(No Model.)

F. V. WINTERS.

STAND BOILER.

No. 589,455. Patented Sept. 7, 1897.

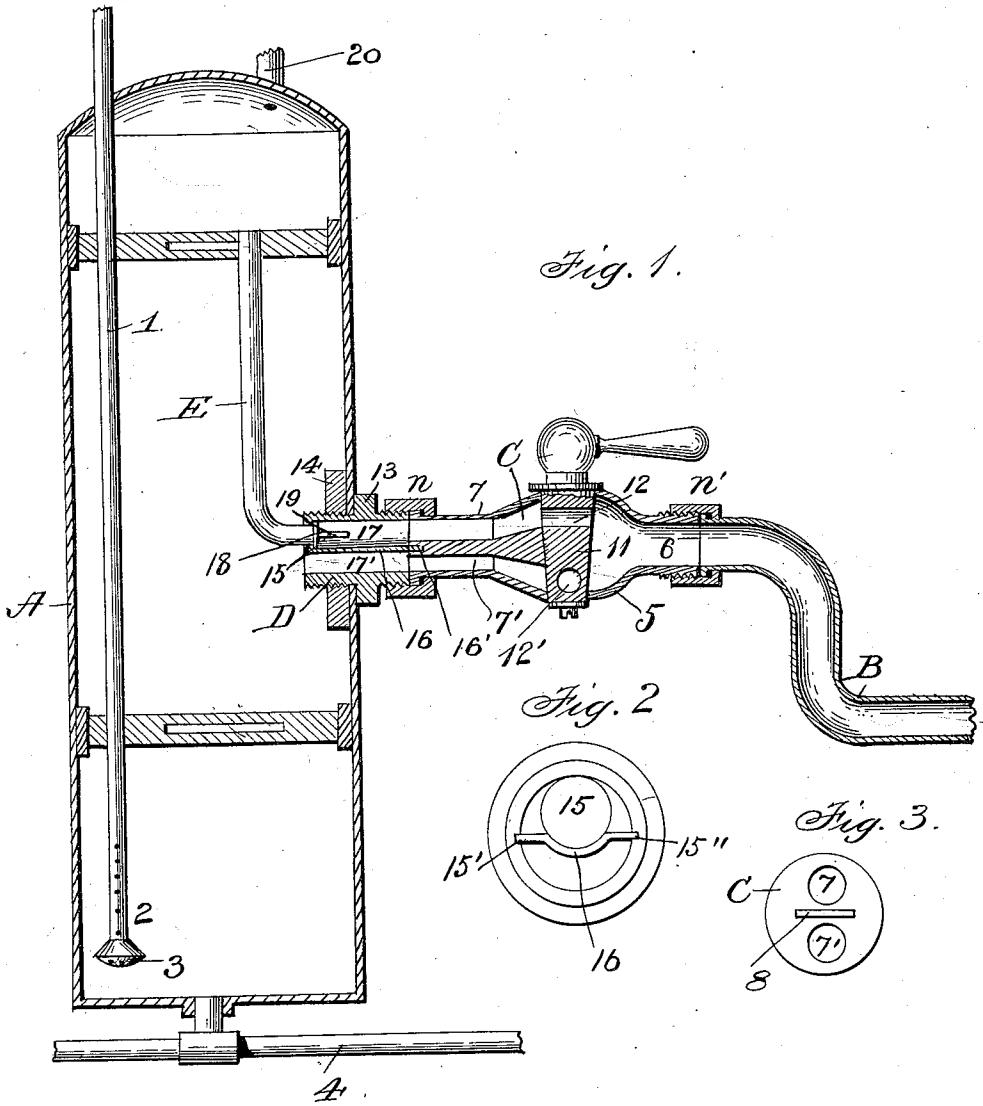


Fig. 1.

Fig. 2

Fig. 3.

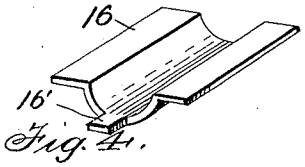


Fig. 4.

Witnesses
Franck L. Durand.
Mott York.

Inventor
Frank V. Winters
by A. G. Heylmun
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FREDERICK V. WINTERS, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO JOHN A. YORK, OF SAME PLACE.

