

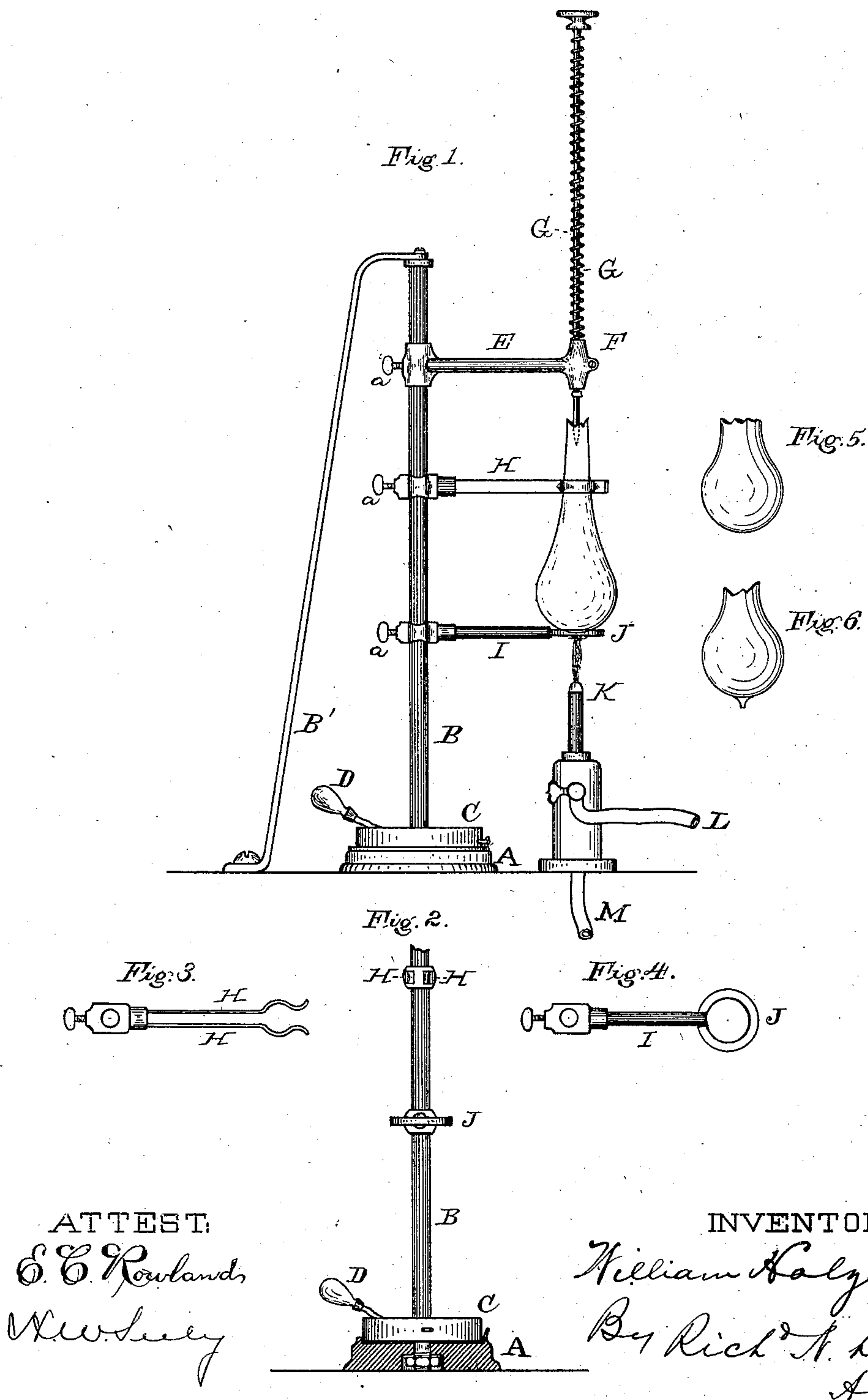
(No Model.)

W. HOLZER.

MANUFACTURE OF INCANDESCING LAMPS.

