

**No. 646,171.**

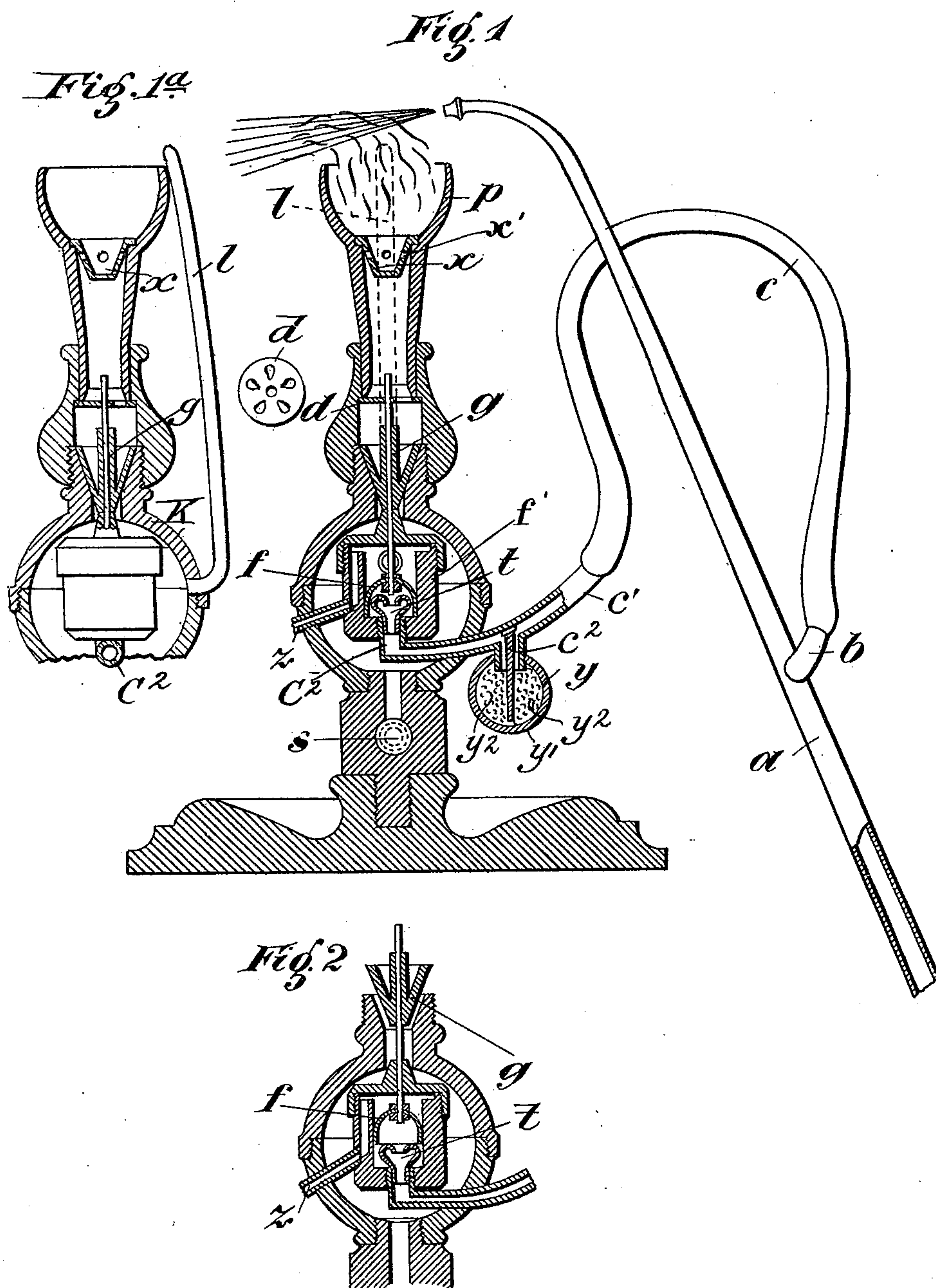
**Patented Mar. 27, 1900.**

**J. HEINZ.**

**BLOWPIPE LAMP.**

(Application filed Oct. 17, 1899.)

(No Model.)



*Witnesses*

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# UNITED STATES PATENT OFFICE.

JOHANN HEINZ, OF PFORZHEIM, GERMANY.

## BLOWPIPE-LAMP.

SPECIFICATION forming part of Letters Patent No. 646,171, dated March 27, 1900.

Application filed October 17, 1899. Serial No. 733,905. (No model.)

*To all whom it may concern:*

Be it known that I, JOHANN HEINZ, manufacturer, a subject of the Grand Duke of Baden, residing at No. 12 Kaiser Friedrich street, Pforzheim, Grand Duchy of Baden, German Empire, have invented certain new and useful Improvements in Blowpipe-Lamps, of which the following is a specification.

This invention relates to an improved construction of blowpipe-lamps in which the flame is automatically regulated by the air-pressure in the blowpipe.

