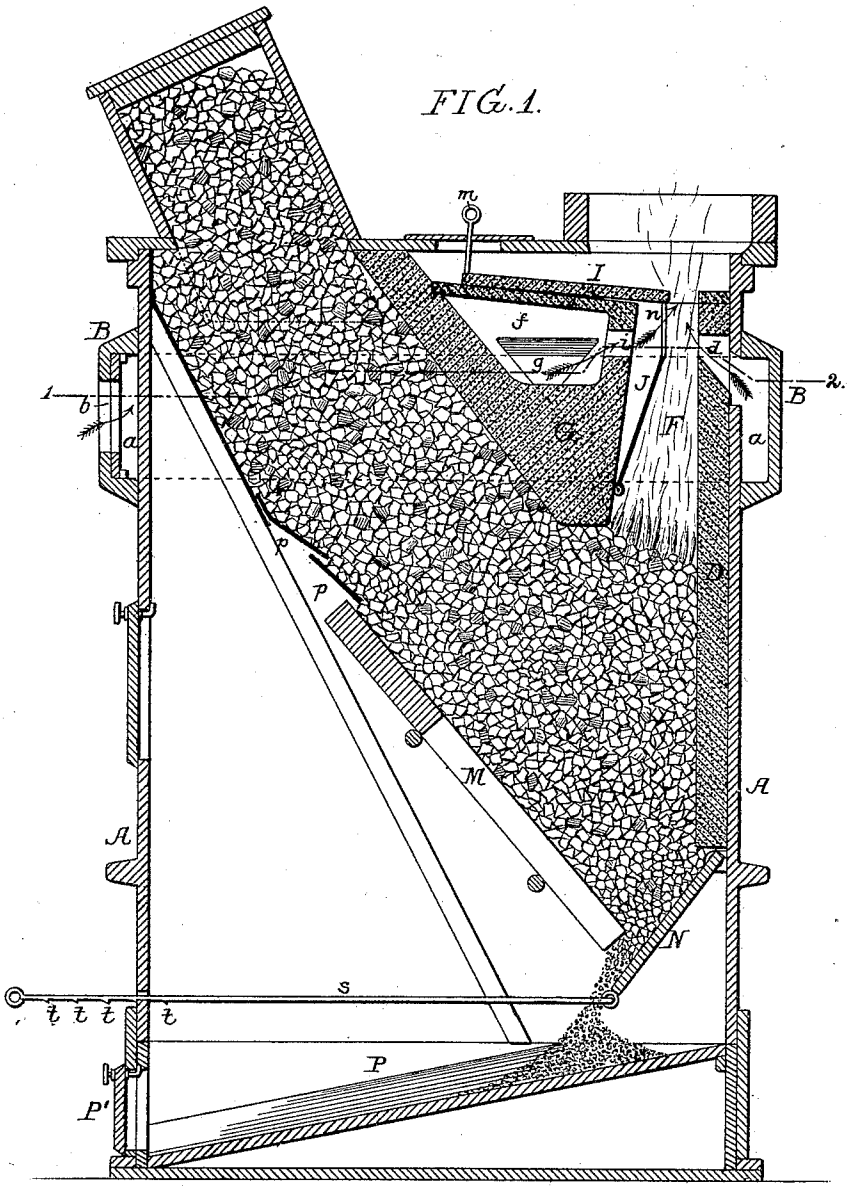
(No Model.) 2 Sheets—Sheet 1.

C. B. GREGORY.

STOVE OR FURNACE.

No. 462,079. Patented Oct. 27, 1891.

FIG. 1.



Witnesses:
Fred D. Goodwin
R. Schleicher.

Inventor
Clark B. Gregory
by his Attorneys
Howson & Howson

(No Model.) 2 Sheets—Sheet 2.

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STOVE OR FURNACE.

