C. F. ZIEGLER & R. A. BARTLING.

ELECTRIC LIGHTED SIGN.

APPLICATION FILED SEPT. 25, 1907.

912,639.

Patented Feb. 16, 1909.

2 SHEETS—SHEET 1.

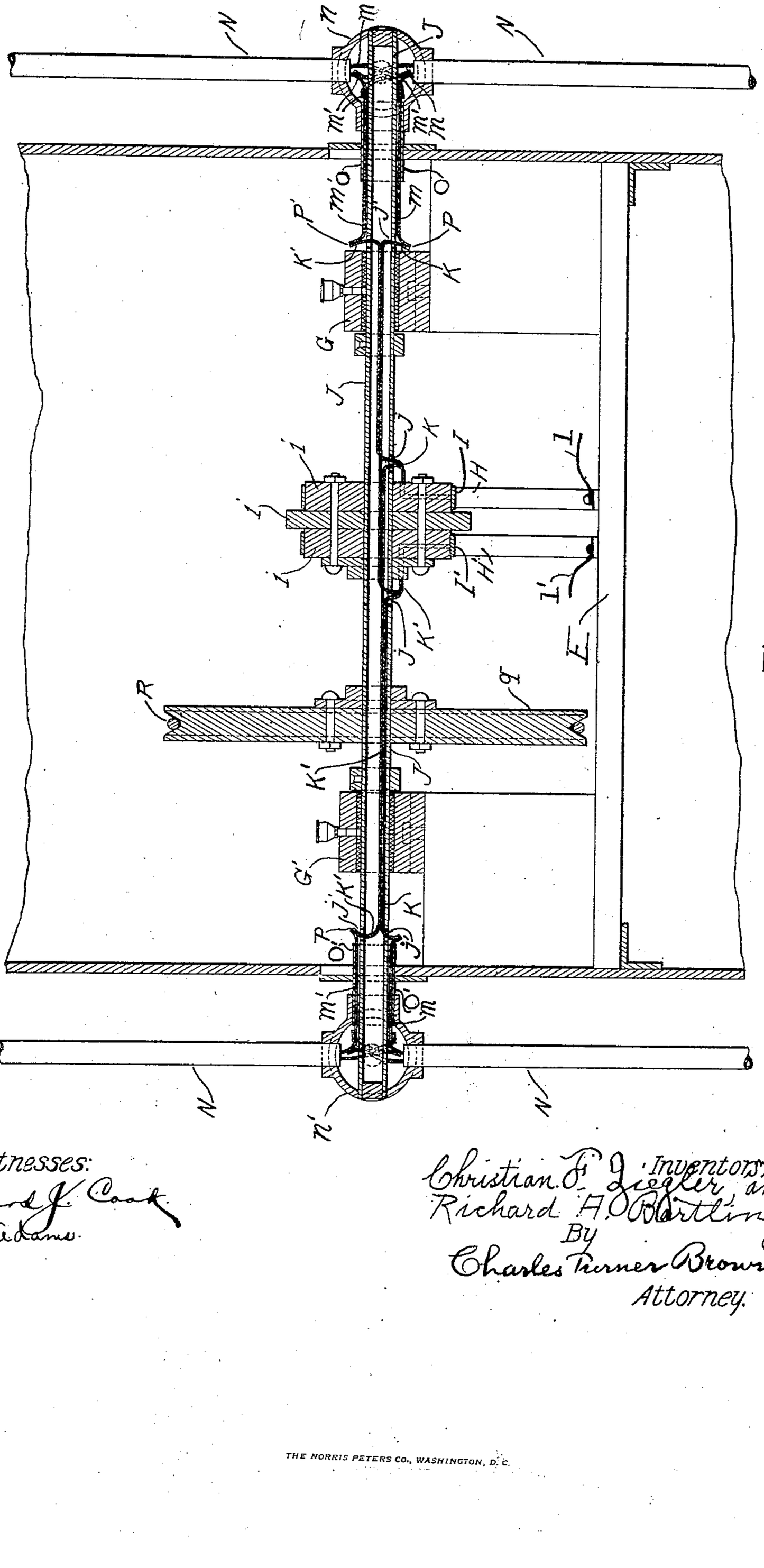

Fig. 1.

