

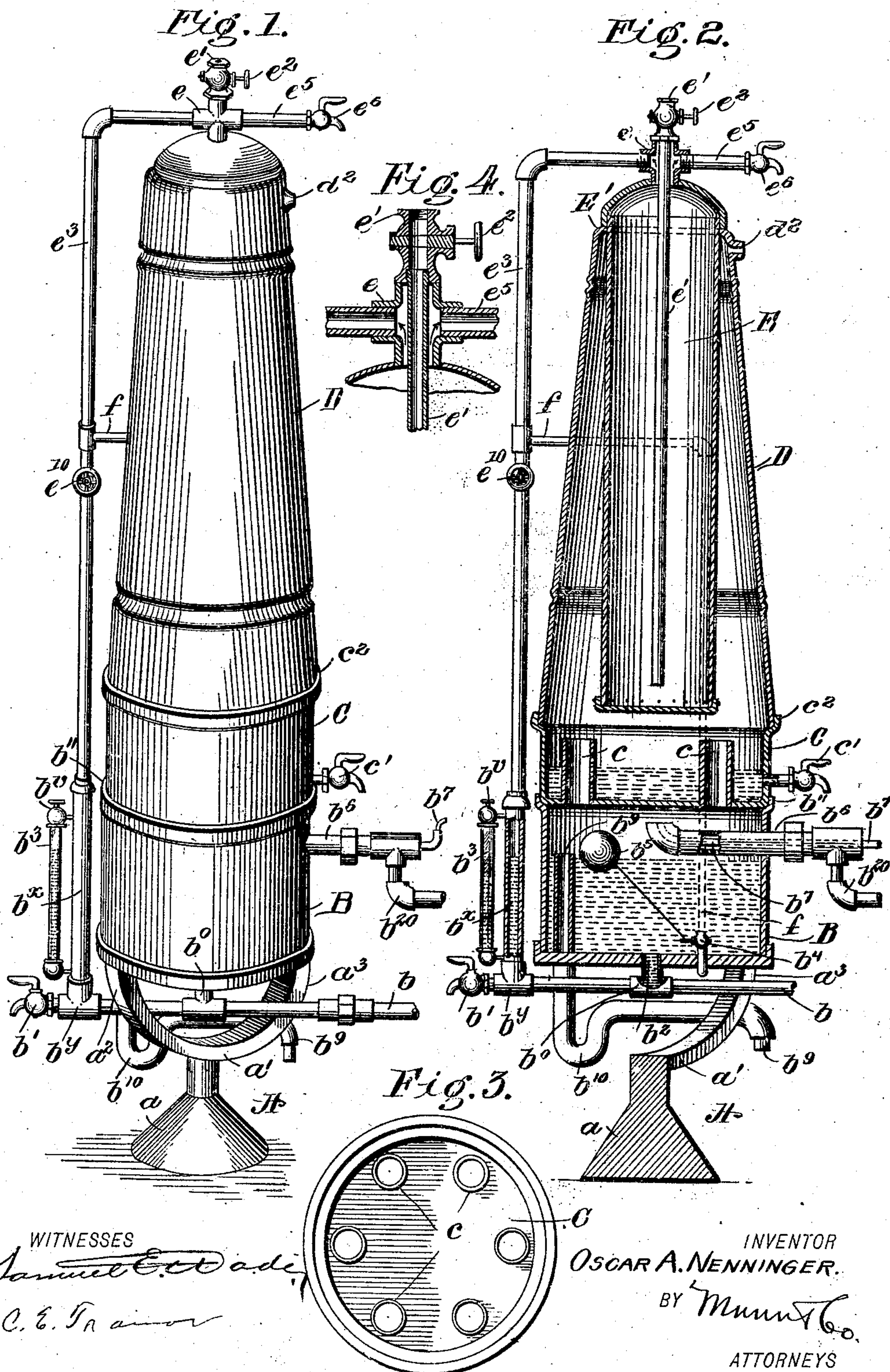
No. 842,687.

PATENTED JAN. 29, 1907.

O. A. NENNINGER.

WATER STILL.

APPLICATION FILED MAY 2, 1906.



UNITED STATES PATENT OFFICE.

