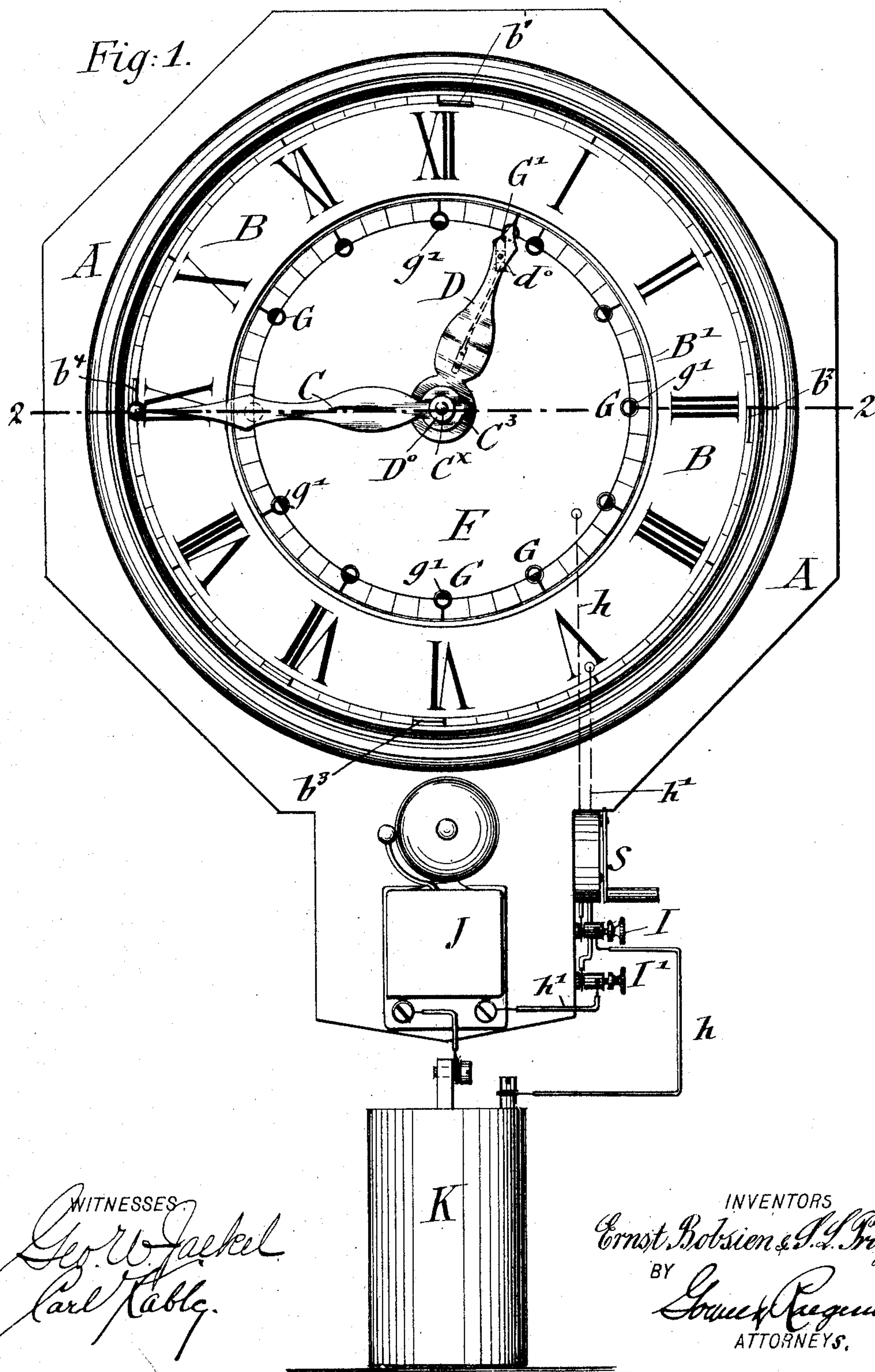


E. BOBSIEN & S. L. PRAGER.
ELECTRIC PROGRAM CLOCK.

No. 587,143.

