

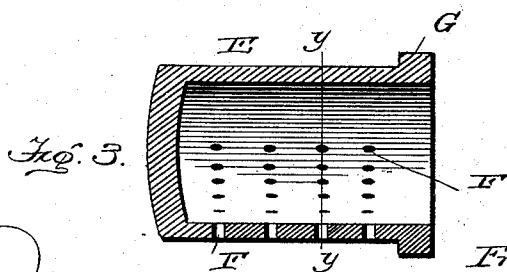
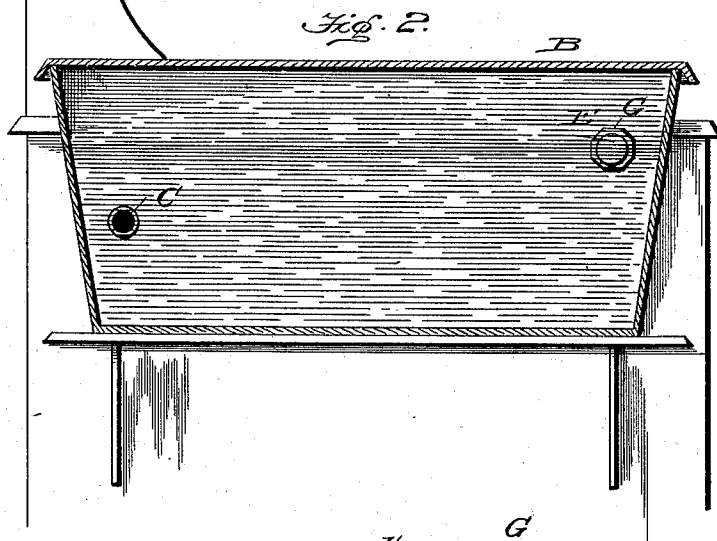
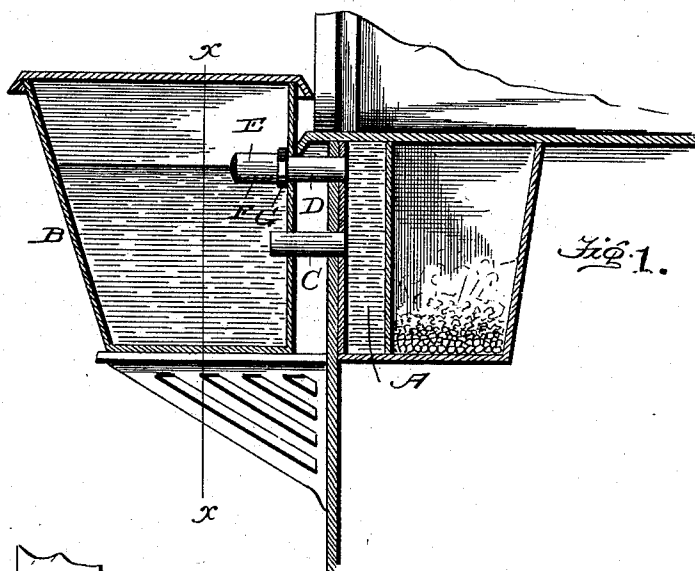
(No Model.)

F. B. PHILLIPS.

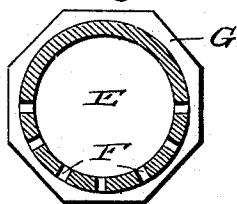
# DEVICE FOR PREVENTING NOISE IN HOT WATER TANKS.

No. 505,722.

Patented Sept. 26, 1893.



Witnesses Fig. 4.



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Att'y.

# UNITED STATES PATENT OFFICE.

FRED B. PHILLIPS, OF CANASERAGA, NEW YORK.

## DEVICE FOR PREVENTING NOISE IN HOT-WATER TANKS.

SPECIFICATION forming part of Letters Patent No. 505,722, dated September 26, 1893.

Application filed April 20, 1893. Serial No. 471,192. (No model.)

*To all whom it may concern:*

Be it known that I, FRED B. PHILLIPS, a citizen of the United States, residing at Canaseraga, in the county of Allegany and State of New York, have invented certain new and useful Improvements in Devices for Preventing Noise in Hot-Water Tanks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a device designed and adapted to prevent the noise commonly noticed when a body of sufficiently heated liquid flows into a body of liquid of lower temperature; and it consists of the construction and combination of parts substantially as herein shown and described and particularly pointed out in the claim.

My improved device is particularly adapted for use in combination with a suitable water tank attached or contiguous to a range or cooking stove having a water back which is connected to said water tank by a pipe.

In the accompanying drawings—Figure 1 is a vertical sectional view through a tank and the water back of a cooking range. Fig. 2 is a sectional view on the line  $x-x$  of Fig. 1, and Figs. 3 and 4 are detail views of my improved cap.

Like letters of reference denote corresponding parts in the several figures of the drawings, referring to which—

A designates the water back or heating vessel, of any preferred construction, which is arranged in any preferred manner within the sides of a cooking range.

B designates a tank or receptacle, designed to receive the water to be heated and the water which has been heated in the water back A. The tank, B, which is supported in any suitable manner and at any suitable position with reference to the range, &c., is connected with the water back A by means of pipes C, D. The tank is preferably mounted on brackets attached to the side of the range so that the connecting pipes C, D, are very short. The pipe or tube C which serves to conduct water to be heated, from the tank B to the interior of the water back

A is arranged below the other pipe D through which the hot water passes from the water back into the tank.

The devices and arrangement of parts hereinbefore described are not new with me but are in common use and I therefore make no claim thereto.

In the practical operation of a range provided with means similar to those hereinbefore described, for heating water, when the hot water is discharged in the body of water of lower temperature in the tank B a disagreeable noise is produced. The cause of this noise is that the water, as it comes from the water back, contains considerable steam which rises, in the form of globules or bubbles, to the surface of the water in the boiler and, on coming in contact with the air therein, explodes. To prevent this noise and enable the hot water in the water back A to pass silently and noiselessly into the body of water of lower temperature in the tank, I secure on the discharge end of the delivery pipe D, within the tank B, a cap E which is provided in its lower side with a series of perforations F through which the hot water passes into the body of water in the tank. As the hot water passes through the cap E, it is sprayed into the heavier and cooler water in the lower portion of the boiler, thereby condensing the steam therein and preventing it from rising to the surface of the water in the boiler and exploding.

The cap E may be of any desired form in cross section although in the drawings I have shown the same as cylindrical; and at its inner end said cap is, preferably, threaded internally and externally has a polygonal shaped flange G to enable it to be screwed on the end of the discharge pipe D. I have found that the end and upper portion of the cap should be wholly imperforate so that all of the hot water will be sprayed into the cooler water in the lower portion of the boiler and all of the steam therein condensed. The cap E is submerged in the water in the tank B; and I have found from practical tests that by providing the discharge end of the pipe D with a cap such as that herein described there will be no noise when the hot water passes

from the water back A into the body of water of lower temperature in the tank.

Although I have shown and described my improvements as applied to cooking ranges  
5 provided with tanks or receptacles for containing a supply of hot water, I do not wish to be understood as limiting myself to heaters or tanks of any particular construction.

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

The combination with a tank, supported by

or arranged contiguous to a range provided with a suitable water back that is connected by pipes with the tank, of a cap secured on  
15 the end of the discharge pipe within the tank and provided in its lower side with a series of perforations, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRED B. PHILLIPS.

Witnesses:

ARTHUR L. BRYANT,  
W. CLARENCE DUVALL.