

No. 692,745.

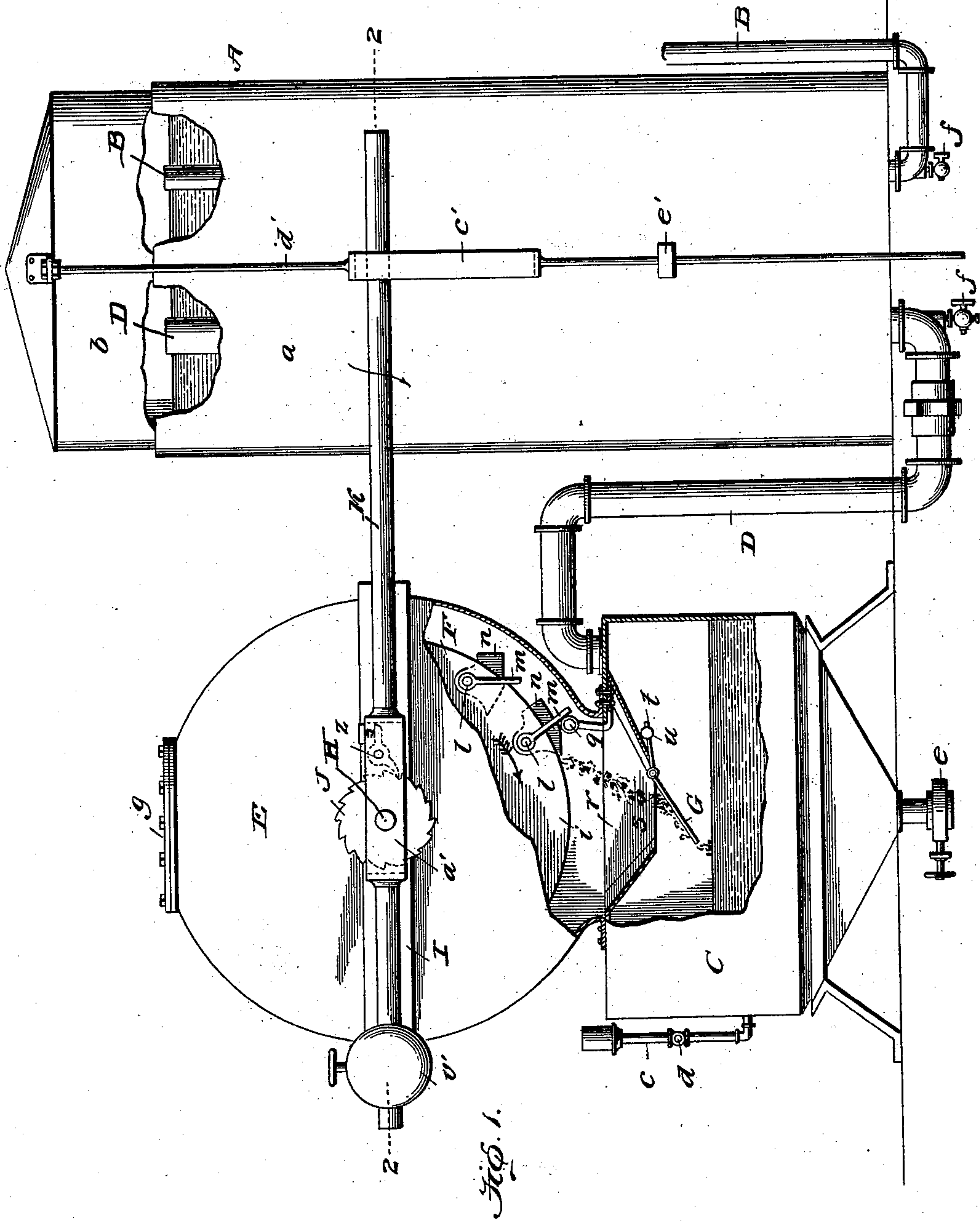
Patented Feb. 4, 1902.

E. L. WEIL & T. W. EVANS.
ACETYLENE GAS GENERATOR.

(Application filed July 8, 1901.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses
Wm. O. Ashlee
N. C. Healy

Inventors
E. L. Weil +
T. W. Evans
by *James J. Shuey* Attorney

No. 692,745.

Patented Feb. 4, 1902.