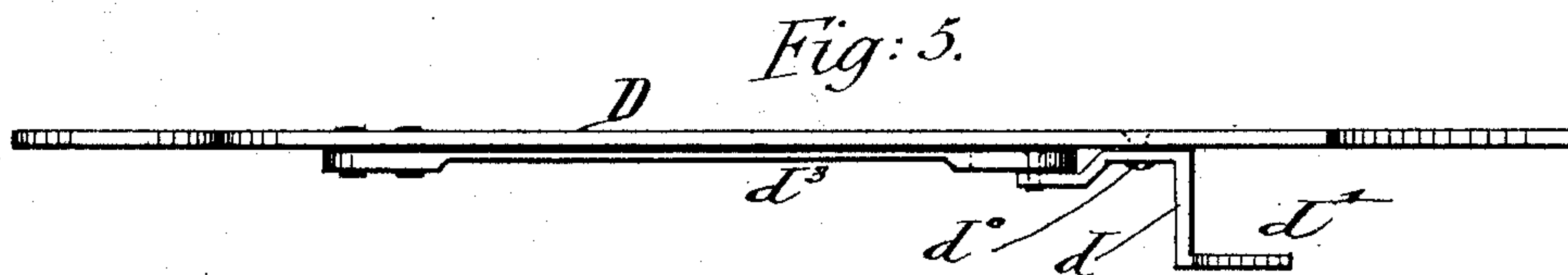
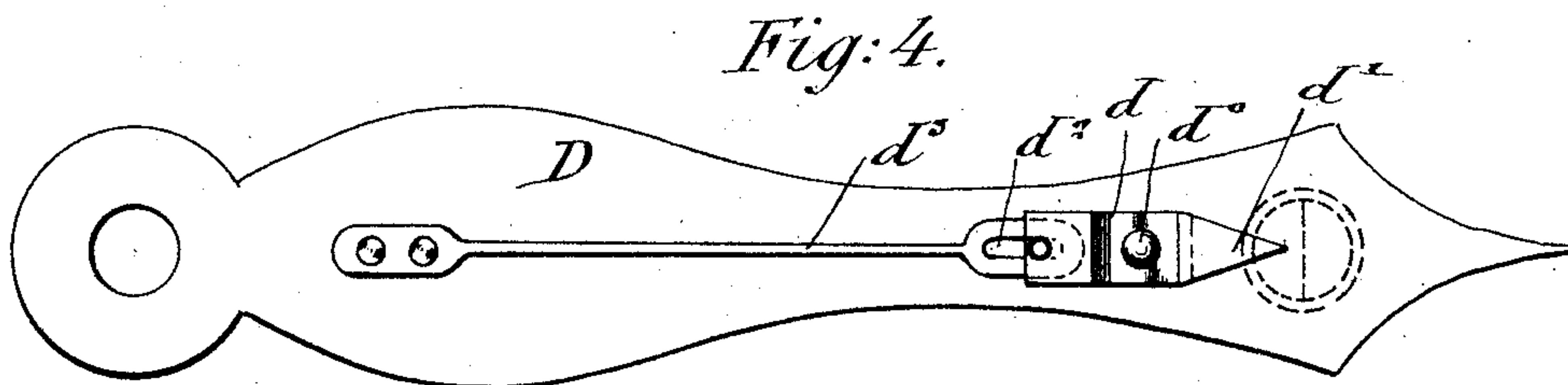
