(No Model.)

F. O. LANDGRANE.

CHANGE GATE FOR CARS, &c.

No. 301,611. Patented July 8, 1884.

Fig. 1.

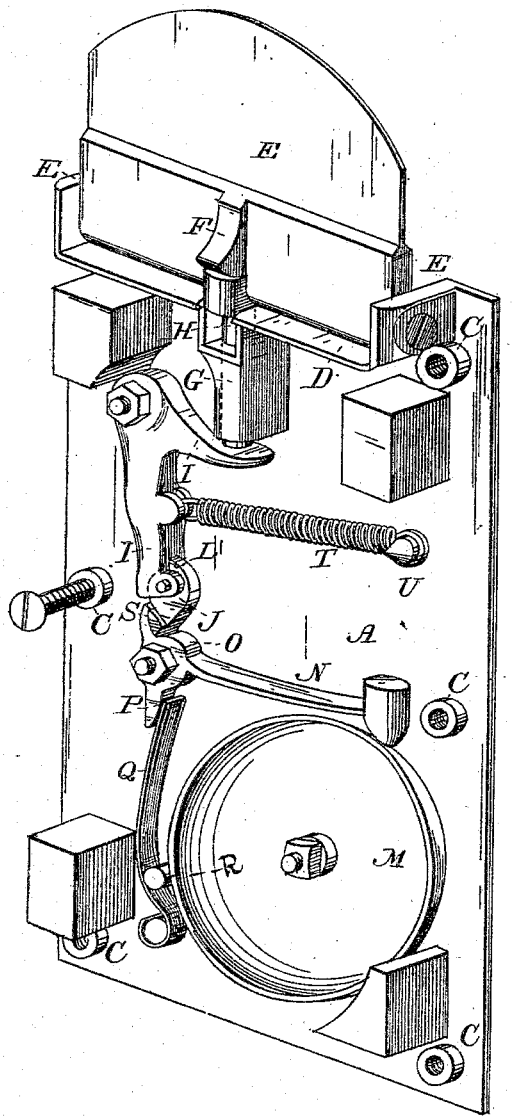

Fig. 2.

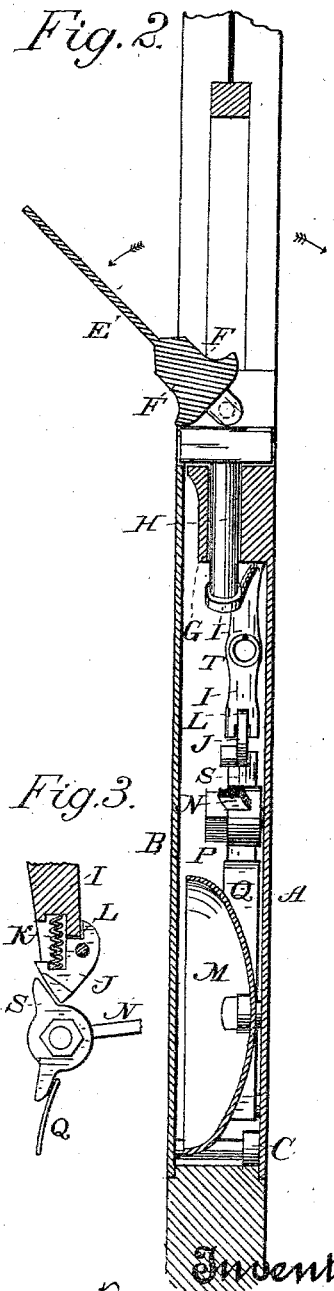

Fig. 3.

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UNITED STATES PATENT OFFICE.

FRANK O. LANDGRANE, OF SAN FRANCISCO, CALIFORNIA.

CHANGE-GATE FOR CARS, &c.

SPECIFICATION forming part of Letters Patent No. 301,611, dated July 8, 1884.

Application filed May 5, 1884. (No model.)

To all whom it may concern:

Be it known that I, FRANK O. LANDGRANE, of the city of San Francisco, county of San Francisco, and State of California, have invented an Improvement in a Change-Gate; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to what is known as a "change-gate," to be applied to the doors of street-cars and similar places where it is necessary to have an opening through which money may be passed and change made, and at which point it is necessary to attract the attention of the driver or person who is to make the change.

It consists of a gong secured between plates which are fitted from the opposite sides of the door, a hammer by which the gong is struck, a bell-crank lever with a tripping attachment by which the hammer is operated, a gate hinged at the top of the plate to which the gong is fixed, having a double cam projecting upon each side at its lower edge, and engaging the transverse head of a vertical moving rod or piston, the lower end of which engages and actuates the bell-crank lever.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a view of the gong, hammer, bell-crank, and operating mechanism secured to one of the plates, the other one being removed, so as to allow them to be seen, and the change-gate and intermediate rod. Fig. 2 is a vertical transverse section showing the gate turned, so as to depress the rod and operate the bell-crank lever and hammer. Fig. 3 is a detail view.

