

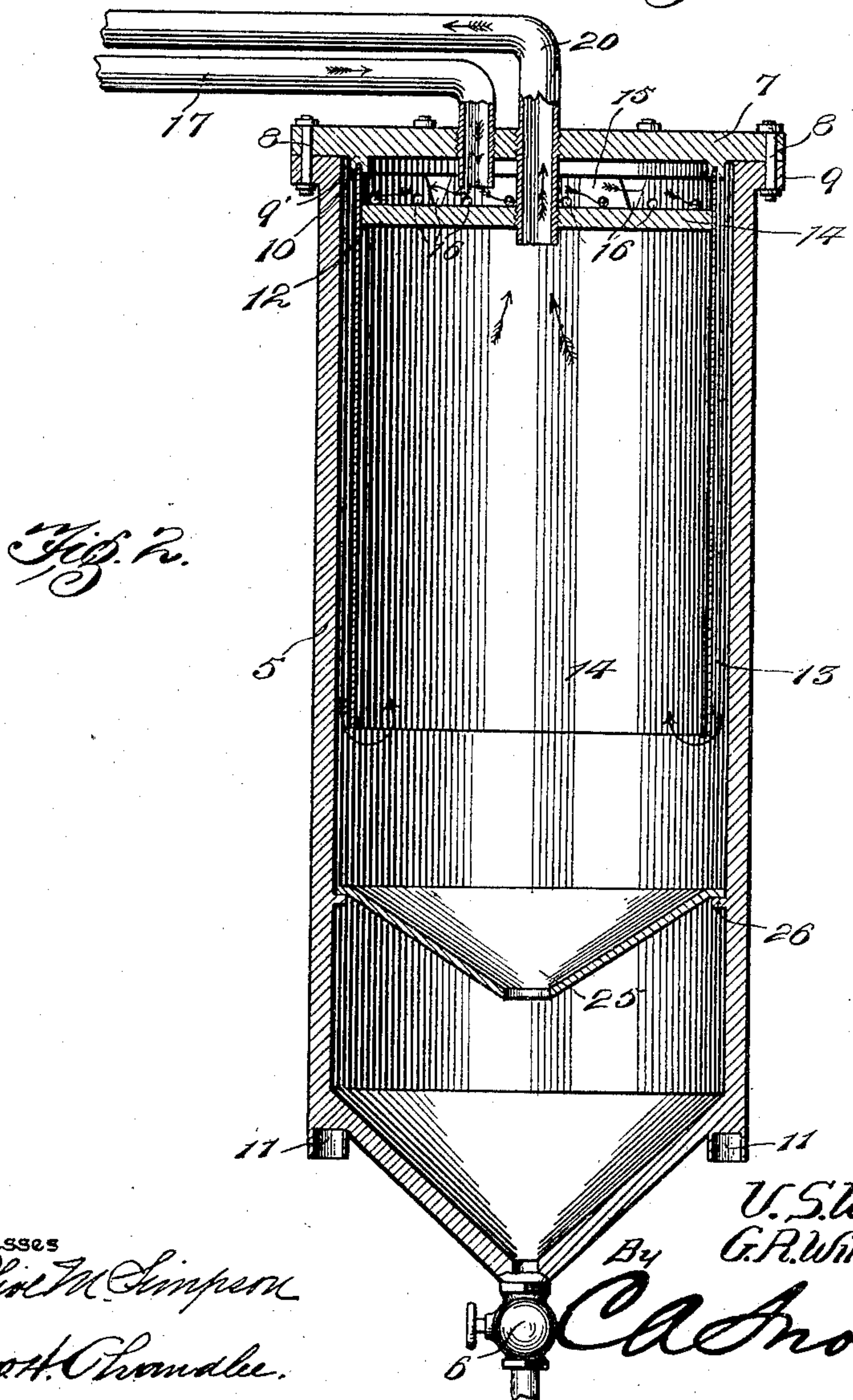
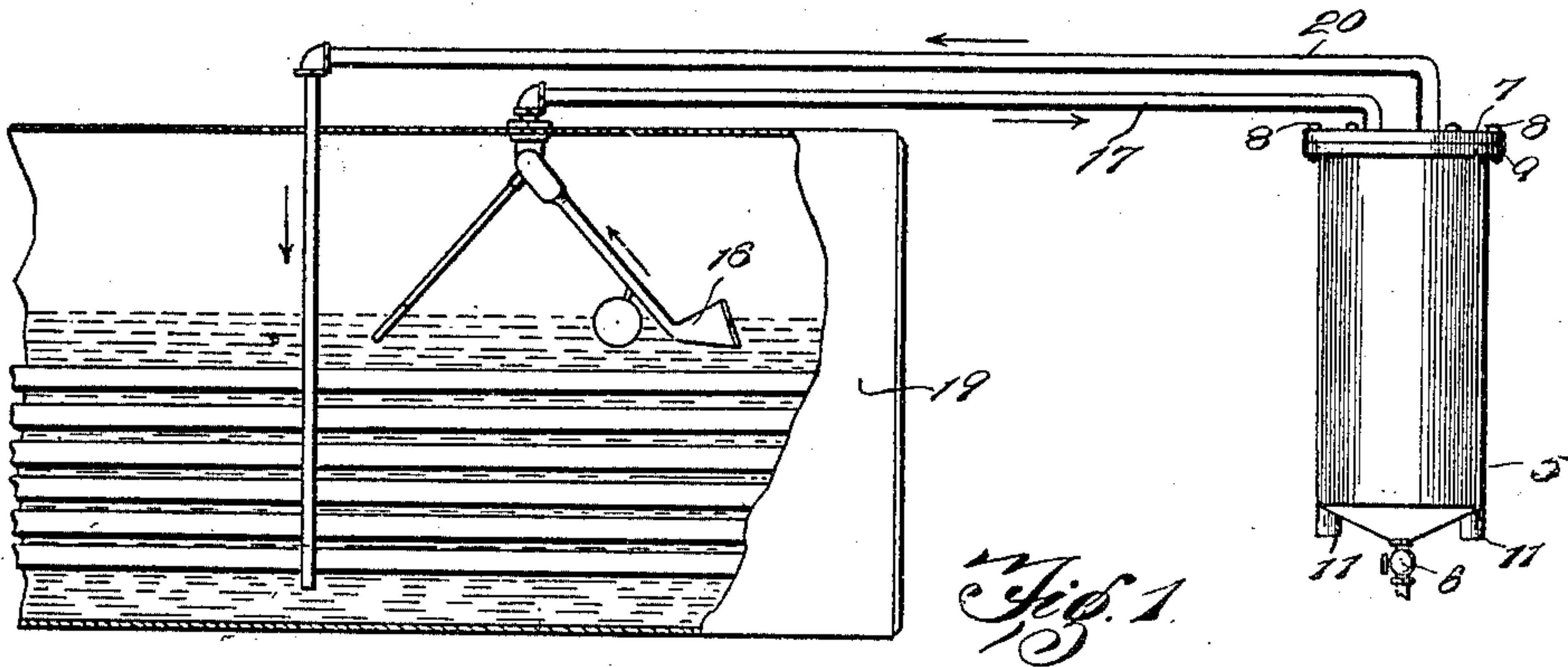
No. 682,398.

