

J. WHEELER.
 OPENING DEVICE FOR FURNACE DOORS.
 APPLICATION FILED MAY 6, 1911.

1,041,212.

Patented Oct. 15, 1912.

Fig. 1

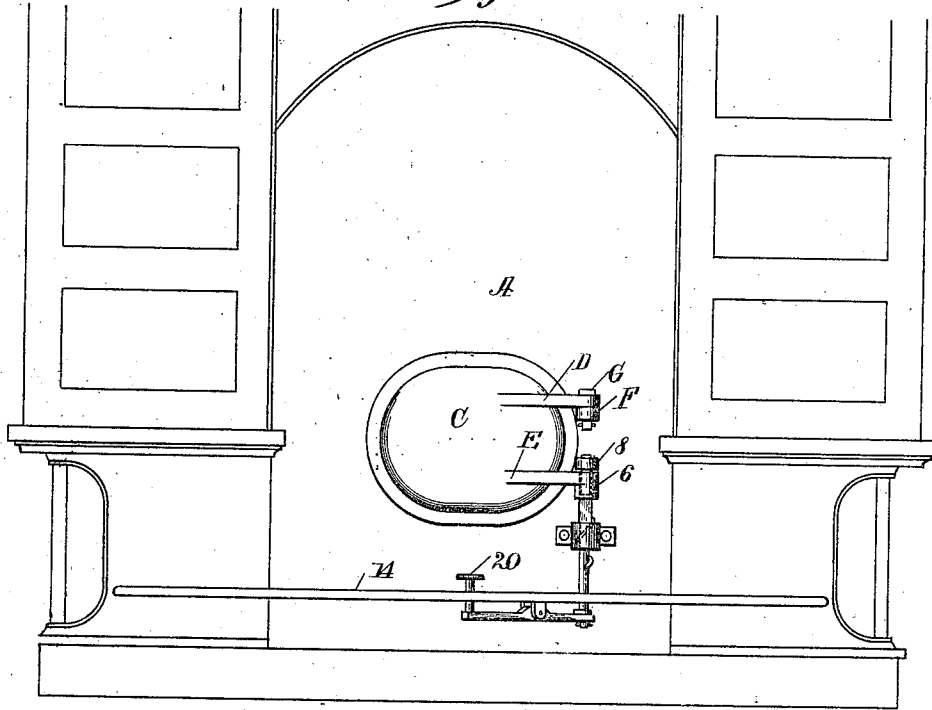


Fig. 2

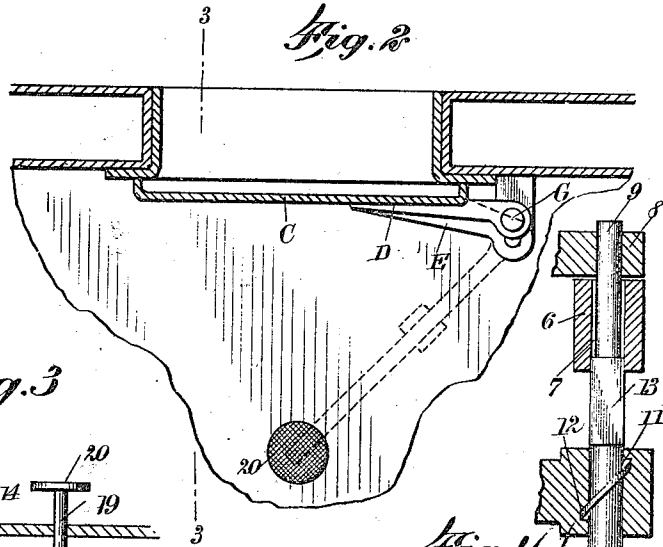


Fig. 3

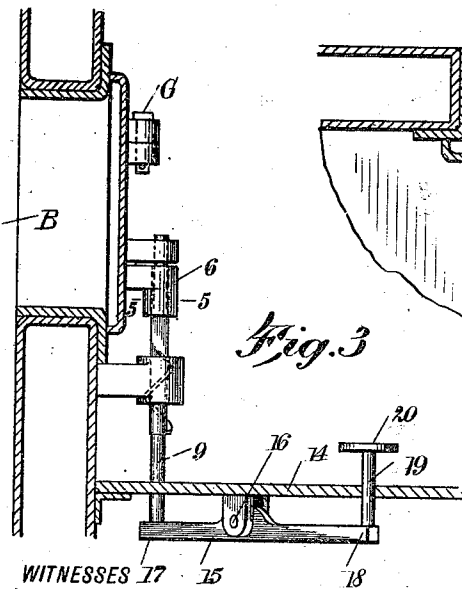


Fig. 4

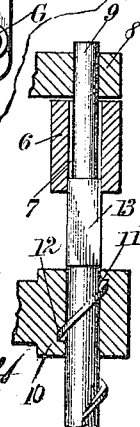
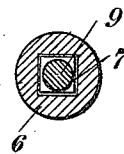


Fig. 5



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JOHN WHEELER, OF CRIPPLE CREEK, COLORADO.

