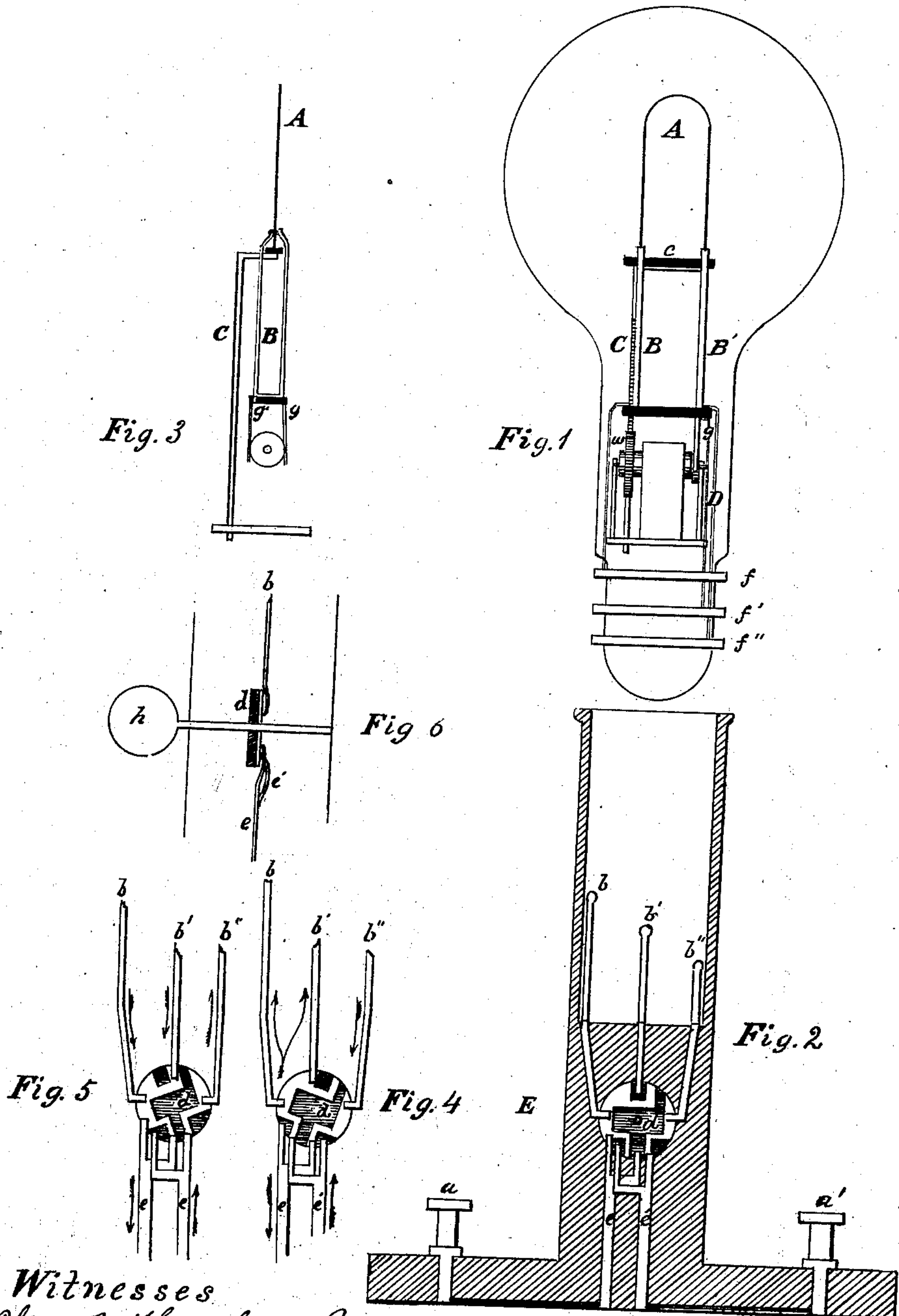


(No Model.)

R. H. S. THOMPSON.
INCANDESCENT ELECTRIC LAMP.

No. 280,337.

Patented June 26, 1883.



Witnesses
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Thos. G. Ingram

Inventor
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UNITED STATES PATENT OFFICE.

RICHARD H. S. THOMPSON, OF LEXINGTON, ASSIGNOR OF ONE-HALF TO
PHILIP B. THOMPSON, JR., OF HARRODSBURG, KENTUCKY.

INCANDESCENT ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 280,337, dated June 26, 1883.

Application filed March 14, 1883. (No model.)

To all-whom it may concern:

Be it known that I, RICHARD H. S. THOMPSON, a citizen of the United States, residing at Lexington, in the county of Fayette and State of Kentucky, have invented a new and useful Incandescent Electric Light, of which the following is a specification.

