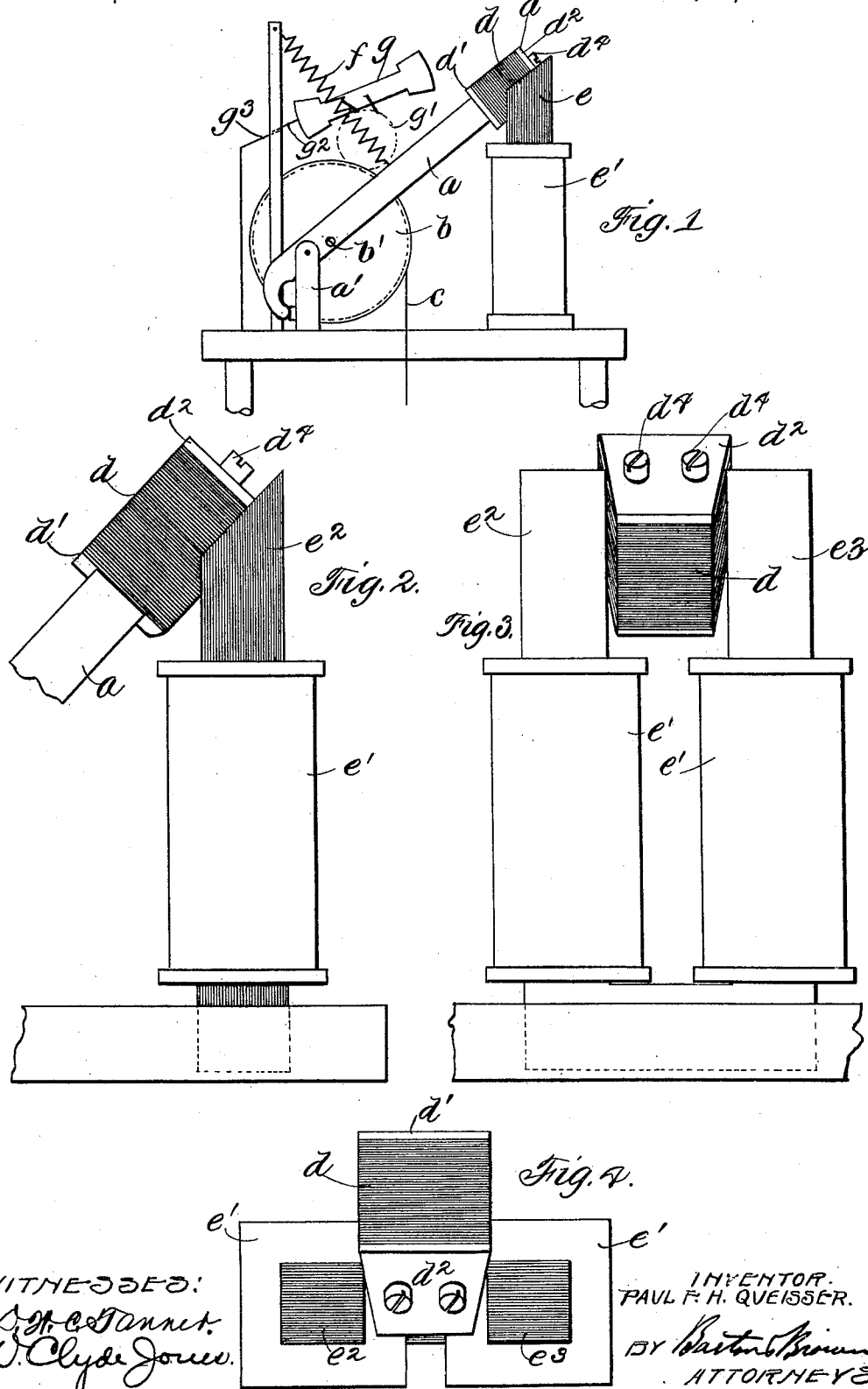


(No Model.)

P. F. H. QUEISSER.
ELECTRIC ARC LAMP.

No. 573,617.

Patented Dec. 22, 1896.



UNITED STATES PATENT OFFICE.

PAUL FRANZ HERRMANN QUEISSER, OF CHARLOTTENBURG, GERMANY, AS-
SIGNOR TO THE SIEMENS & HALSKE ELECTRIC COMPANY OF AMERICA,
OF CHICAGO, ILLINOIS.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 573,617, dated December 22, 1896.

Application filed January 24, 1896. Serial No. 576,642. (No model.)

To all whom it may concern:

Be it known that I, PAUL FRANZ HERRMANN QUEISSER, a subject of the Emperor of Germany, residing at Charlottenburg, near
5 Berlin, Germany, have invented new and useful Improvements in Arc-Lamps, (Case No. 14,) of which the following is a specification.

