No. 885,361. PATENTED APR. 21, 1908.

I. MUMMA.

ACETYLENE GENERATOR.

APPLICATION FILED APR. 28, 1906.

8 SHEETS—SHEET 1.

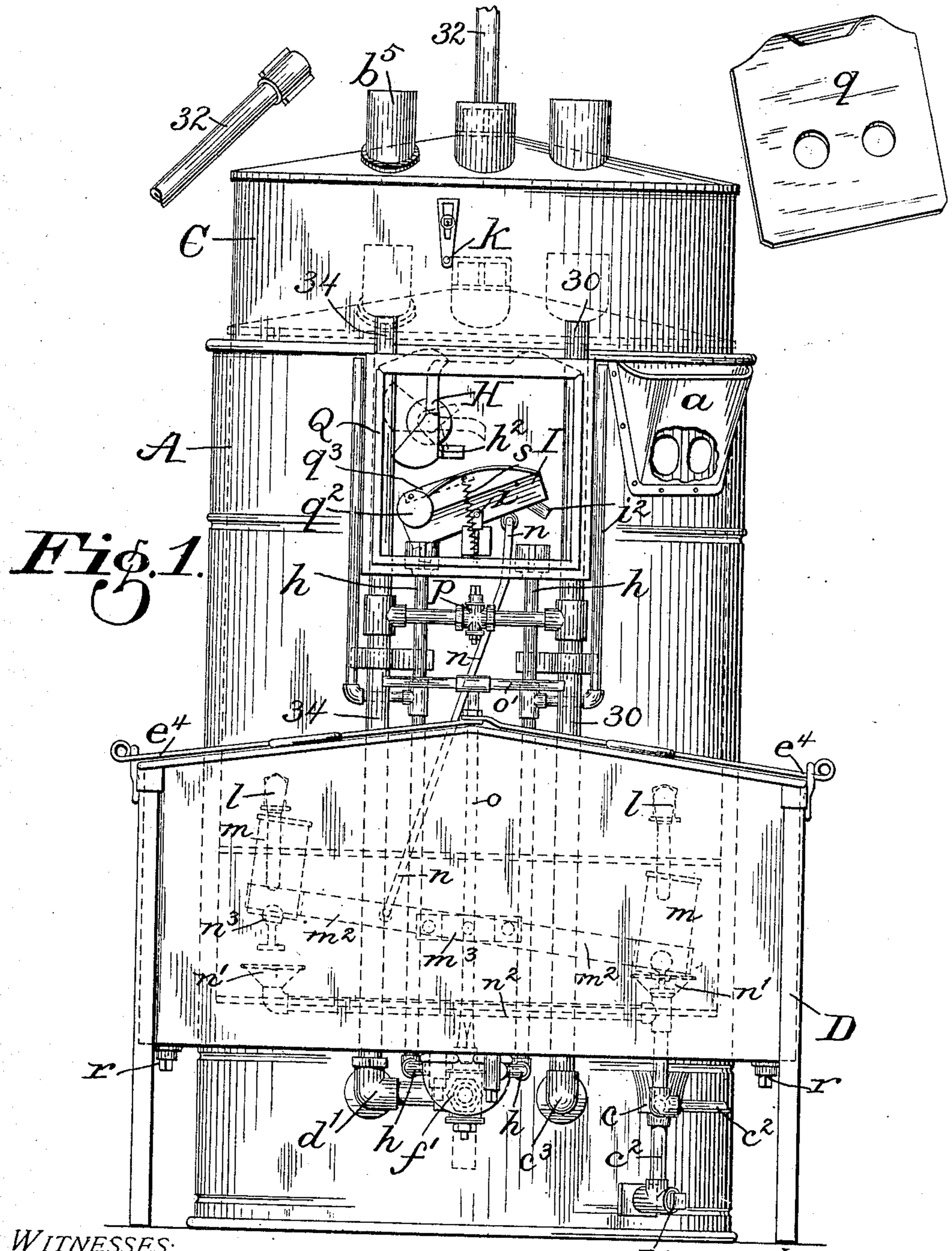

Fig. 1.

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8 SHEETS—SHEET 2.

Fig. 2.

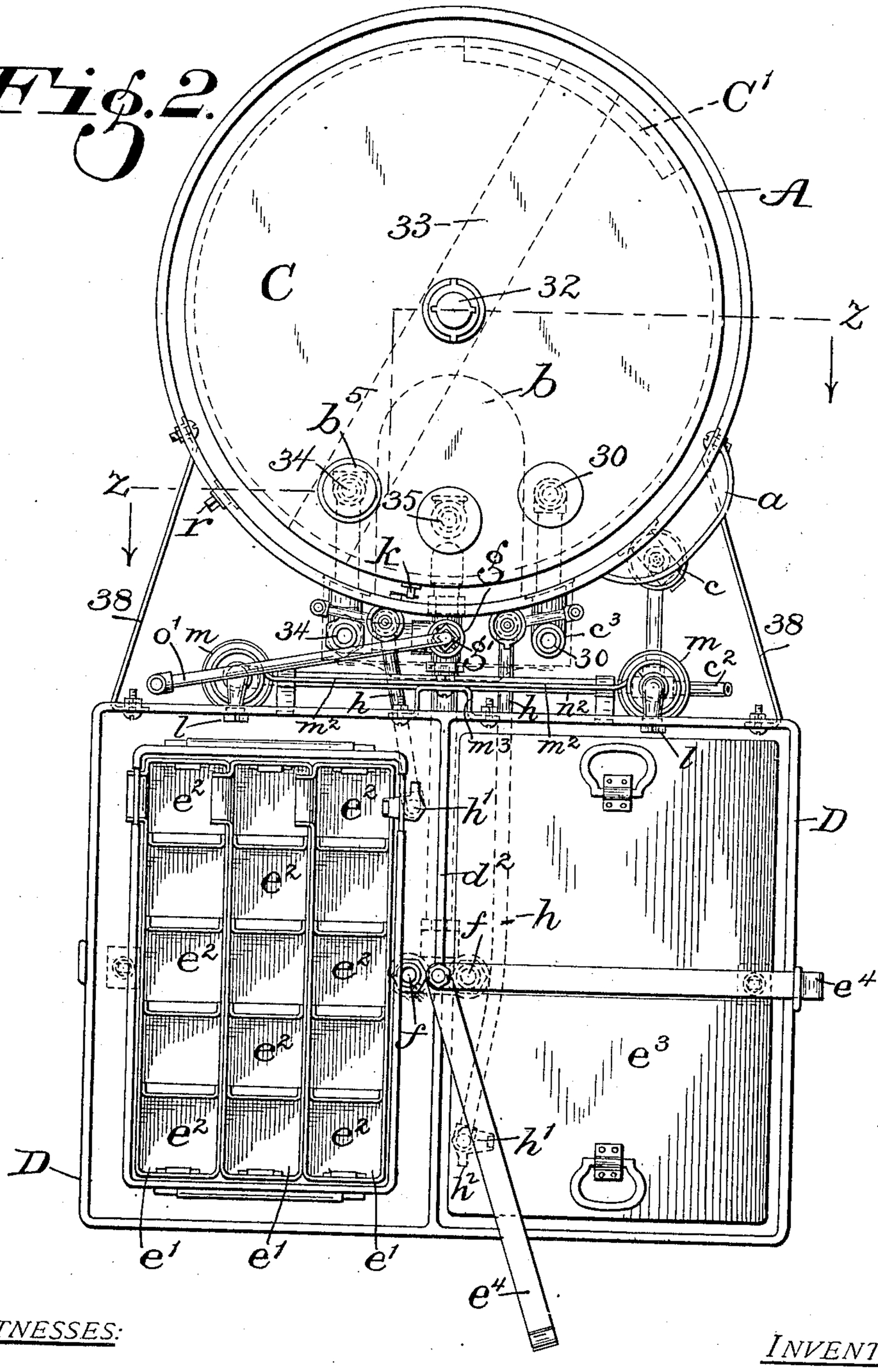

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Fig. 3.

