A. HENNEY.

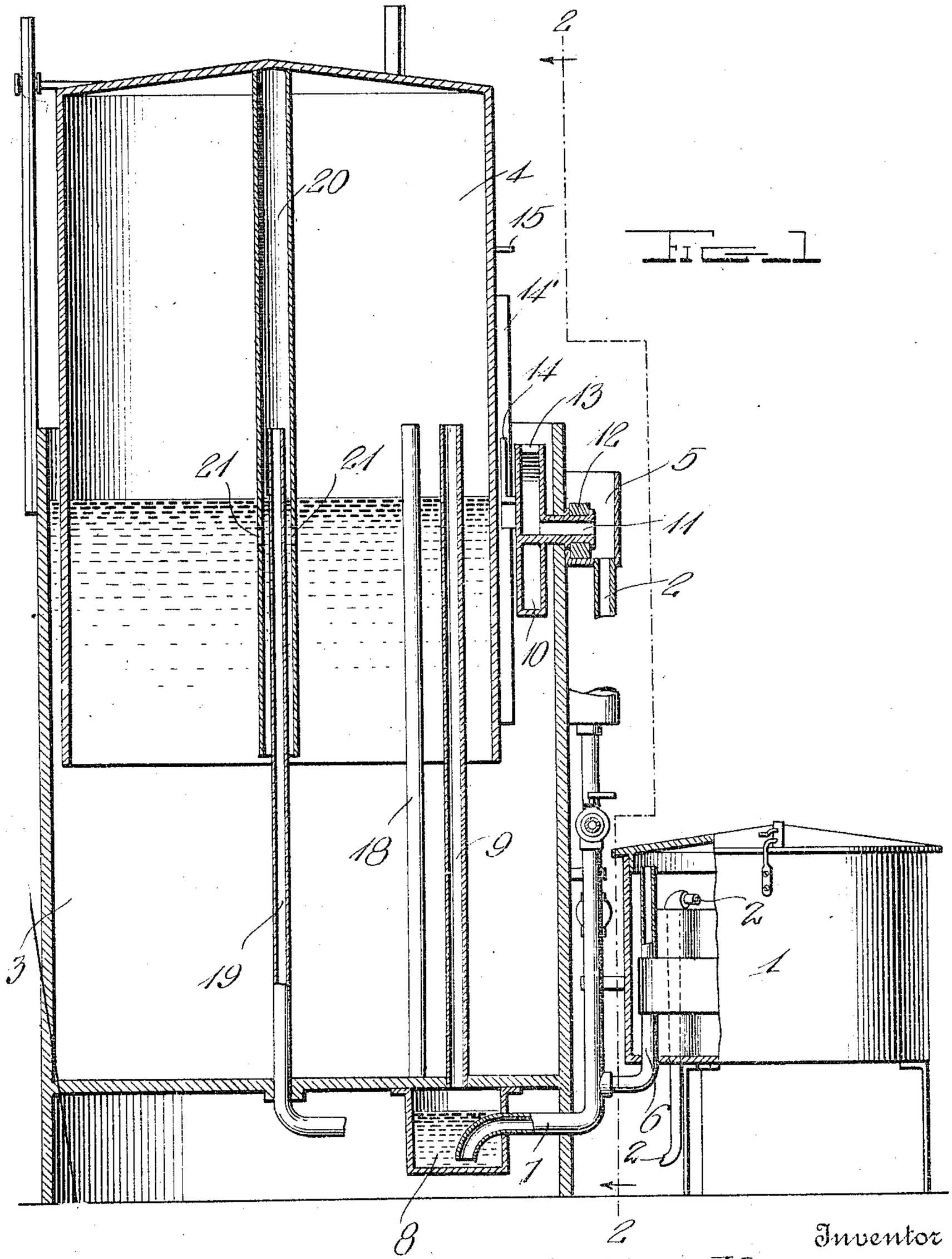
WATER FEED MECHANISM FOR ACETYLENE GAS GENERATORS.

APPLICATION FILED JAN. 26, 1911.

998,578.

Patented July 18, 1911

2 SHEETS—SHEET 1.



Witnesses

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2 SHEETS—SHEET 2.

