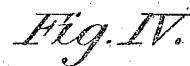
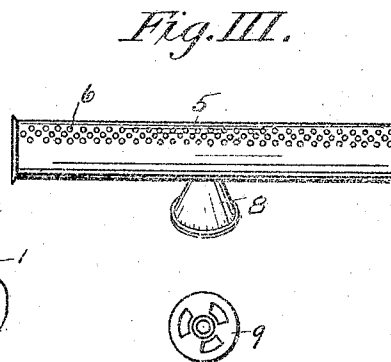
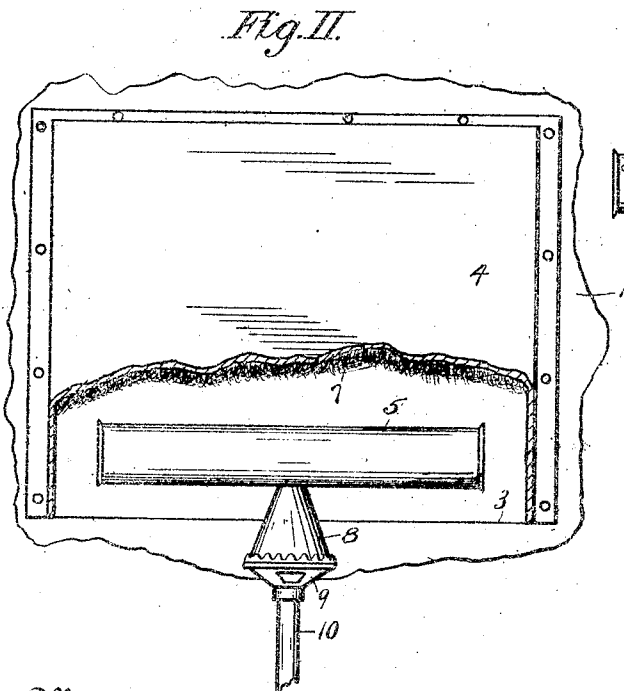
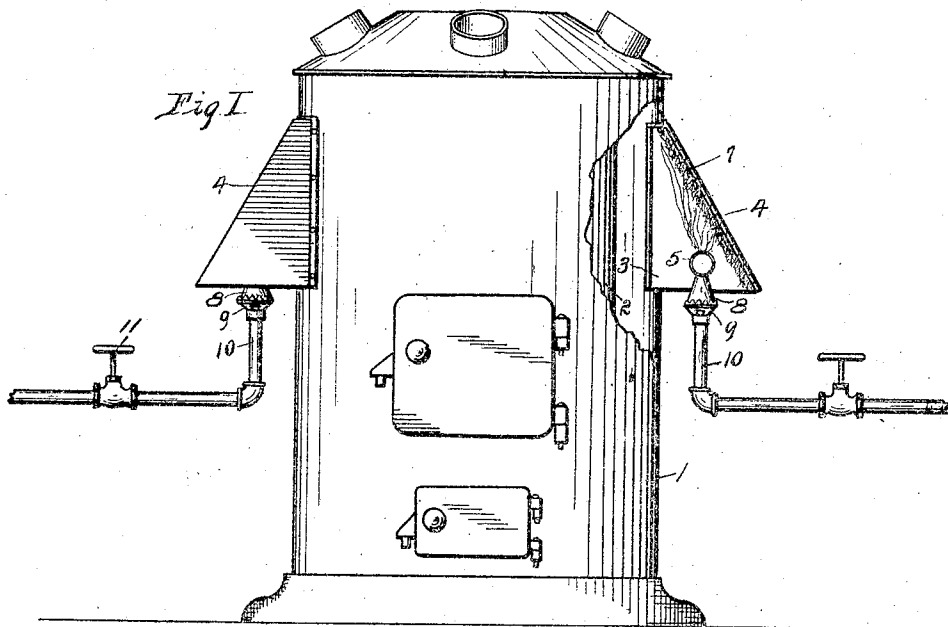


No. 880,844.

PATENTED MAR. 3, 1908.

T. P. WATTS.  
GAS HEATING APPARATUS.  
APPLICATION FILED JAN. 28, 1907.



Witnesses  
C. C. Seidelman.  
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Inventor  
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By his Attorney  
Arthur L. Brown

# UNITED STATES PATENT OFFICE.

THOMAS P. WATTS, OF KANSAS CITY, MISSOURI.

