E. N. MUMMEY & C. H. FISHER.

FURNACE DOOR OPENER.

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Inventors

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By

R. M. RACEY, Attorneys
To all whom it may concern:

Be it known that we, EVERETT N. MUMMEY and CHESTER H. FISHER, citizens of the United States, residing at Scio, in the county of Harrison and State of Ohio, have invented certain new and useful Improvements in Furnace-Door Openers, of which the following is a specification.

This invention provides a novel operating mechanism for opening furnace-doors and the like.

In carrying out the invention the door is operable by means of a foot-lever and normally remains closed by reason of its weight, the foregoing structure admitting of actuation of the door by the fireman without removing his hands from the shovel, and this is advantageous in that the door may be quickly opened and closed as each shovelful of coal is thrown into the furnace, a comparatively small amount of cold air being admitted, and the flues and crown-sheet are thus not allowed to cool, accomplishing a saving of coal in an obvious manner.

The invention resides particularly in the peculiar mounting of the door and the arrangement and structure of the operating parts, whereby the same may be readily reversed so as to be convenient for operation by a right or left hand operator.

For a full description of the invention and the merits thereof, and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view showing the embodiment of the invention. Fig. 2 is a horizontal sectional view. Fig. 3 is a vertical sectional view. Fig. 4 is a detail view of the frame-plate secured to the furnace and against which the door operates.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

In the drawings the numeral 1 indicates the rear portion of the furnace. The door 2 is vertically movable thereon. The door 2 is slidably mounted in vertical guides 3, the latter being attached to the furnace in any suitable substantial manner. The door 2 is limited in its downward movement by means of pins 4, which project from the furnace adjacent and between the lower extremities of the guides 3. The pins 4 serve as rests for the door 2 when the latter is closed, properly supporting said door in such position. A bracket 5 projects from the furnace at one side of one of the guides 3 and at the upper portion thereof, and this bracket supports a lever 6, pivoted thereto at a point between its ends. One end of the lever 6 is connected with the door 2 by means of a link 7, said link being provided at its upper portion with a swiveled loop 8, a pivot-pin 9 passing through the loop 8 and an adjacent end of the lever 6. A connecting-bar 10 is connected with the lever 6 upon one side of its fulcrum, and this bar 10 is also connected with a foot-lever 11, pivoted to the transverse bar 12, the latter being journaled in suitable bars (shown at 13) and located some distance beneath the furnace-door 2. The bar 12 extends some distance beyond the spaced guides 3, and the foot-lever 11 is adjustable transversely of the bar 12, being fixed at an ascertained adjustment by means of a set-screw 13.

A turnbuckle 14 is interposed in the length of the rod 10 and admits a lengthening and shortening of this rod to nicely adjust the position of the foot-door in the practical use of the invention. When it is desired to clean the furnace, a pin 15, pendant from a chain attached to one of the guides 3, is utilized to hold the door 2 open, said pin being adapted to pass through an opening in the adjacent guide to engage the lower extremity of the door.

The provision of the swivel part 8 of the link 7 and the mounting of the foot-lever 11 admits of reversing the position of the foot-lever from one side of the door 2 to the other,
since the lever 6 may be readily turned so as to assume a position in which the same is properly pivoted upon the bracket 9 when the latter is mounted at either side of said door 2. It will also be noted that the form of the link member 7 facilitates a free movement of the door 2 in its guides and prevents binding action of the same as it is opened and closed. A weight may be carried by the end of the lever 6 opposite that connected with the door, said weight being used for obvious purposes. The parts of the invention are very simple in structure and may be very cheaply applied to various types of furnace-door constructions at present in use.

Having thus described the invention, what is claimed as new is——

In a furnace-door opener, the combination of a vertically-movable door, a lever pivoted between its ends adjacent the upper portion of the door, a foot-lever, a rod connecting the foot-lever and the first-mentioned lever, a turnbuckle in the length of said rod, a link connecting the first-mentioned lever and the door, said link being provided with a swivel-loop directly connected with the first-mentioned lever, a bar journaled transversely of the door and arranged below the same, said bar supporting the foot-lever, and a set-screw for adjusting the foot-lever transversely of the said bar.

In testimony whereof we affix our signatures in presence of two witnesses.

EVERETT N. MUMMEY. [L. S.]
CHESTER H. FISHER. [L. S.]

Witnesses:
G. D. CUSTER,
R. R. MORTLAND.