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STATION INDICATOR FOR RAILWAY CARS, &c.

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Patented Mar. 18, 1913.

2 SHEETS—SHEET 1.

1,056,681.

Fig. 1.

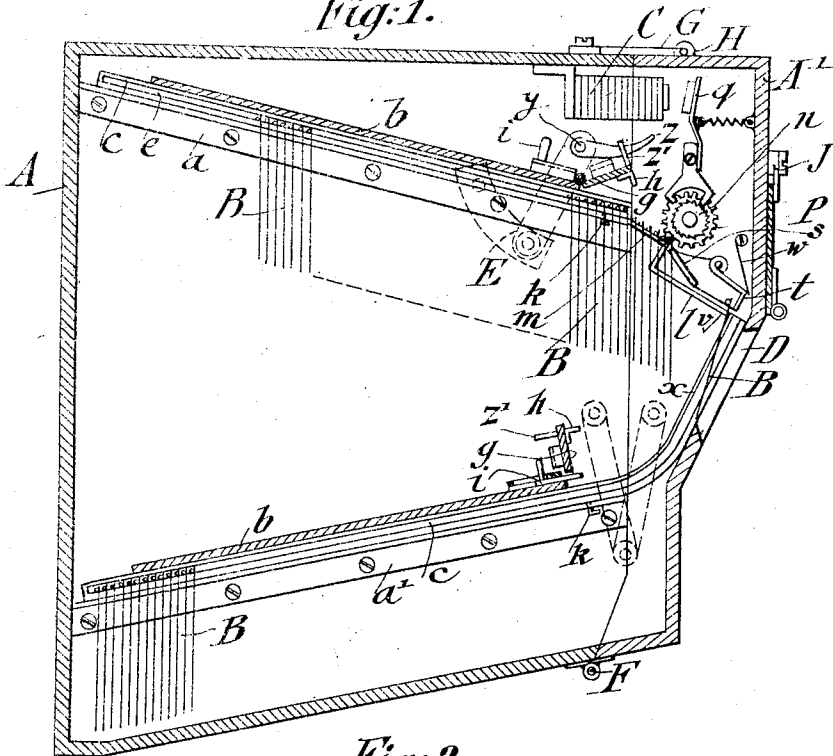
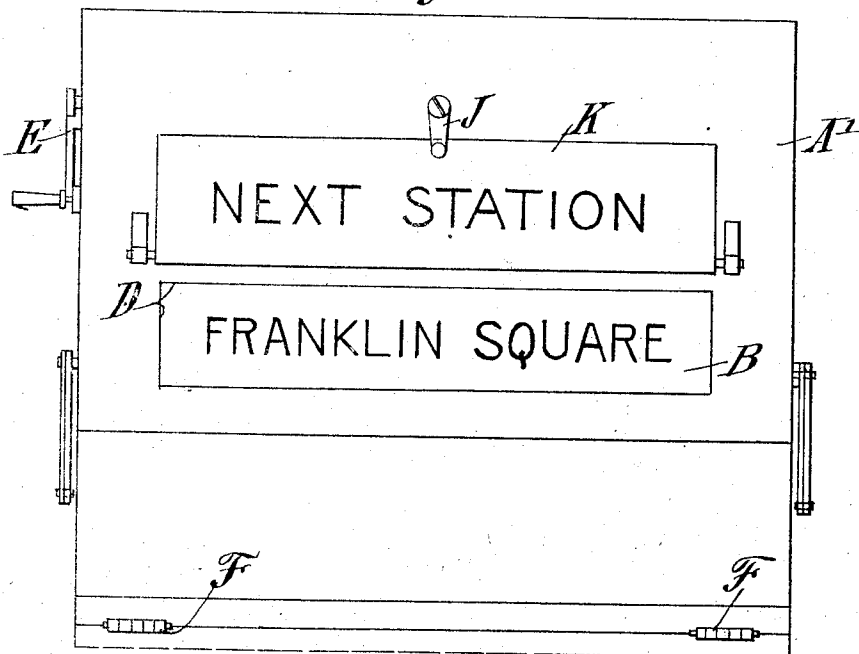


Fig. 2.



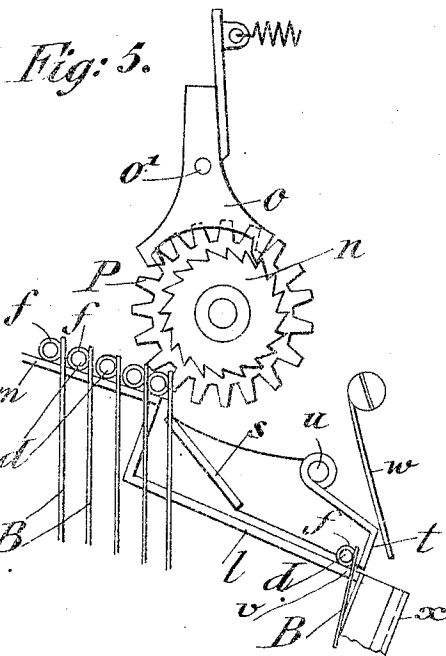
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UNITED STATES PATENT OFFICE.

