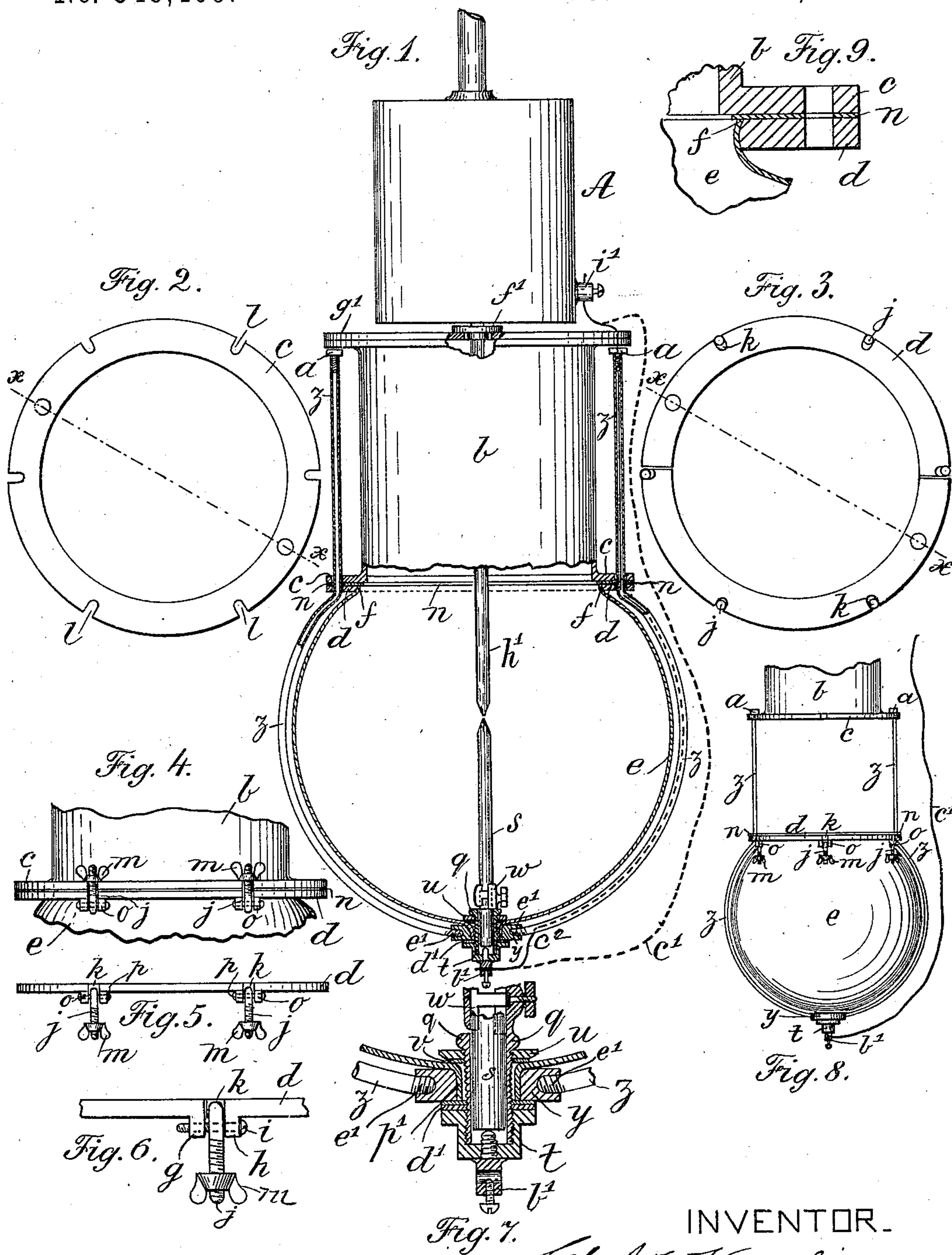


(No Model.)

C. F. VOGELIUS.
ELECTRIC ARC LAMP.

No. 549,409.

Patented Nov. 5, 1895.



WITNESSES.

Jos. S. Lockwood.
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UNITED STATES PATENT OFFICE.

