No. 859,147. PATENTED JULY 2, 1907.

L. STRODTBECK.

AUTOMATIC ALARM DEVICE.

APPLICATION FILED JAN. 18, 1907.

FIG. 1

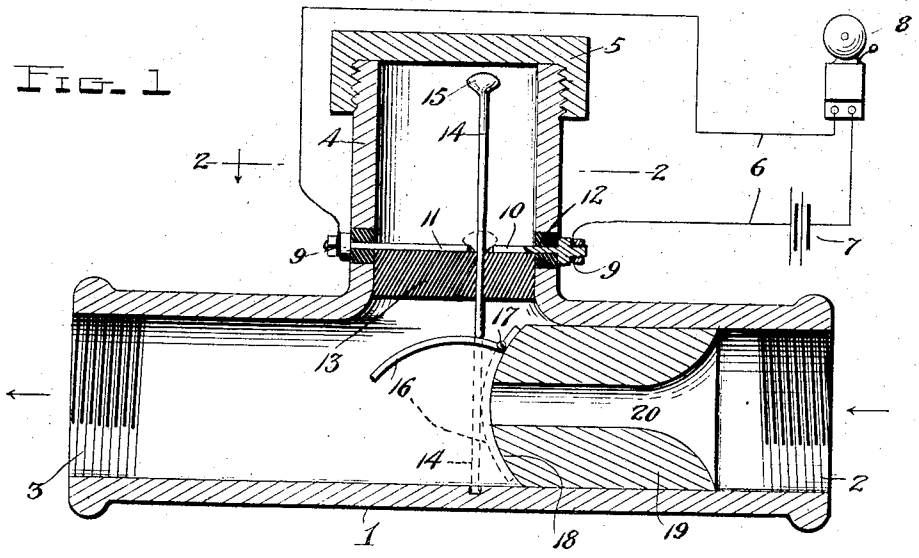
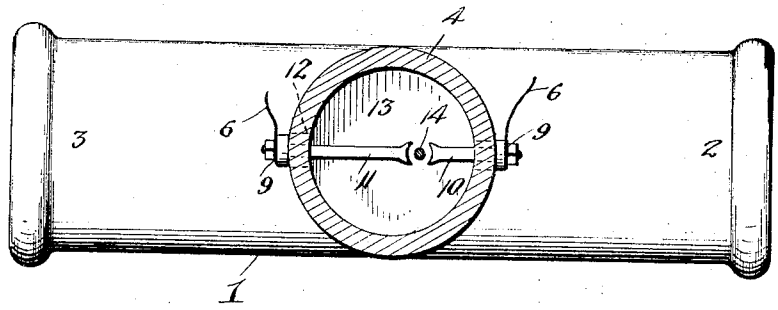


FIG. 2



Witnesses

J. W. Griesbauer, Jr.

L. O. Littler

Louis Strodtbeck Inventor

By Watson E. Coleman Attorney

UNITED STATES PATENT OFFICE.

LOUIS STRODTBECK, OF MIDDLETOWN, OHIO.

AUTOMATIC ALARM DEVICE.

No. 859,147. Specification of Letters Patent. Patented July 2, 1907.

Application filed January 18, 1907. Serial No. 352,959.

To all whom it may concern:

Be it known that I, LOUIS STRODTBECK, a citizen of the United States, residing at Middletown, in the county of Butler and State of Ohio, have invented certain new and useful Improvements in Automatic Alarm Devices, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in automatic alarm devices, and more particularly to one for use in gas pipes or mains for sounding an alarm upon the stoppage of the flow of the gas or fluid therethrough.

One object of the invention is to provide a simple and practical alarm device of this character which will be operated upon any interruption of the flow or pressure in the gas pipe.

Another object of the invention is to provide in connection with an alarm device of this character, means whereby the resumption of the flow of the gas through the pipe will be prevented after the alarm has been sounded.

Further objects and advantages of the invention as well as the structural features by means of which these objects are attained will be made clear by a examination of the following specification taken in connection with the accompanying drawing, in which

Figure 1 is a vertical longitudinal section through the improved device and also showing diagrammatically the electric alarm circuit; and Fig. 2 is a section taken on the plane indicated by the line 2—2 in Fig. 1.

The numeral 1 denotes a casing adapted to be placed in the gas pipe or main to be controlled by the improved device. As shown, this casing is in the form of a T-coupling and its two alined branches 2, 3, are adapted to be screwed upon or otherwise connected to the gas pipe or main. The third branch 4 of the coupling is closed by a removable screw cap or other closure 5 and is adapted to contain circuit closers for an electric alarm circuit 6 which includes a battery or other source of electric energy 7 and an electric bell or other signal device 8. The circuit 6 is normally open and its terminals are connected, as shown at 9, or in any other suitable manner to two contacts 10, 11, arranged in the branch 4 of the coupling. The contacts 10, 11 are in the form of metal strips or bars projecting through blocks 12 of non-conducting material arranged at opposite points in the branch 4, and their inner ends are spaced apart and supported upon a block or partition 13 of non-conducting material arranged in the bottom or lower end of the branch 4. Mounted for vertical sliding movement in the block 13 and between the opposing ends of the contacts 10, 11 is a circuit closing element 14 in the form of a rod having at its upper end an enlargement or head 15 adapted, when said rod drops to its dotted line position, shown in Fig. 1, to engage the two contacts and thus close the alarm circuit 6. This circuit closer 14 is held in its elevated or inoperative position, shown in full lines in Fig. 1, by a valve 16 which is arranged in the main portion of the coupling and is held normally open by the pressure or flow of the gas through the coupling. As shown, the valve 16 is in the form of a concave plate hinged at its upper end as at 17 to the convex end 18 of a block 19 which latter is arranged in the inlet branch 2 of the coupling and is formed with a centrally arranged passage 20 adapted to be closed by the valve 16 when it drops to its dotted line position shown in Fig. 1.

