

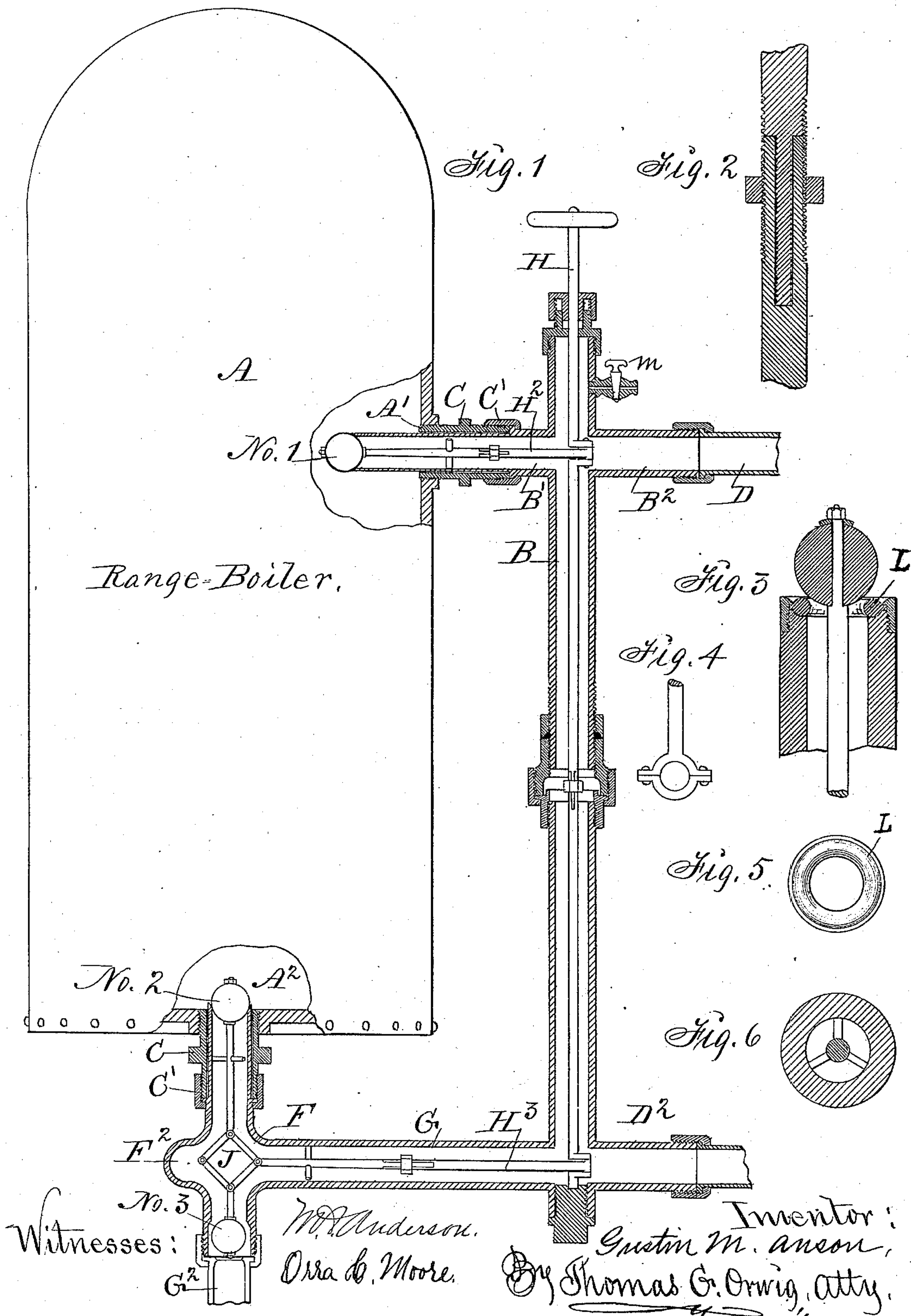
(No Model.)

G. M. ANSON.

ATTACHMENT FOR RANGE BOILERS.

No. 307,516.

Patented Nov. 4, 1884.



UNITED STATES PATENT OFFICE.

GUSTIN M. ANSON, OF MARSHALLTOWN, IOWA, ASSIGNOR OF ONE-HALF
TO R. W. CARPENTER, OF SAME PLACE.

ATTACHMENT FOR RANGE-BOILERS.

SPECIFICATION forming part of Letters Patent No. 307,516, dated November 4, 1884.

Application filed March 24, 1884. (No model.)

To all whom it may concern:

Be it known that I, GUSTIN M. ANSON, of Marshalltown, in the county of Marshall and State of Iowa, have invented an Attachment for Range-Boilers, of which the following is a specification.

My object is to prevent the explosion of "water-backs" in stoves and furnaces and the loss of life and property incident thereto. When there is no fire at night, or at any time in cold weather, and water is allowed to remain in the tubes that connect the water back, coil, or reservoir in a stove or furnace, such water will freeze, and, consequently, when the fire is again started and steam generated, it cannot circulate and an explosion results.

