

B. J. NOYES.
MUNICIPAL SIGNAL APPARATUS.

No. 433,486.

Patented Aug. 5, 1890.

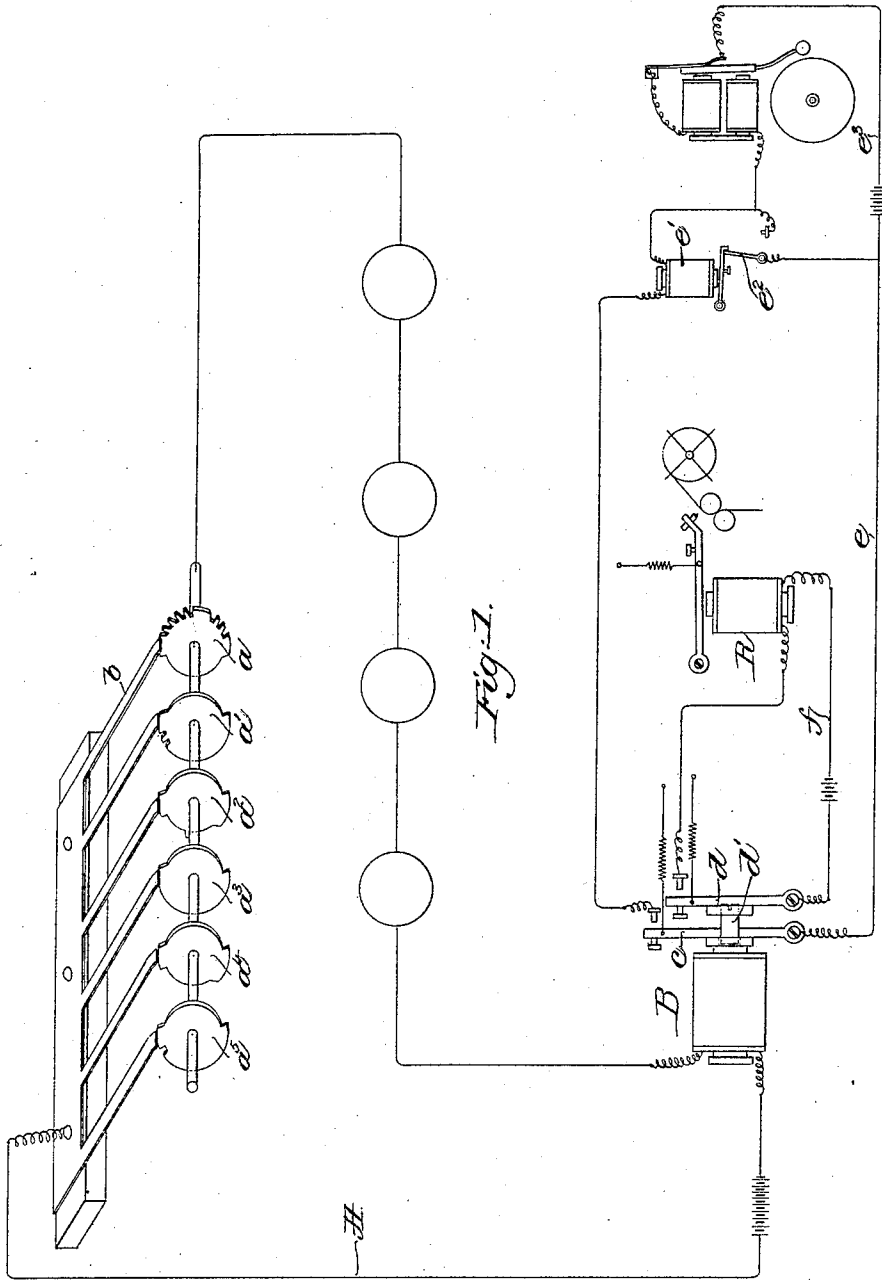


Fig. 1.

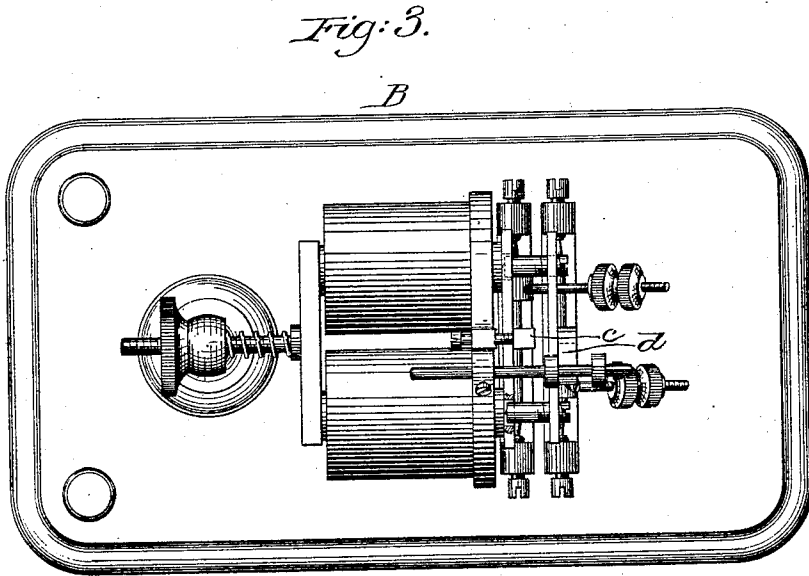
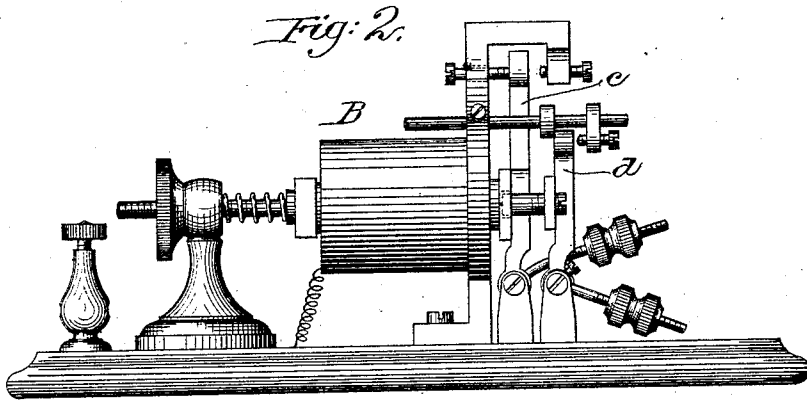
Witnesses.
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Andrew Emery-

