

W. M. WHITLOCK.
STEAM RADIATOR.
APPLICATION FILED JUNE 27, 1908.

955,300.

Patented Apr. 19, 1910.

2 SHEETS—SHEET 1.

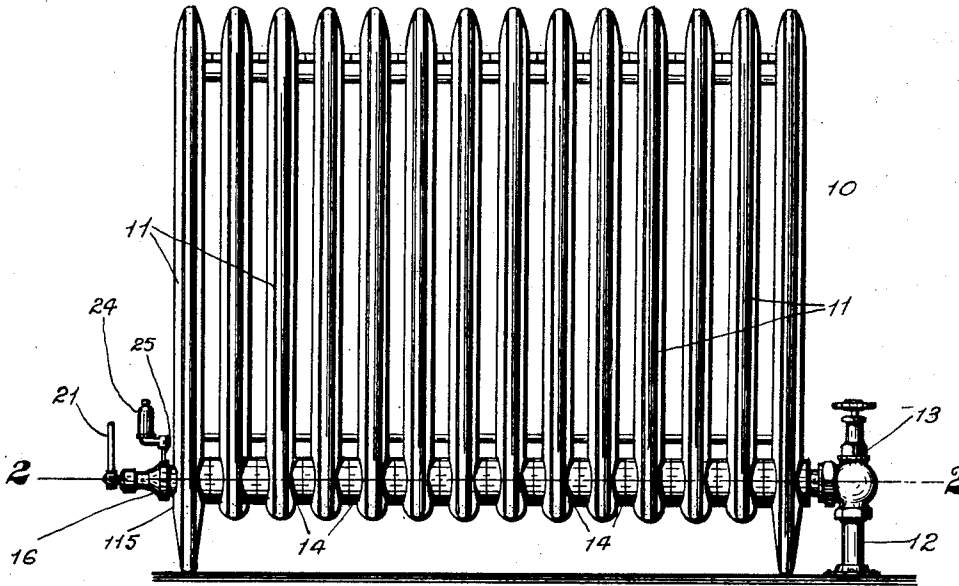


Fig. 1.

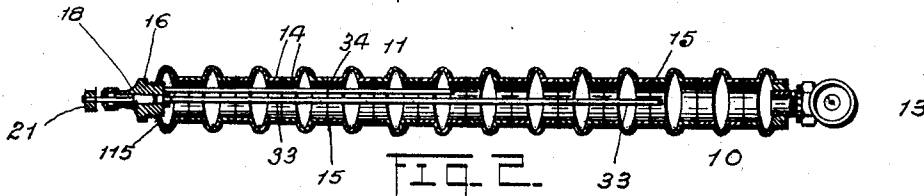


Fig. 2.

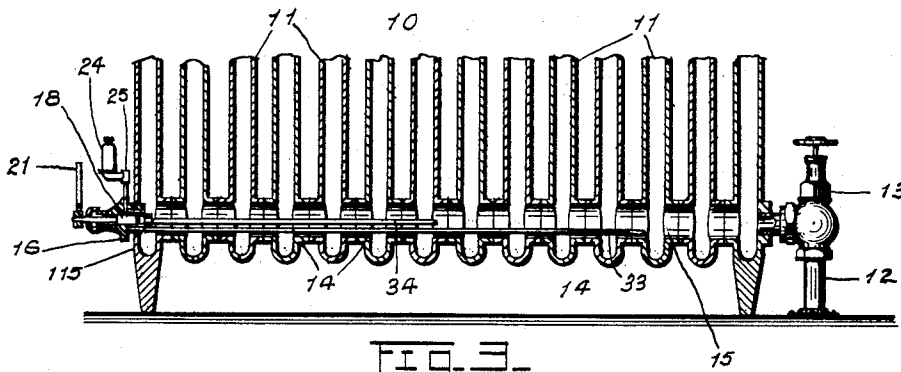


Fig. 3.

WITNESSES

Frederick G. Gorman, Jr.

John W. Kamper.

