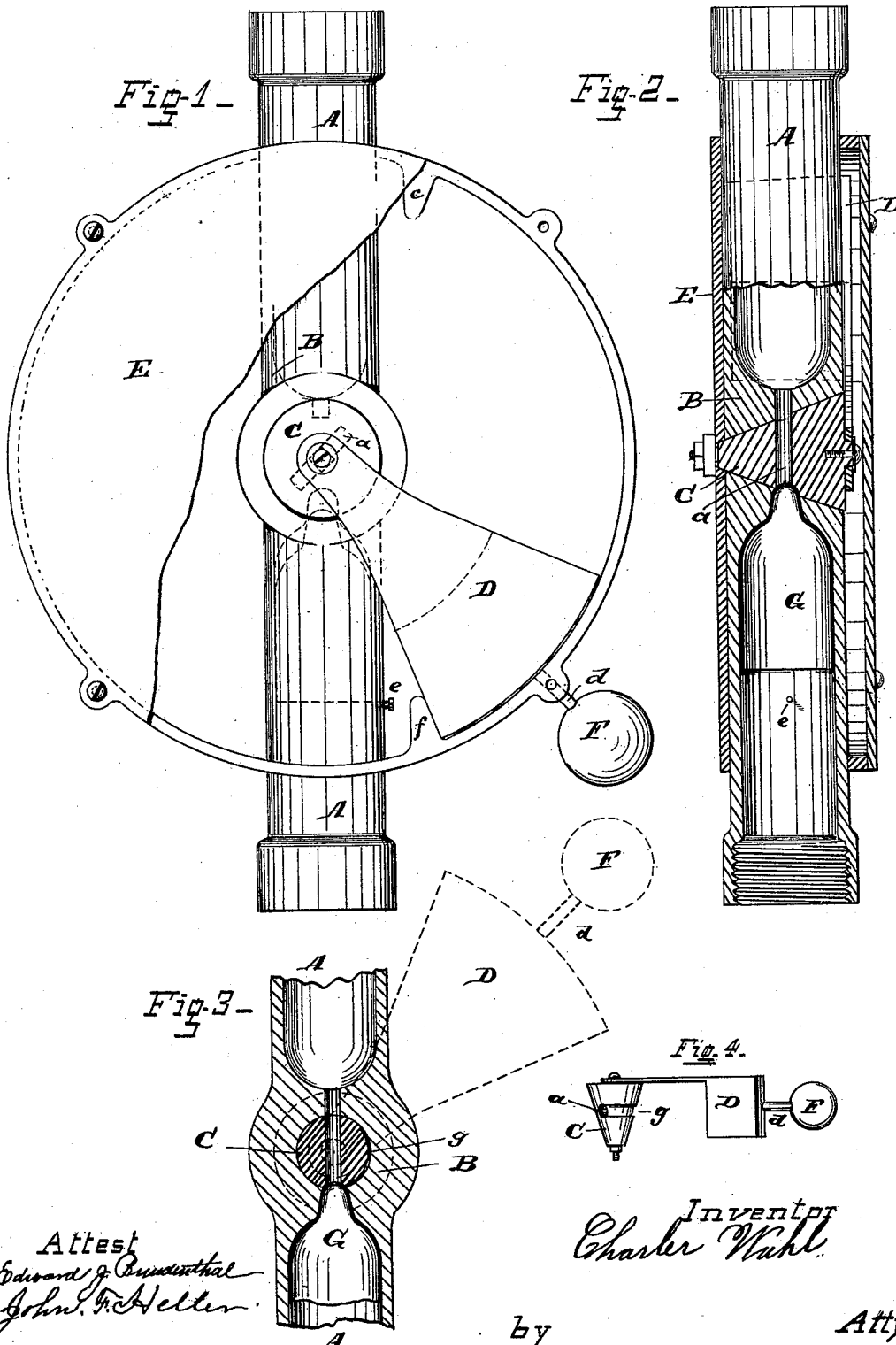


(No Model.)

C. WAHL.  
SAFETY VALVE FOR FUEL GAS PIPES.

No. 420,750.

Patented Feb. 4, 1890.



# UNITED STATES PATENT OFFICE.

CHARLES WAHL, OF DAYTON, OHIO.

## SAFETY-VALVE FOR FUEL-GAS PIPES.

SPECIFICATION forming part of Letters Patent No. 420,750, dated February 4, 1890.

Application filed November 29, 1889, Serial No. 331,978. (No model.)

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

Be it known that I, CHARLES WAHL, a citizen of the United States, residing in Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Safety-Valves for Fuel-Gas Pipes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to improvements in automatic check-valves for use in the burning of fuel-gas, in which the valve is closed automatically when for any reason the gas-pressure is released; and it consists in the locking of the valve open by means of a key acted on by the pressure of the gas, so arranged that when the pressure is released the key will be removed and the valve will close itself by gravity.

