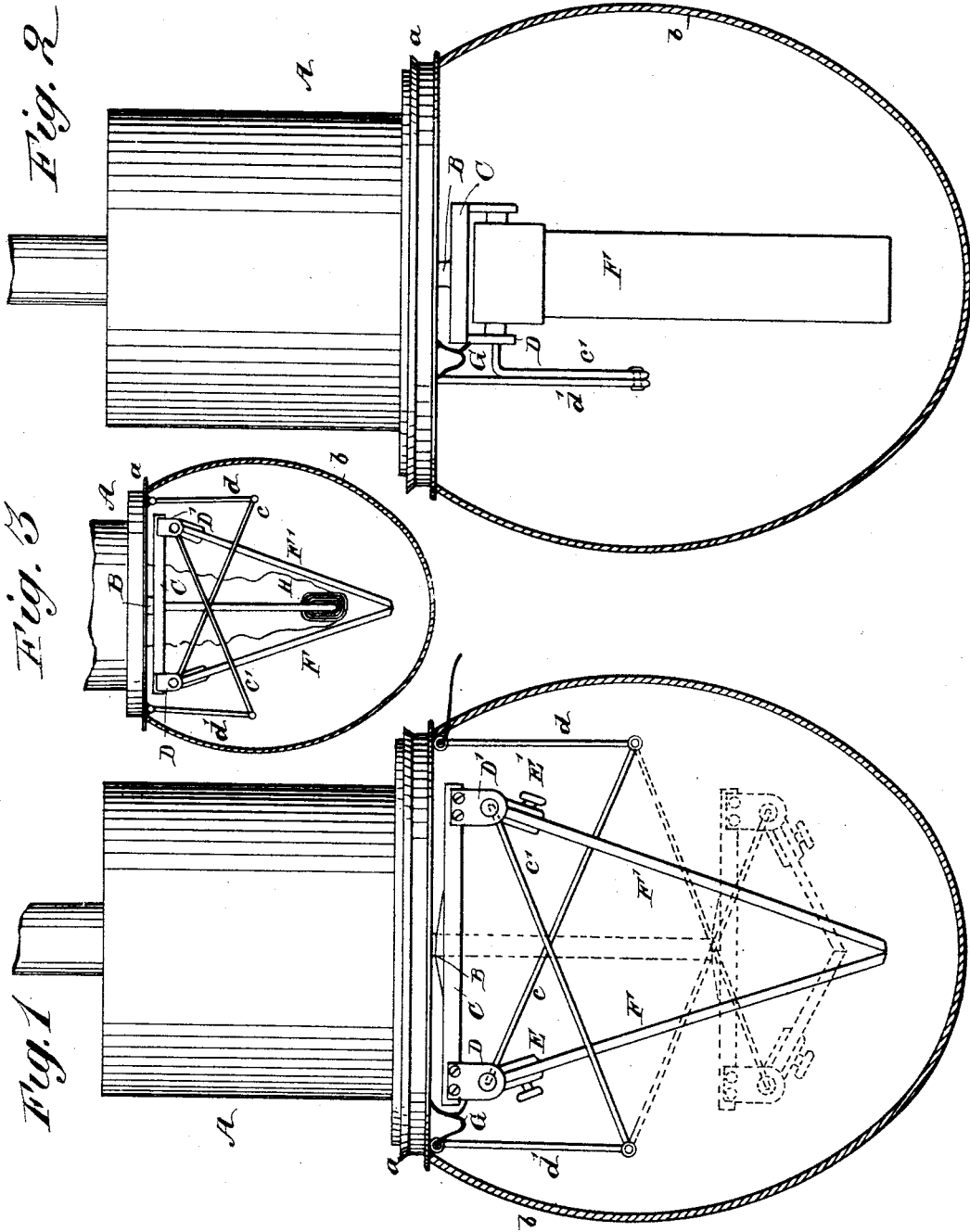


(No Model.)

M. R. GUTIERREZ & M. T. THOMPSON.  
ELECTRIC ARC LAMP.

No. 513,921.

