

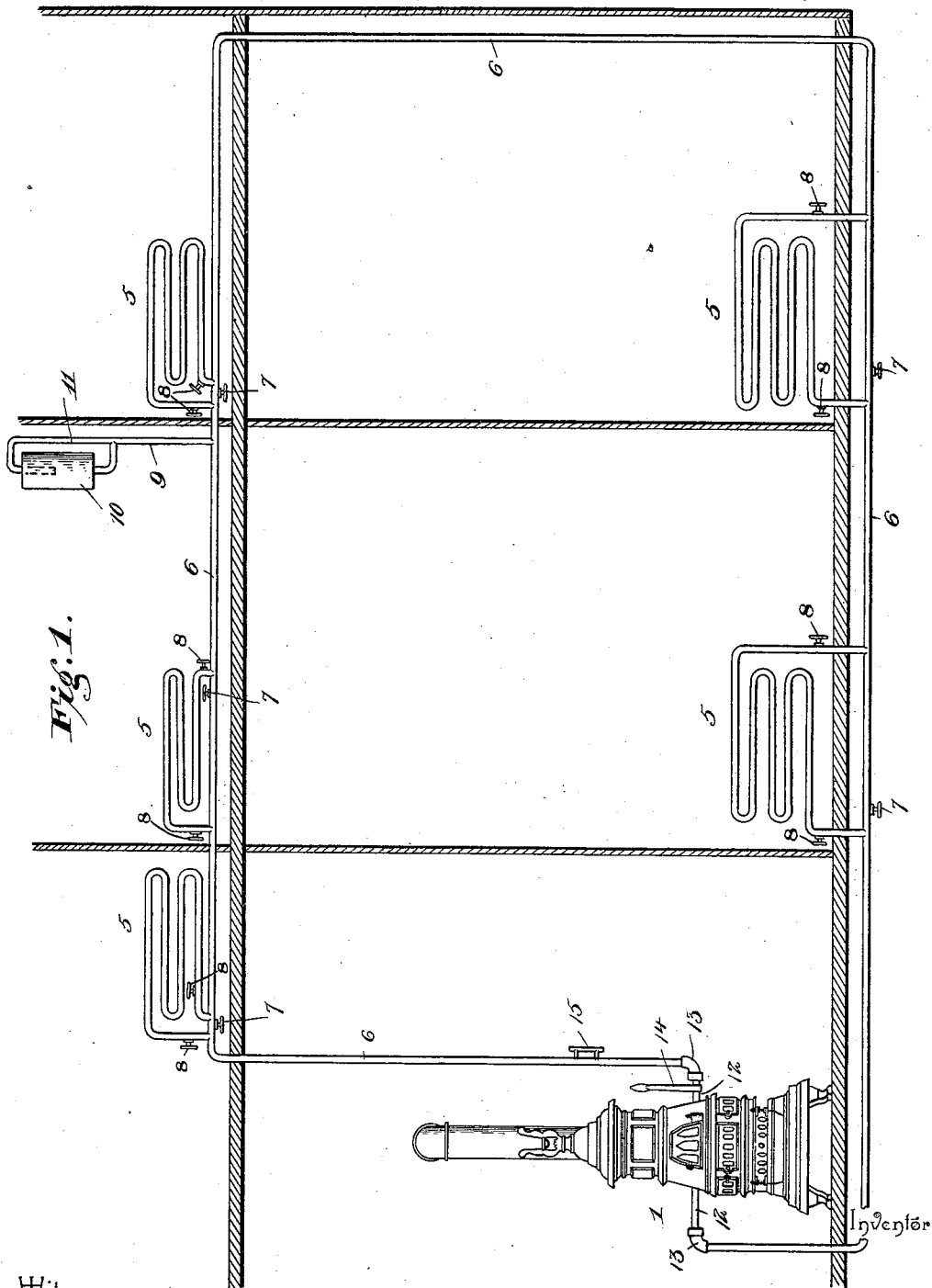
(No Model.)

2 Sheets—Sheet 1.

L. G. ALLEN, Dec'd.
H. ALLEN, Administratrix.
HOT WATER HEATING SYSTEM.

No. 529,098.

Patented Nov. 13, 1894.



