

J. A. BRANDT,  
MULTIPLE INCANDESCENT GAS LAMP.  
APPLICATION FILED JUNE 28, 1907.

905,403.

Patented Dec. 1, 1908.

2 SHEETS—SHEET 1.

Fig. 1

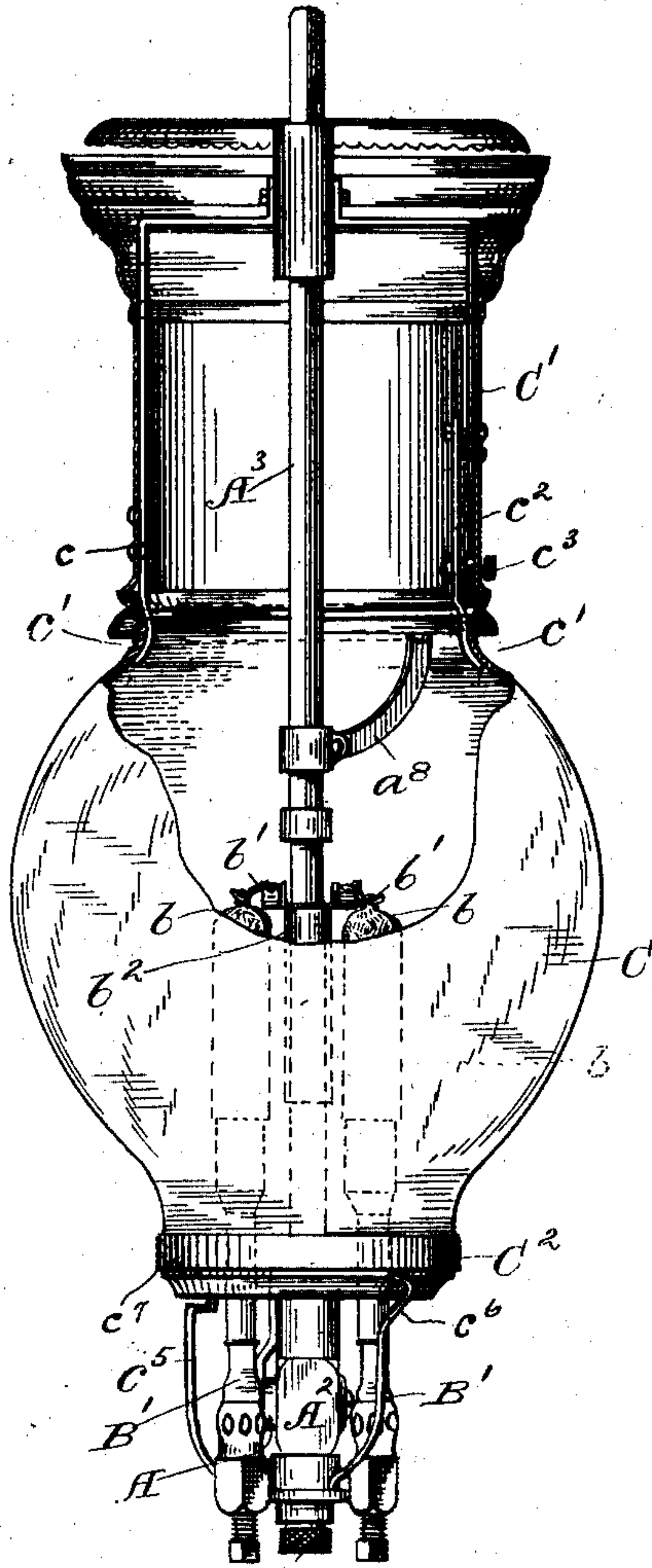


Fig. 4

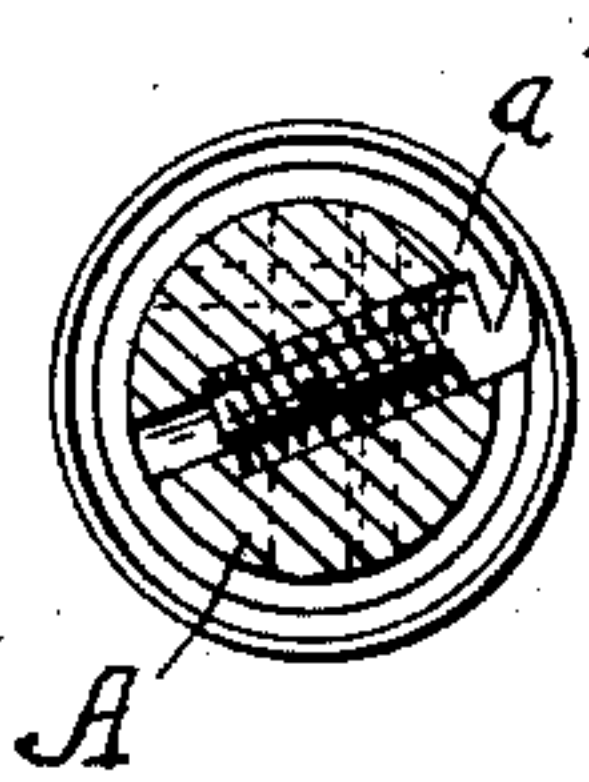


Fig. 3

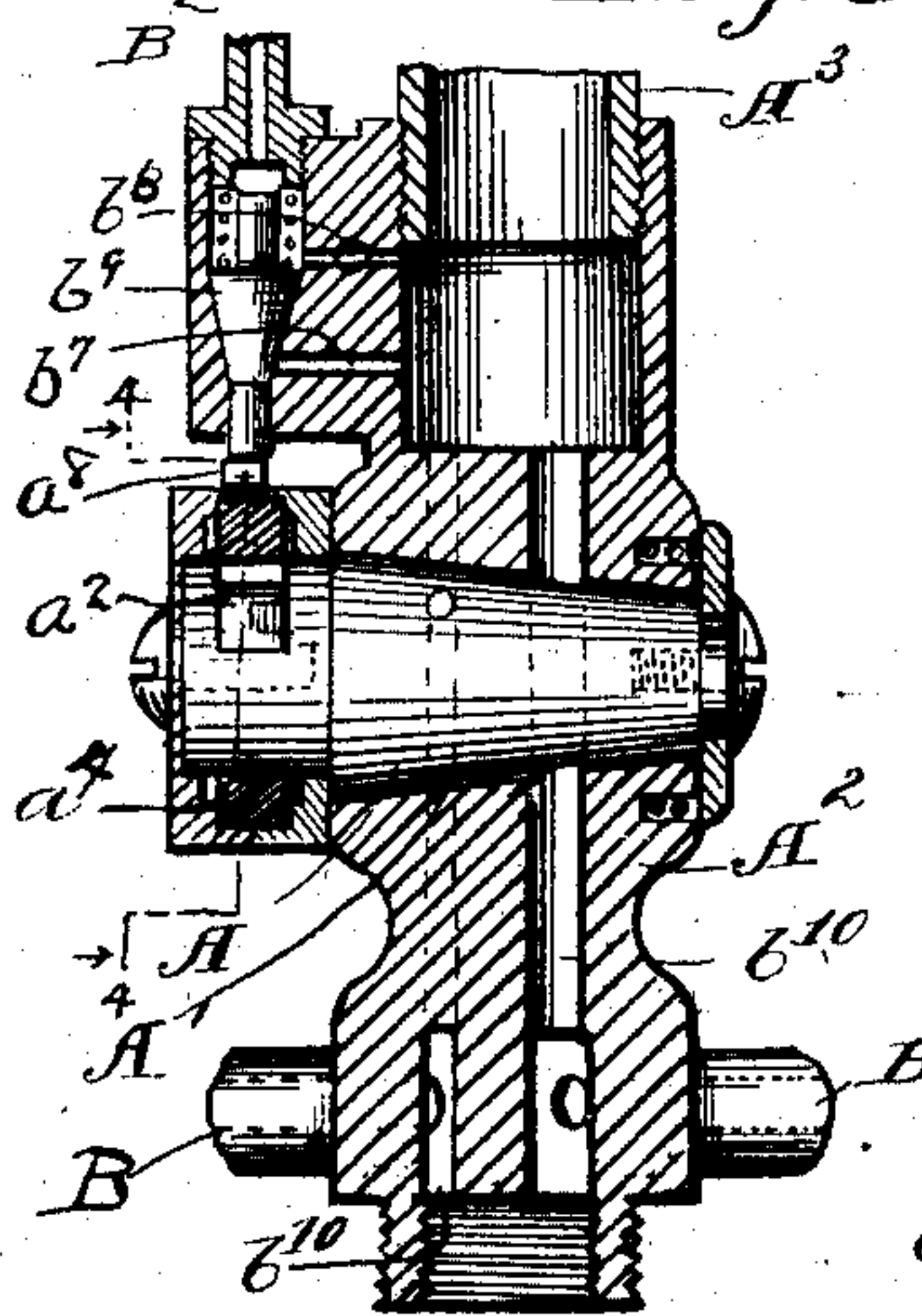
