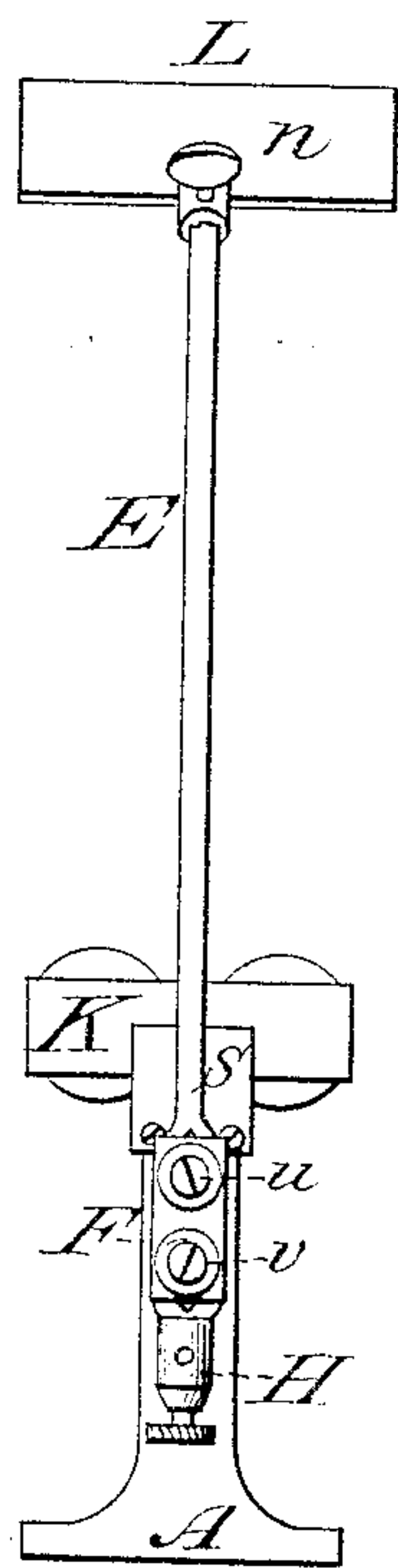


J. C. PORTER.  
Electric-Lamp.

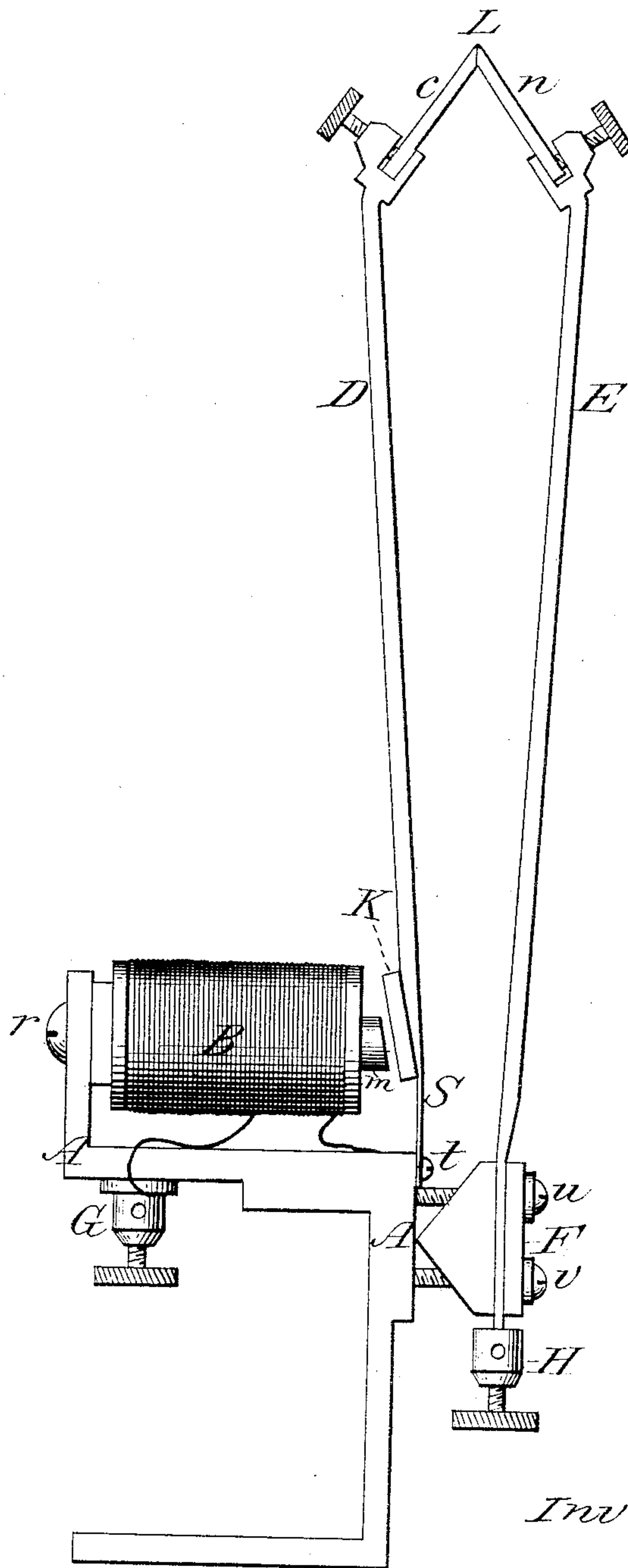
No. 217,744.

