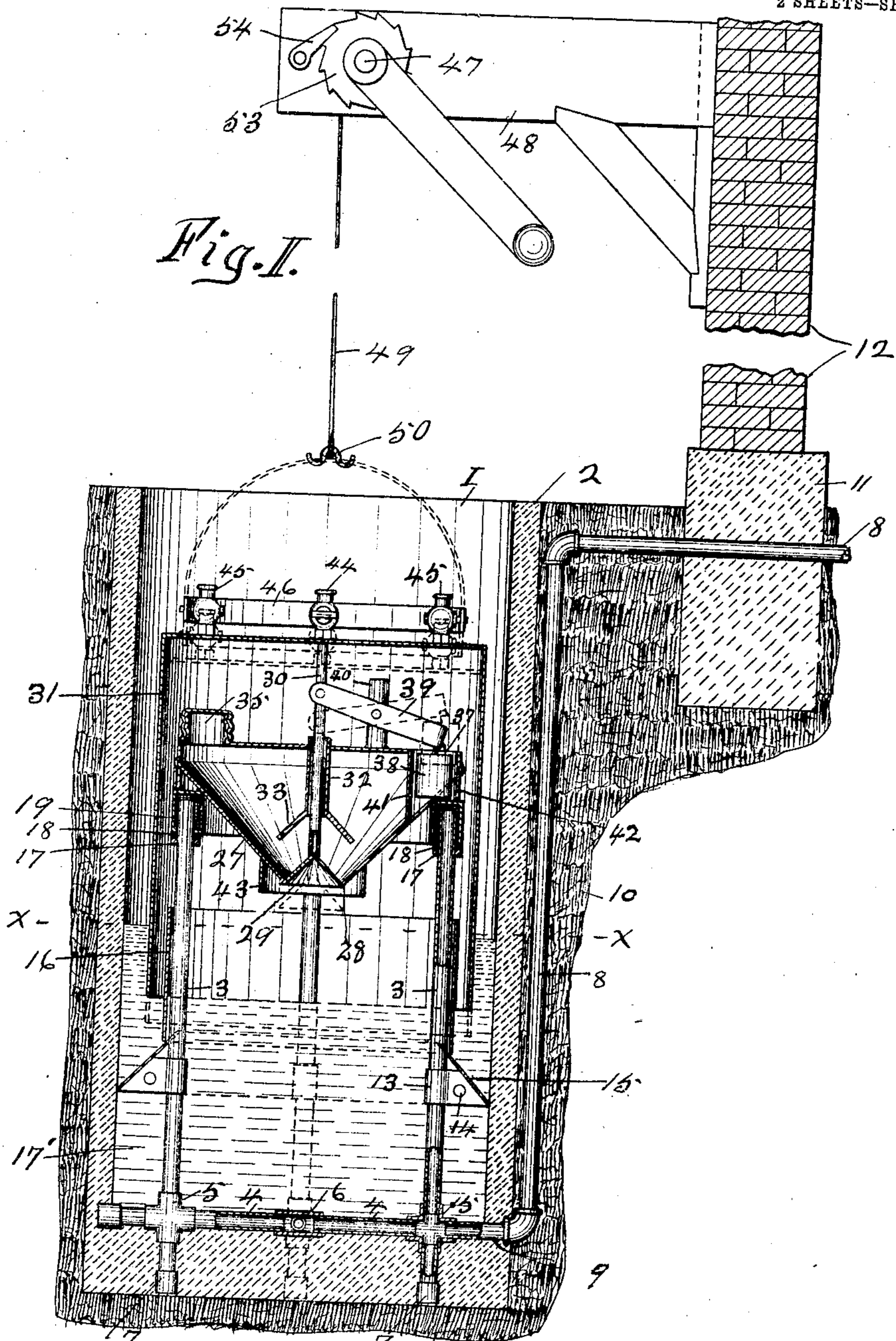


912,572.

C. R. JENNE.  
ACETYLENE GENERATOR.  
APPLICATION FILED JULY 6, 1908.

Patented Feb. 16, 1909.

2 SHEETS—SHEET 1.



WITNESSES:

*J. M. Dickens*

*Augusta Vibery*

*Chancy R. Jenne* INVENTOR.

