

(No Model.)

A. JORDAN.
ELECTRIC ARC LAMP.

No. 559,387.

Patented May 5, 1896.

Fig. 1.

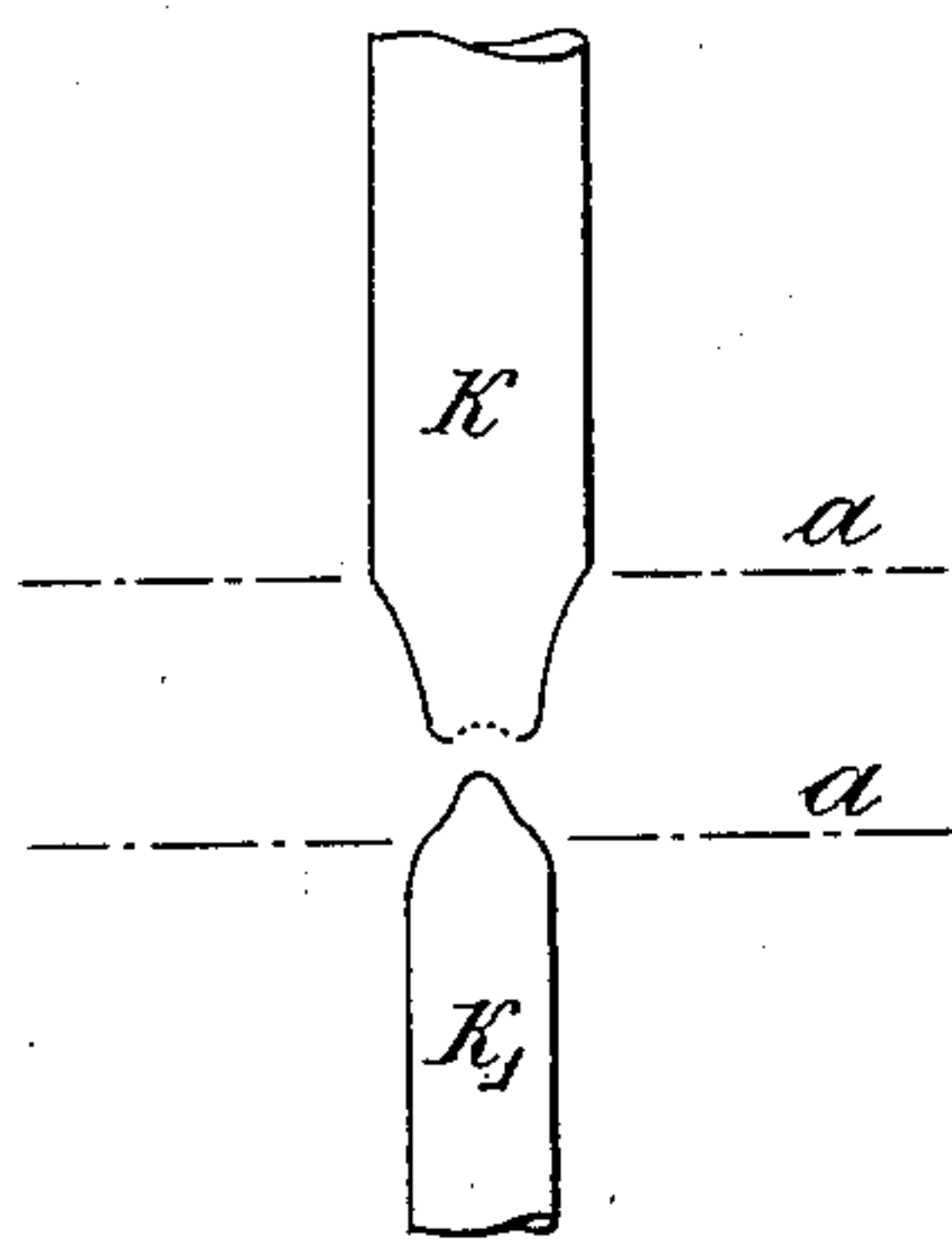


Fig. 2.