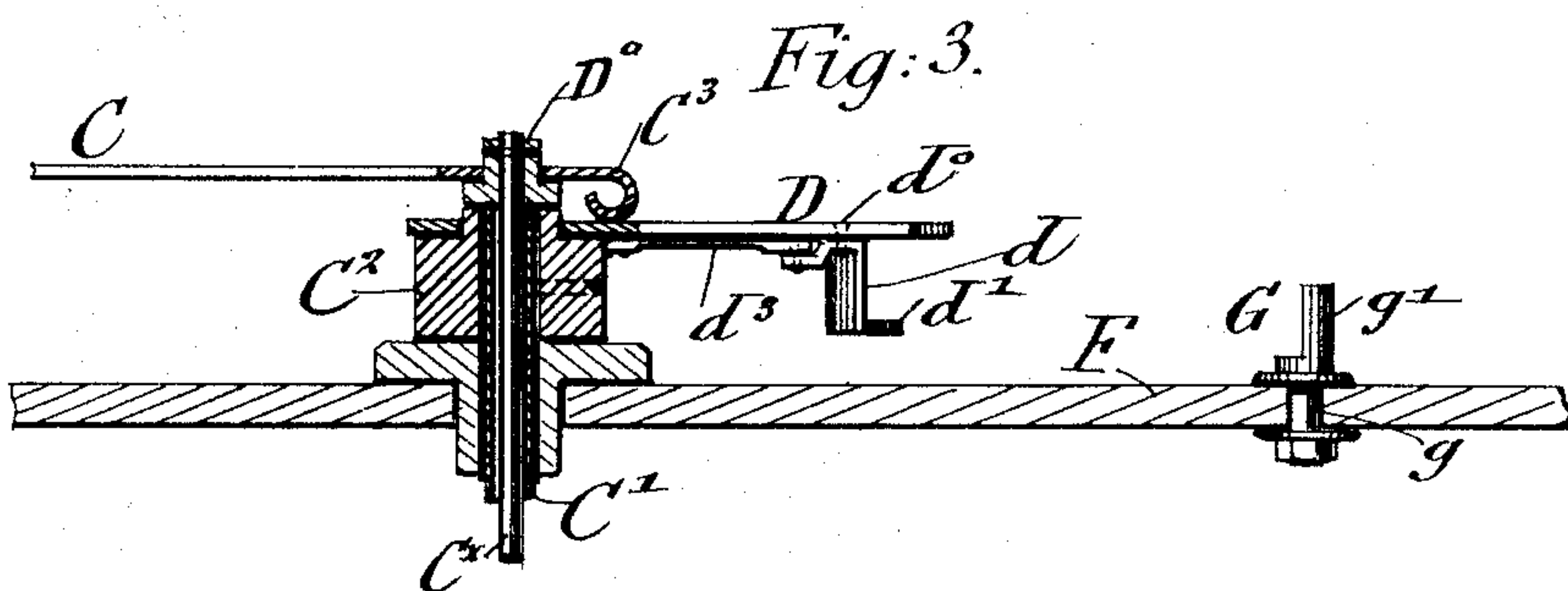
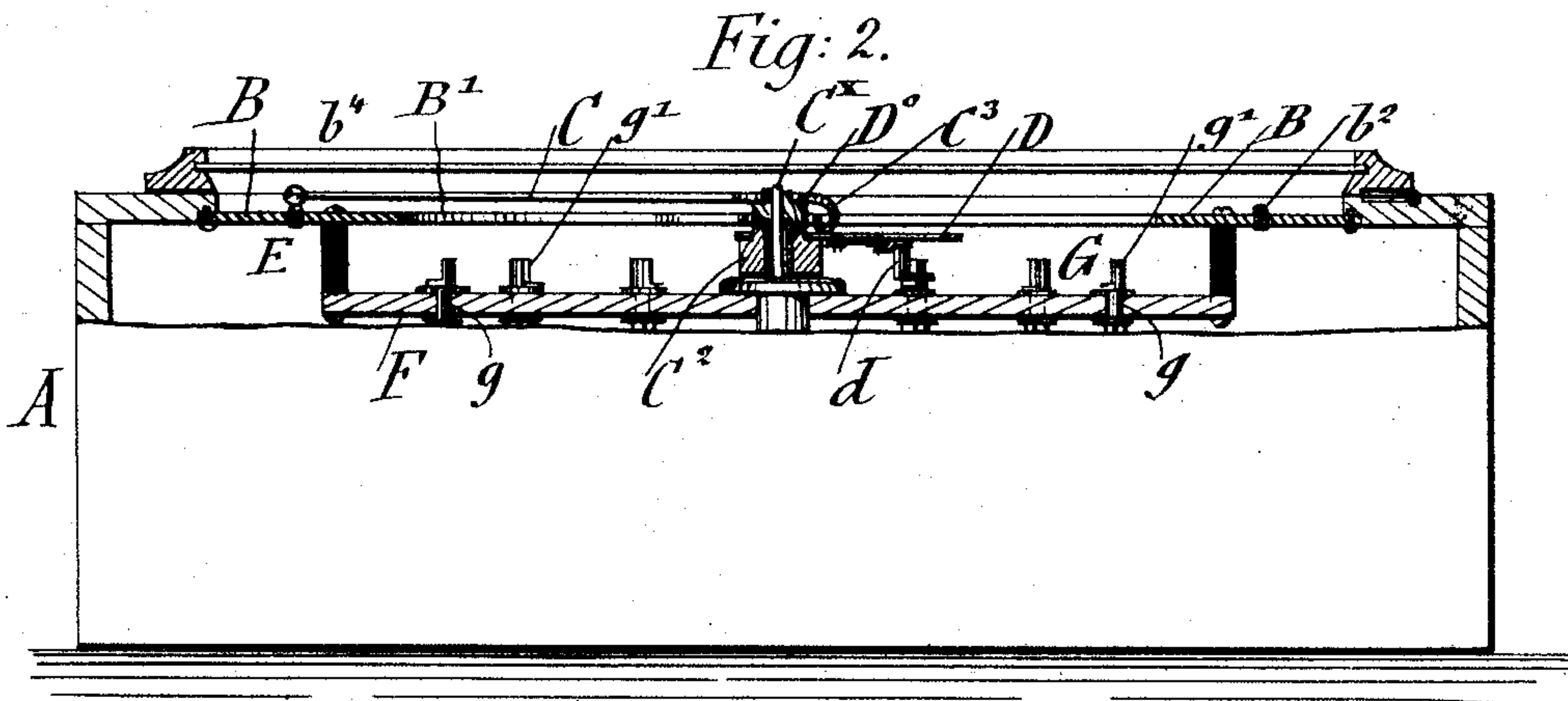
Patented July 27, 1897.



