

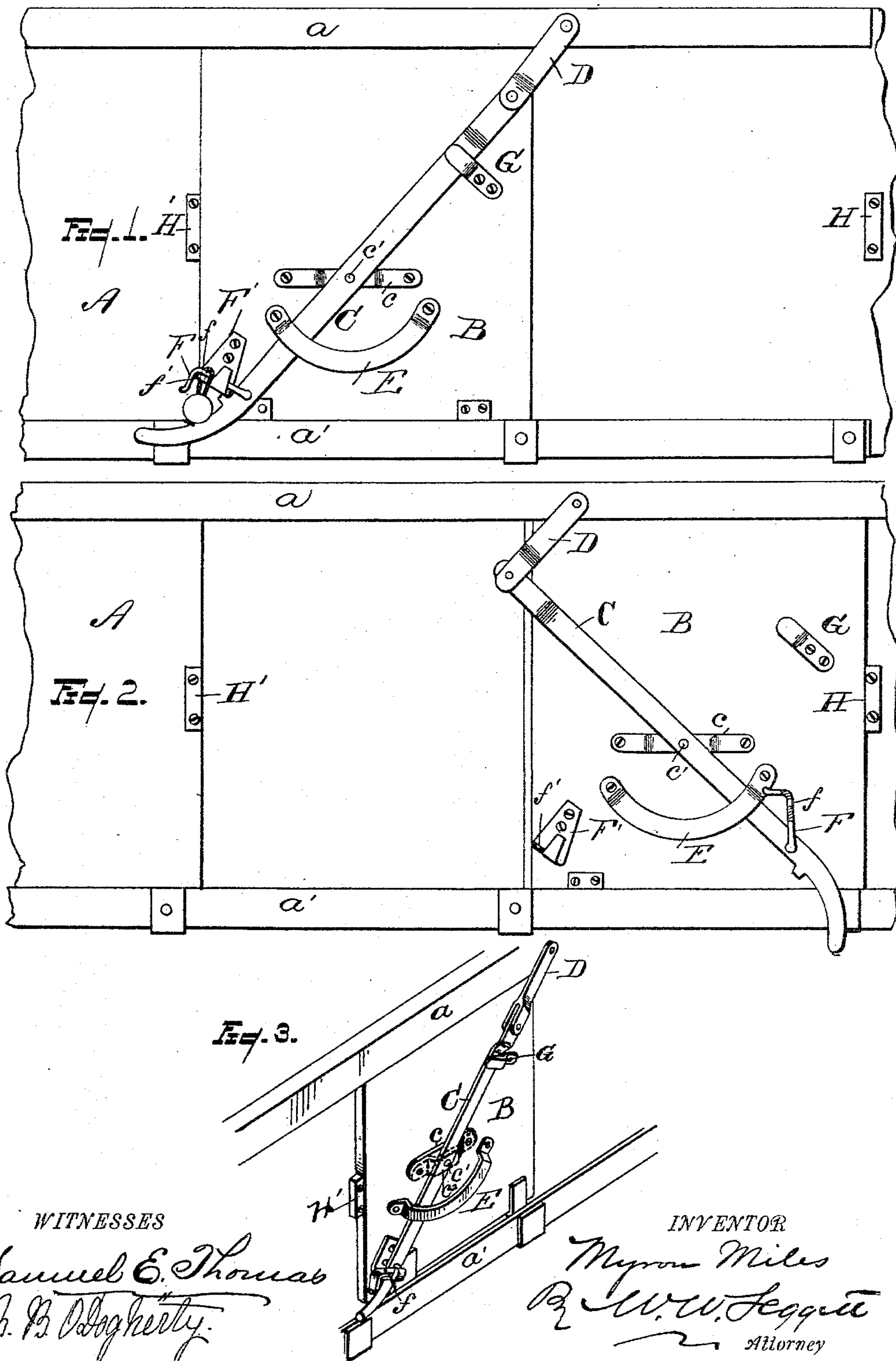
(No Model.)

M. MILES.

CAR DOOR OPENER AND CLOSER.

No. 412,197.

Patented Oct. 1, 1889.



WITNESSES

Samuel E. Thomas
R. B. O'Leary

INVENTOR

Myron Miles
R. W. W. Fegget
Attorney

UNITED STATES PATENT OFFICE.

MYRON MILES, OF OXFORD, MICHIGAN, ASSIGNOR OF TWO-THIRDS TO JOHN D. HAGERMAN AND CLYDE HAGERMAN, OF SAME PLACE.

CAR-DOOR OPENER AND CLOSER.

SPECIFICATION forming part of Letters Patent No. 412,197, dated October 1, 1889.

Application filed October 23, 1888. Serial No. 288,932. (No model.)

To all whom it may concern:

Be it known that I, MYRON MILES, a citizen of the United States, residing at Oxford, county of Oakland, State of Michigan, have invented certain new and useful Improvements in Car-Door Openers and Closers; and I declare the following to be a full, clear, and exact description of the invention, such as 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.

My invention relates to certain new and useful improvements in car-door openers and closers, and it is more especially adapted to the use of freight and cattle car doors, or to those known as "sliding" car-doors.

The general object of my invention is to provide an opener and closer of such construction that it shall be simple, thereby dispensing with the heavy and complicated machinery now in use for the accomplishment of the same purpose, and at the same time will be as effective in its operation.

Having thus stated, generally, the object of my invention, I will now proceed, by reference to the accompanying drawings, to point out more specifically the details thereof.