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Inventors:
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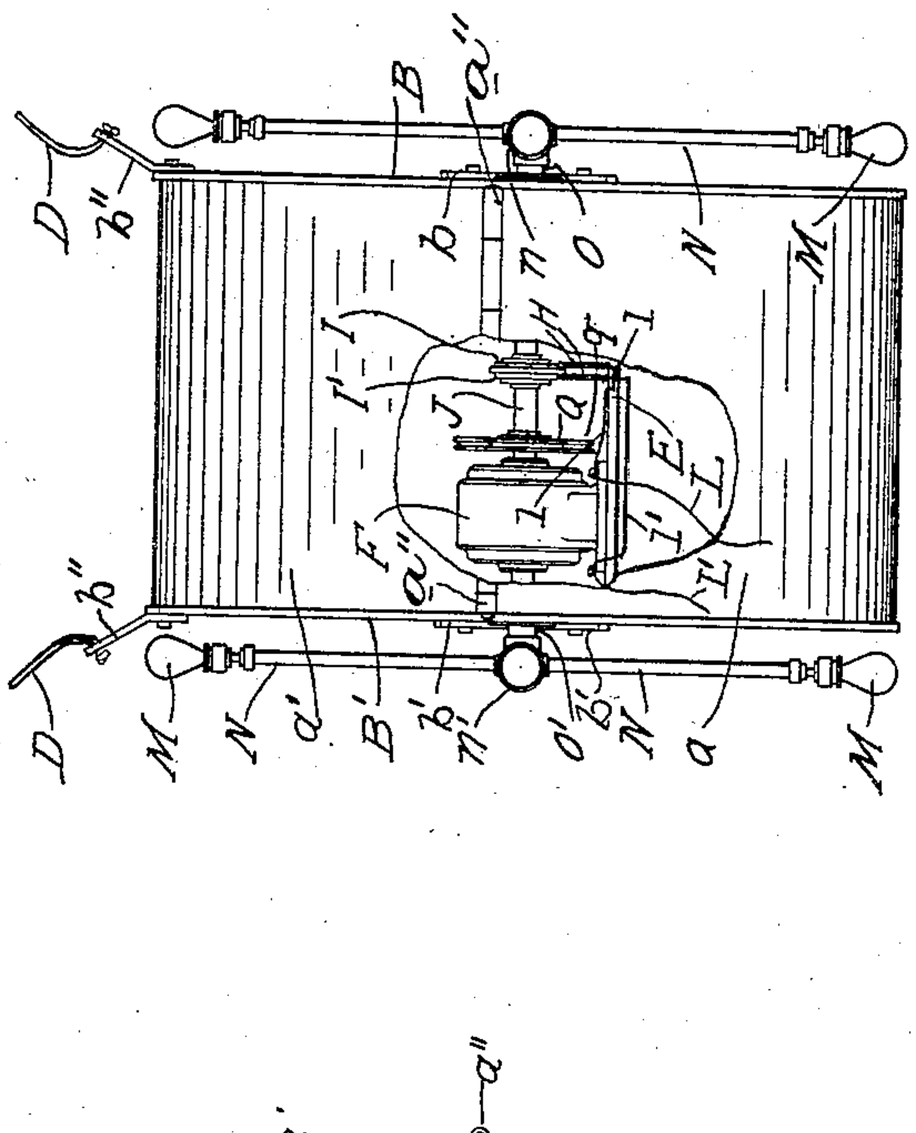

Fig. 3.

