No. 735,751. PATENTED AUG. 11, 1903.

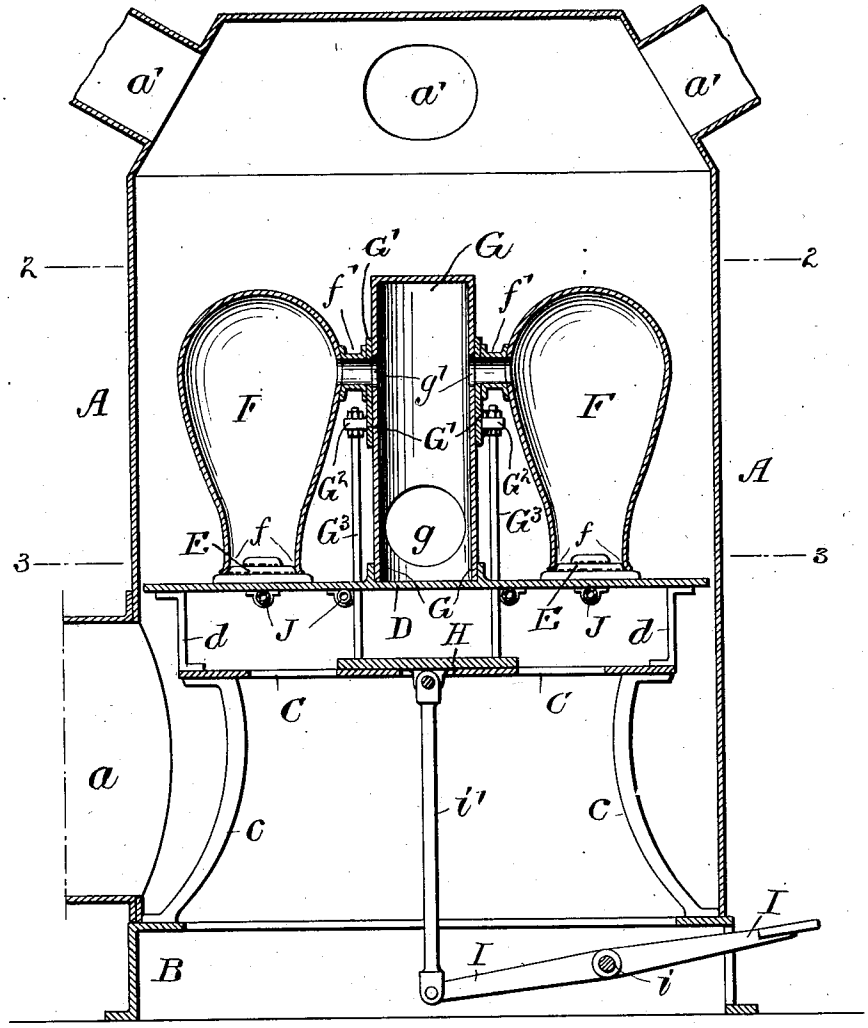
J. C. GOODWIN.

GAS HEATER.

APPLICATION FILED JULY 16, 1902.

NO MODEL 2 SHEETS—SHEET 1

FIG. 1.



Witnesses:
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John W. Horrocks

Inventor:
Julius C. Goodwin
By his Attorney
F. DeWitt Goodwin

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 2 SHEETS—SHEET 2.

FIG. 2.