OSCAR ALFRED NENNINGER, OF EL PASO, TEXAS.

WATER-STILL.

No. 842,687.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed May 2, 1906. Serial No. 314,780.

To all whom it may concern:

Be it known that I, OSCAR ALFRED NENNINGER, a citizen of the United States, and a resident of El Paso, in the county of El Paso and State of Texas, have invented certain new and useful Improvements in Water-Still, of which the following is a specification.

My invention is an improvement in water-stills, and consists in certain novel constructions and combinations of parts hereinafter described and claimed.

Referring to the drawings forming a part hereof, Figure 1 is a side elevation of my improved still. Fig. 2 is a longitudinal vertical section thereof, and Fig. 3 is a plan view of the distilled-water-receiving pan; and Fig. 4 is a detail sectional view of the upper part of Fig. 2, showing the connection between the main and the condensing cylinder.

In the present embodiment of my invention I provide a stand A, comprising a base a and a yoke a' , whose arms a^2 a^3 support the boiler-pan B. The boiler-pan is preferably constructed of cast-iron glazed inside or any other suitable material not easily affected by moisture and is connected to the water-back or circulating-pipes of a kitchen-range or any kind of heating medium in which water-circulation pipes may be placed by means of pipes b and b^6 , the pipe b leading to the water-back and the pipe b^6 therefrom. In order to avoid confusion, the pipe b will be hereafter designated as the "discharge-pipe" and the pipe b^6 as the "steam-supply pipe."

The discharge-pipe b is arranged beneath the boiler-pan and extends to the opposite side thereof, a T-joint b^0 being interposed in the length thereof and having its vertical member connected by a pipe b^2 with approximately the center of the boiler-pan. A second T-joint b^v is arranged upon the end of the discharge-pipe b , having a faucet b' connected with its horizontal member and a pipe b^x connected with its vertical member, the said pipe b^x extending upwardly alongside the still for a purpose to be hereinafter described.

A water-gage b^3 is arranged alongside the pipe b^x , near the lower end thereof and communicates at either end therewith, the upper end of the water-gage being provided with a faucet b^v . An overflow-pipe b^9 is arranged within the boiler-pan, the said pipe having its opening at the level at which it is desired to maintain the water in the boiler-pan, and

a trap b^{10} is interposed in the length of the overflow-pipe.

The steam-supply pipe b^6 communicates with the boiler-pan at a higher level than the discharge-pipe and is provided with a T-joint communicating by an elbow b^{20} with the source of the steam-supply, as shown in Fig. 2, giving admission to a small air-pipe b^7 , arranged within the supply-pipe and extending to the inner end thereof.

A flange b^{11} is provided on the upper edge of the boiler-pan to form a seat for the distilled-water-receiving pan C, the pan being provided with a discharge-faucet c' and with a plurality of vertical tubes c , extending therethrough and forming communicating passages between the boiler-pan and the space above the distilled-water-collecting pan. A jacket D is arranged above the distilled-water-collecting pan, resting upon flanges c^2 , formed in the upper edge of the said pan, the jacket forming a condensing-chamber above the distilled-water-collecting pan.

The condensing-cylinder E is supported within the condensing-chamber by means of the flanges E' thereon, and the upper end of the cylinder is provided with a cross-joint e , having extending vertically therethrough a supply-pipe e' , connected with a water-main or other source of water-supply, the admission of the water to the condensing-cylinder being controlled by a valve e^2 , interposed between the supply-pipe and the water-main.

The supply-pipe e' extends almost to the bottom of the condensing-cylinder, and to the lateral branches of the cross-joint are connected a discharge-pipe e^5 , closed by a faucet e^6 , and a pipe e^3 , extending downwardly alongside the condensing-chamber to the pipe b^x , before mentioned, with which it communicates.

A valve e^{10} is interposed in the length of the pipe e^3 , and connected to the said pipe just above the valve e^2 is a pipe f , the said pipe f opening into the bottom of the boiler-pan.

The admission of the water to the boiler-pan through the pipe f is regulated by means of a valve b^4 in the said pipe f , the valve being connected to a float b^5 by a flexible connection in such manner that when the water in the boiler-pan reaches a predetermined level the valve is closed, shutting off the water-supply. Adjacent to the upper edge of the condensing-chamber D is a small opening d^2

for relieving excess pressure in the said chamber.