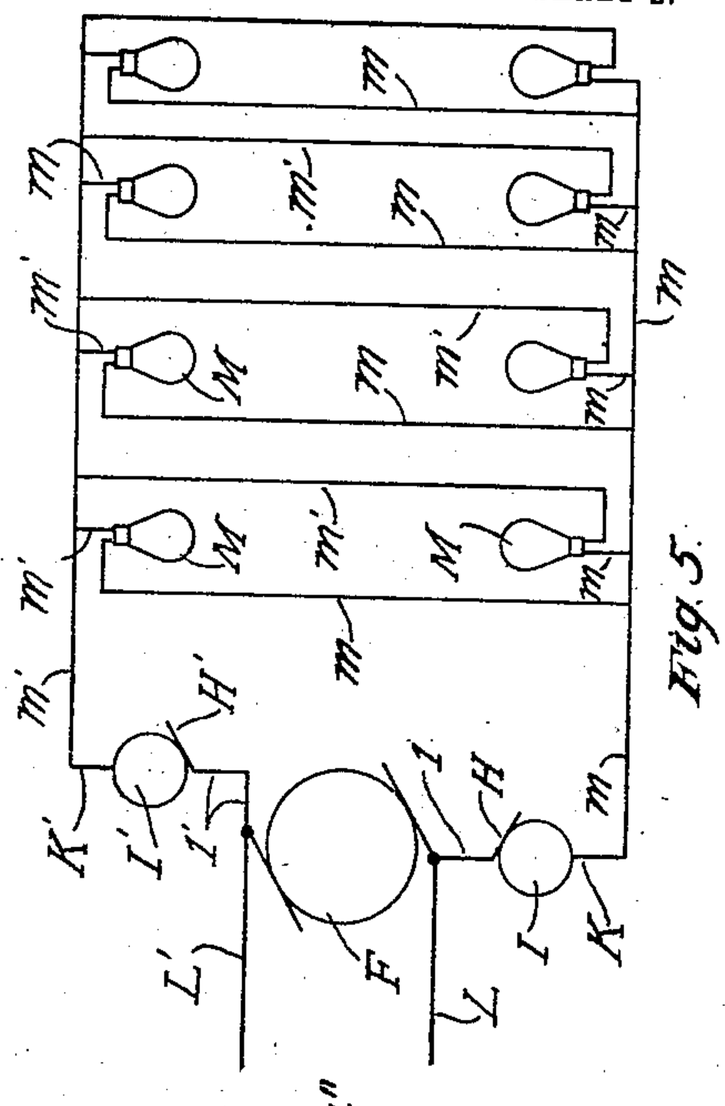

Fig. 5.