FIG. 2

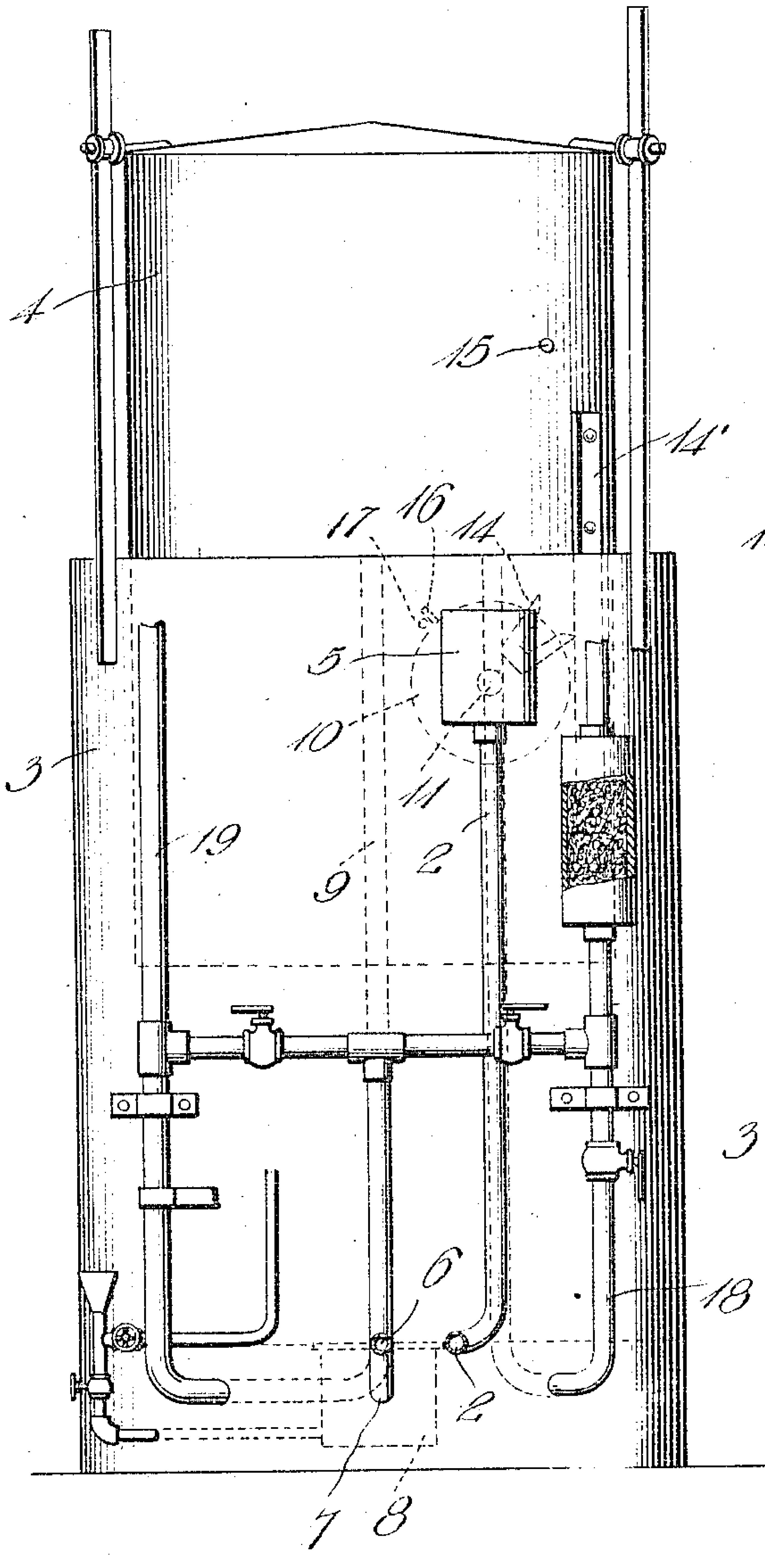


FIG. 3

