

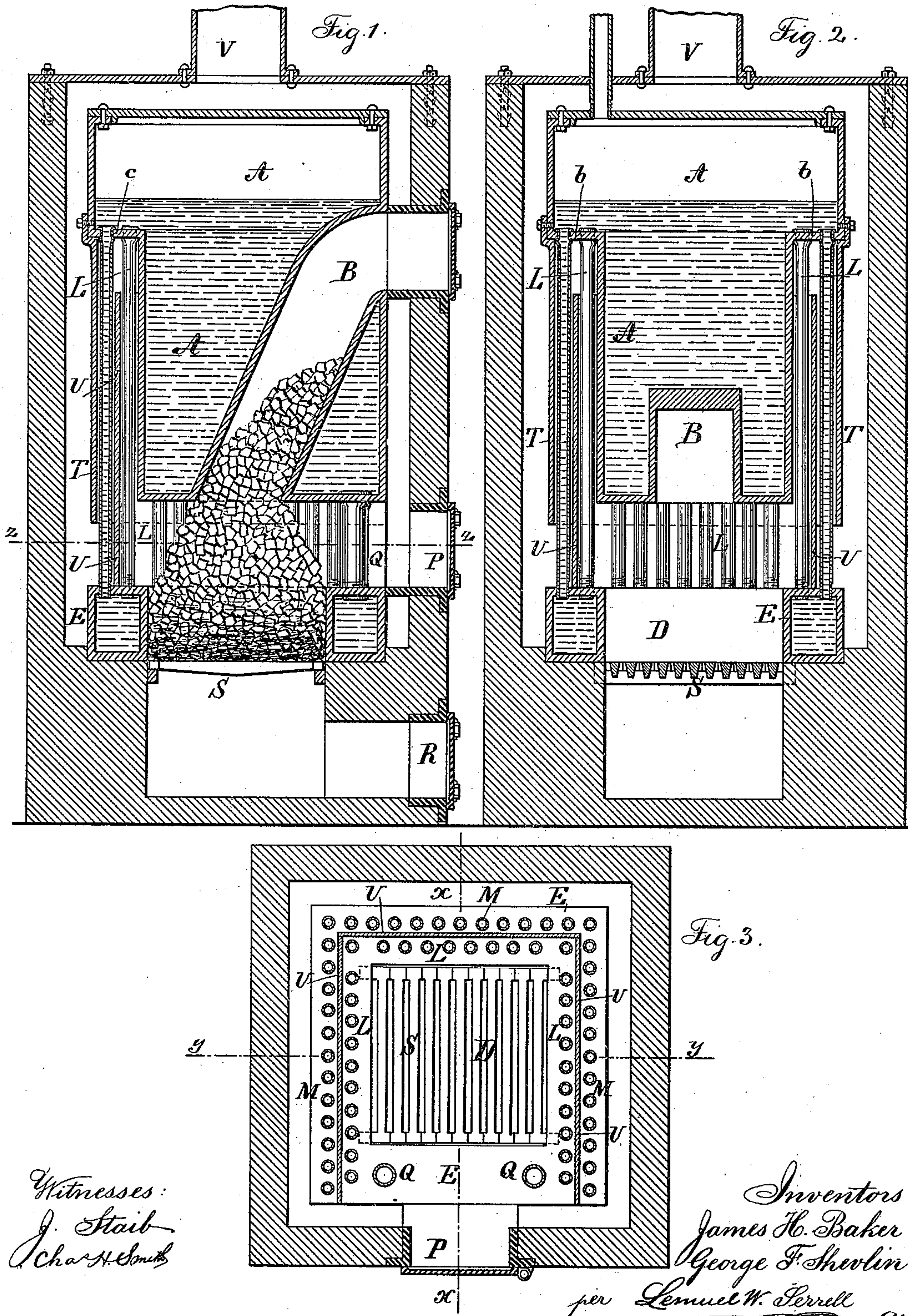
(No Model.)

J. H. BAKER & G. F. SHEVLIN.

STEAM HEATER.

No. 355,808.

Patented Jan. 11, 1887.



Witnesses:
J. Staib
Chas. H. Smith

Inventors:
James H. Baker
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UNITED STATES PATENT OFFICE.

