

No. 764,716.

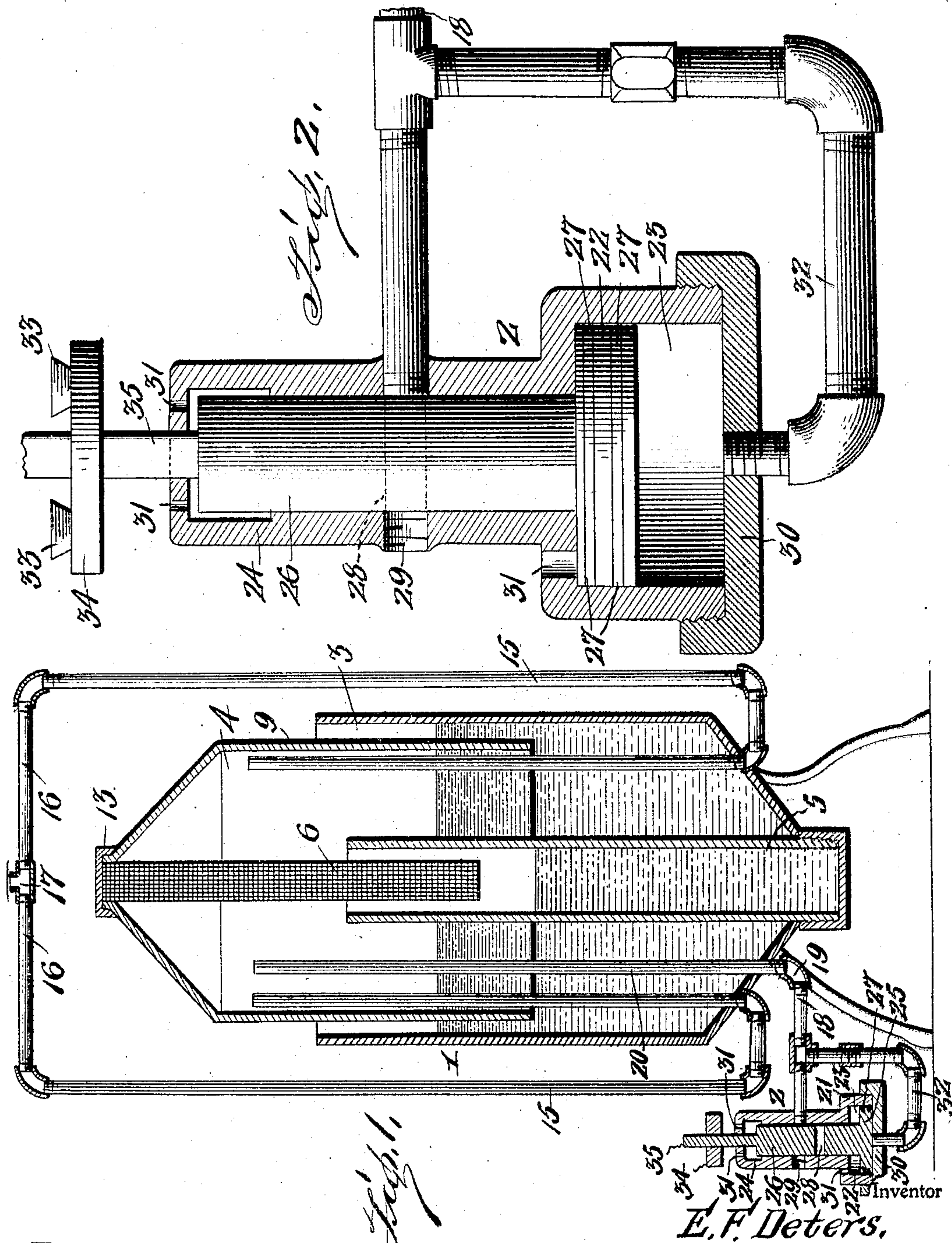
PATENTED JULY 12, 1904.

E. F. DETERS.

PRESSURE REGULATOR FOR ACETYLENE GAS GENERATORS.

APPLICATION FILED NOV. 16, 1903.

NO MODEL.



Witnesses

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PRESSURE-REGULATOR FOR ACETYLENE-GAS GENERATORS.

