

(No Model.)

E. A. WOOD.

STEAM HEATER OR RADIATOR.

No. 262,715.

Patented Aug. 15, 1882.

Fig. 1.

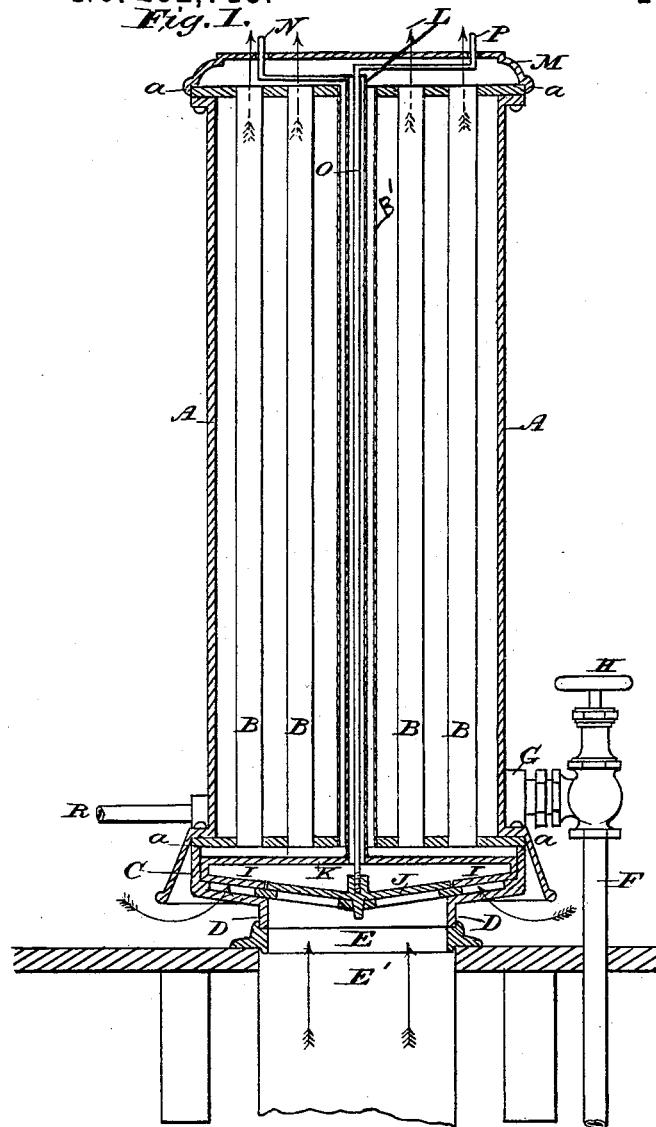


Fig. 2.

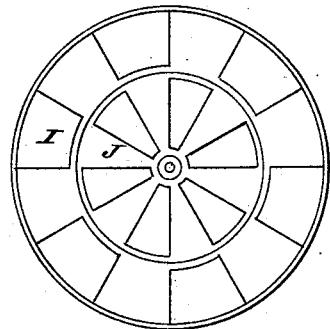


Fig. 3.

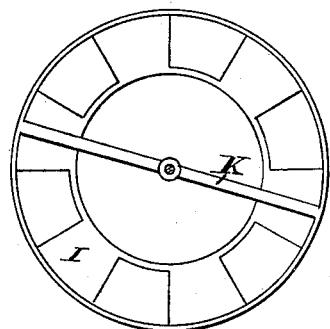


Fig. 5.

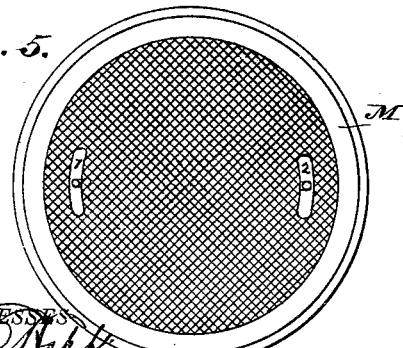
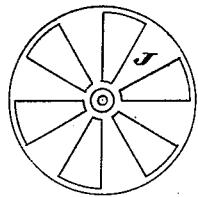


Fig. 4.



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## STEAM HEATER OR RADIATOR.

SPECIFICATION forming part of Letters Patent No. 262,715, dated August 15, 1882.

Application filed May 29, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN A. WOOD, a citizen of the United States, residing at Utica, in the county of Oneida and State of New York, 5 have invented certain new and useful Improvements in Steam Heaters or Radiators; and I do 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 applies to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in direct and indirect radiators for warming buildings by steam; and it consists in the arrangement of parts and in the devices for regulating or controlling the heat, as will be more fully hereinafter set forth, and pointed out in 20 the claims.

