(No Model.)

G. H. SIMPSON.

EVAPORATOR.

No. 455,125. Patented June 30, 1891.

Fig. 1.

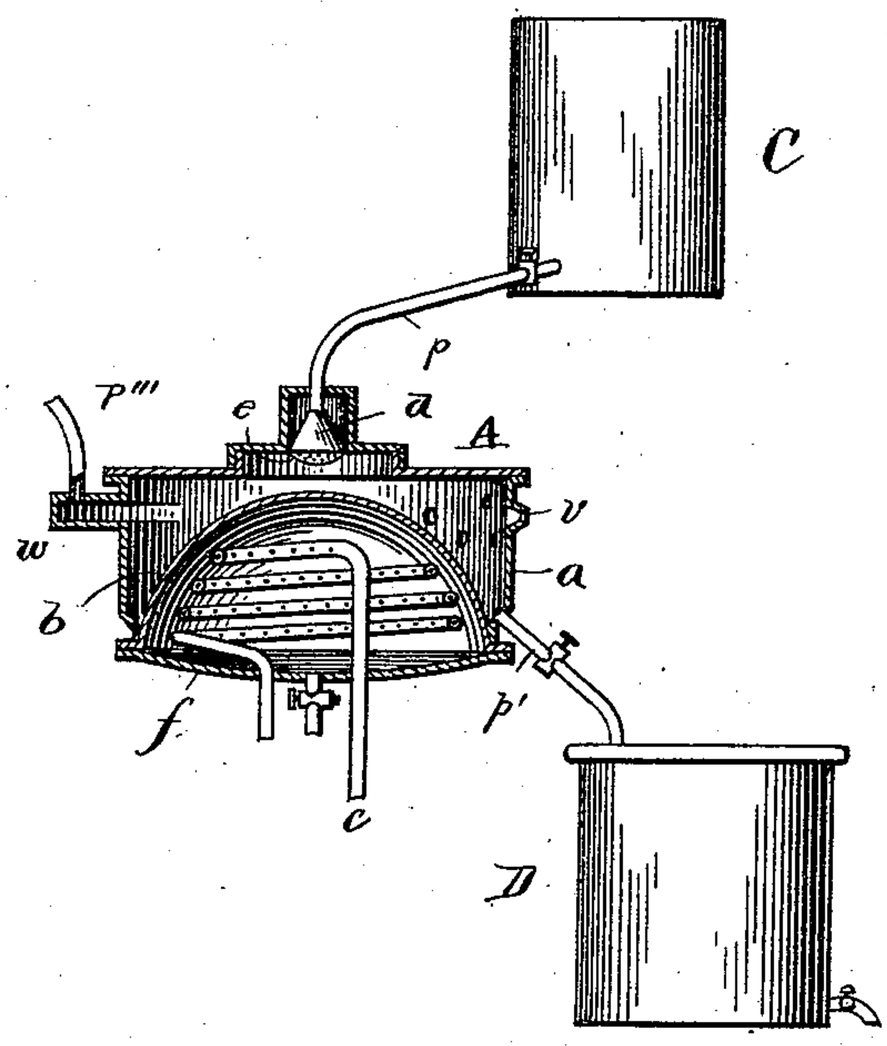
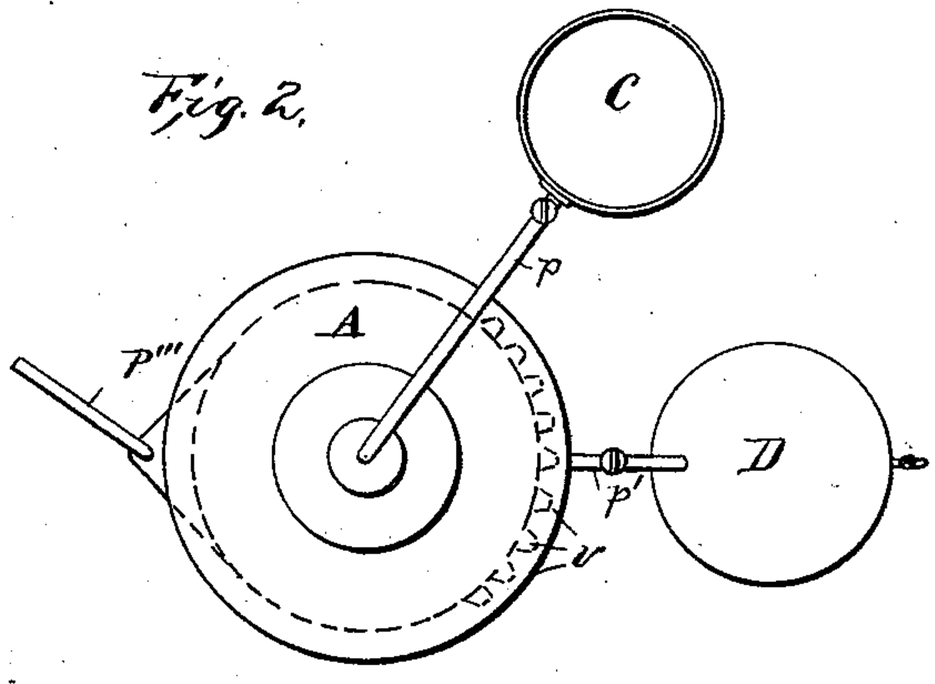


