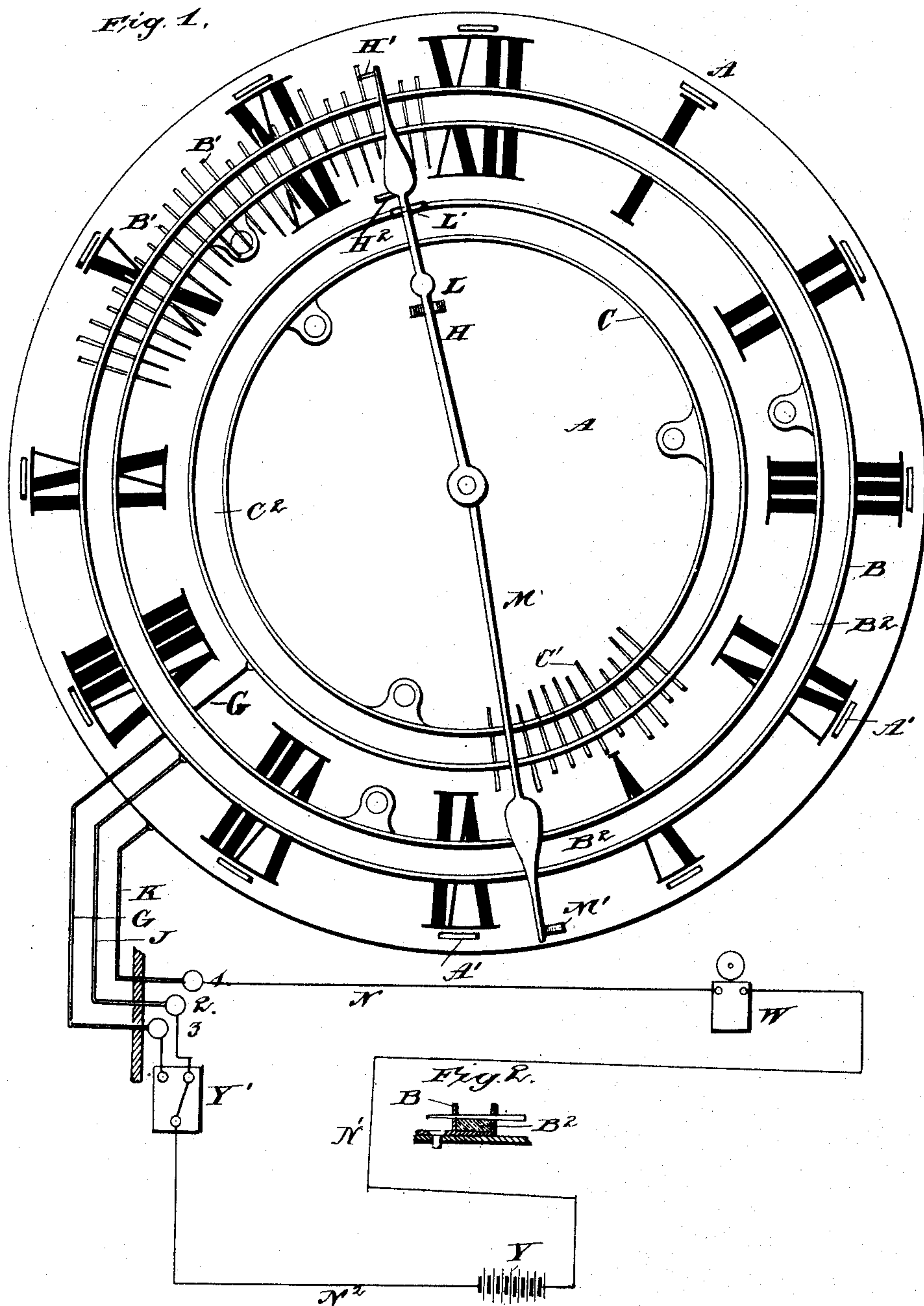


(No Model.)

J. L. McCASKEY.  
ELECTRIC PROGRAMME CLOCK.

No. 428,854.

Patented May 27, 1890.



Witnesses

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By

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# UNITED STATES PATENT OFFICE.

JOHN L. McCASKEY, OF WAYNESBOROUGH, PENNSYLVANIA.

## ELECTRIC PROGRAMME-CLOCK.

SPECIFICATION forming part of Letters Patent No. 428,854, dated May 27, 1890.

Application filed July 26, 1889. Serial No. 318,735. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN L. McCASKEY, a citizen of the United States, residing at Waynesborough, in the county of Franklin, State of Pennsylvania, have invented certain new and useful Improvements in Automatic Electrical Programme-Clocks, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention has relation to an improvement in automatic electrical programme-clocks, the main object of the invention being to provide a separate programme or programmes for day and night, respectively.

15 Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a plan of an automatic electrical programme-clock constructed in accordance with my invention, showing battery-connection; and Fig. 2 is a cross-section of a portion of the annulus, showing method of holding the pins. Fig. 3 is a detail of the wheel-support.

Like letters and figures of reference refer to like parts in all the figures of the drawings.

