

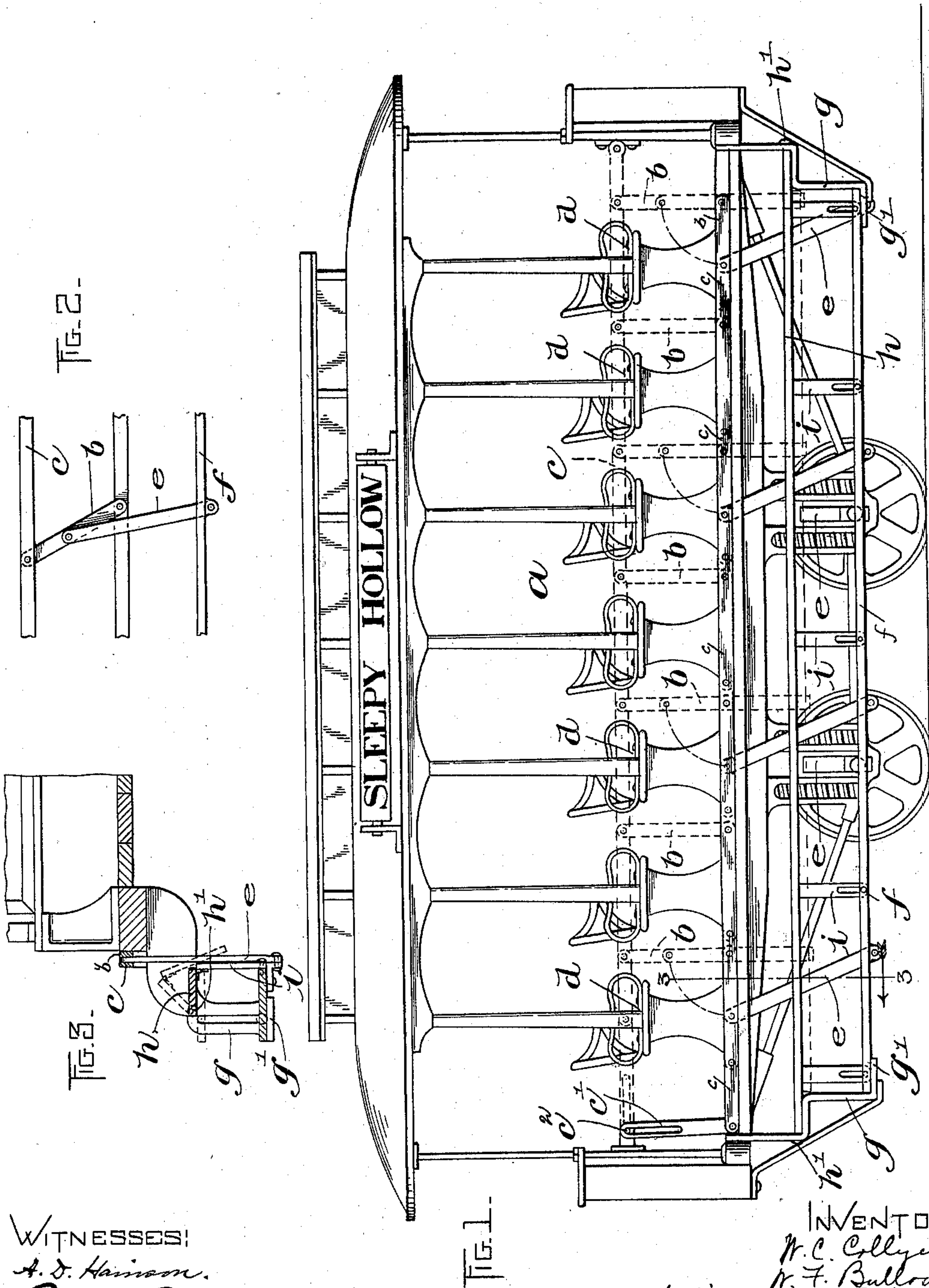
No. 609,082.

Patented Aug. 16, 1898.

