W. E. APT & E. L. SCHOTT.

GAS STOPPAGE ALARM.

APPLICATION FILED NOV. 30, 1908.

929,116. Patented July 27, 1909.

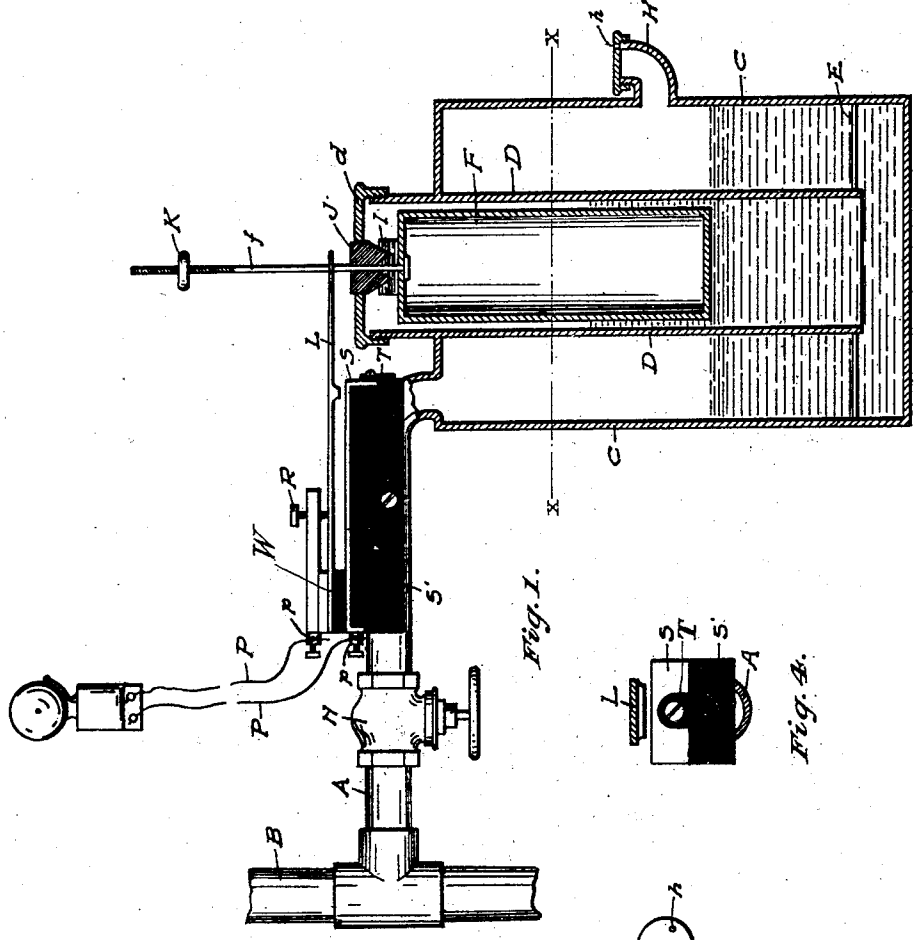


Fig. 1.

Fig. 4.

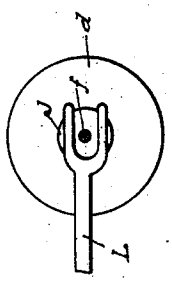


Fig. 3.

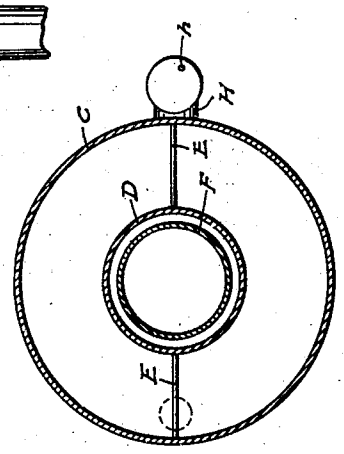


Fig. 2.

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WILLIAM E. APT AND EDMUND L. SCHOTT, OF ST. JOSEPH, MISSOURI.

GAS-STOPPAGE ALARM.

No. 929,116. Specification of Letters Patent. Patented July 27, 1909.

Application filed November 30, 1908. Serial No. 465,271.

To all whom it may concern:

Be it known that we, WILLIAM E. APT and EDMUND L. SCHOTT, citizens of the United States, residing at St. Joseph, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in a Gas-Stoppage Alarm, of which the following is a specification.

Our invention relates to means for detecting the stoppage of the flow of gas through gas supply pipes.

It is a well-known fact that in the supply of gas either for illuminating or heating purposes, and especially with natural gas employed for the latter purpose, there is a liability of the supply of gas ceasing from different causes, such as the failure of supply, or some break in the pipes, which requires instant repair before the consumer of the gas can be notified that the gas has been turned off or for other reasons, and if the flow of gas to the burners, stoves or furnaces should cease for a short period, the fire would become extinguished and when the pressure of the gas is again on, it is liable to escape into the apartments, causing asphyxiation, explosions or other serious accidents. To overcome this danger we provide a simple means of giving an alarm which consists of the combination of an outer cylinder, an inner cylinder and an alarm bell, a float with stem attached within the inner cylinder, whereby as long as the pressure is maintained within the outer cylinder the float and stem are held in such a position that they cannot operate, but as soon as the pressure within the outer cylinder diminishes to any great extent, or ceases, the bell will give the alarm, thus detecting the stoppage of the flow of gas so that the gas can be turned off and accidents prevented.

