(No Model.)

A. L. RIKER.

ELECTRICAL INDICATOR.

No. 381,422. Patented Apr. 17, 1888.

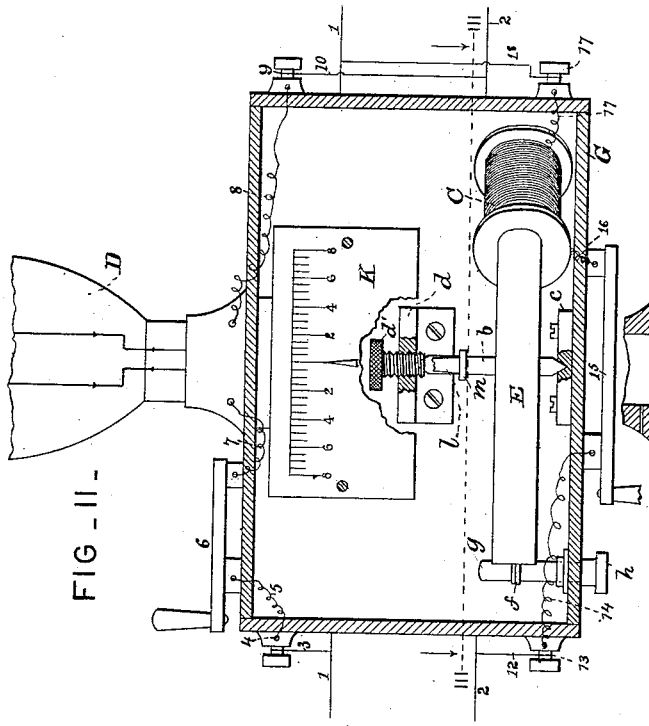

FIG. II.

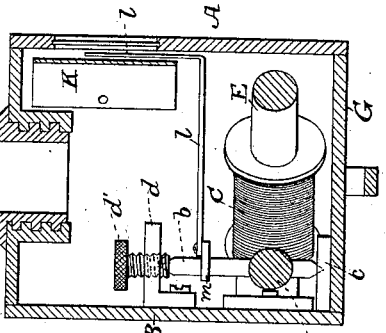

FIG. IV.

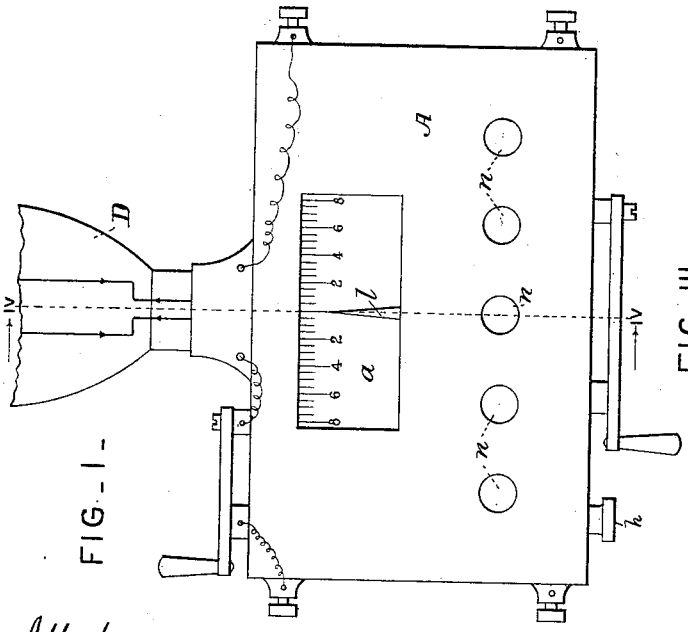

FIG. I.

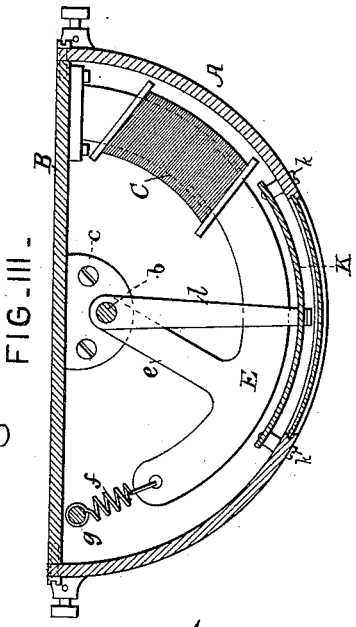

FIG. III.