Patented Sept. 10, 1901.

U. S. WOHLGAMUTH & G. R. WILLIAMS.  
FEED WATER PURIFIER.

(Application filed Mar. 2, 1901.)

(No Model.)



Witnesses

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# UNITED STATES PATENT OFFICE.

ULYSSES S. WOHLGAMUTH AND GEORGE R. WILLIAMS, OF FINDLAY, OHIO,  
ASSIGNORS OF ONE-TENTH TO OTIS A. LONG, OF SAME PLACE.

## FEED-WATER PURIFIER.

SPECIFICATION forming part of Letters Patent No. 682,398, dated September 10, 1901.

Application filed March 2, 1901. Serial No. 49,611. (No model.)

*To all whom it may concern:*

Be it known that we, ULYSSES S. WOHLGAMUTH and GEORGE R. WILLIAMS, citizens of the United States, residing at Findlay, in the  
5 county of Hancock and State of Ohio, have invented a new and useful Feed-Water Purifier, of which the following is a specification.

This invention relates to feed-water precipitators; and it has for its object to provide a precipitator for use in connection with the  
10 skimmer shown and described in our Patent No. 668,244, dated February 19, 1901, or in connection with any other specific skimmer  
15 in connection with which it is operable.

The object of the invention is to provide a simple and efficient construction into which the water, with its impurities, may be introduced from the skimmer and in which the  
20 impurities will be removed by precipitation induced by the cooler water returning to the boiler, a further object of the invention being to provide a construction wherein the inflowing water will not stir up the precipitated  
25 matter, additional objects and advantages of the invention being evident from the following description.

In the drawings forming a portion of this specification, and in which like numerals of  
30 reference indicate similar parts in both views, Figure 1 is a view showing the application of the device to a boiler in connection with a skimmer such as above referred to. Fig. 2 is a vertical central section of the precipi-  
35 tator disconnected from the boiler.

