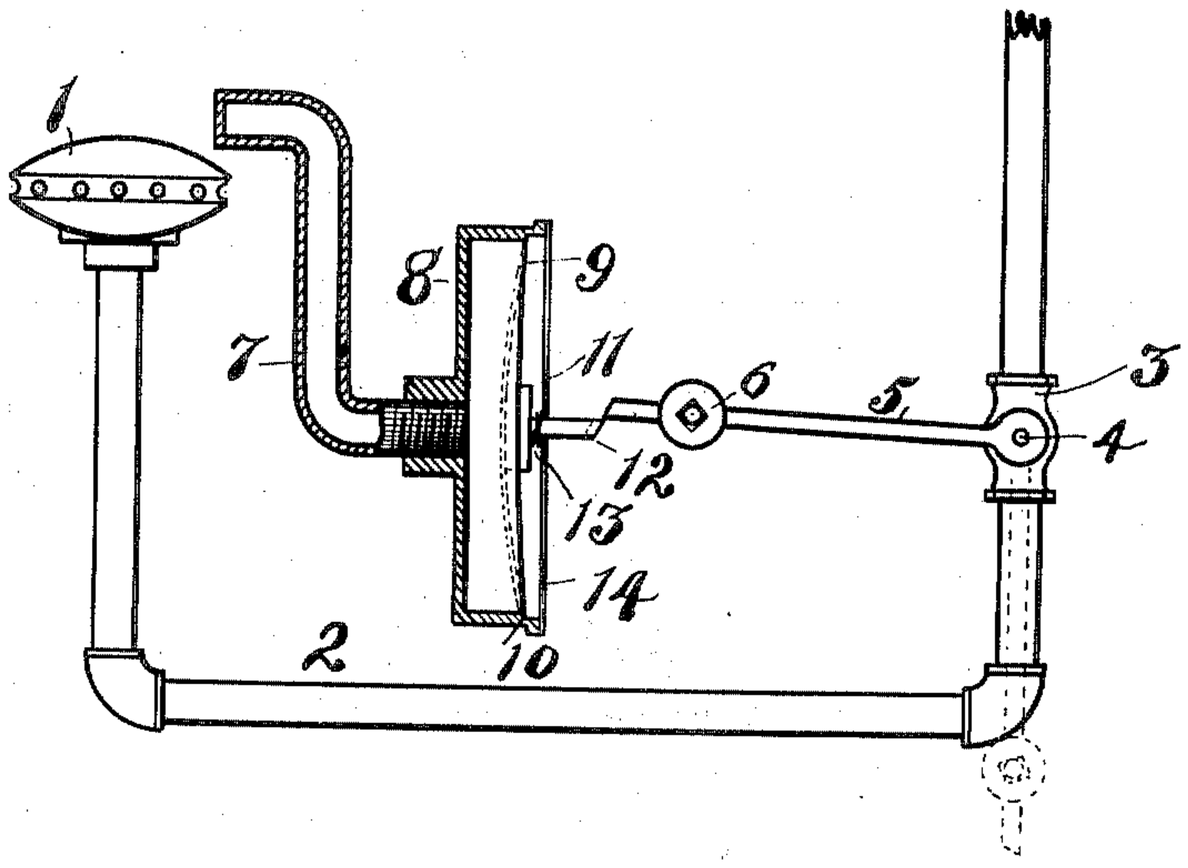
No. 817,505. PATENTED APR. 10, 1906.

C. J. McCORMICK.

AUTOMATIC GAS SHUT-OFF.

APPLICATION FILED NOV. 9, 1904.



Witnesses:
Glenara Fox
E. B. Williamson

Inventor,
C. J. McCormick.
by C. E. Humphrey
atty.

UNITED STATES PATENT OFFICE.

CHARLES J. McCORMICK, OF AKRON, OHIO.

AUTOMATIC GAS SHUT-OFF.

No. 817,505. Specification of Letters Patent. Patented April 10, 1906.

Application filed November 9, 1904. Serial No. 232,037.

To all whom it may concern:

Be it known that I, CHARLES J. McCORMICK, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Improvement in Automatic Gas Shut-Offs, of which the following is a complete specification.

