

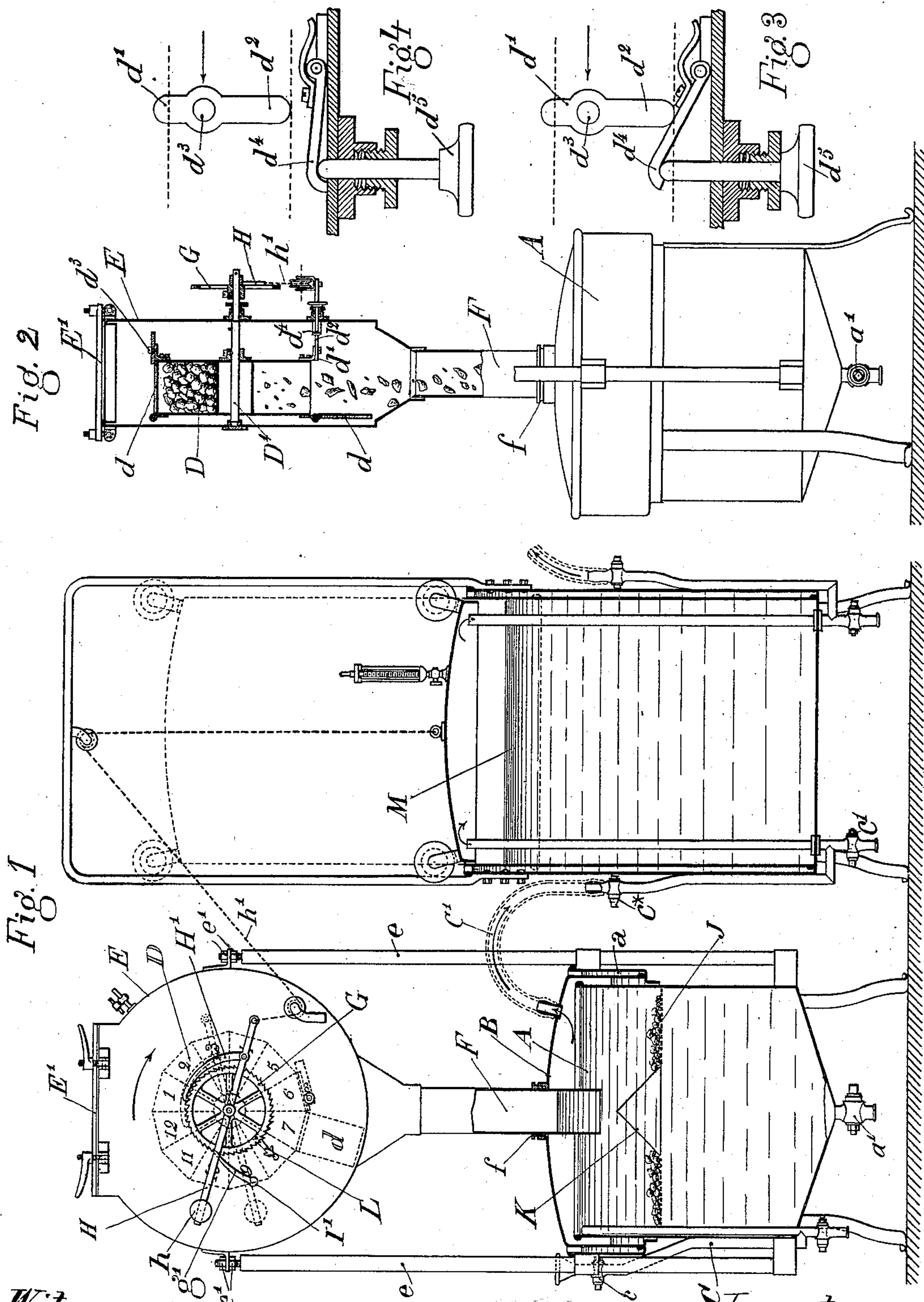
No. 617,518.

Patented Jan. 10, 1899.

A. H. BARTHEZ.  
APPARATUS FOR PRODUCING ACETYLENE GAS.

(Application filed July 10, 1897.)

(No Model.)



Witnesses:-

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# UNITED STATES PATENT OFFICE.

ALFRED HENRI BARTHEZ, OF HAMMA-ALGIERS, ALGERIA.