BY *Chapin & Denny*

*His* ATTORNEYS

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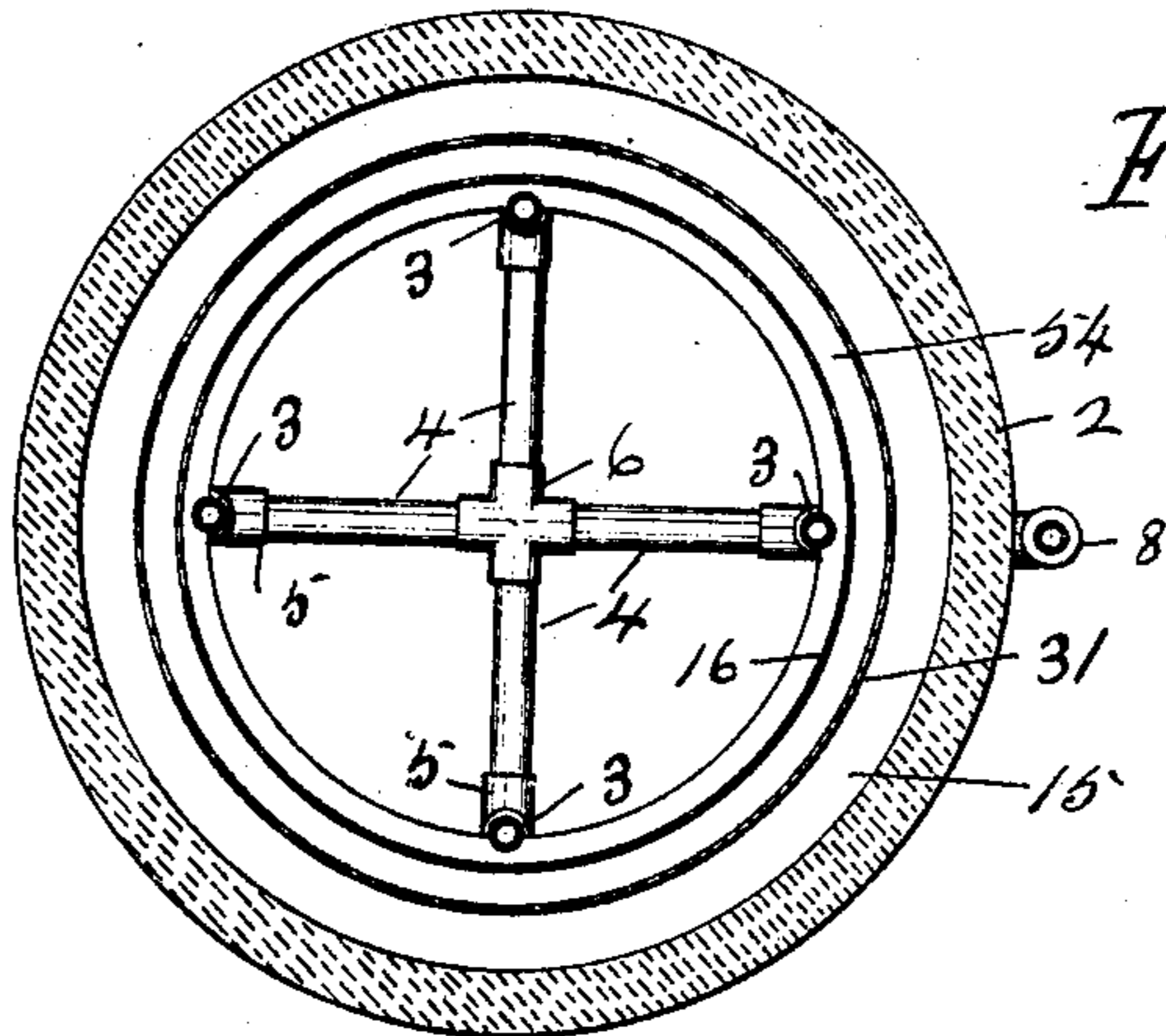


Fig. 2.

