W. GEE.

APPARATUS FOR THE MANUFACTURE OF SODA WATER.

No. 183,454. Patented Oct. 17, 1876.

Fig. 1.

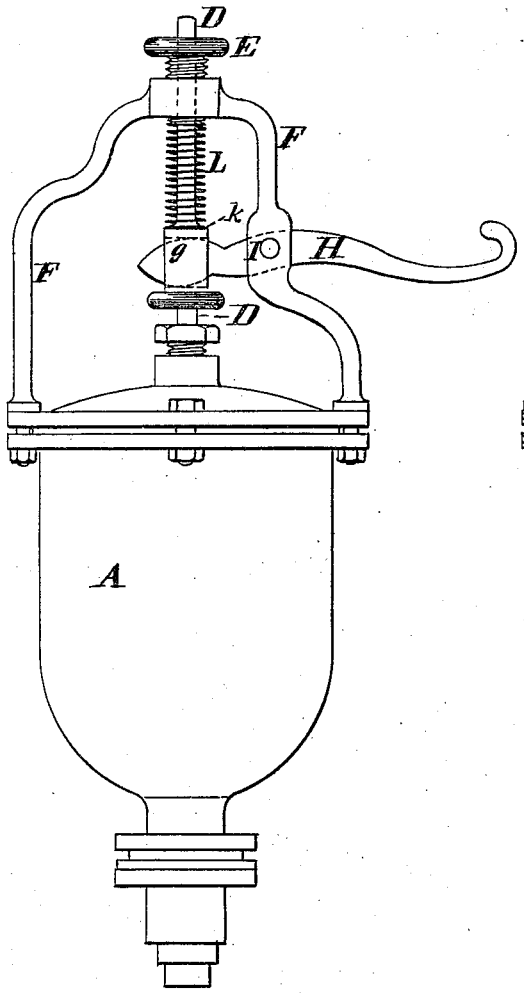


Fig. 2.

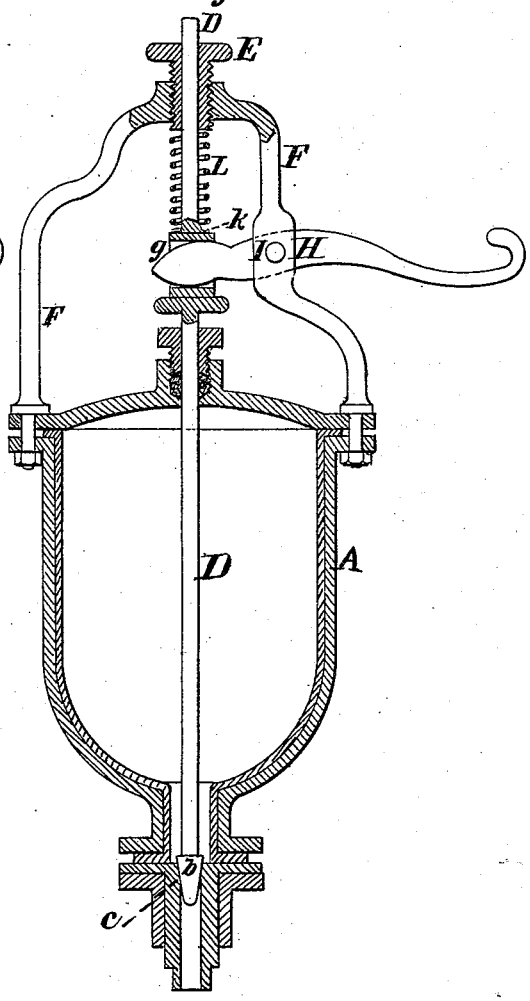
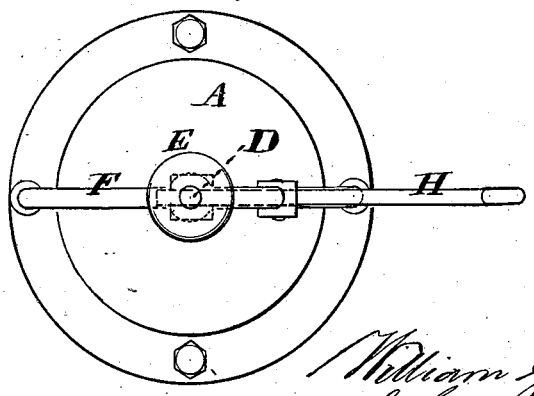


Fig. 3.



