

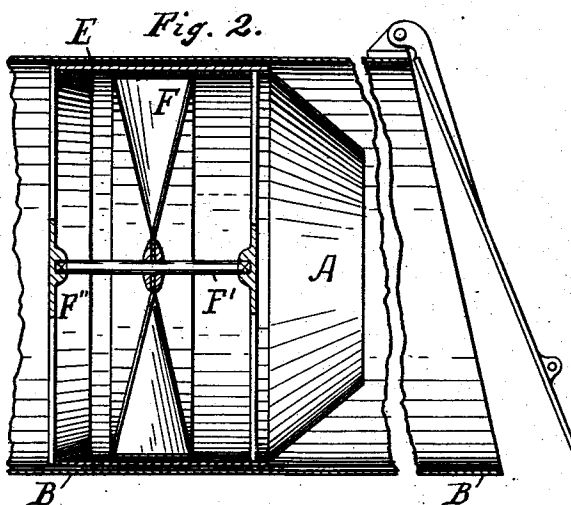
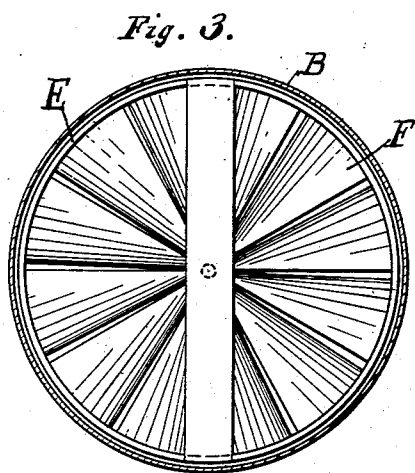
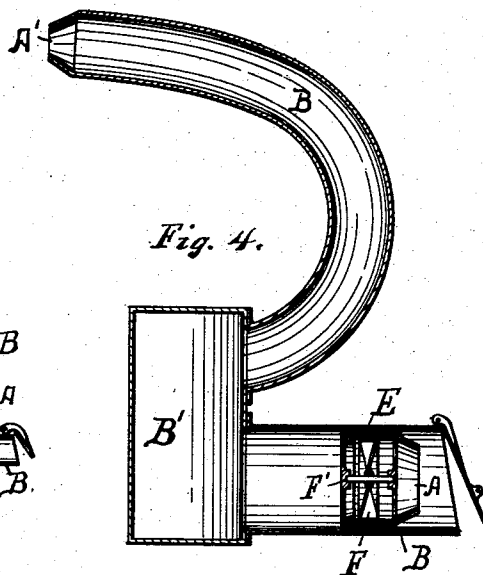
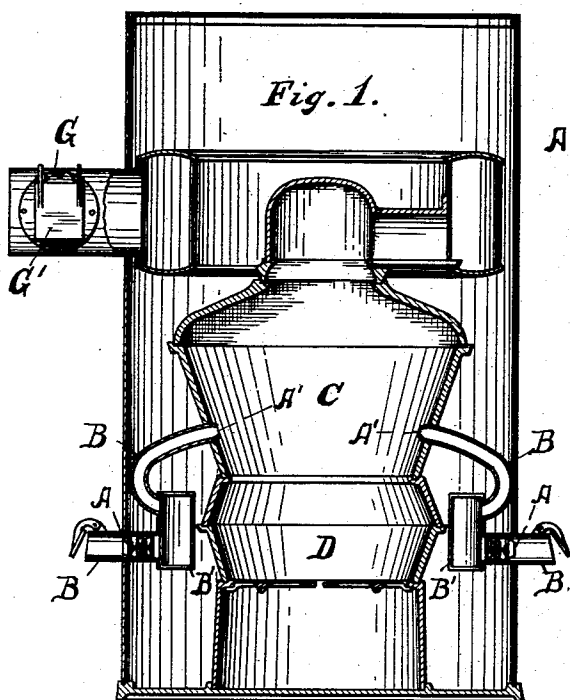
(No Model.)

A. JAHANT.

DRAFT ATTACHMENT FOR FURNACES.

No. 569,204.

Patented Oct. 13, 1896.



Witnesses
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UNITED STATES PATENT OFFICE.

AUGUSTUS JAHANT, OF AKRON, OHIO, ASSIGNOR OF ONE-HALF TO JOHN C. WEBER, OF SAME PLACE.

DRAFT ATTACHMENT FOR FURNACES.

SPECIFICATION forming part of Letters Patent No. 569,204, dated October 13, 1896.

Application filed June 15, 1896. Serial No. 595,667. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS JAHANT, a citizen of the United States, and a resident of the city of Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Draft Attachments for Supplying Air to the Fire-Boxes of Furnaces or Stoves, of which the following is a specification.

10 The nature of my invention pertains to devices for controlling and directing the current of air to the fire-chamber of stoves or furnaces by means of two funnel-shaped attachments, one of which, for the induction, is
15 placed at the air-receiving end of the draft-flue and operates in connection with self-rotating vanes that intercept and impart a centrifugal action to the current of inflowing air which passes through the same, the other, for
20 the eduction, being placed at the end of the draft-flue near where it enters the combustion-chamber, the outlet through which the air flows into the fireplace being much smaller than the same in the air-receiving attachment,
25 thereby regulating and controlling the air as it enters the combustion-chamber and causing it to more readily mix and distribute itself within the fire-chamber to effect a more perfect combustion and consumption of the
30 inflammable gases, as will hereinafter be more fully set forth.

