

(No Model.)

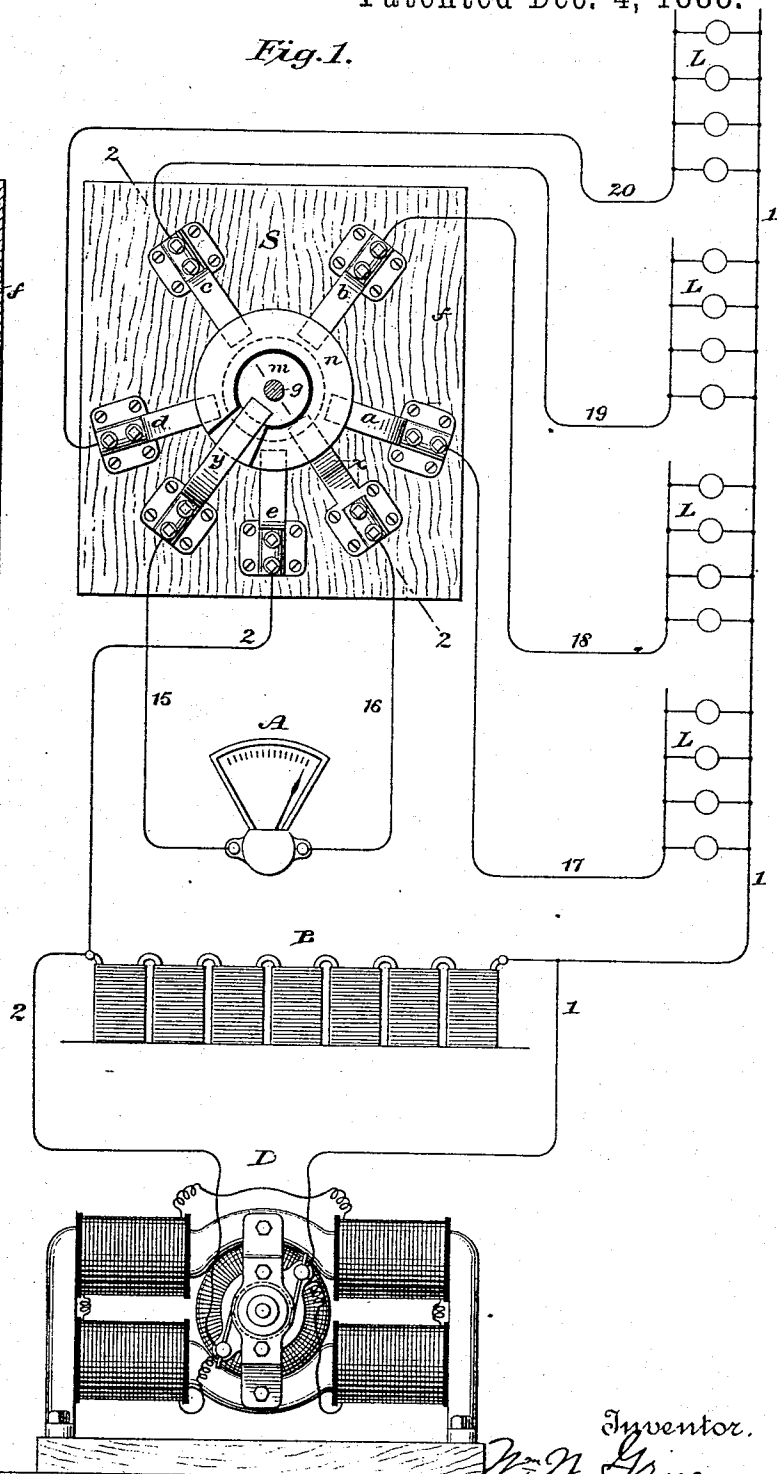
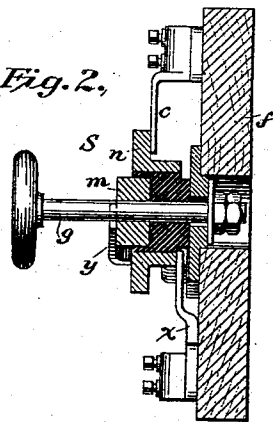
W. W. GRISCOM. BEST AVAILABLE COPY
SYSTEM OF ELECTRIC LIGHTING.

No. 393,756.

Patented Dec. 4, 1888.

Fig. 1.

Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM W. GRISCOM, OF HAVERFORD COLLEGE, ASSIGNOR TO THE
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SYSTEM OF ELECTRIC LIGHTING.

SPECIFICATION forming part of Letters Patent No. 393,756, dated December 4, 1888.

Application filed July 14, 1888. Serial No. 279,922. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. GRISCOM, a citizen of the United States, and a resident of Haverford College, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Electric Lighting, of which the following is a specification.

My invention is an improvement in electric lighting.

The object of my invention is to provide for rapidly including a measuring-instrument in different branches of an electric circuit containing translating devices—such as lamps—so that a direct comparison between different branches of the circuit may be made while the same conditions exist—that is, before the conditions attending the first test have time to change I take an observation of each and every other branch, and I so arrange my apparatus that no interruption occurs in passing from one branch to another. I use the same measuring-instrument in each and every case. In the combination of apparatus for this purpose I use a new and improved form of switch specially adapted to the purpose, which I can best describe by reference to the accompanying drawings.

Figure 1 is a view of the complete installation. Fig. 2 is a sectional view of the switch.

D is a dynamo, feeding main conductors 1 and 2. The switch S is in the main lead 2. Connected with lead 2 and passing through said switch are a series of multiple-arc branches, 17 18 19 20, each branch extending to a different locality and completing the circuit of a series of translating devices, as lamps L, L. The secondary battery B has its terminals connected to the main leads 1 and 2 between the dynamo and lamps.

S is a switch or circuit-changer. It consists of a rotating disk, of conducting material, in two concentric sections, *m* and *n*, insulated from each other. The portion *n* forms a ring having a sector insulated therefrom, but electrically connected to the circular interior portion, *m*. A rod or arbor, *g*, passes through the center of the disk and has bearings in the base, of insulating material, *f*, as shown in Fig. 2. There are two spring-contacts, *x* and

y, bearing upon the surfaces of the disk. One of these spring-fingers, *x*, makes electrical contact with the portion *n* upon the under side or surface. The other spring-finger, *y*, makes electrical contact with the portion *m*. The spring-fingers *x* and *y* are connected to the terminals of a fragment of conductor 15 16, including the coils of an ammeter, A. There are a series of spring-fingers, *a b c d e*, fixed at one end to the base-board *f*, and having their free ends in contact with the rim of the disk *n*. One of these fingers, *e*, forms one terminal of the main lead 2. The remaining spring-fingers form the terminals, respectively, of the series of multiple-arc branches 17 18 19 20, each of which branches includes in its circuit a series of lamps, each series being in a separate locality—as different floors in a house or different blocks in a street.

Normally circuit is, as shown in the drawings, via main lead 2, spring-finger *e*, disk-section *n*, fingers *a b c d*, lamps L, and main lead 1. The ammeter A is out of circuit. We now desire to introduce the ammeter A into circuits 17 18 19 20 successively. We therefore rotate the disk *m n* until the insulated projecting section of *m* rests upon, say, finger *d*. Circuit is now via main lead 2, *e, n, x, 16, 15, y, m, d*, branch 20, lamps L to main lead 1. The ammeter A is now included in the branch 20. As soon as we can take a reading here, we rotate the insulated section of *n* onto finger *c*, and the ammeter is included in the branch circuit 19. The same operation is repeated with regard to circuit branches 18 and 17. In this way reading can be rapidly taken from each branch circuit in succession by one and the same ammeter. I thus avoid the expense of duplicate measuring-instruments and gain the advantage that each test or indication is taken from the same measuring-instrument, and I make the changes without spark or interruption.

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

1. The combination, in a system of electrical distribution, of a source of electricity, a main circuit having a series of branches, translating devices in each branch, and a switch of circuit-changer consisting of two movable

contacts insulated from each other, two fixed contacts forming the terminals of a measuring-instrument normally resting in contact with the two movable contacts, respectively, a series of fixed contacts respectively forming terminals of main-line branches, and a fixed contact forming the terminal of one main lead, all arranged and operating substantially as described.

2. In a switch or circuit-changer, the combination of a composite rotating disk composed of two concentric sections of conducting material insulated from each other, a seg-

ment of the outer section insulated therefrom and electrically connected to the inner section of the disk, a series of spring-fingers fixed in position to make contact with either section of the disk, according to the radial position of the insulated segment, and a spring-contact making permanent connection with one of said sections.

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Witnesses:

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