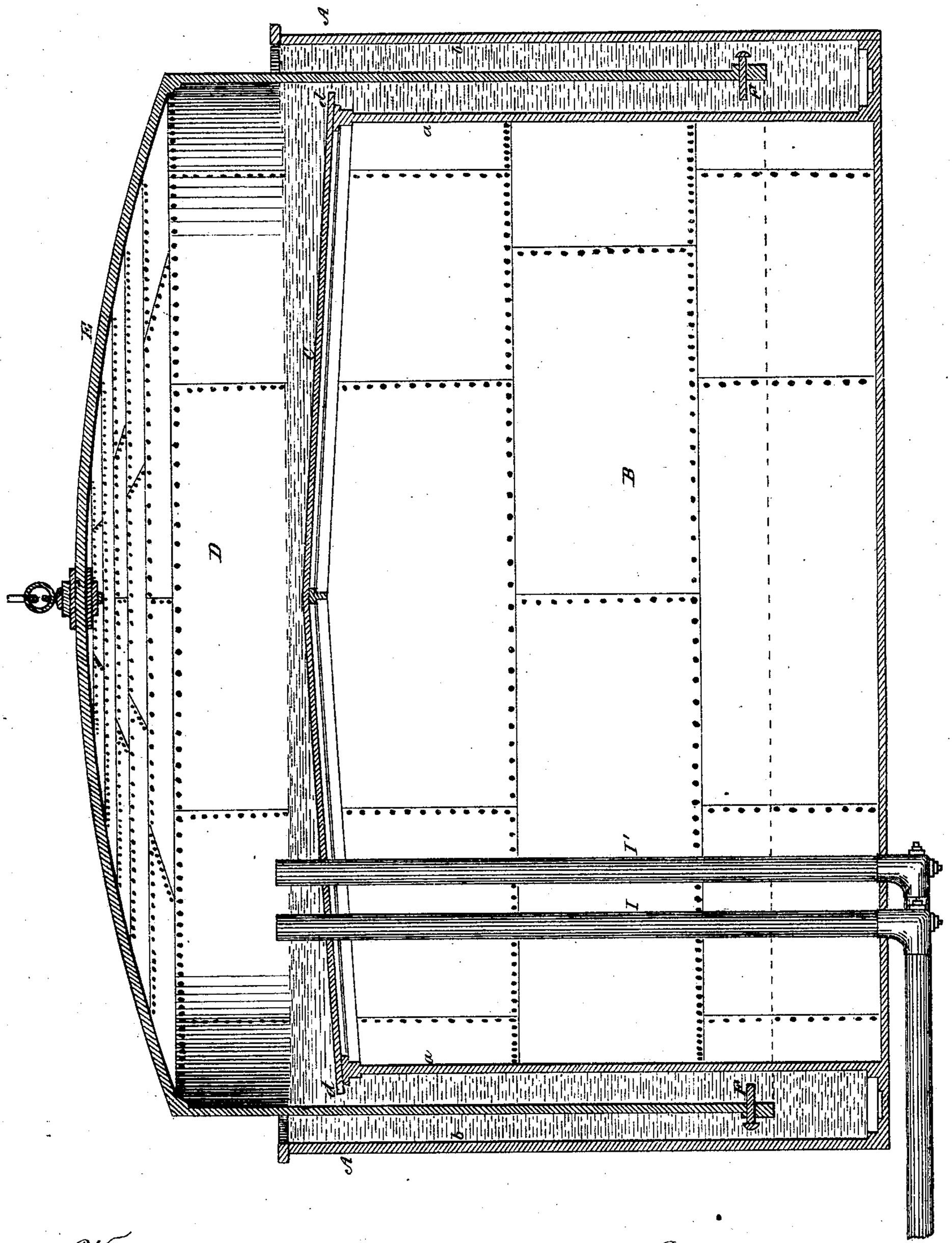
JOHN BUTLER.

Improvement in Gasometers.

No. 123,977. Patented Feb. 27, 1872.



Witnesses.

John S. Thornton.

Isaac Coleman

Inventor:

John Butler.

By his Attys.

C. Rogers & Co.

123,977

UNITED STATES PATENT OFFICE.

JOHN BUTLER, OF NEW YORK, N. Y.

IMPROVEMENT IN GASOMETERS.

Specification forming part of Letters Patent No. 123,977, dated February 27, 1872.

