

E. ANDERSON.

GENERATOR.

APPLICATION FILED APR. 15, 1912.

1,051,363.

Patented Jan. 21, 1913.

Fig. 1,

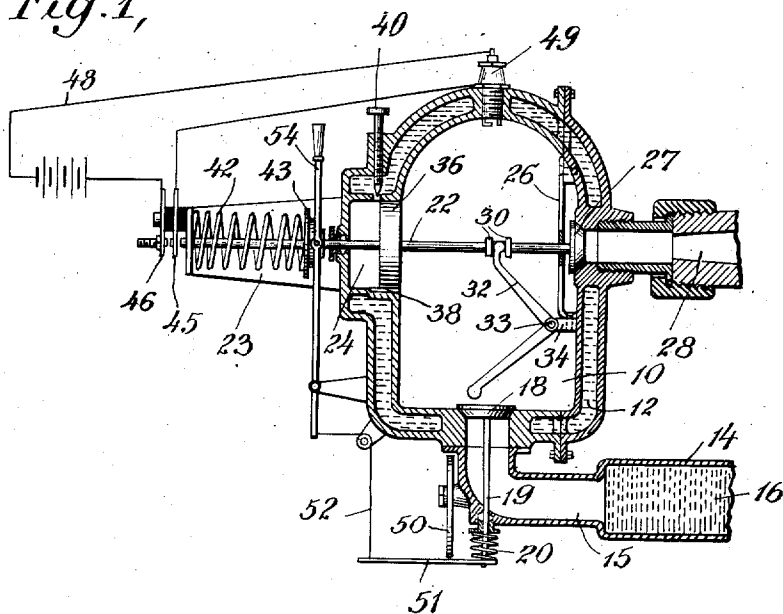


Fig. 2,



WITNESSES:

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EMIL ANDERSON, OF NEW YORK, N. Y.

GENERATOR.

1,051,363.

Specification of Letters Patent.

Patented Jan. 21, 1913.

Original application filed January 5, 1912, Serial No. 669,690. Divided and this application filed April 15, 1912. Serial No. 690,737.

To all whom it may concern:

Be it known that I, EMIL ANDERSON, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Generators, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This invention relates to an improvement in generators and is a division of my application Serial No. 669,690, filed January 5, 1912.

The object of the invention is to provide a simple and improved construction which has advantages over those which have heretofore been in use.

I will describe my invention in the following specification and point out the novel features thereof in the appended claims.

In the accompanying drawing, Figure 1 is a central vertical section of the present embodiment of the invention. Fig. 2 is a front elevation of the eccentric cam for controlling one of the valves.

As illustrated in the drawing, the generator comprises a casing 10, preferably generally dome shaped, and surrounded by a jacket 12. The combustible liquid is supplied under pressure to the generator from a receiver 14 through a pipe 15 provided with fire screens 16, said pipe being provided with a valve 18 which controls the communication with the interior of the generator. The valve 18 is provided with a stem 19 which is surrounded by a light spring 20 tending normally to hold the valve closed.

Mounted to reciprocate within the generator 10 is a piston rod or shaft 22 guided at one end in a bracket arm 23 on the wall of a cylindrical recess 24 in the generator wall, the other end of said shaft being guided in a bar 26 mounted on the interior of said generator casing. The piston rod 22 is provided at one end with a valve 27 which controls the inlet to a discharge pipe 28. Intermediate the length of the rod 22 are two collars 30, between which one end of a bell-crank lever 32 is held, said bell-crank lever being fulcrumed at 33 in a lug 34 projecting from the wall of the chamber 10. The lower end of said bell-crank lever

is arranged to engage the upper surface of the valve 18 to hold the latter closed when the valve 27 is open.

Affixed to the rod 22 is a piston 36 which fits the cylindrical recess or cylinder 24. The wall of the cylinder is provided with small longitudinal grooves 38, which provide for a desired amount of leakage past the piston 36. A valve 40 is provided, which controls the admission of liquid from the jacket 12 into the cylinder 24. A spring 42 surrounds the rod 22, bearing at one end against the bracket arm 23 and at its opposite end against a collar 43 on said rod. This spring normally tends to hold the valve 27 against its seat until overcome by the pressure within the generator against the piston 36. The left-hand end of the rod 22 is arranged to engage a contact 45 and force it against a contact 46, said contacts being insulated from each other and supported on the end of the bracket 23. The contacts 45 and 46 are connected in a circuit 48 of a spark plug 49 which is arranged to ignite charges in the generator 10, an induction coil of usual construction being used in this circuit.

