(No Model.)

A. DILLENBECK.

GAS MACHINE.

No. 304,507. Patented Sept. 2, 1884.

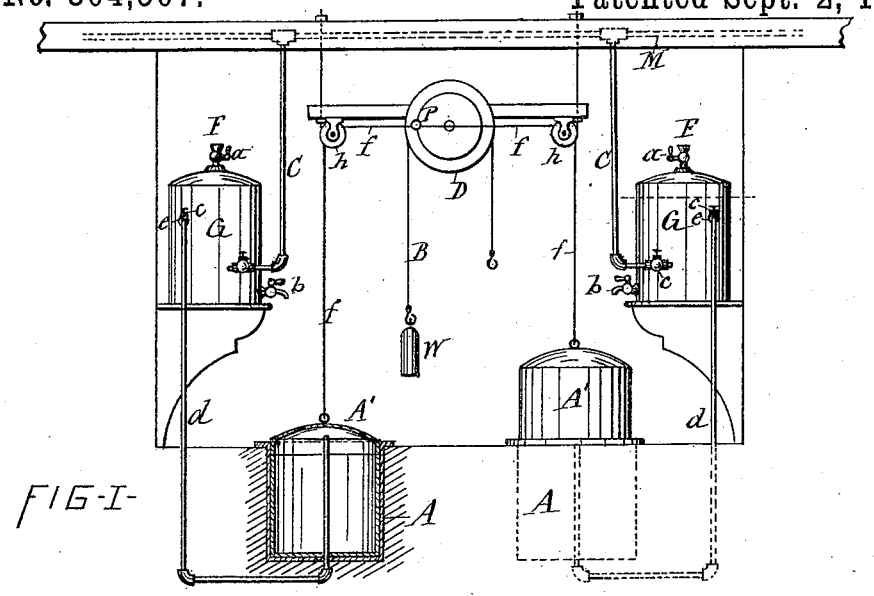


FIG-I-

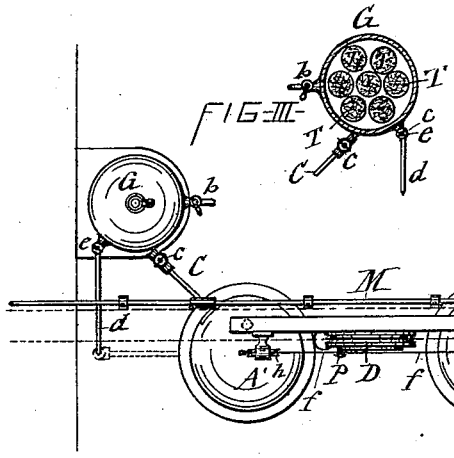


FIG-III-

FIG-II-

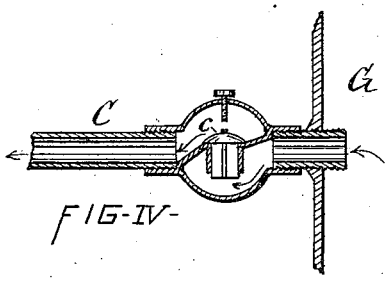
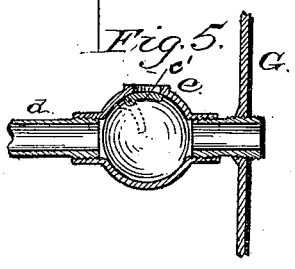


FIG-IV-



ATTEST—

E. Bowdinson

Wm. E. Raymond

INVENTOR—

Adam Dillenbeck

per Duell, Laase & Ely

his attys

UNITED STATES PATENT OFFICE.

ADAM DILLENBECK, OF SCHENECTADY, NEW YORK.

GAS-MACHINE.

SPECIFICATION forming part of Letters Patent No. 304,507, dated September 2, 1884.

Application filed December 18, 1883. (No model.)

To all whom it may concern:

Be it known that I, ADAM DILLENBECK, of Schenectady, in the county of Schenectady, in the State of New York, have invented new and useful Improvements in Gas-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention consists in a novel construction and combination of appliances which conjointly constitute a simple, convenient, and effective apparatus for the manufacture of illuminating-gas from hydrocarbon fluids, all as hereinafter more fully explained, and specifically set forth in the claims.

In the annexed drawings, Figure I is a side elevation of my invention. Fig. II is a plan view of the same. Fig. III is a horizontal transverse section of the gas-generating tank or case, and Fig. IV is a sectional view of the check-valve applied to the pipes connected with the aforesaid tank. Fig. V is a detail section showing the air-inlet valve on a larger scale.

Similar letters of reference indicate corresponding parts.

