

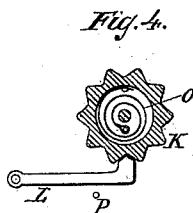
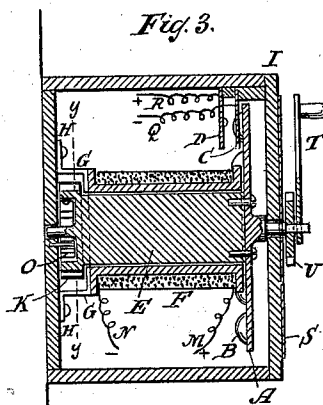
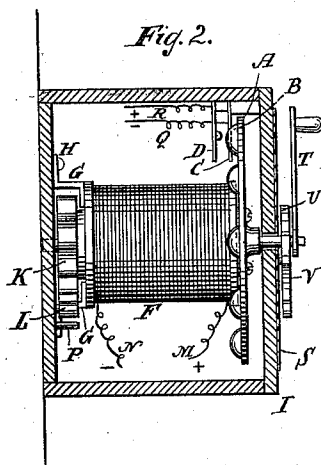
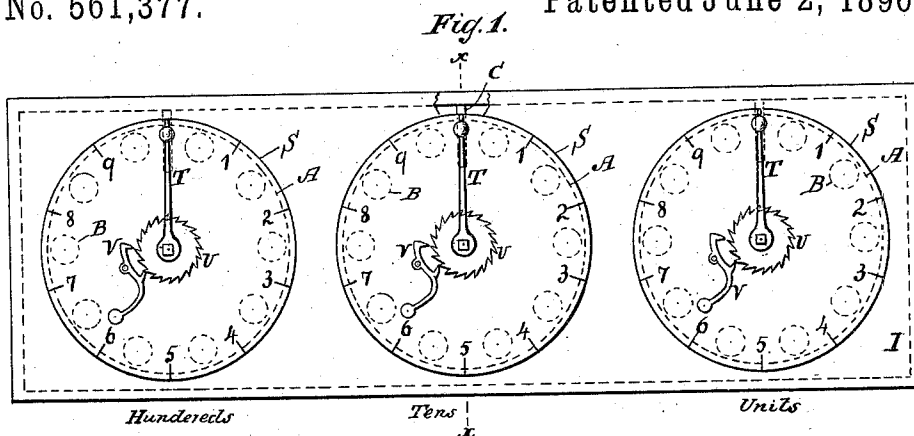
(No Model.)

2 Sheets—Sheet 1.

G. Q. DEAN & J. DEAN, Jr.
AUTOMATIC TELEPHONE CALL.

No. 561,377.

Patented June 2, 1896.



WITNESSES:

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Chas. E. Pennington

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BY
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(No Model.)

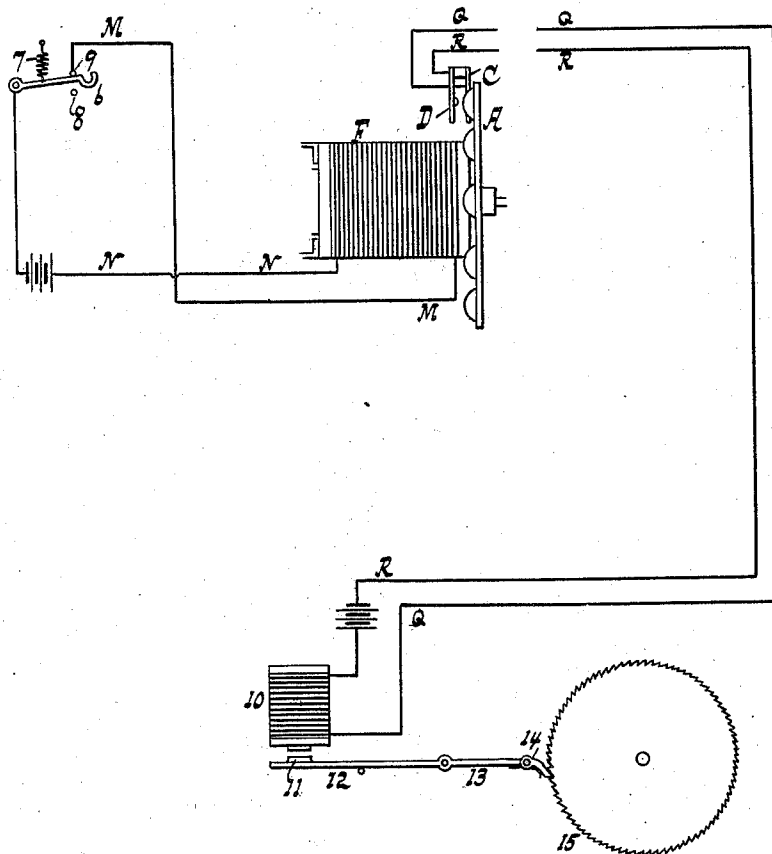
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Fig. 5.



