

Specification of Charles Jacomb : furnaces, stoves, grates, &c.;

Contributors

Jacomb, Charles.

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A.D. 1825 N° 5257.

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

OF

CHARLES JACOMB.

FURNACES, STOVES, GRATES, &c.

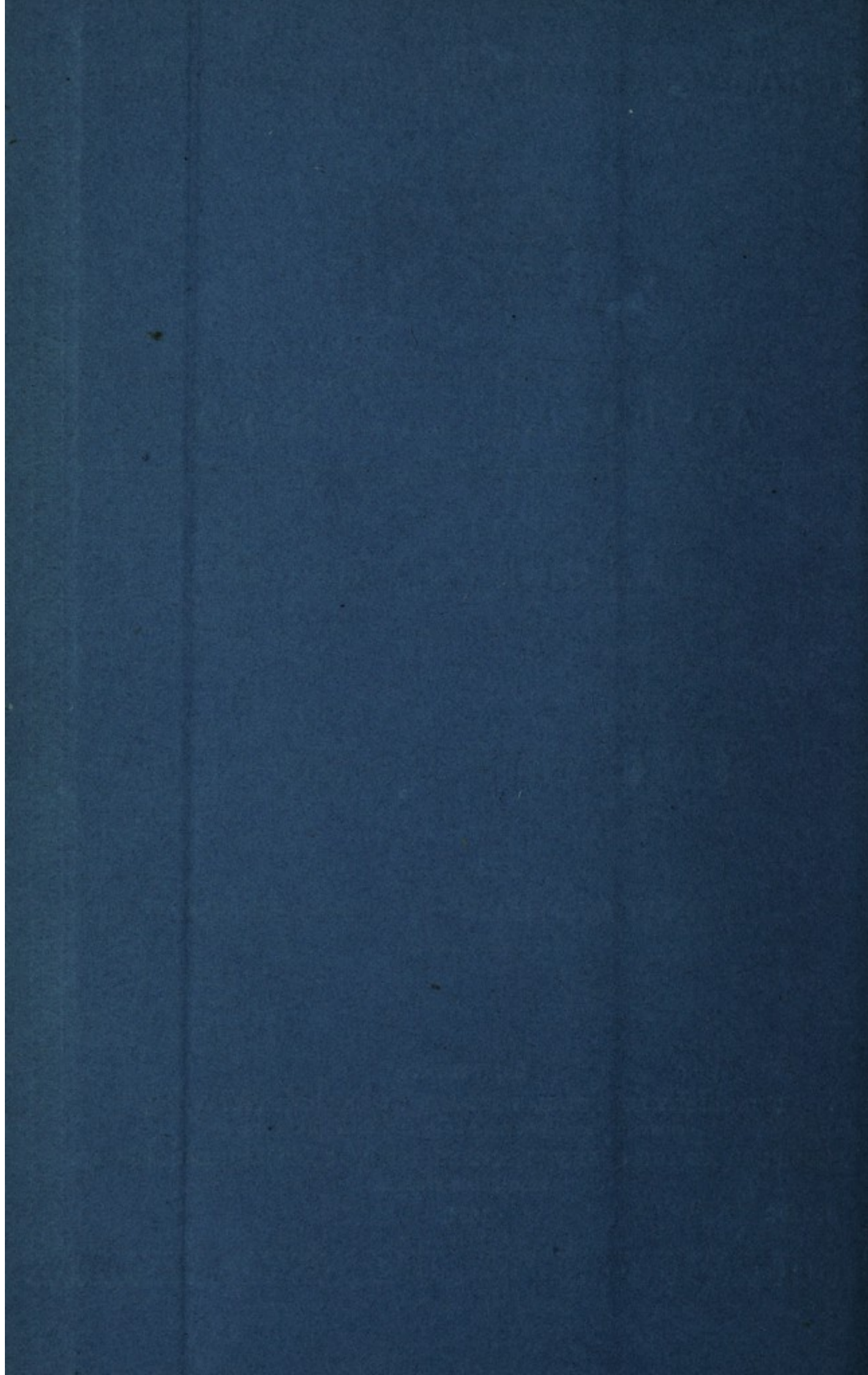
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Furnaces, Stoves, Grates, &c.

JACOMB'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, CHARLES JACOMB, of Basinghall Street, in the City of London, Wool Broker, send greeting.

