

J. M. FLITCRAFT.
ACETYLENE GAS GENERATOR.
APPLICATION FILED FEB. 8, 1909.

967,357.

Patented Aug. 16, 1910.

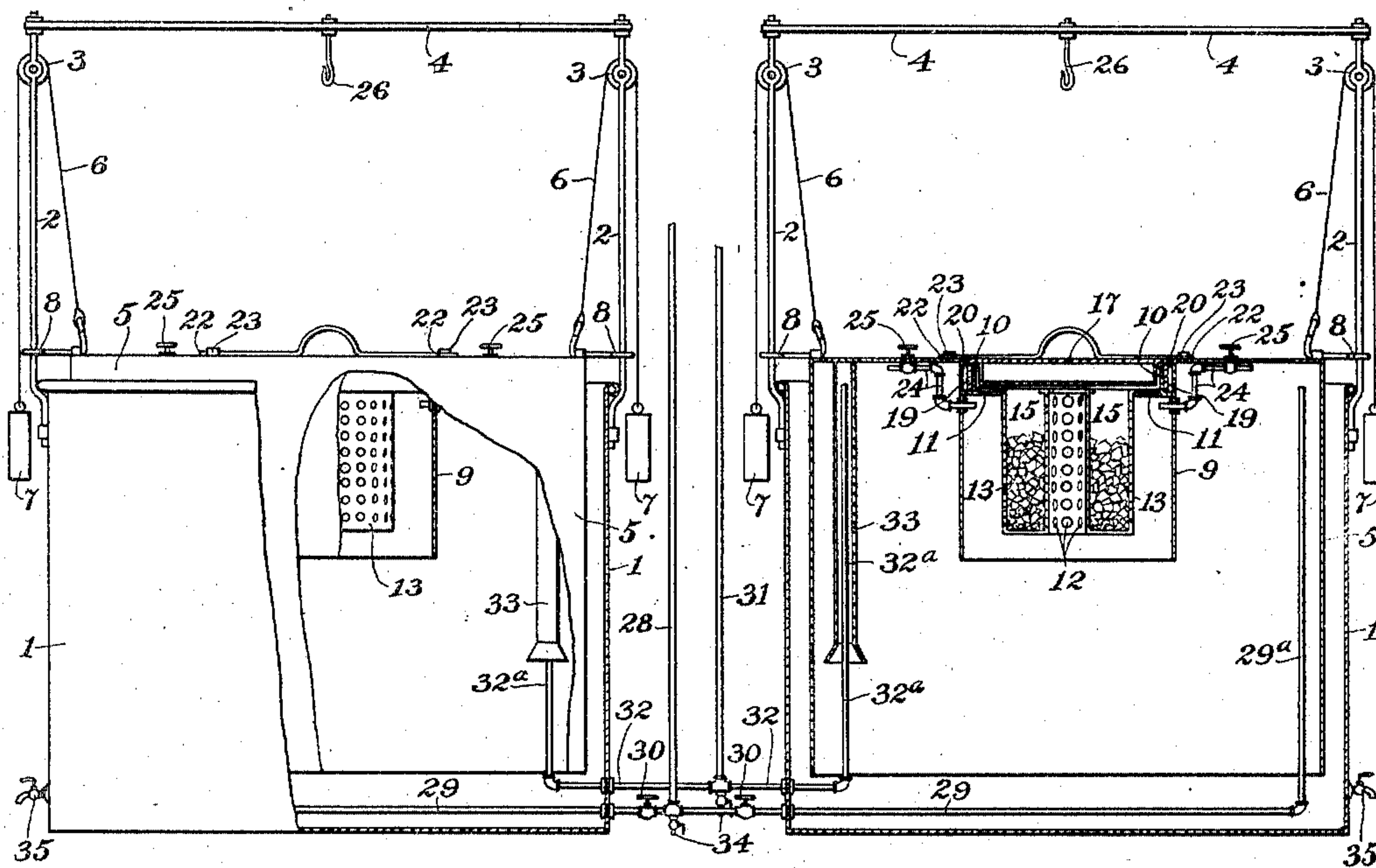


Fig. 1

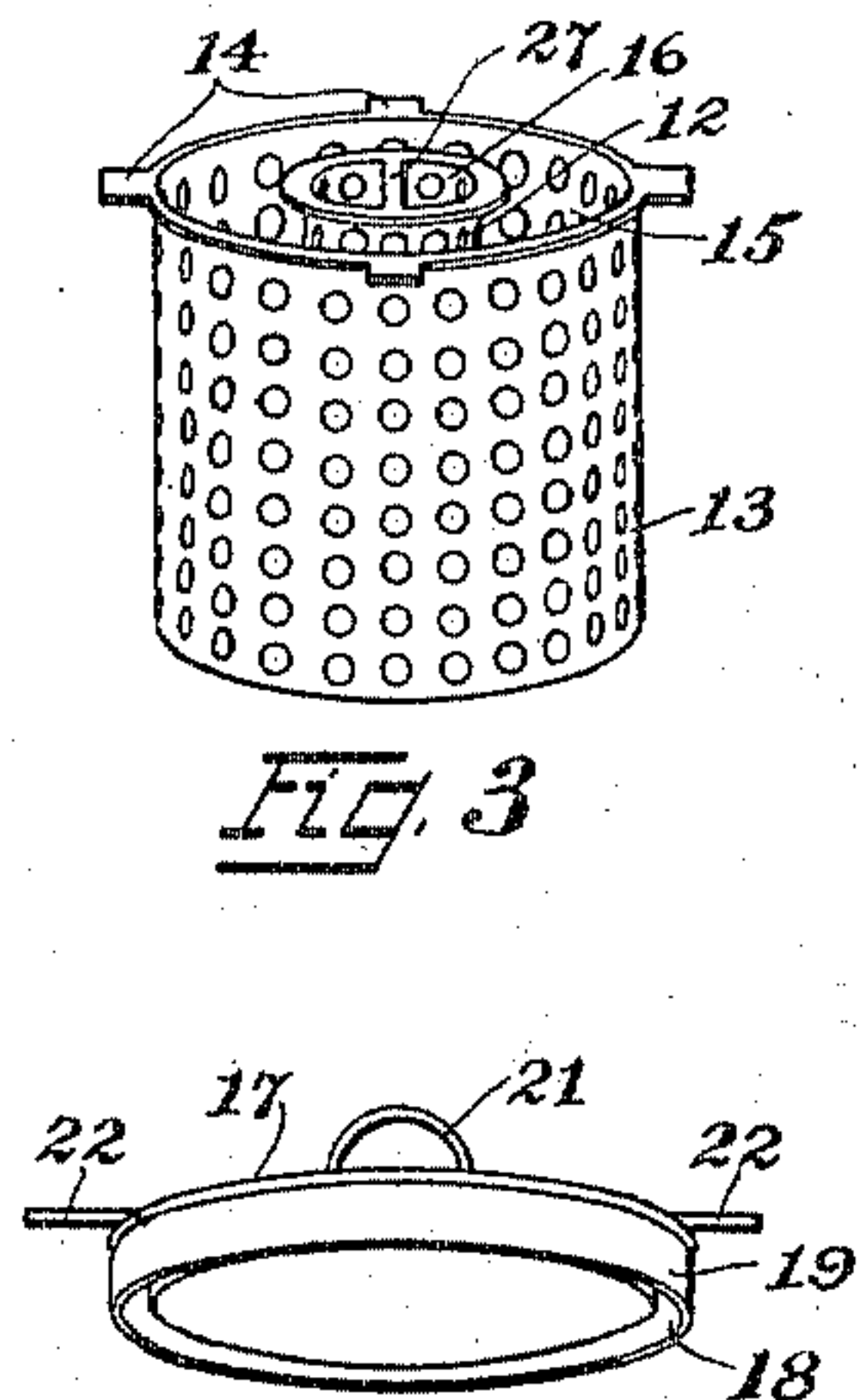


Fig. 3

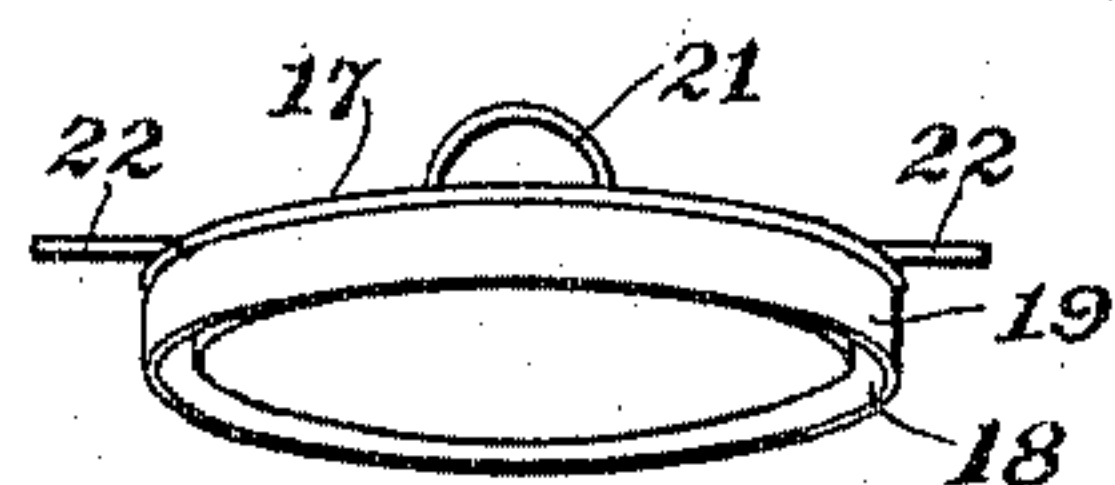


Fig. 4

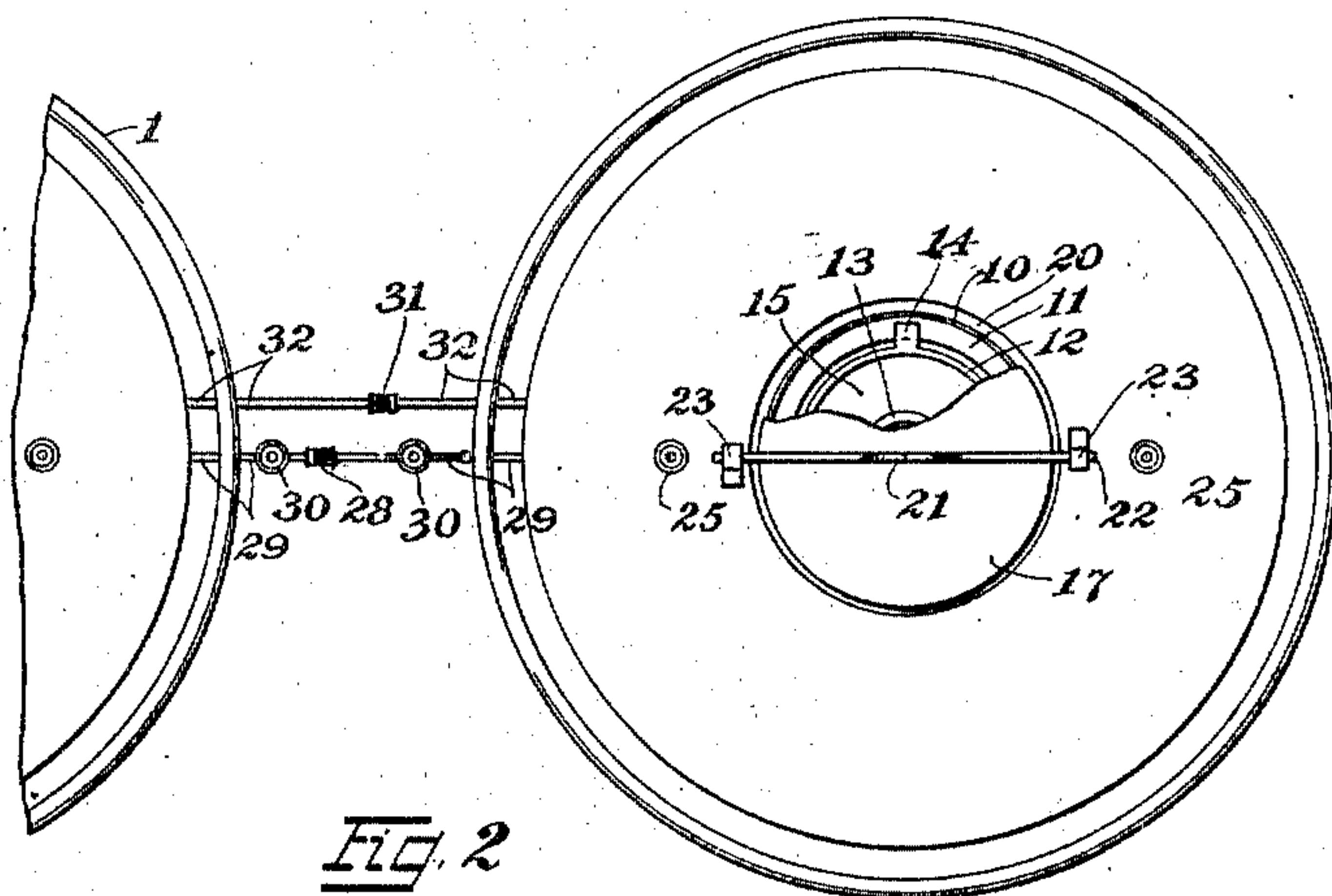


Fig. 2

Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN M. FLITCRAFT, OF ELKHART, IOWA, ASSIGNOR OF ONE-HALF TO J. W. FRYER, OF OSCEOLA, IOWA.

ACETYLENE-GAS GENERATOR.

967,357.

Specification of Letters Patent.

Patented Aug. 16, 1910.

Application filed February 8, 1909. Serial No. 476,626.

To all whom it may concern:

Be it known that I, JOHN M. FLITCRAFT, a citizen of the United States, residing at Elkhart, in the county of Polk and State of Iowa, 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, the primary object of the invention being to provide a generally improved generator of this class of simple, cheap, and efficient structure better adapted to its intended purposes than any other device of the same class with which I am acquainted.

The subsidiary objects of the invention may be stated as follows: first: to provide a generator adapted to supply a larger or smaller number of lights or burners and to automatically regulate the generation of gas according to the number and capacity of lights or burners in use at any time. To this end I employ an