Referring now to the drawings, the precipitator includes a cylindrical casing 5, which is disposed vertical and may be supported by means of legs engaged with sockets 11 in the  
40 lower end thereof, said lower end of the casing being tapered downwardly, as shown, to facilitate drawing off of the sediment through the draw-off or blow-off pipe 6, connected therewith at its lowest point. The upper end  
45 of the casing has a closure 7, held thereon by bolts 8, engaged with perforations therein and in a radial flange 9 upon the upper end of the casing, and depending from this closure 7 and concentric therewith is a flange 9' of  
50 annular form and which has a groove 10 in its lower edge, in which is engaged a cylin-

dricul partition 12, which acts to divide the casing into an outer compartment 13 and an inner compartment 14, this partition extend-  
ing downwardly for substantially half the  
55 length of the casing 5. Within the partition or within the inclosure thereof is a head 14', which is spaced downwardly from the closure 7 and between which and the closure there is formed a receiving-chamber 15, the said par-  
60 tition, above this head, having openings there-through, as shown at 16, to communicate this receiving-chamber with the compartment 13.

As shown in Fig. 1 of the drawings, a pipe 17 leads from the skimmer 18, located in the  
65 boiler 19, and which pipe passes through the closure 7 and into the receiving-chamber 15, whereby the water, with its impurities from the boiler, is deposited upon the head 14'. From the chamber 15 the water runs out-  
70 wardly through the openings 16 and passes downwardly through the compartment 13 to the bottom of the partition 12, after which it passes inwardly and upwardly through the compartment 14, and thence through a re-  
75 turn-pipe 20, which leads from the upper end of the compartment through the head 14', through chamber 15 and closure 7, and thence back to the boiler, which it enters at the top and through which it passes to the bottom, 80  
where it discharges. The water within the inclosure of the partition is of course at a lower temperature than the water passing downwardly through the compartment 13, and this cooler water cools the partition and 85  
the head 14'. Thus the hot water in striking these cooler plates is suddenly chilled and the impurities are precipitated, and while the water passes upwardly around the lower end of the partition the impurities continue their 90  
downward movement and are finally collected in the tapered bottom of the casing. In order that the current of water may have no effect to stir up the precipitated matter, a frusto-conical partition is disposed below the 95  
partition 12, as shown at 25, and rests upon an interior flange 26 of the casing with its minor end downwardly. This partition collects and directs the sediment to the com-  
partment therebelow and prevents disturb- 100  
ance of the water and precipitates in said lower compartment. From time to time the



blow-off cock on the blow-off pipe may be opened to blow off the precipitates.

It will be understood that in practice modifications of the specific construction shown  
5 may be made and that any suitable materials and proportions may be used for the various parts without departing from the spirit of the invention.

What is claimed is—

10 1. A device of the class described comprising a casing, an inner and an outer chamber or compartment within the casing having communication at their lower ends, a receiving-chamber at the upper end of the inner  
15 compartment and communicating with the outer compartment, an inlet-pipe leading to the receiving-chamber and disposed to discharge against the bottom thereof, and an outlet-pipe leading from the inner compartment  
20 at the upper portion thereof to insure contact of the cooler water with the under side of the bottom of the receiving-chamber to cool it.

2. A device of the class described comprising  
25 a casing, a partition within and concentric with the casing to form an inner and an outer compartment, said partition terminating short of the lower end of the casing, a head within and adjacent to the upper end of  
30 the partition to form a receiving-chamber, said chamber communicating with the outer compartment at the upper end thereof, an inlet-pipe leading to the receiving-chamber and disposed to discharge against the bottom  
35 thereof, and an outlet-pipe leading from the inner compartment through the receiving-chamber.

3. A device of the class described compris-

ing a casing, an inner and an outer compartment within the casing having their lower  
40 ends communicating, a receiving-chamber above the inner compartment and communicating with the outer compartment, an inlet-pipe leading to the receiving-chamber, an  
45 outlet-pipe leading from the inner compartment through the receiving-chamber to chill the contents thereof, and an inverted frusto-conical partition in the casing below the communication between the compartments.

4. A device of the class described comprising  
50 a casing having an interior concentric partition inclosing an inner compartment and forming an outer compartment between it and the casing, a head within the partition forming a receiving-chamber between it and  
55 the upper end of the casing, said chamber having communication with the upper end of the outer compartment, and said partition terminating short of the bottom of the casing to permit of communication of the compartments  
60 at their bottoms, a partition in the casing below the first-named partition, said partition being disposed transversely and having a central opening, an inlet-pipe leading  
65 to the receiving-chamber, and an outlet-pipe leading from the inner compartment through the receiving-chamber.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

ULYSSES S. WOHLGAMUTH.  
GEORGE R. WILLIAMS.

Witnesses:

EDW. BOPE,  
L. G. HALE.