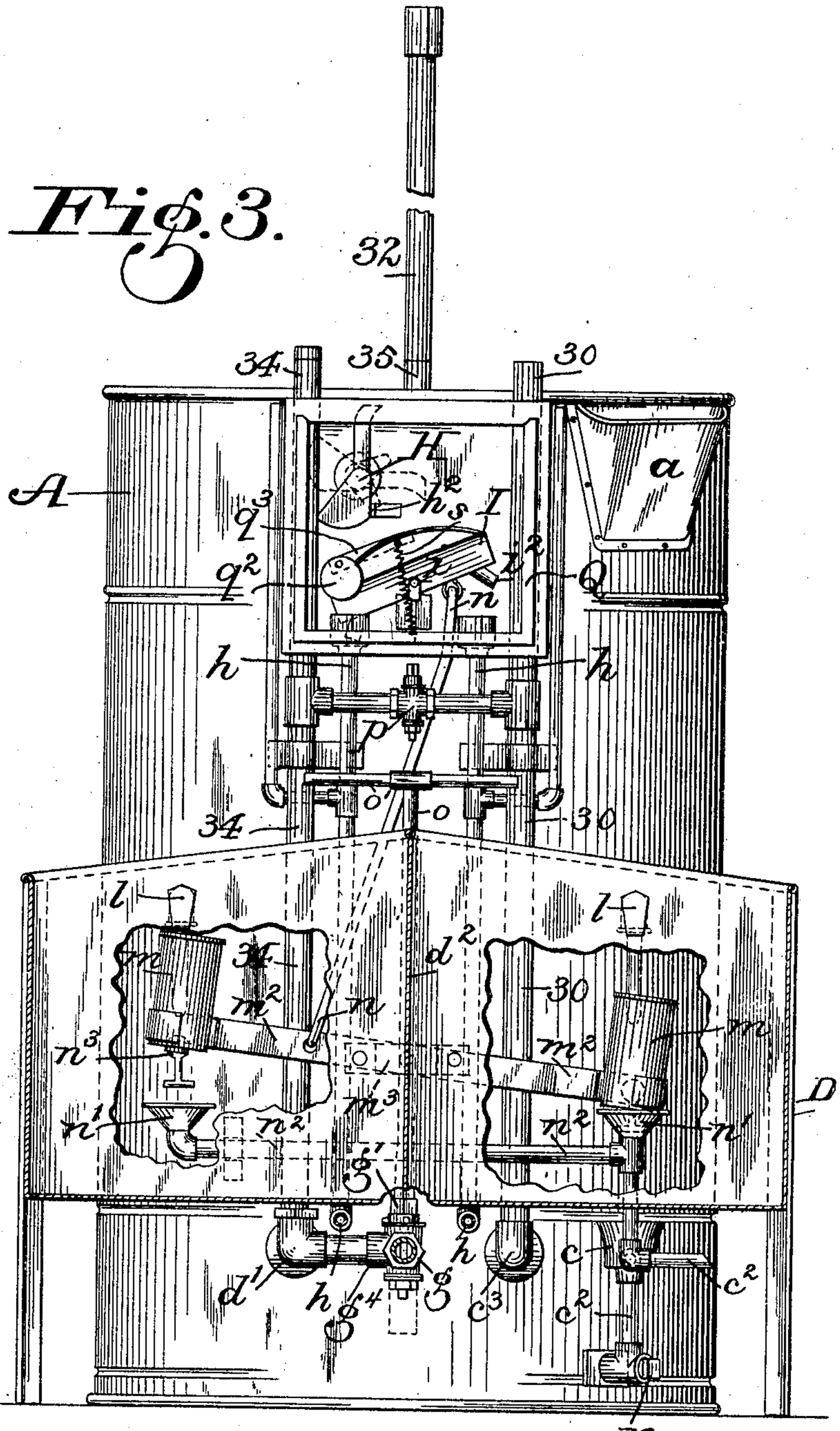

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Fig. 4.

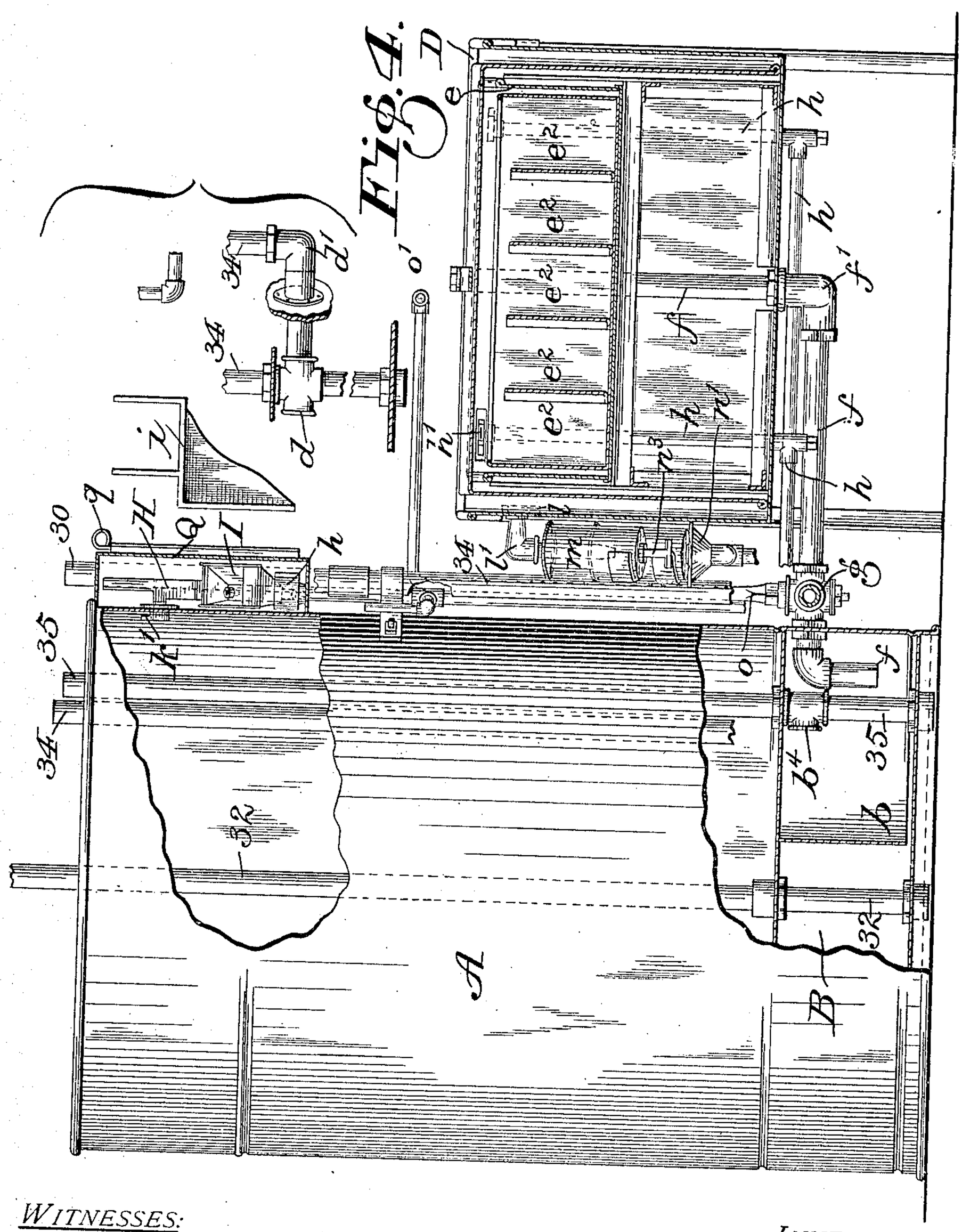

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Fig. 5.

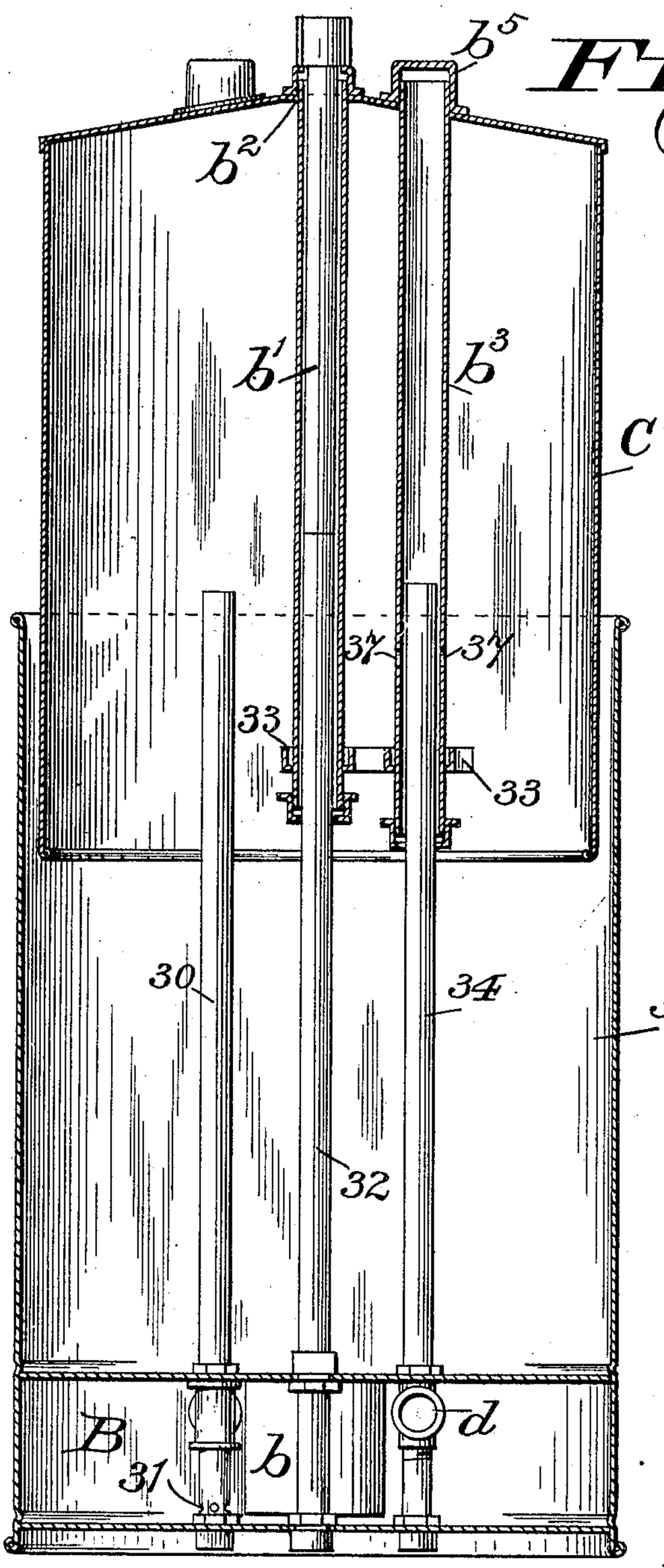
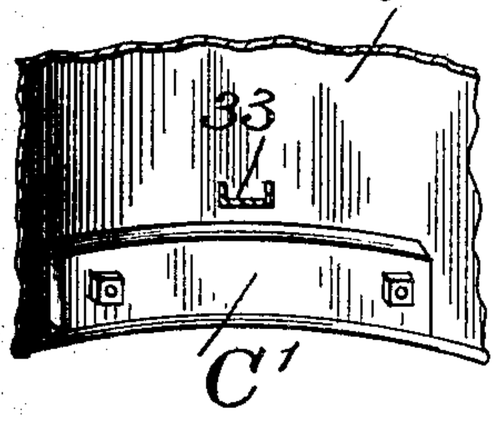


Fig. 6.



