G. W. BROWN.

STEAM-GENERATOR AND WATER-HEATER.

No. 173,157. Patented Feb. 8, 1876.

Fig. 1.

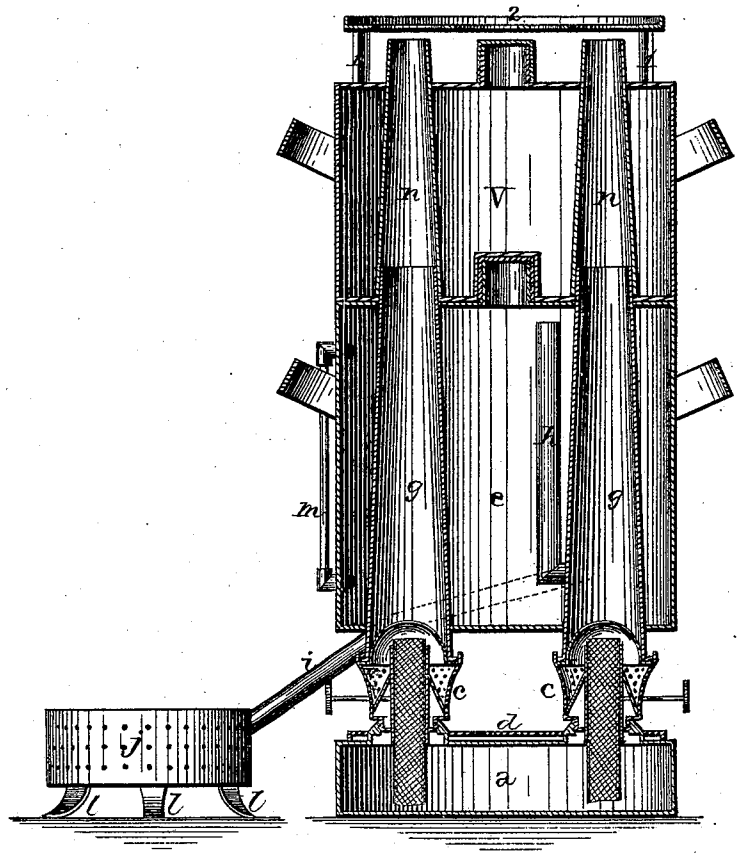
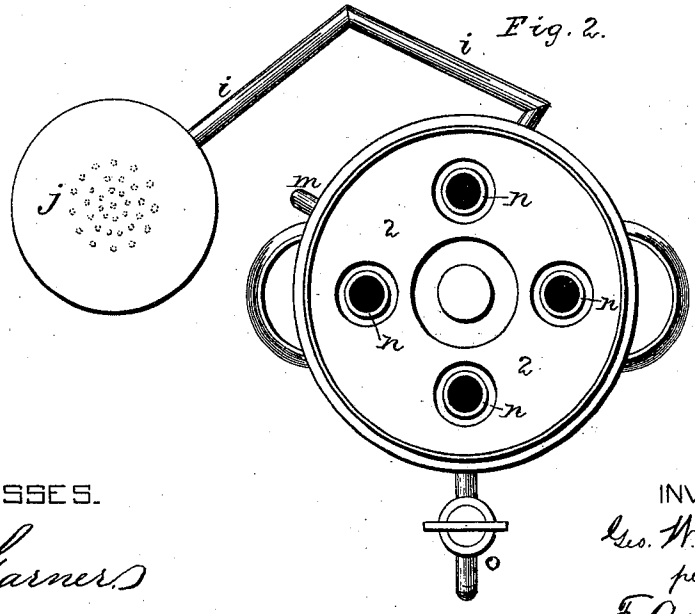


Fig. 2.



WITNESSES.

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UNITED STATES PATENT OFFICE.

GEORGE W. BROWN, OF ROCKFORD, ILLINOIS.

IMPROVEMENT IN STEAM-GENERATORS AND WATER-HEATERS.

Specification forming part of Letters Patent No. **173,157**, dated February 8, 1876; application filed August 18, 1875.

To all whom it may concern:

Be it known that I, GEO. W. BROWN, of Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Steam-Generators and Water-Heaters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improved steam-generator and water-heater; and it consists in the arrangement and combination of parts that will be more fully described hereinafter, whereby a small, compact, portable steam-generator, for supplying steam to vapor-baths and other such purposes, and a water-heater, are produced.

The accompanying drawings represent my invention.

a represents an oil-reservoir, which is provided with any desired number of burners, *c*, the wick-raisers of which extend outward, so as to be in a convenient position.

As here shown, the apparatus is adapted for burning oil, though by slight alterations, when desirable, wood or coal fires may be used.

Secured to the collars of the burners, a slight distance above the top of the reservoir, is a sheet, *d*, of perforated metal, for breaking up the currents of air before reaching the flames. Resting upon the tops of the burners is the generator *e*, which consists of a suitable-sized vessel, up through which extends a tube, *g*, for each one of the burners. These tubes have their lower ends to project down below the bottom of the generator, so as to rest inside the top edges of the burners, and taper from top to bottom, as shown, so as to derive the full advantage of the heat. The pipe *h*, through which the steam escapes, is attached to the side near the bottom, but inside it reaches up to near the top of the generator, for the double purpose of taking the steam that is freed from water, and of making the steam pass through a pipe that is heated both by steam and water, and thus prevent any condensation.

The steam passes through a pipe or tube, *i*, inside of the bath, and from thence into the tub or box through the rose *j*. This rose is of a circular shape, and has a perforated rim, through which the steam escapes into the box, causing an equal distribution and pressure throughout. In order to attach it to the floor under the seat of the patient, the rose is provided with the legs *l*. To one side of the generator is attached a common gage, *m*, so as to show the height of water.

Placed upon the top of the generator is a second vessel, *v*, of the same shape and diameter as the generator, though not of as great capacity, and up through which pass a number of tapering tubes, *n*, corresponding in number to the tubes *g*. The upper ends of the tubes *g* extend a short distance above the top of the generator, and up into the lower ends of the tubes *n*, so as to bind the vessels together, and prevent the upper one from being easily displaced. This vessel *m* is used for heating water for any desired purpose, and is provided with a cock, *o*, for drawing it off.

Secured by the legs or standards 1 to the top of the heater is a flat perforated plate, 2, upon which any article may be placed to be kept hot. The perforations in the plate are immediately above the tops of the tubes *n*, which reach up above the top of the vessel to within a very short distance of its under side, leaving just space enough to allow the smoke and vapor to escape.

The vessels are provided with screw-caps, through which they may be filled with water, and handles, by means of which they may be carried about. In the bottom of the rose there are also holes, through which all water from the condensed steam escapes.

It will thus be seen that I have combined in a single apparatus a steam-generator, a water-heater, and a place for keeping articles warm.

Having thus described my invention, I claim—

1. The combination of a steam-generator, *e*, a water-heater, *v*, conducting-pipes *i*, and a steam-distributer, *j*, substantially as shown.

2. The combination of the steam-generator *e* and boiler *v*, the two being made in sepa-

rate parts, fitted together, and adapted to be heated, as specified.

3. The combination of the steam-generator *e*, boiler *v*, and heating device 1 2, as shown and described.

4. The steam-distributer *j*, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of August, 1875.

GEORGE W. BROWN.

Witnesses:

JOHN M. BUELL,

CLARA B. BUELL.