

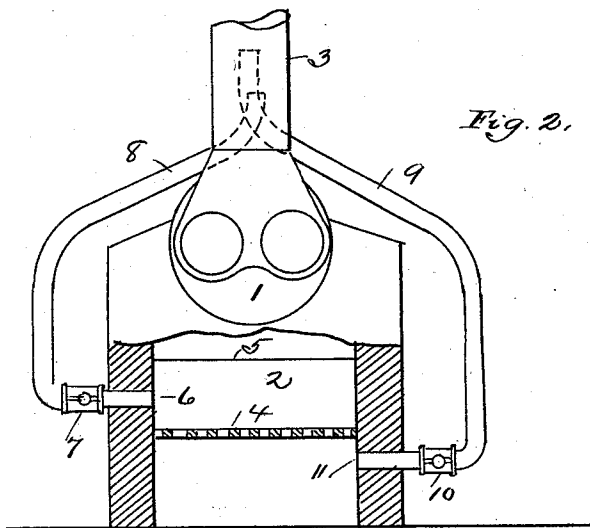
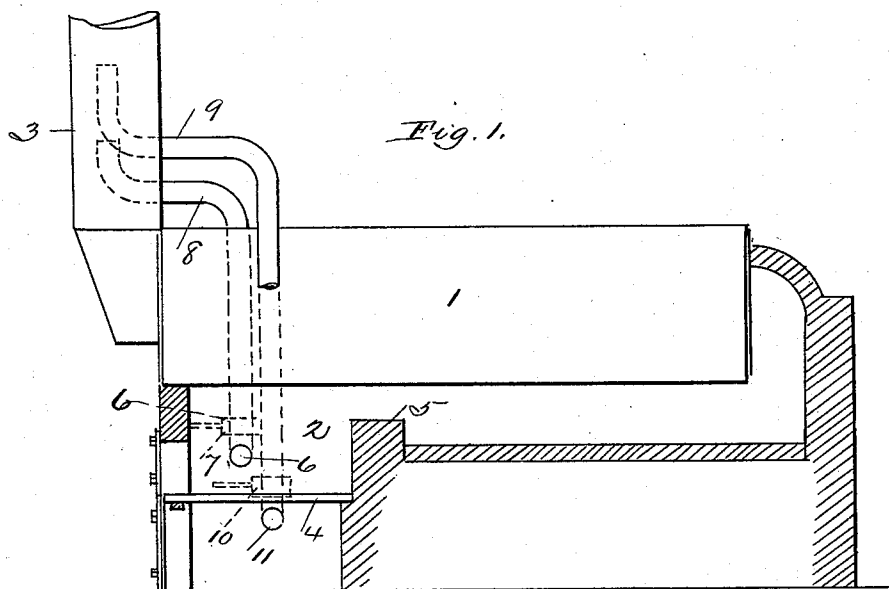
(No Model.)

J. A. CRAWFORD.

SMOKE CONSUMING APPARATUS FOR FURNACES.

No. 539,768.

Patented May 21, 1895.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JOHN A. CRAWFORD, OF ALLEGHENY, PENNSYLVANIA.

SMOKE-CONSUMING APPARATUS FOR FURNACES.

SPECIFICATION forming part of Letters Patent No. 539,768, dated May 21, 1895.

Application filed February 24, 1893. Renewed April 27, 1895. Serial No. 547,432. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. CRAWFORD, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Smoke-Consuming Apparatus for Furnaces; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improved fuel saving and smoke consuming device for furnaces, and consists in certain details of construction, and combination of parts, as will be fully described hereinafter.

In the accompanying drawings, Figure 1 is a side sectional elevation of a boiler-setting having my improved device attached thereto. Fig. 2 is a front elevation, partly in section, of the same.

To put my invention into practice I use a boiler setting, consisting of the boiler 1, the fire chamber 2, the grate bars 4, and bridge wall 5. Beneath the grate bars 4 I connect a pipe 11 of a suitable size and length, and provide the same with a valve or damper 10, and extend the said pipe by means of another 9 upward, and terminate the same within the draft stack 3, at a point some distance above the boiler 1. Connected to and in communication with the fire chamber 2, at a suitable point above the grate bars 4, is another pipe 6 similar to that 11 above described, having a damper 7, and extension 8, which terminates within the draft stack at a point some distance below that of the pipe 9.

This apparatus will be found useful when

starting the fire beneath the boiler, as a direct draft may be obtained to the stack by closing the damper 10, and opening the damper 7, thereby forming a quick acting draft. By thus arranging the pipe 9 to extend above the other 8, the one will have a superior draft over the other, and may be used to check or retard the combustion in the fire chamber by drawing the air from beneath the fire, and at the same time drawing the smoke down through the fire to consume the same, and also to prevent too rapid combustion of the fuel.

Good results may be obtained by terminating the pipe 9 at a point near the floor, outside of and independent of the ash-pit, as a counter draft may be obtained to the stack when the valve 10 is open, to prevent a rapid consumption of the fuel in the fire chamber 2.

By manipulating the dampers the smoke may be partly or altogether consumed.

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

In a device for the purpose described, the combination consisting of the fire chamber 2 the pipe 6 leading therefrom the damper 7, and pipe 8 terminating in the draft stack 3, the pipe 11 having its entrance below the level of the grate bars 4, the damper 10 and extension 9 entering the draft stack 3, and terminating above the pipe leading from the fire chamber 2, all arranged and combined for service, substantially as and for the purpose described.

In testimony that I claim the foregoing I hereunto affix my signature this 9th day of February, A. D. 1893.

JOHN A. CRAWFORD. [L. S.]

In presence of—

M. E. HARRISON,
ALBERT J. WALKER.