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8 SHEETS—SHEET 6.

Fig. 7.

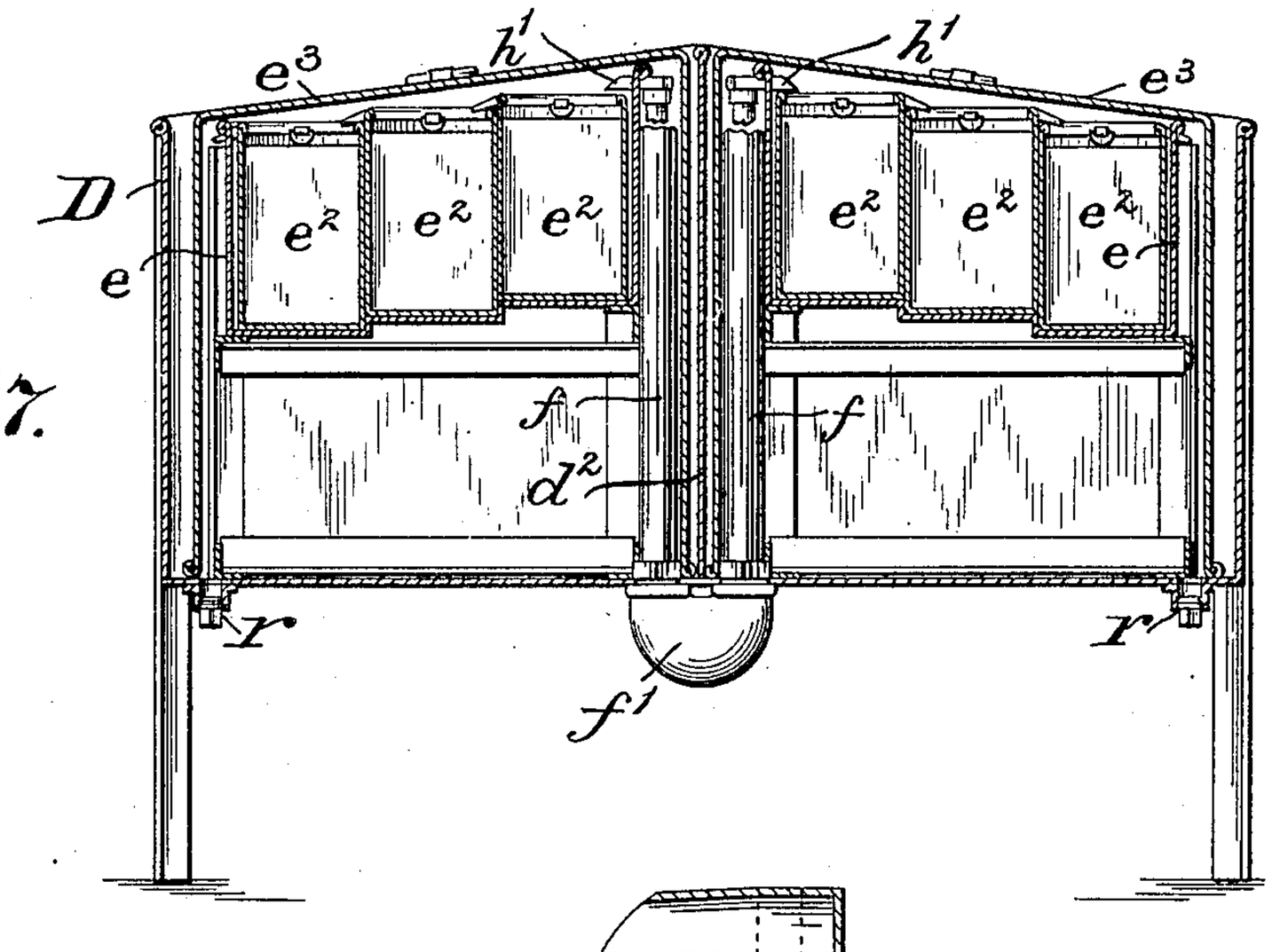


Fig. 10.

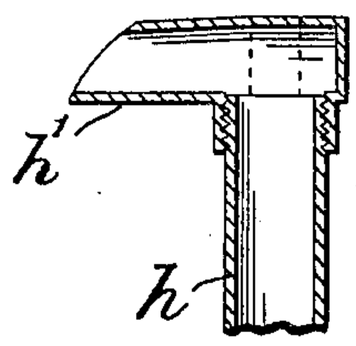


Fig. 8.

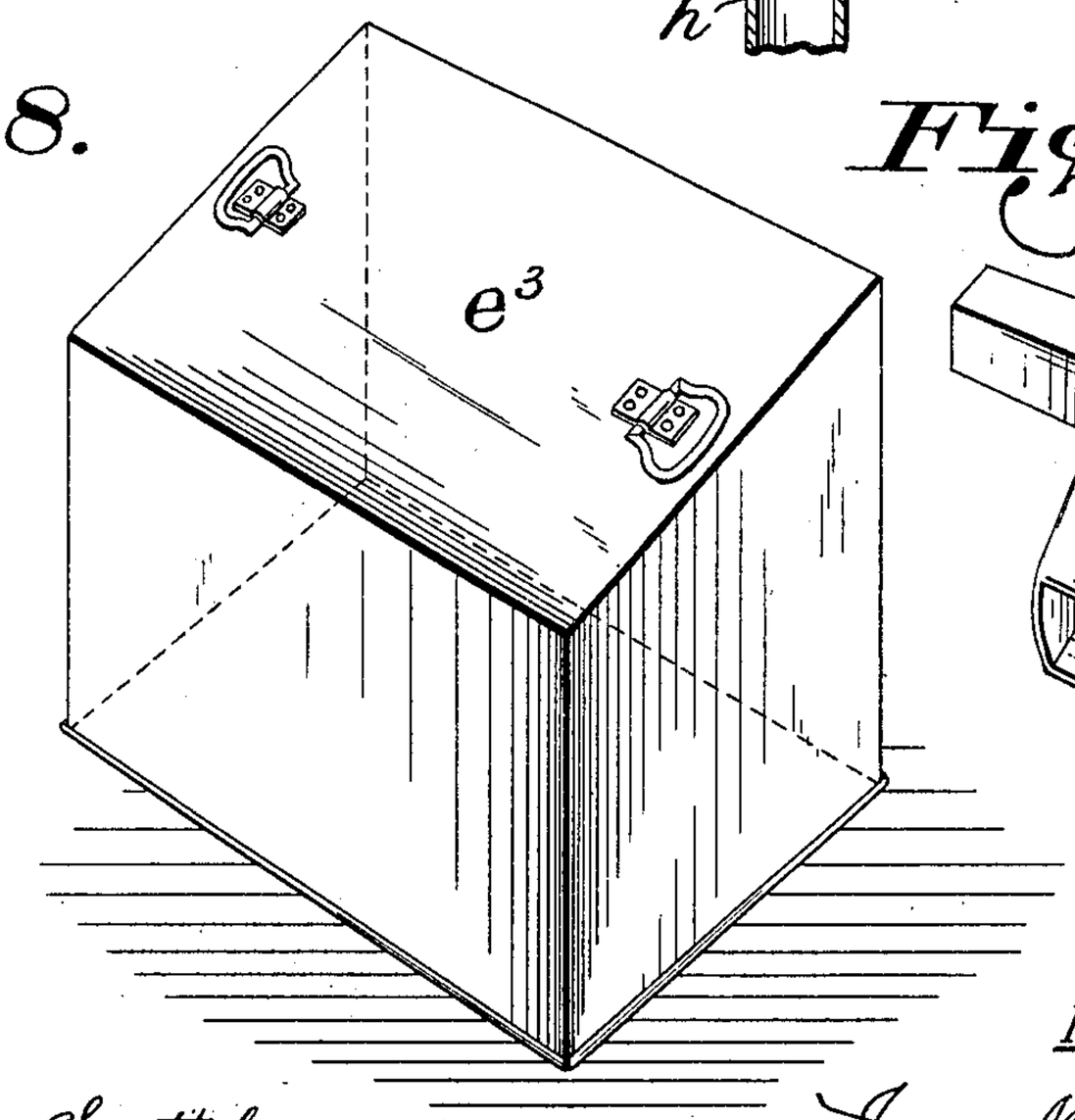
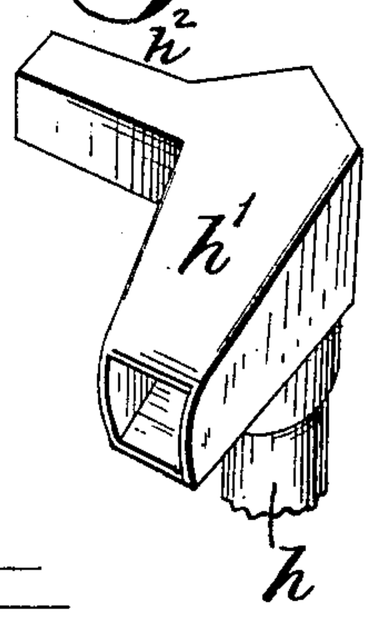


Fig. 9.