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UNITED STATES PATENT OFFICE.

ANDREW L. RIKER, OF NEW YORK, N. Y.

ELECTRICAL INDICATOR.

SPECIFICATION forming part of Letters Patent No. 381,422, dated April 17, 1888.

Application filed January 3, 1888. Serial No. 259,641. (No model.)

To all whom it may concern:

Be it known that I, ANDREW L. RIKER, of New York city, in the county and State of New York, have invented a new and useful Improvement in Electrical Indicators, which improvement is fully set forth in the following specification.

This invention has reference more particularly to the construction of electrical indicators for indicating the strength or potential of currents in a system of electric lighting or the like.

The object of the invention is the production of an indicator that will be efficient in operation and at the same time compact and simple in construction.

The invention will be readily understood from the following description, taken in connection with the accompanying drawings, which form part of this specification, and in which—

Figure I is a front view of an indicator constructed in accordance with the invention; Fig. II, a similar view with the outer casing removed; Fig. III, a horizontal section, partly in plan; and Fig. IV, a central vertical section looking to the left.

The working parts of the apparatus are inclosed in a box of semi-cylindrical form, having a curved face, A, and a flat back, B. In one end of the box is placed a solenoid-magnet, C, having a curved hollow core of brass or other non-magnetic material. The armature E of the magnet is also curved. It is carried by an arm, *e*, which is mounted on a spindle, *b*, having pointed ends. The lower end of spindle *b* rests in a socket or depression in a metal block, *c*, screwed to the bottom plate, G, of the casing. The upper end of the spindle is held by a set-screw, *d'*, which has a socket or depression in the end of its shank. Screw *d'* passes through a threaded opening in an overhanging plate or bracket, *d*, which is screwed to the back B of the casing. The screw *d'* can be adjusted to take up wear, or can be unscrewed to remove or replace the armature and its spindle.

To the rear end of the armature E is attached a spiral tension-spring, *f*, the other end of which is attached to a shank, *g*, which passes through the bottom of the casing and has a milled head for turning by hand, and so increasing or diminishing the tension of the spring.

The curved front piece, A, has a glass-covered window, *a*, behind which is a dial-plate, K, secured to the plate A by screws *k*. Plate K is provided with a graduated scale, to indicate any desired units of electrical measurement. The armature-spindle *b* carries a steel pointer, *l*, held in place by a nut or washer, *m*. The pointer *l* extends at right angles to the spindle *b* until close to the front A. It is then bent at right angles, its end passing up between the window *a* and dial-plate K, as best shown in Fig. IV.

The casing A is provided with a series of perforations, *n*, to supply cool air to the interior and prevent overheating of the magnet.

The arrangement of the circuits is shown in Fig. II. The line-wire 1 is connected by wire 3 to binding-screw 4, from which the circuit continues by wire 5, switch 6, and wire 7 to the lamp D. The other terminal of the lamp is connected by wire 8 to binding-screw 9, from which wire 10 runs to the other line-wire, 2. The line-wire 2 is connected by wire 12 to binding-screw 13, and from the latter continues by wire 14, switch 15, and wire 16 to the helix of magnet C, the other end of which is connected to binding-post 17, which in turn is connected to line-wire 1 by wire 18, thus completing the circuits of the lamp and magnet.

In operation the spring *f* is adjusted by turning button *h* until, with the proper strength of current, the pointer *l* is opposite the zero-mark on the scale. Any fluctuations in the current will increase or diminish the attraction of the solenoid C upon its armature E and cause the latter to turn on its center in one direction or the other. Consequently the pointer *l* will shift to the right or left, as the case may be, and remain in that position until, by proper regulation of the resistance or otherwise, the normal current is restored.

Having now fully described my said invention, what I claim, and desire to secure by Letters Patent, is—

An electrical indicator comprising, in combination, a semi-cylindrical casing, the curved front whereof is provided with a glass-covered opening, a dial-plate behind the latter, a

curved solenoid, a curved armature mounted on an oscillating spindle, an adjustable spring attached to one end of said armature and pulling against the attraction of said magnet, and a pointer carried by said spindle and extending between said dial-plate and glass, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ANDREW L. RIKER.

Witnesses:
PHILIP MAURO,
C. J. HEDRICK.