

(No Model.)

J. McLAUGHLIN.  
ARC LIGHT CARBON.

No. 491,124.

Patented Feb. 7, 1893.

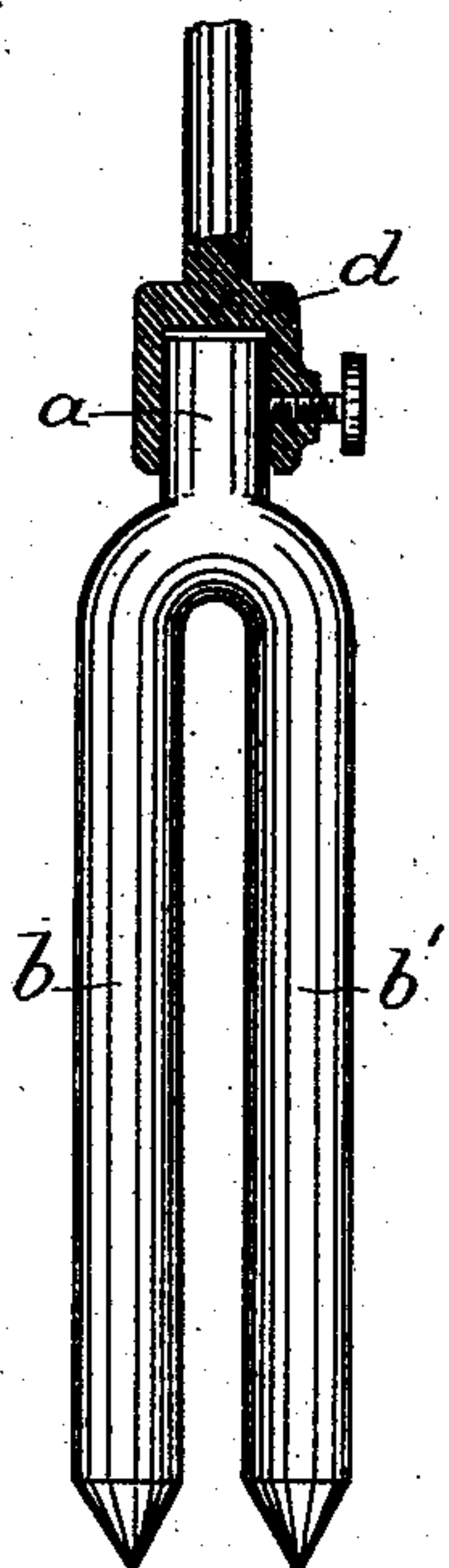


Fig. 1.

