No. 809,486. PATENTED JAN. 9, 1906.

W. H. WYANT.

RADIATOR.

APPLICATION FILED MAR. 6, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

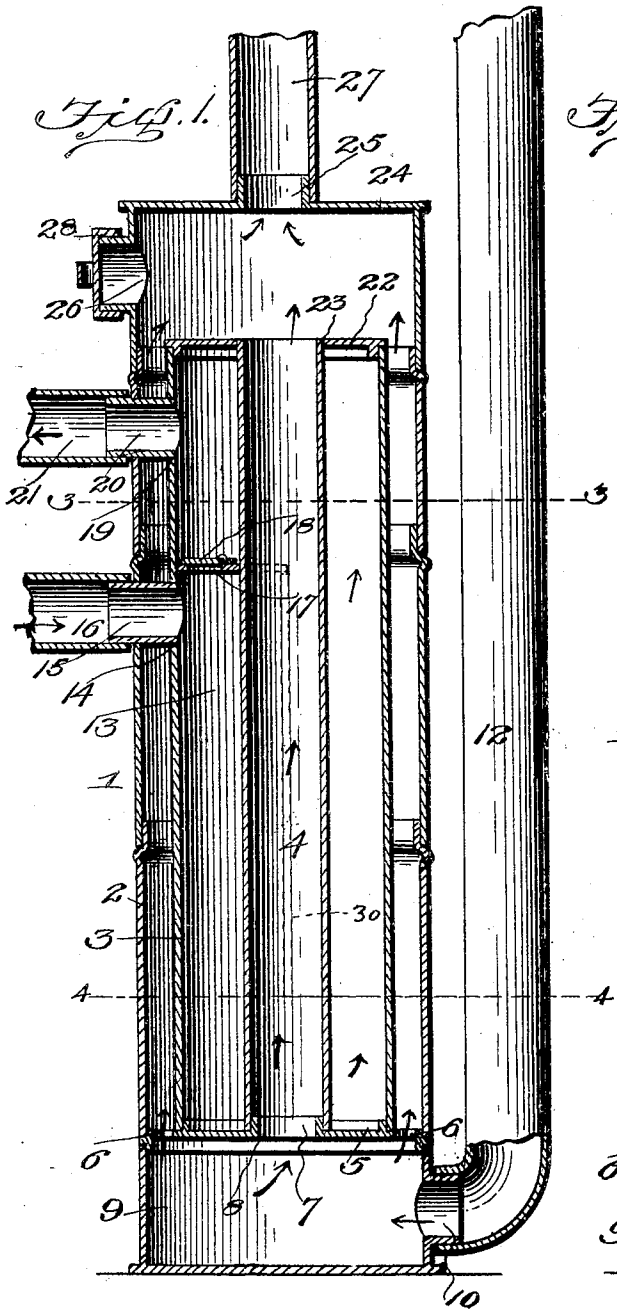

Fig. 2.

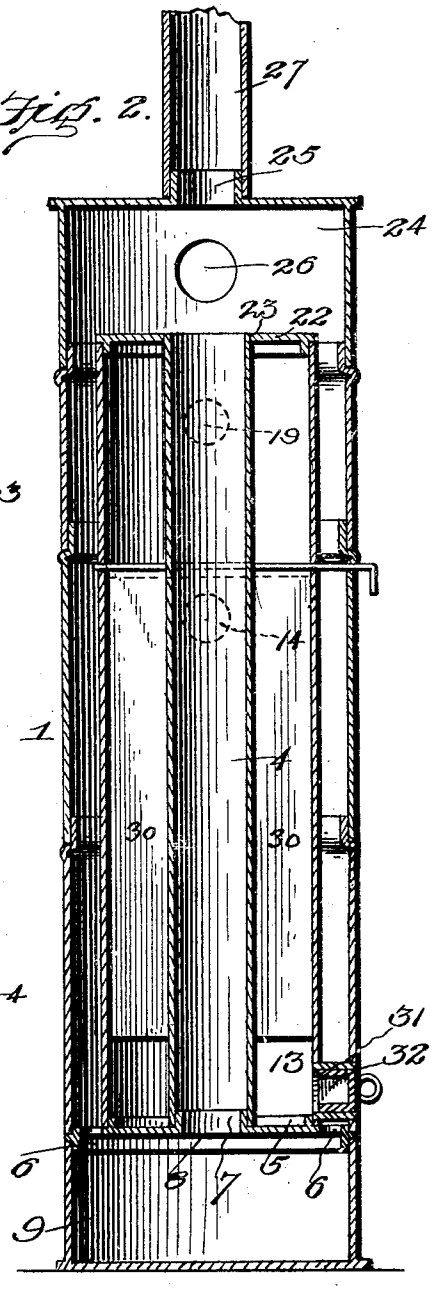

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Fig. 3.

