

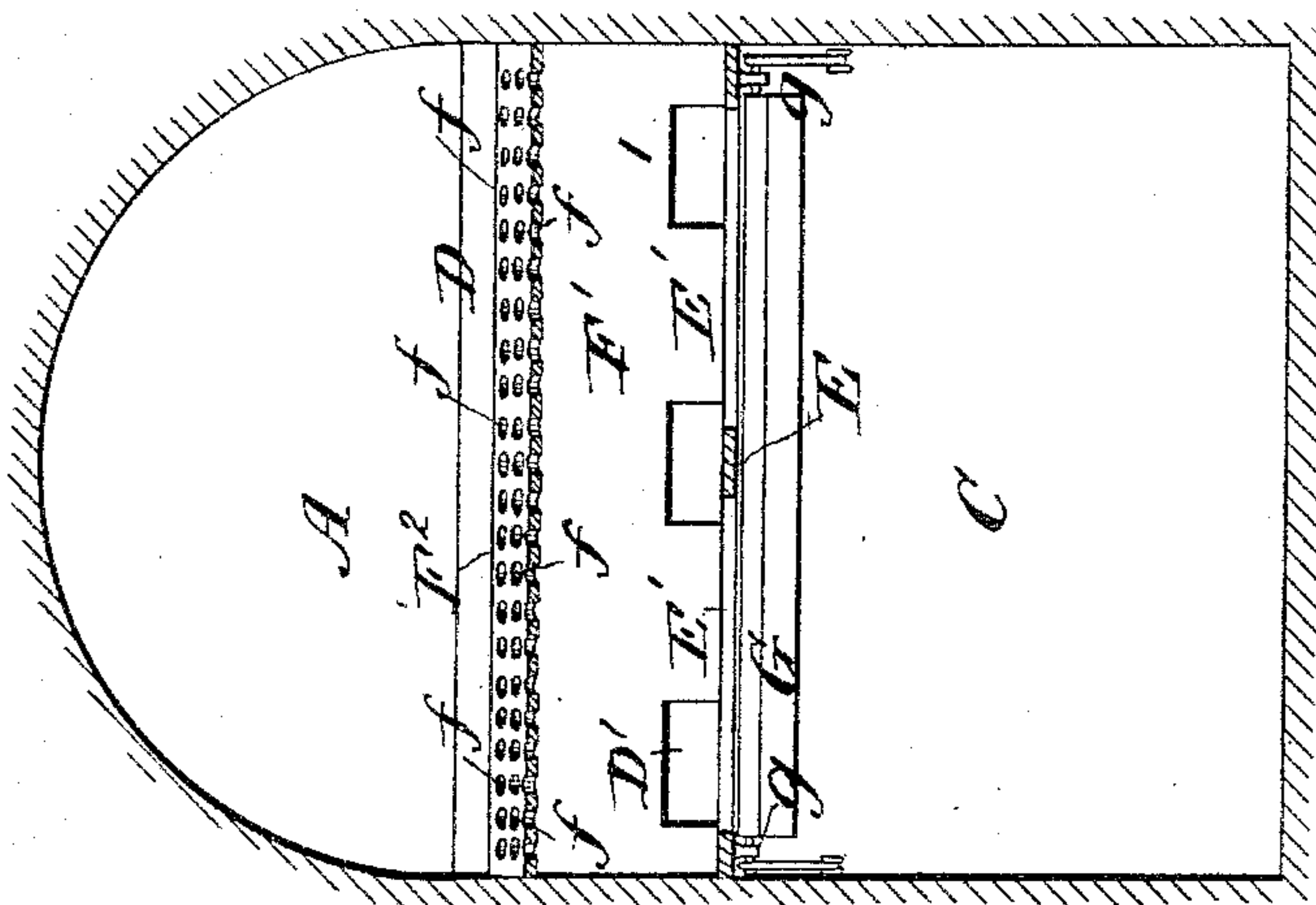
(No Model.)