CHARLES F. VOGELIUS, OF BLOOMFIELD, NEW JERSEY, ASSIGNOR TO
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ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 549,409, dated November 5, 1895.

Application filed January 17, 1895. Serial No. 535,196. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. VOGELIUS, a citizen of the United States, and a resident of Bloomfield, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Arc Lamps, of which the following is a specification.

My invention consists of improvements in the construction of arc lamps for excluding air, so that the consumption of the carbons due to the presence of oxygen at the arc will be avoided, as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is partly a side elevation and partly a sectional elevation of my improved lamp, the plane of the section being indicated by lines *xx*, Figs. 2 and 5. Fig. 2 is a plan of the lower end of the inclosing case to which the globe is attached, the said case being inverted. Fig. 3 is a plan view of the ring by which the glass globe is connected to the lower end of the case. Fig. 4 is a detail showing part of the case and part of the globe in side view. Fig. 5 is a side view of the globe-holding ring as when disconnected from the case-flange. Fig. 6 is a detail of said globe-holding ring on a larger scale. Fig. 7 is a detail showing the lower part of the globe and the lower-carbon holder in sectional elevation, same as represented in the lower part of Fig. 1, but on a larger scale for greater clearness. Fig. 8 is a side elevation of the globe and part of the case on a reduced scale, showing the position of the globe and manner of holding it when the lamp is open. Fig. 9 is a detail of the connection of the globe and case on line *xx*, and enlarged for greater clearness.

My invention relates, essentially, to the construction whereby the globe is connected to the bottom of the case for inclosing the chamber above the globe, so as to be conveniently detached and be lowered to a position affording convenient access for trimming the lamp and be safely suspended in said position.

A represents the case for inclosing the regulating apparatus of any kind. *b* is a cylindrical shell below said case for inclosing a

suitable gas-chamber above the globe, said shell being closed at the top and open at the bottom and having in practice any approved relief-valve or other vent to permit escape of gas and prevent undue pressure of the same within the lamp. The lower end of this shell *b* has an outwardly-projecting flange *c*, to the under side of which a ring *d*, holding the globe *e*, is secured for supporting the globe in position, the connection being readily detachable for opening the lamp.

The globe has an outwardly-projecting edge *f* at the top, under which the ring *d* engages to connect the ring and the globe, said ring being divided into two parts and connected by flanges *g h* and bolts *i*.

The ring *d* has clamping-bolts *j* pivoted to it below notches *k* in its edge, and flange *c* of shell *b* has corresponding notches *l*, into which the clamp-bolts swing when the globe is placed in position, and the globe is clamped tight by the wing-nuts *m*, with a suitable packing-gasket *n*, of elastic material, between the ring and the flange to exclude the air. For two of these clamping-bolts I make the notches *j* at the joints of the divided ring and utilize the flanges *g h* and the screws *i* for connecting them to the ring, and thus save the expense of special lugs *o* and rivets *p*, that have to be provided for the rest of the bolts.

The globe *e* has an opening through the bottom at the center and is preferably made with a downwardly-extending flange *p'*, surrounding the opening through which the socket *q* for holding the lower carbon *s* extends, and it screws into a clamp-nut *t* below to secure the socket and close the opening for exclusion of air. A washer *u* and an elastic packing-gasket *v* are clamped under the head of the socket within the globe, also for closing the opening, and the washer centers and supports the socket. On the top of the socket is a clamp *w* for properly confining the carbon *s*.

To suspend the globe and keep it safely in position when lowered for opening the lamp, I have provided a yoke consisting of the ring *y*, confined under the bottom of the globe by the socket *q* and clamp-nut *t*, and two or more wires or tubes *z*, suitably attached at one end

to the ring and extending upward outside of the globe and through ring *d* and flange *c* and also through the packing-gasket *n* to a suitable height above the said ring and flange
 5 and each terminating in a head *a*, so that when the ring *d* is disconnected from flange *c*, the yoke and the globe will descend the length of the extensions of the wires above the flange *c* and will then be arrested and suspended by
 10 the heads *a* lodging on the flange. The globe, being thus connected both at the top and at the bottom with the yoke, is effectually secured without care on the part of the attendant against danger of falling when the lamp is
 15 open. The wire extending through the packing-gasket *n* also confine it on the ring *d*, so that it keeps its place without trouble to the attendant.

