

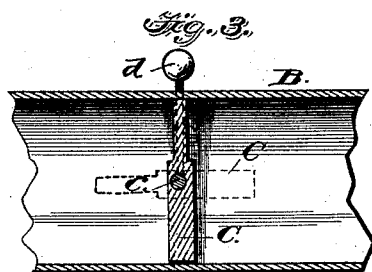
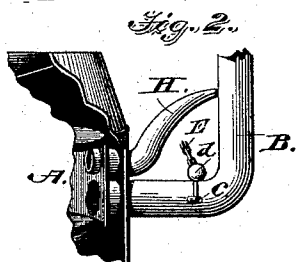
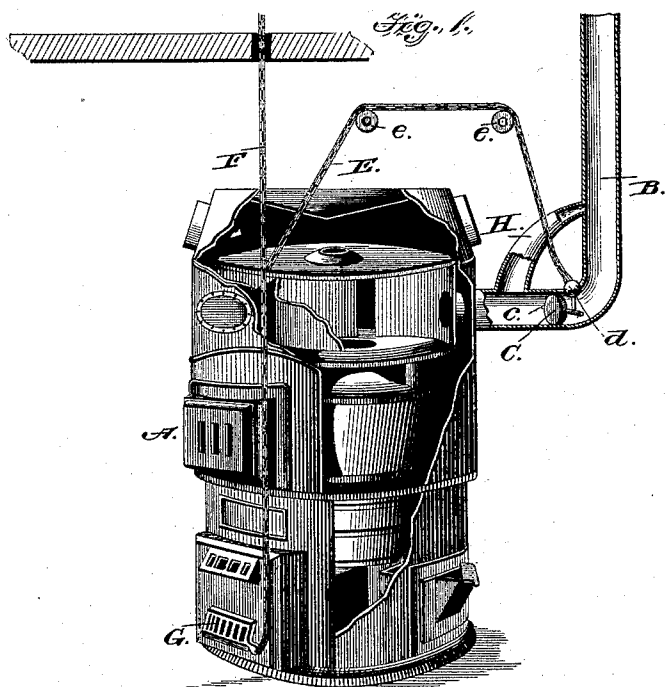
(No Model.)

J. MOAK.

ATTACHMENT FOR HEATING APPARATUS.

No. 487,192.

Patented Nov. 29, 1892.



Witnesses
Arthur L. Bryant

Inventor
Judson Moak
By *his* Attorneys
Edmond P. Biss

UNITED STATES PATENT OFFICE.

JUDSON MOAK, OF UTICA, NEW YORK.

ATTACHMENT FOR HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 487,192, dated November 29, 1892.

Application filed January 7, 1892. Serial No. 417,290. (No model.)

To all whom it may concern:

Be it known that I, JUDSON MOAK, a citizen of the United States, residing at Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Attachments for Heating Apparatus; 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 appertains to make and use the same.

My invention relates to an attachment for heating apparatus; and the objects of the invention are, first, to provide means by which only a small portion of the heat generated is allowed to pass out through the smoke-exit of the apparatus, and, secondly, to so control the draft that a steadier fire can be maintained and less gas allowed to escape than in a heater of ordinary construction.

With these ends in view my invention consists in the combination, with a smoke pipe or conduit of a heater having a suitable damper therein, of a pipe or flue having its ends communicating with the smoke pipe or conduit on opposite sides of the damper therein.

My invention further consists in the peculiar construction and arrangement of parts, as will hereinafter be fully described and claimed.

In the accompanying drawings, Figure 1 is a view, partially in section, through a portion of a heating apparatus having my improvements applied thereto. Fig. 2 is a view of a modification. Fig. 3 is a sectional view through the smoke-pipe and damper.

Like letters of reference denote corresponding parts in the several figures of the drawing, referring to which—

A designates the heating apparatus of any ordinary or preferred kind, and B is the smoke pipe or conduit connecting the heater with the chimney in the ordinary manner.

