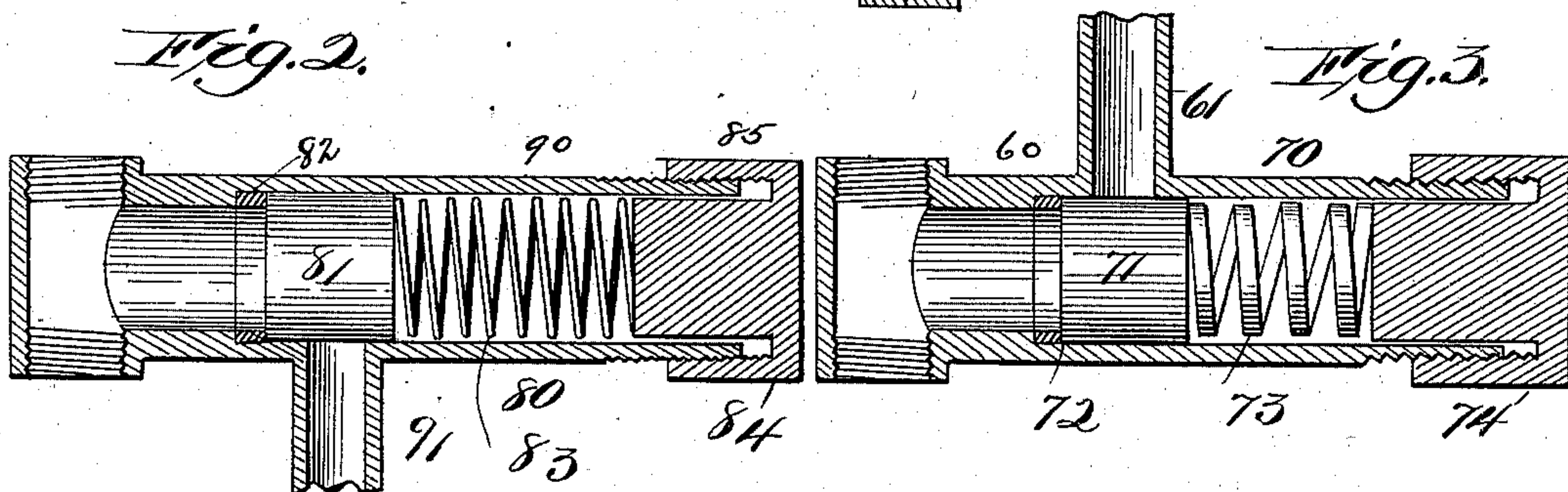
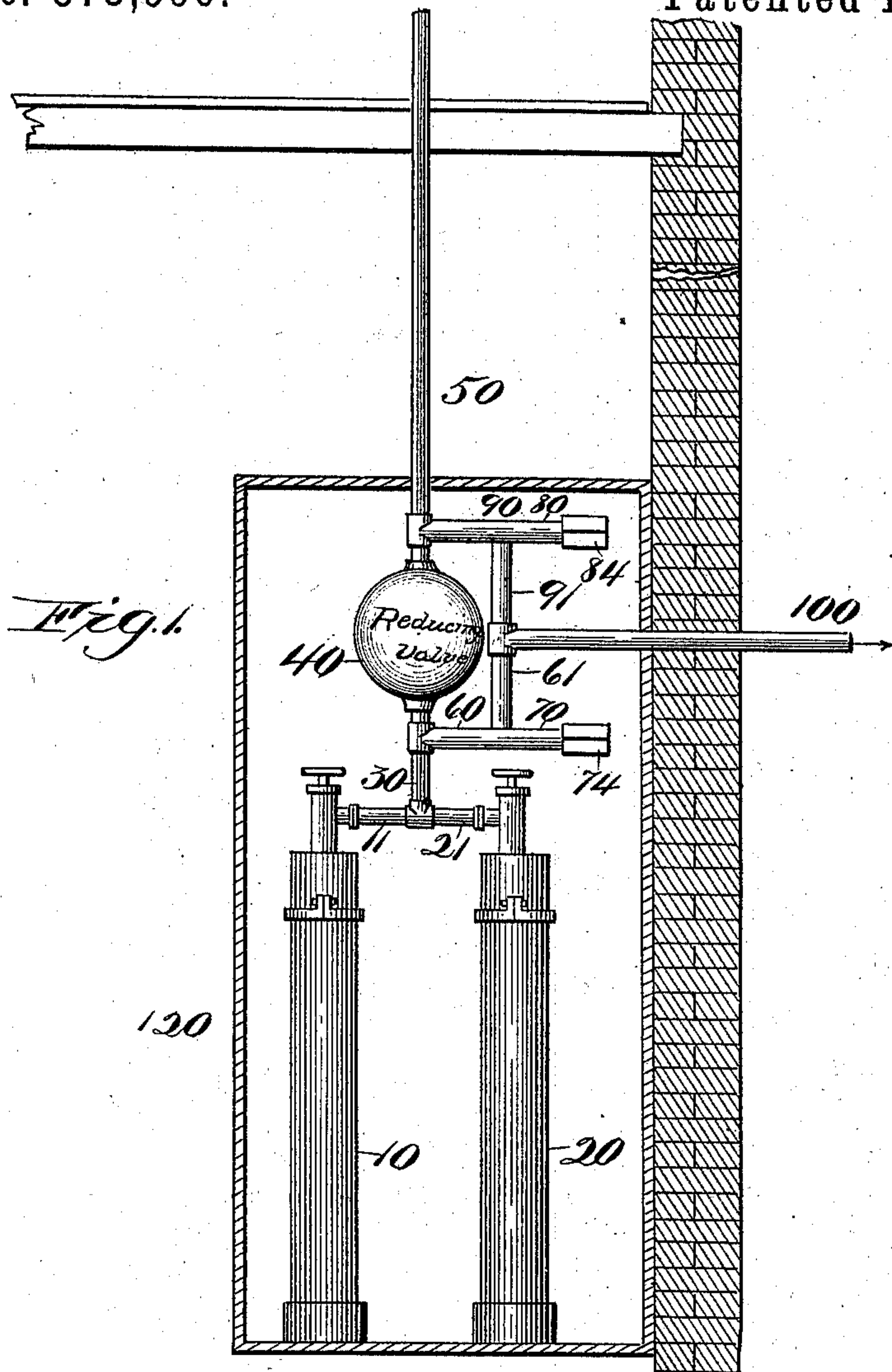


