(No Model.) 2 Sheets—Sheet 1.

J. GEARY.

ELECTRIC ANNUNCIATOR.

No. 381,772. Patented Apr. 24, 1888.

Fig 1

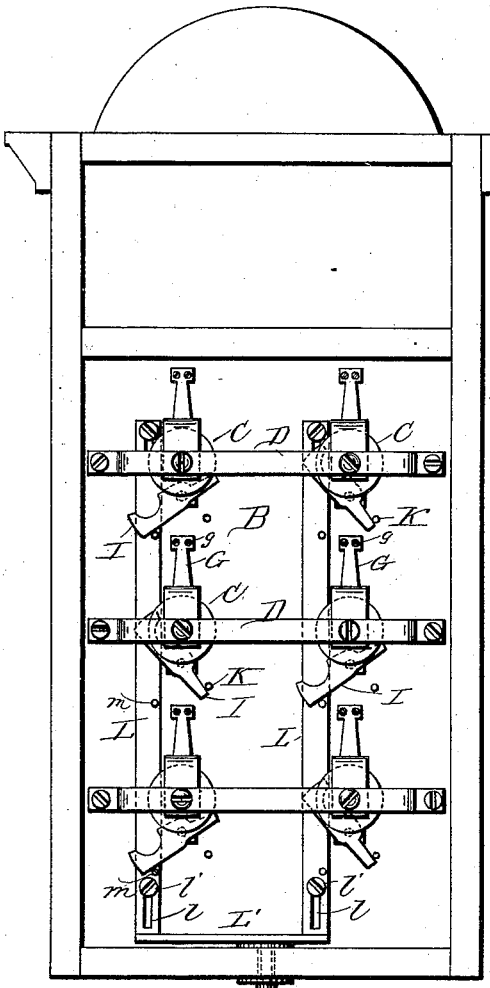


Fig. 2

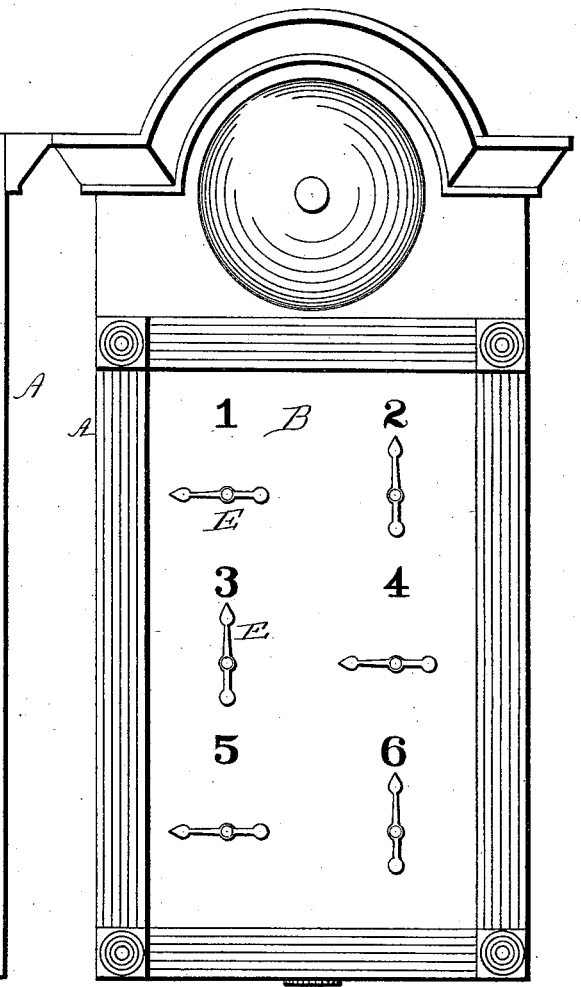
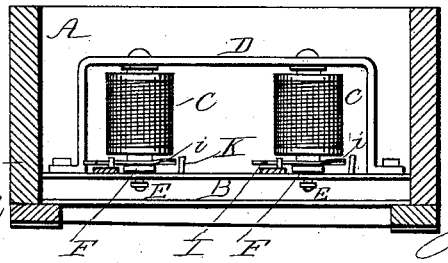


Fig. 3



Witnesses
A. B. Brackwood
M. Smith

Inventor
John Geary
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(No Model.) 2 Sheets—Sheet 2.