My invention relates to an arc-lamp, its object being to provide an improved construction of feeding and regulating mechanism for
10 an arc-lamp adapted to be supplied with an alternating current.

In Letters Patent No. 412,141, dated October 1, 1889, is illustrated a lamp wherein the
15 upper carbon is suspended from a band which winds about a drum mounted upon a pivoted armature-lever, the drum being normally maintained against rotation, but adapted to be released when the armature is attracted
20 by the magnet opposite the pole of which it is placed. The magnet is connected in shunt with the arc and, as the arc lengthens and the resistance of the arc increases, more and more current is diverted through the shunt
25 feeding and regulating magnet until the armature is attracted sufficiently to release the drum and permit the upper carbon to be fed toward the lower carbon.

In the lamp illustrated in the above-mentioned patent the armature rests opposite the
30 end of a magnet the coils of which are adapted to be traversed by a direct or continuous current.

The lamp of the present invention is adapted
35 to be traversed by an alternating current, and the invention embodies certain structural features whereby the efficient operation of the lamp when traversed by an alternating current is effected. The core of the regulating and feeding electromagnet is of a U
40 shape and is formed from laminated plates. The upper ends of the core are cut away to present two oblique faces to the armature, which is also made of laminated plates
45 mounted upon the end of the armature-lever. The armature is adapted to vibrate between the ends of the poles of the core, and the armature is so mounted that its axis is approximately parallel to the oblique faces of the
50 ends of the core. The sides or faces of the

armature toward the poles are tapering, whereby the air-spaces between the edges of the core and the tapering faces of the armature gradually decrease as the armature is drawn
toward the core. The pull upon the arma- 55
ture is thus maintained practically uniform throughout the working travel of the armature, as the air-space is a maximum when the armature is in the position where the greatest pull is exerted by the poles of the magnet- 60
core, the air-space being a minimum when the armature is entirely drawn in, in which position the pull exerted by the poles is a minimum. The core and the armature being 65
formed of laminated sheets or plates, the production of eddy currents and consequent heating of the iron upon the passage of alternating currents is prevented.

I have illustrated my invention in the accompanying drawings, in which— 70

Figure 1 is a view of the lamp mechanism of my invention. Fig. 2 is an end view of the magnet and armature. Fig. 3 is a view in elevation of the magnet and the armature. 75
Fig. 4 is a top view of the magnet and armature.

Like letters refer to like parts in the several figures.

The armature-lever *a* is pivoted to a standard or support *a'*, and the drum *b* is journaled 80
to the armature-lever *a* at *b'*. Around the drum *b* is wound a band or ribbon *c*, upon the lower end of which is mounted the upper carbon. Upon the end of the armature-lever
a is mounted the armature *d*, the armature 85
being composed of thin plates held between the plates *d'* and *d''* by means of screws *d⁴*. The armature vibrates between the poles of the core *e*, which is of U shape and carries the magnet-coils *e' e'*. The core is laminated, 90
being made up of thin U-shaped plates or stampings. The ends or poles *e² e³* of the core *e* are oblique, the plane of the ends being approximately parallel to the axis of the armature *d*. The faces of the armature opposite 95
the edges of the poles are tapered, whereby, when the armature rests in a retracted position, the air-spaces between the edges of the poles and the faces of the armature are of greater width than when the armature is at- 100

tracted. A spring *f* opposes the attraction of the electromagnet and the armature-lever *a* thus moves, due to the opposing actions of the magnet and spring *f*. A pallet *g* engages
 5 a pallet-wheel *g'*, geared to move with the drum *b* to regulate and control the movement of the drum in feeding the carbons together. The pallet *g* carries a tongue *g''*, adapted to
 10 engage a stationary contact *g'''*, to maintain the pallet against oscillation when the armature is retracted. The pallet *g* is mounted upon a frame moving with the armature-lever *a*, and when the armature is attracted the
 15 frame is moved to carry the tongue *g''* out of engagement with the contact *g'''*, thus permitting the pallet to oscillate and feed the ribbon to cause the carbons to feed together.

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

In an arc-lamp the combination with an

electromagnet having a laminated core, the two ends of which are cut away obliquely in one plane, of a pivoted armature-lever, the movement of which controls the feeding of
 25 the carbons, and the laminated armature carried upon said lever and adapted to vibrate between the parallel poles of said core, the axis of the armature being substantially parallel to the oblique face of the ends or poles
 30 of the core, the face of the armature opposed to the parallel edges of said poles being tapered to thereby gradually decrease the air-gaps as the armature is attracted; substantially
 35 as described.

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

PAUL FRANZ HERRMANN QUEISSER.

Witnesses:

OSCAR BIELEFELD,
 PAUL ROEDIGER.