(No Model.)

R. L. OWEN.  
GAS DISTRIBUTING APPARATUS.

No. 573,996.

Patented Dec. 29, 1896.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ROBERT L. OWEN, OF MUSCOGEE, INDIAN TERRITORY.

## GAS-DISTRIBUTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 573,996, dated December 29, 1896.

Application filed March 3, 1896. Serial No. 581,722. (No model.)

### *To all whom it may concern:*

Be it known that I, ROBERT L. OWEN, a citizen of the United States of America, residing at Muscogee, in the Indian Territory, in the United States of America, have invented certain new and useful Improvements in Safety Gas-Distributing Apparatus, of which the following is a specification.

In the lighting of buildings by acetylene gas isolated plants are usually employed. The gas is supplied in liquefied state in a receiver under pressure of about six hundred pounds to the square inch, and a reducing-valve is employed between the receiver and the distributing-pipes, whereby the pressure is reduced in the latter to about two ounces to the square inch, more or less. In case of leakage or accident to the reducing-valve the pressure in the distributing-pipes is liable to become excessive and dangerous, and in case of fire the heat is liable to cause an explosion of the receiver and endanger lives and injure the building.

The object of this invention is to provide an individual plant and distributing apparatus for acetylene gas which will be safe in use and also in case of fire.

Figure 1 of the accompanying drawings represents a fragment of a room of a building having this gas apparatus located therein. Fig. 2 represents a longitudinal section of the regulated automatic valve on the low-pressure side of the apparatus. Fig. 3 represents a longitudinal section of the regulated automatic valve on the high-pressure side of the apparatus.

The same reference-numerals indicate the same parts in all the figures.