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UNITED STATES PATENT OFFICE.

ERNST BOBSIEN AND SIGMUND L. PRAGER, OF MOUNT VERNON, NEW YORK.

ELECTRIC PROGRAM-CLOCK.

SPECIFICATION forming part of Letters Patent No. 587,143, dated July 27, 1897.

Application filed February 8, 1897. Serial No. 622,423. (No model.)

To all whom it may concern:

Be it known that we, ERNST BOBSIEN and SIGMUND L. PRAGER, citizens of the United States, residing at Mount Vernon, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Electric Time-Signal Clocks, of which the following is a specification.

This invention relates to an electric time-signal clock; and the object of the invention is to indicate the time when working people are to begin and stop work in factories, shops, &c., and it possesses the advantage that the alarm can be set for any time desired.

The invention consists of a clock provided with the usual clock-movement, dial, hands, &c., said dial being metallic and insulated and said hands being in electric connection with each other at their hubs, while the minute-hand is adapted to make electrical connection with raised contacts which are arranged systematically upon the face of the dial, the hour-hand being provided with a spring-actuated contact-piece which is adapted to make electrical connection with contact-pins that are mounted in an auxiliary or index dial, which is insulated from the minute-dial and provided with graduations corresponding to the hours, which index-dial is connected with one of the wires of an electric circuit in which is included a source of electricity and a bell, while the other wire of the circuit is in electrical connection with the main dial of the clock, all as will be fully described hereinafter and then particularly claimed.