To all whom it may concern:

Be it known that I, JOHN BUTLER, of the city of New York, in the county and State of New York, have invented new and useful Improvements in Gasometers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing forming a part of this specification and to the letters of reference marked thereon.

My invention relates to improvements in gasometers, and has for its object a far more perfect gas-holder for hotels, families, and similar purposes, than has hitherto been known or used. It is more simple and compact in its construction, and prevents unsealing at the water-line when overcharged with gas, and thereby prevents accidents arising therefrom.

I have found from long experience that portable gas apparatus employed for the manufacture of gas, when operated by inexperienced persons, are liable to continual derangements by forcing the gas into the holder beyond the designed limits, thereby lifting the holder out of the water and allowing the gas to escape and become ignited at the generating-furnace, which, in many instances, has caused loss of life and great damage to property, as well as loss of time and material.

I have also found that the chains and counterpoise or weights generally used in suspending the holder are liable to derangement by becoming entangled in the pulleys or wheels, and in many instances prevent the holder from ascending in an even perpendicular line, causing it to tip when elevated to its full extent and allowing the gas to escape.

I have also found, from my long and continued experience in the manufacture of tanks for gas-holders, great difficulty in obtaining a perfectly water-tight tank, whether constructed of iron, brick, or wood, owing to the great weight of water it has to sustain; also, from its liability to leak, and, in many instances, the difficulty of obtaining a sufficient supply of water. By my invention these several difficulties are entirely overcome.

The nature of my invention consists of a water-tank having an annular water-space, the interior space of which said tank, formed by the inner walls, is covered by a water-tight roof below the water-line, the said roof being provided with lugs or projections, which extend a short distance into the annular water-space, and which form a stop or bearing for one or more bolts located near the lower edge of the gas-holder, that prevent the latter from being elevated above the surface of the water when subjected to an undue pressure of gas. The water-tank, being made annular in form, not only lessens the quantity of water required to seal the gasometer, but also allows ready access to all the pipes leading into the holder, which is a great advantage when the pipes require to be cleaned or repaired. The interior may be heated to prevent freezing.

To enable others skilled in the art to make and use my invention, I will proceed more particularly to describe its construction and operation.

The figure represents a sectional elevation of a gasometer with my improvements.

A represents the water-tank, which may be of any suitable dimensions and of any material suitable for the purpose. The water-space in this tank is made annular in form by means of the inner walls *a*, which are located at any desirable distance from the inner surface of the outer walls *b*. The cylindrical space B, which is formed by the inner walls of the tank, is covered by a water-tight roof, C, which latter is provided with projections *d d* that extend a short distance within the annular water-space, and form a stop or bearing for the bolts F, hereinafter more fully described. The roof or cover C, as well as the inner walls *a*, is submerged, being below the water-line, as shown in the drawing. D is the gas-holder, which is also cylindrical in form, and is of such diameter that when in position its sides come about midway between the inner and outer walls of the water-tank. To the top of this gas-holder is rigidly secured a perfectly tight cover, E, and near its lower edge, which passes downward into the water-space, is provided any suitable number of bolts F F, which pass horizontally through perforations in the sides of the holder, and are arranged in such a manner that when the latter is raised to its highest desirable elevation by the influx of gas, they come in contact with the projections *d d*, by which means the lower edge of the gas-holder D is prevented from rising above the water when subjected to an undue pressure of gas. I I′ are

induction and eduction pipes, located within the cylindrical space B, and passing upward, through the roof C and above the water-line, into the gas-holder D, suitable perforations being provided in the roof C to allow them to pass through.

The advantages of my invention are obvious. It will be seen that the gas-holder cannot rise above the water, nor tip so as to allow the gas to escape; also, that by means of the annular water-tank a much smaller quantity of water is required to seal the gasometer, and, likewise, that it is simple in its construction and easily managed.

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

1. The water-tank of a gasometer having an annular water-space, and being provided with a rim, lug, or projection, *d*, on its inner wall, in combination with any number of projections, lugs, or bolts, F F, upon and near the lower edge of the gas-holder, substantially as herein shown and described, and for the purposes set forth.

2. The water-tank of a gasometer, provided with accessible space to the induction and eduction pipes within its inner walls, substantially as and for the purposes herein set forth.

JOHN BUTLER.

Witnesses:
CHARLES ROGERS,
A. T. SMITHE.