

J. JACOBI.
ELECTRIC TIME ALARM.

No. 478,865.

Patented July 12, 1892.

Fig. I.

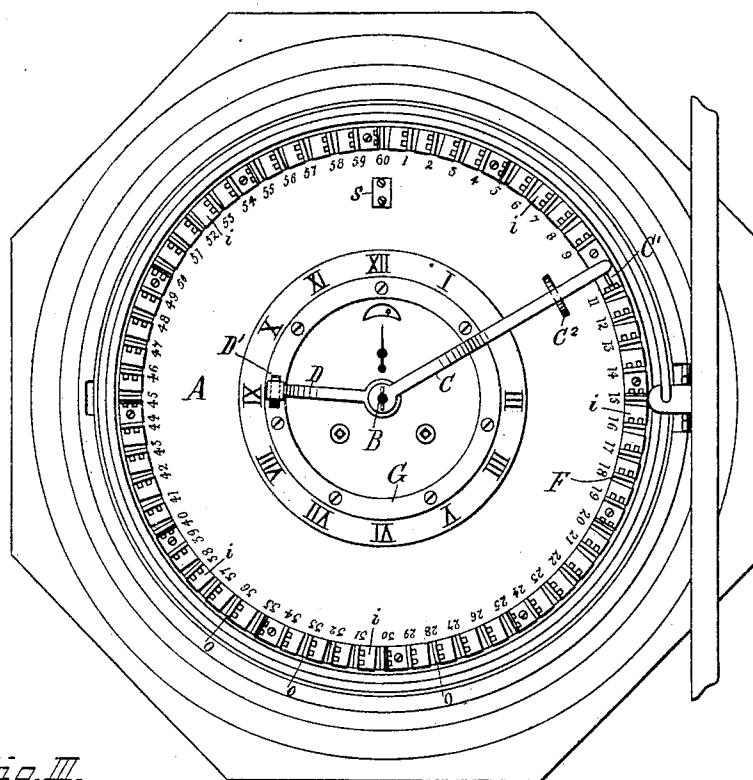


Fig. III.

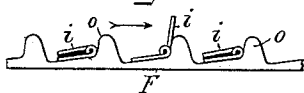


Fig. II.

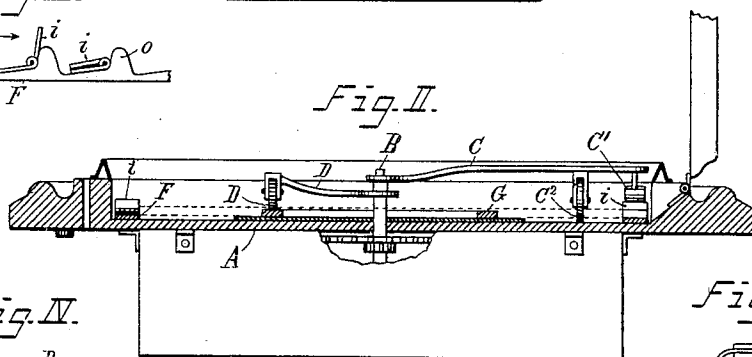


Fig. IV.

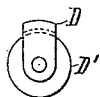
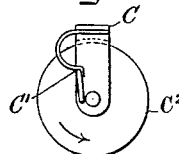


Fig. V.



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Fig. VII.

