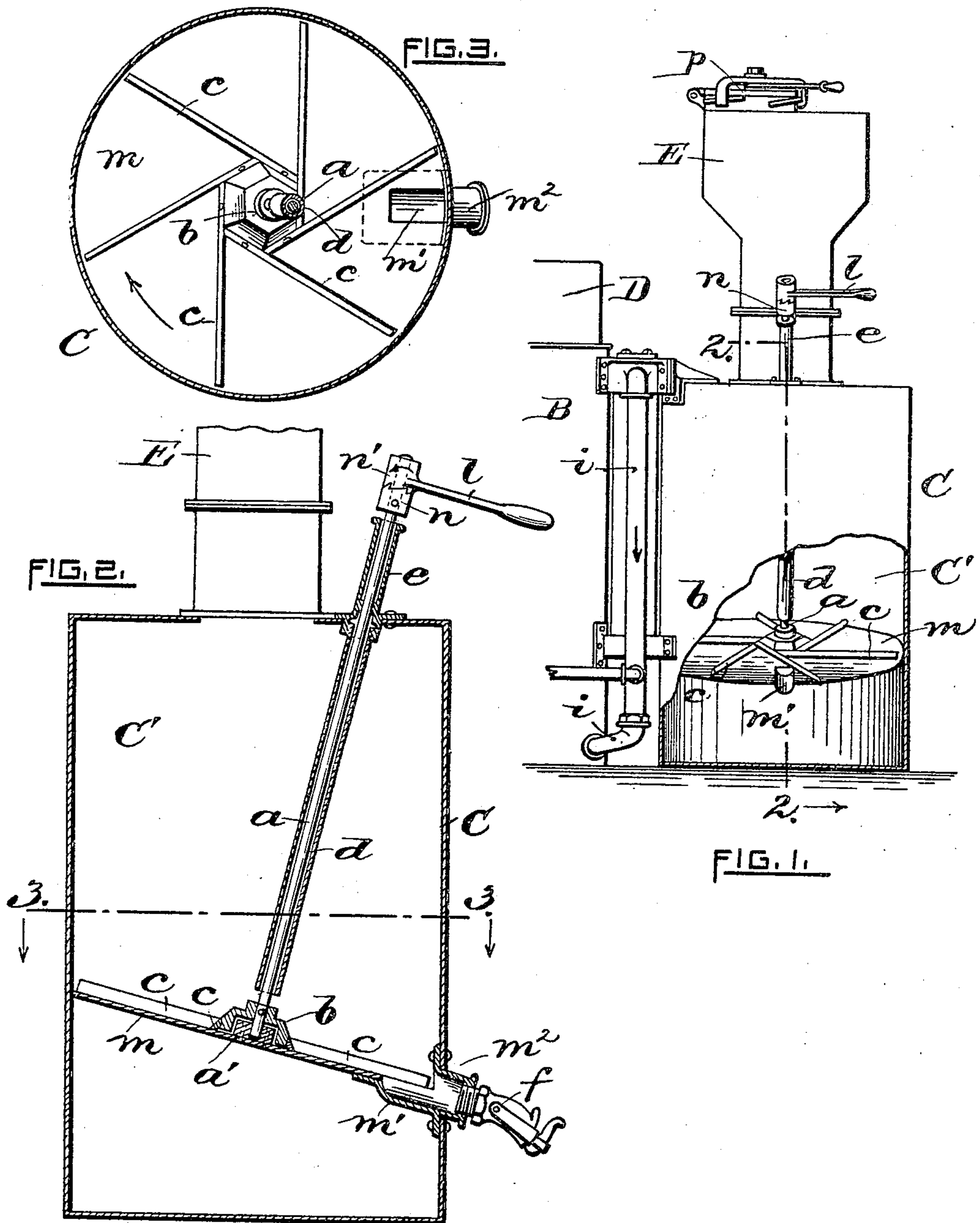


No. 801,167.

