

(No Model.)

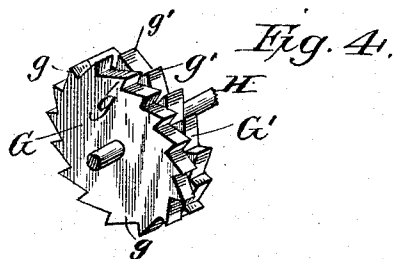
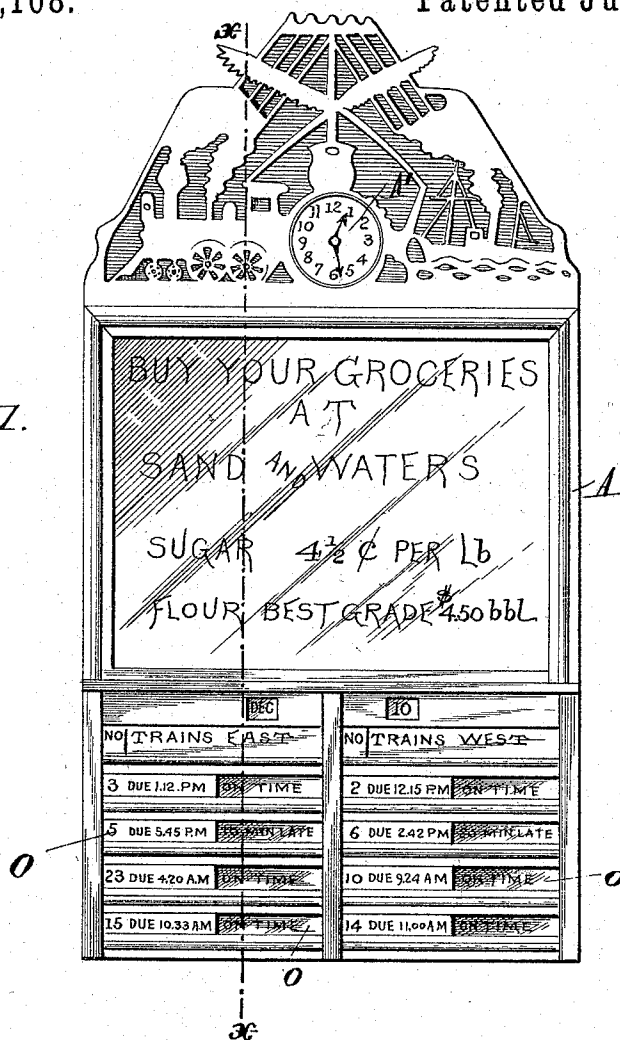
3 Sheets—Sheet 1.

C. H. RITTENHOUSE.  
TRAIN ANNUNCIATOR.

No. 542,108.

Patented July 2, 1895.

Fig. 1.



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(No Model.)