INVENTOR

Wilbur M. Whitlock

BY

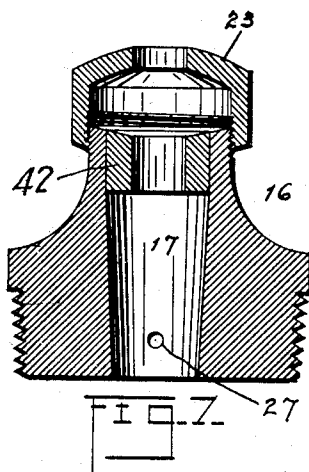
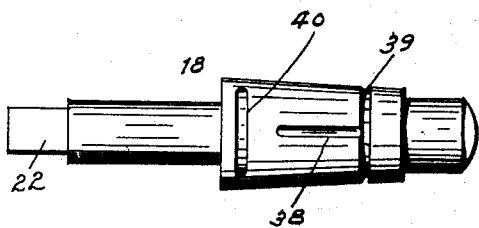
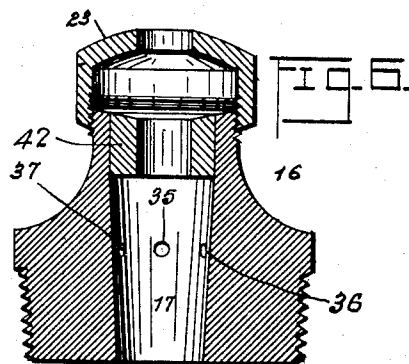
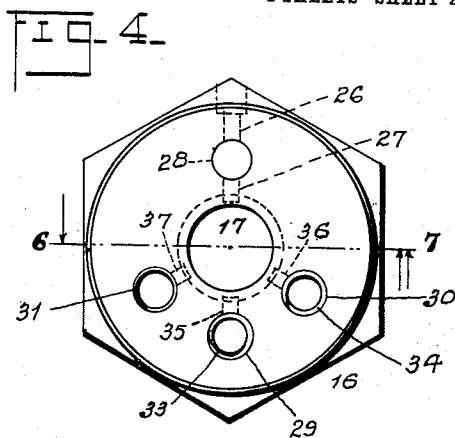
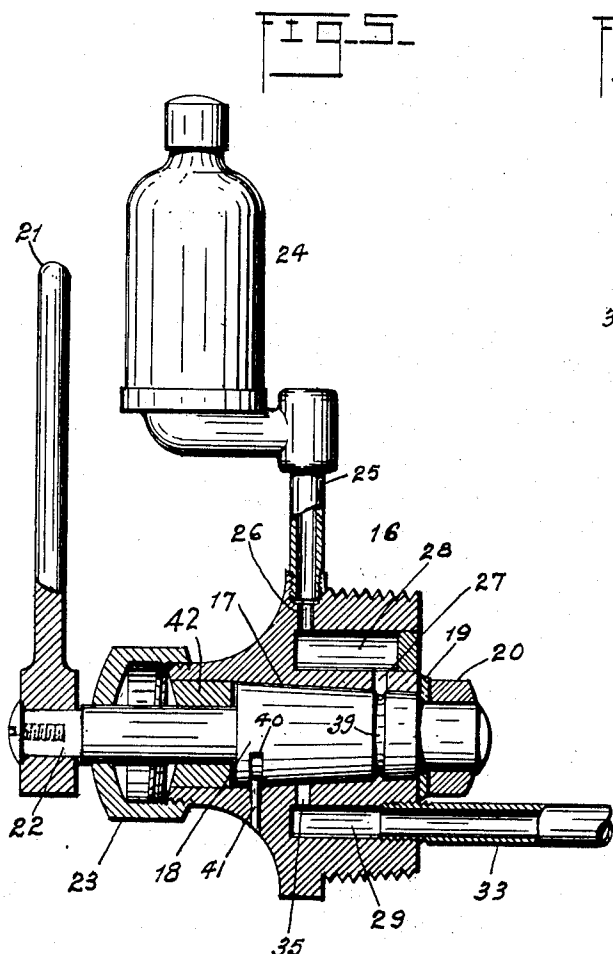
Russell M. Everett,
ATTORNEY.

W. M. WHITLOCK.
STEAM RADIATOR.
APPLICATION FILED JUNE 27, 1908.

955,300.

Patented Apr. 19, 1910.

2 SHEETS—SHEET 2.



WITNESSES

Frederick Germann
John W. Kamper

INVENTOR

Wilbur M. Whitlock
BY
Russell M. Everett
ATTORNEY.

UNITED STATES PATENT OFFICE.

WILBUR M. WHITLOCK, OF NEWARK, NEW JERSEY.

STEAM-RADIATOR.

955,300.

Specification of Letters Patent. Patented Apr. 19, 1910.

Application filed June 27, 1908. Serial No. 440,611.

