

(No Model.)

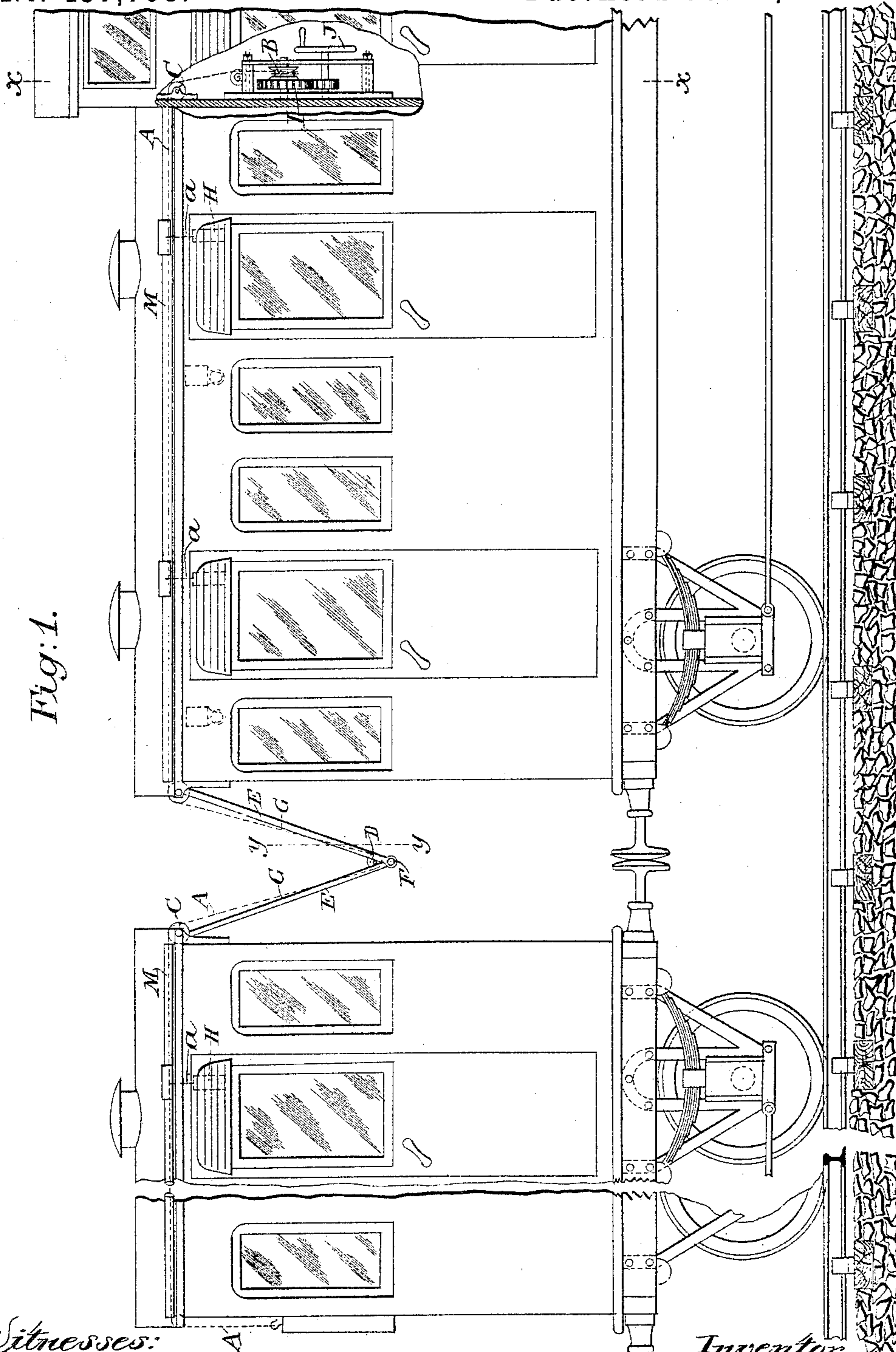
2 Sheets—Sheet 1.

R. N. MONTGOMERY.
MEANS FOR CLOSING AND LOCKING OR UNLOCKING RAILWAY
CARRIAGE DOORS.

No. 437,708.

Patented Oct. 7, 1890.

Fig: 1.



Witnesses:
J. Thomson Cross
A. V. Weaver

Inventor
R. N. Montgomery
per J. W. O'Neil Att'y

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Inventor
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UNITED STATES PATENT OFFICE.

RODERICK NICHOLSON MONTGOMERY, OF MELBOURNE, VICTORIA.

MEANS FOR CLOSING AND LOCKING OR UNLOCKING RAILWAY-CARRIAGE DOORS.

SPECIFICATION forming part of Letters Patent No. 437,708, dated October 7, 1890.

Application filed March 13, 1889. Serial No. 303,150. (No model.)

To all whom it may concern:

Be it known that I, RODERICK NICHOLSON MONTGOMERY, produce merchant, a subject of the Queen of Great Britain, residing at 1 Salisbury Buildings, Bourke Street West, Melbourne, in the British colony of Victoria, have invented new and useful Improvements in and relating to Means for Closing and Locking or Unlocking Railway-Carriage Doors, of which the following is a specification.

