E. Nott,

Magazine Stove.

X7644

Patented June 29. 1833.

Fig. 3.

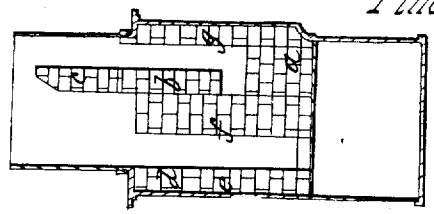


Fig. 1.

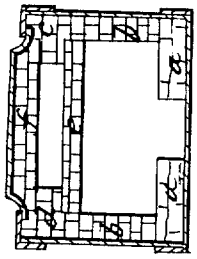
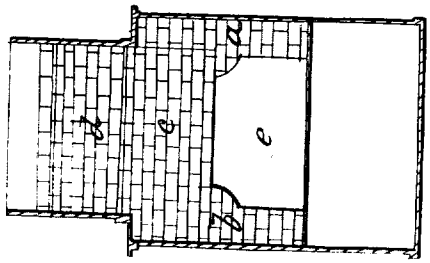


Fig. 2.



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Elisha Lee Scott.)

Case "K"

Letters Patent.

The Schedule referred to in these Letters Patent and making part of the same, containing a description in the words of the said Elisha Lee Scott himself of his improvement for increasing the reflection of heat from Anthracite coal & for rendering the whole of the heat evolved from fuel of any sort, available to the production of useful effect, in the treatment of bodies at rest.

Case "K"

Specification of improvements made for increasing the reflection of heat from Anthracite coal & for rendering the whole of the heat evolved from fuel of any sort, available to the production of useful effects in the treatment of bodies at rest. It having been discovered that the heat of an Anthracite coal fire may be increased by more fully igniting its contained hydrogen; & it having also been discovered that the heat of a fire of any sort may be advantageously applied successively to the treatment of successive bodies. Therefore certain improvements have been made for carrying the same into effect; which consist — In providing for the more complete combustion of the hydrogen produced in the use of Anthracite coal and, — In concentrating the several processes to which the heat produced in the use of fuel of any sort can be conveniently applied — always beginning with a process that requires a high temperature, as the reduction of ores, & the manufacture of metals or the subsequent melting or heating thereof for the purpose of being cast or wrought into other forms; & proceeding thereafter to processes requiring a lower temperature, as iron to be annealed or pit coal, or resin to be decomposed for the production of gas;
By interposing between a bush'd forge-furnace, or chamber of combustion and a boiler, or a chimney if no boiler be in use, an elongated

elongated chamber of treatment, of non-conducting material—either vertical, inclined, or horizontal; or in parts, the one, & in part the other; the same being exhibited, either in a single chamber having when required, recesses or formed, along the line thereof, that certain bodies, or bodies in certain localities, can be placed more or less out of the main current of the contained flame; & having also inspection apertures, & apertures for the ingress or egress of fluids, or for the admission of air for the cooling of the interior—or for the ignition of the contained hydrogen all governed by valves;—or the same or some part thereof being exhibited in two or more channels, placed side by side, or one above the other, & so divided into communications & furnished with additional interior inlets & outlets governed by valves, that bodies under treatment can be passed from the one to the other, and that the flame can be passed in the one channel or the other & caused to act with greater or less intensity on the bodies in any locality of either, or caused off from the walls of the chimney thro' a separate flue, governed by a valve & keeping up the temperature along the line of said chamber of treatment, after the process of melting in the cupola has ceased, by converting a section of said chamber of treatment, into an occasional chamber of combustion and separating the same by a valve from the cupola (unless it be deemed preferable to make use of the cupola itself in such case, as a mere chamber of combustion), & in causing the entire volume of flame however divided in its passage to be thrown upon the boiler (if a boiler be employed) which is always to be placed late if not last in the series of bodies to be heated & the steam thereof besides driving an engine employed in heating water to be used—in other processes as dying bleaching &c—and in providing adjoining the boiler, an auxiliary furnace to be used when necessary; & in governing by valves the inlet to the boiler from the cupola, & the inlet to the furnace from the external air, so that when the flame from the cupola ceases, the inlet

