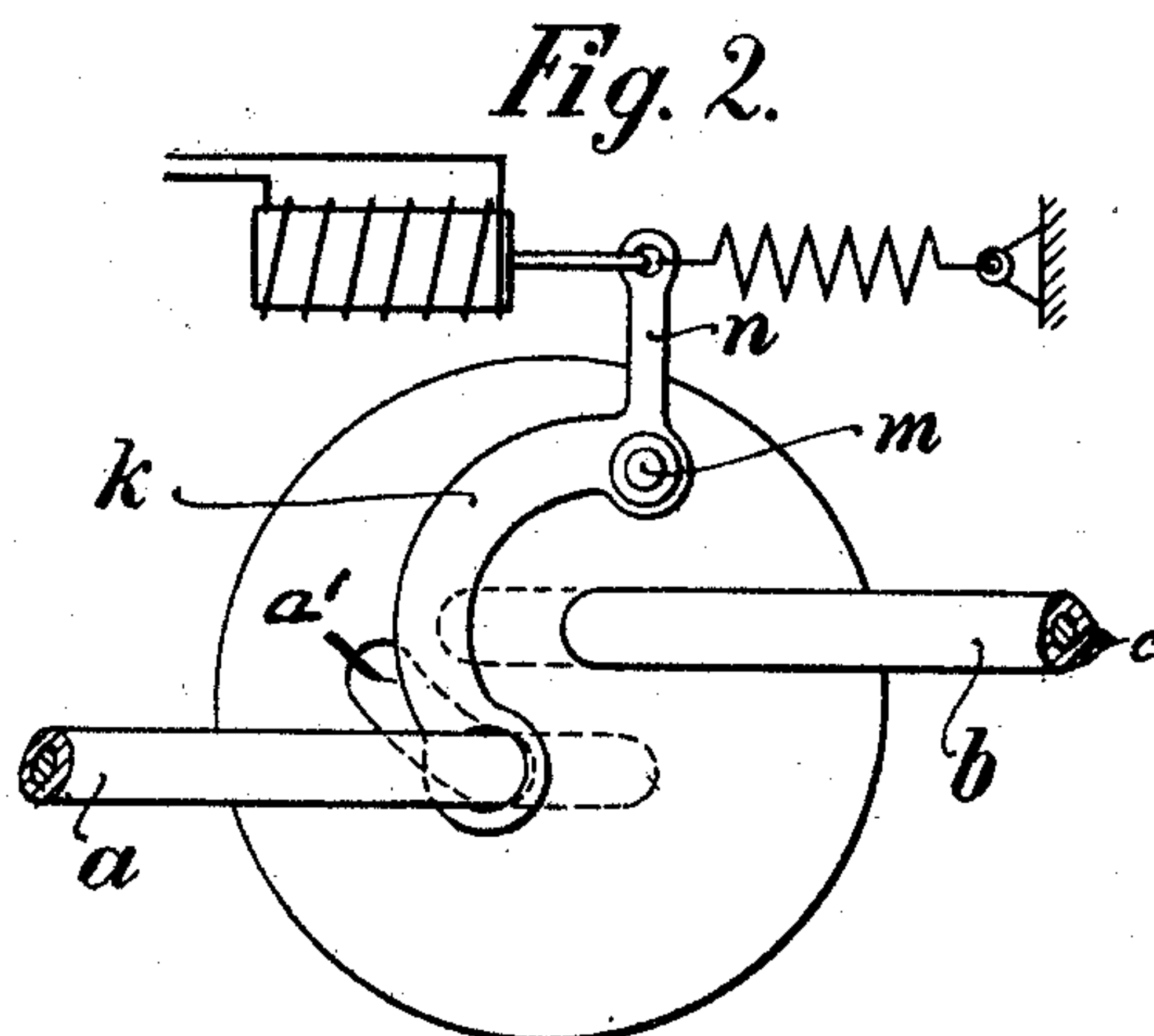