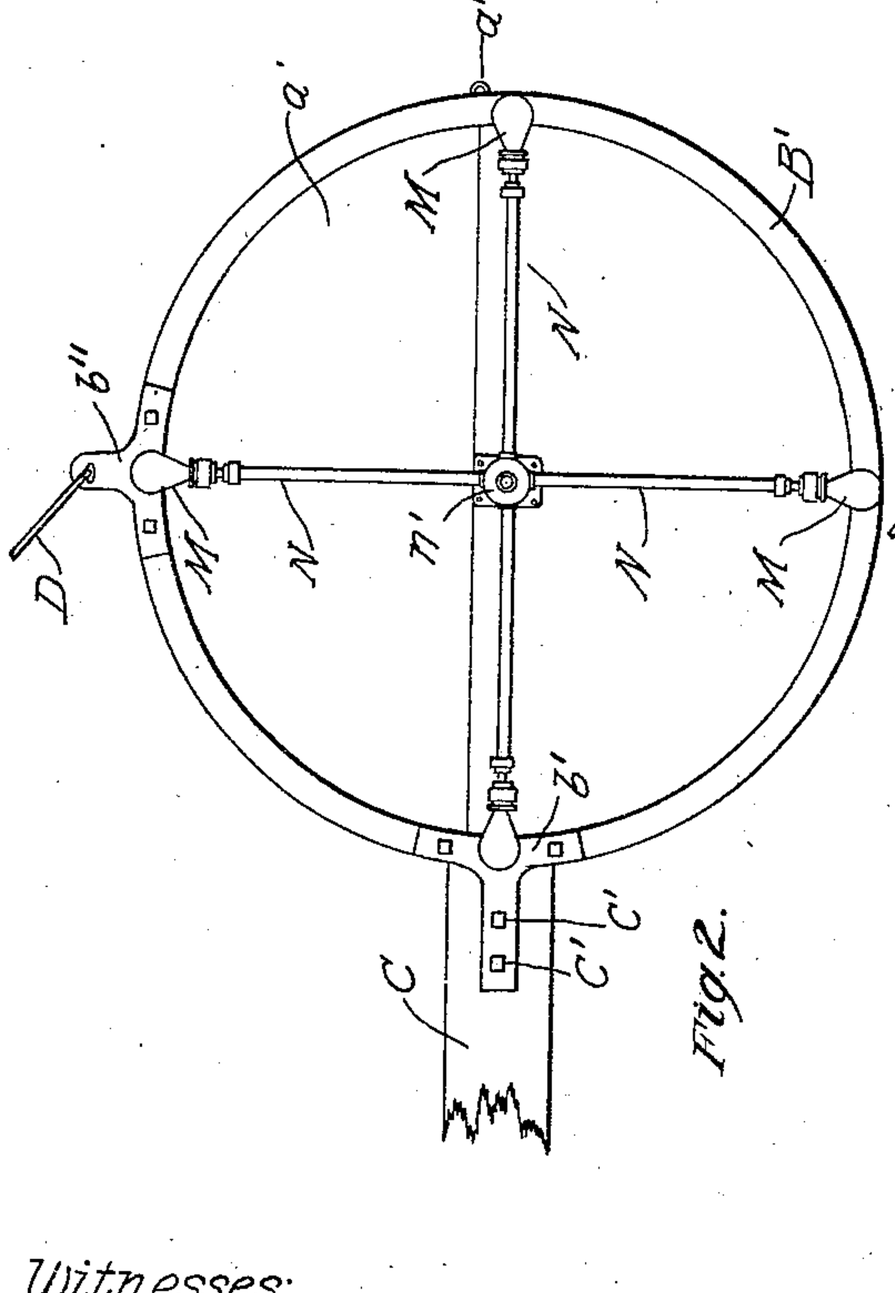

Fig. 2.