WHEREAS His present most Excellent Majesty King George the Fourth, by His Letters Patent under the Great Seal of Great Britain, bearing date at Westminster, the Fifteenth day of September, in the sixth year of His reign, did, for Himself, His heirs and successors, give and grant unto me, the said Charles Jacomb, His especial licence that I, the said Charles Jacomb, my exors, admors, and assigns, or such others as I, the said Charles Jacomb, 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 "CERTAIN IMPROVEMENTS IN THE CONSTRUCTION OF FURNACES, STOVES, GRATES OR FIRE-PLACES;" in which said Letters Patent is contained a proviso obliging me, the said Charles Jacomb, by an instrument in writing under my hand and seal, particularly to describe and ascertain the nature of my said Invention, and in what manner the same is to be performed, and to cause the same to be inrolled in His Majesty's High Court of Chancery within six calendar months next and immediately after the date of the said recited Letters Patent, as in and by the same, reference being thereunto had, will more fully and at large appear.

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NOW KNOW YE, that in compliance with the said proviso, I, the said Charles Jacomb, do hereby declare that the nature of my said Invention, and the manner in which the same is to be carried into effect and practice, are particularly described and ascertained as follows, and by the Drawing hereto annexed, the letters of reference in the Drawing attached, to the various 5 views, elevations, and sections denoting the same parts throughout (that is to say) :—

By Fig. 1 is represented an elevation or side view of a cylindrical furnace, stove, grate, or fire-place formed of iron or other suitable material, and supported on the hollow axis A, A, which rests and revolves when required, as herein-after 10 described, on the iron or other metallic supports B, B. *a, a, a, a, &c.*, represent the external bars, which contain and constitute the support for the coal, coke, or other material used as fuel, and which are rivetted or otherwise effectually fixed to the circular ends C, C. Fig. 4 represents an end view of my cylindrical furnace, stove, grate, or fire-place, by which it is shewn that the circle C, C, or 15 end of the cylinder is closed at the one end, and divided into equal portions or compartments by the bars D, D, D, at the other end. These divisions, formed by and consisting of metallic or other bars, continue or extend the whole length of the cylinder, so that the furnace, stove, grate, or fire-place is thereby divided into any required number of separate and distinct portions or 20 compartments, into and with which the doors E, E, E, severally open and communicate. These doors are connected to and hung upon the bars or arms D, D, D, this arrangement of my improvement having three compartments or divisions. A represents the interior hollow axis or cylinder, which is likewise connected by bars from end to end, as will appear more clearly shewn by 25 Fig. 2, where the exterior bars attached to the circles C, C, are omitted for the purpose of shewing the nature of the framework of my circular furnace, stove, grate, or fire-place. Through the opening A, air is admitted for the support of combustion, and for the requisite stoking or clearing the fire of ashes, clinkers, or other residuum, as well as for the introduction of steam, tar, or other 30 material for the increase of heat or combustion. The external bars of this arrangement of my furnace, stove, grate, or fire-place may be fixed on separately or in segments, as shewn at Fig. 3, which segments may if required be formed by means of a simple contrivance, as the doors or openings for the introduction of fuel, or for other purposes. The arrangements and modifica- 35 tions, however, of the apparatus by which my improvement in the construction of furnaces, stoves, grates, or fire-places are effected may be varied according to the purposes for which they are to be applied, and I herein describe two, the

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same principle being applicable to various other arrangements and modifications well known to workmen conversant in the construction of furnaces, stoves, grates, and fire-places. The first arrangement or modification is shewn in the Fig. 1 to Fig. 7, inclusive; and the second arrangement or modification in 5 Fig. 8 and Fig. 9. Fig. 5 is a plan of one of the end circles or frames C, C, with the arms or bars D, D, D, as herein-before described. Fig. 6 is a transverse section of Fig. 4, and Fig. 7 is a longitudinal section of the same apparatus, as shewn at Fig. 1. To put this first arrangement of my improvement in the construction of furnaces, stoves, grates, and fire-places into operation 10 when applied to a boiler for generating steam, I place it within a flue or passage formed through the boiler, which flue or passage should be formed to permit any apparatus to revolve on its axis A, when supported by the feet *b, b*, resting on the bottom of the flue or passage through the boiler. My apparatus is so placed within the flue or passage of the boiler, that the end at which the 15 fire doors E, E, E, are fixed shall be flush or paralell to the end or outside of the boiler, as shewn at Figure 4. In this position I first charge or load the whole of the space between the exterior and interior cylinders with coal, coke, or other fuel, at the several fire doors E, E, E, and light or fire the uppermost portion therein contained in the ordinary manner, air being admitted by means 20 of the open end of the cylinder A, and through the bars of which the same is composed or formed. As soon as that portion of the coal, coke, or other fuel contained in the uppermost compartment is burned to that state in which it gives off no more smoke or vapour, I gradually turn the whole cylinder on the hollow axis or centre A, in order that a portion of the coal, coke, or other fuel 25 contained in the next or adjoining compartment may become also ignited. By this action it will be seen that the smoke generated or produced by the lighting of that portion of the coal, coke, or other fuel beneath or immediately contiguous thereto is compelled by the arrangement of my apparatus to pass through the first lighted portion, and is thereby consumed; when fresh fuel is 30 required, I throw it into the uppermost division through the door E, and upon the top of the live or ignited fuel contained therein, and immediately turn the whole cylinder on its axis, so as to bring the green or fresh fuel under live or ignited fuel, turning the cylinder more or less, as occasion may require, but always keeping the live or ignited fuel on the top. By this arrangement of my 35 apparatus it will be observed that all the component parts of the coal, coke, or other fuel are made available for the production of heat, and the draft of air conveyed to the centre of the fire in any quantity, and which may be regulated to the greatest nicety through the centre of the cylinder. The rotary motion to be occasionally given to my apparatus here described, may be effected by a