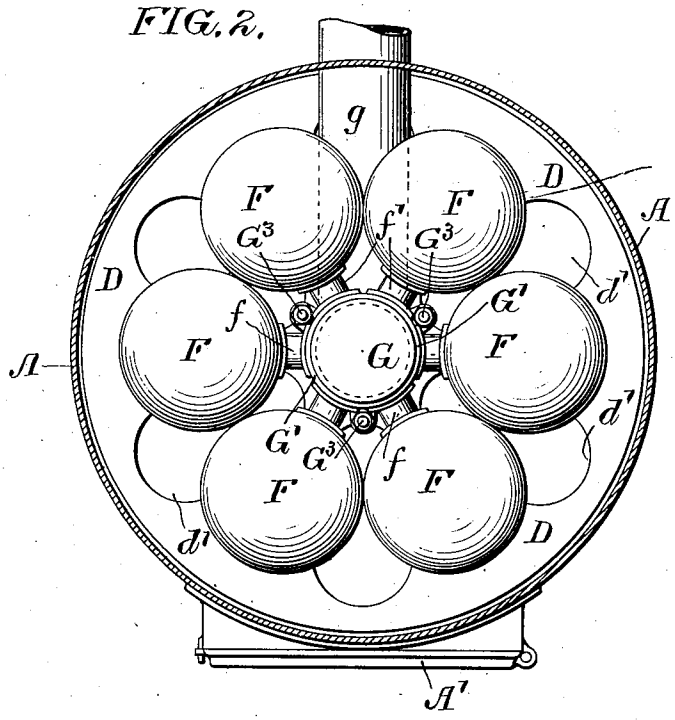


FIG. 4.

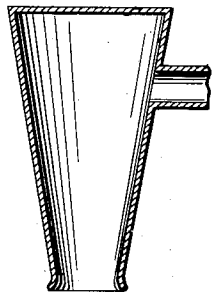


FIG. 3.

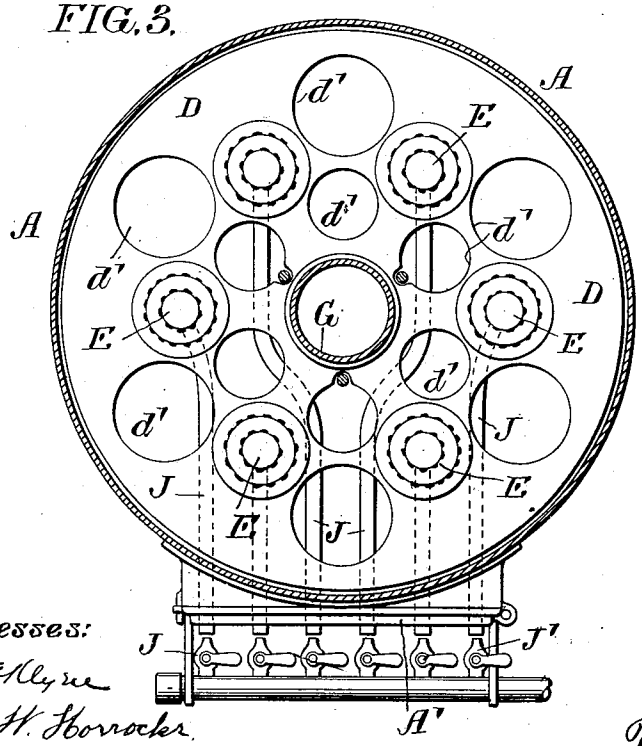
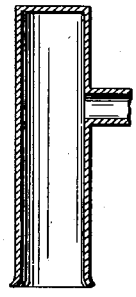


FIG. 5.



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No. 735,751. Patented August 11, 1903.

UNITED STATES PATENT OFFICE.

JULIUS C. GOODWIN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO MARCUS H. DARROW AND FREDERICK CHASE, OF PHILADELPHIA, PENNSYLVANIA.

GAS-HEATER.

SPECIFICATION forming part of Letters Patent No. 735,751, dated August 11, 1903.

Application filed July 16, 1902. Serial No. 115,779. (No model.)

To all whom it may concern:

Be it known that I, JULIUS C. GOODWIN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Gas-Heaters, of which the following is a specification.

My invention relates to improvements in gas-heaters, and particularly to heaters which are adapted to be placed in the cellar of a dwelling-house for heating the same.

The object of my invention is to provide a means of greatly increasing the size of the heat-radiating surface, so that a large amount of air will come in contact with said surface and be heated to a high temperature before it passes through the pipes to the rooms.

