

(No Model.)

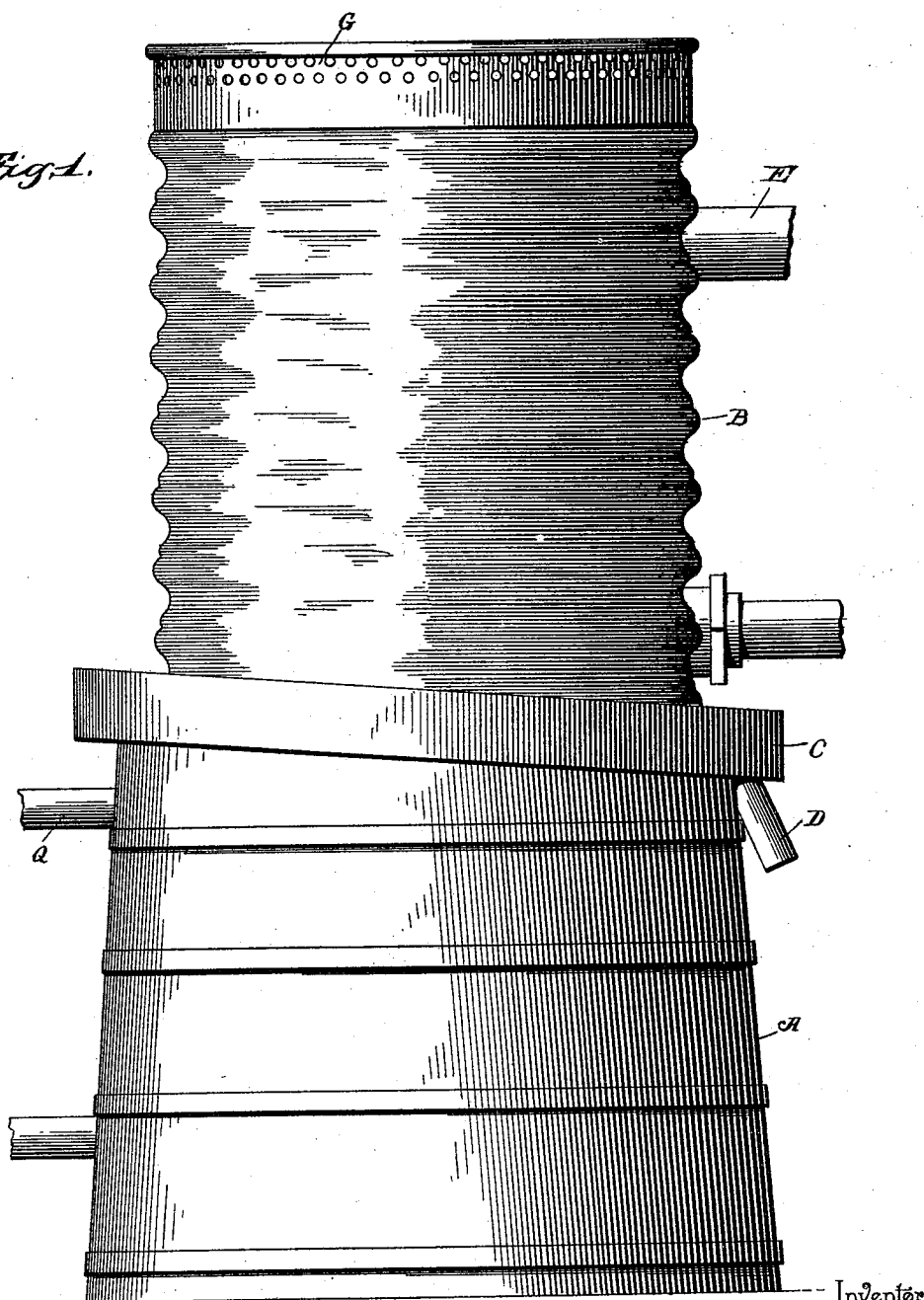
2 Sheets—Sheet 1.

C. STEINBARTH.
STEAM CONDENSER.

No. 494,655.

Patented Apr. 4, 1893.

Fig. 1.



