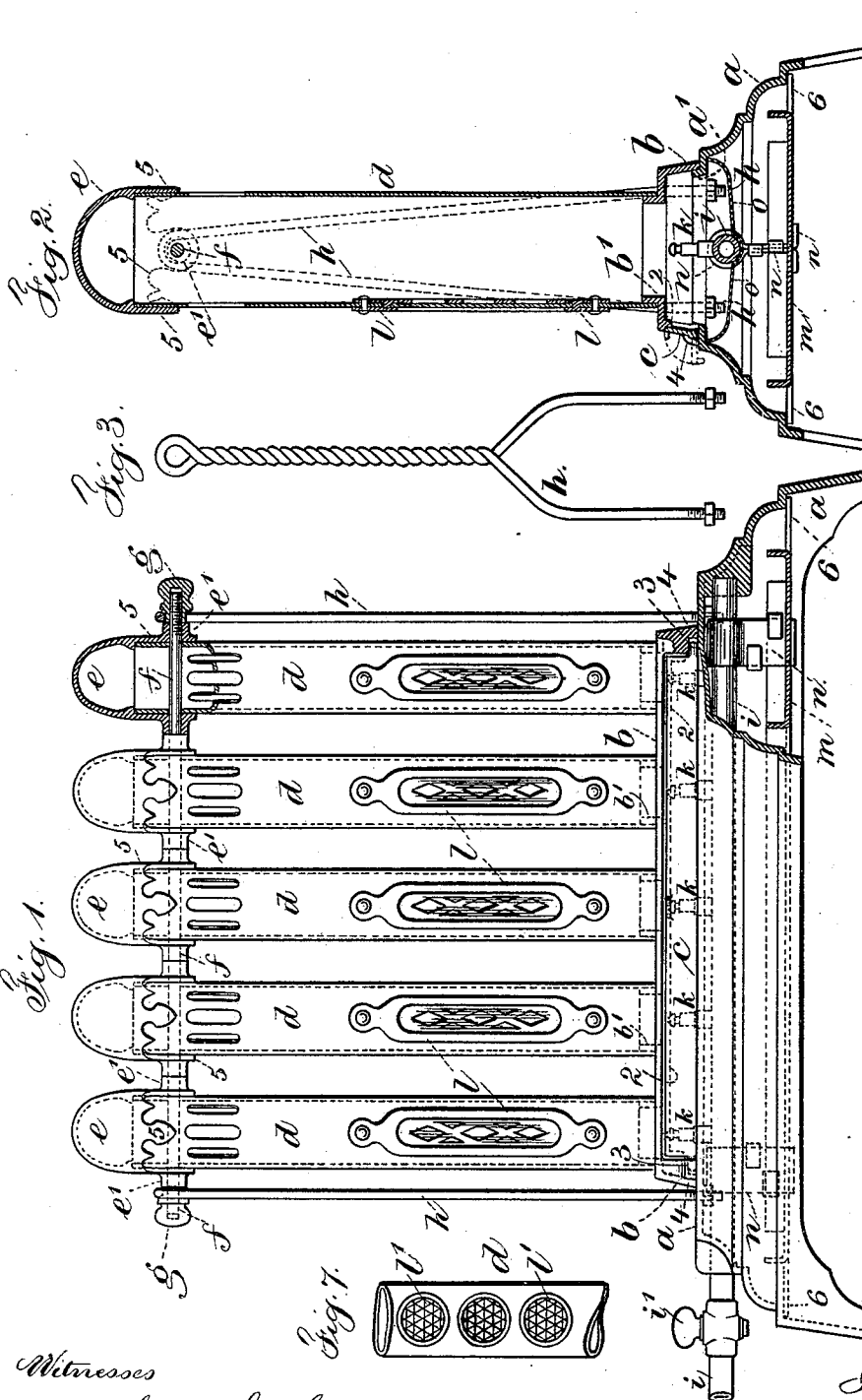


A. WOLFF.
GAS HEATER OR RADIATOR.

No. 481,742.

Patented Aug. 30, 1892.



Witnesses

Chas. H. Smith
J. Fraib

Inventor

Arnovitz Wolff.
per Lemuel W. Seville
Att.

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Fig. 6.