In the accompanying drawings, Figure 1 is a front elevation of an electric time-signal clock for employees, showing the battery and bell in circuit therewith. Fig. 2 is a transverse section on line 2 2, Fig. 1. Fig. 3 is an enlarged detail view of parts shown in Fig. 2 on the same section-line, showing the hour-hand in a position nearer the observer. Fig. 4 is an enlarged under side view of the hour-hand, showing the movable contact-finger thereon; and Fig. 5 is a side elevation thereof.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the casing of a clock, which contains the usual

clock mechanism. (Not necessary to be shown.) The clock is provided with the usual dial B, excepting that said dial has a large central circular opening B', while the clock is further provided with the usual minute-hand C and hour-hand D for the purpose of sweeping around the dial and indicating the time in the usual manner.

The hour-hand is insulated from the tubular arbor C', which carries it, by means of an insulating-collar C², while for the purpose of establishing electrical connection with the hour-hand D the hub of the minute-hand is provided with a contact-finger C³, which is always in contact with the hub of said hour-hand. The minute-hand is also insulated, and this is accomplished by means of an insulating-sleeve D⁰, applied to the arbor C^x.

A metallic auxiliary or index dial F is set directly below the opening in the main dial at some distance from the same and is insulated and supported from the main dial by means of an interposed insulating-ring E, which is attached by means of suitable screws or fastenings to both dials. Rotatably-fixed contact-buttons G are journaled by their axes g in the auxiliary dial F, said buttons having eccentrically-arranged longitudinal projections g'. The buttons G are shown as arranged opposite the hour marks or divisions.

The auxiliary dial F is electrically connected with one of the wires h of an electric circuit, in which is included an alarm J and a battery K, while the other wire h' is electrically connected with the metallic main dial B.

The base portion of the clock has at one side thereof two binding-posts I I', respectively, with which the wires h h' of the electric circuit are connected, while above the posts is arranged a suitable switch S, the particular construction of which need not be shown, as it is well known, and the object of the same is simply to cut the clock into or out of circuit, whereby the alarm may or may not be sounded, as desired.

The minute-hand in sweeping around the dial comes successively in contact at its inner end with raised metallic contacts b' b² b³ b⁴, which are arranged at equal distances apart around the edge of the dial and are lo-

cated, respectively, opposite the numerals indicating the hours "12," "3," "6," and "9."

In the present instance twelve of the contact-buttons G are shown, but this number may be varied in accordance with the requirements, as when the quarter-hours are to be sounded corresponding buttons must be arranged at the quarter-hour divisions shown on the auxiliary dial. Each side projection g' on the buttons is adapted to be engaged by the movable contact d , pivoted at d^0 on the under side of the hour-hand D only when a button is turned on its axis until its projection is in the path of the contact d . The engaging portion of the movable contact has a tapering point d' , which is bent down and away from the hour-hand, while the rear end of the movable contact d has a pin-and-slot connection d^2 with a returning-spring d^3 , fixed at its inner end to the hour-hand, the object of this spring being to return the movable contact d in line with the hour-hand after it has been deflected by contact with the projection g' .