3 Sheets—Sheet 2.

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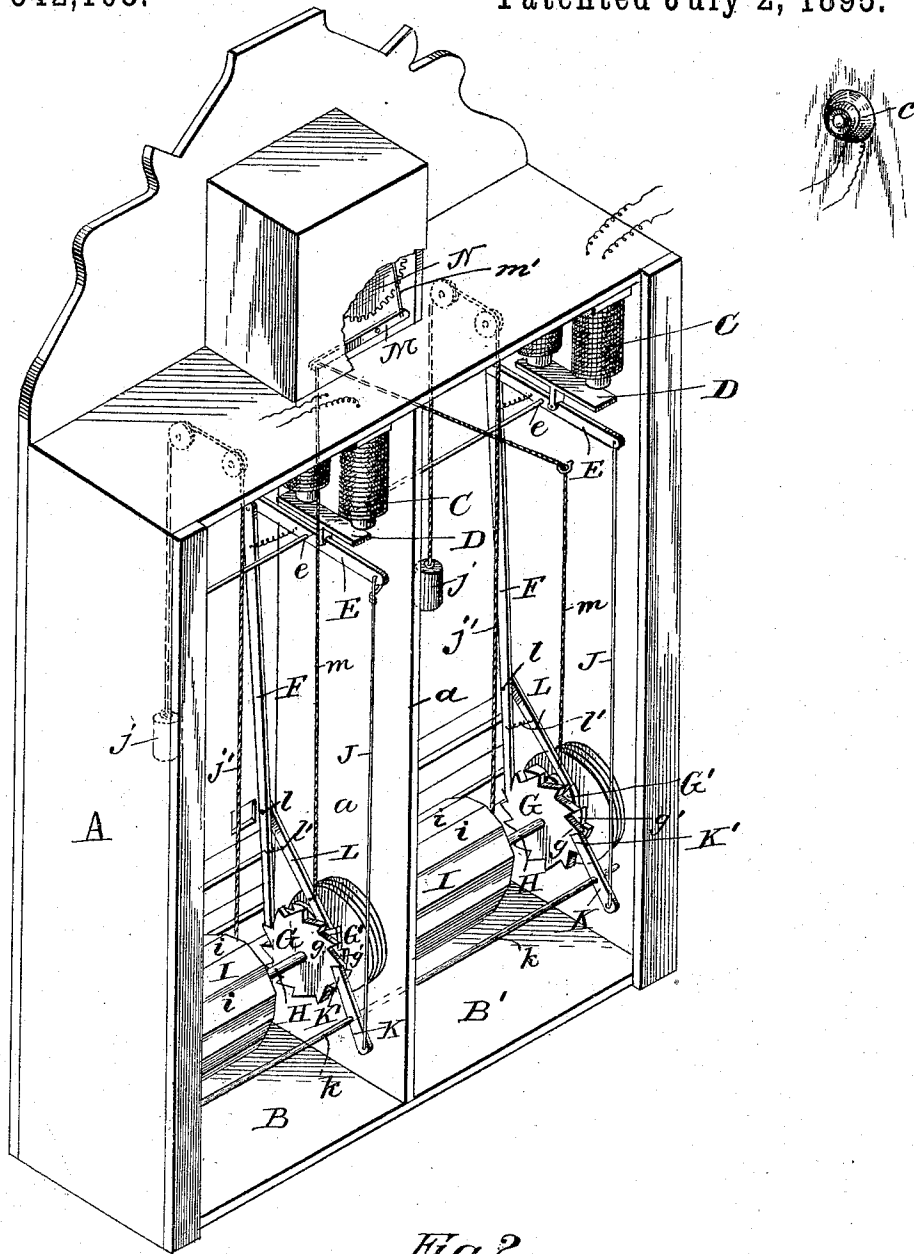


Fig. 2.

