

1,050,086.

WITNESSES
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SUPPLEMENTARY HEATING SYSTEM.

1,050,086.

Specification of Letters Patent.

Patented Jan. 7, 1913.

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To all whom it may concern:

Be it known that I, CHARLES W. BALDWIN, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Supplementary Heating Systems, of which the following is a specification.

In all heating plants, particularly steam heating plants, it takes considerable time to generate sufficient heat for transmission to the radiators throughout the system, besides which it takes considerable fire to generate and maintain steam in the boiler and system owing to the large body of water to be heated, which results in the radiators being cold at such times when the fire is low, for instance during the night and early morning.

The object of my invention is to provide a supplementary heating system designed to be attached to and constitute a part of the main system, whereby very little fire is necessary to generate and maintain steam and distribute it to the radiators in the main system, whereby steam is transmitted to the radiators a considerable time before steam is generated in the main boiler; and with this and minor objects in view, my invention consists of the parts and combination of parts as will be hereinafter set forth.

The illustration is a vertical longitudinal section of a steam generating plant embodying my invention.

1 represents a boiler of suitable construction, below which is a fire box 2. 3 is the main steam lead from the top of the boiler to the radiator system. 4 is the "blow off" or "mud" valve of the boiler.

5 is a supplementary steam generating coil located in the fire box 2 below the boiler, one end of which is connected to the "blow off" or "mud" valve 4 at the bottom of the boiler, thus having direct communication with the boiler. This coil may have as many turns in the fire box as found necessary or desirable according to the size of the plant. The other end of the coil 5 extends through the front wall of the fire box, thence perpendicularly as at 6, to a point above the plane of main steam pipe 3, as at 7, thence making connection on the top of and leading into the main steam pipe 3 at 8. The result of this arrangement is that a very little fire is needed to start and maintain steam in the

radiators. Whenever the steam is low or practically *nil* in the boiler 1 and it is desired to get up steam quickly and with little fire, the valve 4 is opened to permit water to flow from the boiler to the coil 5, in which it is readily generated into steam, giving off the steam at the surface of the water in the perpendicular pipe 6, from whence it passes into the top of the main steam pipe 3 and thence to the radiators. In moderately cold weather, just enough fire can be maintained to generate steam in the coil 5, thus heating the building comfortably and at a small expense.

In the drawing, I have shown a hot water coil 9, both ends of which are connected to a hot water tank 10, which in turn is connected to the city water mains. Hot water spigots 11 are connected to this tank, thus providing hot water for domestic purposes.

Some of the advantages resulting from the employment of my supplementary heating system are that very little fire is required to start and maintain steam in the radiators, and steam can be more quickly started and distributed to the radiators. The term "fluid" in the claims is to be understood as generic to steam, water and air.

What I claim is:—

1. The combination with a fluid radiating circuit, a horizontally disposed boiler connected to said circuit, and a fire box under said boiler, of a supplementary heating system disposed under the boiler in said fire box and connected with the boiler and the liquid radiating circuit.

2. The combination with a fluid radiating circuit, a horizontally disposed boiler connected to said circuit, and a fire box disposed under the boiler, of a supplementary heating system in said fire box under the boiler and connected at one end to the "blow off" valve of the boiler and at its other end to the liquid radiating circuit beyond the boiler.

3. The combination with a main fluid radiating circuit, a horizontally disposed boiler from which said circuit leads, and a fire box under the boiler, of a supplementary heating system in said fire box, one end of which is connected to the boiler and the other end leads into the main radiating circuit at the top beyond the boiler.

4. The combination with a main steam pipe, a horizontally disposed boiler from

which said pipe leads, a fire box under the boiler, of a coil in said fire box, one end of which is connected to the "blow off" valve of the boiler, while the other end extends to
5 a point above the main steam pipe and leads into the main steam pipe on top thereof beyond the boiler.

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

CHARLES W. BALDWIN.

Witnesses:

F. E. BARTH,
FRANK ANDERSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
