

No. 635,140.

G. O. LENTSCHAT.  
ELECTRIC GAS LIGHTER.

Patented Oct. 17, 1899.

(No Model.)

Fig. 1.

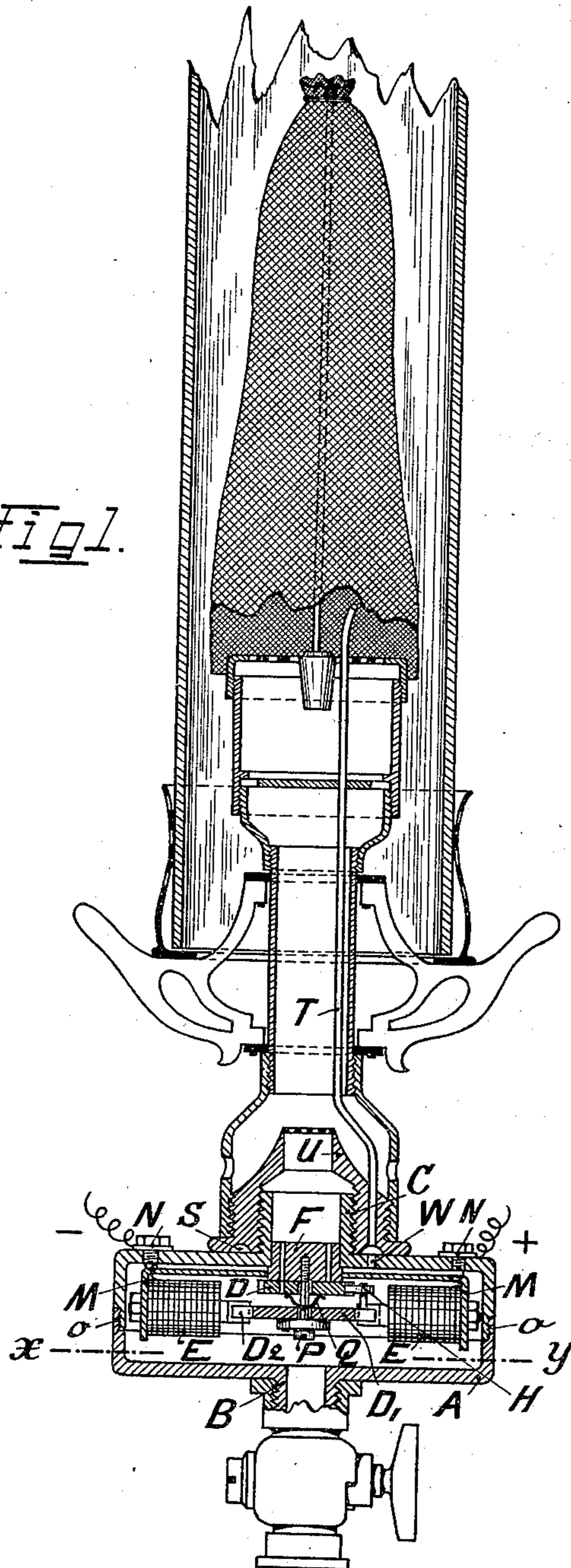
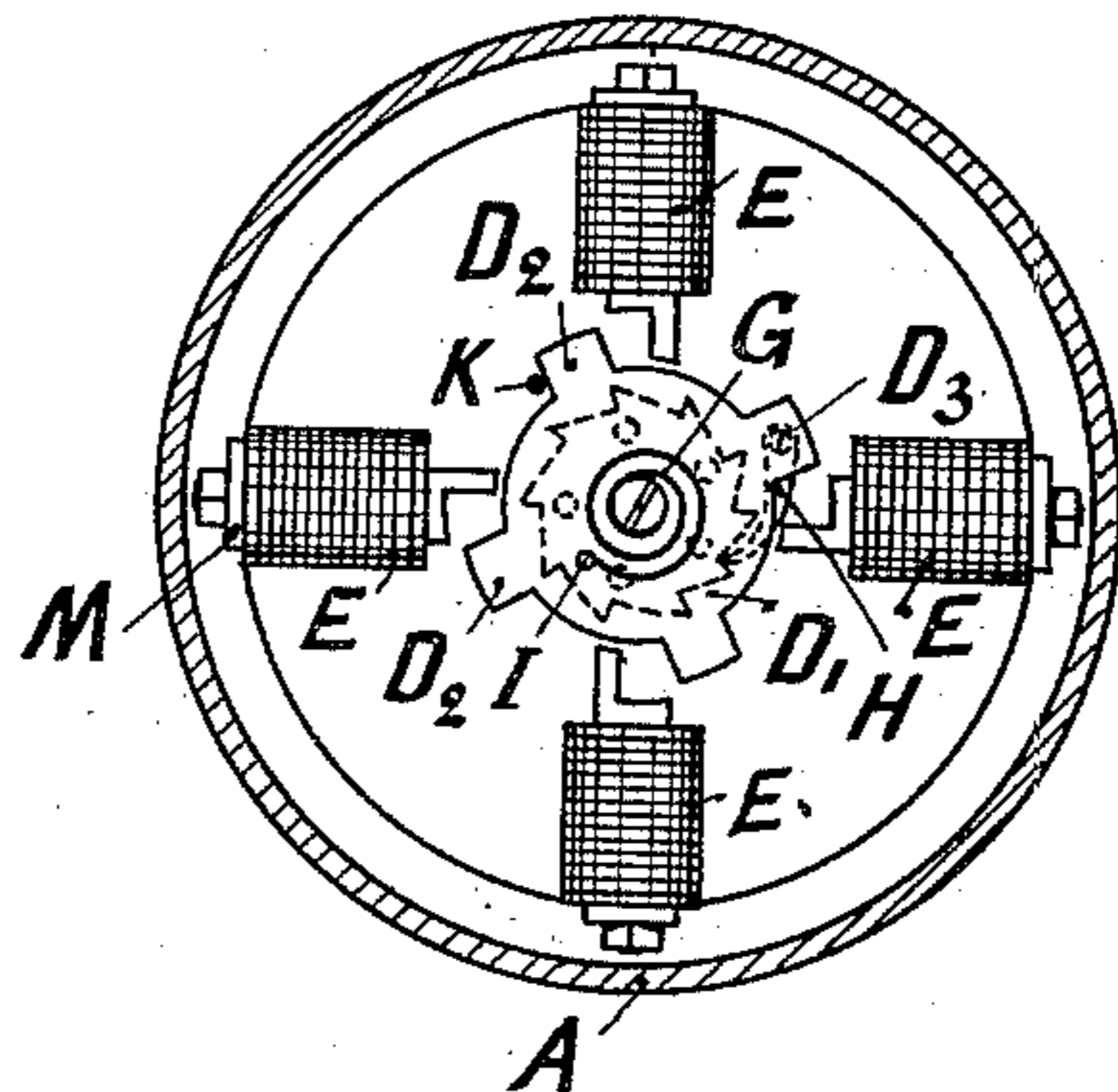