E. DOBSON.
SMOKE CONSUMER.

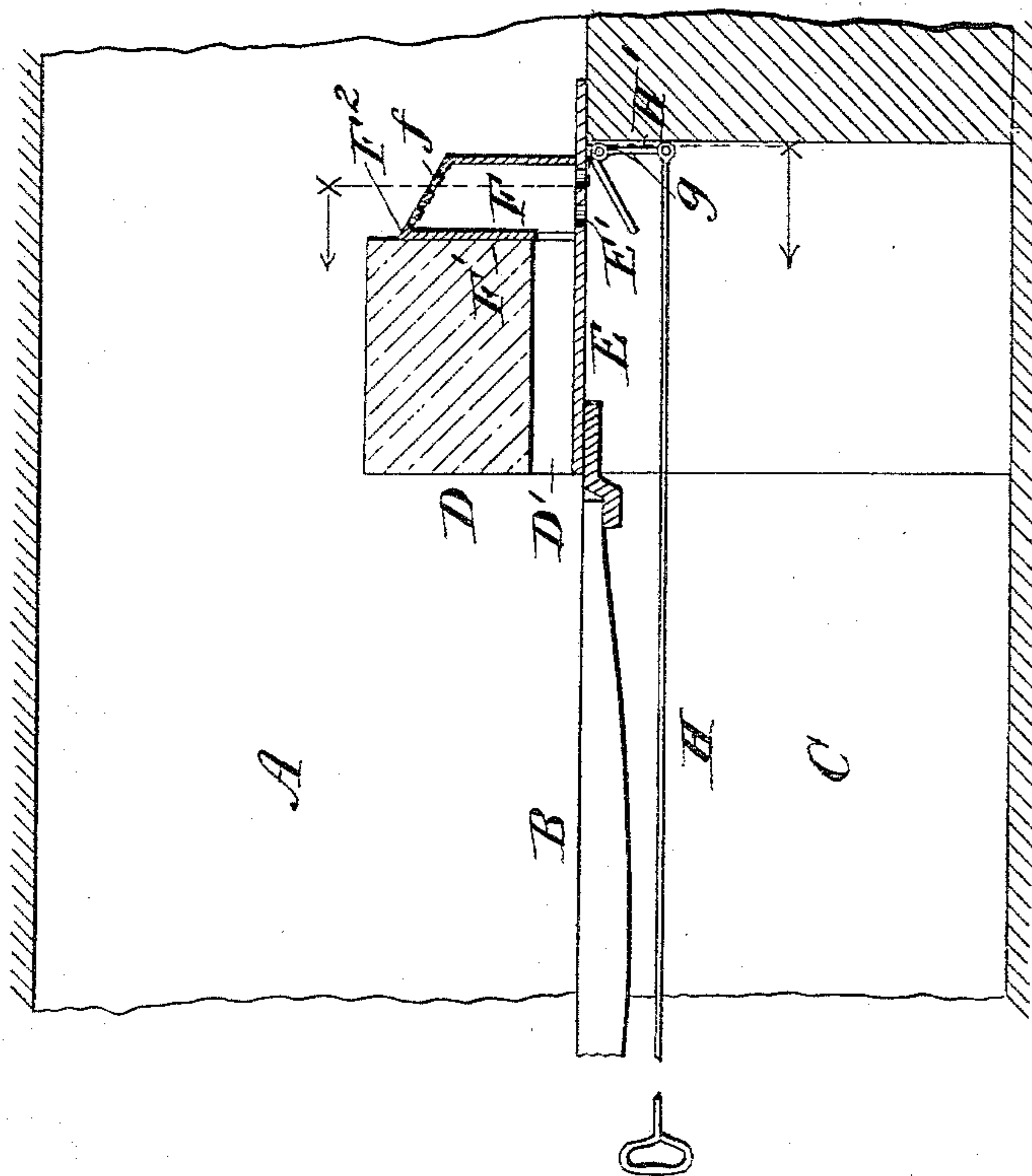
No. 387,866.