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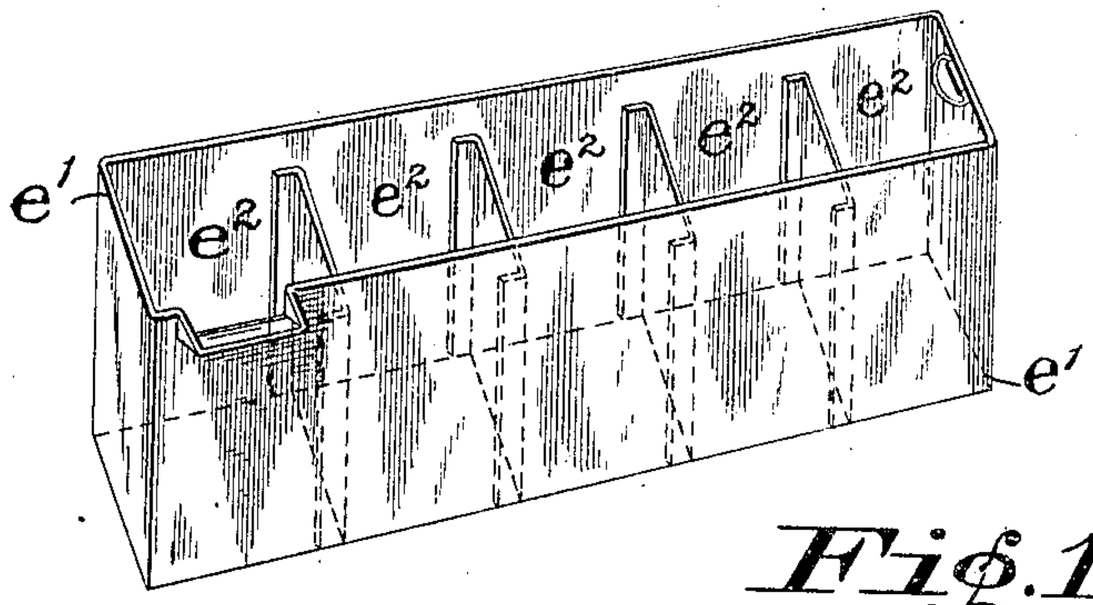

Fig. 11.

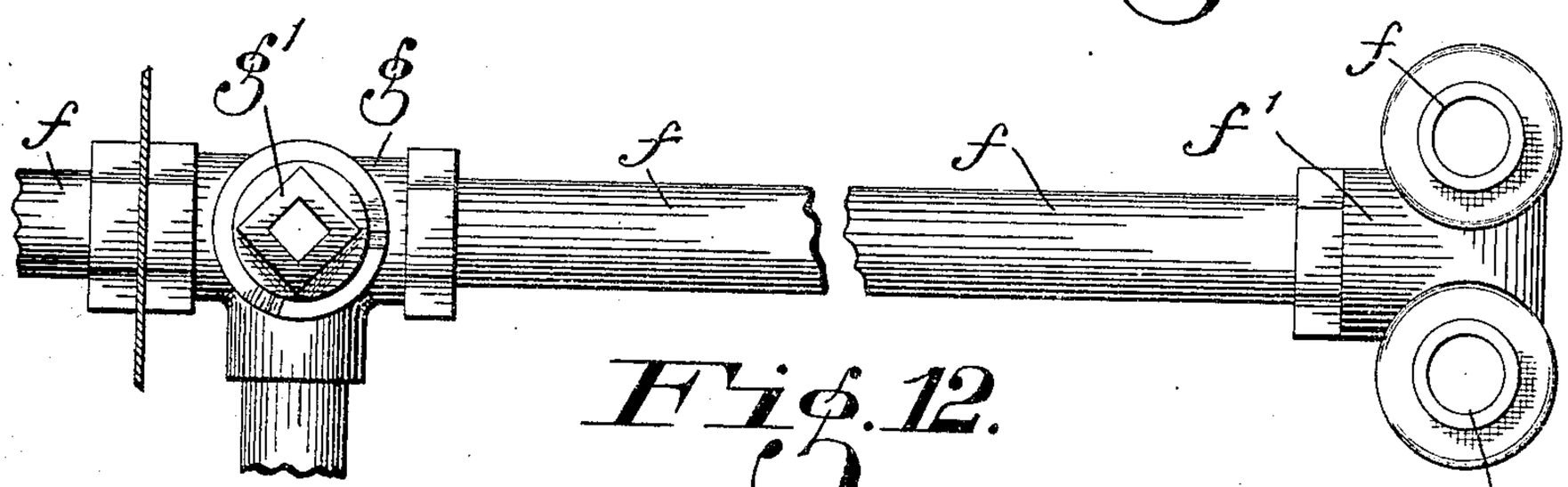

Fig. 12.

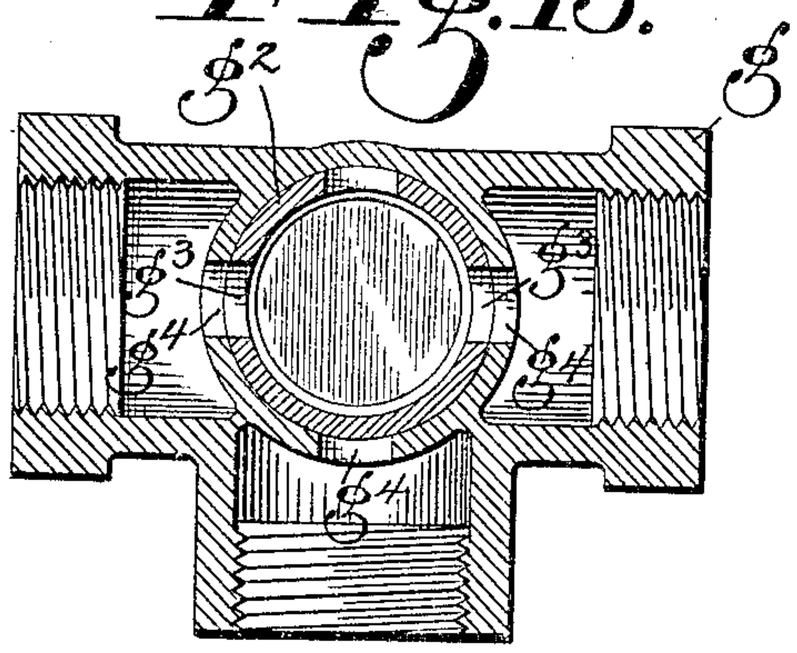

Fig. 13.

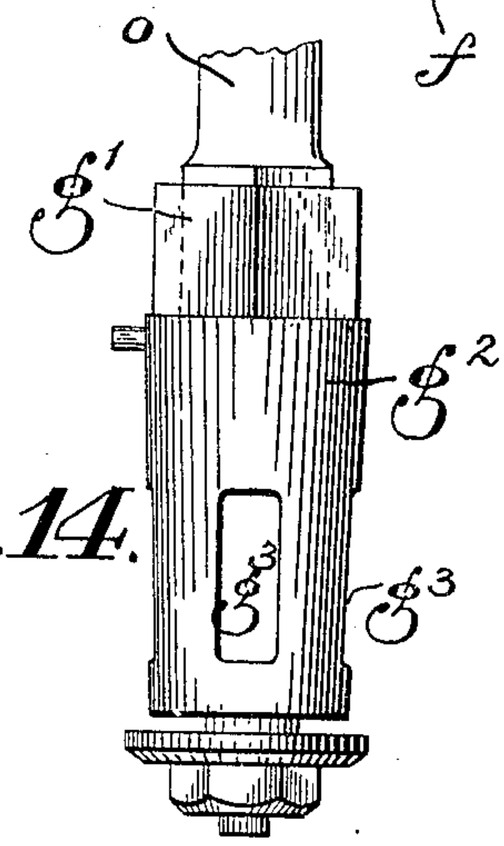

Fig. 14.

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8 SHEETS—SHEET 8.