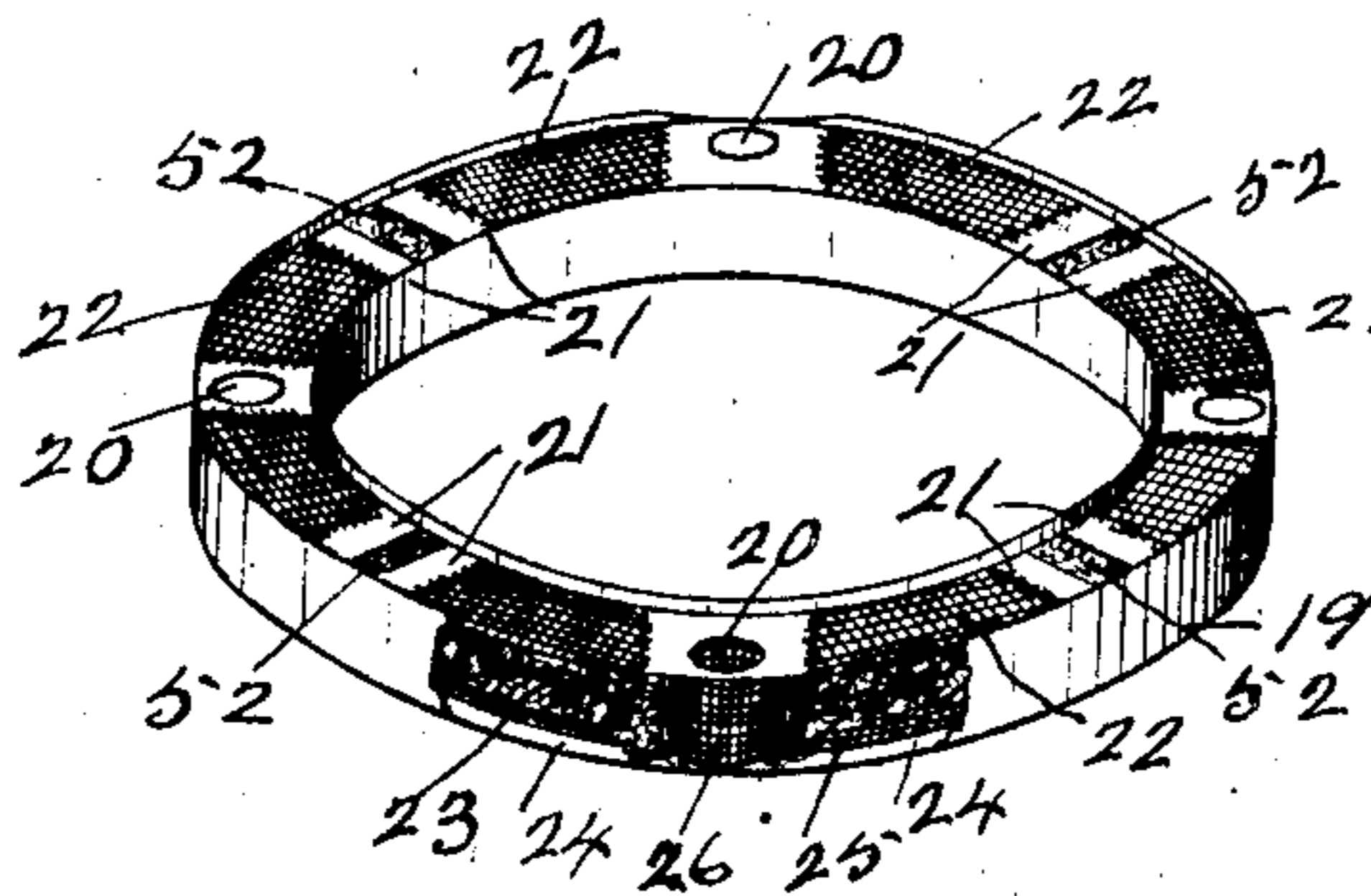


Fig. 3.

