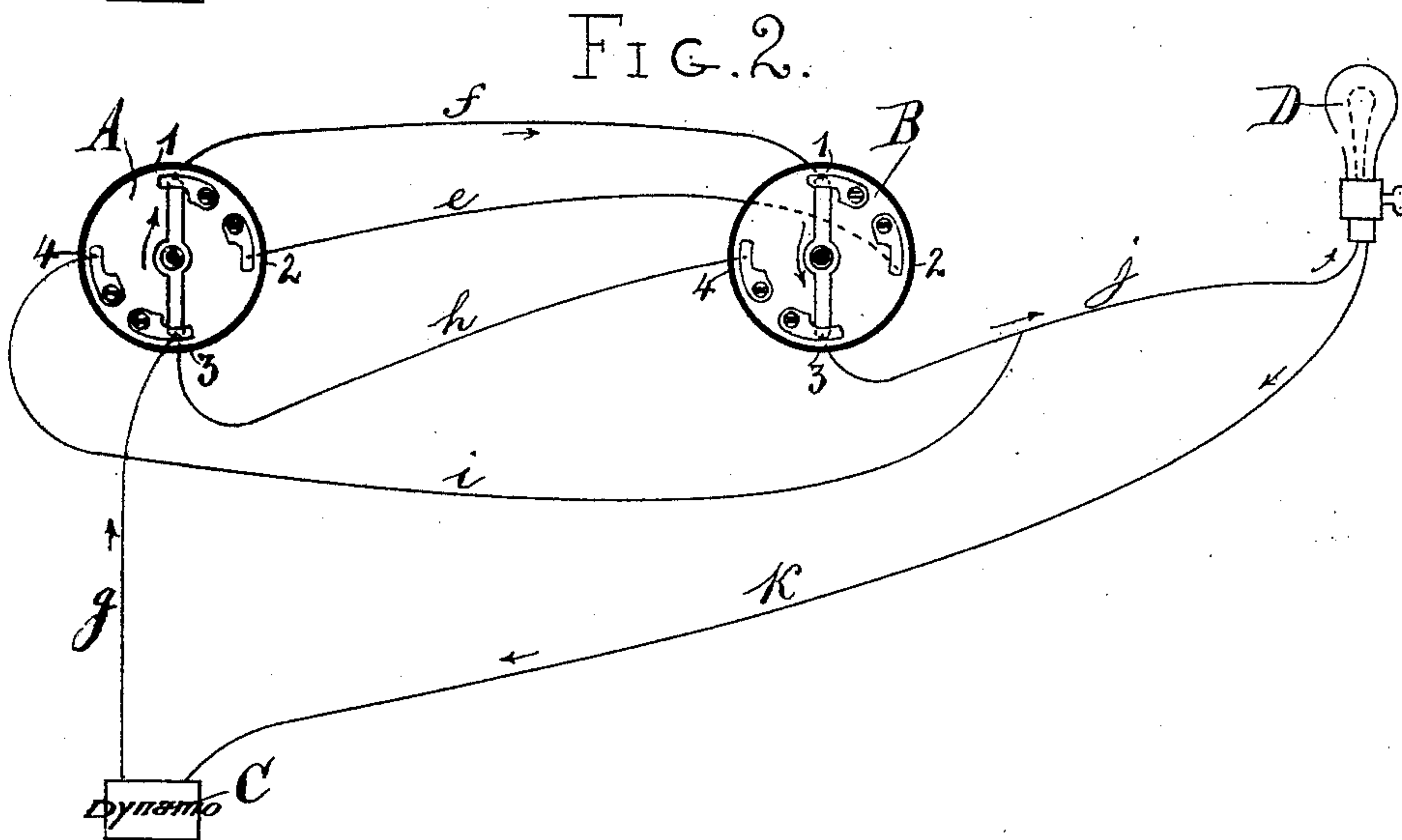
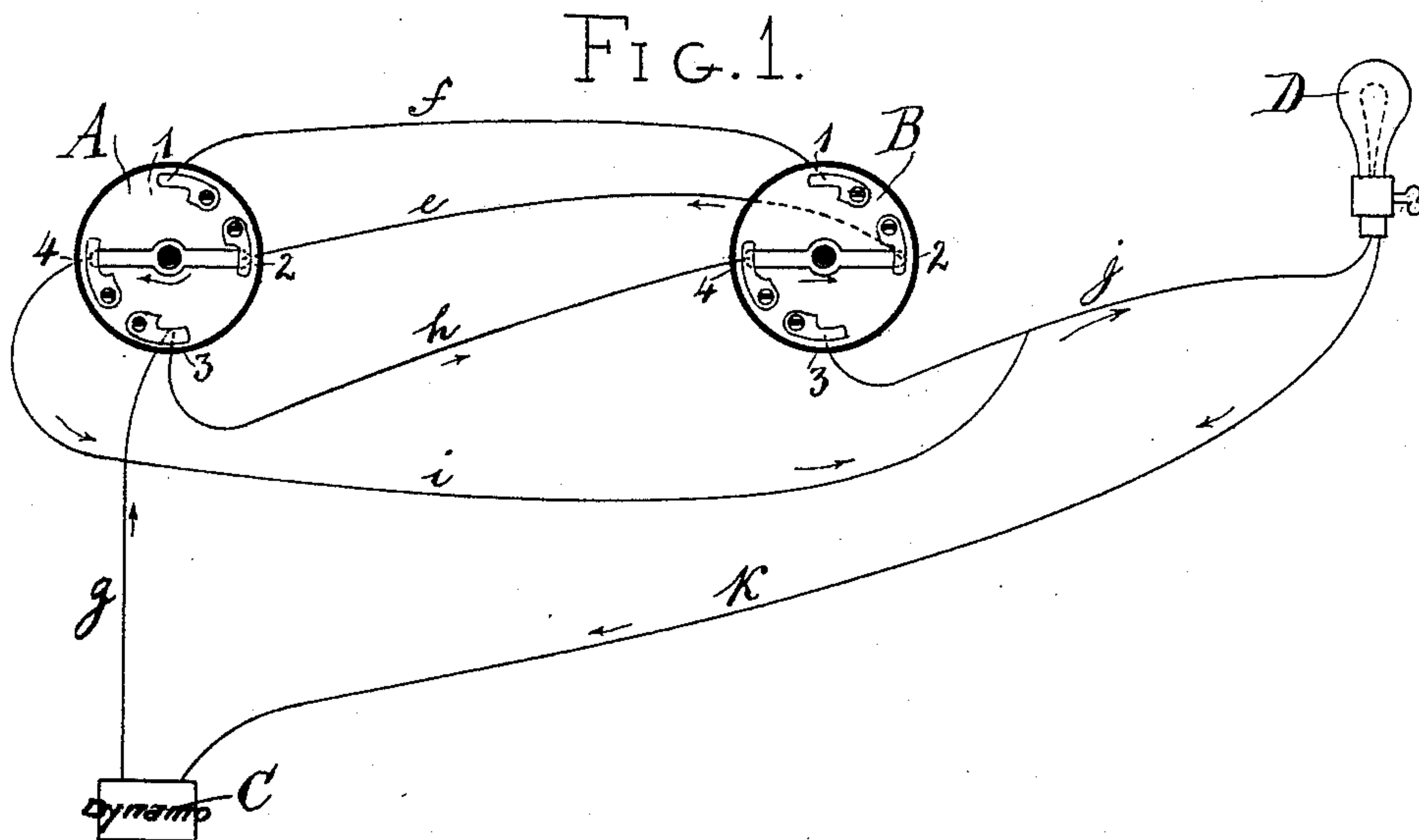