My invention relates to improvements in incandescent electric lights, whether inclosed in a vacuum or not; and the objects of my improvement are, first, to provide a means of regulating the light, increasing or diminishing it without changing its character; second, to save electricity in proportion to the diminution of the light; and, third, when the light is *in vacuo*, to have the mechanical movements which accomplish the above result also in the vacuum and their control outside. I attain these objects by mechanism equivalent to that illustrated in the accompanying drawings, in which—

Figure 1 is a view of the lamp ready to be placed in its stand. Fig. 2 is a vertical section of the stand; and Fig. 3, a side view of the incandescent strip or loop, one of the electrodes, and the ratchet-bar. Fig. 4 is a view of the switch when turned to the right and the connections then made; Fig. 5, a view of the same when turned to the left, and Fig. 6 a cross-section of switch.

Similar letters refer to similar parts throughout the several views.

The incandescent loop A, the electrodes B B', the ratchet-bar C, supporting the non-conducting strip c, to which the incandescent loop A is attached, and the electromotor D, constitute the working part of the lamp proper.

The frame E, the binding-screws a a', the contact-springs b b' b'', and the rotating switch d, together with the conductors e e', constitute the stand or receptacle for the lamp. The cock h serves to turn the switch d.

Upon the lower part of the stem of the globe containing the light are three metal rings, f f' f'', of which f and f'' are connected with the two electrodes B and B' by conducting-wires, which are sealed in the glass. The third ring, f', is connected by another wire, also sealed in the glass, with one of the brushes, g', of the commutator of the electromotor. When the lamp is placed in the socket of the

stand, the three rings f f' f'' come in contact with the springs b b' b'' and form a circuit for the electric current.

The electrodes B B' are formed of spring-brass or other suitable material, and are bent in such a shape as to form good contact with each side of each arm of the incandescent loop A.

With the switch d in the position shown in Fig. 2, the current, entering through the binding-post a', passes directly, by way of the conductor e', the spring b'', the ring f'', to the electrode B', thence through the loop A to the electrode B, and by way of the spring b and conductor e to the binding-post a, and thence to its source. When the switch d is turned to the right by means of the cock h, the current, entering as before, and passing through e', divides, one portion passing to the spring b', thence to the brush of the commutator opposite g, (the one shown in the drawings, Fig. 1,) thence through the wire of the rotating armature to the brush g, which has metallic connection with the electrode B, at which point the divided current reunites and passes through the electrode B, the loop A, through the electrode B', and thence by way of the ring f'', the spring b'', and the conductor e to the binding-post a, and thence to its source. The passage of the current around the armature causes it to rotate, and by means of the pinion-wheel w and the ratchet-bar C the incandescent loop A is drawn down between the lips of the electrodes B and B', thus diminishing the amount of the incandescent surface as much as may be desired, when the cock is turned so as to bring the switch in the position shown in the drawings, Fig. 2. When it is desired to increase the light again, the switch is turned to the left, in which the current, entering as before, passes from the conductor e' to the spring b'', thence to the electrode B', through the loop A and the electrode B to its base, where it divides, one portion passing to the brush g', thence around the armature to the brush g and its connection to spring b' and the conductor e, where it reunites with the other portion, which has passed from the electrode B to the ring f and the spring b to the same conductor, whence the reunited current passes out by the binding-post a to its source. This re-

versal of the direction of the current around the armature causes it to revolve in the opposite direction to the former case; raising the incandescent loop A through the lips of the electrodes as far as may be desired, when the cock is turned so as to bring the switch in the position shown in Fig. 2.

It is evident that various means may be adopted other than the rings $f f' f''$ to bring the wires of the lamp in connection with the switch d , and that when electro-magnets are used as field-magnets for the motor a different arrangement of wires and switch must be made. If a solenoid is used as the motor, no change is necessary.

It is also evident that when mere mechanical means are used for moving the ratchet-bar C up or down, instead of the electromotor, all its connections outside the stem of the globe must be properly sealed, so as to preserve the vacuum in the globe.

What I claim as my invention, and desire to secure by Letters Patent, is

1. The combination, in an incandescent lamp, of electrodes having good but easy bear-

ings or contact with each side of the incandescent strip or loop, with suitable mechanism for changing the points of contact between the electrodes and the strip or loop A, substantially as and for the purpose described.

2. The combination, in an incandescent lamp, of spring-electrodes whose lips form contact with each side of the incandescent strip or loop A, with a ratchet-bar or its equivalent, and an electromotor for moving said incandescent strip up and down between the lips of the electrodes B and B', substantially as and for the purpose set forth.

3. The combination, in an incandescent lamp, of the loop or strip, the movable electrodes bearing upon said loop or strip, and an electromotor for moving said electrodes, with a switch and suitable connections, whereby the current may be sent through the loop or strip, or through both the loop or strip and the motor, substantially as described.

RICHARD H. S. THOMPSON.

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