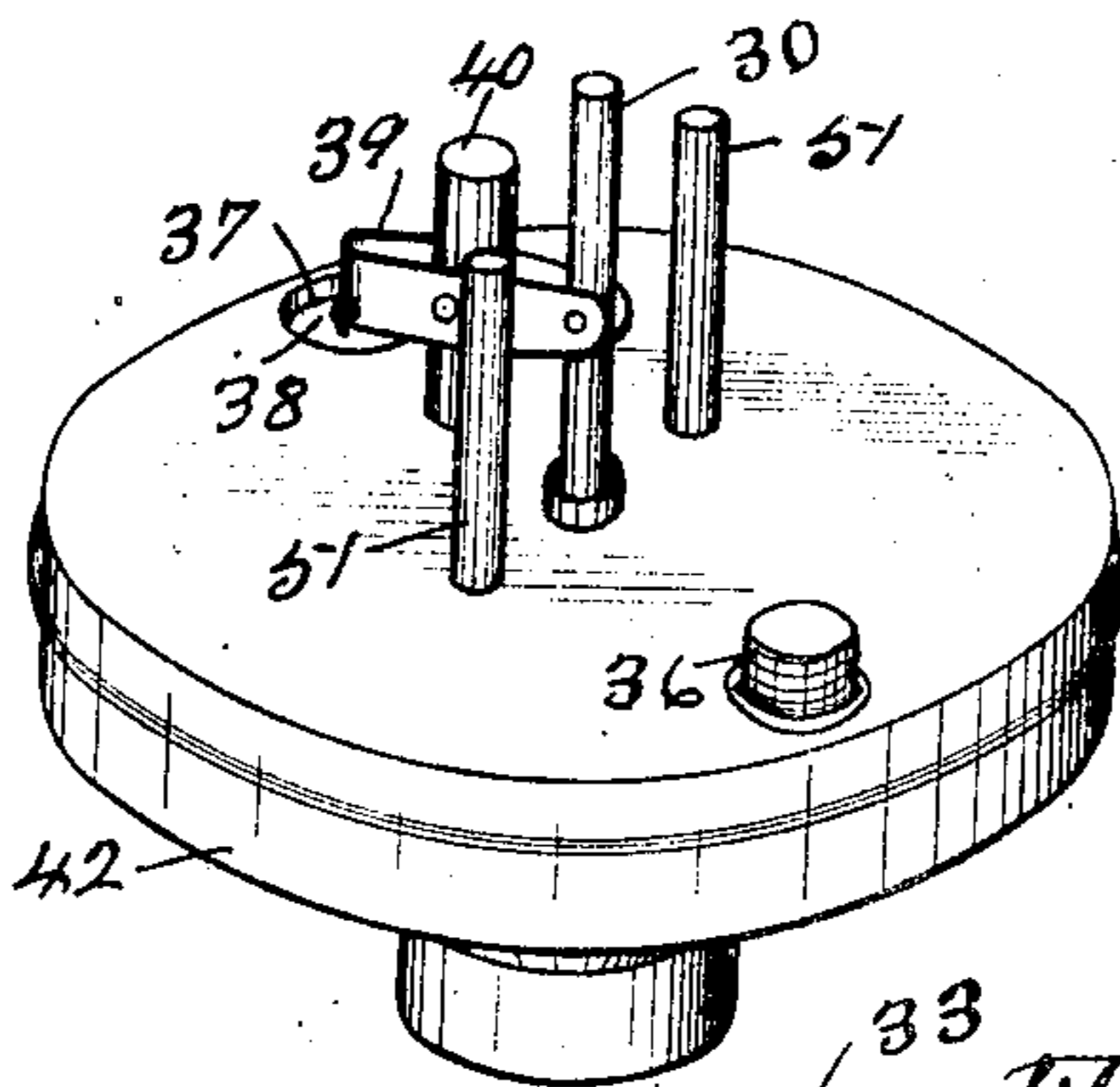


Fig. 4.

