No. 676,144. Patented June 11, 1901.

# O. B. MARTIN.

## AUTOMATIC STOP VALVE.

(Application filed Jan. 21, 1901.)

(No Model.)

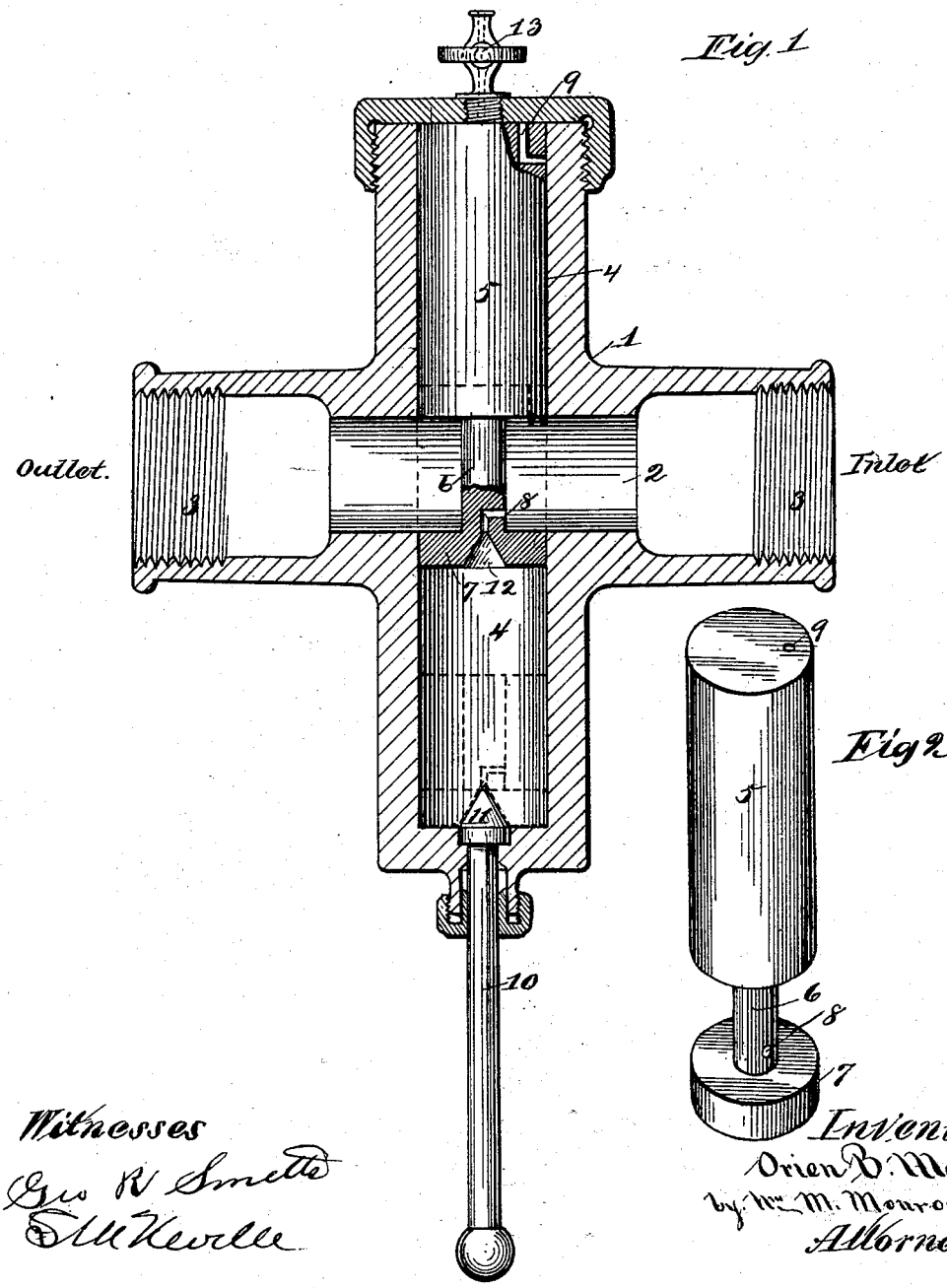


Fig. 1




Fig 2

Witnesses
Geo. R. Smith
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# UNITED STATES PATENT OFFICE.

ORIEN B. MARTIN, OF AKRON, OHIO, ASSIGNOR OF ONE-HALF TO GEORGE R. SMETTS, OF SAME PLACE.

## AUTOMATIC STOP-VALVE.

SPECIFICATION forming part of Letters Patent No. 676,144, dated June 11, 1901.

