

No. 806,224.

PATENTED DEC. 5, 1905.

O. WIEDERHOLD.  
INCANDESCENT GAS BURNER.  
APPLICATION FILED JUNE 27, 1904.

Fig. I

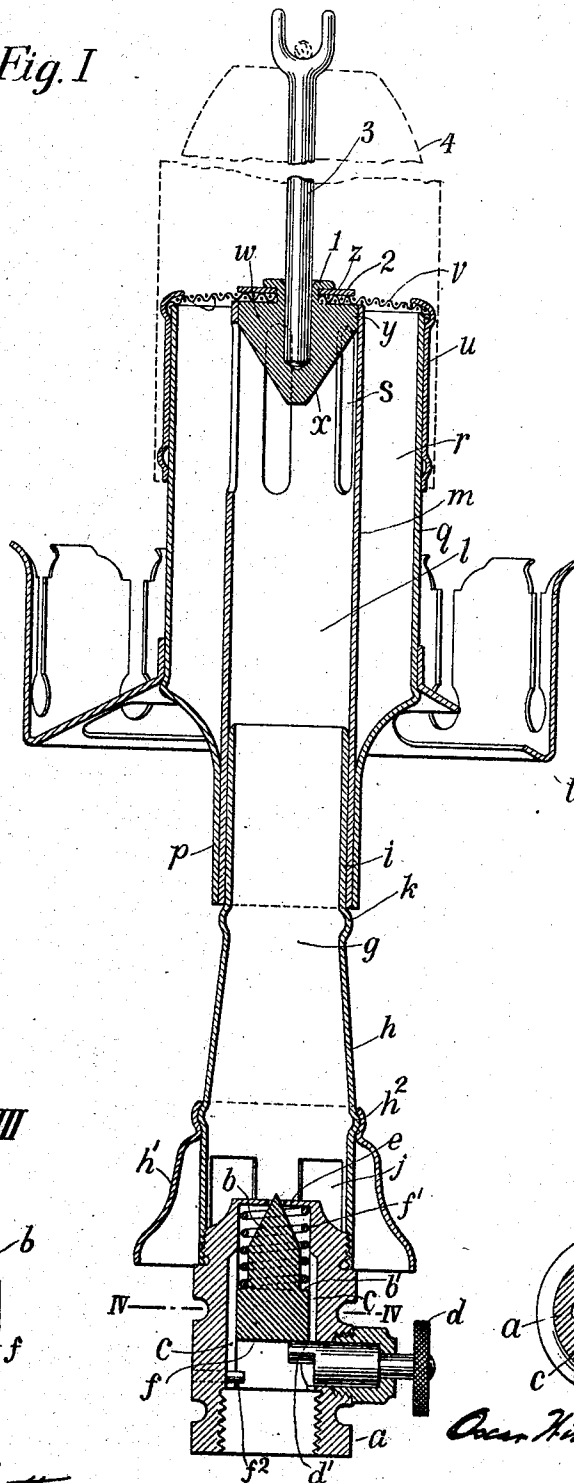


Fig. II

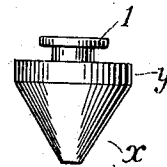


Fig. III

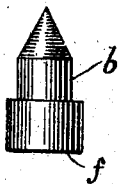
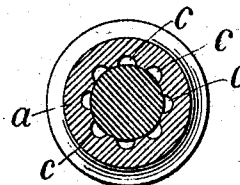


Fig. IV



Witnesses:  
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# UNITED STATES PATENT OFFICE.

OSCAR WIEDERHOLD, OF JERSEY CITY, NEW JERSEY.

## INCANDESCENT GAS-BURNER.

No. 806,224.

Specification of Letters Patent.

Patented Dec. 5, 1905.

Application filed June 27, 1904. Serial No. 214,249.

*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-Burners, of which the following is a specification.

My invention relates to incandescent gas-burners, and has for its object to improve the construction of such burners.

In the accompanying drawings I have shown a burner of the general class to which my invention relates, which drawings show one form of device in which my invention may be embodied, the drawings being illustrative merely in order to comply with the United States statutes relating to Letters Patent.

In the drawings, Figure I is a vertical transverse section through a burner in which my invention is embodied. Fig. II is a side view of the combined spreader and mantle-support socket. Fig. III is a side elevation of the regulator-plug, and Fig. IV is a section on line IV IV of Fig. I.

Speaking generally, the main idea of the invention is three-fold: first, to produce an efficiently-acting burner in which the gas will be properly distributed to the burning-point and in which a proper mixture of air and gas will be effected; second, to provide a regulator for the admission of gas which may be readily manipulated and delicately adjusted, so that it will not be necessary to have a skilled operator set up the burner, and, third, to provide means whereby the center rod or support will be held in a vertical position, warping or twisting of the sieve of the cap being prevented. With this general premise I will now describe the form of burner shown in the drawings, without intending to limit myself to such construction.

