

(No Model.)

E. M. ANDRUS.
FURNACE DOOR.

No. 573,847.

Patented Dec. 29, 1896.

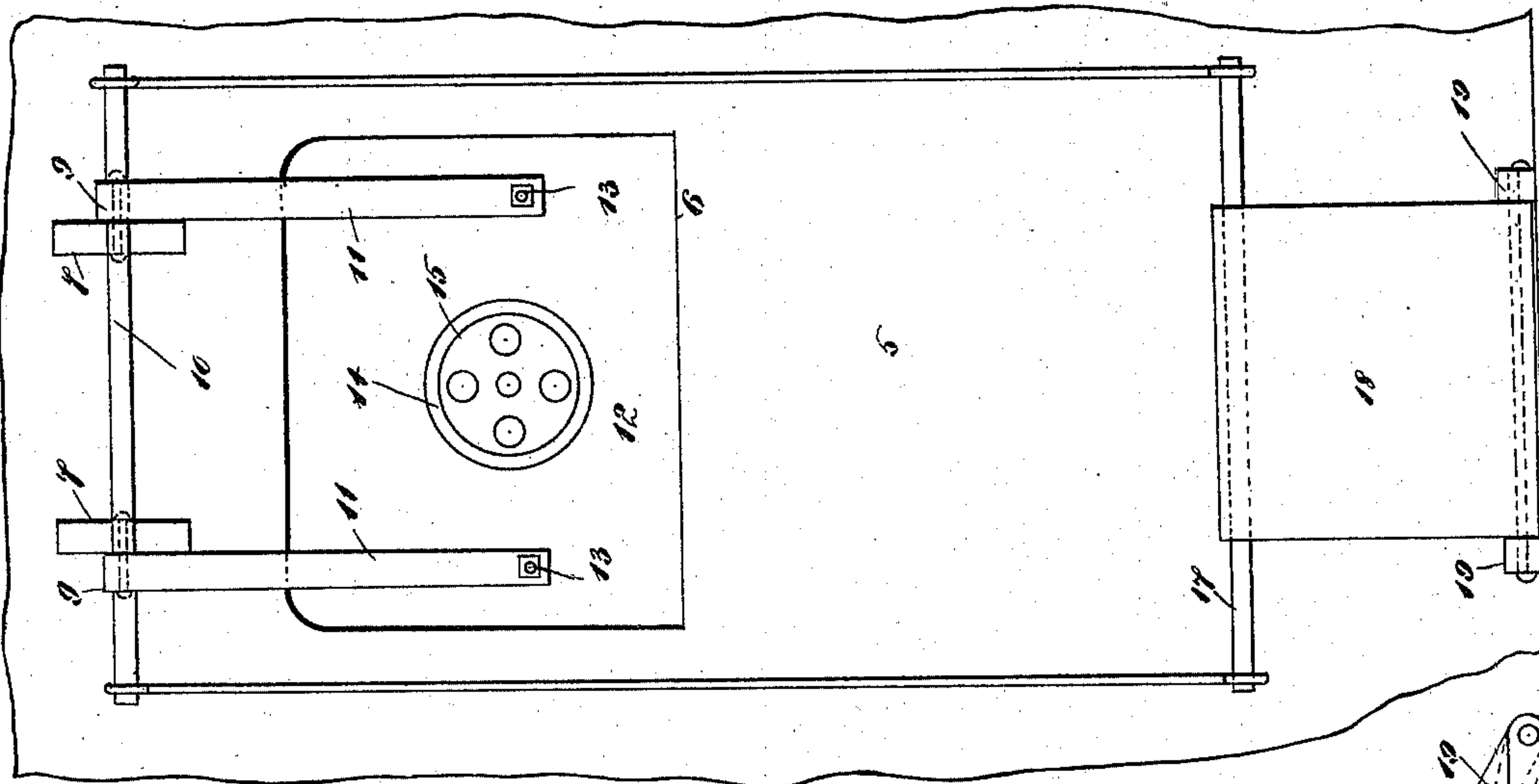


FIG. 2.

