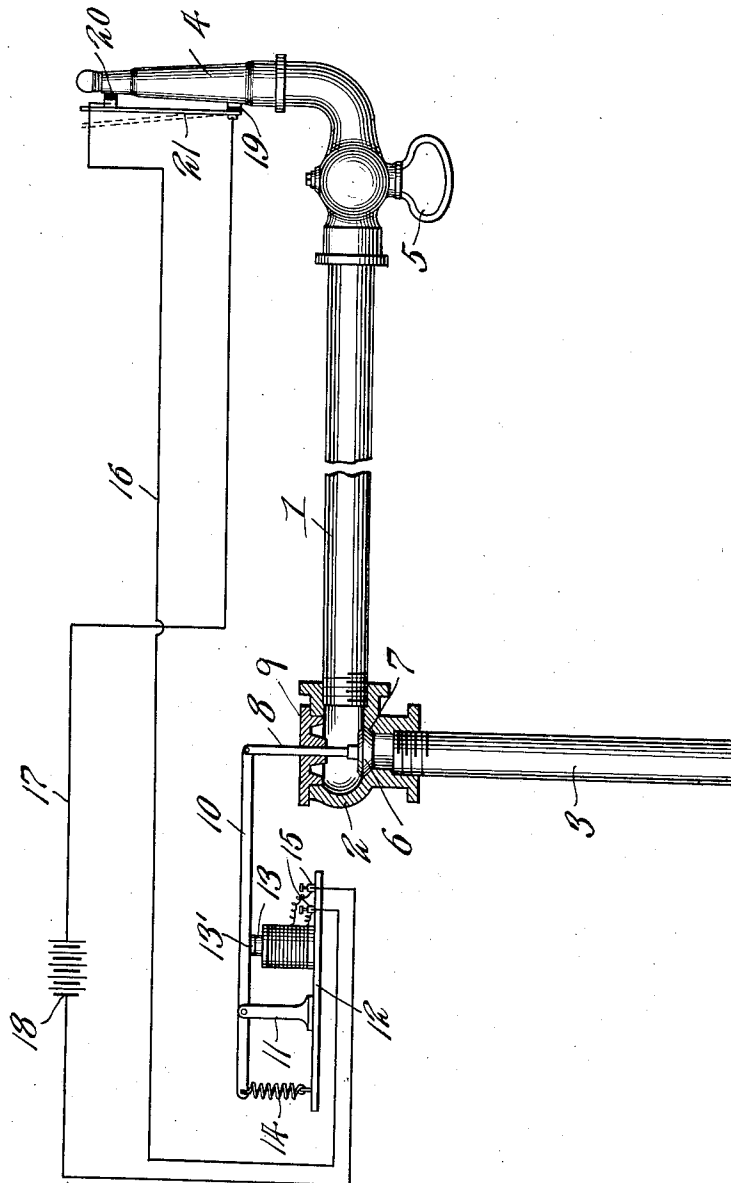


S. ALLEN.
SAFETY GAS COCK.
APPLICATION FILED JAN. 22, 1909.

932,940.

Patented Aug. 31, 1909.



Witnesses

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SAFETY GAS-COCK.

932,940.

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To all whom it may concern:

Be it known that I, SOLOMON ALLEN, a citizen of the United States, residing at Albuquerque, in the county of Bernalillo and Territory of New Mexico, have invented new and useful Improvements in Safety Gas-Cocks, of which the following is a specification.

This invention relates to safety gas cocks, and particularly to thermo-electric means for automatically cutting off the flow of gas to the burner when the flame is blown out or is extinguished by cutting off the gas through the closing of the usual hand valve or cock associated with the burner.

The object of the invention is to provide a thermo-electric cut out which is simple of construction, inexpensive of production and application, efficient in operation, and not liable to get out of order.

The invention is illustrated in the accompanying drawing, showing in sectional elevation and diagram the application of the invention to a burner.

Referring to the drawing, 1 designates a burner pipe, connected at one end by a coupling 2 with a gas supply pipe 3, and carrying at its opposite end a burner 4 provided with the usual controlling cock 5.

The coupling 2 forms a casing for a vertically movable safety valve 6 adapted to engage a seat 7 formed therein to control the flow of gas between the pipes 3 and 1, said valve being provided with an upwardly extending stem 8 slidable through a cap or cover 9 closing an opening in the top of the coupling, through which opening the valve may be applied and removed.

