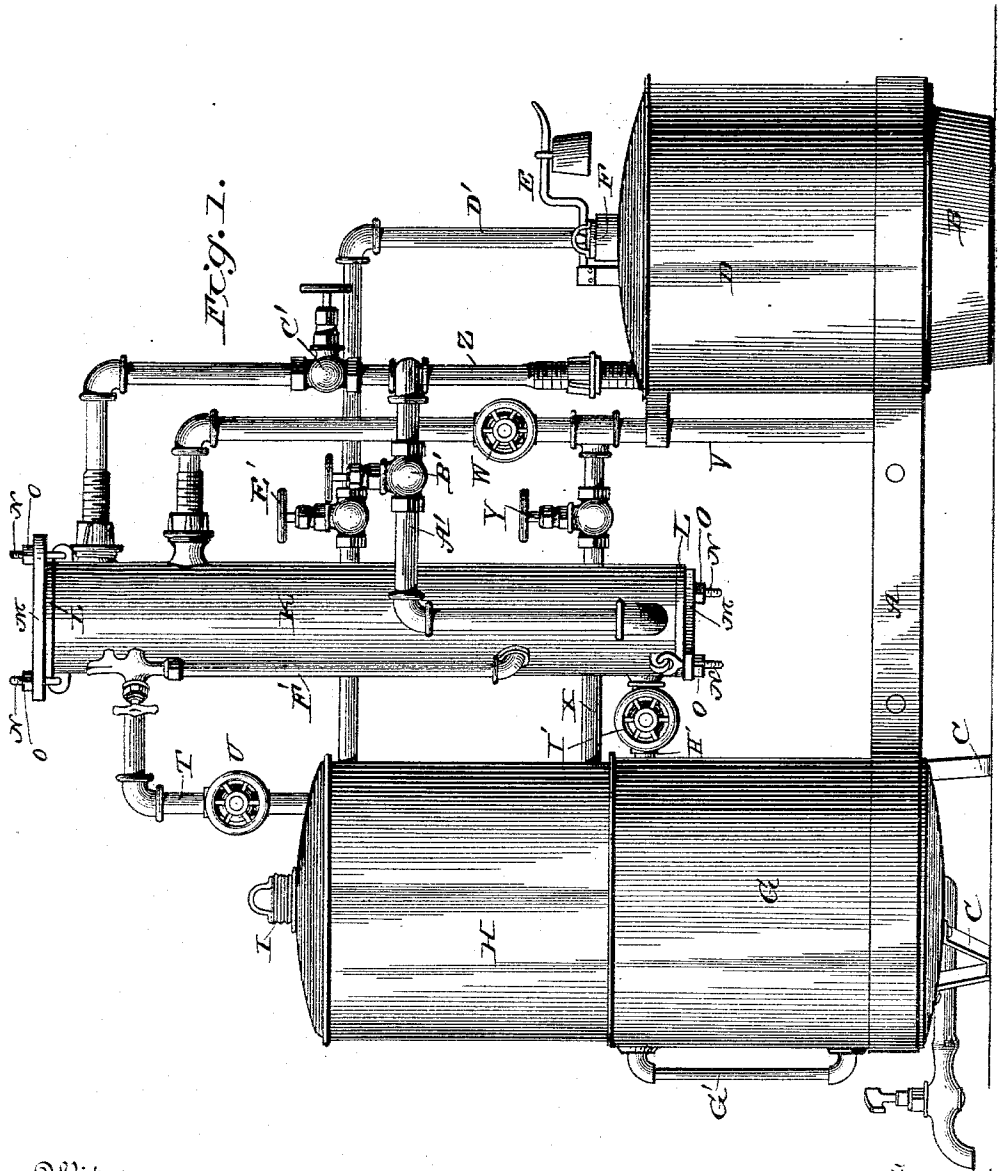
(No Model.) 3 Sheets—Sheet 1.

R. E. HUFF.

APPARATUS FOR MAKING EXTRACT OF TEA.

No. 389,079. Patented Sept. 4, 1888.



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Inventor,
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(No Model.) 3 Sheets—Sheet 2.