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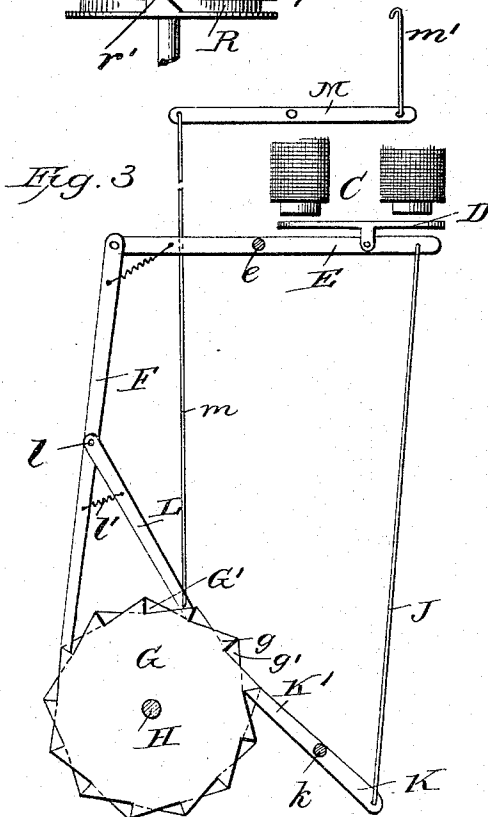
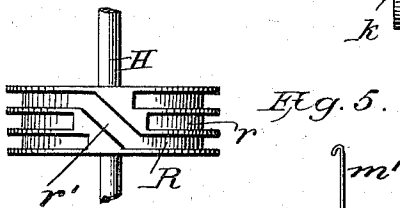
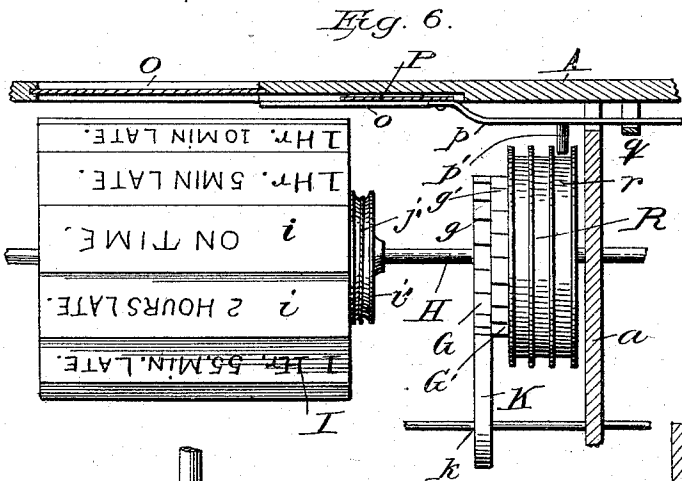
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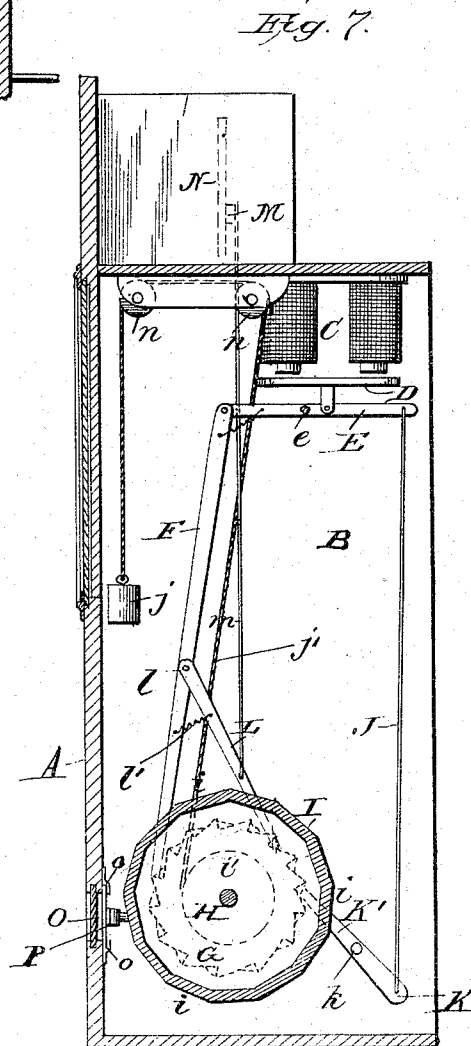
C. H. RITTENHOUSE.  
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Patented July 2, 1895.



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# UNITED STATES PATENT OFFICE.

CHARLES H. RITTENHOUSE, OF KENDALLVILLE, INDIANA.

## TRAIN-ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 542,108, dated July 2, 1895.

Application filed February 14, 1895. Serial No. 538,433. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. RITTENHOUSE, a citizen of the United States, and a resident of Kendallville, in the county of Noble and State of Indiana, have invented certain new and useful Improvements in Train-Annunciators; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a front elevation of my improved electric train-annunciator or automatic time-table. Fig. 2 is a perspective view of the interior mechanism of the same, looking at it from the rear side. Fig. 3 is a detail view, in side elevation, of the pawl-and-ratchet mechanism for actuating the rotary indicator-drum. Fig. 4 is a detail view, in perspective, of the duplex ratchet-wheel shown in side elevation in Fig. 3. Fig. 5 is a detail view of the rotary cam for operating the sliding shutter used in conjunction with the revolving indicator-drum. Fig. 6 is a top view of the said revolving drum with its sliding shutter and the rotary cam for operating the same, and Fig. 7 is a transverse sectional view on the vertical plane indicated by the broken line marked X X in Fig. 1.

