

968,646.

W. W. DEAN.
ANNUNCIATOR.
APPLICATION FILED JULY 28, 1909.

Patented Aug. 30, 1910.

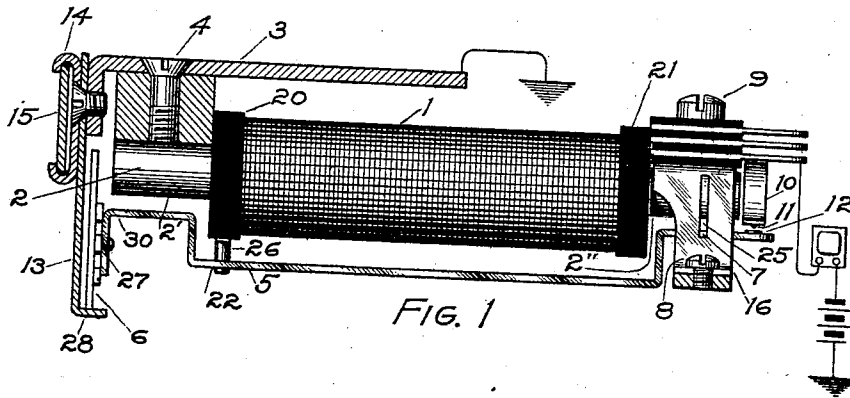


FIG. 1

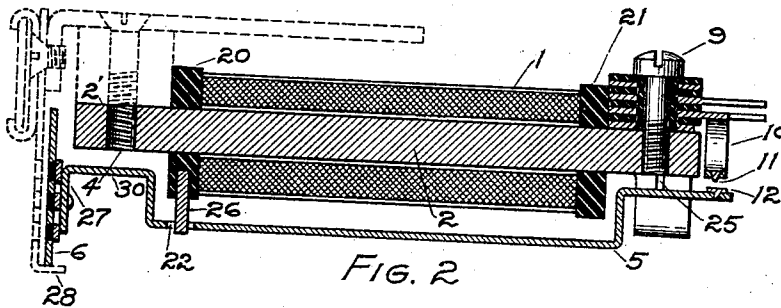


FIG. 2

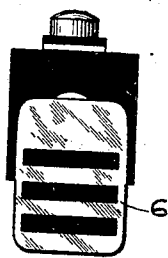


FIG. 4

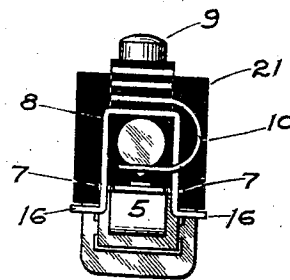


FIG. 3

WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM W. DEAN, OF ELYRIA, OHIO, ASSIGNOR TO THE DEAN ELECTRIC COMPANY,
OF ELYRIA, OHIO, A CORPORATION OF OHIO.

ANNUNCIATOR.

968,646.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM W. DEAN, a citizen of the United States, residing in Elyria, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Annunciators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates more particularly to drop annunciators in which the annunciator signal is controlled by an electromagnet.

Among the objects of my invention I endeavor to produce an instrument simple and compact and which may be erected upon strips occupying very little space. I also provide means to close a signal circuit when the magnet is energized and so arrange the armature that in its movement after the closure of the circuit, the contacts are rubbed together in such a way as to insure brightness of contacts and a good connection.

My invention will be best understood by reference to the following description when taken in connection with the accompanying illustration showing one specific embodiment thereof, while its scope will be more particularly pointed out in the appended claims.

Figure 1 is a side elevation of the annunciator showing the associated framework in section. Fig. 2 is a vertical section through the longitudinal axis. Fig. 3 is a rear elevation. Fig. 4 is a front elevation with the frame removed.

1 is an electromagnet having the insulating ends 20 and 21, 2 is the core extending beyond the magnet to a considerable distance as shown at 2' and 2''. The frame is shown at 3, front frame plate, at 13. A screw 4 passes through the frame into the extended end of the magnet core, serving to attach the magnet to the frame. The terminals of the magnet, a special terminal 10, and a bracket 8, separated from one another by insulation, are fastened to the rear end 2'' of the magnet core by a screw 9. The terminal 10 is bent around and outside the core, presenting a switch contact 11 beneath the core. The bracket 8 extends below and on each side of the core. This bracket is bent outwardly at right angles, as shown at 16, 16, and vertical slots 25, 25, are cut in each side thereof. Holes are punched in the

extension 16 through which screws may be inserted to attach the rear of the magnet to a frame piece. The armature 5 of the magnet extends along the lower surface of the magnet, conforming to the general contour thereof, and being bent at each end to follow the lower surface of the extended pole pieces. Lugs 7, 7 on the armature, work in the slots 25, 25 of the bracket, furnishing a guiding means for the armature during its sliding movement. A contact 12 on the rear end of the armature coöperates with the contact 11 to form a switch controlling an alarm circuit. A lug 26 projects from the lower part of the forward spool head downward through a hole 22 in the armature, serving to guide the forward end of the armature during its movements. The armature is bent over at 27 and attached to a signal 6. The lower part of the signal normally rests against the bent over part 28 of the front frame plate. Slots are cut in this plate through which the signal is adapted to be displayed. The number plate is shown at 15, and a holder therefor, at 14. This holder is fastened to the front plate by screws or other suitable fastening means.