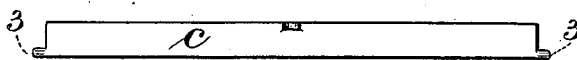


Fig. 5

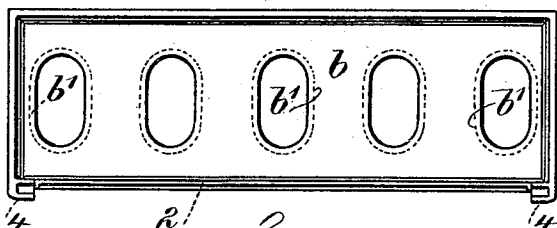
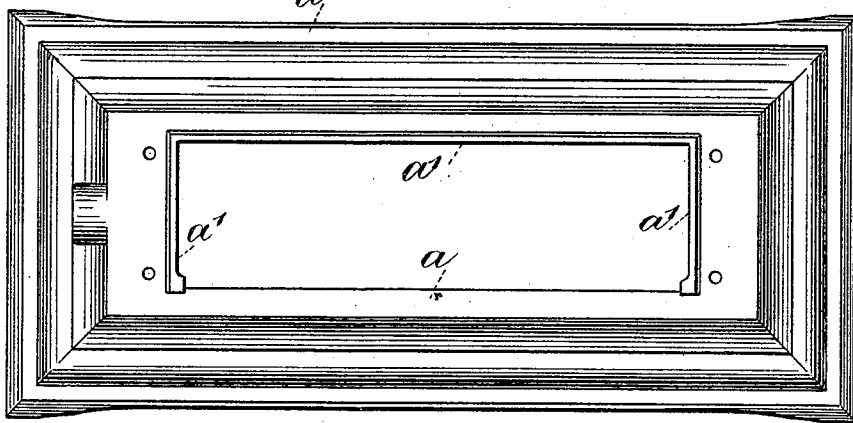


Fig. 4.



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UNITED STATES PATENT OFFICE.

ARNOVITZ WOLFF, OF NEW YORK, N. Y.

GAS HEATER OR RADIATOR.

SPECIFICATION forming part of Letters Patent No. 481,742, dated August 30, 1892.

Application filed December 14, 1891. Serial No. 414,980. (No model.)

To all whom it may concern:

Be it known that I, ARNOVITZ WOLFF, a citizen of the United States, residing at the city, county, and State of New York, have invented a new and useful Improvement in Gas Heaters or Radiators, of which the following is a specification.

My invention relates to a compact and portable heater or radiator for warming rooms by gas-flames; and my present invention is an improvement upon the device set forth and illustrated in my application for Letters Patent filed August 31, 1891, Serial No. 404,189.

In carrying out my invention I employ a two-part base of metal, sheet-metal radiating-tubes that set over collars on the base and in which tubes are gas-burners, a hinged plate in the base to give access for lighting all the burners at once, metal caps to set over the radiating-tubes and having perforated abutting side hubs, through which passes a connecting-rod with end screw-nuts, and tie-rods engaging the ends of the connecting-rod and secured to the base to bind all the parts together. The radiating-tubes have openings at the upper end for the escape of the heated air. I prefer to employ a false bottom within the base to prevent the light of the gas-flames shining on the floor and to prevent downward radiation, as well as sparks from ignited dust falling on a carpet. I also prefer to place frames with mica or with jewel-glasses in the sides of the radiating-tubes to permit the light to shine out and give a cheerful appearance in the room.

In the drawings, Figure 1 is an elevation and partial vertical section of my improved heater or radiator. Fig. 2 is a vertical cross-section. Fig. 3 is an elevation of a tie-rod. Fig. 4 is a plan of the base with the auxiliary base removed. Fig. 5 is an inverted plan of the auxiliary base. Fig. 6 is an elevation of the hinged plate fitting the auxiliary base, and Fig. 7 shows the tube with jewel-glasses.

a represents the base, and b the auxiliary base. The base a is made with corner-legs and a flanged edge a' , over which the auxiliary base sets, and the same may be ornamented as desired. The auxiliary base b is provided with collars b' and with a longitudinal opening along one side. This opening is bounded with a flanged edge 2, and bearing-

lugs 4 are upon this base b at the lower corners of this opening. I provide a hinge-plate c with pins 3, entering the lugs 4 and fitting against the flanged edges 2 and closing the aforesaid opening, and when this plate is turned down access is given, so that all the burners of the radiator can be lighted at once with facility.

