

June 17, 1924.

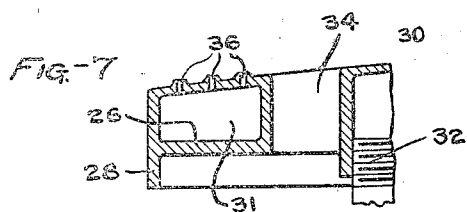
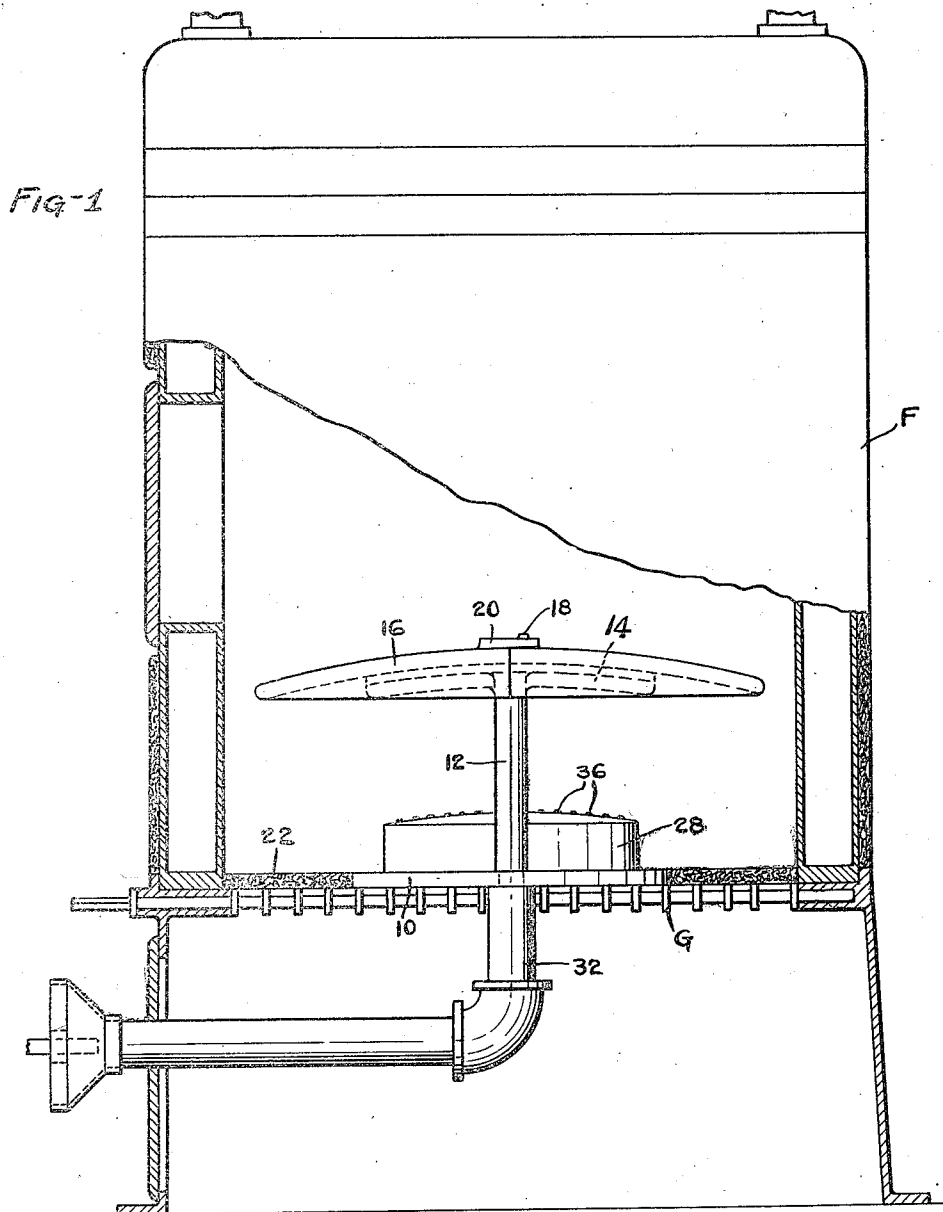
1,498,342

T. R. BLANCHARD

GAS BURNER FOR HEATING PLANTS

Filed Dec. 20, 1923

2 Sheets-Sheet 1



INVENTOR:

THOMAS R. BLANCHARD.