The operation of the generator is as follows: Carbureted hydro-carbon or other fluid is supplied under pressure through the pipe 15 to lift the valve 18 from its seat against the tension of the spring 19. When the pressure in the generator is sufficient, the piston 36 is moved toward the left, thereby bringing the bell-crank 32 into engagement with the valve 18 to close the latter and hold it closed; at the same time the valve 27 is moved from its seat and the circuit 48 closed at the contacts 45, 46 to cause the spark plug 49 to ignite the contents of the generator chamber 10. This movement of the piston 36 closes the outlet of valve 40 and creates a pressure back of the piston which causes a small amount of the liquid from jacket 12 to be sprayed into the generator through the small grooves 38. This liquid may be water which will be instantly expanded into steam by the heat generated within the chamber 10, and will pass with the products of combustion through the discharge pipe 28. Or, this liquid may be a hydrocarbon or other substance of like character which will enrich the explosive mix-

ture already within the generator chamber. Or, if a combustible liquid is used, air only may be admitted to the generator chamber through the valve 18, in which case the explosive mixture is formed within the generator chamber itself.

An eccentrically mounted cam 50 is provided for the purpose of regulating the amount of lift of the valve 23, or of holding it closed for the purpose of stopping the operation of the apparatus.

An extension 51 from the valve stem 19 is connected by a wire 52 with a hand lever 54. This lever is also connected with the rod 22 on which are the valve 27 and the piston 36. This arrangement is provided for the purpose of starting the apparatus, since by rocking the lever 54 the valve 18 may be opened and closed, and the valve 27 and piston 36 reciprocated, and the circuit to the spark plug 49 closed and opened. The result of the operation of this apparatus is that an explosive mixture is admitted under comparatively low pressure, is expanded by combustion and delivered under high pressure through the discharge pipe 28.

What I claim is:

1. A generator comprising a chamber, a cylinder, a piston movable in said cylinder, means for affording communication between said cylinder and said chamber, a jacket surrounding said chamber arranged to contain liquid and communicating with said cylinder, a valve arranged to admit gaseous fluid to said chamber, means for igniting the mixture within said chamber, and a valve for controlling the escape of the products of combustion from said chamber.

2. A generator comprising a chamber, a jacket surrounding said chamber and arranged to contain liquid, a cylinder, means for affording communication between said jacket and said chamber, a piston movable in said cylinder, passages affording communication between said cylinder and said chamber, means for admitting a combustible charge to said chamber, means for igniting the combustible charge in said chamber, and

means for controlling the discharge of the products of combustion from said chamber. 50

3. A generator comprising a chamber, a jacket surrounding said chamber, a cylinder, means for affording communication between said cylinder and jacket, a piston in said cylinder, means for affording communication between said cylinder and said chamber, an admission valve for said chamber, an exhaust valve for said chamber, and means for maintaining one of said valves closed when the other is open. 55

4. A generator comprising a chamber, a cylinder, a rod within said chamber, a piston mounted on said rod and movable within said cylinder, means for admitting a combustible mixture to said chamber, a valve connected to said rod, an ignition device having an electric circuit, contacts cooperating with said rod for controlling said circuit, whereby when said rod is moved in one direction said circuit is closed to ignite said mixture, said piston is moved into said cylinder and said valve is opened to allow the escape of the products of combustion from said chamber. 60

5. A generator comprising a chamber, a rod within said chamber, a hand lever for moving said rod manually, means for supplying a combustible charge to said chamber, an igniting device within said chamber controlled by the movement of said rod, and means for controlling the discharge of the products of combustion from said chamber. 65

6. A generator comprising a chamber, a rod within said chamber, an inlet valve, an exhaust valve connected to said rod, a cylinder, a piston on said rod movable with said cylinder, and a bell crank lever within said chamber operatively connected to said rod and arranged to close the inlet valve when the outlet valve is opened. 85

In witness whereof, I hereunto set my hand this 12 day of April 1912. 90

EMIL ANDERSON.

Witnesses:

F. GRAVES,
G. R. QUIMBY.

Correction in Letters Patent No. 1,051,363.

It is hereby certified that Letters Patent No. 1,051,363, granted January 21, 1913, upon the application of Emil Anderson, of New York, N. Y., for an improvement in "Generators," were erroneously issued to the inventor, said Anderson, whereas said Letters Patent should have been issued to *Anderson Gas Turbine Company, of Newark, New Jersey, a corporation of New Jersey*, said corporation being owner of the entire interest in said invention as shown by the records of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 4th of March, A. D., 1913.

[SEAL.]

C. C. BILLINGS,
Acting Commissioner of Patents.

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6. A generator comprising a chamber, a rod within said chamber, an inlet valve, an exhaust valve connected to said rod, a cylinder, a piston on said rod movable with said cylinder, and a bell crank lever within said chamber operatively connected to said rod and arranged to close the inlet valve when the outlet valve is opened. 85

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