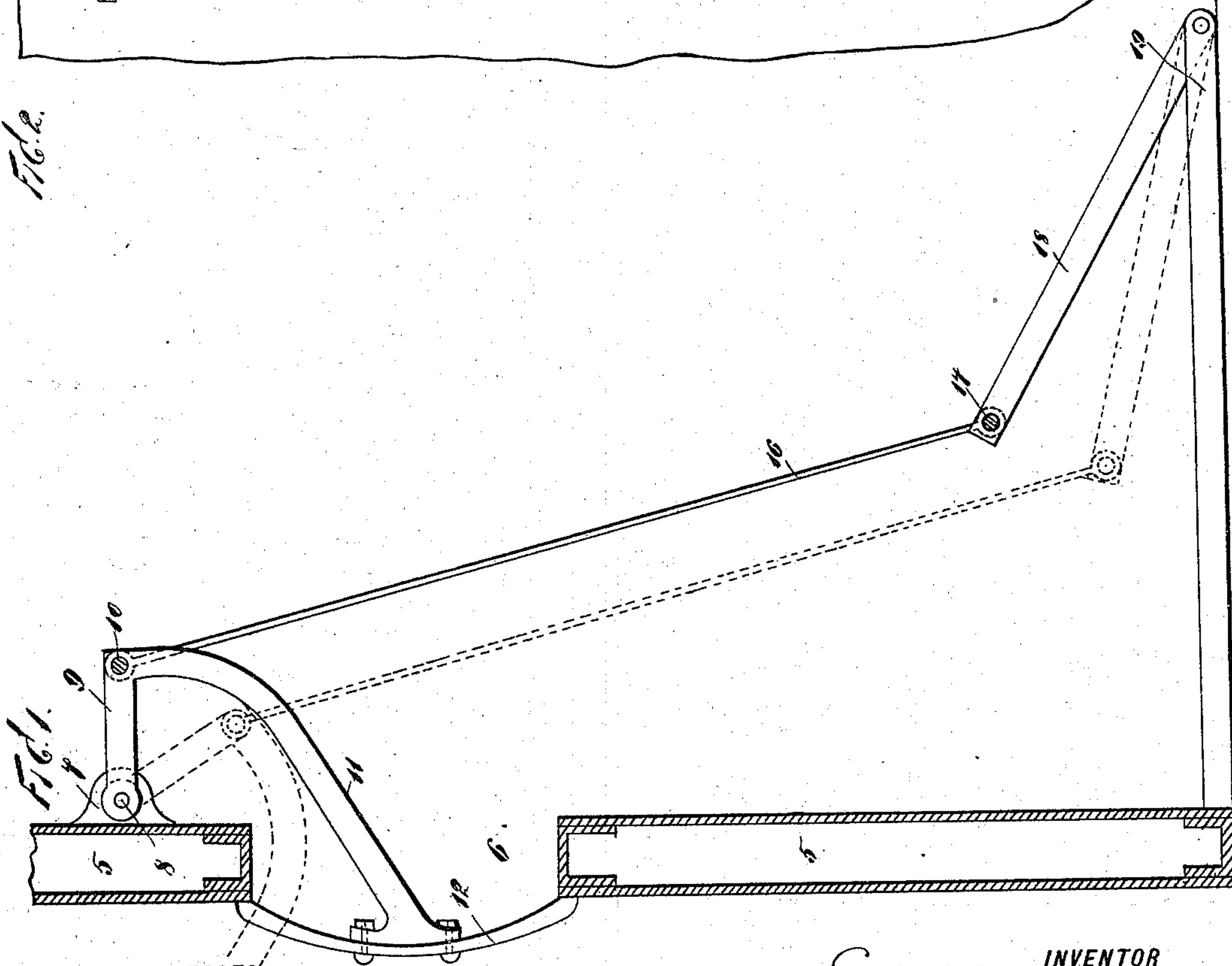


FIG. 1.

WITNESSES

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FURNACE-DOOR.

SPECIFICATION forming part of Letters Patent No. 573,847, dated December 29, 1896.

Application filed August 19, 1896. Serial No. 603,280. (No model.)

To all whom it may concern:

Be it known that I, ELMER M. ANDRUS, a citizen of the United States, and a resident of Mitchell, in the county of Crook and State of Oregon, have invented certain new and useful Improvements in Furnace-Doors, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar numerals of reference indicate corresponding parts wherever found throughout both the views.

