C. MATTHEWS & W. HOLT.

Water Heater.

No. 201,885. Patented April 2, 1878.

Fig. 4.

Fig. 1.

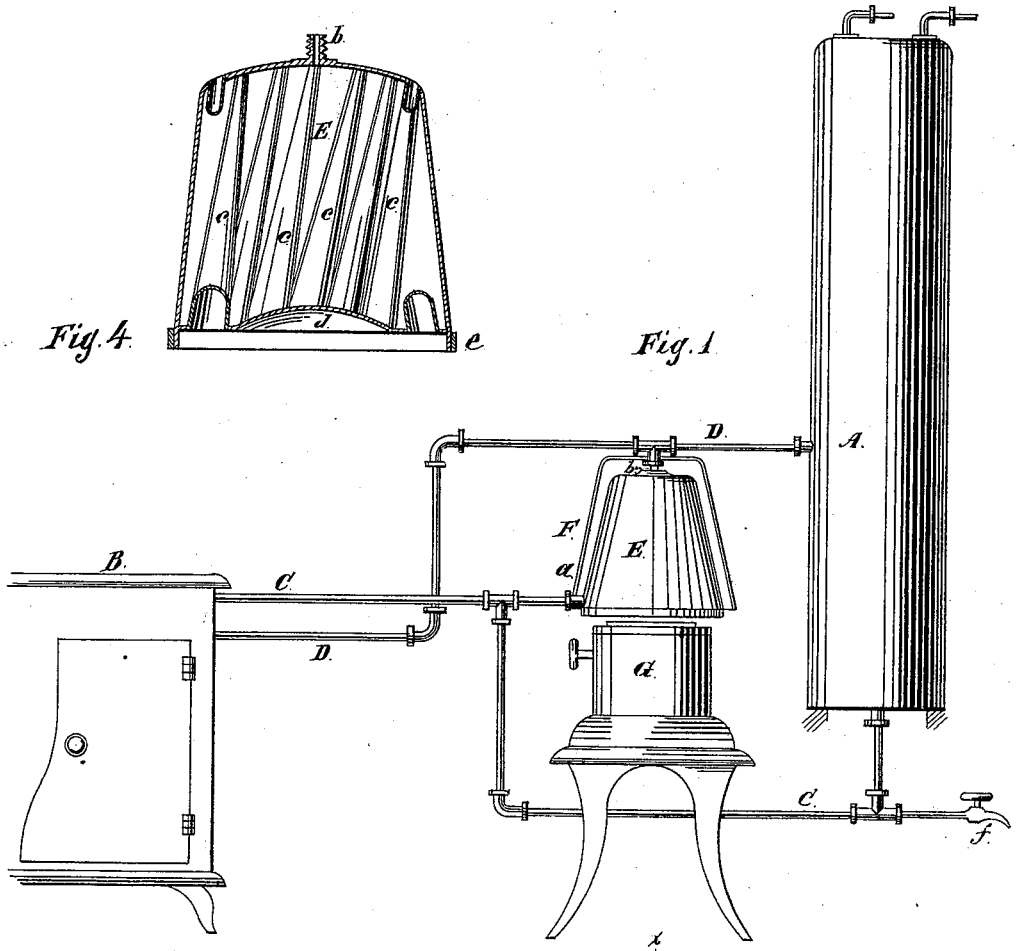
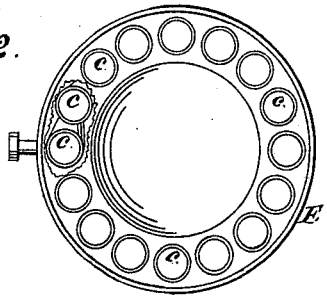


Fig. 2.



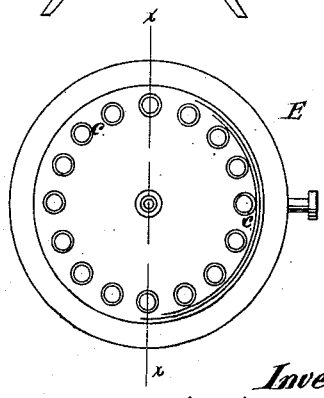


Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES MATTHEWS AND WILLIAM HOLT, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN WATER-HEATERS.