This invention of improvements in and relating to means for closing and locking or unlocking railway-carriage doors has been devised for the purpose of placing all the doors of a train under the control of a duly-authorized official, such as the guard, who can, by operating a suitable hand-wheel or lever in his van or compartment, either close and lock or else unlock all the doors of the train, so that it is impossible for the passengers to reopen them without the consent and co-operation of the guard.

The essential feature of this invention is the employment of a main cord, rod, or chain, or a combination of cords, rods, and chains running lengthwise from end to end of the train, and having other shorter branch cords or chains connecting it to each door, while at either or both ends is provided—say, for instance, in the guard's van—a hand-wheel or lever whereby said cords or chains may be operated so as to either close and lock or else unlock all the doors of the train, as already stated. If required, I sometimes provide a series of electric bells, one in each compartment. These bells I arrange to be rung either automatically or otherwise whenever the doors are about to be closed, thus giving the passengers timely warning of the guard's intention.

Referring to the accompanying drawings, Figure 1 is a side elevation of a portion of a railway-train fitted with my invention. Fig. 2 is a vertical transverse section on line $x x$, Fig. 1, illustrating the mechanism in the guard's van for operating the cords for closing the doors. Fig. 3 is a vertical transverse section through the upper portion of one of the doors, illustrating the connection between said doors and the cord whereby they are closed. Fig. 4 is a section on line $y y$, Fig. 1, the car-body, the connecting-links, and actuat-

ing cord or chain being shown as broken, illustrating the construction of what I term a "governor"—that is, a device employed between the carriages to take up the slack that would otherwise be formed in the operating-cord when the carriages come close together. Fig. 5 is a diagrammatical view illustrating the application of electric bells to the carriages.

It will be seen on reference to Fig. 1 that the end of the cord A or its equivalent is wound around the drum B in the guard's van or other convenient position, whence it passes over pulleys C C along the roof of the first carriage, thence down under a pulley D at the junction of the two pairs of links E E, which constitute the governor hereinbefore referred to. This governor connects the carriages one to the other, and serves to take up the slack cord which would otherwise be formed between the said carriages whenever their buffers were compressed—that is, whenever the carriages draw nearer to each other—as, for instance, when the brakes are applied. A pair of nuts F F on the ends of the bolt which connects the lower extremities of the links of the governor, and which also serves as the spindle of the pulley D, may be removed whenever it is necessary to uncouple said governor—as, for instance, when adding more carriages to the train.

The cord A may readily be disconnected at G G when desired, it being simply coupled together at these points by a hook and eye. At the other end of the train the operating-cord A is secured to either a counterbalance-weight or to a spring whose tendency is to always draw the said cord into such a position that the connecting-cords $a a$ will allow the doors to be opened.

The recesses or chambers a^5 in the upper portion of the car-doors above referred to are preferably made narrow to accommodate a flat weight, a passage in which is pivoted a cord-pulley a^3 being formed in said upper portion of the door, said passage leading to the chamber or recess a^3 , the branch cord a , to which the weight H is attached, passing through said passage over pulley a^3 , thence over the pulley a^2 to the main operating cord or chain A. It is obvious that whenever the cord A is drawn in one or the other direction

to pull the weight H up against the roof of the chamber the door cannot be opened; but when the said cord A is slackened sufficiently to allow the weight H to drop to the bottom 5 of the recess or chamber then the door can be opened, as shown in Fig. 3 in dotted lines, the depth of the chamber determining the length of the branch cords and the extent to which the car-door can be opened.

10 The drum B, around which the end of the operating-cord A is wound, is illustrated in Figs. 1 and 2, arranged to be rotated by gearing I from a hand-wheel J. The electric bells in the different compartments of the train 15 may be operated by causing a pin K, projecting from the drum B, to contact with a spring contact-piece L whenever the said drum is moved to operate the cord A; or, if preferred, the said bells might be connected with an ordinary push-piece or contact-maker, whereby 20 the guard could operate them whenever he wished to do so.

The cords or rods A are preferably protected from the action of the weather by passing them along tubes M M. 25

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

30 1. As a means for simultaneously locking or unlocking the car-doors of a train from a given point, an operating cord or chain run-

ning along the length of the train and having one end thereof connected to a winding-drum and the other to a counterbalancing- 35 weight, branch cords or chains connected with said main cord or chain and extending therefrom into recesses in the car-doors, and a weight connected to said branch cords and adapted to limit the movement thereof with- 40 in the recesses of the doors when the main cord or chain is wound on or unwound from the winding-drum, substantially as and for the purposes specified.

2. As a means for simultaneously locking 45 or unlocking the car-doors of a train and giving an alarm, a main cord or chain A, running along the cars of the train, a winding-drum to which one end of the cord or chain is connected, branch cords or chains extend- 50 ing from the main cord or chain into recesses in the car-doors and adapted to hold the same closed when the main cord is drawn taut, an electric alarm in each of the cars, an electric circuit including said alarms, and a 55 circuit-closer controlled by the winding-drum to close the electric circuit when said drum is revolved, substantially as and for the purposes specified.

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Witnesses:

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