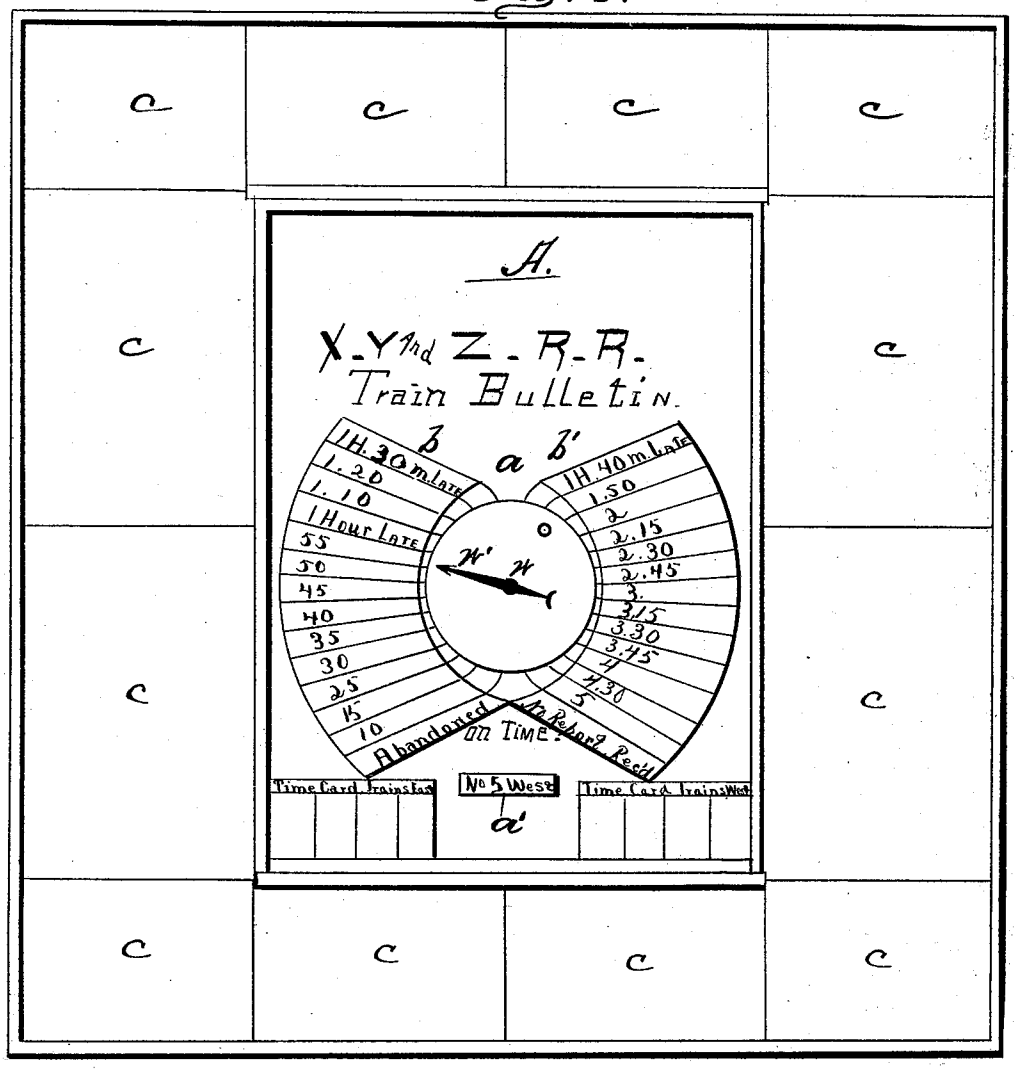
(No Model.) 3 Sheets—Sheet 1.

F. A. JENNINGS.

ANNUNCIATOR.

No. 539,870. Patented May 28, 1895.

Fig. 1.



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(No Model.) 3 Sheets—Sheet 2.

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ANNUNCIATOR.

No. 539,870. Patented May 28, 1895.