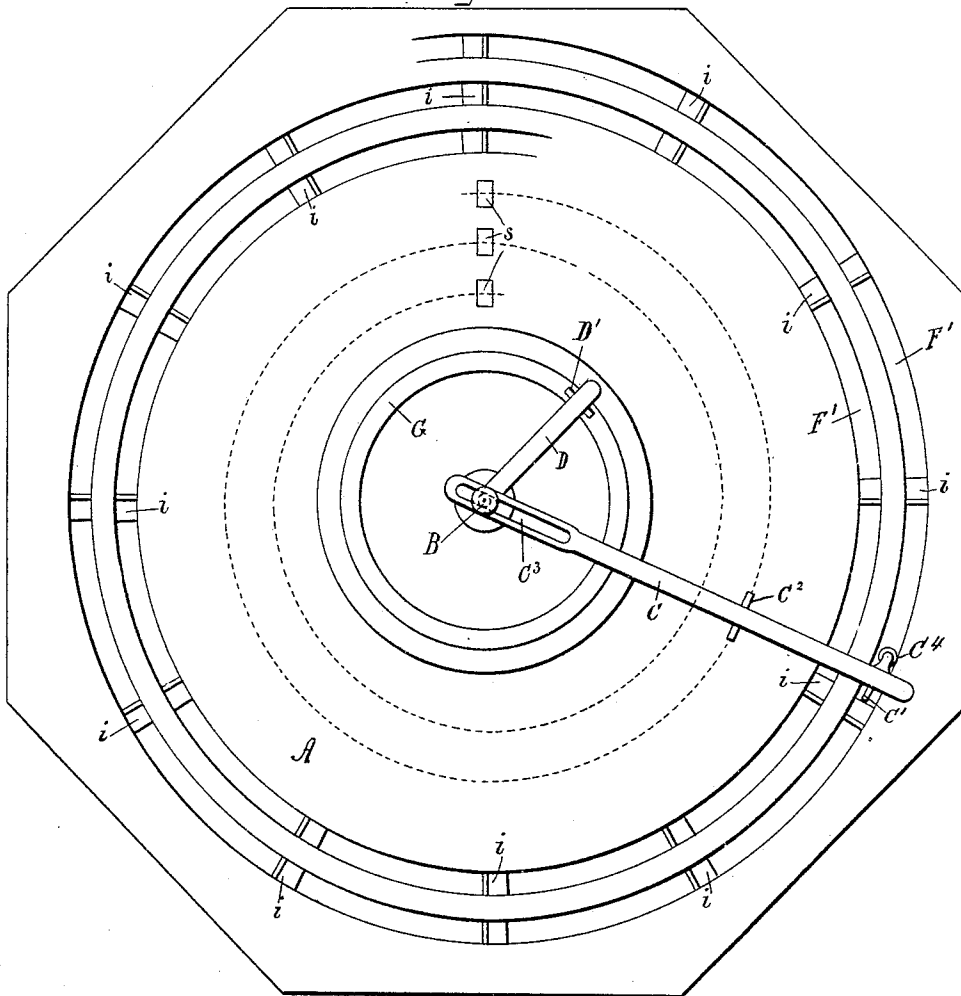


Fig. VII.

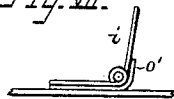
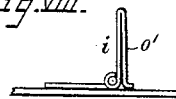


Fig. VIII.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN JACOBI, OF BROOKLYN, NEW YORK.

ELECTRIC TIME-ALARM.

SPECIFICATION forming part of Letters Patent No. 478,865, dated July 12, 1892.

Application filed November 17, 1891. Serial No. 412,122. (No model.)

To all whom it may concern:

Be it known that I, JOHN JACOBI, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Automatic Circuit-Closers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and accurate description.

My invention relates to that class of instruments in which one or both hands of a clock are utilized for effecting the closure of an electric circuit, causing such operation to be performed automatically and at fixed intervals of time.

The instrument embodying my invention is designed for use particularly at the termini of street-railways as a car-starter—that is to say, for automatically working a signal indicating the periods at which the cars are to be started; but it is also adapted to other general uses as a circuit-closer.

The novel features of my instrument and the advantage arising therefrom are herein after fully described, with reference to the accompanying drawings, in which—

Figure I represents a face view with the contact-points in a circular plane. Fig. II represents a partial side view and partial cross-section. Fig. III represents a detail side view of the contact-points. Fig. IV represents an end view of the hour-hand. Fig. V represents a like view of the minute-hand. Fig. VI represents a face view with the contact-points in a spiral plane. Fig. VII represents a side view of a modification.

Similar letters of reference indicate similar parts.

The letter A indicates the face of a clock, and B the center staff thereof geared with clock-movement in the usual way.

C indicates the minute-hand, and D the hour-hand, both mounted on the center staff B where it projects through the clock-face.