Specification forming part of Letters Patent No. **201,885**, dated April 2, 1878; application filed July 21, 1877.

To all whom it may concern:

Be it known that we, CHARLES MATTHEWS and WILLIAM HOLT, of the city of Chicago, Cook county, State of Illinois, have invented a new and useful Improvement in Water-Heaters, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation; Fig. 2, a bottom view with our attachment; Fig. 3, a top view of the same; Fig. 4, a vertical section thereof.

It is customary to heat water in a reservoir by means of pipes passing through the fire-chamber of a stove or range. It frequently happens, especially in warm weather, that it is not desirable to maintain a fire in the stove or range, in which case hot water cannot be provided in the reservoir.

The object of this invention is to provide devices by the use of which the water in the reservoir can be conveniently heated without the use of a stove, or which may be used in connection with the stove, if desired, for a more rapid heating of the water; and it consists in an attachment connected with the water-pipes between the reservoir and stove, through which the water circulates, and to which the heat from a coal-oil stove can be easily applied, for the purpose of heating the water.

In the drawings, A represents a water-reservoir, of the usual construction, arranged and supported in the usual manner.

B is a stove or range; C, the water-pipes passing from the bottom of the reservoir A through the stove B; D, the return-pipe to the reservoir. These pipes are arranged in the usual manner, except that their location may be changed, as may be necessary to adapt them to be used in connection with our attachment.

E represents our attachment. It is connected with and suspended from the pipe D near the reservoir by means of a T-connection. It is also connected with the pipe C near its lower end—for example, at *a*—so that water from the reservoir can pass into and circulate through this attachment to facilitate the heating. The attachment is provided with a series of tubes, *c*, open at the top and bottom thereof, which tubes we prefer to make smaller at the top than at the bottom, and to place in a diagonal position, rather than to have them extend perpendicularly through the attachment. Through these tubes the heat passes, and the water in the attachment surrounds them. We prefer to make the bottom of the attachment concave, as shown at *d*, Fig. 4.

e is a sliding band encircling the attachment. F is a jacket over the same, arranged so that there is a space between it and the attachment E.

G is a coal-oil stove, located just beneath the attachment E. A gas-stove or any other suitable heating device may be used.

f is a pipe by means of which the boiler can be emptied whenever desired. Water is to be drawn from the reservoir in any suitable manner.

In use, the water in the reservoir A can be heated by means of the coal-oil stove G, the heat from which first strikes the plate *d* of the attachment, and then passes up through the tubes *c*. The greater portion of the heat will be absorbed by the water in the attachment, and a portion of that which escapes at the top will be utilized by means of the jacket F.

When the stove G is in operation the water in the reservoir will circulate through the attachment E, passing from the pipe C into E at *a*, and thence out into the pipe D at *b*, and thence into the reservoir.

The stove G is not necessarily a fixture beneath the attachment E, but may be removed and used as in the ordinary manner, being placed beneath the attachment when not in use for other purposes; or a coal-oil stove might be permanently located beneath E, if desired.

The chief purpose of the attachment is to provide means for heating water in the reservoir when there is no fire in the stove or range B; but the attachment may be used in connection with the stove, if desired, one not interfering at all with the operation of the other.

The band *e* extends a little way below the lower end of the attachment E, and it may be lifted up to allow the stove G to be placed beneath the attachment, and when in place the band *e* can be let down again, thus aiding to confine the heat.

This device has been found efficient in prac-

tical use, and only a very small portion of the heat generated escapes without being utilized.

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

1. The interposed heater E G, in combination with the stove or range B, reservoir A, and circulating-pipes C D, substantially as and for the purpose specified.

2. The water-heating attachment and pipes *a b*, in combination with the circulating-pipes C D, substantially as described.

3. The water-heating attachment E, in combination with the air-jacket F, to hold the hot air and prevent circulation around the heater E, substantially as specified.

4. The suspended heater E, in combination with the removable stove or lamp G and circulating-pipes C D, substantially as described.

5. The movable band *e*, in combination with the suspended heater E and removable oil-stove or lamp G, substantially as and for the purpose set forth.

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Witnesses:
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