

(No Model.)

P. CRAVATH.
ELECTRIC LIGHTING SYSTEM.

No. 481,785.

Patented Aug. 30, 1892.

Fig. 1.

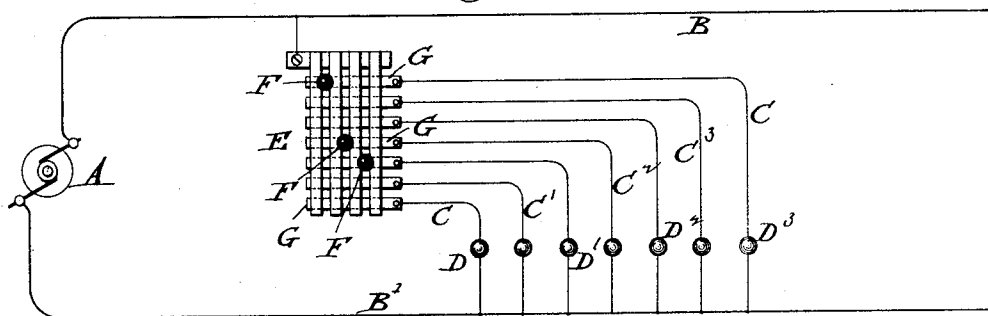


Fig. 2

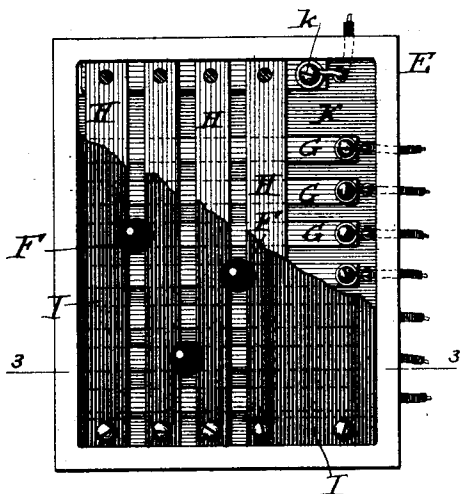


Fig. 4.
ON 4-4

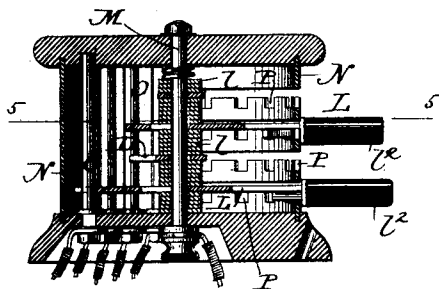


Fig. 5
ON 5-5

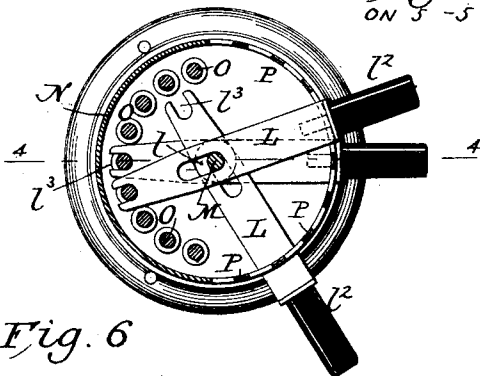


Fig. 3
ON 3-3

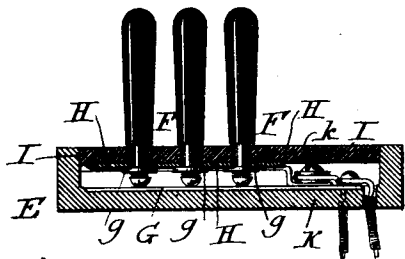
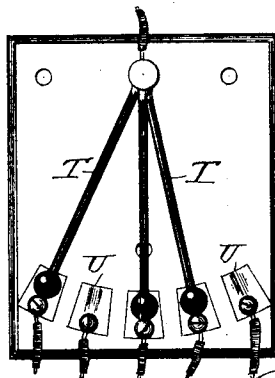


Fig. 6



Witnesses;

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UNITED STATES PATENT OFFICE.

PITT CRAVATH, OF WHITEWATER, WISCONSIN.

ELECTRIC-LIGHTING SYSTEM.

SPECIFICATION forming part of Letters Patent No. 481,785, dated August 30, 1892.

Application filed May 31, 1892. Serial No. 435,053. (No model.)

To all whom it may concern:

Be it known that I, PITT CRAVATH, of White-water, county of Walworth, and State of Wisconsin, have invented a new and useful Improvement in Electric-Lighting Systems, of which the following is a specification.

My invention relates to methods of distributing current for electric-lighting purposes, and has for its object the furnishing of efficient means to each consumer for controlling the position and distribution of the lamps which he desires to use, and at the same time to protect the company furnishing the current from liability of fraud on the part of the consumer, the invention being in effect a switch used in connection with an ordinary distributing-circuit which, while allowing full freedom to the consumer in the management of his lights, limits him at any time, by its construction and arrangement, to the number of lights for which he contracts to pay the power company.

Heretofore in lighting practice there have been two systems in general use. In one the house is wired for a maximum number of lights and a contract made between the parties that the consumer shall use only a specified minimum number of lights on the average. This method depends for its efficiency, from the lighting-company's standpoint, on the honesty of the consumer and has its objections.