Upon the clock-face A is a row or series of adjustable contact-points *i*, which may extend in the circular plane shown in Fig. I or in the spiral plane shown in Fig. VI around the center staff B, and each of which consists of a metallic flap hinged radially in relation to the axis of the staff, so as to be capable of swinging in a direction parallel to said plane

of the series from a lower to a raised position approximately at a right angle to the clock-face, or vice versa. The location of said radially-hinged flaps *i* is at fixed intervals, each representing a certain predetermined limit of time, which may be five minutes, as in the example shown in Fig. I, and for convenience of ascertaining the time so represented the clock-face A is usually marked with suitable figures opposite the flaps. The immediate support for the hinged flaps *i* is a metallic rail F, which is shaped to conform with the desired circular or spiral plane and properly secured to the clock-face A, this rail forming a means common to the series of flaps for connecting them with one pole of a battery. In the example shown in Fig. I the supporting-rail F is ring-shaped, and at a point within it on the clock-face is a second or auxiliary rail G, also ring-shaped, forming a means to connect the clock-hand C (being the minute-hand) with the other pole of the battery, as presently explained.

At a point opposite the auxiliary-rail G, on the hand D, is a contact D', in form of a roller, which permanently engages said rail, while at a point opposite the flap-supporting rail F, on the hand C, is mounted a contact C', in form of a spring, which in practice engages those of the series of flaps *i* which are in raised position, this spring-contact being properly graduated for that purpose, and in order to retain the flaps in a raised or operative position each is provided with a stop *o*, which may consist of a lug on the supporting-rail F, as more clearly shown in Fig. III, or an offset upon the flaps, as shown in Fig. VII, the effect of the stops being to resist a displacement of the raised flaps by the spring-contact C' in the motion thereof together with the clock-hand.

When the instrument is applied to use, the rails F G are suitably wired to the respective poles of a battery and the desired flaps *i* are set to a raised position, leaving the remainder thereof in a lower position, reference being had to the times at which the circuit is to be closed—as, for example, when the circuit is to be closed at intervals of five minutes, the flaps are raised opposite the figures “5, 10, 15,” and so on. Now in the motion of the hand C its spring-contact C' is brought into en-

gagement with each of the raised flaps *i* and by this means the circuit is closed through the clock-hands C D, one of the flaps, and the two rails F G, so that if a signal or other apparatus is properly arranged in such circuit it may be automatically operated at desired intervals of time. If the auxiliary-rail G is omitted, the connection from the battery may be with the center staff B to the proper hand.

By the arrangement of the series of flaps *i* in a spiral plane, as shown in Fig. VII, a comparatively large and indefinite number thereof may be employed, thereby increasing the capacity of the instrument, and for the purpose of adapting the spring-contact C' thereto the clock-hand C has a slot C³, fitted on the center staff B, and also a roller C⁴ or other suitable device engaging a guideway, formed in this example by one edge of a spiral groove F', containing the flap-supporting rail, so that said hand is capable of sliding longitudinally on the staff, while by the action of said guideway upon the hand the spring-contact is automatically adjusted in relation to the spiral plane of the flaps, the hand being in practice re-adjusted to an inner position when said contact has traversed the plane of the flaps. It will be seen that by forming the contact-points of the hinged flaps they possess the advantage of permanent fixture to the instrument, so as to obviate a loss or misplacement thereof while affording a maximum ease and facility of adjustment.

If desired, a fixed contact point or points *s* may be applied to the clock-face for engaging

with a contact C², as a roller, of the hands C, so as to close a circuit in each revolution of said hand, as once in each hour.

What I claim as new, and desire to secure by Letters Patent, is—

1. A circuit-closer in which are combined the clock, radially-hinged metallic flaps at fixed intervals around the center staff of the clock, a stop to each of said flaps for retaining it in raised or operative position, a clock-hand having the spring-contact to engage those of the series of flaps which are in operative position, and a means for connecting the flaps and clock-hand, respectively, with either pole of a battery, substantially as and for the purpose herein described.

2. A circuit-closer in which are combined a clock, radially-hinged metallic flaps at fixed intervals around the center staff of the clock, a metallic rail on the clock-face supporting said flaps to connect the series thereof with one pole of a battery, a stop to each of the flaps for retaining it in raised or operative position, a clock-hand having the spring-contact to engage those of the flaps which are in operative position, and a means for connecting said clock-hand with the other pole of the battery, substantially as and for the purpose herein described.

In testimony whereof I have set my hand this 16th day of July, 1891.

JOHN JACOBI.

Witnesses:

LOUIS W. FROST,
CHARLES G. COE.