

R. E. LE BLANC & P. P. LANDRY.

EXTENSION FURNACE.

APPLICATION FILED JAN. 24, 1912.

1,057,855.

Patented Apr. 1, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

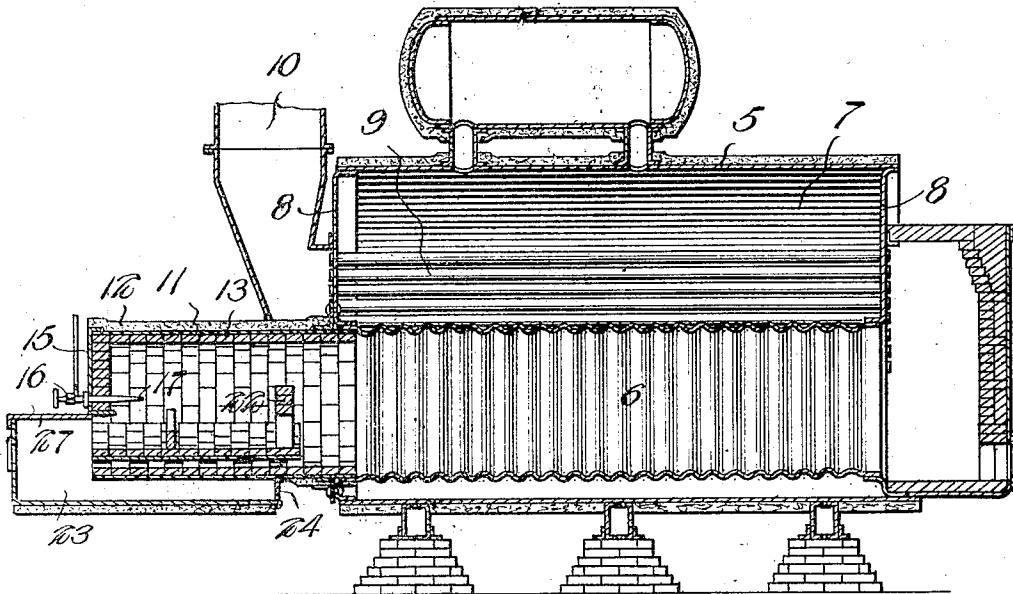
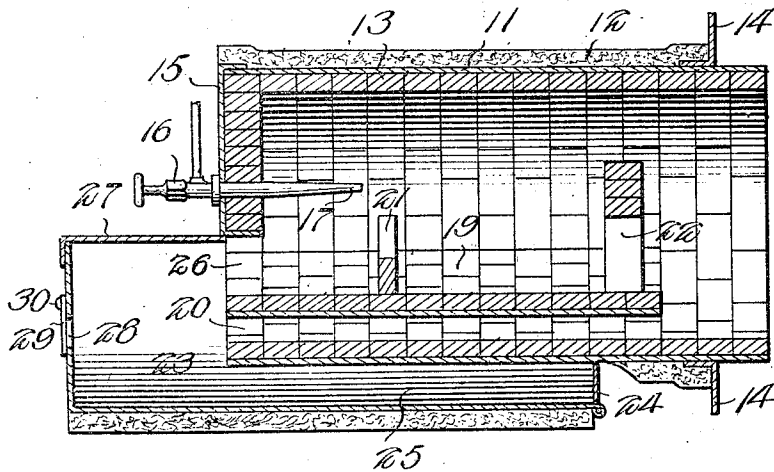


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

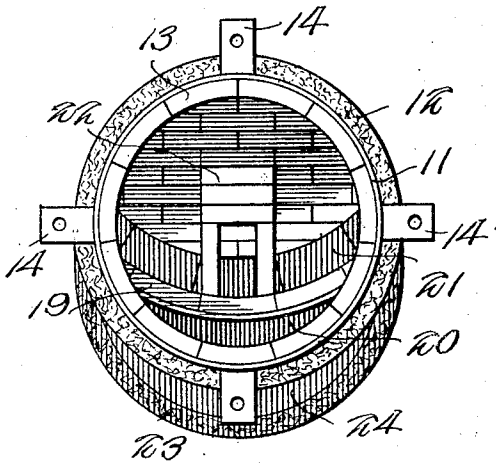


Fig. 4.

