

No. 684,849.

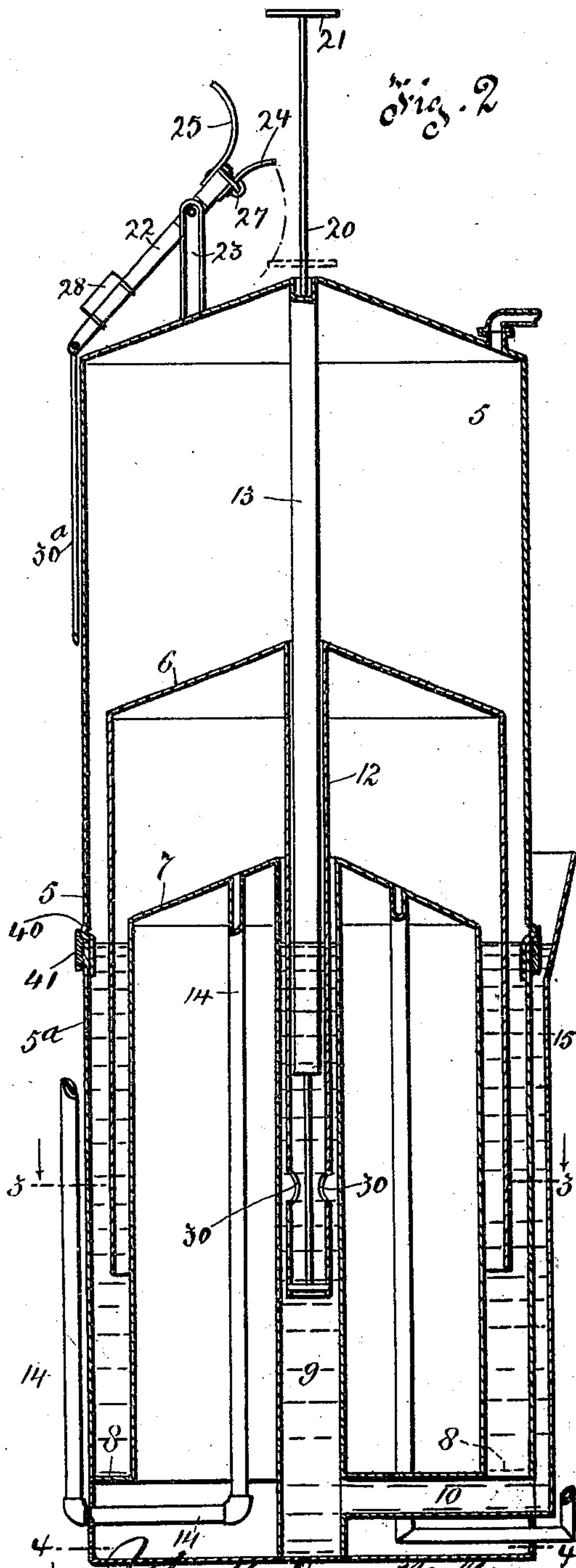
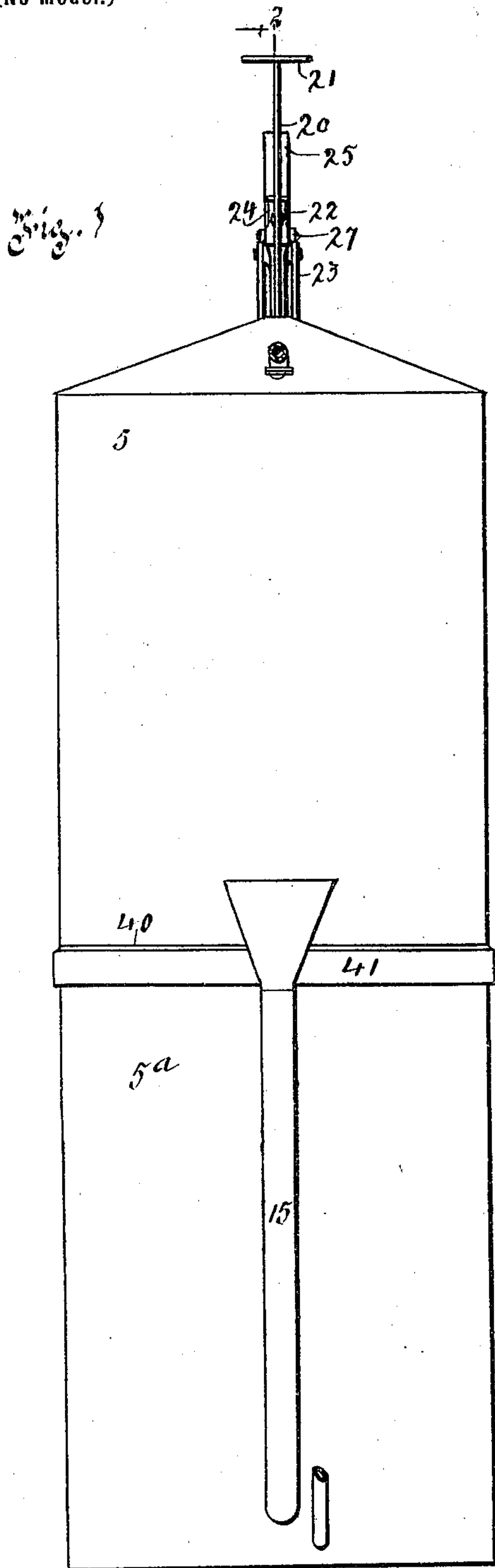
Patented Oct. 22, 1901.

