G. SWEET.

GAS FURNACE.

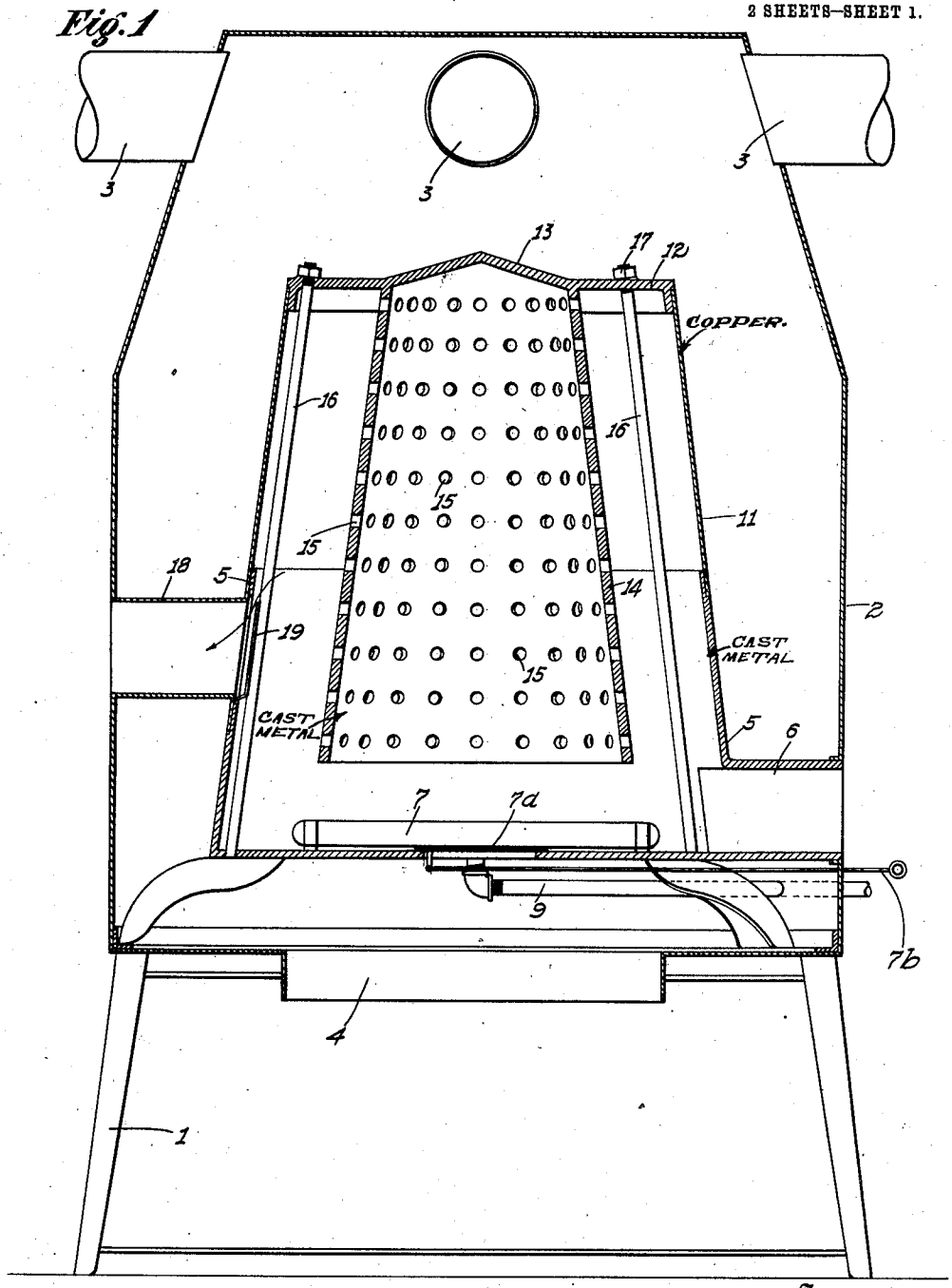
APPLICATION FILED DEC. 26, 1911.

