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Contributors

Preston, Thomas, junior.

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A.D. 1808 N° 3101.

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

OF

THOMAS PRESTON, JUNIOR.

FIRE-PLACES FOR STEAM BOILERS, &c.

L O N D O N :

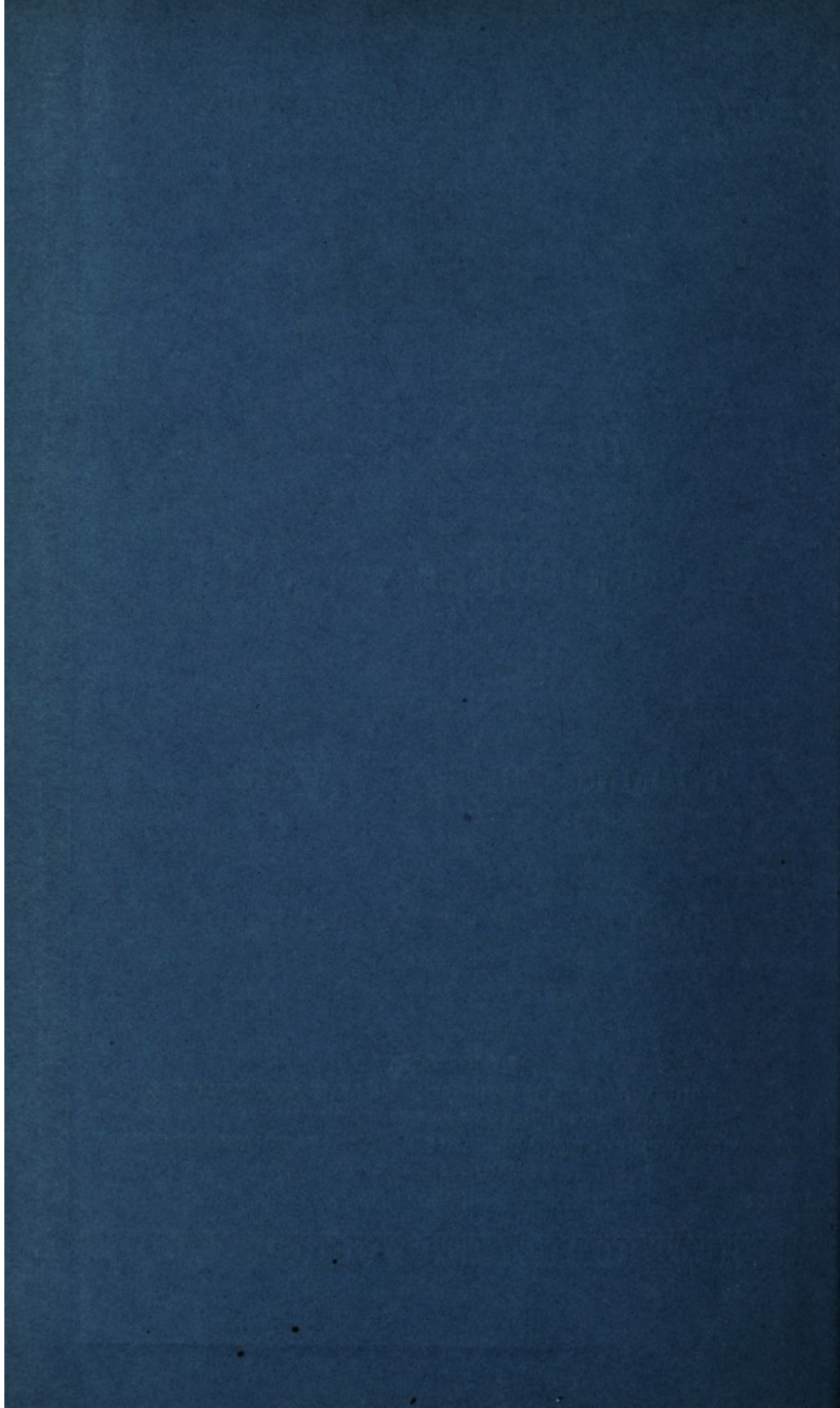
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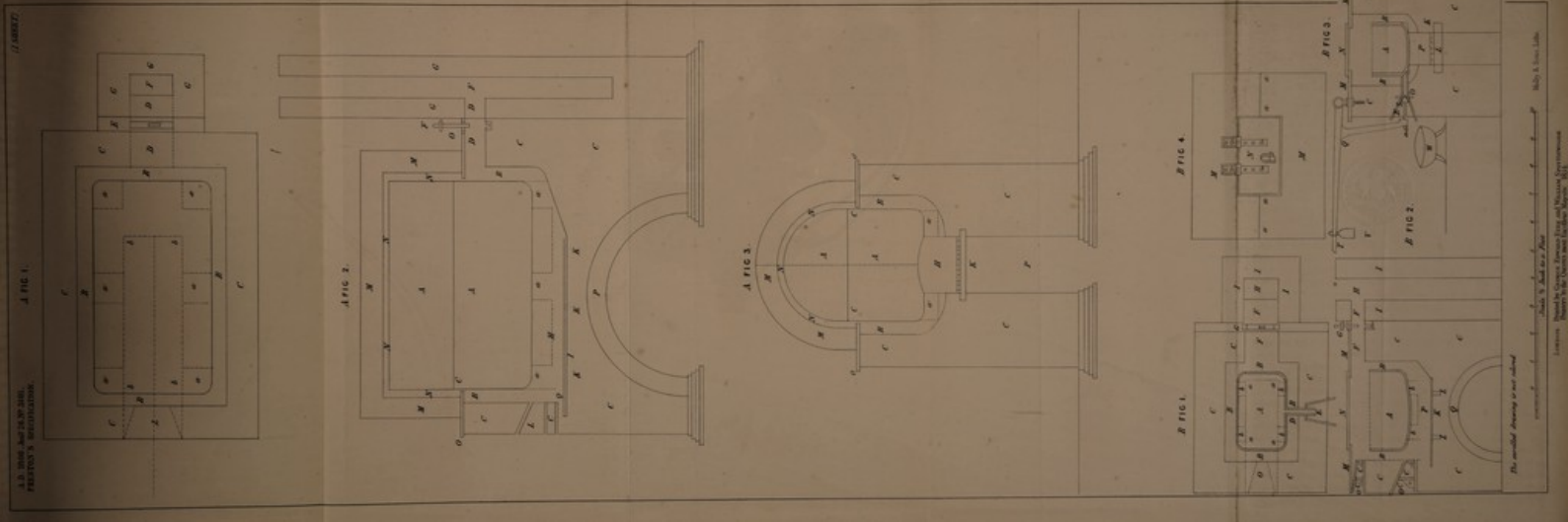
PRESTON'S SPECIFICATION.

