(No Model.) 2 Sheets—Sheet 1.

G. S. SLOCUM.

PRESSURE REGULATOR FOR SODA WATER.

No. 255,467. Patented Mar. 28, 1882.

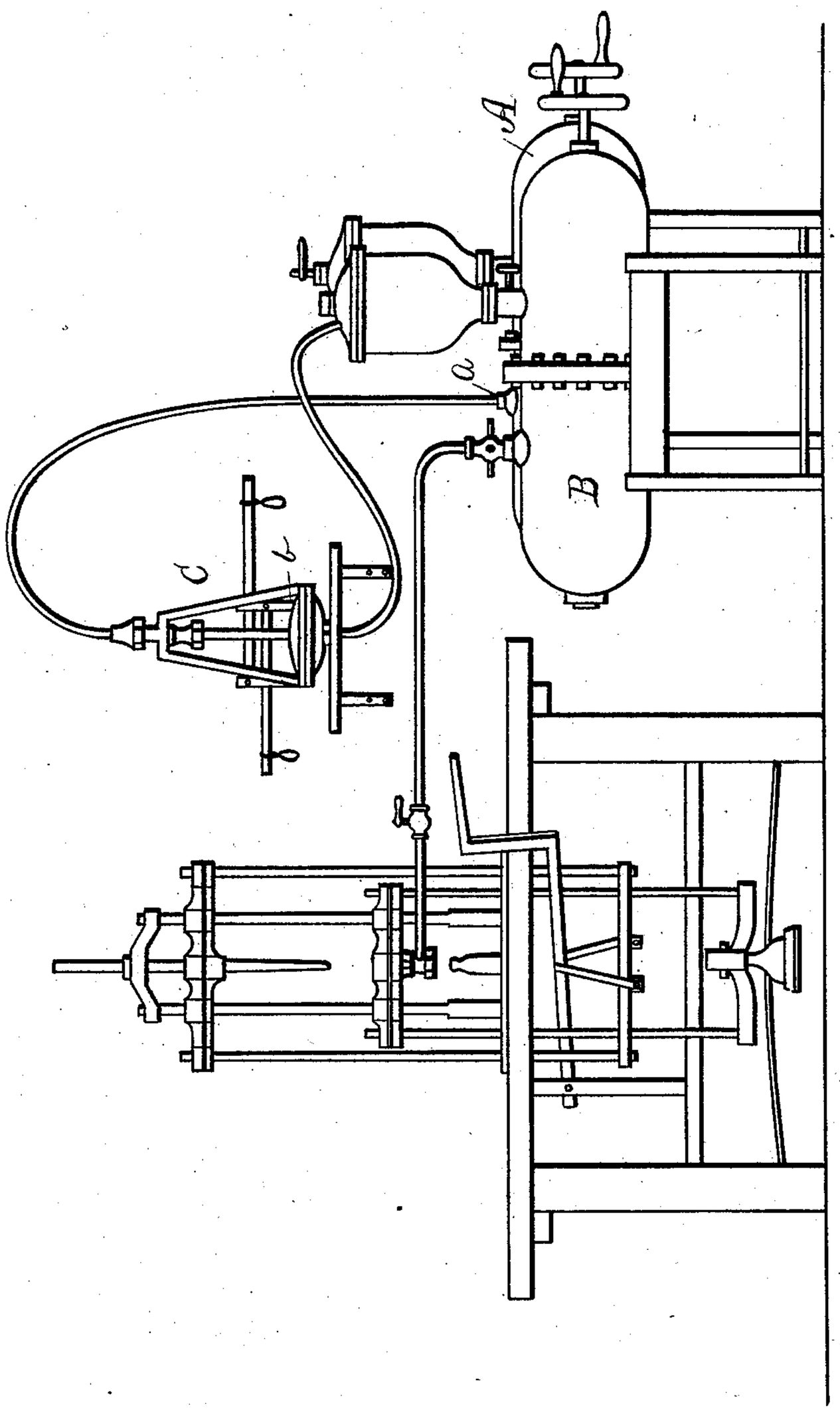

Fig. 1.