In the drawings, Figure 1 is a view showing my device applied to the door and side of a car, the door being shown in a closed and locked position. Fig. 2 is a similar view showing the car-door in an opened position, and Fig. 3 is a detail view of the opener.

Similar letters of reference are used to denote same parts throughout the entire specification and drawings.

A represents the side of an ordinary freight-car, and having the top and bottom thereof provided with the usual tracks or guides α α' , in which works the door, as hereinafter more fully described.

B indicates the door of the car, the top and bottom working within the guides formed upon the side of the car at the top and bottom. It is obvious that the door may be provided with rollers, hangers, and the like, for the purpose of more readily allowing of the sliding forward and backward of the same upon the side of the car.

C is the lever by which the operation of

opening and closing the car-door is performed. The lower end thereof is rounded or reduced, so as to form a more convenient handle for operating the same, and at or near its center the lever is fulcrumed to the door B. The door may be provided with a metallic plate c , to which the lever C may be pivoted, thus preventing the wear which would otherwise result to the door if the lever during its operation came in direct contact with the surface thereof.

Any desirable means may be used for pivoting the lever C to the plate or door. A bolt c' may be passed through the lever and secured either to the plate c or to the door; or a plate or strap (shown by the dotted lines c^2) may be engaged at each end to the plate c and embrace the lever between it and the plate. It is obvious that any means used to fulcrum the lever would be contemplated by my invention.

The upper end of the lever is pivoted to the lower end of a rod, bar, or link D, the upper end of which is pivoted to the car at a suitable point by means of a bolt or other desirable fastening. This link, when connected to the lever, allows of the forward or backward throw of the lever, thereby causing a like movement to be given to the car-door.

The door of the car may be provided with a guide E, under which works the lever C, and which tends to secure the lever in its adjusted position in case of the accidental breakage of the means used to secure the lever C to the door, and which at the same time acts as a stop for the throw of the lever either forward or backward. This guide I have shown as being of a semicircular shape; but any other desirable shape may be used.

I have shown movably secured to the lever C, at or near the lower end thereof, the latch or hook F, which fits over the hook F', secured to the door B at or near its bottom, and which has provided therein the hole f , which corresponds to the hole f' , formed in the hook F'. The purpose of these orifices is to allow of the locking of the car-door, when desired, by means of a staple, lock, seal, or otherwise. I have shown the same as being secured (in Fig. 1) by means of the ordinary railroad-seal. I do not wish to be understood as stat-

ing that this locking device forms an essential feature of my invention, for I am aware that this may be dispensed with and the door fastened in any ordinary manner.

5 H H' are stops secured to the side of the car at the rear and front of the door, respectively, and serve to prevent the forward or backward movement of the door beyond a predetermined point. I have also shown another stop G as attached to the car-door at
10 any convenient point in the rear of the lever C, and against which the lever comes in contact when the door has reached the farthest point in its forward movement in closing.
15 If so desired, the stop H' may be dispensed with altogether, and the stop G serve in place thereof; or one may be used as a substitute for the other in case of breakage resulting to either.

20 The operation of my device is as follows: After the unlocking of the door and the removal of the latch F from the hook F', the lever C is then pulled backward and with it slides the door B until it is prevented from
25 further movement by the stop H. Upon the rearward movement of the lever and door there is given first an upward and then a downward movement to the rod or link D. The closing of the door is exactly the reverse movement
30 given in opening, its motion being in like manner arrested by the stop H' or the stop G.

It will be observed that when the door is closed the point of connection between the lever C and rod or link D is slightly below a
35 line drawn from the fulcrum of the lever to the point where the rod or link is engaged to the car, thus preventing the door from being opened until, by moving the handled end of the lever backward, the aforesaid point of
40 connection is thrown above the said line and the lever permitted to slide backward and with it the door in opening. Thus it will be seen that the locking device F F' is simply
45 an additional means of securing the door and not necessarily essential.

What I claim is—

1. A car-door opener and closer consisting of a lever having its center fulcrumed to the door and its upper end pivoted to a link that in turn is pivoted to the car-body, said lever
50 being thereby adapted to have the power applied to its lower end for opening and closing the door, substantially as described.

2. A car-door opener and closer consisting of a lever fulcrumed to the car-door and pivotally secured at its upper end to a link or
55 rod, which is in turn pivoted to the car at such a point that the point of connection between the lever and link will fall out of a line drawn between the points of attachment
60 of said lever and link in the direction the door must be moved, substantially as and for the purpose described.

3. In a car-door opener and closer, the combination, with a lever fulcrumed to the door
65 and a rod or link pivotally engaged at one end to the upper end of the lever and pivoted at the other end to the car, of a suitable stop located back of the lever and adapted to keep it in a desired position when the door is closed,
70 and means for additionally locking the door, if desired, substantially as described.

4. A car-door opener and closer consisting of a lever fulcrumed to the car-door, a rod or link pivotally connected to the lever at one end
75 and having the other end pivoted to the car, and a guide adapted to keep the lever in the desired position, substantially as described.

5. In a car-door opener and closer, the combination of the lever C, rod or link D, pivoted
80 to the car, said rod or link and lever being pivotally connected together, door B, lever-guide E, latch F, and hook F', said latch and hook forming means for additionally locking the car-door, and the stops H, H', and G, sub-
85 stantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

MYRON MILES.

Witnesses:

M. B. O'DOHERTY,
SAMUEL E. THOMAS.