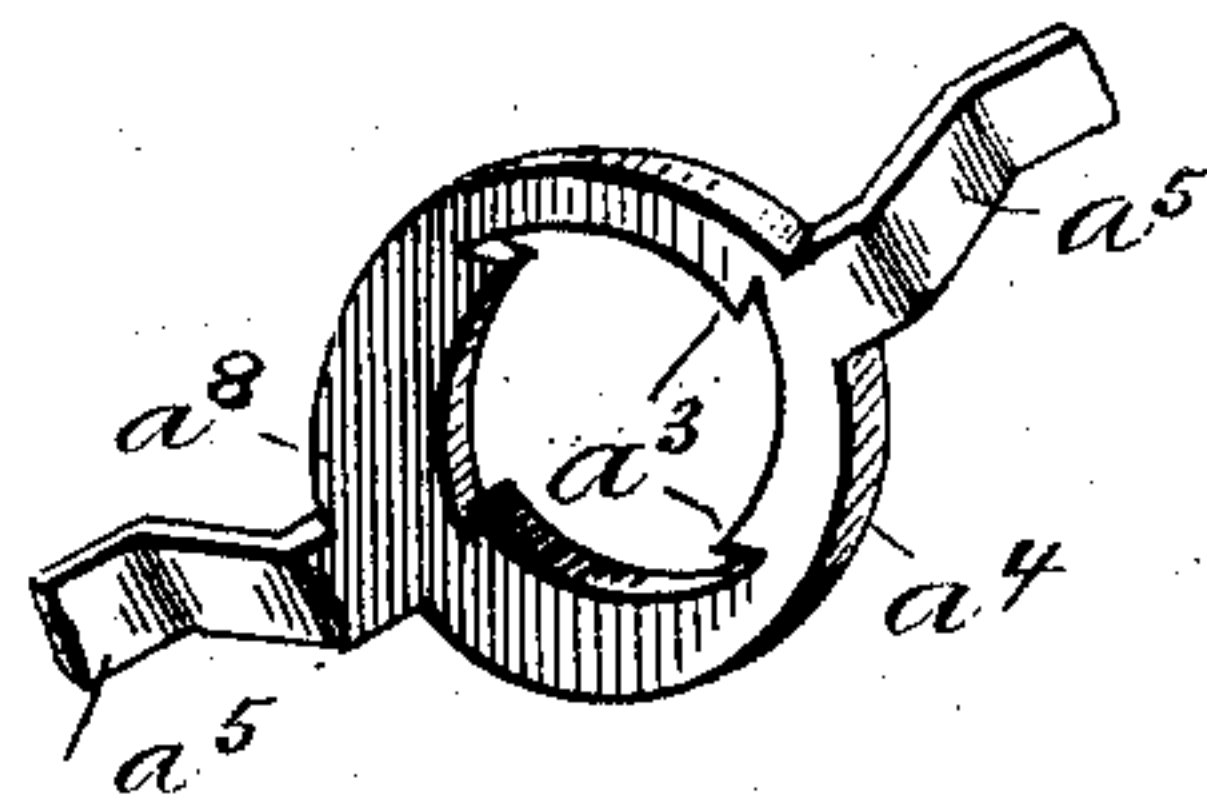


Fig. 5



Witnesses:

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Inventor:

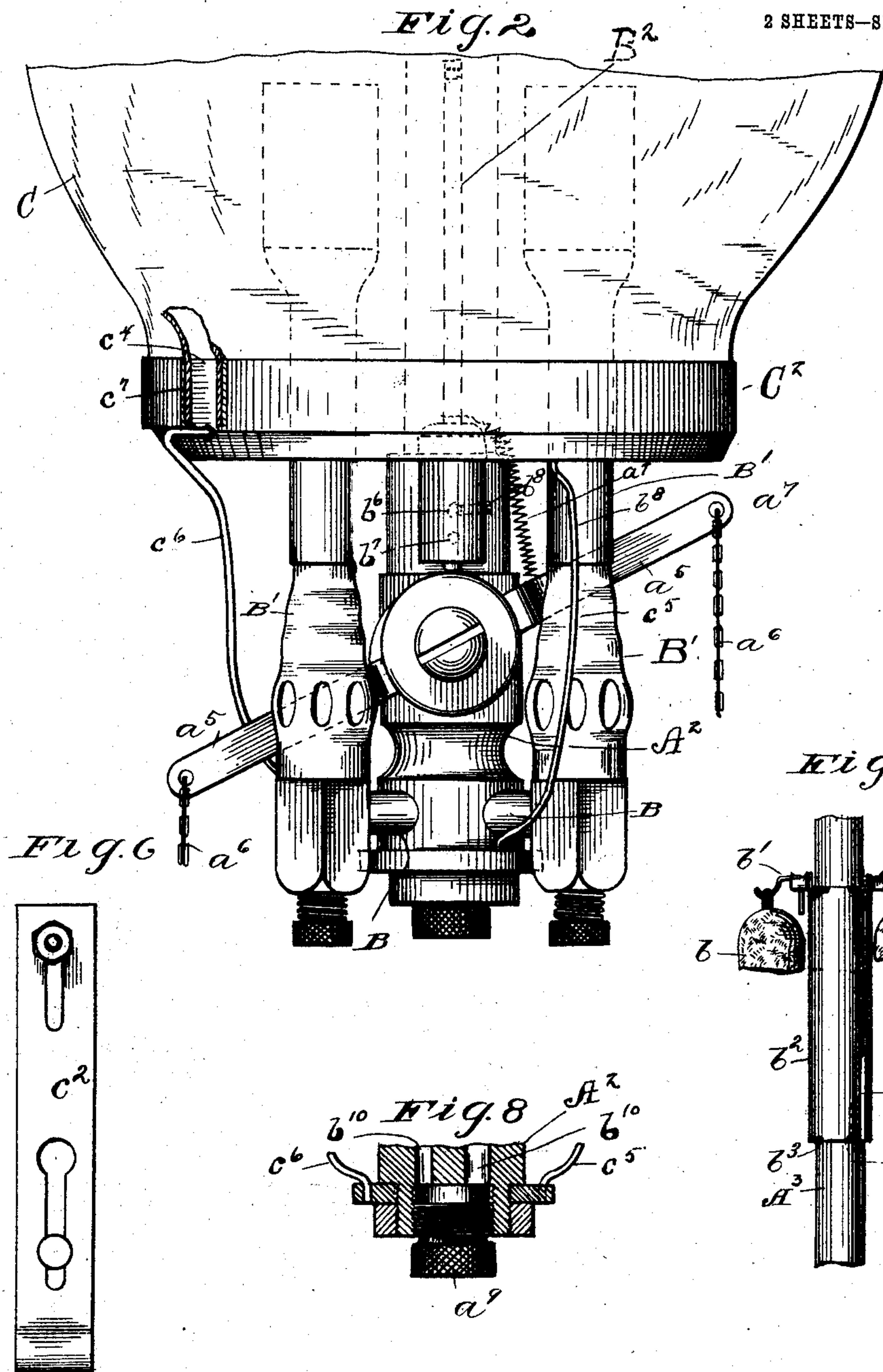
Joseph A. Brandt  
by J. B. Fay  
his attorney.

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2 SHEETS—SHEET 2.



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Inventor:  
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 by J. B. Fay  
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# UNITED STATES PATENT OFFICE.