STAND-BOILER.

SPECIFICATION forming part of Letters Patent No. 589,455, dated September 7, 1897.

Application filed February 6, 1897. Serial No. 622,299. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK V. WINTERS, a citizen of the United States of America, residing in New York city, in the county and State of New York, have invented certain new and useful Improvements in Stand-Boilers, of which the following is a specification.

My present invention relates to improvements in stand-boilers, and the object is to provide a direct hot-water connection with the water-back in a stove or range whereby a supply of hot water may be delivered to the stand-boiler for immediate use and afterward may be cut off and a supply of hot water delivered to the boiler, substantially as in the usual manner.

I accomplish the purposes of my invention by the means illustrated in the accompanying drawings, wherein—

Figure 1 is a vertical section through the boiler and longitudinally through the valve and conduit-pipes. Fig. 2 is an end view of the boiler-connecting sleeve. Fig. 3 is an end view of the valve-shell, looking from the left-hand end in Fig. 1 and showing the slot wherein the end of the partition-plate in the connecting-sleeve engages. Fig. 4 is a detail perspective of the partition-plate removed from the connecting-sleeve.

Reference being had to the drawings, A designates the stand-boiler, which may be of any approved construction and provided with a cold-water feed-pipe 1, reaching well toward the bottom of the boiler and having a perforated closed lower end 2, which may be provided with a spreading tip 3. To the bottom of the boiler is secured the pipe 4, which conducts the cold water to the water-back or other appliance which heats the water.

B designates the return hot-water pipe, leading from the water-back to the boiler. In this hot-water pipe B is interposed a valve C of the following-described construction and elements: 5 designates the valve shell or casing of proper construction, having an inlet end with a single port 6 and having exterior screw-threads to make a connection to the hot-water pipe, substantially as seen in the drawings. In the delivery or discharge end of the valve-shell are formed two water ports or ways 7 7′, arranged directly in vertical line with each other, and in the face of the end of the valve-shell is formed a recess 8, in which the partition-plate of the connecting-sleeve engages and is held. Vertically through the center of the valve-shell is arranged a valve-stem or turning plug 11, formed with two water ways or ports 12 12′, disposed at right angles to each other, the former of which registers with the port 7, and the latter is intended to register with the lower port 7′, so that when it is desired to admit a flow of water directly from the water-back to be delivered to the upper portion of the boiler the plug is turned so that the port 12 is in line with the flow, which position will close the passage through the lower port 7′.

D designates the connecting-sleeve, to which the inner end of the valve-shell is connected, and to which the lower end of the hot-water stand-pipe in the boiler is attached. More particularly describing this connecting-sleeve it will be perceived that it consists of a metal tube provided with exterior screw-threads and an annular collar 13, located at about midway of its length, which lodges against the outer surface of the boiler, and that the sleeve is held in its position by a strong jam-nut 14 on the inner end of the sleeve. The upper portion of the end of this sleeve is closed by leaving the metal stand, and in the standing metal is formed a water-port 15, the edge of the port constituting a shoulder, against which the annular flange of the pipe E bears when arranged and held in position.

In the sleeve D are formed oppositely-arranged grooves 15′ 15″, in which is held a detachable plate 16, constituting a partition dividing the sleeve into two parts or ports 17 17′, the former of which communicates with the pipe E, and the latter is the inlet for the hot water under ordinary admission. On the outer end of the plate 16 is a tongue 16′, which engages in the slot 8 in the end of the valve-shell, as indicated in Fig. 1 of the drawings, the engagement holding the plate 16 in its forward proper position in the sleeve.

To the sleeve D is connected a vertical hot-water pipe E, having an annular flange 18 at its lower end which lodges against the inner face of the end of the sleeve D and is held

in position by a suitable key (not shown) passed through a slot 19 in the sleeve. The hot water is drawn off through a pipe 20, opening from the top of the boiler.