The dial A of the clock is made either entirely of metal which is an electrical conductor or of some non-conducting material, having a conducting-rim conductively connected to the strips or lugs A', hereinafter described. The annulus B, also of conducting material, is securely fastened to the dial A, and insulated therefrom by any suitable means. This annulus is preferably U-shaped in cross-section, and its inner and outer walls are bored through their entire circumference upon the radii extending from the center of the dial for the reception of the adjustable pins B', which are adapted to play freely in their respective perforations. These pins are secured firmly in any position by means of a rubber or other elastic cushion B<sup>2</sup>, the tendency of which is constantly to press against one surface of the pins. In order to have the bell ring every five minutes or at any five-minute space, (as hereinafter described,) there must necessarily be one hundred and forty-four pairs of these perforations. The annulus C, concentric with the annulus B and at-

tached to the dial and insulated therefrom in the same manner as B, is bored upon the radii extending from the center of the dial for the reception of the pins C', corresponding to the pins B'. The elastic cushion C<sup>2</sup> secures the pins firmly in place in the same manner that the cushion B<sup>2</sup> secures the pins B'. There are necessarily one hundred and forty-four of these pins, and, although but few of them are shown in the drawings, it is of course understood that in an operative clock they will extend entirely around the annulus. Those shown are sufficient for the purpose of illustrating the invention.

The minute-hand M has near its outer extremity, and preferably integral therewith, the elastic conducting-tip M', which is adapted to strike one of the lugs A' at each five-minute interval. The hour-hand H has two of these tips H' and H<sup>2</sup>, one for each set of pins B' and C', respectively. As the hour-hand moves only from one five-minute space to another while the minute-hand is making a complete revolution around the dial, it (the hour-hand) will move from one pin to another in the next five minutes.

The wire G makes connection with the annulus C and through it with the hour-hand, the wire J with the other annulus, and wire K with the dial and through it with the lugs A', tips M', and the minute-hand.

The wire N connects with the binding-post 1 and one post of the bell W. The wire N' connects the other post of the bell and one pole of the battery Y. The wire N<sup>2</sup> connects the other pole of the battery and the switch Y'—either the post 2 or 3—accordingly as it is desired to make the circuit with the day or night programme circle.

The operation is as follows: In order to have the bell sound at a certain time, the pin in the path of the hour-hand which corresponds to that time is pushed out so that the tip H' (for the day programme) will strike the pin when it comes opposite it. If no other time is desired to be announced, all the other pins are pushed in. When the hour-hand strikes the one hundred and thirty-ninth pin, counting from the numeral XII in the direction in which the hands move, electrical connection is made through the hand H, tip H', pin 139, annulus



B, wire J, binding-post 2, switch Y', wire N<sup>2</sup>, battery Y, and wire N with one post of the bell W. When the minute-hand strikes the lug A' opposite the half-hour point, (the numeral VI,) electrical connection is made through the minute-hand M, tip M', lug A', dial A, wire K, binding-post 1, and wire N with the second post of the bell W. The circuit is thus closed throughout, and the bell or system of bells sounds. It will be seen that the time indicated is 11:30 a. m. Any desired time may be announced by simply pushing out the pin corresponding to that time.

I do not wish to be understood as limiting myself to the exact details of construction shown and described, as it is evident that many changes may be made without departing from the spirit of my invention. Thus more than two annuli may be used, if it is desired to have more than two independent programmes. The two shown, however—one for a day and the other for a night programme—are preferred. The number of pins may be varied, and also the position of the lugs, if it is desired to have the bell sound other than at five-minute intervals or other multiples thereof. The tips H' and H<sup>2</sup> may strike the inner ends of the two sets of pins or the outer ends of one set and the inner ends of the other set, if desired; also, when the dial is made entirely of conducting material the lugs A' may be dispensed with, as the circuit is closed directly by the dial.

In order to regulate the amount of pressure of the tips upon the pins in the concentric circles, I provide a wheel L or tip L', of non-conducting material, which may run either upon the face of the dial or upon the upper edges of the annuli.

Having thus described my invention, what I claim is—

1. In an automatic electrical programme-clock, an insulated conducting-annulus, substantially U-shaped in cross-section, bored for the reception of contact-making devices, substantially as specified.

2. In an automatic electrical programme-clock, a conducting-annulus bored for the reception of contact-making devices and having a channel for the reception of elastic material adapted to hold the aforesaid contact-making devices firmly and movably, combined with an elastic cushion in said channel, substantially as specified.

3. In an automatic electrical programme-clock, the combination, with the annulus f', of the contact-making pins C', passed through apertures in said annulus, substantially as specified.

4. In an automatic electrical programme-clock, a minute-hand adapted to make connection with one post of an electrical bell through the clock-dial, and an hour-hand adapted to make connection with the other post of the bell through an annulus bored for the reception of contact-making pins held firmly and movably in place by an elastic medium and through said pin and connecting device, said annulus being insulated from the dial, substantially as specified.

5. An automatic electrical programme-clock comprising the dial A, concentric insulated annuli B and C, having pins B' and C', respectively, the hands M and H, having the tips M' and H' and H<sup>2</sup>, respectively, and means for closing a circuit through either of said annuli, substantially as specified.

6. An automatic electrical programme-clock comprising a dial, concentric insulated annuli having pins or screws, substantially as described, the hand M, having the tip M', the hand H, having tips for striking the pins in each respective annulus, and means for closing a circuit between the dial and any one of said annuli, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN L. McCASKEY.

Witnesses:

JAMES POLLEN,  
ALF. N. RUSSELL.