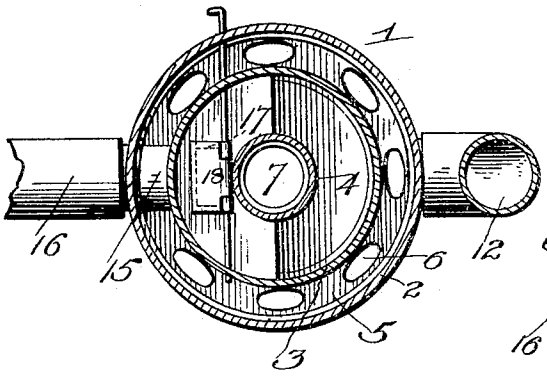


Fig. 5.

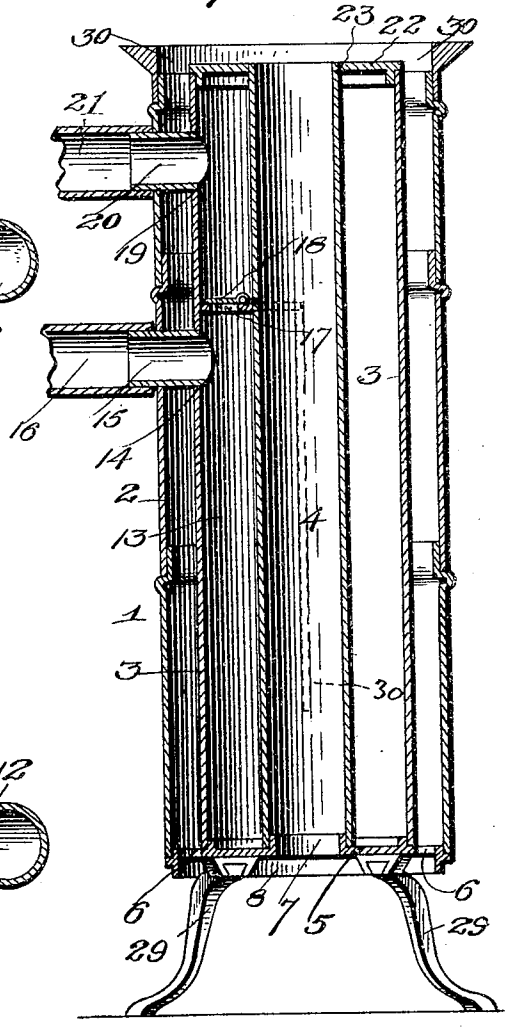
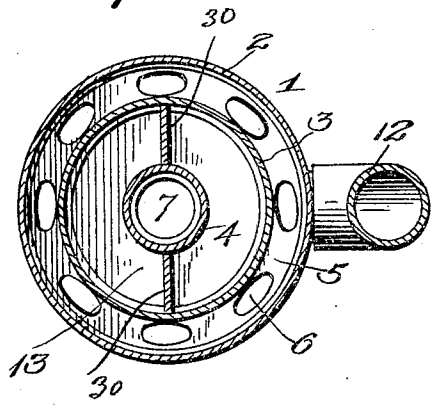


Fig. 4.



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RADIATOR.

No. 809,486. Specification of Letters Patent. Patented Jan. 9, 1906.

Application filed March 6, 1905. Serial No. 248,598.

To all whom it may concern:

Be it known that I, WILLIE H. WYANT, a citizen of the United States, residing at Tabor, in the county of Fremont and State of Iowa, have invented certain new and useful Improvements in 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 appertains to make and use the same.

This invention relates to improvements in radiators.

The object of the invention is to provide a radiator by which the waste heat from the smoke of a stove or furnace may be utilized.

Another object is to provide a radiator of this character whereby the cold air from an upper room which is heated by the radiator may be conducted to the lower end of the radiator and will be passed therethrough and heated and again discharged into the room above, thus providing a perfect circulation of air.

A further object is to provide a radiator for this purpose which will be simple, strong, and durable in construction and provided with three sections, whereby a double-heating capacity is provided.

With these and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a vertical longitudinal sectional view of the radiator, showing the same arranged for heating an upper room. Fig. 2 is a similar view taken at right angles to Fig. 1. Fig. 3 is a horizontal sectional view on the line 3 3 of Fig. 1. Fig. 4 is a similar view on the line 4 4 of Fig. 1, and Fig. 5 is a vertical longitudinal sectional view showing the radiator arranged for heating the room occupied by the same.

Referring more particularly to the drawings, 1 denotes the radiator, which is preferably cylindrical in form and constructed of sheet metal and comprises a main or body portion formed of an outer cylindrical casing 2 and an intermediate casing 3 and an inner casing 4. Said casings are secured at their lower ends to a circular base-plate 5. In the base-plate 5, between the outer and intermediate casings, is formed an annular series of air-inlet openings 6, while in the center of said base-plate is formed an opening 7, over which is arranged the central or inner casing 4.

