C. L. BEAN.

GAS BURNER.

APPLICATION FILED AUG. 14, 1909.

955,308. **Patented Apr. 19, 1910.**

Fig. 1.

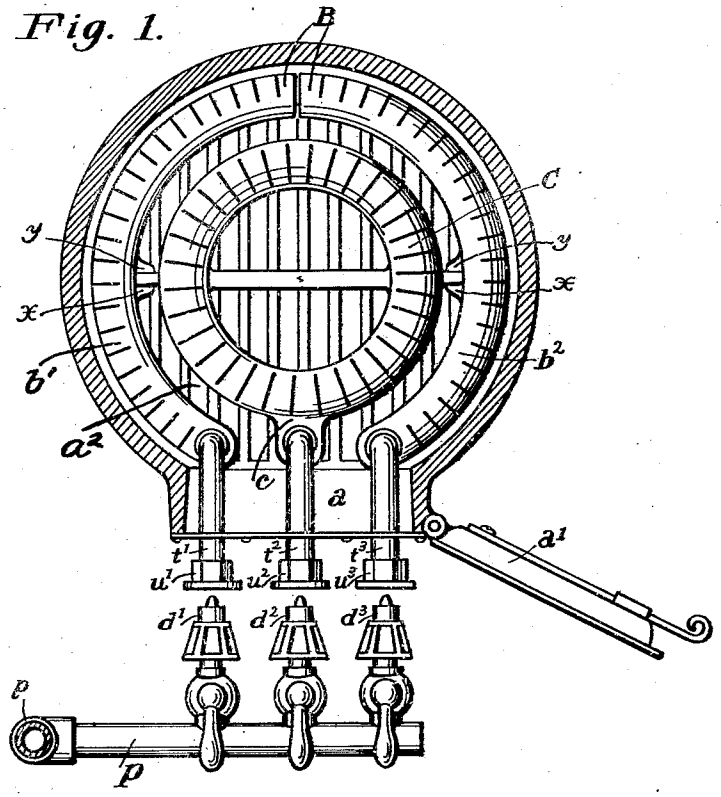
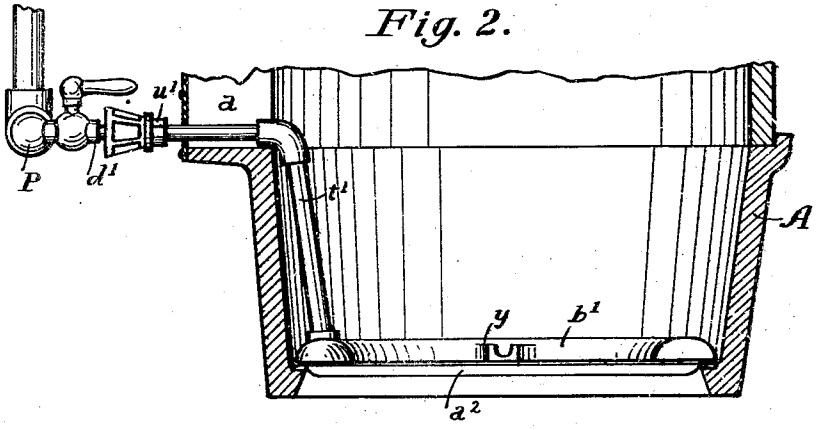


Fig. 2.



WITNESSES:

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GAS-BURNER.

955,308. Specification of Letters Patent. Patented Apr. 19, 1910.

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To all whom it may concern:

Be it known that I, CHARLES L. BEAN, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented new and useful Improvements in Gas-Burners, of which the following is a specification.

My invention has relation to the application of gas burners to ordinary coal stoves and furnaces; its object being to provide simple, convenient and comparatively inexpensive combustion apparatus for the use of gas-fuel in lieu of coal, in an ordinary stove or furnace; which apparatus can be applied or removed without the requirement of especial skill by any one capable of manipulating an ordinary pipe union.

The main object of my invention is to facilitate the change from the use of coal to fuel gas or vice-versa, either permanently or upon occasion.

To this end it consists in the fuel gas burner and immediate connections, constructed and arranged as herein shown and described, which can be applied or removed without changing in any manner the existing structure of the stove or furnace.