The acetylene-holders 10 and 20 are constructed in the usual manner of steel or other suitable material and contain the acetylene gas in liquefied form. Two holders are preferably employed, and pipes 11 and 21 connect these holders with a pipe 30, leading to a reducing-valve 40. This reducing-valve is of any suitable construction. A service-pipe 50 leads from the low-pressure side of the reducing-valve for distributing the gas at low pressure throughout the building.

A branch pipe 60 is connected with the pipe 30 between the acetylene-holder and the reducing-valve. An escape-pipe 61 connects

the pipe 60 with the escape-pipe 100, which extends through the wall of the building to the exterior atmosphere. A safety-valve 70 is located in the pipe 60 or connected with it in such a manner as to relieve the pressure on the high-pressure side of the reducing-valve when said pressure becomes excessive, permitting the gas to flow out through the escape-pipe. This safety-valve may be of any suitable construction. When constructed as shown, it comprises the sliding plug-valve 71, adapted to slide in the pipe 60, which constitutes a valve-chamber. A valve-seat 72, of any suitable construction, is disposed in the pipe 60, against which the valve 71 is seated when closed. Disposed in the rear of the plug-valve 71 is a spiral spring 73, similar to a car-spring or other form of spring adapted to sustain high pressure. This spring normally holds the valve 71 against its seat in opposition to the pressure of the gas in the pipe 30. A screw-plug 74 in the pipe 60 regulates the pressure of the spring 73. The valve may be set at a normal pressure of one thousand pounds per square inch.

A safety-valve 80, of any suitable construction, is disposed on the low-pressure side of the reducing-valve. As shown, this safety-valve is disposed in a branch pipe 90, and an escape-pipe 91 connects it with the outer atmosphere, preferably through the escape-pipe 100. The safety-valve 80 may be of any suitable construction and is preferably adjustable to operate at any desired low pressure. This safety-valve may be in the form of an ordinary water-gage tube if desired. When constructed as shown, this safety-valve comprises a sliding plug-valve 81, normally held against the valve-seat 82 by a spiral spring 83, of much less tension than the spring 73 of the valve 70. A plug 84 is adjustable in the pipe 90, constituting the valve-chamber, by means of a screw-threaded angular flange 85, which engages exterior screw-threads on the outer end of said pipe. A screw 84 may be used to regulate the tension of this spring. This safety-valve may be in the form of an ordinary water-gage tube if desired.

The receivers, pipes, and valves are preferably inclosed in a casing 120, where they are not liable to be tampered with.

In case a fire in the building heats the lique-



fied gas in the receivers beyond a safe tension, say one thousand pounds per square inch, the pressure of the gas or liquid will cause the safety-valve 70 to open and the dangerous pressure will be relieved by the escape of the gas to the outer atmosphere through the escape-pipe 100. In case of leakage in the reducing-valve or from other cause the pressure in the distributing-pipe becomes excessive the safety-valve 80 will open and the pressure will be relieved by escape of the gas through the escape-pipe 100.

I claim as my invention—

1. In a gas apparatus, the combination of a vessel for containing the gas in a liquid or gaseous form, a service-pipe, a reducing-valve between the service-pipe and said vessel, a high safety-valve on the high-pressure side of the reducing-valve, a low safety-valve on the low-pressure side of the reducing-valve, and means for permitting the escape of gas from said safety-valve.

2. A gas-distributing apparatus comprising an inclosing casing, two vessels disposed

in said casing for containing gas in a liquid or gaseous form under pressure, a pipe connecting said vessels, a reducing-valve, a pipe connecting one side of said reducing-valve with said connecting-pipe, a service-pipe connected with one side of said reducing-valve, a high safety-valve on the high-pressure side of the reducing-valve, a low safety-valve on the low-pressure side of the reducing-valve, and means for permitting the escape of gas from both of said safety-valves.

3. In a gas apparatus, the combination of a vessel for containing the gas in a liquid or gaseous form, a service-pipe, a reducing-valve between the service-pipe and said vessel, a safety-valve on the high-pressure side of the reducing-valve, a safety-valve on the low-pressure side of the reducing-valve, and a branched escape-pipe connecting both safety-valves with the exterior atmosphere.

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Witnesses:

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