The valve stem 8 is connected to one end of a lever 10 eccentrically fulcrumed upon a post 11 mounted on a supporting bracket 12. This bracket also supports a pair of electromagnets 13 arranged between the post and valve stem, the cores of which magnets are adapted to attract a transverse armature bar 13' fixed to the lever 10, whereby, when said armature is attracted by the magnets, the long arm of the lever carrying said bar will be drawn down and the valve 6 closed to cut off the supply of gas to the burner. A coiled spring 14 connects the opposite or short end of the lever 10 with the bracket 12 and serves, when the magnets are deenergized, to normally hold the lever in a horizontal position and maintain the valve 6 open.

The coils of the magnets are connected

with binding posts 15 on the bracket, from which posts lead the conducting wires 16 and 17 of an electric circuit, in which the magnets are arranged. The circuit may be provided with current from a battery 18 arranged therein, or by using resistance coils the current from an ordinary electric light circuit can be employed. The terminals of the wires 16 and 17 are respectively connected with a block 19 of insulating material and an insulated contact 20 secured to the side of the burner tube, and also secured at its lower end to the block 19 and in electric connection with the wire 17 is a thermostatic strip 21 which has its upper or free end arranged for movement into and out of engagement with the contact 20.

The thermostatic strip 21 is of any ordinary construction adapting it, when heated to a determined temperature to bow or contract so that its free end will be out of contact with the terminal 20, whereby the circuit will be broken, thus allowing the spring 14 to hold the valve 6 open for the supply of gas to the burner, so that when the burner is not in use and the temperature of the strip is reduced to the normal the strip will be returned to a straight condition by its spring action or elasticity and thus connect the two terminals 19 and 20 to close the circuit and energize the magnets, whereby the valve 6 will be closed in an obvious manner to cut off the flow of gas to the burner.

In operation, the cock 5 is opened and a lighted match applied to the tip of the burner in the usual way so that the flame thereof will contact with, heat and expand the strip 21, whereby the circuit will be broken, the valve 6 opened to allow gas to flow to the burner, and the issuing gas ignited from the flame of one and the same match. The heat from the flame of the burner will then continue to keep the strip 21 bowed and the valve open as long as the burner is in operation. If, however, the cock 5 should be closed or the flame should be accidentally or purposely blown out, the thermostatic strip will be restored to a normal condition upon the cooling thereof and thus connect the two conductors 16 and 17, to energize the magnets, thus automatically closing the valve 6 to cut off the flow of gas and prevent its escape into the room or apartment.

It will be understood that the construction of the coupling 2 with removable head 9 permits of the ready application of the inven-

tion to existing burners and the ready insertion and removal of the controlling valve, so that a new valve may be substituted for a worn one whenever occasion requires. In
5 practice, the wires of the circuit may be concealed as well as the cooperating parts upon and associated with the gas fixture, so that a person attempting self-destruction, but not
10 being familiar with the arrangement of the parts or working of the apparatus, by reason of such unfamiliarity would fail to accomplish his purpose.

If desired, two or more burners may be connected up to be controlled by a single circuit and single controlling valve 6, as will
15 be readily understood.

Having thus fully described the invention, what is claimed as new, is:—

In an automatic gas burner, the combination of a burner pipe, a burner connected
20 therewith, a gas supply pipe, a coupling connecting said pipes and having a valve seat and a removable head, a controlling valve movable in said coupling to engage said seat
25 and provided with a stem projecting exte-

riorly through the head, a spring actuated armature lever pivotally connected with the valve stem and operative to normally hold the valve open, an armature carried by the lever, electro-magnets arranged for cooperation with said armature, contacts mounted
30 directly upon and insulated from the burner, an electric circuit including the magnets having its wires connecting said magnets and contacts, and a thermostatic strip arranged in parallel relation to the burner and
35 connected at one end with one of the wires and supported by the coacting contact, and having its free end disposed adjacent the tip of the burner and normally engaging the
40 other contact and adapted to move out of engagement with said contact when the burner is in use.

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

SOLOMON ALLEN.

Witnesses:

M. E. HICKEY,
W. J. JOHNSON.