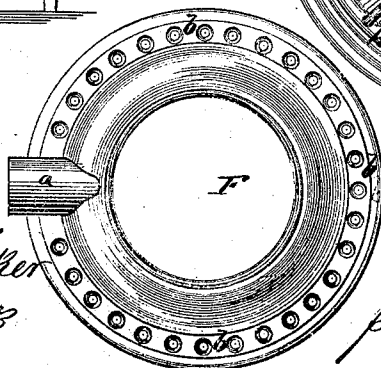
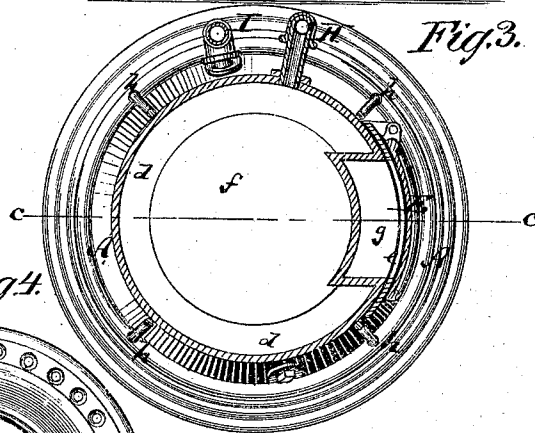
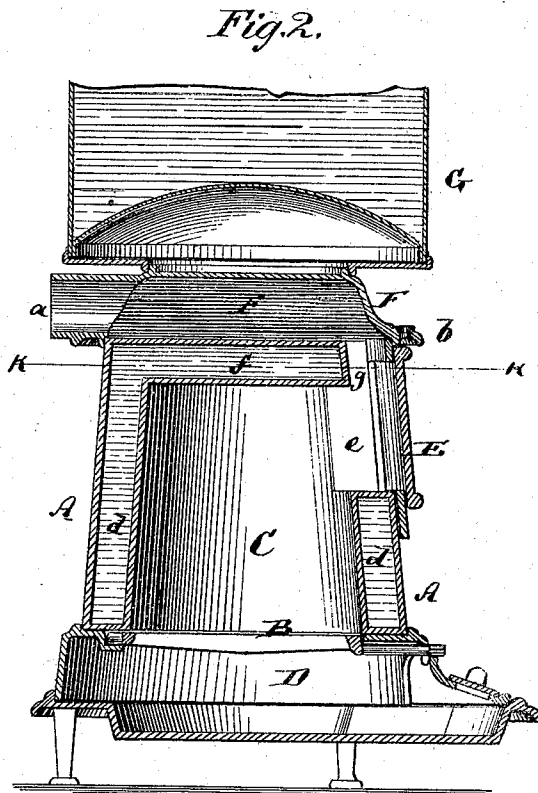
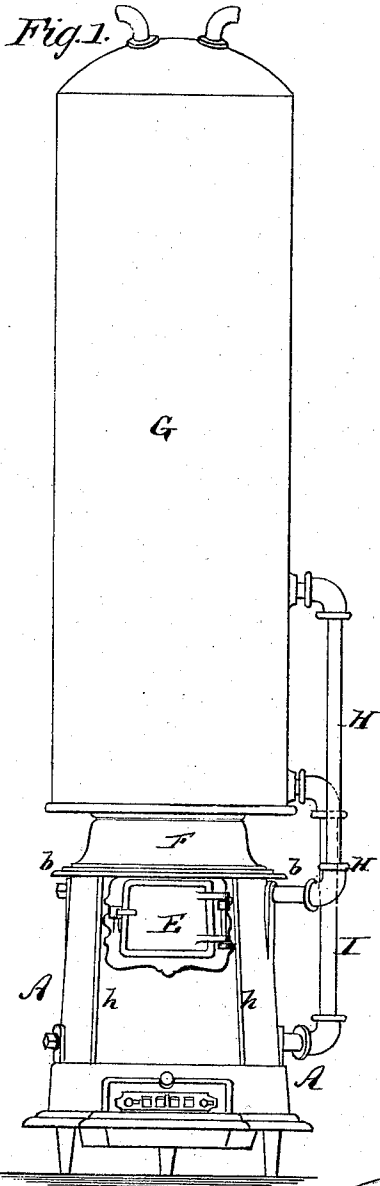


C. F. HITCHINGS.
Boiler-Stands and Heaters.

No. 137,448.

Patented April 1, 1873.



Witnesses.
John Becker
Fred Haynes

C. F. Hitchings
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Attorneys

UNITED STATES PATENT OFFICE

CHARLES F. HITCHINGS, OF NEW YORK, N. Y.

IMPROVEMENT IN BOILER STANDS AND HEATERS.

Specification forming part of Letters Patent No. **137,448**, dated April 1, 1873; application filed February 17, 1873.

