

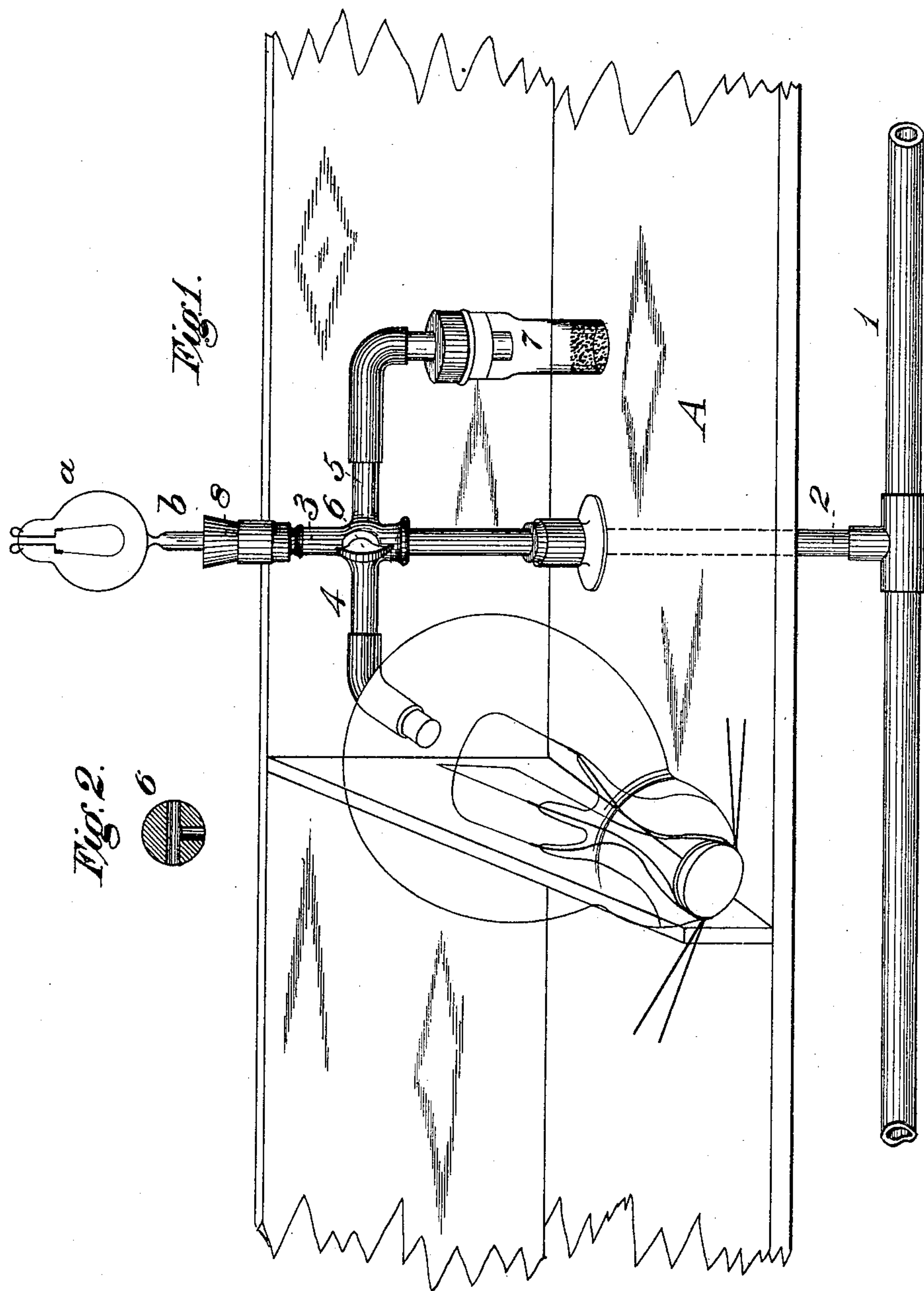
(No Model.)

A. L. REINMANN.

MANUFACTURE OF INCANDESCENT LAMPS.

No. 323,205.

Patented July 28, 1885.



Witnesses.