Fig. 2.



WITNESSES:

*J. H. Danner*  
*A. D. Lawrence*

INVENTOR:

*Georg Otto Lentschat,*

*By Bartlett Brown,*  
*Attorneys.*

# UNITED STATES PATENT OFFICE.

GEORG OTTO LENTSCHAT, OF COLOGNE, GERMANY, ASSIGNOR TO KÖLNER WASSERMESSE WERK GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG, OF SAME PLACE.

## ELECTRIC GAS-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 635,140, dated October 17, 1899.

Application filed April 9, 1898. Serial No. 677,026. (No model.)

*To all whom it may concern:*

Be it known that I, GEORG OTTO LENTSCHAT, a subject of the German Emperor, residing at Cologne, Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Electric Gas-Lighters and Gas-Cocks Therefor, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This invention relates to an improved apparatus for the lighting and extinguishing of gas-lamps from a distance, especially of such lamps that are provided with what is known in the art as "Welsbach" burners.

The invention consists in an electromagnetic device for opening and closing the supply of gas from a distance.

Of the accompanying drawings, Figure 1 is a vertical section through the whole lamp, showing apparatus for accomplishing the objects of this invention. Fig. 2 is a horizontal section on line  $xy$  in Fig. 1.

The letters of reference designate the same parts in both of the figures.

A is a flat cylindrical box made of two pieces hermetically screwed together at  $o$ . The box A is provided with two screw-threaded studs B and C, the lower one, B, serving as inlet and the upper one, C, as outlet for the gas. An ordinary Welsbach burner is shown in Fig. 1, being screwed onto the upper stud C. I will not, however, describe the latter in detail, as its construction is well known to those conversant with the art, and any other gas-lamp may be substituted without changing the nature of this invention. The lower opening of the stud C is filled with a plug F, which latter is perforated with a suitable number of holes. The number of holes may vary; but it ought to be sufficient to admit enough gas to the burner under the ordinary pressure. In the center of the plug F a screw or pin P is fastened, which serves as a pivot for the disk D. The upper surface of the disk D and the lower surface of the plug F are ground smooth and so as to fit each other intimately. The disk D is likewise perforated with a number of holes. These holes are so placed that when the disk is turned

they will correspond with the holes bored in the plug F in certain positions, thus making a free outlet for the gas to the burner, while in other positions the spaces left between the holes in the disk will correspond with the holes in the plug F, and thus the supply of gas will be shut off. In order to secure a gas-tight fit of the disk on the lower surface of the plug F, a spring Q is provided, which presses the disk against said surface and rests against the second disk D', which in its turn is kept from slipping off the pin P by the head of the latter. In the lid of the box A another hole W is provided and corresponding to this hole a circular groove S in the lower surface of the nozzle U. The nozzle further carries a small tube T, reaching down to and communicating with the aforesaid groove S. The upper end of this tube T reaches right up above the burner and is provided with a small gas-outlet at its upper extremity.