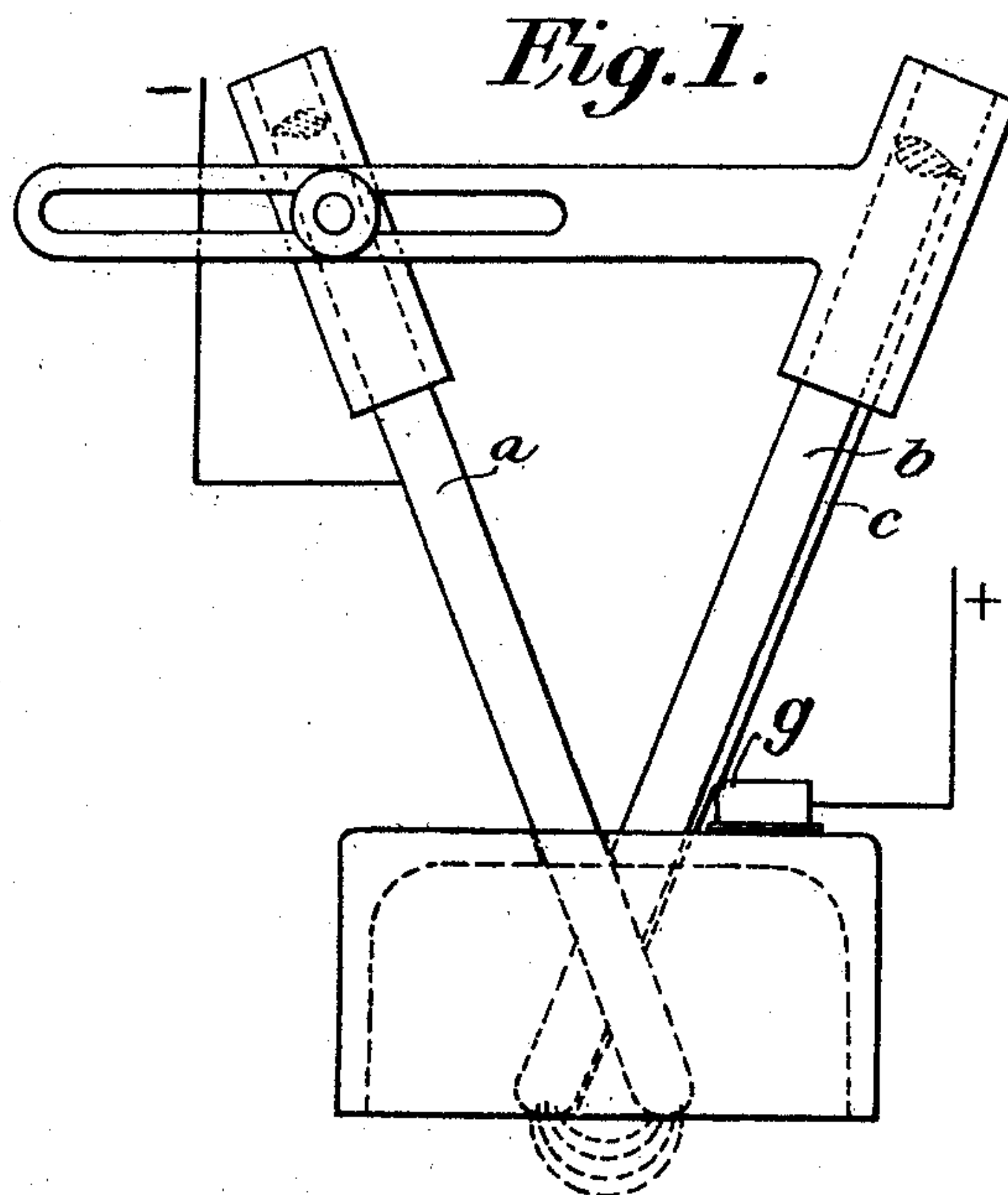


