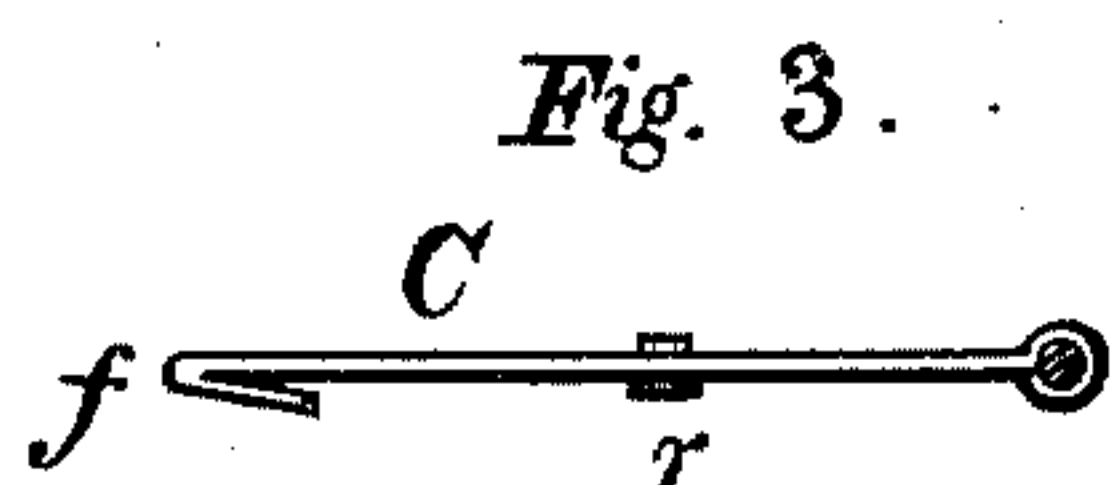
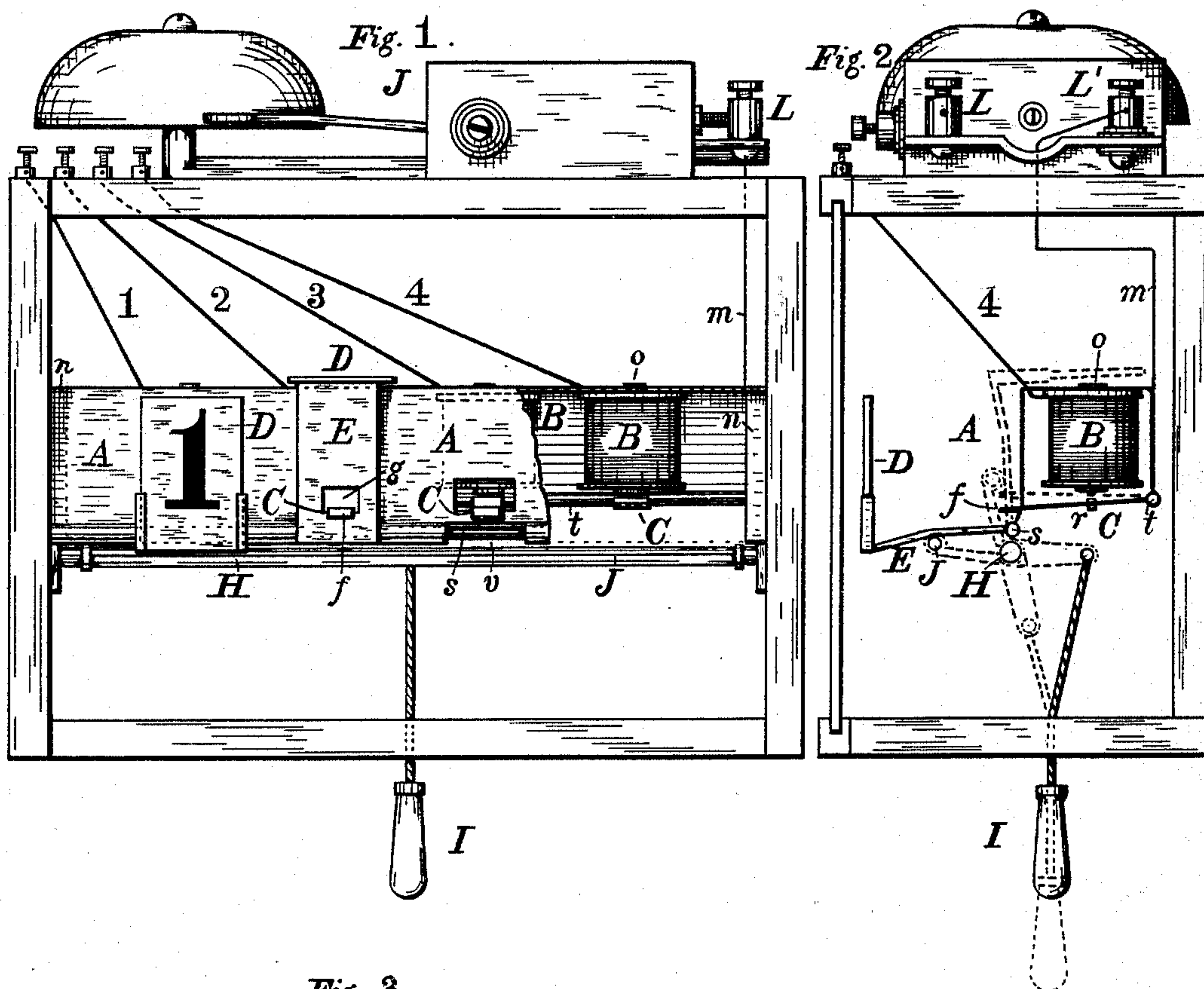


(No Model.)