Patented Aug. 14, 1888.

— Fig. 2 —



— Fig. 1 —



Witnesses.

Wm. P. Heath
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Inventor,

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By his Attorneys

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UNITED STATES PATENT OFFICE.

EDWARD DOBSON, OF MONTREAL, QUEBEC, CANADA, ASSIGNOR OF ONE-HALF TO DANIEL MCKINNON BRODIE, OF SAME PLACE.

SMOKE-CONSUMER.

SPECIFICATION forming part of Letters Patent No. 387,866, dated August 14, 1888.

Application filed November 18, 1887. Serial No. 255,545. (No model.) Patented in Canada October 3, 1887, No. 27,732.

To all whom it may concern:

Be it known that I, EDWARD DOBSON, of the city of Montreal, in the district of Montreal and Province of Quebec, Canada, have
5 invented certain new and useful Improvements in Smoke-Consumers, (for which I have obtained a patent in Canada, dated October 3, 1887, No. 27,732;) and I do hereby declare that the following is a full, clear, and exact
10 description of the same.

The object of my invention is to provide an apparatus which, when placed within a fire-chamber, will, without diminishing the draft of the fire or increasing the consump-
15 tion of fuel, insure the complete burning of the usually wasted products of combustion and the utilization of an increased amount of the heat evolved.

I propose to place in rear of the bridge and
20 on the same level as the dead-plate (which will form the bottom of it) an air-chamber running the full width of the furnace. Into this chamber air is admitted from the ash-pit through one or more openings, its admission
25 being regulated or cut off by means of a damper. From this chamber the air passes by a large number of very small openings through the top plate, which is preferably set obliquely to the rear.

30 By the operation of the apparatus, as just described, the warmed air from the ash-pit which has not passed up through the grate and fuel upon it is taken into the air-chamber and, passing through the top, is brought
35 in minute streams in contact with the products of combustion directly they have passed over the bridge, igniting those particles which by the usual construction of furnace are liable to be carried off unconsumed, and
40 effecting nearly the entire combustion of the carbon.

For full comprehension of the invention reference must be had to the annexed drawings, forming part of this specification, in
45 which—

Figure 1 is a longitudinal sectional elevation through part of a furnace embodying my invention; and Fig. 2, a transverse section on line *x x*, Fig. 1, looking in the direction indi-
50 cated.

Similar letters of reference indicate like parts.

A is the fire-chamber proper, B the grate, C the ash-pit, and D the bridge, all of any usual construction.

E is the dead-plate, having formed in it in such a position as to be in rear of the bridge one or more openings, *E'*.

F is a box or chamber placed immediately in rear of the bridge in such a position as to
60 be over the openings *E'*. In its front plate, *F'*, are formed openings corresponding to openings *D'* in the bridge.

F² is the top plate of the chamber F, in it being formed the largest possible number of
65 small apertures, *f*.

G is a damper, hinged to lugs *g*, formed on the dead-plate, and provided with any suitable means by which it can be closed or the extent of its opening regulated from outside
70 the furnace.

In the drawings a rod, H, is shown, operated by a handle and connected with an arm, *H'*, pivoted to the spindle of the damper G.

It will be seen from the above that the air-
75 admitted into the ash-pit which does not pass up through the grate and incandescent fuel must enter the chamber F and pass out of it in comminuted streams, mingling with the products of combustion at their most heated
80 stage.

What I claim is as follows:

In a furnace, and in combination, the bridge-wall resting upon the dead-plate and perforated at level of same, an air-heating chamber,
85 also resting on dead-plate at rear of bridge-wall, communicating through the perforations in same with fire-grate, so that an amount of hot air, gases, &c., from the fuel can enter it, and having an inclined foraminous top, open-
90 ings formed in the dead-plate to admit air from the ash-pit into said air-heating chamber, and a damper controlled from the outside of furnace to regulate the flow of air from the ash-pit to said chamber, as set forth.

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Witnesses:

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