

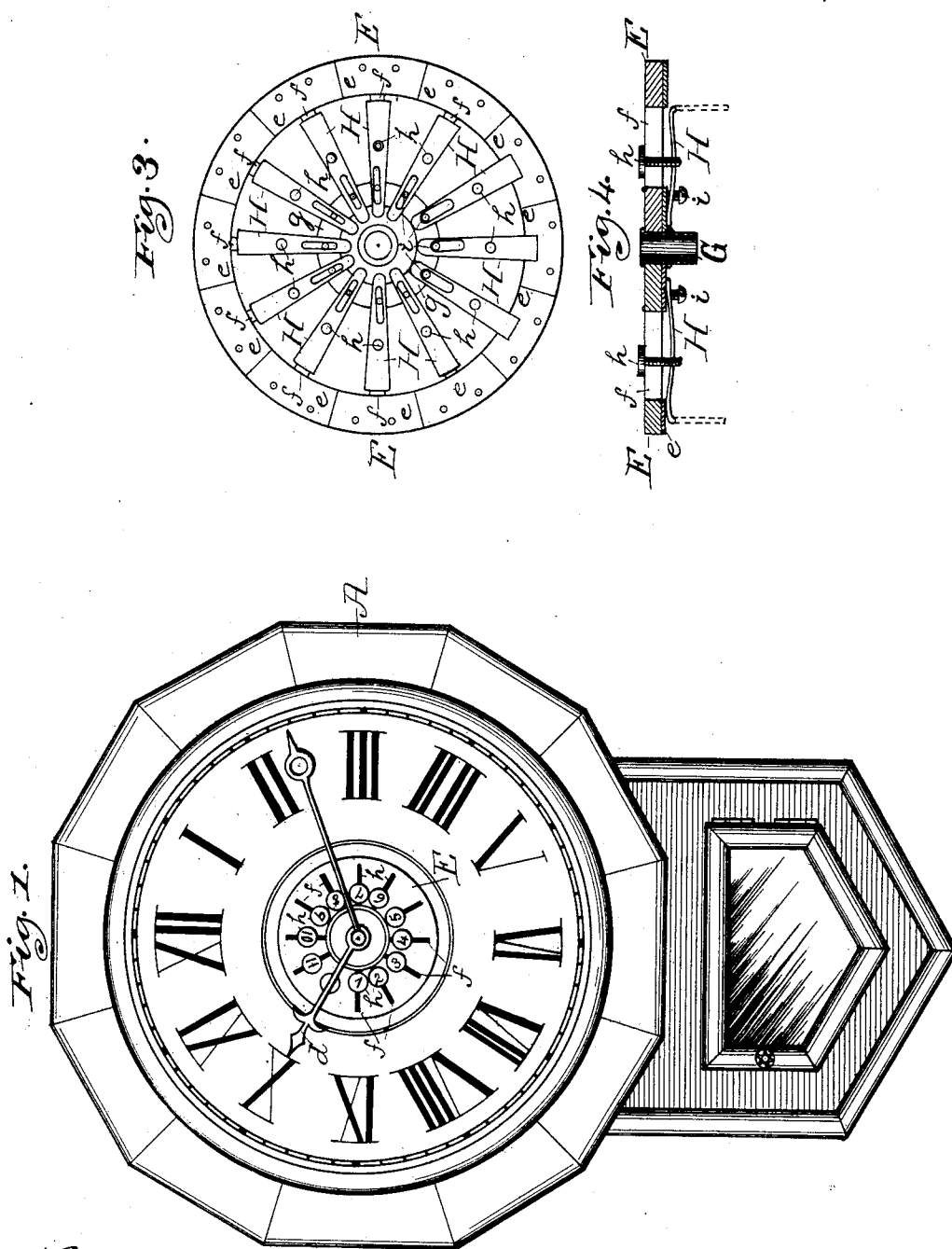
(No Model.)

2 Sheets—Sheet 1.

C. LESTER.
ELECTRIC PROGRAMME CLOCK.

No. 464,730.

Patented Dec. 8, 1891.



Witnesses,
Chas. Barney,
Gustav O. Hermann.

Inventor,
Charles Lester
By, Frank D. Thompson,
Atty.

(No Model.)

