

No. 806,855.

PATENTED DEC. 12, 1905.

J. WAGNER.  
HOT AIR RADIATOR.  
APPLICATION FILED APR. 25, 1904.

Fig. 1.

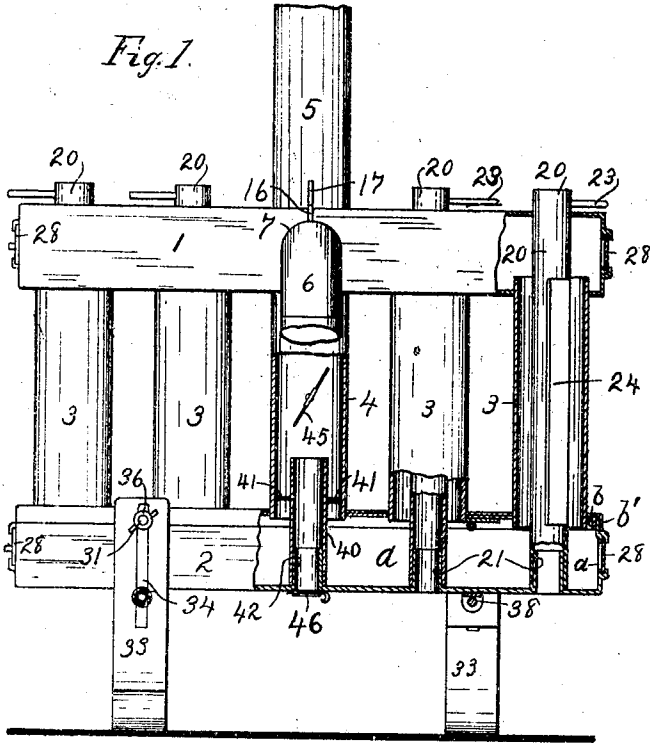


Fig. 2.

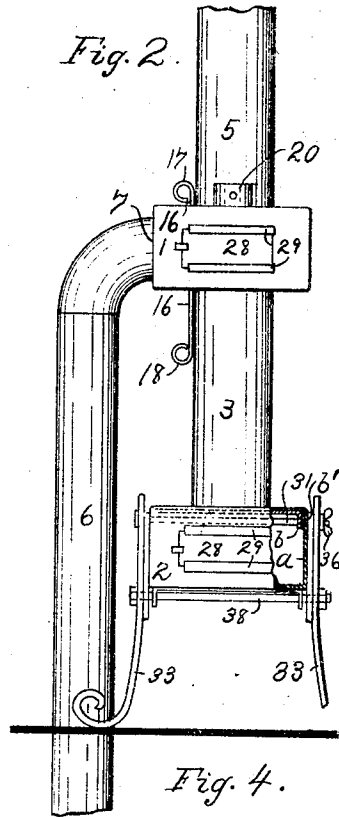
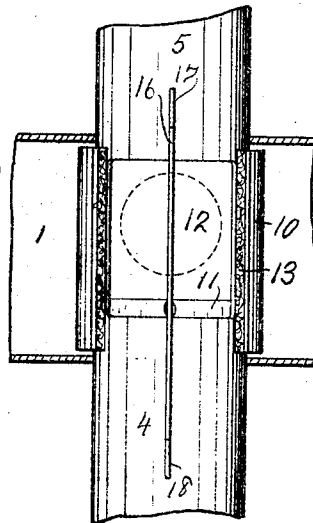
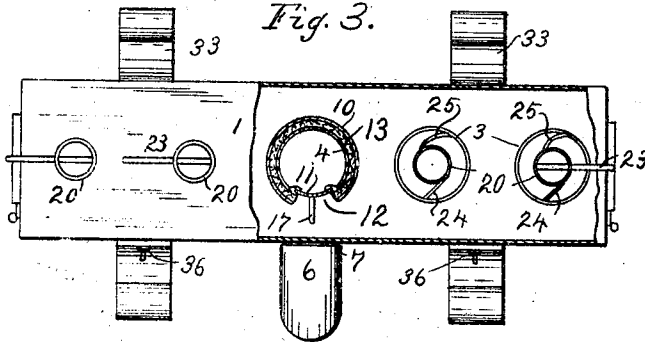


Fig. 4.

Fig. 3.



WITNESSES:  
*F. A. O. W.*  
*H. J. Wagner.*

INVENTOR  
*John Wagner*  
BY *Edwin & Wheeler.*  
ATTORNEYS

# UNITED STATES PATENT OFFICE.

JOHN WAGNER, OF PORTAGE, WISCONSIN.

## HOT-AIR RADIATOR.

No. 806,855.

Specification of Letters Patent.

Patented Dec. 12, 1905.

Application filed April 25, 1904. Serial No. 204,743.

*To all whom it may concern:*

Be it known that I, JOHN WAGNER, a citizen of the United States, residing at Portage, county of Columbia, and State of Wisconsin, have invented new and useful Improvements in Hot-Air Radiators, of which the following is a specification.

My invention relates to improvements in hot-air radiators.

The object of the invention is, first, to provide means whereby the heating capacity of such a radiator may be varied in accordance with the requirements; second, to provide means for adapting the radiator to various positions or locations; third, to provide means for effectively keeping the same at maximum heating capacity, and, fourth, to provide means whereby a direct draft may be secured, if desired.

In the following description reference is had to the accompanying drawings, in which—

Figure 1 is a side view of my invention, partly in section at one end. Fig. 2 is an end view of the same. Fig. 3 is a plan view with a portion of the upper chamber shown in horizontal section. Fig. 4 is a detail view of a portion of the upper chamber and central smoke-flue, said portion of the upper chamber being shown in longitudinal section.