JOSEPH A. BRANDT, OF CLEVELAND, OHIO, ASSIGNOR TO THE SIMPLEX COMPANY,  
OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

## MULTIPLE INCANDESCENT GAS-LAMP.

No. 905,403.

Specification of Letters Patent.

Patented Dec. 1, 1908.

Application filed June 28, 1907. Serial No. 381,335.

*To all whom it may concern:*

Be it known that I, JOSEPH A. BRANDT, a citizen of the United States, resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Multiple Incandescent Gas-Lamps, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

This my present invention has reference to improvements in gas lamps and particularly in incandescent gas lamps of the increasingly popular multiple burner type. The several improvements comprehended in said invention include means whereby the regulation of the number of burners, which shall be lighted at any one time, is made easier and more certain; an improved pilot flame device for so lighting the burners whether one or all, and a novel holder or gallery for the globe when in its normal lower position, as also means for retaining it in its raised position when it is desired to gain access to the burners or to cleanse the interior of such globe. The foregoing means, as well as others that enter into said invention are hereinafter fully described and specifically pointed out in the claims.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings:—Figure 1 represents a side elevation of a four-burner incandescent gas lamp embodying my several improvements, parts being broken away to more fully reveal the interior construction of the lamp; Fig. 2 is a similar side elevation of the burner and control mechanism on a larger scale than is shown in Fig. 1; Fig. 3 is a central cross-section of the controlling valve, and of the mechanism for operating said valve; Fig. 4 is a transverse cross-section of the said valve; Fig. 5 is a perspective view of the ratchet element co-operating with the valve end for rotating the same, as will appear; Fig. 6 is a detail view of one of the elements employed to secure the globe to the stack or draft inducer; Fig. 7 illustrates the mantle supporting device; and Fig. 8 is a central cross section of

the lower end of the valve-casing with which are connected the several burners.

As has been indicated the lamp here chosen for the purpose of illustrating my invention is a cluster lamp and it is to this kind of fixture that such invention is more particularly practicable. However, it will be evident from what follows that various features therein involved may be equally well incorporated in other types of gas lamps, as also in lamps embodying other illuminants than gas.

Referring first of all to the valve operating mechanism it will be seen in Figs. 2 and 3, that such valve comprises simply a valve plug A, of the usual tapering form, fitted to a conical valve seat A' in the casing A<sup>2</sup> that forms the terminal of the central gas supply pipe A<sup>3</sup>, Fig. 1. On arms B extending laterally from a prolongation of the casing are mounted burners B'. These so far as their details of construction are concerned are of the type usually employed in incandescent gas lamps and hence need not be further described. The incandescent mantles b for such burners are suspended from brackets b' consisting of sections of wire inserted in the upper end of a sleeve b<sup>2</sup> loosely mounted upon central supply pipe A<sup>3</sup> and projecting radially therefrom. This sleeve is sustained at the proper elevation by means of a pin or stud b<sup>3</sup> projecting outwardly from such pipe A<sup>3</sup> and is adapted to be secured at various heights by the provision of elongated slots b<sup>4</sup> of different lengths properly spaced about its periphery, in the longer of which the pin is allowed to enter when the mantles are desired to fit in operative position upon the burners, the effect of supporting the lower edge of the sleeve on such pin b<sup>3</sup> being to raise the mantles free of the burners. By slots of intermediate length provision can be made for the use of mantles of different sizes should such change become desirable at any time in the use of the lamp.

The number of arms B and burners B', here assumed to be four, is of course a matter of indifference so far as the principle of the invention is concerned. Such burners have communication with the valve seat A' through suitable ports or passages in the arms B, and by means of suitably disposed ways in the valve plug A connection may be made between such burners and the supply pipe A<sup>3</sup>. Thus, for example, in the



valve here shown, it is contemplated that in one position no connection whatever shall exist, in other words, all the burners shall be out; in the next position one shall be so  
5 connected; in a third position three; and in a fourth position all four.

It is not here sought to ascribe novelty to the construction or disposition of passages and ways just referred to, in fact other than  
10 incidental details of the connections referred to have been omitted from the drawings.