d represents the tubes of sheet metal, such as Russia iron, which at their lower ends fit over the collars b' , and said tubes have openings at their upper ends for the escape of heated air, and I provide caps e to fit over the tops of said tubes d . These caps e have internal flanges to set upon the upper ends of the tubes d , and the caps above the tubes are imperforate and are of curved or convex form sectionally and may be ornamented. These caps e are made with depending ornamental flanges 5 surrounding the upper parts of the tubes d , and these flanges on opposite sides of the caps are made with abutting perforated hubs, and the tubes are also perforated at this place and align with the hubs, and a long connecting-rod f , with screw ends, passes entirely through all the tubes d and hubs e' , and screw-nuts g are upon the respective ends of the rod f to bring together and hold the tubes and caps in place. I employ tie-rods h , engaging the ends of the rod f and extending down and through the base a and having nuts on their lower ends, to draw down and strain the rods h to hold together the parts of the heater or radiator. These tie-rods may be of any desired form. I have shown one as an inverted V in dotted lines and another as twisted and then spread out at the bottom, as in Fig. 3. A gas-pipe i passes longitudinally into and through the base a , and said pipe is provided with a cock i' and with burners k , which burners are within and at the lower ends of the sheet-metal tubes d and adjacent to the plate c , so that they can all be lighted at once. I have shown oblong frames l , connected to the tubes d and containing mica, covering openings in said tubes. These permit the light of the gas-flames to pass out into the room and give a cheerful appearance. The openings behind the mica are numerous and of any desired pattern to lessen the risk of the mica being broken. I may employ jewel-glasses l' in frames secured in openings in said

tubes, the jewels showing colored lights and enhancing the cheerful appearance. These may be used alone or in addition to the mica and frames.

5 I make use of a false-bottom plate *m*, of sheet metal, with turned-up edges to leave air-spaces for the ingress of air to the burners, and this bottom plate has corners 6 fitting within the base and preventing lateral move-
10 ment of the plate, and *n* are straps passing around the gas-pipe *i* and extending down and through the plate *m*, with their ends turned over to support the said plate. This plate *m* prevents the light of the gas-flames shining
15 on the floor or downward radiation heating the floor, and also prevents any sparks of ignited dust falling on the floor.

I employ a bent sheet of wire-gauze *o* within the base *a* and between the gas-pipe *i* and
20 bottom plate *m*. This wire-gauze sheet is secured to the gas-pipe, and it breaks up or comminutes the draft of incoming air, so that the gas-flames burn steadily.

I claim as my invention—

25 1. The combination, in a gas-heater, with vertical radiating-tubes, a gas-pipe, and burners, of a base *a*, having a central opening with a surrounding flange *a'*, an auxiliary base *b*, adapted to set over the said flange *a'*
30 and having an opening along one side with a flanged edge 2 and bearing-lugs 4, and a longitudinal plate *c*, fitting the aforesaid opening and having hubs 3 in the lugs 4, on which the plate swings, whereby access is given for light-
35 ing the burners, substantially as specified.

2. The combination, in a gas heater or radiator, with the base, of sheet-metal radiating-tubes setting upon said base, separate caps fitting over the sheet-metal tubes, a rod pass-
40 ing horizontally through these caps and tubes to connect them together, and tie-rods engaging the ends of the said rod and secured to the base to compact and hold together the parts of the heater, substantially as set forth.

45 3. The combination, in a gas heater or radiator, with the base and sheet-metal radiating-tubes, of separate caps fitting over the sheet-metal tubes and having perforated abutting side hubs, a rod passing horizontally
50 through these caps and tubes to connect them together, and tie-rods engaging the ends of

the said rod and secured to the base to compact and hold together the parts of the heater, substantially as set forth.

4. The combination, in a gas heater or ra- 55 diator, with the base and sheet-metal radiating-tubes, of the separate hollow convex caps *e*, fitting over the sheet-metal tubes, each cap having an internal flange and being imperforate above the radiating-tubes, having de- 60 pending ornamental flanges 5, surrounding the upper ends of the radiating-tubes, and with perforated abutting side hubs *e'* and tie-rods *f* for connecting the caps, substantially as and for the purposes set forth. 65

5. The combination, in a gas heater or radiator, with the sheet-metal radiating-tubes, of the separate caps *e*, fitting over the sheet-metal tubes, each cap having flanges 5 and perforated abutting side hubs *e'*, the longi- 70 tudinal connecting-rod with screw ends passing through the tubes and caps, and the screw-nuts for bringing together and holding the caps and tubes, substantially as specified.

6. The combination, in a gas heater or ra- 75 diator, with the base *a* and gas-pipes *i*, having burners, of the bottom plate *m*, with turned-up edges to leave air-spaces and with corners 6, and the straps *n*, surrounding the gas-pipe and passing through the plate *m*, with the 80 ends turned over to support the plate, substantially as set forth.

7. The combination, in a gas heater or radiator, with the base *a* and gas-pipes *i*, having burners, of the bottom plate *m*, with turned- 85 up edges to leave air-spaces and with corners 6, and the straps *n*, surrounding the gas-pipe and passing through the plate *m*, with the ends turned over to support the plate, and a sheet of wire-gauze *o*, extending across the 90 base midway between the burners and bottom plate and connected to the gas-pipe for distributing and breaking the force of the air passing to the flames, substantially as specified. 95

Signed by me this 11th day of December, 1891.

ARNOVITZ WOLFF.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.