Figure 1 is a vertical sectional view. Fig. 2 is a top view of the registers for controlling the admission of air to the radiator. Figs. 3 and 4 are detached views of the inner and outer 25 registers. Fig. 5 is a top or plan view of the radiator.

Referring to the drawings, A is a cylinder of iron, provided with heads *a a*, through which the air-tubes B B pass, and in which they are 30 secured in substantially the same manner as the tubes in a vertical boiler are arranged. The cylinder A is set on a base, C, of iron, the bottom of which is perforated or provided with openings to register with openings in the register wheels or disks. This base C is provided 35 with an extension, D, which rests on and is supported by a flanged ring, E, placed in an opening, E', in the floor of the room or apartment to be warmed, said opening being connected with a trunk or pipe leading to a window or other opening, and through which the cold air from the outside of the building is admitted to the radiator, where it is heated in its 40 passage through the tubes, and then finds its way to the room or apartment to be warmed.

F is a steam-pipe, which connects with the cylinder A by means of an elbow-joint, G, and valve H, and by which steam is conveyed from any convenient source into the cylinder A and 45 into the spaces surrounding the air flues or pipes B, and by which means the air in its

passage through said flues is heated and discharged into the apartment.

I and J are register wheels or disks, which rest on the perforated base C. The register I 55 is larger than the register J, and is designed to regulate the admission of air taken from the apartment through the radiator. The register I is provided with a cross-bar, K, by which it is connected to the operating-tube L, which 60 passes up through the central air-flue, B'. The operating-tube L may be made of a section or piece of the ordinary gas-pipe, and is provided with a handle, N, by which it is turned to open or close the apertures in the base C. The register wheel or disk J is pivoted on a central support cast in and with the base C, and is adapted to receive the rod O, which passes up through the tube L and is provided with a handle, P, by which it is operated. The operating-handles N and P project toward the 65 sides, and extend slightly above the top M, through slots 1 and 2, and may be so arranged as to serve as indexes or indicators, by which the exact position of the registers can be determined at a glance.

It will be noticed that the register S is directly over the cold-air flue and controls the 70 passage of air from the outside of the building into the apartment.

R is a pipe, through which the water of condensation is carried from the interior of the radiator; but this may be dispensed with, and the water may be returned through the same pipe which admits the steam to the radiator.

The operation of my device is as follows: When the radiator is heated, if it is desirable to warm the room by indirect heat, the register wheel or disk J is turned by means of the rod O and handle P, and cold fresh air is admitted through the opening E' to the radiator, where it is heated in its passage therethrough, and escapes through the perforated top M and 80 mingles with the air in the room, thus raising the temperature therein, proper ventilation 85 being provided, so that the foul air will escape and the fresh, pure, warm air will take its place.

Should it be desirable to warm the room without ventilation, or by what is known as "direct" heat—as, for instance, if it is desirable 90 to heat a room left unoccupied for some time—the register J can be closed and the register I 95

opened, thus admitting only the air within the room to be drawn through the radiator, (its entrance to the radiator being through the perforated base C, as indicated by the arrows in Fig. 1,) which is thereby warmed over and over again and diffused throughout the apartment, and thus in very cold or stormy weather, or where a high degree of temperature is required, the room or apartment can be kept comfortable

10 in an economical manner.

I am aware that it is not new to use in steam-radiators an inner and an outer casing in combination with a source of heat, and with a valve to close or open the chambers within said casing to regulate the passage of heated or cold air. I am also aware that hollow compartments with tubes passing therethrough for the passage of air, the heating agent being confined in said compartment and surrounding

15 20 said tubes, have been used, and such I do not claim.

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

25 1. In a steam heater or radiator, the combination of the cylinder A and perforated base

C with the register disks I and J, resting on and within said base, and devices, substantially such as described, for operating the register-disks from the top of the radiator, as set forth. 30

2. In a steam heater or radiator, the combination of the cylinder A, provided with a central tube, B', with devices, substantially such as described, for operating the registers, as and for the purpose set forth. 35

3. In a steam heater or radiator, the tube B', in combination with the register-operating tube L and operating-rod O, as set forth.

4. The register I, provided with the cross-bar K, in combination with the operating-tube 40 L and crank N, as set forth.

5. The register J, pivoted in the bottom of the base C, and provided with the operating-rod O and handle P, in combination with the tube L, as set forth.

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

EDWIN A. WOOD.

Witnesses:

GEORGE E. HOPKINS,  
WM. E. Wood.