J. ST. L. MCGINN.

GAS HOLDER.

(Application filed Jan. 20, 1899.)

(No Model.)



Witness  
*Ed. J. [unclear]*  
*R. A. [unclear]*

By *John H. Rega McGinn*  
his Attorney  
*John H. Rega*  
Inventor.



# UNITED STATES PATENT OFFICE.

JOHN ST. LEGER MCGINN, OF WINNIPEG, CANADA, ASSIGNOR TO CHARLES CUSHING HOLLAND, TRUSTEE, OF MONTREAL, CANADA.

## GAS-HOLDER.

SPECIFICATION forming part of Letters Patent No. 684,849, dated October 22, 1901.

Application filed January 20, 1899. Serial No. 702,831. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN ST. LEGER MCGINN, of the city of Winnipeg, in the Province of Manitoba, Dominion of Canada, have invented certain new and useful Improvements in Gas-Holders; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates particularly to acetylene-gas holders; and it has for its object to provide a holder that will be exceedingly simple to construct and free from danger and that will not have an exposed water seal, while the exposed surface of the seal within the gas-holder is reduced to a minimum, and consequently the evaporation thereof will be correspondingly reduced.

The invention may be said, briefly, to consist of an expansile chamber, a casing inclosing said expansile chamber and containing a seal therefor, a communicating passage between said chamber and casing, said passage being normally closed, but adapted to connect said chamber and the interior of the casing at the time said chamber expands to a maximum degree, a constantly-open blow-off passage from said casing to the open air, and a pair of gas-conducting pipes leading, respectively, to and from said chamber.

For full comprehension, however, of my invention reference must be had to the accompanying drawings, forming a part of this specification, in which like symbols indicate the same parts, and wherein—

Figure 1 is a side elevation of my improved holder; Fig. 2, a transverse vertical sectional view thereof, taken on line 2 2, Fig. 1.

My improved holder consists of an inclosing casing in which a gas-receiving drum 6 is located, this drum being of the usual dome form and fits over a second dome-like structure 7, the lower edges whereof are connected by an annular diaphragm 8 to the lower edge of the inclosing casing. This casing is constructed in two parts 5 and 5<sup>a</sup>. The upper part 5 has an encircling bead 40 near the lower end thereof. In fitting the parts together the lower edges of the upper part are slipped into the upper end of the lower part 5<sup>a</sup> until said bead comes into contact with

the edge of said upper end, and a strip 41 is soldered at its upper and lower edges, respectively, to said bead and the upper end of the part 5<sup>a</sup>.

A vertical tubular section 9 is formed centrally of the innermost dome and communicates by a horizontal pipe 10 with the lower end of the space between said inner dome and outer casing. The drum has a tube 12 extending from a central opening in the top thereof downwardly into the tubular passage formed by said tubular section 9, to which it approximately corresponds in length, and said tube 12 has a pair of holes 30 near the lower end thereof.

The gas-conducting pipe 14 from the generator (not shown) is taken into the inclosing casing at a point below the diaphragm 8 and upwardly through the innermost dome-like structure and through the top thereof to communicate with the space between said structure and the drum. The water for sealing purposes is supplied to the space between the said structure and the outer casing through a pipe 15, formed on the exterior of said space upwardly to a point about on a level with the point at which it may be desired to keep the water seal. A holder as thus constructed will be found to contain many advantageous features, in fact, all that can be desired; but I prefer to augment same by providing means whereby the means for causing the carbide and water to combine can be actuated by the expansion and contraction of the gas-chamber—i. e., the chamber intermediate the drum 6 and dome 7. To this end the outer casing 5 has a tube 13 extending from a central opening in the top thereof downwardly into the tube 12 to a point a short distance below the top of the tubular passage 9. A rod 20 is secured at its lower end to the lower end of the tube connected to the drum 6 and projects upwardly through the tube 13 and has a transverse disk 21 secured upon its upper end.