SPECIFICATION forming part of Letters Patent No. 764,716, dated July 12, 1904.

Application filed November 16, 1903. Serial No. 181,390. (No model.)

To all whom it may concern:

Be it known that I, EDWARD F. DETERS, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Pressure-Regulators for Gas-Generators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in pressure-regulators for acetylene and other gas generators.

The object of my invention is to provide a device of this character which will be simple in construction, durable in use, very efficient in operation, and comparatively inexpensive of production.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a vertical section of the pressure-regulator and generator; and Fig. 2 is a vertical section, on an enlarged scale, of the pressure-regulator removed from the generator.

Referring to the drawings, 1 denotes a generator for generating acetylene or other gas, and 2 my improved pressure-regulator or safety device attached to the same. The generator is of ordinary type, comprising a water-tank 3, bell 4, water-containing generating-chamber 5, and carbide-holder 6, the latter being attached to and movable with the bell.

The safety device 2 is supported upon one side of the generator upon a horizontal pipe 18, which is attached by an elbow 19, projecting through the bottom of the tank, to a vertically-disposed vent-pipe 20, having its upper open end above the water-line in the tank 3. The device comprises a body or casing 21, into which the outer end of the pipe 18 is screwed and in which a valved piston or plunger 22 is mounted to reciprocate and control the discharge of gas through said pipe

18. The casing comprises a lower cylindrical portion 23 and an upper reduced guide portion 24, the latter receiving the end of said pipe 18. The piston comprises a head 25, slidably mounted in the cylinder 23, and a reduced valve and guide portion 26, which slides in the guide portion 24 of the casing. The piston-head 25 is suitably packed, as at 27, and the guide portion 26 is formed with a transverse valve-opening 28, which when the piston is in its elevated position is adapted to aline with the pipe 18, and an outlet-opening 29, formed in the portion 24 of the casing diametrically opposite said pipe 18. When said piston is in its lowered position, the valve portion 26 will cut off communication between the pipe 18 and said outlet-opening 29 to prevent the escape of gas. The lower open end of the cylinder 23 is externally screw-threaded to receive a closing screw-cap 30, and the upper portion of said cylinder 23 is formed with one or more vent-apertures 31, which open into said cylinder above the piston-head to permit air to enter and exhaust as the head moves down and up. A pipe 32 connects the pipe 18 with the bottom of the cylinder to permit the gas in the pipe 18 to enter said cylinder and elevate its valved piston when the pressure becomes excessive or above a predetermined amount. The device may be set to operate at any desired number of pounds of pressure by placing weights 33 upon a base 34, secured to a stem or rod 35, carried by the upper end of the piston and projecting through the top of the casing, as shown. If desired, a pipe may be attached to the opening 29 and lead to any desired point of discharge.

The operation of the safety device is as follows: When the pressure in the generator rises above a predetermined number of pounds which is equal to the weight of the valve-piston, the gas will pass through pipes 20, 18, and 32 into the cylinder 23 below the piston-head 25 and will elevate the piston so as to bring its opening 28 in alinement with the pipe 18 and the outlet-opening 29 to permit the gas to escape directly to the atmosphere. As soon as the pressure is reduced the piston will lower by gravity and close the valve.

From the foregoing description, taken in

connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

5 Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

10 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In combination with an acetylene-gas generator having a gas service-pipe and a high-
15 pressure escape-pipe provided with a branch pipe, a gas-pressure regulator comprising a casing having a cylindrical guide portion to which the discharge-pipe is connected and provided with a discharge-opening opposite
20 the point where said pipe is connected, and with vent-openings at its upper end, and a

cylinder at the lower end of said guide portion, having a vent-opening in its upper side, the branch pipe being connected to the lower end of said cylinder, and a valve member 25 comprising a piston in the cylinder and a stem rising therefrom, fitting in the guide portion of the casing, having a transverse escape-passage to register with the discharge-pipe and the discharge-opening of the casing, 30 said stem having an extension of reduced diameter extending through an opening in the upper end of the guide portion of the casing and a weight carried by said extension, substantially as described. 35

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

EDWARD F. DETERS.

Witnesses:

W. M. MITCHELL,
F. K. RUNYAN.