The passage 20 being of less diameter than the interior diameter of the coupling causes the gas to strike the bottom face of the valve 16 with sufficient force to hold it elevated as shown, but the instant the pressure or flow of the gas is interrupted, said valve will drop by gravity to its closed position and the circuit closing rod 14 which is normally supported by the valve will also drop by gravity and engage a seat formed in the bottom of the coupling so that the rod will prevent the re-opening of the valve should the pressure or flow of the gas be restored.

The present embodiment of the invention is especially designed for use in a pipe which supplies gaseous fuel, particularly natural gas, to stoves, furnaces or other heating apparatus and when used for this purpose I preferably place it in the main supply pipe. The alarm bell or signal 8 may be located at any point. In operation, should the pressure or flow of gas through the pipe cease, the valve 16 drops by gravity and is thereupon locked in its closed position by the circuit closing rod 14. The latter as it drops to its dotted line position, shown in Fig. 1, completes the electric circuit 6 and sounds the bell 8.

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

1. The combination of a casing having a passage for the flow of fluid therethrough, a valve held open by the flow of the fluid, an electric alarm circuit, and a slidable circuit closer independent of said valve and held by it in an inoperative position to close said circuit when said valve closes upon the stoppage of the flow of fluid through the casing.

2. The combination of a casing having a passage for the flow of fluid therethrough, a valve held open by the flow of the fluid, an electric alarm circuit, a guide, a combined circuit closing and valve locking rod slidable in said guide and held in an inoperative position by said valve when the latter is open, said rod being adapted to be moved to an operative position when the valve closes to complete said circuit and to hold the valve closed.

3. The combination of a casing having a passage therethrough for the flow of a fluid, a vertically swinging valve in said passage, an electric alarm circuit, a guide, and a vertically sliding rod in said guide, said rod having its lower end resting upon said valve and held in an inoperative position when said valve is open being adapted to drop by gravity to complete said circuit when said valve is closed.

4. The combination of a casing having a passage there-

through for the flow of a gas or fluid, a gravity closing valve arranged in said passage, an electric alarm circuit having spaced contact terminals and a rod supported in an inoperative position by said valve and adapted when released by the latter to complete the circuit through said contacts and to lock the valve in its closed position.

5. The combination of a casing in the form of a T-coupling having its alined branches horizontally arranged and its third branch vertically arranged, a normally open valve for closing the passage through the alined horizontal branches of the coupling, an electric alarm circuit having a contact arranged in the vertical branch of the coupling and a vertically slidable circuit closer to engage said contact, said circuit closer being held in an inoperative position by said valve and released when said valve is moved to its closed position.

6. The combination of a casing in the form of a T-coupling having its alined branches horizontally arranged, and its third branch vertically arranged, a valve for closing the passage through the alined horizontal branches of the coupling, an electric circuit having terminal contacts arranged in the vertical branch of the coupling, a guide, and a circuit closing rod held in an inoperative position by the valve and adapted to drop when released by said valve, to lock the latter closed and to complete the circuit through said contacts.

7. The combination of a T-coupling having its alined branches horizontally arranged and its third branch vertically arranged, a removable closure upon the third branch, a block arranged in one of the horizontal branches and having reduced passage, a valve hinged upon said block and adapted to drop by gravity to its closed position, said valve being held normally open by the flow of gas through the coupling, an electric circuit having terminal contacts arranged in the third branch of the coupling, a guide, and a circuit closing rod vertically slidable in said guide and held in an inoperative position by said valve, said rod being adapted to complete the circuit through said contacts and to lock the valve in its closed position when released by said valve, substantially as shown and described.

8. The combination of a casing in the form of a T-coupling having two of its branches alined and its third branch arranged at right angles, a valve for closing the alined branches of said coupling, a guide, an electric alarm circuit, spaced contacts included in said circuit and arranged in the third branch of the coupling, and a circuit closing rod slidably mounted in said guide and controlled by said valve.

9. The combination of a casing having a passage for the flow of a fluid therethrough, a vertically swinging valve in said passage, a vertically movable rod held in an elevated position by said valve when the latter is open and adapted to drop in front of said valve when the latter is closed and an electric circuit adapted to be closed when said rod moves in its lowered position.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

LOUIS STRODTBECK.

Witnesses:
HARRY D. BOLT,
JOS. H. RAUBERTS.