No. 687,483. Patented Nov. 26, 1901.

M. E. MADARA.

DRAFT REGULATOR FOR STOVES, RANGES, OR THE LIKE.

(Application filed Apr. 29, 1901.)

(No Model.)

Fig. 1.

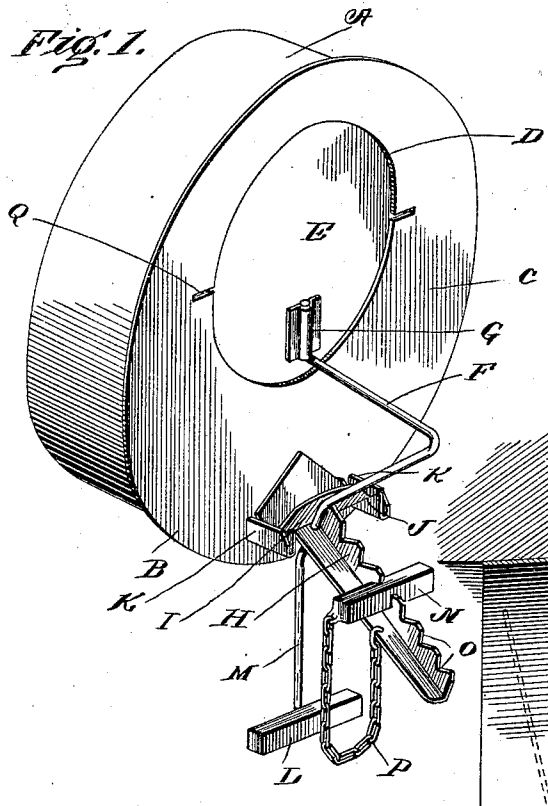
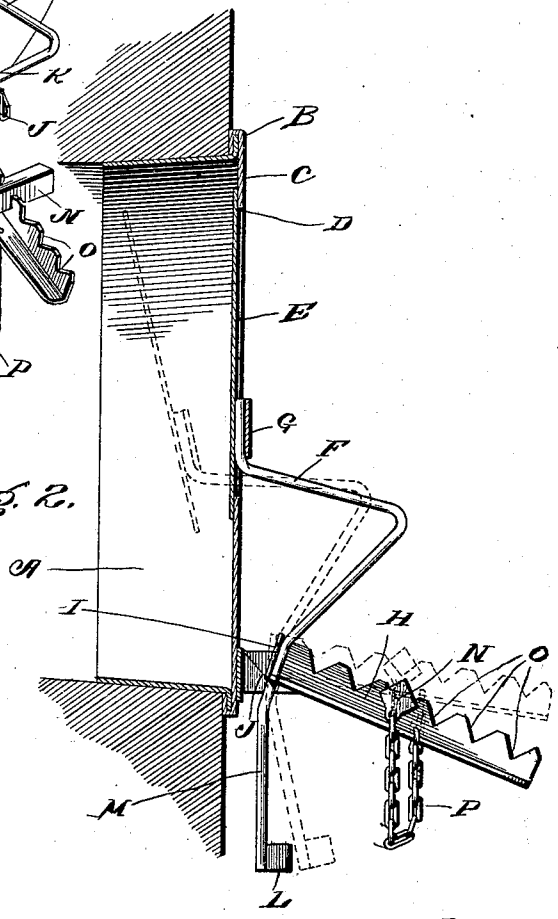


Fig. 2.



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UNITED STATES PATENT OFFICE.

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DRAFT-REGULATOR FOR STOVES, RANGES, OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 687,483, dated November 26, 1901.

Application filed April 29, 1901. Serial No. 58,031. (No model.)

To all whom it may concern:

Be it known that I, MARY E. MADARA, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a certain new and useful Improvement in Draft-Regulators for Stoves, Ranges, or the Like, of which the following is a specification.

My invention relates to a new and useful improvement in draft-regulators for stoves, ranges, and the like, and has for its object to provide a simple and effective device whereby a given pressure of draft may be had beneath the grate-bars for determining the exact quantity of draft-pressure through the fire-bed at all times, regardless of the increase or decrease of the suction in the flue or chimney; and a further object of my invention is to provide a simple means for varying the pressure of the draft, which may be readily adjusted, and which cannot become disarranged, and which, by ordinary observation, will indicate the relative draft-pressure.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view of a draft-regulator made in accordance with my improvement, showing the opening closed; and Fig. 2 is a vertical section of the draft-regulator, showing the same inserted within a chimney-opening, the regulator being shown in full lines closed and in dotted lines open.

