

# CURRIER & PEVEY.

## Steam Heater.

No. 105,179.

Patented July 12, 1870.

Fig: 1.

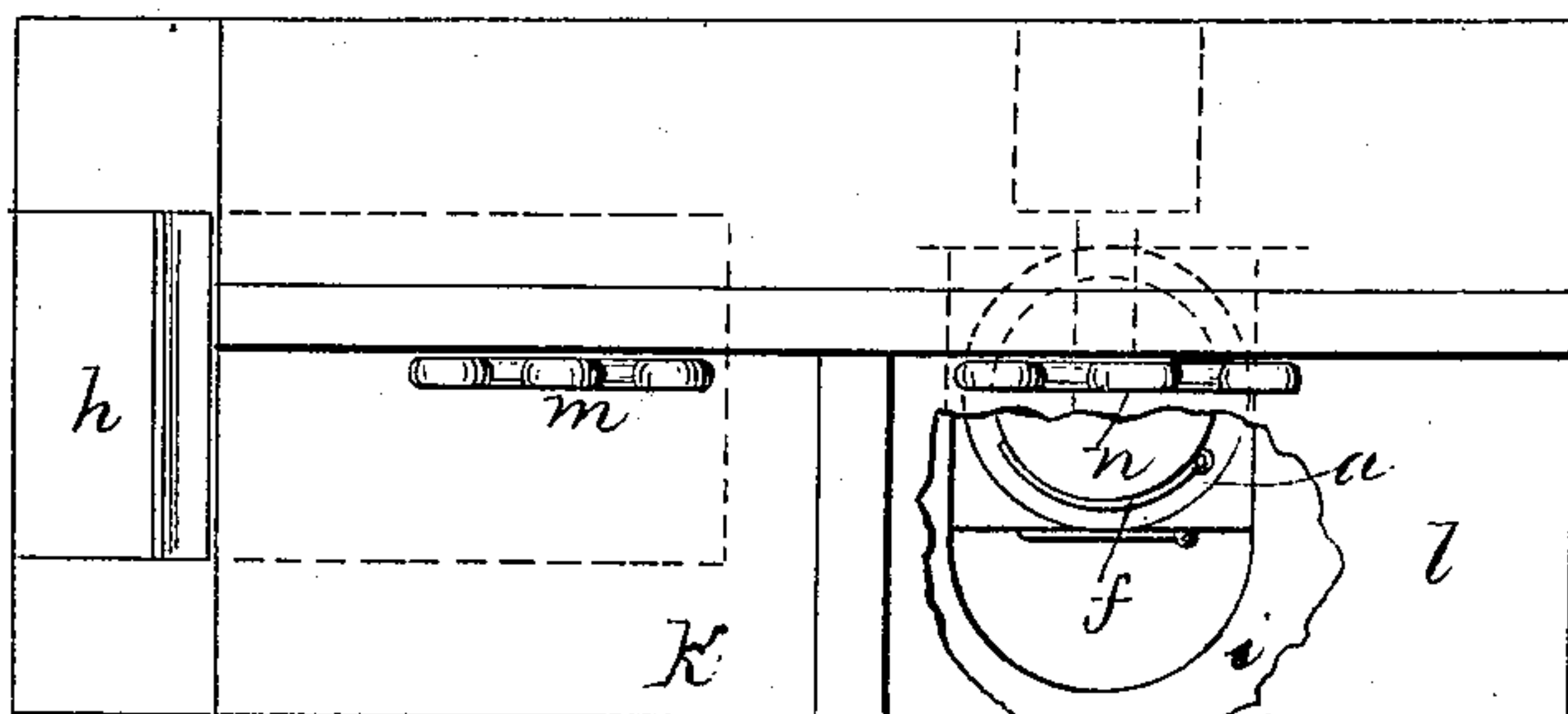
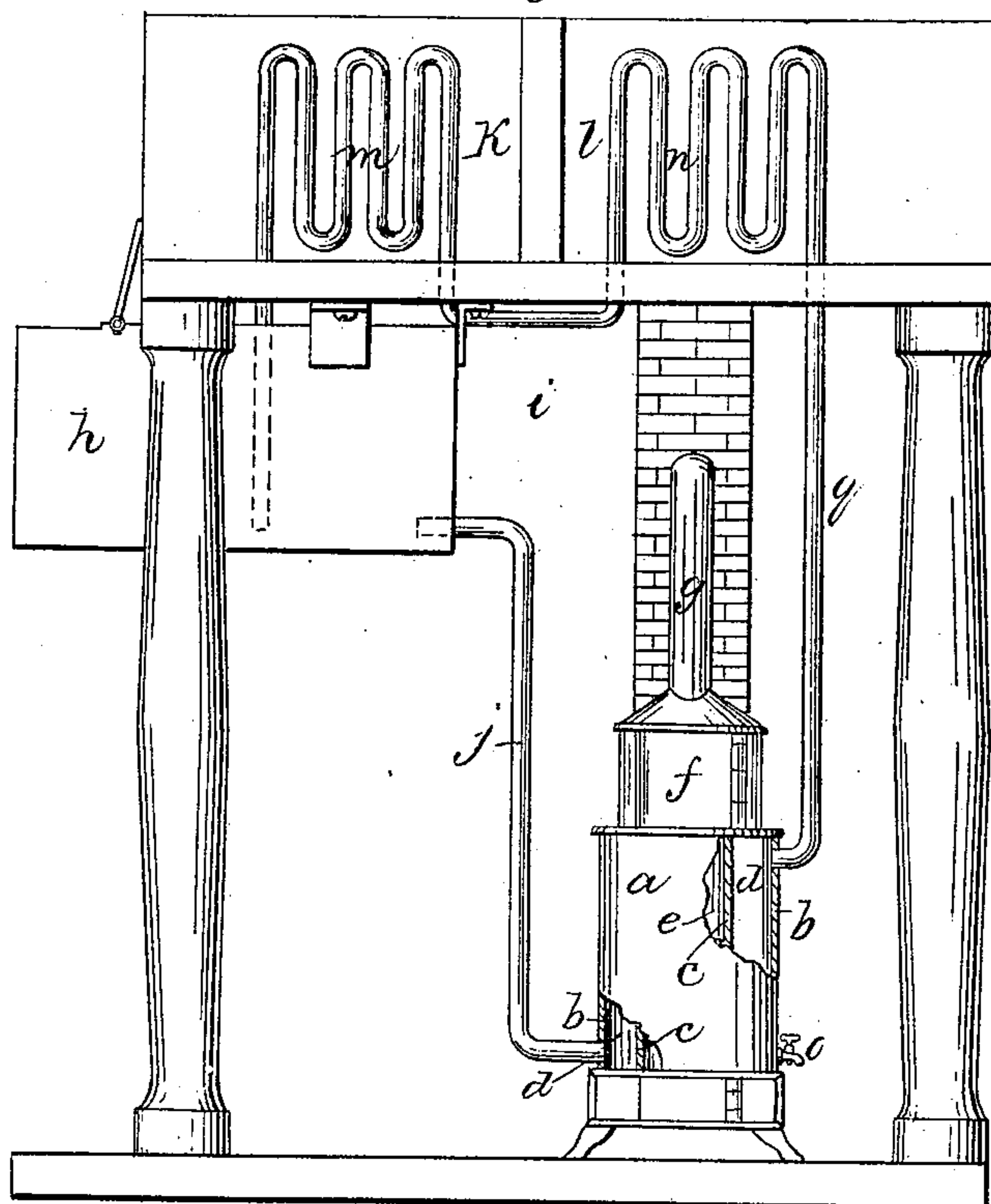


