

No. 722,940.

PATENTED MAR. 17, 1903.

G. BOULLET.

MEANS FOR CONSUMING SMOKE.

APPLICATION FILED NOV. 25, 1901.

NO MODEL.

Fig. 1.

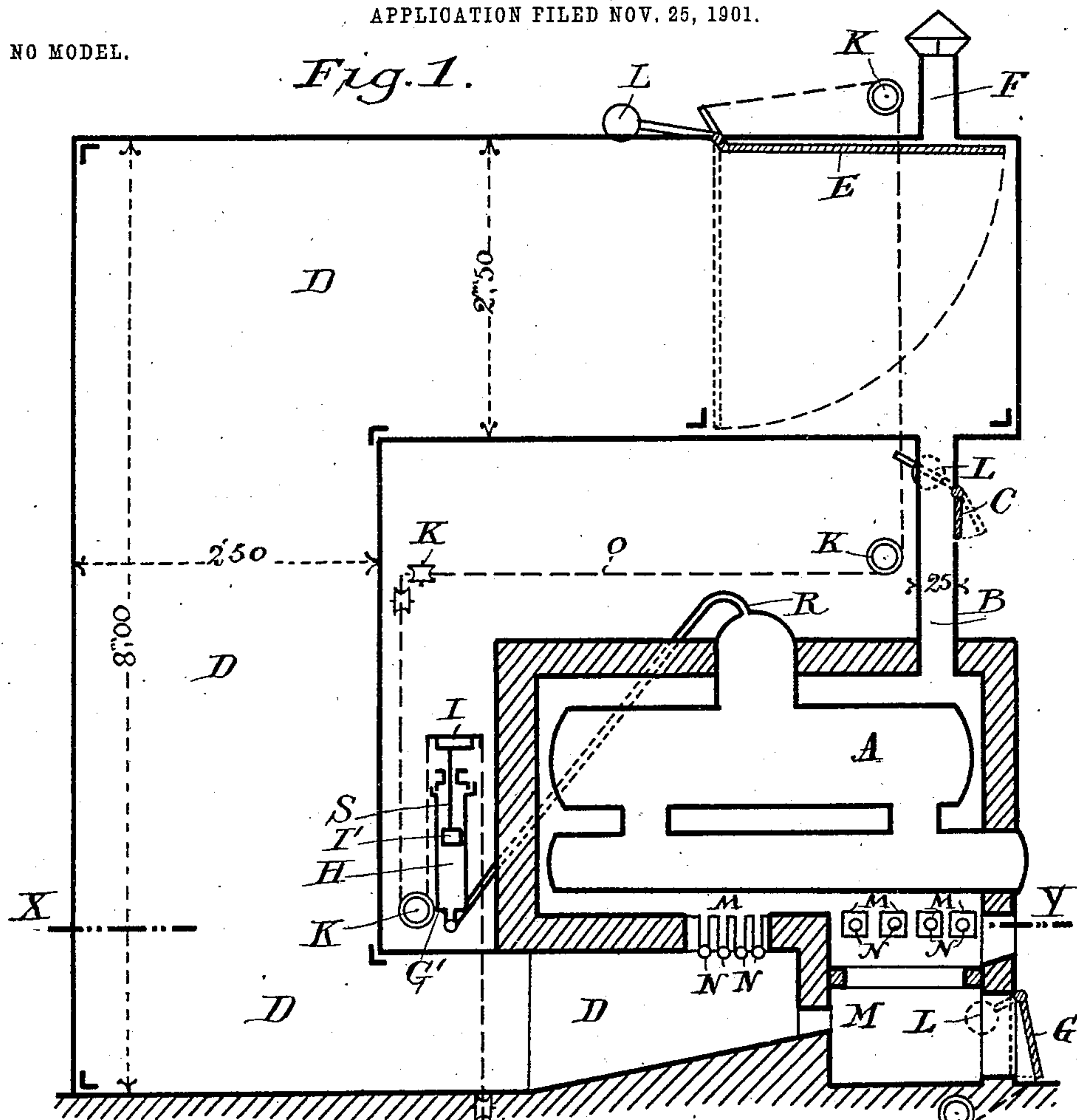
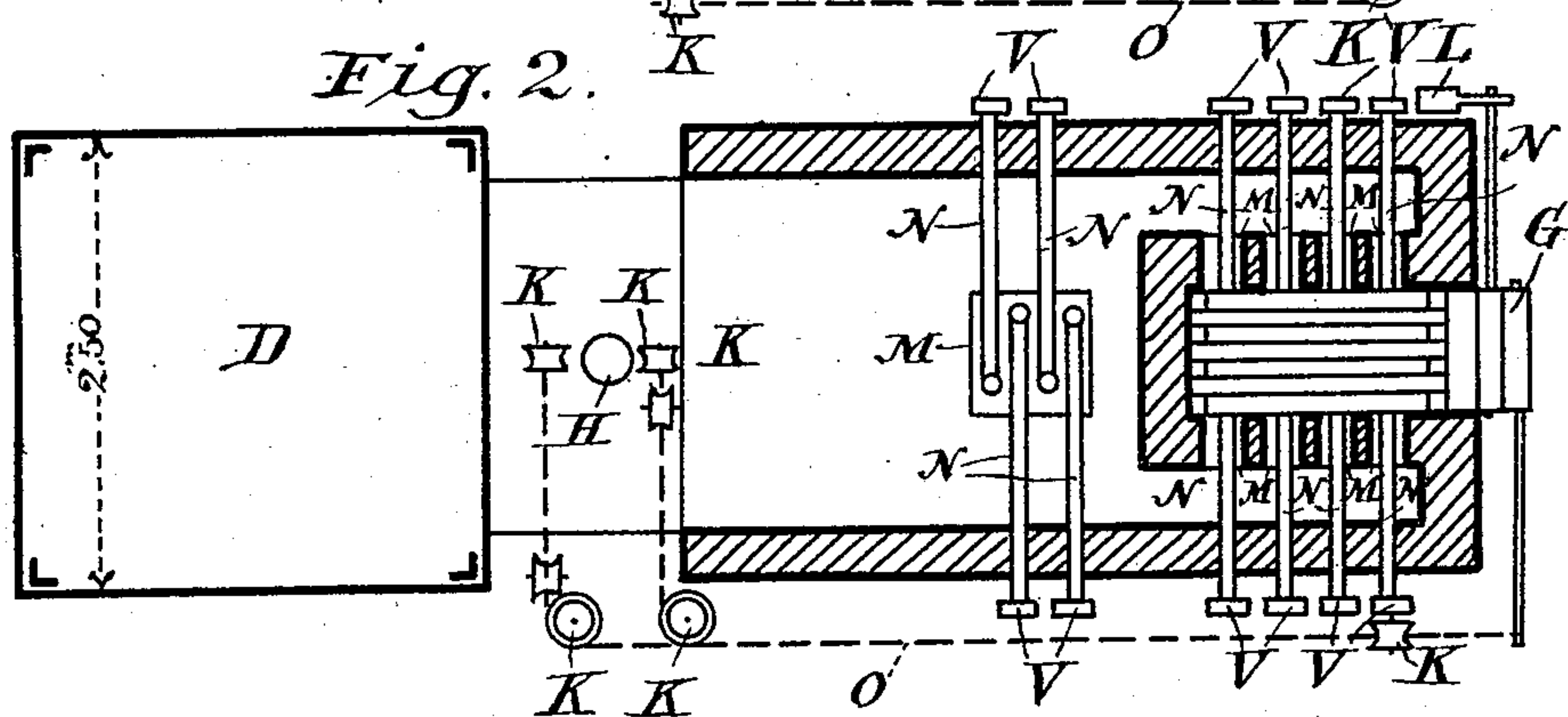