In the drawings, *a* indicates a connecting-nipple terminating at its upper end in a conical projection in the nature of a needle-valve, which conical projection enters an apertured partition *e*. The portion of the connecting-nipple within which the body of the plug *b* works is provided with internal grooves *c*, around which the gas may pass. A shaft *d* is journaled in the side of the nipple *a* and has a cam or eccentric portion *d'* bearing against the lower face *f* of the plug *b*. A spring *f'* surrounds the plug *b* and bears against a shoulder *b'* on the plug. Rotation of the shaft *d* will cause the plug *b* to be

raised, and a reverse movement of the shaft will permit the spring *f'* to restore the plug to its initial position. It will be understood that the plug may be prevented from dropping out by suitable lugs *f''* or other suitable stop devices. By raising the plug *b* up or down the extent of the entrance of its conical portion into the central aperture of the apertured partition *e* may be regulated, thereby regulating the flow of gas.

The nipple *a* is surmounted by a feeder-tube or mixing device *g*, whose lower end *h* is made conical and whose upper end *i* is made of substantially parallel walls, preferably cylindrical. The lower end of the feeder-tube is provided with lateral air-inlet apertures *j*. An air-shield *h'* is preferably provided for shielding the apertures *j* from the direct access of air, being beaded to the mixing device *h*, as shown at *h''*. A circumferential bead *k* is also preferably provided for the purpose of supporting the upper end, which also supports the gallery, which gallery supports the glassware of the lamp should it be desired to use glassware or chimneys with the lamp. The mixing device or feeder-tube *h* delivers into a mixing-chamber *l*, shown in the present instance as comprising a shell *m* of a general cylindrical form, forced into an outer casing *p* of the mixing device. The outer casing *p* is enlarged at *q*, so as to form an annular chamber *r* between the mixing-chamber *l* and the upper end of the casing *q*. The upper end of the mixing-chamber *l*, being the shell *m*, is provided with apertures *s*, preferably elongated, as shown, for the lateral delivery of the air-and-gas mixture into the annular chamber *r*.

A suitable gallery *t* may be provided, firmly secured to the shell *p* *q*, in case it is desired to employ glassware. Fitting over the upper end of the shell or chamber *q* is a cap *u*, provided with a screw *v*. A suitable spreader *w* is secured to the cap. This spreader is shown in the present instance as a frusto-conical plug *x*, having a cylindrical base *y* adapted to fit into and entirely closing the upper end of the mixing-chamber *l*, the purpose of which will be presently explained. The plug is also provided with a shoulder *z* and with a hollow stem 1, whose edges are swaged or splayed outward to bear upon a washer 2, between which washer and the shoulder *z* the screen or sieve *v* is firmly gripped.

The purposes of the construction just described are numerous, among which are the

following: The hollow stem affords a secure and efficient socket for the center rod or mantle-support 3, which mantle-support is designed to support a mantle 4 and to maintain the same accurately centered. It further provides means whereby the ascending mixture of gas and air will be distributed laterally to the apertures *s* and thence against the wall *q* of the casing *p*, and as the conical plug *x* is immediately in rear or opposite each of the apertures *s* gas will be efficiently distributed to the outer casing or wall *q* and will thence pass direct to the burning-point, the upper end of the tube being closed by the plug for that purpose. Furthermore, the cylindrical portion *y* of the spreader *w*, fitting snugly within the mixing-chamber *m*, maintains a rigidity of construction, so that objectionable warping of the screen or sieve *v* is thereby obviated.

It will be understood that in the ordinary operation of Bunsen burners, whereby a center rod is supported by a sieve, the sieve, expanding unequally under the influences of the heat, will cause the center rod to incline in one direction or the other, thereby displacing the mantle and subjecting the same to strain and also destroying the centering thereof, so that it will be acted upon unequally in different portions of the circumference and extent by the Bunsen flame, both of which causes will operate to diminish the life of the mantle. It will be seen that by the rigid construction which I have provided such objectionable strain and abnormal positioning will be obviated. It will further be observed that by closing the upper end of the mixing-chamber *l* and locating the apertures *s* at the extreme upper end of the mixing-chamber the gas will be delivered into the chamber *r*

directly at the burning-point of the burner and for a considerable distance below it. This feature, taken with the frusto-conical mixing device *h* and the substantially straight mixing-chamber above it, will conduce to a very rapid flow of gas and air and a highly-efficient Bunsen-burner effect.

The details of operation of the burner will be readily understood by those skilled in the art and the minute details of construction may be observed from the drawings. I have not, therefore, attempted to set forth the minute construction in detail or the minute operation.

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

1. In a Bunsen burner, the combination of an outer casing and an inner tube or mixing-chamber, a removable sieve and a socketed plug carried by the sieve and entering and fitting into the mixing-chamber and thereby obviating objectionable warping or moving of the sieve so that a mantle may be supported from the center of the sieve in a substantially unvarying position.

2. In a Bunsen burner, the combination of an outer casing and an inner tube or mixing-chamber, a removable sieve fitting to the said outer casing, a socketed plug carried by the sieve, the said plug having a straight portion *y* adapted to enter and fit into the mixing-chamber so as to obviate objectionable warping or moving of the sieve so that a mantle may be supported from the center of the sieve in a substantially unvarying position.

OSCAR WIEDERHOLD.

Witnesses:

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