Chapman & Hammett.

Bath-Boiler.

No 72798 Patented Dec. 31, 1867.

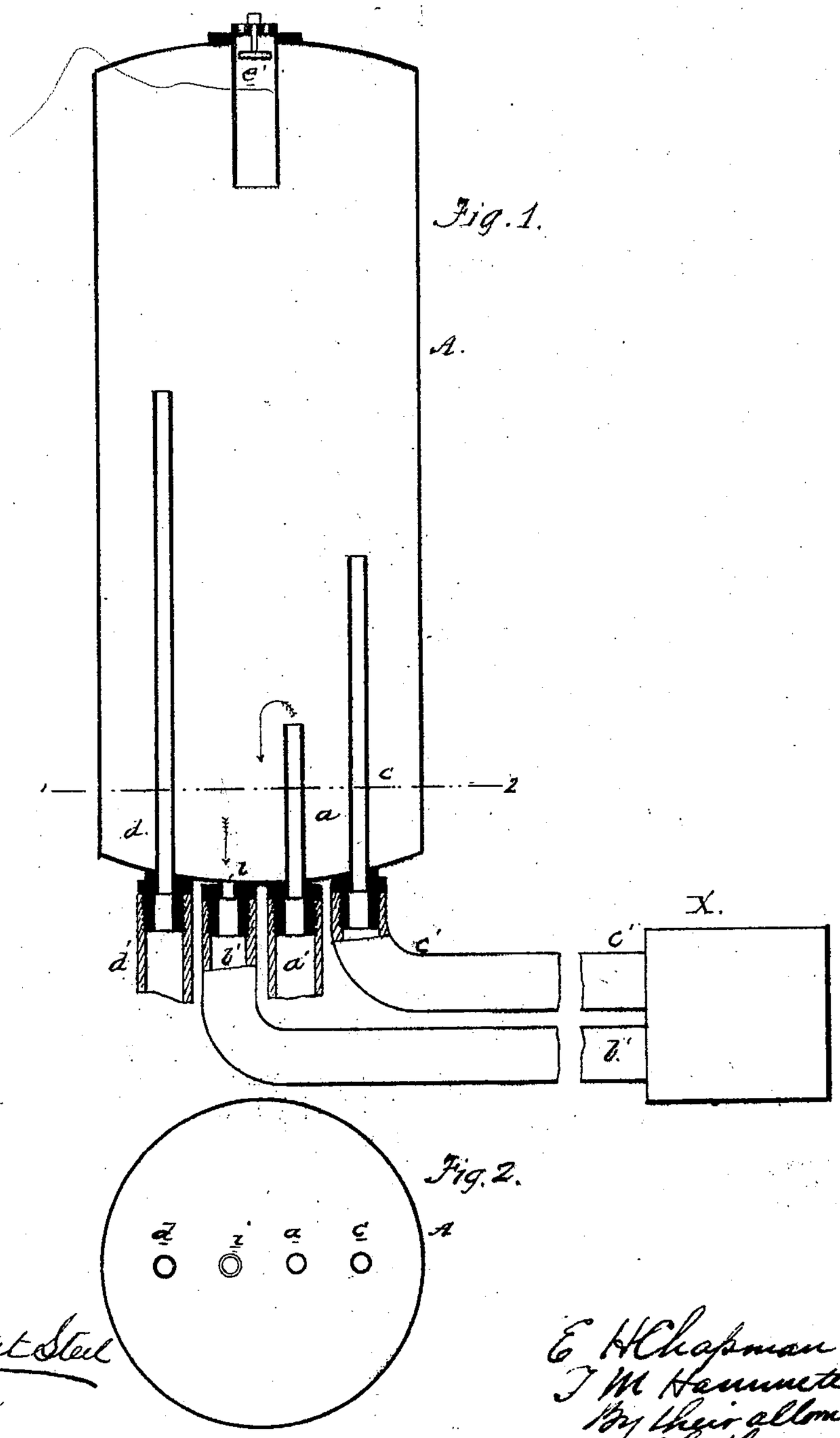
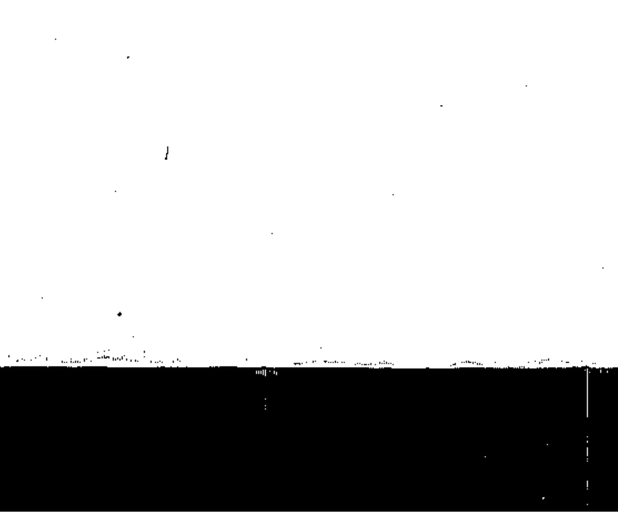


