S. D. STAUFFER.

RADIATOR.

APPLICATION FILED DEC. 15, 1908.

935,172. **Patented Sept. 28, 1909.**

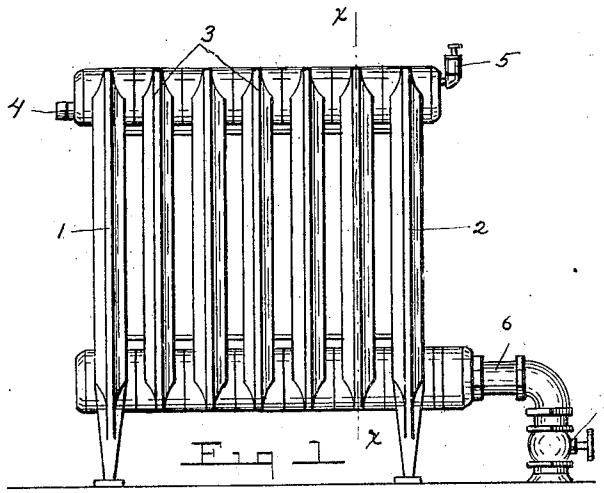


Fig 1

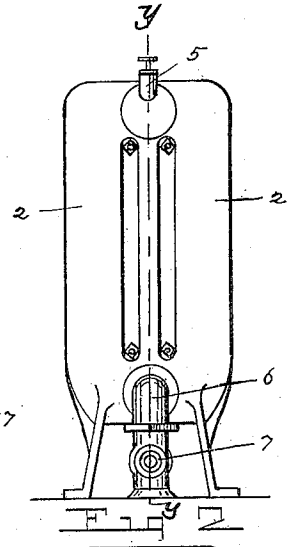


Fig 2

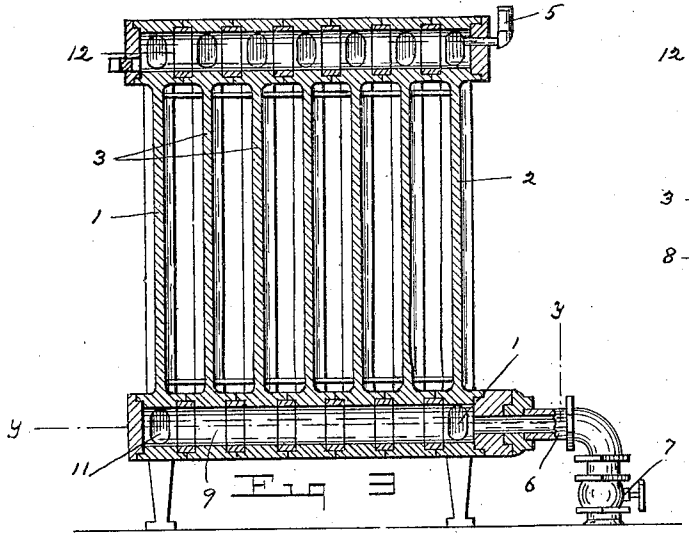


Fig 3

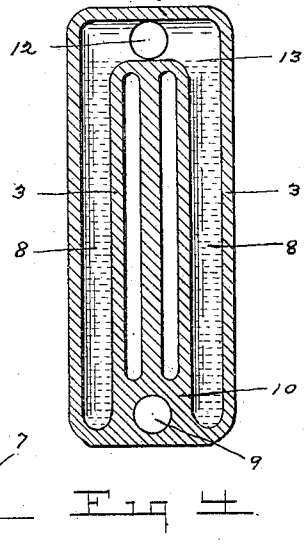


Fig 4

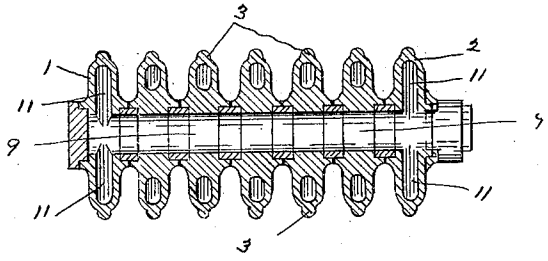


Fig 5

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RADIATOR.

