

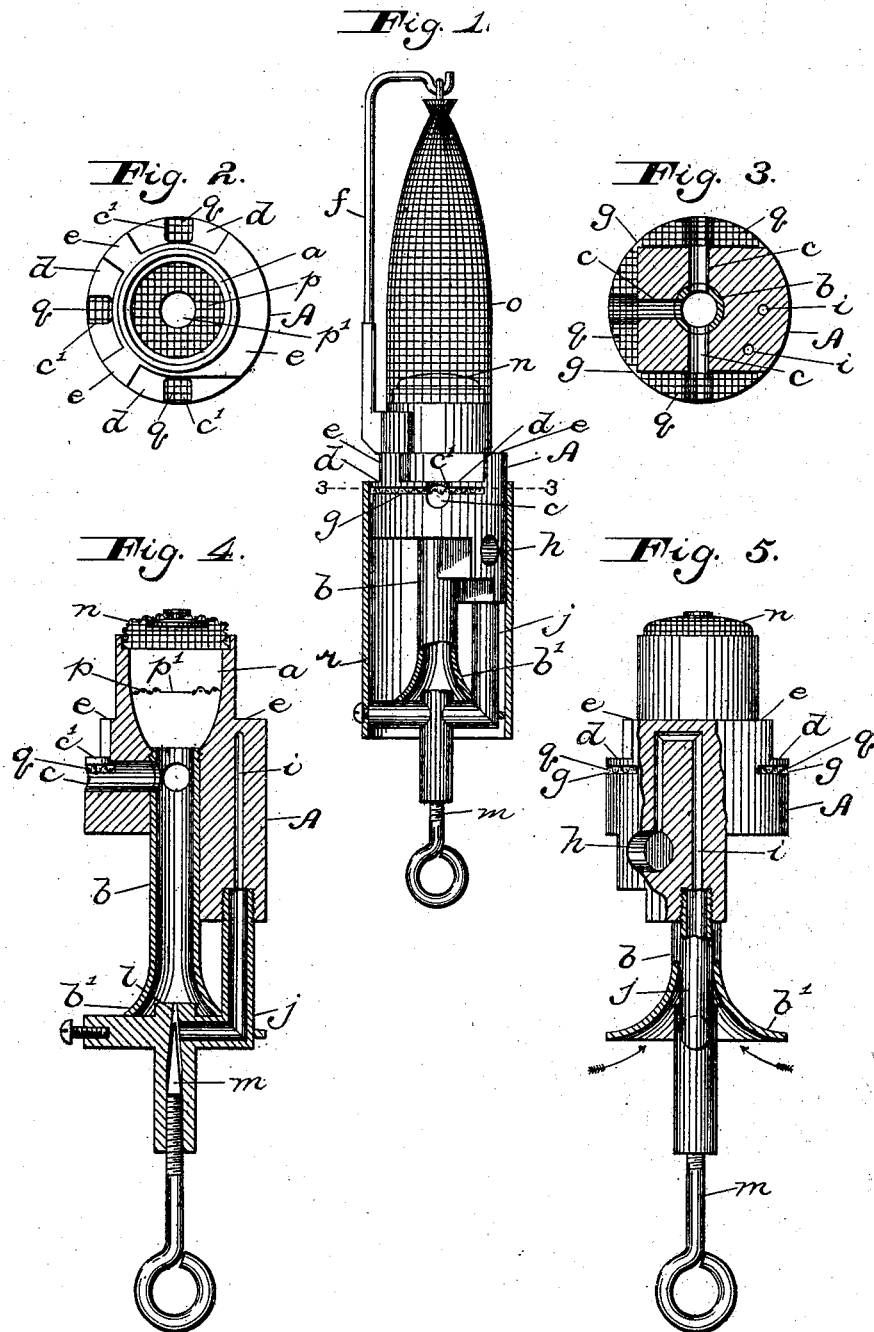
No. 712,341.

Patented Oct. 28, 1902.

A. J. SIMPSON, JR.
INCANDESCENT VAPOR LAMP.

(Application filed Jan. 30, 1902.)

(No Model.)



Witnesses.
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UNITED STATES PATENT OFFICE.

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INCANDESCENT VAPOR-LAMP.

SPECIFICATION forming part of Letters Patent No. 712,341, dated October 28, 1902.

Application filed January 30, 1902. Serial No. 91,835. (No model.)

To all whom it may concern:

Be it known that I, ALFRED J. SIMPSON, JR., a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Incandescent Vapor-Lamps, of which the following is a specification.

This invention relates to incandescent vapor-lamps, and particularly to that class of such lamps in which the vapor or oil-gas is generated in its passage through the lamp-body by means of subfires burning in and heating said body.

The object of the invention is to provide an improved vapor-lamp of this character in which a sufficient amount of vapor may be fed to the said subfires to maintain the same.

The invention consists in certain constructions, arrangements, and combinations of the parts hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved incandescent vapor-lamp. Fig. 2 is an enlarged top plan view of the lamp-body without the ordinary incandescing mantle, mantle-support, and burner-cap. Fig. 3 is a horizontal sectional view on the line 3 3 of Fig. 1. Fig. 4 is a vertical sectional view of the lamp-body. Fig. 5 is a rear view of the same, with parts broken out to illustrate the vapor feed-passage.