To all whom it may concern:

Be it known that I, CHARLES F. HITCHINGS, of the city, county, and State of New York, have invented an Improved Boiler Stand and Heater, of which the following is a specification:

Figure 1 is a front elevation of my improved boiler stand and heater. Fig. 2 is a vertical section of the lower part thereof taken on the plane of the line *c c*, Fig. 3. Fig. 3 is a horizontal section on the line *k k*, Fig. 2; Fig. 4, a plan or top view of the heater.

Similar letters of reference indicate corresponding parts.

This invention relates to a new arrangement of water heater and stand and reservoir, combined with each other in such manner that the heat of the fire in the heater will be utilized on the water to the fullest extent, and so that full and free circulation of the water around the fire will be permitted to take place, and that the angle of the smoke-outlet may be varied at will with respect to the feed-door without changing the position of the latter. My invention consists, first, in constructing a water-heater with a circular top, on which the smoke-nozzle is formed; and which constitutes a support for the boiler or water-reservoir standing thereon. The circular top is cast, and can be turned on the supporting-heater in such manner that the flue-nozzle may be brought to any desired angle with the feed-door in the heater. This will permit the heater to be applied in any desired position in a corner of a room or otherwise, so that the feed-door will face the room, while the smoke-pipe will enter the chimney at a suitable angle in each particular case. My invention also consists in constructing the heater with an annular water-space around the fire-chamber, said water-space communicating by means of pipes with the boiler or upper reservoir, and being provided with an upper extension, which covers the fire-space, retards the escape of the products of combustion, and directs them to an opening formed above the feed or fire door between such fire-space and the aforementioned circular top of the heater. For the purpose of adjusting the heater-top in the manner indicated, it is provided with a ring perforated at short intervals, so that the bolts which con-

nect it with the base of the heater may be passed through those apertures of the top which may be brought in line with them.

In the accompanying drawing, the letter A represents the heater, containing the grate B between the fire-space C and ash-pit D, and a feed-door, E, all as clearly shown in Fig. 2. F is the top of the heater, cast in one piece in such manner that it is closed on top and open at the bottom, the flue-nozzle *a* being cast on it, and also a perforated ring or flange, *b*, which is more clearly shown in Fig. 4. This heater-top F is placed upon the heater and covers the same, and serves at the same time as a support for the boiler G, in the manner shown. The walls of the heater H are made hollow to form an annular water-chamber, *d*, around the fire-space. An opening is formed through this annular water-chamber at *e*, in line with the feed-door E. Between the fire-chamber C and the circular heater-top F is a horizontal extension, *f*, of the water-chamber *d*, said extension covering the fire-space C entirely, leaving an opening, *g*, however, for the escape of the smoke through the circular top F. This opening *g* is directly above the feed-opening *e*, as shown, but may, if desired, be arranged at one side of the heater; or there may be two or more openings at suitable intervals from each other through the covering-crown *f*, between the fire-space and circular heater-top. Circulation-pipes H and I connect the lower part of the water-chamber *d* with the lower part of the boiler G, and the upper part of the chamber *d* with the upper or middle part of the boiler G, respectively, as indicated in Fig. 1. Bolts or rods *h h* extend from the base of the heater through the perforated flange *b* of the circular top, and by turning this top so as to bring the flue-nozzle *a* in the desired direction it will bring some of the apertures in *b* in line with the fastening-bolts, to permit the proper securing of the top F.

It will be observed that the fire on the grate B will sufficiently heat the water in the chamber *d*, and will be detained by the water-crown *f*, so as to give out a full proportion of its heat to the water, the circulation through the pipes H and I permitting the effect of the fire to be distributed throughout the entire boiler.

After having struck the crown *f* the prod-

ucts of combustion are conducted through the opening *g* into the hollow circular top *F*, and serve while passing through the latter to give off whatever heat they may still retain to the bottom of the boiler *G* for additionally heating the water therein. They finally pass off through the flue-nozzle *a*.

One chief advantage of my invention is the casting of the flue-nozzle in one piece with the circular top of the heater, whereby the construction of the latter is greatly simplified. Another chief and great advantage is the arrangement of the opening *g* near the opening *e* in the heater, whereby greater surface is retained for the fire to act upon; and a third advantage is the facility of turning the heater-top and setting the flue-nozzle at any desired angle to the feed-door.

I claim as my invention—

1. The heater *A*, constructed with hollow walls, and with a hollow fire-space top, *F*, and with the openings *e* and *g*, substantially in manner set forth.

2. The heater-top *F*, cast in one piece with the flue-nozzle *a*, as specified.

3. The perforated flange *b* formed on the heater-top *F*, which carries the flue-nozzle *a*, to permit the turning of said top, as set forth.

4. The combination of the water-heater *A*, containing the chambers *d f*, with the circular top *F*, carrying the flue-nozzle *a*, and with the boiler *G* and pipes *H* and *I*, all arranged to operate as specified.

CHAS. F. HITCHINGS.

Witnesses:

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