

No. 877,417.

PATENTED JAN. 21, 1908.

J. W. FIELDS.

GAS CUT-OFF.

APPLICATION FILED SEPT. 26, 1907.

Fig. 1.

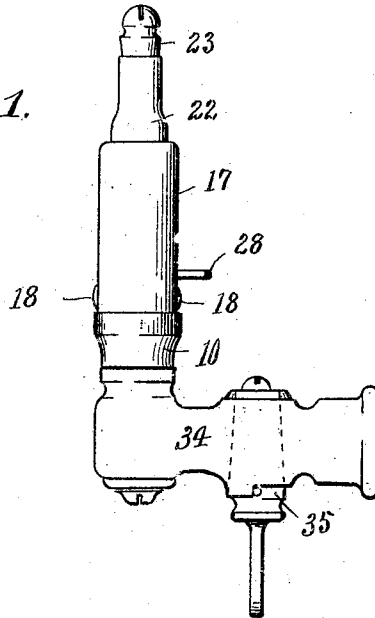


Fig. 3.

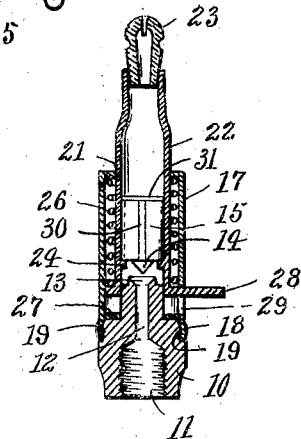


Fig. 2.

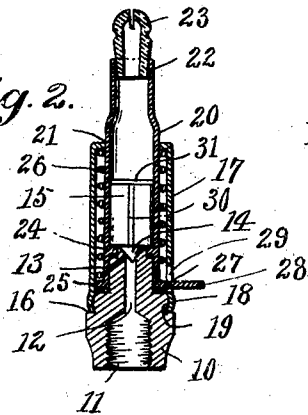


Fig. 4.

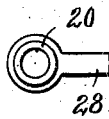


Fig. 5.

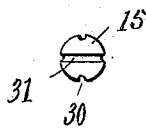
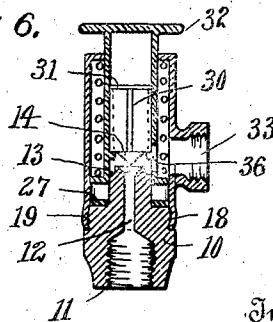


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN W. FIELDS, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR OF ONE-EIGHTH TO JOHN N. STANDISH AND ONE-EIGHTH TO HARRY PEARSALL, OF BRIDGEPORT, CONNECTICUT, AND ONE-FOURTH TO FRANK R. WHITE, OF WATERBURY, CONNECTICUT.

GAS CUT-OFF.

No. 877,417.

Specification of Letters Patent.

Patented Jan. 21, 1908.

Application filed September 26, 1907. Serial No. 394,667.

To all whom it may concern:

Be it known that I, JOHN W. FIELDS, a citizen of the United States, and resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Gas Cut-Offs, of which the following is a specification.

My invention relates to automatic gas cut-offs, and is especially adapted for use in connection with coin operated meters, which will provide a positive cut-off for the gas should the supply be cut off and then renewed while the gas cocks of burners or stoves are open.

It is obvious that many fatal accidents have been caused by the use of coin operated meters. These accidents have usually been the result of carelessness in failing to cut off all the gas cocks when the supply of gas gave out with the result that afterwards when the gas supply was renewed the gas escaped from the open cocks and serious consequences resulted. The present invention renders accidents of this kind impossible since it provides an automatic cut off for burners and gas pipes generally, so that should the supply of gas be cut off and then again renewed with the cocks open no harm could result.

With the above and other minor objects in view I have devised the novel and practical automatic gas cut off shown upon the accompanying drawings forming a part of this specification upon which similar numerals of reference are used to indicate corresponding parts throughout the several figures, and of which,

Figure 1, shows a side elevation of my invention as adapted for use in connection with an illuminating gas burner, attached to a gas pipe. Fig. 2, is a central vertical longitudinal section through the burner shown in Fig. 1, the valve being in a lowered or closed position. Fig. 3, is a similar longitudinal vertical section with the operative parts in a different position as operated preparatory to lighting the burner. Fig. 4, is a detached plan view of the operative upper portion or tube of the cut-off. Fig. 5, is a detail plan or end view of the movable valve mounted within the cut-off, and Fig. 6, is a longitudinal sectional view of a modified form of cut-off designed for use in connection with gas supply for a gas stove.

Referring in detail to the form of my device to be used in connection with a gas

burner and as shown in Figs. 1 to 5 inclusive, 10 indicates a base which is chambered, and threaded as at 11 for attachment to a gas pipe 34 as shown in Fig. 1. A central passage 12 extends up through the base from the chamber to conduct the gas into the upper or burner chamber. Surrounding the upper or outlet end of this passage is formed an annular tapered enlargement 13 that serves as a valve seat into which the cone shaped plug 14 on valve 15 rests when the burner is not in operation. The said base is provided with an annular ledge 16 upon which is seated a shell 17 that may be secured thereto in any suitable way as for instance by having pockets 18 formed upon the inner side of the lower portion of the shell to spring over and receive the enlargement 19 of the base.