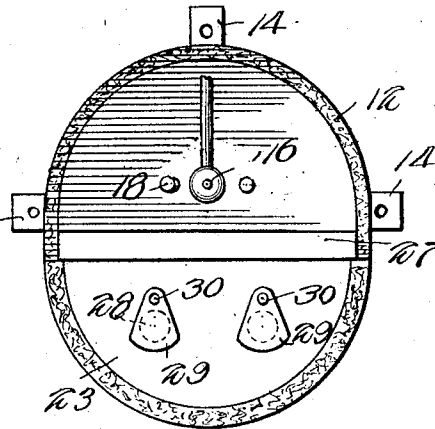


Fig. 5.

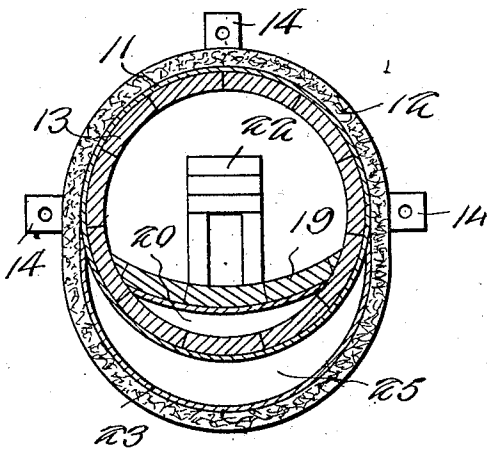
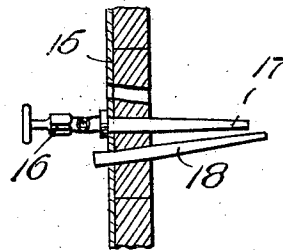


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

ROBERT E. LE BLANC AND PIERRE P. LANDRY, OF PAINCOURTVILLE, LOUISIANA.

EXTENSION-FURNACE.

1,057,855.

Specification of Letters Patent.

Patented Apr. 1, 1913.

Application filed January 24, 1912. Serial No. 673,038.

To all whom it may concern:

Be it known that we, ROBERT E. LE BLANC and PIERRE P. LANDRY, citizens of the United States, residing at Paincourtville, in the parish of Assumption and State of Louisiana, have invented new and useful Improvements in Extension-Furnaces, of which the following is a specification.

The invention relates to an extension furnace, and more particularly to the class of Dutch ovens for use in internally fired boiler furnaces.

The primary object of the invention is the provision of an extension furnace or Dutch oven in which a target is arranged for the firing of the gases, and that will permit the requisite air to be admitted to the gases for producing a maximum temperature when the same have been ignited, thus minimizing the quantity of fuel required for the firing of the furnace.

Another object of the invention is the provision of an extension furnace or Dutch oven in which oil or other liquid fuel may be used for the firing thereof, and that may be used with various styles of boilers or furnace structures.

A further object of the invention is the provision of an extension furnace or Dutch oven which is simple in construction, reliable and efficient in operation, and inexpensive to manufacture.

With these and other objects in view, the invention consists in the construction, combination and arrangement of parts, as will be hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the claims hereunto appended.

In the drawings: Figure 1 is a vertical longitudinal sectional view through an internally fired boiler, showing the Dutch oven or extension furnace mounted therein constructed in accordance with the invention. Fig. 2 is a vertical longitudinal sectional view through the Dutch oven or extension furnace. Fig. 3 is an end elevation thereof. Fig. 4 is a similar view, looking toward the opposite end. Fig. 5 is a sectional view on the line 5-5 of Fig. 1. Fig. 6 is a fragmentary horizontal sectional view through the front wall of the extension furnace.

Similar reference characters indicate corresponding parts throughout the several views of the drawings.

The invention, as herein exemplified, is embodied in a horizontally arranged boiler furnace of the ordinary type, but as will be seen upon a consideration of its essential structural and operative features, it is not limited in application to this or any other special type or form of boiler furnace, being adapted for use in any of the various constructions which are provided with a fire box, and flues or tubes communicating therewith. In the instance herein shown, the boiler 5 is of the usual cylindrical form, and has extended therethrough a corrugated tubular wall 6, forming a fire box surrounded by a vertical water space 7 closed at opposite ends by means of end rings 8, as usual. Passed through the water space 7, above the fire box, are the flues or tubes 9 which direct the products of combustion from the fire box into a smoke box or stack 10, of the usual form, at the front end of the boiler.