Samuel S. Wolcott

C. M. Clarke.

Inventor.

Albert L. Reinmann
By George H. Christy
his Atty

UNITED STATES PATENT OFFICE.

ALBERT L. REINMANN, OF PITTSBURG, PENNSYLVANIA.

MANUFACTURE OF INCANDESCENT LAMPS.

SPECIFICATION forming part of Letters Patent No. 323,205, dated July 28, 1885.

Application filed May 15, 1885. (No model.)

To all whom it may concern:

Be it known that I, ALBERT L. REINMANN, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, a citizen of the United States, have invented or discovered a certain new and useful Improvement in the Manufacture of Incandescent Lamps, of which improvement the following is a specification.

In the accompanying drawings, which make part of this specification, Figure 1 is a perspective view of the apparatus employed in carrying out my improved method of treating the bulbs in the manufacture of incandescent lamps. Fig. 2 is a sectional view of a three-way cock.

The appearance of incandescent lamps is frequently impaired by dirty spots on the inner surface of the bulb. These spots are caused by the condensation on the inner surface of the bulbs, when cooled, of the vapor carried into the bulb during the blowing necessary for the sealing of the platinum wires in the wall of the bulb. As long as the glass remains hot this vapor remains suspended in the air in the bulb, but as soon as the glass is cold the vapor condenses in the form of small globules or drops on the inner surface, and dust collecting on the globules gives a spotted and stained appearance.

My invention has for its object the removal of the vapor from the bulb and the substitution therefor of dry air, thereby preventing the staining of the bulb and the preservation of a bright clean surface; and to this end my invention consists in the improved step in the process of manufacturing incandescent lamps, substantially as hereinafter described and claimed.

Underneath or in convenient proximity to the bench or table A is arranged the pipe 1, leading to any suitable exhaust-pump, and from this pipe extends up through the table the branch pipe 2, provided with a vertical and two lateral arms, 3, 4, and 5, and at the point of juncture of these arms and the branch pipe is located the three-way cock 6. The arms 3 and 4 are adapted for the reception of the stems of the bulbs, and on the arm 5 is secured the vessel 7, containing chloride of calcium or other suitable moisture-absorbent, and having its bottom perforated, or being otherwise suitably constructed to permit of the free admission of air.

After the bulb *a* has been blown and the

platinum wires and the carbons have been properly secured therein, and while the bulb is still sufficiently hot to prevent any condensation, the stem *b* is passed through a cork, 8, which is then pressed into the end of either one of the arms 3 and 4, the other arm being closed in any suitable manner. The cock 6 is then turned so as to open connection with the pipe 2, thereby permitting of the thorough exhaustion of the moist air from the bulb. Connection is maintained with the exhaust-pump until the bulb has become entirely cooled, after which the cock 6 is turned so as to cut off the exhaust-pump and form connection with the arm 5, thereby permitting of the admission of air which has been perfectly dried by passing through the vessel 8, containing a moisture-absorbent. By this thorough removal of moist air or vapor and the substitution therefor of dry air the collection of moisture and dust in spots is entirely prevented. After the above-described treatment the bulb is transferred to a high-vacuum apparatus, and after being thoroughly exhausted is sealed up.

If desired, the alternate exhaustion and admission of dried air may be repeated several times to insure a thorough removal of all moisture.

The arm 4 is usually employed only when very large bulbs are being treated, and it is desirable that they should be otherwise supported than by the stem, as in this case by the table A.

I claim herein as my invention—

1. As a step in the art of manufacturing incandescent electric lamps, the removal of moist air or vapor from the lamps while in a heated condition, substantially as set forth.

2. As a step in the art of manufacturing incandescent electric lamps, the removal of the air from the lamps while in a heated condition, and the subsequent admission of dry air, substantially as set forth.

3. As a step in the art of manufacturing incandescent electric lamps, exhausting the air from the lamps while in a heated condition, permitting the lamps to cool while exhausted, and then admitting chemically-dried air, substantially as set forth.

In testimony whereof I have hereunto set my hand.

Witnesses: ALBERT L. REINMANN.
DARWIN S. WOLCOTT,
FRANCIS X. BARR.