Fig: 2.



Witnesses.

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# UNITED STATES PATENT OFFICE.

JOHN CURRIER AND ABIEL PEVEY, OF LOWELL, MASSACHUSETTS.

## CYLINDER-STOVE.

Specification forming part of Letters Patent No. **105,179**, dated July 12, 1870.

*To all whom it may concern:*

Be it known that we, JOHN CURRIER and ABIEL PEVEY, both of Lowell, in the county of Middlesex and State of Massachusetts, have invented an Improved Hot-Water Apparatus for Heating Rooms; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, making part of this specification.

The nature of our invention consists in the arrangement of a water and steam circulating pipe or pipes connected with a water-chamber heated by a stove when the said pipe or pipes are open to the pressure of the atmosphere, and simply empty into a water reservoir or tank, which, being placed somewhat higher than the water-heating chamber, keeps it constantly supplied with water without depending on the circulating-pipe for a supply, substantially as hereinafter specified.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

Figure 1 represents a plan of our improved device as applied in heating two or more rooms. Fig. 2 represents a front elevation of the same with parts broken out, showing the arrangement, construction, and operation of the same.

Similar letters in the different figures indicate corresponding parts.

In the construction of our improved device, *a* represents a common cylinder-stove, which is formed of two cylinders, *b* and *c*, between which the water-chamber *d* is formed, the inside of the cylinder *c* being designed for the fire-pot *e*, with grate at its bottom. Located and secured to the top of this stove *a* is what we term a "bonnet," with door *f* for fuel, and an opening in its top with flange for the reception of the smoke-pipe *G*.

*h* is the water-tank, which is located above the top of the stove *a*, and, in most instances, secured to the ceiling of the room *i*, in which room said stove *a* is located, this tank *h* being connected to the stove *a* by means of the supply-pipe *j*. *k* and *l* represent two rooms above, in which are located coil of pipes *m* and *n*, or any similar device, said pipes being connected together, the coil *m* connecting with the tank

*h*, and the coil *n* connecting with the water-chamber *d* near its top by means of the discharge-pipe *q*. *o* is a common water-cock, its object being to draw the water from the water-chamber *d*, tank *h*, and pipes *m n j q*, when required to be cleaned out, and for other purposes.

The operation is as follows, viz: The tank *h* being filled with water, and the fire-pot *e* being supplied with fuel, the water in the chamber *d* commences to heat, and when of the required temperature the hot water, by means of the steam, is set in motion, forcing its way from the top of the chamber *d* into the discharge-pipe *q*, thence into and through the coil of pipes *n*. From thence it passes into and through the coil of pipes *m*, discharging itself into the tank *h*, the supply of water in the chamber *d* being kept up by means of the pipe *j*, connecting the same with the tank *h*, which is kept filled or supplied in any suitable or desired manner.

This circulation of hot water we have found, by actual experiments, to be continuous and capable of being carried to any extent desired, according to the heating capacity of the stove, thus heating one or more rooms in addition to the room that the stove *a* heats.

The circulation of the water upward and through the heating-pipes is produced by the steam escaping with the same, and is not, as in ordinary circulating-pipes, due to the lighting of the column by the expansion of the heated water. In the present instance there is not a continuous circuit of water through a pipe from the heating-chamber and back again.

The water which passes through the heating-pipes may be drawn off and never return to the heating-chamber, the supplying-tank being constantly provided with water from an independent source; but it is better to use the same water over again, because it is partly heated when it returns to the tank, and less water is then required for the purpose.

One great advantage derived from this improvement is, that there is a free escape of the steam generated, and there is no danger from explosion; hence less strength is required, and the whole apparatus is simplified. The circulation of water is also rapid, and the heating power is correspondently efficient.



When but two rooms are required to be heated the capacity of the chamber *d* may be lessened, if required, by having it extend but a part way around the cylinder *c*; but to receive the whole benefit of the stove *a* to its full heating capacity, we have the chamber *d* encircle the stove *a* and of the same height, which also prevents to a great extent the cylinder *c* from being burned. Also, in some cases, it may be desired to heat each room separate, which we accomplish by having as many discharge-pipes *q* with the requisite stop-cocks as rooms to be heated, and connecting them with the chamber *d* and coil of pipes *m n* separately, each coil of pipes *m n* connecting with the tank *h*, and in either of the above cases but one pipe, *j*, is required to connect the tank *h* with the chamber *d*.

We do not confine our invention to any special construction of the heating-stove or arrangement of the water-chamber in connection therewith.

We are well aware that hot water or condensed steam and steam have been used for heating purposes by the aid of various devices, such as boilers with connections. For this reason we lay no claim to them whatever.

What we claim as our invention, and desire to secure by Letters Patent, is—

The combination of the water-heating chamber or boiler *d*, supply tank or reservoir *h*, located above the said heating-chamber, so as to keep it fully filled with water, and the steam and water circulating pipe or pipes *q n m*, open to the pressure of the atmosphere, and so as to continually and freely discharge its contents into the tank or otherwise, substantially as and for the purpose herein specified.

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Witnesses:

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