N. H. RAYMOND.
ELECTRICAL ANNUNCIATOR.

No. 483,310.

Patented Sept. 27, 1892.



Witnesses:
J. Watson Sims
C. G. Crannell.

Inventor:
Nelson H. Raymond.
By Geo. B. Selden.
att

UNITED STATES PATENT OFFICE

NELSON H. RAYMOND, OF BUFFALO, NEW YORK, ASSIGNOR TO CHARLES M. PROCTOR, OF SAME PLACE.

ELECTRICAL ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 483,310, dated September 27, 1892.

Application filed September 26, 1891. Serial No. 406,916. (No model.)

To all whom it may concern:

Be it known that I, NELSON H. RAYMOND, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain Improvements in Electrical Annunciators, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to certain improvements in the construction of electrical annunciators, whereby their construction is cheapened and simplified and their operation and adjustment facilitated.

My invention is fully described and illustrated in the following specification and the accompanying drawings, the novel features thereof being specified in the claims annexed to the said specification.

In the accompanying drawings, representing an annunciator containing my improvements, Figure 1 is an elevation, the front of the inclosing case being omitted. Fig. 2 is a side elevation as seen from the right hand in Fig. 1, the side of the case being removed. Fig. 3 represents the armature detached.

In the construction of my improved annunciator I support the magnets, armatures, and drops on a sheet-metal frame made in the form of an inverted trough and extending across the case which incloses the apparatus. This sheet-metal frame A, Figs. 1 and 2, incloses the magnets, the armatures being pivoted on the rear side of the frame and extending through openings therein on the other side into proper relation with the arms of the drops.

B represents the magnets, and C the armatures.

D represents the drops, which consist of an arm E, pivoted to the lower edge of the front side of the frame A and carrying a suitable holder for a cord or tablet inscribed with a numeral or other character. The position of the drops when the number is displayed is indicated by the full lines in Fig. 2 and when folded up by the dotted lines. In the latter position the drop is held from falling by the catch *f* on the end of the armature engaging with the lower edge of an opening *g* in the arm E, so that when the current passes

through the coil of the magnet and the armature is attracted the drop falls by gravity and displays its number. The drops are restored to position by the rock-shaft H, operated by a suitable handle, pull, or lever I. In the accompanying drawings I have represented an annunciator with only four drops; but it is obvious that any desired number of drops may be employed, the frame A being extended lengthwise or a number of such frames being employed.

My improved annunciator is provided with an electric bell J, which is conveniently located on the top of the case.

The course of the current through the apparatus is as follows: from the binding-post L through the bell, and thence from the binding-post L' to the frame A through the wire *m*, and thence through any one of the magnets and through the wires 1 2 3 4 to the various rooms or offices from which it is desired to send the signals. One end of each of the magnet-coils is connected to the frame A and the other end with the wires 1 2 3, &c.

The frame A is made of sheet metal provided with suitable perforations and bent or stamped into shape. It is supported at each end on the lugs or bosses *n n*, attached to the sides of the case. The frame is preferably connected with the zinc side of the battery. The magnets are secured to the frame by the rivets *o*. The armature is provided with a rivet or boss *r* of non-magnetic material, such as copper, which prevents its adhering to the core of the magnet.

The lower edges of the frame A are stiffened by being turned over the wires *s* and *t*, on which the armature and drop are pivoted, respectively, by having their ends bent around the wires, suitable recesses being cut in the frame for this purpose, as indicated at *v*, Fig. 1. The armature or drop may, however, be pivoted to the frame in any other suitable manner. The armature is made of soft iron, and it is easily adjusted so as to work with the least battery-power by bending it. The rock-shaft H is supported at its ends in suitable journals attached to the interior of the case, and it is provided with arms which carry the rod J, which lifts the drops, and with an

arm to which the cord of the pull I is attached. The supports *nn* are made of a shape adapted to receive the trough-shaped frame, which simply rests on them. The case is made in
5 any ordinary or preferred manner, being provided with a glazed front.

My improvements in the construction of annunciators render them easier and cheaper to construct, more durable in practical use,
10 and facilitate their adjustment in case they get out of order.

I claim—

1. The combination, in an electrical annunciator, of the U-shaped sheet-metal frame A,
15 provided with the stiffening-wires *s* and *t*, the magnet B, armature C, pivoted on one of the stiffening-wires, and the drop D, pivoted

on the wire on the opposite side of the frame, substantially as described.

2. The combination, in an electric annunciator, of the U-shaped sheet-metal frame A, provided with the stiffening-wires *s* and *t* at its edges and supported within a suitable enclosing case on the lugs *nn*, fitting the interior of the trough, the magnet B, armature C,
25 pivoted on one of the stiffening-wires, and the drop D, pivoted on the wire on the opposite edge of the frame, substantially as described.

NELSON H. RAYMOND.

Witnesses:

GEO. RICHARDS,
GERMAIN MATTISON.