To all whom it may concern:

Be it known that I, WILBUR M. WHITLOCK, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain Improvements in Steam-Radiators, of which the following is a specification.

The objects of this invention are to provide an improved device which may be attached to a radiator to vent such portions thereof as desired; to thus enable the occupant of a room to regulate the heating of the room; to avoid opening and closing the steam valve, and to secure a uniform regulation; to provide a simple and durable construction, which can be applied to radiators now in use without requiring any modification thereof, and to obtain other advantages and results as may be brought out in the following description.

Referring to the accompanying drawings, in which like numerals of reference indicate the same parts in the several figures, Figure 1 is a side elevation of a radiator embodying my improved regulating means; Fig. 2 is a horizontal section taken on line 2—2, Fig. 1, looking downward; Fig. 3 is a central vertical longitudinal section of the lower part of the radiator; Fig. 4 is an inner end view of a certain plug upon which the different parts of my invention are mounted; Fig. 5 is a central vertical longitudinal section of the said plug and parts carried thereby; Figs. 6 and 7 are central sectional views of the plug taken on line 6—7, Fig. 4, looking in the directions indicated by the single and double arrows, respectively, and Fig. 8 is a side view of a certain valve from its under side.

In said drawings, 10 indicates an ordinary steam radiator made up of sections 11, 11 fastened together by means of rods as is common, and provided with the usual feed pipe 12 and valve 13 through which the steam is supplied. At the bottom of each section, apertures are formed in the opposite sides with bosses 14 adapted to fit snugly together, and form steam tight joints when the radiator sections are clamped together; the apertures of each section register with those in the adjacent sections and thus a longitudinal chamber 15 is formed.

The end section 11 farthest from the steam inlet valve 13 is provided with a plug 16 screwed therein, said plug being usually in radiators as heretofore used a solid closure,

and nothing more. In my invention, however, the plug 16 is chambered centrally and longitudinally as at 17, to form the seat for a tapered plug valve 18, held seated by a washer 19 and nut 20 of usual construction at the inner end of the plug 16, and adapted to be turned by a handle 21 upon a stem 22 which projects outward through a stuffing box 23 at the outer end of the plug 16. At the upper edge of the outer end of the plug 16 is mounted a vent valve 24 of any ordinary and well-known construction in automatic valves of that type, the said vent valve 24 communicating by the pipe 25 which supports it and by passages 26, 27 and chamber 28 with the plug valve chamber 17. At the lower part of the plug 16 are longitudinal recesses 29, 30 and 31 extending from the inner end of the plug toward its outer end but terminating short thereof so as to be closed at their outer ends with respect to the plug. One or more of these recesses may be employed in a plug as desired, and from them tubes extend longitudinally through the chamber 15 of the radiator to such different points thereof as desired. For purposes of illustration, I have shown in the drawings three recesses 29, 30 and 31, from one of which as 29 a tube 33 extends about two-thirds the length of the radiator, from another as 30 a tube 34 extends about one-third the length of the radiator, and from the other 31 there is no tube but said recess opens directly into the radiator. The said recesses 29, 30 and 31 all communicate at their otherwise closed ends with the plug valve chamber 17, as by ducts 35, 36 and 37, respectively. The plug valve 18 has a longitudinal groove 38 which near one end is adapted to register with one of said ducts 35, 36 or 37, and at its other end opens into an annular groove 39 which always registers with the passage 27 at the top of the valve and which leads to the vent valve 24. Obviously, therefore, according as the plug valve 18 is turned to bring its longitudinal groove 38 into registration with one or another of the ducts 35, 36 and 37, the radiator will be vented from one or another of the inner ends of the tubes 33, 34 and recess 31. That is, if the lever 21 stands centrally vertical, the vent valve 24 will be in communication through my improved plug 16 with the vent tube 34, so that the radiator will be vented for about two-thirds of its length next the steam inlet. The air in the

rest of the radiator will be trapped, and accordingly that portion of the radiator will remain cold. By swinging the lever 21 in one direction, the radiator will be vented through tube 33 and consequently even less, or about one-third, of the radiator will become heated, or by swinging it in the other direction the radiator will vent through recess 31 and its entire capacity will be available for heating purposes.

It will be noted that I do not affect the steam valve 13 nor the vent valve 24, but simply change the passage through which air escapes from the radiator to said vent valve. In this way I enable the effective heating area of the radiator to be varied as desired, and very simply.

