

(No Model.)

W. A. TRACY.

SAFETY DEVICE FOR HOT WATER BOILERS.

No. 303,765.

Patented Aug. 19, 1884.

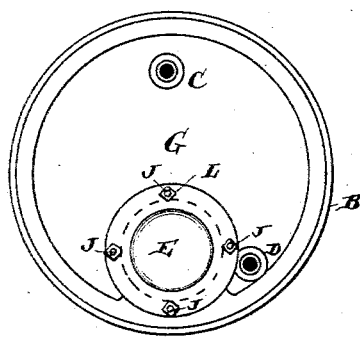
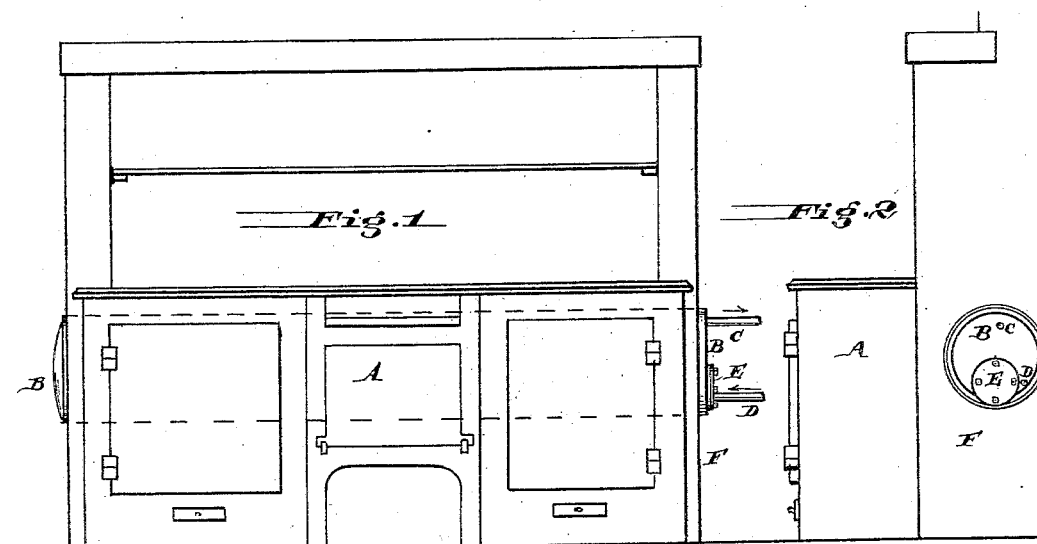


Fig. 4

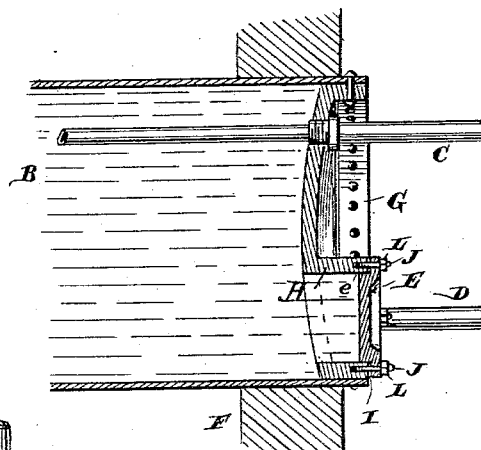
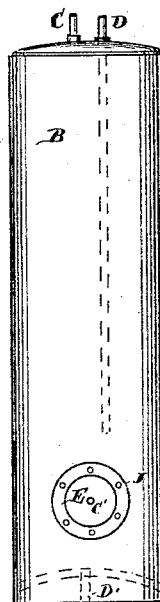


Fig. 3

Fig. 5



Attest  
Homer A. Herbert.  
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By *[Signature]*

# UNITED STATES PATENT OFFICE.

WILLIAM A. TRACY, OF PHILADELPHIA, PENNSYLVANIA.

## SAFETY DEVICE FOR HOT-WATER BOILERS.

SPECIFICATION forming part of Letters Patent No. 303,765, dated August 19, 1884.

Application filed October 26, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. TRACY, of the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented  
5 an Improvement in Safety Devices for Hot-Water Boilers for Ranges, &c., of which the following is a specification.

My invention has reference to hot-water boilers for house use; and it consists in providing  
10 the same with suitable means to allow of its being cleaned without removal and prevent its destruction should steam accumulate or the water therein freeze, all of which is fully set forth in the following specification and shown  
15 in the accompanying drawings, which form part thereof.

Heretofore it has been customary to put the hot-water boilers in houses, either arranged vertically beside the range or horizontally in  
20 the hot-air flues of the same, without providing them with means to allow of their being cleaned, and when dirt, mud, or incrustations accumulate the water becomes unfit for use. To clean them it has been necessary to break  
25 all connecting-pipes and remove the boiler to an open space and roll it, passing water through it meantime. This is a slow, tedious process, and in the case of the boilers built into the brick-work back of the range is very expensive,  
30 and stops the use of the range until rebuilt in place after cleaning; also, in case of the water becoming too hot, the steam generated becomes dangerous, as the boiler is liable to explode, (particularly with the circulating class  
35 of hot-water boilers;) and again, in winter, if the water freezes within the boiler, the expansion which takes place bursts out the heads.

The object therefore of my invention is to provide hot-water boilers generally with means  
40 by which they can be readily cleaned without removal, and also automatically allow of relief if an excessive pressure is created within said boiler.

In the drawings, Figure 1 is a front elevation of a range, showing the location of the boiler in the rear of same. Fig. 2 is an end  
45 elevation of same. Fig. 3 is a sectional elevation through the end of my improved hot-water boiler. Fig. 4 is an end view of the boiler shown in Fig. 3, and Fig. 5 is an elevation of the vertical hot-water boiler with my improvement attached thereto.  
50 A is the range.

B is the hot-water boiler.

G is the cast-iron head, and may be riveted 55 to the cylinder of the boiler in the usual manner.

C is the hot-water pipe, and D is the cold-water pipe.

H is a neck extending from said head G, 60 preferably close to the bottom, and made integral with it or separate therefrom and riveted thereto, and forms the hand-hole. Over the orifice thus formed is clamped a removable cover or plate, E, and the joint may be 65 made tight by a packing-band, I, the cover E being centered, if desired, by lugs or edge *e*. This cover E is bolted to the neck H with weak bolts J—say three in number—having  
70 nuts L. Now, should the boiler become dirty from any cause, the cover E may be readily removed without moving the boiler from its supporting brick-work F, and the operation can be done in a few minutes, where it has  
75 been customary to take as many hours. Now, should steam accumulate sufficiently to endanger the boiler or the water freeze, the plate or cover E is blown off, destroying the bolts J, which are purposely and designedly made  
80 much weaker than any other part of the boiler. In case of vertical boilers this latter feature is especially advantageous, as this class of boilers are much more liable to explode.

The pipes C' D' are the circulating-pipes in connection with the water-backs in the range 85 or stove, and the pipe C' may enter the plate or cover E, as shown in Fig. 7.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A hot-water boiler for house use, combined 90 with a relief device consisting of a cap or cover arranged to fit over a large aperture or inlet to said boiler near the bottom, and held in place, forming a water-tight joint, by means of weak bolts and nuts, which are designedly 95 made of such a strength as to give way before the boiler could burst from the production of steam or ice, substantially as and for the purpose specified. 100

In testimony of which invention I have hereto set my hand.

WILLIAM A. TRACY.

Witnesses:

WILLIAM MCWADE,  
J. ALFRED SMITH.