PATENTED OCT. 3, 1905.

J. W. WEEKS.
STIRRER FOR ACETYLENE GENERATORS.

APPLICATION FILED JUNE 2, 1902.



WITNESSES.

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UNIVERSAL ACETYLENE COMPANY, OF PROVIDENCE, RHODE ISLAND,
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STIRRER FOR ACETYLENE-GENERATORS.

No. 801,167.

Specification of Letters Patent.

Patented Oct. 3, 1905.

Original application filed November 2, 1901, Serial No. 58,443. Divided and this application filed June 2, 1902. Serial No. 109,855.

To all whom it may concern:

Be it known that I, JOHN W. WEEKS, a citizen of the United States of America, and a resident of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in a Combined Scraping and Stirring Device for Carbide Residue Formed in Acetylene-Gas Generators, of which the following is a specification.

My invention relates to improvements in means or mechanism for scraping carbide residue from the bottom of acetylene-gas-generator tanks; and it consists, essentially, in the combination with a generator-tank having an inclined bottom wall or partition and a valved outlet communicating with its lower side of a series of scraper-blades secured to and disposed tangentially to a revoluble hub or base member, a guided rod or shaft extending upwardly from said base and through the top of the generator-tank, and an operating-handle through or by means of which the scraper is actuated.

As just stated, my present invention is more especially adapted to be employed in machines for generating acetylene gas—such, for example, as is shown and described in my Patent No. 701,433, of June 3, 1902.

I am aware that various forms of stirrers, agitators, and scrapers have been devised and used in water-holding tanks in which carbide is fed and converted into acetylene gas. The residue or slaked carbide forms a pasty mass at the bottom of the generator-tank, which at times becomes difficult of removal.

The object I have in view is to provide generators of the class named with more efficient mechanism for insuring the agitation and discharge of the residue from the tank.

By means of my invention the entire mass of residue resting upon the base of the tank may be acted upon simultaneously, thereby causing the heavier portions to collect at the lowest point in the tank, so that upon opening the outlet or gate the waste material or residue will be forcibly discharged therethrough, while at the same time preventing an undue escape of water from the tank.

It is obvious that the device may be manipulated without withdrawing the residue—that

is to say, any incompletely or unslaked pieces of carbide embedded in the pulp may be agitated, thereby exposing them to the action of the clearer water above. The after generation of gas thus produced flows from the generator into the gas-holder and increases the volume of gas therein.

In the accompanying sheet of drawings, illustrating my invention, Fig. 1 is a front side elevation, in reduced scale, showing a portion of an acetylene-gas generator, a part of the generator-tank being broken away to more clearly represent the scraper. Fig. 2 is a vertical sectional view, in enlarged scale, taken on line 2 2 of Fig. 1; and Fig. 3 is a horizontal section taken on line 3 3 of Fig. 2.

The following is a more detailed description of my invention and the manner of its operation.

c designates the closed gas-generating tank, having a carbide-holder *e* at the top adapted to discharge carbide into the gas-generating chamber *c'* in any suitable manner. The gas as produced may pass from the generator, via a pipe *i*, into the lower portion of a suitable gasometer-tank *b* and gasometer *d*, sealed therein, portions of these latter being indicated in Fig. 1.

At a point near the bottom of the tank *c* is formed a water-tight partition *m*, the latter being arranged at an angle or obliquely to the axis of the tank, as clearly shown. I prefer to provide the lower side of the base or partition with a recess or depression *m'*, having an outlet-nozzle *m''* communicating directly therewith and extending through the wall of the tank. A suitable gate or valve *f* is screwed into the nozzle. It is through this gate that the contents of the tank may be readily drawn off at will.