In the use of gas for fuel the gas is turned on, lighted at the burners, and then often left unattended for long periods of time. Especially during the night stoves and grates are allowed to burn after all have retired to rest. If for any reason the gas is shut off in the mains for repairs or for any purpose, the fires will at once go out, leaving the burners open, and when the gas-pressure is again restored the gas will inevitably escape through the burners, to the imminent danger of life and property. To avoid these dangers it is necessary to provide a valve which will automatically close as soon as the gas-pressure is removed, and it is this that my invention aims to accomplish.

In the drawings, Figure 1 is a top plan view of my device with a part of the casing removed. Fig. 2 is a cross-section thereof, taken at right angles to the casing. Fig. 3 is a cross-section of the same, taken on a line parallel to the casing-plates, which are not shown. Fig. 4 is a front view of the spigot of the valve and its handle reduced in size. Like letters of reference indicate identical parts in all the figures.

A is the pipe for conveying the gas through the valve, and it is threaded at each end to allow for the proper connections with the supply-pipe. The central portion of this pipe is slightly enlarged, and is formed with a

hollow conical casing B, within which the plug or spigot C fits accurately. The passage-way *a* for the gas is formed through the spigot in the usual way, the openings in the spigot coinciding with the entrance and discharge orifices of the casing when the cock is open.

To the top of the plug or spigot is securely fastened with screw and washer the valve handle or stem D, which can be made of any suitable shape, but which I prefer to make fan-shaped and quite thick beyond the edge of the casing B, so as to give considerable weight to the handle. The working parts of the valve I inclose in the cylindrical casing E, which properly protects the valve and its parts from injury. A heavily-weighted ball F is attached to the arm D by its stem *d*, the ball and stem being preferably screwed on the arm. This stem *d* passes through a slot cut in the cylindrical casing E, so that by grasping the ball as a handle the plug may be rotated back and forward and the valve thus opened or closed. Stops *f c* on the casing prevent the rotation of the arm beyond certain limits. The location of the passage *a* through the plug is so arranged that when the handle is raised to its highest point the valve will then be open.

Within the supply end of the pipe A is placed the cup-shaped key G, of a size and shape to correspond with the supply-orifice of the casing B and to work snugly therein. The pointed end of this cup G, when the cup is raised, enters slightly the corresponding aperture in the plug or spigot. The pin *e* limits the drop of the cup G and prevents it slipping out of the pipe A. The entrance-orifice of the plug C is slightly rounded or reamed out to allow for the easy entrance of the point *h* of the cup G. The cup G has an opening through the point to allow for the passage of the gas, and the plug C is slightly grooved, as shown at *g*, Fig. 4, so that when the point of the cup is thrown up against the plug by the gas-pressure when the valve is closed the bearing-surface of the plug in its casing will not be marred, but any scratches or indentations will be made in the groove, where they will do no damage.

The operation of my valve is as follows:

The apparatus is attached to the supply-pipe in a vertical position, and in this position the cup-shaped key G will rest on the pin e and permit the plug to be rotated. When the gas is then turned on, the ball F is raised to its highest point and the valve will then be open. The pressure of the gas on the cup will at once raise it into the position shown in Fig. 2 and the upper dotted lines in Fig. 1, and keep it there as long as the gas-pressure is kept up, and in this way the valve will be locked open; but should for any cause the gas-pressure be withdrawn the cup-shaped key G will at once by its own weight drop down till it rests on the pin e, and the heavy weight of the valve-handle and ball will cause the valve to close of its own accord, the handle and ball dropping into the position shown in Fig. 1.

I prefer to make the various parts of my device of brass and of the shape illustrated in the drawings; but of course the material used and the shape of the casing and other parts are entirely immaterial.

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

1. In a safety-valve, the combination, with a conveying-pipe and spigot, of a cup-shaped key arranged and sliding in said pipe, to be driven into the spigot when the valve is open

by the pressure of the gas, and thus to lock the valve, substantially as shown and described.

2. In a safety-valve, the combination, with a passage-pipe, of the spigot seated therein, cup-shaped key within said pipe, and valve-handle acted on by a weight or equivalent means to close said valve when the key is removed, substantially as shown and described.

3. In a safety-valve, the combination, with a conveying-pipe, of a conical-shaped spigot seated therein, cup-shaped key within the supply end thereof, to be driven by the gas-pressure into said spigot when the valve is open and to drop therefrom when the gas-pressure is removed, and the valve-handle acted on by a weight to close said valve when the key is removed, substantially as and for the purpose described.

4. In a safety-valve, the combination, with the pipe A, casing B, conical-shaped spigot C, seated therein, and having a groove g, of a cup-shaped key G within the supply end of said pipe, and a heavily-weighted valve-handle D, operating to close said valve when the locking-key is removed, substantially as and for the purpose described.

CHARLES WAHL.

Witnesses:

JOHN F. HELLER,

EDWARD J. BUNDENTHAL.