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O. WIEDERHOLD.

INCANDESCENT GAS LAMP.

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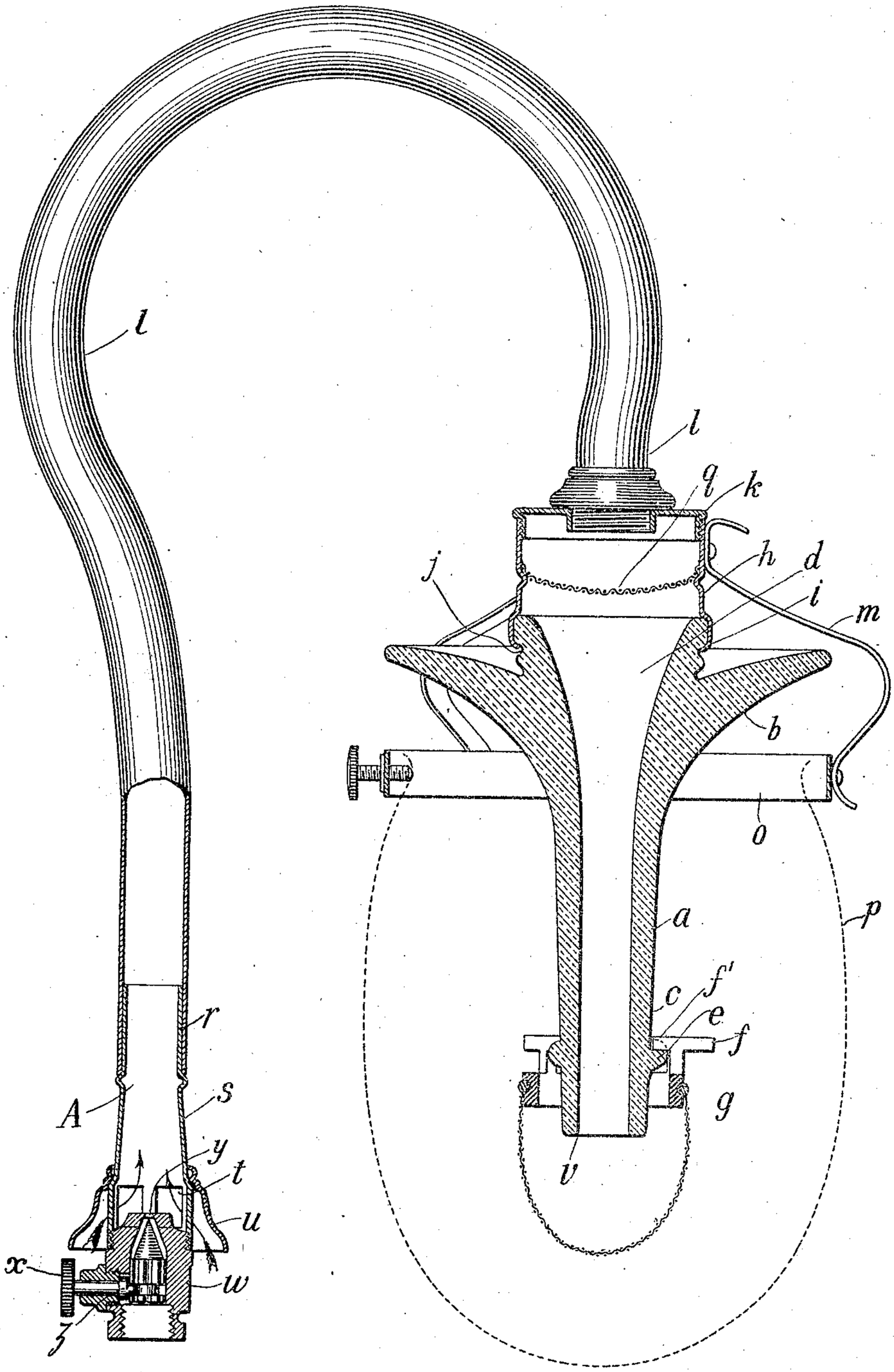


Witnesses:

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# UNITED STATES PATENT OFFICE.

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## INCANDESCENT GAS-LAMP.

No. 841,203. Specification of Letters Patent. Patented Jan. 15, 1907.

Application filed June 30, 1904. Serial No. 214,698.

*To all whom it may concern:*

Be it known that I, OSCAR WIEDERHOLD, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Incandescent Gas-Lamps, of which the following is a specification.

My invention relates to that class of incandescent gas-lamps known as the "inverted" type, and has for its object to produce a construction whereby a thorough commingling or mixing of the air and gas will take place, the air will be brought within a flame in a cool condition, and there will be no danger of objectionable flashing back. These and other advantages of my construction will be set forth hereinafter.

In the claims I shall set forth the essential features of my invention without, however, desiring to limit myself to the construction shown, as any construction falling within the purview of the claims, as construed by the prior state of the art, is contemplated by me as coming within my invention.

In the drawing I have shown, partly in elevation and partly in section, a lamp in which my invention is embodied.

In the drawing, *a* indicates the delivery device for the air-and-gas mixture forming the nozzle or delivery end of the mixing-chamber. Under certain circumstances this portion *a* may be regarded as a mixing-chamber. In the present instance the delivery device *a* is shown as tubular at its lower end *c* and flaring at its upper end *b* and formed with a reflecting-surface.

In the present instance the delivery device is made of porcelain. The passage through the delivery device is shown in the present instance as a passage or mixing-chamber *d* of a general tapering form. In order to provide a suitable support for the mantle, I have in the present instance formed integral with the said porcelain device a series of lugs *e*, which are adapted to be engaged by lugged projections *f'*, carried by a ring *f*, to which the mantle *g* is secured.