Apparatus embodying my invention is illustrated in the accompanying drawings, in which—

Figure 1 is a horizontal cross section of the fire pot with a plan view of the burner in place, with the connections shown detached; and Fig. 2 is a vertical axial section of the fire pot of a furnace showing one of the side sections of the burner in position and connected.

Referring now to the drawings, A designates the circular fire pot of the ordinary furnace or stove, a^1 the fire door controlling opening a, and a^2 the grate. These are of the ordinary construction and require no further description.

My improved burner is preferably constructed as two members B and C.

The outer member B is constructed in two parts, viz. b^1 and b^2 in partial semi-circular tubes, with gas-slits at the outer side, each part closed at the rear end and provided at the front end with a boss for the screw connection of an upright feed tube t—(designated correspondingly t' and t^3)—these tubes rising to an equal height and extending horizontally outward through the fire door opening a^1 of the fire pot. At corresponding points at the inner side of each of the sections b^1 b^2 is a projection y constituting socket rests for the inner member C of the burner.

The inner member C is a single continuous hollow ring having gas-slits at its upper side, and an entrance passage c extended forward between the corresponding receiving ends of the sections b^1 b^2, and there provided with a boss for the screw connection of its feed pipe t^2 which rises to an equal height with the feed pipes already described and is extended outward between them. The ring member C is concentric with the outer member B and is of sufficiently smaller diameter to occupy the horizontal space within the latter with suitable clearance and is provided with radial lugs x, x, projecting outward at opposite sides to rest in the socket pieces y of the outer member B.

The burner sections described, with the feed pipes attached, are inserted singly through the fire door opening a^1 of the fire pot A (the door not shown being swung back for this purpose), and placed in position as shown in the figures upon the grate a^2. The parts are so proportioned as that the outer horizontal ends of the feed pipes t^1 t^2 t^3 are now in place to be attached to the corresponding delivery tubes d^1 d^2 d^3 of the main supply pipe P, and are already provided with "unions" u^1 u^2 u^3 for this purpose. The said delivery tubes lead off laterally at proper distances apart, from the main supply tube P, and are provided with suitable valves, stop cocks and air registers, as shown, which are of the usual construction and require no special description. The supply pipe P may be connected at a convenient point as p by a swivel union to permit its being swung back out of the way when the gas connection is not in use.

It will be observed that in my improved device the feed pipes t^1 t^2 t^3, are not at any point exposed to the direct action of the flame, but are at such a point and so arranged as to be at all times in a current of coolest air, when the device is in use. Also, that the only removable connections of the apparatus, to-wit: the unions u^1, u^2, u^3, are wholly outside of the furnace; and that the only labor required in putting in or taking out the entire gas outfit, is to place or remove the burner sections, and screw on or off the union connections—all of which is

easily effected with slight expenditure of time and very little skill, and without removing or altering any part of the furnace.

I employ a sheet iron covering for the fire door opening when the burner is in use while the ordinary fire door remains swung back upon its hinge.

I claim as my invention and desire to secure by Letters Patent of the United States:

1. A fuel gas burner of substantially annular form and comprising two independent curved outer members each having its rear end closed and separated from the other, feed connections at the front end of each section, and an inner burner member concentric with the outer members having a feed connection at its front end.

2. A fuel gas burner of substantially annular form and comprising two independent curved outer members each having its rear end closed and separated from the other, feed connections at the front end of each section, an inner burner member concentric with the outer members having a feed connection at its front end, each of said feed connections extending upwardly from the burner members and thence outwardly in substantially a horizontal plane.

3. A detachable fuel gas burner consisting of inner and outer concentric burner members, the inner member being continuous and having a feed connection at its front end and the outer member consisting of a plurality of curved parts arranged concentric with the inner member and each of the parts being closed at its rear end to separate it from the other part of the same member, feed connections at the front end of each of the parts of the outer member, said feed connections of each burner member rising therefrom at the front and extending outwardly in substantially a horizontal plane, and several supply connections removed from the burner members.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES L. BEAN.

Witnesses:
A. L. TILDESLEY,
WALTER A. KNIGHT.