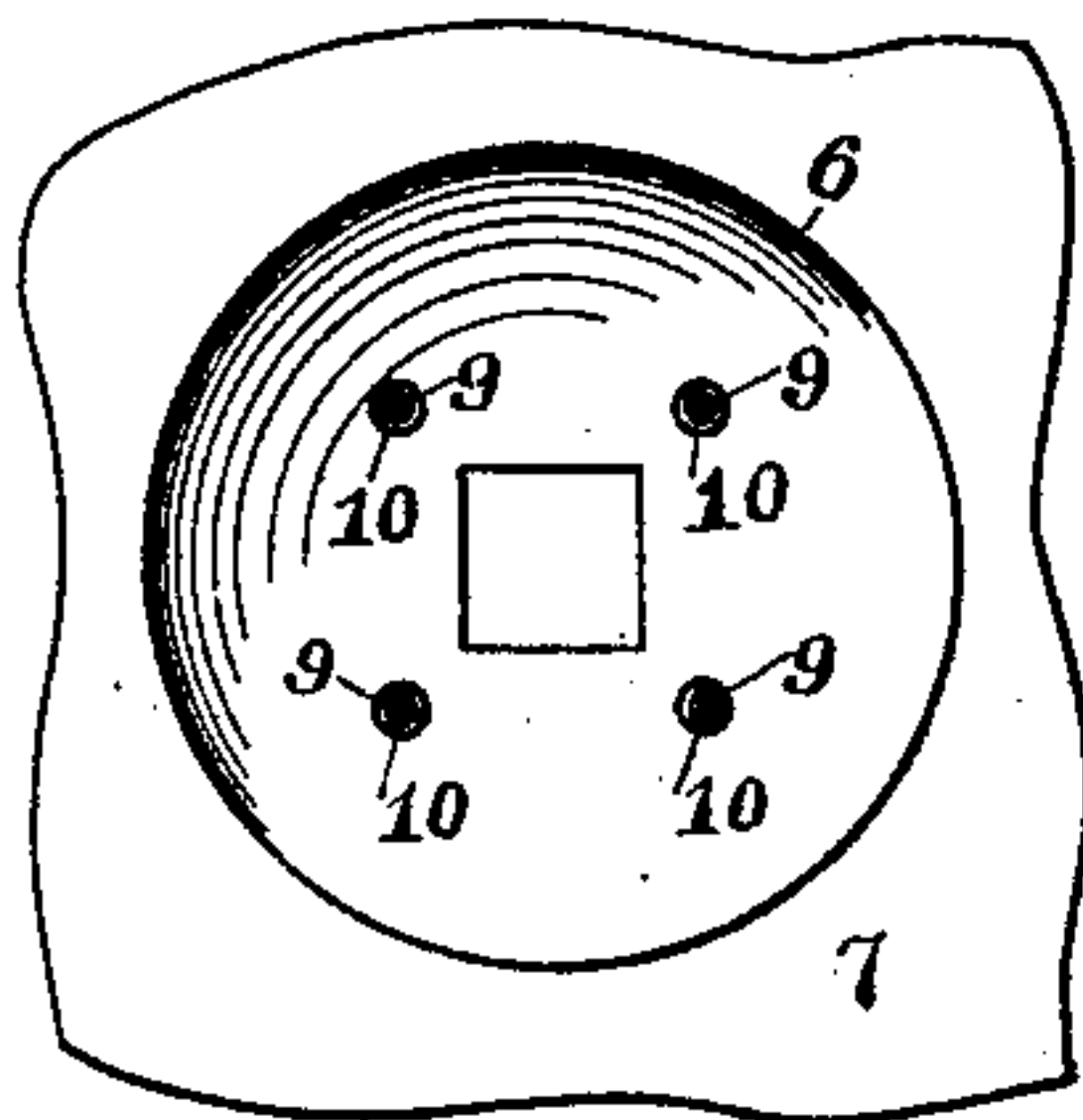
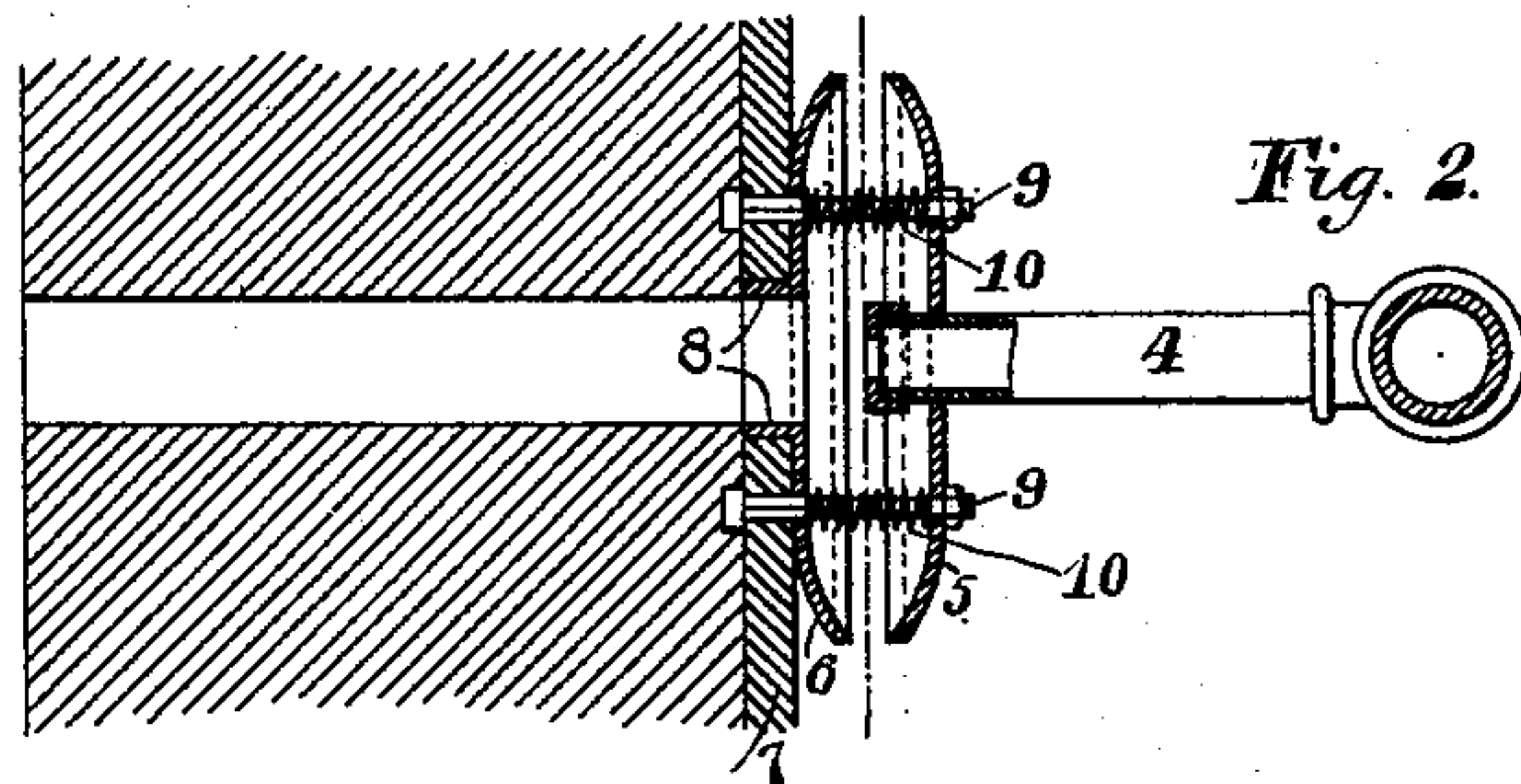