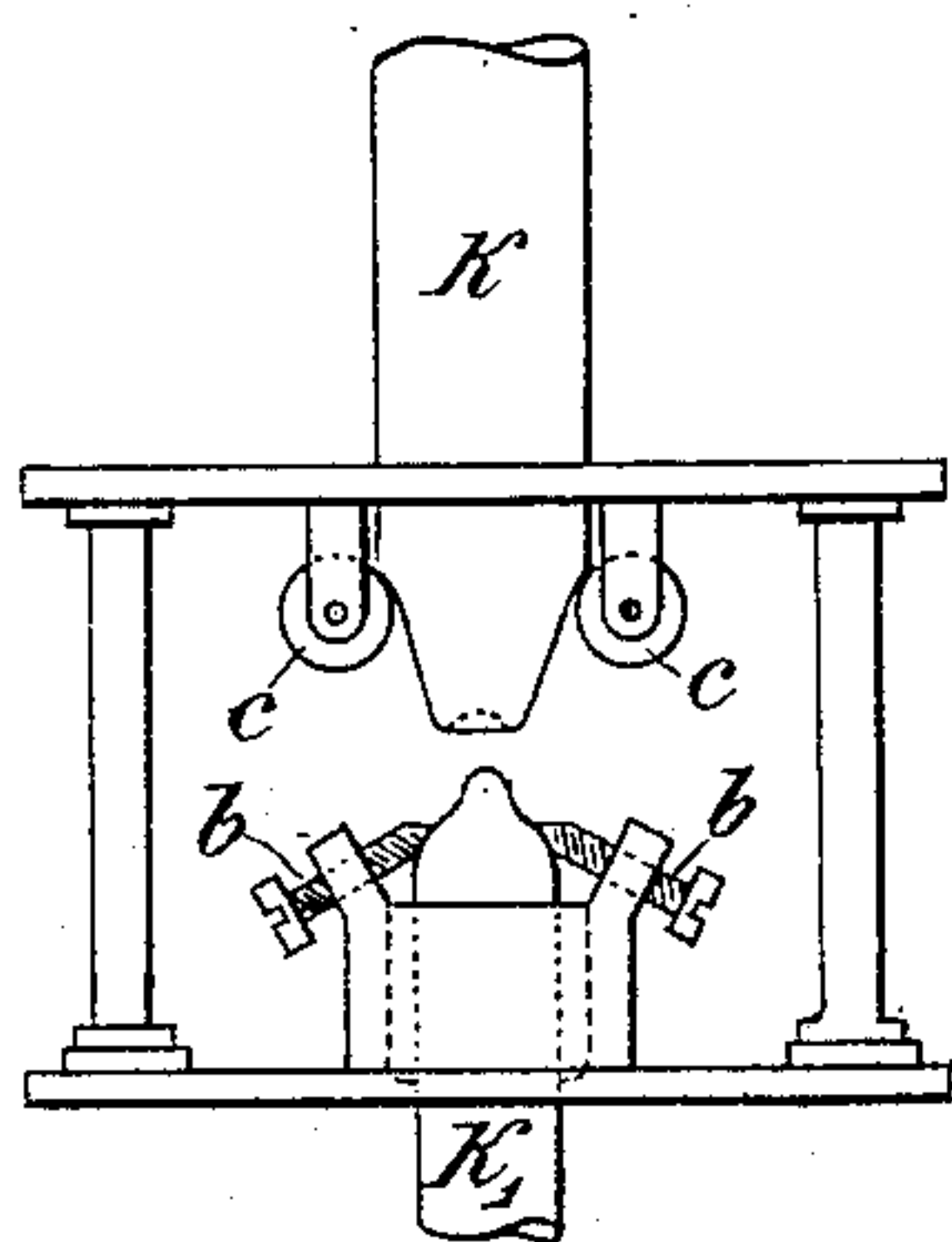