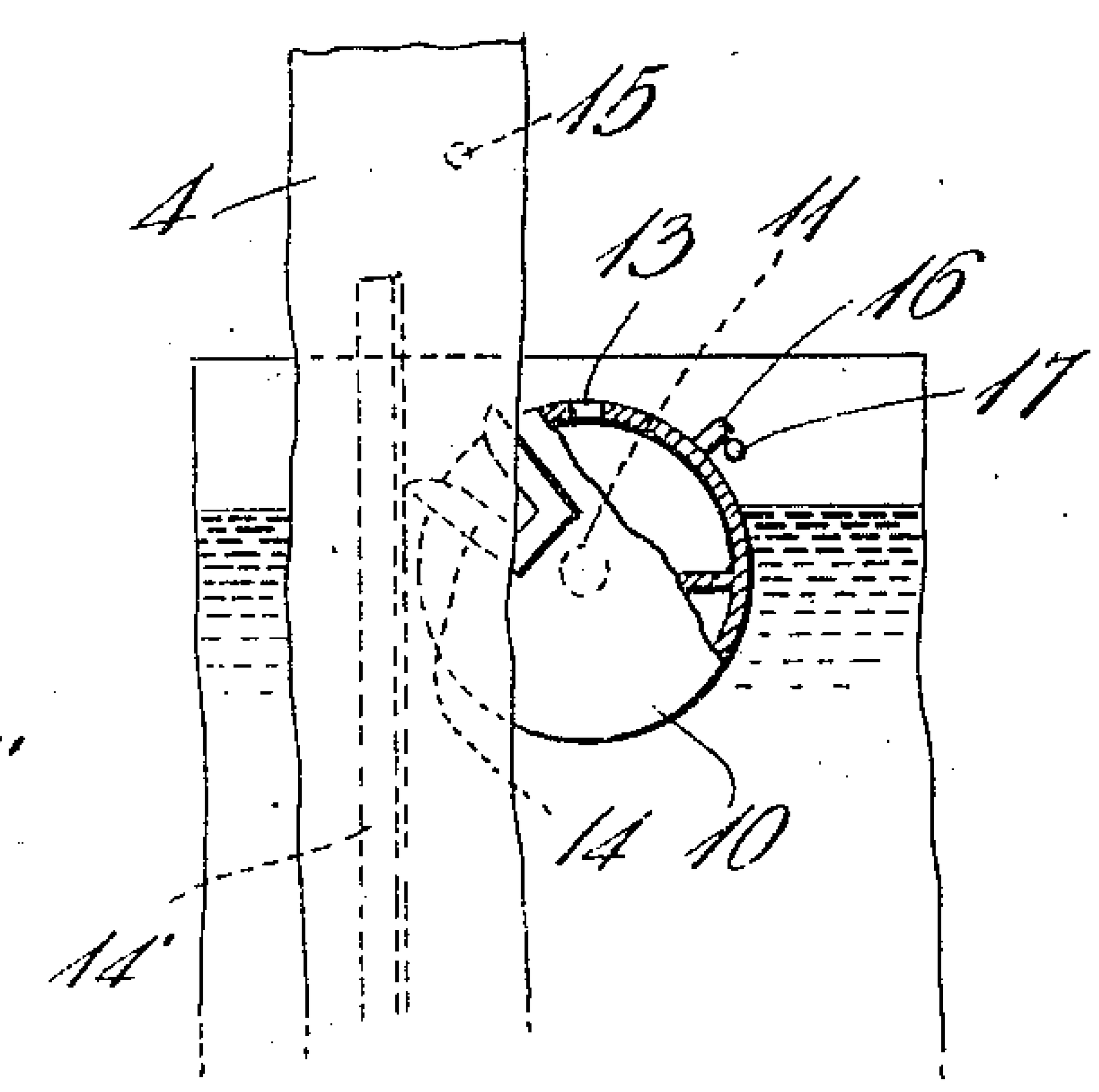
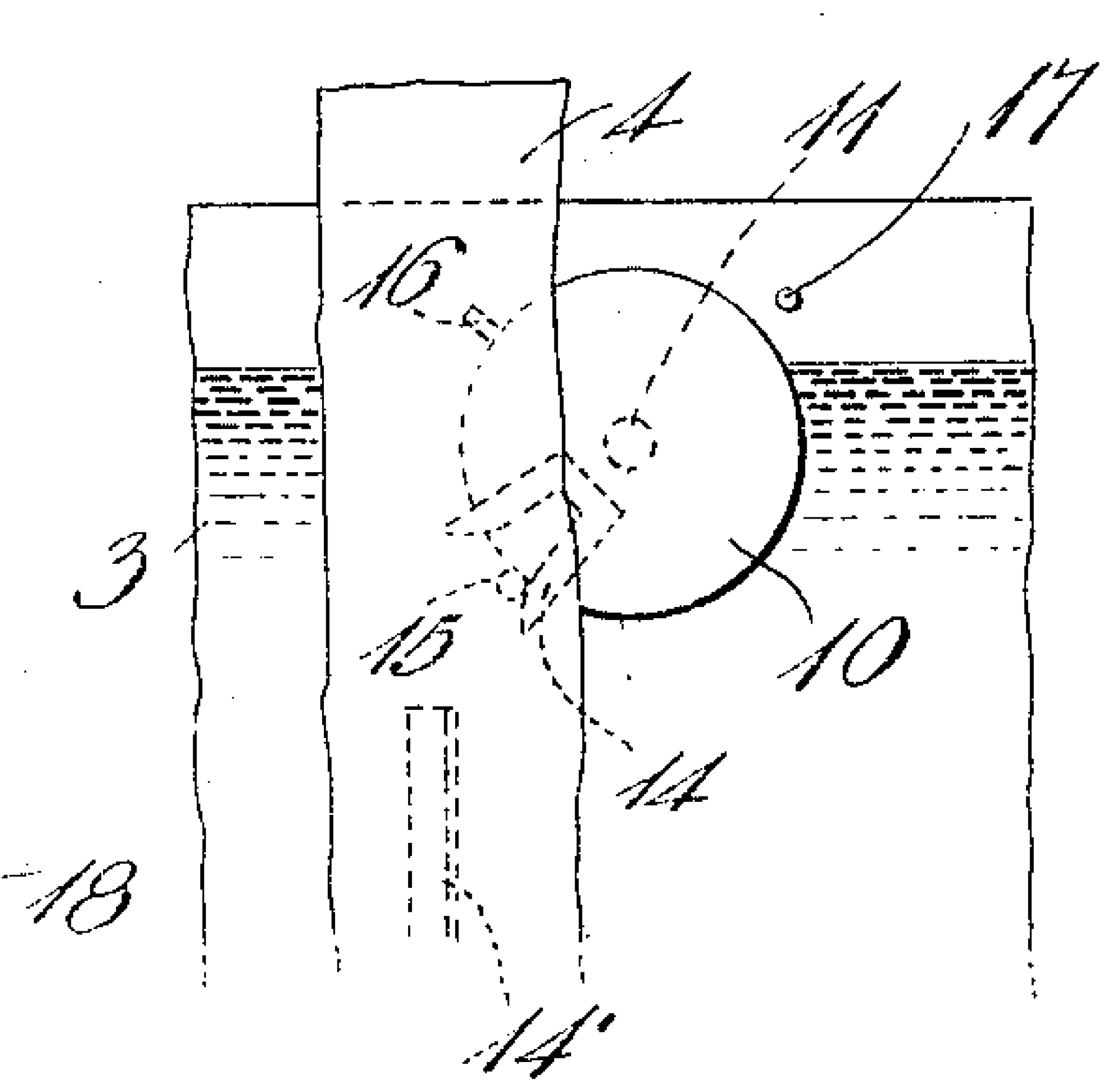