Upon a street-railway where the driver attends to the making of change, and no conductor is employed, it is customary to have an opening through the door communicating with the front platform, so that in case tickets are to be purchased or change made persons within the car may have this done through the opening. This opening has a gate which ordinarily stands vertically within it, and when pushed in either direction it is forced down into a horizontal position, so that the hand may be inserted into the opening. In order to attract the attention of the driver, this gate has a connecting mechanism and springs by which, when it is turned down to one side or the other, it actuates the hammer and causes it to strike the gong situated within the thickness of the door and below the gate. In my invention I have simplified mechanism by which this operation is performed, and reduced the number of moving parts, besides making the apparatus dust-proof and much more compact.

A and B are two plates, between which the operating parts are inclosed. The plate A has projections C with screw-threads cut into them, and the opposite plate, B, has countersunk holes made, corresponding with the screw-holes in the projections C, so that machine-screws may be employed to hold the two plates together and clamped firmly upon the door, thus avoiding the use of wood-screws, which often become loose and project outside the plate sufficiently to interfere with the sliding of the door in its narrow channel. The plate A is cast or otherwise formed with a horizontal portion, D, at the top, with sides E, which are perforated to receive the pins which form the bearings or journals for the change-gate E'. This gate stands vertically above the horizontal portion D, and there is no space or opening at the bottom of the gate through which dirt or any substance can be introduced into the space between the plates A and B.

From each side of the center and lower edge of the gate two lugs, F, project, the bottom of which is slightly curved, as shown. A projection, G, extends down below the center of the portion D, being formed upon the plate A, and this has a vertical hole made through it, which serves as a guide for the rod H, which fits it loosely enough to allow it to slide up and down in the hole. At the top of this rod is a cross or T head, which projects out upon each side beneath the cams F, and the plate D is slotted beneath this head, so as to allow it to move down into the slot, which at the same time serves as a gate, and prevents its being turned to one side or the other.

I is a bell-crank lever having its angle pivoted to the plate A, so that the horizontal arm extends out beneath the lower end of the rod H. The vertical arm of the lever I has its

lower end slotted, and a tripping-foot, J, is pivoted into this lower end with a spring, K, which presses its lower angle downward, while a short lug, L, extending up beside the vertical lever I, prevents its being forced beyond a certain point.

M is a gong, which is secured to the plate A by a central post, as shown, and N is the hammer by which the stroke upon the gong is made. The shank of the hammer has a head, O, through which a pivot-pin passes to secure it to the plate A. From the lower side of this head a lug, P, projects, against which the spring Q acts and forces the lug against a stationary lug, R, upon the plate A, which acts as a stop for it, so as to hold the hammer-head just out of contact with the bell. The shank of the hammer, however, is sufficiently elastic to allow the hammer to strike the bell as it falls, and immediately recoils sufficiently to allow the bell to give a clear tone.

S is another lug projecting from the upper part of the head O, so that when the rod H is forced down, moving the horizontal arm of the lever I downward with it, and the vertical arm backward as it moves around its point of support, the tripping-toe J will act upon the lug S, forcing it backward and raising the hammer until the toe J has passed over the lug S, when the springs Q will be allowed to act and force the hammer down, so as to strike the bell.

T is a spiral spring, one end of which is secured to stud U upon the plate, and the other to the vertical portion of the lever I, so that when the change-gate is released the spring will act to pull lever I forward, and its horizontal arm pushes the rod H up. The action upon the head of this rod upon either of lugs F which may be depressed at the time will be sufficient to force the gate into a vertical position, and the head of the rod being held in contact with the lower flat portion of the lugs F, it serves to hold the change-gate steady in its vertical position. The upper edge of the plate B is fitted beneath the edge of the horizontal portion D of the plate A with sides projecting up so as to rest against the vertical side pieces, E, through which the journal-pins of the change-gate pass, and this incloses the opening and prevents any dirt or article from being introduced into the space between the plates.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a change-gate, the vertical plate A, having the horizontal extension D formed across the top, and the upwardly-extending lugs E, through which the journal-pins of the gate pass, as herein described.

2. In a change-gate, the vertical plate A, with a horizontal extension, D, upwardly-extending journal-lugs for the gate, and the central lug, G, projecting below and perforated to receive and guide the vertically-moving rod or piston, as herein described.

3. A gate, E, journaled above the horizontal plate D, having the cams or lugs F projecting at each side of the center, together with the vertical rod H, with the transverse cross or T head beneath the cams, and a spring acting to force the rod upward, as herein described.

4. A gate, E, journaled above the horizontal plate D, and having the lugs or cams F, a vertically-moving rod or piston with its transverse extension at the top, together with the bell-crank lever having the jointed tripping-toe at the bottom, the hammer and shank having pivot-head O, with its cams, and the springs Q and T, as herein described.

5. The plate A, having the screw-threaded projections C and horizontal extensions D, forming part of said plate, the plate B, having its upper edge fitted beneath the projections D and united to the plate A by screws, as shown, together with the gate E, journaled so as to turn in either direction above the horizontal portion D, having lugs F, rod or piston H, bell-crank lever, gong, hammer, operating-springs, and tripping mechanism, as herein described.

In witness whereof I have hereunto set my hand.

FRANK O. LANDGRANE.

Witnesses:
S. H. NOURSE,
H. C. LEE.