This invention relates to attachments for use in connection with fluid-fuel burners, whereby the supply of fluid fuel to the burner is automatically arrested upon the extinguishment of the flame at the burner.

The object of my invention is to provide suitable mechanism for constant use in connection with a fluid-fuel burner whereby the flow of gas through the service-pipe to the burner may be automatically prevented upon the extinguishment of the flame, to the end that in those communities where a fluid fuel is commonly used and where this fuel is liable to fail temporarily there may be supplied with the burner a life-saving device which will prevent an influx of the fluid into a building through a burner upon a return of the pressure in the service-pipe the flame of which has been extinguished by the temporary arresting of the flow of the fluid fuel. In accomplishing this object of my invention I make use of certain novel and peculiar mechanism, one form of which is hereinafter described, reference being had to the accompanying drawing, forming a part hereof.

The accompanying drawing represents a side elevation of my improved device with certain portions thereof in section to better illustrate the internal construction thereof.

In the drawing, 1 represents a burner, which may be of the form shown herein or any other desired or preferred construction best suited or adapted to the work or service to which it is to be applied, and to the quantity and quality of the fluid fuel to be therein consumed, and this burner may be mounted within the body of a stove, furnace, or other heating device, or may be of such configuration as is used for the purposes of illumination, the general nature of which is an immaterial matter as far as this invention is concerned, so long as it is adapted to burn a fluid fuel and produce therefrom a heat-generating flame.

The burner 1 is mounted upon a service-pipe 2, in some portion of which is a valve 3, to the valve-stem 4 of which is fastened a radial arm 5, having mounted thereon a slidably-adjustable weight 6.

Placed so that one of its ends will be heated by the flame from the burner 1 is a pipe 7, and the end which is designed to remain within the influence of the flame from the burner 1 is closed. At the opposite end of the pipe 7 and communicating with the interior thereof, is a hollow, preferably cylindrical, box 8, across which is a thin diaphragm 9. This diaphragm 9 is preferably held on a shoulder 10, cut along the inner side of the shell of the box 8, by soldering. On the central portion of this diaphragm 9 is a base-plate 11, from which projects a stem 12, and around this stem 12 is a coiled spring 13. The outer face of this box 8 is closed by a rigid plate or cap 14, preferably soldered thereon, through which projects the stem 12.

The stem 12 is arranged to project when the diaphragm is flattened or outwardly pressed such a distance that the extreme end of the arm 5 can just rest upon its outer edge, and thus act as a movable abutment to sustain the weighted arm 5 in the position shown by solid lines in the drawing.

The operation of this device is as follows: The lever 5 is raised to the position shown in solid lines in the drawing by hand, which permits the flow of fluid fuel from the service-pipe 2 to the burner 1, and upon the ignition of the fluid fuel at the burner the heat generated thereby will expand the air within the pipe 7 and the box 8 to such a degree as to slightly flatten or push outwardly the diaphragm 9, as well as the stem 12, until the extreme end of the lever 5 can be securely rested on its upper outer end. If for any reason the flame is extinguished, the cooling of the air in the pipe 7 and box 8 will permit the forcing backward of the diaphragm 9 by reason of the action of the coiled spring situated between the base-plate 11 and the cap 14, which withdraws automatically the end of the stem 12 from under the end of the arm 5, permitting it to swing on the valve-stem 4 as a center by reason of its weighted condition, and thereby close the valve 3.

What I claim, and desire to secure by Letters Patent, is—

The combination in a device of the class described, of a fluid-fuel burner, a closed pipe having one end thereof situated within the influence of the heat of said burner, a box on the opposite end of said pipe, an air-tight

sensitive diaphragm extending across said box, a rigid plate extending across the end of said box outside of said diaphragm, a projecting stem attached to said sensitive diaphragm and passing through a suitable opening in said rigid plate, a spring on said stem engaging said rigid plate to assist the movements of said diaphragm, a valve in the service-pipe of said burner, an arm capable of actuating said valve and attached to the valve-stem thereof of sufficient length to engage said stem when said diaphragm is under compression, whereby said arm is sustained against movement, and an adjustable weight on said arm.

In testimony that I claim the above I hereunto set my hand in the presence of two subscribing witnesses.

CHARLES J. McCORMICK

In presence of—

C. E. HUMPHREY,

GLENARA FOX.