On the lower side of the circular base-plate 5 is formed an annular flange 8, which is adapted to engage the upper edge of a hollow cylindrical base 9, upon which the body portion of the radiator is adapted to rest. In one side of the hollow base 9 is formed a flanged opening 10, with which is adapted to be connected a cold-air pipe 12. Said cold-air pipe may lead to any source of supply, but preferably extends to a room above that occupied by the radiator when said upper room is to be heated by the radiator.

Within the intermediate section 3, between the inner walls of the same and the inner casing, is arranged a smoke-flue 13, the upper end of which is closed, while the lower end of the same opens into the intermediate casing, as shown. This smoke-flue 13 is formed by vertical partitions 30, which are disposed radially with reference to the inner casing 4 and extend downwardly to within a suitable distance of the lower end of said inner casing.

In the wall of the intermediate casing 3 and communicating with the smoke-flue is a smoke-inlet opening 14, with which is connected the short pipe 15. This pipe 15 passes through an opening formed in the outer casing 2 and with which is adapted to be connected the end of a smoke-pipe 16 from the stove or furnace. In the upper wall of the smoke-flue 13 is formed a direct-draft opening 17, which is normally closed by a damper 18, the stem of which projects through the sides of the intermediate and outer casings and has formed thereon a handle by which said damper may be operated.

In the intermediate casing 3 a slight distance above the upper end of the smoke-flue is formed a smoke-outlet opening 19, with which is connected a short pipe 20, said pipe passing through an opening in the outer casing 2 and being adapted to receive the end of a smoke-discharge pipe 21, leading to the chimney. The upper end of the casing 3 is closed by a tight-fitting cover-plate 22, in which is formed a centrally-disposed aperture 23, in which is adapted to pass the upper end of the inner casing.

On the upper end of the outer casing 2 is arranged a cap 24, forming a hot-air dome or chamber into which the upper end of the in-

ner casing opens and with which the space between the outer and intermediate casings communicates. The hot-air dome thus receives the heated air from the inner casing and from the space between the intermediate and outer casing. In the top of the cap 24 is formed a flanged discharge-opening 25, and in one side of the same is formed a flanged opening 26. With one or both of the openings is adapted to be connected a heat-conducting pipe 27, whereby the air from within the cap 24 is conducted to the room above or other desired place. When only one of the discharge-openings is used, the other is closed by means of a tight-fitting cap 28. The opening in the top of the cap 24 is used when the heat is conducted to the register set in the floor, while the discharge-opening 26 in the side of the cap 24 is used to connect the radiator with a hot-air flue leading to a register in the side wall.

In Fig. 5 of the drawings the radiator is shown arranged for use in heating the room occupied thereby, and when thus used the hollow base 9 is removed from the lower end of the radiator-body, and to said lower end are applied supporting-legs 29. Said legs are detachably connected to the base-plate 5 in any suitable manner. In this arrangement of the radiator the cap 24 is also removed, and in place of the same a finishing ring or band 30 is applied to the upper end of the radiator-body. In the latter arrangement of the radiator the cold air from the lower portions of the room or near the floor of the same will pass upwardly through the openings 6 in the base-plate 5 and into the space between the outer intermediate casings, and cold air will also pass upwardly through the intermediate casing 4. The air passing thus upwardly through the radiator will become heated by the hot smoke between the inner and intermediate casings and will pass out through the upper open end of the inner casing and the space between the outer and intermediate casings.

In one side of the outer and intermediate casings 2 and 3 are formed alined apertures in which is inserted a short section of pipe 31, forming a passage in the space between the intermediate and inner casings through which said space may be cleaned out. This passage is sufficiently large to permit a small shovel or other suitable cleaning device. The passage formed by the pipe 31 is normally closed by a plug or other suitable door 32.

A radiator constructed as herein shown and described may be connected with the smoke-pipe of any stove or furnace and will be made of various sizes suitable to the stove or furnace to which the same is to be used, the heat from the smoke passing to the smoke-pipe of said stove or furnace being utilized to heat the air passing through the radiator, thus materially increasing the heating capacity of the stove or furnace.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

The herein-described radiator comprising the outer drum open at its upper end, the intermediate drum in the outer drum, the inner drum in the intermediate drum, the base-plate forming a closure for the lower ends of the outer and intermediate drums and having the openings 6 between them and the opening 7 at the lower end of the inner drum, the top plate forming a closure for the upper end of the intermediate drum and having the central opening through which the upper end of the inner drum extends, the smoke-flue connections 15, 20, extending from the intermediate drum through one side of the outer drum, the downwardly-directed deflector in the space between the intermediate and inner drums and having the horizontally-disposed upper portion closing said space on one side of the inner drum, disposed between the flue connections and having an opening, and the damper to cover and uncover said opening.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIE H. WYANT.

Witnesses:
C. L. HALL,
WILL BARNES.