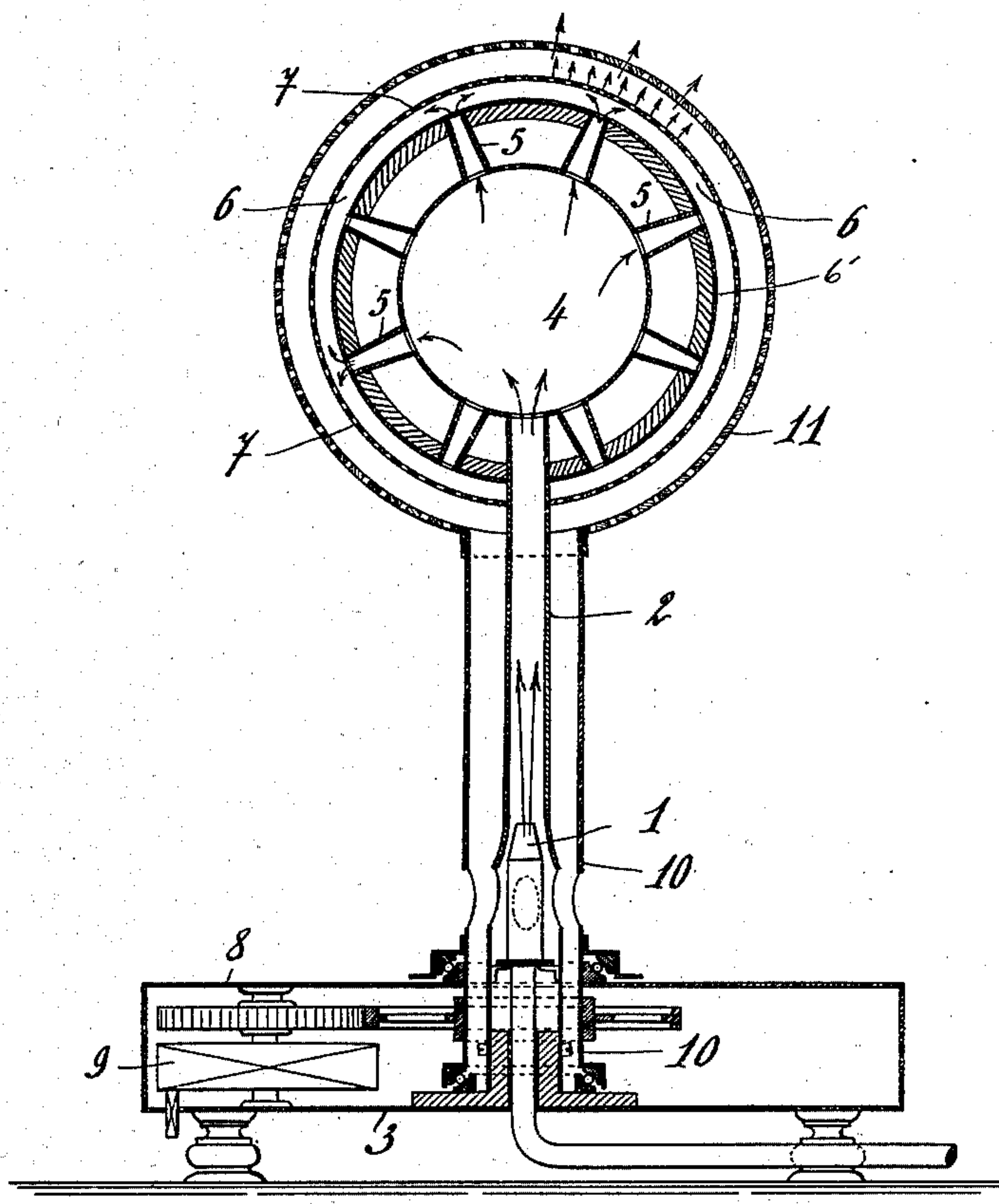


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G. IMBERT.  
HEATING AND LIGHTING APPARATUS.  
APPLICATION FILED OCT. 23, 1902.

NO MODEL.



Witnesses.

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# UNITED STATES PATENT OFFICE.

GEORGES IMBERT, OF BRUSSELS, BELGIUM.

## HEATING AND LIGHTING APPARATUS.

**SPECIFICATION** forming part of Letters Patent No. 749,384, dated January 12, 1904.

Application filed October 23, 1902. Serial No. 128,407. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGES IMBERT, a citizen of the French Republic, residing at Brussels, in the Kingdom of Belgium, have invented certain new and useful Improvements in Heating and Lighting Apparatus, of which the following is a specification.

This invention relates to a heating and lighting apparatus in which a maximum of economy in combustion and of brilliancy of luminosity is obtained from the incandescent mass consequent upon the peculiarly-favorable conditions under which, owing to this invention, the said incandescent mass (or the flame) is brought into contact with the surrounding air, the apparatus at the same time possessing peculiar original features with regard to the effect produced by a flame or an incandescent material.

This apparatus is chiefly characterized by the combination, with one or several burners, of a movable rotating or oscillating device of round, spherical, oval, or other suitable shape and suitable actuating mechanism adapted to rotate or otherwise move the device, which may consist of a casing of refractory or other material capable of being rendered incandescent, the whole being arranged in such a manner that the said movable rotary or oscillating device may be placed in intimate contact with the surrounding air, which is constantly renewed by reason of the eddy or whirl created by the movement, and can thus emit a more brilliant light than usual, the combustion being more energetic and under better conditions, the movement of the incandescent material at the same time producing particularly original effects.