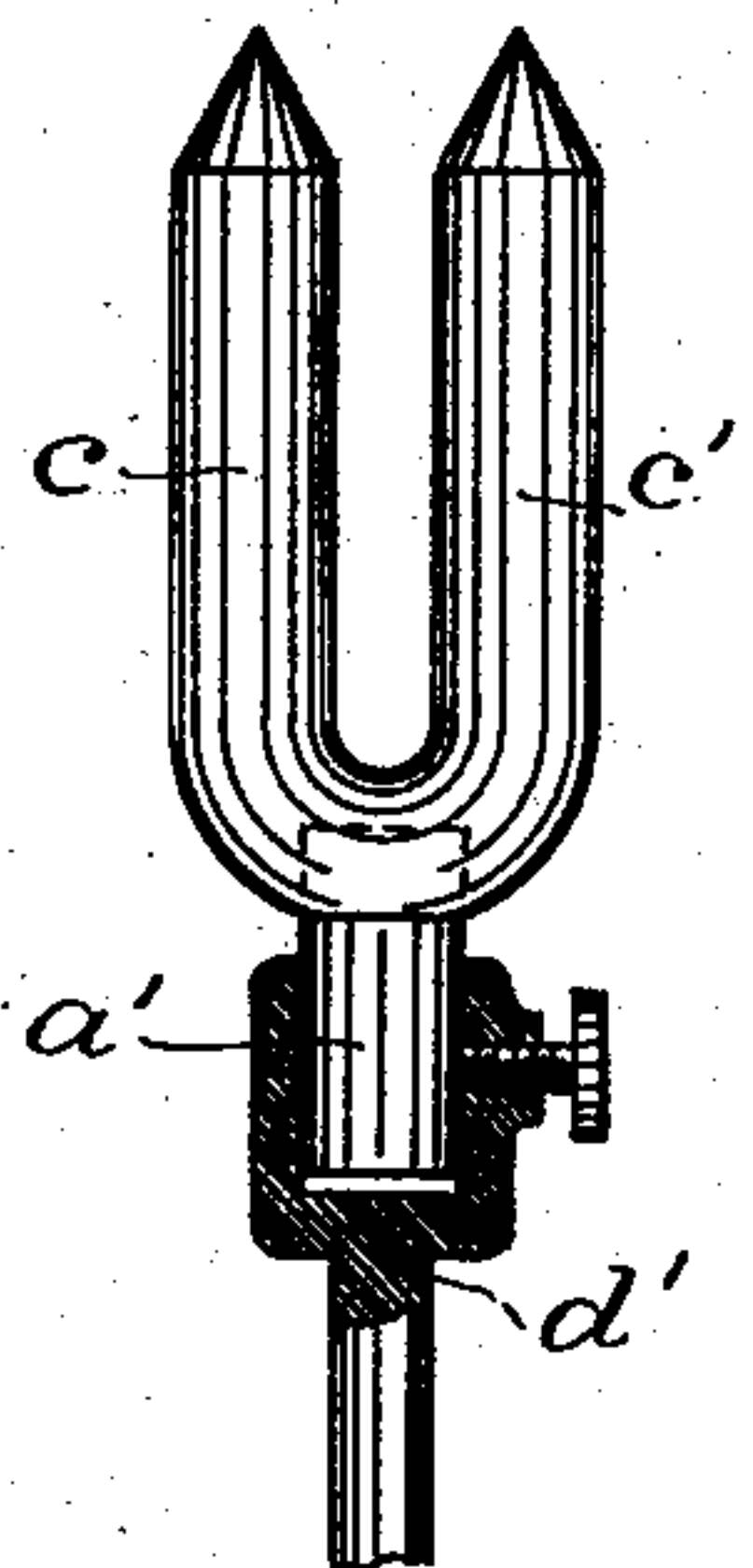


Fig. 2.

Witnesses  
Walter Wagner  
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Inventor  
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# UNITED STATES PATENT OFFICE.

JAMES McLAUGHLIN, OF CHICAGO, ILLINOIS.

## ARC-LIGHT CARBON.

SPECIFICATION forming part of Letters Patent No. 491,124, dated February 7, 1893.

Application filed May 5, 1891. Serial No. 391,631. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES McLAUGHLIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Arc-Light Carbons, which are fully set forth in the following specification, reference being had to the accompanying drawing, forming a part hereof, and in which the drawing shows the construction of my improved arc-light carbons in front elevation with the carbon-sockets of both the upper and lower part of the lamp shown in section.

The object of my invention is to produce carbons for electric-arc lamps which shall give a continuous light of a given power for a longer time, and with the same lamp-mechanism, than can be produced with the old form of carbons; and also to provide means by which carbons possessing the characteristics described may be interchangeably attached to or detached from different lamps of the same construction, or from different lamps the operating mechanism of which is dissimilar, dispensing entirely with the necessity of employing separate, or auxiliary devices for effecting an attachment or detachment and producing a simple, cheap and complete carbon with all the enumerated advantages, which carbon may be attached or detached with the utmost readiness to or from any lamp and, in order to attain said desirable ends I construct my said improved carbons in substantially the following manner namely:

I make the butt or socket-ends  $a a'$ , of such a form and size as will adapt them to fit into the sockets  $d d'$  of such lamps now in use. Said butt ends are only long enough to project slightly beyond said sockets where their outer parts are expanded, laterally, far enough to hold two or more pencils or members  $b b'$ , or  $c c'$ , which are parallel to each other. Said pencils are placed far enough apart to prevent the electric current from leaping from one to the other of said members. In this construction the members of my carbons are, preferably, all molded integrally into a single element, or candle, but the different parts may be engrafted upon each other, as seen in the lower carbon where the socket-piece  $a'$  is shown inserted, as indicated by the dotted

lines, into the bend or part uniting the members  $c c'$ , and said socket piece may be of any other suitable material.

The operation of my device is obvious to the experienced electrician. The electric current will pass through that pair of opposed members, as  $b c$ , which offer the least resistance. Whenever the distance between their points, through burning away, becomes such as to offer greater resistance to the electric current than is presented by another pair of opposed pencils, as  $b' c'$ , the current will establish its course through that pair of pencils and remain in that course until another pair of opposed pencils offers an easier passage for the current when that course will be adopted, and so on until, finally, through the increased resistance between the positive and negative side of the lamp, thus produced, the feeding mechanism is forced into action after which the same operation of the current takes place, as before, and so on continuously.

It is obvious that where there are two members as  $b b'$  each of the same cross-section as the old single lamp-carbon, and burning as above set forth, that the duration of the light will be twice as great as where only the old single carbon was used in the same lamp, and that it will be proportionally greater where three, four, or more such pencils form the members of such a carbon.

It is now obvious, from the socket piece joined integrally with the form of carbon used that I am enabled to derive all of the advantages following from such a form of carbon, and that the same may be readily joined with and detached from the socket of any lamp now in use.

What I claim is:

As an article of manufacture, an electric light carbon for arc lamps consisting of a plurality of separated members, which members are all integrally joined together at one end, by means of a joining or connecting member, and a socket piece integral with the connecting member whereby said carbon may be interchangeably attached to or detached from different lamps.

JAMES McLAUGHLIN.

Witnesses:

WM. ZIMMERMAN,  
LEWIS REESE.