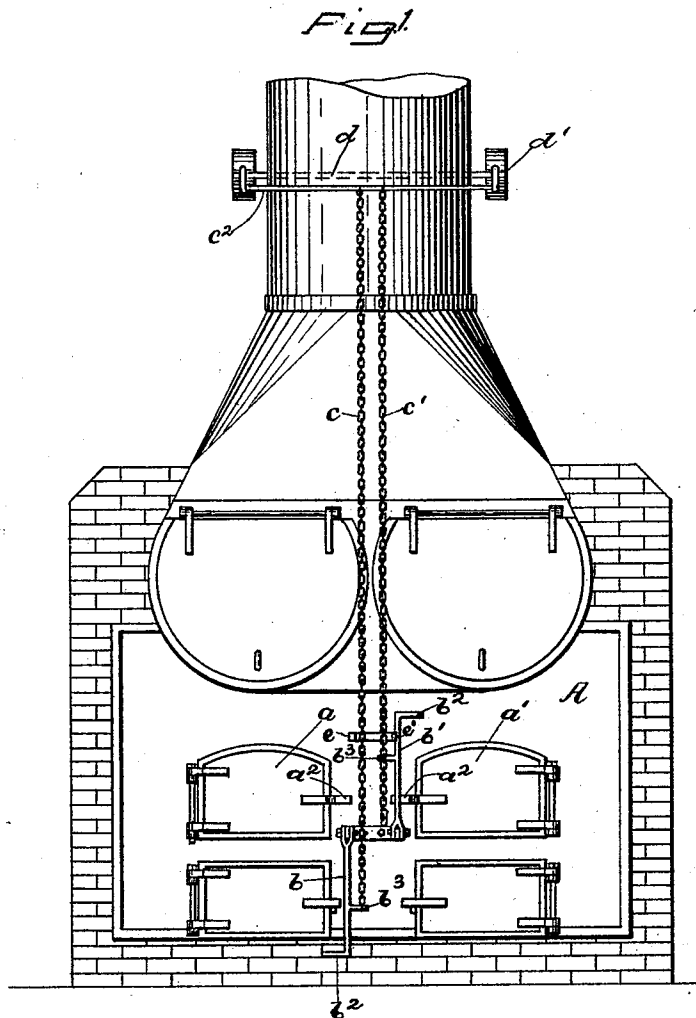


E. FALES.

DAMPER CONTROLLING MECHANISM FOR HEATING APPARATUS.

No. 498,251.

Patented May 30, 1893.



WITNESSES.

C. B. Rogers.
L. F. Graves.

INVENTOR.

Edward Fales.

by B. J. Hayes
att'y.

E. FALES.

DAMPER CONTROLLING MECHANISM FOR HEATING APPARATUS.

No. 498,251.

Patented May 30, 1893.

Fig. 2.

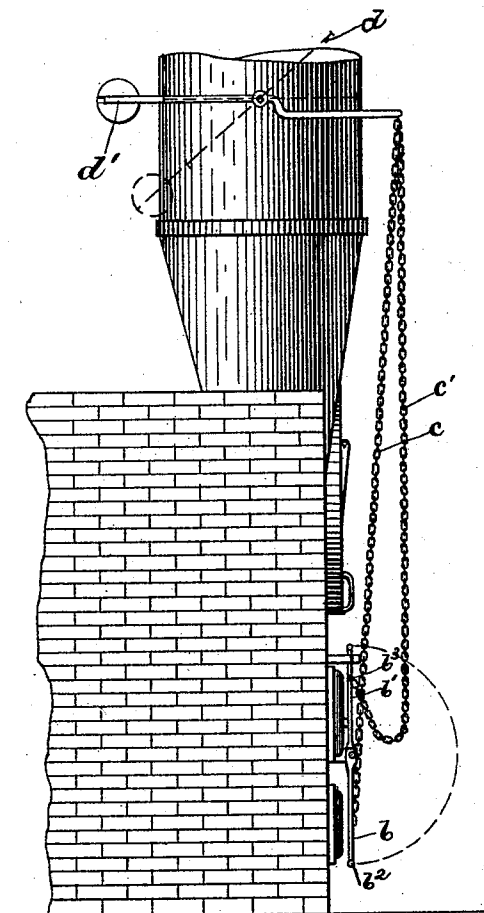


Fig. 3.



Fig. 4.

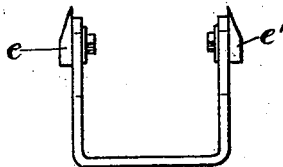


Fig. 5.



WITNESSES.

C. P. Crocker.
Lucy F. Graves.

INVENTOR.

Edmond Fales,
by B. J. Hayes,
Att'y.

UNITED STATES PATENT OFFICE.

EDWARD FALES, OF BOSTON, MASSACHUSETTS.

DAMPER-CONTROLLING MECHANISM FOR HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 498,251, dated May 30, 1893.

Application filed September 13, 1892. Serial No. 445,810. (No model.)

