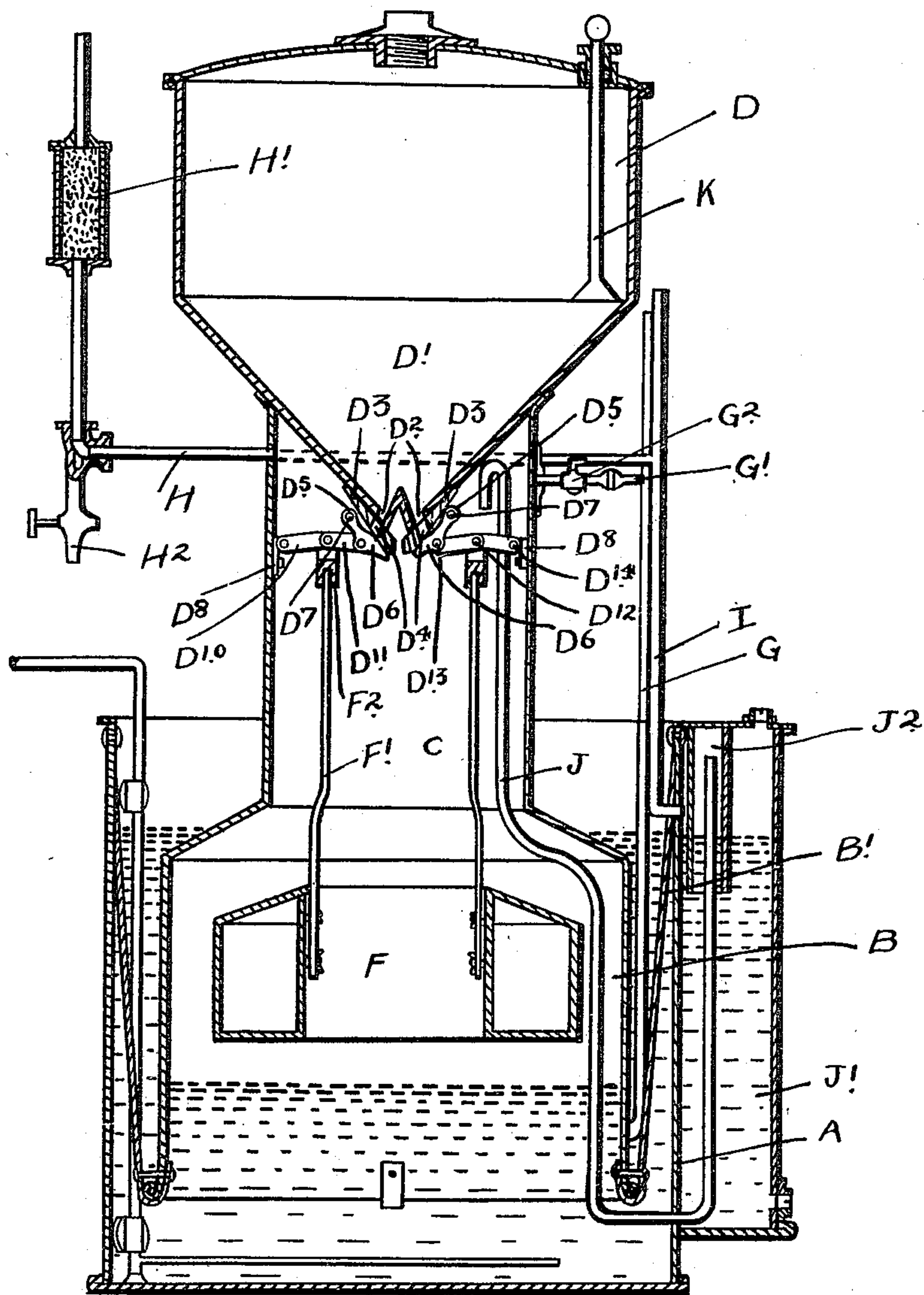


A. C. GRANT.
ACETYLENE GAS GENERATOR.
APPLICATION FILED AUG. 29, 1910.

993,360.

Patented May 30, 1911.



WITNESSES
Wm. H. Laffield
J. M. Kirk.

INVENTOR
A.C. GRANT
By Fred. B. Fetherstonhaugh Atty.

UNITED STATES PATENT OFFICE.

ALLAN CHESMAN GRANT, OF ST. GEORGE, NEW BRUNSWICK, CANADA.

ACETYLENE-GAS GENERATOR.

993,360.

Specification of Letters Patent. Patented May 30, 1911.

Application filed August 29, 1910. Serial No. 579,434.

To all whom it may concern:

Be it known that I, ALLAN CHESMAN GRANT, of the town of St. George, in the Province of New Brunswick, Canada, have
5 invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is the specification.

My invention relates to acetylene gas machines, and the object of the invention is to
10 devise a simple machine in which the feed valves will not clog through slack adhering to them and in which such valves will be positively closed to cut off the feed of the carbid.

