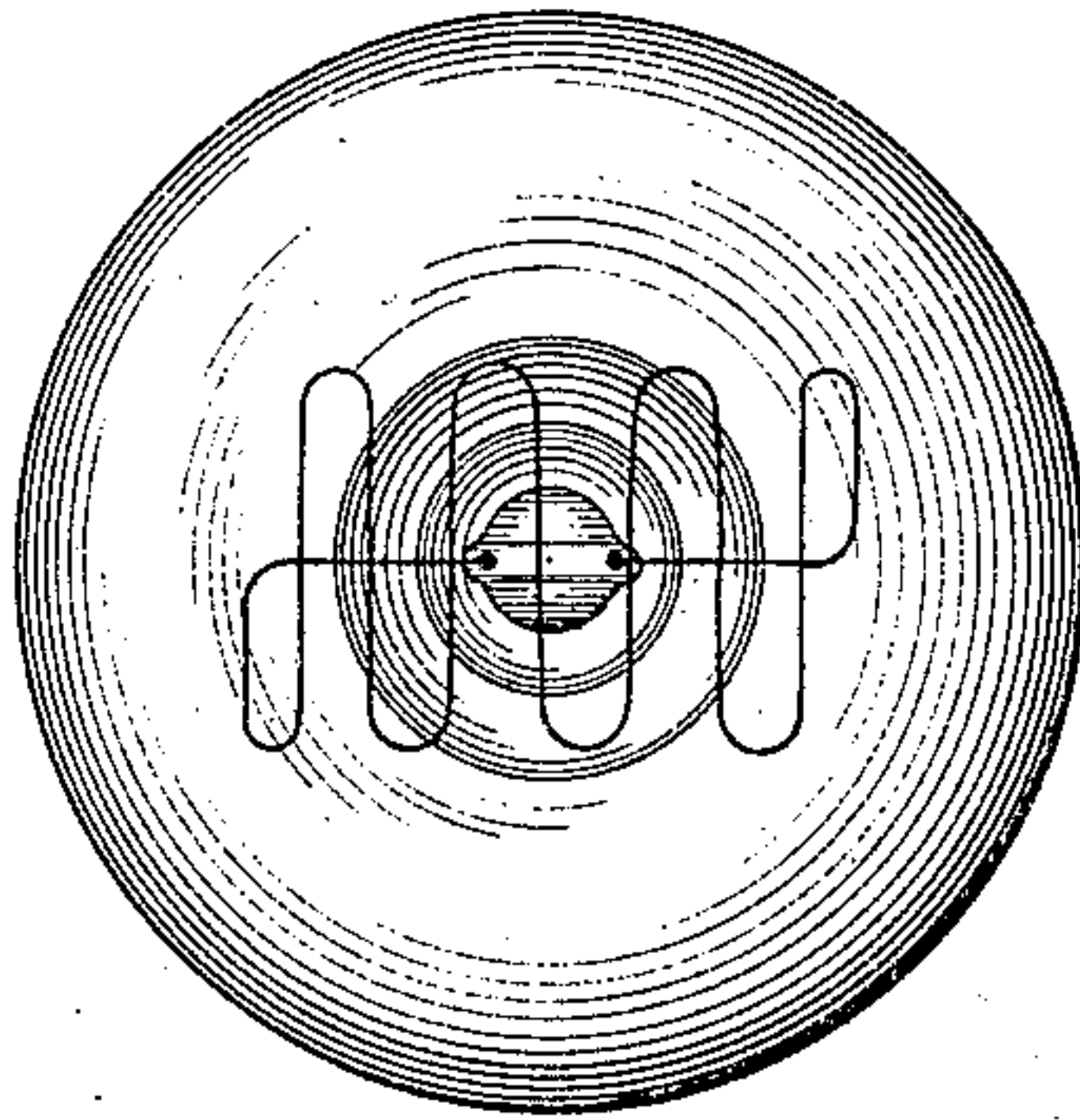


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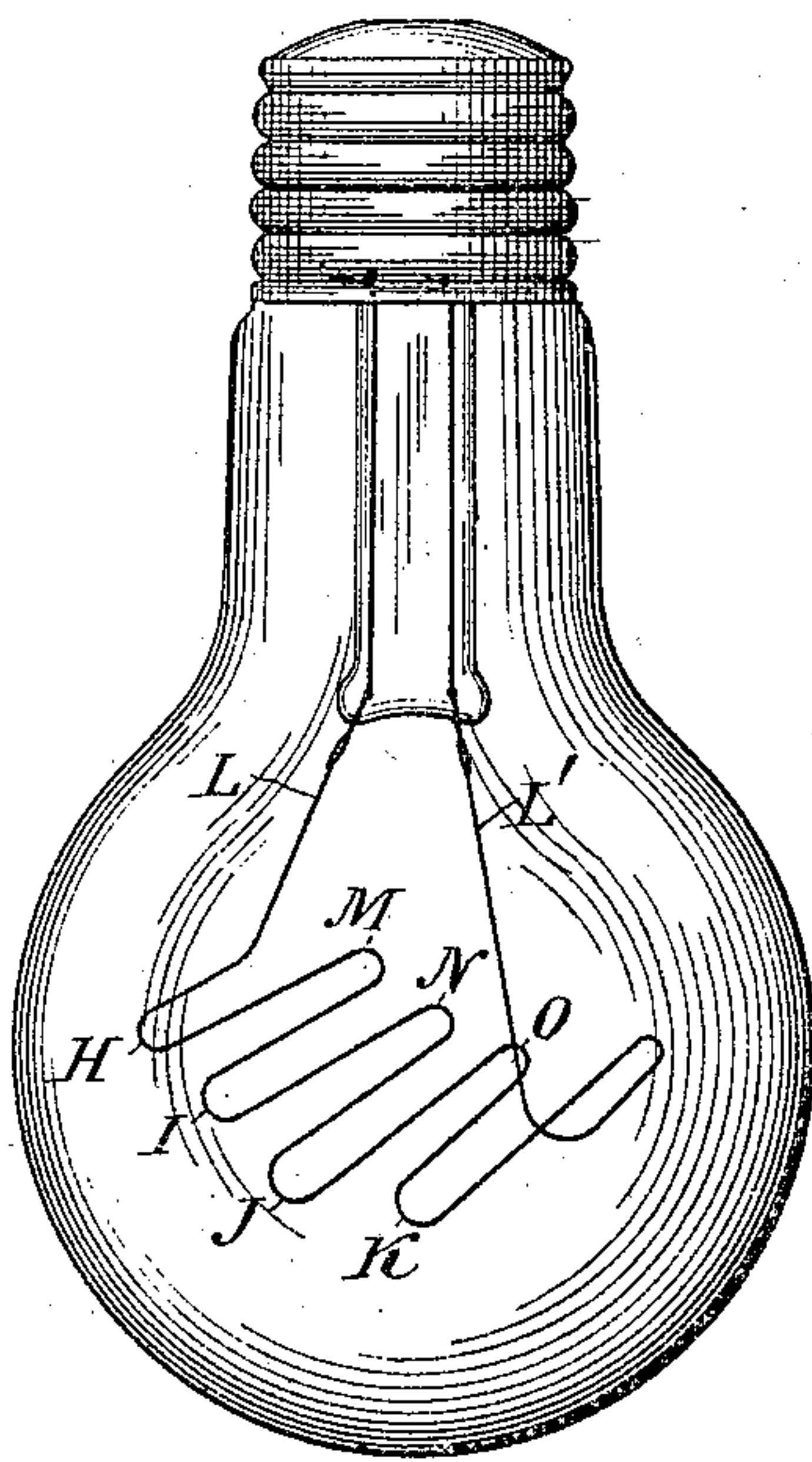
PATENTED DEC. 5, 1905.

J. C. WORMLEY.  
INCANDESCENT ELECTRIC LAMP.  
APPLICATION FILED JAN. 15, 1904.

*Fig. 1.*



*Fig. 2.*



*Witnesses:*

*R. L. Wormley*  
*Alex. Scott*

*Inventor:*

*Jas. C. Wormley*

# UNITED STATES PATENT OFFICE.

JAMES C. WORMLEY, OF NEW YORK, N. Y.

## INCANDESCENT ELECTRIC LAMP.

No. 806,723.

Specification of Letters Patent.

Patented Dec. 5, 1905.

Application filed January 15, 1904. Serial No. 189,222.

*To all whom it may concern:*

Be it known that I, JAMES C. WORMLEY, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Incandescent Electric Lamps, of which the following is a specification.

My invention relates particularly to the method of forming or looping the filaments of the lamp for the purpose of securing a more advantageous distribution of the light than is obtained by lamps heretofore made.

It is a well-known fact that most forms of incandescent lamps give the greatest intensity of illumination on the horizontal—that is, in a direction perpendicular to the axis of the lamp. Now as lamps are commonly used when suspended in line with the axis of the lamp it follows that the major part of the illumination is thrown out sidewise from the lamp instead of beneath, where the illumination is generally required to be the strongest. This results from the fact that the filaments are placed in the lamps with the major axes of their loops in a vertical direction, thereby presenting a greater extent of luminous surface when viewed from the horizontal than when viewed from the vertical or tip end of the lamp.

My filament is so shaped as to present a greater amount of luminous surface when viewed through the lower or "tip end" of the lamp. The form of my filament when viewed from this position is shown in Fig. 1. The filament is formed into convolutions of a grid-iron form, the number of convolutions being varied according to the voltage at which the lamp is to be run. The part of the filament so formed is supported by extending two portions in a direction at right angles to the plane of the convolutions, the said portions or legs being attached to the leading-in