(No Model.)

E. T. COOKE & W. H. MACKAY.  
ELECTRIC LIGHTING SYSTEM.

No. 432,745.

Patented July 22, 1890.



Witnesses

George S. Curry.  
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# UNITED STATES PATENT OFFICE.

EDWARD T. COOKE AND WILLIAM H. MACKAY, OF ST. LOUIS, MISSOURI.

## ELECTRIC-LIGHTING SYSTEM.

SPECIFICATION forming part of Letters Patent No. 432,745, dated July 22, 1890.

Application filed December 6, 1889. Serial No. 332,822. (No model.)

*To all whom it may concern:*

Be it known that we, EDWARD T. COOKE and WILLIAM H. MACKAY, both citizens of the United States, residing at St. Louis, in the State of Missouri, have made a new and useful invention for use in Electric Lighting and Analogous Electrical Distribution Systems, of which the following is a specification.

Our invention relates particularly to improvements in switch or cut-out apparatus for use in systems of electrical distribution, wherein electric lights, motors, or kindred translating devices are utilized, and has for its object such an arrangement of circuit-conductors and switch or cut-out apparatus as will admit of the cutting out of or into an electrical circuit an individual lamp-motor or like electrical translating device at either one of two or more different locations at the will of an attendant or the like function with a series of such translating devices.

To illustrate our meaning more clearly, it is now the custom in systems of electrical illumination to put all the lights of a plant in circuit by a switch at some given point, as a switch-board, and to provide each light with an individual key or thumb-switch, so that when the current is once turned on at the switch-board each individual light is controlled by its own key or switch.

