

W. W. BACHELDER.  
Lighting Gas by Electricity.

No. 103,831.

Patented June 7, 1870.

Figure 1.

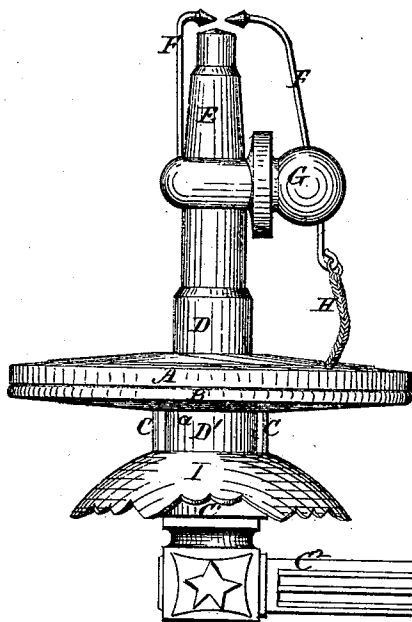


Figure 3.

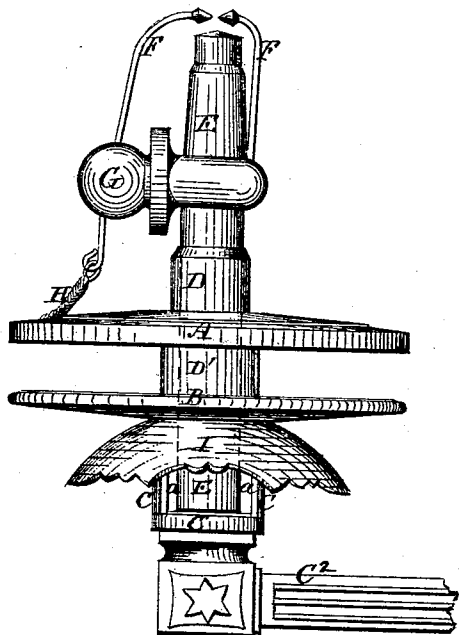
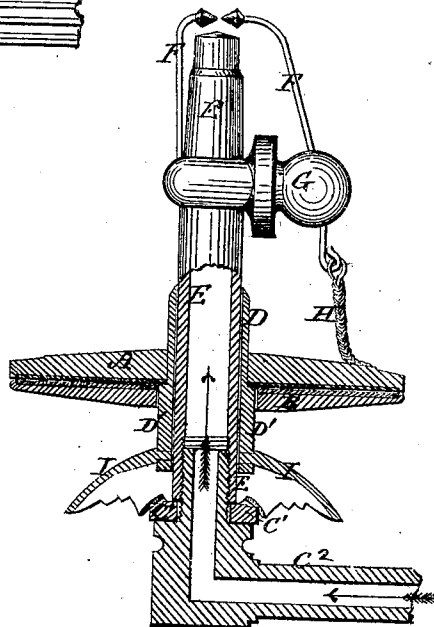


Figure 2.



*Witnesses*  
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# UNITED STATES PATENT OFFICE.

WILLIAM W. BATCHELDER, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN APPARATUS FOR LIGHTING GAS BY ELECTRICITY.

*Specification forming part of Letters Patent No. 103,831, dated June 7, 1870.*

*To all whom it may concern :*

Be it known that I, WILLIAM W. BATCHELDER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Apparatus for Lighting Gas by Electricity; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which makes part of this specification, in which—

Figure 1 represents an elevation of an apparatus attached to a gas-burner, and embracing my improvements. Fig. 2 represents a vertical section of the same. Fig. 3 represents an elevation, showing the disks of the electrophorus separated to liberate the electricity generated thereby.

My invention relates to developing electricity by an electrophorus as a means for lighting gas; and it consists in the employment of a burner in such connection with the frictional generator that the gas must pass through the latter to the burner, whereby the apparatus is made applicable to a gas-pipe drop-light, bracket, stand, chandelier, or other analogous fixture to which a common burner may be secured.

My invention further consists in mounting the upper section of the electro-generator upon a hollow sleeve, in such manner as to inclose the tube of the burner, and have an axial as well as a partial rotary movement upon said burner, for the purpose of generating the electricity without interfering with the position of the burner, or the fixed plate of the generator.