FIG. 4



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UNITED STATES PATENT OFFICE.

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WATER-FEED MECHANISM FOR ACETYLENE-GAS GENERATORS.

998,578. Specification of Letters Patent. Patented July 18, 1911.

Original application filed April 4, 1910, Serial No. 553,188. Divided and this application filed January 23, 1911. Serial No. 604,849.

To all whom it may concern:

Be it known that I, ARTHUR HENNEY, a citizen of the United States, residing at Bellevue, in the county of Huron and State of Ohio, have invented certain new and useful Improvements in Water-Feed Mechanism for Acetylene-Gas Generators; and I do 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.

This invention relates to improvements in acetylene gas generators and is a division from Patent 982962 dated Jan. 31, 1911.

The object of the invention is to provide a generator in which the water is fed at predetermined intervals to the carbid chamber to provide for the generation of the gas to replace the amount utilized.

With this and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings: Figure 1 represents a vertical section through the gas bell and water tank and through a portion of the carbid receptacle; Fig. 2 is a detail front elevation partly in section on the line 2—2 of Fig. 1 and looking in the direction of the arrow; Fig. 3 is a detail fragmentary view showing the rotary water inlet valve when in inoperative position; Fig. 4 is a similar view showing the valve in operative position.

In the embodiment illustrated, a carbid receptacle 1 is shown of any preferred construction having a water feed pipe 2 entering through the bottom thereof. A water tank 3 is preferably arranged adjacent said carbid receptacle and is preferably in the form of a cylindrical casing having a gas bell 4 mounted therein. A cup 5 is arranged on the exterior of the tank 3 near its upper end, and the upper end of the water feed pipe 2 extends through the bottom of said cup and is designed to feed water from the water chamber at proper intervals to the carbid receptacle to cause the generation of gas as fast as it is utilized. The gas generated in said receptacle 1 preferably passes through a pipe 6 and a pipe 7 and into a washer 8 and from the washer passes into a gas pipe 9 which extends upwardly and delivers the gas into the gas bell 4 which rises and falls as the gas is generated and consumed, and may be held against rotary or axial displacement by any suitable means.