A lever 22, having one end weighted, as at 28, is fulcrumed upon a standard 23, secured on the top of the casing, and has its inner end formed with a flared fork having prongs



24 and 25, the prong 24 being pivotally connected to the lower end, as at 27, in such a way as to insure a one-way movement thereof relatively to the lower end. This construction of the fork insures that the disk will pass clear of prong 25 and engage the lower prong 24 as the gas-chamber in contraction approaches its minimum capacity, while the upper prong 25 is simultaneously caused to extend over said disk to be engaged thereby as the chamber expands and also that the disk will clear said upper prong 25 after the lever has been moved the required distance.

When the gas is completely exhausted from the gas-chamber, the disk will assume the position shown in dotted lines in Fig. 2 and in doing so will release the prong 24 and allow the weighted end of the lever to fall, while upon the chamber again expanding the disk will rise and trip upon said prong 24 and cause same through its pivotal connection with its lever to move out of its way. The outer end of the lever is connected by a rod 30<sup>a</sup> or in any other way to the means (not shown) for causing the carbide and water in the generator to combine.

What I claim is as follows:

1. A holder for acetylene gas consisting of an inclosing chamber; an interior dome-like structure; annular diaphragm connecting the lower edges of said inner dome and casing; a movable dome located between said inner dome and casing; a tubular section extending from an opening in and concentrically of the top of said inner dome, to the lower end of the casing; a horizontal pipe connecting the said tubular section to the space between said inner dome and inclosing casing; a tube extending into said tubular section from an opening in the top of the movable dome; an egress-pipe from said casing; a pair of gas-conducting pipes leading from the space between the tops of the inner and movable domes downwardly and out of the lower end of the casing; and a water-conducting pipe outside of the casing and leading from a point on a level with the upper end of the side of the inner dome to and communicating with the lower end of the casing, substantially as described and for the purpose set forth.

2. A holder for acetylene gas consisting of a divisible inclosing casing; means for sealing the adjoining edges of the parts of said casing; an interior dome-like structure; an annular diaphragm connecting the lower edges of said inner dome and casing; a movable dome located between said inner dome and casing; a tubular section extending from an opening in and concentrically of the top of said inner dome, to the lower end of the casing; a horizontal pipe connecting the said tubular section to the space between said inner dome and inclosing casing; a tube extending into said tubular section from an opening in the top of the movable dome; an

egress-pipe from said casing; a pair of gas-conducting pipes leading from the space between the tops of the inner and movable domes downwardly and out of the lower end of the casing; and a water-conducting pipe outside of the casing and leading from a point on a level with the upper end of the side of the inner dome to and communicating with the lower end of the casing, substantially as described and for the purpose set forth.

3. A holder for acetylene gas consisting of an inclosing casing consisting of upper and lower parts 5, 5<sup>a</sup>; a bead formed upon the lower end of the upper part; an interior dome-like structure 7; an annular diaphragm 8 connecting the lower edges of said inner dome and casing; a movable dome 6; the tubular section 9; the horizontal pipe 10; the tube 12 having apertures 30; the tube 13; an egress-pipe from said casing; a pair of gas-conducting pipes leading from the space between the tops of the inner and movable domes downwardly and out of the lower end of the casing; a rod secured at its lower end to the lower end of the tube 12 and projecting upwardly through the top of the casing; a transverse piece secured to the top of said rod; a lever fulcrumed upon the top of the casing and adapted to be engaged by said transverse piece, substantially as described and for the purpose set forth.

4. A holder for acetylene gas consisting of an inclosing casing consisting of upper and lower parts 5, 5<sup>a</sup>; a bead formed upon the lower end of the upper part 5; an interior dome-like structure 7; an annular diaphragm 8 connecting the lower edges of said inner dome and casing; a movable dome 6; the tubular section 9; the horizontal pipe 10; the tube 12 having apertures 30; the tube 13; an egress-pipe from said casing; a pair of gas-conducting pipes leading from the space between the tops of the inner and movable domes downwardly and out of the lower end of the casing; a rod secured at its lower end to the lower end of the tube 12 and projecting upwardly through the top of the casing; a transverse piece secured to the top of said rod; a forked lever 24, 25, fulcrumed upon the top of the casing and adapted to be engaged by said transverse piece, substantially as described and for the purpose set forth.

5. A holder for acetylene gas consisting of a divisible inclosing casing consisting of upper and lower parts 5, 5<sup>a</sup>; a bead formed upon the lower end of the upper part 5 and a removable strip encircling and overlapping the line of juncture of said parts; an interior dome-like structure 7; an annular diaphragm 8 connecting the lower edges of said inner dome and casing; a movable dome 6; the tubular section 9; the horizontal pipe 10; the tube 12 having apertures 30; the tube 13; an egress-pipe from said casing; a pair of gas-conducting pipes leading from the space be-



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the top of the casing and adapted to be en-

gaged by said transverse piece, substantially  
as described and for the purpose set forth. 10

In testimony whereof I have affixed my sig-  
nature in presence of two witnesses.

JOHN ST. LEGER MCGINN.

Witnesses:

WILLIAM P. McFEAT,

FRED. J. SEARS.