Witnesses.
George Dustan.
Wm. T. Andrews

Inventor.
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by
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(No Model.) 2 Sheets—Sheet 2.

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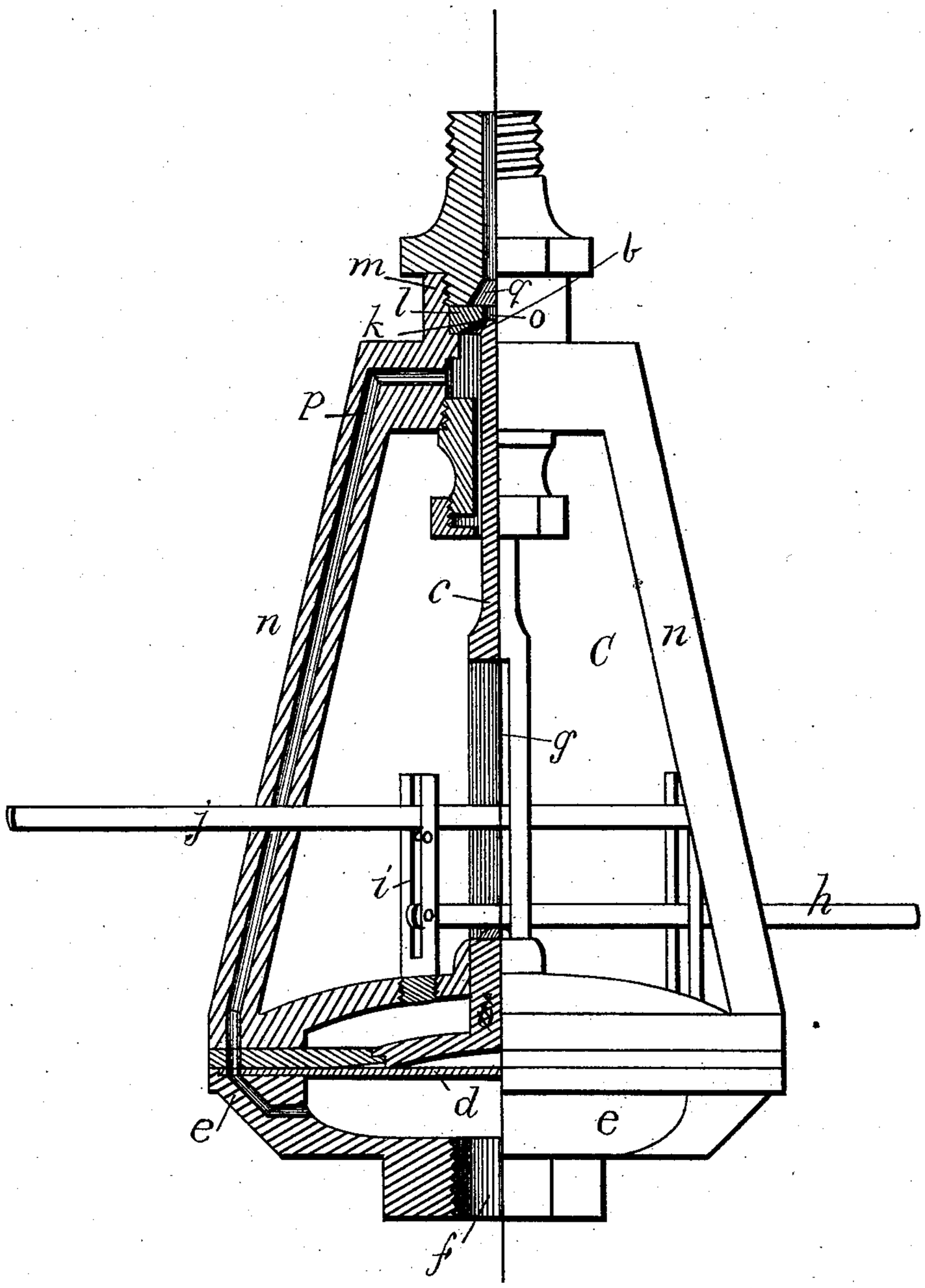
Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE S. SLOCUM, OF NEWPORT, RHODE ISLAND, ASSIGNOR TO ALVIN D. PUFFER & SONS, OF BOSTON, MASSACHUSETTS.

