

(No Model.)

E. B. POTTER.

APPARATUS FOR VAPORIZING LIQUIDS.

No. 350,445.

Patented Oct. 5, 1886.

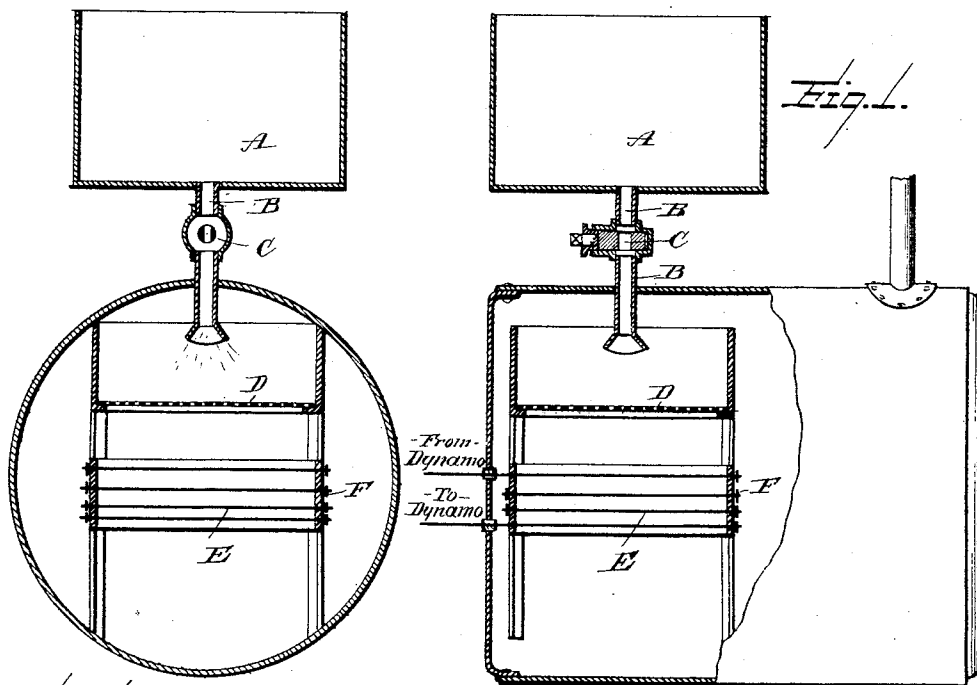


Fig. 2.

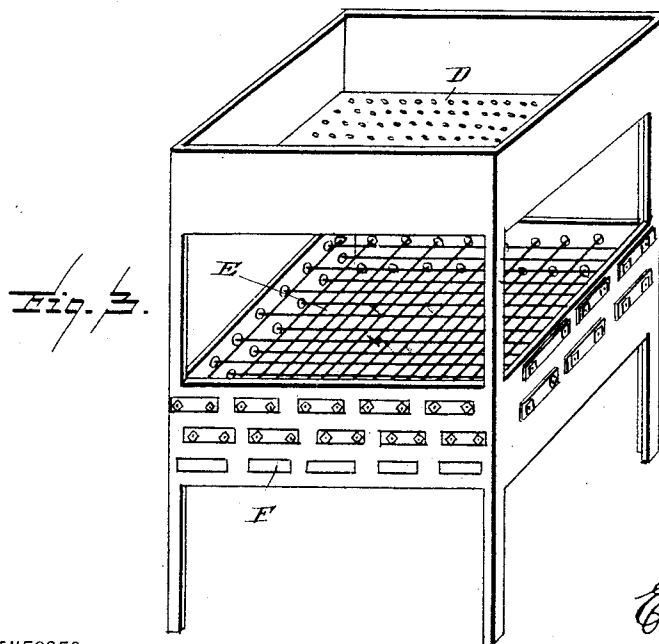


Fig. 3.

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APPARATUS FOR VAPORIZING LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 350,445, dated October 5, 1886.