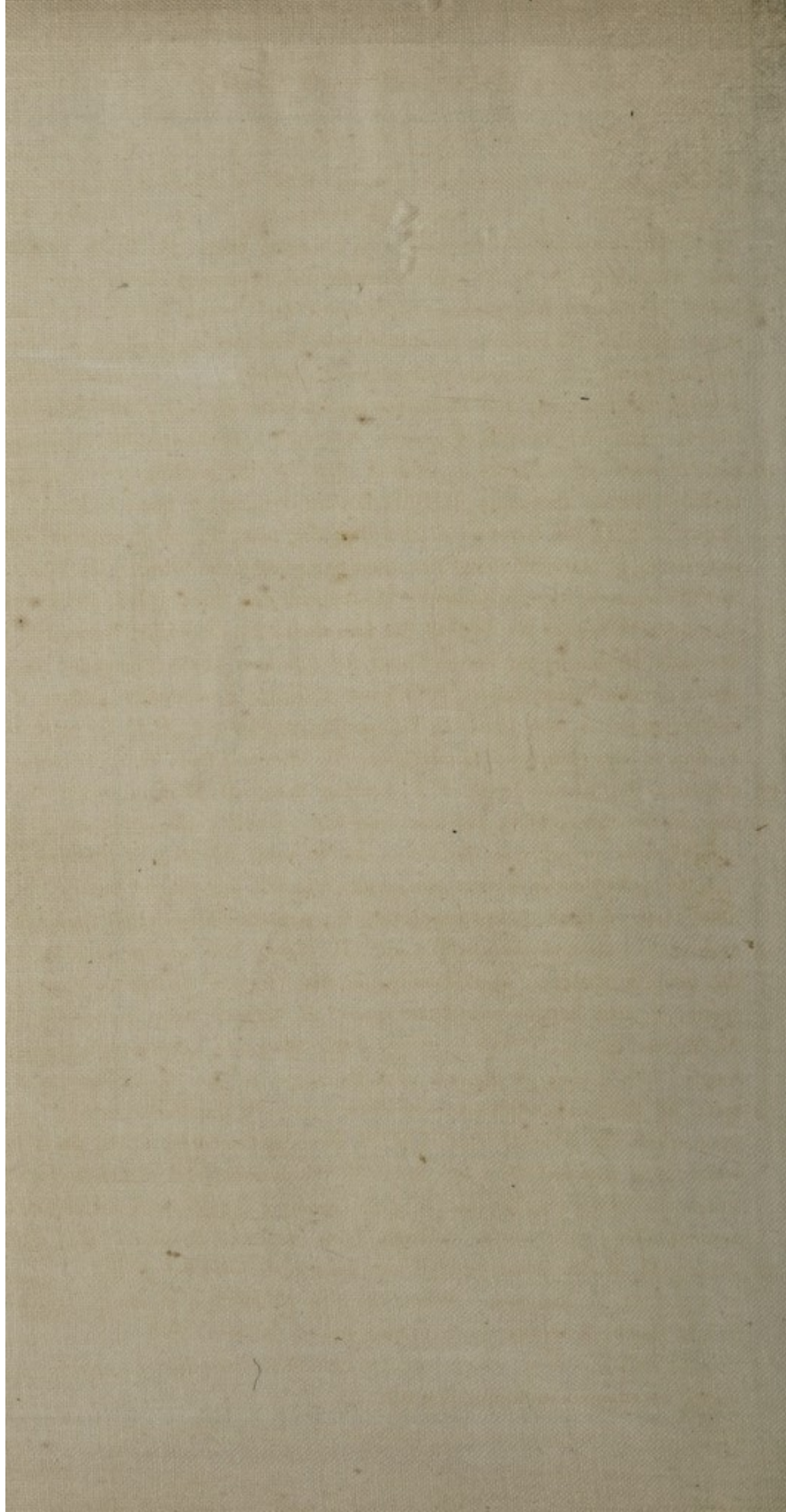
TO ALL TO WHOM THESE PRESENTS SHALL COME, I, THOMAS PRESTON the younger, of Tooley Street, Southwark, in the County of Surrey, Lead Merchant, send greeting.

