitious salts and liquors to sell the same at an easier rate to the consumer; and as His said Majesty is graciously accustomed to grant unto the first inventors of such usefull things the sole property, benefit, and exercise of them for a term of
15 years, I, the said Robert Fall, most humbly prayed His said Majesty that He would be graciously pleased to grant unto me, my executors, administrators, and assigns, the sole property, use, and exercise of my said Invention for the space of fourteen years in that part of Great Britain called England,

Fall's Method of Heating all Kinds of Fluids.

Dominion of Wales, and Town of Berwick upon Tweed, and in the Plantations in America: His said Majesty being willing to give encouragement to all arts and inventions which might be for the publick good, was graciously pleased to condescend to my request, and therefore by His Royal Letters Patent, bearing date at Westminster, the Twenty-fifth day of March, in the sixth year 5 of His reign, of His especial grace, certain knowledge, and meer motion, did give and grant unto me, the said Robert Fall, my executors, administrators, and assigns, His especial licence, full power, sole priviledge and authority, that I, the said Robert Fall, my executors, administrators, and assigns, and every of us, by myself and ourselves, or by mine and our deputy, or deputies, 10 servants, or agents, or such others as I, the said Robert Fall, my executors, administrators, or assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term of years therein expressed, should and lawfully might make, use, exercise, and vend, my said Invention, with that part of His said Majesty's Kingdom of Great Britain 15 called England, His Dominion of Wales, and Town of Berwick upon Tweed, and in His Plantations in America, in such manner as to me, the said Robert Fall, my executors, admors, and assigns, or any of us should in our discretions seem meet, and that I, the said Robert Fall, my executors, administrators, and assigns, should and lawfully might have and enjoy the whole profit, benefit, 20 commodity, and advantage from time to time coming, growing, accruing, and arising by reason of the said Invention for and during the term of years therein mentioned, to have, hold, exercise, and enjoy the said licence, powers, priviledges, and advantages therein-before granted or mentioned to be granted unto me the said Robert Fall, my executors, admors, and assigns, for and 25 during and unto the full end and term of fourteen years from the date of the said Letters Patent next and immediately ensuing, and fully to be compleat and ended according to the statute in such case made and provided; in which said Letters Patent is contained a proviso, that if I, the said Robert Fall, should not particularly describe and ascertain the nature of my said Invention, 30 and in what manner the same is to be performed, by an instrument in writing under my hand and seal, and cause the same to be inrolled in His said Majesties High Court of Chancery, within four calendar months next and immediately after the date of the said Letters Patent, that then the said Letters Patent, and all liberties and advantages whatsoever thereby granted 35 should utterly cease, determine, and become void, anything therein-before contained to the contrary thereof in anywise notwithstanding, as in and by the said Letters Patent may appear.

Fall's Method of Heating all Kinds of Fluids.

NOW KNOW YE, that in compliance with the said proviso, I, the said Robert Fall, do describe and ascertain the nature of my said Invention, and the manner in which the same is to be performed, to be as follows (that is to say):—

- 5 The vessel containing the fluid, which I call a boiler, may be made of any kind of metal. The fire is to be made under the boiler in the same manner as is now practised, whether by furnace or otherwise. At the back part of the boiler an aperture is to be made in its botom, or in its side near the botom, or in such other part as may best answer the draught of the furnace; into this
10 aperture, within side of the boiler, must be inserted the mouth of a pipe or flue, which after rising a little from its insertion makes a turn or bending to one hand, and then should run spirally round, or in such other manner within the fluid as may be best adapted to the construction of the boiler, without touching the sides thereof. After having thus made one or more
15 revolutions within the fluid the upper extremity of the pipe or flue passes out through an opening made for that purpose in the side of the boiler. The fire-place is to be so contrived that the flame, heat, and smoke, having been first applied to the bottom of the boiler, as usual, shall pass wholly off through this pipe or flue. This pipe or flue for conveying the heat through the fluid
20 may be made of any material that will stand the fire and the fluid, and have any form you please, but the purpose will be best answered by making it such that a transverse section thereof may be a thin rectangle or a very flat oval, that is, as far as may be from a circle, for by that means the heat will have the greater effect on the sides of the pipe, and so on the fluid. The
25 dimensions thereof must also be adjusted in proportion to the fire to be applied, and so must the number of revolutions that it makes. By this Invention two or more boilers may be heated with one and the same fire, which after operating on the bottom of the first boiler in the ordinary way may be conveyed into the second boiler, and thence into others through a flue
30 making revolutions therein, as in the case of a single boiler, or after the flue hath made one or more revolutions in the first boiler, without exhausting the whole heat, it may be continued successively to a second or more, till the heat is exhausted. This Invention might also be employed to receive the flame and heat of furnaces used in the smelting of all metallick substances by con-
35 veying such flame and heat through the pipes to heat the fluid in the manner before mentioned. By this manner of conveying the flame and heat through the fluid no part of the effect of the fire is lost, whereas in the ordinary way a great deal is lost. The fluid will not only be boiled in much less time, but

Fall's Method of Heating all Kinds of Fluids.

also kept boiling with a much smaller quantity of fewell; in both which respects there will be a very considerable saving by means of this contrivance, besides many other advantages that will result from it.

In witness whereof, I, the said Robert Fall, have hereunto set my hand and seal, the Sixth day of May, in the sixth year of the reign of our 5 Sovereign Lord George the Third, by the Grace of God of Great Britain, France, and Ireland, King, Defender the Faith, &c., and in the year of our Lord One thousand seven hundred and sixty-six.

ROBERT FALL. (L.S.)

Signed and sealed (being first duly
stamped) in the presence of us,

GEO. TILSLEY,

CHA^s SAWYER.

10

AND BE IT REMEMBERED, that on the said Sixth day of May, in the sixth year of the reign of His Majesty King George the Third, the aforesaid 15 Robert Fall came before our said Lord the King in His Chancery, and acknowledged the writing aforesaid and everything therein contained in form above said; and the said writing was stamped according to the Statute made in the sixth year of the reign of the late King William and Queen Mary, and so forth.

FAMES.

Inrolled the Ninth day of May, in the sixth year of the reign of His 20 Majesty King George the Third, 1766.

LONDON:

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Printers to the Queen's most Excellent Majesty. 1854.