In operation the steam passes into the boiler-pan through the pipe b^6 and thence
 5 passes upwardly through the openings c into the condensing-chamber and into contact with the cold outer surface of the condensing-cylinder. The said steam being condensed flows back into the distilled-water-receiving
 10 pan, where it may be drawn off for use through the faucet c' . The circulation of water in the boiler-pan is maintained through the pipes b b^6 , and sufficient air to aerate the distilled water is admitted through the pipe
 15 b^7 , the steam acting as an injector to draw the air into the chamber. The water in the condensing-cylinder as it becomes heated by the heat from the condensed steam may be drawn off through the faucet e^6 for domestic
 20 uses. A constant supply of warm water is supplied to the boiler-pan from the condensing-cylinder through the pipes e^3 and f . It will be understood that when the hot water is to be drawn off from the condensing-cylinder through the faucet e^6 the valve e^2 is
 25 opened and the cold water from the main forces out the hot water through the said faucet. The valve e^2 is likewise opened when warm water is to be passed from the
 30 condenser-cylinder to the boiler-pan. By interposing the trap b^{10} within the overflow-pipe I provide against the entrance of foul air into the condensing-chamber and against the escape of steam therefrom.

35 The condensing-chamber may consist of the ordinary house-boiler, if desired, or may be made especially for the still. By connecting my improved still as described the house-boiler is made to serve a double pur-
 40 pose—that of a condensing-chamber and that of a hot-water receptacle.

My improvement is easily installed and with but little expense.

I claim—

45 1. In a water-still, the combination of a base, a boiler-pan supported on the base and provided with inlet and outlet pipes, adapted to be connected with a source of boiling water, the inlet-pipe being arranged at a higher
 50 level than the outlet-pipe, an air-supply pipe within the inlet-pipe, a condensing-chamber above the boiler-pan and provided with a vent in its upper end, a condensing-cylinder within the chamber, a pipe for connecting
 55 the condensing-cylinder with a source of

water-supply, a pipe connecting the source of water-supply with the boiler-pan, a float-valve within the boiler-pan at the opening of the said pipe, a receiving-pan below the condenser and between the condensing-chamber
 60 and the boiler-pan, a plurality of tubes connecting the boiler-pan with the condenser and traversing the receiving-pan, an outlet-pipe for the receiving-pan, an overflow-pipe connected with the boiler-pan, and a trap
 65 interposed in the overflow-pipe.

2. In a water-still and in combination, a boiler-pan, supply and discharge pipes for connecting the boiler-pan with a water-back, an air-supply pipe within the supply-pipe, a
 70 condensing-chamber above the boiler-pan, a condensing-cylinder within the chamber, means whereby the cylinder may be connected with a source of water-supply, means below the chamber for receiving the distilled
 75 water, and means for connecting the boiler-pan with the source of water-supply.

3. In a water-still and in combination, a boiler-pan, a supply and discharge pipe for connecting the pan with a water-back, an
 80 air-pipe within the supply-pipe, a condensing-chamber above the boiler-pan, a receiving-pan within the boiler-pan and the condensing-chamber, tubes forming a communication between the boiler-pan and the con-
 85 densing-chamber, a condensing-cylinder within the chamber, and means whereby to connect the condensing-cylinder with a source of cold-water supply.

4. In a water-still and in combination, a
 90 pan for receiving heated water, supply and discharge pipes for the pan, an air-pipe within the supply-pipe, a condensing-chamber supported above the pan, a receiving-pan
 95 below the condensing-chamber, and a condensing-cylinder supported within the chamber above the receiving-pan.

5. In a water-still and in combination, a boiler-pan for receiving heated water, means whereby the heated water may circulate to
 100 and from the pan, an air-pipe traversing said means and communicating with the pan, a condensing-chamber above the pan, a condensing-cylinder within the chamber, and a receiving-pan between the chamber and the
 105 boiler-pan.

OSCAR ALFRED NENNINGER.

Witnesses:

C. O. LAGERFELT,
 A. H. PARKER.