E. L. WEIL & T. W. EVANS.
ACETYLENE GAS GENERATOR.

(Application filed July 8, 1901.)

(No Model.)

3 Sheets—Sheet 3.

Fig. 3.

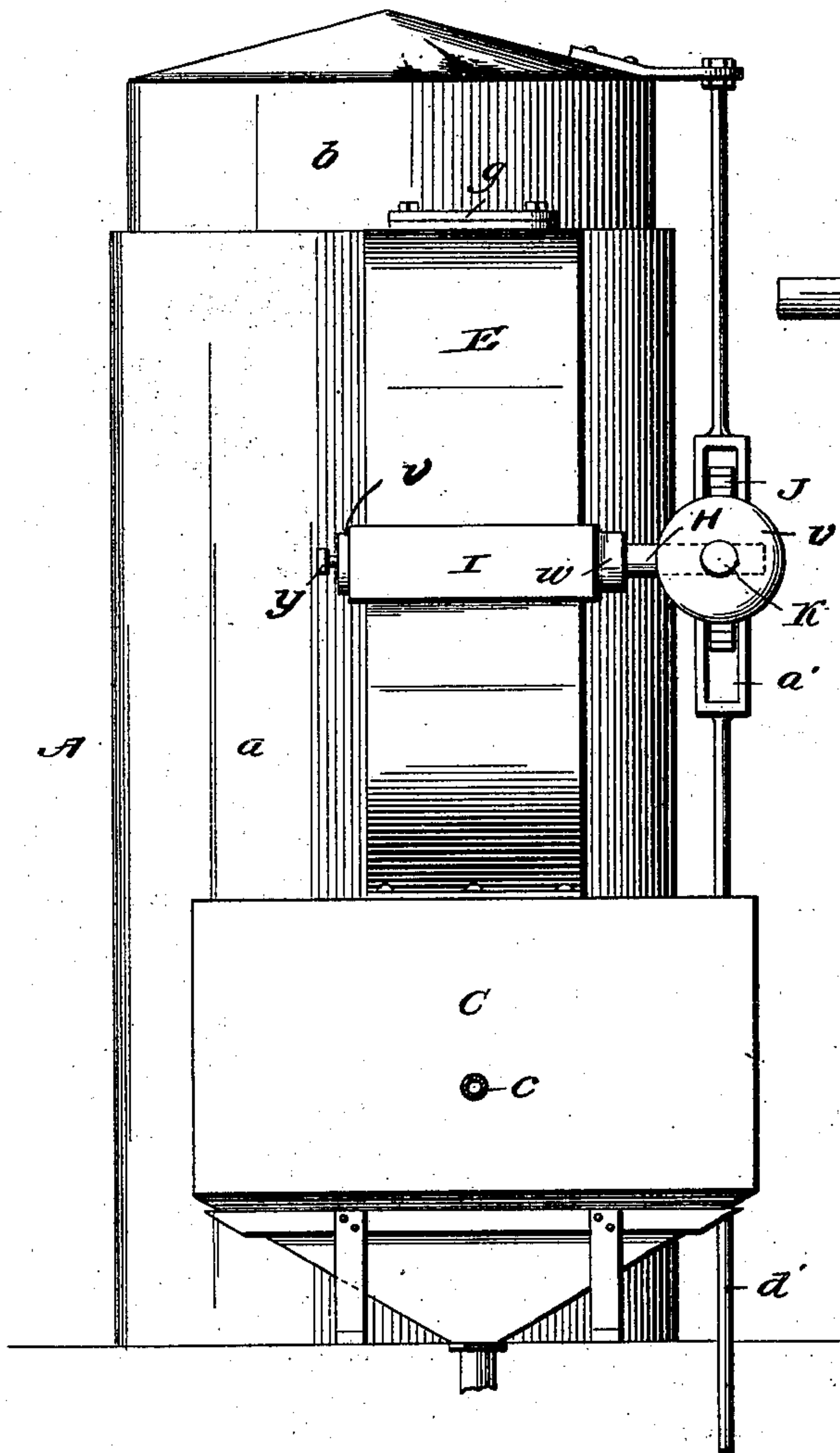


Fig. 6.