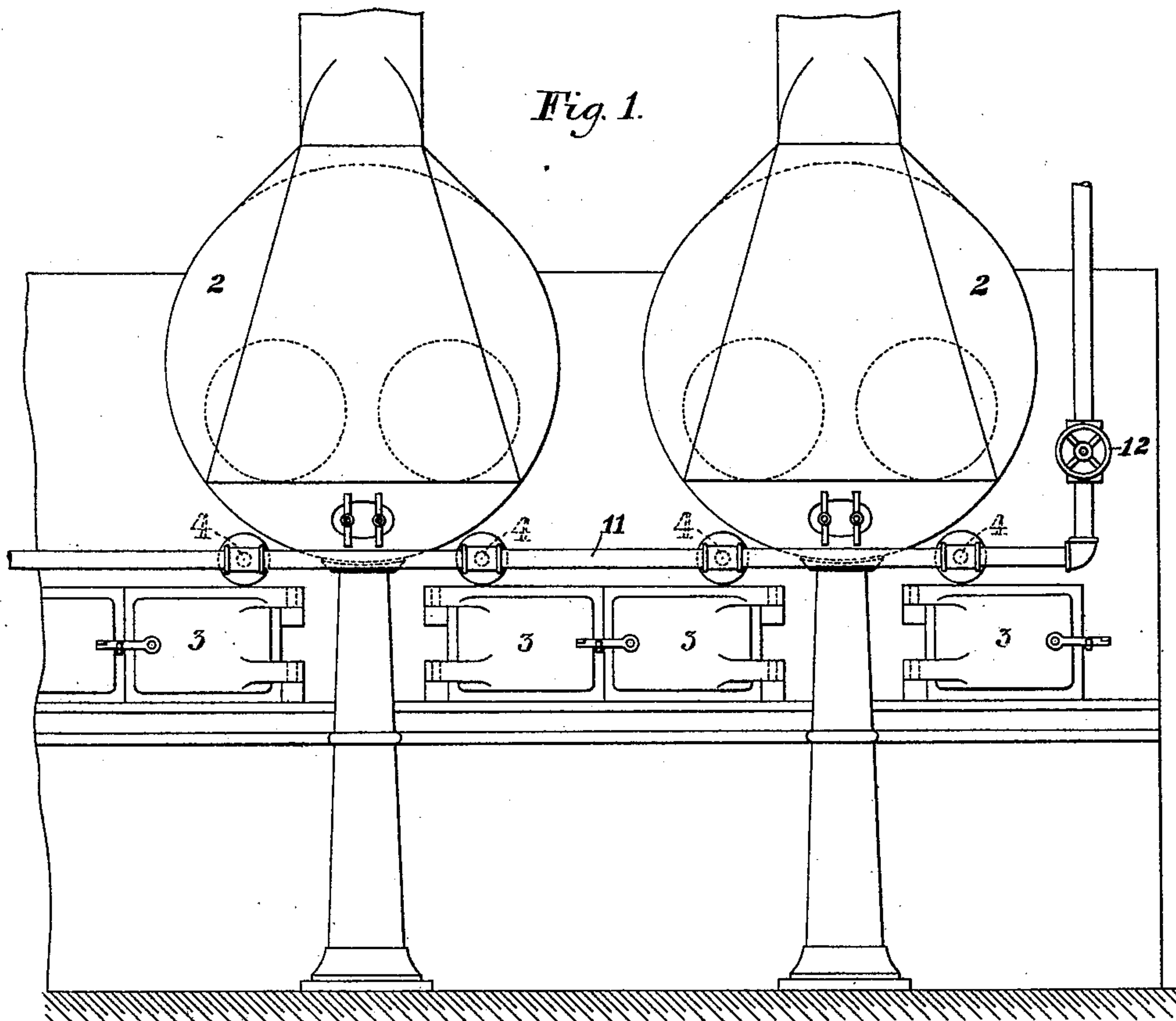