My invention consists in the construction and combination of valves and valve-operating mechanism with the connecting-tubes of a boiler and a waste-pipe, as hereinafter fully set forth, in such a manner that by simply turning a handle I can simultaneously close the ends of the tubes in the boiler to retain the water in the boiler and open the waste-pipe to drain the water from the tubes outside of the boiler; and also from the water back, coil, or reservoir in the stove or furnace.

Figure 1 of my accompanying drawings shows my attachment connected with a range-boiler as required for practical use. Figs. 2, 3, 4, 5, and 6 are enlarged detail views.

Together these figures clearly illustrate the construction, application, and operation of my complete invention.

A represents a range-boiler, that may vary in size and shape, as desired, and that may be supported in any suitable manner and position relative to a stove or furnace.

A' is an inlet at the upper portion and side of the boiler, and A² an outlet at the center of the bottom.

B is a tube, formed in two parts, that are adjustably connected in such a manner that it can be lengthened and shortened to facilitate combining it with the inlet and outlet of the boiler by means of lateral branches at its top and bottom.

B' is a branch that extends from the tube B into the inlet A' of the boiler. It is detach-

ably connected with the boiler by means of a tube-section or tubular coupling, C, that is screw-threaded at both ends, and a nut, C', as clearly shown in Fig. 1.

B² is a branch on the opposite side of the branches B'.

D represents an induction-tube that extends from the branch B² to a water back, coil, or reservoir in a stove or furnace.

D² represents an eduction-tube that extends from the same stove or furnace to the lower end of the vertical tube B.

F represents a valve-chamber connected with the outlet A² in the bottom of the boiler by means of a coupling, C C', and with the lower end of the vertical tube B and the eduction-tube D² by means of a branch or tube-section, G. This valve-chamber F has a valve-seat at its upper end, inside of the boiler, and also one at its lower end.

G² represents a waste-pipe connected with the lower end of the chamber F, to extend to a sewer or wherever desired, for the purpose of carrying off waste water.

F² represents an enlargement in the central portion of the valve-chamber F for the reception of valve-operating mechanism.

H is a valve-operating rod, that extends through a bearing or stuffing box at the top of the tube B, down into a step or bearing formed in or attached to the lower end of the tube. It is formed in two parts, that are adjustably connected, as clearly shown in Fig. 2, in such a manner that it can be readily lengthened and shortened relative to the length of the tube, as required, to facilitate the application of my complete attachment. This rod H is provided with cranks at points that come in line with its lateral branches.

H² is a valve-stem connected with the upper crank and a globular valve, No. 1, in such a manner that the valve will be opened and closed relative to the valve-seat on the end of the branch B' by simply turning the rod H by means of a handle or hand-wheel fixed to the top end of the rod.

No. 2 is a valve in the top end of the valve-chamber F. No. 3 is a valve in the lower end of the same valve-chamber. The stems of

these two valves are connected with each other by means of lazy-tongs levers J in the chamber F, and with the crank on the lower end of the rod H, by means of a rod, H³, as clearly shown in Fig. 1. Each of the rods or stems H² and H³ has radial branches, as clearly shown in Fig. 6, that engage the inner surface of the tubes, and serve as bearings to direct the reciprocating rectilinear motions of the rods or stems. Each rod is also provided with an extensible coupling, as represented by Fig. 2.

L (shown in Figs. 3 and 5) represents a rubber ring applied to the valve-seat to engage the solid surface of the globular valve.

M is an air-cock at the top of the tube B.

From the foregoing detailed description of the construction and function of each element of my complete device it is obvious that, by simply turning the rod H, to bring its cranks toward the boiler, the valves Nos. 1 and 2 will be simultaneously opened and the valve No. 3 closed, as required to establish circulation between the boiler and the water back, coil, or reservoir in a stove or furnace. It is also equally clear that a reverse movement of

the rod and crank will simultaneously close the valves Nos. 1 and 2 and open the valve No. 3, as required to retain the water in the boiler and drain the water from the tubes through the waste-pipe.

I claim as my invention—

1. The tube B, having a branch, B', at its top portion, the valve-chamber F, having valve-seats at its top and bottom, the rod H, having cranks, the valves Nos. 1, 2, and 3, the rods or stems H² and H³, and the lazy-tongs levers J, arranged and combined to operate in the manner set forth, for the purposes stated.

2. The range-boiler attachment composed of the following elements, to wit: a tube, B, having lateral branches at its top and bottom, a valve-chamber, F, valves Nos. 1, 2, and 3, a valve-operating rod, H, having cranks, valve-stems H² and H³, and lazy-tongs levers J, substantially as shown and described, for the purposes specified.

GUSTIN M. ANSON.

Witnesses:

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