The disk D is provided with a toothed edge, thus forming a ratchet-wheel, and the number of teeth cut in its edge is equal to twice the number of holes that are bored in it.

The second disk D' is provided with four radial projections D<sup>2</sup> D<sup>2</sup> and serves as an armature for the four electromagnets E E. On one of the projections D<sup>2</sup> is fastened a pin D<sup>3</sup>, and on this pin a pawl H is pivoted, which engages with the toothed edge of the disk D. A spring G is fastened to the head of the pin P, and its free end is attached to a pin I, fastened in the disk D', so that it will tend to turn the disk D' in a left-hand direction around its pivot, and thus makes the corresponding projection D<sup>2</sup> rest against the pin K. This pin K is secured in the casing to the rear of one of the radial projections D<sup>2</sup> (see Fig. 2) and serves as a stop, with which the projection is normally engaged by the spring G. Fitted onto the plug F is a plate M with four projections, bent downward and serving as supports for the four electromagnets E. This plate M is made of iron, so that the magnetic circuit is practically closed. The ends of the coils wound onto the electromagnets are carried out of the box A through its lid and are attached to the two binding-posts N N, which are supposed to be connected to some suit-

able source of electricity provided with ordinary and suitable means for making or breaking the current from any desired distance.

The operation of my device is as follows:

5 The gas can pass freely through the hole W and the tube T and out of the opening at the upper extremity of the latter. Here it is lighted, and the small flame thus obtained is allowed to burn without interruption. At ordinary  
10 times the disk D is supposed to be in such a position that the holes bored in the plug F are covered. Thus the gas cannot pass out of the box to the burner. When the lamp is to be lighted, a current is made to flow through the  
15 windings of the electromagnets E E. These upon being excited attract the projections D<sup>2</sup>, thus overcoming the force of the spring G. By means of the pawl H engaging with the teeth cut in the edge of the disk D the latter  
20 is likewise made to turn when the disk D' turns, and thus the holes bored in D are made to correspond with the holes bored in F and a free outlet is given to the gas. The latter ascends to the burner and catches fire as soon  
25 as it comes into contact with the small flame at the top of the tube T. When the current is broken, the disk D' follows the pull of the spring G and returns into its original position. The pawl H slides back along the edge  
30 of the ratchet-wheel D and engages with one of the following teeth. When the lamp is to be extinguished, the circuit is again closed and the same action repeats itself, with this difference only that this time the spaces between the  
35 holes in the disk D come into superposition with the holes bored in the plug F, and therefore the gas-supply is cut off and the lamp is extinguished.

40 Having now particularly described and ascertained the nature of my invention and the manner in which the same is to be performed, I declare that what I claim is—

1. In a device of the class described, the combination with a plug or part closing the  
45 gas-opening to the burner, of a disk pivotally mounted upon the said plug adapted to control the supply of gas to the burner, the said plug and disk being provided with a set or series of bored holes, the disk also having a  
50 toothed or ratchet edge; a star-shaped armature pivoted upon the aforesaid perforated plug, said armature being provided with a

pawl engaging with the toothed edge of the perforated disk; electromagnets associated with the said armature adapted to effect its  
55 rotation upon the pivot, and a spring acting upon the armature in a direction opposed to the action of the said electromagnets, substantially as and for the purpose described.

2. In a device of the class described, the  
60 combination with a plug or part closing the gas-opening to the burner, said part being provided with a series of holes or perforations, of a disk pivotally mounted to rotate before the said plug, adapted to close the sup-  
65 ply of gas to the burner, the same being similarly perforated and provided with a toothed or ratchet edge; a star-shaped armature pivotally mounted to be independently rotated, the same being provided with a pawl engag-  
70 ing with the toothed edge of the perforated disk; electromagnets associated with the said armature and adapted to effect the rotary movement thereof, and a spring tending to rotate said armature in a direction opposed  
75 to the action of said electromagnets, substantially as and for the purpose described.

3. In a device of the class described, the combination with a plug or part closing the  
80 gas-opening to the burner, said part being provided with a series of holes or perforations; a disk mounted to be rotated before one face of said part, the same being similarly perforated and provided with a ratchet  
85 edge; a pivotally-mounted armature connected with said disk by means of a pawl adapted to secure the step-by-step rotation of the disk before its coacting part, whereby the flow of gas is controlled; a spring opposing  
90 the movement of said armature, whereby the same is brought back to its normal position, and an electro magnet or magnets adapted to actuate the armature and impart a step-by-step movement to the disk, thus causing  
95 the holes in the disk alternately to register with the holes in its coacting part and permitting the gas to flow to the burner, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

GEORG OTTO LENTSCHAT.

Witnesses:

J. WRIGHT NEUMAN,  
LOUIS TILDMANN.