Witnesses

Charles C. Shaw
D. E. Case

By his Attorneys, *Levi G. Allen,*

Charles C. Shaw

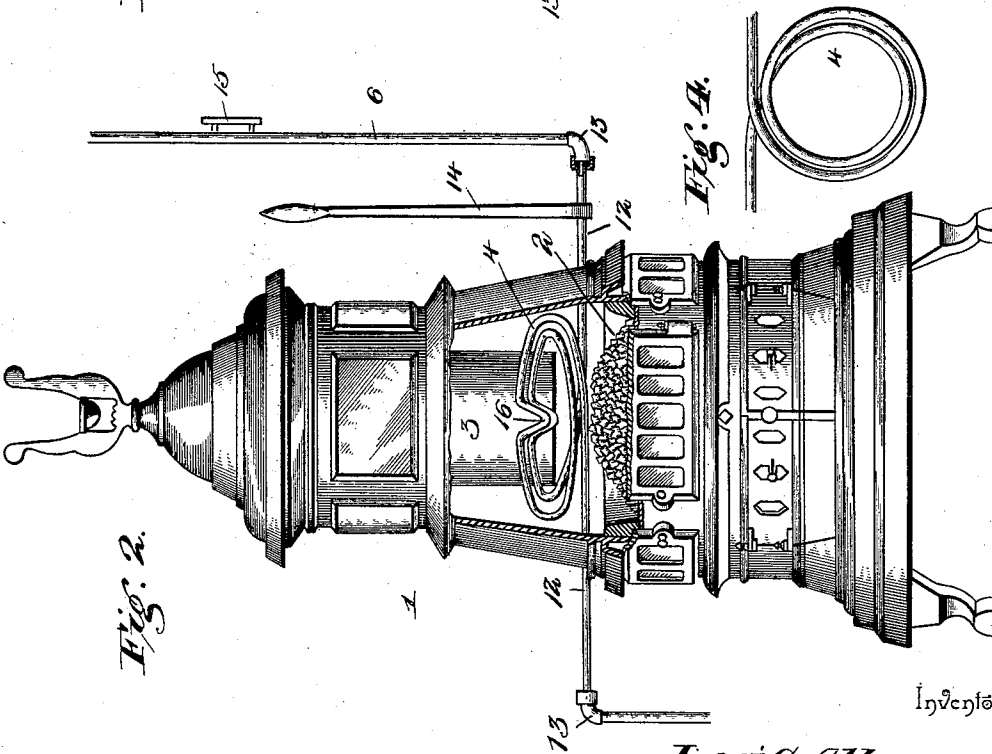
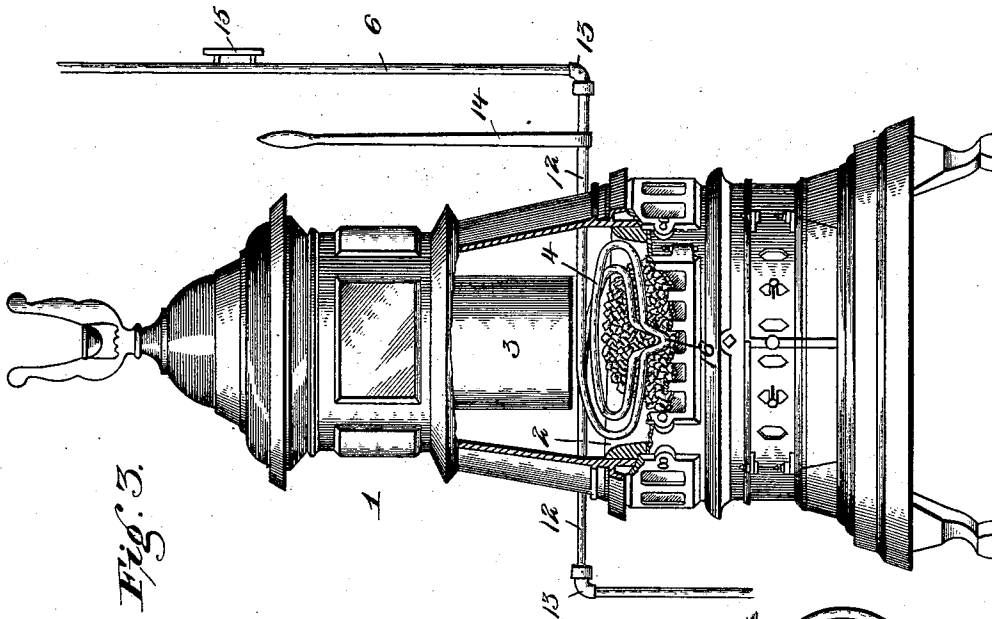
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Inventor

Levi G. Allen

Witnesses

John C. Shaw
E. J. [Signature]

By *his* Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

LEVI G. ALLEN, OF MANNSVILLE, NEW YORK; HENRIETTA ALLEN ADMINISTRATRIX OF SAID LEVI G. ALLEN, DECEASED.

HOT-WATER HEATING SYSTEM.

SPECIFICATION forming part of Letters Patent No. 529,028, dated November 13, 1894.

Application filed January 2, 1894. Serial No. 495,392. (No model.)

To all whom it may concern:

Be it known that I, LEVI G. ALLEN, a citizen of the United States, residing at Mannsville, in the county of Jefferson and State of New York, have invented a new and useful Hot-Water Heating System, of which the following is a specification.