The delivery device *a* is suitably supported by a socket *h*, having an engaging edge *i* entering a groove *j* in the delivery device *a*. This socket *h* is supported from a cap *k*, into which a pipe *l* is suitably screw-threaded. This cap may be secured to the socket in any suitable manner. The socket also serves for supporting the arms *m* of a ring *o*, serving as a globe-support, supporting the globe *p*, which is shown as closed at the bottom and open at the top. Located within the socket *h* is a sieve or screen *q*, which, as shown, has an upwardly-facing concavity, so that the central portion of the sieve is lower than its edge. The sieve is located at a point where the internal width of the socket or chamber *h* is greatest. This sieve or screen *q* is of the greatest importance, as it prevents flashing back, and thereby insures the integrity of the mantle.

In inverted incandescent lamps as heretofore proposed it has been suggested to put the air-admission holes in the side of the socket *h*. I have found by experimenting with such lamps that when the air is brought in at the point mentioned there is great liability of imperfect combustion taking place and the mantle blackening. I entirely avoid such danger by bringing the air into contact with the gas at a considerable distance from the burning-point, in most cases beyond the sieve *q*.

In the present instance I have shown a tube *l* as of a general gooseneck shape and seated on the straight portion *r* and surmounting the conical portion *s* of an injector or feeding device A. This injector or feeding device is shown in the present instance as having lateral air-openings *t*, guarded by a petticoat *u*, and located below the delivery-point *v* of the burner. The feeding device is shown as mounted upon a plug or nipple *w*, which is in gas-conducting communication with a suitable gas-pipe or gas-service pipe. The nipple is provided with a suitable regulator *x* of any desired form, herein shown as a plug *x*, controlling an opening *y*, and operated by a crank-pin *z*.

It will be observed that by bringing the air into the gasway at a point remote from the burner and in some cases below the delivery-point of the burner, a thorough mixture will take place before the said mixture comes within the scope of the influence of the intensely-heated parts of the burner. It will also be observed that the sieve or screen *q* can be replaced by other obstructions which will operate in an equivalent manner—that is to say, which will not impede the flow of gas but will effect a distribution thereof.

but at the same time will not permit flashing back.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an inverted incandescent gas-lamp the combination of a downwardly-delivering device for delivering an air-and-gas mixture to the delivery-point of the burner, an enlarged expansion-chamber located above the said delivery-point, a sieve located in said expansion-chamber directly above the delivery-point and dividing the said chamber into an upper and a lower chamber, the delivery device being in open communication with the lower chamber and an air-and-gas-supply device in open communication with the upper chamber.

2. In an inverted incandescent lamp the combination of a delivery device progressively decreasing in sectional area, an expansion mixing-chamber located above the said delivery device, a sieve in the said expansion mixing-chamber dividing the said expansion mixing-chamber into two chambers, the lowermost of which communicates with the delivery device and the uppermost of which communicates with the source of gas-supply.

3. In an inverted incandescent lamp, an expansion and mixing chamber located directly above the burner-outlet, a sieve located in said chamber and dividing it into upper and lower compartments, the lower compartment communicating with the burner, and a supply-pipe connected with the upper compartment and provided with an air-inlet located below the level of the burner-outlet.

4. In an inverted incandescent lamp, an enlarged expansion and mixing chamber exposed to the combustion products but receiving air from a point outside the path of the combustion gases, and provided with an inlet at the top and a tubular outlet at the bottom, and a sieve located in said chamber directly above the outlet, the diameter of said sieve being equal to the largest internal diameter of the chamber.

5. In an inverted incandescent lamp, an enlarged expansion and mixing chamber exposed to the combustion products but receiving air from a point outside the path of the combustion gases, and provided with an inlet at the top and a gradually-contracted vertical tubular outlet at the bottom, and a sieve located in said chamber directly above the outlet.

6. In an inverted incandescent lamp, an enlarged expansion and mixing chamber exposed to the combustion products but receiving air from a point outside the path of the combustion gases, and provided with an inlet at the top and a tubular outlet at the bottom, and a sieve located in said chamber directly above the outlet, the central portion of said sieve being lower than its edge.

7. In an inverted incandescent lamp, an enlarged expansion and mixing chamber exposed to the combustion products but receiving air from a point outside the path of the combustion gases, and provided with an inlet at the top and a tubular outlet at the bottom, and a sieve located in said chamber directly above the outlet, the said sieve being concaved upwardly.

8. In an inverted incandescent lamp, an enlarged expansion and mixing chamber exposed to the combustion products, and provided with an inlet at the top and a tubular outlet at the bottom, and a sieve located in said chamber directly above the outlet, the diameter of said sieve being equal to the largest internal diameter of the chamber.

9. In an inverted incandescent lamp, an enlarged expansion and mixing chamber exposed to the combustion products, and provided with an inlet at the top and a gradually-contracted vertical tubular outlet at the bottom, and a sieve located in said chamber directly above the outlet.

10. In an inverted incandescent lamp, an enlarged expansion and mixing chamber exposed to the combustion products and provided with an inlet at the top and a tubular outlet at the bottom, and a sieve located in said chamber directly above the outlet, the central portion of said sieve being lower than its edge.

11. In an inverted incandescent lamp, an enlarged expansion and mixing chamber exposed to the combustion products, and provided with an inlet at the top and a tubular outlet at the bottom, and a sieve located in said chamber directly above the outlet, the said sieve being concaved upwardly.

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Witnesses:
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