

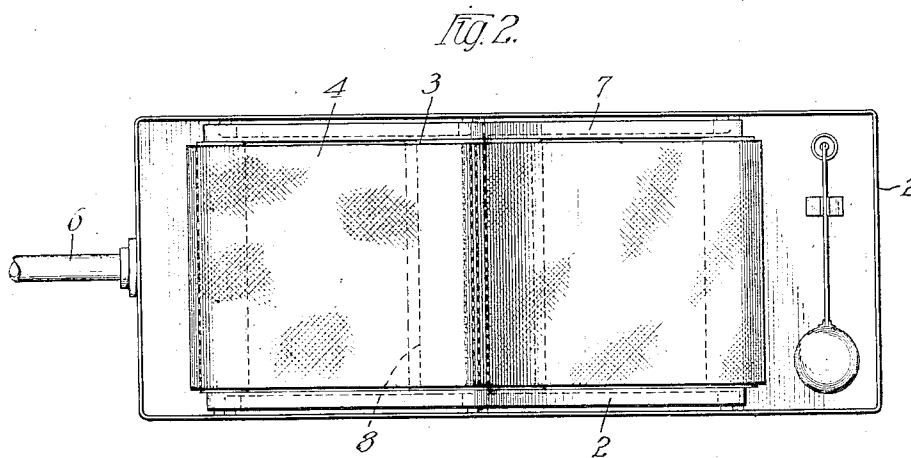
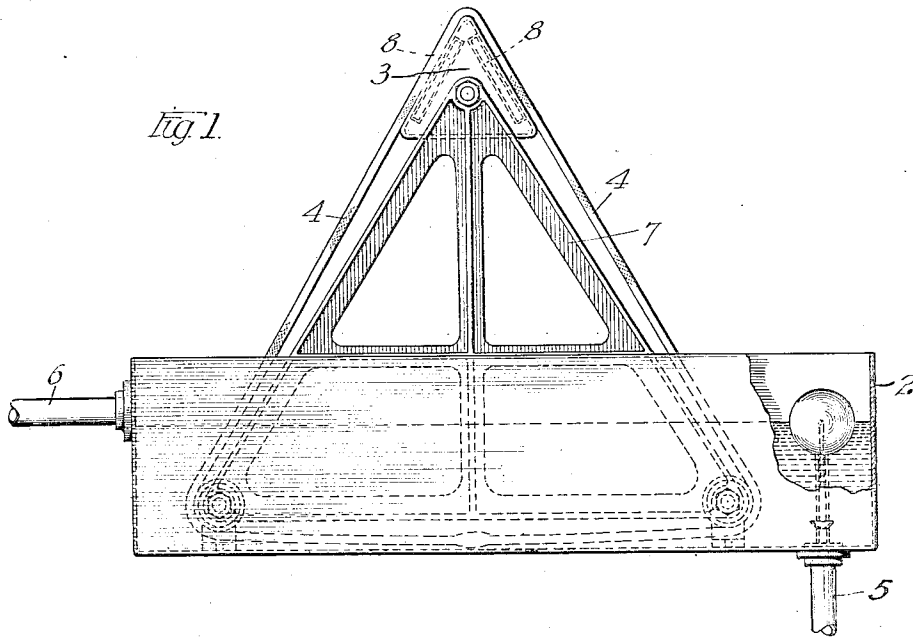
A. SIMON & E. O. SESSIONS.

VAPORIZER.

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1,292,657.

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Witnesses:

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UNITED STATES PATENT OFFICE.

ARTHUR SIMON, OF MILWAUKEE, WISCONSIN, AND EDSON O. SESSIONS, OF CHICAGO, ILLINOIS, ASSIGNORS TO THE CUTLER-HAMMER MFG. CO., OF MILWAUKEE, WISCONSIN, A CORPORATION OF WISCONSIN.

VAPORIZER.

1,292,657.

Specification of Letters Patent.

Patented Jan. 28, 1919.

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To all whom it may concern:

Be it known that we, ARTHUR SIMON, a citizen of the United States, and EDSON O. SESSIONS, a citizen of the United States, and residents, respectively, of Milwaukee, in the county of Milwaukee and State of Wisconsin, and of Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Vaporizers, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in vaporizers.

One of the objects of the invention is to provide a structure in which heat is applied directly to a small quantity of the fluid to be vaporized without heating the whole body of fluid.

Another object of the invention is to provide means for isolating a small quantity of fluid and applying heat thereto to produce an instantaneous and efficient vaporization.

A further object of the invention is to provide a vaporizer in which the quantity of heat applied for producing vaporization is independent of the total body of fluid or the heat capacity of its container.

Other objects and advantages of our invention will hereinafter appear.

The accompanying drawings illustrate an embodiment of said invention, and in said drawings:

Figure 1 is a side elevation of a vaporizer embodying the invention.

Fig. 2 is a top view of the structure shown in Fig. 1.

The vaporizer comprises in general a fluid receptacle or tank 2, a heater 3 supported above the same, and a wick 4 for conducting fluid from the tank to the heater.