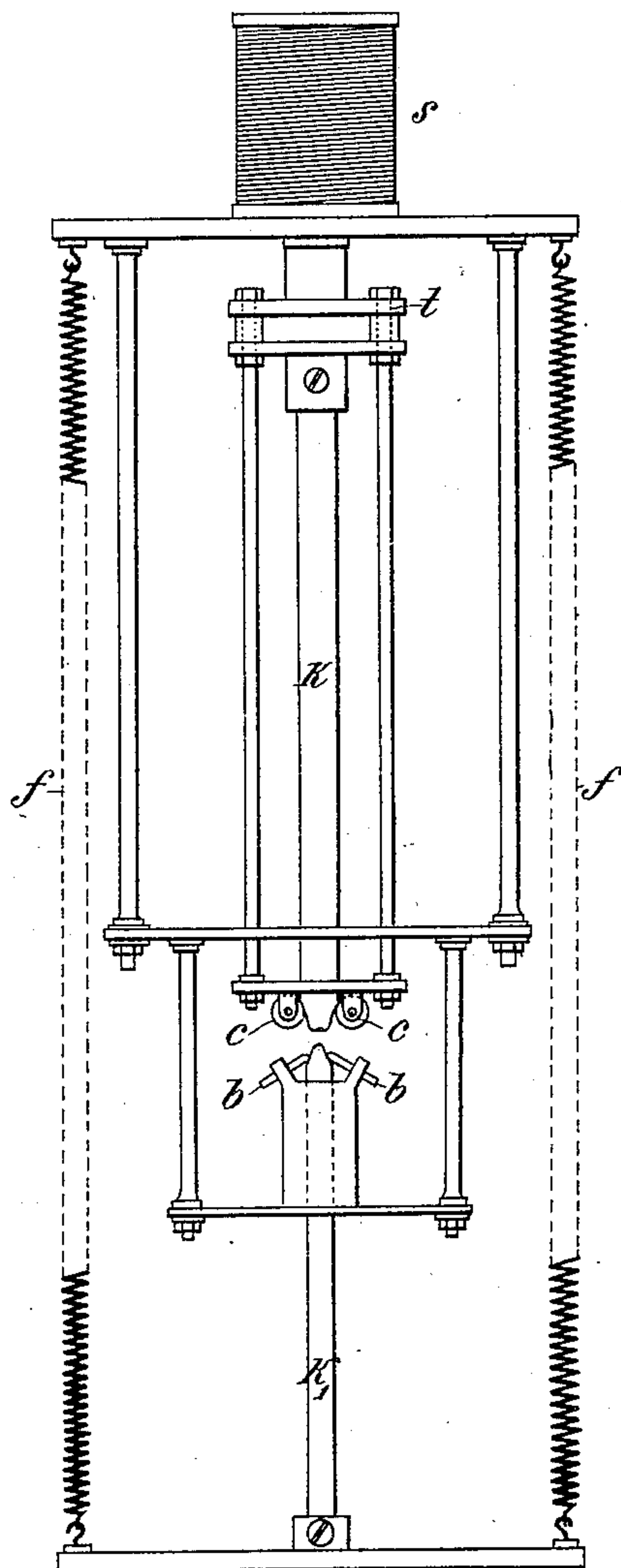


