

(No Model.)

H. W. STONE.
STEAM RADIATOR.

No. 521,832.

Patented June 26, 1894.

Fig. I.

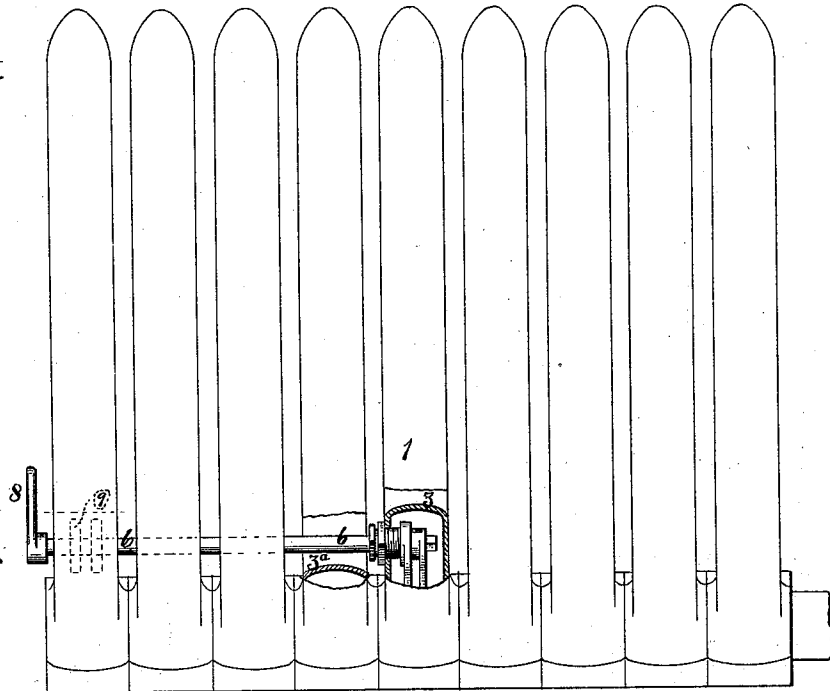


Fig. II.

Fig. III.

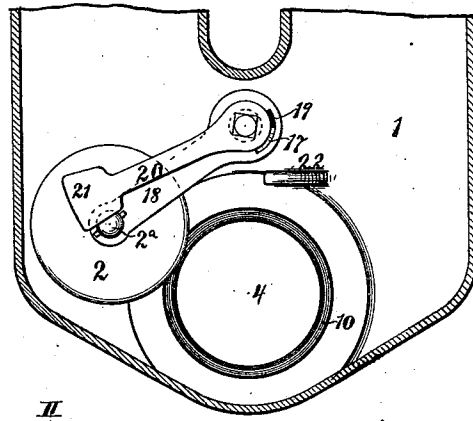
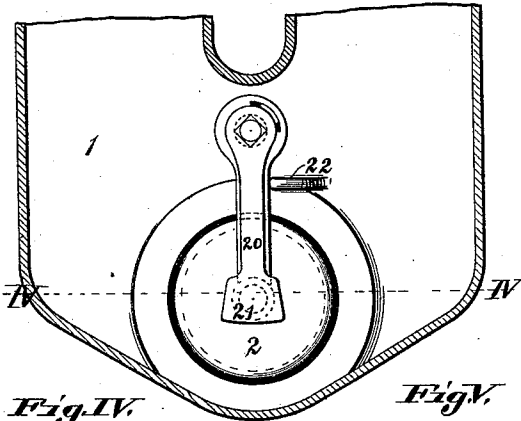


Fig. IV.

Fig. V.

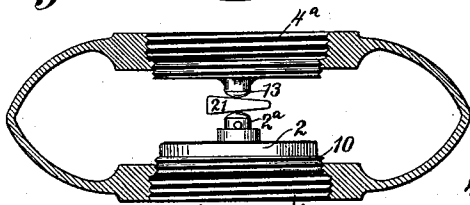


Fig. VI.

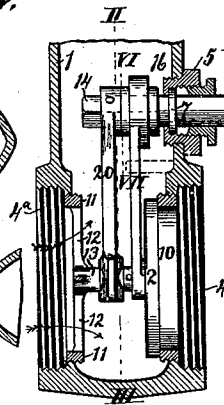


Fig. VII.

Fig. VIII.

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UNITED STATES PATENT OFFICE.

HAMILTON W. STONE, OF ST. LOUIS, MISSOURI.

STEAM-RADIATOR.

SPECIFICATION forming part of Letters Patent No. 521,832, dated June 26, 1894.

Application filed June 7, 1893. Serial No. 476,899. (No model.)

To all whom it may concern:

Be it known that I, HAMILTON W. STONE, of St. Louis, Missouri, have invented a certain new and useful Improvement in Steam-Radiators, of which the following is a full, clear, and exact description.