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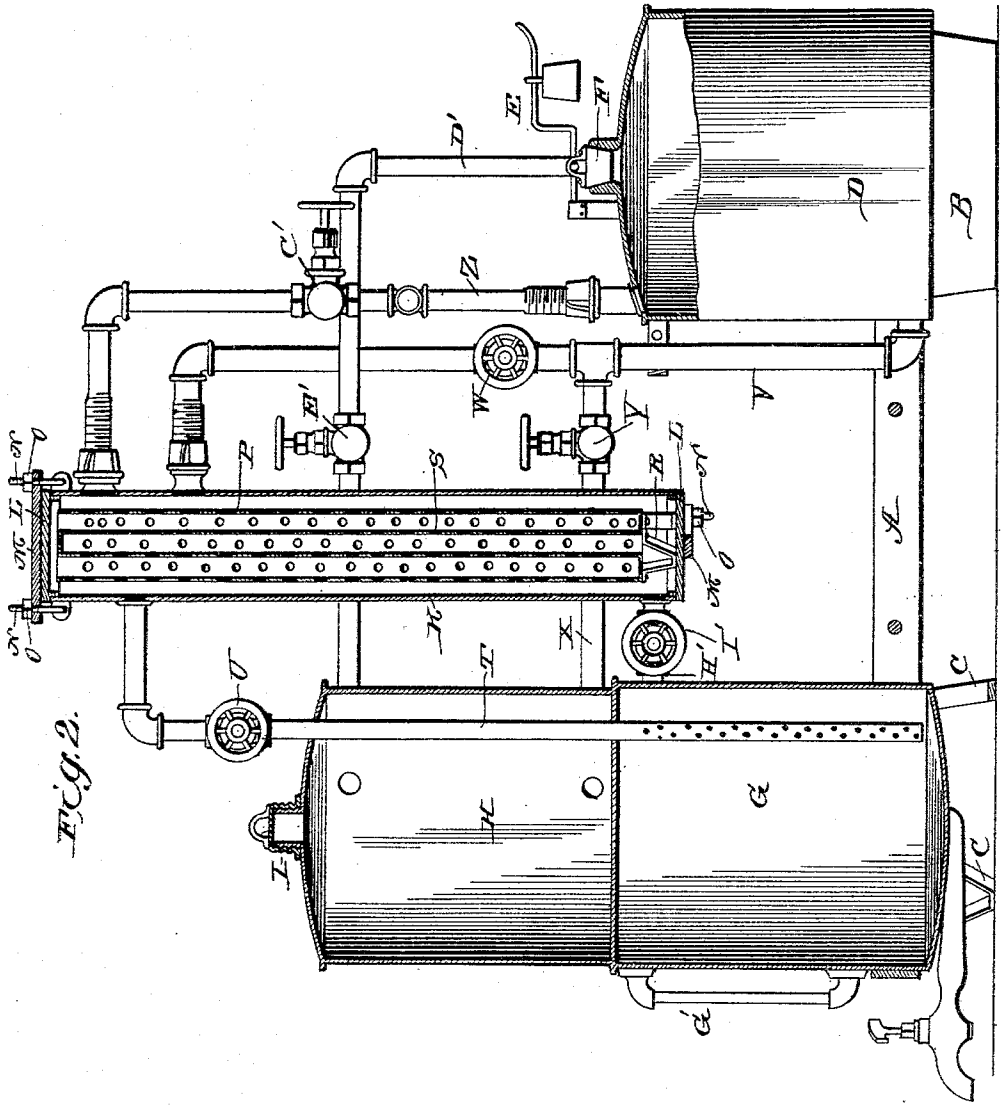

Fig. 2.

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Fig. 3.

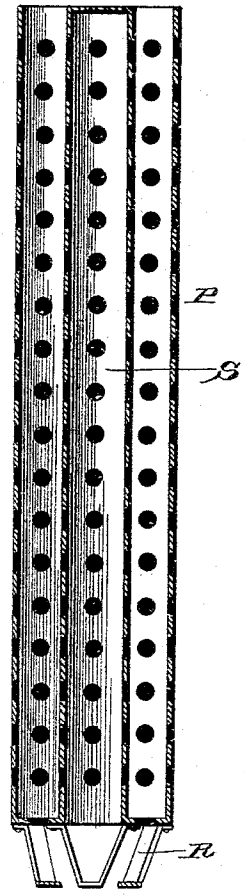


Fig. 4.

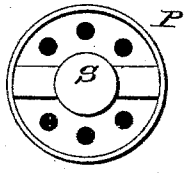
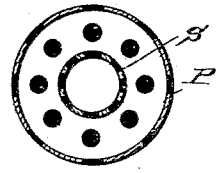


Fig. 5.



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UNITED STATES PATENT OFFICE.

ROBERT E. HUFF, OF EUREKA, KANSAS.

APPARATUS FOR MAKING EXTRACT OF TEA.

SPECIFICATION forming part of Letters Patent No. 389,079, dated September 4, 1888.

Application filed August 5, 1887. Serial No. 246,213. (No model.)

To all whom it may concern:

Be it known that I, ROBERT E. HUFF, a citizen of the United States, residing at Eureka, in the county of Greenwood and State of Kansas, have invented a new and useful Improvement in Apparatus for Making Extract of Tea, of which the following is a specification.

My invention relates to an improvement in apparatus for making extract of tea suitable for bottling; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is an elevation of a tea-extracting apparatus embodying my improvements. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a detail vertical sectional view of the tea-tank. Fig. 4 is a top plan view. Fig. 5 is a transverse sectional view of the same.

A represents a metallic base-plate of the form here shown, which is provided at one end with a furnace or heater, B, containing a suitable lamp, (not shown,) and has depending supporting-feet C at its opposite extreme to maintain the base-plate in a horizontal position.