G represents the gas-generator, in the form of an air-tight tank or case, having an inlet, F, for the fluid, which inlet is provided with a stop-cock, *a*. In the interior of the tank G is arranged a series of compartments formed of perforated cylinders T T, as illustrated in Fig. III of the drawings. These cylinders I pack with equal parts of asbestus, charcoal, and lamb's wool, which packing absorbs the fluid introduced through the inlet F. A faucet, *b*, is applied to the base of the tank G to draw off the surplus fluid. A gas-pipe, C, taps the aforesaid tank, and is extended to the main gas-pipe M, which conducts the gas to the burners. (Not necessary to be here shown.) The pipe C is provided with a check-valve, *c*, similar to that illustrated in Fig. IV of the drawings, which valve serves to prevent back-pressure of gas from the pipe to the tank G.

A′ is a tank placed in an inverted position in a water tank or pit, A, in a manner similar to the common gasometers.

A duct, *d*, is extended from the gas-generator G, and terminates above. The duct *d* is provided with an air-inlet, *e*, to which is connected a check-valve, *c′*, similar to that of the gas-pipe C, but arranged to act conversely—*i. e.*, to prevent outward escape of gas from the duct *d*. When either vessel A′ is rising, the check-valve *c* in the pipe C is closed, the valve *c′*, which covers the air-inlet *e*, allowing air to mix with the gas passing from the tank G to the said vessel A′. When either vessel A′ is falling, the pressure in the duct *d* closes the valve *c′*, and the mixed air and vapor is forced from said vessel through the tank G and pipe C.

D represents a pivoted drum, over the periphery of which a rope or chain, B, is extended, and connected thereto in such a manner that a draft on said rope or chain imparts rotary motion to the drum. The two ends of said rope are suspended from the drum and provided with a hook or other suitable device for readily attaching a weight, W, thereto. On the side of the drum is a stud-pin, P, which may be either attached directly to the drum or to a disk fixed concentric to the drum, as shown.

To the stud-pin P is attached a rope or chain, *f*, which passes over a sheave, *h*, arranged directly over the center of the tank A′, to which latter the end of the aforesaid rope or chain is attached.

The operation of the described apparatus is as follows: The generator G, being charged with either benzine, naphtha, gasoline, or analogous hydrocarbon fluid, which is absorbed by the packing of the cylinders T T, leaves the interstices between the said cylinders empty for the reception of the vapor or gas emitted from the hydrocarbon fluid in the cylinders. The weight W is then applied to one of the ends of the rope or chain B. The resultant draft on the latter rotates the drum D, and carries the stud-pin P from a point nearest the sheave *h* to the point farthest from the same, and thus raises the tank A′ by the draft on the rope or chain *f*, connecting said tank with the stud-pin P. The raising of the aforesaid tank produces a vacuum in the same, and this vacuum causes the gas to flow from the generator G through the pipe *d* into the tank A′, and simultaneously opens the check-valve *c* of the air-inlet *e* to allow air to accompany the gas in its flow to the tank A′, the latter becoming thus charged with a mixture of gas and air. The weight W is then either removed or transferred to the opposite end of the rope or chain B, to

allow the tank A′ to descend and exert a pressure on its contents, which are forced back through the duct *d* into the gas-generator G, the check-valve *c* of the air-inlet being in the meantime closed by the aforesaid pressure. The gas and air entering the generator pass through the interstices between the cylinders T T, and escape through the pipe C to the main gas-pipe M.

In cases where a large and constant supply of gas is required, I duplicate the arrangement of the generator G, tank A′, and their connections, as illustrated in the annexed drawings. By shifting the weight W from one end of the rope or chain to the opposite end thereof, the aforesaid appliances are caused to operate alternately, and thus produce nearly a continuous flow of gas to the main pipe M.

Having described my invention, what I claim is—

1. In combination with the vessel A′, means for raising and depressing it alternately, the generators G and gas-pipe M, the pipes C, having check-valves *c*, and the ducts *d*, having air-inlets *e* and air-inlet valves *c′*, all combined and operating as and for the purposes set forth.

2. In an apparatus for volatilizing hydrocarbon fluids, the generator G, provided with the discharge-pipe C, check-valve *c*, perforated cylinders T T, packed with absorbent material, immersed tank A′, communicating with the generator G by duct *d*, air-inlet *e*, provided with a check-valve, and mechanism for alternately raising and depressing the tank A′, substantially as described and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 13th day of December, 1883.

ADAM DILLENBECK. [L. S.]

Witnesses:

FREDERICK H. GIBBS,

WM. CHANDLER RAYMOND.