Patented July 22, 1879.

*Fig. 1*



*Fig. 2.*



*Attest:*

*L. S. Porter.*  
*C. W. Porter.*

*Inventor.*

*Jno. C. Porter.*

# UNITED STATES PATENT OFFICE.

JOHN C. PORTER, OF ST. LOUIS, MISSOURI.

## IMPROVEMENT IN ELECTRIC LAMPS.

Specification forming part of Letters Patent No. **217,744**, dated July 22, 1879; application filed January 20, 1879.

*To all whom it may concern:*

Be it known that I, JOHN C. PORTER, of the city of St. Louis and State of Missouri, have invented a new and Improved Method of Constructing an Electrical Lamp, of which the following is a specification.

The object of this invention is to produce an inexpensive machine which shall close and break the electrical connection so rapidly and perfectly as to give a steady and reliable electric light, so arranged that several lights may be supplied by one circuit, and without the loss of current, wear, corrosions, and imperfections liable to result from the use of hinges, joints, or other moving electrical connections.

In the accompanying drawing, A A represent the brass frame or support; B, the electro-magnet; C and N, the carbon pencils or plates; D, the movable arm or holder, and E the fixed arm supporting the carbons; G and H, binding-screws for the electrical connection.

One end of the coils forming the electro-magnet is firmly fastened to the brass frame, the other to the insulated binding-screw at G. The arm E is also insulated from the frame at F.

The arm D is firmly attached to the armature at K, which is connected with the brass frame by the spring S. This spring keeps carbon C pressed against carbon N.

The position of the arm E may be changed by screws *u* and *v*, to admit wider or narrower carbons.

An electric current from a magneto-electric generator, entering the machine at G, passes through the coils B to the brass frame, and through the spring S and arm or holder to the carbon C, thence through the other carbon and insulated holder E, passing out through binding-screw H. This current causes the magnet *m* to attract the armature K, which breaks the electrical connection at L; but it is immediately renewed by the spring pressing back the arm D, thus causing that arm to vibrate with great rapidity, and producing the light at L.

The support may be made of wood instead

of this brass frame, in which case one end of the magnet-coils should be firmly attached to the fixed end of the spring at *t*.

The carbons should be in plates, burning from the edges, the current in such direction as to consume most rapidly the largest carbon or electrode which is placed upon the fixed arm or holder.

A helix and core may be used to make the vibrations, instead of magnet and armature.

The spring may be curved or spiral, to give greater elasticity; but it must be of good conducting material, and so attached as to form a perfect electrical connection.

An air-tight glass may be fitted over this lamp for use in mines and mills liable to explosions.

The lamp may be attached to the side of a room or suspended from the ceiling, to throw down or forward an unobstructed light.

What I claim as new, and desire to secure by Letters Patent, is—

1. The arrangement of a carbon or other electrode upon an arm or holder supported upon a spring in an electric lamp, so that the carbon or other electrode may close and break the electrical connection, vibrating rapidly and freely, while at the same time maintaining a firm electrical connection without motion at the point of attachment to the lamp.

2. An arrangement of a stationary insulated arm or holder sustaining a carbon plate-pencil, or other electrode, and a spring permanently fixed at one end and conveying the electric current, while supporting an arm or holder and carbon or other electrode, and pressing the carbons or other electrodes together, in connection with an electro-magnet and an armature attached to the movable holder all so placed in an electric lamp that the current shall cause one of the carbons or other electrodes to vibrate rapidly and produce the electric light, substantially as herein set forth and described.

JOHN C. PORTER.

Witnesses:

L. S. PORTER,  
C. W. PORTER.