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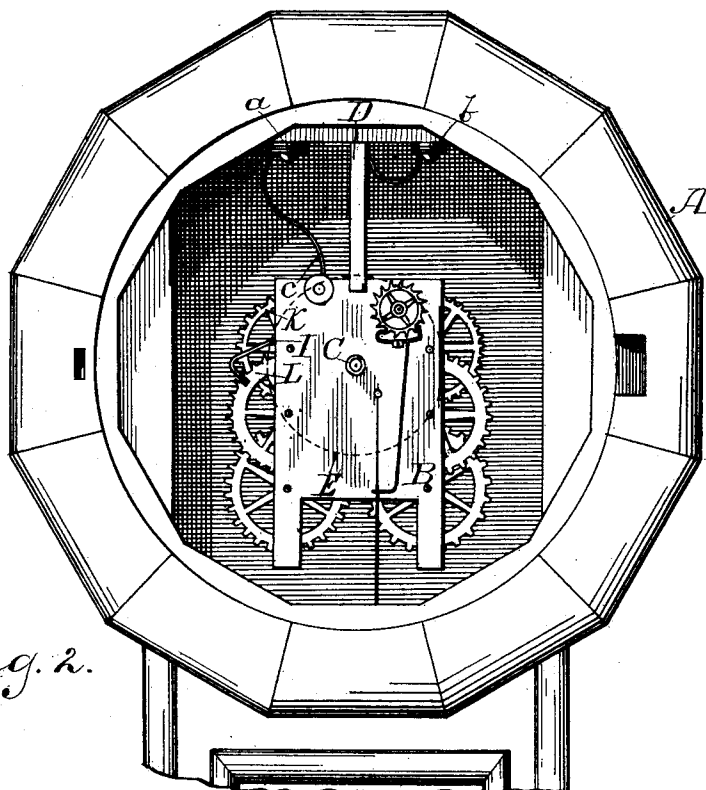


Fig. 2.

Witnessed;

Gustav Esdmann
Lure Carney.

Inventor:

Charles Lester,
By Frank D. Thomason
Atty

UNITED STATES PATENT OFFICE.

CHARLES LESTER, OF CHICAGO, ILLINOIS, ASSIGNOR TO GEORGE A. HARMOUNT, OF SAME PLACE.

ELECTRIC PROGRAMME-CLOCK.

SPECIFICATION forming part of Letters Patent No. 464,730, dated December 8, 1891.

Application filed April 10, 1891. Serial No. 388,371. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LESTER, of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Programme-Clocks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

It is desirable in houses and other buildings where they have electric burglar systems, or where it is desired to ring an alarm at stated times, to have some automatic means for making and breaking the electric circuit. This has been done before by means of complicated and expensive mechanism, which for ordinary purposes it was inexpedient therefore to use.

The object of my invention is to provide simple and effective means for accomplishing this purpose, the expense of which is within the reach of the ordinary property-owner, and which may be easily applied to an old clock quickly and at comparatively little expense, substantially as hereinafter fully described, and as illustrated in the drawings, in which—

Figure 1 is a front elevation of my improved clock. Fig. 2 is a similar view with the dial and cut-out plate removed. Fig. 3 is a rear view of the said cut-out plate, and Fig. 4 is a transverse central section thereof.

In the drawings, A represents the case of an ordinary clock, which may be of the design shown or of any other suitable design.

B represents the clock-work, and C the hour-hand sleeve thereof.

In the construction of my invention I place the clock-work in an electric circuit and make it one of the terminals or poles thereof, and when it is desired to close the circuit I automatically bring said clock-work in contact with the other pole of the said circuit, and cut it out of said circuit by the same automatic means when it is desired to open the same. For this purpose I provide the case with the posts *a* and *b*, respectively, and connect the former by means of a suitable binding-screw and wire *c* to the clock and connect the latter *b* to the brush D, which extends,

preferably, in a radial line toward the hour-hand sleeve over the clock-work immediately back of the dial, substantially as shown. Upon the hour-hand sleeve, back of the hour-hand *d* is a cut-out plate E. This plate is of such diameter as to fit within a circular opening concentric to the hour-hand sleeve in the dial of the clock and is made of insulating material. The margin of the under side of this plate E is provided with a series of independent segmental plates *e e*, which are arranged in a circle concentric with the center of the plate, and are, preferably, of corresponding length. I prefer that there should be but twelve of these plates, dividing the circle which they describe into twelve equal parts. Made in said plate are a series of radial slots *f f*, each of which extends from some one plate *e* to near the center of the plate, where they terminate contiguous to the edge of a circular metallic plate *g*, secured thereto, that connects with the central sleeve G, which latter slips over the hour-hand sleeve and secures the said cut-out plate thereto. Through each one of these slots I pass a set-screw *h*, the head of which is greater in diameter than the width of the slot and is placed on the outside. The inner end of each of these screws passes through a radially-arranged brush H, which latter are of such length that when adjusted radially outward they project across the insulating space between the segmental plates *e* and the inner metallic plate *g* and connect the two. These brushes are bow-shaped, with their ends bent toward the insulated cut-out plate E, and in order to direct their radial movement I provide their inner ends with a longitudinal slot which is of a length corresponding to the movement of said brushes, and pass outward therethrough from the said metallic plate *g* the screws or pins *i i*. The length of the brush D is such that it terminates immediately under the circle described by the segmental plates *e* of the cut-out plate E and presses outward against the same. If it is desired to close the circuit, of which the said brush forms one terminal and the clock-work the other, I simply push radially outward all of the brushes H, so as to bring into contact

the segmental plate *e* and the central metallic plate *g*. When all of these brushes are pushed outward, the said circuit would be closed all the time, and when only a portion of these brushes are adjusted outward, the circuit will be closed only while the segmental plates which said brushes are in contact with are passing by and in contact with the brush D. The heads of the said screws *i* are numbered consecutively from right to left 12 1 2 3 4 5 6 7 8 9 10 11, and the said cut-out plate is so arranged and adjusted with reference to the hour-hand sleeve that when the hour-hand indicates twelve the pin or screw *i* marked "12" will be in line with an imaginary line drawn through the center of the hour-hand sleeve and the brush D, and when the hour-hand indicates one (1) on the dial the pin *i* numbered "1" will be in alignment with said imaginary line, and so on. Thus, if I should desire to have the circuit closed from nine o'clock until six continuously, I would adjust outward the pins marked from 9 to 6, inclusive. Therefore it follows that during these hours the segmental plates *e* would be connected with the central metallic plate *g* and keep the circuit closed, and after the pins marked thus had passed the radial plane of the said brush D said circuit would automatically open.

