

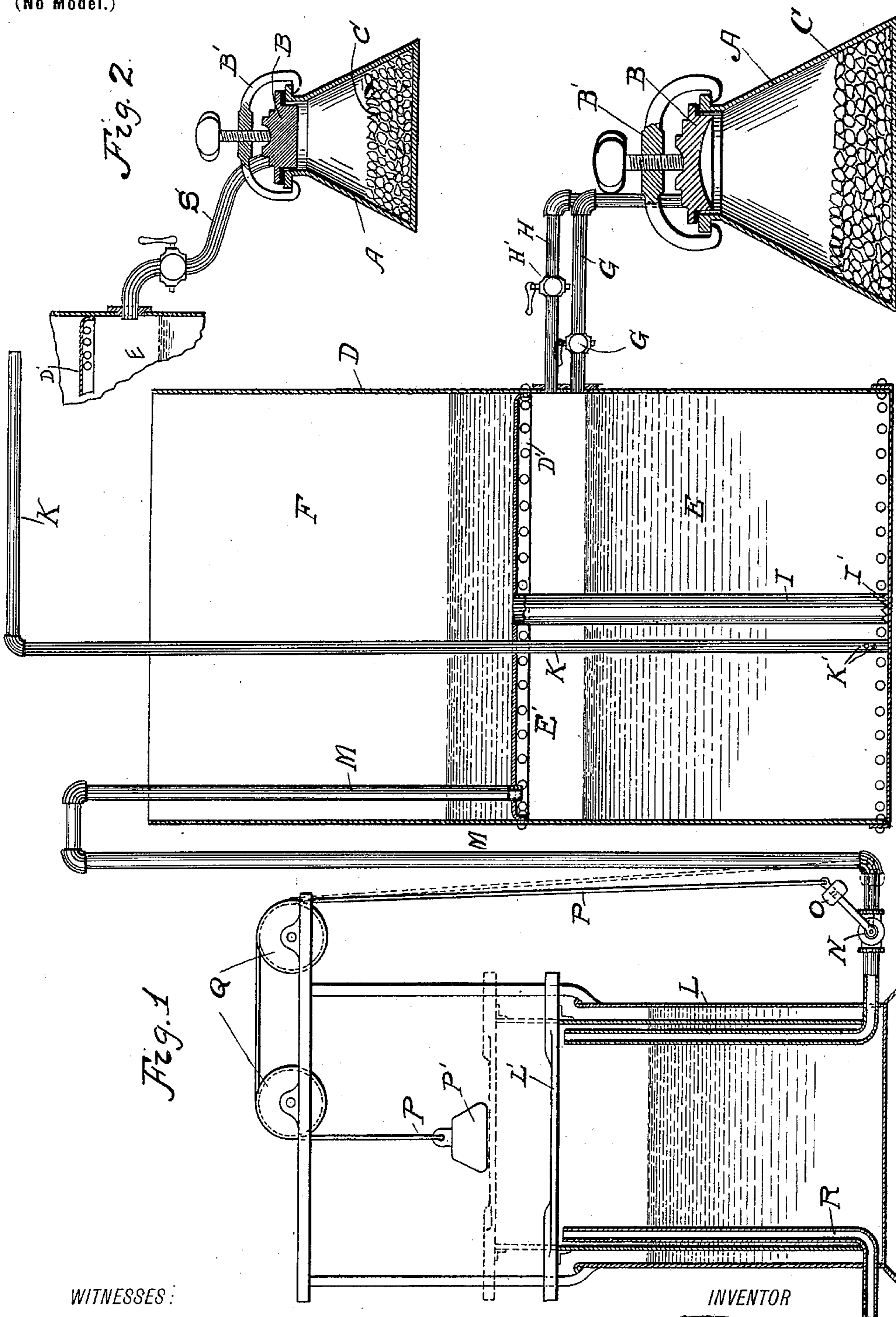
No. 620,179.

Patented Feb. 28, 1899.

M. L. PROCTOR.
ACETYLENE GAS GENERATOR.

(Application filed Apr. 12, 1898.)

(No Model.)



WITNESSES:

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MARO L. PROCTOR, OF CONSTANTINE, MICHIGAN.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 620,179, dated February 28, 1899.

Application filed April 12, 1898. Serial No. 677,278. (No model.)

To all whom it may concern:

Be it known that I, MARO L. PROCTOR, a citizen of the United States, residing at Constantine, in the county of St. Joseph and State of Michigan, have invented new and useful Improvements in Apparatus for Generating Acetylene Gas, of which the following is a specification.

This invention relates to apparatus for generating acetylene gas; and the object thereof is to provide apparatus of simple and improved form wherein the amount of gas generated is controlled automatically by pressure of unconsumed gas, thereby rendering it entirely safe, while its action is mechanically certain and accurate.

