N. B. CREIGHTON.

SHIELD AND BURNER.

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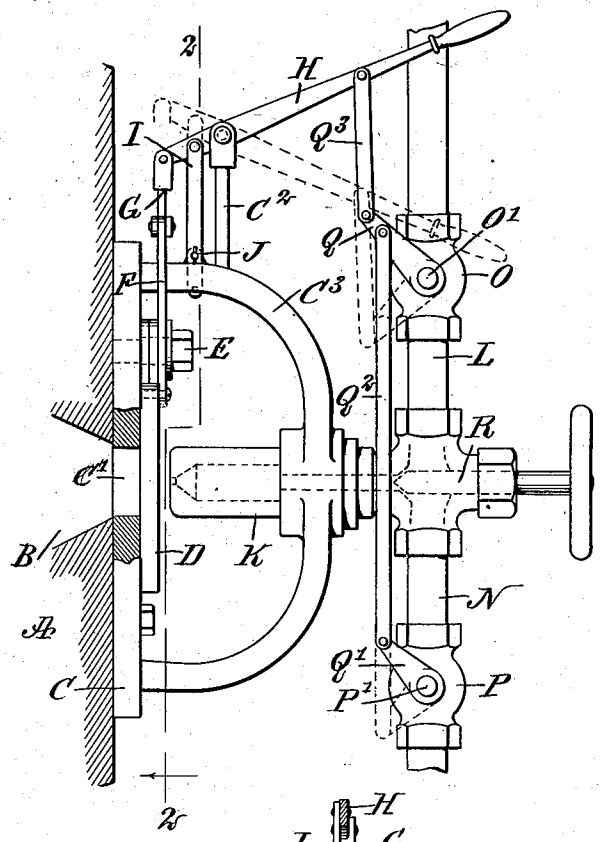


Fig. 1.

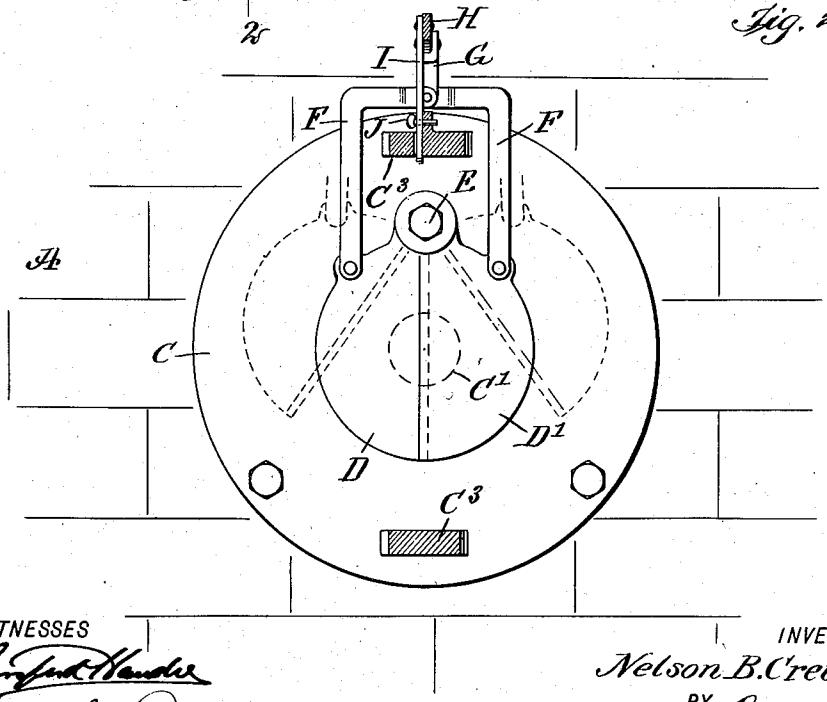


Fig. 2.

WITNESSES

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SHIELD AND BURNER.

No. 916,110. Specification of Letters Patent. Patented March 23, 1909.

Application filed October 5, 1908. Serial No. 456,305.

To all whom it may concern:

Be it known that I, NELSON B. CREIGHTON, a citizen of the United States, and a resident of the city of New York, Maspeth, borough of Queens, in the county of Queens and State of New York, have invented a new and Improved Shield and Burner, of which the following is a full, clear, and exact description.