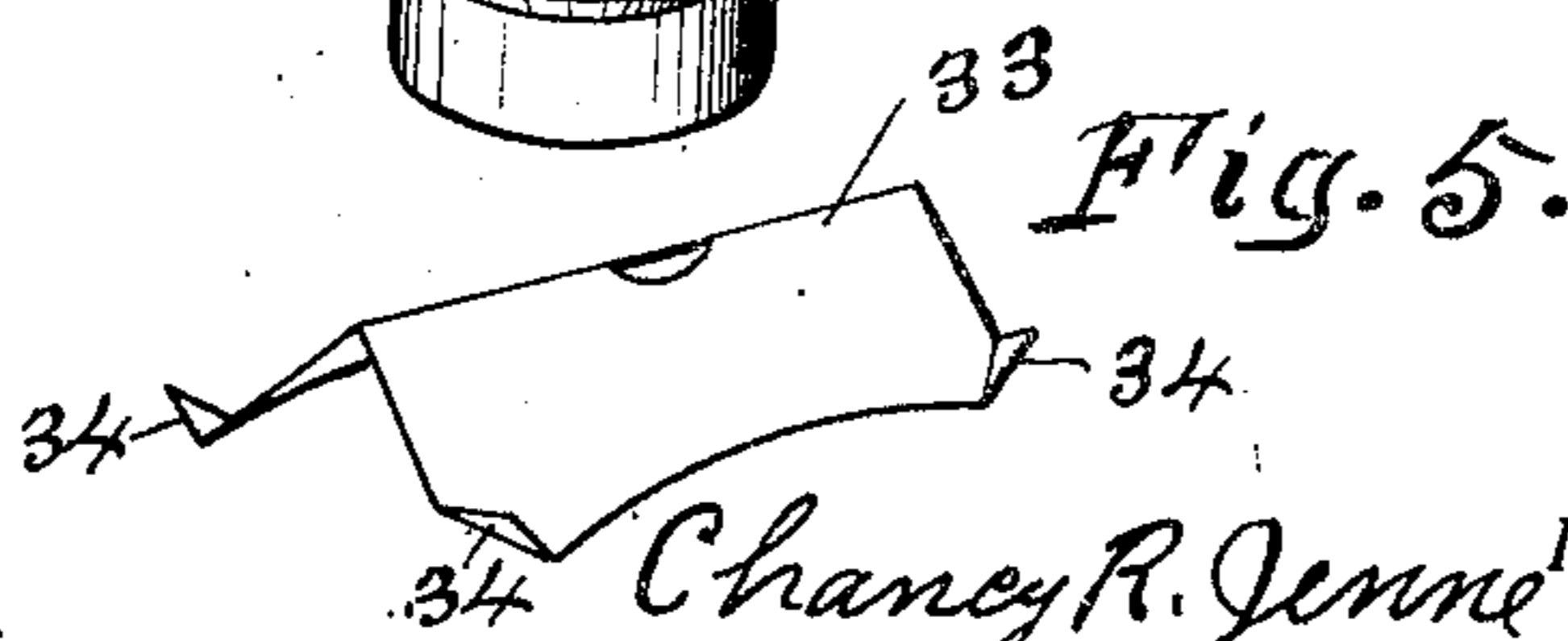


Fig. 5.

WITNESSES:

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*Chaney R. Jenne* INVENTOR.

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# UNITED STATES PATENT OFFICE.

CHANCY R. JENNE, OF FORT WAYNE, INDIANA.

## ACETYLENE-GENERATOR.

No. 912,572.

Specification of Letters Patent.

Patented Feb. 16, 1909.

Application filed July 6, 1908. Serial No. 441,944.

*To all whom it may concern:*

Be it known that I, CHANCY R. JENNE, a citizen of the United States, residing at Fort Wayne, in the county of Allen, in the State of Indiana, have invented certain new and useful Improvements in Acetylene-Generators; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in acetylene generators.

The primary object of my present invention is to provide a comparatively cheap, simple and efficient acetylene generator, positive in action, reliable in use, easily and readily recharged, and so located and arranged relative to the building to be lighted as to be absolutely safe under all conditions of service.

My invention consists of a cement-lined, normally closed pit located outside of and away from the walls of the building, and adapted to constitute a water-containing chamber, and containing the entire apparatus; a plurality of upright gas pipes fixed in the said pit and connected with the service pipe, and adapted to support the generating apparatus; a floating gas-holder having novel means for facilitating its removal in recharging the apparatus; a carbid-hopper arranged within the gas-holder and provided with a novel feeding mechanism; means for directing the generated gas to the interior of the floating gas-holder; and means for filtering the gas or its impurities in its passage from the gas-holder to the service-pipe.