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lever inserted in the holes *c, c, c*, Figure 1, or by any other mechanical contrivance, which must depend on the size and nature of the apparatus to which my improvement is applied, all which are well known to mechanics or workmen conversant in work of this nature.

The second arrangement of apparatus for my improvement in the construction of furnaces, stoves, grates, or fire-places is shewn at Figure 8, which represents a front view or elevation of a domestic grate or fire-place supported on the axis *A, A*, which slides and is held in the longitudinal groove or slit *B, B*, Figure 9. This grate or fire-place is so formed that a door or opening composed of bars may be placed at the bottom and top thereof, which doors are made to open and shut, and when shut are held fast by the catch at *X*. To put this arrangement of my improvement in furnaces, stoves, grates, and fire-places in action, I light a fire in the ordinary manner with coal or other suitable material, as near as possible at the top, preferring to place uppermost some cinders, and green coal undermost. The fire will then gradually find its way to the bottom, burning with little or no smoke, which together with the gas or vapour is consumed as emitted by the coal or other fuel; when fresh coal or other fuel is required, I place it on the top of the ignited fuel, and shut down the door or opening, which is securely held by the catch *X*. I then draw the grate forward in the groove or slit *B, B*, Figure 9, and immediately turn it one half revolution on its axis *A*, and then return it back again to its former position in the groove or slit *B, B*. By this action the live or ignited fuel is again brought to the top, and thereby causing the smoke, gas, or vapour emitted by the fresh fuel to pass through that which is already in a state of ignition, and thereby consuming it. In describing the construction and the proper method of managing or working the two before-mentioned applications of my improvement in the construction of furnaces, stoves, grates, or fire-places, I do not confine my claim to them or to any particular dimensions or parts thereof, all which must depend on the purpose to which my improvement is to be applied, and the varied constructions, selection of materials, and diversification of proportions necessary and proper thereto may be effected, contrived, and arranged by any competent workman in work of this and the like nature; but I do confine my claim to such arrangement as shall enable the operator to impart a rotary motion to the furnace, stove, grate, or fire-place, and thereby to produce the effect, as herein-before described.

In witness whereof, I, the said Charles Jacomb, have hereunto set my hand and seal, this Fourteenth day of March, in the year of our Lord One thousand eight hundred and twenty-six.

CHARLES JACOMB. (L.S.)

FIG. 1.



FIG. 4.



FIG. 7.



FIG. 2.

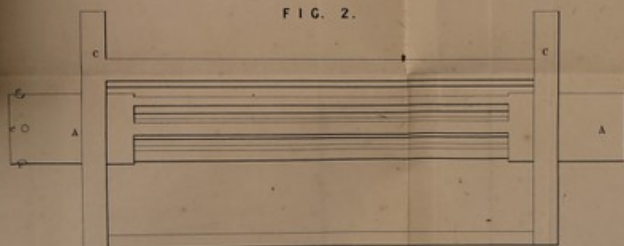


FIG. 5.

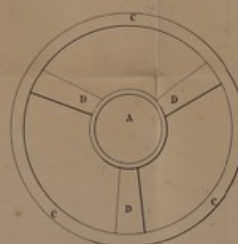


FIG. 8.



FIG. 3.



FIG. 6.