My invention relates to an improvement in hot water heating systems, and has for its object to provide a simple, inexpensive and efficient apparatus adapted to be used in connection with ordinary heating stoves and provided with means for regulating and controlling the temperature of the water in the heating pipes to avoid accident by overheating, bursting, &c.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings: Figure 1 is a diagrammatic view of a heating system embodying my invention. Fig. 2 is a view of the coil arranged in the operative position in a heating stove. Fig. 3 is a similar view, showing the coil depressed. Fig. 4 is a detail view showing a modified form of the coil.

Similar numerals of reference indicate corresponding parts in the several figures of the drawings.

1 designates a heating stove, which may be of the ordinary or any preferred construction, having the fire-box 2 and a fuel chamber or cylinder 3. Within the casing of the stove, at the top of the fire-box, is arranged a coil 4, of pipe, said coil forming a part of and being in communication with a line of service pipe which, as shown in Fig. 1, extends through the building and is cut out at various points to communicate with radiators 5, which are arranged in the several rooms not heated by the stove. The line pipe 6 is provided adjacent to each radiator with a cut-in valve 7, whereby the direct passage through the line pipe may be cut off to cause the water to pass through the radiator, and each radiator is provided, at opposite ends, with cut-out valves 8, to prevent the hot water from passing therethrough. Located at an intermediate point of the system, and communicating with

the line pipe 6 by means of a supply pipe 9, is a feed tank 10, said supply pipe being extended and tapping the feed tank at the top to form a safety pipe 11, whereby an excessive pressure in the line pipe finds a vent through the safety pipe to the tank.

The means which I employ for varying the temperature of the water in the service pipe consists of the devices whereby the coil may be adjusted to vary its distance from the bed of coals in the fire-box, whereby, when it is required to intensify the heat, the coil may be lowered to occupy a position adjacent to, or if necessary in the bed of coals, and when it is desired to diminish the heat, said coil may be elevated or withdrawn from contact with the coals. To accomplish this I pivot the coil of pipe in the casing of the stove by extending the terminals of the coil at a tangent to the coil and in axial alignment with each other, and forming bearings for such terminals by perforating the casing of the stove. It is desirable to employ a coil composed of a series or plurality of loops which should conform substantially to the shape of the fire-box, and said loops should be arranged approximately in a common plane, whereby the lateral extensions or terminals 12 may be arranged in axial alignment without bending the same far from the plane of the loops. The couplings 13, between the terminals 12 and the ends of the service pipe, should be provided with any suitable steam-tight packing boxes, whereby said terminals may turn freely without allowing the escape of the water or steam. Secured to a convenient part of one of the terminals 12 is an operating lever 14, whereby the coil may be adjusted.

From the above description, it will be understood that the water as it is heated passes, as in other systems of the same kind, from the coil to the service pipe, from which it may, by the proper manipulation of the valves, be turned into any or all of the rooms included in the system. The feed tank supplies the waste due to evaporation and other causes, but as the service pipe is continuous it is obvious that such waste is small. An indicator or gage 15 is applied to the service pipe at a point adjacent to the stove to show the temperature of the water; and by

the adjustment of the coil, as hereinbefore described, a suitable temperature may be maintained to cause an effective circulation through the pipe and prevent a temperature which would endanger the efficiency of the mechanism by forcing the water out of the service pipe.

In order to increase the facility with which the coil may be embedded in the coals of the fire, I provide the loops forming the coil with depending V-shaped offsets 15, which, when the coil is lowered, extend down into the bed of coals and receive more directly the heat of the fire.

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. For instance, I do not wish to be limited to making the coils with the depending V-shaped off-set, as the coils may be made straight, as shown in Fig. 4 of the drawings.

Having described my invention, what I claim is—

1. In a heating system, the combination with a heating stove, of a coil connected to and in communication with the line pipe of the system, said coil being pivoted at one side within the stove whereby it may be ver-

tically adjusted at the opposite side, and means to adjust the coil substantially as specified.

2. In a hot water heating system, the combination with a heating stove, of a coil arranged in the stove above the grate and having tangential terminals mounted in bearings in the stove casing and connected to and in communication with the line pipe of the system said coil being provided at the side opposite said terminals with a depending offset to lie in the bed of coals when the coil is depressed, substantially as specified.

3. In a hot-water heating system, the combination with a stove, of a coil consisting of a plurality of connected loops arranged in a common plane and having tangentially disposed axially aligned terminals mounted in bearings in the casing of the stove, and revolvably connected with the ends of the line pipe of said system, and means for adjusting the coil about said terminals as a center, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

LEVI G. ALLEN.

Witnesses:

CHS. H. WILCOX,
T. W. ALLEN.