The receptacle 2, which may be of any suitable form, is provided with an inlet 5 and an over-flow or outlet 6. The inlet is controlled by an ordinary float valve which maintains the fluid level within predetermined limits. Obviously the structure of the tank and the type of means employed for maintaining the fluid level therein may be varied to suit different conditions.

A triangular frame 7 is shown for supporting the heater 3. This frame is mount-

ed in a tank 2, the shape of the frame and the type of support being varied as desired.

The heater 3 may also be of any suitable type. An electric heater is shown in the form of a triangular shaped casing containing standard flat heating units 8. The shape of the casing and the type of units employed are of course subject to many variations.

The wick 4 is passed over the heater 3 and extends into the fluid in the tank. In the present structure, the wick is continuous, its mounting being such that it passes over the heater and around the sides of the triangular frame. It should be understood that any wick suitable for conducting fluid to the heater might be used. The continuous wick is supported on the frame so that it may be shifted around the frame and present a new surface to the heater 3. This allows the portion of the wick in contact with the heater to be changed from time to time. It also allows a wet portion of the wick to be brought into contact with the heater when the top of the wick has become dry by reason of the vaporizer having stood idle for some time.

The heater and the frame with the wick mounted thereon comprise a unit which may be readily inserted in a tank. Only the lowest portion of the unit is immersed in the fluid, the upper part of the frame which supports the heater being above the fluid. This structure is simple, compact and may easily be removed for inspection and repair.

The operation of the vaporizer is very simple. When the tank is filled with fluid, the wick carries a certain quantity thereof to the heater by means of capillary attraction. When the current to the heater is turned on the fluid in the wick adjacent to the heater is vaporized. The fluid so vaporized is replaced by more fluid in the wick, the capillary action being continuous and the vaporization taking place as long as heat is applied and fluid is maintained in the tank.

The heat is thus applied directly to a small quantity of fluid to be vaporized and no heat is wasted in raising the temperature of the body of fluid in the tank. It is not necessary to wait until a body of fluid has been heated before vaporization is secured. The heat is immediately applied to a small quan-

tity of fluid and the vaporization is almost instantaneous. As soon as a sufficient quantity of vapor has been produced, the heater may be turned off and no further vaporization takes place. Moreover, the vaporizer is ready for instant use again when desired. The heater is also located above and out of the body of fluid, thereby making it readily accessible and not subject to the disadvantage of being immersed in the fluid.

While we have shown and described a preferred embodiment of our invention, it is obvious that many changes may be made in the details of construction and arrangement of parts without departing from the spirit and scope of the appended claims.

Having described our invention, what we claim and desire to secure by Letters Patent is:

1. A supply of vaporizable fluid, a porous member having only a portion thereof immersed in the fluid, and a heating element associated with the unimmersed portion of the porous member to vaporize the fluid drawn up into said last named portion by capillary attraction.

2. In a vaporizer a supply of vaporizable fluid, a wick having only a portion thereof immersed in the fluid and an electrically heated body in contact with the unimmersed portion of the wick to vaporize the fluid drawn up into said last named portion by capillary attraction.

3. A vaporizer having a heating unit, a wick supported thereby, and a receptacle for holding fluid in which only a portion of said wick is immersed, said heating unit being adapted to vaporize the fluid drawn up into the unimmersed portion of the wick by capillary attraction.

4. In a vaporizer, a supply of fluid, a heater outside of the fluid, and a porous member a portion of which dips into said fluid for carrying the fluid to the heater by capillary attraction, said heater being adapted to vaporize the fluid carried thereto by the porous member.

5. In a vaporizer, a supply of fluid, a heater outside of said fluid, and a continuous porous member dipping into said fluid for carrying said fluid in small quantities to said heater.

6. In a vaporizer, a supply of fluid, a heater outside of said fluid, a continuous wick in engagement with said heater and dipping into said fluid whereby the fluid is carried to the heater in small quantities.

7. A vaporizer having a heater supported on a frame above a quantity of fluid, a continuous wick supported by said frame in engagement with said heater and said fluid in such manner that said wick may be moved.

8. A vaporizer having a heater supported on a frame, a wick supported by said frame in engagement with said heater, said structure being adapted to be inserted in a quantity of fluid so that a portion of said wick is in said fluid and said heater is above the fluid, said heater being adapted to vaporize the fluid conducted to the heater by said wick.

9. A vaporizer having a heater, a triangular frame for supporting the same, a wick in engagement with said heater and passing around the sides of said triangular frame, said frame being adapted to be inserted in a quantity of fluid so that a portion of said wick is immersed in said fluid.

10. A vaporizer having a heater, a triangular frame for supporting the same, and a movable wick carried by said frame in engagement with said heater and a quantity of fluid.

In witness whereof, we hereunto subscribe our names in the presence of two witnesses.

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EDSON O. SESSIONS.

Witnesses as to Simon:

L. C. SCHANTZ,
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Witnesses as to Sessions:

ANNE SOLOMON,
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