(No Model.)

T. GUNNING.
SMOKE CONSUMER.

No. 482,124.

Patented Sept. 6, 1892.



WITNESSES

W. M. Corvick
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UNITED STATES PATENT OFFICE.

THOMAS GUNNING, OF PITTSBURG, PENNSYLVANIA.

SMOKE-CONSUMER.

SPECIFICATION forming part of Letters Patent No. 482,124, dated September 6, 1892.

Application filed May 19, 1892. Serial No. 433,540. (No model.)

To all whom it may concern:

Be it known that I, THOMAS GUNNING, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Smoke-Consumers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevation of a battery of boilers provided with my improved smoke-consumer. Fig. 2 is a vertical sectional view through one of the injectors employed, and Fig. 3 is a front view of the inner plate employed.

My invention relates to that class of smoke-consumers wherein cold air is injected through the front casing of the furnace over the burning fuel to unite with and consume the smoke arising therefrom; and it consists in an improved means for regulating the supply of air forced in, as hereinafter more fully described, and set forth in the claims.

In the drawings, in which similar numerals indicate corresponding parts, 2 represents the boiler, 3 3 the firing-doors, and 4 4 the injectors above the doors. Each injector projects through a circular dished plate 5, which is supported upon bolts 9, passing through a second similar plate 6 and through the casing 7 of the boiler. The plate 6 is centrally perforated and is provided with inwardly-extending flanges 8 about the hole, these flanges fitting closely within the registering hole in the casing. The bolts 9, which are headed inside the casing, are squared in cross-section where they pass through the casing and provided with nuts upon their outer ends. Spiral springs 10 surround each of the bolts between the dished plates and force the plates apart, and by turning the outer nuts upon the bolts the amount of air drawn in may be nicely regulated, the plate 5 moving back and forth upon the injector 4. A steam-main 11 extends in front of the row of boilers, from which

main the injectors 4 lead, and a valve 12 at one end controls the supply of steam to the injectors.

The action of the device is obvious. The steam passing out of the injectors draws in air between the plates and forces it into the combustion-chamber above the burning fuel. This air unites with the smoke rising from the fuel and burns therewith, producing an intense heat and almost entirely doing away with the emission of smoke from the chimneys.

Many changes may be made in the form and arrangement of the parts without departure from my invention.

What I claim is—

1. A furnace having a hole through its front casing, a perforated dished plate secured to the casing, a second dished plate adjustably held in front thereof, and an injector projecting into the space between the two plates, substantially as and for the purposes described.

2. A furnace having a hole or holes in its front casing, perforated dished plates secured at the front of the holes, dished plates supported upon bolts passing through the first-named plates, and injectors passing through the outer plates into the space between the two, substantially as and for the purposes described.

3. A furnace having a hole or holes in its front casing, perforated dished plates secured at the front of the holes, dished plates supported upon bolts passing through the first-named plates, spiral springs surrounding the bolts, and injectors passing through the outer plates into the space between the two, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 13th day of May, A. D. 1892.

THOMAS GUNNING.

Witnesses:

H. M. CORWIN,
C. BYRNES.