Like letters of reference designate corresponding parts in all the figures.

My invention relates to devices or time-tables for announcing in railway-stations, hotels, and other public places the deviation from schedule time in the arrival and departure of passenger-trains, or so-called "train-annunciators;" and it consists in the construction and combination of parts of an electrically-operated device or apparatus of that class, as will be hereinafter more fully described.

Heretofore it has been customary to place blackboards in conspicuous places in railway-stations, upon which is written in chalk the number of minutes any due passenger-train is behind schedule time, for the information of passengers about to take that train, as well as for persons expecting friends or relatives to arrive. This is not only a slow and cumbersome method, but this way of announcing

the status of trains cannot well be carried out outside of the station or its immediate vicinity.

The object of my invention is, therefore, to construct an annunciator or time-indicator which can be located at any desirable point, either in proximity to or at any distance from the railway-station and in any desired number of specimens, all of which may be actuated simultaneously and instantaneously from a central point or station by means of electrical connections. In this manner I am enabled to provide hotels and other public places located at any distance from the railway-station with annunciators which shall inform the public of the exact time of arrival of any train which may be late or overdue, which, it will be readily perceived, is a great convenience to the traveling public, as it enables passengers to avoid the long and tedious waiting at the station for a train which may be upward of an hour overdue.

On the accompanying three sheets of drawings I have shown an annunciator equipped with two sets of indicators; but it will be readily understood that this arrangement may be duplicated or multiplied to any desired extent.

The apparatus consists of a box or casing A, the interior of which is divided by one or more transverse vertical partitions *a* into two or more compartments B, B', &c. In the upper part of each of these compartments is located an electromagnet C, the battery-wire of which is provided with a circuit-breaker *c*, preferably in the nature of an ordinary electric call-button, while its armature D is connected to one end of a lever E, having its fulcrum at *e*, and provided at its opposite or inner end with a pawl or detent F, the lower free end of which is adapted to engage the teeth of a ratchet-wheel G, fastened upon a shaft H, which intersects the lower part of the series of compartments horizontally and longitudinally, so as to intermittently revolve said shaft and with it the indicator drum or cylinder I, which is also mounted upon the shaft, and which will be described more in detail later on.

The ratchet-wheel G is double or duplex, as shown more clearly in Fig. 4 on the drawings and indicated in dotted lines in Figs. 3

one end a rod  $p$ , the free end of which slides in keepers  $q'$  and is provided with a laterally-projecting stud  $p'$ , which enters a groove  $r$  in a cam-wheel R, which is also mounted upon and rotates with shaft H. The offset  $r'$  in the cam-groove  $r$  is so arranged and disposed relative to the drum I, which is mounted upon and revolves with the same shaft or axis H, that while normally the sliding shutter P will cover the "1 hour" part of the series of legends marked upon the rectangular faces of the drum in the manner described, yet when this drum, and also the cam-wheel R, shall have made one complete revolution the offset  $r'$  in the cam-groove will strike the stud  $p'$ , so as to push this to one side and thus pull upon the arm  $p$  and slide the shutter P back, thus exposing the "1 hour" part of the several legends marked upon the revolving drum. A complete revolution of the cam-wheel R in the opposite or reverse direction will, of course, result in the pushing back of the sliding shutter P into its former or original position, so as to cover in part (as described) the legends upon the faces of the rotary annunciator-drum. When it is remembered that each arriving and departing train, during the usual twelve-hour schedule, is represented by a rotary indicator-drum, marked in the manner described, (or in any other appropriate manner,) provided with its sliding shutter, operating mechanism, and appropriate electrical connections and batteries, the manner of using this apparatus will readily be understood. The circuit-breakers (or "call-buttons") appertaining to the respective electromagnets (of which there is, of course, one for each indicator) are all located at the superintendent's or train-dispatcher's office or at some other convenient and eligible point, each bearing the number of that particular train which it is intended to report. By pressing the appropriate button the desired number of times, corresponding to the exact number of times the corresponding indicator-drum has to revolve in order to exhibit the requisite legend, this will be effected, and either once or twice every twenty-four hours, as may be desired, (and the tripping-mechanism adjusted accordingly,) each indicator-cylinder will be automatically returned to its normal or original starting position.

