

W. W. COZINS.
ACETYLENE GAS GENERATOR.
APPLICATION FILED JULY 2, 1908.

922,090.

Patented May 18, 1909.

FIG. 1.

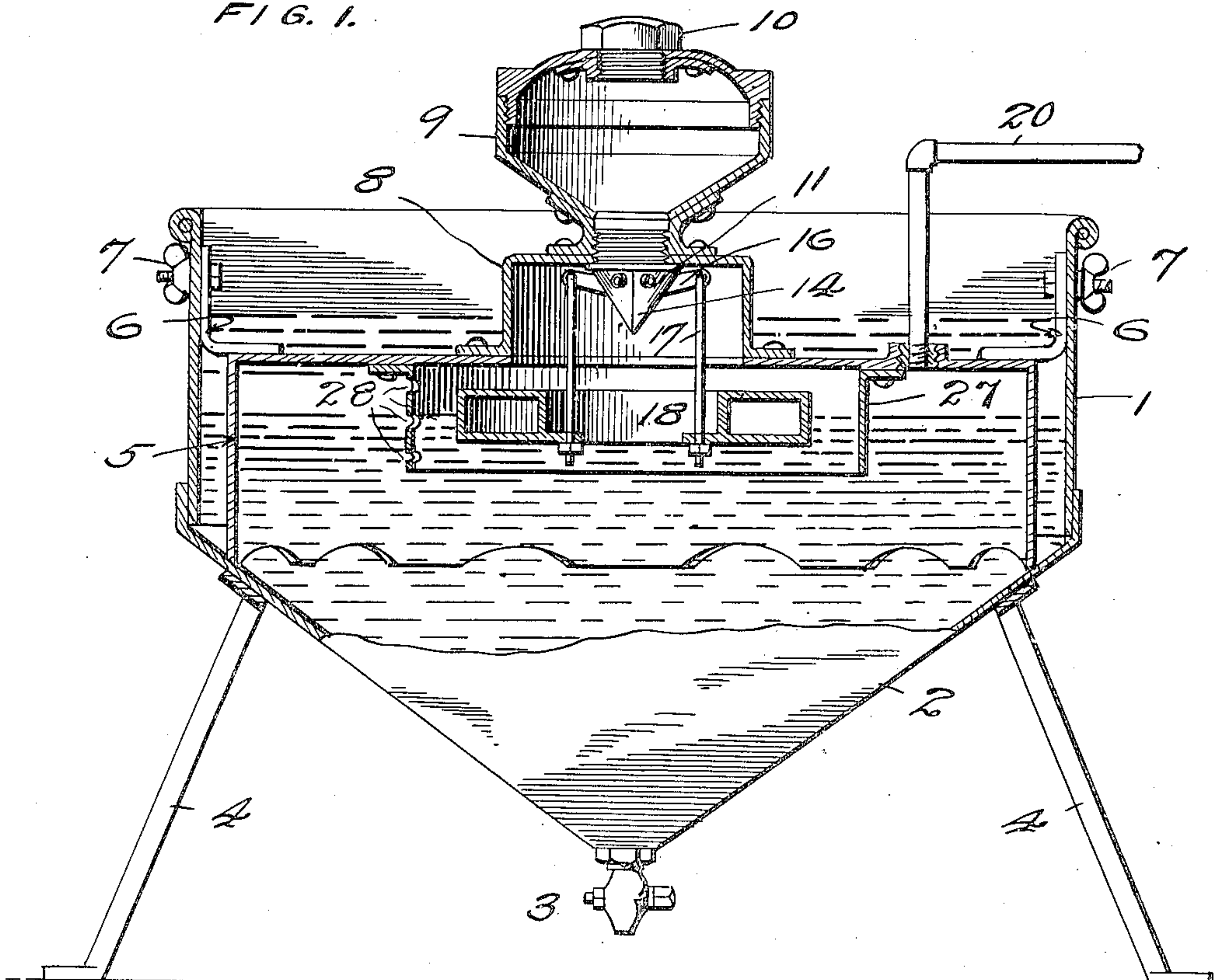


FIG. 2.