The stem of valve plug A is made of larger diameter than usual and in a diametral passage therein is mounted a spring-pressed plunger  $a^2$ , the outer end of which  
15 is adapted to engage successively the interiorly projecting ratchet teeth  $a^3$  of an annular ring or collar  $a^4$  rotatably mounted upon such valve stem. Such ring or collar  
20  $a^4$  bears two oppositely extending arms  $a^5$  with which are connected depending cords or chains  $a^6$ , as shown, Fig. 2. Normally a spring  $a^7$ , or equivalent resilient member, attached to one of said arms, is adapted to  
25 retain the same in a raised position. Upon now depressing the said arm by pulling on the corresponding chain, the ratchet collar  $a^4$  is rotated sufficiently to bring the next succeeding ratchet tooth into engagement  
30 with the spring-pressed plunger  $a^2$ , and the return of the collar to its normal position under the action of spring  $a^7$  will effect the rotation of the valve plug A through an angular distance corresponding to that be-  
35 tween such successive teeth. It will be seen from the construction just described that one pull, or the proper number of successive pulls, on cord  $a^6$  will definitely and without bothersome adjustment connect burners B' with the supply pipe A<sup>3</sup> in whatever possi-  
40 ble combination it may be desired. The second cord depending from the spring connected arm of collar  $a^4$  that is not connected with spring  $a^7$  will not ordinarily be employed, it being provided, if at all, merely  
45 for use in case of emergency, as the breaking of spring  $a^7$ , whereupon depression of the arm in question may be required to be had manually.

50 Since lamps of this kind are generally employed suspended from the ceilings of rooms or in like situations, it has become customary to provide them with pilot lights that can be kept burning all the time. Such lights  
55 should normally burn quite low in order to economize gas and yet such low flame is not sufficient to light the several burners. It hence becomes necessary to incorporate in the structure of the pilot light, means for  
60 increasing temporarily the supply of gas to it whenever any one of burners B' is turned on in order that the pilot may flare up and light the same. In connection with the valve actuating mechanism already de-  
65 scribed, I have accordingly found it neces-

sary to devise a pilot light that would meet the foregoing requirements and at the same time be operable in conjunction with such valve actuating mechanism. This pilot light then comprises a vertical tube B<sup>2</sup> dis-  
posed intermediately of two burners B' and extending into proximity with the mantles  
70 b borne by such burners. In order that the flame may be directed properly to insure the lighting of the burners the upper end of the tube, Fig. 2, is closed save for small aper-  
75 tures disposed to secure the result desired. This tube B<sup>2</sup> is connected with the gas supply pipe A<sup>3</sup> above valve casing A<sup>2</sup> so that its operation is not effected by valve A.  
80 The supply of gas to such pilot flame is had through two independent passages or openings  $b^6$   $b^7$  both communicating with supply pipe A<sup>3</sup>. The former of these openings is controlled by a set screw  $b^8$  so as to supply  
85 a minimum amount of gas to the tube or just enough to keep the light burning. Flow of gas through the other opening  $b^7$  is regulated by a puppet or plunger valve  $b^9$  mounted in a small casing secured laterally of  
90 valve casing A<sup>2</sup>. This valve in its normal position in which it is retained by a spring is designed to completely close passage  $b^7$  so that the only fuel supplied the pilot light is that escaping past set screw  $b^8$ . The stem  
95 of valve  $b^9$ , however, projects outwardly through the casing into proximity with the ratchet collar  $a^4$  before described as being rotatably mounted upon the stem of control valve A, which latter is provided with a  
100 cam  $a^8$ , that as the collar is given successive partial rotations in the manner described, will each time engage such valve stem and raise the same thereby admitting momentarily an increased flow of gas to the pilot  
105 light tube. The operation of the pilot light will hence be seen to be entirely automatic, and, inasmuch as it occurs with each successive rotation of the control valve, the additional burners, turned on each time, are sure  
110 to be lighted promptly.