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ARC LAMP.

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975,034.

Patented Nov. 8, 1910.



Witnesses  
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per G. H. H.  
Attorney

# UNITED STATES PATENT OFFICE.

PAUL HANISCH, OF COLOGNE-ON-THE-RHINE, GERMANY.

## ARC-LAMP.

975,034.

Specification of Letters Patent.

Patented Nov. 8, 1910.

Application filed September 15, 1908. Serial No. 453,147.

*To all whom it may concern:*

Be it known that I, PAUL HANISCH, a subject of the King of Prussia, German Emperor, residing at Cologne-on-the-Rhine, in the Province of the Rhine, Kingdom of Prussia, German Empire, have invented a certain new and useful Arc-Lamp, of which the following is a specification.

Arc lamps are already known having downwardly directed electrodes in which the latter rest by means of supporting ribs against a supporting body placed at an acute angle, through which body the current is conducted so that the ribs in consequence of the transmission of the current burns slowly and thereby the feed of the electrodes is regulated. This feed regulation possesses, however, a serious drawback if the electrodes are simply arranged sloping toward one another in the usual manner, because if the burning takes place too quickly, then the carbon points approach one another and more current flows through the lamp. The supporting edge will be still more quickly consumed and the carbons will slide together instead of moving forward more slowly. The feed on the other hand will be delayed in consequence of the diminished current strength when the carbons move too slowly. The proper advance of the carbons is attained by means of the new and special arrangement of the electrodes. When these electrodes are crossed above the light arc, then the above-mentioned drawbacks are avoided and a regulation unobjectionable in every respect is attained.

Figure 1 is an elevation illustrating my invention. Fig. 2 is a plan thereof.

The new arrangement of the electrodes is illustrated in Fig. 1 of the drawing. If in this position an increase of the current strength takes place, then the feed is accelerated and thereby the distance apart of the carbon points is increased. If, on the other hand, the current strength decreases, then the advance is delayed and a diminution of the distance is the consequence. The feed in this construction of the electrodes can consequently be regulated simply and solely by the passage of the current at the supporting point and is solely dependent upon the current strength of the lamp. If the electric arc rises, then, in consequence of the reduced length of the

arc, the tension diminishes. The current strength then increases correspondingly and the feed is quickened through the quicker combustion of the supporting ribs, until the normal condition is again restored.

For the formation of the electric light arc, the ends of the electrodes must of course be in contact one with the other, in order on the passage of the current to be brought into the combustion position. A device serving for this purpose is illustrated by way of example in Fig. 2 of the drawings.

*a* is one electrode connected with the negative pole and *b* is the other electrode provided with the longitudinally disposed rib *c*.

*g* is the supporting body connected with the positive pole of the battery.

The superposed electrode *b* lies immovable, while the other one *a* oscillates in a slot *a'*. The slot is preferably not made larger than the track of the electrode necessitates. The electrode is engaged by the suitably bent arm *k* of a lever revoluble at *m*, whose other arm *n* is on the one hand under the influence of an electromagnet and on the other hand under that of a spring. The latter effects when the lamp is not burning, the contact of the carbon points, and the former draws, on the passage of the current, the electrode points apart. Experiment has proved that the light arc remains permanently at the electrode points and does not show any inclination to approach the crossing point of the electrodes. By the arrangement of a blow magnet, this can, moreover, also be prevented without difficulty.

I thus provide an automatic regulation which is of simple form, yet efficient and reliable.

In Fig. 1 I have shown a conventional form of means for feeding the electrodes downward together, but it is to be understood that the invention is in no wise restricted to this feeding means.

What I claim is:—

1. In an arc lamp having electrodes oppositely downwardly inclined and crossed above their lower ends, and automatic means constructed to permit movement of one of said electrodes to automatically increase the feed in accordance with increased current strength.

2. In an arc lamp having electrodes oppositely downwardly inclined and crossed



above their lower ends, and automatic means  
constructed to permit movement of one of  
said electrodes and constructed to automati-  
cally increase the feed in accordance with  
5 increased current strength and to decrease  
the arc and diminish the feed under de-  
creased current strength.

In testimony whereof I have signed my  
name to this specification in the presence of  
two subscribing witnesses.

PAUL HANISCH.

Witnesses:

BESSIE F. DUNLAP,  
M. KÜPPERS.

BEST AVAILABLE COPY