## APPARATUS FOR PRODUCING ACETYLENE GAS.

SPECIFICATION forming part of Letters Patent No. 617,518, dated January 10, 1899.

Application filed July 10, 1897. Serial No. 644,044. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED HENRI BARTHEZ, a citizen of the Republic of France, residing at Hamma-Algiers, Algeria, have  
5 invented a new and useful Improvement in Automatic Apparatus for the Production of Acetylene Gas, (for which patents have been obtained in France, No. 262,344, dated Sep-  
10 tember 22, 1896, and in Belgium, No. 125,841, dated January 20, 1897,) of which the following is a specification.

The apparatus which constitutes the subject of this invention though particularly intended for domestic lighting is also appli-  
15 cable to lighting on a larger scale. Its compactness permits its employment everywhere, and, moreover, it is exempt from all danger of explosion.

For the purpose of rendering intelligible in  
20 what the invention consists I have represented as an example in the accompanying drawings a portable apparatus for the production of acetylene embodying the improvement, and after having described it in detail  
25 I will point out its novelty in claims.

Figure 1 of the drawings represents a vertical section; Fig. 2, a side view of a portion of the exterior removed; Figs. 3 and 4, detail  
30 views, on a larger scale, in two positions of the device which produces the opening of the buckets.

A designates the generator. It consists of a receiver mounted upon feet and closed by a bell B, which forms a hydraulic joint by its  
35 lower edges engaging in an annular channel  $a$  around the receiver A. The receiver A is fed with water through a funnel-tube C, which debouches to its interior, and the acetylene formed is delivered to the gasometer by the  
40 tube C', in which is a stop-cock  $c^*$  and which is furnished at its bottom with a waste-cock  $c'$ . A cock  $a^4$  is fitted to the bottom of the generator to permit the withdrawal of the deposits of lime when that becomes necessary.  
45 At a certain distance below the level of the water the gasometer is furnished with a grate J, bearing at its middle a cone K, upon which falls the carbid coming from the distributor. The carbid rolling upon this cone is spread  
50 in a uniform layer upon the grate.

D designates the distributor, which consists of a bucket-wheel journaled in the casing E,

which is supported upon the generator by means of rods or standards  $e$  and which communicates with it by a dipping-tube F, upon  
55 which the bell B is represented as sliding. The casing E is furnished with a lid E', which, being packed with india-rubber, forms a hermetic joint.

Each of the buckets of the wheel D is fitted  
60 with a hinged lid  $d$ , which, being packed with india-rubber, forms a hermetic joint when it is held against the edges of the bucket by the arm  $d'$  of the two-armed lever  $d' d^2$ , (see Figs. 2, 3, and 4,) carried by the wheel and capable  
65 of turning on the pivot  $d^3$  for unfastening the lid. This is what is done when during the rotation of the wheel the arm  $d^2$  encounters an inclined tripping-piece  $d^4$ , which projects  
70 into the casing E. The lid of the corresponding bucket then opens by its own weight, and the charge of carbid from that bucket thus opened falls through the tube F upon the cone and is distributed on the grate J of the generator. There is a lever  $d' d^2$  for each bucket. 75

When it is desired that the apparatus shall not operate, all that is necessary is to displace the tripping-piece  $d^4$  in such manner that it is not in the way of the lever  $d' d^2$  and that  
80 consequently it will not produce the opening of the buckets. This displacement of the tripping-piece is produced by pushing in the externally-projecting button  $d^5$ .

I will now describe the mechanism which I preferably employ to produce the turning  
85 step by step of the bucket-wheel by the movements of the bell M of the gasometer. The shaft D', on which is keyed the bucket-wheel, carries an external ratchet-wheel G, of which the movement in one direction is prevented  
90 by a retaining-pawl  $g'$ . Upon this shaft D' is loosely mounted a lever H, furnished at one end with a counterpoise  $h$  and to the other end of which is attached one of the extremities of a cord  $h'$ , which passes over guide-  
95 pulleys, and the other extremity of which is attached to the bell M of the gasometer. This lever H carries a pawl H', which turns the ratchet-wheel, and consequently the bucket-wheel, in the direction of the arrow shown in  
100 Fig. 1, when the bell M descends. The movement of the lever in the other direction is limited by a stop  $i$  in such manner that the angle of rotation communicated to the



ratchet-wheel by the lever on the descent of the bell M will be exactly equal to that which corresponds with a bucket. An indicating-pointer L, which works in front of a dial, permits it to be seen at any moment by a simple reading how many buckets remain full. It will be thus always known when it will be time to recharge the buckets. The quantity of gas stored up in the gasometer after the fall of the contents of one bucket is always more than sufficient to supply the burners during the recharging.

