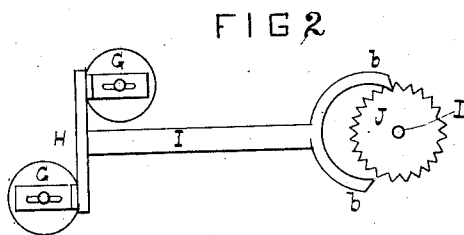
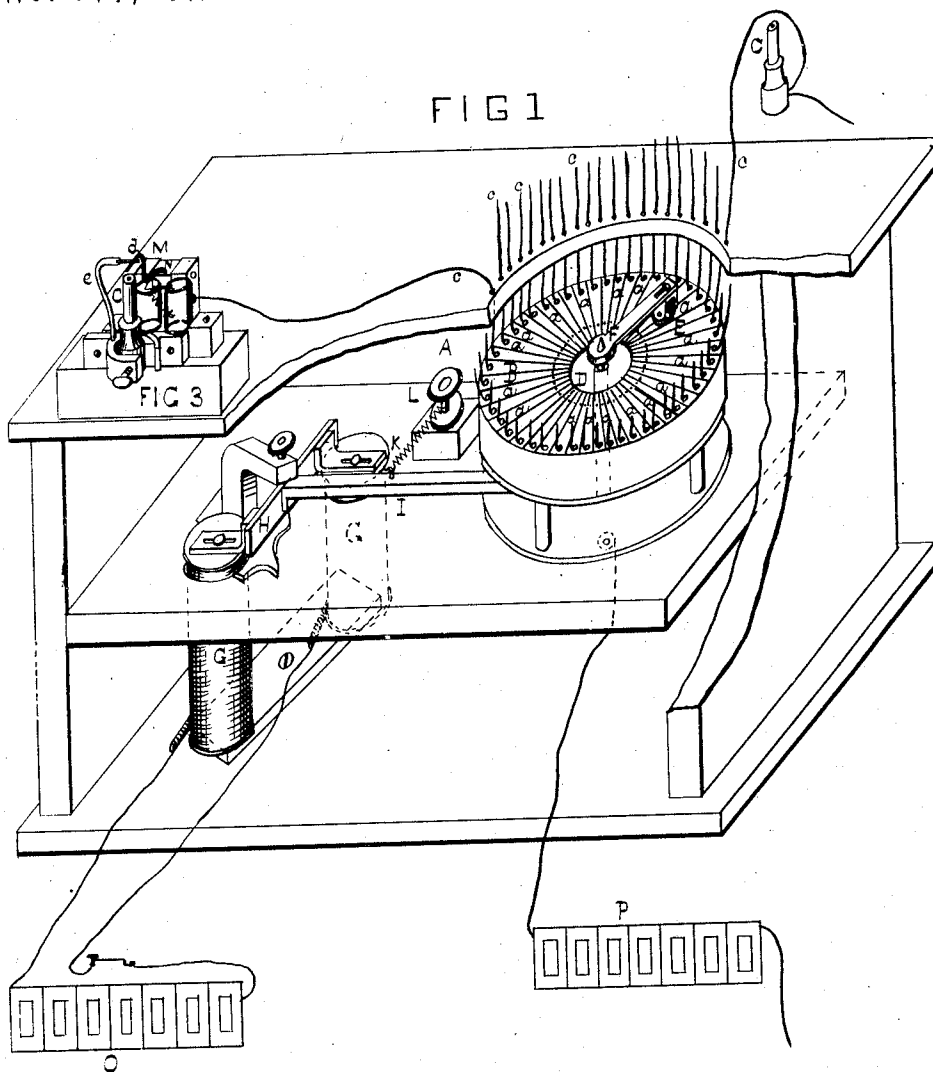


Lighting Devices.

A. POTTER.
Gas-Lighting Apparatus.

No. 140,591.

Patented July 8, 1873.



Witnesses.
John Miller
Edmund P. Cochran.

Inventor.
Arthur Potter
by *Francis D. Pastorius.*
his Atty in fact

UNITED STATES PATENT OFFICE.

ARTHUR POTTER, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN GAS-LIGHTING APPARATUS.

Specification forming part of Letters Patent No. **140,591**, dated July 8, 1873; application filed December 12, 1872.

To all whom it may concern:

Be it known that I, ARTHUR POTTER, of the city and county of Philadelphia and State of Pennsylvania, have invented an Electrical Apparatus for Lighting Gas, of which the following is a specification:

The invention consists in a commutator, by which the burners are lighted in rapid succession.

Figure 1 is a perspective view. Fig. 2 is a plan view, showing the arrangement of the commutator, electro-magnets, and the mechanism employed for working the same. Fig. 3 is a view of the arrangement of a gas-burner and its electro-magnets.

A is a commutator, the face B of which is divided into as many contact pieces, *a*, as there are burners C to be lighted. D is a vertical shaft. It forms contact with the divisions *a* by means of a roller, E, on the end of the arm F attached to it. G are electro-magnets, which are set obliquely so that their magnets will attract not only on the opposite ends of the armature H, but on opposite sides to give a horizontally-vibrating motion to the armature lever I, whose pallets *b* take alternately into the teeth or notches of the wheel J on the shaft D. A spring, K, is attached between the armature-lever and the tension-screw L. As shown at Fig. 3, each burner C has a small electro-magnet, M, attached; the wire *c* from the section *a* of the commutator leads to the same. The armature N has a wire, *d*, which makes contact with a wire, *e*, from the burner, which is insulated from the electro-magnet, its current being through the gas-pipe of the building. O is the battery of the electro-magnets G, and P the battery of the commutator. The electric circuit is formed by a suitable key. As the current is closed and opened the electro-magnets and the spiral spring K operate to vibrate the armature-lever I very rapidly, the pallets *b* of which, taking into the teeth or notches of the wheel J on the shaft D, give to it a very rapid intermittent rotary motion. As the roller E of

the arm F passes from one section, *a*, of the commutator to another, at that instant the current is broken, and again formed the next instant when it touches the adjacent division.

The revolving of the contact-wheel E over the face B of the commutator serves also to open and close the gas-burner circuit by separating and bringing together the wire *d* of the electro-magnet M and the wire *e* of the burner C, whereby a spark is produced sufficient to ignite the gas.

The commutator should be placed at any convenient position. In the case of a chandelier it can be fixed within the same, and the wires *c* branched off from the contact-plates *a* to the electro-magnets M of the respective burners, a main wire leading from any distance to the operator.

For the use of secondary or induced currents the commutator may be used, and the attachment to the burners merely an insulated wire. For this purpose a very small induction-coil or friction-machine is all that is required.

The end and design of the invention is to light any number of gas-burners with a minimum force of electricity, so that a current sufficient to light one burner will light any number by repeating in rapid succession by means of the commutator.

I claim as my invention—

1. The face or plate B of the commutator, divided into any number of contact pieces, *a*, in combination with an intermittent rotary contact-former, E, of any construction, for the purpose shown and described.

2. The contact-face B, contact-roller E, arm F, shaft D, toothed wheel J, armature and armature-lever H I, electro-magnets G, and the spring K, combined as shown and described.

In testimony whereof I hereunto sign my name in presence of two subscribing witnesses.
ARTHUR POTTER.

Witnesses:

EDMUND P. COCHRAN,
FRANCIS D. PASTORIUS.