1,047,331.

Patented Dec. 17, 1912.

2 SHEETS—SHEET 1.

Fig. 1



Witnesses

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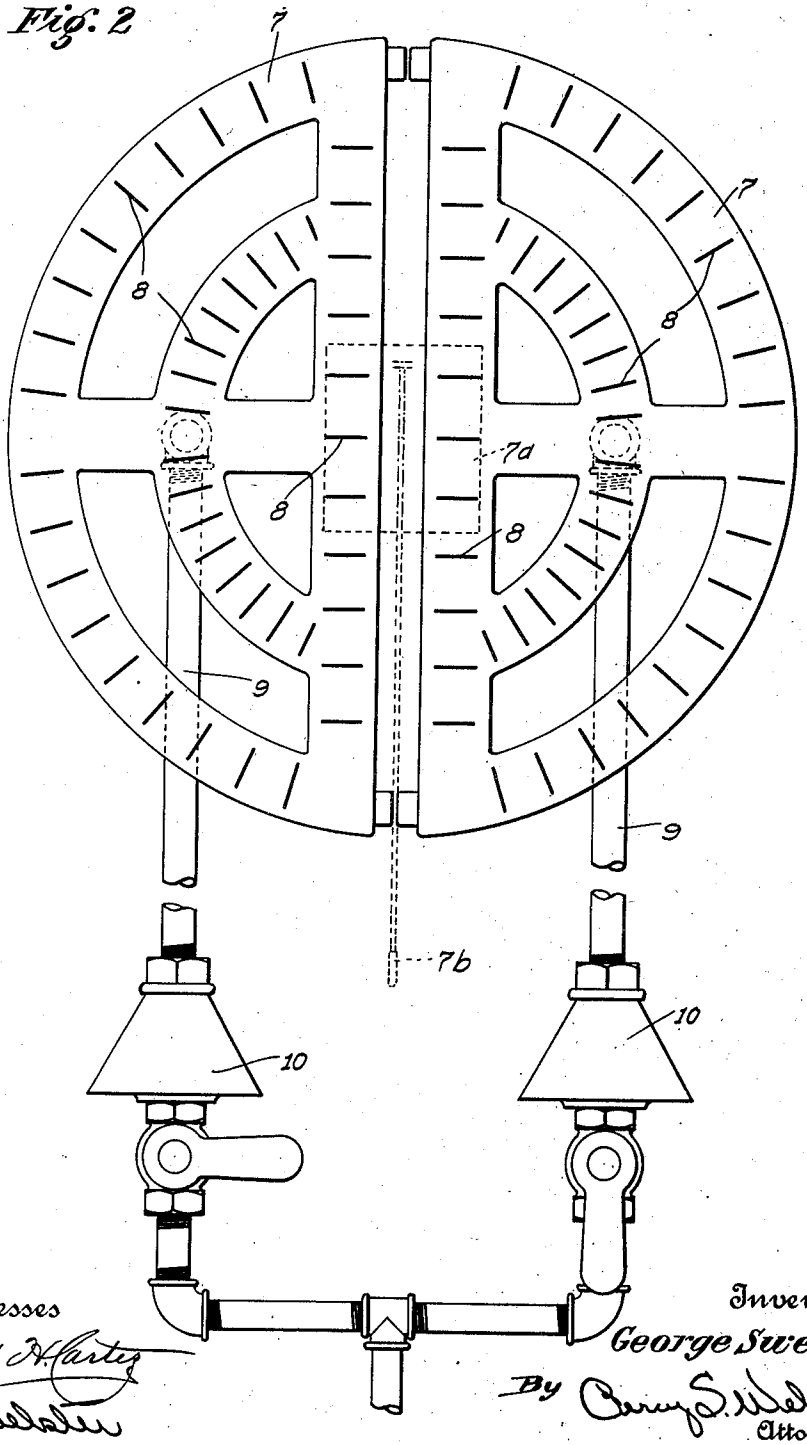
2 SHEETS—SHEET 2.