Inventor,
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UNITED STATES PATENT OFFICE.

BERNICE J. NOYES, OF BOSTON, MASSACHUSETTS.

MUNICIPAL SIGNAL APPARATUS.

SPECIFICATION forming part of Letters Patent No. 433,486, dated August 5, 1890.

Application filed September 23, 1889. Serial No. 324,812. (No model.)

To all whom it may concern:

Be it known that I, BERNICE J. NOYES, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Municipal Signal Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In United States Patent No. 359,688, dated March 22, 1887, a municipal signal apparatus is shown, comprising a central station and several sub-stations connected by an electric circuit, the sub-stations containing multiple-signal transmitters constructed and arranged to change the condition of the circuit for intervals of long and short duration, and the central station containing a register which records all the signals and an audible alarm or indicating signal which is responsive to the long changes only. The audible alarm or indicating signal therein shown was controlled by an independent relay.

In United States Patent No. 411,407, dated September 17, 1889, a municipal signal apparatus is shown, comprising a central station and several sub-stations connected by an electric circuit, the sub-stations containing multiple-signal transmitters constructed and arranged to change the condition of the circuit for intervals of long and short duration, and the central station containing a register which records all the signals and having audible alarm or indicating signal. The audible alarm or indicating signal is therein shown as controlled by a relay, the armature of which is acted upon by a restraining or retarding force produced by the residual mechanism in the cores of the relay, and the armature is adjusted close to the cores to obtain the effect, and the signal-receiving relay is adjusted with its armature away from the cores, so as not to be acted upon by the restrained influences.

This invention has for its object to simplify the construction of the central-office-receiving apparatus.

In accordance with this invention a signal-receiving relay is employed at the central office, provided with two armatures, one of which is adjusted close to the cores of the re-

lay, or substantially so, and the other is adjusted away from the cores but within the field of force. The armature, which is adjusted close to the cores, is acted upon by the restraining influence of the residual mechanism of the cores, while the other armature is free to move, being unrestrained. The restrained armature is included in a local battery-circuit which contains, as herein shown, a bell, while the unrestrained armature is included in a local battery-circuit containing a register. The unrestrained armature is responsive to all impulses, while the restrained armature is responsive to impulses of long duration only, and hence the multiple-signal transmitter is constructed and arranged to change the condition of the circuit for intervals of long and short duration, as shown in the patent referred to.

Figure 1 shows, in diagram, a multiple-signal transmitter at a sub-station and a receiving apparatus at the central station; Fig. 2, a side elevation of the relay employed, and Fig. 3 a plan view of the relay shown in Fig. 2.

The multiple-signal transmitter employed at the sub-station, and herein shown, is substantially such as represented in United States Patent No. 320,032, dated June 16, 1885, it containing as a co-operative part of it the signal-wheels a a' a^2 a^3 a^4 a^5 and contact-pens b , one for each signal-wheel. The signal-wheels are formed, substantially as described, to effect changes in the condition of the circuit A for long and short duration, as referred to in Patent No. 359,688. At the central station a single relay B is employed, it having two armatures c d , one of which, as c , is adjusted close to the cores of the relay, and the other, as d , is adjusted away from the cores but within the field of force. The armature c will then be acted upon or restrained by the residual mechanism in the cores, while the armature d will be free to respond, being unrestrained; hence the armature d will respond to all impulses irrespective of duration, while the armature c responds only to the impulses in the changes of long duration. The armature c is included in a local battery-circuit e containing an electro-magnet e' , the armature of which holds in elevation a drop

e^2 , which is included in the local battery-circuit e^3 , containing a bell or other indicating-signal. The armature d is included in a local battery-circuit f , containing a register I.

5 To admit of the compactness desired, the pivoted armature c will have two holes through it, through which pass studs d' , secured to or forming a part of the pivoted armature d .

10 I do not desire to limit my invention to any particular form of transmitter employed.

I claim—

15 In a municipal signal system comprising a central station and several sub-stations connected by an electric circuit, multiple-signal transmitters at the sub-stations for changing

the condition of the circuit for intervals of long and short duration, combined with a single receiving-relay B, having two armatures, one of which is adjusted close to or in contact with the cores, and the other is adjusted away from the cores, but within the field of force, substantially as described. 20

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BERNICE J. NOYES.

Witnesses:

GEO. W. GREGORY,

E. J. BENNETT.