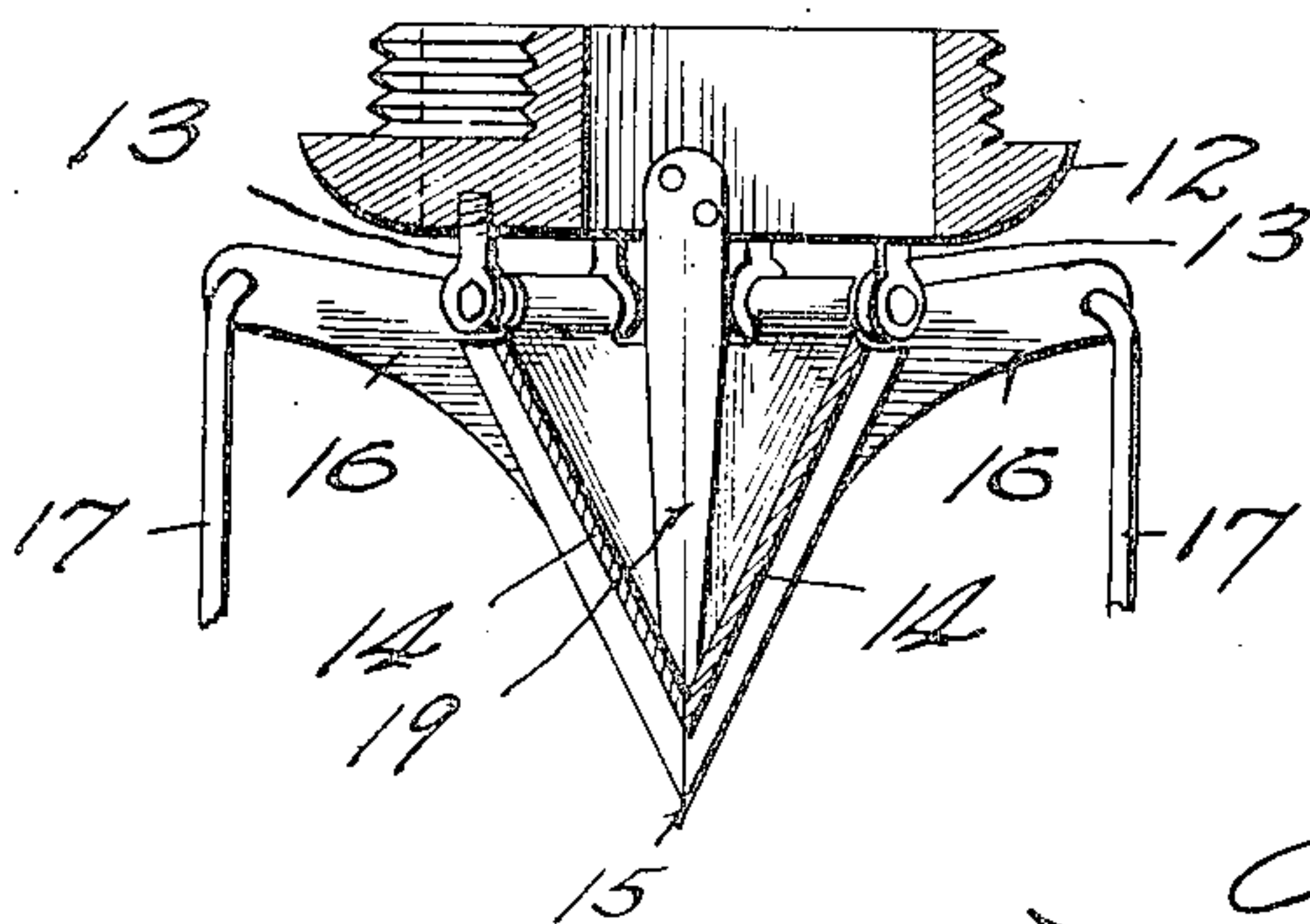
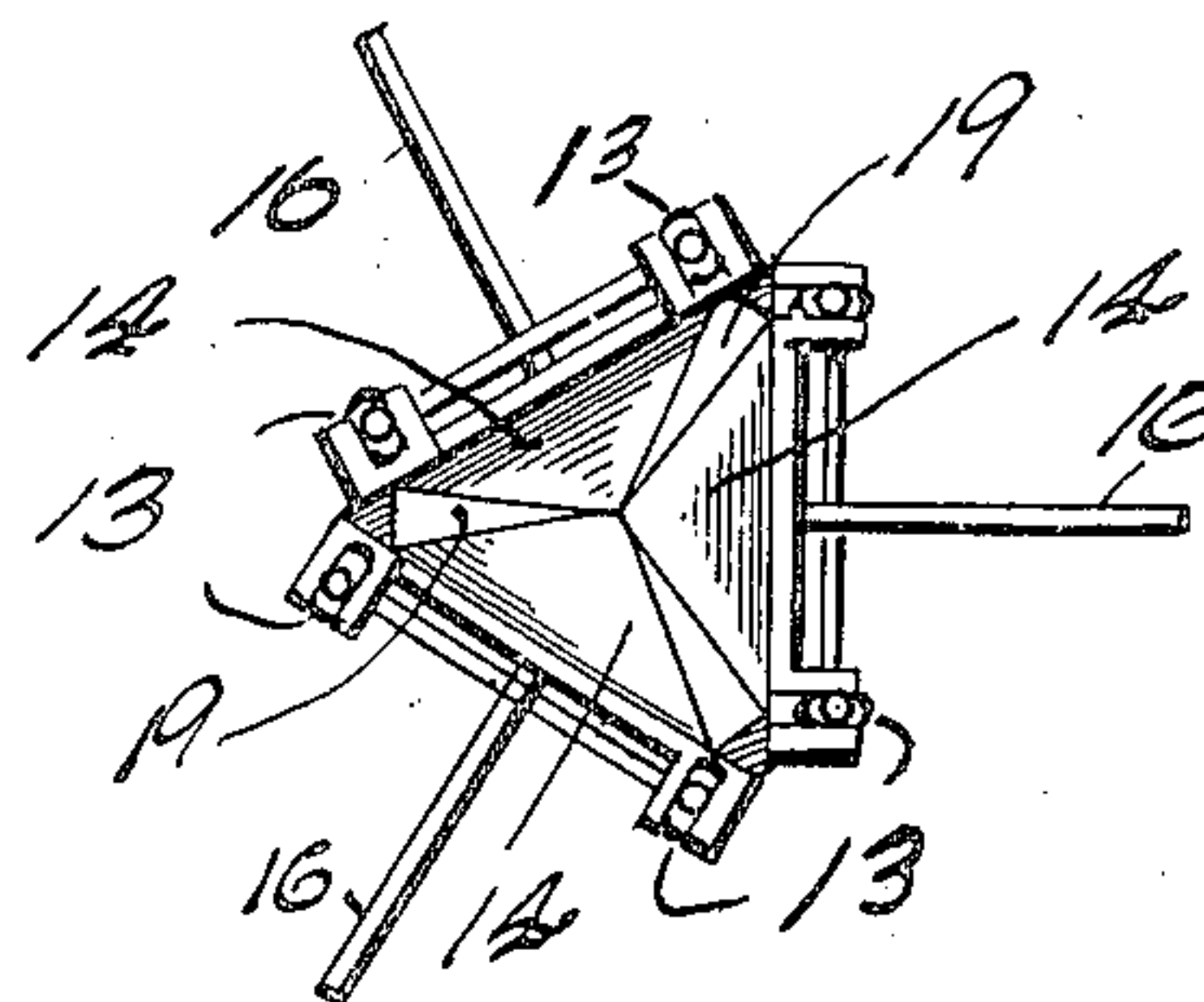