W. C. COLLYER & W. F. BULLOCK.
COMBINED GUARD AND STEP FOR STREET CARS.

(Application filed Dec. 3, 1897.)

(No Model.)



WITNESSES:
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UNITED STATES PATENT OFFICE.

WILLIAM C. COLLYER AND WILLIAM F. BULLOCK, OF LYNN, MASSACHUSETTS.

COMBINED GUARD AND STEP FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 609,082, dated August 16, 1898.

Application filed December 3, 1897. Serial No. 660,579. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM C. COLLYER and WILLIAM F. BULLOCK, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in a Combined Guard and Step for Street-Cars, of which the following is a specification.

This invention has relation to street-cars in which there is an entrance at the side of the car and a step running longitudinally along the side of the car—as, for instance, in the ordinary open car having transversely-extending seats.

The invention has for its object to provide a combined guard-rail or gate and step for street-cars of this pattern; and it consists in the novel features of construction and arrangement which we will now proceed to describe and claim, with the aid of the drawings accompanying and forming a part of this application.

Figure 1 represents a side elevation of an open car provided with our improvement. Fig. 2 represents a detail side elevation with the parts in another position. Fig. 3 represents a section on line 3 3 of Fig. 1.

The same reference characters indicate the same parts in all the figures.

Referring to the drawings, *a* designates the car-body, and *b b* designate a number of arms of equal length, pivoted at their lower ends to the floor-beam or frame of the car and at their upper ends to a guard-rail or gate *c*, which is adapted to swing on said arms in a vertical plane from an obstructing position across the ends of the aisles between the car-seats *d d* to a depressed or inoperative position at or below the level of the car-floor.

c' is an end section or addition to the guard-rail, pivoted to the main rail and slotted to receive a stationary pin *c²*. When the rail *c* is depressed, the auxiliary piece *c'* occupies the position shown by full lines in Fig. 1, and when said rail is raised, as shown by dotted lines in Fig. 1, the piece *c'* occupies a hori-

zontal position across the end of the last aisle.

e e are links pivoted to the arms *b b* intermediate of the ends of the latter and to a horizontal step *f*, extending longitudinally of the car and adapted to slide up and down in slotted end guides or brackets *g g*. The said brackets are provided at their lower ends with flanges *g'*, which support the ends of the step *f* when the latter is in its lowermost position. A second step *h* is located above the step *f* and is pivoted at *h' h'* to the brackets *g*. Arrangements are made for tilting up the rear edge of the step *h* when the step *f* is raised, these arrangements consisting of rods *i*, having a pivotal connection with the step *h*, and a slot-and-pin connection with the step *f*, the latter connection being provided because the step *f* has a greater range of motion than the rear edge of the step *h*.

It will readily be seen that when the guard-rail *c* is depressed the lower step *f* is also depressed and the upper step *h* is in a horizontal position, giving convenient ingress and egress for passengers to and from the seats *d* on this side of the car; but when the guard-rail *c* is raised the step *f* is raised to an inconvenient height above the street and the step *h* is tilted to a sloping position. Passengers are thus effectually prevented from getting on or off the car on this side. In practice the arrangement of guard-rail and step is provided on each side of the car, so that when running access may be provided on one side of the car and prevented on the other side for the sake of safety.

We do not wish to confine ourselves to the details of construction herein described, as considerable variation in structure may be made without departing from the spirit of the invention.

We claim—

In a street-car having one or more side entrances, a guard-rail or gate adapted to occupy a raised or obstructing position across said entrances, and a depressed or unobstruct-

ing position, a step connected with said rail
and adapted to be raised and depressed bodily
by the raising and depressing of the rail, a
second step hinged to suitable supports, and
5 means whereby the second step is made to
occupy a tilted or sloping position when the
rail is raised, and a horizontal position when
said rail is depressed.

In testimony whereof we have signed our

names to this specification, in the presence of
two subscribing witnesses, this 23d day of
November, A. D. 1897.

WILLIAM C. COLLYER.
WILLIAM F. BULLOCK.

Witnesses:

C. F. BROWN,
A. D. HARRISON.