PRESSURE-REGULATOR FOR SODA-WATER.

SPECIFICATION forming part of Letters Patent No. 255,467, dated March 28, 1882.

Application filed November 5, 1880. Renewed February 9, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. SLOCUM, a citizen of the United States, residing at Newport, in the county of Newport and State of Rhode Island, have invented certain new and useful Improvements in Pressure-Regulators for Soda-Water Generators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as 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 letters or figures of reference marked thereon, which form a part of this specification.

The object of this invention is to provide means whereby the pressure of gas in a soda-water fountain will automatically regulate itself by allowing a valve to open for the influx of more gas whenever said pressure falls below the proper degree. This object I attain by the construction and combination of devices hereinafter particularly set forth.

The drawings accompanying this specification represent, in Figure 1, a general view of a bottling-machine and generator with my improved regulator, and in Fig. 2 a sectional elevation of the regulator.

A represents a generator for producing carbonic-acid gas, such as is used by manufacturers of soda and other aerated waters, the outlet-coupling which connects this generator with the fountain being shown at *a*.

B in the drawings represents the "fountain," so called, being the closed vessel in which the water aerated by the gas from the generator A is held and supplied to the bottles.

C in the drawings represents a pressure-regulator valve to automatically govern the supply and pressure between the generator and fountain. As various valves may be employed in this connection, and in carrying out this principle of my invention, I do not restrict myself to the employment of any special form of valve. The one I have herein shown is substantially after the form of a pressure-regulator now in general use, in which the valve-stem is supported upon an elastic diaphragm and the valve so constructed that when the pressure of steam in the service-pipe falls below the adjusted point the valve opens to admit more steam to such point, and vice versa. As shown in the drawings, this valve is constructed as follows: The valve *per se* is an ordinary conical puppet-valve, and is shown at *b* as secured to the upper end of a vertical rod, *c*, the lower end of which rests upon an elastic diaphragm, *d*, secured at its margin within a hollow base, *e*, having at its lower part an eduction-port, *f*, provided with a female screw for attachment to the bottling fountain or receiver, the valve rod or stem being slotted vertically, as shown at *g*, to receive a lever, *h*, and constitute the fulcrum of such lever, the base of this lever being pivoted to a post, *i*, erected upon the base *e*, while the free end of the lever is weighted according to the pressure to be maintained in the fountain.

A compound lever may, if desired, be obtained by adding a second weighted lever, *j*, disposed over the first, and pivoted at its bore to a post erected upon the opposite side of the base *e* and bearing upon the first lever.

The valve-seat is shown at *k* as formed in the under side of a shelf, *l*, secured within the upper part of a chambered or tubular head, *m*, disposed above the lever before named, and erected upon the base *e* by several upright columns, *n n*, &c., this valve-seat being annular and communicating with a vertical orifice, *o*, created in the shelf *l*. Above the shelf *l* the tubular head has a female screw to adapt it to be coupled to the generator, in which the water is charged with gas.

Communication is had between the generator and fountain by a passage, *p*, leading from the valve-chamber *q* in the lower part of the head *m* downward through one of the columns *n*, thence through the material of the base *e*, and into the chamber of the latter below the diaphragm, and the gas consequently escapes from such chamber by the eduction-port *f* to the fountain.

Should the pressure in the fountain fall below the intended pressure, as determined by the weighted lever, the valve will open and an additional amount of gas under the head from the generator will flow into the fountain until its maximum pressure is restored, when the valve closes and communication between the generator and fountain is cut off. By this means

the pressure in the fountain is maintained uniform. Hence the bottles are charged with a uniform pressure, and in addition the time of the attendant is not occupied in constantly opening and closing the cock between the two vessels, as is now necessary.

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

In combination with the generator, fountain, and connecting-pipe of an aerated-water apparatus, a valve arranged in said pipe and operated by the pressure in said fountain to open and admit a fresh supply of gas when the pressure in said fountain falls below the proper point.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE S. SLOCUM.

Witnesses:

WM. F. WHIPPLE,

PATRICK J. GALVIN.