The principal novel features of my invention are the means for facilitating the removal of gas-holder in recharging the apparatus; the carbid hopper; the carbid feeding means; and the construction and coöperative arrangement of the gas filtering means.

Similar reference numerals indicate like parts in the several views of the drawings in which—

Figure 1 is a vertical section of my invention in position in a cement lined pit, also in vertical section, showing its arrangement relative to the outside wall of the building to which the gas is supplied, and also showing

one form of means for removing the gas-holder in recharging. This figure also shows in dotted outline the relative positions of the gas-holder, the feed-valve, and its operating mechanism, and also shows in dotted lines the gas-holder bail in its engagement with the means for removing the gas-holder to recharge the apparatus. Fig. 2 is a cross-section of my invention taken on the line  $x-x$  of Fig. 1, showing the concentric arrangement of the operative parts, and the relative arrangement of the supporting means. Fig. 3 is a bottom perspective view of the filtering means partly broken away to show the internal construction thereof. Fig. 4 is a perspective view of the carbid hopper showing the means for supporting the floating gas-holder when empty, and showing the valve operating mechanism. Fig. 5 is a perspective detail view of the means for shielding the feed-valve from the weight of the contents of the hopper.

My invention is arranged in a pit 1 of proper dimensions, preferably about three feet in diameter and about seven feet in depth, for an ordinary dwelling house. This pit is preferably circular in contour as shown in Fig. 2, and is lined at its bottom and sides with cement 2, and is located outside of the building it is used to illuminate, and a few feet from the wall thereof, as shown in Fig. 1. This pit is provided with any suitable watertight cover, not shown. In this pit, at a suitable distance from the walls thereof, are arranged a plurality of vertical gas-pipes 3 united at their lower ends by the horizontal pipes 4 by means of suitable unions 5, and to each other by the union 6. These gas-pipes 3 may have the vertical extensions 7 which are closed at their lower ends, and which are embedded in the cement lining of the pit bottom, as seen in Fig. 1. The pipes 4 may also be wholly or in part embedded in the cement lining if desired to more efficiently preserve the same. These pipes 4 are connected to a proper service pipe 8 by means of the pipe 9 and the adjacent union 5, which service pipe passes upward through the soil and through a suitable opening in the foundation 11 of the walls 12 of the building.

On the upright pipes 3 at a proper distance from the ends thereof are mounted the collars 13, Fig. 1, which are then rigidly fixed in position by tightening the screws 14 in the

ends thereof. On the beveled ends of these collars is loosely and removably mounted the annular guide 15 whose inner edge is notched to receive the pipes 3, and whose outer edge fits tightly and firmly against the adjacent inner face of the cement lining 2 of the pit and is thereby adapted to direct the gas as it is generated into the open bottom of the floating gas-holder, and to prevent its escape upward through the annular space between the gas-holder and the walls 2 of the pit.

An open ended cylindrical casing 16 of proper height is loosely mounted on the guide 15 and aids in directing the gas as it is generated in the water 17, upward into the gas-holder hereafter described, and also guides the particles of carbid toward the center of the generating chamber or pit 1, and within the annular guide 15 to prevent its escape, as before described.

On the upright pipes 3 near the open upper ends thereof are adjustably and removably mounted the metal collars 17 in any suitable manner. On these collars 17 respectively are placed the rubber gaskets 18 for the purpose hereafter described. On the upper open ends of these pipes 3 and resting upon the gaskets 18 is loosely and removably mounted my improved means for filtering the moisture and other impurities out of the gas, which consists of an annular casing 19 whose inner and outer vertical walls are substantially concentric, and whose upper face is tightly closed, but whose lower face is provided with a suitable number of vertical openings 20 to loosely but snugly receive the upper ends of the pipes 3. Substantially midway of these openings 20 I preferably arrange a pair of fixed radial stiffening strips 21 properly spaced apart. Between these strips and the openings 20 are rigidly fixed the wire netting 22 or other proper openwork to freely admit the generated gas into the interior of the casing which is filled with cotton waste 23, Fig. 3, except a small annular space 24 from which the cotton waste is separated by a suitable strip of wire netting 25, thereby providing a free passage for the filtered gas after it has passed through the cotton waste, to the upper ends of the pipes 3 which it enters through the wire netting 26 which surrounds the same. The collars 17 and the gaskets 18 are so placed on the pipes 3 as to leave a suitable space between the upper face of the casing 19 and the upper ends of the pipes 3 to permit the filtered gas to freely enter such pipes from which it passes downward to and then upward through the service pipe. The space 52 between the strips 21 forms an opening through which the cotton waste is inserted in position to fill the filter casing 19. The inner and outer vertical sides of this casing 19 preferably extend slightly below the lower wire-netting face thereof to protect the cotton waste filling thereof from