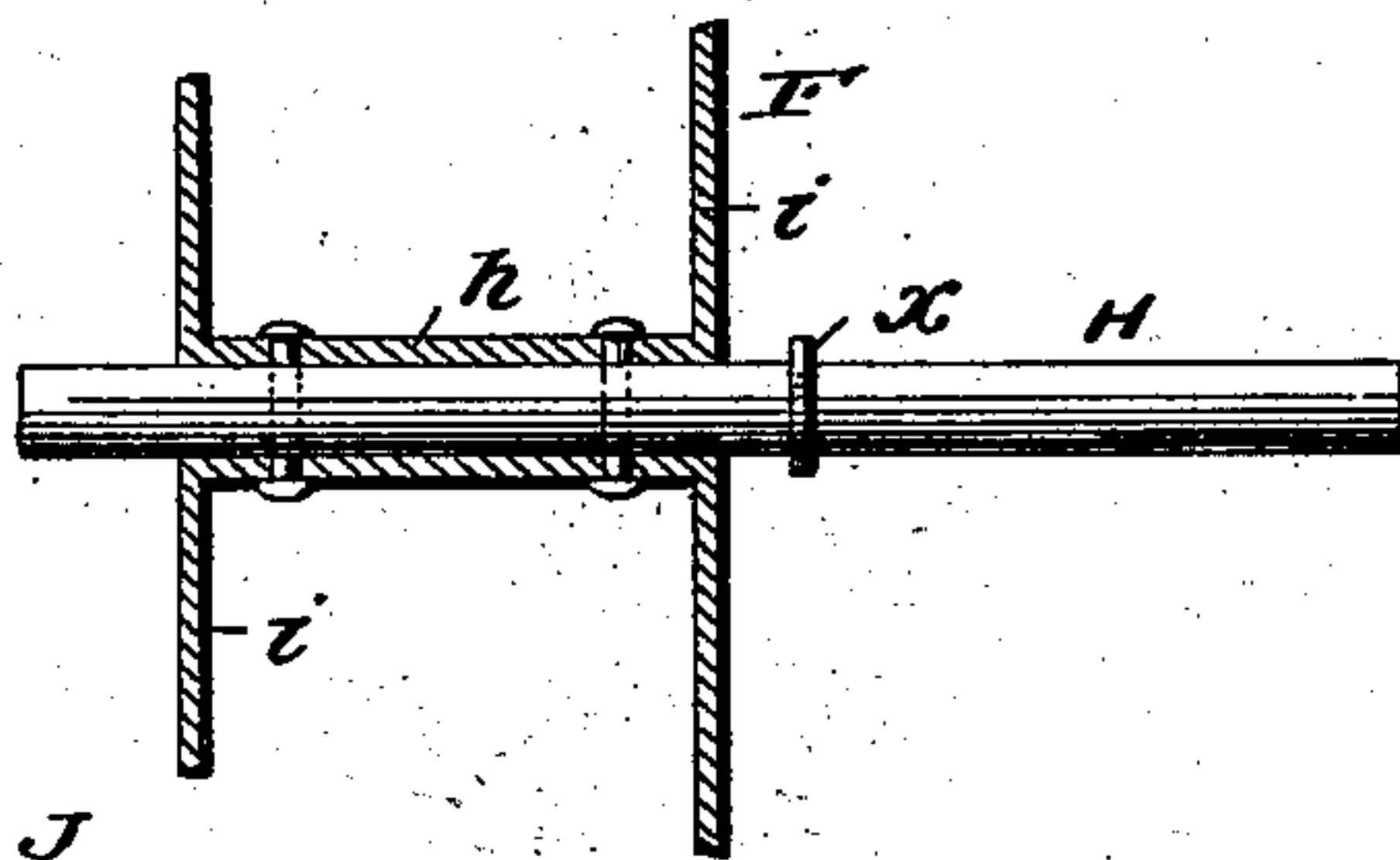
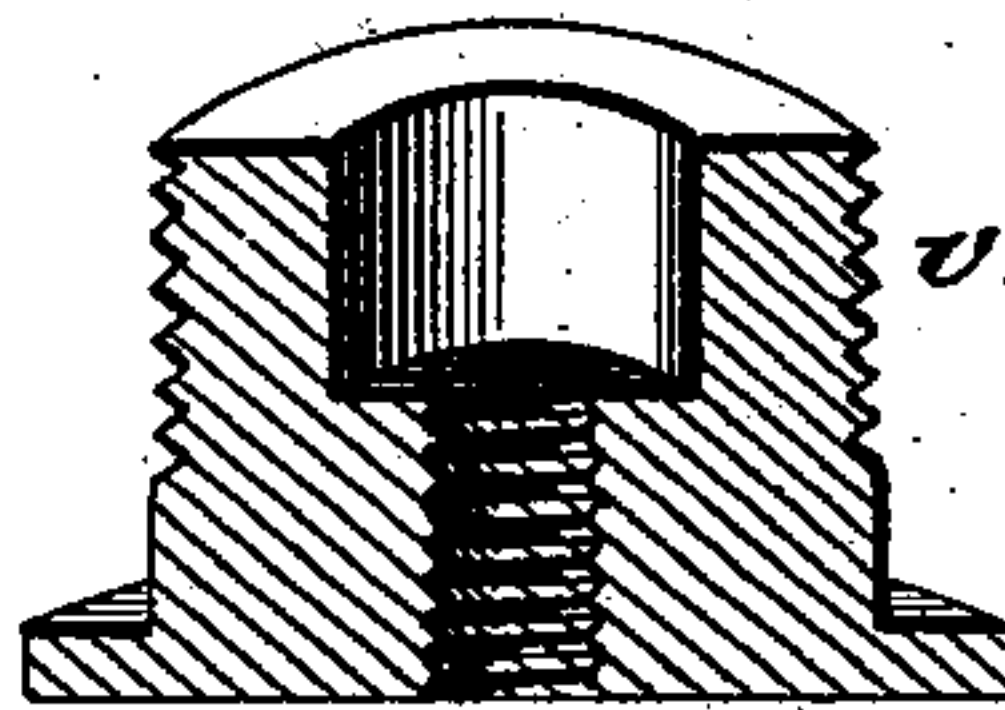