WHEREAS His most Excellent Majesty King George the Third, did, by His Letters Patent under the Great Seal of the United Kingdom of Great Britain and Ireland, bearing date at Westminster, the Twenty-sixth day of January, in the forty-eighth year of His reign, give and grant unto me, the said Thomas Preston, my executors, admors, and assigns, His especial licence, full power, sole privilege and authority, that I, the said Thomas Preston, my executors, admors, and assigns, during the term of years therein mentioned, should and lawfully might make, use, exercise, and vend, within England, Wales, and the Town of Berwick upon Tweed, my Invention of "**A NEW METHOD OF SETTING BOILERS FOR STEAM ENGINES, PANS FOR MELTING LEAD, TIN, PEWTER, AND OTHER METALS OF EASY FUSION, AND A NEW MODE OF DISCHARGING THE PANS FOR MELTING LEAD, TIN, PEWTER, &c. AS BEFORE NAMED WHEN FULL, AND SETTING COPPERS AND BOILERS OF EVERY DESCRIPTION;**" in which said Letters Patent there is contained a proviso obliging me, the said Thomas Preston, by an instrument in writing under my hand and seal, to 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 His Majesty's High Court of Chancery within four calendar months after the date of the said recited Letters Patent, as in and by the same (relation being thereunto had) may fully and at large appear.