Within the smoke pipe or conduit B, between the heater and the chimney, is arranged a damper C, which consists of a solid impermeable plate mounted on a shaft *c*, which extends transversely across the interior of the pipe or conduit B, in the walls of which said shaft is journaled. The damper C is of the same size as the interior of the pipe or con-

duit B, and when turned into a vertical position across such pipe it entirely closes the same against the passage of any smoke or gas. One end of the shaft *c* extends beyond the side of the pipe or conduit B, and to this extended end is attached a weight *d*, which lies parallel to the vertical axis of the damper when the same is moved into a vertical position across the pipe or conduit B.

The damper C on one side of the shaft *c* is made of greater thickness than on the opposite side of the supporting-shaft, and the tendency of this weighted or thickened side is to keep the damper C in a vertical position across the pipe B. This tendency of the plate or damper C to assume a vertical position across the smoke-passage is counterbalanced by the weight *d* on the end of the shaft *c* and a chain or cable E, which has one end connected to the shaft, and after passing over suitable guide wheels or pulleys *e* its other end is attached to a chain or cable F. One end of this latter cable is connected to the lower draft-door G and the other end extends through the ceiling of the room in which the apparatus A is situated, so that both the lower draft-door G and the damper C in the pipe B can be opened by a person in the room above.

H designates a pipe or flue which has its ends communicating with the interior of the pipe or conduit B on opposite sides of the damper C therein. This pipe or flue H is tapered longitudinally or of varying diameter throughout its length. The end of the flue H, which communicates with the interior of the pipe or passage B between the apparatus A and the damper C, is preferably made of the same diameter as the pipe B; but from that point to its other end it is made tapering, so that at the point where it enters the pipe B beyond the damper C it is only about one-fourth the size it is at the other end.

If desired, the larger end of the pipe or flue H can be passed directly through the casing or shell A into the combustion-chamber instead of being connected to the pipe B, the reduced end of such pipe communicating in both cases with the pipe or conduit B between the damper therein and the chimney.

The operation of my invention is as follows: By pulling the free end of the chain or

cable F the lower draft-door G is opened and the damper C turned into a horizontal position within the pipe B to establish a draft through the heater and the smoke-pipe. When the fire is well under way, the upper free end of the chain or cable F is loosened and the draft-door G closed, the weighted side of the damper C descends, and the weight ascends, throwing the damper entirely across the pipe B and cutting off all draft therethrough. When the damper in the pipe B is closed, the draft is through the pipe or flue H, and as this flue is contracted toward its outer end only a small portion of the heat escapes out into the chimney, and consequently a large proportion of the heat that ordinarily escapes is confined within the heater, and therefore more heat is obtained from a certain amount of coal and the fire requires less attention than is the case of ordinary heaters.

Though I have shown and described my improvements in connection with an apparatus in which both the lower draft and the damper in the smoke-pipe are designed to be operated simultaneously, yet I would not be understood as limiting myself to this combination of parts, as I am aware that my attachment can be used with equally-beneficial results in connection with heaters of different constructions. I also do not wish to be understood as limiting myself to any particular construction of damper or any particular heating apparatus, but reserve the right to make such changes and alterations in the embodiment of my invention as fairly fall within the scope thereof. I am also aware that my improve-

ments can be used to advantage on stoves and ranges and, in fact, on any kind of heating apparatus.

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

1. The combination, with a valved smoke-pipe of a heating apparatus, of an auxiliary tapering flue or pipe communicating with the combustion-chamber and with the smoke-exit pipe beyond the valve therein, whereby the products of combustion are carried through said auxiliary tapering flue and the draft reduced when the smoke-exit pipe is closed by the valve therein, substantially as described.

2. The combination, with the smoke-pipe of a heating apparatus, having a damper, of a tapering pipe or flue connecting the combustion-chamber of the apparatus with the smoke-pipe beyond the damper therein, substantially as described.

3. The combination, with a heater and its smoke-exit pipe, of a counterpoised damper in said pipe, an auxiliary pipe communicating with the smoke-exit pipe beyond the damper and with the combustion-chamber of the heater, and connections between the lower draft-door of the heater and the damper, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JUDSON MOAK.

Witnesses:

LIZZIE M. DAY,
JOHN P. DAY.