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UNITED STATES PATENT OFFICE.

GERARD Q. DEAN AND JOHN DEAN, JR., OF NEW YORK, N. Y.

AUTOMATIC TELEPHONE-CALL.

SPECIFICATION forming part of Letters Patent No. 561,377, dated June 2, 1896.

Application filed August 3, 1895. Serial No. 558,143. (No model.)

To all whom it may concern:

Be it known that we, GERARD Q. DEAN and JOHN DEAN, JR., citizens of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Automatic Telephone-Calls, of which the following is a specification.

The object of this invention is to provide a call instrument which can be easily and accurately operated; and the invention resides in the novel features of construction set forth in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 is a face view of the call apparatus. Fig. 2 is a section along line *xx*, Fig. 1. Fig. 3 is a view like Fig. 2, showing a sectional view of a core. Fig. 4 is a section along line *yy*, Fig. 3; and Fig. 5 is a diagram of the circuits.

In automatic telephone-exchanges as heretofore arranged the person wishing to place his transmitter and receiver in connection with those of another was compelled to successively press buttons according to the number of the telephone with which connection was desired. For example, if such person desired connection with telephone 315 he had to press or push the hundreds-button three times, the tens-button once, and the units-button five times. If in counting the number of pushes an error was made—as, for example, pushing the units-button six times instead of five times—the operation of making connection had to be recommenced, and in the absence of any guide or index showing the number of pushes which a button has received a person, especially if in a hurry or somewhat distracted, is apt to make a miscount.

The contact-maker shown in the drawings comprises a plate or carrier A, having projections or actuating portions B, which when the plate or disk A is moved carry the projections past the contacts or fingers C and D, normally separated, as shown, but temporarily contacted by the passage of the actuating portions B. The contact-maker A B has connected thereto and moving therewith a core E, forming part of the electromagnet E F. The coil F of this magnet is fixed by arms or bracket G H to the box or support I.

The detent K L is shown with the ratchet or toothed disk K forming part of core E, and when this core E K is vitalized the pawl L is attracted to engage or click over the ratchet K as the latter moves with core E and contact-maker A B. When the current is cut off from the coil-leads M and N, the coil or vitalizer F is inactive, and, the core no longer attracting the pawl L, the spring or restorer O is free to return the contact-maker to the starting-point. When the pawl L is thrown off from ratchet K, the stop P limits the motion of the pawl away from the ratchet. It may be noted that the engaging tip or portion of the pawl L can be suitably electroplated to avoid or get over residual magnetism.

In the drawings are shown three contact-makers—one for units, one for tens, and one for hundreds—although of course this number can be varied.

The operation of the device is readily understood. The person desiring to make connection taking his receiver from the hook will close the circuit through the leads M N and vitalizer F, so as to cause the detent L to be attracted or brought into action. Then, supposing the number desired to be "315," the various contact-makers can be set as desired and mistakes avoided by setting the hundreds contact-maker to "3," the tens contact-maker to "1," and the units contact-maker to "5," each said contact-maker when being set causing a corresponding number of impulses to be sent through the leads Q R of the contacts C D.

