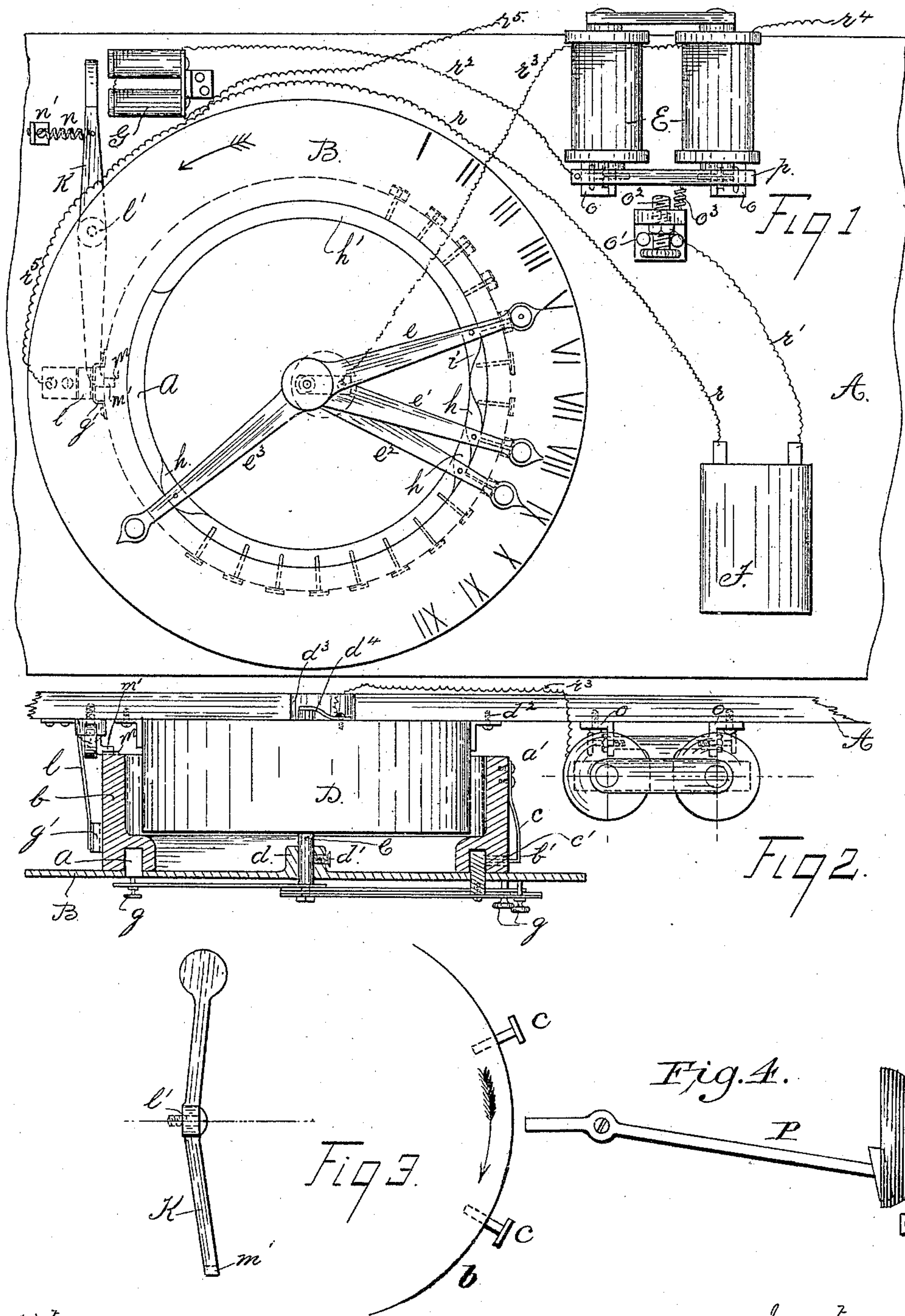


(No Model.)

G. R. LAWRENCE.
TELEPHONE ENUNCIATOR OR INDICATOR.

No. 444,780.

Patented Jan. 13, 1891.



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TELEPHONE ENUNCIATOR OR INDICATOR.

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To all whom it may concern:

Be it known that I, GEORGE R. LAWRENCE, a citizen of the United States, residing at Manteno, in the county of Kankakee and State of Illinois, have invented certain new and useful Improvements in Telephone Enunciators or Indicators, of which the following is a specification.

My invention relates to an improvement in enunciators or indicators for telephones; and it consists in certain peculiarities of the construction, operation, and arrangement of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a face view of my device with its magnets, batteries, and connections as they appear when in place on the wall of a room or board. Fig. 2 is a partially-sectional plan view of the same, and Fig. 3 is a detail view in side elevation of the locking-lever. Fig. 4 is a front view of a gong and tripping-lever and a portion of the cylindrical casing and its springs.

The object of my invention is to automatically indicate to the transmitter of a message by telephone, in the absence of the person for whom the message is intended, the exact time he (the receiver) may be reached to receive the message and while it is especially designed for this purpose and in connection with a telephone, yet I do not confine myself to any particular use to which it may be put.