Fig. 3.



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UNITED STATES PATENT OFFICE.

ALBERT JORDAN, OF VIENNA, AUSTRIA-HUNGARY.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 559,387, dated May 5, 1896.

Application filed February 12, 1896. Serial No. 579,024. (No model.)

To all whom it may concern:

Be it known that I, ALBERT JORDAN, a subject of the Emperor of Austria-Hungary, residing at the city of Vienna, in the Province of Austria and Empire of Austria-Hungary, have invented certain new and useful Improvements in Electric-Arc Lamps, of which the following is a specification.

My invention has relation to mechanism for feeding automatically and regularly the carbons of an electric-arc lamp, so as to maintain a constant and uniform distance or arc between the same for the passage of the spark, and in such connection it relates particularly to the construction and arrangement of such mechanism for said purpose.

The principal objects of my invention are, first, to provide in an arc-lamp simple and efficient mechanism for automatically and regularly feeding the carbons to maintain a constant and uniform arc between the same; second, to provide in an arc-lamp suitable mechanism, consisting of weights, springs, or the like, for feeding the carbons toward each other and detaining mechanism consisting of supports resting upon the conical ends of the carbons and adapted to permit of the advancement of the carbons only as the points are burned or worn away, and, third, to provide in an arc-lamp, in connection with the feeding and detaining mechanism for the carbons, a solenoid or its equivalent adapted initially to establish the arc between the carbons.

My invention, stated in general terms, consists of mechanism for feeding automatically and regularly the carbons of an arc-lamp, so as to maintain a constant and uniform arc between the same, when said mechanism is constructed and arranged in substantially the manner hereinafter described and claimed.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and in which—

Figure 1 represents in diagram the ends of two carbons of an arc-lamp and illustrates the extent of heat or incandescence of said ends. Fig. 2 is a side elevational view of the two carbon ends and the supports therefor, illustrating the main features of my invention; and Fig. 3 is a side elevational view of

an arc-lamp, illustrating the feeding mechanism for the carbons, the detaining-supports for the ends of said carbons, and the solenoid adapted to establish initially the arc between the carbons.

Referring to Fig. 1 of the drawings, the two carbons k and k' , during the formation of the arc between the same, are consumed, so that the ends of the carbons are always substantially conical. The ends of the carbons are heated to a white heat or incandescence at the points, which the heat or incandescence gradually decreases until at the points a the carbon is only heated to a dull red.

Referring now to Figs. 2 and 3, at the points of dull-red heat are supported the conical ends of the carbons k k' upon either of two set-screws b b , which are preferably used for the lower carbon k' , or upon two rolls or wheels c c , which are in fixed relationship to each other and separated a distance less than the diameter of the carbon k . The rolls or wheels c c are preferably used for the support of the upper carbon k . The distance vertically between the supports b of the lower carbon and supports c of the upper carbon is invariable after once the proper distance between the carbon points has been determined to produce the required arc. This distance between the points usually is approximately one-sixteenth ($\frac{1}{16}$) of an inch, and by reason of the supports b and c the carbons are held at that distance constantly, being permitted to feed toward each other only as the carbon ends are consumed.

As illustrated in Fig. 3, the lower carbon k' is fed upward by means of a spring or springs f , while the upper carbon k is weighted in a suitable manner, so as to feed by gravity toward the lower carbon.

It is to be understood that the supports b are insulated in any suitable manner from the supports c .

To establish initially the arc between the carbons k and k' when the lamp is switched or cut into circuit, a suitable contact may be interposed between the carbon ends and withdrawn to form the spark or arc between the same, or else, if preferred, the carrier t of the upper carbon k is placed, under the influence of a solenoid or electromagnet s , in such a manner that when the current is off the car-

rier *t* will be permitted to drop and permit the upper carbon to rest upon the lower carbon, the supports *b* at the same time moving toward the supports *c*, and when the current is on a portion is shunted to the solenoid *s*, which attracts and raises the carrier *t* and carbon *k* a sufficient distance to establish the arc between the said carbons *k* and *k'*.

From the above description it will be understood that the supports *b* and *c*, inasmuch as they rest upon the conical or inclined faces of the carbon points *k* and *k'*, will serve as detents for the ordinary feeding mechanism, permitting of the movement of the carbons only a distance regulated by the consumption of the points, which is distributed evenly over the conical surface heated to a white heat or incandescence.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an electric-arc lamp, in combination

with a carbon and mechanism for feeding the same, of two rolls rotating in fixed bearings and both adapted to rest at their peripheries upon the conical end of the carbon and to permit of the feeding of the same only by the consumption of the end thereof, substantially as and for the purposes described.

2. In an electric-arc lamp, in combination with the two carbons and mechanism for feeding the same toward each other, of two adjustable screw-supports adapted to rest upon the conical end of the lower carbon, and the two rolls rotating in fixed bearings and both adapted to rest at their peripheries upon the conical end of the upper carbon, substantially as and for the purposes described.

In witness whereof I hereunto set my hand in presence of two witnesses.

ALBERT JORDAN.

Witnesses:

W. R. SINKEFONG,
DEAN B. MASON.