Fig. 2.



Witnesses:

E. B. Roltton

Adelaide Claire Gleason.

Inventor:
Georges Baullet

By *Richardson*
his Attorneys.

UNITED STATES PATENT OFFICE.

GEORGES BOULLET, OF PARIS, FRANCE.

MEANS FOR CONSUMING SMOKE.

SPECIFICATION forming part of Letters Patent No. 722,940, dated March 17, 1903.

Application filed November 25, 1901. Serial No. 83,678. (No model.)

To all whom it may concern:

Be it known that I, GEORGES BOULLET, expert in chimney-building, of 35 Rue de la Jonquiére, in the city of Paris, Republic of France, have invented Improved Means for Consuming Smoke, of which the following is a full, clear, and exact description.

This invention relates to improved means for consuming smoke and is based upon the principle of natural siphonage, which takes place whenever two fluids, either both of the same nature or each of a different nature, are not at the same temperature, in which case the fluid which has the higher temperature draws up the fluid which has the lower temperature.

This improved apparatus is applicable to any kind of generator without need of making any change whatever in the constituent parts, the power, or the type of the said generator, whether the latter be heated by coals or otherwise.

The invention is capable of various applications and enables high brick chimneys to be dispensed with. It can be applied to movable steam-engines, to locomotives, to all furnaces which are movable, as well as to those which are a fixture, such as heating apparatus, kitchen-ranges, furnaces at works, and the like.

The same invention can be applied to the ventilation of hospitals, the fireplaces having nowhere to take the air from except the rooms to be ventilated for the incineration of noxious matters and microbes. It can likewise be applied to furnaces for calcining refuse.

I will describe the invention with reference to the accompanying drawings, which, by way of example, shows the improved device as applied to a steam-generator, although I distinctly desire it to be understood that the improved device is not limited to such application.

Referring to the drawings, Figure 1 is a longitudinal section of a steam-generator fitted with a device embodying this invention. Fig. 2 is a section of the same, taken on line X Y of Fig. 1.

In the drawings, A represents a steam-generator, and B the outlet for the smoke into the improved apparatus.

C is a valve, and D represents the recuperating-chambers, (or receivers.)

E is a movable valve.

F is the chimney or funnel for the exhaust of the burned-up gases.

G is the door of the ash-pit, which can be closed so as to be air-tight.

H is the automatic regulator.

I is a weight for loading the regulator when it is desired to work at a higher pressure.

K represents guide-pulleys.

L represents counterweights.

M represents inlets for the gas into the fire-box.

N represents blowers of atmospheric air.

O represents chains for the working of the valves.

V represents screws for regulating the ingress of the air into the blowers.

The operation of the improved device is as follows: When the lighting of the fire has been effected in the usual manner, the valves E and C are closed, the valve G half opened. The smoke and the products of combustion are diffused into the recuperating-chambers (or receivers) D, which are calculated so as to be able to contain the products of the coal of the lowest qualities. The said products are then brought back to the fire-box in consequence of the siphonage caused by the difference in the temperature of the fluids, and at that moment the fuel is heated, the fire being clear and the caloric of the gases being considerably increased by the air-blowers M, which act as blowpipes. The overproduction of steam would, however, cause the boiler to explode, were it not for the adjunction of the automatic regulator H, which at once stops the draft of the fire-box by closing, by means of chains and pulleys, the ash-pit G and the smoke-chambers and the latter by means of the valve E, which opens the exhaust-funnel F. The air-valve C also opens at the same time. This regulator, which is automatic, is composed of a cylinder G' and a piston I', put into action by the steam coming from the nozzle R, the piston-rod S being susceptible of being loaded at I at will and according to requirements, so as to work with a higher pressure. The pressure returning to its normal state, each constituent part

assumes its original position for the next feeding of the furnace.

The improved device can be constructed with one or several outlets or with one or 5 several inlets, according to requirements.

Among the advantages which are offered by the apparatus may be mentioned the suppression of the smoke and of the smells and a saving of more than thirty per cent. in the 10 fuel.

I claim—

In combination with a boiler and furnace, a chamber D, an outlet leading therefrom, a valve E controlling the said outlet, a valve C

between the chamber and the furnace controlling the inlet of air to the outgoing products of combustion, said chamber being connected at its lower end with the furnace and a regulator connected with the valves E and C, and a connection to the said regulator from 15 the said boiler, substantially as described. 20

The foregoing specification of my improved means for consuming smoke signed by me this 2d day of October, 1901.

GEORGES BOULLET.

Witnesses:

J. ALLISON BOWEN,
ORDE MOSENTHAL.