wires attached to the lamp. A perspective view of my filament is shown in Fig. 2, in which L and L' are the legs and H I J K L M N O are the segments of the convolutions. A lamp constructed with a filament formed in this manner will give sixteen-candle-power intensity through the bottom or tip end of the lamp, with a mean horizontal intensity of thirteen-

candle power and a similar distribution when made for other candle-powers, thus giving the greatest intensity of illumination beneath the lamp when installed in the most common position.

Having thus fully described my invention, what I claim is—

1. In an incandescent lamp, a filament having a series of convolutions consisting of substantially parallel bars connected by curves lying substantially in the plane of the straight bars, the ends of the filament converging and being connected to and integral with the convolutions.

2. In an incandescent lamp, metallic wires leading into the lamp, a filament having a series of convolutions consisting of substantially parallel bars connected by curves, the parallel bars lying in a surface of revolution whose curvature is substantially concentric with the curvature of the bulb, the ends of the filament being integral with the convolutions, and substantially normal to the surface in which said convolutions lie, the said ends converging and attached to the ends of the metallic wires.

3. In an incandescent lamp, metallic wires leading into the lamp, a filament having a series of convolutions consisting of substantially parallel bars connected by curves, the parallel bars lying substantially in a surface of revolution, the ends of the filament being integral with the convolutions and substantially normal to the surface in which said convolutions lie, the said ends converging and attached to the ends of the metallic wires.

4. In an incandescent lamp, an integral filament having connection to the light-wires, and having its body composed of substantially parallel bars connected by curved portions, the parallel bars lying in lines nearly transverse to the glass bulb, and about equally distant from the curved lower end of the bulb.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES C. WORMLEY.

Witnesses:

E. L. ELLIOTT,  
F. B. KAVANAGH.