D represents a boiler, which is arranged over the furnace or heater B, and is provided with a safety-valve, E, and with a cap, F, which is adapted to be removed, and thereby uncover the opening in the top of the boiler, through which the latter may be replenished with water.

G represents a cylindrical vessel, which forms a condenser and is supported on the end of the base-plate having the feet C. Above the said condenser is a similar vessel, H, which forms a water-tank. The said water-tank is provided in its upper side with a removable cap, I.

K represents a vertical cylindrical vessel of suitable length and diameter, which is arranged between the condenser and the boiler at a suitable elevation above the same. The upper and lower ends of the vessel K are provided with removable caps L, which are normally held in position thereon by means of yokes M and bolts N, which are pivoted to opposite sides of the tank, are adapted to extend through openings in the ends of the yokes, and are provided with clamping-nuts O, adapted to firmly clamp the yokes against the removable caps, and thereby secure the latter in position.

P represents a vertical cylindrical vessel, which is inclosed in the tank K, and has its sides perforated, as shown in Fig. 2. The said perforated vessel P is provided at its lower side with depending supporting-feet R, which serve to prevent it from coming in contact with the lower removable cap or plate, L.

S represents a vertical cylindrical tube, which extends centrally through the vessel P. The said tube is perforated, its upper end is closed, and its lower end is open and extends through a central opening in the bottom.

T represents a vertical pipe, which extends upward through the condenser, through the tank H, and has its upper end communicating with the tank K, near the upper end thereof. The upper portion of this tube S is provided with a valve, U, and the lower end thereof, which extends downward in the condenser, is perforated, as shown in Fig. 2.

V represents a pipe which communicates with the lower side of the boiler and extends upward above the same, and has its upper end attached to the tank K, near the upper end thereof. This tube V is provided near its center with a valve, W.

X represents a horizontal tube or pipe, which connects the lower end of the water-tank with the pipe V, and is provided with a valve, Y.

Z represents a pipe which extends upward from the top of the boiler, and has its upper end connected to the upper end of the tank K. A pipe, A′, is connected to the central portion of the pipe Z and to the lower end of tank K, and this tube A′ is provided with a valve, B′.

C′ represents a valve, which is located in the pipe Z at a suitable distance above the pipe A′.

D′ represents a pipe which extends from the upper end of the boiler and the upper end of the water-tank, and is provided with a valve, E′.

The tank K is provided on one side with a vertical tubular glass indicator, F′, and the condenser G has a similar indicator, G′.

H′ represents a short horizontal pipe connecting the lower end of the tank K and the upper end of the condenser, and is provided with a valve, I′.

The operation of my invention is as follows:

The water-tank is first filled, a suitable quantity of tea is placed in the perforated vessel P around the perforated tube therein, and the said vessel is then inclosed in the tank K. The valve Y is then opened and a sufficient quantity of water is drawn from the tank H into the boiler, after which the said valve Y is closed. The lamp in the furnace or heater B is then lighted and caused to generate steam in the boiler. The valve B′ is then opened and the steam from the boiler is forced through the pipes Z and A′ into the lower end of the tea-tank and caused to thoroughly heat and steam the tea therein. The valve U is opened after the tea has been steamed sufficiently to admit steam from the tea-tank into the condenser, the said steam as it passes through the portion of pipe T in the water-tank serving to heat the water therein. The valve B′ is then closed and the valve W is then opened, thereby causing a quantity of boiling water to be forced from the boiler through the pipe V into the tea-tank until the latter has been filled to a sufficient extent. The valve W is then closed and the valve B′ opened, thereby forcing steam in at the bottom of the tank, which steam passes through the tea and water in the tank and exhausts through the pipe T into the condenser until the tea is thoroughly steeped, which operation consumes from seven to ten minutes time. The valve U and valve B′ are then closed and the valve I′ and valve C′ opened, causing the steam to pass downward through the tea-leaves to extract the substance therefrom and exhausting the steam from the tea-tank into the condenser through the pipe H′, in which the valve I′ is located, thereby thoroughly extracting the substance from the tea without permitting the least particle of its strength to escape. After the tea is thoroughly steeped and its extract is conveyed to the condenser, the bottom plate of the tea-tank is removed, thereby permitting the perforated cylindrical vessel to be taken from the tea-tank and emptied of the steeped tea-leaves. The gage G′ indicates the amount of the tea extract in the condenser.

Having thus described my invention, I claim—

1. The combination of the tank K, provided with strainer P, having concentric tube S, its lower end being perforated and its upper end having a valve, the boiler, and the valved pipes Z V, connecting the same and the tank K, substantially as described.

2. The combination, in an apparatus for making tea extract, of the tank or vessel K, the perforated vessel P therein, the boiler, the pipe Z, extending from the boiler above the water-line to the tank K, and having the valve C′, and the pipe V, communicating with the tank K and with the boiler below the water-line of the latter, and having the valve W, whereby the said tank may be supplied with either hot water or steam from the boiler, substantially as described.

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

ROBERT E. HUFF.

Witnesses:
J. J. LEDGERWOOD,
O. B. MARTIN.