Referring to the drawings, A designates the lamp-body, provided at its upper end with a vertically-extending vapor-chamber *a*, whose interior wall tapers downwardly to produce a reduced lower end, as shown in Fig. 4, and which opens at said lower end into a vertical air and vapor mixing tube *b*, rigidly secured within the lamp-body and provided with a bell-shaped or flared lower end *b'*. The lamp-body A is further provided with a series of lateral passages *c*, in this instance three in number, said passages being located just below the lower end of the vapor-chamber *a* and extending from the interior of the mixing-tube *b* through the walls thereof and thence to the outer wall of the lamp-body, whereby said passages communicate with the vapor-chamber at its lower end and form passages which branch off from the main vapor-

passage formed by the mixing-tube and vapor-chamber. Above and coincident with these lateral passages *c* the lamp-body is provided with three upwardly-opening recesses *d*, whose lower walls intersect the outer ends of the said lateral passages to form upward openings *c'* in the said outer ends and which are separated from each other by upwardly-extending shoulders *e*, adapted to form rests for the mantle-support *f*, and transverse slots *g* in the exterior wall of the lamp-body also intersect the outer ends of the lateral passages, as indicated in Figs. 1 and 3, for a purpose presently described.

An oil-feed port *h* is formed in the lamp-body at the rear thereof and opens into a feed-passage *i*, which extends upwardly from said port, then horizontally, and then downwardly, as indicated in Fig. 4, with its outlet end communicating with a feed-tube *j*, secured in the lower end of the body A and provided with a jet-aperture *l* underneath the lower end of the mixing-tube *b* and governed by a needle-valve *m*.

In the top of the vapor-chamber *a* is seated the ordinary burner-cap *n*, of wire-gauze or similar reticulated material, over which the lower end of the incandescing mantle *o* is located. In the vapor-chamber *a* below said burner-cap *n* and above the lower end of said chamber is detachably supported a reticulated vapor-obstructing button *p*, of wire-gauze or the like, provided with a central vapor-aperture *p'* of larger area than the openings between its strands, as illustrated in Figs. 2 and 4, and sections of wire-gauze *q* are inserted in the transverse slots *g* and cover the upward openings *c'* in the outer ends of the lateral passages *c*.

When the lamp is in operation, the oil fed into the port *h* is vaporized by the heat of the lamp-body in the passage *i*, and the vapor issues out of the jet-aperture *l* and is mixed with air in the bell-shaped or flared lower end of the mixing-tube. By means of this flared lower end the mixture of oil-vapor and air ascends the mixing-tube with a strong upward draft, and as it passes into the vapor-chamber a portion of it passes freely through the central aperture *p'* of the button *p* to the burner-cap *n*, where it is ignited, while a portion

also of the ascending vapor is "banked" or obstructed by the reticulated part of said button, and is thereby caused to issue out through the lateral passages *c* and is ignited automatically from the main flame of the lamp and burns through the wire-gauzes *q* to form sub-fires which effectually heat the lamp-body, so as to quickly vaporize the oil entering therein. Hence this arrangement of partially obstructing the main vapor-passage, so that the vapor will seek outlet through the branch or lateral vapor-passages, insures that a sufficient amount of gas is continuously fed to the sub-fires at the outer ends of said branch passages. The gauze button *p* and gauze coverings *q* may be readily removed and replaced by others whenever necessary.

As illustrated in Fig. 1, a cylindrical jacket *r* surrounds the lamp-body and closes the outer ends of the lateral passages *c*.

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

1. A vapor-lamp, comprising a burner-body provided with a jet-aperture for the vapor, a mixing-tube thereabove, a vapor-chamber above said mixing-tube and tapered at its lower end and communicating with said mixing-tube, with which it forms a main vapor-passage, and said body also provided with one or more branch vapor-passages leading from said main vapor-passage; a burner-cap in said vapor-chamber; and a gauze button in said vapor-chamber below said burner-cap and above said branch vapor-passages, said button being provided with an aperture of larger area than the openings between its strands, as and for the purpose set forth.

2. A vapor-lamp, comprising a body provided with a vapor-chamber and with one or more lateral passages in communication with

said vapor-chamber; and a wire-gauze button, *p*, in said vapor-chamber above said lateral passages and provided with a central aperture, *p'*, of larger area than the openings between its strands, as and for the purpose set forth.

3. A vapor-lamp, comprising a body provided with a main vapor-passage and one or more branch vapor-passages, and also provided with upwardly-opening recesses whose lower walls intersect the outer ends of said branch vapor-passages and which are separated from each other by upwardly-extending shoulders adapted to form rests for a mantle-support; and means in said main vapor-passage for partially obstructing the same whereby a portion of the vapor will be caused to seek outlet through said branch vapor-passages, as and for the purpose set forth.

4. A vapor-lamp, comprising a burner-body provided with a main vapor-passage and one or more branch vapor-passages leading from said main vapor-passage, and also provided with upwardly-opening recesses whose lower walls intersect the outer ends of said branch vapor-passages and with transverse slots also intersecting said outer ends; gauzes in said transverse slots; a cylindrical jacket surrounding said burner-body and closing the outer ends of said branch vapor-passages; and a gauze button, *p*, in said main vapor-passage above the branch vapor-passages and provided with a central aperture, *p'*, as and for the purpose set forth.

In testimony whereof, I affix my signature in the presence of two witnesses.

ALFRED J. SIMPSON, JR.

Witnesses:

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