When the magnet is energized, the armature is attracted at both ends toward the naked poles. The movement of the armature is both rectilinear and rotary. The rectilinear motion is substantially perpendicular to the longitudinal axis of the magnet, while the rotation takes place about the contacts 11 and 12, as a pivot. The armature first moves upward until these contacts engage, and then rotates thereon to complete the operation of the signal. When fully attracted, the switch 11—12 is closed, and the signal 6 is elevated to be disclosed through the slots in the front frame. The lower part of the forward spool head contacts with the armature 5 before the extended part 30 engages the naked end 2' of the magnet core. This prevents the freezing or sticking of the armature to the core. When deenergized, the magnet releases its armature, interrupting the circuit and restoring the signal to the normal position.

These annunciators are compact, simple, and easy to construct and assemble. They are adapted to be quickly and easily attached and detached from the frame. In use they may be attached to the frame in parallel arrangements and installed in strips.

While I have shown this particular arrangement and mounting and have described these objects and advantages, it will be obvious to those skilled in the art, that numerous and extensive departures from the form and the details of the apparatus here shown, may be made without departing from the spirit of the invention, while other objects and advantages are intended and realized, those herein described being solely for the purpose of clearly illustrating one specific embodiment of the invention.

I claim:

1. In an annunciator, an electromagnet, a slidably mounted armature for said magnet extending substantially parallel to said magnet, a switch contact, a signal controlled by the armature, a contact adapted to cooperate with the first named contact to close an electric circuit when said armature is attracted by said magnet, and guiding means for said armature.

2. In an annunciator, an electromagnet, a switch contact mounted on said magnet, a slidably mounted armature for said magnet, a signal and a switch contact mounted on said armature, said last switch contact adapted to cooperate with the switch contact mounted on the magnet.

3. In an annunciator, the combination with an electromagnet, an armature for said electromagnet, means for guiding said armature, said armature adapted to slide in guiding means when attracted, a signal on said armature on one side of said guiding means, and an electric switch controlled by said armature on the other side of the guiding means.

4. In an annunciator, an electromagnet, a slidably mounted armature, a core for said electromagnet extending beyond the magnet, a spool head on said magnet adapted to engage said armature when attracted, to prevent contacting engagement between said armature and said core, and a signal controlled by said armature.

5. In an annunciator, a combination of an electromagnet, a sliding armature for said electromagnet, guiding ways for said armature, a signal mounted on said armature on one side of the guiding ways, and a circuit controlling switch, one of whose contacts is

carried by said armature on the other side thereof, both the signal and the switch being controlled by the electromagnet.

6. In an annunciator, an electromagnet, a core for said magnet extending at its end beyond said magnet, an armature extending substantially parallel to said magnet and adapted to be attracted to the sides of the extended part of the core, and a signal carried by the armature.

7. In an annunciator, a frame, an electromagnet, a core therefor, means for attaching said core to said frame, a bracket, an armature for said electromagnet extending from end to end of said magnet and supported in its unattracted position at one end by the frame and at the other by the bracket, and a signal on the front end of said armature visible at the front of said frame.

8. In an annunciator, an electromagnet, an armature for said magnet, a signal on said armature, a switch contact on said armature, said armature adapted to pivot on said contact and rotate thereabout when attracted by the magnet.

9. In an annunciator, an electromagnet, an armature for said magnet, a signal on one end of said armature, a switch contact on said armature, guiding means for said armature, said armature adapted to slide in said guiding means to close said contact, and thereafter to rotate on said contact as a pivot to display said signal.

10. In an annunciator, an electromagnet, an armature for said magnet, a signal and a switch contact controlled by said magnet, said armature adapted to move rectilinearly to close said switch and thereafter to rotate on said contact to operate said signal.

11. In an annunciator, an electromagnet, an armature for said magnet, a pivot, a signal controlled by said armature, said armature moving rectilinearly to engage said pivot and rotating thereon to operate said signal.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM W. DEAN.

Witnesses:

F. O. RICHEY,

C. A. SEVERCOAL.