getting wet in replenishing the apparatus with water.

The carbid hopper 27 is of conical form and has a central discharge opening 28 in the bottom thereof which is adapted to be closed by a downwardly opening cone valve 29 having an upwardly extended valve stem 30 which is adapted to be actuated by its engagement with the lower face of the upper closed end of the gas-holder 31 when the supply of gas therein is insufficient to support the same, thereby opening the valve for the feeding down of a new supply of carbid.

When in its normal or initial position the gas-holder 31 rests securely upon the upright posts 51, Fig. 4, which are fixed to the upper face of the hopper 27, and hold the feed-valve 29 open by its impingement upon the upper end of the valve stem 30. The valve stem 30 passes loosely through the tubular guide 32 whose upper end preferably projects slightly above the closed top of the hopper 27 and is rigidly fixed thereto. To the lower end of this guide 32 is rigidly fixed the valve shield 33, of any proper contour, having its upturned corners 34 soldered to the adjacent inner face of the hopper, Figs. 1 and 5, thereby leaving suitable openings at its ends and side to permit the carbid to feed downward, but at the same time this shield protects the valve 29 from the weight of the carbid in the hopper, which ordinarily weighs from fifty pounds upward, and would otherwise tend to open the valve prematurely, and even prevent the proper and secure closing of the same in use. The top of this hopper has a suitable opening 35 to admit the carbid, which opening is closed by a proper screw-top 36, and has a vertical opening 37 to admit the weight 38 which is pivotally suspended from the horizontal lever 39 which is pivotally fulcrumed at or near the middle of its length to the upright post 40 fixed on the top of the hopper, and has its other end pivotally connected to the valve-stem 30 at a suitable distance below the free end thereof, Fig. 4. The opening in which the weight 38 rests passes through the hopper and is separated from the carbid chamber by a suitable circular wall 41.

The hopper 27 has a pendent peripheral flange 42 adapted to support the hopper in position by resting upon the upper face of the filter casing 19, Fig. 1. The hopper 27 is provided upon its lower face with a pendent annular flange 43 which surrounds the valved discharge opening therein and extends somewhat below the same and thereby serves to arrest the condensed moisture upon the outer face of the hopper and conducts it downward and away from the valve.

The gas holder 31 normally rests upon the upper free end of the valve stem 30, which

by its weight overcomes the gravity of the weight 38 and thereby opens the feed valve 29 by forcing the stem 30 thereof downward, as shown in dotted outline in Fig. 1. The upper closed end of the gas-holder 31 has a valved opening 44 adapted to receive any proper removable gas burner when it is desired to test the gas to see if it is of a proper quality to turn into the service pipe for use; and also has a pair of valved openings 45 which are opened for the admission of air to the interior thereof when it is desired to remove the same for the purpose of recharging the apparatus. A suitable bail 46 has its opposite ends secured to the valves which thus control the openings 45, whereby when the bail is down in its normal position as shown in full lines in Fig. 1, the valves are closed, and when the bail is elevated to the position shown by dotted lines in the same figure, these valves will be open, and, of course, will so remain until the bail is returned to its normal position.

As the gas-holder in large machines is quite heavy it is desirable to employ a suitable mechanical aid in removing the same for recharging the apparatus, and for that purpose I mount a windlass 47 in suitable supports 48 which may be fixed in the wall 12 on which windlass is wound a suitable rope 49 having a hook 50 upon its free end adapted to engage the bail 46. This windlass is provided near one end thereof with a ratchet wheel 53 and a coacting pawl 54 adapted to secure the windlass in any desired position.

