

No. 697,161.

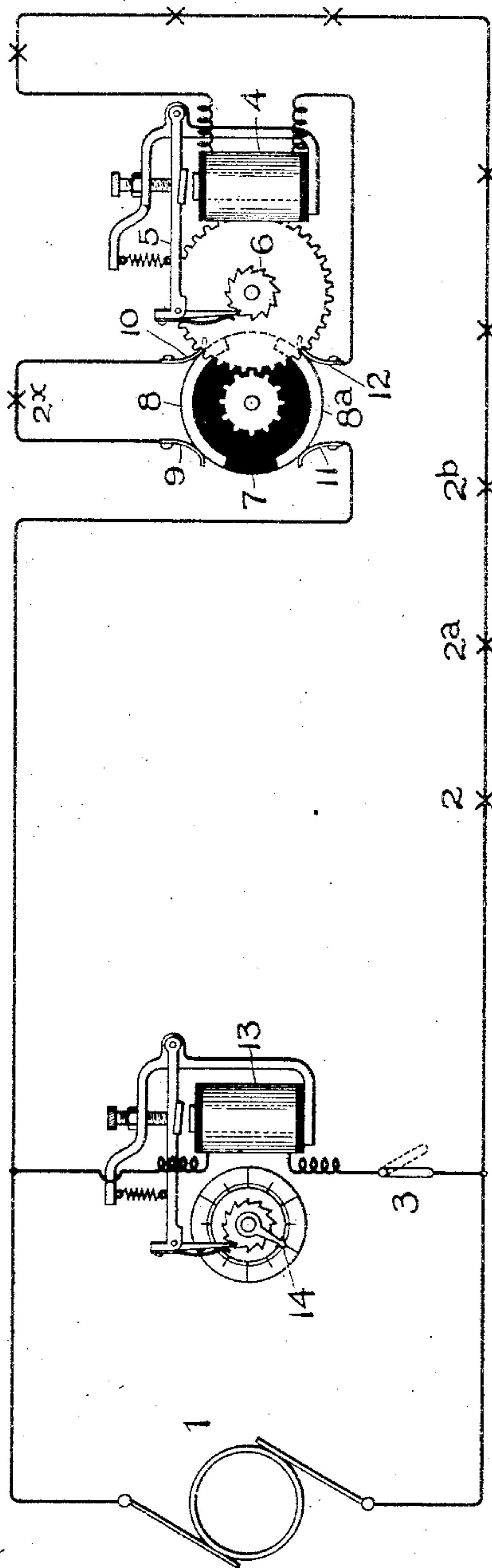
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E. OXLEY.

CONTROLLING ELECTRIC LAMPS.

(Application filed Aug. 25, 1900.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

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CONTROLLING ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 697,161, dated April 8, 1902.

Application filed August 25, 1900. Serial No. 28,007. (No model.)

To all whom it may concern:

Be it known that I, EUSTACE OXLEY, a subject of the Queen of Great Britain, residing at Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Controlling Electric Lamps, (Case No. 1,820,) of which the following is a specification.

In operating constant-current series arc-lamps it is sometimes desirable to selectively control all or certain of the lamps in circuit, so as to permit their operation only at stated periods not the same as the periods during which the rest of the lamps are burning. For example, in municipal lighting lamps located at some points may be cut off earlier than others, thus permitting a reduction in the cost of lighting without materially affecting the convenience of the public. Systems have been proposed for effecting a result of this kind, some of which involve the employment of an additional control-circuit by which the lamps may be selectively operated and others of which employ a clock mechanism for operating the cut-out switch of the lamp at the proper time. Both of these systems are open to objection, not only on account of their expense, but also of their liability to get out of order. I have simplified and cheapened the control of such systems by providing means by which the lighting-circuit itself may be used to convey impulses for determining the operation of the cut-out devices controlling the arc-lamps. My system is based upon the ability to short-circuit a constant-current circuit supplied by a Brush, Thomson-Houston, or other open-coil type of generator. Such a generator, although supplying one hundred and twenty-five or more arc-lamps, may be short-circuited without injury to the machine and without flashing or excessive sparking at the commutator on opening or closing the short circuit. I employ at the point where the lamp which it is desired to selectively control is installed a switch and an electrical controlling device for operating the switch, adapted to respond quickly upon the cessation of current in the circuit. With such an organization by short-circuiting the terminals of the generator at the distributing-station or at other control-point the switch

may be operated and the lamp controlled. The switch should be so organized that repeated operation will not disarrange it for the operation of cutting in or out with certainty the lamps.

The invention is not limited exclusively to arc-lamps, but may be employed in mixed systems containing lamps and other constant-current translating devices, or is applicable even to constant-current systems containing translating devices of any character.

The distinctive feature of my system involves a selective control of certain translating devices by current flowing in the circuit, whether it be of the same or different character from that operating the translating devices, and means for varying the current to cut in or out the translating devices. The invention embodies this feature of novelty as well as other features which will be specifically pointed out hereinafter and definitely indicated in the claims appended to this specification.

In the accompanying drawing, which diagrammatically shows a system embodying my improvements, 1 represents a constant-current generator, and 2 2^a 2^b 2^x a series of arc-lamps supplied by a circuit fed by the said generator and, connected, as usual in such circuits, in series relation. In this circuit I interpose a switch for each lamp or other translating device, such as 2^x, which is to be selectively controlled, the operation of which may be timed by the control-switch 3 at the central or other control station. This switch may be operated by any suitable electrical device responsive to change of current. As shown, I employ an electromagnet 4, wound with sufficiently coarse wire to carry the circuit-current without heating and connected in such relation to the circuit as to be responsive to changes of current therein. As shown, it is placed in series relation. Its armature is mounted on a spring-retracted lever 5, provided with a pawl engaging a ratchet-wheel 6, mounted on the arbor of a gear-wheel engaging a pinion on an insulating-disk 7, provided with two arc-shaped contacts 8 8^a. Mounted on the periphery of the disk in operative relation to these contacts are four coordinate contacts 9 10 11 12 at such distances

