May 24, 1927. 1,630,212

W. H. OVERTON

ELECTRIC GAS SWITCH

Filed Oct. 26, 1925

Fig. 1.

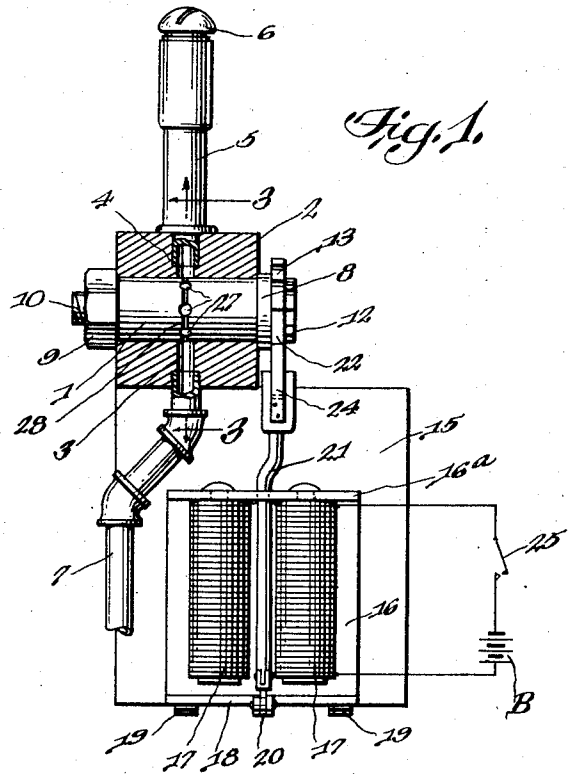


Fig. 2.

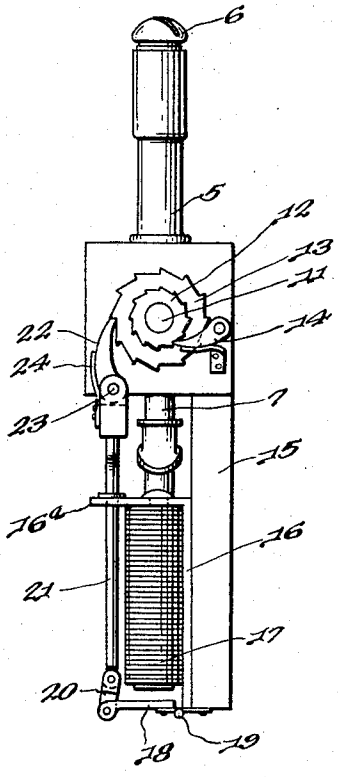
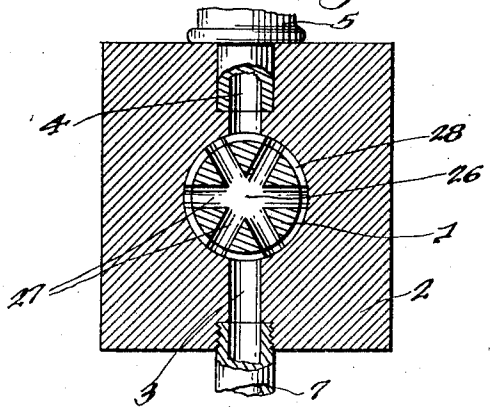


Fig. 3.



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UNITED STATES PATENT OFFICE.

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ELECTRIC GAS SWITCH.

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This invention relates to means for controlling gas lights, and more particularly to what I term an electrical gas switch.

One of the main objects of the invention is to provide simple and efficient means whereby a gas burner or light may be kept burning low when not in use and the flow of gas can be quickly increased when desired from a distant point for increasing the illumination of the burner. A further object of the invention is to provide a control valve for gas burners and similar purposes of simple and efficient construction and operation having electro-magnetic means for actuating the valve from a distant point. Further objects will appear from the detailed description.

In the drawings:

Fig. 1 is an elevation of the valve as applied, partly in section.

Fig. 2 is a side view of the valve as applied and associated parts.