The clamp-nut *t* carries the binding-post *b'*
 20 for connecting the conducting-wire *c'* for the lower carbon. I prefer to inclose the connecting-wire *c'* in one of the tubular wires of the globe-suspending yoke, as indicated at *c*², for protecting and concealing it, in which case a
 25 binding-post *i'* will be employed for connection through the case *A*, so that the wire may be disconnected readily when the globe is to be lowered; but the wire may be arranged outside of the yoke-tube, as represented by
 30 dotted line *c'*, if desired, and may be disconnected at the binding-post *b'* for lowering, or it may have sufficient slack for allowing the globe to be lowered without disconnecting the wire. The clamp-nut *t*, holding the binding-
 35 screw, is insulated from the ring *y* by one or more non-conducting washers *d'*.

For enabling the globe to be taken out readily without the trouble of detaching the wire members of the yoke from the flange *c*
 40 and ring *d* the wires *c'* are connected to the ring by right-and-left screw-threaded connections *e'*, enabling the ring and the wires to be connected or disconnected while the wires are in position by slackening ring *d*, so
 45 as to release the globe and turning the globe one way or the other on the axis of the said connections. For relieving undue pressure of gas within the globe I have provided a
 50 disk valve *f'* on the cover *g'* of case *d* over the central opening for the rod holding the upper carbon *h'* and fitting so as to rise and fall freely on it, the said opening being suitably enlarged for the escape of the gas when the valve is raised. The said rod serves as a
 55 guide and keeper for the valve.

I claim as my invention—

1. The combination with the globe having the top normally connected with the case, of the vertically sliding yoke embracing the
 60 globe and inserted through perforations in the globe flange, and case flange substantially as described.

2. The combination of the globe, the vertically sliding yoke and the ring connected
 65 with the bottom of the globe, said members of the yoke having the right and left threaded

screw connection with the ring connected to the bottom of the globe.

3. The combination with the globe, the case flange, the divided ring for coupling with the
 70 globe flange, and the clamping bolts pivoted in the ring, said ring coupled by pivots of clamping bolts substantially as described.

4. The combination with the shell of the inclosing chamber and its lower end flange, of
 75 the globe, the globe holding ring detachably connected to said flange and adapted to clamp the globe to the case flange, and the exterior yoke constructed and arranged to support the
 80 globe in its bow and suspend said globe below the shell for access to the lamp for trimming it when detached from the flange substantially as described.

5. The combination with the shell of the inclosing chamber and its lower end flange, of
 85 the globe, the globe holding ring adapted to clamp the globe to the case flange, the clamping bolts pivoted to the ring and detachably connecting said ring and flange, and the exterior yoke constructed and arranged to sup-
 90 port the globe in its bow and suspend said globe below the shell for access to the lamp when detached from the flange substantially as described.

6. The combination with the shell of the inclosing chamber and its lower end flange, of
 95 the globe, the globe holding ring, bolts detachably connecting said ring and flange, and the globe suspending yoke, said yoke connected to the globe at the bottom, and con-
 100 nected through the globe holding ring and the shell flange, and slidable therein to a limited extent substantially as described.

7. The combination with the shell of the inclosing chamber and its lower end flange, of
 105 the globe, the globe holding ring, means detachably connecting said ring and flange, packing gasket between said ring and flange, and the globe suspending yoke, said yoke connected to the globe at the bottom and con-
 110 nected through the globe holding ring, packing gasket and the shell flange, and slidable therein to a limited extent substantially as described.

8. The combination with the shell of the inclosing chamber and its lower end flange, of
 115 the globe, the globe holding ring, means detachably connecting said ring and flange, globe suspending yoke consisting of the ring connected with the bottom of the globe, and
 120 the wires or tubes connected through the globe holding ring and shell flange, and being slidable therein to a limited extent substantially as described.

Signed at New York city, in the county and
 125 State of New York, this 31st day of December, A. D. 1894.

CHARLES F. VOGELIUS.

Witnesses:

W. J. MORGAN,
 JOS. S. LOCKWOOD.