FIG. 3.



WITNESSES

Chas. H. Davis.

M. E. Moore.

W. W. Cozins
INVENTOR

by M. E. Moore
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM W. COZINS, OF HADLEY, PENNSYLVANIA.

ACETYLENE-GAS GENERATOR.

No. 922,090.

Specification of Letters Patent.

Patented May 18, 1909.

Application filed July 2, 1908. Serial No. 441,519.

To all whom it may concern:

Be it known that I, WILLIAM W. COZINS, a citizen of the United States, residing at Hadley, in the county of Mercer and State of Pennsylvania, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

My invention relates to improvements in acetylene gas generators, and refers in particular to those of the "carbide feed" type of machine, and the primary object of the invention is the provision of simple and effective mechanism for automatically governing the float of the carbide tank to regulate the consumption of the gas.

Another object of my invention is the provision of a device of the character set forth, which shall be of simple and inexpensive construction and which shall be thoroughly practical in every particular.

With the above and other objects in view my invention consists essentially of a tank or containing vessel adapted to contain a liquid, an inverted bell confined in the tank, a carbide receptacle carried by the bell and an automatically controlled valve to the carbide receptacle.

The invention further consists of an acetylene gas generator embodying certain other novel features of construction, combination and arrangements of parts substantially as herein disclosed and as illustrated in the accompanying drawings in which—

Figure 1 is a sectional view of my improved gas generator. Fig. 2 is an enlarged detail view of the throttle valve for governing the escape of the carbide. Fig. 3 is a plan view looking down upon the valve with the flaps closed.

