

(No Model.)

W. W. AUSTIN.
STAND BOILER.

No. 243,680.

Patented July 5, 1881.

Fig. 1.

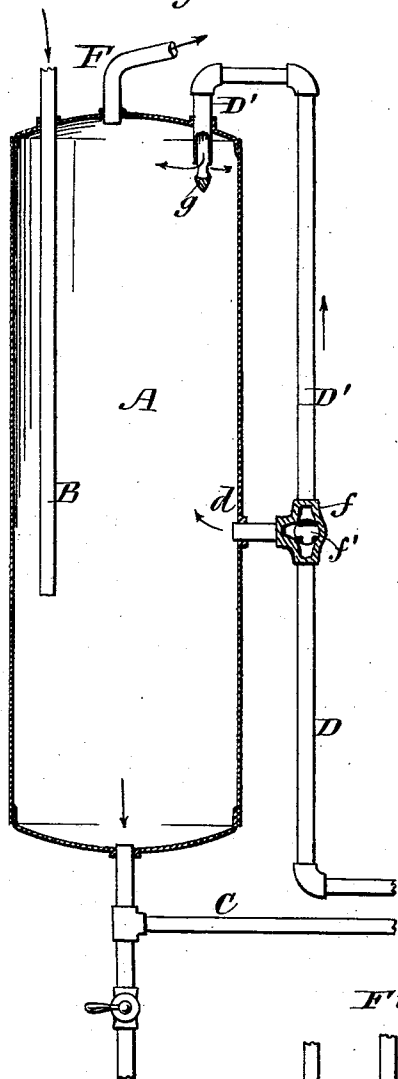


Fig. 2.

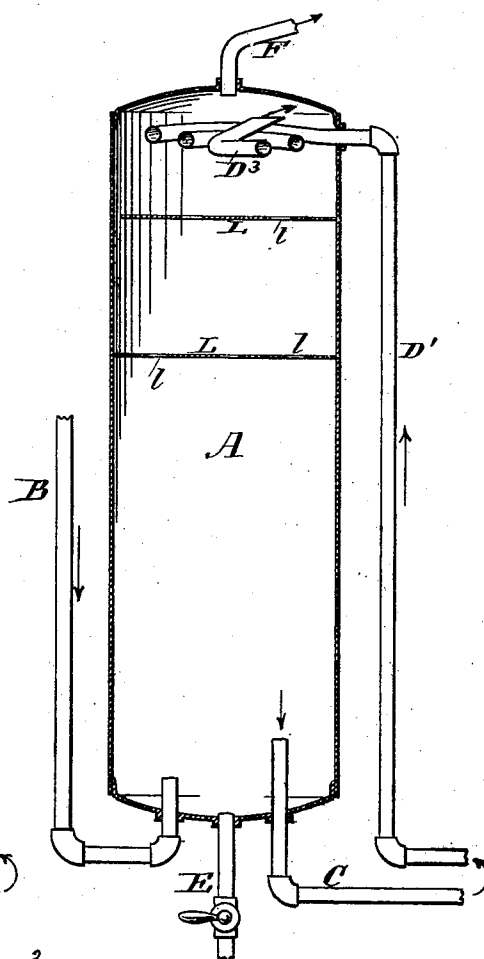
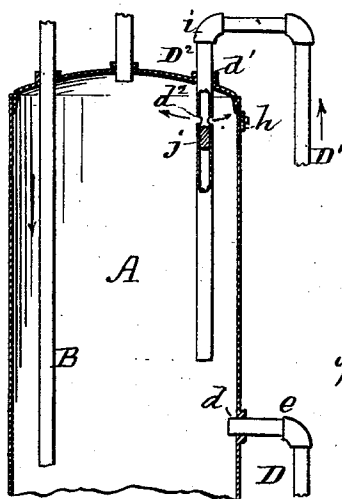


Fig. 3.



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att'y

UNITED STATES PATENT OFFICE.

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STAND-BOILER.

SPECIFICATION forming part of Letters Patent No. 243,680, dated July 5, 1881.

Application filed May 7, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. AUSTIN, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Stand-Boilers, of which the following is a specification.

My invention relates to improvements in stand-boilers generally used with ranges, stoves, &c., in which cold water under pressure is introduced and led through pipes into a water-back or receiver subjected to the fire, where it becomes heated and is then conducted through other pipes to the stand-boiler, from which it can be drawn when desired.

Heretofore the hot water has generally been led into the stand-boiler at a point lower than the middle of the boiler and caused to ascend by its own specific gravity through the body of cold water above its entrance. By this construction much time is required before any water having a high temperature can be obtained from said boiler. Hot water has also been admitted into boilers at the top thereof, the rapid current passing through the leading pipe, being then directed straight downward into the water filling the boiler. Its caloric is thus disseminated through the contents and is lost for immediate use.

The objects of my improvements are to obtain a receiver for hot water produced in the water-back or similar heater forming part of a range, stove, &c., as soon as a new fire is started, and retaining the greatest amount of caloric possible in a comparatively small amount of water. In other words, the object of this invention is to obtain in a stand-boiler a few gallons of very hot water soon after a new fire is started in a range, and in such a position that it can be drawn out for immediate use without requiring to heat nearly all the contents of the boiler before this result can be obtained. I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 represents a vertical section through a stand-boiler having attachments as formerly in use, and with my improvement applied thereto. Fig. 2 represents a vertical section through a stand-boiler constructed with my improve-

ments. Fig. 3 represents a modification of the boiler attachment shown in Fig. 1.

