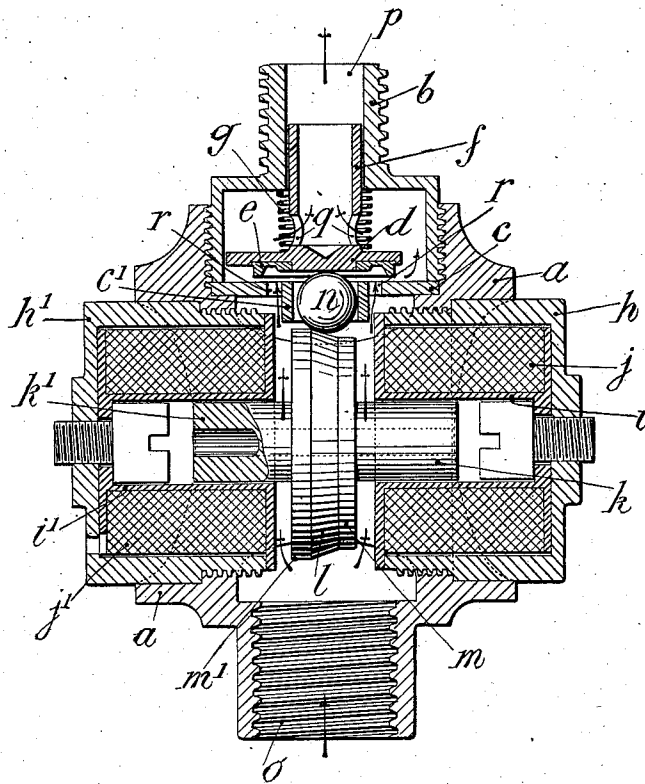


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 DEVICE FOR CONTROLLING FROM A DISTANCE THE PASSAGE OF GAS.
 APPLICATION FILED AUG. 19, 1908.

1,028,657.

Patented June 4, 1912.



Witnesses.

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UNITED STATES PATENT OFFICE.

ALBERT MAURICE AUBERT AND JEAN MARCEL AUBERT, OF BILLANCOURT, FRANCE.

DEVICE FOR CONTROLLING FROM A DISTANCE THE PASSAGE OF GAS.

1,028,657.

Specification of Letters Patent.

Patented June 4, 1912.

Application filed August 19, 1908. Serial No. 449,354.

To all whom it may concern:

Be it known that we, ALBERT MAURICE AUBERT and JEAN MARCEL AUBERT, citizens of the Republic of France, residing at 135
5 Route de Versailles, Billancourt, Seine, in the said Republic, have invented certain new and useful Improvements in Devices for Controlling from a Distance the Passage of Gas; and we do hereby declare the following to be a full, clear, and exact description
10 of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings,
15 and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to a device for controlling from a distance the passage of gas; the said device being operated with aid of
20 three electric leads, that is to say, the device comprises two electromagnets which are thrown into circuit alternately by turning a suitable switch, one of these magnets determining the admission of gas to the burner
25 and the other determining the cutting off of this gas.

The device consists essentially of a valve designed to control a gas passage and arranged in such a manner that it is actuated
30 by a ball adapted to engage its lower face, said ball being actuated through the intermediary of a conical surface on a cylindrical-conical body of revolution, the lateral
35 displacement of the latter in one direction acting to raise the valve from its seat, while the displacement of said body in the opposite direction permits the return of the valve to its seat under the action of a spring.

40 The accompanying drawing is a vertical section of one form of device embodying our invention, the body of revolution being represented as in motion.

The apparatus comprises a tubular casing
45 a in the upper part of which is screwed a tube b which holds in place the seat c of the valve d ; the latter is provided with a collar e of any suitable form and material, is guided by a tubular extension f and is held
50 on its seat by a spring g .

