

(No Model.)

H. S. DOWNERD.
ELECTRICAL ANNUNCIATOR.

No. 384,430.

Patented June 12, 1888.

Fig. 1.

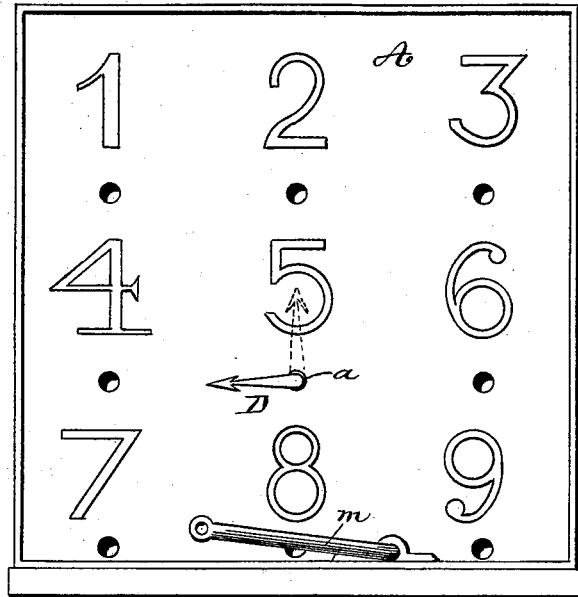
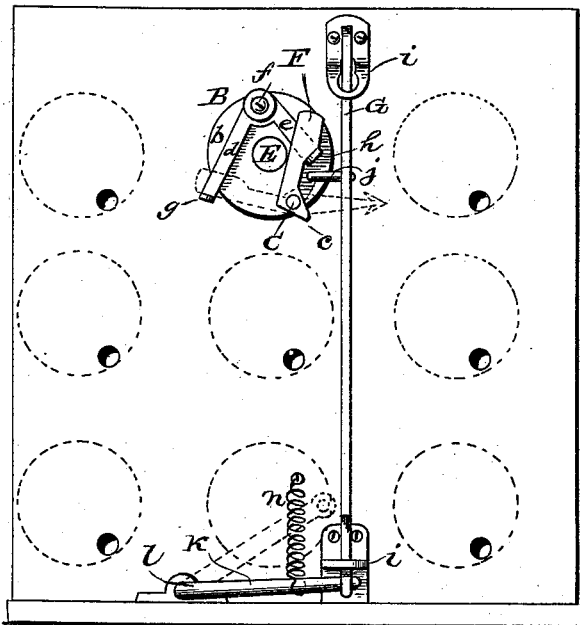


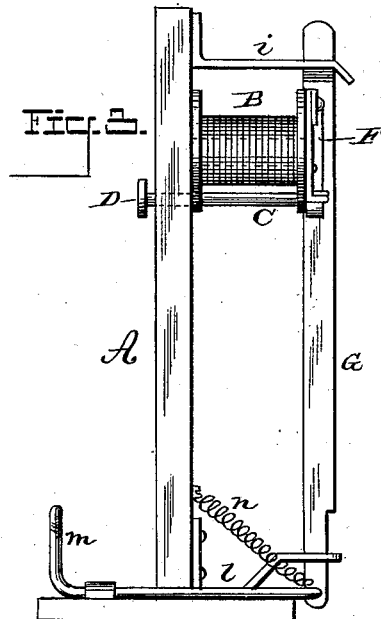
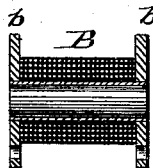
Fig. 2.



WITNESSES:

D. D. Mott
C. D. Mott

Fig. 3.



INVENTOR:

H. S. Downerd,
BY Munn & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

HIRAM S. DOWNERD, OF ZANESVILLE, OHIO.

ELECTRICAL ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 384,430, dated June 12, 1888.

Application filed January 28, 1888. Serial No. 262,257. (No model.)