Preston's Improvements in Fire-places for Steam Boilers, &c.

NOW KNOW YE, that in compliance with the said proviso, I, the said Thomas Preston, do hereby declare that my Invention consists in setting boilers, lead pans, &c., in such a position that the fire may have free access to every part of them without conducting the flame round the sides by a wheeling or winding flue by a partial draft leading from the fire-place under 5 the boiler by one or more small openings; that the boiler or pan be placed at a convenient distance immediately over the fire-place upon as many small bearings as will be sufficient to support it properly, leaving the fire to arise freely on every side of the boiler or pan. The smoak is to be carried off to the chimney through an aperture of a convenient size, which is to be placed 10 as near the upper part of the flue as possible, and to be regulated by a damper. This aperture will be better situated at the extreme end, opposite the feeding hole of the fire-place. The Drawings A, Figure one, two, and three, hereunto annexed, will serve to elucidate the foregoing description. Figure one is the ground plan of a boiler for a steam engine; A, the boiler; B,B,B,B, the 15 opening or flue betwixt the boiler and the brickwork; C,C,C,C, the brickwork; D,D, flue leading to the chimney; E, the damper; F, the chimney flue; G, G, G, brickwork of chimney; a, a, a, a, a, a, the lumps supporting the boiler, shewn by the dotted lines; L, the happer for feeding the fire, shewn by the dotted lines; b, b, b, b, fire-place, shewn by the dotted 20 lines. A, Figure two, is a side view section of the same boiler; A, A, the boiler, the line across from C to C shewing the heighth of the water; B,B, the opening or flue betwixt the boiler and the brickwork; C,C,C,C,C, the brickwork; D, D, the flue leading to the chimney; E, the damper, partly drawn up; F, the chimney flue; G, G, the brickwork of the chimney; H, the fire- 25 place; I, the fire bars; K, K, K, the bearing bars; L, the happer hole to feed the fire; M, M, M, brickwork covering the upper part of the boiler, leaving a small space of about three inches betwixt the boiler and brickwork, as at N, N, N, N; O, O, a cast iron plate to cover the flues, which may likewise be covered in with any other matter or substance equally suitable, and to stop 30 the fire from rising higher than within about three or four inches of the water line. The covering, if of cast iron, might be about one inch thick, and should be cast in two or more separate pieces to prevent its flying from the heat, and should be rabbited at the joints. I would not have the plate placed quite close against the sides and ends of the boiler, but a small opening must be 35 left for a sufficient quantity of hot air to pass over and round the ends of the upper part of the boiler through the space N, N, N, N, to keep the steam from being chilled; an opening may be made at the top of the brickwork to regulate this; P, the arch to give air and save brickwork; Q, a small space of about two inches betwixt the upper part of the furnace bars and the plate 40