automatically reciprocating gas-holder which is filled and depleted so as to maintain a substantially uniform pressure and constant supply of gas by automatically regulating the generation of gas according to the amount consumed. Second: to provide a gas generator which may be refilled or replenished with calcium carbide without in any way disturbing or depleting the supply of gas contained in the main gas-bell. To this end I employ an auxiliary gas-bell carried within said main gas-bell and provided with a removable carbide-receptacle. Third: to provide a generator adapted to supply a substantially constant pressure of gas while being refilled or recharged with calcium carbide. To this end I employ two gasometers connected to a common service pipe and adapted to be connected to or disconnected from each other and with or from the common service pipe according to the gasometer being replenished at a given time.

With the above mentioned ends in view, the invention in its present embodiment, consists in the novel construction, arrangement and combination of parts, hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claim.

Referring to the accompanying drawings, forming a part of this specification, Figure 1, is a side view partly in side elevation and

partly in longitudinal section of a generator constructed in accordance with my invention. Fig. 2, a top plan view of the same, a portion of one of the generators being broken away. Fig. 3, is a perspective view of the removable carbide-receptacle or container. Fig. 4, a perspective view of the removable lid or cover for the carbide-receptacle.

Similar numerals of reference designate like parts throughout all the figures of the drawings.

The improved acetylene gas generator, preferably, comprises companion fluid containing tanks 1, preferably arranged and connected as shown and hereinafter more fully described. Each fluid containing tank is provided with a pair of vertically arranged upwardly-extending guide-bars 2, provided at their upper ends with pulleys 3, and connected by means of a cross supporting bar 4. Each tank contains a main gas-bell 5, counterbalanced therein by means of cords 6, passing over the pulleys 3, and provided with counter-weights 7. Each main gas-bell is provided with a pair of guide-eyes 8, slidably-mounted on the guide-bars 2, and the counter weighted gas-bell is sealed by having its lower edges submerged in the fluid contained within the tank so that it will rise as the gas is driven into it and sink as the gas is withdrawn by consumption.

The main gas-bell carries an auxiliary gas-bell 9, depending from its top and, preferably, arranged near the center thereof as shown. The auxiliary gas-bell is provided about its upper edges with an upwardly-extending annular flange 10, and an inwardly-extending annular flange 11. A carbide-receptacle or holder made up of inner and outer pervious or foraminous walls 12, and 13, respectively, is removably carried within the auxiliary gas-bell by means of radial lugs 14, (see Figs. 3, and 4) which take over the inner annular flange 11. The inner and outer walls 12, and 13, provide an intermediate annular carbide-chamber 15, and a central opening 16. The carbide receptacle or holder is closed and sealed by means of a lid or cover 17, said lid or cover being adapted to normally close the annular carbide chamber 15, and central opening 16, and to water seal the same together with the auxiliary gas-bell 9, by being provided with an annular recess 18, (see Fig. 4) adapted

to receive and contain the upwardly-extending annular flange 10, (see Fig. 1) the annular rim 19, of the lid or cover fitting over the outside of the annular flange 10, leaving
 5 an annular external water sealing recess 20, outside of the rim 19, as shown most clearly in Figs. 1, and 2, of the drawings. The lid or cover 17, is provided with a cross-bar forming a loop handle 21, and oppositely-
 10 disposed projecting lugs 22, and the said lid or cover is adapted to be secured by having said projecting lugs engage with and take under oppositely-disposed hooks 23, in a well known manner and as shown most
 15 clearly in Fig. 2, of the drawings.