Fig. 7.



Witnesses

Wm. E. Doolittle
N. C. Healy

Inventors

E. L. Weil &
T. W. Evans

by *James J. Sheehy* Attorney

UNITED STATES PATENT OFFICE.

EMANUEL LEOPOLD WEIL AND THOMAS WALSTON EVANS, OF NEW ORLEANS, LOUISIANA.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 692,745, dated February 4, 1902.

Application filed July 8, 1901. Serial No. 67,494. (No model.)

To all whom it may concern:

Be it known that we, EMANUEL LEOPOLD WEIL and THOMAS WALSTON EVANS, citizens of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented new and useful Improvements in Acetylene-Gas Machines, of which the following is a specification.

Our invention relates to acetylene-gas production, and contemplates the provision of an acetylene-gas machine which, while simple and inexpensive in construction and embodying no parts that are liable to get out of order after a short period of use, is automatic in action, and consequently requires but a minimum amount of attention from an attendant.

With the foregoing in mind the invention will be fully understood from the following description and claims, when taken in conjunction with the accompanying drawings, in which—

Figure 1 is a side elevation of our improved machine with some of the elements partly broken away and others in vertical section. Fig. 2 is a horizontal section taken in the plane indicated by the line 2 2 of Fig. 1. Fig. 3 is an end elevation of the machine with the pipe for supplying water to the generator in section. Fig. 4 is a vertical section taken in the plane at the inner side of one of the disks of the carbid-wheel. Fig. 5 is a perspective view of one of the buckets of said wheel removed. Fig. 6 is a detail section, on an enlarged scale, illustrating the preferred manner of fixing the carbid-wheel on the shaft; and Fig. 7 is an enlarged sectional perspective view of the cap-nut hereinafter referred to in detail.

In the said drawings similar letters of reference designate corresponding parts in all of the several views, referring to which—

A is the gasometer of our improved machine, which comprises a tank *a*, designed to be filled with water to about the height shown, and the usual vertically-movable water-bell *b*.

B is a service-pipe which extends from a point above the water in the tank *a* down through the bottom of said tank and thence to the point at which it is desired to use the gas.

C is a generator having a pipe *c*, provided with a cock or non-return valve *d*, whereby it may be filled with water when necessary, and also having a gate-valve *e* for facilitating the removal of debris, and D is a pipe for conveying gas from the generator to the gasometer, said pipe extending through the bottom of the tank *a* to a point above the height of the water therein, as illustrated.

The pipe D and the service-pipe B are provided at their elbows below the tank *a* with cocks *f*, through which water may be drained from them at intervals.