Fig. 3 is a section taken through the valve casing substantially on the line 3—3 of Fig. 1.

A substantially cylindrical valve 1 is rotatably mounted in a casing 2 provided with an inlet and outlet passage 3 and 4, respectively, and jet 5 provided with a tip 6 of known construction communicates with passage 4 and a gas supply pipe 7 communicates with inlet passage 3. The valve is provided at one end with an outer annular shoulder 8 which is turned snugly against the adjacent face of casing 2 by nut 9 threaded on a shank 10 extending from the other end of the valve. A stem 11 extends from the end of the valve at which the shoulder 8 is located and inner and outer ratchet wheels 12 and 13, respectively, are secured on this stem. A spring pressed pawl 14 engages with ratchet wheel 12 and acts to hold the valve against reversed operation after it has been turned a predetermined distance in one direction. The valve casing is mounted on a base 15, the outer face of which is secured to an L-shaped bracket 16 which supports electro-magnets 17 positioned to attract, when energized, an armature 18 hingedly secured at 19 to the bottom of base 15. This armature is connected, at its outer ends, by a link 20 to the lower end of the operating arm 21 which is slidably mounted through the upper arm 16^a of bracket 16 so as to be guided thereby. A pawl 22 is pivotally secured at 23 to the upper end of arm 21 and is held in engagement with ratchet wheel 13 by a leaf spring 24. When the electro-magnets 17 are energized, as by closing the suitable switch 25 positioned in the circuit of a suitable source of electrical energy B in series with which the coils of the magnets are connected, armatures 18 are attracted by the electro-magnets so as to be raised thereby thus raising pawl 22 and turning the valve 1 a predetermined distance in a clock-wise direction as considered in Figs. 2 and 3. Upon opening of switch 25, the electro-magnets are de-energized thus permitting the armature 18 and arm 21 to be moved by gravity into lowered positions, the pawl 22 engaging beneath the succeeding tooth of ratchet 13.

The valve 1 is provided with a central opening or space 26 from which radiate a plurality of ducts 27, these ducts being equidistant at their outer ends. The valve is also provided with a circumferential groove 28 in its outer face which is of small cross area relative to the cross area of the respective ducts 27. When valve 1 is in position illustrated in Fig. 3 none of the ducts are in alignment with the outer passage 4 so that comparatively small amount of gas will flow through the jet 5 by means of groove 28. The distance between the successive ducts 27 at their outer ends is equal approximately to twice the distance through which the valve is turned upon actuation of the operating arm 21 so that, when the switch 25 is closed and arm 21 is actuated, said valve will be turned a proper distance so as to bring one of the ducts into alignment with the outlet passage 4. It will also be noted that the ducts 27 are arranged in pairs, the ducts of each pair extending diametrically of the valve so that when one duct is brought into alignment with the outer passage 4 the other duct is brought into alignment with the inlet passage 3. This results in greatly increasing the amount of gas supplied to jet 5 thus producing a much larger flame at the tip 6 and consequently increases any illumination of the burner. When the switch 25 is again closed, the valve will be turned into the position illustrated in Fig. 3 thus cutting off the greater portion of the gas supply to the jet and very materially reducing the

flame so as to dim the burner. This provides a very simple and highly efficient means whereby the gas light or other apparatus of a similar character can be readily controlled from a distant point so as to have its light increased or diminished as desired.

What I claim is:

In a gas controlling means including a valve comprising a rotatable cylinder having a multiplicity of transverse openings communicating through a common center, a circumferential groove connecting the peripheral openings, substantially as shown, a valve casing provided with inlet and outlet ducts in alignment with corresponding openings in said valve, a ratchet wheel secured on one end of said valve having a number of teeth equally spaced and corresponding to twice the number of peripheral openings in said valve, an electrical magnet disposed to support and actuate an intermediately supported rod member, substantially as shown, a pawl pivoted on said rod member and positioned for engagement with the ratchet wheel so that when the magnet is energized the pawl will advance said ratchet wheel one tooth and on release will return to the next tooth.

In testimony whereof I affix my signature.

WILLIAM H. OVERTON.