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" STATION-INDICATOR FOR RAILWAY-CARS, &c.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, KURT AUGUST WALTER HÖSEL, a citizen of the German Empire, residing in Dresden, Kingdom of Saxony, German Empire, have invented certain new and useful Improvements in Station-Indicators for Railway-Cars, &c., of which the following is a specification.

My invention relates to station-indicators for railway cars, tram-cars and the like.

A primary object of my invention is to provide an improved station-indicator in which the sign-boards provided with the names of the stations are passed by the aperture solely by the action of gravity, whereby all mechanical conveying devices are done away with and increased certainty of action is obtained. To this end, I suspend the sign-boards provided with the individual names of the stations on an inclined track along which they slide down owing to gravity, their motion being interrupted and controlled by a locking device. Preferably, both that part of the track which at first contains all the signs and is located above the locking device and also that part of the track which finally contains all the signs and is located below the locking device are detachable so that they can be exchanged one with the other in order to allow the signs to run along the track again.

The inclined track may be interrupted and arranged in any desired slanting position or vertically. Preferably, however, the two parts of the track from which the signs are suspended by means of lateral pins are arranged at an angle, the aperture in the casing being arranged at the apex of the angle. In this manner I provide that the indicator is neither excessively deep nor excessively high. Lastly, it is desirable that the aperture and the sign behind it be arranged slanting in order to render visible to persons quite near or immediately below the indicator the inscription of the sign appearing for the time being in the aperture. To this end, I prefer to release the signs suspended from the top section of track individually by means of an escapement and to allow them to slide on to an intermediate section at the apex of the disconnected tracks, whereupon they are arrested here one at a time in a slanting position behind the slanting aperture by means of a catch; then in order to allow the sign last exposed to pass on, this catch is disengaged by the next

sign being released by the escapement, falling on to a movable part of the track connected with the catch to form a two-armed lever, and loading this part of the track while the sign slides over it.

One illustrative embodiment of my invention is represented by way of example in the accompanying drawings, wherein:—

Figure 1 is a vertical section taken at right-angles to the front of the indicator, Fig. 2 a front elevation, Fig. 3 a vertical section taken parallel to the front of the indicator, and Figs. 4 and 5 are detail views.

Referring to the drawings, in the upper part of the casing A an exchangeable frame *b*, *c* rests on angle bars *a* which are attached to the side walls of the casing and slant down toward the front; this frame comprises a top plate *b*, and two U-bars *c* attached to its under side, the open sides of these bars facing one another. A frame of exactly similar construction rests in the lower part of the casing on bars *a'* slanting down to the rear. The U-bars *c* constitute the angular interrupted track for the sign-boards B provided with the names of the stations.

As Fig. 3 clearly shows, the signs B carry pins *d* which project into the bars *c* and are prevented from jumping out of the track by flanges *e* on the bars and collars *f* on the ends of the pins. The length of each frame is determined by the number of signs to be carried directly behind one another on it. In order to prevent the signs sliding out when conveying the frame, the front part of the plate *b* is formed as a hinged strip *g* and provided with downwardly projecting lugs *h*. By means of a latch *i* provided with a handle and guided on the plate *b* the hinged strip *g* can be fixed in the position shown in Fig. 4. This strip *g* can also be held by the same latch in its open position by the front end of the latch engaging in a recess in the strip. The frame is prevented from sliding off the bars *a* by hook-shaped stops *k* located at the front of the bottom of the frame and entering into recesses in the bars *a*.

In the front folding part A' of the casing the track runs out into the guide *l*. This guide comprises a slide *m* at whose end is arranged an escapement comprising a toothed locking disk P, when the disk is moved always only one sign B whose pins enter into the tooth-gaps is released. The disk is operated by an anchor *o* which coacts in known manner with a ratchet *n* connected with the

locking disk P; as clearly shown in Fig. 5, the anchor *o* rocking about its pivot *o'* is influenced by a spring-actuated armature *q* which coacts with an electromagnet C in such a manner that whenever the circuit of the magnet is closed and the armature *q* is attracted the ratchet *n* is released and a sign fed by the pressure of its pins bearing against the locking disk and then onto the guide *l*. The guide *l* also comprises a movable track portion *s* which constitutes with a hook *t* a two-armed lever rocking about the fixed fulcrum *u*. The hook *t* coacts in such a manner with the front edge *v* of the guide *l* that it normally holds the pins of the sign *b* which has arrived here, a spring *w* aiding it.