The correct setting of the contact-maker can be assured by an index, as shown, for example, in the drawings. The support or frame I having a dial S and the contact-maker an index T, which latter can also serve as a handle for moving the contact-maker, then by setting the index to a certain number—as, for example, the number "3"—the operator is assured that the contacts C D have been actuated three times by the contact-actuators B, or, in other words, that three contact-actuators B have successively passed the contacts. When thus set at a number—as, say, the number "3"—the contact-maker A B is held in this position against the returning tendency of its restoring-spring O by the attracted detent L, which, as clearly noticed, is not released until

the current through leads M and N is stopped by the hanging up of the receiver at the close of the conversation.

The contact-actuators B when the index T is at the starting-point or zero are somewhat out of alinement with or not directly underneath the dial-numbers, so that by the time the index T is set to a number the corresponding contact-actuator will have passed the contacts C D, so that the circuit or circuits through leads Q R are but momentary.

An escapement or brake U V prevents the index T being rotated too rapidly, so that the successive contacts of the fingers C D will be suitably timed apart or isolated.

Instead of having, for example, one pair of contact-fingers, as C D, and ten contact-actuators, as B, the carrier A might have but one contact-actuator, which on the movement of carrier A would be made to pass over a number—say ten separate pairs—of contact-fingers, and in this way also ten isolated contacts or impulses could be produced. Such and other equivalents are manifestly within the scope of the invention, which is not limited to the exact construction shown, the feature of the invention being that the number and kind of contacts to be made can be rapidly effected and noted.

The core E or ratchet K is shown partly hollowed or recessed for suitably housing the restorer or spring O.

The brake or escapement U V can, if seen fit, be concealed by being applied or placed within the box I.

An example of circuits is shown in Fig. 5, where the hook 6, when released from the weight of the receiver, is drawn by spring 7 away from the rest or stop 8 and to contact 9, so as to close the circuit M N passing about or through the coil F. The pulsations or successive touches of the contacts C D cause the pulsations through circuit Q R and magnet 10, whose armature 11 vibrates lever 12 and 13, engaging by pawl 14 a gear 15. This gear 15 is shown in the form of a wheel; but, as known, a rack could be substituted for the wheel. The circuits M N and Q R can have one common battery or individual batteries located as found practical.

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

1. A movable contact-maker and contacts actuated by said contact-maker, combined with a movable core, a vitalizer for the core, and a detent actuated by and made to engage said core substantially as described.

2. A movable contact-maker and contacts actuated by said contact-maker, combined with a core carried by the contact-maker, a vitalizer for the core, and a detent actuated by said core substantially as described.

3. A movable contact-maker and contacts actuated by said contact-maker, combined with a movable core, a coil fixed about the core for vitalizing the latter, and a detent actuated by and made to engage said core substantially as described.

4. A movable contact-maker and contacts actuated by said contact-maker, combined with a movable core, a vitalizer for the core, a ratchet or toothed disk connected to the core, and a detent arranged to be attracted by said ratchet when vitalized substantially as described.

5. A movable contact-maker and contacts actuated by said contact-maker, combined with a movable core, a vitalizer for the core, a detent actuated by and made to engage said core, and an escapement or brake for the contact-maker substantially as described.

6. The combination with contacts of a contact-maker comprising a plate or carrier provided with projections or actuating portions for the contacts, a core carried by the carrier and provided with a ratchet or toothed disk, a vitalizer for the core, and a detent for the ratchet adapted to be actuated by said core substantially as described.

7. A movable contact-maker and contacts actuated by said contact-maker, combined with a movable core, a vitalizer for the core, a detent actuated by and made to engage said core, and a returning-spring or restorer for the contact-maker substantially as described.

8. A movable contact-maker and contacts actuated by said contact-maker, combined with a movable core, a vitalizer for the core, a detent actuated by said core, and a returning-spring or restorer for the contact-maker, said core being hollow and said restorer being housed in the core substantially as described.

9. The combination with contacts of a contact-maker comprising a plate or carrier provided with projections or actuating portions for the contacts, a core carried by the carrier, a vitalizer for the core, a detent actuated by said core, a restorer for the carrier, and an index and dial for the carrier, said restorer being adapted to return the carrier into position with the contact-actuating portions out of contact with the contacts and out of alinement with the dial figures substantially as described.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

GERARD Q. DEAN.
JOHN DEAN, JR.

Witnesses:

WM. C. HAUFF,
CHAS. E. POEMGEN.