E is a casing disposed above and connected to the generator C and provided with a man-hole *g* at its top, and F is a carbid-wheel arranged in the said casing. The carbid-wheel in the preferred embodiment of the invention comprises a central sleeve *h*, side walls or disks *i*, a circular series of transverse bolts *j*, connecting said side walls, sleeves *k*, surrounding said bolts and interposed between the disks or walls *i* to hold the same at the proper distance apart and stiffen and strengthen the wheel, a circular series of transverse shafts *l*, which are journaled in the side walls *i* and are provided at one side of the wheel with cranks *m*, and carbid-receiving buckets *n*, which have sleeves *p* arranged on and connected by bolts or other suitable means to the shafts *l*. As stated, the cranks *m* on the shafts of the carbid-buckets are disposed at one side of the wheel, and they are arranged to be engaged by a tappet *q*, arranged in the casing E at a point adjacent to an opening *r* between the casing E and generator C when the carbid-wheel is rotated in the direction indicated by arrow in Fig. 1. From this it follows that as the buckets approach the opening *r* they will be automatically dumped and their contents discharged through a hopper *s*, with which the generator is preferably provided, into the water in said generator.

With a view of preventing the passage of gas from the generator into the casing E we provide the trap-door G. This door is pivotally connected to the hopper *s*, at the lower end thereof, and is provided with an arm *t*, carrying a weight *u*, whereby it is normally held in a closed position for the purpose stated. When, however, a charge of carbid

is received on the door from one of the buckets n , it opens, after the manner shown in Fig. 1, to permit the carbid to pass into the water in the generator, and then automatically closes.

The sleeve h of the carbid-wheel F surrounds and is connected by diametrical bolts or other means to a shaft H , and this shaft is extended through the side walls of the casing E and journaled at one end in a cap-nut v , screwed into one side bar of a strengthening-frame I , which surrounds the casing E , as shown. The shaft also extends through a stuffing-box w , connected to the other side bar of the frame I , and is provided within said stuffing-box with a collar x . A screw y , which bears in the cap-nut v and impinges against one end of the shaft H , has for its purpose to bind the collar x against the gland of the stuffing-box w , and thereby subject the shaft to friction, so that the wheel will not casually turn when but a portion of the buckets n are filled with carbid.

One end of the shaft H is extended a considerable distance beyond the casing E and frame I and is provided with a ratchet-disk J . This disk is designed to be engaged by a pawl z , carried by a lever K , which lever has an open portion a' fulcrumed on the shaft H and surrounding the ratchet-disk J and also has a counterbalance-weight v' mounted on one of its arms, preferably in an adjustable manner. The other arm of the lever K extends through a yoke c' , carried by a rod d' , connected to the water-bell b and movable through a guide c' on the tank a of the gasometer. By virtue of this construction it will be observed that when gas is taken from the gasometer and the water-bell b descends in consequence the lever K will be rocked in the direction indicated by arrow in Fig. 1 and the carbid-wheel will be turned in the same direction to carry the crank m of one carbid-bucket into engagement with the tappet q , when the bucket will be dumped and its contents discharged past the trap-door G into the water in generator C . This will result in the generation of a fresh supply of gas in the generator, and such gas passing through the pipe D into the gasometer will raise the water-bell of the latter to its normal position. Incident to the raising of the water-bell the counterbalance-weight v' will rock the lever K in the direction opposite to that indicated by arrow to carry the pawl z into engagement with the next upper tooth of the ratchet-disk J , so that when gas is again taken from the gasometer and the water-bell b descends the carbid-wheel will be again rotated to effect the dumping of the carbid-bucket in rear of that before mentioned and the generation of a fresh supply of gas. This operation will continue until all of the several buckets of the carbid-wheel have been discharged of their contents.

In order to charge or place carbid in the buckets n of the carbid-wheel, the attendant has but to open the manhole g at the top of

the casing E , disengage pawl z from disk J , and slowly turn the wheel F in the direction opposite to that indicated by arrow and fill the buckets as they come beneath the manhole. When the wheel is turned in the direction opposite to that indicated by arrow, the cranks on the buckets will ride over the tappet q in said direction; but the filled buckets, by reason of their construction, (see Fig. 5,) will not be discharged of their contents.

The generator C is supplied with water through the pipe c , the cock d being of course opened precedent to the filling operation and closed subsequent to the same, so as to prevent the escape of gas through the pipe. When desired a check or non-return valve may be employed in lieu of the cock d without departing from the scope of my invention.