Supposing the rotatable contact-buttons G are set in the position shown in Fig. 1, so that their projections g' are in the path of rotation of the movable contact d respectively at the graduations of the dial F indicating twelve o'clock, quarter to one o'clock, six o'clock, and eight o'clock, then the operation in sounding the alarm and notifying the employees of a shop, factory, &c., that it is time to begin or stop work is as follows:

In Fig. 1 the time shown is a quarter to one and the alarm will be given at that time. When the minute-hand C arrives, as shown, at the figure "IX," so that its outer end comes in contact with the fixed contact or raised portion b^1 on the main dial B, the hour-hand will simultaneously arrive at the graduation on the auxiliary dial indicating a quarter to one, causing the movable contact d on the under side thereof to come in contact with and for a short space of time be pressed in contact with the projection of the button G' , arranged at said graduation underneath of it, thus establishing the following electric circuit: From the battery K through the wire h , auxiliary dial F, button G' , movable contact d , hour-hand D, spring-finger C^3 , minute-hand C, raised contact-piece b^1 , dial B, wire h' , and bell J, back to the battery. The circuit being thus closed the alarm will be simultaneously sounded as long as the movable contact on the hour-hand is in contact with the projection on the contact-button G' . The contact of the movable contact d' with the projections g' of the contact-buttons is maintained for a short interval of time by reason of the prolongation of the point d' of the contact beyond the circumference of the circle described by the projections g' , when they are set around to a point nearest the axis of the dial, so that the contact is established and the circuit closed as long as the movable contact d is deflected to one side by the projections g' , said movable contact after being car-

ried by each projection being returned to its normal position under the influence of the spring d^3 .

When the hour-hand sweeps around to six o'clock, the movable contact thereon engages with the projection g' on the button G and the minute-hand bears at its outer end upon the fixed contact or raised portion b^1 at the upper portion of the dial opposite figure "XII," and the alarm is sounded again and the circuit closed in a similar manner at six. Likewise the alarm will be sounded at eight o'clock and at twelve o'clock.

A multiplicity of combinations can be produced by means of the rotatable buttons G by causing them to indicate different hours or quarter-hours. The quarter-hours are shown by dividing each of the twelve divisions around the circumference of the index-dial F into four equal parts, so that the quarter-hours and half-hours, as well as hours, may be indicated by the ringing of the bell, providing, of course, each quarter-hour has a button, such as G' .

The invention is particularly useful in factories and shops where a large number of working people are employed, as thereby may be indicated the time to begin work, the time to stop work at noon, the time to resume work again, and the time to stop work for the day. It obviates many inconveniences and disagreeable features in the usual gathering of and assembling of employees, as an employer can always set the clock so that it can give the signal day after day without necessitating resetting, unless the hours for beginning and stopping work be changed, in which case the rotatable contact-buttons can be readjusted. If it is not desired that the alarm be sounded, the battery can be cut out by means of the switch.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In an electric time-signal clock, the combination of the main dial having a central opening and provided with a raised contact on its upper surface, the minute-hand sweeping over the face of the dial in contact with said raised contact, the hour-hand provided with a movable contact, said hands being insulated from their arbors, and said minute-hand being electrically connected with the hour-hand, an auxiliary or index dial arranged below and visible through said opening in the main dial, suitable insulating means between the auxiliary and main dials, a set of contact devices on the auxiliary dial, a source of electricity, an alarm, and electrical connections or wires leading from the source of electricity and alarm, respectively to the main dial and to the contact devices on the index-dial, substantially as set forth.

2. In an electric time-signal clock, the combination of the main dial provided with a raised contact on its upper surface, the minute-hand adapted to touch said contact

portion and provided on its hub with a contact-finger, the hour-hand, the hub of which is engaged by said contact-finger, a pivoted contact on the underside of the hour-hand, 5 a spring acting on the inner end of the pivoted contact for returning it into normal position, an auxiliary or index dial arranged below and visible through a central opening in the main dial, means for insulating the 10 two dials from each other, a set of contact devices arranged on the auxiliary or index dial, a source of electricity, an alarm, and electrical connections or wires leading from

the battery and alarm, respectively to the main dial and to said contact devices on the 15 auxiliary or index dial, substantially as set forth.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two subscribing witnesses.

ERNST BOBSIEN.

SIGMUND L. PRAGER.

Witnesses:

PAUL GOEPEL,

GEO. L. WHEELLOCK.