Witnesses

Inventor

E. W. Hurdman

By his Attorneys,

C. SteinbARTH

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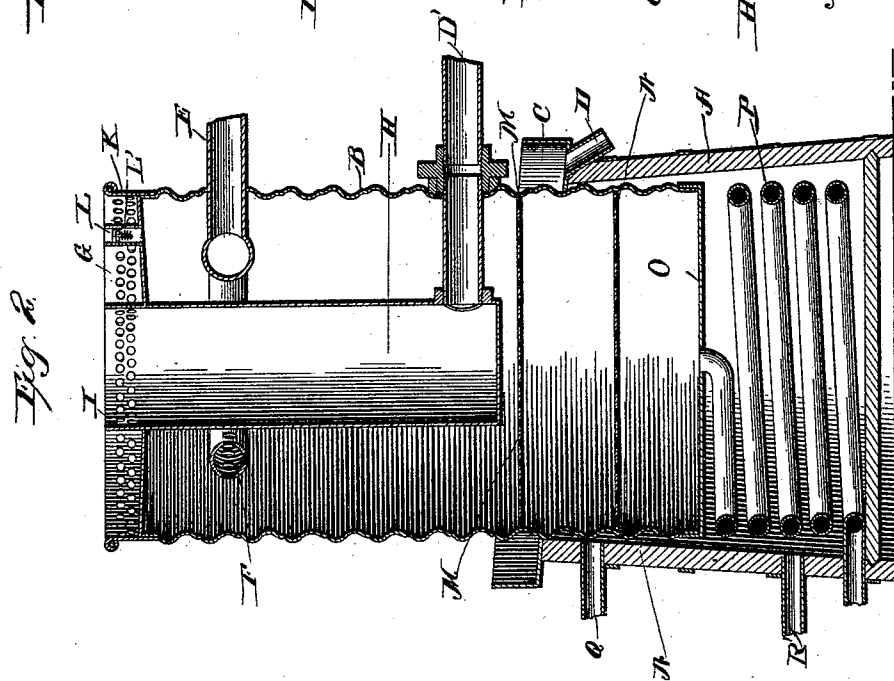
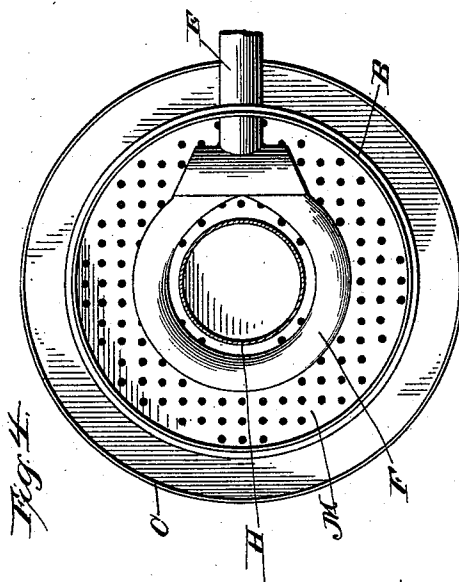
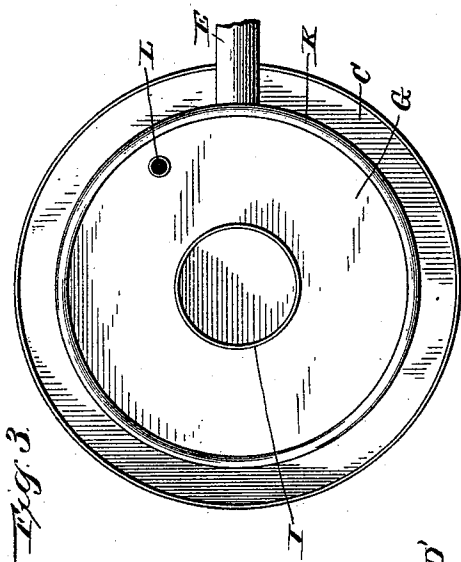
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2 Sheets—Sheet 2.

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Witnesses

E. H. Hurdman

O. E. Roff

By *his* Attorneys,

C. Steinbarth
C. A. Snow & Co.

Inventor

UNITED STATES PATENT OFFICE.

CARL STEINBARTH, OF ABILENE, TEXAS, ASSIGNOR OF ONE-HALF TO HENRY PFAFF, OF SAME PLACE.

STEAM-CONDENSER.

SPECIFICATION forming part of Letters Patent No. 494,655, dated April 4, 1893.

Application filed September 7, 1892. Serial No. 445,236. (No model.)

To all whom it may concern:

Be it known that I, CARL STEINBARTH, a citizen of the United States, residing at Abilene, in the county of Taylor and State of Texas, have invented a new and useful Steam-Condenser, of which the following is a specification.

My invention relates to improvements in steam-condensers adapted for use in tea factories and for other purposes where distilled water is required, the object of my improvement being to provide a simple and compact device in which the back pressure upon the supply shall be reduced to a minimum, and in which the condensation shall be complete.

Further objects of my invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

In the drawings: Figure 1 is a side view of my improved condenser. Fig. 2 is a vertical central section. Fig. 3 is a plan view. Fig. 4 is a similar view with the cap removed and the cooling-chamber shown in horizontal section.

