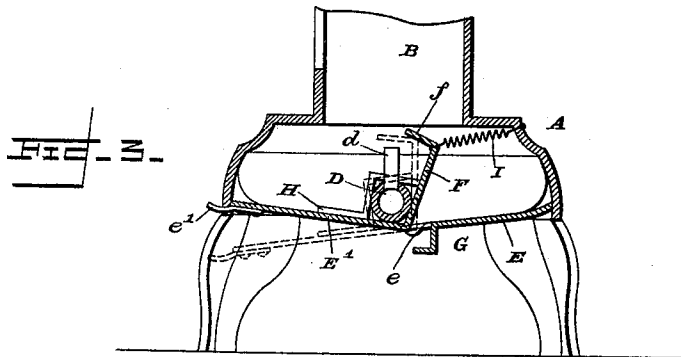
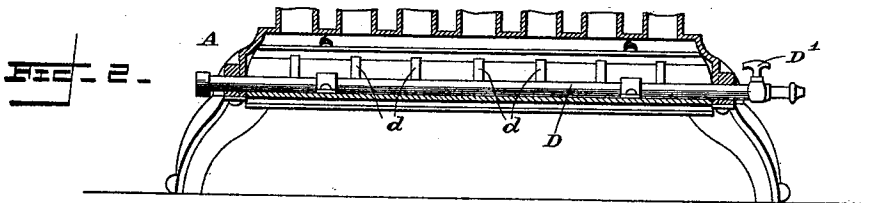
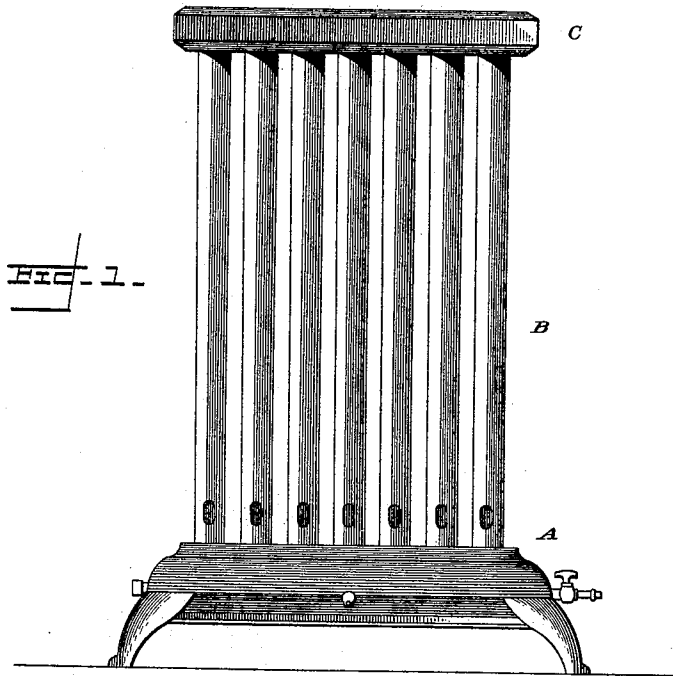


(No Model.)

J. JOHNSON.
RADIATOR.

No. 521,618.

Patented June 19, 1894.



Witnesses

Carl Swarc, Jr.
Wm L Boyden

Inventor

Jonathan Johnson
per Fred Wacker
Attorney

UNITED STATES PATENT OFFICE.

JONATHAN JOHNSON, OF LOWELL, MASSACHUSETTS.

RADIATOR.

SPECIFICATION forming part of Letters Patent No. 521,618, dated June 19, 1894.

Application filed September 5, 1893. Serial No. 484,821. (No model.)

To all whom it may concern.

Be it known that I, JONATHAN JOHNSON, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Radiators; and I do hereby 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.

My present improvements relate to gas or oil heaters or radiators.

The object of the invention is to improve the construction of heaters of this class so as to permit the development thereby of the highest degree of heating power without the concomitant disadvantages generally belonging thereto and more particularly to improve the mechanism for lighting simultaneously and effectively all the burners of the series usually located within the base of the radiator.

The invention therefore consists essentially in the construction, arrangement and combination of parts, substantially as will be hereinafter described and then more particularly pointed out in the ensuing claims.

In the annexed drawings illustrating my invention: Figure 1 is a front elevation of the complete radiator. Fig. 2 is a partial vertical longitudinal section of the lower portion of the radiator, showing the burners in position for heating the same. Fig. 3 is an enlarged transverse section.