The second method consists in furnishing each consumer with a meter for measuring the amount of current used, and, while measurably efficient, leaves the lighting company in the position of never knowing at any given time the amount of current which its plant may be required to furnish.

With the intention of overcoming the objectionable features of the usual methods my invention consists, broadly, in furnishing each consumer deriving current from a central supply-station with a multiple-contact multiple-way switch connected to the main and branches, through and by which he may at any time use in any desired position all the current to which he is entitled, and of such construction as to prevent the possibility of his practicing fraud against the company.

In the accompanying drawings, Figure 1 is a diagram illustrating the application of my

device to an electric-light circuit. Fig. 2 is a plan of a preferred form of a multiple switch. Fig. 3 is a section of the same on line 2 2, Fig. 1. Fig. 4 is a longitudinal vertical section of another form of switch similar in principle and operation. Fig. 5 is a detail in plan of the action of the same. Fig. 6 is a modified form of switch for the same purpose.

Referring to Fig. 1, A represents the dynamo-machine or source of electricity, B B the mains running from house to house, and C C' C² C³, &c., branch circuits, in which are included lamps or other translating devices D D' D² D³, &c.

Between one of the mains B B' and the branch circuits C C', I place a multiple-contact multiple-arm switch E, of the construction hereinafter described, consisting, broadly, of a series of movable contacts F, connected to the main circuit, equal in number to the number of lights for which the consumer contracts to pay, so arranged as to make connection with a series of strips or contacts G, equal in number to the number of lights in the house, which may be, of course, as many as desired. Each of the contacts F is independently movable in such manner as to make contact with any of the branch-circuit contacts G.

In Figs. 2 and 3, which represent a three-light seven-way switch, F F F are the main-line contacts in the form of pins, with a projecting insulated handle and carrying at their lower ends spring-washers g g, which make contact with the strips G, of brass or other conducting material, fastened to the inner side of a back plate K. These strips may be each connected by a suitable binding-post to one of the branch circuits containing lights and lie at right angles to the line of movement of the pins F F, which move in slotted strips H, of brass or other conducting material, fastened to the inside of a correspondingly-slotted cover I of insulating material. At one end the strips H are connected to a bar or strip of conducting material carrying a binding-post k for connection to the main.

It will be seen that the back and front of the casing form an insulating protection to all the contact-strips which are held between them and that the movement of the pins will carry the spring-washers across the branch-

wire strips in succession at the same time that they are in permanent contact with the main-wire strips H, and that while one of the series of contacts—viz., the main line—is fixed in its number the other series of contacts, representing the branch circuits, is variable.

In Figs. 4 and 5 I have shown a four-light switch with nine branch circuits. The operation of this switch is the same as the one shown in Figs. 2 and 3. The construction is varied, as shown in the drawings. In these figures L L L L represent slotted levers separated by washers *l* and swinging around a central pin M. N represents the cylindrical casing surrounding the central pin M and a series of upright rods O, arranged in a semi-circle opposite a series of slots P in the casing, through which the ends of the levers project, the protecting ends being furnished with handles *I*² of insulating material. The inner ends of these levers are slotted, as shown at *I*³, so that the two prongs formed thereby may grasp the upright rods and make firm connection with them. The slots in the casing are notched at intervals corresponding to the spaces between the upright rods O and the levers L, carrying on their under sides bolts or webs which enter these notches, thereby locking the levers in position. The central post M is connected to the main. The rods O are connected each to a separate branch containing lights, the other ends of which branch circuits are carried back to the source of supply in the usual manner.

Fig. 6 shows another form of switch, in which a series of radial arms T, connected to the main, move over and make contact with a series of section-plates U, connected to the lamp-circuits, the arrangement of circuits in each of the forms being substantially similar.

It is obvious that in order for the consumer to make selection of any desired light he has but to move one of the levers of the switch to the position corresponding to the light desired,

which may be indicated on the outside casing of the switch. It is also obvious that it is impossible for him to use more than the number of lights corresponding to the number of levers in the switch.

I have illustrated these forms of switches; but any one skilled in the art will immediately perceive that numberless forms could be designed through which the same result might be obtained, all of which would be but variations of the same general idea—that is, a fixed number of movable contacts connected to the main circuit and corresponding in number to the lamps contracted to be used and a variable number of circuits with which the movable contacts make connection.

Having thus described my invention, what I claim is—

1. The combination, in an electric-lighting system, of a source of electric energy, a main circuit leading therefrom, a series of branch circuits, each containing a lamp or lamps, and a multiple switch between the main and branches and having a series of independently-movable contacts less in number than the branches, whereby the number of branch circuits in use is limited, but a selection permitted.

2. In an electric-lighting system, the combination, with a source of electric energy, main circuits leading therefrom, and branch circuits carrying current from said mains through lamps or other translating devices to the other main, of a switch interposed between one of the mains and the branch circuits, said switch having independently-adjustable contacts less in number than the branch circuits.

In testimony whereof I hereunto set my hand this 25th day of February, 1892, in the presence of two attesting witnesses.

PITT CRAVATH.

Witnesses:

SAMUEL BISHOP,
CARRIE A. BISHOP.