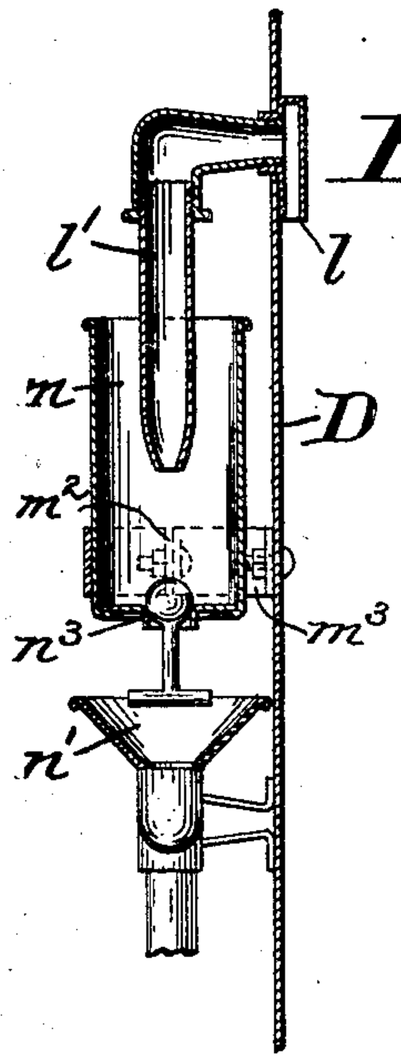

Fig. 19.

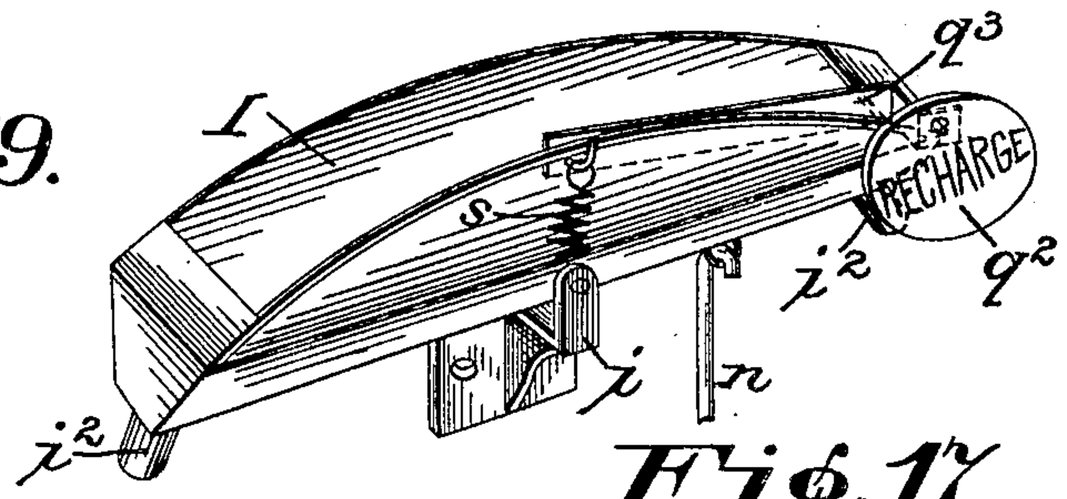

Fig. 17.

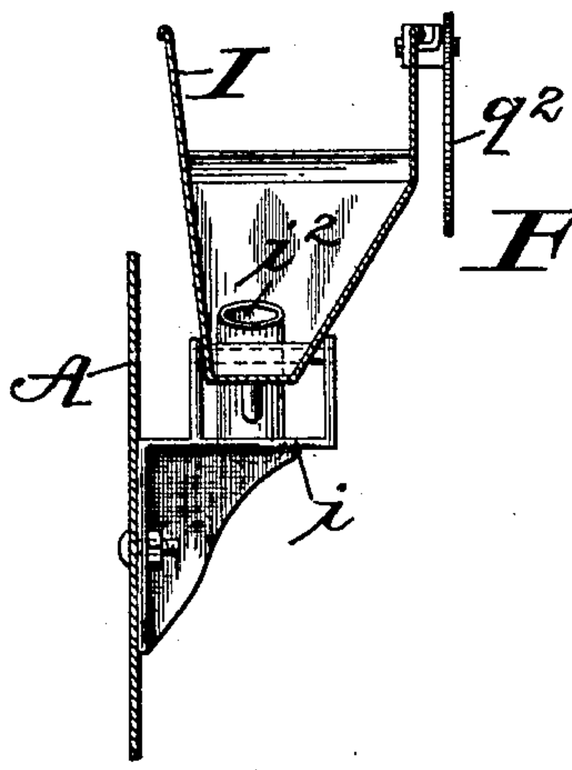

Fig. 18.

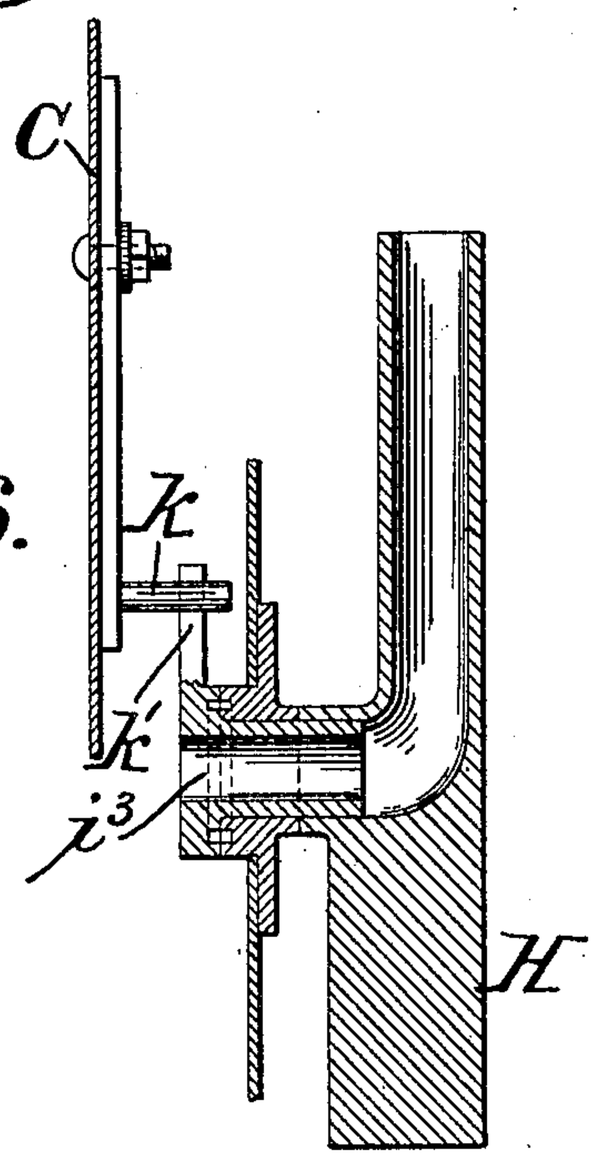

Fig. 16.

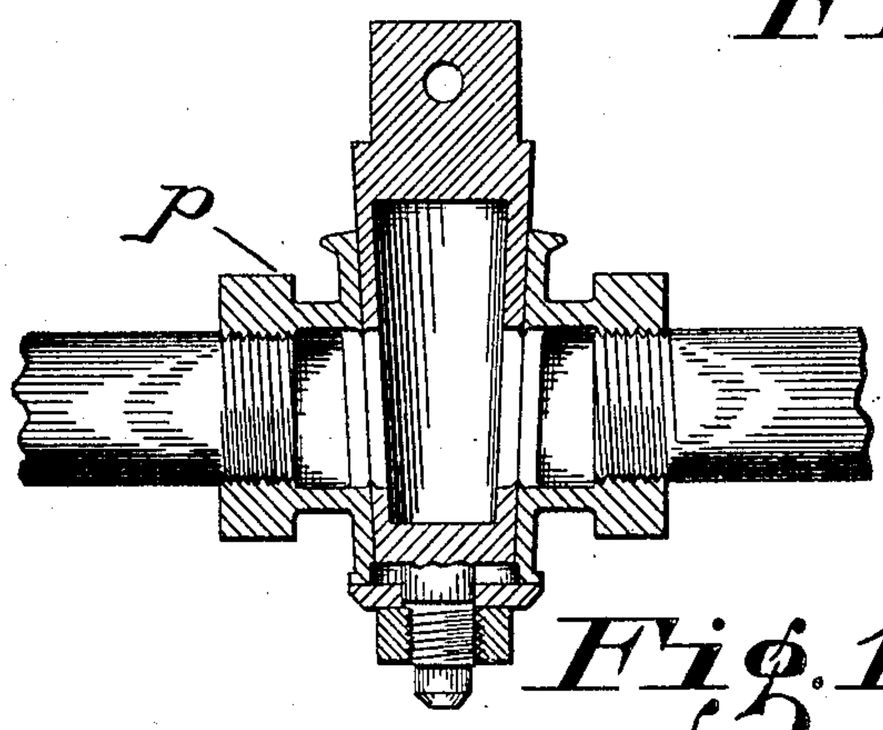

Fig. 15.

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UNITED STATES PATENT OFFICE.

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ACETYLENE-GENERATOR.

No. 885,361. Specification of Letters Patent. Patented April 21, 1908.

Application filed April 28, 1906. Serial No. 314,121.

To all whom it may concern:

Be it known that I, IRA MUMMA, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in an Acetylene-Generator; and I do hereby 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to acetylene gas generators, and particularly to that class of generators wherein the generation is controlled by the regulation of the supply of water admitted to the charge of calcium carbid.

While the drawings show a "double" generator, or one which includes two independent sets of gas making apparatus with means to automatically place in operation the second set at the time the first set is exhausted, it is to be understood that the specific features of the generator are equally applicable to a single generator device or one employing but a single set of gas making apparatus.