inlet to the boiler therefore may be closed, & when the flame from the cupola is sufficient for the boiler the inlet to the furnace from the external air may be closed unless when opened for igniting the hydrogen from the cupola, or for cooling the interior. It is to be understood that when practicable the air introduced for the ignition of gas, should be heated by being passed between the crust of the fabric, & an exterior or second crust enveloping the whole as to form an air chamber; - and it also being understood that a double arrangement is to be preferred so that as one apparatus is refrigerating the other may be in use. For further information reference may be had to the drawings hereunto prefixed.

Summary.

The improvement herein contemplated consists, - In increasing the heat evolved by anthracite coal and increasing the whole of the heat evolved by fuel of any sort available to the production of useful effect by a concentration of the natural processes to which the same can be economically applied in the treatment of bodies at rest; commencing with a process requiring a high temperature as the reduction of ores & the manufacture of iron & other metals; or the subsequent melting or heating thereof for the purpose of being cast or wrought into other forms; and causing the flame thereafter to act successively on successive bodies requiring less & less temperature as iron to be annealed or pit coal or rosin to be decomposed for the production of gas - By interposing between a cupola, forge, furnace or chamber of combustion & a boiler or a chimney, if no boiler be in use, an intermediate chamber of treatment exhibited in one or more channels & furnished with compartments, apertures and valves as aforesaid; or exhibited in any other form and furnished in any other manner provided only adequate provision be made by the interposition of a chamber of treatment between a cupola, forge, furnace, or chamber of combustion & a boiler or a chimney, if no boiler be in use for consuming the hydrogen

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hydrogen produced in the use of Anthracite coal & for applying the heat produced by fuel of any sort to the production of useful effects in the carrying forward of different processes by the treatment of successive bodies at rest.— Also in the preventing of the injurious effects of the flame of a cupola upon a boiler in contact therewith and in diminishing the reduction of temperature to which it is exposed while charging the cupola by the removal of the same to a distance therefrom.— Also in protecting a boiler however situated against the action of the flame of a cupola when too intense by taping off a portion thereof thro' a separate flue governed by a valve; & also in governing the inlet from a cupola to a boiler by a valve, & in furnishing a boiler by means of an auxiliary furnace, with the requisite heat when the cupola is not in blast, or when the heat therefrom is insufficient for generating the steam required. I therefore claim as my invention and improvement the increasing of the evolution of heat in the use of Anthracite coal, and the rendering the entire heat evolved in the use of fuel of any sort available to the production of useful effect by concentrating & arranging in the order aforesaid the several processes to which the same heat can be conveniently applied in the treatment of successive bodies or of bodies divided into successive portions at rest; by interposing between a cupola, forge or furnace or chamber of combustion & a boiler or a chimney, if no boiler be in use, an intermediate chamber of treatment, exhibited & furnished as aforesaid, or exhibited and furnished in any other manner, provided, adequate provision be made thereby for the ignition of the hydrogen of Anthracite & for rendering the entire heat from fuel of any sort productive of useful effect by applying the same successively to such several processes as can be conveniently carried forward by the treatment of successive bodies at rest.—

Also the preventing the injurious effects of the flame of a cupola upon a boiler in contact therewith & the diminishing of the

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of the reduction of the temperature to which it is exposed while charging the cupola by the removal of the same to a distance therefrom. Also the preventing of the boiler however liable to against the action of the flame of a cupola, when too intense, by taking off a portion of the heat thereof thro' a separate flue governed by a valve.— And also the governing of the inlet to a boiler from a cupola by a valve;— and the furnishing of a boiler by means of an auxiliary furnace, with the requisite heat, when the cupola is not in blast or when the heat thereof is insufficient; together with which the uses to which the same has been, or may hereafter be applied.

Witnesses
W. Boyd
D. Boyde

Elisha Wells Esq

(1644 Words)

(Granted June 29 1833)