The invention relates to reverberatory furnaces and ovens using hydro-carbon fuel, and its object is to provide a new and improved shield and burner, arranged to permit of conveniently opening and closing the burner entrance of the furnace or oven, and to simultaneously operate the hydro-carbon burner in unison with the shield.

The invention consists of novel features and parts and combinations of the same, which will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in both views.

Figure 1 is a side elevation of the improvement as applied, parts being in section; and Fig. 2 is a sectional front elevation of the same on the line 2—2 of Fig. 1.

The reverberatory furnace or oven A of the usual construction is provided at one end with a burner opening B, and on the said end is secured a plate C having an opening C′ registering with the opening B. The opening C′ is adapted to be covered and uncovered by the sections D, D′ of a shield or door, and the said sections D, D′ are fulcrumed on a pivot E, secured to the plate C a short distance above the opening C′. The shield sections D, D′ are pivotally connected by upwardly-extending angular links F with a link G, pivoted on the rear end of a lever H, fulcrumed on a standard C^6 attached to a bracket C^3, forming part of the plate C. Normally the shield sections D, D′ are in a closed position, thus covering the opening C′, and when the operator swings the hand lever H downward, then the links G and F impart a simultaneous sidewise swinging motion to the shield sections D, D′, to swing the same outwardly in opposite directions from each other, thus uncovering the opening C′ for the introduction of the burning fuel or flame into the furnace or oven. The lever H is adapted to be locked in either of its two normal positions, by means of a locking bar I, pivoted at one end to the hand lever H, and adapted to be locked at its other end by a pin J to the bracket C^3, as plainly indicated in Figs. 1 and 2. In front of the plate C and mounted on the bracket C^3 is arranged the hydro-carbon burner K in axial alinement with the openings B and C′, and the said hydro-carbon burner K is provided with the usual air or steam inlet pipe L, and an oil or gas inlet pipe N, connected with proper sources and containing valves O and P, having their valve stems O′, P′ provided with arms Q, Q′ pivotally connected with each other by link Q^6, so as to actuate the valves O and P in unison. The arm Q is also connected by a link Q^3 with the lever H, so that when the parts are in the position shown in full lines in Figs. 1 and 2, then the shield sections D and D′ are closed, and likewise the valves O and P; and when the operator after unlocking the lever H swings the latter downward, then the shield sections D, D′ swing into an open position, and the valves O and P are likewise opened, to feed the fluids to the hydro-carbon, the mixture being burned at the front end thereof and passing into the oven by way of the openings C′ and B. The amount of the gaseous mixture passing to the hydro-carbon burner K from the pipes L and N is controlled by the usual needle valve R, as indicated in Fig. 1.

It is understood that when the lever H is swung downward as described, it is locked in position by the arm I and pin J, and when the oven has been heated to the desired degree, the lever H is again unlocked and returns to the closing position, so as to close the shield sections D, D′ and simultaneously close the valves O and P.

By the arrangement described, the heat is confined within the oven, as the opening C is immediately closed after the oven has been heated to the desired degree, and the flame is extinguished at the burner K by shutting off the supply of fuel to the burner.

By the arrangement shown and described, the burner is prevented from carbonizing, thereby prolonging the life of the burner because it is not subjected to the intense heat of the furnace, being on the outside thereof.

The device is very simple in construction and can be readily applied to ovens as now constructed.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent:

1. A furnace provided with a door plate having a burner opening and arranged for attachment to one end of the furnace, the said plate having a bracket, a shield made in sections for covering and uncovering the said opening, the shield sections being pivoted to the said plate directly above the said opening, a hand lever fulcrumed on the said bracket, links connecting the said lever with the said shield sections, and locking means for locking the said hand lever in either position to the said bracket.

2. A furnace provided with a hydrocarbon burner, a shield having sections for controlling the burner entrance, manually-controlled actuating means connected with the said shield sections and the valve of the said hydrocarbon burner, for simultaneously opening or closing the shield sections and the valves, and a plate for one end of the furnace and on which the said shield sections are pivoted, the plate having a bracket for supporting the hydro-carbon burner and the said actuating means.

3. A furnace provided with a door plate having a burner opening, a shield made in section for covering and uncovering the said opening, a bracket connected with the plate, and a burner supported by the bracket in front of the opening, a hand lever for swinging the sections from over the door opening and a connection between the handle and the valves of the burner for simultaneously operating the valves and the shield sections.

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

NELSON B. CREIGHTON.

Witnesses:
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FREDK. R. LAWRENCE.