The operation and manner of employing my invention thus described is obvious and briefly stated is as follows: The operator first places a proper quantity of water in the pit 1, after which the casing 16, the filtering device 19, the hopper 27 and the gas-holder 31 are all mounted in position as described, the hopper having been previously filled with carbid particles. As the weight of the gas-holder normally rests upon the upper end of the posts 51 and by its impingement on the upper end of the valve-stem 30 it will force the valve 29 open and permit the carbid to feed downward into the water by gravity through the openings at the ends and sides of the shield 33, which supports the weight of the contents of the hopper. As the gas is generated, in a well understood manner, it rises upward within the guide 15 and the casing 16, and is thus directed into the gas-holder where it passes through the annular space 54 to the gas-space above the hopper where it elevates the gas-holder when a sufficient quantity of gas has been generated, to relieve the valve-stem 30 of its impingement thereon after which the feed-valve will be automatically closed by the gravity of the weight 38, thereby shutting off the feeding of any more carbid until the supply of gas in the gas-holder is sufficiently exhausted to

permit it to resume its initial position upon the upper end of the posts 51, thereby opening the feed-valve for a fresh supply of carbid as before. The gas enters the filter 19 through the wire netting 22 and passes through the cotton waste 23 into the annular space 24 and thence through the wire netting 26 into the open upper ends of the gas-pipes 3 through which it passes downward to the service-pipe 8. It is thus seen that my invention is simple in construction, convenient to assemble and charge, positive and reliable in its feeding action, and absolutely safe in use.

Having thus described my invention and the manner of employing the same what I desire to secure by Letters Patent is:

1. An acetylene generator consisting of a cement lined pit forming a water holding generating chamber; upright gas-pipes fixed in the chamber and connected to the service main; a gas fitting means consisting of an annular casing detachably mounted on the upper open ends of the gas-pipes, and filled with a proper filtering material; a carbid hopper of conical contour having a central discharge opening in the bottom thereof, a surmounted support for the valve operating mechanism, and means for supporting the gas-holder in its normal position; a downwardly opening valve controlling the discharge opening, and provided with an upwardly extended stem; weighted means for normally securing the valve in its closed position; means for shielding the valve from the weight of the contents of the hopper; a floating gas-holder inclosing the above described mechanism and adapted to open the feed valve by its own weight when the supply of gas therein is sufficiently reduced; and means for directing the gas as generated into the gas-holder.

2. The combination in an acetylene generator of a water holding generating chamber; upright gas-conducting pipes fixed in the chamber; an annular casing filled with gas filtering material and forming a conducting medium between the interior of the gas-holder and the gas conducting pipes, and removably mounted upon the upper ends of such pipes; a carbid hopper having a bottom discharge opening and removably mounted on the annular casing, and provided with surmounted means for normally supporting the weight of the gas-holder; a downwardly opening carbid feeding valve normally closing the said opening and provided with a vertical stem which is extended upwardly through the hopper; means for normally securing the feed valve in its closed position; a floating gas-holder arranged in the generating chamber and inclosing said feeding and filtering mechanism, and adapted by its gravity to actuate the feed-valve, and provided upon its upper closed end with means

for permitting the admission of air when its removal is desired for recharging the apparatus.

3. In an acetylene generator a water-holding generating-chamber; upright gas-pipes fixed in the chamber and adapted to support the operating mechanism; an annular gas-filtering device detachably mounted on the upper end of the said pipes and whose interior is in open communication therewith; a carbid hopper mounted on the filtering device, provided with a central discharge opening and a fixed shield above said opening adapted to support the weight of the contents of the hopper; a downwardly opening feed valve normally closing the discharge

opening and having an upwardly extended stem; means for securing the valve in position; a floating gas-holder within the generating chamber and inclosing the operating mechanism; means for opening the feed valve under the conditions described; and means for guiding the gas when generated upward into the gas-holder.

Signed by me at Fort Wayne, Allen 25 county, State of Indiana, this 2nd day of July, 1908.

CHANCY R. JENNE.

Witnesses:

WATTS P. DENNY,  
AUGUSTA VIBERG.