## GAS HEATING APPARATUS.

No. 880,844.

Specification of Letters Patent.

Patented March 3, 1908.

Application filed January 28, 1907. Serial No. 354,407.

*To all whom it may concern:*

Be it known that I, THOMAS P. WATTS, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Gas Heating Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My present invention relates to a gas heating apparatus and more particularly to an apparatus of that class for use with hot air furnaces.

It is the object of my invention to provide a gas heating apparatus which may be applied to any ordinary type of hot air furnace for heating purposes, but which when so applied will not in any way interfere with the usual operation of the furnace, it being possible with my apparatus to simultaneously heat the furnace with both coal and gas. To accomplish these objects I have provided the improved details of structure which will presently be fully described and pointed out in the claims, reference being had to the accompanying drawings forming part of this specification, in which like reference numerals refer to like parts throughout the several views, and in which,—

Figure I is a front elevation of a furnace of the ordinary type equipped with my gas heating apparatus, one of the hoods being in section, and a part of the furnace jacket being broken away for better illustration. Fig. II is a view in side elevation showing one of the hoods, which is partially broken away for better illustration. Fig. III is an enlarged detail view of the burner and mixing chamber. Fig. IV is a bottom plan view of the mixing chamber.

Referring more in detail to the parts,—1 represents a furnace jacket, which is ordinarily constructed of sheet metal, and incloses a cast metal fire bowl 2, within which coal or like fuel is burned for heating purposes, there being a space between the bowl 2 and jacket 1 for the circulation of heated air, which air is conducted through pipes opening into the space between the jacket

and bowl, and leading to the various apartments in the building which it is desired to heat.

In the jacket I provide one or more cut out portions, indicated at 3, and over the cut out portions I secure a hood 4 which is secured at its upper and side edges to the furnace jacket and slants outwardly toward the bottom; the base of the hood being open to receive the burner 5, which comprises a tube extending substantially the length of the hood and is provided with a number of perforations 6, through which the gas is discharged against an asbestos or like lining 7 on the inner surface of hood 4.

Burner 5 is supported on the upper end of a mixing chamber 8, which may be of any suitable type, and is provided with openings at its lower end, and with a slide 9 for closing and opening said openings to regulate the admission of air to the chamber. The mixing chamber is supported on a feed pipe 10, having a valve 11 and connected with a source of supply, not shown.

As before stated, the furnace jacket may be provided with any desired number of cut out portions and hoods, the number depending on the size of the furnace and the amount of heat which it is desired to generate.

When the parts mentioned have been arranged as described, and the gas ignited, the flame from the burning gas will rise into impingement with the asbestos lining to the hood, which assists in the combustion and increases the amount of heat which is carried into the space between the jacket and fire bowl, and from thence into the pipes leading to the various apartments. The mixture of gas and air is secured in the manner mentioned, and the regulation of the flow of gas regulated in the ordinary manner.

With this apparatus it is not necessary to alter the fire bowl in which coal or like fuel is burned, and if desired there may be a fire in the bowl and an operation of the gas burner at the same time, thereby obviating the necessity for a change in the furnace construction, should it be desired to change from the use of coal to gas, as a fuel, or vice versa.

Having thus described the invention, what I claim as new therein and desire to secure by Letters Patent is,—

1. The combination with a furnace having a jacket provided with a cut out portion, of

a hood projecting from said jacket and covering said cut out portion, and a burner located in said hood.

2. The combination with a furnace having a jacket provided with a cut out portion, of a hood having close contact with said jacket at the top and sides of said cut out portion, but open at the bottom, and a burner located in said hood, for the purpose set forth.

3. The combination with a furnace having a jacket provided with a cut out portion, of a hood having close contact with said jacket at the top and sides of said cut out portion, but open at the bottom, a burner located in said hood near the bottom, and a mixing chamber and feed pipe projecting into said open bottom and supporting said burner.

4. The combination with a furnace having a jacket provided with a cut out portion, of a

wedge shaped hood having a close contact with said jacket at the top and sides of said cut out portion and extending outwardly toward the bottom, and a burner located in said hood near the bottom, for the purpose set forth.

5. The combination with a furnace having a jacket provided with a cut out portion, of a hood carried by said jacket in communication with said cut out portion, an asbestos lining in said hood, and a burner located in said hood, for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS P. WATTS.

Witnesses:

A. M. MAXWELL,  
J. T. ALLBRITAIN.