Similar letters of reference designate corresponding parts throughout the different figures of the drawings.

In all the figures A represents the chambered base having any suitable size and shape, being preferably of cast iron and provided with suitable legs or feet to sustain it at the proper height from the floor. This base A is pierced with one or more rows of holes—in Figs. 2 and 3, with one row,—to receive the lower ends of the radiating pipes B, which are inserted therein and supported in a vertical position and the top of which pipes B is the canopy or radiator head C.

Within the chambered base A is located the horizontal gas supply pipe which supplies the burners. This supply pipe may have one or more sections and may be arranged in any

desired manner within the base. In Figs. 2 and 3, it consists simply of one length of pipe D, preferably provided at one end with a valve or cock D', which end connects with any suitable source of gas supply. This pipe D is supported in suitable bearings at each end of base A. Screwed into the upper side of this pipe D, is a series of burners *d* of which there may be any number. These burners *d* may be of any suitable kind. They may be what are known as Scotch tips or fish tail burners, employing what is termed straight gas, or they may be of the kind shown in Patent No. 408,980, of August 13, 1889, which use atmospheric air mixed with gas. I do not wish to be restricted to any particular arrangement however of the gas supply pipe, as it may have as many sections as are desirable, be bent or shaped in any way, and made of any preferred size, as well as arranged to carry any number and kind of burner tips.

On the bottom of the chambered base A are located longitudinal bottom plates or fenders E and E', which close the entire bottom of the base with the exception of a central longitudinal slot *e* in the space which intervenes between the contiguous longitudinal edges of the said bottom plates E, at the medial line of the base. This slot *e* is directly underneath the series of burners *d* when only one pipe D is employed, it being found that air supplied in this manner at a point directly beneath the burners very largely increases the heating power thereof by permitting a rapid and intense combustion. The plate E is provided on its longitudinal edge nearest the plate E', with an angular or right-angled flange G, the bottom part of which rests beneath the slot *e*. The plate E' has its edge which is nearest the flange E, formed with a right-angled longitudinal extension F, which lies within the base A alongside of the pipe D and is itself provided on its edge with a right-angled flange or plate *f* which is adapted at certain times to occupy a horizontal longitudinal position directly above the series of burner tips. The plate E' with its additions as described, is hung movably upon the pipe D by means of straps H surrounding said pipe and attached at their ends respectively to the plate E' and the plate F. Furthermore the plate E' is provided on its outer edge about

midway thereof, with a handle *e'*, which can be laid hold of for the purpose of depressing the plate and thereby shifting it from the position shown in full lines in Fig. 3, to the position shown in dotted lines in the same figure. A spring I, attached to base A and to the plate F preferably at the point where said plate joins with the flange *f*, operates to hold plate E' as well as plate F in the position shown in full lines in Fig. 3. In this position the plate *f* is not directly above the burners *d*, but a little to one side so as not to be in the way of the flame. When the plate however is moved into the position shown in dotted lines, it will obviously be directly above the burners. The operation of this plate will be obvious. When it is desired to light the burners, the operator will depress the handle *e'* and consequently the plate E', thereby bringing the plate *f* above the burners and then, as the gas is turned on, the latter will fuse itself beneath the plate *f* so that a flame applied at any point will suffice to ignite all the burners.

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

1. As an improvement in heaters, the combination with a radiating pipe of the burner chamber in the base, the burners located within said chamber, said chamber being inclosed on all sides with the exception of a cen-

tral longitudinal slot through which air is admitted, one of the inclosing plates carrying an integral lighting plate which is movably supported, substantially as described.

2. The combination in a gas or oil heater, with a series of burners and a base inclosing the burners, of an adjustable lighting plate suspended upon the supply pipe and forming a part of the bottom of the base, substantially as described.

3. In a heater, the combination of the base having bottom plates whose longitudinal edges are slightly apart to provide an air slot the burners within said base and an adjustable lighting plate carried by one of said bottom plates which plate is supported upon the supply pipe and provided with a closing spring and an operating handle, substantially as described.

4. In a heater in combination with the base and a supply pipe therein, a longitudinal bottom plate having an integral lighter plate supported on the supply pipe and operating in conjunction with the burners, substantially as described.

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

JONATHAN JOHNSON.

Witnesses:

SAMUEL B. WYMAN,
GEO. W. STEVENS.