Fig. 2.



WITNESSES:

E. C. Duffy

H. E. Peck

INVENTOR

George H. Simpson

BY O. E. Duffy

ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE H. SIMPSON, OF TERRE HAUTE, INDIANA, ASSIGNOR OF ONE-HALF TO WILLIAM C. BUNTIN, OF SAME PLACE.

EVAPORATOR.

SPECIFICATION forming part of Letters Patent No. 455,125, dated June 30, 1891.

Application filed February 10, 1890. Serial No. 339,944. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. SIMPSON, a citizen of the United States, residing at Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Evaporators; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in evaporators; and it consists in certain novel features of construction and in combinations of parts more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a vertical elevation of the apparatus, showing sectional views of parts when necessary for clearness in description. Fig. 2 is a plan view of the apparatus.

Similar letters refer to similar parts in both views.

The letter A indicates an evaporator, which consists of a metallic cylindrical chamber *a*, a convexed dome-like heating-surface *b*, and a coil of perforated steam-pipe *c*. At the top of *a* there is a dome in which there is an inverted funnel *d*. The pipe of the funnel protrudes from the top of the dome and is connected by a supply-pipe *p* with a retort or supply-reservoir C, situated high above A. The funnel *d* is covered with a concave strainer *e*. Also on one side of the chamber *a*, near the top, there are a number of air-vents *v*, and diametrically opposite to these vents there is an exhaust-pipe *w*. A fits down upon and is closed by the dome-shaped surface *b*. Thus *b* forms a bottom for *a*, and is arranged so that one side is a little higher than the other, so that the matter deposited thereon will settle on the lower side, where it may be drawn off through the drain-pipe *p'* into a retort or receptacle D. The convexed heating-surface *b* is closed by a bottom *f*, shaped so as to conveniently envelop the coil of steam-pipe *c*.

The process is as follows: Place the liquid, from which it is desired to extract the alcohol or any other volatile or medicinal substances, into the retort or supply-vessel C and allow it to drop through the pipe *p* into the inverted funnel *d*, where it is dashed into a spray by passing through the screen *e*. The liquid then falls in a spray upon the surface *b*, which is heated by means of the coil of steam-pipe *c*, and is instantly evaporated in the free air, the vapors being exhausted through *w* and the residue falling to the bottom of *a*, where it is drawn off into the catch vessel or reservoir D and recovered.

Any suitable exhausting means (not shown) can be connected with pipe *p'''* to draw the vapor from the evaporator into a condenser. (Not shown.)

What I claim as my invention, and desire to secure by Letters Patent, is—

1. An evaporator consisting of a cylindrical casing having a closed top provided with a dome, a discharge-spreader in said dome, an air-vent in the side of said cylinder, a vapor-discharge through said casing, and a dome-shaped imperforate bottom upon which said casing fits, so as to form a heating-chamber above the bottom, and a discharge from the lowest portion of the chamber formed by said casing and bottom.

2. An evaporator comprising the casing having a closed top provided with a discharge into the chamber and a closed imperforate bottom convexed upwardly and centrally into the chamber, air-vents into one side of said chamber, a vapor-discharge from the upper portion of said chamber diametrically opposite said vents, and a liquid-discharge from said chamber.

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

GEO. H. SIMPSON.

Witnesses:

SAMUEL C. STIMSON,

ALVIN M. HIGGINS.