My invention further consists in the arrangement of the means by which the electro-generator is operated, immediately beneath the same, in connection with a slotted tube, in such manner as to allow one of the plates to have a limited axial and rotary movement, and afford facility for catching hold of it without interfering with the burner, the shade, globe, or the movement of the plate, to liberate the electricity.

In the accompanying drawing, the electrophorus consists of two plates or disks, A B, of suitable diameter, having their contiguous surfaces covered—the positive, A, with leather, and the negative, B, with an enamel of hard rubber—one of which, when set in motion,

produces what is known as frictional electricity. One of these plates (in the drawing the lower one) is mounted upon a skeleton tube or yoke, C, the annular open end, C<sup>1</sup>, of which fits upon the bracket C<sup>2</sup>, or other fixture at the base of the burner. The other or top plate A is provided with a sleeve, D D', projecting a suitable distance beyond either side thereof. One end or branch, D', extends into the skeleton tube or yoke C of the lower plate; and into this sleeve the gas-burner E is inserted, and screwed to the pipe or bracket, so that the open end of the skeleton tube or yoke C intervenes, to clamp its disk B firmly in position, as shown in Figs. 2 and 3. The burner therefore passes through the electro-generator, and forms the stem or shank upon which its movable section is guided and supported in generating the electricity.

By this arrangement of the stem E of the burner, I am also enabled to locate the electro-generator between the base and mouth of the burner rendering it compact and convenient of access, and adapting it to take the place of the burner of any fixture.

The burner is provided with the usual conductors F, having their ends enlarged, to concentrate the electric spark. One of these conductors is insulated by means of a hard-rubber knob, G, screwed into the burner, and provided at its lower end with a chain, H, which rests upon the positive section A of the generator, so as to yield to the axial and horizontal movement of the latter, and maintain its connection at all times with the insulated conductor.

In order to manipulate the generator, I provide the lower section D' of the inclosing-sleeve with a handle or arms, I, located between the base of the burner and the lower section B of the generator, so that it may be readily reached, and swiveled with a partial rotary motion while the two sections are in contact, and thus, by friction, develop electricity, which would, however, be retained so long as the parts maintain their contact. The two sections, therefore, are then quickly separated by an axial movement of one of them, which liberates the electricity, and throws off the igniting-sparks.

In order to permit this action of the movable section, the fixed tube or yoke C is made with

openings or slots *a*, of such form as to limit the said motions, and allow the handle I to be permanently connected to the inclosing-sleeve.

The movable section of the electro-generator is kept, by its weight and position, in contact with the other section, and separated, as before stated.

The theory of generating electricity by friction, and its application by means of what is known as the electrophorus, for the purpose of lighting gas, being well known to those skilled in the art, a further description thereof is deemed unnecessary, except to say that the inclosing-sleeve of its movable section is made of hard rubber, in order to insulate it from the stem of the burner.

Having described my invention, I claim—

1. The combination and arrangement of an electro-generator with a gas-burner or pipe, in such manner that the gas must pass through the electro-generator to said burner, substantially as described.

2. The electro-generator interposed between the base and mouth of the burner, in such manner that one of its sections may have an axial and a partial rotary movement over and upon the stem of said burner, substantially as herein described.

3. The method of operating the upper section of the electro-generator by means arranged beneath the lower section thereof, substantially as herein described.

4. In combination with an electro-generator composed of a horizontal fixed and a movable section, A B, the arrangement of the chain H of the electrical conductor, substantially as herein described.

5. The electro-generating apparatus, clamped in position upon the bracket or gas-pipe C<sup>2</sup> by means of the stem E of the burner and yoke C<sup>1</sup>, substantially as described.

6. The combination, in an apparatus for lighting gas by electricity, of the positive and negative plates A B of the electro-generator, the inclosing-sleeve D D', the locking-yoke C, the manipulating-arms I, the conductor F with its chain H, and the gas-burner E, the several parts being constructed and arranged substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand.

W. W. BATCHELDER.

Witnesses:

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