Revolubly mounted in the tank 3 is a hollow disk-shaped valve 10 having a hollow shaft 11 mounted in a bearing 12 and projecting into the cup 5. This hollow valve is normally submerged in the water to above its hollow shaft and provided with an inlet opening 13 in its periphery which is above the water when the bell is raised and on its inner face is provided with a bifurcated member 14 which is designed to receive a pin or stud 15 projecting laterally from the outer face of the bell 4. This valve 10 is held against retrograde movement by a pin 16 which extends from the periphery of said valve and is adapted to engage a stop 17 projecting from the inner face of the receptacle 3.

A longitudinally disposed rib or angle iron 14′ is secured to the outer face of the bell 4 in a plane slightly out of alinement with the pin 15 and with its upper end terminating below said pin. This rib is designed to be engaged by the free end of the member 14 when the bell is in normal raised position, as shown in Figs. 2 and 3, to prevent the valve being turned while the bell is in this position.

In the operation of the apparatus, as the gas is consumed the bell 4 is lowered in the tank 3 and during its descent after the upper end of the rib 14′ has passed below the member 14 the pin 15 engages the bifurcated member 14 and turns the valve 10 to bring the inlet opening 13 thereof into communication with the water in the tank 3, which permits the water to flow through the valve out of its hollow shaft into the cup 5 and from the cup 5 to pass through the feed pipe 2 to the carbid receptacle, and on coming in contact with the carbid in said receptacle causes the generation of more gas which passes into the bell 4 which is again raised thereby. The raising of the bell 4 causes the valve 10 to be rotated into the position shown in Fig. 3, and thereby cuts off the further supply of water to the receptacle 1, the rib 14′ being again engaged with said member 14 locks it against downward turning.

The gas from the gas bell 4 passes out through a pipe 18 to the service pipe (not

shown). A pipe 19 communicating with the atmosphere extends upwardly through the tank 3 into a pipe 20 which depends from the top of the bell 4 and is provided with inlet ports 21 which are normally arranged below the water level of the tank 3. Should gas accumulate too rapidly in the bell 4 said bell will be raised a sufficient distance to bring the inlet ports 21 above the water level and the surplus gas will flow out through said ports into the pipe 20 and pass into the upper end of the safety pipe 19 from which it passes to the atmosphere or to any suitable storage receptacle (not shown).

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention claimed.

I claim as my invention:

1. In an acetylene gas generator a water tank, a gas bell movable therein, a carbid receptacle, a feed pipe discharging into the carbid receptacle, a hollow disk-shaped valve within the water tank provided with a concentrically projecting hollow shaft communicating with the interior of the valve and discharging into the feed tube, said hollow shaft being journaled in and projecting through the wall of the water tank a sufficient distance below the top of the tank to submerge the valve in the water therein to above the hollow shaft, the hollow disk having a peripheral opening, and means whereby the hollow disk valve will be rotated by the rise and fall of the bell to bring the peripheral opening above or below the water when the bell is raised.

2. In an acetylene gas generator a water tank, a gas bell movable therein, a carbid receptacle, a feed pipe discharging into the carbid receptacle, a hollow disk-shaped valve within the water tank provided with a concentrically projecting hollow shaft communicating with the interior of the valve and discharging into the feed tube, said hollow shaft being journaled in and projecting through the wall of the water tank a sufficient distance below the top of the tank to submerge the valve in the water therein to above the hollow shaft, the hollow disk having a peripheral opening, and means whereby the hollow disk valve will be rotated by the rise and fall of the bell to bring the peripheral opening above the water when the bell is raised and below the water level when the bell is lowered comprising a bifurcated bar secured to the disk with its points projecting radially beyond the periphery thereof, and a pin carried by the bell and adapted to engage between the arms of the bifurcated bar as the bell rises and falls.

3. In an acetylene gas generator a water tank, a gas bell movable therein, a carbid receptacle, a feed pipe discharging into the carbid receptacle, a hollow disk-shaped valve within the water tank provided with a concentrically projecting hollow shaft communicating with the interior of the valve and discharging into the feed tube, said hollow shaft being journaled in and projecting through the wall of the water tank a sufficient distance below the top of the tank to submerge the valve in the water therein to above the hollow shaft, the hollow disk having a peripheral opening, a bifurcated bar secured to the disk and projecting radially beyond the periphery thereof, a pin carried by the bell to engage between the arms of the bifurcated bar as the bell rises and falls, a stop to prevent over movement of the valve as the bell rises, and a bar attached to the bell out of vertical alinement with and below the pin to hold the valve against retrograde movement when the bell is raised.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ARTHUR HENNEY.

Witnesses:

C. A. HEYMAN,

A. G. AIGLER.