Like parts are identified by the same reference characters throughout the several views.

The radiator is provided with an upper chamber 1 and a lower chamber 2, which chambers are connected by pipes 3, which constitute smoke-flues. A central smoke-flue 4 extends from the lower chamber 2 through the upper chamber and connects with a pipe 5, leading to a chimney or other suitable point of discharge.

6 is an inlet smoke-pipe leading from a stove or furnace and entering the upper chamber at 7, as best shown in Figs. 2 and 3. The smoke and gases of combustion delivered into the chamber 1 from the pipe 6 pass downwardly from said chamber through the flues 3 to chamber 2, from which they pass upwardly through the pipe 4 to the discharge-pipe 5. The pipe 4 within the chamber 1 is provided with a collar 10, which serves as a guide for a damper 11, which normally covers an aperture 12 in the pipe 4. This aperture is located directly opposite the inlet 7, so that when the damper 11 is opened the smoke and gas from the pipe 6 are permitted to pass directly through the aperture 12 and to discharge through the pipes 4 and 5. The damper 11

has its edges abutting a packing 13, of asbestos, which is interposed between the collar 10 and pipe 4 and not only assists in rendering the damper air-tight when closed, but prevents the heat of the incoming smoke and gas from radiating through the pipe 4.

To operate the damper 11, a piece of wire 16 is secured thereto and projects upwardly and downwardly through suitable apertures in the walls of the chamber 1, the projecting ends of this wire being looped at 17 and 18 to form handles whereby the damper may be manipulated. Pipes 20, constituting air-flues, extend vertically through the chamber 2, flues 3, and chamber 1, the lower ends of the pipes 20 being rotatably engaged by tubular projections 21 in the bottom of the chamber 2. The upper ends of the pipes 20 are provided with handles 23, whereby they may be rotated, and each of the pipes 20 is provided with a wing 24 within the flue 3, which wing bears against the wall of the flue and scrapes the same when the pipe 20 is rotated. The flue 3 is also provided with an inwardly-projecting wing 25, adapted to scrape the wall of the air-flue 20 when the latter is rotated, the flues being thus kept clear of soot.

The respective ends of the chamber 1 and 2 are each provided with a slide-damper 28, which moves in suitable guides 29 and is opened for cleaning the chamber.

In order that the radiator may be adjusted at various heights to facilitate its instalment and save cutting the pipes 6 and 5 into lengths to suit the particular location of the apparatus, I have provided the lower chamber 2 with legs 33, having slots 34 at their upper ends and connected with the chambers by bolts 31 and nuts 36, which are used to clamp the legs to the chamber in any desired position. A removable bolt 38 is passed through the slot-apertures 34 in the legs below the chamber 2, this bolt 38 being also capable of adjustment in various positions in the slots 34. The bolt 31 supports the main portion of the radiator from the legs. The bolt 38 supports the bottom of the chamber 2, which is made in the form of a pan, having side and end walls *a*, entered between flanges *b b'*, depending from the top of chamber 2, whereby the bottom portion of this chamber may be removed and cleaned by withdrawing the bolts 38.

An air-pipe 40 is used to deliver air directly into the smoke-flue 4. This pipe is supported by arms 41 within the pipe 4 and at its lower

end is slipped over a tubular projection 42, by which air is admitted through the bottom of chamber 2. The object of the projections 42 and 21 is to avoid loose joints in the bottom of the radiator, the pan *a* being thus capable of receiving and retaining the soot and liquid produced by the condensation of gases within the radiator. A damper 45 of ordinary construction is located in the flue 4 above the pipe 40. The draft is checked by this damper and by admitting air to the pipe 40, a slide-damper 46 being employed to regulate the admission of air through the tubular inlet projection 42.

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

1. The combination of upper and lower chambers; flues connecting said chambers; an inlet-flue leading to the upper chamber; a discharge-flue leading from the lower chamber through the upper chamber; and air-flues leading through both chambers and their connecting-flues; each of said air-flues being rotatable and provided with a wing extending therefrom in a direction opposite that of rotation, and contacting with the wall of the connecting-flue; said connecting-flue being provided with a similar wing projecting in the direction of rotation of the flue and in contact with the latter.

2. The combination of a set of lower and upper chambers connected by smoke-flues; an inlet-pipe communicating with the upper chamber; a discharge-pipe leading from the lower chamber through the upper chamber; a set of slotted legs adjustably connected with the top of the lower chamber by headed pins;

a removable pin engaged in suitable apertures in the legs and adapted to support the bottom of said lower chamber; the bottom and top portions of said lower chamber being separable.

3. In a heater of the described class, the combination with a set of chambers connected by suitable flues; a discharge-flue leading from one chamber through the other; an inlet-pipe connected with said last-mentioned chamber near the discharge-flue; a slide-valve covering an aperture in the discharge-flue opposite said inlet; a collar partially encircling said flue and arranged to serve as a guide for said valve; and an asbestos lining interposed between said collar and flue and arranged to serve as a packing for the valve.

4. In a heater of the described class, the combination of a set of smoke-receiving chambers connected by suitable smoke-flues and located one above another, a discharge-flue connected with the lower chamber, a removable pan constituting a bottom for the lower chamber and provided with tubular projections extending upwardly in said chamber in line with the connecting smoke-flues and discharge-flue; air-pipes having their lower ends engaging said tubular projections and arranged to extend upwardly therefrom in the smoke-flues and through the upper chamber, said removable pan also having an air-pipe extending upwardly in the discharge-flue.

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

JOHN WAGNER.

Witnesses:

WILLIAM O. KELM,  
ROBERT J. HUGHES.