A. W. SANGSTER.
Ozone-Generator.

No. 199,997. Patented Feb. 5, 1878.

Figure 1

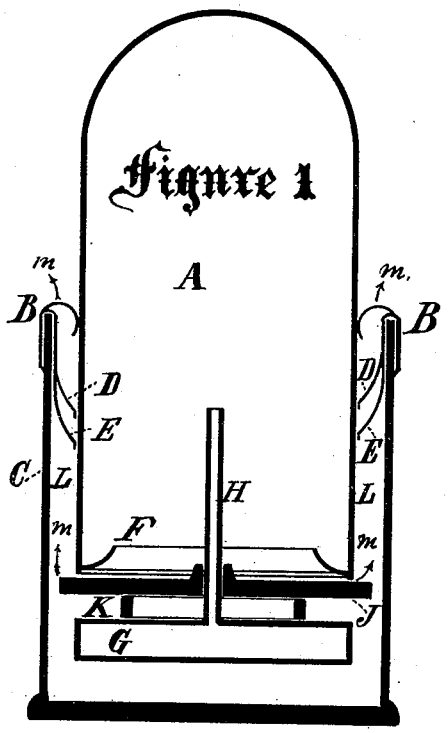


Figure 2

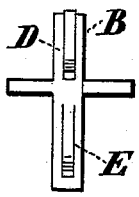
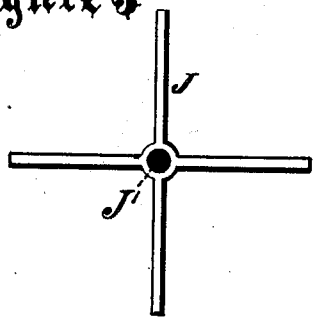


Figure 3



Witnesses,
C. L. Pond.
Wm. S. Grosvenor

Inventor.
Amos W. Sangster
By James Sangster
Atty.

UNITED STATES PATENT OFFICE.

AMOS W. SANGSTER, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO EDWARD M. JEWETT, OF SAME PLACE.

IMPROVEMENT IN OZONE-GENERATORS.

Specification forming part of Letters Patent No. **199,997**, dated February 5, 1878; application filed October 29, 1877.

To all whom it may concern:

Be it known that I, AMOS W. SANGSTER, of the city of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Ozone-Generators, which improvements are fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a vertical central section. Fig. 2 represents an inside view of one of the springs for holding the dome or upper part of the machine at any point of its vertical adjustment; and Fig. 3 is a plan or top view of a removable frame, which rests between the phosphorus and the bottom of the dome.

The object of my invention is to produce a cheap portable ozone-machine in which phosphorus and air are the generating agents; and the first part of said invention consists in the combination of a vertically-adjustable dome, a vessel for holding the phosphorus and water, and two or more double springs for retaining the dome at any point of its vertical adjustment, and for keeping it in a vertical line while being or when adjusted.

The second part of my invention consists of a vessel for holding the water and phosphorus, an adjustable dome, and a removable frame, which rests between the bottom of said dome and the top of the phosphorus, so as to leave an open space between them as an inlet for the air and an outlet for the ozone, in combination with a hollow float provided with a tube, which answers the purpose of a handle for lifting it out, and as an opening through which sand, fine shot, or its equivalent may be introduced into the float to regulate or adjust its weight.

The third part of my invention consists, in an ozone-machine, of a vertically-adjustable dome, provided with an inwardly-projecting flange at the bottom, for purposes which will be more clearly hereinafter shown.

A in said drawings represents the adjustable dome. It is made of glass, so as to be transparent. B B are the springs for holding it in a vertical position, and with sufficient force to retain it at any point at which it may be adjusted up or down. They are formed so as to clasp over the upper part of the glass vessel C, and are each provided with two or more springs, D E, which project in toward and against the dome A, so as to hold it, as shown in Fig. 1.

F represents the inwardly-projecting rim at the lower part of the dome A. G is the float, provided with the tube H. It is made hollow, and arranged so that its weight can be easily regulated by putting the adjusting material through the tube. It may be made of glass, and hollow, as before mentioned, so as to be light enough for the purpose. The float may also be made solid, of wood, cork, or other material sufficiently light for the purpose; but a hollow float is better, as it can be adjusted to exactly the right weight.

J represents a light frame, of glass or other suitable material. It is provided with a hole, J′, at the center, so that it can be slipped over the tube H into position. K is a ring of phosphorus.

The dome A is arranged to pass down into the vessel C, as shown in Fig. 1, and thereby leave the space L, into which the ozone flows from dome A, and is then forced up as it is generated, and out in the direction of the arrows *m*, while the heavier vapors, having an affinity for water, descend to it, and are absorbed thereby.

The object of the inwardly-projecting flange F is to cause the ozone and vapors that arise during the generation of ozone to flow toward the center of the dome A, and thereby become more thoroughly intermingled.

I am aware that I have mentioned the use of springs for holding the dome up when elevated in the Letters Patent No. 194,729, granted to me August 28, 1877. I therefore do not claim one or more springs adapted only for holding the dome up, the object of my present invention being not only to keep the dome up or secure it at any point of its vertical ad-

justment, but it is also adapted for the additional purpose of holding it in a vertical line, as described.

I claim as my invention—

1. In an ozone-machine, the combination of the dome A, springs B D E, and vessel C, for the purpose of holding the dome vertical and retaining it at any point desired.

2. The combination of the dome A, vessel C, float G, phosphorus K, and the interposed frame J, for the purposes specified.

3. In an ozone-machine, a glass dome, A, provided with an inwardly-projecting flange, F, as and for the purposes set forth.

AMOS W. SANGSTER.

Witnesses:

C. L. POND,

WM. S. GROSVENOR.