Fig. 2



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UNITED STATES PATENT OFFICE.

GEORGE SWEET, OF OAKLAND, CALIFORNIA.

GAS-FURNACE.

1,047,331. Specification of Letters Patent. Patented Dec. 17, 1912.

Application filed December 26, 1911. Serial No. 667,811.

To all whom it may concern:

Be it known that I, GEORGE SWEET, a citizen of the United States, residing at Oakland, in the county of Alameda, State of California, have invented certain new and useful Improvements in Gas-Furnaces; and I do declare the following to be a full, clear, and exact description of the same, 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 characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in heating means and particularly for heating means in furnaces where it is desired to use gas as a fuel, the object of the invention being to produce a furnace wherein gas may be used in such a manner as to give the highest efficiency for the amount of gas used and this of course can be accomplished by an improvement in the even radiation of the heat.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects, I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claim.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a vertical section of my improved furnace. Fig. 2 is a top plan view of the gas burner.

Referring now more particularly to the characters of reference on the drawings, 1 designates the supporting legs for the furnace and 2 the side walls of the furnace provided with the usual heating pipes 3, radiating in various directions from the furnace.

In the bottom of the furnace is an air inlet 4 which admits the air into the furnace to be heated by the burner prior to passing through the air pipes 3 to the various points to be heated.

Within the furnace 2 I provide a radiating means composed substantially of a cast iron bottom casing 5 having an inlet 6 opening through the side of the member 2 to permit the insertion of the gas burners 7 which for my purpose I make preferably of two semicircular members having the usual outlet slits 8 and supply pipes 9 provided with mixers 10, these members 7 being composed of a number of branches or compartments as shown.

Disposed upwardly from the casting 5 is a casing 11 made of copper or similar material and then mounted on the top of this casing 11 is a cast iron cap 12 having a conical center member 13 and a hollow cone 14 depending into the casing 11 and casting 5 to a point above the gas burners 7, said member 14 being provided with a plurality of small holes 15 throughout its sides. The members 5, 11 and 12 are securely bolted together by means of rods 16 and nuts 17.

Opening from the member 5 and through the member 2 is a vent member 18 having a protecting hood 19 over its inner end through which the products of the combustion of the gas pass to the atmosphere, the hood 19 being spaced from the inner end of the member 19 at its upper end to permit of the exit of the said products of combustion after full efficiency of the gas has been obtained.

In practice the flames from the gas burners 7 pass up through the cast iron member 14 and through the plurality of holes 15, thus getting this member exceedingly hot and the heat then is radiated through the copper casing 11, which being a good heat conductor readily passes the heat from the member 11 into furnace 2, thus heating the air which passes from the pipes 3 to a high degree. A sliding air door 7^a is disposed under the gas burners 7 and is provided with a handle 7^b to regulate the combustion.

In furnaces using gas heretofore the great trouble has been to thoroughly radiate all the heat from the fire to the air to be heated in the furnaces, but by means of my cast iron member 14 and the heat conducting radiator 11 I feel that I have produced a furnace which will overcome these objections. The gas burner 7 will admit sufficient air for combustion purposes through the inlet 4 and through the mixer 10.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfils the object of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such devia-

tions from such detail may be resorted to as do not form a departure from the spirit of the invention.

Having thus described my invention what I claim as new and useful and desire to secure by Letters Patent is:—

A device of the character described comprising a furnace proper, a radiating means disposed within said furnace, such radiating means comprising a bottom casting having an inlet through the side of said furnace, a copper casing projecting upwardly from said bottom casting, a top casting mounted on said copper casing, bolts projecting through from said top to said bottom casting, a depending drum on said top casting provided with a plurality of holes in its side, an outlet from said lower casting through the side of said furnace, a hood over said outlet and a burner in said lower casting below said drum, as described.

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

GEORGE SWEET.

Witnesses:
STEPHEN N. BLEWETT,
FRANK H. CARTER.