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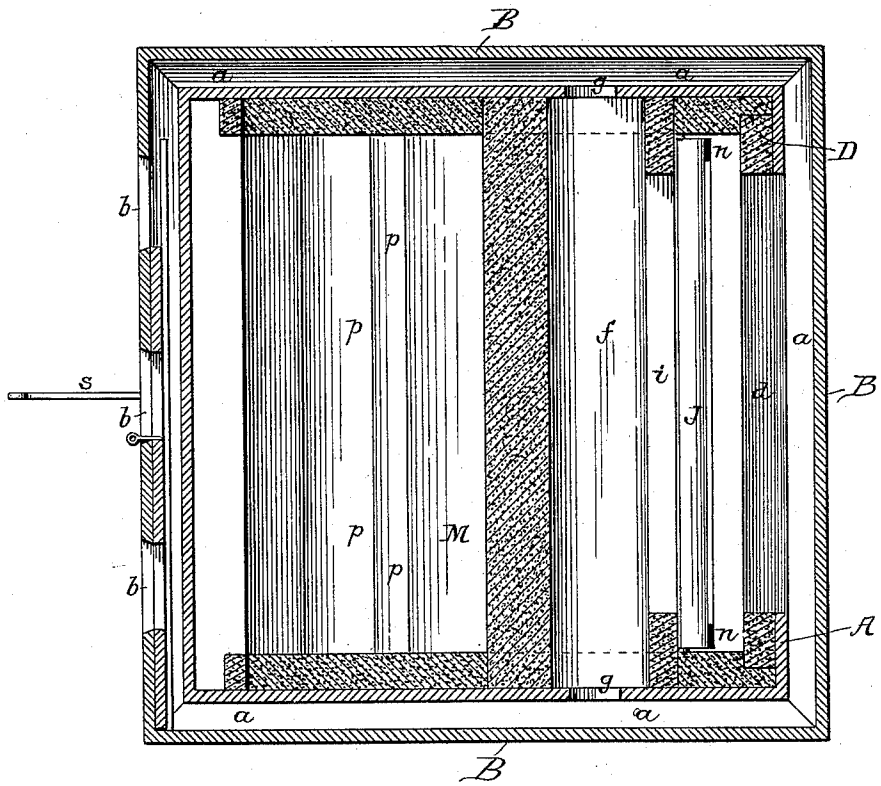
FIG. 2.



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Inventor:
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by his Attorneys
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UNITED STATES PATENT OFFICE.

CLARK B. GREGORY, OF EDGEWATER PARK, NEW JERSEY.

STOVE OR FURNACE.

SPECIFICATION forming part of Letters Patent No. 462,079, dated October 27, 1891.

Application filed June 13, 1891. Serial No. 396,100. (No model.)

To all whom it may concern:

Be it known that I, CLARK B. GREGORY, a citizen of the United States, and a resident of Edgewater Park, Burlington county, New Jersey, have invented certain Improvements in Stoves or Furnaces, of which the following is a specification.

My invention consists of certain improvements in the furnace for which I obtained Letters Patent No. 228,061, dated May 25, 1880, the object of my present improvements being to vary the area of the flue or neck for the discharge of the products of combustion without the formation of any abrupt corner or shoulder in the path of said products of combustion. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 represents a longitudinal sectional view of a furnace constructed in accordance with my present invention, and Fig. 2 a sectional plan view on the line 1 2.

A represents the outer casing of the furnace, which may be constructed of any suitable form and dimensions and which is preferably provided with a fire-brick or other refractory lining in that portion which is subjected to the action of the products of combustion.

Around the upper portion of the casing A is another casing B, inclosing an air-chamber *a*, into which air enters through a suitably-dampered opening *b* in the front of said casing B and circulates around the upper portion of the furnace, so as to be heated by contact with the walls of the same. A portion of the heated air escapes from the chamber *a* through an opening *d* in the rear lining D of the fire-pot into the outlet flue or neck F, which is formed between the said rear lining and the hollow transverse slab G, as in the former furnace. Air also enters a transverse chamber *f* in the slab G from the chamber *a* through an opening *g*, and this air escapes from the chamber *f* into the neck F through an opening *i*, so that the two currents of heated air enter the ascending current of the products of combustion at opposite points and meet and thoroughly mingle with the same, so as to insure the complete combustion of all the gases, or the air may, if desired, enter the neck F at but one side of the same, as set forth in my former patent.

It is advisable to vary the area of outlet of the neck F to accord with the character of the fuel which is being used, and I therefore employ for this purpose a transverse damper slab or tile I, mounted on the slab G and movable by means of a handle *m*, so that it can be caused to close or partly close the outlet-neck F; but as the passage of the intensely-heated products of combustion around the projecting end of this slab or tile would be likely to rapidly destroy the same I mount in the neck F, below the damper-slab I, a deflector-plate J, pivoted at its lower edge and connected at the upper edge by rods *n* or other suitable connections to the slab I. It will thus be seen that as the forward end of the slab I is caused to project across the neck F a swinging movement will be imparted to the plate J below the same and the area of the neck F will be gradually contracted, so that there will be no sharp shoulder or corner projected in the path of the escaping products of combustion, or the same result would be attained if the deflector-plate J was used without the damper-slab.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination of the fire-pot having a contracted neck with air-inlets communicating with said contracted neck below the upper or outlet end of the same, and an adjustable deflector-plate pivoted at its lower edge in said neck, so as to gradually contract the area of discharge of the neck, substantially as specified.

2. The combination of the fire-pot having a contracted neck with air-inlets and an adjustable deflector-plate located in the neck below said air-inlets and pivoted at its lower edge, but free to swing inward at its upper edge, substantially as specified.

3. The combination of the fire-pot having a contracted outlet-neck with air-inlets, the adjustable slab or tile for partially closing the upper end of said outlet-neck, and an adjustable deflector-plate within said neck, pivoted at its lower end and connected at the upper end to said adjustable slab or tile, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CLARK B. GREGORY.

Witnesses:
EUGENE ELTERICH,
HARRY SMITH.