In the drawings similar letters refer to corresponding parts throughout the different views.

A represents a portion of the wall of a room or a suitable surface to which the enunciator is secured in any desired manner.

B is a dial-plate, made of suitable size and material, having on its face, near its periphery, the numerals 1 to 12, inclusive, or the letters, words, or signs representing said numbers. At a suitable distance from the center of the plate is formed a circumferential groove or open space *a*, which acts as a guideway to the travelers, which are secured to

the hands of the indicator. To the rear of the dial-plate is secured a cylindrical casing *b*, which has its portion adjacent to the dial bifurcated, so as to stride the groove or guideway *a* at its rear, as shown in Fig. 2—that is, one prong of the fork is secured to one side of the groove and the other prong to the other side, thus affording a track of some depth for the travelers. To the outer surface of the casing *b*, and near the portion adjacent to the wall, is secured, by means of screws *a'* or otherwise, a number of springs *c*, which have their free ends bent inwardly at substantially a right angle, as shown at *b'*, which bent portion is adapted to extend through suitable holes *c'* in the casing into the groove *a* at the back of the dial and in alignment with the numbers or letters thereon indicating the hours one to twelve.

Through the center of the dial-plate is passed a shaft *C*, to the outer end of which is secured the hands of the indicator, and near the same the dial, which is formed for this purpose on its rear surface with a hub *d*, provided with a set-screw *d'*, by means of which the plate may be rigidly secured to the shaft. The hands *e e' e² e³* are loosely secured at their inner ends to the outer end of the shaft *C*, and are provided near their free ends with a knob or button *g*, which passes through the hands, and has its inner end resting on the face of the dial, thus affording a ready means for moving the hands to any desired point on the dial, and retaining them in said position by reason of the spring in the hands which presses the inner ends of the button against the face of the plate, as is readily understood. To more securely retain the hands in place, I sometimes provide the face of the dial near the numbers with small holes or indentations for the reception of the ends of the pins or buttons. To the under side of each of the hands and at a point opposite the groove *a* is secured the travelers *h h h h'*, which are adapted to fit snugly in the groove and to traverse the entire circle, if necessary. The traveler *h'* is made to conform to the circular groove *a*, and of sufficient length to extend from the spring at Fig. "I" to the one at Fig. "XII," and has one of its ends beveled, as at *i*, thus enabling it to pass easily under the pro-

jecting ends of the springs and holding the entire lot out of the groove when desired. The other travelers may be of the forms shown in Fig. 1 of the drawings and of sufficient length to raise one only of the springs from the groove.

To the outside of the cylindrical casing *b* is secured a metallic lug or projection *g'*, which extends outward from the casing the same distance as do the springs *c* when held out of the groove by the travelers. Upon the outside of this lug rests the upper end of a spring *l*, which is secured at its other end to the wall or board *A*. At the rear of the casing *b*, and at a proper point to engage with the lower end of the locking-lever *K* at the same time the spring *l* presses against the lug *g'*, is provided a projection *m*. The lever *K* may be slightly curved or bent, as shown in Fig. 3, and formed at its lower end with a projection *m'* to engage the projection *m* when it is desired to lock the casing or dial. It is also fulcrumed near its middle to the wall *A*, as at *l'*, and has secured to its outer side near the upper end a spring *n*, which is fastened at one end to a suitable piece *n'*, secured to the wall or board.

Rigidly secured to the wall or board by means of screws *d²* or otherwise, and fitting within the rear portion of the casing *b*, is a suitable casing *D*, which incloses a clock-work mechanism of any desired kind, which mechanism is attached to and operates the shaft *C*, upon which is mounted the dial-plate and hands, as before stated. The shaft *C* is journaled in the front and back of the casing *D*, and projects slightly beyond the rear portion thereof, as shown in Fig. 2, and to accommodate this projection the wall is provided with a suitable mortise or depression *d³* therein. Within this depression is a spring *d⁴*, which has one of its ends secured to the back of the casing *D* and the other resting lightly upon the rear end of the shaft *C*, thus allowing it to revolve freely, yet being in contact all the time with the spring.

E is a suitable magnet, such as is generally used in telephones, and in some instances may be in the telephone which is attached to the wall alongside of the enunciator. In the drawings, however, I have shown the magnet *E* resting upon suitable brackets *o*, which are secured to the wall by means of screws or otherwise, and project some distance from the wall, as shown in Fig. 2. To these brackets, just beneath the lower portion of the magnet *E*, is hinged or pivotally secured an armature *p*, which extends outward horizontally and is adapted to move up and down at its free portion. At a desired distance below the brackets *o* is secured to the wall another bracket *o'*, having secured in its upper portion a suitable metallic screw *o²* or other piece, which projects upwardly to near the armature, and upon which the armature rests at times, as will be presently explained. As seen in Fig. 1, the armature is connected to the

bracket *o'* by means of an insulated spring *o³*, which draws it to the screw *o²*, when the magnet ceases to attract by reason of the change in the current of electricity.