In order to enable others skilled in the art to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 represents a vertical section of a furnace with my invention attached thereto; Fig. 2, a side view of the receiving end of the
40 draft-flue; Fig. 3, an end view of the self-rotating vane. Fig. 4 represents the attachments placed within the draft-flue of a hot-air overdraft-furnace.

In the drawings, A represents the induction
45 funnel-shaped attachment at the air-receiving end of the draft-flue; A', the eduction funnel-shaped attachment placed at the end of the draft-flue near where it enters the combustion-chamber; B, the furnace draft-flues;
50 B', the draft-air-heating chamber; C, the fire-chamber; D, the fire-box; E, the attachment-

supporting frame; F, revolving vanes; F', the axle thereof. F'' is a flange or shield or projecting inner surface placed within the attachment-supporting frame E to protect
55 the rotary vanes from dust or obstructions; G, the smoke-pipe check; G', its door.

My invention is equally applicable to the use of hot or cold air and to the draft-flue locating above or below the fire, and can be
60 attached to any furnace. One or more may be used in connection therewith.

The vanes are secured obliquely to a central shaft which is free to revolve in its supporting-frame that is inserted within the flue,
65 which may have the ordinary sliding or hinged closing or regulating door.

My device is adapted to be inserted within any form of draft-flue, and by the use thereof I am enabled to control and regulate the
70 inflowing air that supplies the oxygen to maintain a uniform combustion while a moderate amount of heat is evolved, which is of a uniform character and maintains the fire for a much longer period of time, and complete
75 and perfect combustion is insured, and that portion of the fuel which by the ordinary process escapes combustion and is carried up by the current of hot air and known as "soot" is entirely consumed, which economizes fuel,
80 and I am enabled to utilize the greater proportion of the total heat obtained in the combustion of the fuel and prevent its being carried off by the escaping gases, as is the case when the force of the draft is admitted directly
85 into the fire-chamber.

The combustion of the fuel is increased or diminished by the force of the draft on the fire; but my device regulates the supply and
90 furnishes only a moderate quantity of oxygen as it is demanded and disseminates it throughout the fire-chamber, and thus produces the most perfect combustion and secures an even regular heat thereby and conduces to great economy in the use of fuel.

The draft being regulated and controlled
95 enters the fire-chamber uniformly and does not chill the heat that is being evolved, and a more uniform temperature is maintained within the combustion-chamber.

The smoke-pipe is provided with the check-draft-regulating door operating in the usual
100

well-known manner, and when said door is raised the inflowing draft and consequently the rapidity of movement of the rotary vanes is decreased.

5 By the use of my device what is termed "slack" coal can be burned without any of the objections commonly prevailing against its use as a fuel, as the gases generating in the fire-box are entirely consumed, thus preventing the usual smoke and soot caused by
10 the formation of the carbonic oxid of gas, as it facilitates regular combustion and consumption of the gases arising in combustion, and the slack coal becomes a coke, the bitumen and sulfur having been gradually and
15 perfectly consumed, at which stage of combustion the drafts may be entirely closed or checked, and the now coked fuel will retain its heating properties in the ordinary process
20 of combustion, while the furnace and flues and chimney are free from soot deposit.

In burning anthracite or hard coal the application of my device insures an economical consumption of fuel and maintains a more
25 regular fire and uniform production of heat than any of the draft appliances ordinarily used and saves a large per cent. of the coal.

The use of my device in connection with my hot-air overdraft-furnace, as shown in
30 Fig. 1, in which the cold air enters the draft-air-heating chamber B', and after it is heated enters the fire-chamber above the fire to secure a downdraft, produces desirable results, as heretofore stated, and I find it to be a very
35 important improvement, enabling me to burn cheaper and inferior qualities of fuel without producing smoke or clinkers.

In some atmospheric conditions the revolving vanes may be omitted from the draft-flue

and favorable results secured by the use of 40 the funnel-shaped attachments.

I do not restrict myself to the funnel shape of the attachment, as it may be of any form and have the contracted opening.

Having thus described my invention, what 45 I claim, and desire to secure by Letters Patent, is—

1. In a heating-furnace the combination with the fire-chamber C, of the draft-flue B provided with the inclosed supporting-frame 50 E with its funnel-shaped induction attachment A, and the rotary vanes F, the flange or shield F'', said draft-flue B being also provided with the eduction funnel-shaped attachment A', the opening of which is smaller 55 than the opening of the induction attachment A operating substantially as shown and described.

2. In a heating-furnace the combination of the draft-flue B provided with the induction 60 attachment A and the eduction attachment A' as a means of supplying air to the combustion-chamber substantially as shown and described.

3. The draft-flue B provided with the at- 65 tachment-supporting frame E, its self-rotating vane F, and the flange or shield F'' operating substantially as shown and described.

4. The draft-flue B entering the furnace within the fire-chamber above the fire-box, 70 and having the single eduction attachment A' to contract the stream of air as it is discharged within the fire-chamber operating substantially as shown and described.

AUGUSTUS JAHANT.

Witnesses:

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