This improvement relates to the construction and arrangement of a valve within a sectional radiator, the valve being placed within one of the sections or loops, and operating over the orifice connecting the subsequent loops or sections. This valve section may be placed anywhere in the radiator, it could be placed at one end thereby dispensing with an outside valve, or it may be placed any number of sections from the steam inlet, in this way dividing the radiator in two parts so that the part nearest the steam inlet may be used alone or on opening the valve the whole radiator may be used. Two or more of these valve sections may be used in a single radiator and in this way the degree of heat in a room can be nicely regulated.

This radiator is designed especially for the one pipe system, that is where the steam is introduced and the water of condensation is carried off by one and the same pipe, it is consequently necessary that the valve be placed as near the bottom of the section as possible and the section must be free from all pockets or chambers which could hold water. This is accomplished in the manner substantially as hereinafter described and claimed, reference being had to the accompanying drawings which form part of this specification.

Figure I. is an outside elevation of the radiator, portions of the sides being broken away to show the difference between the valve section and the other common sections. Fig. II. is a vertical cross section on line II.—III. of Fig. V., through the valve section, showing the valve closed. Fig. III. is the same view as Fig. II. showing the valve open. Fig. IV. is a horizontal section on line IV.—IV. of Fig. II. Fig. V. is a vertical longitudinal section through the valve section. Figs. VI. and VII. are two views on line VI.—VII. Fig. V. showing the valve arm and its connection to the turning rod. Fig. VIII. is the outside bearing for the turning rod.

1 is the cast iron shell or loop of the radi-

ator section containing the valve 2, the shell or loop 1, is of the customary form except that the two side pipes are joined together higher up than usual, as at 3, the usual form being shown at 3^a. Through the side of the shell 1, immediately above the nipple opening, or connection 4, is inserted a small bushing 5 which forms a stuffing box for the turning rod 6, said rod 6, having a shoulder bearing 7 in the stuffing box. This turning rod 6, or its extension, protrudes through the opening in the loops of the sections to the end of the radiator, where a lever 8, or some equivalent is attached for the purpose of turning the rod 6. Clamped to the end section of the radiator is a bearing 9, for the rod 6, made of two pieces of metal clamped together by the bolts 10. The nipple connections 4 and 4^a have a slight contraction or shoulder at their inner sides which are also threaded, into one side is screwed the valve seat 10, and into the other side is screwed the collar 11, which by arms 12, support the point 13. The rod 6, is made square inside of the shell 1, as at 14, and secured to it is a round collar 16, having a lug 17, from one side thereof; fitting loosely on this collar is the valve arm 18, which has a slot 19, cut out of its bearing surface, and of greater width than the lug 17, and in which the lug 17 moves. At the lower end of the arm 18, is hung the valve 2, by the pin 2^a projecting from its center. The valve 2 is loose on the arm 18, that it may revolve and adapt itself to any wear of the valve seat 10. Depending also from the rod 6, but secured rigidly thereto is an arm 20, having a wedge 21 at its lower end to come between the pins 13 and 2^a.

The operation of the valve would be as follows, supposing the valve to be closed as shown in Fig. II.—the lever 8 being turned to the right turns the rod 6, and the arm 20 and wedge 21 being rigidly secured to the rod 6 turn with it, as does the collar 16, the arm 18 carrying the valve 2, however does not turn at once owing to the slot 19 being wider than the lug 17, and as shown in Figs. II. and VI. the lug 17 has not reached the shoulder of the slot 19.—the valve 2 does not move until the wedge has been withdrawn,—when the arm 20 has reached the relative position to the arm 18 as that shown in Fig. III.

any movement of the rod 6 to the right will move the valve 2, in this way the valve is opened. To close the valve the lever 8 is turned to the left and the valve and wedge
 5 move over the valve seat 10; when the arm 18 has gone this far it is stopped by the projection 22, which projection does not extend
 10 between the pins 13 and 2^a thereby pressing the valve 2 firmly to its seat 10,—the slot 19 being wider than the lug 17 of course offers no resistance to accomplishing this end. Placing a valve in one section of a radiator
 15 in this manner permits of the use of a part of the radiator when all of it is not desired, which is a matter of great economy and convenience.

I claim—

20 1. A radiator section 1 in which is placed a

valve 2 operating over a seat 10 placed around the orifice 4, the valve arm 18 loosely mounted on the turning rod 6, the wedge 21 firmly mounted on the turning rod 6, and the bearing block 13 secured to the opposite side of
 25 the section from the valve seat 10.

2. In a sectional radiator a valve 2 placed within one of the sections, said valve 2 being loosely mounted on the turning rod 6 and allowed a limited amount of play by the slot 19
 30 and lug 17 and having its seat 10 around the orifice 4, the wedge 21 securely fixed to the turning rod 6 and operating between the valve 2 and the bearing block 13 supported by the opposite side of the section, all substantially
 35 as described.

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