The parts may be assembled in their proper operative positions and relations by inserting the pipe E through the opening in the end of the sleeve D and then inserting the key in the slot 19 and driving it home to hold the pipe firmly. The partition-plate 16 is then placed in the sleeve and pushed home. The pipe is then passed into the boiler and the sleeve screwed up until the collar lodges against the surface of the boiler. The nut 14 is then passed over the pipe and screwed up to clamp the sleeve in place, with the pipe E in vertical position. The valve-shell is then arranged in position and the connecting-nuts *n n'* screwed up, with the tongue 16' of the plate 16 engaging in the slot 8 in the end of the valve-body.

It will be premised that under the ordinary process of heating the water in the boiler the water delivered to the boiler from the hot-water pipe enters the boiler and commingles with the body of cold water therein. Under these conditions it takes a considerable time before the hot water overcomes the conflict with the cold water and longer before a hot-water flow can be had at the spigot. It is the object of my present invention to overcome this deficiency and to provide hot water in a very short time, and this is accomplished as follows: The fire being made and the water-back heated the valve is turned so that the lower port 12' is closed to shut off the water from flowing through it into the boiler and the upper port 12 open to feed the hot water through that way into and out of the pipe E into the boiler, where it is immediately in condition to be utilized at the spigot. It is well known that the top portion of the water in a stand-boiler is the hotter. My mode of delivery takes advantage of this fact by delivering the hot water directly to the top of the boiler. When sufficient supply of water has been heated, the valve may be turned to close the upper port and open the lower, and the hot water then be delivered into the body of the water as in the usual manner.

What I claim is—

1. The combination with a stand-boiler, of a water-back having between it and the stand-boiler the usual pipe connections, a partition dividing the hot-water pipe at the end adjacent to the stand-boiler and forming ducts into the boiler, a pipe leading from one of the said ducts to the top of the stand-boiler, and means for causing the hot water to flow through either of said ducts as desired.

2. The combination with a stand-boiler and a hot-water pipe leading thereto, of a valve-casing interposed in the hot-water pipe, having a shell or body formed with a single inlet-port, and two outlet-ports opening into the boiler, a valve-stem in the valve-casing formed with two water-ports arranged at right angles to each other to alternately open and close the outlet-ports, a vertical hot-water pipe in the boiler opening therein adjacent to the top of the boiler, means to secure the vertical pipe to the valve-casing in registration with one of the outlet-ports, and means to hold the said pipe and valve-casing in operative connection to the boiler.

3. The combination with a stand-boiler and a hot-water pipe leading thereto, of a valve interposed in the hot-water pipe, formed with a single inlet-port, and two outlet-ports leading to the boiler, a valve-stem in the valve-shell formed with two water-ports arranged at right angles to each other to alternately open and close the outlet-ports, a connecting-sleeve to connect the valve-shell to the boiler, a partition-plate in the connecting-sleeve, and a hot-water standing pipe in the boiler having its lower end connected to the said connecting-sleeve above the partition therein.

4. The combination with a stand-boiler and a hot-water pipe leading thereto, of a valve interposed in the hot-water pipe, formed with a single inlet-port, and two outlet-ports leading to the boiler, a valve-stem in the valve-shell formed with two water-ports arranged at right angles to each other to alternately open and close the outlet-ports, a connecting-sleeve to connect the valve-shell to the boiler, a detachable partition-plate in the connecting-sleeve, and a hot-water standing-pipe in the boiler having its lower end connected to the said connecting-sleeve above the partition therein.

5. The combination with a stand-boiler and a hot-water pipe, of a valve interposed in the hot-water pipe and formed with a single inlet-port and two outlet-ports and having a slot in the end of the partition between the outlet-ports, a valve-stem in the valve-shell having two ports arranged at right angles to each other to alternately open and close the said outlet-ports, a connecting-sleeve secured in the boiler and to the valve-shell and formed with interior oppositely-arranged grooves, a partition-plate detachably disposed in the said grooves and standing across the bore of the sleeve and said plate being formed with a tongue on its outer end to engage in the slot in the end of the partition between the outlet-ports, and a vertically-arranged pipe in the boiler having its lower end secured in the end of the connecting-sleeve above the said partition-plate.

In witness whereof I have hereto set my hand in the presence of two attesting witnesses.

FREDERICK V. WINTERS.

Attest:
A. G. HEYLMUN,
JNO. A. YORK.