A further object of my invention is to construct a heater in which the burners are effectively arranged and the parts properly constructed to make a very effective heater.

Referring to the drawings, Figure 1 represents a sectional view through the center of a heater constructed according to my invention. Fig. 2 is a sectional view on line 2 2, Fig. 1. Fig. 3 is a sectional view on line 3 3, Fig. 1. Fig. 4 is a sectional view of a conical form of radiator. Fig. 5 is a sectional view of a cylindrical form of radiator.

A represents the casing, having an air-inlet *a* near the bottom and air-outlets *a'* at the top. The casing rests upon the cast-iron base B, and upon this base rests the table C, having legs *c* supporting the same. The table C is adapted to support the plate D by means of the braces *d*.

The plate D has secured thereto the burners E, which are arranged as shown in Fig. 3. These burners are similar to those now in use. In the illustration I have shown six burners, but any number may be used. Over each burner is placed a radiator F, which has its larger portion at the top and its smaller portion at the bottom. The sides gradually taper toward the smaller end, so as to form an inverted cone. An opening *f* at the bottom is adapted to encircle the burner, the same fitting tightly, so that the gas or the flame cannot come in contact with the air to be heated.

The flame from the burner heats the radiator to a high temperature and then passes through the pipe *f'*, which is connected to the central pipe G, which is connected to the smoke-flue *g*, running to the chimney. The radiators F are each connected to the central pipe G by the pipes *f'*.

The plate D, as shown in Fig. 3, is provided with openings *d'*, which are so arranged that the air from the opening *a* in the casing will be directed to the radiators F and pass upward along the conical sides of the radiators and be thoroughly heated before it leaves the top of the radiators, as the air will be in close contact with the sides of the same for a considerable length of time, and it is forced outwardly at the same time that it is traveling upwardly, due to the shape of said radiators. The air then passes through the pipes *a'* to the rooms.

To facilitate the lighting of the burners, I provide the following means for lifting the radiators F so that the burners may be reached from the door A' in the casing A. The central pipe G is held in an upright position by securing it to the plate D. Encircling the pipe G is a sleeve G', which is adapted to slide vertically thereon. Said sleeve G carries the pipes *f'*, which support the radiators F. The sleeve G' is provided with lugs G^2, in which are secured rods G^3, which pass down through the openings in the plate D and are attached to the disk H, which latter rests upon the table C when the radiators are in their normal position encircling the burners. A foot-lever I is provided to raise the disk H, which in turn raises the radiators. The said lever I is pivoted at *i* to the base B and is connected to the disk H by the rod *i'*.

The central pipe G is provided with openings *g'*, which register with the pipes *f'* from the radiators.

Each burner is connected with a gas-supply pipe J, which is secured to the plate D. Said pipes J run to the sides of the casing A and are provided with valves J' in the ordinary manner.

The operation of my invention is as follows: The radiators are raised by the foot-lever I, when the burners can be ignited by inserting a taper through the door A'. The lever is then released. The radiators then encircle the burners and are heated to a very high tem-

perature. The obnoxious gases are carried by the pipes f', G, and g to the chimney. The air is admitted through the opening a and directed to the radiators and thoroughly heated and then carried to the rooms of the dwelling through the pipes a'.

It will be understood that radiators similar to those shown in Figs. 4 and 5 can be used without departing from my invention.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination of a casing, a plate within said casing, burners supported on said plate, a support located centrally with respect to said burners, a sleeve slidably mounted on said support, radiators carried by said sleeve and arranged to be superposed on said burners and means for elevating said sleeve, substantially as described.

2. The combination of a casing, a plate within said casing, burners supported on said plate, a support located centrally with respect to said burners, a sleeve slidably mounted on said support, radiators carried by said sleeve and arranged to be superposed on said burners, rods attached to said sleeve, a disk to which said rods are attached and means of raising said disk, substantially as described.

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

JULIUS C. GOODWIN.

Witnesses:

GEO. W. BUCKLEY,

JOHN W. HORROCKS.