Application filed January 21, 1901. Serial No. 44,118. (No model.)

*To all whom it may concern:*

Be it known that I, ORIEN B. MARTIN, a citizen of the United States, and a resident of Akron, county of Summit, State of Ohio, have invented certain new and useful Improvements in Automatic Stop-Valves, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in an automatic stop-valve employed in a circulating-pipe for gas or fluid wherever necessary to prevent escape from open cocks in case the pressure should be suddenly withdrawn from the mains.

I exemplify my invention as employed in the use of natural gas, where sometimes the flow of gas is stopped unknown to the occupants of a house and the house-burners are left open, when if no automatic means where employed to shut off the main supplying gas to the house the house would be flooded with gas as soon as the flow was resumed.

My invention further consists in the gravity-operated valve and in the means for maintaining the same in both the raised and fallen positions, with the various details of construction and combination and arrangement of parts, as hereinafter described, shown in the accompanying drawings, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical sectional elevation of the device as applied to the main supply or house pipe. Fig. 2 is a perspective view of the cylinder-valve.

In the views, 1 is a T-shaped union inserted in the main and containing the horizontal passage 2, which is a continuation of the main and is screw-threaded at 3 for attachment thereto.

4 is a vertical cylindrical chamber crossing the horizontal passage 2 at right angles. In this cylindrical chamber is placed the cylinder-valve 5, which is annularly reduced at 6 to admit of the free passage of gas or fluid through the horizontal passage 2, which will occur when the cylinder is raised above the passage.

In order to sustain the cylinder in its elevated position, the piston 7, integral therewith, closes the mouth of the chamber 4 below the horizontal passage, and a small passage 8 in the stem 6, which passes downward through the piston 9, admits gas under pressure into the chamber below the piston.

It will readily be seen that in action as soon as the pressure ceases in the main the cylinder and piston will fall and the cylinder will cut off the passage 2 from the main until again raised. The lower position is seen in dotted lines in Fig. 1. When down, it is possible that gas might leak around the cylinder and get under it to raise it before the burners in the house have been closed and so cause a leak of the gas. In order to prevent this, I make a short passage 9 in the top of the valve-cylinder, which opens into the main passage 2 when the valve is down. Through this small passage gas will find its way above the valve and the pressure will retain the valve when down until it is raised by hand by means of the rod 10 below the piston. The head of this rod may be conical at 11 and may have a conical seat at 12 in the piston to serve as a further protection from the leakage of gas through the passage 8.

At 13 is seen a small vent-cock to release the gas above the cylinder-valve when the piston is raised to its upper position.

The advantages of this device are obvious in its simplicity and effectiveness, since it is impossible to light burners in the house after the valve has fallen until it has been raised by hand, and the valve will instantly close without attention if the pressure for any reason is released.

I believe myself to be the first to provide a cross-shaped union inserted in a gas-main in which a valve-chamber intersects at right angles the main horizontal gas-passage and to insert therein a cylindrical valve constructed to be raised by the gas-pressure and adapted to fall by gravity across said main passage and into the chamber below the passage, whereby it is placed directly across the passage and shuts off the flow therein.

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

1. An automatic valve for a main service-pipe, comprising a cylindrical valve, provided

with a reduced stem and piston thereon, a cylindrical chamber inclosing said valve, crossing vertically the main passage, and a passage through said stem and piston arranged to connect the main passage with the lower part of the cylindrical chamber when the valve is up, substantially as and for the purpose described.

2. The combination with a main service-passage, of a vertical cylindrical chamber intersecting said passage, a cylindrical valve provided with a reduced stem and piston secured to the lower extremity thereof, and means for sustaining the valve in its elevated position when the pressure is on the main, consisting of a passage through said stem and piston, connecting the main passage with the chamber under the piston, and means for raising the valve when fallen, substantially as described.

3. The combination with a main service-passage, of a cylindrical chamber crossing vertically said passage, a valve in said chamber adapted to fall by gravity and close said passage, a stem on said valve arranged to cross said passage when the valve is up, and a piston on said stem arranged to close the entrance to the chamber from said passage, a passage in said stem connecting the chamber and the main passage when the valve is up, and a passage in the upper portion of the valve adapted to connect the main passage and the upper portion of the chamber when the valve is down, a rod in the head of said chamber, whereby the valve can be raised when fallen, and a vent-cock in the upper end of the chamber, substantially as and for the purposes described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ORIEN B. MARTIN.

Witnesses:
GEO. O. WILLET,
WM. M. MONROE.