The object of the invention is to simplify the construction as well as the means and mode of operation of such devices, whereby they will not only be cheapened in construction, but are rendered more safe and reliable in operation and unlikely to get out of repair.

A further object is to provide a machine which will be automatic in operation, and economical in the consumption of calcium carbid.

A further object is to provide a structure wherein not only will the water supply be regulated automatically, but also the water will be caused to act upon only a limited amount of calcium carbid at a time, thus preventing excessive generation.

A further object is to provide a structure in which the water is so supplied that the generating apparatus will be sufficiently cooled at all times to prevent the polymerization or "splitting" up of the acetylene gas into other hydro-carbon gases of inferior quality, which sometimes occurs when subjected to excessive heat.

A further object is to provide automatic operating safety mechanism as hereinafter described.

With the above primary and other incidental objects in view as will appear from the specification, the invention consists of the means, mechanism, construction and mode of operation or their equivalents hereinafter described and set forth in the claims.

Referring to the accompanying drawings: Figure 1,—is a front elevation of my double automatic water-feed acetylene generator, complete and in operative position. Fig. 2,—is a plan view of same, as shown in Fig. 1—with cover to one of the compartments of the generator proper removed. Fig. 3,—is a front elevation of my device with the bell or gasometer removed, and the generator proper in section and broken away,—to show the shifting lever and cups. Fig. 4,—is a side elevation of my device with the bell or gasometer removed; the water-reservoir partially broken away, and the gasometer proper in vertical section. Fig. 5,—is a vertical sectional view taken on dotted lines *z*—*z* of Fig. 2,—looking from the rear as indicated by the arrows; through the water-reservoir, and bell or gasometer,—the latter being in a raised position and showing clearly the condensing chamber, the guide, escape and service pipes. Fig. 6,—is a detail view in perspective, of a broken away portion of the bell or gasometer, so as to clearly show the weight for giving the desired pressure to said bell, to properly balance same. Fig. 7,—is a vertical sectional view, across the generator proper, to clearly show the two compartments therein, and the construction and position of the carbid-receptacles supported within the same. Fig. 8,—is a perspective view in detail of one of the covers to the carbid receptacles;—of one of the compartments of the generator proper. Fig. 9,—is a perspective view in detail, of one of the movable mouth-pieces,—one of which being located on the discharge end of each of the water-supply pipes: and Fig. 10,—is a vertical sectional view of same. Fig. 11,—is a perspective view in detail of one of the carbid receptacles. Fig. 12,—is a broken away plan view in detail, of the three-way valve which controls the flow of gas, and the side outlet return bend, at end of gas pipe for conveying the gas from the gas

generator. Figs. 13 and 14,—are horizontal sectional, and side views, respectively; of the three-way valve, and its core. Fig. 15,—is a vertical sectional view in detail through the stop-cock or release valve,—which allows of the release or passage of gas from the service to the escape pipe. Fig. 16,—is a vertical sectional view in detail through the rotary water valve, and showing the trip-pin connected to the bell or gasometer for tripping same. Fig. 17,—is a perspective view in detail, of the movable water-trough and indicator: and Fig. 18,—is a transverse vertical sectional view of same: and Fig. 19,—is a vertical sectional view in detail of the siphon, the water-cup and its valve, and the funnel shaped outlet for same.

Like parts are indicated by similar characters of reference throughout the several views.

In describing my invention specifically, and referring in detail to the various and different mechanical parts or elements of construction, as shown throughout the several views of the accompanying drawings and indicated by means of the letters and numerals of reference, as aforesaid; A, refers to the water-reservoir, provided at the top with a water-filler or stationary funnel *a*, and at the base with a false-bottom forming a water or condensing chamber B, which is divided or partitioned off, into a wash-chamber *b:* said condensing chamber receiving all moisture which passes down the service-pipe 30, and out through small openings or outlet ports 31 in lower end of said pipe, located in said condensing chamber. Said condensing chamber being provided with an outlet means, in the shape of an over-flow cup *c*, situated on the outside thereof, and located high enough to always keep the water in said condensing chamber at a proper height,—as more particularly shown in Figs. 1 and 3:—said over-flow cup being provided with a small waste pipe c^2; thus allowing of all superfluous water or moisture in said condensing chamber to rise in said cup, and pass off through said waste-pipe leading therefrom. Said condensing and wash chambers are intercommunicating below the dividing partition which extends from the false bottom to a plane adjacent to, but does not engage the true bottom of the tank, as shown in Figs. 4 and 5.

A guide-pipe 32, is firmly and securely retained in position by means of said false-bottom,—as shown in Fig. 5;—and rises vertically in center of said reservoir, and receives the sleeve b^1—of the bell or gasometer C,—which registers with said guide-pipe, and works up and down on same, as the bell or gasometer rises and falls through the action of the gas:—said gasometer being provided with a weight C^1 to give the desired pressure. Said sleeve is retained and supported in position at the top in said gasometer at b^2, and at the lower end is connected to the supporting brace 33 of the gasometer: said brace not alone acting as a stay or brace to strengthen and hold the gasometer in shape, but also supports the sleeve b^3 in which the escape-pipe 34 telescopes.

An inlet-pipe 35—as shown in Fig. 4,—receives, through its inlet or mouth b^4; all gas as it rises in the wash-chamber—(as will be fully described hereinafter);—and conveys it to the gasometer. Said inlet-pipe being held or retained securely in a vertical position in said reservoir, by means of the false-bottom,—the same as the guide-pipe.

A service-pipe 30, which is held or retained firmly and securely in a vertical position in the reservoir, by means of the false-bottom, the same as the guide and inlet pipes as just referred to; extends sufficiently above the water in said reservoir—which comes to about one inch from the top thereof,—and into bell or gasometer C, so as to receive the gas from said gasometer: said service-pipe extending downward and making a turn as at c^3—(see Figs. 1, 2 and 3);—thence up on the outside of said reservoir, where it is intended in practice to connect with the house-pipe.

The escape-pipe 34, is held or retained firmly and securely in a vertical position in the reservoir, by means of the false bottom,—the same as the guide, inlet and service pipes;—and receives the sleeve b^3 of the gasometer,—as heretofore referred to:—said sleeve being similar to sleeve b^1 excepting that its top is covered by a cap b^5 so as to prevent the escape of gas, and is provided with inlet openings or ports 37;—as a safety means,—in case there should be too much gas accidentally generated, by reason of rotary water-valve,—(which will hereinafter be fully described);—being tampered with: and in this instance, the superfluous amount of gas in said gasometer, which would then rise to the approximate position shown in Fig. 5, would escape through ports 37, thence down said escape-pipe 34, making a turn through cross *d* and side outlet-ell d^1,—see Fig. 3;—thence up said escape-pipe on outside of said reservoir, where it is intended in practice to be carried off to the outside of the building, as a blow-off. In this instance, and taken in connection with said escape-pipe; another very important advantage of my device being that in case any heavy article or other obstruction should,—accidentally or otherwise,—be placed on top of the gasometer or in way of same, so as to prevent its rising to the position shown in Fig. 5; the gas as generated would clog, and not be able to pass from wash-chamber *b*, up through inlet-pipe 35—as usual;—but instead, would pass or crowd down underneath said wash-chamber, into and through the

water in condensing-chamber B, thence into cross *d*, and through side outlet-ell d^1, and up off through said escape-pipe on the outside of said reservoir,—the same as the first safety means just heretofore referred to.

The acetylene gas generator D, at front of the device, is supported by legs of ordinary construction as shown, and is firmly connected or attached to water-reservoir A, by means of strong braces 38, and has a central partition or wall d^2, dividing said generator into compartments on each side thereof; each of said compartments being provided with a tray *e*, holding carbid receptacles e^1—said receptacles being divided into cells e^2,—which are supplied with calcium-carbid;—said tray resting in a supporting frame of ordinary construction—see Figs. 7 and 4. Said carbid receptacles in each compartment being arranged in rows, each row being lower than the other, and being removable as shown in Figs. 2, 4, 7 and 11, and are provided with a cover e^3—see Fig. 8,—held in position by means of movable fastening arms e^4.

Approximately on a level with the top of tray *e*,—in each of the compartments of said generator, and close to and on each side of partition b^2,—is located the opening or mouth of a gas supply pipe *f*, which receives the gas as generated, and carries it down underneath said generator, through side outlet return bend f^1—which is in form of a T—(see Figs. 4, 7 and 12);—thence continuing in one pipe—see Fig. 12;—to and through three way valve *g*, thence into wash-chamber *b;* where said gas is washed for the purpose of cooling and cleansing it of all foreign matter, when said gas passes up through inlet or mouth b^4 into inlet-pipe 35, passing out of said pipe onto the water, where it is stored in gasometer C.

Located in each side, or compartment, of gas generator D,— and just above the upper row of said carbid receptacles,—is the movable mouth-piece or discharge end h^1, of water supply pipe *h;* said end being provided with a lug h^2 which permits the tray and carbid-receptacles being removed from the compartments at any time, and also said lug h^2 by not allowing of the cover or lid e^3—when removed,—being replaced in position over said carbid receptacles, until said mouth-piece or discharge end is turned and until the lug is out of the way; and mouth-piece h^1 rests in position over the cells of the carbid receptacles, thus always insuring the free discharge of the water in said water supply pipe from said mouth-piece onto the carbid in said carbid receptacles.

