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Patented Sept. 10, 1901.

P. KÄSSBAUER.

REGULATING DEVICE FOR ELECTRIC ARC LAMPS.

(Application filed June 1, 1900.)

(No Model.)

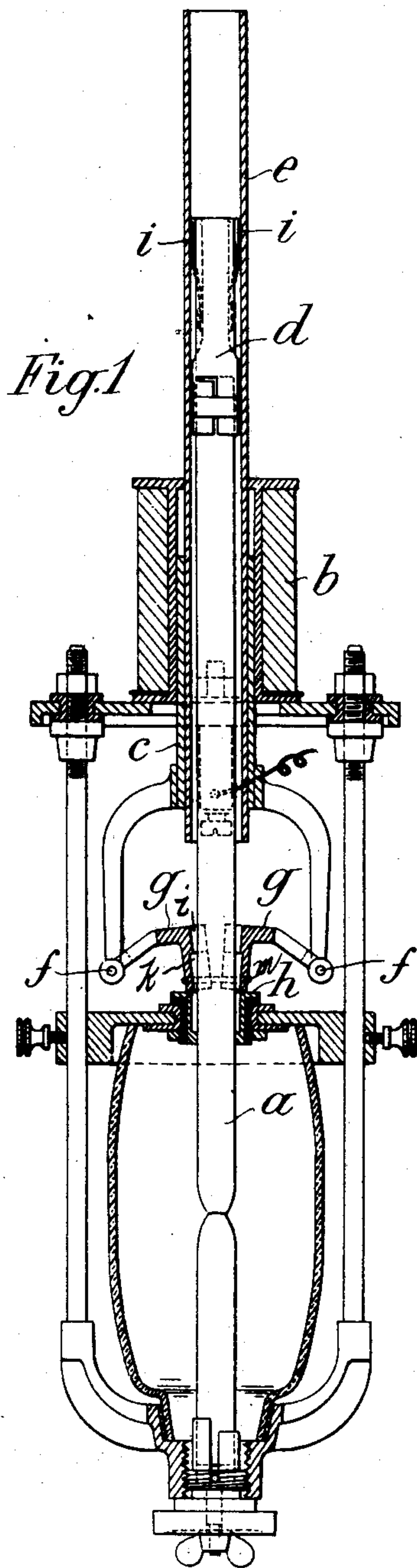


Fig. 1

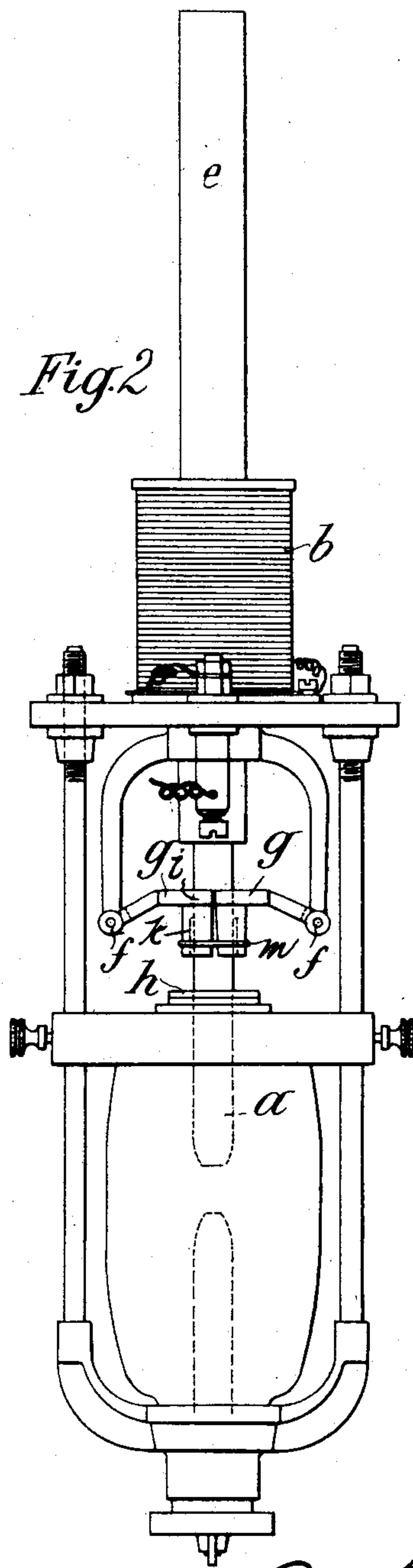


Fig. 2

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Att'y

UNITED STATES PATENT OFFICE.

PAUL KÄSSBAUER, OF VIENNA, AUSTRIA-HUNGARY, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO EUGEN MYTTEIS, OF SAME PLACE, AND OSKAR LENCK, OF OEDENBURG, AUSTRIA-HUNGARY.