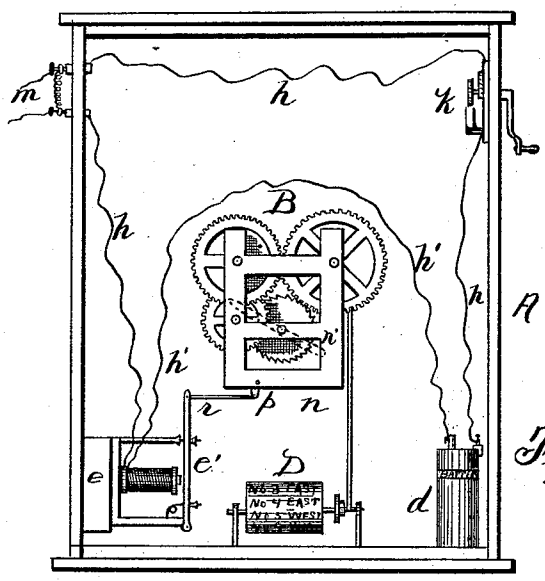


Fig. 2.

Fig. 3.

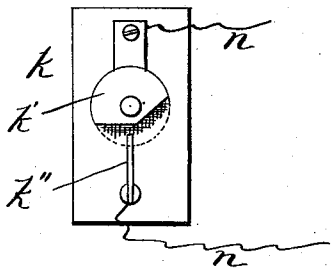


Fig. 4.

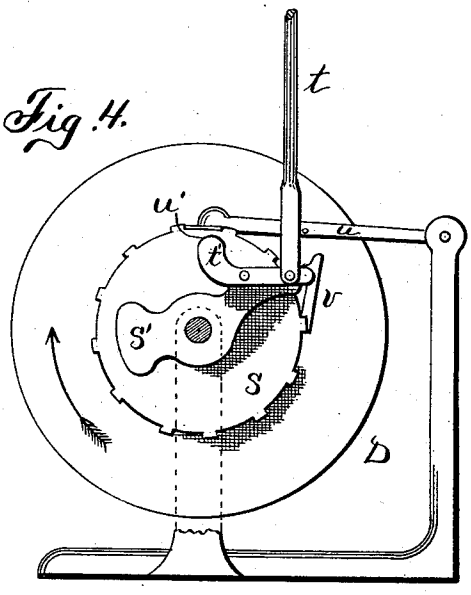
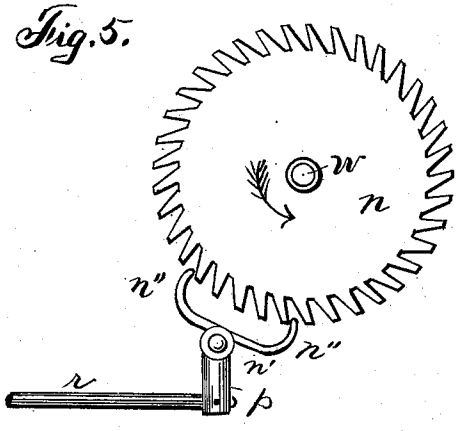


Fig. 5.