In carrying out my invention as here embodied I provide a casing A, which may be of sheet metal or other suitable material and which may or may not have secured thereto the flange B. When this flange is secured to the casing, it is for the purpose of securing the latter in position within the opening in the chimney, and when the flange is not used the casing is adapted to fit within the opening in the stovepipe or the like. The front of the casing is closed by a plate C, except where a portion is cut out to form the opening D. A plate E is adapted to normally close this opening D from the inside.

F is an angular arm, one end of which is secured to the plate E by the strap G and the other end is secured to an arm H. This arm H, with the arm F, forms a lever pivoted on a plate I, said plate having its ends bearing in the notches J, formed in the extension K of the front plates of the casing to form a pivot for the lever. A counterbalance-weight L is connected to the arm H near its pivotal point by the rod M. This counterbalancing-weight L is of such a size that it will normally keep the plate E against the inside of the front plate C of the casing, and thereby close the opening D; but the slightest draft will suck the plate inward by reason of said plate being pivoted through the arm F within the notches J.

Of course it would not be practical to cause the plate E to rock inward with the slightest draft, as in that case the draft would all pass through the opening D and very little, if any, through the fire-bed. To regulate this and to cause the plate E to be only rocked when the draft becomes in excess of the desired amount, I provide a weight N, which has a slot formed in the same, so as to rest upon the arm H. Notches O are formed in the upper edge of this arm, so as to hold the weight in whichever position placed.

It is obvious that if the weight L is so as to just counterbalance the plate E and if the weight N is placed in the topmost notch the plate E will not be quite so sensitive as if it did not have the weight N to raise; but the weight N being placed so near the fulcrum a very slight draft will cause the plate E to rock. Therefore the weight N would only be placed in the uppermost notch when it is desired to have the fire lie dormant, as is the case over night; but when it is desired to have a greater amount of draft pass through the fire-bed the weight N will be placed lower down upon the arm H, in which case it will take a comparatively greater amount of draft to cause the plate E to rock inward, and thus by merely noticing the position of the weight N upon the arm H it can be told at a glance how much draft is passing through the fire-bed.

For the purpose of preventing the weight N from being mislaid or lost I provide a chain P, one end of which is secured to the arm H and the other end to the weight N. For the purpose of inserting or removing the plate E from the casing without removing the casing from the chimney-opening I provide two slots Q, cut into the edge of the opening upon each side of the same, and if the plate E, with its attachments, is removed from the notches J and turned so that the plate is horizontal it can be readily removed or inserted through the slots Q.

The advantages of my improvement are that when the regulator is placed within a flue to which a stove, range, or the like is connected the plate E may be so weighted as to normally hold the opening D closed against the maximum draft for feeding the fire, and should at any time this pressure be increased within the flue above the maximum point the tendency to draw the air into the flue will cause the surrounding air to so act upon the plate E as to open the same to a degree equal to the increase of pressure within the flue, thus relieving the fire of this increased pressure by the inflowing of the air through the opening to counteract the partial vacuum within the flue.

Among the other advantages of my improvement are its simplicity, cheapness of manufacture, and the fact that it may be regulated by any one, requiring no skill to produce the desired results.

Of course I do not wish to be limited to the exact construction here shown, as slight modifications could be made without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is—

1. In an automatic draft-regulator, a casing adapted to fit within an opening in the flue or chimney, and having an opening formed therethrough, a plate adapted to close said opening from the inside, an arm, one end of which is secured to said plate, a regulating-arm, one end of which is fulcrumed in suitable fulcrum-points extending outward from the front of the casing, the other end of the first-named arm secured to the regulating-arm at this fulcrum-point, a counterbalancing-weight secured to these arms, a regulating-weight adapted to be placed upon the regulating-arm in notches formed in said regulating-arm for the purpose of retaining the weight in the desired position, substantially as described and for the purpose specified.

2. In an automatic draft-regulator, a casing adapted to be inserted within a chimney or flue opening, and having an opening formed therethrough, a plate adapted to normally close said opening from the inside thereof, the casing having slots formed in the edge of said opening for the purpose of inserting or removing said plate from the casing, an angular arm, one end of which is secured to the outside of said plate, a regulating-arm to which the other end of the first-named arm is secured, a cross-piece formed upon the upper end of said regulating-arm, projections extending outward from the front plate of the casing, a notch formed in said projection in which the ends of said cross-piece are adapted to rest, a counterbalancing-weight secured to said arm, a regulating-weight adapted to be placed upon the regulating-arm in notches formed in the regulating-arm for the purpose of retaining the regulating-weight in the desired position, a chain, one end of which is secured to the regulating-arm, and the other end to the regulating-weight, substantially as described and for the purpose specified.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

MARY E. MADARA.

Witnesses:
CHAS. H. KLINE,
ADAM K. STOLTZ.