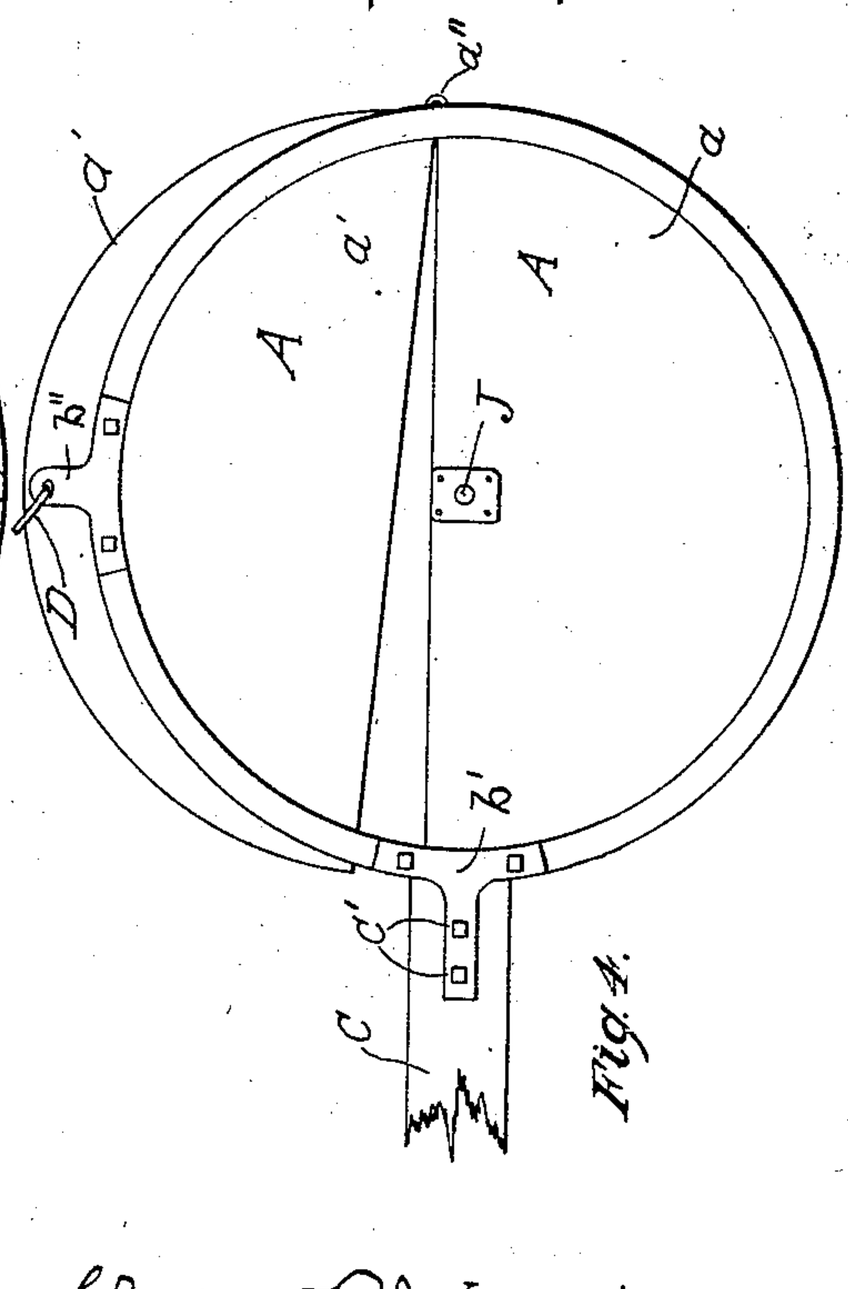

Fig. 4.

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UNITED STATES PATENT OFFICE.

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ELECTRIC-LIGHTED SIGN.

No. 912,639. Specification of Letters Patent. Patented Feb. 16, 1909.

Application filed September 25, 1907. Serial No. 394,556.

To all whom it may concern:

Be it known that we, CHRISTIAN F. ZIEGLER and RICHARD A. BARTLING, citizens of the United States, and residents of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Electric-Lighted Signs, of which the following, when taken in connection with the drawings accompanying and forming a part hereof, is a specification sufficient to enable those skilled in the art to which it pertains to understand, make, and use the same.

This invention relates to those signs which are illuminated by electric lights.

The object of the invention is to obtain, at small cost, a durable mechanism by means of which electric lamps will be rotated to illuminate a sign placed in suitable relative position to such lamps. And a further object of the invention is to obtain mechanism for the purpose named which can be cheaply operated, readily inspected and easily repaired, when required.

In the drawings referred to Figure 1 is a vertical section of the movable parts of the mechanism embodying the invention. Fig. 2 is a side elevation of a sign provided with lamps, embodying the invention and showing the casing of the sign closed. Fig. 3 is a rear elevation of a sign, provided with lamps, embodying the invention, with a portion of the casing of the sign broken away to expose to view some of the movable parts of the mechanism of the apparatus. Fig. 4 is a side elevation of a sign, provided with lamps, such sign and lamps embodying the invention and showing the casing of the sign partially open. And Fig. 5 is a diagram showing the electric wiring of the apparatus.

A reference letter applied to designate a given part is used to indicate such part throughout the several figures of the drawings wherever the same appears.