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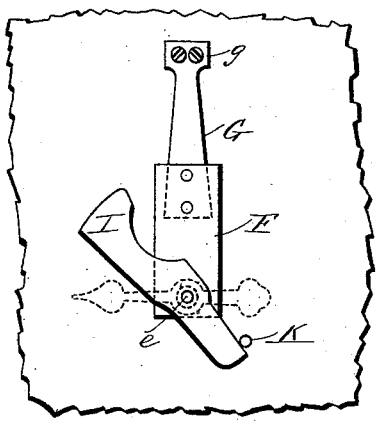

Fig. 5.

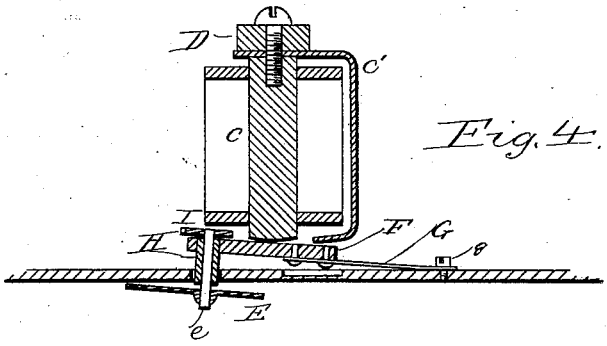

Fig. 4.

Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN GEARY, OF PHILADELPHIA, PENNSYLVANIA.

ELECTRIC ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 381,772, dated April 24, 1888.

Application filed October 25, 1887. Serial No. 253,380. (No model.)

To all whom it may concern:

Be it known that I, JOHN GEARY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Electric Annunciators; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification.

My invention has relation to electric annunciators, and has for its object the provision of an annunciator of novel and simple construction, which shall operate with certainty and by the aid of a comparatively weak battery.

My invention relates particularly to that class of electric annunciators wherein the point or station from which the signal is sent is indicated upon a plate bearing numbers or letters by the movement of a pivoted hand or pointer arranged in proximity to one of such numbers or letters.

As ordinarily constructed, heretofore the index-hands in annunciators of this class have been pivoted upon a shaft passing through the core of the electro-magnet, by the energizing of which the movement of the index-hand is secured, and as such cores are necessarily of iron, and hence liable to rust upon exposure to damp air, and thus interfere with the movement of said index-hand, annunciators so constructed are constantly liable to become absolutely inoperative, and need constant and careful overhauling and attention.

In carrying my invention into effect I journal the pivot of the index-hand of each magnet in a bushing set into a hole in the armature of the magnet and suspend the said armature by a spring-plate upon the back of the index or numbered plate of the annunciator, the electro-magnet being so arranged that it will face the said plate and the armature suspended therefrom. Upon the inner end of the index-hand shaft or pivot I secure an arm, one end of which is adapted, when the magnet is inactive, to engage with a pin upon the index-plate, and thus maintain the index-hand in its normal position, and the other end of said arm being weighted, so that when the magnet is energized and the arm released from its pin the weight of the end of the arm will cause the index to turn, and thereby indicate a "call."

My invention consists, in addition to the above-described features, in the novel construction, combination, and arrangement of parts hereinafter described and claimed.

Referring to the accompanying drawings, Figure 1 is a rear elevation, and Fig. 2 a front elevation, of an annunciator constructed according to my improvements, and containing six electro-magnets adapted to operate an equal number of index-hands; Fig. 3, a cross-section on the line *x x* of Fig. 2; Fig. 4, a detail, partly in section, of one of the electro-magnets, its armature, and the attached index-hand; and Fig. 5, a similar view illustrating more clearly the construction and arrangement of the arm upon the pivot of the index-hand.