The gas is generated in a well known manner by the contact of the carbid contained in the carbid chamber with the fluid contained in the tank 1, and when so generated
 20 ated is adapted to pass into the main gas-bell 5, through the medium of the gas-conduit pipes 24, leading from the auxiliary gas-bell 9, into the top portion of the main gas-bell 5. The gas conduit pipes 24, are
 25 provided with valves 25, extending through the top of the main gas-bell, and when it is desired to remove the carbid-receptacle or holder to replenish the same with fresh calcium carbid communication between the
 30 main and auxiliary gas-bells 5, and 9, may be cut off by means of the valves 25, after which the lid or cover 17, may be removed and the carbid-receptacle lifted out of the auxiliary gas bell. If desired the carbid-
 35 receptacle may be hung upon the hook 26, of the cross-bar 4, by means of the cross-bar 27 (see Fig. 3), at the top of said carbid-receptacle.

The main gas-bells 5, are adapted to
 40 communicate with each other and with the service pipe 28, by means of horizontal outlet pipes 29, having vertical pipe portions 29^a, terminating in the upper portions of the fluid containing tanks and above the
 45 extreme upper level of the fluid contained therein. The outlet pipes 29, are provided with valves 30, by means of which communication between the gas-bells 5, and service pipe 28, may be turned on or off as
 50 the exigencies of service and replenishing with calcium carbid may demand.

As a means for providing for the escape of an over supply of gas when the main gas-bells have been driven upwardly to their extreme capacity an escape pipe 31, is provided communicating at its lower end with
 55 branch pipes 32, said branch pipes 32, being provided with upwardly-extending vertically arranged pipe portions 32^a, normally closed by means of depending bell-pipe
 60 valves 33, carried by the main gas-bells 5.

The depending pipe valves 33, take or telescope over the upwardly-extending pipe portions 32^a, and as shown most clearly in Fig. 1, of the drawings, are normally submerged in the fluid contained in the main gas-bells 5. By this arrangement it is obvious that when the main gas-bells 5, have been driven upwardly to such a point that the lower ends of the pipe-valves 33, are
 70 carried out of the fluid, that the gas will be permitted to escape through the pipe valves 33, and out through the branch pipes 32, and escape pipe 31.

The valve cocks 34, at the T-portions of the service and escape pipes 28, and 31, permit of the withdrawal of any water which may accumulate therein. The faucets 35, secured to the fluid containing tanks 1, enable the fluid to be withdrawn when desired.
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From the foregoing description, taken in connection with the accompanying drawings, the advantages and operation of my invention will be readily understood.

Having thus described an embodiment of my invention, what I claim and desire to secure by Letters Patent is,—
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An acetylene gas generator, comprising companion generators each consisting of a tank, a main gas-bell, an auxiliary gas-bell carried by said main gas-bell in the upper portion thereof and provided with an annular external water sealing recess, said auxiliary gas-bell having its lower edges terminating above the median portion of said main gas-bell, a removable carbid-receptacle mounted in said auxiliary gas-bell and comprising inner and outer foraminous walls providing an intermediate carbid-chamber and a central opening, a lid or cover having its rim normally resting in said water-sealing recess, valved gas-conduits normally connecting said auxiliary gas-bell with said main gas-bell, a common service-pipe communicating with the main gas-bell of each of said companion generators, a common escape-pipe connected to the tank of said generators and provided with vertical portions terminating within the main gas-bells and above the auxiliary gas-bells and carbid-receptacles, and depending bell-pipe-valves carried by said main gas-bells and taking over and normally closing the vertical portions of said escape pipe by being submerged in the fluid in said tanks below
 90
 95
 100
 105
 110
 115 said auxiliary gas-bells.

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

JOHN M. FLITCRAFT.

Witnesses:

BETHANIA M. CLARK,
 VIOLET E. WALTIRE.