To all whom it may concern:

Be it known that I, EDWARD FALES, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Damper-Controlling Mechanism for Heating Apparatuses, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to provide a mechanism for controlling the operation of the damper of a heating apparatus of any form, whereby said damper will be closed before the door of the fire box is opened, thereby preventing a draft of cold air from entering said door, and driving the heated air up the flue, the tendency of which is to deaden the top of the fire or cool the tubes of the boiler.

In carrying out this invention the damper is designed to be moved in one direction by a weight or equivalent, as for instance to be opened, and to be moved in opposite direction as for instance, to be closed, by means of a lever or levers connected therewith by cords or chains, which levers in turn control the opening of the door or doors of the fire box.

Figure 1 shows in front elevation a heating apparatus provided with a damper, and mechanism embodying this invention controlling its operation, which mechanism also controls the opening of the door of the fire box; Fig. 2 a side view of the parts in Fig. 1; Figs. 3 and 4 end and under side views of the latch, and Fig. 5 a modification to be referred to.

The heating apparatus A, which may be of any usual or suitable construction is herein represented as a horizontal boiler having fire box doors *a, a'*. These doors each have a laterally projecting handle or extension *a²*, by means of which they may be opened and closed as well as for other purposes to be described. Two like levers *b, b'*, are pivoted to suitable supports on the front of the heating apparatus, having at their extremities opposite their pivots, lateral projections *b²*, which constitute handles by means of which said levers may be moved, and also having laterally projecting pins *b³*. Chains or cords *c, c'*, or equivalent flexible connections are connected at one end to the projections or pins *b³*, and at the other end to a bail *c²*, which is connected with the damper *d*, or to its journals. Coun-

ter-balancing weights *d'* are also connected to said damper, which tend to restore it to its normal position in opposition to the movement given to it by the chains. Two latches *e, e'*, project outwardly from the front of the heating apparatus above the pivots of the levers *b, b'*, and are so positioned as to engage and hold said levers when they are thrown up into vertical position. These latches are formed of beveled faced blocks having studs which pass through slots in the ends of the arms, so that said blocks may be adjustable toward and from the front of the apparatus to accommodate variations in the thickness of the doors caused by variations in packing, &c. The projections *a²* of the doors *a, a'*, lie close to the front of the apparatus, back of the levers *b, b'*, when the latter are in vertical position, so that said levers act by bearing against said projections to hold the fire box doors closed. In order that one or the other of said doors may be opened, one or the other lever must be unlatched and thrown down, or if both doors are to be opened both of said levers must be unlatched or thrown down. Whenever one of the levers is unlatched and thrown down the chain connected therewith being carried down with it, acts to close the damper against the action of the counter-balancing weight, and at the same time the other chain, it will be seen, will become slackened so that if the other lever should be unlatched and thrown down at such time it will merely act to tighten the chain connected with it. As the levers are restored to their normal positions, the counter-balancing weight or weights restore the damper. Thus it will be seen that in order to open either door the damper will be closed.

I do not desire to confine my invention to any particular construction of parts herein represented, as it is obvious that the same may be changed and still come within the spirit and scope of this invention.

In Fig. 5 I have shown a weight connected to a short chain which passes over a pulley, and is connected to one of the chains *c* or *c'*, for the purpose of taken up the slack, and thereby holding the chain continuously taut at the lower end.

I claim—

1. In a heating apparatus, the combination

of a fire box door and damper, of a lever which controls the opening of the door, and connections between said lever and the damper whereby the damper will be closed before the door is opened, substantially as described.

2. In a heating apparatus, the combination of the fire box door and damper, of the lever controlling the opening of the door, a latch therefor, and connections between said lever and the damper, whereby the damper will be closed before the door is opened, substantially as described.

3. In a heating apparatus, the combination of the fire box door and damper, of a lever controlling the opening of the door, an adjustable latch therefor, and connections between said lever and damper whereby the latter will be closed as the former releases the door permitting it to be opened, substantially as described.

4. In a heating apparatus, the combination of the fire box door and damper, and counter-balancing weight for said damper, and a lever controlling the opening of the door, and intermediate connections between said lever and damper, whereby the latter is closed as the former is moved for opening the door, and a latch for said lever which holds it in its normal position with the door closed, substantially as described.

5. In a heating apparatus, the combination of the fire box door having a lateral projec-

tion a^2 , and counter-balanced damper, of a pivoted lever, which engages said projection a^2 , and thereby holds the door closed, a latch for said lever and a chain connecting said lever with the damper, substantially as described.

6. In a heating apparatus, the combination of the fire box door having the lateral projection a^2 , and counter-balanced damper, of a pivoted lever which engages said projection a^2 , and thereby holds the door closed, a latch for said lever, a pin or projection b^2 on said lever and a chain connecting said projection b^2 with the damper, substantially as described.

7. In a heating apparatus, the combination of the fire box doors a, a' , having lateral projections a^2 , and a counter-balanced damper, of pivoted levers b, b' , which engage said projections a^2 , and thereby hold the doors closed, and latches for said levers, and chains connecting said levers with the damper, whereby movement of either lever to release its door acts to close the damper, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD FALES.

Witnesses:

BERNICE J. NOYES,
LUCY F. GRAVES.