935,172. Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed December 15, 1908. Serial No. 467,608.

To all whom it may concern:

Be it known that I, SAMUEL D. STAUFFER, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Radiators, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to a combined steam and hot water radiator of that class in which the water is contained in separate compartments from the steam and is heated thereby, and which is connected on a one pipe system, and by the combination of both steam and hot water, the moisture of the room is not exhausted as by the usual steam radiator, while the defects caused by the length of time required for the usual hot water radiator to become heated or cooled is obviated.

The objects of my invention are to produce a combined radiator of the class that can be operated on a single pipe system, that will give a rapid and uniform heat, retain the moisture of the air, and retain sufficient water by the condensation of the steam.

With these and other objects in view my invention consists in certain construction and combination of parts as will hereinafter be fully described and claimed and illustrated in the accompanying drawings forming part of this application, and in which like figures of reference refer to corresponding parts in all the views, but it is fully understood that while I have here described my invention as herewith shown, that I do not confine myself to the exact design as shown, as slight changes may be made in the construction and combination of parts without departing from the spirit of the invention.

Referring to the accompanying drawings forming a part of this application:—Figure 1, is a side elevation of the usual two hub hot water radiator modified to my construction. Fig. 2, is an end elevation of the same. Fig. 3, is a vertical sectional view through the center of Fig. 2 on the line Y—Y. Fig. 4, is a vertical sectional view of one of the inner water coils on the line X—X of Fig. 1, showing my novel construction. Fig. 5, is a longitudinal sectional plan view taken on the line Y—Y of Fig. 3.

As herewith illustrated and described my invention consists of the front section of coil 1, of the double hub hot water pattern, the rear section of coil 2, of the same construction, and the series of intermediate sections of coils 3, which may be all alike or alternated with sections of the same construction as the front and rear coils, and all of said coils being connected together in the usual way, the upper hub of the front coil being provided with the drain plug 4, and the rear coil being provided with the air valve 5, in the upper hub thereof and the steam pipe 6, connected to the lower hub in the usual way and further provided with a cut off valve 7.

My novel construction of the intermediate coils 3, consists in preventing the water legs 8, from communicating with each other near their lower ends or with the passage 9, which may be accomplished by shutting off said legs 8, from the passage 9, by the walls 10, or a dividing wall placed farther up the legs 8, (not shown herewith) and which may be readily done with any of the usual styles of double hub radiators of any number of coils, either the legs of all of the intermediate coils being closed off from the horizontal passage or alternate coils as desired. By this novel construction it will be noted that while the main passage 9, communicates with the legs 11, of the end coils 1, and 2, and thence upward to the passage 12, which freely communicates with the upper ends of legs 8, of the intermediate coils 3, there is no communication between the legs 8, and the main passage except through the legs 11. And it may here be noted that by my novel method of constructing the main passage 9, by cutting off the legs 8, from communication with their lower hubs, I overcome the disadvantage in the use of a longitudinal pipe connected to the end sections and passed through the hubs of the intermediate coils to separate the steam from the hot water, as by this old construction the expansion and contraction of the longitudinal pipe will cause the radiator to leak at the hub joints of the intermediate coils. It will therefore be noted that by my construction the coils cannot be affected by expansion or contraction to cause them to leak, and the radiator may be filled by introducing water through the steam pipe 6, which will pass through the passage 9, upward through the legs 11, to the upper passage 12, and thence into the legs 8, of the intermediate coils which are thus filled, and after they are thus filled with water the excess water may be drawn off, through said steam pipe 6, leaving the water at the level 13, and the

steam then introduced which will fill the main passage 9, the legs 11, and the upper passage 12, thus heating the water.

When it is desired to entirely empty the radiator of water, this may be accomplished by disconnecting the steam pipe 6, and turning the radiator over upon its side.

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

A radiator comprising a series of adjacent sections, each forming a water receptacle, said water receptacles having communication with each other at their upper portion, said sections having a longitudinal orifice formed through the base thereof, end sections forming communication between said longitudinal orifice and the upper portion of the water receptacles, and a steam supply pipe adapted to supply steam to the base of one end section.

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

SAMUEL D. STAUFFER.

Witnesses:
CHARLES F. BOWMAN,
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