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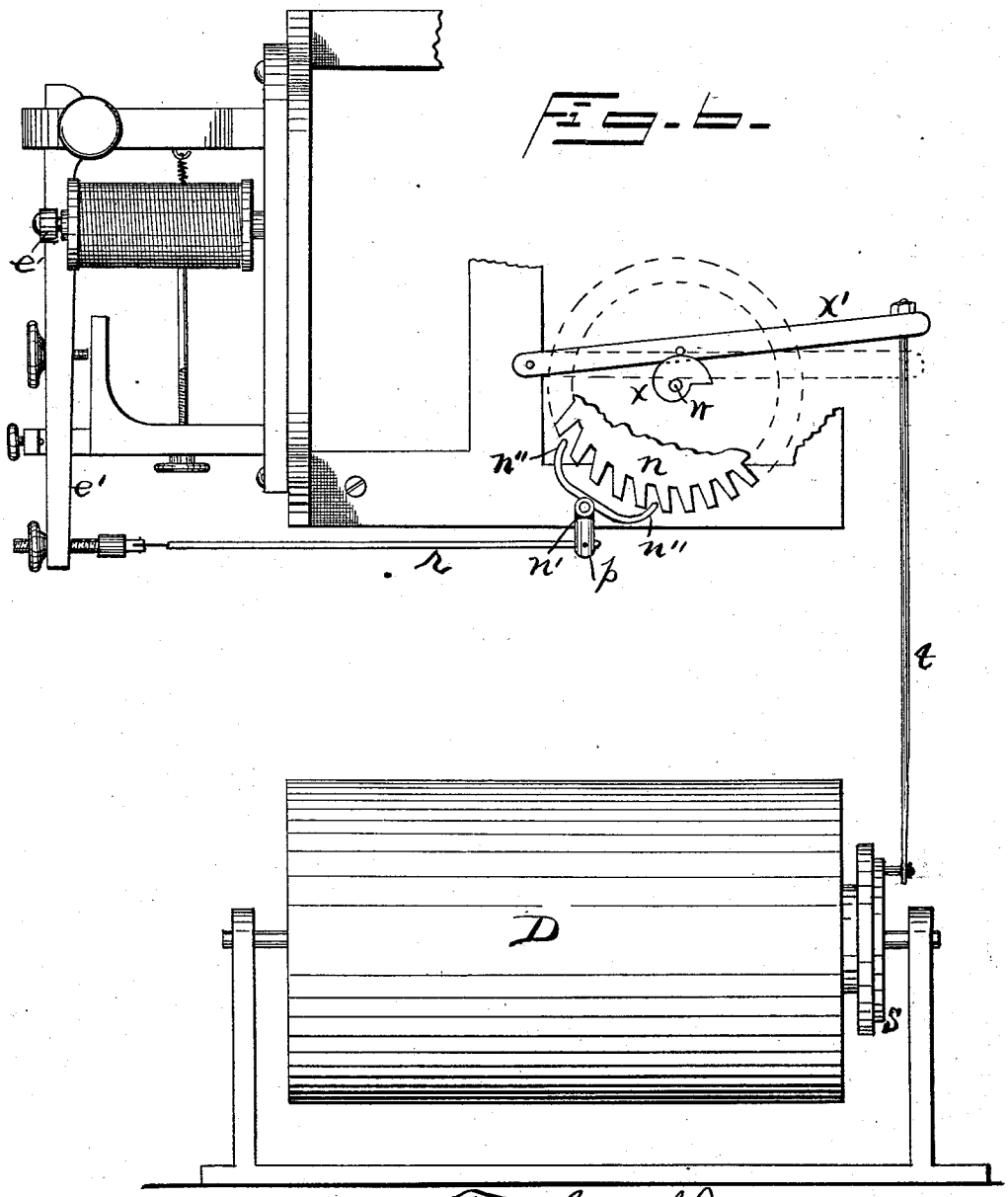
(No Model.) 3 Sheets—Sheet 3.

F. A. JENNINGS.

ANNUNCIATOR.

No. 539,870. Patented May 28, 1895.



WITNESSES:
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M. M. Bond

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UNITED STATES PATENT OFFICE.

FRANKLIN A. JENNINGS, OF ITHACA, NEW YORK, ASSIGNOR TO THE ELECTRIC BULLETON COMPANY, OF CHICAGO, ILLINOIS.

ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 539,870, dated May 28, 1895.

Application filed March 23, 1893. Serial No. 467,253. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN A. JENNINGS, of Ithaca, in the county of Tompkins, in the State of New York, have invented new and useful Improvements in Train-Annunciators, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in train annunciators.

My object is to produce an improved combination advertising, train bulletin, train indicating and train annunciating board, comprising a battery, an electro-magnet connected thereto, an intermediate circuit maker and breaker, a motor operatively regulated by the connection of its escapement to the armature of the electro magnet, a pointer operated intermittently by the motor, a train-bulletin dial, and a train indicating and annunciating cylinder intermittently rotated by the motor; the whole mechanism being set in motion by the making of an electric circuit, and stopped by the breaking thereof.

My invention consists in the several novel features of construction and operation hereinafter described and which are specifically set forth in the claims hereunto annexed. It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of the board complete, showing the advertising-spaces, the dial, the pointer, and part of the train-indicating cylinder through the dial-plate. Fig. 2 is a front elevation of the operating mechanism with dial-plate removed, showing the battery, the circuit maker and breaker, the electromagnet, the motor and the train-indicating cylinder, and the wiring and other connecting mechanisms. Fig. 3 is a front elevation of the circuit-breaker. Fig. 4 is an end elevation of the train-indicating cylinder and the mechanism whereby it is intermittently rotated. Fig. 5 is an elevation of the motor-escapement detached. Fig. 6 is a side elevation of the electromagnet, its armature, its connections to the scape-wheel, the main shaft, the scape-wheel and cam thereon, the lever engaging with the cam, and the lifting-rod connected to the lever to intermittently rotate the train-indicating cylinder.