A represents the cooling-tank, in which fits the lower end of the outer condensing-cylinder B, the sides of which are corrugated to increase their surface and strengthen the structure. The condensing-cylinder is provided near its lower end, with a receiving-trough C, which is inclined toward one side and provided at its lowest point with an outlet-tube D. The upper edge of the cooling-tank is similarly inclined, and the receiving-trough, which forms the collar to support the condensing-cylinder in the tank, rests upon the inclined edge of the latter.

E represents the supply or live-steam pipe, which enters the condensing-cylinder near its top and communicates within the latter with a circular distributing-pipe F, which is perforated upon its lower side and upon its inner and outer sides to allow the escape of the steam into the cylinder.

The cap G, which fits upon and closes the top of the condensing-cylinder, carries, at its center, an inner condensing cylinder H, which depends from the lower side of the cap and through the distributing-tube. The upper end of this inner condensing cylinder is open,

and its upper edges project above the plane of the cap to form a flange I, which is perforated as shown. The cap is also provided with a peripheral up-standing flange K, provided with perforations. A safety-valve L is set in an exhaust pipe L' in the cap, as shown in the plan view, Fig. 3.

The steam being admitted through the live-steam pipe and distributed in the main cylinder by means of the distributing-tube, cold water or other cooling agent is placed in the inner cylinder and on the cap and allowed to flow from the latter down the outer surface of the outer cylinder until it reaches the receiving-trough and is carried off by the outlet. The water or other cooling agent which flows into the inner cylinder, passes off after it has completed its work, through the exhaust-pipe L', which passes through the side of the outer cylinder, near its bottom, and may be conveyed to the boiler in which the steam is generated, but as this forms no part of my invention, it is not shown.

M and N, respectively, designate transverse horizontal filtering diaphragms, which are arranged near the bottom of the outer cylinder, and below the lower diaphragm the cylinder is closed by the bottom O, provided at its center with an opening to which is connected the upper end of a worm P, through which the water, after condensation and filtration, is conveyed through the cooling-tank. The cooling-tank is provided with inlet and outlet openings Q and R, respectively, to receive and discharge the cold water or other cooling agent which is employed to reduce the temperature of the distilled water after it leaves the condensing-cylinder.

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

1. In a steam condenser, the combination with an outer condensing-cylinder provided with a cap and a steam supply pipe, of an annular distributing tube connected to said supply pipe and arranged concentrically within the cylinder, an inner condensing cylinder concentrically disposed in the outer cylinder and depending from the cap thereof through said distributing tube, an outlet pipe connected to the outer cylinder at its bottom,

duplicate parallel spaced diaphragms arranged horizontally in the outer cylinder below the lower end of the inner cylinder, and means to supply the cylinders with a cooling agent, substantially as specified.

2. In a steam condenser, the combination with the outer condensing-cylinder, provided with a cap a steam supply pipe, an annular distributing tube connected to said supply pipe and arranged concentrically within the cylinder, and an inner condensing cylinder arranged concentrically in the outer cylinder and depending from the cap thereof through said distributing tube, of a cooling tank, and a cooling worm connected to the lower end of the outer cylinder and extending through said tank, substantially as specified.

3. In an outer steam condenser, the combination with a condensing cylinder provided with a cap and a steam supply pipe permanently connected thereto, an annular distributing tube connected to said supply pipe and arranged concentrically in said cylinder, an inner condensing cylinder concentrically disposed within the outer cylinder and depending from the cap thereof through said distributing chamber, and means for supplying the cylinders with a cooling agent, of a subjacent tank into which the lower end of the outer cylinder depends, such tank having a beveled upper edge, an annular receiving trough sur-

rounding and secured exteriorly to the outer cylinder and inclined to bear upon the upper edge of the said tank, such trough being provided at its lowest point with an outlet spout, a cooling worm connected to the lower end of the outer cylinder and extending through the tank, and water inlet and outlet pipes connected to the tank, substantially as specified.

4. In a steam condenser, the combination with an outer condensing cylinder provided with a cap, a cap applied to its upper end and provided with a vertical perforated flange, an inner condensing cylinder concentrically-disposed in the outer cylinder, depending from its cap and extending at its upper end above the same and perforated to allow the cooling agent placed upon the cap to flow into the inner cylinder, and a steam supply pipe, of an annular distributing tube connected to said supply pipe, arranged concentrically in the outer cylinder around the inner cylinder and provided in its inner and outer sides with perforations for the escape of the steam, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CARL STEINBARTH.

Witnesses:

W. T. BERRY,
E. O. PRICE.