In the drawings, the numeral 1 designates the tank or containing vessel which is preferably cylindrical and provided with a cone 2 and a waste cock 3, which is arranged in the center of said cone so that the water and residue may be drained off when so desired. The tank is supported upon legs 4, as shown or in any other suitable manner and arranged within the tank is an inverted bell 5, which is held confined in the tank by means of the adjustable stops or abutments 6 which are clamped on the walls of the containing vessel by screws 7. The bell is provided with a central raised portion or dome 8 upon which is supported the carbide receptacle 9, the carbide receptacle being supplied

with a suitable closure 10 and the throttle valve 11 which serves as a closure to the open lower end of the receptacle, threaded supporting or ring 12 is engaged in the bottom of the carbide receptacle and depending from the lower face of the annulus are eyes or pivot lugs 13 and hinged between the said pivot lugs are flap valves 14, these flaps being usually 3 in number and having their meeting edges beveled as at 15, so as to make close joint one with the other.

Each of the flaps or valves is provided with an outstanding arm 16, to which are connected the links 17, the lower ends of links being connected to the circular float 18. The bottom of the carbide receptacle is also preferably of conical formation as shown to facilitate the discharge of the carbide. In order to prevent any leakage of the carbide around the pivoted connection and to prevent the carbide from interfering with the operation of the flaps of the throttle valve depending guards 19, are arranged on the inner periphery of the annulus and cover the joints between the adjacent flaps. The gas is led off from beneath the bell and gas dome through the service pipe 20. In the operation the throttle valve is about half way open, thus allowing the carbide to be fed outward in a steady stream, but when for any reason there becomes a shortage of gas, the water which is forced out from in the bell and overflows the top of the bell, again flows back up in the bell and raises the float. The float rises, opens the flaps of the supply or throttle valve and carbide is allowed to again drop into the reservoir until sufficient gas is generated to expel part of the water.

I have found by experience that when the carbide falls into the water there is a tendency for the gas to be generated too quickly and to cause the flame to flare or shoot up and thus waste the carbide and also give an uneven and unsteady flame. I overcome this defect and objection by providing the ring or collar 27 which I provide with a series of vertical disposed gas escape openings 28, which permits the escape of the excess pressure and insures a steady and smooth light thus making my generator a thoroughly practical and desirable machine.

I claim;

1. A valve for gas generators, comprising in combination with an annulus having an abutting flange at one end lugs depending

from said annulus coacting flaps pivoted to said lugs, guards depending from the annulus to cover the joints between the flaps.

2. In combination with a reservoir and a gas bell therein, a carbide receptacle supported on the bell, a float in the reservoir, a service pipe leading off from the bell, an annulus secured in the bottom of the receptacle, having depending lugs, flaps pivoted to said lugs, guards depending from the annulus to cover the joints between the flaps, leverage arms outstanding from the flaps, and links connected between said arms and the float.

3. A gas generator comprising a reservoir having a conical bottom, a waste cock in said bottom, standards for supporting the reservoir, a gas bell in the reservoir having a corrugated lower edge in contact with the inclined bottom of the reservoir, angular stops secured to the walls of the reservoir to engage the top of the bell and hold the same stationary, a service pipe leading off from the bell, a central dome on the bell and a carbide receptacle, supported thereby, in combination with and an annulus having an abutting flange at one end and mounted in the bottom of the carbide receptacle, flaps forming a closure to the carbide receptacle, a leverage arm on the flap, an annular float in the reservoir, and links adjustably connected between the leverage arms of the flaps and the float and guards carried by said annulus to cover joints between flaps.

4. A valve comprising in combination with an annulus coacting flaps pivoted to and depending from one end of the annulus and guards depending from the annulus to cover the joints between the flaps.

5. A valve comprising in combination with an annular member, coacting flaps

pivoted thereto, arms outstanding from the flaps for operating the same, and guards carried by the annular member to cover the joints between the flaps.

6. A gas generator comprising a reservoir and gas bell therein, a carbide receptacle supported on the bell, a float in the reservoir, a service pipe leading from the bell, a throttle valve carried in the bottom of the receptacle, said valve comprising an annulus, coacting flaps pivoted thereto, guards carried by the annulus to cover the joints between the flaps, leverage arms outstanding from the flaps, and links connected between said arms and the float.

7. A valve comprising in combination with an annular member, coacting depending flaps pivoted thereto, means carried by said annulus member to cover joints between the flaps and leverage arms outstanding from the flaps for operating the same.

8. A gas generator comprising a reservoir, a gas bell, a float in the reservoir, a carbide receptacle supported on the bell and a gas pressure regulating device carried by the bell and surrounding the float and a valve operatively connected with the float and embodying coacting pivoted flaps and means for covering the joints between said flaps.

9. In a gas generator the receptacle a hollow float and carbide receptacle and controlling valve composed of flaps with means for protecting joints between the flaps, and pivoted connections between said flaps and the float.

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

WILLIAM W. COZINS.

Witnesses:

WM. N. MOORE,

CHAS. K. DAVIES.