BY Whiteley and Ruckman

ATTORNEYS

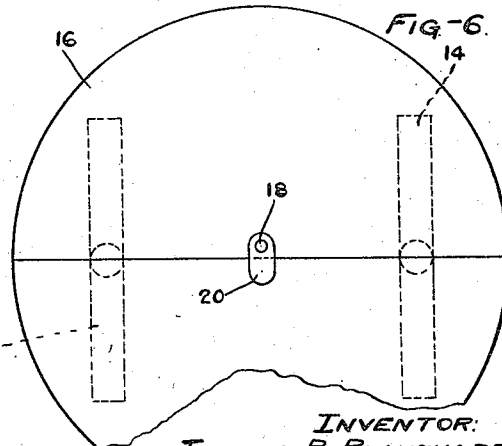
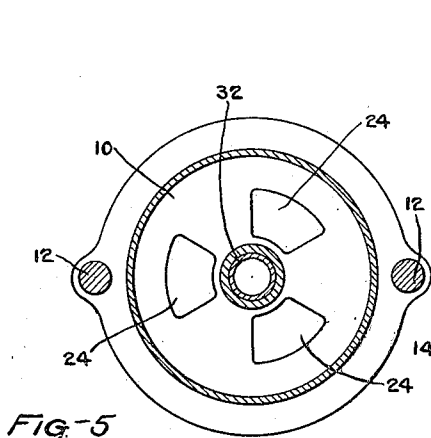
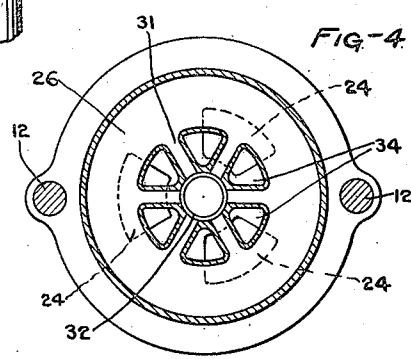
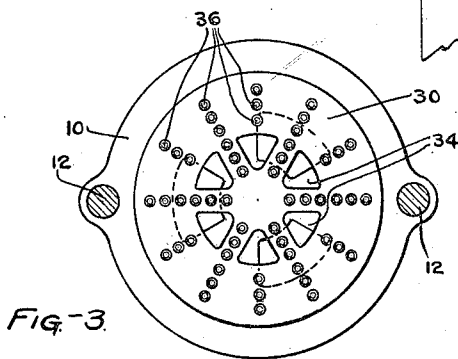
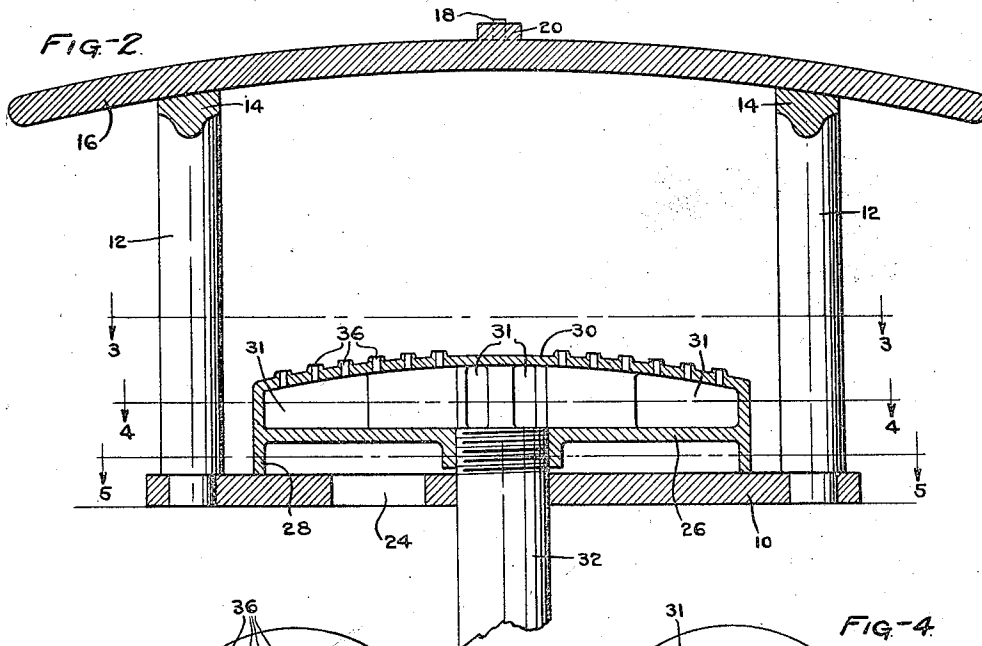
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UNITED STATES PATENT OFFICE.

THOMAS R. BLANCHARD, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE AIRGAS BURNER COMPANY, OF MINNEAPOLIS, MINNESOTA, A CORPORATION OF MINNESOTA.

GAS BURNER FOR HEATING PLANTS.

Application filed December 20, 1923. Serial No. 681,753.

To all whom it may concern:

Be it known that I, THOMAS R. BLANCHARD, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Gas Burners for Heating Plants, of which the following is a specification.

My invention relates to gas burners for heating plants. Among the objects of the invention are to provide a device of this character which is convenient to install in furnaces and stoves already in use, and which will be safe, efficient, foolproof, and economical. Other objects are to provide a device which requires no complicated adjustments, which can be used for heating purposes without requiring attention for long periods of time, and which will consume only a small amount of gas for effective heating.