In carrying out my invention I preferably make use of one or several burners supplying gas, carbureted air, or some other suitable combustible agent in a fixed perforated casing of suitable shape, outside which the gas can be ignited. This burner and its casing are mounted upon a suitable support surrounded by a rotary support actuated by clockwork or other suitable motive power. On the rotary support is mounted a spherical, round, oval, star, or other shaped body surrounding the perforated casing of the burner and

being itself perforated and made of a refractory material capable of becoming incandescent when in contact with the flame burning outside the fixed perforated surface fed with gas by the burner. This outer body is set in rotation by its support and turns concentrically with the casing or fixed perforated surface fed by the burner. Owing to the more or less rapid rotation of the outer body, the latter creates in the air a certain eddy or whirl the effect of which is to render the combustion of the gas on the outer surface of the apparatus more active, to increase the luminous brilliancy of the rotating refractory mass, and to assist the radiation of the heat in the surrounding air.

The accompanying drawing shows a vertical cross-section of a heating and lighting apparatus constructed in accordance with my invention.

The apparatus may comprise a suitable burner 1—a Bunsen burner, for example—furnishing a mixture of air and gas to a tube 2, carried on a suitable foot or base 3. This tube 2 extends, for example, into a spherical or other chamber 4, from which extend tubular arms 5, conducting the gaseous mixture into a spherical, oval, or other suitably-shaped space 6, comprised between the spherical or other body 6' and the perforated casing 7.

The base or foot 3 may consist of a box 8, containing a spring 9, adapted to actuate and rotate through a suitable train of gearing a tubular support or column 10, surrounding the tube 2 and rotating in suitable supports or bearings. This rotary column 10 carries at its upper part a device 11, of the same shape as the outer perforated casing 7, carried by the central tube 2. This device 11 may be made of perforated sheet metal, wire-gauze, or other suitable material, covered or not with refractory material, which may be either smooth or plain or arranged so as to represent some article, such as a map, an advertisement, or the like. This casing 11 when the apparatus is set in motion turns at a more or less high speed concentrically with the perforated casing 7. The gaseous mixture supplied by the burner 1 and distributed over the outside of perforated casing 7 can be there ignited,



when it will heat the rotating refractory material 11. The rotation of the incandescent material not only produces the best effects as regards appearance, but also considerably assists the combustion and the incandescence outside the movable casing 11. In the example hereinbefore described I have diagrammatically illustrated the combination of an outer spherical rotating body supposed to be made of refractory material. It is obvious, however, that this arrangement can be considerably modified both as regards the shape and the arrangement and combination of the parts. Thus, for example, the rotary member instead of being heated inwardly or over its entire surface can be just as well heated outwardly over only a portion of the said surface by means of one or more rows of suitably-arranged burners, thus heating the rotary casing and igniting the latter or rendering it incandescent by its passage in front of the rows of fixed burners. Also the part to be rendered incandescent can be fixed and the inner portion have a rotary or other motion communicated to it, so as to create the requisite movement for bringing the flame into contact with the surrounding air.

The effects obtained can be also considerably varied, if desired, if only a portion of the movable surface is to be illuminated or rendered incandescent—for example, a half or a quarter of the latter or certain portions, according to what the design represents which is formed on the surface of the member by the material which becomes incandescent.

The movable member can also be inclosed in or surrounded by reflectors of suitable shape or be arranged in an outer casing provided or not with openings having mica coverings, such as are usually applied to furnaces.

Having thus described my invention, what I claim is—

1. The combination with a number of burners of a movable device capable of being rendered incandescent and of a suitable actuating mechanism adapted to move the said device, substantially as and for the purpose set forth.

2. The combination with a number of burners of a movable refractory body capable of being rendered incandescent and of an actuating mechanism adapted to rotate the said body, substantially as and for the purpose described.

3. In combination a gas-supplying apparatus, a perforated casing to which the gas is supplied, a refractory body adapted to be rendered incandescent and a suitable actuating mechanism adapted to rotate the refractory body concentrically to the perforated casing outside of which the gas is ignited, substantially as and for the purpose set forth.

4. In combination, a burner, a tube supplied with a mixture of air and gas through said burner, a chamber supplied with air and gas through said tube, a perforated casing supplied with a mixture of air and gas from said chamber and outside of which the said mixture is ignited, a refractory perforated body surrounding the said perforated casing and a suitable actuating mechanism adapted to move the refractory body concentrically to the perforated casing, substantially as and for the purpose described.

5. In combination, a burner, a tube supplied with a mixture of air and gas through said burner, a chamber supplied with the said mixture through the said tube, a perforated casing supplied with the mixture of air and gas from the said chamber and outside of which the said mixture is ignited, a refractory perforated body surrounding the said perforated casing, a column supporting the said perforated body, the said column being adapted to rotate in suitable bearings and an actuating mechanism rotating the said column and the perforated refracting-body supported by said column substantially as and for the purpose described.

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

GEORGES IMBERT.

Witnesses:

GREGORY PHELAN,  
MAURICE GERBAULT.