This invention relates to furnace-doors, and particularly to means for connecting the doors of furnaces therewith; and the object of the invention is to provide improved means for connecting the doors of furnaces of various kinds and classes therewith, so that the door may be opened by stepping upon a pedal or frame and closed by removing therefrom.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a central vertical section of the front wall of a furnace, showing my improved means for connecting the furnace-door therewith and for operating the same; and Fig. 2, a front view thereof.

In the drawings forming part of this specification I have shown at 5 the front end wall of a furnace, in which is formed the door-opening 6, and in the practice of my invention I form on or secure to the furnace-wall above the door-opening outwardly-directed shoulders or projections 7, to which are pivoted at 8 outwardly-directed bars 9, which are connected at their outer ends by a transverse rod or shaft 10 and each of which is provided with a downwardly and backwardly directed arm 11, and the furnace-door 12 is rigidly bolted or otherwise secured to the lower ends of these downwardly and backwardly directed arms 11, as shown at 13.

It will be understood that the bars 9 and the arms 11 are formed integrally and that the center of gravity of the door when connected with its supporting-arms 11, as described, is directly under the hinge or pivotal connection 8 of the bars 9.

The door 12 may be of any desired form and construction, and is preferably provided with a central opening at 14, having a register-plate 15 of the usual or any preferred con-

struction, and said door when closed rests against the inner surface of the front wall 5 and completely closes the opening 6, as will be readily understood. 55

Pivotally connected with the ends of the rod or shaft 10 are end rods 16, which extend downwardly and outwardly and are pivotally connected with a horizontal rod 17, which supports the end of a pedal, plate, or frame 18, which is pivotally connected therewith at one end, and the other end of said pedal, plate, or frame is pivotally connected with the floor of the furnace-chamber or with suitable bearings 19, secured thereto or formed thereon, or said bearings may consist of a plate or bars which extend backwardly to the front wall of the furnace, as shown in Fig. 1. 60 65

All that is necessary to open the door is to step upon the pedal, plate, or frame 18, and this operation depresses said pedal, plate, or frame, as shown in dotted lines in Fig. 1, and forces the arms 11, with which the door is connected, backwardly into the furnace and raises the door or forces it inwardly into the furnace, as will be readily understood, and then by removing the foot or feet from the pedal, plate, or frame 18 said door will be instantly closed, this operation being accomplished by the weight of the door, as will be readily understood, the center of gravity thereof being very much in front of the door when in its closed position. 70 75 80

The advantages of this construction will be apparent to all those familiar with this class of devices. In the ordinary forms of construction the fireman, in order to put coal into the furnace, must first open the door and then go to the pile of coal, fill a shovel therewith and return, and after throwing the coal into the furnace closes the door. This operation takes considerable time, and all this time the door is open, allowing the cold air to rush into the furnace. 85 90 95

With my improved construction the fireman first fills his shovel with coal, then steps on the pedal, plate, or frame 18, the door is at once opened, and the coal is thrown into the furnace, and the door is closed the instant that the foot is removed from the pedal, plate, or frame 18, and this operation is repeated each time that the fireman goes for coal, and the door is thus open only for an instant each 100

time a shovelful of coal is thrown into the furnace.

My improved furnace-door support is simple in construction and operation and cannot get out of order or fail to operate, and it is evident that changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages.

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

1. The herein-described furnace-door support, and means for opening and closing the same, which consist of outwardly-directed supports pivotally connected with the wall of the furnace above the door-opening, downwardly and backwardly directed arms connected with said supports, which extend through the door-opening and to which the furnace-door is secured, and devices connected with said supports for opening and closing said door by means of the feet, substantially as shown and described.

2. The combination with the wall or end of a furnace, a door-support pivotally connected therewith, above the door-opening, and extending outwardly therefrom, and provided

with downwardly and backwardly directed arms which extend through the door-opening, and to which the door is secured, and a pedal, plate or frame pivotally connected with the floor of the furnace-room, and operative devices connected therewith, and also pivotally connected with said door-supports, substantially as shown and described.

3. The combination with the front end wall of a furnace, of a door-support pivotally connected therewith, above the door-opening, and extending outwardly therefrom, and provided with downwardly and backwardly directed arms which project through the door-opening, and to which the door is secured, said support being also pivotally connected with rods, which are pivotally connected with a pivoted pedal, or foot-plate, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 4th day of August, 1896.

ELMER M. ANDRUS.

Witnesses:

GEO. E. HOUCK,
FRED N. WALLACE.