No. 289,837.

Patented Dec. 11, 1883.



# UNITED STATES PATENT OFFICE.

WILLIAM HOLZER, OF HARRISON, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE EDISON LAMP COMPANY, OF SAME PLACE.

## MANUFACTURE OF INCANDESCING LAMPS.

SPECIFICATION forming part of Letters Patent No. 289,837, dated December 11, 1883.

Application filed March 30, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HOLZER, of Harrison, in the county of Hudson and State of New Jersey, have invented a certain new and useful Improvement in the Manufacture of Incandescing Electric Lamps, of which the following is a specification.

In making electric lamps the first step is to blow from molten glass or upon a glass tube a bulb, which is to form the inclosing-globe of the lamp. After the parts of the lamp are put together, this globe is exhausted through a tube attached to its upper end. In order to attach this tube, it is found desirable to perforate the bulb and form a perforated tubular projection upon the end of the bulb, to which said tube can be welded.

My invention relates to an apparatus for forming such perforated tubular projections; and said invention consists in the novel features of construction and operation of such apparatus, as hereinafter fully set forth.

The invention is illustrated in the accompanying drawings, in which Figure 1 is a side elevation of the machine; Fig. 2, a front view of the lower portion thereof with the base in section; Fig. 3, a top view of the device for grasping the bulb; Fig. 4, a top view of the support for the bulb; Fig. 5, a view of the bulb before the operation of the machine, and Fig. 6 a view thereof after such operation.

A is a suitable base, within which is pivoted, so as to revolve, the standard B, supported by a brace, B'. To the standard B is attached the revolving collar C, provided with a handle, D, for turning it. From near the top of the standard an arm, E, extends horizontally, having at its end the sleeve F, through which passes the sharp-pointed rod G, provided with a flat knob at its end for pressing it down. A spiral spring, G', encircles the rod G, so that said rod is depressed against the tension of said spring. Below the arm E the spring-fingers H H extend from the standard. Their ends are formed to grasp the neck of the lamp-bulb. Below the spring-fingers the arm I projects, having a ring, J, at its end. All these parts are adjustable vertically upon the standard, being held at the proper points by set-screws a, so that the apparatus can be arranged for bulbs of different lengths.

K is a gas-burner, L being the gas-pipe, and

M a pipe for admitting air to the flame. It is evident that an alcohol or other lamp could be used instead.

By means of the handle D the standard B is swung around, so that the projecting parts are away from the flame. The lamp-bulb B is then set upon the ring J and held upright by the spring-fingers H H, and the standard is swung around until the bulb is directly over the burner K. The heat melts and softens the glass in a few moments, when the punch G is pressed down within the bulb and through the glass, punching it out and forming the perforated tubular projections b, as shown in Fig. 6. When the pressure is removed, the spring forces the punch up again. The standard is then swung back again, the bulb replaced by a fresh one, and the operation repeated.

What I claim is—

1. The combination, with a lamp or burner and a punch, of means for supporting an incandescing electric-lamp bulb between said burner and punch, substantially as set forth.

2. The combination, with a stationary burner, of a punch and means for holding a lamp-bulb, said punch and said holding means being adjustable to and from said burner, substantially as set forth.

3. The combination, with a stationary burner, of a pivoted standard carrying a punch and means for holding a lamp-bulb, substantially as set forth.

4. The combination, with the standard, of the arm for supporting the lamp-bulb, the spring-fingers for grasping the same, and the arm carrying the punch, substantially as set forth.

5. The combination, with the arm attached to the standard, of the punch held by said arm, and the spring for retracting the punch, substantially as set forth.

6. The combination, with the standard, of a vertically-adjustable punch and vertically-adjustable devices for holding the lamp-bulb, substantially as set forth.

7. The lamp-bulb having a perforated tubular projection at its end, substantially as and for the purpose set forth.

This specification signed and witnessed this 28th day of March, 1883.

Witnesses: WILLIAM HOLZER.

RICHD. N. DYER,  
H. W. SEELY.