After the reservoir A is first filled with water to about (1) inch from the top, by means of the filler or stationary funnel *a;* and each and every cell e^2 of the carbid-receptacles e^1 have been charged with calcium carbid and the device is in condition to be operated;—rotary-water-valve H,—which is retained in position and prevented from swinging entirely around when operated, by means of small stop h^2 attached to the reservoir;—is moved by hand to the position shown by dotted lines in Figs. 1 and 3, until the discharge opening or mouth of its spout, rests over the movable or swinging water-trough I,—pivotally supported by means of a bifurcated bracket *i* as clearly shown in Figs. 17 and 18;—each end of said trough having a funnel shaped mouth i^2; one end of said trough being swung or tilted lower than the other, so that said funnel shaped mouth on the side will rest over the mouth of water-supply-pipe *h*, which passes down on outside of the water-reservoir and turns up underneath and enters gas-generator as heretofore described; and as water passes from said reservoir, through opening i^3 in said rotary - water - valve, which communicates with the interior of the reservoir, (see Fig. 16);—there being sufficient water in said reservoir to come at a height and on a level,— or just above said opening in rotary water-valve H; the water will pass from said reservoir, through said valve and into water-trough I, and thence from said trough down said water-supply-pipes *h*, and up through the movable mouth-piece h^1—located in each of the side compartments of said generator—(as heretofore referred to);—out onto the carbid in the first cell in the first row of said carbid-receptacles: and as the water pours onto the calcium-carbid in said cell, the gas generated therefrom, will escape or pass from said generator down gas-supply-pipe *f*,—heretofore clearly referred to;—through side outlet return bend—or T—f^1, and along said gas-supply-pipe, through three-way-valve *g*, into wash-chamber *b*—in false-bottom underneath the water-reservoir,—where said gas is washed or filtered, and passes through inlet or mouth b^4, into and up the vertical inlet-pipe 35 of the reservoir, out onto the top of the water in said reservoir, until a sufficient amount of said gas has accumulated to raise bell or gasometer C,—as heretofore referred to,—and until the trip-pin *k* on front of the bell or gasometer, has passed above arm k^1 of rotary water-valve H,—see Fig. 16,—when sufficient gas will have been generated and passed onto the top of the water in said reservoir—(as heretofore described),—and is stored in the gasometer to light the burners located throughout the building:—the entire operation of said device from now on becoming automatic.

As just described, the gas in passing from the generator up into the gasometer, will, at same time pass therefrom into service-pipe 30,—which is intended in practice to be connected with the house-pipe (not necessary to be here shown), and which leads to the burn-

ers throughout the building: and as the gas is burned or consumed at the burners after being ignited, the amount of gas in the gasometer as it thus decreases will cause the bell or gasometer to gradually fall, which will constantly force more gas down the mouth of said service-pipe, thence through the house-pipe to the burners, until said bell or gasometer as it falls or descends in the water-reservoir A, will by means of its trip-pin *k* strike and come into engagement with the arm k^1 of rotary water-valve H; and as said trip-pin thus forces said arm downward, the rotary water-valve will again be turned,—but this time automatically;—until its spout rests over the water-trough I, when the water again coming from the reservoir, will again pass through said rotary water-valve and out of its spout, into said water-trough, thence into and down water supply pipe *h*, and up into the compartment on the side of generator D, from which gas is being generated;—as heretofore fully described;—and the water as it now comes from movable mouth-piece or discharge end h^1, will pass into the former small carbid cell,—if not already heretofore filled with water;—but if said cell is already filled with water, said water will necessarily pass into the next unfilled carbid cell; when in either case, said water will again act upon the carbid in said cell and generate more gas; the operation of these parts as heretofore fully and clearly described, being continuously repeated, until the water has passed down over the lip or mouth of each of the carbid receptacles e^1, and each cell e^2 has been in turn filled with water, and all the gas generated from the calcium-carbid by each fresh attack of the water upon it; and as the water still continues to flow through each operation of the device, said water will pass over and into the space in this compartment underneath the carbid-receptacles,—and mingle with the water which has been placed there previous to starting the device, and which surrounds the tray holding the carbid receptacles. When the water within the compartment rises to a sufficient height it will flow through the outlet *l* and the discharge nozzle *l'*, which act as a siphon into a water-bucket *m* supported by means of a centrally fulcrumed lever m^2 swinging from a small bracket m^3 projecting from the rear and outside of the gas generator;—see Figs. 1, 2, 3 and 4;—said lever being connected to water-trough I, by means of rod *n;* and as said bucket fills with water, the weight of said water will cause bucket *m* to drop or descend until it rests in the annular or cup shaped mouth-piece n^1,—of horizontal waste-pipe n^2,—adapted to receive it; when the T-shaped stem which forms a part of small valve n^3,—the ball at top of which rests snugly in and closes the opening in bottom of said bucket;—see Fig. 19,—will now be forced up inside of said bucket until above and free of said opening, when the water as it passes out through said valve, will pass down said annular or cup-shaped mouth-piece and through said horizontal pipe, and out of a similar annular or cup-shaped mouth-piece located at opposite end of said horizontal pipe, on opposite side of said generator, and off through the outlet or small waste pipe c^2 from the device as a waste: the water will thus continue to pass off through said siphon and bucket and said horizontal pipe, until the amount of water in this compartment has dropped below the mouth of said siphon, thus stopping or discontinuing the flow of water: and as said bucket drops down through the weight of the water as just described, its lever m^2 will move downward rod *n*, forming the connection between said lever and movable or swinging water-trough I,—which is provided with a small tension-spring *s*, to facilitate its movement—see Fig. 17,—thus shifting or tilting said swinging water-trough, until it stands in an exact opposite position, as shown; so that its funnel-shaped mouth-piece, will now rest over and in the mouth of water-supply pipe *h* on opposite side, and which connects with and supplies water to the compartment on opposite side of gas generator D, which will now generate the gas from this compartment by the action of the water on the calcium-carbid therein, in the identical manner and operation of the parts, similar to that of the first compartment, as already clearly and fully described. Said rotary-valve and movable water-trough are protected by an inclosing box or casing Q—of ordinary and simple construction,—provided with a removable front *q*, having two observation openings through which the word "Recharge," which is carried on the small indicator q^2, pivoted to an arm q^3, which is in turn pivotally connected to said trough,—see Fig. 17,—may be readily seen, as said indicator rises and is brought in line or directly in front of the observation opening on side or in line with the compartment of the gas-generator from which the gas has just been generated, when trough I shifts, thus giving notice and calling attention to the fact that the calcium-carbid in the cells in the receptacles in this compartment of generator D need recharging or refilling, and when this is done indicator q^2 is to be swung or moved by hand—(by means of its arm and pivotal connections)—to opposite side of the trough, so that when said trough shifts;—after this compartment has been operated upon as clearly described,—said indicator will now rise with said trough as it shifts until in line with observation opening on opposite side, thus indicating in a similar manner as in case of first compartment, that

this second compartment on this opposite side of the generator, needs recharging with the calcium-carbid.

Three-way-valve *g*, is provided at its top with a rectangular socket g^1, which receives the key-shaped end of a lever *o*, provided at its top with a handle o^1,—by which said three-way-valve is operated; so that when all gas has been generated from one of the compartments of said gas generator;—as has been fully described;—and it is necessary to recharge said gas generator, handle o^1, is turned so as to permit of the cover or lid e^3 of the carbid receptacles in this compartment, being removed;—see Fig. 2,—thereby turning core g^2, of the three-way-valve, until one of its slotted openings g^3, comes in line with similar opening in side outlet g^4, of said valve;—see Figs. 13 and 14,—when any small amount of gas and all odor yet remaining in said generator, will pass through said side outlet of the valve, thence through side outlet ell d^1, up escape pipe 34, where it passes and escapes off, to the outside of the building as heretofore referred to; thus purifying said device so that the generator is in proper condition to be recharged.

Each of the water-supply pipes *h*,—as shown more particularly in Figs. 1 and 3,—are provided with air vents *x*, in the form of small branch-pipes which are open at one end and have an open communication at the other with said water supply pipes at a point slightly above the movable mouth or discharge end of said water supply pipes, located in the generator, thus forming an automatic means of escape for all air in said water supply pipes and preventing them from becoming air bound by reason of compressed air.

Stop cock or release valve *p*,—as fully shown in detail in Fig. 15 in an open position,—is of ordinary construction, and connects the service and escape pipes,—see Figs. 1 and 3—so that when turned there will be an open communication as shown in Fig. 15,—established from said service pipe to said escape pipe;—thus allowing at any time the release or escape of all gas from the device—should it be so desired, but as this is seldom used, it is not necessary to be here more elaborately described in detail, as it will be readily understood.

As shown in Figs. 1, 2 and 7, I provide the condensing chamber of reservoir A, also the compartments of gas generator D, with a drainage opening and plug *r*,—both being of ordinary and common form of construction,—for the sole purpose of affording an easy means of draining, when cleaning or moving the device.