Along with the structure described above I have incorporated in my lamp improved means for securing the globe C to the stack or draft inducer C' as also a globe holder or  
115 gallery C<sup>2</sup> that presents certain novel features. Such securing means comprise two fixed depending clips  $c$ , of the kind shown to the left, Fig. 1, affixed to the inside of stack C'. With these the upper inturnd  
120 edge or lip  $c'$  of the globe C is designed to fit; and a third clip  $c^2$ , Figs. 1 and 6 that is adapted to be actuated inwardly and outwardly by a set screw  $c^3$ , is provided so that  
125 such globe lip may be fitted over the first two clips and then raised into its proper position and secured against disengagement therefrom by outward actuation of the third clip  
130  $c^2$ , Fig. 1. By thus securing the lip of the globe by means of clips engaging therewith



from within the frequent occasion of breakage, due to expansion of the globe, where such globe is secured from without as is the prevailing construction, is entirely done away with. The globe holder or gallery C<sup>2</sup> comprises an inner metallic ring c<sup>4</sup> supported by two or more arms c<sup>5</sup> of the sort clearly appearing in Fig. 1. Immediately without such ring is supported on two or more arms c<sup>6</sup> a second metallic ring c<sup>7</sup> having its lower edge turned inwardly so as to form, when the two rings are assembled, a trough or groove adapted to receive and hold the base of the globe. Such last named arms c<sup>6</sup> are not attached to the inner ring c<sup>4</sup> at all, but, being resilient, normally assume the position shown, wherein their upper ends which are bent inwardly to form a sort of ledge are positioned without said inner ring and are thus adapted to support the outer ring and with it the globe C. To remove the globe, however, all that is necessary is to spring such last named arms inwardly whereupon the outer ring and the globe may be readily slipped downwardly and freed from the lamp. Neither the feature of the clips, nor the construction of globe-holder or gallery C<sup>2</sup>, is claimed in the present case, but having been divided out of this case, are presented in a co-pending application filed by me October 23, 1908, Serial No. 459,216.

In order to obviate the necessity of removing the globe in the fashion just described whenever it is desired to gain access to the burners B' for the purpose of replacing mantles or the like, I provide means for retaining the globe, together with the stack C', from which it is suspended, in a raised position entirely above such burners. This is effected by means of one or more pivoted arms a<sup>8</sup>, one only being shown, that are secured to the gas supply pipe A<sup>3</sup> above the mantle supporting sleeve b<sup>2</sup>. The outer end of such pivoted arm a<sup>8</sup>, which is notched, is adapted to engage the lower edge of the globe when the latter is elevated to a sufficient height. By simply pressing the arm inwardly, the globe is again free, and may be lowered into its original position.

Another minor detail of construction, that nevertheless materially increases the ease with which the lamp may be maintained in first class operative condition, is that shown in Fig. 8. From such figure, considered in conjunction with Fig. 3, it will be seen that the prolongation of valve casing A<sup>2</sup> in which are mounted the burner-supporting arms B is open at the bottom, the lower ends of the several gas supply ducts b<sup>10</sup> that lead to the respective burners lying within such opening. A threaded plug a<sup>9</sup> fitted to the opening normally serves to close the same together with the ducts just referred to; by simply removing plug a<sup>9</sup>, accordingly, access to these ducts is readily to be had for pur-

poses of cleansing the same of any deposit of foreign matters such as are apt otherwise to clog the passages to the burners and oftentimes seriously interfere with the supply of gas to the same. 70

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any one of the following claims or the equivalent of such stated means be employed. 75

I therefore particularly point out and distinctly claim as my invention:—

1. In a lamp, the combination of a fuel-supply pipe; a plurality of burners; a valve plug having a plurality of ways adapted in different positions of said valve plug to variously connect said burners with said supply pipe; a plunger transversely mounted in the stem of valve plug; a sleeve rotatably mounted upon such stem, said sleeve being adapted to engage said plunger to rotate said stem in one direction but not in the other; and means for oscillating said sleeve upon said stem to thus rotate the same. 80 85 90

2. In a lamp, the combination of a fuel-supply pipe; a plurality of burners; a valve plug having a plurality of ways adapted in different positions of said valve plug to variously connect said burners with said supply pipe; a spring actuated plunger transversely mounted in the stem of said valve plug; a sleeve rotatably mounted upon such stem and provided with ratchet teeth respectively adapted to engage said plunger to rotate such stem in one direction but not in the other; means normally positioning said sleeve about such stem; and means adapted to move said sleeve from such normal position to thus rotate said stem. 95 100 105