The convenience to all traveling people of this apparatus and arrangement is too obvious and apparent to require extended explanation.

It is the intention to place a specimen of this apparatus not only in each of the public waiting-rooms and on the platforms of the station, but also in leading hotels and at other places where travelers congregate, so that any one intent upon taking a certain train can be easily and officially advised of the exact time when it will be necessary for him or her to be at the station.

It is my purpose to utilize this device largely for advertising purposes, employing the front side of the casing A, above the columns of windows, for the display of either stationary or movable advertising cards, and as it is the intention to locate my electric annunciator conspicuously in railway-stations, hotel-lobbies, and at other public places which are frequented by large crowds of people the advantages of this apparatus as an advertising device will readily suggest itself, so that the cost of placing and operating the device may, in a large measure, at least, be covered by the revenue received from advertisers.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a train-annunciator operated by electricity, the combination with the intermittently-operated magnets and their appropriate armature of the lever E having pivoted detent F provided with the pivoted spring-actuated pawl or finger L; rotary indicator-drum I having shaft H provided with the duplex ratchet-wheel G G'; pivoted back-lash pawl K' K; and rod J connecting said pawl to the armature-lever; substantially as and for the purpose shown and set forth.

2. The combination with the rotary indicator or annunciator-drum, its shaft and actuating duplex ratchet-wheel, and the pawls or detents operating the same in the manner set forth, of the sheave  $i'$ ; cord or chain  $j'$  carrying a weight  $j$  at its free end; detent F provided with the pivoted spring-actuated pawl L; lever M having tappet  $m'$ ; connecting-rod  $m$ ; and the clock-escapement adapted to trip the tappet at predetermined intervals; substantially as and for the purpose shown and set forth.

3. The combination with the slotted casing, the intermittently rotating annunciator-drum, and the described mechanism for operating the same electrically, of the sliding shutter P provided with the rod  $p$  having stud  $p'$ ; cam-wheel R having offset  $r'$ ; and the sheave, weighted cord, and tripping-mechanism for restoring the drum to its initial position automatically; substantially as and for the purpose shown and set forth.

4. The combination, in an electrically-operated train-annunciator, of the following co-operating elements, to wit: the exterior slotted casing subdivided by vertical partitions into two or more compartments; a clock-mechanism mounted in or upon said casing and having an exposed dial, the electro-magnets with their appropriate circuits and circuit-breakers; the armature appertaining to the magnets and the lever connected thereto; the rotary annunciator-drum provided with a central shaft, a concentric grooved sheave, and a duplex ratchet-wheel mounted upon and revolving with the shaft; the duplex detent engaging with its free ends the oppositely-sloping teeth of adjacent wheels forming the

duplex ratchet-wheel; the pivoted backlash  
or retaining-pawl; the rod connecting said  
pawl with the armature-lever; the re-setting  
lever having at one end a tappet engaging  
5 the clock-escapement and at the opposite end  
a rod connecting it with the shorter link of  
the duplex detent; and the weighted cord or  
chain wound around the sheave appertaining  
to the annunciator-drum;—all constructed,  
10 combined and juxtaposed to operate substan-

tially in the manner and for the purpose  
herein shown and described.

In testimony that I claim the foregoing as  
my own I have hereunto affixed my signature  
in presence of two witnesses.

CHARLES H. RITTENHOUSE.

Witnesses:

LOUIS BAGGER,  
BENNETT S. JONES.