Fig. 1.

Fig. 2.



attest- { Wm Albert Steel
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By their attorney
H. Howson

United States Patent Office.

E. H. CHAPMAN AND T. M. HAMMETT, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 72,798, *dated December* 31, 1867.

BATH-BOILERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, E. H. CHAPMAN and T. M. HAMMETT, of Philadelphia, Pennsylvania, have invented an Improvement in Bath-Boilers; and we do hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to that class of water-heaters which are known as circulating-boilers, and which are used in dwelling-houses, in connection with stoves and ranges, for affording a constant supply of hot water; and our invention consists of a boiler, with a peculiar arrangement of internal tubes, described hereafter, so that a constant supply of hot water may be maintained within the boiler, and so that the hottest portion of the water may be first withdrawn.

In order to enable others skilled in the art to make and apply our invention, we will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 is a vertical section of our improved bath-boiler, and

Figure 2 a sectional plan on the line 1–2, fig. 1.

A is a vertical cylindrical reservoir, or (as it is technically termed) "boiler," through the lower end of which project three tubes, *a*, *c*, *d*, of different lengths, the tube *c* communicating with a pipe, *c'*, extending to the usual water-back, X, (shown in red lines,) of a fireplace, a tube, *b*, extending from near the lower side of the said water-back to the bottom of the boiler A, with which it communicates through an opening, *i*. The tube *a*, which projects but a few inches above the bottom of the boiler, communicates with the hydrant, or with the cold-water reservoir, and the tube *d*, which projects a short distance above the centre of the boiler, communicates with a discharge-pipe extending to any desired point. At the upper end of the boiler is a valve, *e*, which opens inward, for a purpose described hereafter.

The cold water, admitted through the tube *a*, under pressure, to the boiler, flows therefrom through the opening *i*, passes to the lower part of the water-back, in which, as it is heated, it rises, and then flows to the tube *c* and into the boiler, the hottest portion of the water rising above the pipe *d*, through which it is withdrawn as required.

It will be seen that by the above-described arrangement of tubes the coldest portion of the water in the boiler flows first to the water-back, while the hottest portion is always the first to be withdrawn; and that, as the water can never be entirely withdrawn from the boiler through the discharge-pipe, accidents resulting from such withdrawal are prevented. So long as there is any pressure within the boiler, the valve *e* will be maintained in its seat. When, however, the pressure ceases, the valve will fall and admit the air, the collapsing of the boiler being thus prevented.

We claim as our invention, and desire to secure by Letters Patent—

The vertical boiler A, having internal-pipes *a*, *c*, and *d*, and an opening, *i*, arranged in the manner and for the purpose described.

In testimony whereof, we have signed our names to this specification in the presence of two subscribing witnesses.

ED. H. CHAPMAN,
THO. M. HAMMETT.

Witnesses:
CHARLES E. FOSTER,
C. B. PRICE.