REGULATING DEVICE FOR ELECTRIC-ARC LAMPS.

SPECIFICATION forming part of Letters Patent No. 682,554, dated September 10, 1901.

Application filed June 1, 1900. Serial No. 18,737. (No model.)

To all whom it may concern:

Be it known that I, PAUL KÄSSBAUER, a subject of the Emperor of Austria-Hungary, residing at Vienna, in the Province of Lower Austria, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Regulating Devices for Electric-Arc Lamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The present invention relates to that part of the regulating mechanism of an electric-arc lamp which during the action of the regulating electromagnetically-actuated part causes the gradual advancing of the carbon. This part consists, according to the present invention, of two or more rotatable clamping-jaws, whose axes of rotation are connected with the regulating electromagnetically-actuated part and receive from the latter a to-and-fro motion in the direction of the carbon to be regulated. During the upward movement of the axes of rotation the clamping-jaws descend by the action of their own weight into the clamping position and produce the coupling of the carbon to be regulated with the regulating part. During the downward movement of the axes of rotation the clamping-jaws are released from the clamping position by abutments, whereupon the carbon is free to slide downward between them.

In the annexed drawings the arrangement of the improved device is shown in connection with a continuous-current lamp with regulation of the main circuit.

Figure 1 is a vertical section through the lamp, together with the regulating device before the insertion into the circuit. Fig. 2 shows a side elevation of the lamp with the clamping device in activity.

As can be seen from the drawings, the upper carbon *a* is guided in the interior of a main-current coil *b* and of a hollow iron core *c*, and owing to the action of its own weight,

as well as of the weight of the carbon-holder *d*, it possesses the tendency to slide downward in the guiding-tube *e*. Two clamping-jaws *g g* are arranged symmetrically opposite each other and movable around the axes *f*, connected with the iron core *c*. When these clamping-jaws are turning in a downward direction unimpeded, they clamp when in a certain position the carbon *a* between them; but in the lowermost position of the iron core *c* they are prevented from turning downward by the insulated guiding-socket *h* or by any other suitable abutments, and therefore loosely encompass the carbon. When the lamp is put into circuit, the iron core *c* is in its lowermost position, the clamping-jaws *g g* rest on the socket *h*, and the upper carbon *a* rests on the lower one, Fig. 1. It will be observed that the clamping-jaws *g* are provided with an upper or clamping face *i*, below which the jaw is cut away, as shown at *k*, in order to give free play when unclamping, and at the lower ends of these jaws is a ring *m*, which surrounds them and acts as a pivot during unclamping, the weight of the moving parts at the pivots *f* being sufficient to readily move the jaws apart. At the closing of the circuit the iron core is raised, the clamping-jaws get out of the reach of the contact-surface of the socket *h* and descend into the clamping position, Fig. 2, whereupon during the further raising of the iron core the carbon *a* is carried along and the luminous arc is formed. Should a weakening of the coil current occur in consequence of the burning down of the carbons and of the simultaneously-increasing resistance in the lamp, then the iron core descends until the clamping-jaws *g g* will strike against the socket *h*, acting as an abutment, and thereby are brought out of the clamping position. In this moment the carbon *a* begins to slide downward and will descend until the coil-current, in consequence of the decreased resistance, is strengthened again and the iron core is raised so far that the clamping-jaws return into the clamping position. In order to allow the carbon *a* to descend but slowly after its release by the clamping-jaws *g g*,

the carbon-holder *d* is fitted with two friction-springs *i i*. The alteration of the weight of the carbon (in consequence of its burning off) may be met by the arrangement of a correspondingly heavy carbon-holder.

I claim—

1. In an arc-lamp, the combination with a stationary abutment, of depending vertically-movable brackets, clamping-jaws arranged to grip the carbon and contact with said abutment at the limit of their travel, a cut-away portion on the inner face of said jaws below their clamping-surface and arms rigidly connected to the upper ends of said jaws and pivotally connected to the depending brackets, substantially as and for the purpose set forth.

2. In an arc-lamp, the combination with an abutment, of depending vertically-movable brackets, clamping-jaws arranged to grip the carbon and contact with said abutment at the end of their travel, arms rigidly connect-

ed to the upper ends of said jaws and pivotally connected to the ends of said brackets, and a ring loosely surrounding the jaws at their lower ends, substantially as and for the purpose set forth.

3. In an arc-lamp, the combination with an insulated stationary abutment, of electromagnetically - moved depending brackets, clamping-jaws, the lower part of the clamping-face cut away, a ring loosely surrounding the lower ends of the clamping-jaws, arms rigidly secured to the upper ends of said jaws and pivoted at their ends in the ends of the depending brackets, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

PAUL KASSBAUER.

Witnesses:

ALVESTO S. HOGUE,
AUGUST FUGGER.