When it is desired to remove debris from the generator C , the same may be readily accomplished by supplying the said generator with water and opening the gate-valve e at the bottom of the same.

It will be readily appreciated from the foregoing that while our improved machine is simple and inexpensive in construction and embodies no parts that are liable to get out of order after a short period of use, it is automatic in operation, the attendant having but to fill the generator C and replenish the supply of carbid in the buckets n at intervals.

We have entered into a detailed description of the construction and relative arrangement of parts embraced in the present and preferred embodiment of our invention in order to impart a full, clear, and exact understanding of the same. We do not desire, however, to be understood as confining ourselves to such specific construction and relative arrangement of parts, as such changes or modifications may be made in practice as fairly fall within the scope of our claims.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In an acetylene-gas machine, the combination of a generator, a casing disposed above and communicating with the generator, a tappet arranged in the casing, a vertically-disposed carbid-wheel mounted in the casing, and comprising upright disks, transverse shafts journaled in said disks and having cranks arranged to be engaged by the tappet, and pendent carbid-buckets carried by the shafts and interposed between the disks, and means for rotating the carbid-wheel.

2. In an acetylene-gas machine, the combination of a gasometer having a vertically-movable water-bell, a generator connected with the gasometer, a casing disposed above and communicating with the generator, a tappet arranged in the casing, a vertically-disposed carbid-wheel mounted in the casing and comprising a central shaft journaled in the side walls of the casing and extended outwardly beyond one of said side walls, upright disks fixed on the shaft, transverse shafts

journaled in said disks, and having cranks arranged to be engaged by the tappet, and pendent, carbid-buckets carried by said transverse shafts and interposed between the disks, 5 a ratchet-disk fixed on the extended portion of the central shaft of the carbid-wheel, a lever fulcrumed on the said extended portion of the central shaft and carrying a pawl arranged to engage the ratchet-disk, and means 10 intermediate of the water-bell of the gasometer and the lever for rocking the lever and turning the carbid-wheel when the water-bell descends.

3. The herein-described acetylene gas machine comprising the generator having a hopper, the counterbalanced trap-door pivotally connected to and adapted to normally close 15 the lower end of the hopper, the casing disposed above the generator and communicating with the same, a tappet arranged in said casing at a point adjacent to the hopper of the generator, the strengthening-frame surrounding the casing and provided in one of its side bars with a cap-nut and in its other 20 side bar with a stuffing-box, a shaft extending through the side walls of the casing and having one of its ends disposed in the cap-nut, and also having a collar at an intermediate point of its length arranged against the 25 gland of the stuffing-box, a screw bearing in the cap-nut and impinging against one end of the shaft, the carbid-wheel mounted on the shaft and having the disks or sides, and carbid-buckets mounted in and adapted to 30 swing between said sides or disks and having cranks arranged to be engaged by the tappet, a gasometer connected with the generator and having a vertically-movable water-bell, a ratchet-disk fixed on the shaft of the

carbid-wheel, a lever fulcrumed on the shaft 40 and having a pawl in engagement with the ratchet-disk and also having a counterbalance-weight on one of its arms, and means intermediate of the water-bell of the gasometer and the other arm of the lever whereby 45 said lever will be rocked and the carbid-wheel turned to discharge one of the buckets of its contents incident to downward movement of the water-bell.

4. In an acetylene-gas machine, the combination of a generator, a casing disposed above 50 and communicating with the generator, a tappet arranged in the casing, a strengthening-frame surrounding the casing and provided in one of its side bars with a cap-nut and in 55 its other side bar with a stuffing-box, a shaft extending through the side walls of the casing and having one of its ends disposed in the cap-nut and also having a collar at an intermediate point of its length arranged against 60 the gland of the stuffing-box, a screw bearing in the cap-nut and impinging against one end of the shaft, a carbid-wheel mounted on the shaft within the casing and having buckets arranged to be dumped by the tappet, a 65 gasometer connected with the generator and having a vertically-movable water-bell, and ratchet mechanism operated by said water-bell for rotating the carbid-wheel through the medium of its shaft. 70

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

EMANUEL LEOPOLD WEIL.
THOMAS WALSTON EVANS.

Witnesses:

JOS. MODENBACH,
JOHN TORRAGANO.