3. In a lamp, the combination of a fuel-supply pipe; a plurality of burners; a valve plug having a plurality of ways adapted in different positions of said valve plug to variously connect said burners with said supply pipe; a spring actuated plunger transversely mounted in the stem of said valve plug; a sleeve rotatably mounted upon such stem and provided with ratchet teeth respectively adapted to engage said plunger to rotate such stem in one direction but not in the other; arms borne by said sleeve; a spring connected with one of said arms for normally positioning said sleeve about such stem, and a cord connected with the other of said arms for moving said sleeve from such normal position to thus rotate said stem. 110 115 120

4. In a lamp, the combination of a fuel-supply pipe; a plurality of burners; a valve plug having a plurality of ways adapted in different positions of said valve plug to variously connect said burners with said supply pipe; a plunger transversely mounted in the stem of said valve plug; a sleeve rota- 125 130



ably mounted upon such stem, said sleeve being adapted to engage said plunger to rotate said stem in one direction but not in the other; means for oscillating said sleeve upon said stem to thus rotate the same; a pilot light having independent connection with said supply pipe; a reciprocable valve controlling such pilot light connection, and a cam upon said rotatable sleeve engaging said valve and adapted to open the same upon each oscillation of said sleeve.

5. In a lamp, the combination of a fuel-supply pipe; a plurality of burners; a valve plug having a plurality of ways adapted in different positions of said valve plug to variously connect said burners with said supply pipe; a plunger transversely mounted in the stem of said valve plug; a sleeve rotatably mounted upon such stem, said sleeve being adapted to engage said plunger to rotate said stem in one direction but not in the other; means for oscillating said sleeve upon said stem to thus rotate the same; a pilot light having independent connection with said supply pipe by means of two separate passages; means for adjusting the size of one such passage; a reciprocable valve controlling the other passage; a spring normally seating said valve to close such passage; and a cam upon said rotatable sleeve engaging said valve and adapted to open the same upon each oscillation of said sleeve.

6. In a lamp, the combination of a fuel-supply pipe; burners connected therewith; a rotatable valve plug controlling connection between said burners and supply pipe; means for rotating said valve plug; a pilot light having independent connection with said supply pipe by means of two separate passages; means for adjusting the size of one such passage; a valve controlling the other passage; a spring normally seating such valve to close such passage; and means connecting said pilot valve with said valve plug rotating means whereby the former is opened wide with each operation of the latter.

7. In a lamp, the combination of a fuel-supply pipe; burners connected therewith; a rotatable valve plug controlling connection between said burners and supply pipe; a

pilot light having independent connection with said supply pipe by means of two separate passages; means for adjusting the size of one such passage; a reciprocable valve controlling the other passage; a spring normally seating said valve to close such passage; and a cam borne by said valve plug and adapted to open the same upon rotation of said plug.

8. In a lamp, the combination of a fuel-supply pipe; burners connected therewith; a rotatable valve plug controlling connection between said burners and supply pipe; a pilot light having independent connection with said supply pipe by means of two separate passages; a set screw intersecting one such passage and adapted to control the flow of fuel therethrough; a reciprocable valve controlling the other passage; a spring normally seating said valve to close such passage; and a cam borne by said valve plug and adapted to open the same upon rotation of said plug.

9. In a lamp of the class described, the combination of a central support; burners secured thereto; a globe adapted in one position to inclose said burners; and means for retaining said globe in an elevated position above said burners, such means comprising an arm pivotally attached to said central support and adapted to drop into the path of said globe, when the latter is raised, to engage the lower edge of the same.

10. In a lamp of the class described, the combination of a central support; burners secured thereto; a stack slidably mounted upon said support; a globe attached to said stack and adapted in one position to inclose said burners; and means for retaining said globe in an elevated position above said burners, such means comprising an arm pivotally attached to said central support, so as to normally project outwardly into the path of said globe when raised, whereby it is adapted to engage the lower edge of the latter.

Signed by me this 18th day of June, 1907.

JOSEPH A. BRANDT.

Attested by—

E. R. RODD,

JNO. F. OBERLIN.