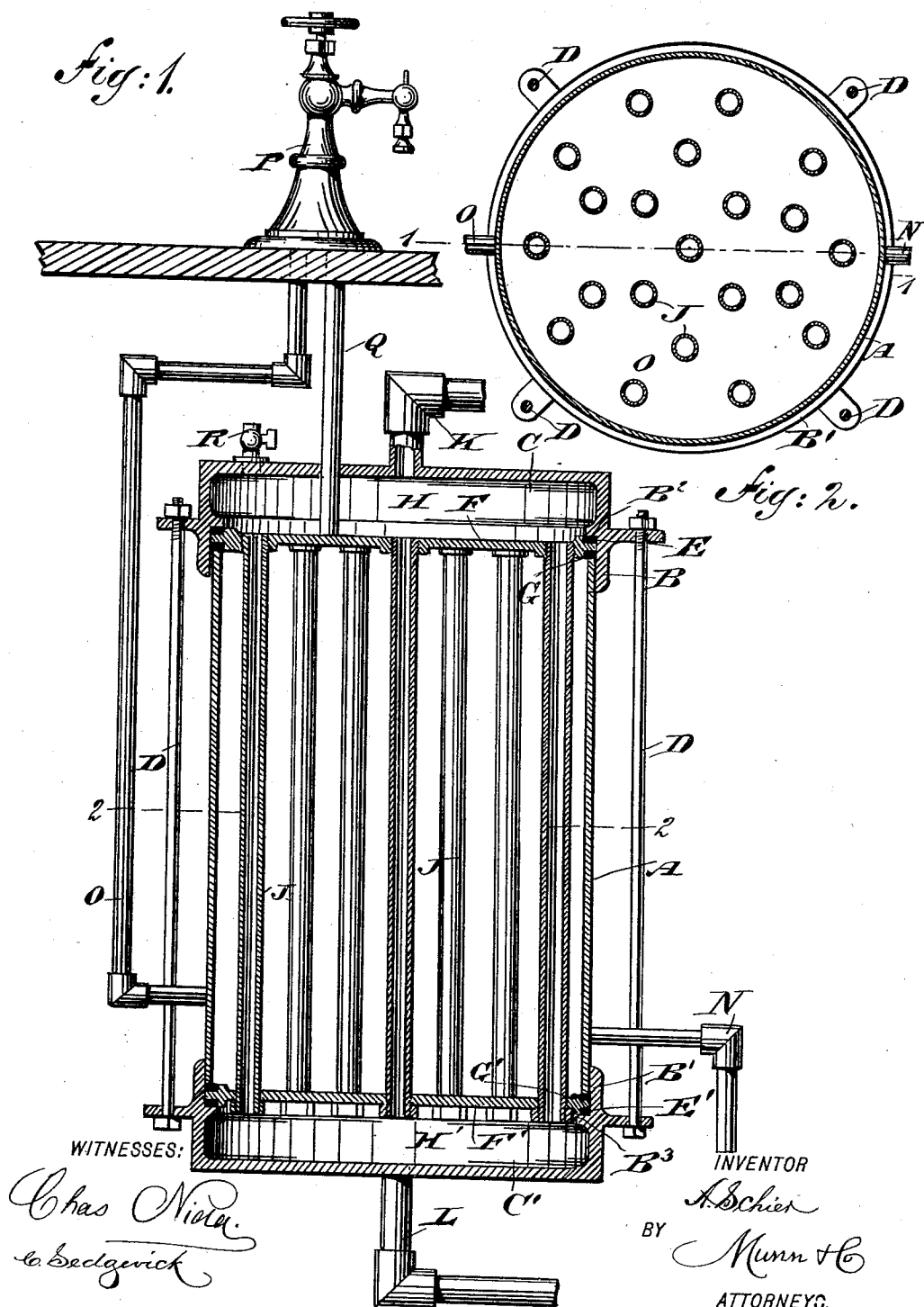


(No Model.)

A. SCHIER.
WATER HEATING APPARATUS.

No. 499,940.

Patented June 20, 1893.



UNITED STATES PATENT OFFICE.

ADOLPH SCHIER, OF CHICAGO, ILLINOIS.

WATER-HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 499,940, dated June 20, 1893.

Application filed September 13, 1892. Serial No. 445,812. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH SCHIER, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved

5 Water-Heating Apparatus, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved water heating apparatus, which is simple and durable in construction,

10 and more especially designed for heating water for use in connection with soda water fountains, and other apparatus or devices, to conveniently make hot drinks.

The invention consists of certain parts and details and combinations of the same, as will be hereinafter described and then pointed out in the claim.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate

20 corresponding parts in both the figures.

Figure 1 is a sectional side elevation of the improvement on the line 1—1 of Fig. 2; and Fig. 2 is a sectional plan view of the same on

25 the line 2—2 of Fig. 1.

The body or shell A, of the apparatus is cylindrical. The hollow heads C and C' are applied to and close the ends of the shell as shown, being secured by rods D that pass

30 through flanges E E'. Said heads have flanges B and B' respectively, which embrace the ends of the shell A and are also respectively provided with internal shoulders B² B³, for supporting the apertured diaphragms F and

35 F'. Packing rings G G' are applied between these diaphragms and the aforesaid shoulders B² B³, and the ends of the shell A, as set forth in Fig. 1, for the purpose of preventing leakage. The diaphragm F forms the lower side

40 of the compartment H in head C while the diaphragm F' forms the upper side of the similar compartment H' in the lower head C'. These two compartments H and H' are connected by parallel tubes J, whose ends enter

45 and are secured in the apertures of the diaphragms F F'.

Into the steam compartment H leads a pipe K, connected with a suitable source of steam supply, and from the compartment H' leads

50 a steam return pipe L, for returning the steam

to the source of supply to be reheated, so that a constant circulation of steam takes place from the compartment H through the tubes J to the compartment H'. Into one side of the shell A leads a water supply pipe N, connected with a suitable source of water supply, so as to fill the shell A with water, the said water being heated by the steam passing through the tubes J, as above described. A water outlet pipe Q leads from the top of the water compartment formed by the shell A and plates F F', through the head C to a faucet P, from which hot water can be drawn from time to time as required. A return pipe O leads from the faucet P to the shell A to discharge into the water compartment. It will be seen that the hot water rising in the pipe Q to the faucet P can be withdrawn from the latter in suitable quantities for making hot drinks or for other purposes. When the faucet P is shut, the water, as it cools, returns through the pipe O from the faucet to the water compartment formed by the shell A and plates F, F', so that whenever the faucet is opened, only hot water is withdrawn from the pipe Q.

It will be seen that this device is very simple in construction, can be cheaply manufactured, is not liable to leak and readily furnishes the desired quantity of hot water for the purposes mentioned.

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

The improved water heating apparatus, composed of the following parts: the shell A and hollow heads C and C' having lateral flanges and internal shoulders and secured together by rods, the internal apertured diaphragms F and F' bearing on said shoulders, the tubes J connecting the said diaphragms, the inlet and outlet steam pipes K and L applied to the heads, the hot water inlet pipe N, attached to the shell, and the hot water outlet pipe Q, attached to the upper head C, as shown and described.

ADOLPH SCHIER.

Witnesses:

THOS. W. CHAMBERLAIN,
FRED H. KEENE.