Into the respective sides of the casing a are screwed caps h and h' containing bobbins, i , i' of solenoids j , j' . Within the hollow bobbins slide the solenoid cores k , k' ;
55 the two cores are fixed to the opposite faces of a disk l having a central conical portion

and two cylindrical portions m , m' of different radii, on its periphery. Accordingly as current is transmitted through solenoid j or solenoid j' , the disk l is moved to the right
60 or to the left. Preferably the cores k k' and the disk l are bored axially so that air may pass from one end to the other when the disk is displaced under action of one or other of the solenoids.

Extending co-axially through the seat c of the valve is a short tube c' in which is lodged a ball n resting on the disk l . The diameter of this ball is such that when the ball n rests on the cylindrical portion m
70 of the disk, the valve d can rest upon its seat, but when the ball rests upon the cylindrical portion m' of the disk the valve d is fully opened, while when the ball rests on the conical portion of the disk as shown
75 in the figure the valve occupies an intermediate position. When the solenoid j is energized the valve is lifted, while when the solenoid j' is energized the valve is able to return to its seat under action of spring g .
80 A simple switch having two poles suffices to control this valve from a distance. When the valve is open the gas passes through the connection at o to that at p by way of the orifices r in the valve seat c and the orifices
85 q in the tubular extension f . Inasmuch as the ball n has considerable play in the tube c' gas can also pass through this tube; the direction of the passage of the gas is shown by the arrows.

It will be seen that the cylindrical parts m m' of the disk keep the valve stable in its open or closed position, so that when it is open vibrations do not cause it to shut. Moreover, the apparatus is exceedingly sensitive since friction is avoided by the use of
95 a ball and a freely movable body of revolution.

The solenoids or electromagnets and their armatures may be of any suitable form and may be attached to the casing in any suitable manner.

Having thus described the nature of our said invention and the best means we know of carrying the same into practical effect,
105 we claim:

1. Mechanism for controlling gas from a distance, comprising a casing, tubes attached thereto for the admission and escape of gas, a cut-off valve, a spring to press said valve
110 on its seat, a freely and axially movable body having a conical surface of revolution

between cylindrical surfaces of different diameters axial therewith, said body maintained distant from the walls of the casing to permit the passage of gas around and
 5 past the body under all conditions of operation, a round faced member between said body and valve, and means controlled from a distance for moving the entire cylindro-conical surface in one direction or the other.
 10 2. Mechanism for controlling gas from a distance, comprising a casing, pipes attached thereto for the admission and escape of gas, a cut-off valve, a spring to press the valve on its seat, a freely and axially movable member having a conical surface of
 15 revolution between cylindrical portions of different diameters and co-axial therewith, a ball between said member and valve, cylindrical bearings mounted on opposite sides of the cylindro-conical body and co-axial there-
 20 with, two electro-magnets adapted to be controlled from a distance by a source of current, and cores attached to the cylindro-conical body movable in said bearings.
 25 3. Means for controlling the passage of gas from a distance, comprising a casing, pipes attached thereto for the admission and escape of gas, a cut-off valve, a body of revolution free to move, composed of a central conical part and two lateral cylindrical
 30 parts of different diameters, a freely movable ball interposed between the body of revolution and the valve, an electro-magnet

on each side of the body, and cores for said magnets mounted on the opposite faces of
 35 said body and co-axial therewith.

4. Means for controlling the passage of gas from a distance, comprising a casing, tubes on the casing for the admission and escape of gas, a valve, a seat for said valve,
 40 a freely movable cylindro-conical body of revolution, a ball interposed between said body and the valve, a socket formed on the seat of the valve and in which said ball is mounted and is free to move both laterally
 45 and vertically, electro-magnets on the respective sides of the body, and cylindrical cores on the opposite faces of the body.

5. In apparatus for controlling gas from a distance, the combination with a spring-
 50 urged valve; of a member having a conical portion with cylindrical portions of different diameters on the respective sides of said conical portion, a ball free to rotate in any
 55 direction between the valve and conical portions, and means controlled from a distance to axially move said member to cause the ball to open the valve and permit it to close.

In testimony that we claim the foregoing as our invention we have signed our names
 60 in presence of two subscribing witnesses.

ALBERT MAURICE AUBERT.

JEAN MARCEL AUBERT.

Witnesses:

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HENRY THIESSE.