We accomplish our object by the mechanism illustrated in the accompanying drawings, in which,

Figure 1 is a sectional elevation of the device showing the position of the parts when the pressure is on; Fig. 2 is a cross section cut on lines *x*—*x* of Fig. 1; Fig. 3 is a detail view of the forked end of a contact lever; and Fig. 4 is an elevation of a circuit breaker turn button.

Similar letters refer to similar parts in the several views.

A is a small branch pipe leading from gas supply pipe B to an outer cylinder C. Within this outer cylinder and spaced from it, there is a smaller cylinder D, having a screw top *d*. This inner cylinder extends above the top of the outer cylinder. The lower end of said inner cylinder is provided with braces E E to assist in holding it in vertical position, and above the bottom of the outer cylinder. The lower end of said inner cylinder is open.

F is an air tight float adapted to travel vertically within the inner cylinder; it is provided with a stem *f* which is rigidly attached to the top of the float. The outer cylinder chamber is adapted to be supplied with water, or other suitable liquid up to the filling valve H so that when the gas enters said cylinder chamber through branch pipe A the gas pressure will force the water down in the outer cylinder and up the inner cylinder, thus forcing the air tight float upward as shown in Fig. 1.

P P are wires attached at set screws *p p*.

R is a set screw to regulate the lever L at point of contact with plate S. Plate S is insulated from spring lever L by means of block W which can be made of fiber or any insulating material. Block S′ is made of an insulating material and holds the electric device secure to gas pipe A by means of set screw. Lever L and plate S are provided with contact points at their outer ends as shown in Fig. 1. The water in the outer cylinder makes said cylinder absolutely gas tight, and a rubber gasket I coming in contact with the edges of bushing J makes it absolutely water tight. As the gas pressure is reduced to a very low point, or ceases, the pressure upon the surface of the water in the outer cylinder diminishes, and the water rises in the same and lowers within the inner cylinder, bringing the said float down with it, causing an adjustable nut K to descend upon spring lever L and forcing said spring lever L against point of contact at the outer end of plate S closing the electrical circuit.

T is a turn button, made of a non-conducting material, at the outer end of brass plate S; said turn button can be turned upward raising lever L, thus breaking the circuit.

Our devices may be located in any part of a building, and the parts of the devices may be constructed of any suitable material.

What we claim and desire to secure by Letters Patent is:—

1. In a gas stoppage alarm the combination with a gas supply pipe, a branch pipe and the valve therein, an alarm bell and

wires having suitable electrical connections, of an outer cylinder, a filling valve thereon provided with an escapement port, an inner cylinder, projecting vertically above the horizontal plane of the top of the outer cylinder, a screw cap thereon, a bushing inserted in said screw cap, braces at the bottom of said inner cylinder to rigidly hold said inner cylinder, an air tight cylindrical float in said inner cylinder, a stem rigidly attached to the upper end of said float, a rubber gasket at the base of said stem to engage said bushing making it water tight; a non-conducting block over the branch pipe provided with a set screw to hold said block to said branch pipe, a brass plate carried by said block, a spring lever insulated from said brass plate; a nut on the upper part of said stem for engaging said spring lever, provided with contact points at their outer ends to close the circuit, a regulating screw, a turn button to raise said spring lever and to break the circuit, substantially as set forth and shown.

2. In a gas stoppage alarm, a float, a stem, a nut carried thereon, an outer cylinder forming a chamber for supply of water or other liquids in its lower part, an inner cylinder open at the lower end forming a chamber for said float and for water or other liquids, a branch pipe connecting with the top of the outer cylinder through which gas is forced into the upper part of said outer cylinder and the water or other liquid thereby forced downward into said outer cylinder and upward into said inner cylinder lifting said float, an electrical bell, a plate and a spring lever connected to said bell provided with contact points at their outer ends, said nut contacting with said lever forcing said lever against said plate, closing the circuit as the gas is shut off or ceases to enter said outer chamber and the float descends from its normal position by reason of the recession of the water or other liquid from said inner chamber when the pressure of gas ceases, substantially as shown and set forth.

3. In a gas stoppage alarm, a float, a stem, a nut carried thereon, an outer cylinder forming a chamber for supply of water or other liquid in its lower part, an inner cylinder open at the lower end forming a chamber for said float and for water or other liquid, a branch pipe connecting with the top of the outer cylinder through which gas is forced into the upper part of said outer cylinder and the water or other liquid thereby forced downward into said outer cylinder and upward into said inner cylinder lifting said float, an electrical bell, a non-conducting block, a plate and a spring lever insulated from each other by means of said non-conducting block, said plate and spring lever being connected to said bell and provided with points of contact at their outer end for closing the circuit, said nut contacting with said lever forcing said contact points together and closing the circuit, substantially as described and set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM E. APT.
EDMUND L. SCHOTT.

Witnesses:
HERMAN EINSTEIN,
A. C. HAMLET.