A, is the box or case, inclosing or containing the operating mechanisms, its front being normally closed by the dial-plate —*a*—, provided with a slot-way —*a'*— and with the train bulletin-tables —*b*—*b'*— arranged thereon substantially as shown, on lines radial to its center, or more or less diverging from radial lines. Around this case, upon a suitable board or boards, the advertising spaces —*c*— are arranged or grouped in any manner desired, or most effective for the display of the advertising matter. Within said case a battery —*d*— is placed, and an electro magnet —*e*— is mounted having an armature —*e'*— hinged at one end to the frame of said magnet; and —*h*—*h'*— are the connecting wires, one leading direct from the magnet to the battery and the other leading from the battery to the circuit maker and breaker —*k*—, thence to the binding posts —*m*— and thence to the electro-magnet.

The circuit maker and breaker —*k*— is of ordinary construction, consisting of a rotatable disk —*k'*— broken away on one side, as a breaker, and a spring finger —*k''*— mounted in the binding post to which the wire on that side is connected, so that when, by the rotation of the disk, it comes into contact with the said finger, the circuit is made and continues so long as such contact continues.

B, is the motor shown, for illustration, as comprising an ordinary spring-actuated clock work, having a scape-wheel —*n*— and the ordinary escapement-pawl —*n'*— having the end pallets —*n''*— secured upon a vertical rod —*p*— which is secured to the escapement rod —*r*—, the other end of which is connected to the armature —*e'*—, so that the clock-work motor is intermittently operated whenever a circuit is made, and the armature makes contact with the poles of said magnet.

D, is the train indicating cylinder mounted upon a shaft journaled in end bearings in uprights, as shown, and carrying upon its periphery a strip of paper suitably inscribed with the numbers of the trains and the direction of their travel. Upon this shaft the spaced ratchet wheel —*s*— is secured. The counter-balance —*s'*— is loose upon said shaft and its outer end is connected to the lifting rod —*t*—; and —*t'*— is a lifting pawl pivoted

upon the counter-balance and engaging with a lip —*u'*— upon the stop-pawl —*u*— which engages with the ratchet wheel; and —*v*— is a push pawl normally in engagement with said ratchet wheel, and also connected to and adapted to be lifted from one tooth to another by the rod —*t*—, and also adapted, when raised, to engage with and raise the stop-pall —*u*— out of engagement, and then when said rod is released the specific gravity of the parts above the push pawl —*v*— is sufficient to rotate the cylinder the distance of one ratchet tooth.

The rod —*t*— is connected to the lever —*x'*— with which the cam —*x*— on the shaft —*w*— engages so that the rotation of said shaft and cam each time a circuit is made and the armature is vibrated rocks the escapement pawl and releases the scape-wheel from one point, permitting it to rotate the distance of a tooth and then when the circuit is broken, and the spring throws the armature away from the electro-magnet, the reverse rock of said pawl will throw the pawl into engagement with the scape and lock it until a circuit is again made; so that each time a circuit is made, the motor is released, the cam and its shaft partly rotated, the pointer moved one space on the dial, the rod —*t*— lifted a short distance, slightly moving the push pawl —*v*— toward the stop-pawl —*u*—. When by this step-by-step movement the pointer has reached the last step, the cam has nearly rotated, and the next time a circuit is made and the pointer finishes its circle, the cam is also fully rotated, and then the pawl —*v*— having been lifted into engagement with the next tooth of the space wheel and with the pawl —*u*— and raised that out of engagement with the space wheel, and the lever —*x'*— being released from the cam, then the gravity of said lever, the rod —*t*— and the pawls, rotates the cylinder one space and exposes the number or designation of the next train.