The stirring or agitating device is mounted on the upper side of the partition *m* and has an operating-shaft *a* extending upwardly through the top of the tank and perpendicular to the plane of the partition. A bearing *a'* is secured to the latter having the lower end of said shaft mounted to revolve therein. Surrounding this bearing is a base-casting or spider *b*, having, as drawn, a series of six scraper-blades *c* secured tangentially thereto. The shaft *a* passes through and is fastened to

said casting. The shaft also passes upwardly through a bearing member *e*, secured to the top of the tank, and is surmounted by a clutch member *n*, fixed thereto and a fellow clutch member *n'*, loosely mounted on the shaft, provided with an operating handle or lever *l*. A downwardly-extending pipe *d*, secured to said member *e* and surrounding the shaft, forms a water seal or water packing for the shaft.

From the foregoing it will be evident that upon rotating the shaft *a* the blades *c* will be correspondingly actuated, thereby stirring or agitating the material or residue normally resting upon the partition *m*, and since the latter is arranged at an angle to the plane of the tank the action of the blades, together with the force of gravity, will cause most of the residue to collect at the lower side, the larger pieces of residue or impure carbid, if any, being caught in the recess *m'*, so that upon opening the gate *f* the waste will readily flow therefrom.

I prefer to make the blades *c* of half-round stock, substantially as shown sectionally in Fig. 2, and arrange them at an angle and also tangentially to the hub or casting *b*, whereby when in use the blades operate to force or deflect the residue from the center and toward the walls of the tank, while at the same time causing the residue to become massed at the lower side, as before stated. I also prefer to employ the slip-clutch device *n n' l*, thereby adapting the scraper to be actuated intermittently or in a ratchet-like manner and in one direction only. It is obvious that a short operating-handle or small hand-wheel may be secured directly to the head of the shaft in lieu of the clutch; but I prefer the latter, as just stated. It will be seen that the shaft and the blades are capable of vertical or end-wise movement or until arrested by the lower end of the tube *d*, thereby permitting the revolving blades to adjust themselves to any irregularities or unevenness of the bottom *m*.

I claim as my invention and desire to secure by United States Letters Patent—

1. In an acetylene-gas generator, the combination with the gas-generating tank provided with an inclined partition, a recess formed in its lower side, and a discharge-outlet registering with said recess, of a series of blades arranged to scrape the upper surface of said partition and extend over said recess, and means connected with said blades, whereby the latter are capable of being manually actuated, substantially as described.

2. In an acetylene-generator, the combination of the gas-generating tank having the base thereof inclined to the tank's longitudinal axis, a valved outlet in direct communication with the tank's interior located adjacent the lower edge of said base, a suitably-supported revoluble central head or hub, a series of scraper blades or members rigidly secured to said hub and arranged tangentially to the tank's axis whereby when in use the residue resting upon the base is deflected outwardly by the blades toward the tank's periphery and carried around to the discharge-outlet, and means connected with said device through which the latter may be manually operated.

3. In an acetylene-gas generator, the combination with the gas-generating tank provided with an inclined base or partition *m* having a recess *m'* in its lower side or edge and a discharge-outlet communicating with said recess, of a central hub member *b*, a series of scraper-blades secured to and extending tangentially from said hub and mounted contiguous to the upper face of said partition, and a suitably-supported operating-shaft extending downwardly through said tank and secured to said hub, substantially as shown and described.

Signed at Providence, Rhode Island, this 23d day of May, 1902.

JOHN W. WEEKS.

Witnesses:

GEO. H. REMINGTON,
STEPHEN C. HARRIS.

It is hereby certified that in Letters Patent No. 801,167, granted October 3, 1905, upon the application of John W. Weeks, of Providence, Rhode Island, for an improvement in "Stirrers for Acetylene-Generators," errors appear in the printed specifications requiring correction, as follows: On page 1, line 71, the reference letter "c" should read *C*; in line 72, "e" should read *E*; in line 74, "c'" should read *C'*; in line 77, "b" should read *B*; in line 77, "d" should read *D*, and in line 80, "c" should read *C*; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 12th day of December, A. D., 1905.

[SEAL.]

F. I. ALLEN,
Commissioner of Patents.