F is a battery, which may be located at any desired point, and is connected by means of the wires *r r'* to the screw *o²* and a magnet *G*, which is secured to the wall near the upper end of the lever *K*, as is seen in Fig. 1 of the drawings. Connected at one of its ends to this magnet and at the other to the armature *p* is a wire *r²*, by means of which the circuit from the battery is completed when the armature rests on the screw *o²*, as is obvious. To the spring *d⁴* is connected at one end the wire *r³*, which leads to the magnet *E*, through which it is united to one of the main wires *r⁴ r⁵*, the wire *r⁵* being joined at one end to the spring *l*, as indicated in the drawings.

The operation of my device is as follows: The casing containing the clock-work, which is wound up, and the enunciator is secured at a convenient place to the wall and is connected, as above described, by means of the wires and through the magnets to the main telephone-wires, when the hands of the indicator may be placed and secured to indicate the hour and quarter-hour when necessary. In Fig. 1 I have shown the hands set so as to indicate the hour of five and thirty minutes after. Now when the transmitter of a message rings the bell on his instrument to call the person to whom the message is to be sent and to whose instrument the enunciator is attached the armature *p* will be dropped from the magnet *E* by reason of the break in the current, thus demagnetizing the said magnet, and will rest upon the top of the screw *o²*, which operation completes the circuit from the battery *F* and creates the magnet *G*, which attracts thereto the upper end of the lever *k*, the projection on the lower end of which is drawn away from the lug *m*, thus liberating the casing *b* and allowing it to revolve in the direction indicated by the arrow by reason of the action of the clock-work on the shaft. As soon as the dial begins to revolve the spring *l* is disengaged from the lug *g'*, and the armature is attracted to the magnet *E*, thus breaking the circuit from the battery *F* and permitting the lever *k* to be held in place to engage with the lug *m* through the spring *n*. In the revolution of the dial-plate the springs *c*, which are held out of the groove by the travelers, will strike in rapid succession the spring *l*, which operation unites and breaks the circuit and causes the bell in the telephone alongside the enunciator, as well as the one in the distant telephone, to ring one time for each out-pressed spring, thus indicating the hour and quarter-hour at which the person at the distant station expects to return. As seen in Fig. 1, the springs at 1 to 5 are pressed out of the groove by the traveler *h'*, and at 8 and 9 by the travelers *h h*. When in this position, the bells will strike five times in rapid succession, and while

the springs at 6 and 7, which are in the groove and will not come in contact with the spring *l* are passing said spring a short interval will elapse, after which the bells will again sound two strokes, thus indicating two quarter-hours. If it is desired to indicate three quarter hours, it is only necessary to place the other traveler at figure 10, which will press out the spring at that point. After the dial has made one revolution the lever *K* will engage with the lug *m* and will lock the device, when the above-described operation may be repeated as often as desired, the clock-work being kept wound up for this purpose. I may sometimes dispense with the springs *d*⁴ and *l* and their wire connections *r*³ *r*⁵, and place a gong *R* or bell having a tripping-lever *P* at a suitable place for the springs *c* to strike in their revolution, in which case the sound will be transmitted through the telephone, as is apparent.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a telephone-enunciator, the combination of a dial-plate having on its face characters representing the numbers one to twelve, inclusive, and a circular guideway with a number of index-hands having suitable travelers adapted to move in the guideway, the cylindrical casing *b*, secured to the dial-plate and having the groove *a*, the lugs *g'* *m*, and the springs *e*, the shaft *C*, having mounted thereon the dial-plate and hands and being operated by a suitable clock-work mechanism, and means for connecting the device to the telephones, all constructed, arranged, and operating substantially as set forth.

2. In a telephone-enunciator, a dial-plate having on its face characters representing the numbers one to twelve, inclusive, and a circular guideway, in combination with a number of index-hands having suitable travelers adapted to move in the guideway, the cylindrical casing *b*, having the groove *a*, the lugs *g'* *m*, the springs *c*, the shaft *C*, having mounted thereon the hands and dial-plate and being operated by a suitable clock-work mechanism, the locking-lever *K*, the springs *l* and *d*⁴, the magnet for attracting the lever, and the means for connecting the device to and transmitting sound over the telephone system, substantially as and for the purpose set forth.

3. In a telephone-enunciator, the dial-plate *A*, having on its face characters representing the numbers one to twelve, inclusive, and a circular guideway, in combination with a number of index-hands having the travelers *h'* *h* and buttons *g*, the cylindrical casing *b*, having the groove *a*, lugs *g'* *m*, springs *c*, the shaft *C*, having mounted thereon the dial-plate and hands and journaled in the casing *D* and operated by suitable clock-work in said casing, the springs *d*⁴ *l*, the lever *k*, having the projection *m'* and spring *n*, the magnet *G*, battery *F*, having the connections *r* *r'* *r*², the piece *o*² and spring *o*³, the magnet *E*, having the hinged armature *p*, and the wires *r*³ *r*⁴ *r*⁵, all constructed, arranged, and operating substantially as shown and described, and for the purpose set forth.

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Witnesses:

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