Patented Jan. 30, 1894.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

MANUEL RAFAEL GUTIERREZ AND MILTON T. THOMPSON, OF JALAPA,  
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## ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 513,921, dated January 30, 1894.

Application filed August 3, 1893. Serial No. 482,657. (No model.)

To all whom it may concern:

Be it known that we, MANUEL RAFAEL GUTIERREZ, of Jalapa, State of Vera Cruz, Mexico, and MILTON THEODORE THOMPSON, a citizen of the United States, residing at Jalapa, State of Vera Cruz, Mexico, have invented new and useful Improvements in Electric-Arc Lamps, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a front elevation of our improved electric arc lamp, showing the globe in section. Fig. 2 is a side elevation also showing the globe in section; and Fig. 3 is a front elevation of a modified form, with the globe in section.

Similar letters of reference indicate corresponding parts in all the views.

Heretofore, arc lamps have been constructed in such form that the part of the frame supporting the lower carbon and the globe, casts a shadow on that part of the street or other surface immediately beneath the lamp, and this part of the frame beside causing loss of light, is heavy, clumsy, and occupies much space.

The object of our invention is to produce a lamp having nothing to intercept the rays of light from falling directly below the lamp and being equally distributed on all sides of it; also to construct a lamp which will occupy a minimum amount of space, that will be light and easy to handle, and which when idle, will not allow the carbons to slide one past the other. We produce these results by arranging the carbons on pivotal supports so that they are held at varying angles while being consumed.

Our invention is designed to be used with alternating currents in order to secure an equal consumption of the two carbons.

In the drawings, the full lines represent the two carbons in their first position, and the dotted lines show the position of the carbons when they are practically consumed.

The casing A, contains the well known regulating devices used in electric arc lamps, which will therefore need no special description. The lower end of the casing is provided with a flange *a*, which supports the globe *b*. A rod B, which is supported at one end by the globe

or the feeding mechanism of the lamp, carries at its other end a bar C, of insulating material, such as vulcanized fiber.

To the bar C, are secured ears D, D', in which are pivoted the clamps E E', carrying the carbons F, F', the said carbons being preferably made of oblong cross section. To the pivot of the clamp E is secured the lever *c*, which is jointed to the bar *d* pivoted to the flange *a*. In a similar manner the lever *c'* is connected with the pivot of the clamp E', and jointed to a bar *d'* pivoted to the flange *a*. The current passes through the series coil of a differential radiator, thence to the flexible wire cord G, thence by the bar *d'* and lever *c'* to the carbon clamp E' and carbon F', and by the carbon F, clamp E, lever *c* and rod *d* back to the line. The action of the current raises the rod B, which in turn lifts the bar C and the clamps E E'. The outer ends of the levers *c c'* being connected with the rods *d d'*, when the rod B and the bar C are released by the regulating mechanism, the lower ends of the carbons F F', are made to swing apart, thus striking the arc. The shunt coil prevents the rod B from rising farther than is necessary to maintain the arc, and as the carbons are consumed the rod B is lowered by the regulating devices, the angle of the levers *c c'* and of the carbons F F' continually increasing as the rod B descends, thereby bringing the parts into the position shown in dotted lines, when the carbons are nearly consumed.

The apparatus which we have described and shown in the drawings is designed to be attached to any of the forms of alternating current arc lamps.

In Fig. 3, we have shown a modification, in which a coil H, consisting of a few turns of wire connected in series with the lamp, is arranged directly over and near the arc, so that the current flows from the lower side of the coil in the direction opposite the direction taken by the current through the arc. We have found that this arrangement greatly increases the value of the light.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In an arc lamp, the combination with a

cross bar of insulating material, of carbons pivotally connected with the cross bar, levers connected with the pivoted ends of the carbons for moving the carbons simultaneously  
5 in opposite directions, and feeding mechanism connected with the cross bar for lowering the carbons and turning them on their pivots, substantially as specified.

2. In an arc lamp, the combination of the  
10 carbon supporting rod B, the insulating cross

bar C, the pivoted carbons F, F', the levers *c* *c'* connected with the pivoted ends of the carbons, and the pivoted rods *d* *d'* jointed to the ends of the levers *c* *c'*, substantially as specified.

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Witnesses:

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