From the above description it will be apparent that there has been produced an acetylene gas generator possessing the particular features of advantage before enumerated as desirable, and which obviously is susceptible of modification in its form, proportion, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

Having thus fully described my invention I claim:

1. In the herein referred to device for generating acetylene gas from calcium-carbid, the combination of the water reservoir; the bell or gasometer adapted to rest and move in the water within said reservoir through the action of the gas; the gas generator attached to said water-reservoir and provided with carbid-receptacles which are surrounded with water; the water supply-pipes each having a receiving end, the discharge end of each resting in said gas generator; the rotary water-valve attached to said reservoir and which receives water from same; the swinging water-trough which receives the water from said rotary water-valve, and provided on each side with a discharge end; and means to actuate said swinging trough by the overflow waste water from said gas generator, the service-pipe which conveys the gas from the gasometer to the house pipes; and the escape pipe to allow of the escape of all superfluous gas; all substantially as described.

2. The combination in the herein referred to device for generating acetylene gas from calcium-carbid, of the reservoir for holding the water; the bell or gasometer in which the gas is stored, and which moves vertically in said reservoir; the generator attached to said reservoir in which the gas is generated, and provided with receptacles for holding calcium-carbid; the movable water-valve attached to said reservoir which is provided with a receiving end and a discharge end; the swinging water-trough adapted to be actuated by the overflow of water from said generator; the water-supply-pipes for conveying water from said reservoir to said gas generator; the gas-supply pipe for conveying gas from said generator to said gasometer; the service pipe which conveys the gas to the house-pipe; the escape-pipe for allowing of the escape of all superfluous gas; all substantially as and for the purposes described.

3. The combination in a double automatic water-feed acetylene generator; of the water-reservoir; the gasometer or bell adapted to have a vertical movement in the water in said reservoir through the action of the gas; the gas generator connected to said reservoir and divided into compartments, each of said compartments receiving carbid receptacles divided into cells for holding calcium-carbid in small quantities; the weighted rotary water valve attached to said water reservoir, and having a receiving end and a discharge end; the trough for receiving the water from said

valve and conveying it to the water-supply pipes; the water-supply pipes each of which receives said water from said trough and conveys it to and delivers it onto the calcium-carbid in the carbid-receptacles in each compartment of said gas generator; the siphon connected to said gas generator and which receives the water from the same; the water buckets which receive the water from said siphon, and the lever and connecting-rod for shifting said water-trough; the gas supply pipe leading from each compartment of said gas generator to the gasometer, and provided with a three-way valve; the inlet-pipe leading into the gasometer; the service pipe which connects with the house-pipe; and the escape-pipe leading to a blow-off on outside of building; all substantially as and for the purposes described.

4. In a device as described the combination with a gas generator and gasometer, of a water supply valve comprising a pivoted lever, a conduit in one arm of said lever, a hollow trunnion forming the pivotal connection of said lever and connecting said conduit with the interior of the gasometer, a comparatively great amount of material in the opposite arm of said lever forming an integral weight which tends to move the lever about its pivotal connection to maintain the discharge orifice of said valve about the intake thereof, substantially as specified.

5. In an acetylene gas machine, the combination with gas generator and gasometer, of means for shifting or changing the flow of water from the supply reservoir, comprising a pivotally connected water trough, discharge spouts at opposite ends of said trough, receptacles adapted to ultimately receive the water discharged from the generators, and means whereby the preponderance of weight in the receiving receptacle will move said trough on its pivotal connection, thus alternating the flow through the respective spouts to the corresponding receptacle, substantially as and for the purpose specified.

6. In the herein referred to device for generating acetylene gas from calcium-carbid, the combination of a water-reservoir; a bell or gasometer resting in said water-reservoir and adapted to move up and down in same, by the action of the gas; a gas generator located at front of the device and conected to said water-reservoir, and divided into compartments having a tray supported therein, carbid-receptacles resting in said tray and so arranged that water after flowing onto the calcium-carbid in each receptacle will pass therefrom and mingle with the water in said compartment and surround said tray containing said carbid-receptacles; a water-valve pivotally connected to said water-reservoir and having a receiving end communicating therewith, and a discharge end; a swinging-water-trough so located as to receive the water from said rotary water valve and connected to said reservoir and provided at both ends with an outlet or discharge spout; a siphon and means connected therewith for shifting said swinging water-trough through the medium of the water from each compartment of said gas generator; water supply pipes connected to said water reservoir, each having a receiving end so located as to receive the water from the discharge spout of said swinging trough, and having the discharge end of each provided with a mouth piece located within each of the compartments of said gas generator, so as to discharge the water from said reservoir into the carbid receptacles; a gas supply pipe leading from each of the compartments of said gas generator, and thence communicating with the wash-chamber of said reservoir and provided with a cut-off valve; an inlet pipe leading from said wash chamber into said gasometer; and a service pipe leading from said gasometer to outside of said device, and adapted to be connected to the house pipe; all substantially in the manner and for the purposes described.

7. In an acetylene gas machine the combination with a gasometer, of a gas generator, a partition in said generator dividing same into two non-communicating chambers, water supplies for each of said chambers, gas off takes in each of said chambers, carbid receptacles located in each of said chambers, a cover for each of said chambers comprising a dome adapted to inclose the said carbid receptacles, the water supplies and the gas off takes, and to rest on the bottom of said chamber, substantially as specified.

8. In an acetylene gas machine, the combination with a gasometer of a generating chamber, a stepped support in said chamber, removable carbid receptacles located on the respective steps of said support, a water space in said chamber and below the plane of said carbid receptacles, a dome inclosing the said carbid receptacles extending within the walls of said chamber and resting on the bottom thereof, and means for supplying water to the uppermost receptacle of the series, and an overflow spout leading from each receptacle to the next lower receptacle of the series, substantially as specified.

9. In an acetylene gas machine, the combination with a gasometer of a gas generator comprising a chamber, a cover therefor, carbid receptacles in said chamber arranged in series, supporting means in said chamber maintaining the carbid receptacles above the bottom of said chamber, a water space in said chamber below said receptacles, means for admitting water to said carbid receptacles the overflow of which is received in the space below said receptacles and a siphon for conducting the water from said water space, substantially as specified.

10. In an acetylene gas machine, the combination with a gasometer of a gas generator comprising a chamber, a cover therefor, carbid receptacles within said chamber, a water supply, a discharge nozzle for said supply adjustable in a horizontal plane, a lug on said discharge nozzle normally out of the path of said cover but adapted to extend into the path of said cover when said nozzle is adjusted to discharge otherwise than into said receptacle, substantially as specified.

11. In an acetylene gas machine, a gasometer, a gas generator, a water supply conduit leading to the generator, a water supply receptacle, a water supply valve comprising a T shaped member having connecting conduits extending through the stem portion and one arm of said member, said stem portion of the member projecting through the wall of the water supply receptacle and forming a hollow trunnion for said member, the discharge nozzle of said member being retained normally above the water level of the supply receptacle by the preponderance of weight in the solid arm of said T shaped member, and means connected with the gasometer to move said nozzle about its pivotal connection to discharge water from said tank through said water supply conduit, substantially as specified.

12. In an acetylene gas machine, a gasometer and a gas generator, a water supply conduit for said generator, a water supply receptacle, a discharge nozzle adapted to oscillate in a plane tangent to the wall of said water receptacle and comprising a discharge conduit, a hollow trunnion communicating with the interior of the receptacle, and an integral arm extending beyond the pivotal connection of the member and possessing a preponderance of weight and means for moving the said counter weighted discharge nozzle to operative position by the operation of the gasometer, substantially as specified.

13. In an acetylene gas machine, the combination with gasometer and gas generating apparatus of a water supply, two supply conduits leading to said generating apparatus, a shifter arranged to discharge alternately into each of the supply conduits, a fulcrumed beam, a receiver on said beam on each side of its fulcrum point, two water nozzles in position to discharge into the respective receivers on said beam, a connection between said beam and said shifter to operate said shifter synchronously with the movements of said beam due to the overbalancing of said beam by a preponderance of water in either of the receivers thereon, substantially as specified.

14. In an acetylene gas machine, the combination with gasometer of a gas generating apparatus divided into two independent gas generating chambers, a separate water supply conduit to each of said chambers, means for automatically shifting the water supply from one of said chambers to the other comprising a pivoted receiving member having a discharge orifice on each side of its pivotal point adapted to register with the respective supply conduits, an overflow outlet from each of said chambers, a fulcrumed beam having receivers thereon adapted to receive the overflow from the respective chambers, a link from said beam to said receiving member, whereby said devices will operate synchronously to shift the water supply to the other of said generating chambers when one of said chambers overflows, substantially as specified.

15. In an acetylene gas machine, the combination with gasometer of gas generating compartments, carbid receptacles arranged in series in each of said compartments, a siphon outlet in each of said compartments having its intake below the level of the final carbid receptacle of the series and its bend above said level, adapted to automatically operate after the carbid receptacles have been submerged, substantially as specified.

16. In an acetylene gas machine the combination with gasometer, of gas generating apparatus, a water supply therefor, an overflow discharge in said generating apparatus, a movable receiver for said overflow, having a discharge opening therein, a valve normally closing the discharge opening of said receiver and operated by the movement thereof, substantially as specified.

17. In an acetylene gas machine, the combination with receiving and dispensing apparatus of generating apparatus, a water supply therefor, a discharge conduit therefrom, a movable receiver for the overflow water from said generator, said receiver having an opening in the bottom thereof, a valve normally closing said opening, a depending stem on said valve means with which said stem engages upon the downward movement of said receiver to open said valve and discharge the contents of said receiver, substantially as specified.

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

IRA MUMMA.

Witnesses:
W. S. COBLENTZ,
EUGENE G. KENNEDY.