If desired, limits for the lateral swinging for the handle 21 may be provided by forming a groove 40 transversely of the plug valve 18, and which groove receives the end of a pin 41 projecting from the body of the plug 16 and adapted to engage the end walls of the groove simultaneously with the registration of the end ducts 36 and 37 with the longitudinal groove 38 of the valve. The middle position of the valve can be determined by the vertical position of its handle 21. In the construction shown in the drawings, an annular bushing 42 surrounds the stem 22 of the valve 18 at the outer end of the chamber 17 to close said end of said chamber around the valve stem 22 and provide a bottom for the stuffing box 23.

It will be understood that the particular construction of the plug 16, or of the controlling valve therein, shown, is not essential to my invention, and may be modified to suit varying conditions; the number of venting branches within the radiator may also be varied, so long as the radiator is vented from a plurality of points by inclosed tubes which are controlled by valve means. My improved device may furthermore obviously be employed for venting in different systems of heating, whether single pipe systems using an automatic air valve as shown, two pipe systems having a vacuum chamber or the like, or still other systems.

Having thus described the invention, what I claim as new is:

1. The combination with a radiator having an opening in its wall, of a plug for said opening, a plurality of ducts leading from said plug different distances into the radiator chamber, an outer vent, and a controlling valve adapted to place said vent in communication with any one of the said ducts or cut off such communication.

2. The combination with a radiator, of a controlling valve located in the wall of the radiator chamber, a plurality of ducts leading from said valve different distances into the radiator chamber, and an outside vent

having a passage leading to the controlling valve, said controlling valve adapted to place said vent in communication with any one of the said inner ducts or cut off such communication.

3. The combination with a radiator, of a removable plug in the wall of said radiator having a valve seat, a vent in communication with said valve seat, a plurality of ducts leading from said valve seat different distances into the radiator chamber, and a valve in said valve seat adapted to place the said vent in communication with any one of said ducts or cut off such communication.

4. The combination with a radiator, of a removable plug seated in the wall of the radiator and providing a valve seat, a vent carried by said plug and communicating with said valve seat, a plurality of ducts leading from said valve seat different distances into the radiator chamber, and a valve in said valve seat adapted to establish or cut off communication between said vent and each one of the ducts.

5. The combination with a radiator having a threaded opening, of a plug screwed into said opening, said plug having a central valve seat and a plurality of sockets outside said valve seat and communicating therewith at different points, a vent having a passage communicating with said valve seat, a valve in said valve seat having means for placing each of said sockets in communication with said vent independently of the others, and a tube projecting from one of said sockets into the chamber of the radiator.

6. The combination with a radiator having an opening in its wall, of a plug removably inserted in said opening, said plug providing a valve seat and a plurality of sockets communicating with said valve seat, a tube mounted in one of said sockets and projecting into the radiator, a vent having a passage communicating with said valve seat, and a valve for said valve seat adapted to place the vent in communication with any one of said sockets.

7. The combination with a radiator comprising a plurality of sections each having at its opposite sides openings for connecting said sections in series, a plug in the extreme end one of said openings, said plug providing a longitudinal valve seat and at its inner end a plurality of sockets communicating with said valve seat, tubes of different lengths mounted in said sockets and projecting into the radiator, a vent valve mounted upon said plug and communicating with the valve seat thereof, a plug valve for said valve seat having passages adapted to place said vent valve in communication with any one of said tubes, means at the inner end of the plug for holding said plug

valve seated, and means at the outer end for turning said valve.

5 8. The combination with a radiator formed with an exhaust port, of a plug adapted to be applied to said port, said plug formed with ducts communicating with said radiator at different distances from said exhaust port, an automatic air valve carried by said plug, and valve mechanism also carried
10 by said plug and adapted to bring said ducts alternately into communication with said automatic air valve.

15 9. The combination with a radiator having inlet and outlet ports, of a plug adapted to be applied to the outlet port, said plug formed with ducts communicating with the interior of the radiator at different points between said inlet and outlet ports, an auto-

matic air valve connected to said plug, and valve mechanism for said plug adapted to bring said ducts alternately into communication with said automatic air valve. 20

10. The combination with a radiator formed with an exhaust port, of a plug adapted to be applied to said port, said plug 25 formed with ducts communicating with said radiator at different distances from said exhaust port, and with an air discharge vent, and valve mechanism carried by said plug and adapted to bring said ducts alternately
30 into communication with said vent.

WILBUR M. WHITLOCK.

In the presence of—

RUSSELL M. EVERETT,

ETHEL B. REED.