Within the shell 17 is slidably mounted a tube 20, the upper portion of which protrudes through an opening 21 in the end of the shell while the extreme end 22 is fitted with a burner tip 23. Within this tube is formed an internal annular ledge 24 to engage and support the valve 15. The lower portion of this tube is provided with an outwardly extended flange 25 that operatively engages the inner surface of the before mentioned shell 17. A spring 26 is mounted intermediate of the upper end of the before mentioned shell 17 and the flange of said tube 20 and serves to hold the tube down tightly against the annular packing 27 mounted upon the shoulder of the base surrounding the seat 13, to form a gas tight connection that will not permit a leakage of gas therepast. An extended finger piece 28 that is formed integral with the flange 25 of the tube 20 is disposed outward through a slot 29 in the shell 17 to permit of the operation of the tube as in raising and lowering the same preparatory to lighting the burner. Within the tube 20 is mounted the valve 15 which is comparatively light and of a general cylindrical form, but having a suitable number of vertical grooves 30 and cross grooves 31 to permit of a flow of gas past the valve and through the tube when the former is so positioned within the shell as to allow of the passage of gas from the chamber in base.

The depending plug 14 is of a size and shape to snugly enter the seat 13 and close the passage 12 from the chamber of the base when the said valve 15 is seated as in Fig. 2,

and in a way to hold back the gas until such times as the said valve may be manually elevated to open the said passage. After being raised in this way to elevate the valve the tube may be immediately released when the spring 26 will force the same down, while the pressure of gas exposed to the underside of valve retains the same in an elevated position in a manner to allow the gas to pass thereby.

In Fig. 6, I have shown a cut-off adapted to be used in connection with a gas stove or range, which is very similar to the previously described construction, except that it has no burner tip; the top end of the tube 20 being closed and provided with a flange 32 which extends slightly beyond the shell 17 and forms a means for engagement to open the valve. An opening 36 is formed in one side of the lower portion of this tube to allow the gas to escape into the outer shell. The outer shell 17 as shown in this form contains a side outlet 33 with which a stove or range connection may be made and is located adjacent to the said opening 36.

From the foregoing it will be noted that the normal position of the valve in the cut-off is obviously closed as shown in Fig. 2, when not in use and at such times as when the gas is cut-off either at the meter, or in the cock 35 in gas pipe 34 and that when it is desired to light the burner the gas would necessarily have to be first turned on by the manipulation of the said cock, in the usual way and then my cut-off, operated by engaging the finger piece 28 to raise the tube and valve, withdrawing the plug from its seat in a manner to permit the gas to enter the tube and pass on to the tip or outlet, after which the gas pressure will hold the valve up.

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

1. An automatic gas cut-off comprising a base having a gas passage therethrough and a valve seat in said passage, a shell attached to the base, a tube slidably mounted within the shell, a valve movably mounted within the tube bearing a cone to engage and close the valve seat and port when the device is closed and means for operating the tube to raise the valve from its seat.

2. An automatic gas cut-off comprising a base having a gas passage leading therethrough, a tube slidably connected with the base, a sliding valve mounted within the tube adapted to close the gas passage when in a lowered position, a shell to inclose said tube and engage the base, and a spring intermediate the shell and tube to normally hold the latter and its valve closed.

3. An automatic gas cut-off comprising a base having a gas passage therethrough, a tube slidably mounted upon the base having an extension to form a finger piece and an internal annular shoulder, a valve mounted within the tube adapted to be engaged by the said shoulder and bearing a cone shaped plug to engage and close the gas passage when the gas pressure is cut off, a shell to inclose the tube and a spring intermediate the shell and tube to normally hold the same in a lowered or closed position.

4. In an automatic gas cut-off of the class described the combination with a base having a port therethrough, of a tube slidably mounted upon said base, a sliding valve within the tube adapted to be normally held raised by gas pressure but to drop and close the gas passage to form a seal when the gas supply is cut off and grooves in said valve to permit of the passage of gas therepast when in said raised position.

5. The combination with a gas inlet, of a sliding valve to engage and close said inlet and having grooves in its sides to permit of a flow of gas therepast, a tube to inclose and cover the said gas inlet and having an extension to form a finger piece to operate the valve, and means within the tube to engage the valve to raise and open the same.

6. In an automatic gas cut-off the combination with a base having a gas passage therethrough, of a shell connected with the base, a tube mounted within the shell and slidably connected with the base and having an extended finger piece whereby the tube is operated and an internal annular ledge, a sliding valve mounted within the tube adapted to be engaged by the said ledge and provided with a cone shaped plug to engage and close the gas passage, and an opening from said tube to permit the gas to flow therefrom.

7. An automatic gas cut-off comprising a base having a gas passage therethrough and a conical valve seat, a tube slidably mounted upon the base, a valve mounted within the tube bearing a cone shaped end and having grooves in its seat to form gas passages, an opening in the side of the tube to permit of an escape of gas, a shell inclosing the tube, and also having a gas outlet adjoining the opening in the tube, and a spring intermediate of the shell and tube.

Signed at Bridgeport, in the county of Fairfield, and State of Connecticut, this 21st day of September, A. D., 1907.

JOHN W. FIELDS.

Witnesses:

C. M. NEWMAN,
H. G. GREENE.