A is the casing of the apparatus, and comprises the bottom part *a*, which is firmly secured in place, and the top part *a'* which is hinged to part *a*, as by hinge *a''*.

B is a ring secured to one side of part *a* of casing A, and B' is a like ring secured to the other side of such part *a*.

b, *b'*, *b''*, are projecting irons secured to the respective rings B, B'. The casing A is secured in position, as over a side walk, by attachments secured to the projecting irons *b*, *b'*, *b''*, and C, (Fig. 2) is a beam forming an attachment which is secured to projecting irons *b*, *b'*, by bolts or cap screws C', C', while D, D, are wire ropes attached to the projecting irons *b''*, *b''*.

E is a shelf in part *a* of the casing A; such shelf forming the base or foundation on which the several about to be described parts of the apparatus are mounted.

F is an electric motor on shelf E.

G, G', are journal bearings on shelf E.

H, H, are electric brushes in electrical contact with rotatable electric conductors I, I', respectively.

J is a hollow shaft rotatably mounted in bearings G, G'. The electric conductors I, I, are rigidly secured on the rotatable shaft J, with non-electric material interposed, as disks *i*, *i*, to insulate such conductors.

K, K' are electric wires which are respectively attached, to be in electric connection with the conductors I, I'.

L is the incoming and L' the outgoing wire of an electric circuit, and are respectively attached, in the ordinary way, to the terminals of the electric motor F. *l*, *l'* are wires attached respectively to the wires L, L', of the circuit, to form a continuation of such incoming and outgoing wires; and also attached to the brushes H, H', respectively.

M, M, are the lamps of the apparatus, and *m*, *m'*, are, respectively, the incoming and the outgoing wires of such lamps. The respective wires *m* are secured to wires K to form electric conductors, and wires *m'* are secured in like manner to wires K'.

N, N, are arms rigidly attached to the shaft by means of hubs, about to be described, and such arms are rotated by the rotation of such shaft. These arms N, N, are hollow, the several lamps being attached to the outer ends thereof and the wires *m*, *m'* extend through, being drawn into, the arms.

n is the hub to which the arms N on one side of casing A are attached, and *n'* is a like hub to which like arms on the other side of the casing are attached. The hubs *n*, *n'* are respectively hollow and the wires *m*, *m'* joined in such hubs.

o, *o'* are, respectively, rings or ferrules of fiber or other insulating material, and

through such rings or ferrules a continuation of the wires m, m', respectively, is drawn, such continuation of wires m, m' being secured as at P, P′ to the wires K, K′. The rings or ferrules O, O′, are respectively firmly secured in the hub n, n, so that when the hubs are taken off the hollow shaft such rings or ferrules remain in such hubs.

The attachment of the wires m, m', to the wires K, K′, is made after the several parts of the device have been assembled on the shaft J, and to remove the hub n, (or n') it is necessary to break this attachment.

Wires m, m', are continued through the ferrules or rings O, O′, respectively for two principal reasons, first, to have such wires m, m', and the joining of such wires with wires K, K′, on the outside of the hollow shaft so that in case of short circuiting of the wires in the arms N, N, or hubs n, n, such wires may be easily cut or the joint broken, to permit the hubs and arms to be taken off the hollow shaft J; and secondly, to obtain a construction wherein the liability of short-circuit occurring outside of the casing A in the hub n or in the hollow shaft, will be reduced to a minimum.

Q is a driving wheel of the motor F, and q is a wheel on shaft F over which belt R extends from driving wheel Q, and by means of which the shaft F is rotated.

The sign which is desired to be illuminated by lamps M, M, is placed on the side of the casing A, and the lamps are revolved by means of the motor F. The revolution of the shaft J and lamps M, M, is controlled by the comparative diameter of wheels Q, q, and I prefer to have the wheel q of the smaller diameter. The rotation of such shaft J may be made at a rate of speed to cause a ring of light to be made by the lamps M, M, and to make it difficult to individualize such lamps.