The downwardly slanting and rearwardly inclined aperture D in the hinged front part A' of the casing A begins at the edge *v*, and the track for the pins of the signs B continues from here as a guide *x* which corresponds in form to the slanting position of the aperture and connects with the track formed by the lower frame.

The device for fixing the hinged strip or bar *g* will now be described with reference to the top frame. It comprises a curved pin *z* which is fast on a shaft *y* and projects into an eye *z'* fast on the hinged strip. The shaft *y* can be rotated and fixed in two positions by a handle E fast on it outside the side wall of the casing A.

My improved indicator is manipulated and operates as follows:—A closed frame *b*, *c* filled with the requisite signs is first pushed on to the top rails *a* of the casing whose front portion A' is moved downward about the pivot-pin F. Care must be taken that the curved pin *z* passes into the eye *z'* on the hinged strip *g*. An empty frame having its strip *g* folded up is then pushed on to the bottom angle bars *a'*. The part A' of the casing is then turned upward and securely closed by hooks G which enter into eyes H. By rocking the handle E into its second position the hinged strip *g* of the top frame is lifted, as shown in Fig. 1, whereupon the pile of signs slides forward until the pins of the front sign bear against the lateral locking disks P. On closing the circuit of the electromagnet C the latter is energized and its armature *q* attracted, so that the locking disk P is fed one step forward. The first sign consequently slides over the movable part *s* of the track and is caught at *v* by the hooks *t*. The inscription of this sign is accordingly visible through the slanting aperture D. When the electromagnet is again energized the next sign slides on to the movable part *s* of the track. The two-armed lever *s*, *t* is caused to rock so that the sign previously held in front of the aperture by the hooks *t* can now slide over the part *x* of the track into the

open frame located below. As soon as the second sign just released by the escapement has passed over the movable part *s* of the track, the pressure on this lever-arm *s* ceases, so that the two-armed lever rocks back into the position according to Fig. 1 under the influence of the spring *w* and the hook *t* catches the second sign. Consequently, this second sign now remains stationary in front of the aperture. When the circuit is again closed the play is repeated. When all the signs that have been conveyed from the top frame into the bottom frame, *i. e.* if the vehicle has traveled to the end of the line or section in question, the front part A' of the casing is turned down and the strip *g* of the bottom frame is unbolted, turned over into its closed position and bolted afresh. The bottom frame filled with signs is then pulled out and also the empty top frame. The two frames are exchanged one for the other and pushed in the above-described manner into the casing A and on to the tracks *a* and *a'*, whereupon the indicator is ready for the reverse direction of travel.

To provide for the apparatus when not in operation I arrange at the front part A' of the casing a flap K (Fig. 2) which is normally held in its elevated position by a catch J and when lowered covers the aperture D.

I claim:—

1. A station-indicator; comprising a casing having a hinged front-part, guide-rails in said casing slanting in opposite directions to each other, removable frames supported on said guide-rails, slidable sign-boards supported on said frames, an escapement for permitting the passage of one sign-board after the other, a rocking guide-plate, and an inclined guide for conducting one sign-board after the other from the guide-plate to the lower frame.
2. A station-indicator, comprising a casing provided with a hinged front-part, fixed guide-rails in said casing slanting in opposite directions to each other, removable sign-carrying frames supported on said guide-rails, sign-boards supported in said frames, an electrically-actuated escapement for permitting the passage of one sign-board after the other, a slide-plate adjacent to the lower end of the upper sign-carrying frame, said escapement-mechanism being adjacent to said slide-plate, a rocking guide-plate provided with stop-hooks below the escapement, and an inclined guide connecting the rocking guide-plate with the lower sign-carrying frame.
3. In a station-indicator, the combination of a casing, interchangeable sign-carrying frames supported in the same, sign-boards shiftable in said frames, a hinged plate at the end of each frame, means for locking

said plates for retaining all the sign-boards in said frames when interchanging the sign-carrying frames in the casing, and means for lifting said hinged plates and releasing the sign-carrying frames after they are placed in proper position in the casing.

4. In a station-indicator, a sign-carrying frame provided with guide-rails, shiftable sign-boards movable on said guide-rails, a locking plate hinged to one end of the sign-carrying frame, means for locking the plate onto the sign-boards for preventing their

escape from the frame when the latter is transferred, and means for holding the locking plate in released position when placed in proper position in the case.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

KURT AUGUST WALTER HÜSEL,

Witnesses:

RICHARD IFFERTE,
GUSTAV MÜLLER.