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which supports the brickwork over the ash hole. A, Figure 3, end view section of same boiler; A, A, the boiler; B, B, opening or flue; C, C, C, C, brickwork; H, fire-place; I, fire bars; K, bearing bars; M, M, M, brickwork over the boiler; N, N, N, space betwixt the brickwork and upper part of
 5 boiler; O, O, cast iron plate to cover flues; C, C, water line; *a, a*, the lumps supporting the boiler, shewn by dotted lines. For melting lead, tin, &c. I place the pans exactly in the same position as the boilers before described, only that I bring the fire fairly over them, the smoke being carried off, as before mentioned. The Drawings B, Figure 1, 2, 3, and 4, are four views of a melting
 10 pan for lead, &c. Figure 1, ground plan; A, the melting pan, of cast iron or any other fit material; B, B, B, B, the opening or flue; C, C, C, C, the brickwork; D, the spout for discharging the pan; E, a hopper made of cast iron or any fit material round the spout to preserve the brickwork; F, F, flues to the chimney; G, the damper; H, the chimney flue; I, I, I, brickwork of
 15 chimney; O, hopper for feeding the fire, shewn by the dotted lines; *a, a, a, a*, fire-place, shewn by the dotted lines; *b, b, b, b*, four lumps to support the pan, shewn by the dotted lines. B, Figure 2, shews a side-view section of the melting pan; A, the pan; B, B, opening or flue; C, C, C, C, brickwork; F, flue to the chimney; G, damper; H, chimney flue; I, I, brickwork of
 20 chimney; K, furnace bars; L, L, bearing bars; M, M, iron cover; N, iron door in the cover; O, O, two cast iron hopper holes; the upper one to admit of a slice or poker, and the lower one to feed the fire; P, the fire-place; C, C, C, C, four doors of cast iron or any other fit material to the two hopper holes O, O; *b, b*, the lumps supporting the pan, shewn by dotted lines; Q, the
 25 arch to give air and save brickwork. B, Figure 3, is an end view section of the pan; A, the pan; B, B, opening or flue; C, C, C, C, brickwork; D, the spout; E, iron hopper round the spout; K, furnace bars; L, bearing bars; M, M, iron cover; N, door to cover; P, fire-place; Q, a lever (of a convenient length) with a plug at the end next the spout to stop up the mouth of the
 30 spout till the pan is required to be discharged; R, the screw nuts and spindle upon which the lever Q is marked; S, the plug attached to the lever Q, to which it is fastened by a key at *a*; T, the extreme end of the lever; V, a weight in which may be moved upon the lever Q; W, a vessel of any convenient form to receive the discharge from the pan. B, Figure 4, is the iron
 35 cover; M, M, the cover cast in two peices, the division of which is shewn at *a, a, a, a*; N, the door. When the pan is required to be discharged the weight should be drawn down to that end of the lever next the furnace, and the end at T raised up, which will of course draw the plug; the reverse of this should be adopted in closing it again.

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The foregoing I conceive will be sufficiently explanatory of the nature of my Invention. Though I have made all my drawings to a certain scale, they will of course admit of much variation in point of dimensions and proportions without deviating from the principle I have here explained. This principle will be applicable to boilers of every description, namely, that of placing the 5 copper or boiler as it were in the midst of the fire, and confining the heat with which it is enveloped as closely as possible. With respect to the pans for melting metal they will answer the purpose of a reverberatory furnace only in a more advantageous manner, the flame wholly enveloping the matter to be fused, by which means the fire not only does its duty more expeditiously, but 10 likewise with much less injury to the furnace. For a plumber's use or where a great heat is not wanted the iron cover may be brought nearly close down upon the edges of the pan. It may be proper to observe, that the pan and flues may be covered over by any other substance or material capable of confining the heat, and that will admit of the pan being worked with equal convenience. 15

In witness whereof, I, the said Thomas Preston, have hereunto set my hand and seal, this Twenty-sixth day of May, in the year of our Lord One thousand eight hundred and eight.

THO. PRESTON, JUN^R. (L.S.)

AND BE IT REMEMBERED, that on the Twenty-sixth day of May, in 20 the forty-eighth year of the reign of His Majesty King George the Third, the said Thomas Preston the younger came before our said Lord the King in His Chancery, and acknowledged the Instrument aforesaid, and all and every thing therein contained and specified, in form above written. And also the 25 Instrument aforesaid was stamped according to the tenor of the Statute made in the Forty-fourth year of His said Majesty's reign.

Inrolled the Twenty-sixth day of May, One thousand eight hundred and eight.

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