It will be observed that the shaft J is provided with the holes j, j, through which the wires K, K′, are respectively drawn to connect them with the rotary conductors H, H′, and with the holes j', j' through which such wires K, K′, are drawn to connect them, (as at P, P′), with the wires m, m', respectively. The wire used is known as insulated wire, that is, wire covered by insulating material.

The rings or ferrules of fiber, O. O′, are interposed between the shaft J and the hollow hubs n, n', respectively, and extended into the casing and adjacent to the bearings G, G′, respectively. The shaft J is extended through the outer wall of the respective hub n, n', as is well illustrated in Fig. 1, and the end of the shaft is closed by the plug n''.

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

1. The combination of bearings, a rotatably mounted hollow shaft in said bearings, electric conductors rigidly fixed on said shaft, insulating material interposed between the same to insulate such conductors, brushes in electrical contact with said conductors, a casing, hollow hubs on said shaft outside of and at opposite ends of said casing, hollow arms carried by said hubs, insulation between said hubs and shaft, electric lamps on said arms, a motor operatively connected with said hollow shaft, electric wires attached to said conductors, incoming and outgoing wires for the lamps and operative connections between the wires of the lamps and the said electric wires, which latter are disposed within the hollow shaft.

2. The combination of bearings, a hollow rotatable shaft mounted in the bearings, hollow hubs at the ends of the shaft to turn therewith, rings of insulating material interposed between the hubs and the hollow shaft, hollow arms attached to the respective hubs, lamps on the arms, incoming and outgoing wires from the lamps to the hollow hubs, the incoming wires of the several lamps joined and the several outgoing wires of such lamps joined, within the hubs, with one of such incoming and one of such outgoing wires extending through the rings of insulating material, electric conductors insulated from and rigidly attached to the hollow shaft, an outgoing wire in the hollow shaft attached to one of the electric conductors and to the outgoing wire of the lamps and an incoming wire in such hollow shaft attached to the remaining electric conductor and to the incoming wire of the lamps, brushes to the electric conductors, a motor, incoming and outgoing wires to the motor and wires from the terminals of the motor to the terminals of the brushes, a driving wheel on the shaft of the motor and a driven wheel on the hollow shaft, and a flexible connection over the wheels.

3. A casing, in combination with a shelf in the casing, bearings on the shelf, a hollow shaft rotatably mounted in the bearings with the ends of such shaft outside the casings, hollow hubs on the ends of the shaft, ferrules of electric insulating material interposed between the hubs and the shaft, hollow arms on the hubs and electric lamps on the arms, insulated wires to the lamps, such wires passing out of the respective hubs through the insulating material, circular electric conductors insulated from and rigidly attached to the shaft, insulated wires in the hollow shaft and electric connection between such wires and the respective conductors and electric connection between such wires and the wires to the lamps, brushes to the conductors, and wires to the brushes, and means to rotate the shaft.

4. In an electric sign, a casing, a shelf therein, journal bearings on said shelf, a hollow

shaft rotatably mounted in said bearings, a motor on said shelf and connections therewith for rotating said shaft, brushes secured to said shelf, rotatable electric conductors rigidly mounted on said shaft for contact with said brushes, means insulating such conductors, hubs secured to the ends of said shaft outside said casing, hollow arms radiating from said hubs and carrying electric lamps, wires connected with said conductors, incoming and outgoing wires of an electric circuit connected with the terminals of said motor, wires connected with said circuit wires and with the brushes, incoming and outgoing wires for the lamps, connections between said wires and the wires connected with the conductors, insulating rings on the ends of the shaft between the same and said hubs, said shaft being extended through the outer wall of the respective hubs, and removable plugs closing the ends of said shaft.

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RICHARD A. BARTLING.

In the presence of—
CHARLES TURNER BROWN,
CORA A. ADAMS.