

Specification of Thomas Potts : manufacture of tubular flues of locomotive and other steam boilers.

Contributors

Potts, Thomas.

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A.D. 1848 N° 12,114.

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

OF

THOMAS POTTS.

MANUFACTURE OF TUBULAR FLUES OF
LOCOMOTIVE AND OTHER STEAM BOILERS.

L O N D O N :

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A.D. 1848 N° 12,114.

**Manufacture of Tubular Flues of Locomotive and
other Steam Boilers.**

POTTS' SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, THOMAS POTTS, of Birmingham, Brass Tube Maker, send greeting.

WHEREAS Her present most Excellent Majesty Queen Victoria, by Her Royal Letters Patent under the Great Seal of the United Kingdom of
5 Great Britain and Ireland, bearing date at Westminster, the Tenth day of April, One thousand eight hundred and forty-eight, in the eleventh year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Thomas Potts, my exors, admors, and assigns, Her especial
licence, full power, sole privilege and authority, that I, the said Thomas Potts,
10 my exors, admors, and assigns, or such others as I, the said Thomas Potts, my exors, admors, 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 "IMPROVE-
15 MENTS IN THE MANUFACTURE OF TUBULAR FLUES OF LOCOMOTIVE AND OTHER STEAM BOILERS;" in which said Letters Patent is contained a proviso that I, the said Thomas Potts, should cause a particular description of the nature of my said Invention, and in what manner the same is to be performed, by an instrument in writing under my hand and seal, to be inrolled in Her Majesty's
20 High Court of Chancery within six calendar months next and immediately 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.

NOW KNOW YE, that in compliance with the said proviso, I, the said Thomas Potts, do hereby declare that the nature of my said Invention, and

Potts' Impts. in the Manufacture of Tubular Flues of Locomotive Boilers.

the manner in which the same is to be performed, are fully described and ascertained in and by the following statement thereof (that is to say):—

In the use of tubular flues of locomotive and other steam boilers, when made of copper or of brass, I have observed that the brazed or soldered joints have not been so prejudicially acted on by the friction consequent on the sharp 5 grit from the fire being carried through by the draft; and I have discovered that by lining the whole interior of the surface of a copper tube, or a tube made of an alloy of copper with a similar description of metal to that now used for simply brazing or soldering the joints, an improved manufacture of such flues results. In carrying out my Invention I take what is called "Bath 10 metal," compounded of three parts of best selected copper, two parts of foreign zinc, and ten ounces of refined tin, for every hundredweight of the Bath metal, rolled out into a plate or strip, which I form into a tubular shape of the size required in the ordinary manner of making tubes, the edges butting 15 together, and I anneal such tubes and stretch them in order to straighten 15 them and that the edges of each plate may come correctly together. On each of these tubes I place by preference a tube of copper, but it may be of an alloy of copper, the outer tube going readily on to the inner or lining tube. The compound tube thus prepared I put on to a taper mandril of steel with a taper of about one sixteenth of an inch in its length, which not only facilitates the 20 withdrawing of the mandril, but also gives additional thickness to the end of the tubular flue which comes next the fire-box of the steam boiler. These compound tubes are then drawn with the mandrils within them through dies or draw plates, as is well understood. I have not found it necessary to solder the inner tube or lining of Bath metal, the strength being sufficient without, 25 and the water is prevented passing through by reason of the outer tube being complete.

I would remark that I do not confine myself to the exact proportions of the composition of Bath metal, neither do I claim the making of Bath metal, but only the use of a lining of such a preparation of metal to the lining of tubular 30 flues of copper and of copper alloyed, the object being to obtain a lining of metal which shall be less prejudicially acted on by the passage of sharp grit from the fire than if the whole tube, as heretofore, were made of copper or of copper alloyed. And in using such lining I prefer to make the lining of about two thirds the thickness of the finished tube, and the external tube about one third 35 the thickness of the finished tube.

In witness whereof, I, the said Thomas Potts, have hereunto set my hand and seal, this Fifth day of September, in the year of our Lord One thousand eight hundred and forty-eight.

THOMAS (L.S.) POTTS. 40

Potts' Impts. in the Manufacture of Tubular Flues of Locomotive Boilers.

AND BE IT REMEMBERED, that on the Fifth day of September, in the year of our Lord 1848, the aforesaid Thomas Potts came before our said Lady the Queen in Her Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained and specified, in form above
5 written. And also the Specification aforesaid was stamped according to the tenor of the Statute made for that purpose.

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Enrolled the Tenth day of October, in the year of our Lord One thousand eight hundred and forty-eight.

LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1857.

1. The first of the following is a list of the names of the persons who were present at the meeting of the Board of Directors of the University of California, held on the 15th of January, 1918.

AND THE SECOND IS A LIST OF THE NAMES OF THE PERSONS WHO WERE PRESENT AT THE MEETING OF THE BOARD OF DIRECTORS OF THE UNIVERSITY OF CALIFORNIA, HELD ON THE 15TH OF JANUARY, 1918. THE THIRD IS A LIST OF THE NAMES OF THE PERSONS WHO WERE PRESENT AT THE MEETING OF THE BOARD OF DIRECTORS OF THE UNIVERSITY OF CALIFORNIA, HELD ON THE 15TH OF JANUARY, 1918. THE FOURTH IS A LIST OF THE NAMES OF THE PERSONS WHO WERE PRESENT AT THE MEETING OF THE BOARD OF DIRECTORS OF THE UNIVERSITY OF CALIFORNIA, HELD ON THE 15TH OF JANUARY, 1918.

THE FIFTH IS A LIST OF THE NAMES OF THE PERSONS WHO WERE PRESENT AT THE MEETING OF THE BOARD OF DIRECTORS OF THE UNIVERSITY OF CALIFORNIA, HELD ON THE 15TH OF JANUARY, 1918. THE SIXTH IS A LIST OF THE NAMES OF THE PERSONS WHO WERE PRESENT AT THE MEETING OF THE BOARD OF DIRECTORS OF THE UNIVERSITY OF CALIFORNIA, HELD ON THE 15TH OF JANUARY, 1918.

THE SEVENTH IS A LIST OF THE NAMES OF THE PERSONS WHO WERE PRESENT AT THE MEETING OF THE BOARD OF DIRECTORS OF THE UNIVERSITY OF CALIFORNIA, HELD ON THE 15TH OF JANUARY, 1918. THE EIGHTH IS A LIST OF THE NAMES OF THE PERSONS WHO WERE PRESENT AT THE MEETING OF THE BOARD OF DIRECTORS OF THE UNIVERSITY OF CALIFORNIA, HELD ON THE 15TH OF JANUARY, 1918.

THE NINTH IS A LIST OF THE NAMES OF THE PERSONS WHO WERE PRESENT AT THE MEETING OF THE BOARD OF DIRECTORS OF THE UNIVERSITY OF CALIFORNIA, HELD ON THE 15TH OF JANUARY, 1918. THE TENTH IS A LIST OF THE NAMES OF THE PERSONS WHO WERE PRESENT AT THE MEETING OF THE BOARD OF DIRECTORS OF THE UNIVERSITY OF CALIFORNIA, HELD ON THE 15TH OF JANUARY, 1918.