JAMES H. BAKER AND GEORGE F. SHEVLIN, OF SARATOGA SPRINGS, N. Y.

STEAM-HEATER.

SPECIFICATION forming part of Letters Patent No. 355,808, dated January 11, 1887.

Application filed October 2, 1886. Serial No. 215,111. (No model.)

To all whom it may concern:

Be it known that we, JAMES H. BAKER and GEORGE F. SHEVLIN, of Saratoga Springs, in the county of Saratoga and State of New York, have invented an Improvement in Steam-Heaters, of which the following is a specification.

This heater is made for obtaining a large extent of heating-surface in a small space, and for preventing the coal in the magazine above the fire becoming highly heated.

We provide a boiler with a magazine for the coal passing into the boiler at one side and down over the fire, and this boiler is usually square, and the upper part projects and forms a steam-dome, the projections being on three sides and sufficiently wide to receive two ranges of tubes that open at their lower ends into a hollow ring that surrounds the fire-chamber, and there are also tubes between this hollow ring and the lower end of the boiler over the fire. The products of combustion pass up around the boiler and the inner ranges of tubes, over intermediate flue-plates, down around the outer ranges of tubes and below hanging flue-plates, and up around the steam-dome to an escape-flue.

In the drawings, Figure 1 is a vertical section of the boiler at the line *x x*, Fig. 3. Fig. 2 is a vertical section at the line *y y*, and Fig. 3 is a horizontal plan at the line *z z*, Fig. 1.

The boiler A is of a suitable size, and the upper parts project or overhang at *b b* on the sides and at *c* on the back, and the upper part of the boiler forms the steam dome or chamber, to which are connected the pipes leading to the steam-coils and radiating apparatus.

The fuel chute or magazine B passes in at the front of the boiler, and curves downward and runs diagonally to the middle part of the bottom of the boiler, and opens over the fire-chamber D. Around this fire-chamber D is a hollow ring or casing, E, of a size corresponding, or nearly so, to the horizontal measurements of the steam-dome; and there are two ranges of vertical tubes screwed at their lower ends into the ring E, and secured at their upper ends into openings in the overhanging portions *b b* and *c* of the steam-dome. The inner ranges, L, of said tubes are near the outer surfaces of the boiler A, at the sides and back, and there are metal sheets, forming flue-plates U, standing vertically between the inner ranges of tubes, L, and the outer ranges, M,

of tubes, and there are hanging flue-plates T, extending down from the parts *b b* and *c* of the steam-dome to about six inches from the hollow ring E.

The heater is to be inclosed in a brick or metal casing, with a fire-door at P and an ash-door at R, and the grate-bars S are below the hollow ring E, and there is the necessary flue-space between the casing and the plates T and dome, so that the products of combustion pass up around the boiler A, and between the tubes L and over the flue-plates U, and descend between U and T, and then ascend within the casing and around the steam-dome to any suitable flue, such as at V.

The boiler and hollow ring are shown as square; but we are not limited in this particular. They may be polygonal or circular.

The tubes Q, connecting the lower end of the boiler with the hollow ring E, allow the water to circulate freely through this ring.

We claim as our invention—

1. The boiler having its lower end directly over the fire and a fuel chute or magazine passing diagonally into it at one side and down to the bottom and opening over the fire-chamber, in combination with a hollow ring around the fire-chamber and ranges of vertical tubes around the fire-chamber, connecting the hollow ring and boiler, substantially as set forth.

2. The heating-boiler having the upper part thereof projecting at the sides and back, in combination with a hollow ring around the fire-chamber, tubes connecting the ring to the bottom of the boiler, and ranges of vertical tubes around the combustion-chamber, and connecting the hollow ring to the overhanging portions at the sides and back of the boiler, substantially as set forth.

3. The heating-boiler having the upper part or steam-dome projecting at the sides and back, in combination with a hollow ring around the fire-chamber and two ranges of vertical tubes extending from the ring to the overhanging portions of the boiler, and flue-plates between the ranges of tubes and outside the same, substantially as set forth.

Signed by us this 25th day of September, A. D. 1886.

JAMES H. BAKER.
GEORGE F. SHEVLIN.

Witnesses:

JOHN FOLEY,
T. H. BAKER.