15 It consists essentially of an outer tank, an inner casing supported within the tank by suitable hangers depending from the sides of the tank, a tubular neck extending upwardly from the casing to the interior of
20 which the neck communicates, a carbid holder provided with a conical bottom depending into the neck, feed valves pivotally secured to the outside of the carbid chamber in proximity to the depending apex lo-
25 cated within the tubular neck of the inner casing, a toggle joint connection between the pivoted valves and the wall of the tubular neck, a float located in the casing and hangers connecting the toggle joint connection
30 to the float as hereinafter more particularly explained.

The drawing represents a vertical section of my machine.

A is a tank designed to contain water.

35 B is an inner casing supported within the tank A by depending hangers B', which are secured to the inside of the wall of the tank A in proximity to the top thereof. The hangers B' extend downwardly in an
40 oblique direction and are suitably secured to the bottom rim of the inner casing B. On referring to the drawing it will be seen that the casing B has an open bottom.

45 C is a tubular neck extending upward from the top of the inner casing to the interior of which it communicates.

D is a carbid receptacle provided with an inverted conical bottom D' extending down and fitting into the tubular neck C.

50 D² are feed openings located in the bottom D' in proximity to the apex thereof.

D³ are castings secured to the bottom D' of the carbid receptacle D and provided with feed openings D⁴ registering with the open-
55 ings D².

D⁵ are lugs forming part of the castings D³.

D⁶ are valves pivotally connected to the lugs D⁵ by pins D⁷.

D⁸ are brackets secured to the inside of
60 the tubular neck C.

D¹⁰ and D¹¹ are links pivotally connected together by a pin D¹² and to the valves D⁶ and brackets D⁸ by pins D¹³ and D¹⁴
65 respectively.

F is a float located in the receptacle B.

F' are link rods secured at their lower ends to the float F and are provided at their upper ends with forked castings F² extend-
70 ing to each side of the links D¹⁰ and D¹¹ and through which the pins D¹² also pass.

J is a pipe leading from the neck C through and around the bottom of the casing B into a supplemental water chamber J'.

J² is a depending tube having a closed
75 upper end and into which the tube J extends above the water level in the chamber J'.

I is a pipe leading to the service pipe H. The gas in passing through the water in the chamber J' is cooled at it passes to the
80 service pipe.

K is a gage rod by which the depth of the carbid in the carbid holder is indicated.

G is a blow out pipe.

G' is a branch pipe connecting the blow
85 off pipe with the interior of the tubular neck C. The tubular pipe G' is provided with a closing valve G².

H is a service pipe which is provided with a suitable filter H' located at any suitable
90 point in its length. The filter H' comprises a tubular casing filled with felt or any other suitable filtering material.

H² is a drip pipe.

Having described the principal parts in-
95 volved in my invention I shall briefly describe the operation of the same.

It will be understood that the casing B and necks C form the gas generating cham-
100 ber. As the gas is fed through the service pipe H the pressure in the casing B is necessarily reduced allowing the water con- tained in the tank A to rise within the cas- ing B. The water continues to rise until
105 it lifts the float F. The lifting of the float F breaks the toggle joint formed by the links D¹⁰ and D¹¹, the float being connect- ed to such toggle joint by the link rods F' as
110 hereinbefore described. By this means the valves D⁶ are swung away on the pins D⁷

from the openings D^4 thereby allowing the carbide to feed through the openings D^2 and D^4 into the generating chamber. It will also be understood that as soon as the gas
5 pressure increases the water contained in the casing B will be forced downward carrying with it the float F. Immediately the water has left the float F the full weight of the float will serve to spread the toggle joint links
10 D^{10} and D^{11} apart so as to bring them into alignment and thereby swing the valves D^6 into their closed position.

From this description it will be seen that I have devised a very simple machine in
15 which the feed valves are not liable to become clogged and in which no springs or gaskets are employed, which are liable to wear out or otherwise be deleteriously affected.

20 What I claim as my invention is:

1. In a device of the class described, the combination with a carbide receptacle having an inverted conical bottom having feed
25 openings in proximity to the bottom thereof, and a hollow neck supporting the carbide receptacle, of pivoted valves located in prox-

imity to the feed openings, brackets secured to the inside of the neck, toggle jointed links connecting the valves with the brackets, a float and connecting means between
30 the float and toggle jointed links designed to break the joint upon the rising of the float, as and for the purpose specified.

2. In a device of the class described, the combination with the carbide receptacle hav-
35 ing a vertical conical bottom, having feed openings located in proximity to the apex thereof, of castings secured to the said bottom having feed openings registering with the feed openings in such bottom, bearing lugs
40 forming part of the castings, valves pivotally connected to the lugs, suitably supported brackets, toggle jointed links between the brackets and the valves, a float, and links
45 connecting the float with the toggle jointed links designed to break the toggle by the raising of the float, as and for the purpose specified.

ALLAN CHESMAN GRANT.

Witnesses:

CHARLES JOHNSON,
W. F. MORIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