A further object is to provide mechanism for controlling the admission of gas to the gasometer and for maintaining the pressure therein at a fixed point.

The invention consists in the novel features of construction and in the combination and arrangement of parts hereinafter fully described and claimed, and illustrated by the accompanying drawings, in which—

Figure 1 is a vertical sectional view of the apparatus. Fig. 2 is a detail view illustrating a connection between the generating-chamber and gas-receiver of modified form.

The generating-chamber A is closed and sealed by cover B, secured by clamp B', and in the chamber is deposited a suitable amount of carbid C.

D designates an equalizing-tank divided by partition D' into lower chamber E and upper chamber F. The tank is positioned adjacent chamber A, and chamber E thereof communicates with chamber A through pipes G and H, valved, respectively, at G' and H', pipe G serving to pass water to chamber A and pipe H passing gas therefrom. Chambers E and F communicate through centrally-arranged pipe I, open only at its lower end, to chamber E, as indicated at I'.

In operation a quantity of water being supplied to tank D the same flows from chamber F to E through pipe I until pipe G is reached, and valve G' being open it passes to chamber A and in contact with the carbid. Gas is immediately generated, which passes out through pipe H, valve H' being open, to chamber E and forces the water-level below pipe

G, the level of the water in chamber F being correspondingly raised. The water-supply for the generating-chamber being thus cut off, generation ceases until gas-pressure in chamber E is reduced sufficiently to permit the water to again reach and flow through pipe G. The generation of gas is thus automatically controlled by its own pressure, in conjunction with the change of water-levels in chambers E and F. Pipe I being open at its lower end only, gas cannot escape there-through, but is confined in space E' between the water-surface and partition D'. If through any cause the generation should continue or the pressure increase so as to threaten the capacity of chamber E, danger is averted by safety-pipe K, open at its lower end to chamber E, as indicated at K', the opening being above opening I' in pipe I, so that should the water-level drop sufficiently, owing to increased volume or pressure of gas, the latter will pass out through pipe K to the outer air before opening I' is exposed.

Gas is supplied to gasometer L from chamber E through pipe M, provided with valve N, the latter carrying weighted arm O, and leading upward from this arm is cord P, passing over elevated sheaves Q, and at its extremity, where it depends centrally over dome L' of the gasometer, the cord is provided with weight P'. By this means the supply of gas to the gasometer is regulated to a nicety, the rising of dome L', in consequence of increased pressure, lifting weight P' and permitting weighted arm O to lower and shut off the supply by closing the valve, while diminution of pressure causes dome L' to drop from beneath weight P, and the latter, drawing upon cord P, opens valve N. Service-pipe R supplies gas to the burners.

I do not desire to limit myself to the construction here shown for operating valve N by the vertical movement of the gasometer-dome, as the same may be accomplished in a variety of ways for securing the desired automatic action. Instead of the two pipes connecting chambers A and E the desired result may be attained by providing one large pipe S, Fig. 2, of sufficient capacity to pass the water and gas simultaneously in opposite directions. When only one pipe is used, there is a tendency, more or less pronounced, of the

water and gas to commingle therein and impede the flow of water, and for this reason I prefer the two-pipe arrangement. In like manner other details of construction may be
5 changed or varied without departing from the spirit or scope of my invention, and the several parts of the apparatus will be of such size as to accommodate the number of burn-
ers to be supplied.

10 By closing valves G' and H' the generating-chamber is cut off from the remainder of the apparatus, and by loosening clamp B' chamber A may be removed from beneath cover B and the supply of carbid replenished.

15 The gas-pressure is under absolute control at all times and there is no possible opportunity of the apparatus exploding through excessive pressure. The supply to the gas-
ometer is so regulated that an unvarying
20 pressure is maintained and it becomes unnecessary to interpose a regulator or other equalizing device between the same and the
burners.

Having thus fully described my invention,
25 what I claim, and desire to secure by Letters Patent, is—

In an acetylene-gas generator, the combina-

tion of the generating-chamber A, tank D di-
vided by horizontal partition D' into lower
compartment E and upper compartment F, 30
valved pipe G connecting the upper portions
of chamber A and compartment E, valved
pipe H also connecting said parts but enter-
ing compartment E above pipe G for the
purpose described, pipe I connecting the bot- 35
toms of compartments E and F, pipe K open
in compartment E above the lower end of
pipe I and extending to the outer air, gas-
ometer L in the plane of tank D and chamber
A, arched pipe M extending from partition 40
D' to the upper end of tank D then down-
ward between the tank and gasometer and
entering the bottom of the latter, and a valve
in pipe M controlled automatically by the gas-
ometer-dome, all as herein specifically de- 45
scribed and shown.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

MARO L. PROCTOR.

Witnesses:

JAS. A. MARSH,
JOHN H. JONES.