OPENING DEVICE FOR FURNACE-DOORS.

1,041,212.

Specification of Letters Patent.

Patented Oct. 15, 1912.

Application filed May 6, 1911. Serial No. 625,523.

To all whom it may concern:

Be it known that I, JOHN WHEELER, a citizen of the United States, and a resident of Cripple Creek, in the county of Teller and State of Colorado, have invented a new and Improved Opening Device for Furnace-Doors, of which the following is a full, clear, and exact description.

My invention relates to a new and improved device for opening the doors of furnaces, especially engine furnaces.

An object of my invention is to provide means whereby the door of a furnace may be opened by stepping on a pedal and will automatically close when said pedal is released.

I attain the above-outlined object by positioning a lever below the floor of the furnace room, and by extending from one end of said lever a pedal and from the other end an actuating rod, which rod has a worm thereon, a square-headed portion of which rod extends through an actuating arm to swing the door on its pivot.

With the above and other objects in view, as will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a front elevation of a furnace with a preferred embodiment of my invention applied thereto; Fig. 2 is a horizontal sectional view taken through the door of the furnace, looking down; Fig. 3 is a vertical sectional view taken on the line 3—3 of Fig. 2; Fig. 4 is a detailed sectional view showing the actuating rod; and Fig. 5 is a transverse sectional view taken on the line 5—5 of Fig. 3.

I have shown a boiler A of any preferred form having a feed opening B closed by a door C, which door has extending from the same a pair of hinge leaves D and E, the upper hinge leaf D being pivoted to a bracket F by means of a pin G as is common with similarly hinged door constructions. The outer end of the lower leaf E is formed into a vertically elongated boss 6 having a bore 7 rectangular in cross section

extending vertically therethrough. Positioned above the boss 6 is a bracket 8 forming a bearing for the upper end of an actuating rod 9, which rod extends vertically to one side of and below the door, and is adapted to move vertically in the bracket 8 and in a lower bracket 10 rigidly mounted upon the body of the furnace and positioned in vertical alinement below the boss 6. The actuating rod 9 has a screw thread 11 of a pitch of about forty-five degrees disposed thereabout and adapted to move in threaded grooves 12 in the lower bracket 10. It will be seen that the movement of this rod vertically will rotate the same, due to the threaded engagement of the rod with the bracket 10. Above the threaded portion of the rod, the same has a portion rectangular in cross section, as shown at 13, which portion fits within and moves through the square bore 7 in the leaf E, so that the turning of the rod 9 will rotate the leaf E and its boss 6, and as this leaf is rigidly attached to the door C of the furnace, it will of course swing the door on the pivot formed by the pin G and the rod 9.

In order to actuate the rod 9, there is positioned below the floor 14 of the engine room, a lever 15 centrally fulcrumed at 16, one end 17 of which bears upon the lower end of the rod 9. Resting upon the opposite end 18 of the lever 15 is a step or pedal 19 projecting through the floor 14 and having a head 20 thereon located in front of the door C of the furnace. It will be seen by this arrangement that stepping upon the head 20 will move the rod 19 vertically and the threaded or worm connections 11 and 12 will swing the door open, and the door will remain open as long as the fireman stands on the head 20. Stepping off the head 20 causes the rod 9 to drop by its own weight, thereby closing the door of the furnace.

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

A means for opening furnace doors, comprising a vertically movable actuating rod, part of which is rectangular in cross section and provided with screw threads below said rectangular portion, said rod constituting the lower hinge pin of the door, a bracket extending from the furnace in threaded engagement with said screw-threaded rod, said rod having a leaf extending from the door of the furnace, said leaf having a bore rec-

tangular in cross section extending there-
through and in sliding engagement with the
rectangular portion of the rod, a hinge con-
nection between the furnace and door hav-
5 ing its pivotal point in axial alinement with
said rod, a lever one end of which is posi-
tioned below said rod, and a pedal resting
upon the opposite end of said lever whereby
stepping on said pedal will raise and rotate

said rod, thereby opening the furnace door 10
on its hinges.

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

JOHN WHEELER.

Witnesses:

CARL WEYAND,
LABAN E. WEYAND.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."