To all whom it may concern:

Be it known that I, HIRAM S. DOWNERD, of Zanesville, in the county of Muskingum and State of Ohio, have invented a new and Improved Electrical Annunciator, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a front elevation of my improved annunciator, showing one of the indexes and the replacing-lever. Fig. 2 is a rear elevation showing one section of the annunciator and replacer. Fig. 3 is a side elevation, and Fig. 4 is a longitudinal section, of the annunciator-magnet.

Similar letters of reference indicate corresponding parts in all the views.

The object of my invention is to construct a simple, inexpensive, and efficient electrical annunciator.

The invention consists in the construction and combination of parts, as will be hereinafter fully described and claimed.

The face A of the annunciator is provided with series of figures or other characters, and below each character is formed an aperture, *a*. To the back of the face A, and behind each figure or character, is placed an electro-magnet, B, provided with heads *b*, which project beyond the winding of the electro-magnet and are apertured to receive the spindle C, which projects through the face of the annunciator and carries on its outer end an index, D. The spindle C is located below and a short distance to one side of the iron core E of the electro-magnet B, and to the rear end thereof is attached an armature, F, provided with a finger, *c*, projecting obliquely from the body of the armature.

To the rear head *b* of the electro-magnet B are attached the arms *d e* by the screw *f*, the said arms being made of non-magnetic material, with the ends bent rearwardly, forming stops *g h* for arresting the motion of the armature F. At the side of each magnet B is placed a bar, G, arranged to move in guides *i*, attached to the back of the face of the annunciator. The bar G carries a finger, *j*, adapted to engage the finger *c* on the armature F. The lower end of the bar G is connected with an arm, *k*, carried by a rock-shaft,

l, the said rock-shaft projecting through the front of the annunciator and carrying an arm, *m*. The annunciator is provided with as many magnets B and associated parts as there are figures or characters upon the face thereof, and for each vertical row of magnets there will be a bar G, and the several bars G of an annunciator may be all connected together, so as to be moved simultaneously, if desirable. The bar G is held normally in an elevated position by a spring, *n*, attached to the arm *k* and secured to the back of the face A.

When a current is sent through the electro-magnet, the core E, being magnetized, attracts the armature F, causing it to leave its stop *h* and move toward the stop *g* and past the center of gravity, and when the core E becomes demagnetized by the breaking of the circuit in which the magnet B is placed the armature F drops by gravity upon the stop *g*, as shown in dotted lines. The armature by dropping in this manner turns the spindle C through a quarter of a revolution and raises the index D into a vertical position in front of the figure or character on the face of the annunciator, as shown in dotted lines.

When it is desired to return the armature and the index to the point of starting, the arm *m* is pushed down, thereby drawing down the bar G, bringing the finger *j* into engagement with the finger *c*, and throwing the armature F over against the stop *h*, where it remains by its own gravity.

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

1. The combination, with the electro-magnet B, having heads *b b*, of a spindle, C, journaled in the heads below and to one side of the core, the index at the outer end of the spindle, the armature F, secured to the inner end of the spindle, normally extending upward adjacent to the core and provided on its lower end with a finger, *c*, projecting obliquely therefrom, the arms *d e*, secured to the head above the core, as at *f*, extending downwardly at opposite sides of the core and provided with stops *g h*, respectively, and the vertical rod G, having a lateral projection or arm, *j*, into the path of which the finger *c* at times extends, substantially as set forth.

2. The combination, with the electro-mag-

..... net and the spindle having an index and an armature provided with a finger or projection, of the vertical rod G, having a laterally-project- ing arm or projection, <i>j</i> , into the path of which 5 the said finger at times projects, guides <i>i i</i> for said rod, the horizontal rock-shaft <i>L</i> , having an arm, <i>k</i> , at its inner end engaging the lower end of the rod G, and an arm, <i>m</i> , at its outer	end, and the spring <i>n</i> , exerting an upward strain on the arm <i>k</i> and rod, substantially as re- set forth. HIRAM S. DOWNERD. Witnesses: ISAAC HUMPHREY, A. H. STERN.
--	---