The extension furnace or Dutch oven comprises a cylindrical body 11, preferably constructed from metal, the outer surface of which is covered with suitable fire-proofing material, such as asbestos 12, while the interior thereof is lined with suitable fire-brick 13, the inner end of the body 11 being provided with outturned bolt receiving ears or brackets 14, through which are passed ordinary bolts, the same being also passed through the end rings 8 at the front of the boiler, thereby securing the extension furnace to the boiler, so that the same will aline with the fire box therein. The upper half of the front end of the body 11 is closed by a segmental-shaped front end plate 15, the same being secured thereto in any suitable manner, and is provided with a medial opening, through which is extended a burner tube 16 of any approved form which projects interiorly of the body 11 and terminates in a burner nozzle 17 of any preferred form, and through this tube 16 is introduced oil fuel to the burner nozzle 17 for the firing of the boiler furnace. At opposite sides of the burner tube 16 are arranged torches 18 which project interiorly of the body 11 through suitable openings formed in the end plate 15.

Arranged within the body 11, below the burner nozzle 17 and the torches 18, is a horizontally disposed partition 19, the same being slightly downwardly curved, and forms beneath the same an air channel or

conduit 20 which directs air to the rear of the furnace. Rising from the partition 19, spaced from the front end of the body 11, is a stop wall 21 which elevates the air admitted in the lower open portion of the front end of the said body into the path of the flame issuing from the burner nozzle 17, interiorly of the body.

Formed on the partition 19 and spaced inwardly from the stop wall 21 is a target 22, against which plays the flame from the burner nozzle 17 for the ignition of gases within the said body 11 of the furnace. Fixed to and depending from the body 11 is a supplemental hollow body 23, the outer end of which extends beyond the front end of the main body 11, while its inner end terminates spaced from the inner or rear end of said main body, and this rear end of the supplemental body 23 is normally closed by a damper 24 hinged or otherwise swingingly connected to the supplemental body 23, so that it may be opened, when desired, the supplemental body 23 being designed to provide a hot air conduit or chamber 25 therein, which has its forward end in direct communication with the gas conduit 20 in the main body 11, and with the lower open portion 26 at the front end of the said main body, so that air may be let into the main body both at the front and rear ends thereof, the partition 19 being of less length than the body 11, whereby air passing through the conduit 20 will rise at the rear end of the main body 11 above the partition therein.

Closing the protruded end of the supplemental body 23, at the top thereof, is a lid or cover 27 which may be raised or removed to permit access to be had thereto, the front end wall of the supplemental body 23 being provided with peep openings 28 normally closed by shutters 29 pivoted at 30 to the front wall of the said supplemental body. On the opening of the damper 24, air will be admitted into the hot air chamber 25, whence a portion thereof will be conveyed through the conduit 20 to the rear end of the main body 11, and will rise into the same above the partition 19, while the remaining portion will be let into the main body 11 through the lower open portion 26 at the front end thereof, thus assuring the proper combustion of the gases for obtaining maximum heat, without an excessive consumption of fuel, the oil fuel being fed through the burner tube 16 to the burner nozzle 17, whence it is ignited by the torches 18, as usual, and the gases contained in the main body 11 will be burned from the flame issuing from the burner nozzle, the latter be-

ing directed toward the target 22, as heretofore set forth.

The torches 18 are removed from the openings in the front of the extension furnace, after the flame has been ignited, issuing from the burner nozzle 17, and these torches are of the ordinary type.

What is claimed is:

1. An extension furnace for fire tube boilers comprising a cylindrical body extending outwardly from the fire box of the boiler and communicating therewith, a downwardly bowed partition arranged interiorly of the body and spaced from the bottom thereof, said partition being extended longitudinally for the greater portion of the length of said body, an air deflector wall rising from the partition intermediate the ends thereof, a target rising from the partition at a point spaced rearwardly from the deflector wall, a supplemental body formed exteriorly of said first named body and extended below the bottom thereof, and beyond the outer end of the same for communication with the said first named body, a damper located at the inner end of said supplemental body and a lid on the top of said supplemental body beyond the outer end of the first named body.

2. An extension furnace for fire tube boilers comprising a cylindrical body extending outwardly from the fire box of the boiler and communicating therewith, a downwardly bowed partition arranged interiorly of the body and spaced from the bottom thereof, said partition being extended longitudinally for the greater portion of the length of said body, an air deflector wall rising from the partition intermediate the ends thereof, a target rising from the partition at a point spaced rearwardly from the deflector wall, a supplemental body formed exteriorly of said first named body and extended below the bottom thereof, and beyond the outer end of the same for communication with the said first named body, a damper located at the inner end of said supplemental body and a lid on the top of said supplemental body beyond the outer end of the first named body, the said supplemental body being provided with a peep hole in its outer end and shutters normally closing said peep hole.

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

ROBERT E. LE BLANC,
PIERRE P. LANDRY.

Witnesses:

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E. J. CLIFTON.