In blowpipe-lamps as heretofore constructed the supply-valve for the combustible gas has been actuated by the expansion of an accordion-like vessel contained in the lamp-casing, which vessel in expanding actuates a loaded elbow-lever connected to the valve. According to the present invention the air under pressure in the blowpipe acts directly upon a piston or the like, which in moving raises or lowers the valve-cone in a corresponding manner.

In order to make my invention more clear, I refer to the accompanying drawings, in which similar letters denote similar parts throughout the several views, and in which—

Figure 1 is a vertical section through one form of construction of my improved lamp, the valve being closed. Fig. 2 shows the same section as Fig. 1, with the valve opened by the air-pressure; Fig. 1<sup>a</sup>, a vertical central section at right angles to the plane of section of Fig. 1.

The soldering-blowpipe *a*, Fig. 1, has, as usual, a branch pipe *b*, which is connected by a flexible tube *c* with the soldering-lamp.

By the supply of air-pressure an inverted-cup-shaped piston *f*, situated in a cylinder *f'*, is more or less raised, according to the strength of the air-pressure, such as to the position shown at Fig. 2, the conical valve *g*, which is connected to *f* by a rod, being at the same time raised. On the air-pressure diminishing the piston *f* and valve *g* sink by their own weight and the valve shuts off the gas-supply. A channel *z* serves for carrying off the air when the piston *f* has sunk so that the valve *g* closes. The cup-shaped piston serves, among other things, to steady the advance and return of the piston, which is very important for the closure and opening of the gas-valve. More-

over, where the same is made of thin elastic material, as shown, the expansive force of the air serves to automatically pack the same against the walls of the cylinder, thereby preventing leakage of air.

For the purpose of arresting any moisture which may be carried along by the air-blast, such as saliva and the like, I arrange at a suitable point along the passage of the blast a moisture-trap *y*, which in the present case consists of a bulb *y'*, arranged below the blast-pipe *c'*, and which is preferably filled with absorbent and in some cases dehydrating material *y*<sup>2</sup>, such as wadding or other fibrous material. The blast-pipe *c'* is divided at this point by a diaphragm *c*<sup>2</sup>, which dips down almost to the bottom of the bulb *y'*, thereby diverting the blast downward through the absorbent or dehydrating material, thereby compelling the same to discharge its moisture before proceeding toward the flame. Moreover, the blast-pipe *c'* at its discharge-orifice *c*<sup>2</sup>, where it enters the cylinder *f'*, is provided with a funnel *t*, having an upset or inward-turned edge or rim which supplements the moisture-trap and checks the passage of any slight moisture that may have escaped the latter. In some instances the trap *y* may be dispensed with and in others the funnel *t*; but they are preferably used together. Either or both serve as a moisture-arrester, according to the conditions under which the apparatus is employed. The funnel *t*, with inward-turned edge underneath the piston *f*, also serves for the same purpose. For protecting the interior of the lamp against dust there is inserted in the cup-shaped nozzle *p* a perforated cup *x*, provided with gas orifices or jets *x'*. The combustible gas enters through the channel *s*, and the dotted by-pass pipe *l*, Fig. 1, serves, as usual, for the supply of a constantly-burning igniting-flame. A disk *d*, arranged within the lamp, serves as a guide for the stem of the conical valve *g* and also regulates the gas-discharge by causing the said gas to issue in a series of fine jets, whereby pulsations and sudden puffs are effectually avoided.

Having now described my invention, what I desire to secure by Letters Patent of the United States is—

1. In a blowpipe-lamp, a gas-controlling valve in combination with a blast-pipe, a cyl-



inder communicating with the blast-pipe, a piston arranged to reciprocate within said cylinder, and means between the piston and the valve comprising a longitudinal connecting-rod secured to the piston, whereby the movement of the former actuates the latter.

2. In a blowpipe-lamp, a gas-controlling valve in combination with the blast-pipe, a cylinder communicating with the blast-pipe, a cup-shaped piston within said cylinder and a longitudinal rod connecting the piston with the valve.

3. In a blowpipe-lamp, a gas-controlling valve in combination with a blast-pipe, a cylinder communicating with the blast-pipe, a piston within said cylinder, a longitudinal rod connecting the piston with the valve, and a funnel with inward-turned flanges at its mouth, forming the exit of the blast-pipe and arranged below the piston.

4. In a blowpipe-lamp, a gas-controlling valve and a blast-pipe for actuating the same in combination with a moisture-trap consisting of a bulb communicating with the blast-

pipe and a diaphragm dividing the blast-pipe and extending entirely across the same and from the top thereof to a point near the bottom of the bulb.

5. In a blowpipe-lamp, a gas-controlling valve, and a blast-pipe for actuating the same in combination with a bulb filled with moisture-absorbent material, and a diaphragm dividing the blast-pipe and extending to a point near the bottom of the bulb.

6. In a blowpipe-lamp, a gas-controlling valve, and a blast-pipe for actuating the same in combination with a moisture-trap arranged on the blast-pipe, an air-cylinder connected with the blast-pipe and a piston within the same and a funnel with inward-turned flanges at its mouth forming an exit of the blast-pipe and arranged below the cylinder.

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

JOHANN HEINZ.

Witnesses:

J. ADRIAN,  
KARL FUCHS.