The whole is so arranged that each time a circuit is made and broken, the pointer is advanced one space, its normal position being at, "On time," and when the cylinder indicates train "No. 5: West" each making of a circuit advances the pointer a space, until the pointer will travel clear around to the starting point, before the cylinder will be actuated to indicate another train. The binding posts —*m*— are also provided so that the wires leading to another annunciator or to a series of them erected in different places in a city or town, can be connected thereto so that all will be connected to the primary one located at the depot, so that as the one at the depot is operated, so all of the others will be operated simultaneously so as to indicate the same information.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In an annunciator, the combination with the rotatable train-designating cylinder and the ratchet secured thereto, of a push-pawl engaging therewith, a vertically reciprocating rod connected to said pawl, a lever connected to said rod, a cam engaging with said lever to lift it and said rod and pawl, and release them when raised, and means to rotate said cam.

2. In an annunciator, the combination with the rotatable train-designating cylinder, provided with a ratchet on one end, of a stop-pawl engaging with said ratchet, a push-pawl engaging with said ratchet and adapted to intermittently lift said stop-pawl out of its engagement, a rod connected to said push-pawl, a lever connected to said rod, a cam adapted to be rotated in engagement with said lever, to lift it, and to release it, to rotate said cylinder a step and a motor actuating said cam.

3. In an annunciator, a stationary dial provided with a series of notices indicative of the time status of a train, a rotating shaft, a pointer thereon, a scape-wheel upon said shaft actuated by a clock movement, an escapement pawl, a rod connecting it to an armature, an armature, an electro-magnet, and means to make and break a circuit therewith, in combination with a cam rotated by the scape-wheel shaft, a lever reciprocated by said cam, a rod connected to said lever, a push pawl connected to said rod, a train-designating cylinder, and a ratchet thereon with which said pawl engages.

4. In an annunciator, a rotatable train designating cylinder, a ratchet secured thereto, a push-pawl engaging therewith, a vertically reciprocating rod connected to said pawl, a lever connected to said rod, a cam engaging with said lever to lift it and said rod and pawl, and release them when raised, and means to rotate said cam, in combination with a stationary series of notices indicative of the time-status of a train, an electrically controlled indicator adapted to be shifted from one notice to another, an inclosing case and an aperture therein for exposing the train-titles successively.

5. In an annunciator system, a series of annunciators, each consisting of a rotatable train-designating cylinder, a ratchet secured thereto, a push-pawl engaging therewith, a vertically reciprocating rod connected to said pawl, a lever connected to said rod, a cam engaging with said lever to lift it and said rod and pawl and release them when raised, and means to rotate said cam, a stationary series of notices indicative of the time-status of a train, an electrically controlled indicator adapted to be shifted from one notice to another, and means for exposing the train-titles singly, in combination with a single line of working circuit to which said annunciators are connected and by which all are simultaneously operated to indicate the time-status of any train.

6. An annunciator comprising a case, a rotatable train-designating cylinder, a ratchet and pawl mechanism for rotating it and a cam actuating said mechanism, in combination with a dial provided with a series of no-

tices indicative of the time status of a train, a pointer upon a rotating shaft, a motor connected to said shaft and actuating said cam and adapted to shift said pointer from one notice to another by the making and breaking of an electric circuit, and an aperture in said dial exposing a train title on said cylinder.

7. An annunciator, comprising a case, a rotatable train-designating cylinder therein, a ratchet and pawl mechanism for rotating it and a cam actuating said mechanism, in combination with a dial provided with a series of notices indicative of the time-status of a train, a pointer upon a rotating shaft, an electro-magnet, an armature therefor, an escapement intermittently released by said armature when a circuit is made, a motor adapted to intermittently rotate said pointer-shaft when so released, and an aperture in said case exposing the train-title on said cylinder.

8. An annunciator system, consisting of a series of annunciators, each comprising a case, a rotatable train-designating cylinder, a ratchet and pawl mechanism for rotating it, a cam actuating said mechanism, a dial provided with a series of notices indicative of the time-status of a train, a pointer upon a rotating shaft, a motor connected to said shaft and actuating said cam and adapted to shift said pointer from one notice to another by the making and breaking of an electric circuit, and an aperture in said dial exposing a train-title on said cylinder, in combination with a single line of working circuit to which said annunciators are connected, and by which all are simultaneously operated to indicate the time-status of any train.

In witness whereof I have hereunto set my hand this 13th day of March, 1893.

FRANKLIN A. JENNINGS.

In presence of—
C. W. SMITH,
HOWARD P. DENISON.