Having now described the apparatus itself, I will proceed to describe its operation.

To charge the distributor, the button  $d^5$  is withdrawn to let back the inclined tripping-piece  $d^4$ , as shown in Fig. 4, in order that it may not act upon the lever  $d' d^2$ . The lid E' is then opened and the upper bucket is filled and closed. The bucket-wheel is then turned far enough to bring an empty bucket to the top. This bucket is then filled and closed, and so on until all the buckets are full. The wheel is afterward turned to bring the pointer L opposite the division 12, and the lid E' is then closed. When it is desired to commence the operation, all that is necessary is to push the button  $d^5$  and turn the ratchet-wheel G by hand until the pointer L arrives at the division 1. A bucket then empties itself and the bell is refilled. The lever H then returns under the action of the counterpoise  $h$  to the position indicated in dotted lines in Fig. 1. When the bell afterward descends, at the end of its descent it draws the chain or cord  $h'$ , and the lever H' returning to the position shown in full outline a new charge of carbid will fall into the generator. The operation will continue automatically in the same manner so long as all the buckets are not emptied or until the button  $d^5$  is withdrawn to allow the inclined plane  $d^4$  to return to the position shown in Fig. 4 for the purpose of preventing the latter from operating the closing-lever  $d' d^2$  during the rotation of the wheel D.

In case the apparatus is intended to give only a small supply of gas the generator may also serve as a gasometer. In that case during its operation the bell B slides upon the dipping-tube F, and it is to this bell that the lower extremity of the cord or chain  $h'$  is attached.

What I claim as my invention is—

1. An automatic apparatus for the production of acetylene gas comprising in combination a bucket-wheel the buckets of which are of a capacity to contain a charge of carbid, a lid for each bucket, a closing device for each lid, a device which by the rotation of the wheel disengages the closing device in order to permit the lid of the lower bucket to open, a generator for containing water arranged be-

low the bucket-wheel, a casing containing the bucket-wheel and communicating with the generator by a dipping-tube, a cone arranged below this tube in the generator, a grate surrounding the said cone, a gasometer and a connection between the movable part of the gasometer and the bucket-wheel for the purpose of utilizing the movement of the said movable part to produce the intermittent rotation of the bucket-wheel, substantially as herein described.

2. An automatic apparatus for the production of acetylene gas comprising in combination a bucket-wheel the buckets of which are of a capacity to contain a charge of carbid, a casing for said bucket-wheel, a lid for each bucket, a closing device for each lid, a device which by the rotation of the wheel disengages the closing device in order to permit the lid of the lower bucket to open, a generator for containing water arranged below the bucket-wheel and connected with said casing by a dipping-tube, a distributing-cone arranged under the said tube in the generator, a grate surrounding this cone, a gasometer, a ratchet-wheel fast upon the axle of the bucket-wheel, a counterpoised lever furnished with a pawl engaging with the said ratchet-wheel and a connection between the said lever and the movable part of the gasometer, substantially as herein described.

3. An automatic apparatus for the production of acetylene gas comprising in combination a bucket-wheel the buckets of which are of a capacity to contain a charge of carbid, a lid for each bucket, a two-armed lever for each lid the said lever being carried by the bucket-wheel in such manner that in its normal position one of its arms bears upon the lid of the corresponding bucket to hold it closed, a displaceable tripping-piece which in one of its positions is within range of the other arm of the said lever during the rotation of the bucket-wheel for the purpose of causing the swinging of the said lever to permit the opening of the corresponding bucket, a generator for containing water for the reception of the charge of carbid when the lid of the bucket opens, a gasometer and a connection between the movable part of the gasometer and the bucket-wheel for the purpose of utilizing the movement of the said movable part to produce the intermittent rotation of the bucket-wheel, substantially as herein described.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ALFRED HENRI BARTHEZ.

Witnesses:

EDWARD MACLEAN,  
LOUIS GENES.