Application filed January 28, 1886. Serial No. 190,137. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM BARRY POTTER, a citizen of the United States, residing at Paducah, county of McCracken, State of Kentucky, have invented a new Apparatus for Vaporizing Liquids, of which the following is a specification.

The method by which I propose to produce steam or vapor is by passing water in the form as nearly as possible of an actual spray upon wires heated by electricity sufficiently hot to rapidly vaporize the water. The mechanism I employ to accomplish this end is as follows, illustrated by accompanying drawings:

Figure 1 is a longitudinal section of a boiler in which is shown my apparatus also in section. Fig. 2 is a transverse section of the boiler with my apparatus, also in section, shown inside. Fig. 3 is a perspective view of my apparatus with boiler removed.

Similar letters refer to similar parts in the different views.

Tank A is used as a reservoir for the water which passes from the tank through the pipe B. Pipe B has the outlet enlarged, with a wire or other obstruction placed across the outlet or end of pipe to break or spread the stream of water in the form of a shower. The flow of water is regulated and controlled or adjusted by the cock C. The water in tank A will be placed under the necessary pressure so as to obtain as nearly as possible the conditions under which spray is formed. The water passes through the tube B, dashing upon the perforated plate D. The diameter of holes in and the thickness of this plate will be graduated by what is found in practice to best subserve the desired end—viz., to enable the water to pass through the plate with the greatest facility and in the most minute streams upon the wires E, shown below the plate D. These wires will be made of platina or any other metal that may be found to become best heated by the passage of a current of electricity along or through them. I propose to make these wires of single straight pieces, so connected with each other at the ends by blocks F of high conducting power as to form one continuous line of wire. Wires will be held in place by thread and nut, as shown, outside of blocks. It will be seen on reference to the drawings that wires in second row pass at right angles

to the first and about one-fourth inch below them, thereby dividing the surface into squares. The third row of wires is set at right angles to second row, and set in such a manner as to bisect the squares formed by the first and second rows, the fourth row at right angles to the third, and set so as to bisect the squares formed by the third. By this arrangement the squares formed by fourth row will be but one-quarter the size of those formed by first and second. The number of rows of wires may be indefinitely extended, as occasion may require, making it hardly possible for even a drop of water to pass through without coming in contact with one or more wires. The frame-work which holds these wires in position must be made of material possessing two properties: first, to be a non-conductor of electricity; second, to have the ability to resist heat, thereby forming a perfect insulation for the wires contained therein. There will be a supply-pump acting in conjunction with the tank A. There will also be a safety-valve connected with the boiler; also, a water-discharge valve on bottom of boiler to take off the waste water, with the necessary gages to test water and vapor.

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

1. In an electrical vaporizing apparatus, a non-combustible frame having an electrical conductor crossing the same in horizontal planes in directions at right angles to each other in different planes, substantially as specified.

2. In an electrical vaporizing apparatus, a non-combustible frame having an electrical conductor crossing the same in horizontal planes in directions at right angles to each other in different planes, and arranged under the center of squares formed by the conductor in the plane above, whereby said squares gradually diminish the vertical spaces between the wires of the whole series, substantially as specified.

3. In an electrical vaporizing apparatus, a non-combustible frame provided with an electrical conductor arranged as described, in combination with a superimposed perforated plate, substantially as specified.

4. In an electrical vaporizing apparatus, the combination of a water-tank provided with a

discharge-pipe terminating in a rose or spraying device, a perforated plate, and an electrical conductor arranged to cross itself to form fine meshes, whereby water delivered from the tank
5 in spray form is again distributed in a finer spray upon the heated conductors to be vaporized, substantially as specified.

5. In an electrical vaporizing apparatus, the combination of a water-tank provided with a
10 discharge-pipe terminating in a rose or spray-

ing device, a perforated plate, and an electrical conductor arranged to cross itself to form fine meshes, and a vapor receiving and distributing receptacle or boiler, whereby the vapor may be applied to practical use as a motive power, substantially as specified. 15

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Witnesses:

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