In said drawings, A represents a stand-boiler having a cold-water induction-pipe, B, a pipe, C, leading the cold water from the stand-boiler to a water-back or any other water-heating chamber or device placed in a range, stove, &c., where the contents thereof will be heated, and a pipe, D, to bring the heated water back into the boiler.

Heretofore the hot water has generally been admitted into the boiler at a point in the lower half of the boiler, as shown at *d* in Figs. 1 and 3.

My improvement consists in bringing the hot water through peculiar openings at the top of the boiler.

I apply my improvement at little expense to a boiler already in use—as, for example, the boilers shown in Figs. 1 and 3—by removing the elbow *e*, Fig. 3, ordinarily found upon the pipe D, close to the boiler, and replacing it by a three-way cock, *f*, as shown in Fig. 1, and connecting the upper end thereof by means of the pipe D' with the top of the boiler, into which it enters a few inches only, the end of said pipe being closed in line with its axis to cause the hot water to issue therefrom in a horizontal plane through radial openings in the sides of said pipe. This addition to boilers now in use can be easily made, as the top of the boiler is generally provided with plugged openings to adapt it to various locations. The three-way cock *f* is preferably provided with a handle pointing the way the water runs, and is to permit the hot water to be directed at will either into the lower half of the boiler or into the uppermost end, the passage-ways leading into and off the cock being comparatively large, and the stops thereon so arranged as to prevent the plug *f'* of the cock ever closing entirely one without opening the other of the water-passages leading into the boiler.

The water-deflector *g*, in line with the end of the pipe D', is shown in Fig. 1 as attached to said pipe; but it may be secured to the side or head of the boiler, although it is more difficult if the boiler is already closed.

In Fig. 3 I have shown my improvement placed upon a copper boiler that had been provided with a pipe, D², entering the top, and

extending down in the interior about two-thirds of the length thereof. This pipe D^2 , having been soldered to the boiler at d' and remaining immovable, but desiring to use it in attaching my improvement, I drilled a small hole through the pipe D^2 at d^2 . The elbow i having been disconnected from the pipe D^2 , a plug or cork, j , has been forced down the pipe D^2 past the openings d^2 and left secure under them. I then plugged the hole h in the side of the boiler, and the pipe D' was then in proper condition to be connected either with a three-way cock, as in Fig. 1, or, as in Fig. 2, directly with the water-back.

15 In Fig. 2 is shown a construction that I prefer with new boilers. In said figure the cold water is not brought in a pipe passing through the whole body of warm water, whereby its temperature is lowered, but is brought outside 20 of the boiler and introduced through the bottom thereof and extends a few inches upward in the interior, above any sediment that may accumulate. The pipe C , leading from the boiler to the range, passes also through the bottom of the boiler, its upper end being preferably a little above the inner end of the pipe B , and between the two last-mentioned pipes is secured to the lower end of the boiler the sediment or mud discharging pipe E . The 30 water, after passing through the range, is carried up through the pipe D' into the upper portion of the boiler, where it terminates into a horizontal coil, D^3 , having its open end provided with a deflector or pointing in such a 35 direction as to deflect the water in a horizontal plane or toward the top of the boiler. I have placed in the boiler one or more horizontal partitions, L , provided with a series of perforations, l , through which water will pass, although said plates will partly arrest and deflect the current of the entering cold water and prevent it from reaching the hot water in the top of the boiler.

45 It will be clearly understood from the above description and drawings that with a boiler

constructed according to either of the figures, as soon as a fire is made, the hot water will be admitted into the uppermost part of the boiler without sensibly mixing with the body of water underneath and close to the pipe F , leading to a bath-tub, wash-stand, &c. The cold water escaping through the pipe C will gradually lower the upper level thereof, and thus fill the whole boiler with warm water, the continuous flow of hot water direct from the range keeping the upper end much the hottest. 55

Having now fully described my invention, I claim—

1. The combination of a stand-boiler shell, a cold-water induction-pipe entering said shell, 60 a pipe to carry the cold water from the bottom of the boiler, and a hot-water induction-pipe entering the upper end of the boiler, with a deflector adapted to direct the hot water nearly horizontally in the upper portion of the boiler, 65 substantially as and for the purpose described.

2. The combination of a stand-boiler shell, a hot-water carrying-pipe on the outside of said shell, having an induction-pipe at d in the side of the boiler, pipe D' , entering the top 70 of the boiler, and three-way cock f , substantially as and for the purpose described.

3. The combination of a stand-boiler shell, a pipe to admit cold water entering through the bottom of said boiler, and a pipe to admit 75 hot water entering the upper part of said boiler, with a coil, D^3 , substantially as and for the purpose described.

4. The combination of a stand-boiler shell, a pipe, D' , entering the upper part of said 80 boiler, and provided with a deflector or its equivalent, substantially as described, with perforated plates L secured in the interior of said boiler, substantially as and for the purpose described.

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