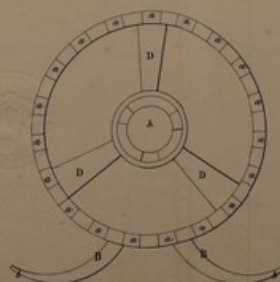
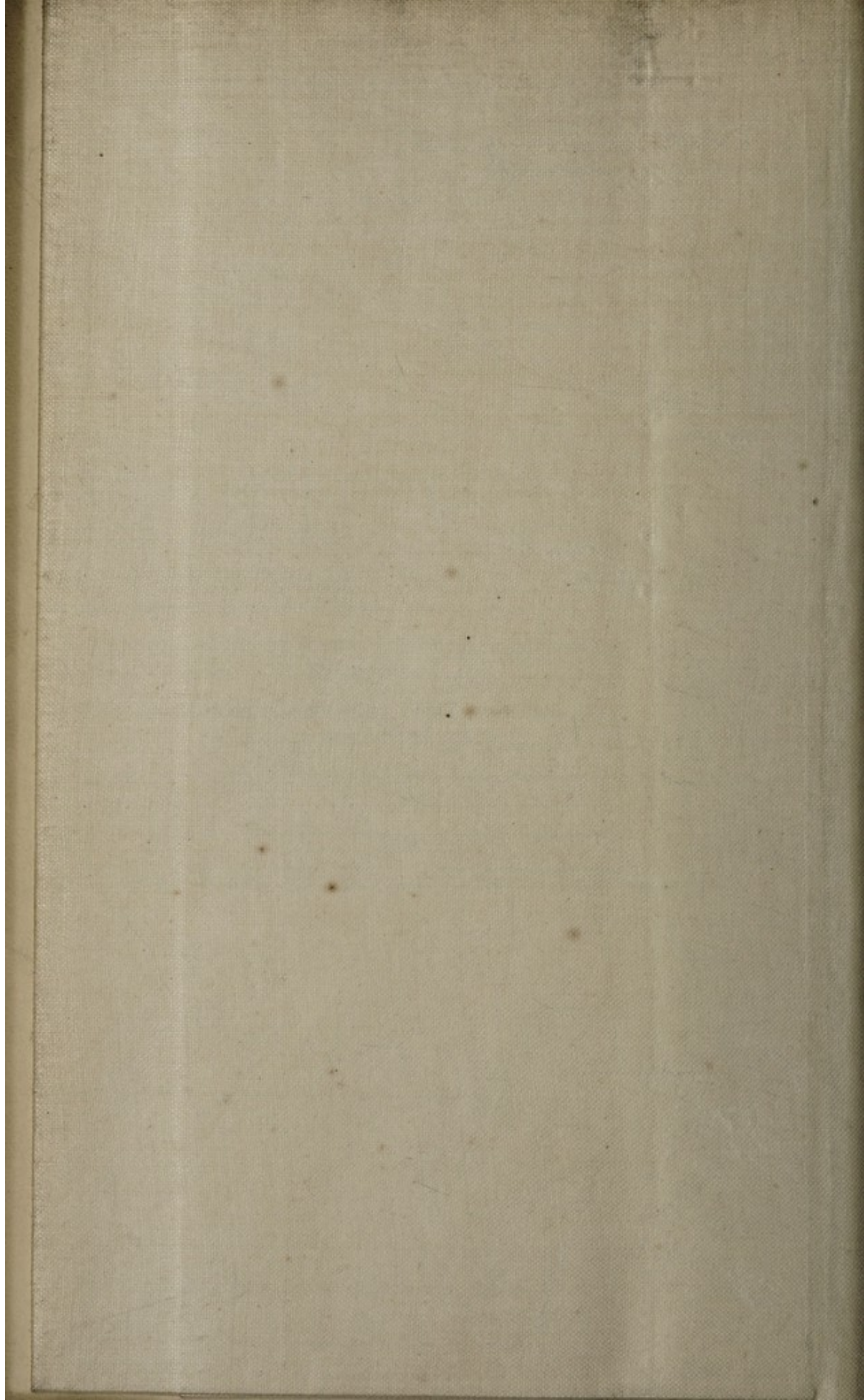


FIG. 9.



The enrolled drawing is colored.



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AND BE IT REMEMBERED, that on the Fourteenth day of March, in the year of our Lord 1826, the aforesaid Charles Jacomb came before our said Lord the King in His Chancery, and acknowledged the Specification aforesaid, and all and everything therein contained and specified, in form above written.
5 And also the Specification aforesaid was stamped according to the tenor of the Statute made for that purpose.

Inrolled the Fourteenth day of March, in the year of our Lord One thousand eight hundred and twenty-six.

LONDON:

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