Should it only be desired to sound an electrically-controlled audible signal at a given hour and not keep a circuit opened or closed for any considerable length of time by means of my improvements, I simply adjust outward the pins *h*, indicating the particular hour, so as to close the circuit at the given time desired. Considering that for bell-ringing or signaling purposes the duration of the current need not be long, I may, if desired, reduce the contact between the brush D and the clock-work to such an extent that the plates *e* arranged edgewise in the plate E of insulating material would answer.

It is proper here to state that it is not absolutely necessary that the plate *g* be used. It could be dispensed with and the inner end of the brush *h* be so constructed that when it was adjusted radially outward it would form a contact between the metallic sleeve by means of which the plate E is secured on said hour-hand sleeve and the segmental plate *e*.

In the event of the clock being used for mechanically striking an alarm, I could dispense with the segmental contact-plates *e* and the central metallic plate *g* entirely.

The segmental contact-plates may, if desired, be dispensed with and a contact between the outer end of the radially-adjustable brushes and the brush D be relied upon to close the circuit. This would obviously do for sounding an electrically-controlled alarm; but if it was desired to keep the circuit closed continuously for any considerable length of time it would be necessary to change the con-

struction of the brush so that their outer ends would have lateral branches, giving the said brush a sort of T shape. In this event the contact with the brush D would be longer, and when several of the brushes II in continuous order were adjusted outward the brush D would come in contact with one brush before it was out of contact with the other, thus keeping the circuit closed. This modification would practically be the equivalent of securing the segmental plates to the outer ends of the brush II—that is, so far as the effect is concerned—substantially as shown in the drawings.

It will be understood that the cut-out plate E, hereinbefore described, can be attached direct to the minute-hand post or sleeve, as well as to the hour-hand sleeve. It can, moreover, be operated equally well, although at a slightly greater cost, indirectly by means of the said hour-hand sleeve or minute-hand spindle. In this latter case, however, it would be necessary for an idle gear or pinion, acquiring motion from said hour-hand or minute-hand mechanism, to mesh with its geared periphery.

What I claim as new is—

1. The combination, with the clock-work of a clock, of a plate moving synchronously with the hour-hand thereof and an independently radially-adjustable brush carried thereby and constituting one terminal of an electric circuit, with an arm constituting the other terminal of the same, and a gong connected to said arm, so that when said brush is radially adjusted it establishes a transient contact with said arm and causes said gong to sound.

2. The combination, with an electrical circuit and a clock in said circuit, of a plate of insulating material revolving synchronously with the hour-hand of said clock and independently radially-adjustable brushes which, when adjusted with reference thereto, moves past and establish a transient contact with the opposite terminal of said circuit and temporarily close the same.

3. The combination, with the clock-work of a clock, a gong, and gong-striking mechanism, of a plate of insulating material concentric and revolving with the hour-hand, and independent adjustable brushes constituting one terminal of an electrical circuit, which, when adjusted out of their normal position, form a contact with the other terminus of said circuit and thereby cause the gong to sound.

4. The combination, with an electrical circuit and the clock-work of a clock arranged in said circuit, of a plate of insulating material concentric to and revolving with the hour-hand sleeve of the same, segmental contact-plates secured to said plate of insulating material and aligned in a circle concentric therewith, and independent radially-adjustable brushes carried thereby which can be adjusted so as to connect said segmental plates

with the hour-hand sleeve, and thus when the segmental plates move past and establish a contact with the opposite terminal of said circuit temporarily close the same.

5 5. The combination, with an electrical circuit and the clock-work of a clock in said circuit, of a plate of insulating material concentric to and revolving with the hour-hand sleeve and having radial slots therein, segmental contact-plates secured to said plate
10 and arranged in a circle concentric therewith, and the independent radially-adjustable brushes which can be adjusted so as to connect said segmental plates with the hour-
15 hand sleeve, and thus when the segmental

plate moves past and establishes a contact with the opposite terminal of said circuit temporarily closes the same.

6. The combination, with an electric circuit, a clock in the same, and a brush forming one terminal of said circuit and extending toward the clock-work of said clock, of the plate E, having radial slots *f* therein, segmental plates *e e*, arranged as described, central plate *g*, independent radially-adjustable
20 brushes H, and screw *h*, as set forth.

CHARLES LESTER.

Witnesses:

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JOHN GRANT.