Witnesses.
John Becker.
Fred. Haynes

William Gee
by his Attorneys
Brown & Allen

UNITED STATES PATENT OFFICE.

WILLIAM GEE, OF NEW YORK, N. Y.

IMPROVEMENT IN APPARATUS FOR THE MANUFACTURE OF SODA-WATER.

Specification forming part of Letters Patent No. **183,454**, dated October 17, 1876; application filed August 25, 1876.

To all whom it may concern:

Be it known that I, WILLIAM GEE, of the city, county, and State of New York, have invented an Improvement in Apparatus for the Manufacture of Soda-Water; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

My invention relates to valves for the acid-chambers of apparatus employed for manufacturing what is commonly known as "soda-water," or water charged with carbonic-acid gas under pressure, and it has for its object the automatic closing of such valves.

These valves are made of lead, as other base metals do not withstand the action of sulphuric acid. They are, consequently, soft, and under the method of operating them hitherto employed they rapidly wear out.

It is necessary that, when the proper charge of acid has been delivered from the acid-chamber of the gas-generator of such apparatus, the flow of acid from such acid-chamber to the generator should be at once and entirely stopped, as, otherwise, the generation of gas would continue, and the pressure of gas increase beyond the capacity of the apparatus to withstand such pressure.

From the imperfect closing of these valves has arisen a large proportion of the explosions of soda-water fountains, and the damage to life and property resulting therefrom. It has been usual to force down such valves by hammering and wedging, and to hold them in place by various make-shifts. They have even been tied down with ropes, or forced down by a piece of board driven in under the joists of the supervening floor, and this rough usage, resorted to for want of a good mechanical device for automatically closing them, soon injures the soft leaden valves and valve-seats so much as to necessitate their renewal. The extent to which these parts suffer damage is shown by the fact that with my improved method of operating such valves they last at least ten times as long as valves operated in the unmechanical and rude manner heretofore employed.

My invention consists in the combination, with the valve-stem and spring which closes such valve, and the bridge which supports the fulcrum of the valve-lever, of a tubular nut, which acts as a compressor for the spring, and a guide or bearing for the valve stem.

Figure 1 in the accompanying drawing is a side elevation of an acid-chamber with my automatically-closing valve attached thereto. Fig. 2 is a central vertical section, and Fig. 3 is a top view of the same.

A represents the acid-chamber, provided in the usual manner with a lead lining. At the bottom of said chamber is the leaden valve *b*, Fig. 2, fitted to the leaden-valve seat *c*. D is the valve-stem, which passes through a stuffing-box in the cover of the acid chamber A, and extends upward through the tubular nut E, screwed into the top of the bridge F, which overarches and is attached to the top of the acid-chamber A. The valve-stem is enlarged and slotted at *g*, Figs. 1 and 2, to admit the end of the lever H, which has its fulcrum at I, supported by the bridge F. Surrounding the valve-stem D, between the tubular nut E and a shoulder, *k*, formed on the valve-stem, is placed the spring L.

The valve is opened by pressing downward the outer end of the lever H, and is automatically closed by the action of the spring L, which promptly and accurately shuts said valve down into and upon its seat, but without sufficient shock to disturb or damage the same, the spring L being kept adjusted to the required tension by the use of the tubular nut E.

I claim—

The tubular nut E, in combination with the spring L, the valve-stem D, and the bridge F, substantially as and for the purpose set forth.

WILLIAM GEE.

Witnesses:

BENJAMIN W. HOFFMAN,

FRED. HAYNES.