The full objects and advantages of my invention will appear in connection with the detailed description, and the novel features of my inventive idea will be particularly pointed out in the claims.

In the accompanying drawings which illustrate one form in which my invention may be embodied,—Fig. 1 is an elevational view of the burner showing it in place in a hot water furnace, the latter being partly broken away. Fig. 2 is a view of the burner in vertical section. Fig. 3 is a view on reduced scale taken in section on the line 3—3 of Fig. 2. Fig. 4 is a view in section on the line 4—4 of Fig. 2. Fig. 5 is a view in section on the line 5—5 of Fig. 2. Fig. 6 is a top plan view of the burner partly broken away. Fig. 7 is a fragmentary view in section taken at a different position from that shown in Fig. 2.

The burner is shown applied to a furnace F of well known construction having a grate G. The base 10 of the burner is placed in central position upon the grate and consists of a metal disk having standards 12 extending upwardly from points adjacent the periphery. The upper ends of these standards are provided with cross arms 14 which support a dome-shaped baffle 16 which for convenience is made in two similar parts held together by means of a pin 18 on one of the parts extending into an opening formed in

a lug 20 attached to the other part. The grate outside of the base 10 is made substantially airtight by a layer of heat resisting material 22, such as asbestos, and the base 10 is provided with openings 24 as shown in Fig. 5 for the passage of air. Above the base 10 is a casting which includes a web 26 provided with a peripheral cylindrical flange 28, the lower end of which extends below the web 26 and rests upon the base. The upper portion of the casting is composed of an upwardly convexed plate 30 joined to the upper end of the cylindrical flange 28 whereby a chamber 31 is produced within the body of the casting. As best shown in Fig. 2, the web 26 is provided with a central screw-threaded opening into which is threaded the upper end of a pipe 32 which conducts a mixture of gas and air to the burner. The web 26 and the plate 30 are joined by a plurality of tube-like members 34 arranged circularly around the center of the casting whereby vertical openings are produced which extend through the casting. The plate 30 is provided with a multiplicity of perforations 36, the material of the plate being preferably thickened around the upper ends of these perforations as shown in Fig. 2. The plate 30 constitutes a distributor for the gas.

The operation and advantages of my invention will now be obvious. A mixture of gas and air passes through the pipe 32 into the chamber 31 from which it is distributed to the perforations 36 after passing through which it is ignited underneath the dome or baffle 16. The entire draft of air for the furnace is through the openings 24 and tubular members 34, the latter being so disposed that a large volume of air is introduced into the center of the flame supplied by the gas coming through the perforations 36. In this manner, a very hot flame is produced from a small amount of gas. The dome 16 serves as a baffle and causes the flame to spread out into engagement with the interior wall of the furnace as will be apparent from Fig. 1. In operation, the burner is practically noiseless and its use is not accompanied by the production of soot, odor, ashes or dust while an adequate supply of fuel is readily available from the city gas system.

I claim:

1. A gas burner for heating plants comprising a base member placed on the grate of the heating plant, a layer of material on the grate surrounding said base member for preventing passage of air outside of said base member, a gas conducting pipe extending through said base member, the latter having openings outside of said pipe for passage of air, and a gas distributor positioned above said base member and the outlet end of said conducting pipe.

2. A gas burner for heating plants comprising a base member placed on the grate of the heating plant, a layer of material on the grate surrounding said base member for preventing passage of air outside of said base member, a gas conducting pipe extending through said base member, the latter having openings outside of said pipe for passage of air, a hollow member to the lower wall of which the end of said conducting pipe is attached, the upper wall of said hollow member having a multiplicity of perforations for passage of gas, and a plurality of tubelike members connecting the upper and lower walls of said hollow member for supplying air to the central portion of the space above said upper wall.

3. A gas burner for heating plants comprising a base member placed on the grate of the heating plant, a layer of material on the grate surrounding said base member for

preventing passage of air outside of said base member, a gas conducting pipe extending through said base member, the latter having openings outside of said pipe for passage of air, a gas distributor positioned above said base member and the outlet end of said conducting pipe, and a baffle positioned above said gas distributor for deflecting the flame outwardly.

4. A gas burner for heating plants comprising a base member placed on the grate of the heating plant, a layer of material on the grate surrounding said base member for preventing passage of air outside of said base member, a gas conducting pipe extending through said base member, the latter having openings outside of said pipe for passage of air, a hollow member to the lower wall of which the end of said conducting pipe is attached, the upper wall of said hollow member having a multiplicity of perforations for passage of gas, a plurality of tubelike members connecting the upper and lower walls of said hollow member for supplying gas to the central portion of the space above said upper wall, standards extending upwardly from said base member, and a baffle supported by said standards in spaced relation above said upper wall.

In testimony whereof I hereunto affix my signature.

THOMAS R. BLANCHARD.