It is sometimes desirable to have individual lamps located at isolated points where it is not always convenient to go at all times to turn them on or off—as, for instance, hall and basement lamps, which may be turned on by servants who are liable to forget to switch them out through carelessness.

It is the especial object of our invention to remedy this objectionable feature, and we accomplish this by locating individual switch or cut-out apparatus at two or more parts of the circuit and so arranging the circuit-connections that the lamp or lamps or equivalent translating devices may be cut in or out at will at all times from either switch without in any way interfering with the other switch.

Our invention will be fully understood by referring to the accompanying drawings, which illustrate it quite clearly in two diagrammatic views, Figure 1 showing both switches in one position, and Fig. 2 the same

in reversed position, the lamp being shown in circuit in both figures.

C represents an electrical generator of any preferred type, and D an incandescent electric lamp of well-known form connected by a conductor K to one pole of the generator, the other pole of the generator being connected by a conductor *g* to a contact 3 of switch A, while the remaining pole of the lamp D is connected by a similar conductor to a corresponding contact 3 at switch B. The switches A and B are preferably of the well-known "snap-action" type, which prevent arcing, and are provided with insulated handles, (not shown,) but operatively connected to rotatable metallic conducting-arms adapted to form secure sliding electrical contact with the two sets of conducting-contacts 1 3, 4 2, arranged in pairs. These conducting-contacts in switch A are joined to their duplicates in switch B by conductors *f*, *e*, *h*, and *i*, and contacts 4 of switch A and 3 of switch B are joined directly to the lamp or translating device D by conductors 1 J, as clearly shown.

The operation is as follows: Suppose switch A to be located in the hallway in any convenient position near the lamp D and switch B to be located in the bed-room of the owner or tenant, situated, say, on an upper floor. When the servant switched the lamp in circuit, switch A was turned, as in Fig. 1, and the current from the generator C circulated as follows: by wire *g* to point 3, wire *h* to point 4, switch B to point 2, wire *e* to point 2, switch A to point 4, wire *i* to lamp D, back by wire K to starting-point. Should the owner desire to turn the light out at switch B, it is simply rotated into the position shown in Fig. 2, so that its contact-arm makes contact with points 1 and 3. It will be seen that there is then no current through the lamp, the circuit being open at points 2 and 4, supposing switch A to remain as in Fig. 1, standing at an angle of ninety degrees to switch B. Should it be desired to turn the light on in the hall after the bed-room switch B has been set, as in Fig. 2, it is only necessary to turn switch A to the position indicated in Fig. 2.

In both Figs. 1 and 2 the lamp is included in circuit; but it may be readily seen that an attendant at either switch can either cut it in



or out of circuit at will, no matter what the position of the other switch, the switch-arms standing at right angles to each other when the current is off.

5 We do not limit ourselves to the specific construction and arrangement of parts herein shown and described for independently manipulating the current through an electric lamp or equivalent electrical translating device  
10 at will from either of two independent switches, so that no matter what the position of the switch at one point the current may be continued or wholly discontinued at pleasure at the second switch, and vice versa, as  
15 we believe it is broadly new with us to do this, and we desire it understood that our claims are of such scope as to include any combination of two or more contact-switches, which may be actuated at will independently  
20 to cut in or wholly cut out one or more lamps or equivalent translating devices.

We are aware that a device has heretofore been constructed for use in connection with watchmen's electric time-recorders in which  
25 two or more switches have been utilized for causing the current to flow from a generator of electricity through different portions of the apparatus when said switches are operated in succession; but this apparatus differs from  
30 our improvement, in that the switches cannot be operated at will at any one of two or more points to wholly cut in or cut out the translating device, regardless of the position or positions of the switch or switches not being  
35 acted upon. Our device has a totally different function, and is radically different in its mode of operation, in that it is designed solely for cutting the lamp or translating device

into or out of circuit at will at either one of two stations, regardless of the position of the switch not being acted upon. 40

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. A pair of electrical switches having each two sets of conducting-contacts and circuit-connections between said contacts, and an electrical generator and a translating device, one contact only at each switch being connected directly to the translating device, substantially as described. 45 50

2. A pair of electrical switches having each two pairs of electrical contacts and a switch-contacting arm, in combination with two pairs of electrical conductors joining said contacts, and additional conductors connecting said switches to an electrical generator and one or more translating devices, substantially as described. 55

3. A pair of electrical switches A and B, having each two pairs of electrical contacts 1 3, 4 2, joined by conductors *f h* and *e i*, in combination with an electrical generator C and a translating device D, the former connected to switch A and the latter to switch B, and united by a return-conductor K, substantially as described. 60 65

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

EDWARD T. COOKE.  
WILLIAM H. MACKAY.

Witnesses:

RICHARD E. BOLTON,  
JOHN N. COOKE.