In the drawings the arrangement of the devices for ringing the usual bell and the circuits of the electro-magnets are not shown, as the same are well understood and are such as are ordinarily employed in devices of this class.

A designates the case or box of the annunciator, and B the index-plate of the same, having upon its face the numbers 1, 2, 3, &c.

C C C designate the electro-magnets secured upon the U-shaped cross arms or frames D D D, and E E E are the index-hands. The electro-magnets C C C each consist of a coil of wire inclosing a core, *c*, and a plate of iron, *c'*, which is secured to the core at one end and has its other end bent around into juxtaposition with the other end of the core, so as to secure the effect of a horseshoe magnet.

F designates the armature of the magnet, which is suspended in front of the magnet by means of a small flat spring, G, which is secured at *g* to the index-plate B. A bushing, H, of brass or other non-magnetic material, is set in a hole near the lower end of armature F, and through said bushing passes the pivot *e* of index-hand E. Upon the inner end of pivot *e* is fixed a lever-arm, I, which has its lower edge at one end beveled, as at *i*, and said beveled edge contacting with the beveled end of a pin, K, set in plate B, thereby causing the arm to pass the pin when the index-hand is

brought back to its normal position, as will be presently described.

L L designate two upright metal standards, guided and supported by screws *l' l'*, passing through slots *l l*, and connected together by a cross-piece, L', to which is attached a rod, L^2, that projects through the bottom of case A. The standards L L have pins *m m m*, which serve as stops to limit the downward motion of arms I, and thereby limit the movement of the index-hands, and which serve, also, to raise the said arms I and restore the index-hands to normal upon pushing up the rod L^2.

Operation: When a magnet is inactive, the armature is held away from the poles by the spring G, and the index-hand is held in its normal position—which is, for instance, a horizontal position—by the end of arm I which is beneath the pin K. Upon the magnet becoming energized the armature is drawn toward it, and the arm I being thereby released from the pin K, its weighted end drops and the index points to the proper number on the index-plate B. When one or any number of the magnets has been operated, their respective index-hands may be simultaneously restored to normal position by pushing up the rod L^2. This causes the pins *m m m* to raise the arms I until, by reason of the bevel upon the lower edge and the bevel upon pins K, the said arms have swung past the pins, and the springs G G, drawing the armatures and arms I I toward index-plate, retain the arms in position until the magnets are again energized.

While I have described the armatures F as being suspended upon a spring, G, I do not wish to confine myself to this precise construction, as the armatures might be suitably hinged or pivoted and any other desired or suitable form of spring employed.

Having described my invention, I claim—

1. In an annunciator, the combination, with an electro-magnet and its armature, of a shaft journaled in said armature apart from said magnet, an index-hand secured to one end of said shaft, an arm secured to the other end of the same, and a stop for engagement with said arm, substantially as described.

2. In an annunciator, the combination, with an electro-magnet and its movable armature, of a stop, an arm engaging therewith, a horizontally-movable shaft journaled apart from said magnet and carrying said arm, and an index-hand secured to said shaft, said parts being so arranged that the movement of the armature toward the magnet will disengage said arm and stop, substantially as described.

3. In an annunciator, the combination, with the electro-magnet C, armature F, secured to spring G, and stop K, of the shaft or pivot *e*, index-hand E, and arm I, secured to said shaft, substantially as and for the purpose described.

4. In an annunciator, the combination, with electro-magnet C, armature F, and stop K, of the shaft *e*, journaled in said armature, the arm I, secured to said shaft and beveled, as at *i*, and the frame or standard L, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of October, 1887.

JOHN GEARY.

Witnesses:
A. A. CONNOLLY,
R. DALE SPARHAWK.